



Electronic Products for electrical panels

February 2009 edition



UNI EN-ISO 9001



UNI EN-ISO 14001

WARNING If not specified, the technical data in this catalogue are typical and measured at 25°C (77°F), 230 Vac, Unom, Vdc and rated current; ripple is measured at 20 MHz with probe connected to 0.1 µF. The technical data in this catalogue are typical and are not binding for Cabur and may be modified without prior notice, simply for production or improvement and/or evolution reason. Please contact our technical-commercial offices for any relevant confirmation or updates. For more informations visit our web site www.cabur.eu.



Catalogue printed on FSC certified, ecological and recyclable glossy paper.

FSC (Forest Stewardship Council) is an international non-profit organization devoted to encouraging the responsible management of the world's forests through an environmentally friendly and economically sustainable policy.

Quality wins! That's guaranteed!

Quality, reliability, high technology, know-how, efficient use are all aspects and features of a product of primary importance.

For the safety and piece of mind of its Customers, Cabur designs and creates its Electronic Products with great care, using selected materials and components, in perfect harmony with the Quality choices made by the company in the last few decades. That's why we can guarantee our electronic products for five years.

Cabur's electronic products warranty

Cabur guarantees its electronic products against manufacturing defects and faults as well as defects due to their parts and/or components (except for wearable parts and/or components) for 5 years starting from the date of the shipping document issued by Cabur.



www.cabur.eu/5

Introduction

Cabur	page 6
Products range	page 8
Web site	page 9
Quality and environment	page 10
Standards and Directives	page 11

Power supplies

Introduction	page 12
Quick selection table	page 14
CSD series - modular single-phase switching power supply - Domotic Power	page 16
CSF series - single-phase switching power supply - Cool Power	page 21
Single-phase switching power supply in IP65 housing	page 30
CSP series - single-phase switching power supply - Easy Power	page 31
CSW series - single and 2-phase switching power supply - Universal Power	page 35
CSB series - 2-phase switching power supply - Triple power	page 38
CSG series - 3-phase switching power supply - Triple power	page 38
CSA series - DC/DC switching converters	page 48
CSE series - switching power supply with 24 Vac input	page 50
CL series - Adjustable linear power supply input 24 Vac	page 52
AR series - filtered power supply without transformer	page 53
Accessory for charging buffer batteries	page 55
Batteries holder module	page 57
CSC series - switching power supply with integrated battery charger	page 58
Accessory for power supplies redundant parallel connections	page 59

Surge protection devices

Introduction	page 60
Pluggable surge protection devices	page 61

Overcurrent protection devices

Introduction	page 62
Adjustable electronic overcurrent protection	page 63

EMI Filters

Quick selection table	page 64
TDV series - 3-phase filter without neutral	page 65
TDS series - 3-phase filter without neutral	page 66
TDDS series - 3-phase filter without neutral	page 67
TDSS series - 3-phase filter without neutral	page 68
TYT series - 3-phase filter with neutral	page 69
TY series - compact three-phase filter with neutral	page 70
DK series - single-cell single-phase filter	page 71
DP series - double-cell single-phase filter	page 72

Signal conditioners

Introduction	page 73
Quick selection table	page 75
Programmable analog signal converters	page 78
Analog signal converters	page 82
Passive galvanic isolators	page 88
Analog signal to frequency converters	page 89
Universal temperature converters	page 90
Programmable converters for RTD sensor	page 91
Programmable converters for TC J and K sensor	page 92
Temperature to frequency converters	page 93
Current to threshold converters	page 94

Current to analog signal converters	page 95
Frequency to analog signal converters	page 96
Analog to digital converters	page 98
Digital to analog converters	page 99
Analog signal to threshold converters	page 100
Load cells converter	page 101
Auxiliary power supply for sensors and potentiometers	page 102
NPN and PNP signal inverter	page 103
Electromechanical relay modules	
Single relay quick selection table	page 104
R series - single relay DC input	page 105
CM series - single relay DC input	page 107
CM series - single relay AC input	page 110
CKR and CWRE series - Relay modules	page 113
Multiple relays quick selection table	page 116
24 V SPDT multiple relay modules	page 117
24 V DPDT multiple relay modules	page 121
24 V SPDT multiple relay modules with test button	page 124
12 Vdc SPDT multiple relay modules	page 125
12 Vdc DPDT multiple relay modules	page 126
48 Vdc DPDT multiple relay modules	page 127
110...120 V SPDT multiple relay modules	page 128
230 Vac SPDT multiple relay modules	page 129
12-24 V SPDT multiple socket modules without relays	page 130
12-24 V DPDT multiple socket modules without relays	page 131
CR and CRE series - super compact relay modules	page 132
PLC and CN interfaces quick selection table for	page 135
PLC Siemens S7 interfaces modules	page 136
PLC Telemecanique interfaces modules	page 139
Solid state relay modules	
Quick selection table	page 140
Single solid state relays modules	page 141
Modular single solid state relays modules	page 144
SPDT single solid state relays modules	page 146
Signal optoisolators	page 147
Multiple solid state relays modules	page 148
Passive interface modules	
Quick selection table	page 152
SUB-D / terminals interfaces	page 153
FLAT-cable / terminals interfaces	page 156
Components holder modules	page 158
Diodes holder modules	page 159
LED testing module	page 161
Lamp testing module	page 162
Distribution modules	page 163
Modular diodes holder modules	page 164
Accessories	
Electronic circuit housing	page 165
Plug-in and screw type jumpers	page 167
Marking system	page 169
DIN rail clamp	page 169
Mounting rails	page 170
Index	page 172



• Terminal blocks for electrical boards

polyamide screw clamp, spring-clamp terminal blocks, melamine insulated terminal blocks, terminal boards for metering panels, high current terminal blocks

• Electronic products for electrical boards

power supplies, analog modules, relay modules, signal converters

• Installation products

junction boxes terminals, distribution terminal boards, polyamide 12-pole terminal boards, connection systems for photovoltaic equipments

• Multipole connectors



If you wish to receive complete and updated technical documentation on Cabur products, please send a request using the dedicated form that you can download online on the **www.cabur.eu** website <http://www.cabur.eu/documentations>

or just fill in, and send the form below

PLEASE SEND ME THE COMPREHENSIVE TECHNICAL DOCUMENTATION

Surname _____ Name _____ Function _____

Company Name _____ Field of activity: ☐ Distributor ☐ Installer ☐ Panel Builder ☐ Other

Address _____ Town _____ Postcode _____

Telephone _____ Fax _____ E-mail _____

Data supplied shall be kept by Cabur Srl and processed on printed forms, confidentially protected, with the sole purpose to allow Cabur, its agents, retailers and partners to deliver commercial information and services. Data contribution is optional. Nevertheless the non-authorization to data processing implies the impossibility of receiving information and commercial bargains. At any moment you may avail yourselves of the rights as prescribed in the Italian decree 196/2203. In order to ask for a copy of the data supplied, obtain its modification or its cancellation from our archives, or to exercise the rights as per article 7 of above mentioned law decree, you may send a written request to: Cabur Srl - Marketing department - Località Isola Grande, 45 - 17041 Altare (SV, Italy). The holder of data processing is: Cabur Srl, Località Isola Grande 45, Altare (SV), Italy.

I agree to my personal data being processed for the a.m. purposes.
Signature _____

PLEASE PHOTOCOPY AND SEND BY FAX AT **+39 019 58999280**

Shortly after its foundation, back in 1952, Cabur became a leading manufacturer of electrical panel terminal blocks, by focusing on installers' needs and providing leading edge technical solutions that, in some cases, would become popular in the industry.

In particular, in our product design and manufacturing, we have pioneered a quality focus on raw materials, functionality, reliability over time, and respect for the environment. That is the reason why Cabur was granted Class 1E (Equipment for Nuclear Power Generating Stations) qualification as early as in 1985 and, in addition, the ISO 9001/UNI-EN 29001 (Quality) and ISO 14001 (Environment) certifications, as well as compliance to Atex standards for "Ex e" installations on the most important terminal block lines.



UNI EN-ISO 14001



UNI EN-ISO 9001

The Headoffices

In 2006 a significant growth in company structure urged the organization to move from the historic site in Albissola Marina to a new logistic and manufacturing centre in Altare (SV).

Rather than moving abroad, Cabur has opted to invest in Italy, by acquiring a new state-of-the-art 15,000 sqm production site.

By doubling our production surface and increasing our staff with the recruitment of new people, we will be able to rationalise and make our current production processes, logistics, and sales, even more efficient.

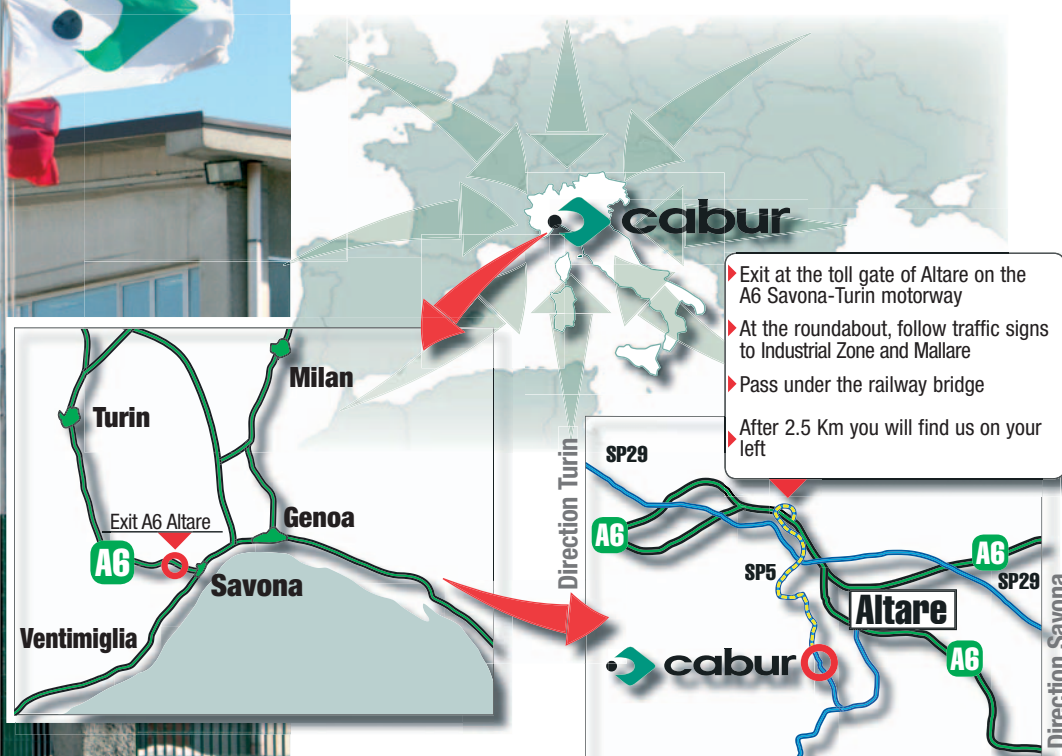


Località Isola Grande 45
17041 Altare (SV)
ITALY

Tel. +39 019 58999.1

Fax +39 019 58999280

e-mail: info@cabur.it



Product range

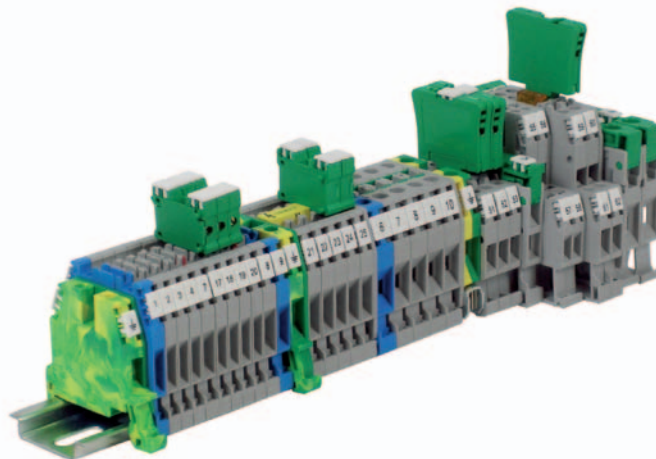
With over 50 years of experience, Cabur develops and produces, by its own designs, a wide range of products for the electrical industry, providing the best in working conditions, in terms of operability and reliability.

Current production of:

- **Terminal blocks for electrical boards**
- **Electronic products for electrical boards**
- **Installation products**

Fully meets users' varied and complex installation needs.

Our varied and diversified production represents the optimal synthesis of Cabur's long experience as partner of Italy's most important Industries and Research Laboratories, combined with foreign activities and collaboration, always with the aim of pinpointing and meeting users' installation needs.

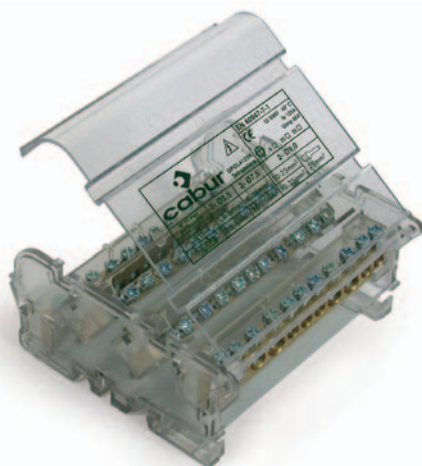
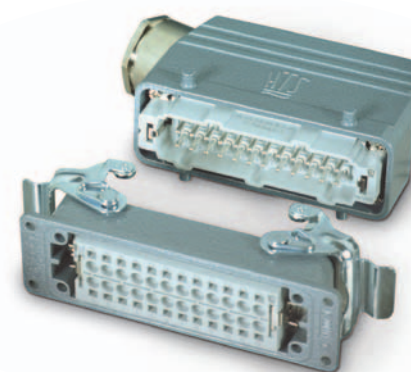


In addition to terminal blocks, Cabur product offering features a full range of electronic products for electric panels for plant and machine automation and process control. These products are designed for an easy deploy and for easy material management, thanks to the use of innovative and leading-edge technology.

Following an agreement with Tyco Electronics, Cabur distributes in the Italian market the HTS **heavy duty connector line**, which enlarges and completes the product range with over 250 items, presenting a series of highly qualified solutions.

HTS was selected as our partner for their strong experience in this field, their reliability and top material and finished product quality.

In particular as a result of a specific planning decision, products in our "standard" series are designed to meet the fundamental requirements of the most severe installation conditions and environments, thus avoiding to produce special product series for specific applications. This kind of planning has determined a clear qualitative improvement in the entire production, as well as a more streamlined and simplified product management, first of all to the advantage of the Distribution, which can guarantee to final Clients the most efficient service.



Highest ...mass produced quality

We guarantee top performance of our contacts and maximum flexibility of connection solutions.

A full range of standard products for automation panels is available at all major Wholesalers. Full support is provided by Cabur sales force both in Italy and in over 30 countries abroad, as well as by our Engineers, in order to provide our clients with the best installation solutions.

Web site

www.cabur.eu web site

On our web site, our customers and industry operators can always get up-to-date information on new products and sales offers.

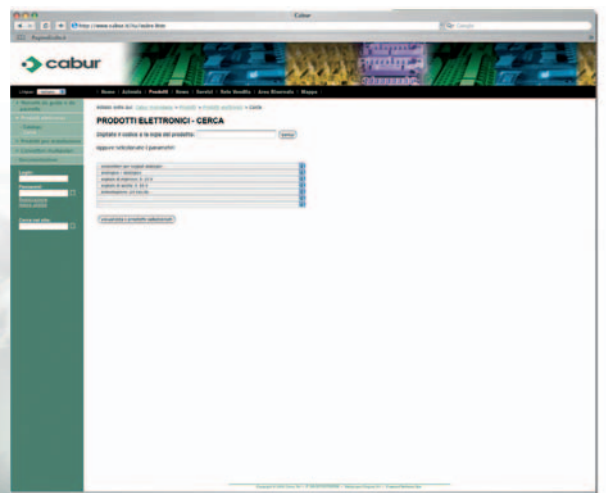
All data sheets of Cabur product range, including those in this Catalogue, are available on our online catalogue featuring advanced user-friendly search functions.

Moreover, on our web site you can:

- ask our specialists for technical information and application advice
- contact our sales staff and ask them for estimates
- download manuals and other technical literature
- get access to quality and compliance certificates
- look at our latest sales literature
- ask for free catalogues and brochures
- ... and much more.

By this newsletter, Cabur communicates also via e-mail its main innovations and commercial activities to all those who apply for it through the registration form.

In conclusion, Cabur web site (**www.cabur.eu**) is the ideal tool to get real time information and contacts with our company.



www.cabur.eu

Real time information on our company, products, and certifications

In order to be promptly updated about the availability of new technical and commercial documentation, please register on the site and join the newsletter service.

Quality and environment

ISO 9001 CSQ Certification



UNI EN-ISO 9001

Until recently, Cabur "Quality" was simply recognised through the appreciation of its customers. This has allowed the company to become a leader in Italy in the design, production and distribution of "terminal blocks for electrical panels" and, more recently, to extend its products offering to the segment of "electronic products" with recognised reliability levels in both Italian and foreign markets. Obviously, this cannot be the result of improvisation, but of a constant organisation process begun back in 1985 with the definition and implementation of a Quality Assurance Programme based on ANSI N 45.2 (referred to the particularly severe nuclear environment) that has involved the entire structure of the Company and has made each function and worker responsible for quality standards. Since 1995, CSQ (international institute for the certification of business quality systems) has certified the Quality system designed and adopted by Cabur. The Quality system refers to the most complete and severe standard amongst



UNI EN ISO 9000 series defining the requirements for Total Quality in Companies, that is ISO 9001, including the activities of Product Design, Development, Manufacturing and Customer Service. After the issue of the new Edition of the Standard (ISO 9001:2000), the whole Quality System has been revised and renewed to be fully compliant with the new regulations. This compliance was confirmed by CSQ with the new Certificate issued in 2003.

**THE QUALITY OF OUR PRODUCTS IS JUDGED BY OUR CUSTOMERS.
OUR QUALITY ASSURANCE SYSTEM IS CERTIFIED BY CSQ.**

ISO 14001 CSQ Certification



UNI EN-ISO 14001

In its continuous improvement process, CABUR has adopted an environmental management system since 2001, obtaining the international CSQ UNI EN 14001 recognition. This goal represents a guarantee given of the respect Cabur has for the surrounding environment as well as a demonstration of the adoption of environmental safeguard rules and, additionally, a pledge for constant ecological improvement. This kind of Certification is still quite uncommon in Italy; Cabur has nevertheless been able to achieve and add it to its corporate philosophy, which is always aimed at the anticipation, rather than to the passive adaptation, of those needs that are becoming more and more urgent and global. Environment is undoubtedly one of these issues and, anticipating many other companies, not only in Italy, Cabur



firmly decided to adopt a system that monitors and prevents environmental risk, inherent to every stage of its manufacturing process. Operational procedures and other paper documentation were unified and harmonised with the running Quality Assurance System and the manual, becoming of both Quality and Environmental Management, is now a complete reference point. The Quality Assurance and Environmental Management Department is at your complete disposal to provide any further information and/or clarification on the entire Quality / Environment System and Customer Service. Cabur can provide you with a copy of both CSQ and EQNET certificates, or with a copy of the Quality and Environmental Management manual.

Standards and directives

The 2002/95/CE Directive



The 2002/95/CE Directive, known as RoHS, sets limits to the use of specific dangerous materials in electric and electronic devices.

The Directive applies exclusively to devices included in the following categories, as listed in attachment 1A of 2002/96/EC Directive, also known as WEEE, excluding categories 8 and 9.

1. Large appliances excluding fixed ones
2. Small appliances
3. IT and telecommunication appliances
4. Consumers' appliances
5. Lighting appliances
6. Electric and electronic tools, excluding large fixed industrial tools
7. Toys and devices for hobbies and sports
10. Vending machines

Cabur Products' compliance to RoHS Directive

Cabur products are generally deployed in electric panels for electric distribution and for industrial automation, which are excluded from the application field of the RoHS Directive, as components of "fixed industrial tools" and of "fixed installations".

Nevertheless, in consideration of the needs of those Customers deploying Cabur products into devices and appliances that need to be RoHS compliant, we have decided to review our production according to RoHS Directive requirements.

From the beginning of the year we have been disposing of non-compliant items, not only to reduce dangerous substances but to eliminate them completely from components in our production, with a Zero Tolerance mindset.

The small amount of our products which is currently non-RoHS compliant consists of dated stocked parts or of those few items that cannot be produced by different materials or process yet. In any case, as mentioned above, these items are deployed in product categories that are not listed in the RoHS Directive application field.

Our staff is available for further details both on our products and on the application of the RoHS Directive.

For more information, please click on www.cabur.eu

CE Marking



All products in this catalogue meet all EU applicable standards when the catalogue was printed. Therefore, all required CE markings are placed on the products and on all product related documents.

Do not hesitate to contact our staff for any further information and/or explanations on Reference Standards. Cabur Customer Service can provide you with certificates of compliance to Reference Standards, type approvals, and CE markings.



Cabur power house

Cabur continues to renew and expand the range of power supplies for the use in industrial automation of vehicles, overhaul of processes and plants by improving technologies and product services and by introducing new models.

Quality and safety: Cabur is the first Italian company to obtain the special approval UL508C Industrial Control Equipment for devices used for the processes in the industrial automation, in conformity with the direction IEC950, EN60950 for Electric Safety and thus EC labelled.

Innovation and research: in 1997 Cabur was the first Italian company to produce switching power supplies for Din guide with universal input 120-230 Vac, while others were offering power supplies with outperformed, heavy and cumbersome step-down network transformer.

With the new generation of products presented in this catalogue, Cabur aimed at obtaining the highest possible output, to reduce energy costs and working temperatures although reducing the dimensions of power supplies. By increasing the output, the dissipated power is reduced and besides the duration of the power supplies it is possible to reduce the thermic stress of the components for more reliability and savings while running.

By using circuit technologies and innovative components, we obtained the highest output on the market with over 94% in three-phase. The new three-phase power supply of 20°/24V has an output of 94.5%, supplies 480 W and dissipates only 28W compared to more than 50 W dissipated in other products: 25 W saved, less heat and much more reliability.

The new generation of power supplies has all the characteristics of flexibility and functionality for use of the previous series:

- all models are adequate for a network voltage of 100-120-230-240 Vac with a range of 90...264 Vac/110...370 Vdc which makes it possible to use them all over the world
- new mono- two-phase power supplies of the CEW series with an extended range from 185...550 Vac in only one model
- the output voltage of the power supplies above 2 A can be adjusted between 24 to 27.5 Vdc
- all models supply a high output peak power (above 200% for 200 ms or 1 sec according to the model) to start the hardest loads and guarantee the selectivity of safety fuses on the 24 V line
- there are the versions with alarm contact and diode in an "o-ring" available on the output for the redundant parallel connection and all standard power supplies can be connected in parallel to sum power.

EN61000-3-2: all the models are in conformity with the EN61000-3-2 regulations of emissions of harmonic currents in low-voltage power supply systems, in force since 01/01/2001. By using our power supply systems, the user can declare the conformity of its own panel to the EMC directives without additional external EMI filters and without knowing points 1,2, 3,4 which may be unknown to the user or vary from one panel to the next or from client to client.

Thermic protection: all models are equipped with protections against overtemperature adjusted at 60° C with full load: in case of insufficient ventilation of the panel, continuous overload and high ambient temperature you avoid a broken power supply because of overheating and you reduce the thermic stress. The area of functioning of ambient temperature ranges from 20 a + 50°C for all models with full load without derating (except other indications).

Protection from short-overload: the protection from short-circuit and overload is used to protect the power supply from break down through overcurrent and subsequent overheating above the limits supported by the components. This function can be designed by starting with different applicable needs, with practical results and very different costs. In an automated process, the conditions for use, the value and the nature of the load can vary a lot, they are not known to those who project power supplies and sometimes not even to the users. The power supply in automation must reconcile needs which are in contrast between each other: protect themselves from overcurrent, but at the same time try to feed loads which call for a high peak current, work at ambient temperatures of max 45° C according to the regulation and sometimes also above in critical ventilation situations and furthermore guarantee high reliability and acceptable costs.

Choice of technology for protection of power supplies in automated processes:

- the overcurrent protection must support the high peak currents required by loads such as filament lamps, capacitive loads (dc/dc converter and filter condensators when switching on are almost a short-circuit for some ms) or inductive loads (engines in dc, electromagnets, etc.) at the peak they require currents above 5-10 times their nominal power and furthermore all these loads must sometimes be started synchronously.
 - high peak power must be supplied for a sufficient time in order to "start" the loads, for at least about ten ms or even up to 1-2 s according to the power of the power supply
 - if the power supply has a high power and supplies a number of power outlets protected by fuses, the circuit protection from the short circuit/overload must guarantee the selectivity of the operation of the protections from overcurrent by burning the fusible of the broken load before its internal protection circuit intervenes by switching off the output or reducing the voltage and output power.
 - the ambient temperature to which the project must refer to in order to measure the components, the admitted overcurrent and its duration must be equal or superior to 45°C, established in the directives regarding electric panels; the ambient temperature is a basic reference parameter because besides on supplied power and output, the heating of components depends also on ambient temperature.
- To protect the power supply you can use various techniques:
- switch off the output as soon as possible: it is safe and costs less but it does not enable you to start heavy loads or to burn fuse on the 24 Vdc line
 - constant power protection: if the admitted overcurrent is sufficiently high it enables you to start heavy loads, but if the overload lasts longer the power supply is always working with overload
 - hiccup protection: combines the two techniques listed above and admits over +200% of overcurrent for a relatively long time and then it switches off the output for a even longer break; the result is that you obtain the necessary peak of power when heavy loads are coming in with less heating of the components and during the break it cools down instead of being in continuous overload such as it is the case for protections with constant power.

The protection with Hiccup technology with overcurrent output admitted up to +200% of the nominal power for a time duration between 200ms to over 1s (according to the power of the model) which has shown to be effective and reliable in practice for many processes in the field of automation.

Environment and RoHS conformity: as our products are not included in the RoHS WEEE directive, Cabur has adapted its own products. Cabur is one of the first Italian companies to obtain the International Environmental Certificate UNI EN ISO 14001, certified by CSQ on ecologically compatible treatment of all materials necessary during the working cycle in order to produce its own products.

Filtered power supplies: a few components for a simple, reliable and economic solution in order to supply engines in dc or loads able to work without problems also with reciprocating wastage relatively high in output (ripple) and variations of output voltage equal to $\pm 10\%$, due to the variations of loads and variations of network. The filtered power supplies supply continuous non-stabilized voltage and if combined with underdimensioned transformers, in cases where the load calls for high power with a simultaneous decrease of the network voltage, the output voltage can decrease remarkably and cause a disfunctioning of the supplied devices. They are not recommended in case of a network voltage which cannot guarantee major stability or a voltage at least equal to $\pm 10\%$ of the nominal voltage provided by the regulations.

Linear power supplies: Cabur produces linear power supplies with small power and high performance, reliability and an acceptable price. The linear power supplies make only a small part of the market and are offered as standard products, even though the performance of the high quality switching technology permits to realize compact power supplies with a very superior performance.

"Custom" power supplies: Cabur plans and produces "custom" power supplies on request of the client to be able to meet the requirements of the directives and the high demands. Furthermore our lab offers a technical documentation and the measures which prove the conformity of the products with the directives on Electric Safety and Electromagnetic compatibility, besides the necessary technical support to define the characteristics of the product on the basis of the client's needs and our own experience.

Cabur offers three different technologies with the right performance and price

	Switching	Linear	Filtered
Efficiency	>87%	< 50%	80%
Energy dissipated	14%	> 50%	20%
Mains var. tolerance	90-264 Vac	207-257 Vac	218-240 Vac
Load var. stability	> ± 50 mV	> ± 200 mV	> ± 2.5 V
Ripple	@ 100 mV _{pp}	@ 100 mV _{pp}	≥ 2 V _{pp}
Weight	reduced	high	high
Dimensions	small	high	high
Cost	higher	higher	low
EMI	below standard limits	low	low

Which power supply unit to use

- Switching**
- with highly variable line voltages (from 90 to 246 Vac)
 - with electronic loads
 - when high Vdc stability is required
 - to reduce energy consumption, dissipated heat, weight, dimensions
- Linear**
- with line voltages stable within $\pm 10\%$
 - with electronic loads
 - for applications requiring very low electromagnetic emissions
- Filtered**
- with very stable line voltages within $\pm 5\%$
 - with loads having high tolerance to high ripple
 - with loads having high tolerance to variations of 25 Vdc
 - to reduce costs

GENERAL NOTES

All technical data indicated in this catalogue are "typical", and are measured at 25°C, rated input voltage, rated output voltage and current, after 10 min warm up; ripple is measured at rated input and output, 20 MHz, probe on 100 nF.

Length of insulation stripping: 9 mm, model with fixed terminals; 6 mm, model with pluggable terminals.

Cooling: distance the power supply units 2 cm (1") from adjacent devices and at least 5 cm (2") from other equipment on the upper and lower sides.

We recommend to mount the power supply on horizontal DIN rails.

Assembly: the power supply units are equipped with an EN 50.022 guide fitting. For a better stability we recommend attaching the guide to the panel, also in the point where the power supply unit is to be mounted.

DC input supply voltage: it is possible to supply the input of 90...264 Vac wide range models with 100...370 Vdc following these indications: reduce output current 25%, min. input DC voltage 100 Vdc, respect input polarity indicated on instruction sheet. Models with double voltage input cannot be supplied with DC voltage lower than 220 Vdc.

Redundant parallel and parallel connection: models with the letter P in their type and Cat. No. are supplied as standard with the output protection diode for redundant parallel and parallel connection.

We recommend adjusting to the same voltage (tolerance ± 50 mV) the outputs of all the power supply units, applying the same calibration load, before connecting them in parallel and using power supply units of the same model. If two power supply units not provided with an internal diode (standard versions) have to be connected in parallel, the connection shown in Figure 1 has to be applied out.

The CSDB module allows to connect in redundant parallel power supplies with 12, 15, 24 and 48 Vdc output voltages up to 15 A total max.

Connection in series of two power supply units: possible by connecting a diode in anti-parallel to the output of each power supply unit, dimensioned to withstand the max. current of the power supply unit (see Figure 2).

Dual voltage output power supplies: if a specific model with dual output is not available, dual output voltage can be achieved by connecting the outputs of two power supply unit as in Figure 3.

Power good signal available on "P" models: failure signal is provided by a 1A /30 Vdc SPST or SPDT contact (depending on model) of an internal relay: contact is closed when

functions are all OK, contact is opened in case of AC line shut off, overload or short circuit on 24 Vdc line or power supply failure.

NOTES FOR POWER SUPPLY UNITS WITH TRANSFORMER SECONDARY INPUT

Isolation: this series of power supply units is not isolated.

Type of use: they are suitable for use in PELV (one pole of the Protective Extra Low Voltage earthed) and SELV (Safety Extra Low Voltage, no pole earthed). The transformer used must have double or reinforced isolation in accordance with CEI 14.6 / EN 60742.

In the case of use in PELV circuits, only earth one pole of the 24 Vdc of the power supply unit. In the case of use in SELV circuits, do not earth the input earth terminal.

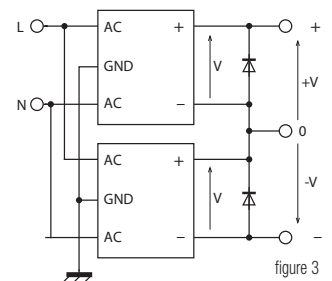


figure 3

Do not connect to the negative pole of the power supply output (- Vdc) together with one pole of the AC secondary source; this condition will damage the power supply; the secondary output voltage of the transformer must be kept isolated from ground and only the negative pole of the power supply output can be grounded for safety.

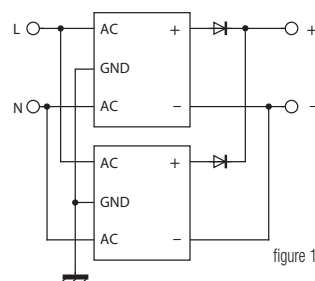


figure 1

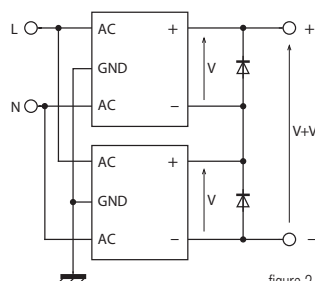


figure 2

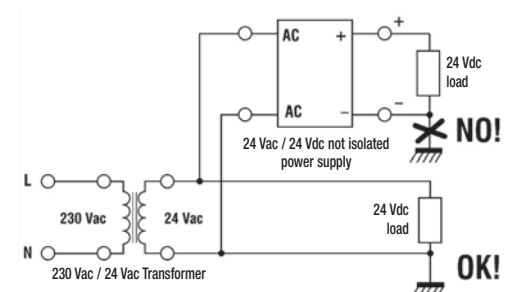


figure 4

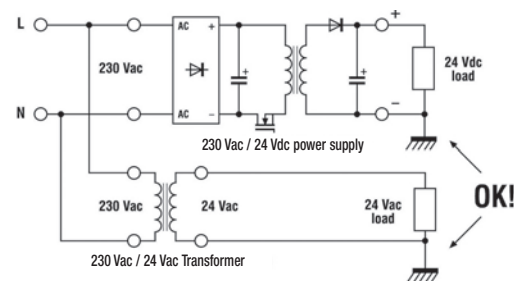


figure 5

Power supply quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Switching power supply - Cool Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
10...15 Vdc	1.5...1 A	90...264 Vac / 100...320 Vdc	(1) (9) (11)	CSF30B	XCSF30B	22
12...15 Vdc	6 A	90...264 Vac / 100...370 Vdc	(1) (8) (9) (11)	CSF85B	XCSF85B	24
12...15 Vdc	7 A	90...264 Vac / 100...370 Vdc	(1) (8) (9) (11)	CSF120B	XCSF120B	26
12...15 Vdc	16 A	120 Vac / 230 Vac	(2) (8) (9) (11)	CSF240B	XCSF240B	28
24 Vdc	1.2 A	90...264 Vac / 100...320 Vdc	(1) (11)	CSF30C	XCSF30C	22
24 Vdc	3.5 A	90...264 Vac / 100...370 Vdc	(1) (8) (11)	CSF85C	XCSF85C	24
24 Vdc	3.5 A	90...264 Vac / 100...370 Vdc	(1) (7) (8) (11)	CSF85CP	XCSF85CP	24
24 Vdc	5 A	90...264 Vac / 100...370 Vdc	(1) (8) (11)	CSF565	XCSF565	30
24 Vdc	5 A	90...264 Vac / 100...370 Vdc	(1) (8) (11)	CSF120C	XCSF120C	26
24 Vdc	5 A	90...264 Vac / 100...370 Vdc	(1) (7) (8) (11)	CSF120CP	XCSF120CP	26
24 Vdc	10 A	120 Vac / 230 Vac	(2) (8) (11)	CSF240C	XCSF240C	28
24 Vdc	10 A	120 Vac / 230 Vac	(2) (7) (8) (11)	CSF240CP	XCSF240CP	28
24 Vdc	20 A	120 Vac / 230 Vac	(2) (8) (11)	CSF500C	XCSF500C	29
48 Vdc	2.5 A	90...264 Vac / 100...370 Vdc	(1) (8) (11)	CSF120D	XCSF120D	26
48 Vdc	2.5 A	90...264 Vac / 100...370 Vdc	(1) (7) (8) (11)	CSF120DP	XCSF120DP	26
48 Vdc	5 A	120 Vac / 230 Vac	(2) (8) (11)	CSF240D	XCSF240D	28
48 Vdc	10 A	120 Vac / 230 Vac	(2) (8) (11)	CSF500D	XCSF500D	29

Single-phase switching power supply - Easy Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	3.5 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSP85C	XCSP85C	32
24 Vdc	5 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSP120C	XCSP120C	33
24 Vdc	10 A	120 Vac / 230 Vac	(2) (11)	CSP240C	XCSP240C	34

Single-phase switching power supply - Domotic Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
5...15 Vdc	3...1.5 A	90...264 Vac / 100...370 Vdc	(1) (9) (11)	CSD30E	XCSD30E	18
±12...±15	0.6 A	90...264 Vac / 100...370 Vdc	(1) (9) (11)	CSD30F	XCSD30F	18
12 Vdc	1.2 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSD15B	XCSD15B	17
12...15 Vdc	3.5...3 A	90...264 Vac / 100...370 Vdc	(1) (9) (11)	CSD50B	XCSD50B	19
24 Vdc	0.6 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSD15C	XCSD15C	17
24 Vdc	1.2 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSD30C	XCSD30C	18
24 Vdc	2 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSD50C	XCSD50C	19
24 Vdc	3 A	90...264 Vac / 100...370 Vdc	(1) (11)	CSD70C	XCSD70C	20

Single and two-phase switching power supply - Universal Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
12...15 Vdc	8...7 A	185...550 Vac	(3) (9) (11)	CSW120B	XCSW120B	36
12...15 Vdc	16...15 A	185...550 Vac	(3) (8) (9) (11)	CSW240B	XCSW240B	37
24 Vdc	5 A	185...550 Vac	(3) (11)	CSW120C	XCSW120C	36
24 Vdc	10 A	185...550 Vac	(3) (8) (11)	CSW240C	XCSW240C	37
48 Vdc	5 A	185...550 Vac	(3) (8) (11)	CSW240D	XCSW240D	37

Note

- (1) wide range single-phase input
- (2) double range single-phase input
- (3) single-phase and two-phase input
- (4) two-phase input
- (5) three-phase input

- (6) input from a secondary of a transformer
- (7) with Oring diode for redundant parallel
- (8) with failure contact (power good)
- (9) with adjustable output
- (10) DC/DC converter
- (11) UL508C approved 

Power supply quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Two and three-phase switching power supply - Triple Power series

Output voltage	Output current	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	3.5 A	340...550 Vac / 507...700 Vdc	(4) (9) (11)	CSB85C	XCSB85C	39
24 Vdc	6 A	340...550 Vac / 507...700 Vdc	(4) (11)	CSB150C	XCSB150C	40
24 Vdc	10 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG240C	XCSG240C	42
24 Vdc	20 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG500C	XCSG500C	43
24 Vdc	30 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG720C	XCSG720C	44
24 Vdc	42 A	340...550 Vac / 507...700 Vdc	(5) (11)	CSG42	XCSG42	45
24 Vdc	40 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG960C	XCSG960C	46
24 Vdc	100 A	340...550 Vac / 507...700 Vdc	(5) (11)	CSG2400C	XCSG2400C	47
48 Vdc	10 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG500D	XCSG500D	43
48 Vdc	15 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG720D	XCSG720D	44
48 Vdc	20 A	340...550 Vac / 507...700 Vdc	(5) (8) (11)	CSG960D	XCSG960D	46
48 Vdc	50 A	340...550 Vac / 507...700 Vdc	(5) (11)	CSG2400D	XCSG2400D	47

Switching power supply out 24 Vdc in IP65 case

Output voltage	Output current	Input tipology	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	5 A	Single-phase	90...264 Vac / 100...370 Vdc	(1) (8)	CSF565	XCSF565	30

Switching power supply with input from transformer and out 24 Vdc

Output voltage	Output current	Input tipology	Input voltage	Notes	Type	Cat. No.	Page
24 Vdc	3 A	From transformer	24 Vac	(6)	CSE3	XCSE3	50
24 Vdc	5 A	From transformer	24 Vac	(6)	CSE5	XCSE5	50
24 Vdc	10 A	From transformer	24 Vac	(6)	CSE10	XCSE10	51

Linear power supply with adjustable output 1.2...24 Vdc

Output voltage	Output current	Input tipology	Input voltage	Notes	Type	Cat. No.	Page
1.2...24 Vdc	1.5 A	From transformer	9...26 Vac	(6) (9)	CL1R	XCL1R	52
1.2...24 Vdc	5 A	From transformer	9...26 Vac	(6) (9)	CL5R	XCL5R	52

Filtered power supply with not stabilised output

Output voltage	Output current	Input tipology	Input voltage	Notes	Type	Cat. No.	Page
12...24 Vdc	1 A	From transformer	9...20 Vac	(6)	AR1	XAR1	53
12...24 Vdc	2 A	From transformer	9...20 Vac	(6)	AR2	XAR2	53
12...24 Vdc	4 A	From transformer	9...20 Vac	(6)	AR4	XAR4	54
12...24 Vdc	6 A	From transformer	9...20 Vac	(6)	AR6	XAR6	54

Note

- (1) wide range single-phase input
- (2) double range single-phase input
- (3) single-phase and two-phase input
- (4) two-phase input
- (5) three-phase input

- (6) input from a secondary of a transformer
- (7) with Oring diode for redundant parallel
- (8) with failure contact (power good)
- (9) with adjustable output
- (10) DC/DC converter
- (11) UL508C approved 

Modular switching power supply CSD series

DOMOTIC POWER

Domotic Power series

It includes single-phase switching supplies with up to 75W for applications in civil and industrial automation.

Its housing is designed adopting the sizes of DIN standard modular products for units integrated into modular control panels and may also be used in standard switchboards or small-depth panels.

Suggested uses

- Applications in industrial automation
- Applications in civil automation
- General applications in systems fit into small remote panels

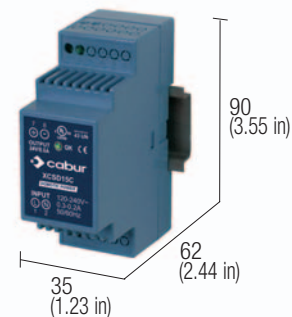
Main features

- The 90...264 Vac and 110...370 Vdc input makes them suitable for use on all power supply lines.
- These power supplies are Insulation Class 2, thus they don't require grounding, which reduces costs and times during installation into remote panels, surveillance and monitoring systems.
- Their high efficiency reduces energy consumption and working temperature and allows their use in small panels.
- Their backup power allows the supply of continuous current at least +25% above the rated value up to 45°C without exceeding standard temperature limits and ensuring safety and reliability.
- Dimensioned power supply and surge protection supplying breakaway starting currents 150% above the rated value required by heavy loads.
- Thermal protection prevents faults caused by prolonged overload at high ambient temperatures.
- Their internal components' high efficiency and excellent ventilation offer small dimensions and IP20 protection against accidental contacts in compliance with IEC529.



Single-phase switching power supply 120-230 Vac output power 15 W

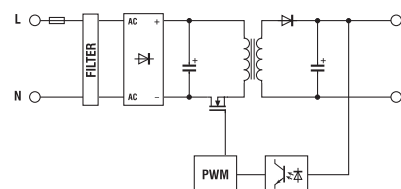
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) Over 50°C (122°F) apply a derating: C version: -0.015 A/°C;
B version: -0.03 A/°C.
- (3) Overload and short circuit current depends on the total line resistance

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 0.6 A
- Output 24 Vdc 0.6 A redundant version
- Output 12 Vdc 1.2 A
- Output 48 Vdc 0.3 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD15C

CSD15C

Cod. XCSD15B

CSD15B

120-230 Vac (range 90...264 Vac / 100...370 Vdc)

47...63 Hz

0.3 A / 0.16 A ± 10%

< 5 A

> 0.6

T 1 A replaceable

circuit breaker: 2 A - C characteristic - fuse: T 2 A

24 Vdc

0.6 A @ 50°C (2)
1.08 A (3)

< 1%

≤ 30 mVpp
>12 ms / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

possible

possible with external ORing diode

12 Vdc ± 0.5 Vdc

1.2 A @ 50°C (2)
2.16 A (3)

< 1%

≤ 30 mVpp
>12 ms / >20 ms

possible

possible with external ORing diode

>85% / >87%

19 W / 13 W

>85% / >87%

21 W / 15 W

-20...+60°C, with derating over 50°C / over temperature protection (2)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

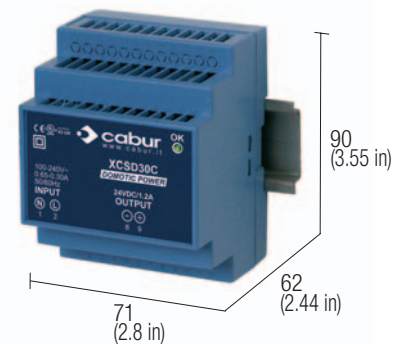
130 g (5.12 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 30 W

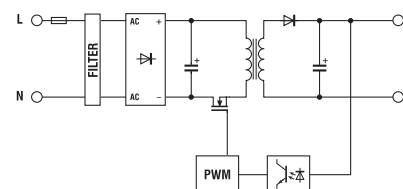
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) Over 50°C (122°F) apply a derating: C and F versions: -0.03 A/°C; E version: -0.08...-0.04 A/°C.
- (3) Overload and short circuit current depends on the total line resistance.
- (4) Output current depends on the output voltage: 3.3A @ 5Vdc, 2A @ 9Vdc, 2.2A @ 12Vdc, 1.5A @ 15Vdc.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 1.2 A
- Output 24 Vdc 1.2 A redundant version
- Output 5...15 Vdc 3.3...1.5 A
- Output ±12...±15 Vdc 0.6 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal Iout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD30C

CSD30C

Cod. XCSD30E

CSD30E

Cod. XCSD30F

CSD30F

120-230 Vac (range 90...264 Vac / 100...370 Vdc)

47...63 Hz

0.55 A / 0.28 A ± 10%

< 13 A

0.45 A / 0.25 A ± 10%

< 13 A

0.4 A / 0.2 A ± 10%

< 13 A

> 0.6

T 2 A replaceable

circuit breaker: 3 A - C characteristic - fuse: T 3.15 A

24 Vdc

—

1.2 A @ 50°C (2)

1.6 (3)

—

< 1%

≤ 50 mVpp

>30 ms / >60 ms

5...15 Vdc

5...15 Vdc

3.3...1.5 A @ 50°C (2)(4)

4 A (3)

—

< 1%

≤ 50 mVpp

>50 ms / >100 ms

±12...±15 Vdc

±12...±15 Vdc

2 x 0.6 A @ 50°C (2)

>2 x 0.8 A (3)

—

< 1%

≤ 50 mVpp

>50 ms / >100 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

—

possible

possible with external ORing diode

—

possible

possible with external ORing diode

—

possible

possible with external ORing diode

>85% / >87%

5.2 W / 4.5 W

>87% / >89%

4.5 W / 3.7 W

>87% / >89%

4.5 W / 3.7 W

-20...+60°C, with derating over 50°C / over temperature protection (2)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

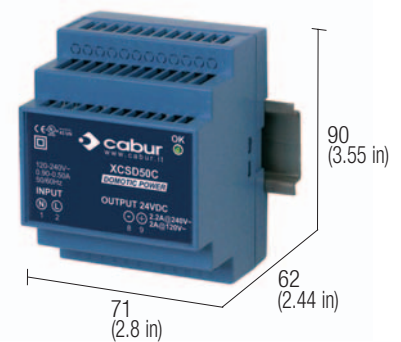
200 g (7.06 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 50 W

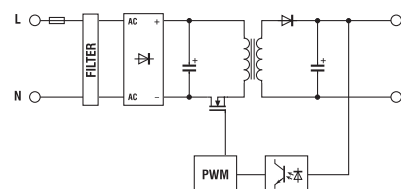
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 50°C (122°F) apply a derating:
C version: $-0.06\text{ A}/^\circ\text{C}$; B version: $-0.085\text{ A}/^\circ\text{C}$.
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 2.2 A
- Output 24 Vdc 2.2 A redundant version
- Output 12...15 Vdc 3.5...3 A
- Output 48 Vdc 1.1 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD50C

CSD50C

Cod. XCSD50B

CSD50B

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

0.9 A / 0.5 A $\pm 10\%$

< 15 A

> 0.6

T 2 A replaceable

circuit breaker: 3 A - C characteristic - fuse: T 3.15 A

24 Vdc

—

2.2 A @ 50°C (3)

3 A (4)

—

< 1%

$\leq 50\text{ mVpp}$

>20 ms / >40 ms

12...15 Vdc

12...15 Vdc

3.5...3 A @ 50°C (3)

4.37...3.75 A (4)

—

< 1%

$\leq 50\text{ mVpp}$

>20 ms / >40 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

—

possible

possible with external ORing diode

>88% / >90%

6.8 W / 5.5 W

>88% / >90%

6.8 W / 5.5 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

200 g (7.06 oz)

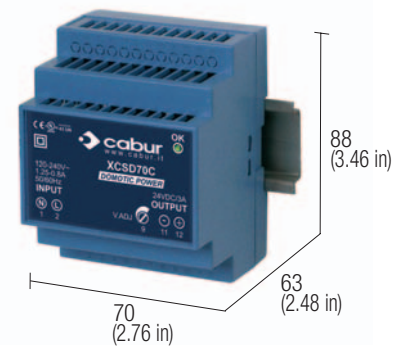
vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 70 W



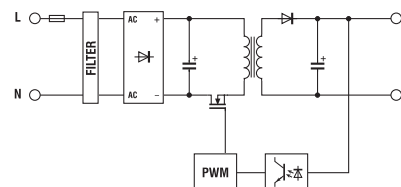
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input overvoltage protections
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%.
- (3) Over 50°C (122°F) apply a derating: C version: $-0.15\text{ A}/^\circ\text{C}$.
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 3 A
- Output 24 Vdc 3 A redundant version
- Output 12...15 Vdc 5...4 A
- Output 48 Vdc 1.5 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSD70C

CSD70C

	-		
		-	
			-

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.25 A / 0.8 A $\pm 10\%$

< 15 A

> 0.6

T 2 A not replaceable

circuit breaker: 4 A C characteristic - fuse: T 3.15 A

24 Vdc

24...27.5 Vdc

3 A @ 55°C (3)

4 A (4)

—

< 1%

$\leq 60\text{ mVpp}$

>15 ms / >30 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

>87% / >89%

10.4 W / 8.6 W

$-20...+60^\circ\text{C}$, with derating over 55°C (3)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

250 g (8.82 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSF series

COOL POWER

Cool Power series

It includes DIN-rail single-phase switching power supplies, specifically designed for applications in industrial automation and process control switchboards and panels. They can supply 50% above the rated voltage for more than 5 sec. keeping the output voltage constant and the alarm contact controlled by a voltage threshold switching over when the voltage drops 90% below the rated value. **Thanks to these features and to the numerous international certifications, this series of power supplies allows engineers to meet with all the requirements of the new EN 60204-1 Machinery Directive.**

Suggested uses

- Applications in industrial automation requiring high levels of efficiency and reliability
- Applications requiring selectivity of surge protection devices on DC lines.
- Application in machinery automation requiring high levels of reliability in terms of control and safety voltage
- Applications in process control
- Heavy duty uses
- Applications in civil automation

Main features

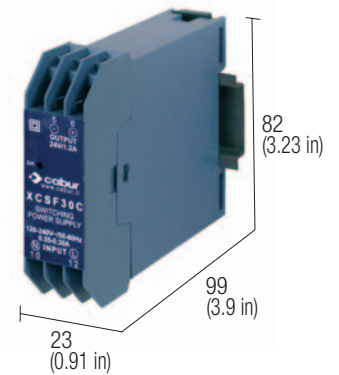
- The 90...264 Vac and 110...370 Vdc input makes them suitable for use on all power supply lines.
- Threshold alarm contact warning when the voltage drops 90% below the rated value.
- Versions with integrated Oring diode for redundant parallel connections, avoiding the use of external devices and reducing dimensions and installation costs.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Their backup power allows the supply of current and voltage at least +50% above the rated value at 45°C for a few minutes without exceeding standard temperature limits and ensuring safety and reliability.
- The output voltage may be adjusted and the output is protected against the input of surges coming from the DC line and caused by inductive loads.
- The output is equipped with double electronic protection devices preventing dangerous voltages which may damage powered components in the event of internal faults.
- Thermal protection prevents faults in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, small dimensions and IP20 protection against accidental contacts in compliance with IEC529.
- Thanks to their high efficiency and excellent ventilation, they are the smallest devices available on the market.



Single-phase switching power supply 120-230 Vac output power 30 W



- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature protection
- Isolation Class 2, no grounding needed
- Compact dimensions
- Suitable for applications in SELV and PELV circuits

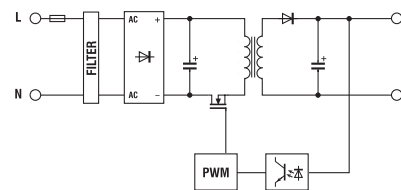


NOTES

The depth dimension includes the DIN rail clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 50°C (122°F) apply a derating: C version: $-0.03 \text{ A}/^\circ\text{C}$; B version: $-0.038 \text{ A}/^\circ\text{C}$; F version: $-0.013 \text{ A}/^\circ\text{C}$
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 1.2 A
- Output 10...15 Vdc 1.5 A
- Output $\pm 12... \pm 15 \text{ Vdc}$ 0.5 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSF30C

CSF30C

Cod. XCSF30B

CSF30B

Cod. XCSF30F

CSF30F (1)

120–230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

0.55 A / 0.3 A $\pm 10\%$ | 0.35 A / 0.2 A $\pm 10\%$

< 25 A

> 0.60

T 1,25 A not replaceable

circuit breaker: 2 A - C characteristic - fuse: T 2 A

24 Vdc $\pm 10\%$

—

1.2 A @ 50°C (3)

1.4 A (4)

12 – 15 Vdc

10...15 Vdc

1.5...1 A @ 50°C (3)

1.7...1.2 A (4)

$\pm 12 \pm 15 \text{ Vdc}$

$\pm 12... \pm 15 \text{ Vdc}$

0.5 A @ 50°C (3)

0.8...0.6 A (4)

< 1%

$\leq 50 \text{ mVpp}$

>10 ms / >30 ms

hiccup at the overload limit with auto reset

"DC OK" green LED

—

possible

possible with external ORing diode

>86% / >87%

4.7 W / 4.3 W

$-20...+60^\circ\text{C}$, with derating over 50°C (3)

3 kVac / 60 s SELV output

class 2 without PE connection

class 2 without PE connection

EN50178, EN61558, EN60950, IEC950, UL508, UL60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>750'000 h acc. to SN 29500 / >250'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

140 g (4.94 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 40...72 W

- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 45°C (113°F) apply derating: CSF3-CSF3P: $-0.07\text{ A}/^\circ\text{C}$; B version: $-0.1\text{ A}/^\circ\text{C}$; version A: $-0.13\text{ A}/^\circ\text{C}$
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM

Item available till sell-out, will be replaced by CSF85 series...

VERSIONS

Output 24 Vdc 4 A
Output 24 Vdc 4 A redundant version
Output 12...15 Vdc 6 A
Output 5 Vdc 8 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal lout (Uin 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XCSF3	Cod. XCSF3P	Cod. XCSF3B	Cod. XCSF3A
CSF3	CSF3P	CSF3B	CSF3A

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.3A / 0.7 A $\pm 10\%$

< 20 A

> 0.7

T 2 A replaceable

circuit breaker: 4 A C characteristic - fuse: T 4 A

24 Vdc	12...15 Vdc	5 Vdc
23...27.5 Vdc	12...15 Vdc	—
4 A @ 45°C (3)	6 A @ 45°C (3)	8 A @ 45°C (3)
6 A (4)	8.5 A (4)	10.5 A (4)
—	—	—
< 1%	< 1%	< 1%
$\leq 40\text{ mVpp}$	$\leq 40\text{ mVpp}$	$\leq 40\text{ mVpp}$
>10 ms / >20 ms	>10 ms / >20 ms	>10 ms / >20 ms
hiccup at the overload limit with auto reset / over temperature protection		
"DC OK" green LED / "DC OK" alarm contact		
—	—	—
possible	possible	possible
possible with external ORing diode	factory provided with internal ORing diode	possible with external ORing diode

>86% / >90%

12 W / 8 W

$-20\ldots+60^\circ\text{C}$, with derating 45°C / over temperature protection (3)

3 KVac / 60 s SELV output

1.5 KVac / 60 s

0.5 KVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

515 g (18.18 oz)

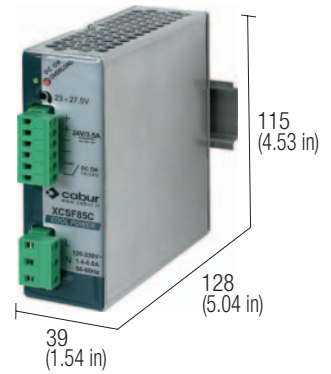
vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 85 W



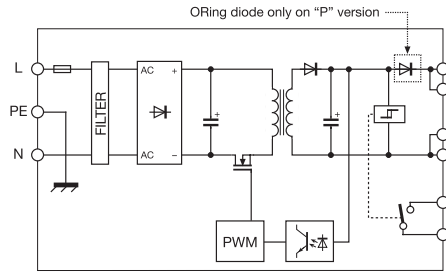
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for Uout -10%
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) Over 45°C (113°F) apply derating: CSF3-CSF3P: $-0.07\text{ A}/^\circ\text{C}$; B version: $-0.1\text{ A}/^\circ\text{C}$; versione A: $-0.13\text{ A}/^\circ\text{C}$
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 3.5 A
- Output 24 Vdc 3.5 A redundant version
- Output 12...15 Vdc 6 A
- Output 48 Vdc 1.8 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSF85C

CSF85C

Cod. XCSF85CP

CSF85CP

Cod. XCSF85B

CSF85B

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.6 A / 0.9 A $\pm 10\%$

< 20 A

> 0.65

T 2 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

24 Vdc

23...27.5 Vdc

3.5 A @ 50°C (3)

6 A per >30 s

with $U_{out} > U_n \times 0.9$ (4)

10 A per 50 ms (4)

< 1%

$\leq 70\text{ mVpp}$

>20 ms / >70 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

21.6 Vdc

possible

possible with external ORing diode

factory provided with internal ORing diode

12...15 Vdc

12...15 Vdc

6 A @ 50°C (3)

9 A per >30 s

with $U_{out} > U_n \times 0.9$ (4)

10 A per 50 ms (4)

< 1%

$\leq 30\text{ mVpp}$

>15 ms / >60 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

10.8 Vdc

possible

possible with external ORing diode

>85% / >89%

15 W / 11 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508, UL60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

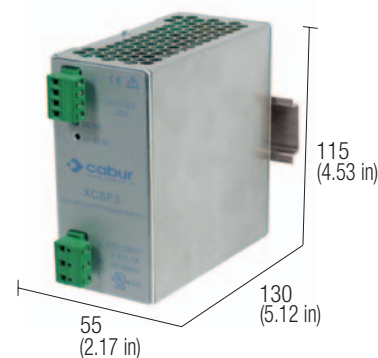
400 g (14.12 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 96...144 W

- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

(1) Not available

(2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%

(3) Over 45°C (113°F) apply derating: CSF5-CSF5P: $-0.1\text{ A}/^\circ\text{C}$; B version: $-0.13\text{ A}/^\circ\text{C}$; D version: $-0.04\text{ A}/^\circ\text{C}$

(4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM

Item available till sell-out, will be replaced by **CSF120** series...

VERSIONS

Output 24 Vdc 6 A

Output 24 Vdc 6 A redundant version

Output 12...15 Vdc 8 A

Output 48 Vdc 2.5 A

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ nominal lout (Uin 120 / 230 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time @ In (Uin 120 / 230 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)

Dissipated power (Uin 120 / 230 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Cod. XCSF5

CSF5

Cod. XCSF5P

CSF5P

Cod. XCSF5B

CSF5B

Cod. XCSF5D

CSF5D

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.8 A / 1 A $\pm 10\%$

< 20 A

> 0.7

T 3.15 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

24 Vdc

23...27.5 Vdc

6 A @ 45°C (3)

10 A (4)

—

< 1%

$\leq 40\text{ mVpp}$

>10 ms / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact

—

possible

possible with external ORing diode

factory provided with internal ORing diode

—

possible

possible with external ORing diode

—

possible

>87% / >91%

18 W / 12 W

-20...+60°C, with derating over 45°C / over temperature protection (3)

3 KVac / 60 s SELV output

1.5 KVac / 60 s

0.5 KVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

515 g (18.18 oz)

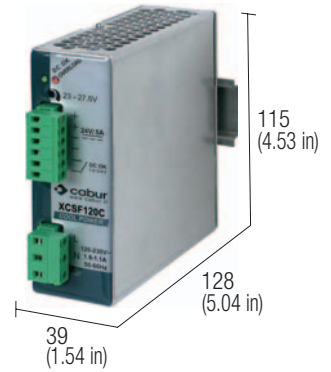
vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 120 W



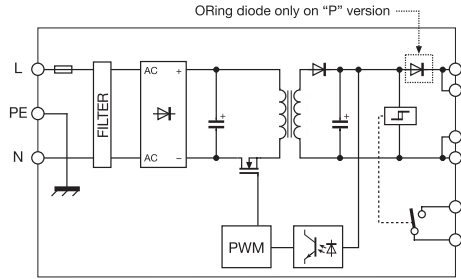
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for U_{out} -10%
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
(2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
(3) Over 50°C (122°F) apply a derating $-0.1\text{ A}/^\circ\text{C}$, max 60°C
(4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A
Output 24 Vdc 5 A redundant version
Output 12...15 Vdc 7 A
Output 48 Vdc 2.5 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal I_{out} (U_{in} 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ I_n (U_{in} 120 / 230 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (U_{in} 120 / 230 Vac)
Dissipated power (U_{in} 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XCSF120C

CSF120C

Cod. XCSF120CP

CSF120CP

Cod. XCSF120B

CSF120B

Cod. XCSF120D

CSF120D

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.9 A / 1.1 A $\pm 10\%$

< 20 A

> 0.65

T 3.15 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

24 Vdc

23...27.5 Vdc

5 A @ 50°C (3)

8 A for >30 s

with U_{out} > U_n x 0.9 (4)

15 A per 50 ms (4)

< 1%

≤ 30 mVpp

>17 ms / >72 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

<21.6 Vdc

possible

possible with external ORing diode

factory provided with internal ORing diode

12...15 Vdc

12...15 Vdc

7 A @ 50°C (3)

8 A for >30 s

with U_{out} > U_n x 0.9 (4)

15 A per 50 ms (4)

< 1%

≤ 40 mVpp

>24 ms / >80 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

<10.8 Vdc

possible

possible with external ORing diode

48 Vdc

45...55 Vdc

2.5 A @ 50°C (3)

8 A for >30 s

with U_{out} > U_n x 0.9 (4)

7.5 A per 50 ms (4)

< 1%

≤ 30 mVpp

>16 ms / >81 ms

>86% / >90%

19 W / 13 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508, UL60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

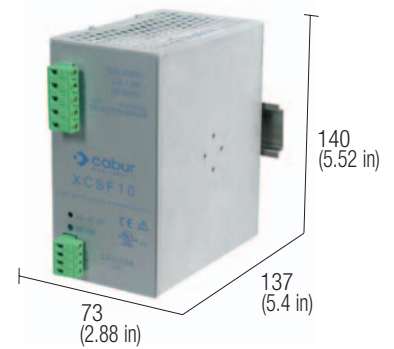
400 g (14.12 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 192...240 W

- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Suitable for applications in SELV and PELV circuits
- High efficiency and low dissipated power



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) Double input selectable with external jumper, DC supply allow only between 300 and 350 Vdc
- (3) Over 45°C (113°F) apply derating: CSF10-CSF10P: -0.16 A/°C; B version: -0.27 A/°C; D version: -0.08 A/°C
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM

Item available till sell-out, will be replaced by **CSF240** series...

VERSIONS

- Output 24 Vdc 10 A
- Output 24 Vdc 10 A redundant version
- Output 12...15 Vdc 16 A
- Output 48 Vdc 5 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSF10	Cod. XCSF10P	Cod. XCSF10B	Cod. XCSF10D
CSF10	CSF10P	CSF10B	CSF10D

120 - 230 Vac (range 90...132 Vac / 185...264 Vac / 300...350 Vdc) (2)
47...63 Hz
3.5A / 1.8 A ± 10%
< 35 A
> 0.6 / >0.85
T 6.3 A replaceable
circuit breaker: 6 A C characteristic - fuse: T 6.3 A

24 Vdc	12...15 Vdc	48 Vdc
22.5...27.5 Vdc	12...15 Vdc	45...55 Vdc
10 A @ 45°C (3)	16 A @ 45°C (3)	5 A @ 45°C (3)
20 A (4)	17 A (4)	5.5 A (4)
—	—	—
< 1%	< 1%	< 1%
≤ 60 mVpp	≤ 60 mVpp	≤ 60 mVpp
>20 ms / >40 ms	>20 ms / >40 ms	>20 ms / >40 ms

hiccup at the overload limit with auto reset / over temperature protection		
"DC OK" green LED / "DC OK" alarm contact		
—	—	—
possible	possible	possible
possible with external ORing diode	factory provided with internal ORing diode	possible with external ORing diode

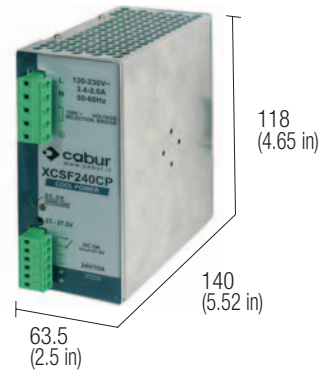
>87% / >90%	>87% / >90%	>87% / >90%
35 W / 27 W	35 W / 27 W	36 W / 27 W
-20...+60°C, with derating over 50°C / over temperature protection (3)		
3 kVac / 60 s SELV output		
1.5 kVac / 60 s		
0.5 kVac / 60 s		
EN50178, EN61558, EN60950, IEC950, UL508		
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11		
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F		
II / 2		
IP 20 IEC 529, EN60529		
2.5 mm² pluggable screw type		
aluminium and stainless steel		
920 g (32.48 oz)		
vertical on rail, allow 10 mm spacing between adjacent components		

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 240 W



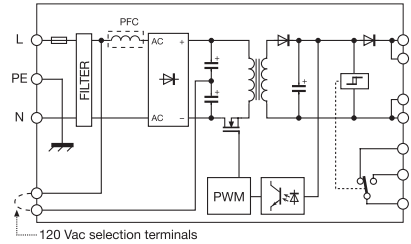
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Failure contact for Uout -10%
- Compact dimensions
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) Double input selectable with external jumper, DC supply allow only between 300 and 350 Vdc
- (3) Over 50°C (122°F) apply a derating: C version, CP: -0.25 A/°C; B version: -0.4 A/°C; D version: -0.13 A/°C.
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 10 A
- Output 24 Vdc 10 A redundant version
- Output 12...15 Vdc 16 A
- Output 48 Vdc 5 A

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ nominal Iout (Uin 120 / 230 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time @ In (Uin 120 / 230 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)

Dissipated power (Uin 120 / 230 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Cod. XCSF240C

CSF240C

Cod. XCSF240CP

CSF240CP

Cod. XCSF240B

CSF240B

Cod. XCSF240D

CSF240D

120 - 230 Vac (range 90...132 Vac / 185...264 Vac / 300...350 Vdc) (2)

47...63 Hz

3.5 A / 1.8 A ± 10%

< 35 A

> 0.6

T 6.3 A replaceable

circuit breaker: 6 A C characteristic - fuse: T 6.3 A

24 Vdc

23...27.5 Vdc

10 A @ 50°C (3)

15 A for >30 s with Uout > Un x 0.9 (4)

>25 A for 400 ms (4)

< 1%

≤ 50 mVpp

>30 ms / >60 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

21.6 Vdc

possible

possible with external ORing diode

factory provided with internal ORing diode

12...15 Vdc

12...15 Vdc

16 A @ 50°C (3)

14 A for >30 s with Uout > Un x 0.9 (4)

>25 A for 400 ms (4)

< 1%

≤ 50 mVpp

>30 ms / >60 ms

10.8 Vdc

possible

possible with external ORing diode

48 Vdc

45...55 Vdc

5 A @ 50°C (3)

7.5 A for >30 s with Uout > Un x 0.9 (4)

>25 A for 400 ms (4)

< 1%

≤ 50 mVpp

>30 ms / >60 ms

43.2 Vdc

possible

>88% / >90%

32 W / 27 W

>87% / >90%

35 W / 27 W

>88% / >90%

32 W / 27 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508, UL60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

920 g (32.48 oz)

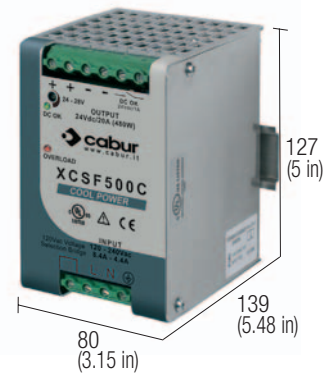
vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 500 W



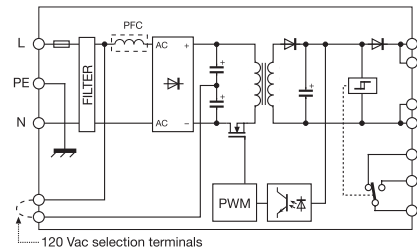
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- Compact dimensions
- Suitable for applications in SELV and PELV circuits
- Failure contact for Uout -10%



NOTES

- The depth dimension includes the DIN rail clamp.
- (2) Double input selectable with external jumper, DC supply allow only between 300 and 350 Vdc
- (3) Over 50°C (122°F) apply a derating: C version: -0.5 A/°C; D version: -0.25 A/°C.
- (4) Overload and short circuit current depends on the total line resistance.
- (5) "Cool Power" version with threshold alarm and "Overload" LED available from October

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 20 A
- Output 24 Vdc 20 A redundant version
- Output 12...15 Vdc 40 A
- Output 48 Vdc 10 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSF500C

CSF500C

Cod. XCSF500D

CSF500D

120-230 Vac (range 90...132 Vac / 185...264 Vac / 300...350 Vdc) (2)

47...63 Hz

4.1 A / 2 A ± 10%

< 25 A with electronic limiter

> 0.75 with PFC

circuit breaker: 16 A C characteristic - fuse: T 15 A

24 Vdc

24...28 Vdc

20 A @ 50°C (3)

30 A for >5 s

with Uout > Un x 0.9 (4)

>50 A for 5 s (4)

< 0.5%

≤ 50 mVpp

>12 ms / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED (5)

21.6 Vdc (5)

possible

factory provided with internal ORing diode

48 Vdc

45...55 Vdc

10 A @ 50°C (3)

15 A for >5 s

with Uout > Un x 0.9 (4)

>50 A for 5 s (4)

< 0.5%

≤ 50 mVpp

>12 ms / >20 ms

43.2 Vdc (5)

possible

factory provided with internal ORing diode

>90% / >92%

55 W / 43 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

4 and 6 mm² fixed screw type

aluminium

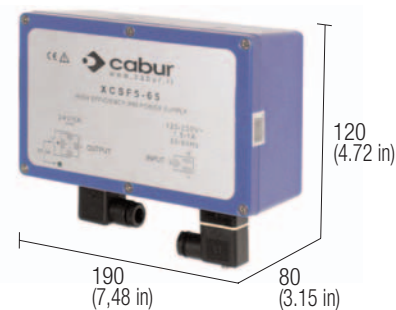
1,3 kg (45.89 oz)

vertical on rail, allow 20 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac IP65 protection degree

- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable to be mounted directly on the machinery frame, don't require any protective enclosure
- IP65 pluggable screw connectors
- Suitable for applications in SELV and PELV circuits

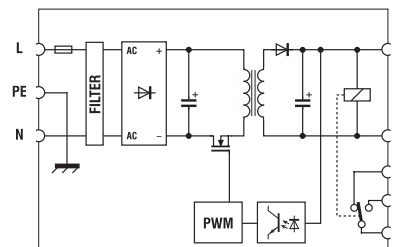


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (2) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A

Cod. XCSF565

CSF5-65

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal lout (Uin 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (1)
47...63 Hz
1.8 A / 1 A $\pm 10\%$
< 20 A
> 0.7
T 3.15 A replaceable
circuit breaker: 4 A - C characteristic - fuse: T 4 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection
Redundant parallel connection

24 Vdc
23...27.5 Vdc
5 A @ 60°C
8 A (2)
—
< 1%
 $\leq 50 \text{ mVpp}$
> 10 ms / > 20 ms
hiccup at the overload limit with auto reset / over temperature protection
"DC OK" green LED / "DC OK" alarm contact
—
possible
possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

> 87% / > 90%
18 W / 12 W
-20...+60°C / over temperature protection
3 kVac / 60 s SELV output
1.5 kVac / 60 s
0.5 kVac / 60 s
EN50178, EN61558, EN60950, IEC950, UL508
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
> 500'000 h acc. to SN 29500 / > 150'000 h acc. to MIL Std. HDBK 217F
II / 2
IP 20 IEC 529, EN60529
2.5 mm² IP65 pluggable screw connectors
aluminium
1.9 Kg (67.02 oz)
vertical on rail or panel mounting by means of screws

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSP series

EASY POWER

Easy Power series

It includes DIN-rail single-phase switching power supplies for general automation and installation applications. They are the recommended low-cost choice for uses where loads do not require high breakaway starting currents.

Suggested uses

- Applications in civil automation
- General applications in the installation of systems

Main features

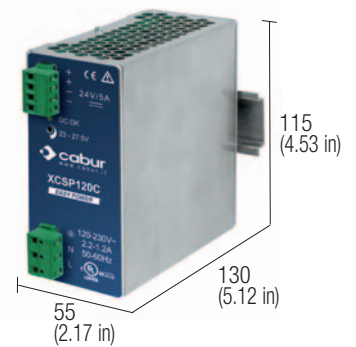
- Equipped with 120 - 230 Vac input, they are suitable for use in all single-phase networks.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Backup power +20% above the rated voltage up to 45°C without exceeding standard temperature limits and ensuring safety and reliability.
- The output voltage may be adjusted and is protected against the input of surges caused by inductive loads on the DC line and is equipped with double electronic protection devices preventing damages to powered equipment in the event of internal faults.
- Short-circuit, overload and thermal protection devices prevent faults in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, very small dimensions and IP20 protection against accidental contacts in compliance with IEC529.
- Compared to other products having similar power and costs, they offer higher performances, functions and reliability.



Single-phase switching power supply 120-230 Vac output power 85 W



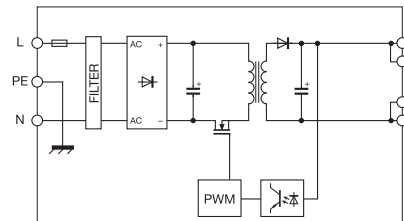
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
 (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
 (3) Over 45°C (113°F) apply a derating of $-0.05\text{ A}/^\circ\text{C}$
 (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 3.5 A
Output 24 Vdc 3.5 A redundant version

Cod. XCSP85C

CSP85C

—

INPUT TECHNICAL DATA

Input rated voltage
 Frequency
 Current @ nominal lout (Uin 120 / 230 Vac)
 Inrush peak current
 Power factor
 Internal protection fuse
 External protection on AC line

120–230 Vac (range 90...264 Vac / 100...370 Vdc) (2)
 47...63 Hz
 1.3A / 0.7 A $\pm 10\%$
 $< 20\text{ A}$
 > 0.7
 T 2 A replaceable
 circuit breaker: 4 A - C characteristic - fuse: T 4 A

OUTPUT TECHNICAL DATA

Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time @ In (Uin 120 / 230 Vac)
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection
 Redundant parallel connection

24 Vdc
 23...27.5 Vdc
3.5 A @ 45°C (3)
 $> 5\text{ A}$ (4)
 —
 $< 1\%$
 $\leq 40\text{ mVpp}$
 $> 10\text{ ms}$ / $> 20\text{ ms}$

hiccup at the overload limit with auto reset / over temperature protection
 "DC OK" green LED
 —
 possible
 possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
 Dissipated power (Uin 120 / 230 Vac)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

$> 86\%$ / $> 90\%$
 12 W / 8 W
 $-10...+50^\circ\text{C}$, with derating over 45°C / over temperature protection (3)
 3 kVac / 60 s SELV output
 1.5 kVac / 60 s
 0.5 kVac / 60 s
 EN50178, EN61558, EN60950, IEC950, UL508
 EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
 $> 400'000\text{ h}$ acc. to SN 29500 / $> 100'000\text{ h}$ acc. to MIL Std. HDBK 217F
 II / 2
 IP 20 IEC 529, EN60529
 2.5 mm² pluggable screw type
 aluminium and stainless steel
 515 g (18.18 oz)
 vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

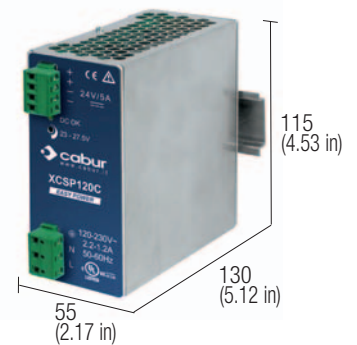
Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

Single-phase switching power supply 120-230 Vac output power 120 W

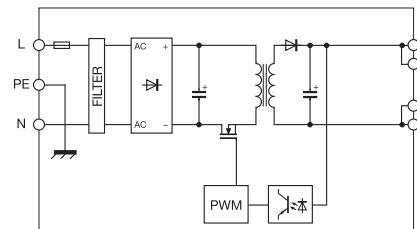
- Single-phase input 90...264 Vac and DC 100...370 Vdc
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
 (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
 (3) Over 45°C (113°F) apply a derating of $-0.083\text{ A}/^\circ\text{C}$
 (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A
 Output 24 Vdc 5 A redundant version

Cod. XCSP120C

CSP120C

-

INPUT TECHNICAL DATA

Input rated voltage
 Frequency
 Current @ nominal lout (Uin 120 / 230 Vac)
 Inrush peak current
 Power factor
 Internal protection fuse
 External protection on AC line

120-230 Vac (range 90...264 Vac / 100...370 Vdc) (2)
 47...63 Hz
 1.8 A / 1 A $\pm 10\%$
 $< 20\text{ A}$
 > 0.7
 T 3.15 A replaceable
 circuit breaker: 4 A - C characteristic - fuse: T 4 A

OUTPUT TECHNICAL DATA

Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time @ In (Uin 120 / 230 Vac)
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection
 Redundant parallel connection

24 Vdc
 23...27.5 Vdc
5 A @ 45°C (3)
 6 A (4)
 —
 $< 1\%$
 $\leq 40\text{ mVpp}$
 $> 10\text{ ms} / > 20\text{ ms}$

hiccup at the overload limit with auto reset / over temperature protection
 "DC OK" green LED
 —
 possible
 possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
 Dissipated power (Uin 120 / 230 Vac)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

$> 87\% / > 91\%$
 18 W / 12 W
 $-10...+50^\circ\text{C}$, with derating over 45°C / over temperature protection (3)
 3 kVac / 60 s SELV output
 1.5 kVac / 60 s
 0.5 kVac / 60 s
 EN50178, EN61558, EN60950, IEC950, UL508
 EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
 $> 400'000\text{ h acc. to SN 29500} / > 100'000\text{ h acc. to MIL Std. HDBK 217F}$
 II / 2
 IP 20 IEC 529, EN60529
 2.5 mm² pluggable screw type
 aluminium and stainless steel
 515 g (18.18 oz)
 vertical on rail, allow 10 mm spacing between adjacent components

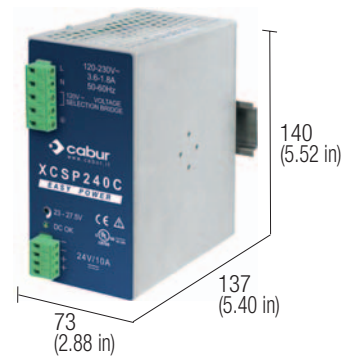
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Single-phase switching power supply 120-230 Vac output power 240 W

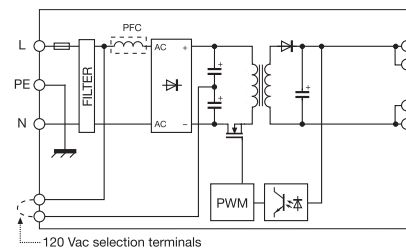
- Single-phase input 120 and 230 Vac
- Short circuit, overload, over temperature, input and output overvoltage protections
- Suitable in civil automation and general applications in the installation of systems
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the terminal blocks and the DIN clamp.
- (2) Double input selectable with external jumper, DC supply allow only between 300 and 350 Vdc
- (3) Over 45°C (113°F) apply a derating of -0.083 A/°C
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 10 A**
- Output 24 Vdc 10 A redundant version**

Cod. XCSP240C

CSP240C

-

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ nominal lout (Uin 120 / 230 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

- 120-230 Vac** (range 90...132 Vac / 185...264 Vac / 300...350 Vdc) (2)
- 47...63 Hz
- 3.5A / 1.8 A ± 10%
- < 35 A
- > 0.6 / >0.85
- T 6.3 A replaceable
- circuit breaker: 6 A C characteristic - fuse: T 6.3 A

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time @ In (Uin 120 / 230 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

- 24 Vdc**
- 23...27.5 Vdc
- 10 A @ 45°C (3)**
- >14 A (4)
-
- < 1%
- ≤ 60 mVpp
- >20 ms / >40 ms

- hiccup at the overload limit with auto reset / over temperature protection
- "DC OK" green LED
-
- possible
- possible with external ORing diode

GENERAL TECHNICAL DATA

- Efficiency (Uin 120 / 230 Vac)
- Dissipated power (Uin 120 / 230 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

- >87% / >90%
- 35 W / 27 W
- 10...+50°C, with derating over 45°C / over temperature protection (3)
- 3 kVac / 60 s SELV output
- 1.5 kVac / 60 s
- 0.5 kVac / 60 s
- EN50178, EN61558, EN60950, IEC950, UL508
- EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
- >400'000 h acc. to SN 29500 / >100'000 h acc. to MIL Std. HDBK 217F
- II / 2
- IP 20 IEC 529, EN60529
- 2.5 mm² pluggable screw type
- aluminium and stainless steel
- 920 g (32.48 oz)
- vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply GSW series

UNIVERSAL POWER

Universal Power Series

It includes DIN-rail single/two-phase switching power supplies with 185...550 Vac universal input for applications in industrial automation and process control. The input circuit's technology protects them against surges caused by faults in three-phase networks with neutral, increasing the application's reliability.

Suggested uses

- In single or three-phase systems requiring great flexibility
- Applications in industrial automation and process control
- Heavy duty uses
- Applications in civil automation

Main features

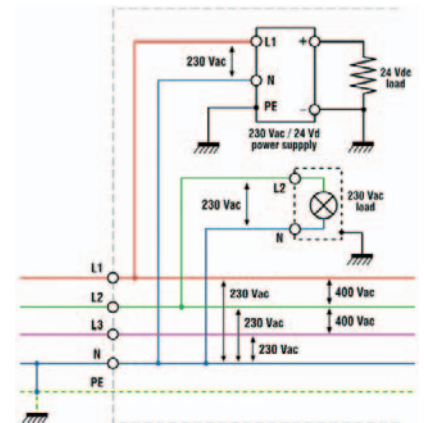
- The wide-range input 185...550 Vac may be supplied single-phase 230...240 Vac, two-phase 208 Vac and two-phase 400...500 Vac ensuring excellent adaptability to AC networks and enabling to get rid of the isolating transformer.
- The two-phase input enables to reduce dimensions, wiring, installation costs and space inside the panel.
- They enable to get rid of the transformer for adapting to power voltages.
- Versions with DC OK alarm contact.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Great backup power allowing to supply at least + 30% above the rated voltage for 5 seconds, up to 45°C without exceeding standard temperature limits and ensuring safety and reliability.
- The output voltage may be adjusted and is protected against the input of surges on the DC line and is equipped with double electronic protection devices disconnecting output in the event of internal faults.
- Dimensioned short-circuit and overload protection supplying breakaway starting currents 150% above the rated value required by heavy loads; thermal protection prevents failures in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, very small dimensions and IP20 protection against accidental contacts in compliance with IEC529.
- Thanks to their high efficiency and excellent ventilation, they are the smallest devices available on the market.

Greater reliability

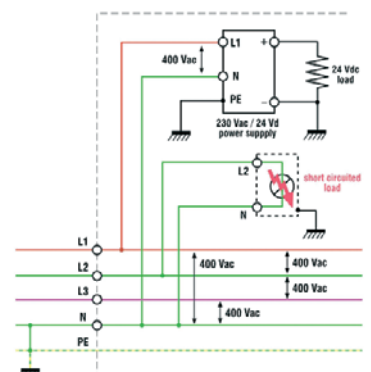
Compared to single-phase power supplies, this Series is more reliable in industrial applications. The input stage uses components with 900 V operating voltage, which are more resistant to voltage peaks in industrial power lines compared to components used in single-phase supplies, whose operating voltage is 550V in high-quality power supplies, but often 400...450 V in low-cost products.

Being able to work from 185 to 550 Vac, these power supplies are immune to power failures; at 230 Vac input (L1-N), when another device connected to L2-N goes short, the neutral rises up to approx. 400 Vac and the input is supplied phase/phase until the protection is activated, which takes place - at best - in 300 ms; this is one of the most common causes of damages to 230-Vac single-phase power supplies in industrial applications.

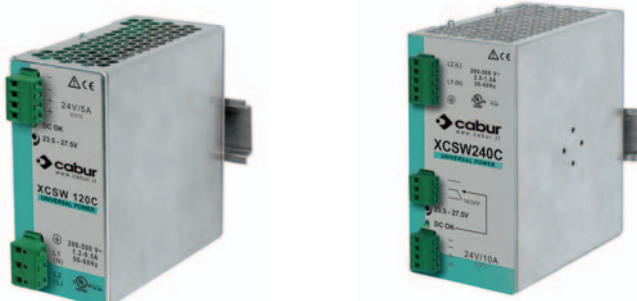
Another example of faults in 230-Vac single-phase devices powered between phase-neutral is due to the disconnection or accidental interruption of the panel's neutral from the system's neutral: failing to return to the neutral point, the neutral rises up to phase voltage applying approx. 400 Vac to single-phase loads, inevitably damaging the system.



Typical application with three-phase network and neutral. The latter is used to obtain a 230-Vac voltage in order to supply power to loads (in the example, a simple bulb) and power supplies.

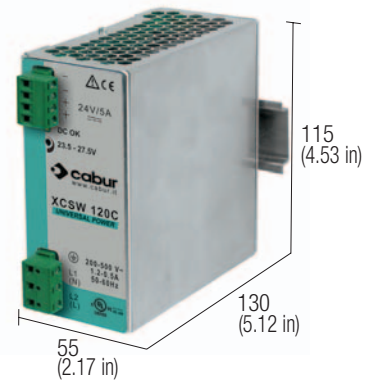


A simple short-circuit on the load causes a rise in the neutral's potential, all the devices connected to it will be powered between two phases, i.e. with a value of approx. 340...400 Vac instead of 230 Vac.



1 or 2-phase switching power supply 230-400-500 Vac output power 120 W

- Both single-phase and two-phase input 185...550 Vac
- High reliability and immunity against over voltage due to failures on AC line
- Short circuit, overload, over temperature, input and output overvoltage protections
- High inrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

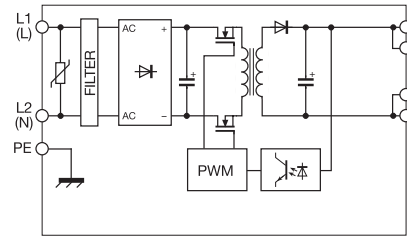


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 3 W/°C
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 5 A
- Output 24 Vdc 5 A redundant version
- Output 12...15 Vdc 7 A
- Output 48 Vdc 2.5 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ Iout max. (Uin 230 / 400 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time (Uin 230 / 400 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 230 / 400 Vac)
- Dissipated power (Uin 230 / 400 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSW120C

CSW120C

Cod. XCSW120B

CSW120B

230-400-500 Vac (range 185...550 Vac / 270...770 Vdc) (2)

47...63 Hz

1.1 A / 0.55 A

< 20 A

> 0.65

circuit breaker: 2 X 6 A C characteristic - fuse: 2 X T 3.15 A

24 Vdc

24...27.5 Vdc

5 A @ 50°C (3)

7.5 A for >5 s

with Uout > Uin x 0.9 (4)

15 A for 0.5 s (4)

< 1%

≤ 50 mVpp

>20 ms / >200 ms

12...15 Vdc

12...15 Vdc

8 A @ 12 Vdc / 7 A @ 15 Vdc

8.8...7.7 A for >5 s

with Uout > Uin x 0.9 (4)

> 15 A for 0.5 s (4)

< 1%

≤ 50 mVpp

>20 ms / >200 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

possible
possible with external ORing
diode

possible
possible with external ORing
diode

>86% / >88%

20 W / 16 W

>84% / >86%

20 W / 17 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

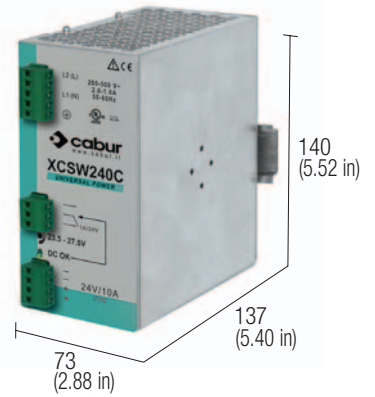
600 g (21.18 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

1 or 2-phase switching power supply 230-400-500 Vac output power 240 W

- Both single-phase and two-phase input 185...550 Vac
- High reliability and immunity against over voltage due to failures on AC line
- Short circuit, overload, over temperature, input and output overvoltage protections
- High inrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

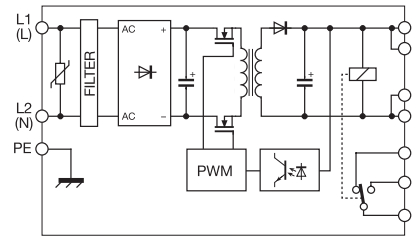


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 3 W/°C
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 10 A
Output 24 Vdc 10 A redundant version
Output 12...15 Vdc 16...15 A
Output 48 Vdc 5 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max. (Uin 230 / 400 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time (Uin 230 / 400 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection
Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 230 / 400 Vac)
Dissipated power (Uin 230 / 400 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XCSW240C

CSW240C

Cod. XCSW240B

XCSW240B (1)

Cod. XCSW240D

XCSW240D (1)

230-400-500 Vac (range 185...550 Vac / 270...770 Vdc) (2)

47...63 Hz

2 A / 1 A

< 20 A

> 0.65

circuit breaker: 2 X 6 A C characteristic - fuse: 2 X T 6.3 A

24 Vdc

24...27.5 Vdc

10 A @ 50°C (3)

15 A for >5 s
with Uout > Uin x 0.9 (4)
20 A for 0.5 s (4)

< 1%

≤ 80 mVpp

>20 ms / >120 ms

12...15 Vdc

12...15 Vdc

16 A @ 12 Vdc / 15 A @
15 Vdc

20...18 A for >5 s
with Uout > Uin x 0.9 (4)
20 A for 0.5 s (4)

< 1%

≤ 80 mVpp

>20 ms / >120 ms

48 Vdc

45...55 Vdc

5 A @ 50°C (3)

6 A for >5 s
with Uout > Uin x 0.9 (4)
20 A for 0.5 s (4)

< 1%

≤ 80 mVpp

>20 ms / >120 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact

—

possible

possible with external ORing
diode

—

possible

possible with external ORing
diode

—

possible

possible with external ORing
diode

>88% / >90%

33 W / 27 W

>87% / >89%

34 W / 28 W

>88% / >90%

33 W / 27 W

−20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium and stainless steel

1 Kg (35.3 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply CSB and CSG series

TRIPLE POWER

Triple Power series

It includes 400...500 Vac single-phase and three-phase switching power supplies for applications in industrial automation.

They can supply + 50% breakaway starting current above the rated voltage for 5 seconds, keeping output voltage constant and ensuring power supply to the system. They are equipped with an alarm contact controlled by a voltage threshold switching over when the voltage drops 90% below the rated value. **Thanks to these features and to the numerous international certifications, this series of power supplies allows engineers to meet with all the requirements of the new EN 60204-1 Machinery Directive.**

Suggested uses

- Applications in machinery automation requiring high levels of reliability in terms of control and safety voltage
- In applications requiring selectivity of surge protection devices on DC lines
- Applications in industrial automation
- Heavy duty uses

Main features

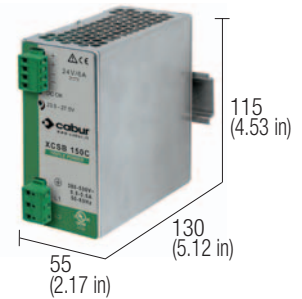
- Equipped with 340...550 Vac / 507...770 Vdc, they are suitable for use on all power lines.
- Their high efficiency reduces energy consumption and components' operating temperature allowing their use in small panels and under severe ambient conditions.
- Great backup power allowing to supply at least + 50% above the rated voltage for 5 seconds, keeping output voltage constant up to 45°C without exceeding standard temperature limits and ensuring safety and reliability.
- The output voltage may be adjusted and is protected against the input of surges on the DC line and is equipped with double electronic protection devices preventing damages to powered components in the event of internal faults.
- Dimensioned short-circuit and overload protection supplying breakaway starting currents 150% above the rated value required by heavy loads.
- Thermal protection prevents faults in the event of prolonged overloads at high ambient temperatures.
- Their design ensures excellent ventilation to internal components, very small dimensions and IP20 protection against accidental contacts in compliance with IEC529.



2-phase switching power supply 400-500 Vac output power 85 W



- Two-phase input 340...550 Vac
- It saves cabling costs and line protection costs
- Short circuit, overload, over temperature, input and output overvoltage protections
- High inrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

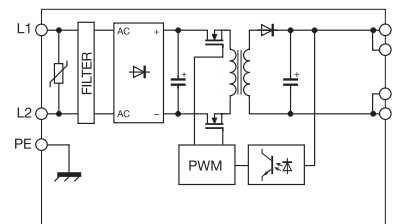
The depth dimension includes the terminal blocks and the DIN clamp.

(2) 550 Vdc max for UL508

(3) Over 50°C (122°F) apply a derating of about 2 W/°C

(4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 3.5 A

Output 24 Vdc 3.5 A redundant version

Output 12...15 Vdc 7 A

Output 48 Vdc 1.75 A

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ Iout max. (Uin 400 / 500 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time (Uin 400 / 500 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)

Dissipated power (Uin 400 / 500 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Cod. XCSB85C

CSB85C

400–500 Vac (range 340...550 Vac) (2)

47...63 Hz

0.5 A / 0.45 A

< 50 A

> 0.65

circuit breaker: 2 X 6 A C characteristic - fuse: 2 X T 6.3 A

24 Vdc

24...27.5 Vdc

3.5 A @ 50°C (3)

6 A for >5 s

with Uout > Uin x 0.9 (4)

15 A for 0.4 s (4)

< 1%

≤ 60 mVpp

>50 ms / >60 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

>88% / >90%

12 W / 9 W

–20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

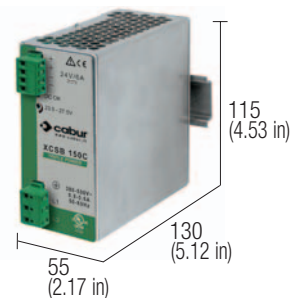
600 g (21.18 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

2-phase switching power supply 400-500 Vac output power 150 W

- Two-phase input 340...550 Vac
- It saves cabling costs and line protection costs
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

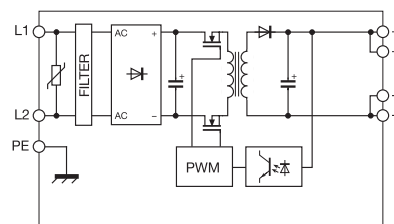
The depth dimension includes the terminal blocks and the DIN clamp.

(2) 550 Vdc max for UL508

(3) Over 50°C (122°F) apply a derating of about 3.75 W/°C

(4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 5 A

Output 24 Vdc 5 A redundant version

Output 12...15 Vdc 8...7 A

Output 48 Vdc 3 A

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ Iout max. (Uin 400 / 500 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time (Uin 400 / 500 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)

Dissipated power (Uin 400 / 500 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Cod. XCSB150C

CBS150C

400–500 Vac (range 340...550 Vac) (2)

47...63 Hz

0.7 A / 0.55 A

< 50 A

> 0.65

circuit breaker: 2 X 6 A C characteristic - fuse: 2 X T 6.3 A

24 Vdc

24...27.5 Vdc

6 A @ 50°C (3)

9 A for >5 s

with Uout > Uin x 0.9 (4)

20 A for 0.4 s (4)

< 1%

≤ 60 mVpp

>50 ms / >60 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

>90% / >91%

17 W / 15 W

–20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

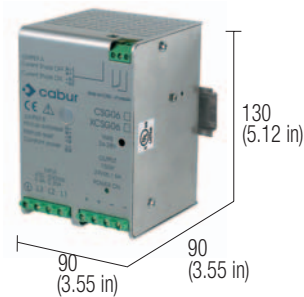
600 g (21.18 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 240 W

- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the DIN rail clamp.
(2) 550 Vdc max for UL508
(3) Over 50°C (122°F) apply a derating of about 3.75 W/°C
(4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM

Items sold until sell-out,
will be replaced by **CSG240** series...

VERSIONS

Output 24 Vdc 10 A
Output 24 Vdc 10 A redundant version
Output 12...15 Vdc 20 A
Output 48 Vdc 5 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max. (Uin 400 / 500 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

400–500 Vac (range 340...550 Vac / 507...770 Vdc) (2)
47...63 Hz
0.6 A / 0.42 A
< 50 A
> 0.7
—
circuit breaker: 3 X 6 A C characteristic - fuse: 3 X T 1.5 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time (Uin 400 / 500 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

24 Vdc
24...28 Vdc
10 A @ 50°C (3)
>20 A
—
< 1%
≤ 50 mVpp
>10 ms / >20 ms
hiccup at the overload limit with auto reset / manual reset / constant power / over temperature protection
"DC OK" green LED
—
possible
possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)
Dissipated power (Uin 400 / 500 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>90% / >90%
27 W / 27 W
–20...+60°C, with derating over 50°C / over temperature protection (3)
3 kVac / 60 s SELV output
2 kVac / 60 s
0.5 kVac / 60 s
EN50178, EN61558, EN60950, IEC950, UL508
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F
II / 2
IP 20 IEC 529, EN60529
4 and 6 mm² fixed screw type
aluminium
1 Kg (35.30 oz)
vertical on rail, allow 10 mm spacing between adjacent components

MOUNTING ACCESSORIES

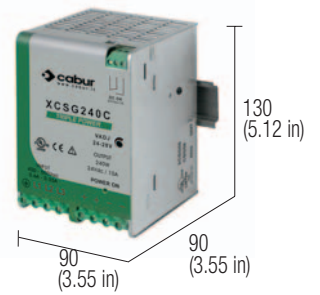
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 240 W



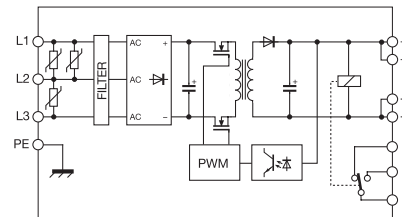
- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
 (2) 550 Vdc max for UL508
 (3) Over 50°C (122°F) apply a derating of about 6 W/°C
 (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 10 A
 Output 24 Vdc 10 A redundant version
 Output 12...15 Vdc 20 A
 Output 48 Vdc 5 A

INPUT TECHNICAL DATA

- Input rated voltage
 Frequency
 Current @ Iout max. (Uin 400 / 500 Vac)
 Inrush peak current
 Power factor
 Internal protection fuse
 External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time (Uin 400 / 500 Vac)
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection
 Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 400 / 500 Vac)
 Dissipated power (Uin 400 / 500 Vac)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

Cod. XCSG240C

CSG240C

400–500 Vac (range 340...550 Vac / 507...770 Vdc) (2)

47...63 Hz

0.6 A / 0.42 A

< 50 A

> 0.7

circuit breaker: 3 X 6 A C characteristic - fuse: 3 X T 1.5 A

24 Vdc

24...28 Vdc

10 A @ 50°C (3)

15 A for >5 s

with Uout > Uin x 0.9 (4)

>25 A for 1.5 s (4)

< 1%

≤ 50 mVpp

>20 ms / >30 ms

hiccup at the overload limit with auto reset / over temperature protection (3)

"DC OK" green LED / "DC OK" alarm contact

—

possible

possible with external ORing diode

>90% / >90%

27 W / 27 W

–20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

4 mm² fixed screw type

aluminium

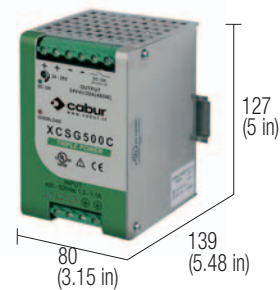
1 Kg (35.3 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 500 W

- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

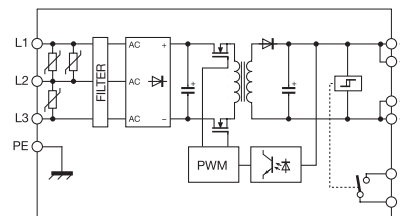


NOTES

The depth dimension includes the DIN rail clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 6 W/°C
- (4) Overload and short circuit current depends on the total line resistance.
- (5) "Triple Power" version with threshold alarm and "Overload" LED available from October

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 20 A
- Output 24 Vdc 20 A redundant version
- Output 12...15 Vdc 40 A
- Output 48 Vdc 10 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ Iout max. (Uin 400 / 500 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time (Uin 400 / 500 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 400 / 500 Vac)
- Dissipated power (Uin 400 / 500 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSG500C

CSG500C

Cod. XCSG500D

CSG500D (1)

400-500 Vac (range 340...550 Vac / 507...770 Vdc) (2)

47...63 Hz

1 A / 0.6 A

< 35 A

> 0.75 with PFC

circuit breaker: 3 X 10 A C characteristic - fuse: 3 X T 3.15 A

24 Vdc

24...28 Vdc

20 A @ 50°C (3)

>30 A for >5 s

with Uout >Un x 0.9 (4)

>50 A for 5 s (4)

< 0.5%

≤ 50 mVpp

>12 ms / >20 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED (5)

<21.6 Vdc

possible

possible with external ORing diode

48 Vdc

45...55 Vdc

10 A @ 50°C (3)

>15 A for >5 s

with Uout >Un x 0.9 (4)

>50 A for 5 s (4)

< 0.5%

≤ 50 mVpp

>15 ms / >30 ms

>93% / >94%

36 W / 30 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

4 and 6 mm² fixed screw type

aluminium

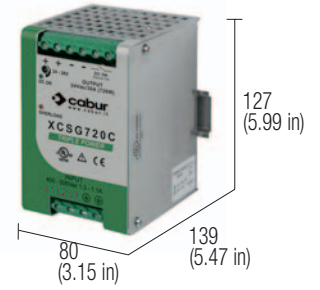
1.3 Kg (45.89 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 720 W

- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

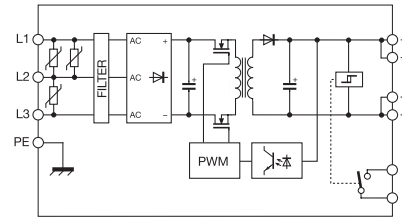


NOTES

The depth dimension includes the DIN rail clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 6 W/°C
- (4) Overload and short circuit current depends on the total line resistance.
- (5) "Triple Power" version with threshold alarm and "Overload" LED available from October

BLOCK DIAGRAM



VERSIONS

- Output 24 Vdc 30 A
- Output 24 Vdc 30 A redundant version
- Output 12...15 Vdc 60 A
- Output 48 Vdc 15 A

INPUT TECHNICAL DATA

- Input rated voltage
- Frequency
- Current @ Iout max. (Uin 400 / 500 Vac)
- Inrush peak current
- Power factor
- Internal protection fuse
- External protection on AC line

OUTPUT TECHNICAL DATA

- Output rated voltage
- Output adjustable range
- Continuous current
- Overload limit
- Short circuit peak current
- Load regulation
- Ripple @ nominal ratings
- Hold up time (Uin 400 / 500 Vac)
- Overload / short circuit protections
- Status display
- Alarm contact threshold
- Parallel connection
- Redundant parallel connection

GENERAL TECHNICAL DATA

- Efficiency (Uin 400 / 500 Vac)
- Dissipated power (Uin 400 / 500 Vac)
- Operating temperature range
- Input/output isolation
- Input/ground isolation
- Output/ground isolation
- Standard/approvals
- EMC Standards
- MTBF @ 25°C @ nominal ratings
- Overvoltage category/Pollution degree
- Protection degree
- Connection terminal
- Housing material
- Approx. weight
- Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35-7.5
- Mounting rail type according to IEC60715/G32

Cod. XCSG720C

CSG720C

(1)

(1)

Cod. XCSG720D

CSG720D (1)

400-500 Vac (range 340...550 Vac / 507...770 Vdc) (2)

47...63 Hz

1.4 A / 1.1 A

< 30 A

> 0.75

circuit breaker: 3 X 10 A C characteristic - fuse: 3 X T 5 A

24 Vdc

24...28 Vdc

30 A @ 50°C (3)

45 A for >5 s

with Uout > Un x 0.9 (4)

>50 A for 1.5 s (4)

< 1%

≤ 200 mVpp

>10 ms / >15 ms

<21.6 Vdc possible possible with external ORing diode

>93% / >94%

36 W / 30 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

4 and 6 mm² fixed screw type

aluminium

1.3 Kg (45.86 oz)

vertical on rail, allow 10 mm spacing between adjacent components

48 Vdc

45...55 Vdc

15 A @ 50°C (3)

22.5 A for >5 s

with Uout > Un x 0.9 (4)

>50 A for 1.5 s (4)

< 1%

≤ 200 mVpp

>10 ms / >15 ms

<43.2 Vdc possible possible with external ORing diode

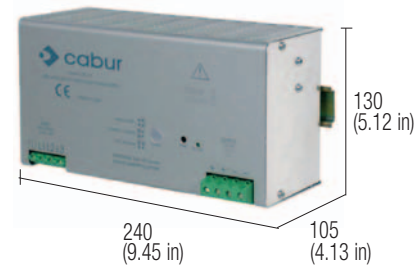
>93% / >94%

36 W / 30 W

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 960 W

- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits

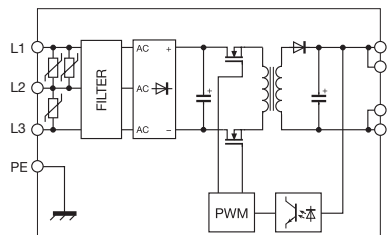


NOTES

The depth dimension includes the DIN rail clamp.

- (1) To be replaced by model XCSG960C
- (2) 550 Vdc max for UL508
- (3) Over 50°C (122°F) apply a derating of about 24 W/°C
- (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 40 A
Output 24 Vdc 40 A redundant version
Output 12...15 Vdc 80 A
Output 48 Vdc 20 A

Cod. XCSG42

CSG42 (1)

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max. (Uin 400 / 500 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

400-500 Vac (range 340...550 Vac / 507...770 Vdc) (2)

47...63 Hz

2,2 A / 1.1 A

< 20 A

> 0.65

circuit breaker: 3 X 10 A C characteristic - fuse: 3 X T 6.3 A

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time (Uin 400 / 500 Vac)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

24 Vdc

24...28 Vdc

40 A @ 50°C (3)

>45 A

—

< 1%

≤ 250 mVpp

>10 ms / >15 ms

hiccup at the overload limit with auto reset / manual reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)
Dissipated power (Uin 400 / 500 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

>91% / >91%

95 W / 95 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC529, EN60529

4 and 6 mm² screw type

aluminium

2.2 Kg (77.60 oz)

vertical on rail, allow 10 mm spacing between adjacent components

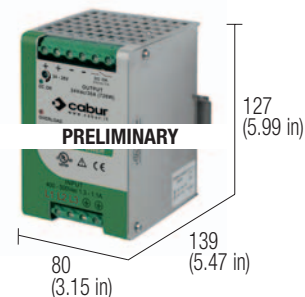
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 960 W

- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

The depth dimension includes the DIN rail clamp.

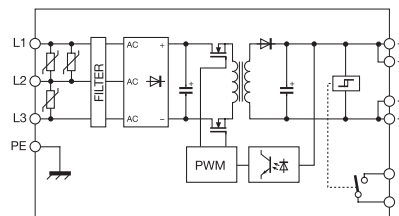
(1) Available from June 2009

(2) 550 Vdc max for UL508

(3) Over 50°C (122°F) apply a derating of about 18 W/°C

(4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 40 A

Output 24 Vdc 40 A redundant version

Output 12...15 Vdc 80 A

Output 48 Vdc 20 A

INPUT TECHNICAL DATA

Input rated voltage

Frequency

Current @ Iout max. (Uin 400 / 500 Vac)

Inrush peak current

Power factor

Internal protection fuse

External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage

Output adjustable range

Continuous current

Overload limit

Short circuit peak current

Load regulation

Ripple @ nominal ratings

Hold up time (Uin 400 / 500 Vac)

Overload / short circuit protections

Status display

Alarm contact threshold

Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)

Dissipated power (Uin 400 / 500 Vac)

Operating temperature range

Input/output isolation

Input/ground isolation

Output/ground isolation

Standard/approvals

EMC Standards

MTBF @ 25°C @ nominal ratings

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Cod. XCSG960C

CSG960C (1)

Cod. XCSG960D

CSG960D (1)

400-500 Vac (range 340...550 Vac / 507...770 Vdc) (2)

47...63 Hz

2.2 A / 1.1 A

< 20 A

> 0.65

circuit breaker: 3 X 10 A C characteristic - fuse: 3 X T 6.3 A

24 Vdc

24...28 Vdc

40 A @ 50°C (3)

60 A for >5 s

with Uout > Uin x 0.9 (4)

>80 A for 5 s (4)

< 1%

≤ 250 mVpp

>10 ms / >15 ms

48 Vdc

45...55 Vdc

20 A @ 50°C (3)

30 A for >5 s

with Uout > Uin x 0.9 (4)

>80 A for 5 s (4)

< 1%

≤ 250 mVpp

>10 ms / >15 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED / "DC OK" alarm contact/ "Overload" red LED

<21.6 Vdc

possible

possible with external ORing diode

<43.2 Vdc

possible

possible with external ORing diode

>91% / >91%

95 W / 95 W

>91% / >91%

95 W / 95 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

4 and 6 mm² fixed screw type

aluminium

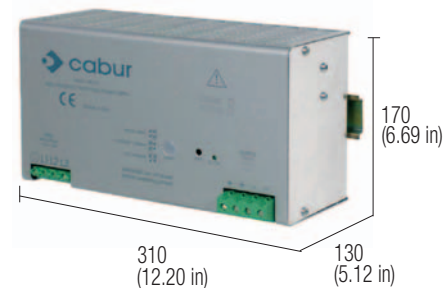
2 Kg (70.55 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

3-phase switching power supply 400-500 Vac output power 2400 W

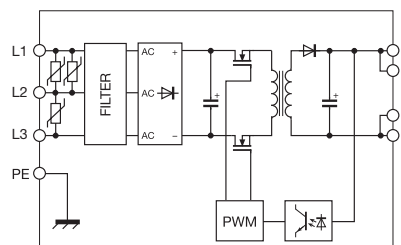
- Three-phase input 340...550 Vac or two-phase with derating
- Short circuit, overload, over temperature, input and output overvoltage protections
- High outrush current to guarantee downstream overcurrent protections selectivity and to start-up heavy loads
- High efficiency and low dissipated power
- Suitable for applications in SELV and PELV circuits



NOTES

- The depth dimension includes the DIN rail clamp.
 (2) 550 Vdc max for UL508
 (3) Over 50°C (122°F) apply a derating of about 40 W/°C.
 (4) Overload and short circuit current depends on the total line resistance.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 100 A
 Output 24 Vdc 100 A redundant version
 Output 12...15 Vdc 200 A
 Output 48 Vdc 50 A

Cod. XCSG2400C

Cod. XCSG2400D

CSG2400C

CSG2400D

INPUT TECHNICAL DATA

Input rated voltage
 Frequency
 Current @ Iout max. (Uin 400 / 500 Vac)
 Inrush peak current
 Power factor
 Internal protection fuse
 External protection on AC line

400-500 Vac (range 340...550 Vac / 507...770 Vdc) (2)

47...63 Hz

6 A / 5 A

< 130 A

> 0.75

circuit breaker: 3 X 20 A C characteristic - fuse: 3 X T 15 A

OUTPUT TECHNICAL DATA

Output rated voltage
 Output adjustable range
 Continuous current
 Overload limit
 Short circuit peak current
 Load regulation
 Ripple @ nominal ratings
 Hold up time (Uin 400 / 500 Vac)
 Overload / short circuit protections
 Status display
 Alarm contact threshold
 Parallel connection

24 Vdc

24...28 Vdc

100 A @ 45°C (3)

110 A (4)

>150 A for 2 s (4)

< 1%

≤ 300 mVpp

>10 ms / >15 ms

hiccup at the overload limit with auto reset / manual reset / over temperature protection

"DC OK" green LED

possible

possible with external ORing diode

48 Vdc

45...55 Vdc

50 A @ 45°C (3)

55 A (4)

>75 A for 2 s (4)

< 1%

≤ 300 mVpp

>10 ms / >15 ms

possible

possible with external ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 400 / 500 Vac)
 Dissipated power (Uin 400 / 500 Vac)
 Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Standard/approvals
 EMC Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

>92% / >92%

210 W / 210 W

-20...+60°C, with derating over 50°C / over temperature protection (3)

3 kVac / 60 s SELV output

2 kVac / 60 s

0.5 kVac / 60 s

EN50178, EN61558, EN60950, IEC950, UL508

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC529, EN60529

4 and 6 mm² screw type

aluminium

3.2Kg

vertical on rail, allow 20 mm spacing between adjacent components

MOUNTING ACCESSORIES

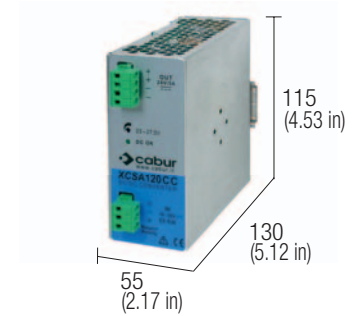
Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

DC/DC Insulated converters output power 120 W



- DC wide range input
- Short circuit, overload, over temperature protection
- Compact design

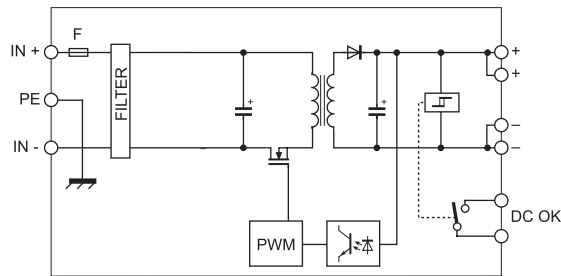


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Inrush current is measured with input supplied by a battery; the current peak vary depending on the internal impedance of the current source and depending on cables and connections resistance.
- (2) Over 50°C (122°F) apply a derating -3 W/°C, max 60°C
- (3) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS

12 Vdc / 24 Vdc 5 A
24 Vdc / 12 Vdc 7 A
24 Vdc / 24 Vdc 5 A
48 Vdc / 24 Vdc 5 A

INPUT TECHNICAL DATA

Input rated voltage
Current @ Iout max.
Inrush peak current
Standby power
Internal protection fuse
External protection on AC line
Overvoltage input protection circuit

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ 1n
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection

Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 110 Vdc)
Dissipated power (Uin 110 Vdc)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XCSA120BC

CSA120BC

Cod. XCSA120CB

CSA120CB

Cod. XCSA120CC

CSA120CC

Cod. XCSA120DC

CSA120DC

12 Vdc (range 10.5...18 Vdc)
12 A ±10%
< 60A / < 2ms (1)
<1.5 W @ 12 Vdc
T 20 A replaceable
≥25 A C characteristic
Passive varistor and active shutdown at 19 Vdc

24 Vdc (range 18...36 Vdc)
5.1 A ±10%
< 100A / < 2ms (1)
<1 W @ 24 Vdc
T 10 A replaceable
≥13 A C characteristic
Passive varistor and active shutdown at 38 Vdc

24 Vdc (range 18...36 Vdc)
5.8 A ±10%
< 90A / < 2ms (1)
<1.5 W @ 24 Vdc

48 Vdc (range 36...72 Vdc)
2.8 A ±10%
< 120A / < 2ms (1)
<2 W @ 48 Vdc
T 5 A replaceable
≥6 A C characteristic
Passive varistor and active shutdown at 76 Vdc

24 Vdc
22.5...27.5 Vdc
5 A @ 50°C (2)
6.5 A
12 A for 300 ms

12...15 Vdc
12...15 Vdc
7 A @ 50°C (2)
9.1 A
15 A for 300 ms

24 Vdc
22.5...27.5 Vdc
5 A @ 50°C (2)
6.5 A
12 A for 300 ms

24 Vdc
22.5...27.5 Vdc
5 A @ 50°C (2)
6.5 A
13 A for 300 ms

≤ 100 mVpp
>1 ms
≤ 150 mVpp
≤ 200 mVpp
>4.5 ms

hiccup at the overload limit with auto reset / over temperature protection

"DC OK" green LED

—

possible

possible with external ORing diode

> 83%
<25 W

>87%
<16 W
-20...+60°C, with derating over 50°C (2)

>87%
<18 W
(3)

>90%
<13 W

2.1 kVdc / 60s
1.41 kVdc / 60s
0.75 kVdc / 60s

IEC950, EN60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-5-5, EN61000-4-6, EN61000-4-11
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type
aluminium

550 g (19.40 oz)

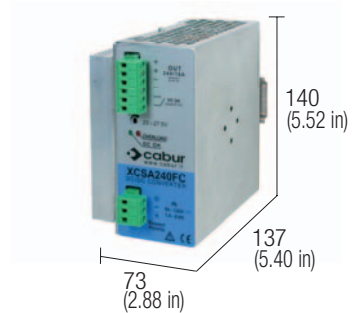
vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

DC/DC Insulated converters output power 240 W



- DC wide range input
- Short circuit, overload, over temperature protection
- Already preset with internal ORing diode for redundant connection
- Compact design

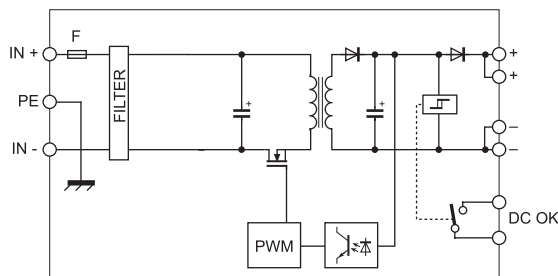


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Inrush current is measured with input supplied by a battery; the current peak vary depending on the internal impedance of the current source and depending on cables and connections resistance.
- (2) Over 50°C (122°F) apply a derating -6 W/°C, max 60°C
- (3) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS

110 Vdc / 24 Vdc 10 A
110 Vdc / 24 Vdc 10 A ridondante

Cod. XCSA240FC

CSA240FC

INPUT TECHNICAL DATA

Input rated voltage
Current @ Iout max.
Inrush peak current
Standby power
Internal protection fuse
External protection on AC line
Overvoltage input protection circuit

110 Vdc (range 90...130 Vdc)
2.4 A $\pm 10\%$
< 150A / < 2ms (1)
< 3.4 W @ 110 Vdc
T 5 A replaceable
 ≥ 6 A C characteristic
Passive varistor and active shutdown at 136 Vdc

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 110 Vdc)
Overload / short circuit protections
Status display
Alarm contact threshold
Parallel connection
Redundant parallel connection

24 Vdc
22.7...27 Vdc
10 A @ 50°C (2)
15 A
21 A for 300 ms
< 1.5%
 ≤ 100 mVpp
> 4 ms
hiccup at the overload limit with auto reset / over temperature protection
"DC OK" green LED / "DC OK" alarm contact / "Overload" red LED

possible

factory provided with internal ORing diode

GENERAL TECHNICAL DATA

Efficiency (Uin 110 Vdc)
Dissipated power (Uin 110 Vdc)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

> 89%
< 28 W
-20...+60°C, with derating over 50°C (2)
2.1 kVdc / 60s (3)
1.41 kVdc / 60s (3)
0.75 kVdc / 60s (3)
IEC950, EN60950
EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-5-5, EN61000-4-6, EN61000-4-11
> 500'000 h acc. to SN 29500 / > 150'000 h acc. to MIL Std. HDBK 217F
II / 2
IP 20 IEC 529, EN60529
2.5 mm² pluggable screw type
aluminium
800 g (28.24 oz)
vertical on rail, allow 10 mm spacing between adjacent components

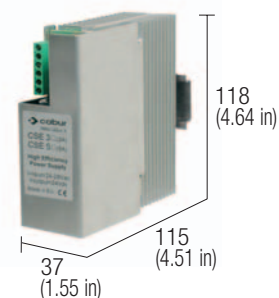
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply input 24 Vac output power 72...120 W

- Standard input voltage 24 Vac
- Dissipated power less than 10%
- Short circuit, overload, over temperature protection
- Input protection fuse



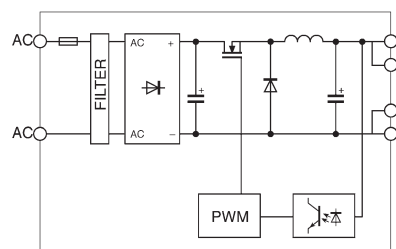
CE

NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

(1) Over 25°C (77°F) apply derating: CSE3: -0.5 W/°C; CSE5: -0.85 W/°C; max 60°C

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 3 A
Output 24 Vdc 5 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max.
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In
Overload / short circuit protections
Status display
Parallel connection
Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency
Dissipated power
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Reference Standards
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

Cod. XCSE3

CSE3

Cod. XCSE5

CSE5

24 Vac (range 24...28 Vac)

50...60 Hz

4 A

5 A

T 8 A replaceable

circuit breaker: 10 A C characteristic - fuse: T 10 A

24 Vdc

23...25 Vdc

3 A @ 25°C (1)

4 A

24 Vdc

23...25 Vdc

5 A @ 25°C (1)

5.5 A

< 1%

< 100 mVpp

>20 ms

constant current, limit current, auto reset / over temperature protection

"DC OK" green LED

possible

possible with external ORing diode

>90%

< 8 W

-10...+60°C, with derating over 45°C / over temperature protection (1)

not insulated

0.5 kVac / 60 s

0.5 kVac / 60 s

IEC 664-1, DIN VDE 0110.1

EN55011, EN55022

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529, EN60529

2.5 mm² fixed screw type

metal

500 g (17.64 oz)

550 g (19.40 oz)

vertical on rail, allow 20 mm spacing between adjacent components

APPLICATIONS

CSE power supplies are suitable for use in SELV and PELV circuits.

WARNING! In PELV circuits, in which one safety low voltage pole is connected to the ground, **a pole of the secondary of the transformer too must not be connected to ground at once**; the only one pole to be grounded is normally the negative of the 24 Vdc output of the power supply and effectively used as control voltage.

The connection to ground of one pole of the transformer Vac output together with one pole of the 24 Vdc of the power supply output damages the power supply.

Input and output of the CSE Series power supplies are not isolated. Safety isolation function is therefore assigned to the external transformer which has to comply with EN60742 Std.

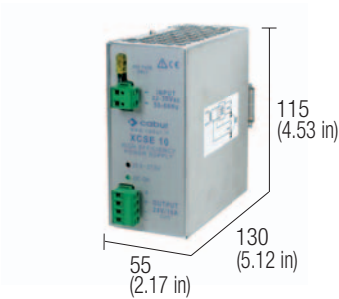
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Switching power supply input
24 Vac
output power 240 W

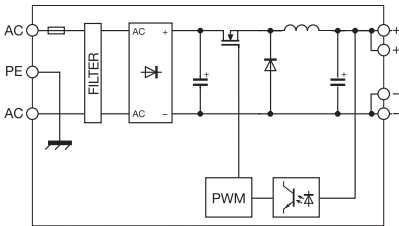
- Standard input voltage 24 Vac
- Dissipated power less than 10%
- Short circuit, overload, over temperature protection
- Input protection fuse



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
(1) Over 45°C (113°F) apply a derating -4 W/°C, max 60°C.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc 10 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max.
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In
Overload / short circuit protections
Status display
Parallel connection
Redundant parallel connection

GENERAL TECHNICAL DATA

Efficiency (Uin 110 Vdc)
Dissipated power (Uin 110 Vdc)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Reference Standards
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

Cod. XCSE10

CSE10

24 Vac (range 21...30 Vac)
50...60 Hz
12 A
T 20 A replaceable
circuit breaker: 25 A C characteristic - fuse: T 25 A

24 Vdc
22...26.5 Vdc
10 A @ 25°C (1)
12 A
—
< 1%
< 200 mVpp
>10 ms
hiccup at the overload limit with auto reset / over temperature protection
"DC OK" green LED
possible
possible with external ORing diode

>90%
< 26 W
-10...+60°C, with derating over 45°C / over temperature protection (1)
not insulated
0.5 kVac / 60 s
0.5 kVac / 60 s
IEC 664-1, DIN VDE 0110.1
EN55011, EN55022
>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F
II / 2
IP 20 IEC 529, EN60529
2.5 mm² fixed screw type
metal
600 g (21.16 oz)
vertical on rail, allow 20 mm spacing between adjacent components

APPLICATIONS

CSE power supplies are suitable for use in SELV and PELV circuits.
WARNING! In PELV circuits, in which one safety low voltage pole is connected to the ground, **a pole of the secondary of the transformer too must not be connected to ground at once**; the only one pole to be grounded is normally the negative of the 24 Vdc output of the power supply and effectively used as control voltage.
The connection to ground of one pole of the transformer Vac output together with one pole of the 24 Vdc of the power supply output damages the power supply.
Input and output of the CSE Series power supplies are not isolated. Safety isolation function is therefore assigned to the external transformer which has to comply with EN60742 Std.

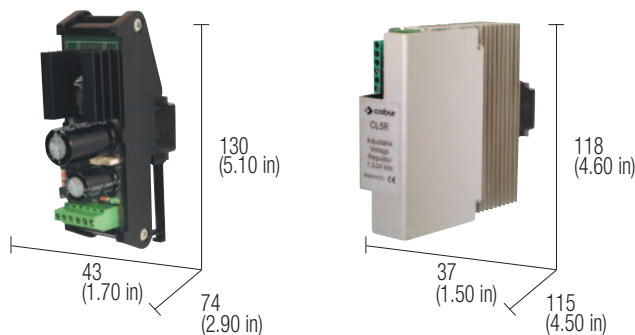
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Adjustable linear power supply input 24 Vac

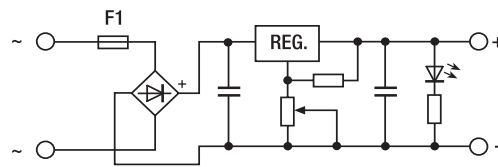
- Adjustable output voltage 1.2...24 Vdc
- Output current 1.5 and 5 A
- Short circuit, overload, over temperature protection



NOTES

The depth dimension includes the terminal blocks and the DIN clamp.
(1) See "Applications"

BLOCK DIAGRAM



VERSIONS

Output 1.2 A
Output 5 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ lout max.
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output rated voltage
Output adjustable range
Continuous current
Overload limit
Load regulation
Ripple @ nominal ratings
Hold up time @ In
Overload / short circuit protections
Status display

GENERAL TECHNICAL DATA

Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Reference Standards
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

Cod. XCL1R

CL1R

Cod. XCL5R

CL5R

9...26 Vac (see Tab. 1)
50...60 Hz

2,5 A
T 3 A replaceable
MCB: 4 A C characteristic - fuse T 4 A

6 A
T 10 A replaceable
MCB: 10 A C characteristic - fusibile T 10 A

1.2...24 Vdc

(see Tab. 1)

1.5 A (see Tab. 2)

1.2...24 Vdc

(see Tab. 1)

5 A (see Tab. 2)

< 1%

< 50 mVpp @ 24 Vac

>20 ms

constant current, limit current, auto reset / over temperature protection

"DC OK" green LED

-20...+45°C / over temperature protection (1)

not insulated

0.5 kVac / 60 s

0.5 kVac / 60 s

IEC 664-1, DIN VDE

EN50081-1, EN61000-6-4

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 00 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

aluminium

120 g (4.23 oz)

350 g (12.35 oz)

vertical on rail, allow 20 mm spacing between adjacent components

APPLICATIONS

The CL-R linear regulated power supply series of CABUR is provided with adjustable output and it can satisfy all those needs related to the feeding of small loads with non-standard rated voltage and at an extremely limited cost. It can be mounted on the rail in whatever position, providing that enough space for the free circulation of the air remains for the cooling; the CL1R model having an IP 00 protection degree, its use is intended inside a protected enclosure. Even if the power supply is protected from over-current it is advisable to respect the rated values shown in table 1 and 2.

(1) CL1R and CL5R give the rated performances if fed by a voltage between 24 and 27 Vac, as indicated on **Tab. 1**; with input voltage between 24 and 27 Vac, the maximum output current for output voltages lower than 24 Vdc are indicated on **Tab. 2**; to achieve a good voltage stabilization and low ripple, linear power supplies must be fed with an input voltage higher than output voltage, while if they are supplied with 24 Vac, and adjusted for 24 Vdc output, when rated current is supplied, the ripple increases and voltage stabilization decreases; input voltages higher than 27 Vac increases power dissipation and increases operating temperature of the component, and might cause thermal protection shut down. The products are preadjusted to Vout 24 Vdc with Vin 26 Vac.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

INPUT (Vac)	OUTPUT (Vdc)	lout max (A) XCL1R	lout max (A) XCL5R
24...27	24	1.5	5
16...18	15	1.5	5
14...16	12	1.5	5
12...14	10	1.5	5
12	9	1.5	5
9	5	1.5	5

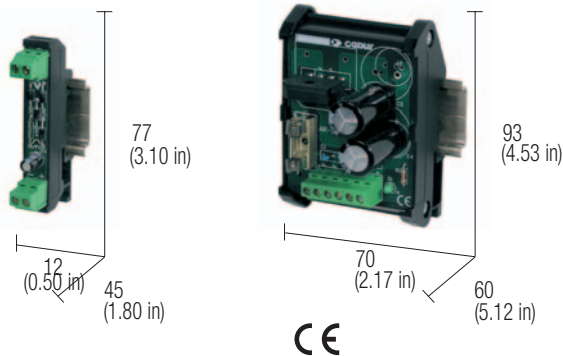
Tab. 1

INPUT (Vac)	OUTPUT (Vdc)	lout max (A) XCL1R	lout max (A) XCL5R
24	24	1.5	5
24	15	0.8	2.5
24	12	0.7	2
24	10	0.5	1.5
24	9	0.45	1.3
24	5	0.3	0.8

Tab. 2

Filtered power supplies without transformer with non regulated output

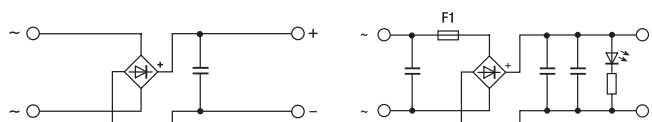
- DIN rail mounting
- Suitable for rectifying 6 Vac to 20 Vac
- V output = Vac input x 1.41 (-1V)



NOTES

(2) Version available upon request; for information call our sales department, local agent or representative
 (3) They can work with input from min. 6 Vac to 30 Vac max., the non regulated output voltage depends on the load and on the variations of the input voltage supplied by the transformer
 (4) They are protected from overcurrent by their input fuse (except AR1 model); it is recommended to protect cables of the output line with fuses of value coordinated with the current of the load and cables.

BLOCK DIAGRAM



VERSIONS

Output 1 A
Output 2 A (2)

INPUT TECHNICAL DATA

Input rated voltage
 Frequency
 Current @ Iout max.
 Internal protection fuse
 External protection on AC line

OUTPUT TECHNICAL DATA

Output voltage (without load)
 Output voltage (full load)
 Continuous current
 Overload limit
 Load regulation
 Ripple @ nominal ratings
 Hold up time @ In
 Overload / short circuit protections
 Status display
 Parallel connection
 Redundant parallel connection

GENERAL TECHNICAL DATA

Operating temperature range
 Input/output isolation
 Input/ground isolation
 Output/ground isolation
 Reference Standards
 MTBF @ 25°C @ nominal ratings
 Overvoltage category/Pollution degree
 Protection degree
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

Cod. XAR1

AR1

Cod. XAR2

AR2 (2)

6...20 Vac
 50...60 Hz

1.2 A @ 20 Vac
 not available
 MCB: 1 A C characteristic - fuse T 1 A

2.4 A @ 20 Vac
 T 3.15 A replaceable
 MCB: 4 A C characteristic - fusibile T 4 A

1 A @ 20°C
 1 A

2 A @ 20°C
 3 A

Uout = (Uin x 1.41) (3)
 Uout = (Uin x 1.41) - 2 (3)
 ≤ 10%
 >20 ms
 not available, insert external fuse (4)
 "DC OK" green LED

-20...+45°C / max 60°C

not insulated

0.5 kVac / 60 s

0.5 kVac / 60 s

IEC 664-1, DIN VDE

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 00 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

22 g (0.77 oz)

110 g (3.88 oz)

vertical on rail, allow 50 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

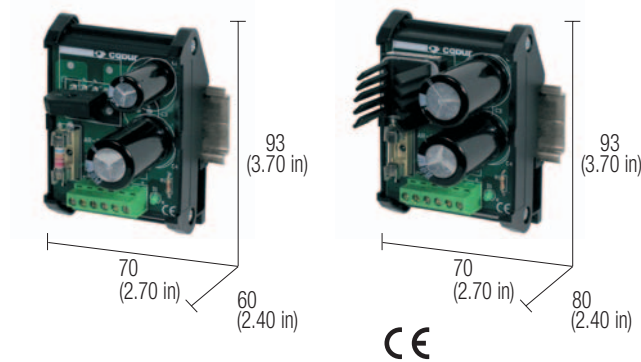
APPLICATIONS

A rectified and filtered power supply is made with a rectifier bridge and a filter capacitor, that converts the alternating voltage into a continuous voltage. Since the power supply unit is not regulated, the output voltage varies considerably according to the current required by the load and according to the ±10% mains voltage variations. The formula indicated in the output specifications allows to calculate the output voltage with Zero load, with 50% load and full load. This allows you to choose the most suitable transformer for your needs. These units offer a low cost and a reliable voltage source suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide voltage variations; in applications where mains is unstable or troubled, it might be not suitable to feed microprocessor devices, analog converters, encoders and electronic devices which are sensitive to voltage variations.

INPUT (Vac)	OUTPUT without load (Vdc)	OUTPUT full load (Vdc)
20	28.7	24.2
18	25.4	21.4
15	21.2	17.2
12	17	15
9	12.7	8.7
6	8.5	4.5

Filtered power supplies without transformer with non regulated output

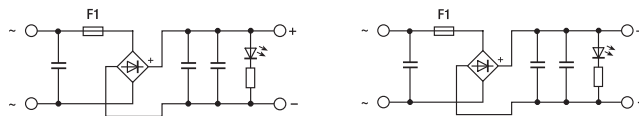
- DIN rail mounting
- Suitable for rectifying 6...20 Vac
- $V_{\text{output}} = V_{\text{ac input}} \times 1.41$ (-1V)



NOTES

- (1) They can work with input from min. 6 Vac to 30 Vac max., the non regulated output voltage depends on the load and on the variations of the input voltage supplied by the transformer
- (2) They are protected from overcurrent by their input fuse (except AR1 model); it is recommended to protect cables of the output line with fuses of value coordinated with the current of the load and cables

BLOCK DIAGRAM



VERSIONS

Output 4 A
Output 6 A

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ Iout max.
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output voltage (without load)
Output voltage (full load)
Continuous current
Overload limit
Load regulation
Ripple @ nominal ratings
Hold up time @ In
Overload / short circuit protections
Status display
Parallel connection
Redundant parallel connection

GENERAL TECHNICAL DATA

Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Reference Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XAR4

AR4

Cod. XAR6

AR6

6...20 Vac
50...60 Hz

4.8 A @ 20 Vac
T 6.3 A replaceable
MCB: 10 A C characteristic - fuse T 7 A

7.2 A @ 20 Vac
T 8 A replaceable
MCB: 10 A C characteristic - fuse T 10 A

4 A @ 20°C
6 A

6 A @ 20°C
9 A

$U_{\text{out}} = (U_{\text{in}} \times 1.41)$ (1)
 $U_{\text{out}} = (U_{\text{in}} \times 1.41) - 2$ (1)

± 10%
>20 ms
not available, insert external fuse (2)
"DC OK" green LED

-20...+45°C / max 60°C

not insulated

0.5 kVac / 60 s

0.5 kVac / 60 s

IEC 664-1, DIN VDE

>500'000 h acc. to SN 29500 / >150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 00 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

115 g (4.06 oz)

140 g (4.94 oz)

vertical on rail, allow 50 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

APPLICATIONS

A rectified and filtered power supply is made with a rectifier bridge and a filter capacitor, that converts the alternating voltage into a continuous voltage. Since the power supply unit is not regulated, the output voltage varies considerably according to the current required by the load and according to the ±10% mains voltage variations.

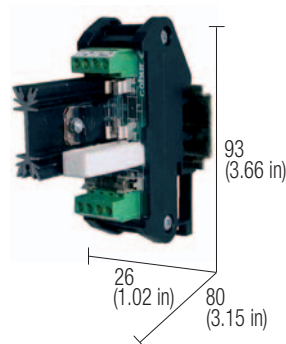
The formula indicated in the output specifications allows to calculate the output voltage with Zero load, with 50% load and full load. This allows you to choose the most suitable transformer for your needs.

These units offer a low cost and a reliable voltage source suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide voltage variations; in applications where mains is unstable or troubled, it might be not suitable to feed microprocessor devices, analog converters, encoders and electronic devices which are sensitive to voltage variations.

INPUT (Vac)	OUTPUT without load (Vdc)	OUTPUT full load (Vdc)
20	28.7	24.2
18	25.4	21.4
15	21.2	17.2
12	17	15
9	12.7	8.7
6	8.5	4.5

Accessory for charging buffer batteries

- Battery charger
- Allows to connect in redundant parallel two power supplies
- Suitable for power supplies up to 10 A
- Battery protection fuse
- Battery feedback protection diode
- Current charge limiting resistor

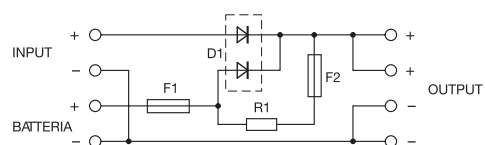


NOTES

The depth dimension includes the terminal blocks and the DIN rail clamp.

(1) The charging current is dependent on the battery type and the required level of charge

BLOCK DIAGRAM



VERSIONS

Cod. XCSBC

CSBC

GENERAL TECHNICAL DATA

Power supply rated voltage	6...30 Vdc
Power supply rated current	> 3 A
Load rated voltage	6...29.5 Vdc
Load max current	10 A
Charge current limitation	0.6 A (1)
Battery disconnecting voltage	not available
IN/OUT drop voltage	0.5 V
Battery protection fuse	F1 = T 6.3 A / F2 = T 1 A
Protections	battery short circuit / overload
Alarm signal	—
Operating temperature range	-10...+50°C
Reference Standards	IEC 664-1, DIN VDE
Overvoltage category/Pollution degree	II / 2
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	80 g (2.82 oz)
Mounting information	vertical on rail, adjacent

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

APPLICATIONS

1. Battery charger

With this module is possible to use a Cabur power supply as a battery charger while it is feeding the load.

The diode provides decoupling between the battery and the power supply; the resistance limits the current charge limiting power supply output current and assuring longer life to the battery. The F1 fuse protects the battery and its wiring against short circuit.

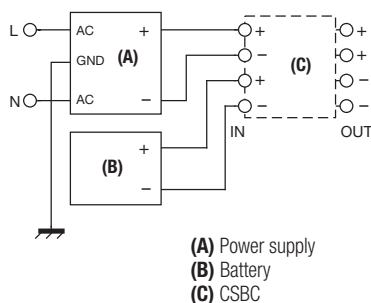
The next picture shows the connections.

2. Parallel connection of power supplies

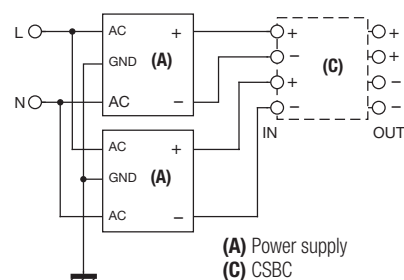
It is possible to use this module also to connect two power supplies in parallel, not provided with output decoupling diode, eliminating "Fuse 2" in series to charging current limiting resistor.

The next picture shows the connections.

1. Battery charger

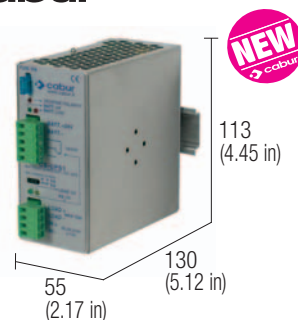


2. Parallel connection of power supplies



Accessory for charging and controlling buffer batteries

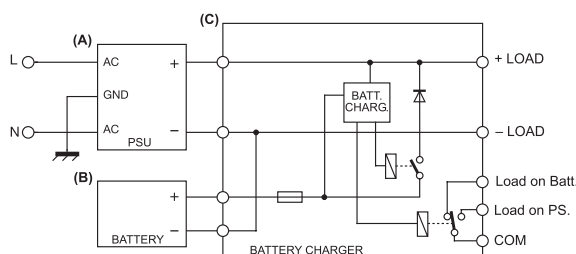
- Suitable for power supply with adjustable output
- Suitable for lead batteries
- Suitable for charging batteries while feeding loads
- Battery protection fuse
- "Deep discharge" battery protection
- Status display LED and failure contact



NOTES

The depth dimension includes the DIN rail clamp.

BLOCK DIAGRAM



VERSIONS

Output 24 Vdc
Output 12 Vdc

GENERAL TECHNICAL DATA

Power supply input voltage
Power supply rated current
Load rated voltage
Max load current
Charging current
Battery disconnection voltage
IN/OUT voltage drop
Battery protection fuse
Protections
Alarm signals
Operating temperature range
EMC Standards
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

Power supply OK:
Battery OK
Battery LOW
Load OK
Battery reverse polarity

Cod. XCSUPS1

CS-UPS1

26...28.5 Vdc
≥ 3 A
26...28 Vdc
15 A
selectable 2 A or 4 A
≤ 18 Vdc ±0.5V

Cod. XCSUPS2

CS-UPS2

12...15 Vdc
≥ 3 A
10...15 Vdc
15 A
selectable 2 A or 4 A
≤ 9.2 Vdc ±0.5V

0.4 V
T 15 A 42 V blade type

Reverse polarity, short circuit, battery overload, battery deep discharge

SPDT 24 V / 1 A

green LED

red LED

yellow LED

green LED

−10...+50°C

IEC 664-1, DIN VDE

II / 2

IP 20 IEC 529, EN60529

2.5 mm² pluggable screw type

aluminium

300 g (10.58 oz)

vertical on rail, adjacent

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

APPLICATIONS

All power supplies with adjustable output voltage to +15% of rated voltage can be used as lead battery chargers, suitable to be used as back up supply in case of AC line breakdown.

The CS-UPS-1 circuit regulate the current charging the battery, and it is possible to set it up to 2A or 4A charging current ; CS- UPS1 disconnects the load from the battery whenever the battery voltage drops under 19Vdc, to avoid total discharge which always shortens battery life.

The module is provided with a fuse protecting the battery and its cable to prevent fire risk in case of short circuit. The module is provided with the following leds display:

PS OK: The green LED is on when the power supply feeding the CS-UPS1 is OK and the load is supplied by the power supply while the battery is continuously charged.

LOAD OK: Yellow LED is on when CS-UPS1 feeds the load.

BATT. OK: Green LED is on when the power supply is turned OFF or disconnected and indicates that the battery is connected and can feed the load.

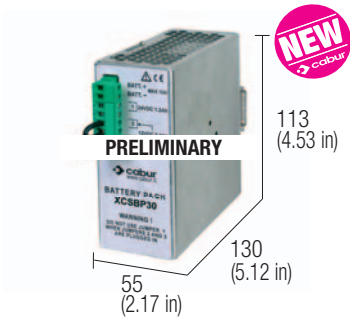
BATT. LOW: Red LED on when the battery is low or discharged.

REVERSE BATTERY: Red LED is on when battery is connected with reverse polarity.

Alarm contact: a relay with an SPDT contact 1A/24V switches when the load is no more supplied by the power supply and then is supplied by the battery. This contact allows to get a remote warning on the status of the system even in the case that the power supply is turned OFF or damaged, or non more supplied for any reasons.

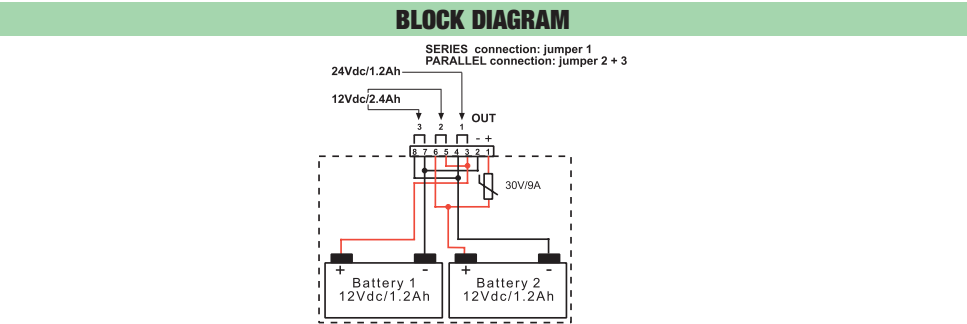
Batteries holder module

- 12 or 24 Vdc selectable output voltage
- Suitable for sealed lead rechargeable batteries
- Suitable for CSBC, CS-UPS, CSC75
- Suitable for DIN rail installation



NOTES

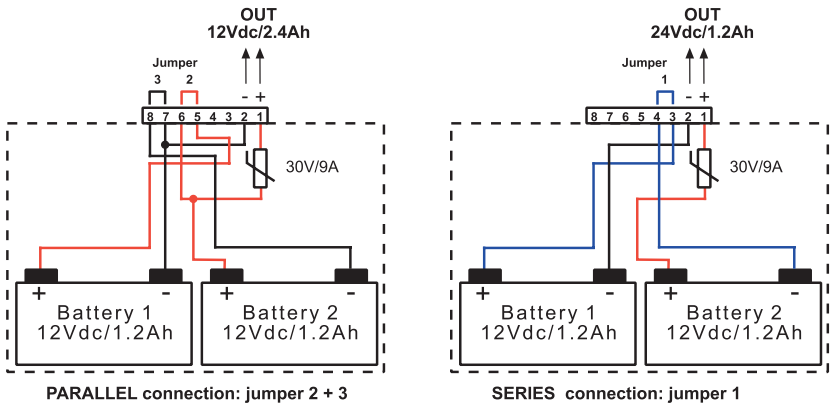
The depth dimension includes the terminal blocks and the DIN rail clamp.
(1) Available from February 2009



VERSIONS	
Batteries holder module (empty)	
Battery	
GENERAL TECHNICAL DATA	
Batteries type	
Internal protection fuse	
Tipo di configurazione	
Output voltage	
Charging current max.	
Discharging current max.	
Operating temperature range	
EMC Standards	
Overvoltage category/Pollution degree	
Protection degree	
Connection terminal	
Housing material	
Approx. weight	
Mounting information	
MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	

CSBP30Y	Art. No. XCSBP30Y
BAT12V1,2AH	Art. No. 911012
2 sealed batteries 12 Vdc 1.2 Ah	
15 A	
parallel	series
12 Vdc 2.4 Ah	24 Vdc 1.2 Ah
0.6 A	0.3 A
5 A	3 A
-10...+50°C	
IEC 664-1, DIN VDE	
II / 2	
IP 20 IEC 529, EN60529	
2.5 mm² pluggable screw type	
aluminium	
1.2 kg (42,36 oz)	
vertical on rail, adjacent	
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	
PR/DIN/AC, PR/DIN/AS, PR/DIN/AL	

APPLICATIONS



Switching power supply with integrated battery charger

- Suitable for 12 Vdc loads and batteries
- Suitable for lead batteries
- Suitable for charging batteries while feeding loads
- Battery protection circuit
- "Deep discharge" battery protection
- Status display LED and failure contact

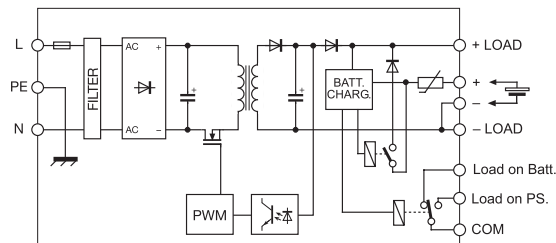


NOTES

The depth dimension includes the terminal blocks and the DIN clamp.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) With 100...127 Vdc input voltage, constant output power and $T_a > 45^\circ\text{C}$, the output current must be derated by 25%
- (3) In addition to the current load, the device supplies about 0.8 A for battery charging
- (4) Over 50°C (122°F) apply a derating $-0.13\text{ A}/^\circ\text{C}$, max 60°C
- (5) Available from February 2009

BLOCK DIAGRAM



VERSIONS

Output 12 Vdc 5 A
Output 24 Vdc 5 A (1)

INPUT TECHNICAL DATA

Input rated voltage
Frequency
Current @ nominal lout (Uin 120 / 230 Vac)
Inrush peak current
Power factor
Internal protection fuse
External protection on AC line

OUTPUT TECHNICAL DATA

Output voltage with operating power supply
Output voltage with batteries
Continuous current
Overload limit
Short circuit peak current
Load regulation
Ripple @ nominal ratings
Hold up time @ In (Uin 120 / 230 Vac)
Overload / short circuit protections

Output voltage with operating power supply
Output voltage with operating batteries

GENERAL TECHNICAL DATA

Efficiency (Uin 120 / 230 Vac)
Dissipated power (Uin 120 / 230 Vac)
Operating temperature range
Input/output isolation
Input/ground isolation
Output/ground isolation
Standard/approvals
EMC Standards
MTBF @ 25°C @ nominal ratings
Overvoltage category/Pollution degree
Protection degree
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Cod. XCSC75B

CSC75B (5)

Cod. XCSC75C

(1)

120...230 Vac (range 90...264 Vac / 100...370 Vdc) (2)

47...63 Hz

1.3 A / 0.8 A $\pm 10\%$

< 20 A

> 0.6

T 2 A replaceable

circuit breaker: 4 A - C characteristic - fuse: T 4 A

12.8...15.2 Vdc

12...14.4 Vdc

5 A @ 50°C (3)

> 8 A per > 30 s

—

< 1%

$\leq 50\text{ mVpp}$

> 15 ms / > 20 ms

24.8...27 Vdc

24...26.2 Vdc

5 A @ 50°C (3)

> 8 A per > 30 s

—

< 1%

$\leq 50\text{ mVpp}$

> 15 ms / > 20 ms

with operating power supply: hiccup at the overload limit with auto reset
with non operating power supply: auto resettable electronic fuse against battery short circuit
with non operating power supply: threshold-relay against battery deep discharge
"PSU OK" green LED / failure contact / "BATTERY" red LED
0.8 A (suitable for sealed lead batteries up to 15 Ah)

> 86% / > 90%

21 W / 13 W

$-20...+60^\circ\text{C}$, with derating over 50°C / over temperature protection (4)

1.5 kVac / 60 s SELV output

1.5 kVac / 60 s

0.5 kVac / 60 s

IEC950, EN60950

EN61000-6-2, EN61000-6-4, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11

> 500'000 h acc. to SN 29500 / > 150'000 h acc. to MIL Std. HDBK 217F

II / 2

IP 20 IEC 529 EN60529

2.5 mm² pluggable screw type

aluminium

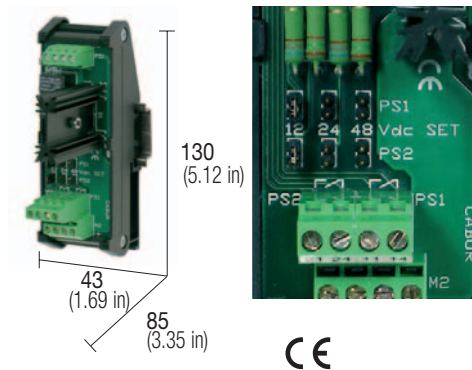
500 g (17.65 oz)

vertical on rail, allow 10 mm spacing between adjacent components

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Accessory for power supplies redundant parallel connections

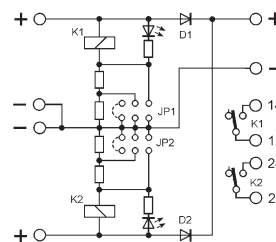
- Suitable for power supplies without Oring diodes
- Compact dimensions
- Three selectable voltages 12, 24 and 48 Vdc
- 2 status/relays contacts
- Power supplied status LED



NOTES

The depth dimension includes the terminal blocks and the DIN rail clamp.

BLOCK DIAGRAM



VERSIONS

Cod. XCSBD

CSBD

APPLICATIONS

This module allows the customer to connect in redundant parallel two power supplies not provided with built in Oring diodes (output decoupling diodes); a jumper bridge allows to select 12, 15, 24 or 48 Vdc operating voltage; each channel is provided with status indication led, status relay and contact for remote failure alarm.

GENERAL TECHNICAL DATA

Power supply rated voltage

Power supply rated current

Load rated voltage

Load max current

IN/OUT drop voltage

Protections

Alarm signal

Operating temperature range

Reference Standards

Overvoltage category/Pollution degree

Protection degree

Connection terminal

Housing material

Approx. weight

Mounting information

12–24–48 Vdc selectable

15 A, max 30 A

12–24–48 Vdc selectable

15 A

0.7 V @ 15 A

—

2 contacts NA 2A @ 230 Vac

–20...+50°C

IEC 664-1, DIN VDE

II / 2

IP 00 IEC 529, EN60529

2.5 mm² fixed screw type

UL94V-0 plastic material

120 g (4.23 oz)

vertical on rail, adjacent

MOUNTING ACCESSORIES

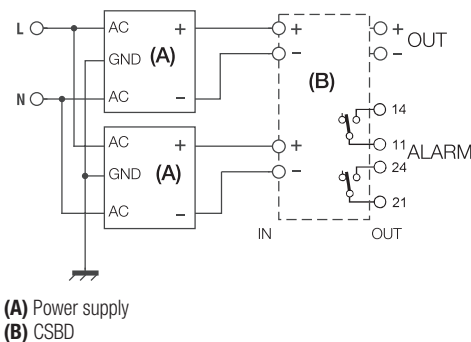
Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

Block diagram



Surge Protection Devices

Surge Protection Devices

The MA3000 Series surge protection devices prevent surges and transient overvoltages conducted through AC power distribution boards from damaging electronic systems such as instrumentation control panels, telemetry substations and fire and security alarm installations. The JVS operates by limiting excess voltages to suitable lower levels for the equipment previewed for employment in Overvoltage Category II (2.5 kV), in Class C overvoltage security zone, like requested by the Standards IEC 1024, IEC 1312-1, EN 50083-1.

Where to mount the SPDs

According to actual standards, the JVS overvoltage protection device has to be installed on the AC supply line at the very input of control cabinets, to guarantee surge immunity of all the devices installed in the panel, such as PLC, power supplies, inverters etc. The conformity to EMC Standards applies also to control cabinets, and requires that the max residual overvoltage does not exceed 2.5 kV. As a consequence, it is mandatory to install overvoltage protection devices capable to reduce incoming overvoltages under 2.5 kV, and overvoltage level that the devices inside the cabinet can withstand without damage.

JVS Series

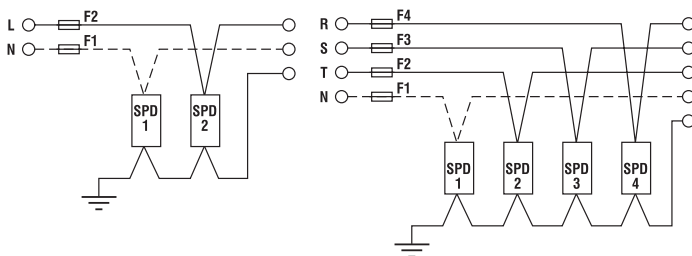
The surge protection device is made of a DIN rail mounted socket equipped with double connection terminal blocks and a pluggable module containing the overvoltage protection circuitry. This feature makes it easy to remove the protection device during isolation tests and for quick replacement. The MA 3000 can withstand a 20 times 10 kA discharge current (waveform 8/20), and a single 40 kA (JVS1-C1P) and 70 kA (JVS1-E1P) peak current. As required by industry surge protection device standards, the MA3000 series is provided with a disconnection device that removes the SPD from the line in case of internal damage or short circuit, giving a visible failure display on the front panel of the unit (picture no. 2). After a great number of discharges and continued long service the module will lose protection capacity and can be replaced without disconnecting the circuit wiring.

Fuse and protection devices

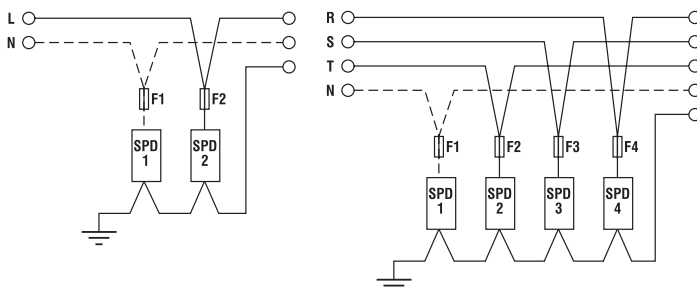
The MA3000 Series surge protective devices are not designed with a built-in thermal disconnecter, therefore they must be equipped with upstream protection against short-circuit currents and with a differential protection element for protection against indirect contact (generally already present in the installation). The MA3000 Series must not be installed downstream of high sensitivity differential protection devices.

Connections

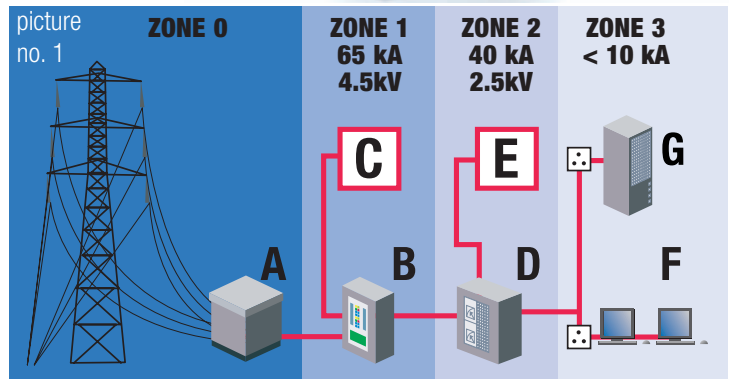
The surge protection devices MA3000 series can be employed in these types of connections:



Protection takes priority



Continuity of services takes priority



Lightning protection zones

Zone 0 - Zone where items are subject to direct lightning strikes or where an unattenuated electromagnetic field occurs as a result of the strike.

Zone 1 - Zone where items are subject to low level direct lightning strikes. The conducted impulse lightning currents and/or switching surges are reduced compared with Zone 0.

Zone 2 - Remnants of lightning impulse currents and/or switching surges are reduced compared with Zone 1.

Zone 3 - Surges, caused by oscillation effects, magnetic field couplings and internal switching surges are reduced compared with Zone 2

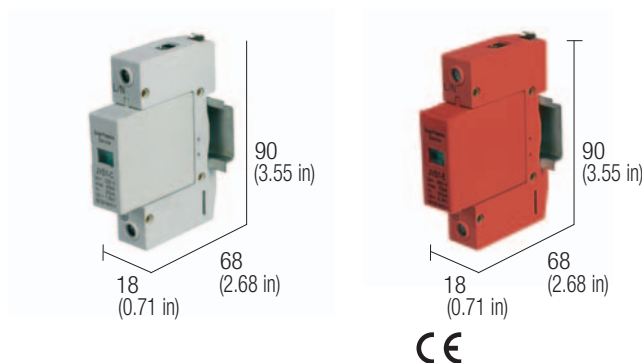
A - Sub Station
B - Main distribution board
C - Heavy machinery
D - Local distribution board
E - Light machinery
F - Workstation
G - Equipment

picture no. 2



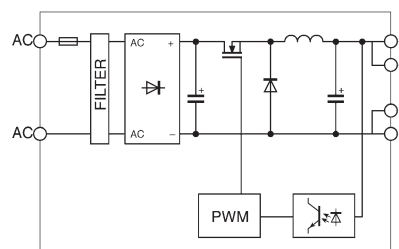
Surge protection devices

- Rugged contacts
- Pluggable protection
- Efficiency status indicator on front panel
- Rugged metal parallel connection bridges



NOTES

BLOCK DIAGRAM



VERSIONS

With varistor

cod. XJVS1C1P

JVS1-C1P

cod. XJVS1E1P

JVS1-E1P

ELECTRICAL TECHNICAL DATA

Rated voltage	
Max. operating voltage	
Frequency	
Limiting voltage	
Nominal discharge current (20 multi shot 8/20 μ s waveform)	
Maximum discharge current (single shot 8/20 μ s waveform)	
Protection voltage level	
Varistor rated voltage	
Leakage current	
Response time	
Energy withstand (2 ms)	
External protection devices	

230 V

320 V

< 1500 V

20 kA

40 kA

1.5 kV

510 V $\pm$ 10%

640 J

400 V

460 V

50...60 Hz

< 2300 V

40 kA

70 kA

2.3 kV

680 V $\pm$ 10%

< 1 mA

<25 ns

1580 J

circuit breaker: C-10 A o B-25 A - fuse: 50...40 A

GENERAL TECHNICAL DATA

Efficiency status indicator	
Operating temperature range	
Protection degree	
Reference Standards	
EMC Standards	
Connection terminal	
Module color	
Housing material	
Approx. weight	
Mounting information	

green: protection fully operational

red: protection disconnected, replace the module

-40...+80°C

IP 20 IEC 529, EN60529

IEC61643-1

EN 55011

16 mm² screw type (6 AWG) / 25 mm² (rigid cable)

light grey

red

UL94V-0 plastic material

128 g (4.52 oz)

on rail, adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	
Replacement varistor	
Screw type jumper	2 poles
	3 poles
	4 poles

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

XJVS1C1R

XJVS1E1R

XJGB2P

XJGB3P

XJGB4P

APPLICATIONS

The JVS Series surge protection devices prevent surges and transient overvoltages conducted through AC power distribution boards from damaging electronic devices and electronic control systems used in process control, factory automation, machinery automation and electric systems in general.

In case of local or remote lightning strokes, JVS surge suppressors limit the residual overvoltage to values coordinated with Overvoltage Category II, as used on most electronic control systems, panels and electronic devices such as PLCs, DCSs, industrial PCs, power supplies and motor drives or any other electronic devices.

Adjustable electronic overcurrent protection from 1...10 A / 24 Vdc



According to the new EN60204-1 Std. it is **compulsory** to protect wires on SELV-PELV lines against the effects of surges. The standard requires that surge protection devices on 24Vdc cut the fault off before the 24 Vdc control drops below 21.6 V, disconnecting power to controls and preventing the starting of emergency and safety functions.

According to EN 60204-1 and EN 61131-1 and -2, surge protection devices on SELV-PELV lines must be able to disconnect shorts within 10ms and dangerous surges within 5s. The use of power supplies with high output surge capacity and precise and quick protection devices enables to cut faults off before 24V drops below 21.6V disconnecting power to controls.

Fuses and magneto-thermic switches on 24 Vdc lines do not have I / t features enabling to quickly and precisely cut faults off; moreover fuses may be replaced with different types thus altering the system's protection and safety.

The correct coordination of the circuitry into which the surge protection device is incorporated must take into account the line's total R: R connections + R wires + R protection + residual R of the damaged load. R total value must always enable that the protection device's tripping current may flow in the circuit; it is also important to avoid undersizing the protection device in order to prevent inconvenient trips due to the load's breakaway starting I, or oversizing it thus increasing t of intervention.

The whole circuitry made up of power supply, surge protection device, wires and connections must be designed so as to enable the safe interruption of surges within 5s before 24 Vdc drops below 21.6 Vdc. This condition may be met using Cabur's power supplies - series CSF and CSG - dimensioned to supply high output surge (>+50% of rat.I for >5s) and electronic surge protection devices with CEP System which are more precise and quicker than magneto-thermic switches and devices whose tripping t does not depend upon ambient T and may be reset with local or remote controls.

Features of protection devices

Mgts have two different intervention curves: Thermal and Magnetic. The magnetic relay trips exclusively in the event of a short with different I / t curves: thermal relays have all the same intervention curve, regardless of the mgt curve and in the event of a surge, they operate as described in figure 2: surge currents $1.13 \times I_n$ are cut in >1h and with surges $> 1.45 \times I_n$, the tripping takes place in a few minutes.

The disconnection of short currents is carried out by a magnetic relay whose tripping t goes from 0.01 to 0.1 sec, with very high currents which the power supply may not be able to supply; an mgt C5 used on DC has >70A safe tripping, a current that only power supplies with much higher rated I, i.e. 40A, may be able to supply (and not all of them) and that can not be supplied by 10A power supplies.

Using mgt as surge protection device, if the power supply has a surge I 1.2 times its rat. I, disconnection will take place in 20...60 min, while with 2.5 currents higher than rat.I it will take place between 25 sec. and 2 min., depending on amb.T., whose times are too long to ensure the stability of 24V, for protecting wires and the selectivity of protection devices. In the event of a failure - until the protection device trips - the power supply remains with a higher surge of $I_n \times 1.5 \times 5s$ and 24V drops below 21.6V leaving standard functions and most of all safety functions with no power supply.

Selectivity of protection devices

In the event of a surge or a short, only the damaged circuit is disconnected by its protection device with no repercussions on the supply of the other loads. This function is obtained with power supplies having high surge capacity and quick and precise protection devices.

CEP system - a smart system for current's control

CEP "recognizes" surges at their lowest and more precise stage and disconnects the damaged circuit as quickly as possible. For an excellent flexible use, the CEP system allows to set 10 tripping currents ranging from 1A to 10A in 1A steps and 3 intervention curves "Fast - Normal - Delayed" (see figure 3).

The protection status is displayed by two leds and by a remote alarm transistor output; the load may be activated / deactivated by pressing a button on the front (figure 5) or by the PLC remote control. The possibility of separately controlling single channels is useful during installation, because the various components may be separately activated and tested and - in big systems - the remote control may be used in order to gradually activate loads thus preventing simultaneous overloads when the system is started up. Another important features in terms of safety is the possibility of manually disconnecting the load, which means that even when protection devices are reset from the remote control, the load will remain inactive thus preventing dangerous situations.



figure 1

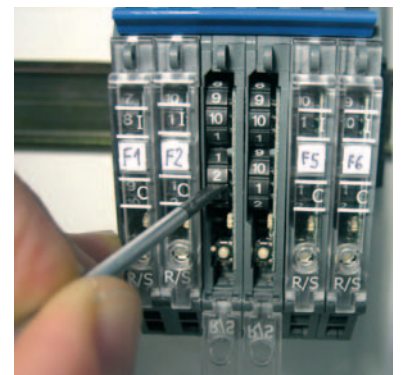


figure 3

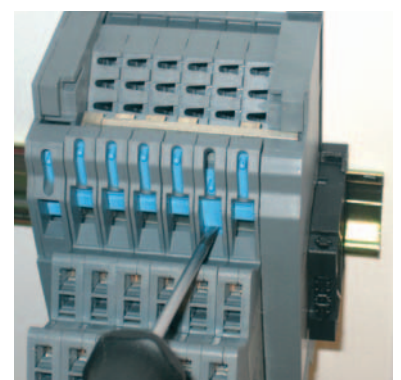


figure 4

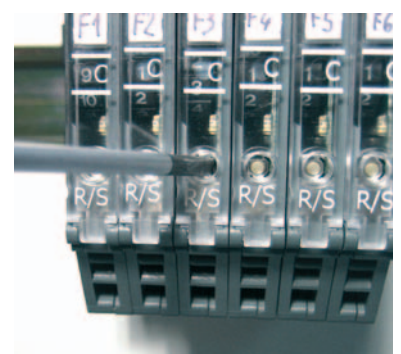
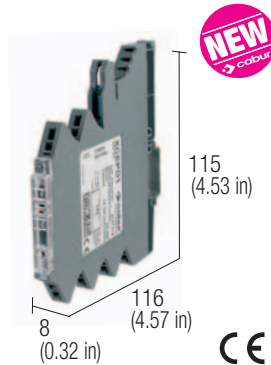


figure 5

Programmable electronic overcurrent protection 1...10 A / 24 Vdc

- Programmable from 1 A to 10 A in 1 A steps
- 3 programmable characteristic curves
- Remote or local ON/OFF control
- Status signal with LED and remote signal
- Slide contact for the manual load disconnection
- Sealable front cover allows to protect the set up of the protection

UL pendant



CE



- 1) sealable front cover
- 2) current selector
- 3) identification label
- 4) characteristic curve selector
- 5) ste/reset button

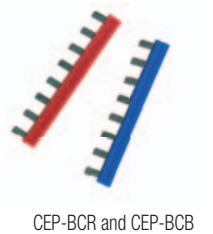
NOTES

The measures include the overall dimensions and the fixing to the guide. (1) Version available upon request; for information call our sales department, local agent or representative (2) Il comando remoto avviene tramite impulsi a 24 Vdc. La durata degli impulsi dovrà essere: ON = impulso > 1 s / OFF = impulso > 100 ms e < 800 ms (3) The three standard intervention curves are described in the graphics; the C EP-D3 Version is also provided with a curve programmable through a software

BLOCK DIAGRAM

VERSIONS	
With overload indication	
With status indication (ON/OFF)	
With one wire bus	
INPUT TECHNICAL DATA	
Rated voltage	
Rated current	
Max system current	
Protection	
Remote control ON/OFF	
OUTPUT TECHNICAL DATA	
Rated voltage	
Current min. / max.	
Programmable characteristic curves	
Switch ON capacity	
Status indication	
Status display	
GENERAL TECHNICAL DATA	
Operating temperature range	
Input/output isolation	
Protection degree	
Reference Standards	
Connection terminal	
Housing material	
Approx. weight	
Mounting information	
MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Distribution kit (terminal + end bracket)	
Distribution rail (busbar)	
Insulation cover for distribution rail	
Plug-in jumper	red
	blue
Marking tag	

Cod. XCEPD1		Cod. XCEPD3	
CEP-D1			
	(1)		
		CEP-D3	
24 Vdc (range 18...32 Vdc)			
10 A dc max.			
40 A dc with CEP-RCC copper rail			
Internal against reverse polarity			
24 Vdc external pulse		24 Vdc external pulse and by software (2)	
24 Vdc (voltage drop <170 mV @ Un / In)			
1...10 A dc programmable in 10 step of 1 A			
slow, medium, fast		slow, medium, fast and a special programmable custom curve (3)	
10.000 µF			
green LED: fixed = ok, flashing = lout at 90% of the nominal, red LED: fixed = output manually switched off, slow flashing = overcurrent, quick flashing = error			
open collector transistor (overcurrent status)	open collector transistor (ON/OFF status)	open collector transistor (programmable status)	
-25...+60°C, derating Imax. 8 A over 40°C			
3 kVac / 60 s SELV output			
IP 20 IEC 529, EN60529			
EN60950-1, EN61131-1, EN61131-2, EN60898, EN60947-4-1, EN50081			
0.25...2.5 mm² fixed screw type			
PA 6.6 (UL94V-0, NFF I2, F2)			
120 g (4.24 oz)			
vertical on rail, adjacent without gap, we recommend the use of end brackets			
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
—			
CEP-SS	(cod. XCEPSS)		
CEP-RCC	(cod. XCEPRCC)		
CEP-RCP	(cod. XCEPRCP)		
CEP-BCR	(cod. XCEPBCR)		
CEP-BCB	(cod. XCEPBCB)		
CEP-MTW	(cod. XCEPMTW)		
	(8 poles)		
	(8 poles)		
	(table with 50 tags)		



CEP-BCR and CEP-BCB

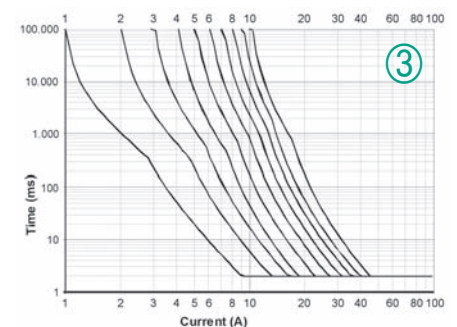
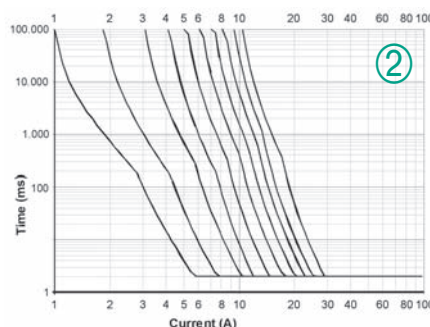
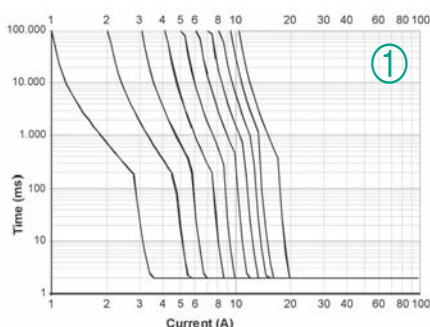


CEP-MTW



CEP-SS

- Intervention curves:
- 1) fast
 - 2) medium
 - 3) slow



EMI filters quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

3-phase filter without neutral wire 400-480 Vac

Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
7 A	20	60	60	60	50	35	25	60	65	60	55	40	XFTDV07ST2	65
16 A	15	50	55	60	50	35	25	55	60	60	55	40	XFTDV16ST2	65
30 A	15	50	55	60	50	35	25	55	60	60	55	40	XFTDV30ST2	65
42 A	55	70	70	45	35	20	45	45	45	45	45	30	XFTDV42ST2	65
55 A	15	55	55	55	50	35	25	55	60	60	50	40	XFTDV55ST2	65
75 A	15	55	55	55	50	30	20	50	50	50	55	40	XFTDV75ST2	65
100 A	35	50	45	25	15	7	30	35	35	35	30	7	XFTDV100ST2	65
150 A	20	30	40	45	40	30	30	40	40	45	40	25	XF150TDS84C	66
180 A	20	30	40	45	40	30	30	40	40	45	40	25	XF180TDS84C	66
200 A	55	60	55	30	20	—	45	30	25	10	10	5	XF200TDDS84C	67
300 A	30	30	23	10	8	5	35	30	25	14	10	5	XF300TDS84C	68
400 A	30	30	20	10	5	2	30	30	20	10	8	2	XF400TDS84C	68
500 A	45	25	20	10	5	2	40	30	25	10	10	5	XF500TDS84C	68
600 A	25	25	20	10	5	2	40	30	25	10	10	5	XF600TDS84C	68

3-phase filter with neutral wire 400-480 Vac

Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
10 A	10	20	20	20	30	25	10	20	25	25	30	30	XF10TYG9	70
16 A	25	50	50	50	45	30	35	55	60	60	40	30	XF16TYT2	69
20 A	10	15	20	35	40	25	10	15	20	20	25	20	XF20TYS9	70
25 A	25	50	50	50	45	30	35	55	60	60	40	30	XF25TYT2	69
36 A	25	50	50	50	40	25	30	50	55	50	40	30	XF36TYT2	69
50 A	25	45	45	40	40	25	30	50	50	40	40	30	XF50TYT2	69
100 A	10	20	25	30	30	20	30	40	40	35	35	25	XF100TYT2	69

Single-cell single-phase filter 120-250 Vac

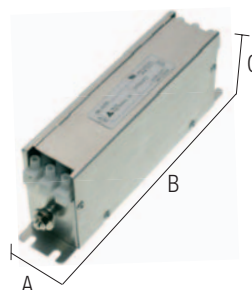
Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
3 A	20	30	35	45	50	45	7	35	50	45	45	45	XF03DKBG5B	71
6 A	15	20	25	40	45	45	10	20	45	45	50	45	XF06DKBG5B	71
12 A	10	20	22	35	45	40	10	20	40	45	45	45	XF12DKBG5B	71
16 A	10	18	20	35	45	30	10	18	40	40	40	35	XF16DKCG5B	71
20 A	10	18	20	30	35	35	10	12	35	35	40	40	XF20DKCG5B	71
30 A	10	25	30	45	50	35	12	40	50	50	50	45	XF30DKCS5B	71

Double-cell single-phase filter 120-250 Vac

Current	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)						Cat. No.	Page
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz		
3 A	45	60	60	55	45	45	12	45	45	45	45	45	XF03DPCG5C	72
6 A	30	50	60	55	50	35	8	45	45	45	45	45	XF06DPCG5C	72
12 A	15	25	35	55	55	35	12	40	40	35	35	40	XF12DPCG5C	72
16 A	20	35	45	60	50	35	12	40	40	45	45	50	XF16DPCG5C	72
20 A	15	40	45	50	50	40	12	45	45	45	35	50	XF20DPCG5C	72
30 A	10	30	35	55	45	30	18	45	50	40	40	40	XF30DPGS5C	72

3-phase filter without neutral TDV series

- Models from 7 to 130 A
- High attenuation from 50 kHz to 30 MHz
- High attenuation also with long cables
- Minimum space on the panel

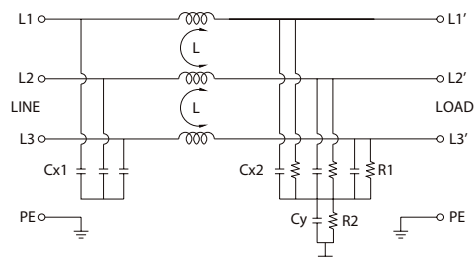


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

(1) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS

Rated current	Type	Cat. No.
7 A	F 07 TDV ST2	XFTDV07ST2
16 A	F 16 TDV ST2	XFTDV16ST2
30 A	F 30 TDV ST2	XFTDV30ST2
42 A	F 42 TDV ST2	XFTDV42ST2
55 A	F 55 TDV ST2	XFTDV55ST2
75 A	F 75 TDV ST2	XFTDV75ST2
100 A	F 100 TDV ST2	XFTDV100ST2

Dimensions

A	B	C	Weight (kg)
42 (1,65 in)	192 (7,56 in)	72 (2,84 in)	
47 (1,85 in)	252 (9,93 in)	72 (2,84 in)	
52 (2,05 in)	272 (10,72 in)	87 (3,43 in)	
52 (2,05 in)	312 (12,29 in)	87 (3,43 in)	
87 (3,43 in)	252 (9,93 in)	92 (3,62 in)	
92 (3,62 in)	272 (10,72 in)	137 (5,4 in)	
90 (3,55 in)	270 (10,64 in)	150 (5,91 in)	

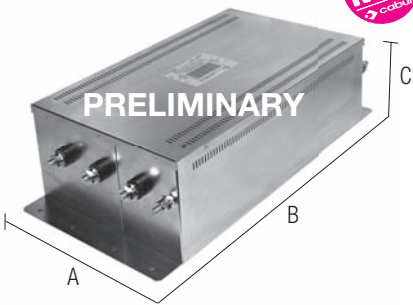
GENERAL TECHNICAL DATA

Rated voltage	480 Vac $\pm$ 10%
Rated current	see versions table
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	30 mA
Operating temperature range	-25...+85°C
Insulation L/L	1.45 KVdc / 60 s (1)
Insulation L/PE	2.25 KVdc / 60 s (1)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	screw terminals
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 07 TDV ST2	20	60	60	60	50	35	25	60	65	60	55	40
F 16 TDV ST2	15	50	55	60	50	35	25	55	60	60	55	40
F 30 TDV ST2	15	50	55	60	50	35	25	55	60	60	55	40
F 42 TDV ST2	55	70	70	45	35	20	45	45	45	45	45	30
F 55 TDV ST2	15	55	55	55	50	35	25	55	60	60	50	40
F 75 TDV ST2	15	55	55	55	50	30	20	50	50	50	55	40
F 100 TDV ST2	35	50	45	25	15	7	30	35	35	35	30	7

3-phase filter without neutral TDS series

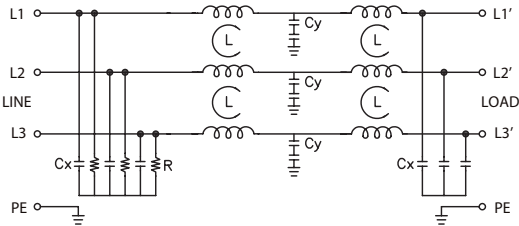
- Models from 150 to 180 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables



NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.
(1) Version available upon request; for information call our sales department, local agent or representative
(2) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



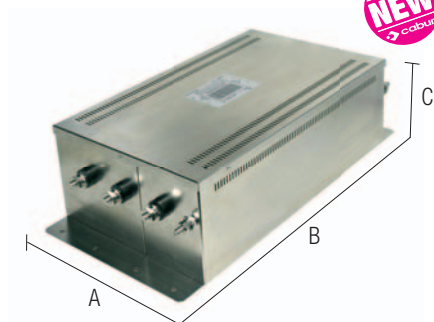
VERSIONS		
Rated current	Type	Cat. No.
150 A	F 150 TDS 84C	XF150TDS84C (1)
180 A	F 180 TDS 84C	XF180TDS84C (1)
GENERAL TECHNICAL DATA		
Rated voltage		
Rated current		
Frequency		
Leakage current at 480 Vac 60 Hz		
Operating temperature range		
Insulation line/line		
Insulation line/PE		
Overvoltage category/Pollution degree		
Protection degree		
Connection terminal		
Housing material		
Approx. weight		
Mounting information		

Dimensions			Weight (kg)
A	B	C	
202 (7,96 in)	390 (15,37 in)	122 (4,81 in)	
202 (7,96 in)	390 (15,37 in)	122 (4,81 in)	
480 Vac $\pm$ 10%			
see versions table			
50...60 Hz			
500 mA			
-25...+85°C			
1 KVdc / 60 s (2)			
1 KVdc / 60 s (150A) – 2.25 KVdc / 60 s (180A) (2)			
—			
IP 20 IEC 529, EN60529			
with screw bolts			
metal			
see versions table			
on the panel with screws			

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 150 TDS 84C	20	30	40	45	40	30	30	40	40	45	40	25
F 180 TDS 84C	20	30	40	45	40	30	30	40	40	45	40	25

3-phase filter without neutral serie TDDS

- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables



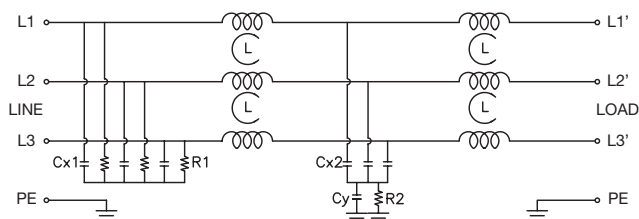
NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

(1) Version available upon request; for information call our sales department, local agent or representative

(2) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS		
Rated current	Type	Cat. No.
200 A	F 200 TDDS 84C	XF200TDDS84C (1)

GENERAL TECHNICAL DATA

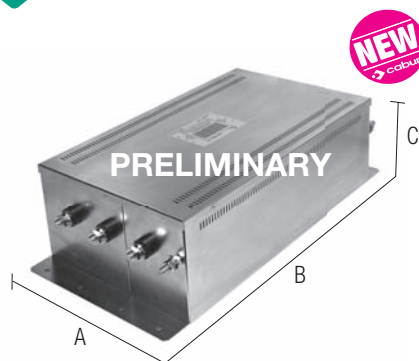
Rated voltage	480 Vac $\pm$ 10%
Rated current	200 A
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	500 mA
Operating temperature range	-25...+85°C
Insulation line/line	1 KVdc / 60 s (2)
Insulation line/PE	1.8 KVdc / 60 s (2)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	with screw bolts
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Dimensions			Weight (kg)
A	B	C	
240 (9,46 in)	477 (18,79 in)	140 (5,52 in)	

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 200 TDDS 84C	55	60	55	30	20	/	45	30	25	10	10	5

3-phase filter without neutral TDSS series

- Models from 300 to 600 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables

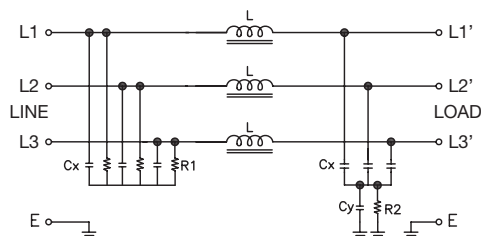


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

- (1) Version available upon request; for information call our sales department, local agent or representative
- (2) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM

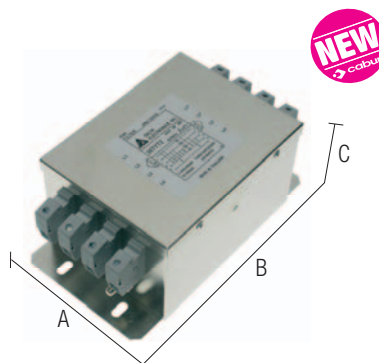


VERSIONS			Dimensions			Weight
Rated current	Type	Cat. No.	A	B	C	(kg)
300 A	F 300 TDSS 84C	XF300TDSS84C (1)	242 (9,53 in)	525 (20,69 in)	142 (5,59 in)	
400 A	F 400 TDSS 84C	XF400TDSS84C (1)	242 (9,53 in)	525 (20,69 in)	142 (5,59 in)	
500 A	F 500 TDSS 84C	XF500TDSS84C (1)	272 (10,72 in)	680 (26,79 in)	182 (7,17 in)	
600 A	F 600 TDSS 84C	XF600TDSS84C (1)	272 (10,72 in)	680 (26,79 in)	182 (7,17 in)	
GENERAL TECHNICAL DATA						
Rated voltage	480 Vac $\pm$ 10%					
Rated current	see versions table					
Frequency	50...60 Hz					
Leakage current at 480 Vac 60 Hz	1000 mA					
Operating temperature range	-25...+85°C					
Insulation line/line	0.6 KVdc / 60 s (2)					
Insulation line/PE	1 KVdc / 60 s (2)					
Overvoltage category/Pollution degree	—					
Protection degree	IP 20 IEC 529, EN60529					
Connection terminal	with flat plug					
Housing material	metal					
Approx. weight	see versions table					
Mounting information	on the panel with screws					

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 300 TDSS 84C	30	40	40	25	20	15	40	40	50	35	30	20
F 400 TDSS 84C	25	35	30	20	20	10	40	35	35	20	15	10
F 500 TDSS 84C	25	30	30	20	15	10	30	30	30	20	15	10
F 600 TDSS 84C	25	25	25	15	15	10	25	25	25	15	10	10

3-phase filter with neutral serie TYT

- Models from 16 to 100 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables

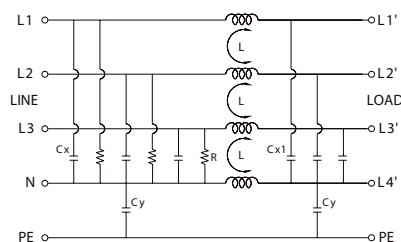


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

(1) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



VERSIONS

Rated current	Type	Cat. No.
16 A	F 16 TYT2	XF16TYT2
25 A	F 25 TYT2	XF25TYT2
36 A	F 36 TYT2	XF36TYT2
50 A	F 50 TYT2	XF50TYT2
100 A	F 100 TYT2	XF100TYT2

Dimensions

A	B	C	Weight (kg)
107 (4,22 in)	191,5 (7,55 in)	82 (3,23 in)	
107 (4,22 in)	191,5 (7,55 in)	82 (3,23 in)	
107 (4,22 in)	191,5 (7,55 in)	82 (3,23 in)	
124 (4,89 in)	194 (7,64 in)	104 (4,1 in)	
162 (6,38 in)	252 (9,93 in)	132 (5,2 in)	

GENERAL TECHNICAL DATA

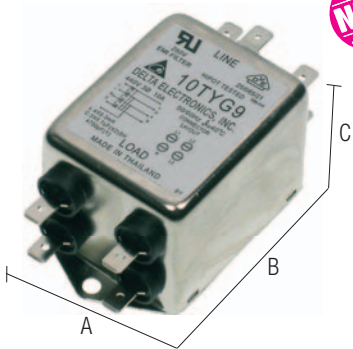
Rated voltage	440 Vac $\pm$ 10%
Rated current	see versions table
Frequency	50...60Hz
Leakage current at 480 Vac 60 Hz	3 mA
Operating temperature range	-25...+85°C
Insulation line/line	1.45 KVdc / 60 s (1)
Insulation line/PE	2.25 KVdc / 60 s (1)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	screw terminals
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 16 TYT2	25	50	50	50	45	30	35	55	60	60	40	30
F 25 TYT2	25	50	50	50	45	30	35	55	60	60	40	30
F 36 TYT2	25	50	50	50	40	25	30	50	55	50	40	30
F 50 TYT2	25	45	45	40	40	25	30	50	50	40	40	30
F 100 TYT2	10	20	25	30	30	20	30	40	40	35	35	25



Compact 3-phase filter with neutral TY series

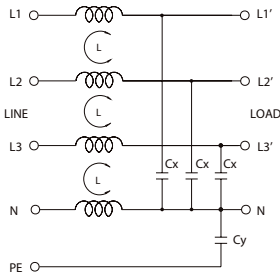
- Models from 10 to 20 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables
- Excellent quality/price/performance ratio



NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.
(1) According to EN60950 insulation tests on input side must be made only with DC instruments.

BLOCK DIAGRAM



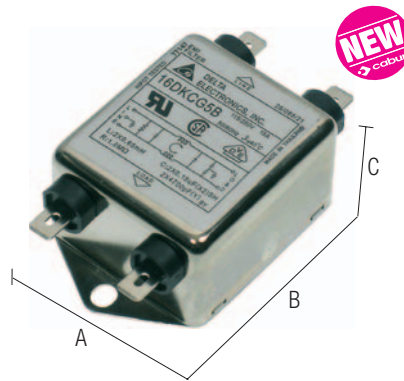
VERSIONS		
Rated current	Type	Cat. No.
10 A	F 10 TYG9	XF10TYG9
20 A	F 20 TYS9	XF20TYS9
GENERAL TECHNICAL DATA		
Rated voltage		
Rated current		
Frequency		
Leakage current at 480 Vac 60 Hz		
Operating temperature range		
Insulation line/line		
Insulation line/PE		
Overvoltage category/Pollution degree		
Protection degree		
Connection terminal		
Housing material		
Approx. weight		
Mounting information		

Dimensions			Weight (kg)
A	B	C	
50 (1,97 in)	85 (3,35 in)	44 (1,73 in)	
50 (1,97 in)	97 (3,82 in)	44 (1,73 in)	
440 Vac ± 10%			
see versions table			
50...60Hz			
0.5 mA			
-25...+85°C			
1.45 KVdc / 60 s (1)			
2.25 KVdc / 60 s (1)			
—			
IP 20 IEC 529, EN60529			
with flat plug (10 A) and with screw terminals (20 A)			
metal			
see versions table			
on the panel with screws			

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 10T YG9	10	20	20	20	30	25	10	20	25	25	30	30
F 20 TYS9	10	15	20	20	25	20	10	15	20	20	25	20

Single-cell single-phase filter DK series

- Models from 3 to 30 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables
- Minimum space on the panel

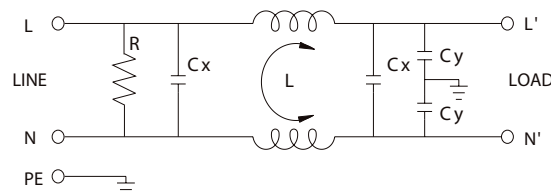


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

- (1) 0.25 mA @ 115 Vac e 0.45 mA @ 250 Vac for models from 3...20 A - 1 mA @ 115 Vac e 2 mA @ 250 Vac for the model of 30 A.
- (2) According to EN60950 insulation tests on input side must be made only with DC instruments.
- (3) With flat plug for models from 3...20 A – with screw bolt for the model from 30 A.

BLOCK DIAGRAM



VERSIONS		
Rated current	Type	Cat. No.
3 A	F 03 DK BG5B	XF03DKBG5B
6 A	F 06 DK BG5B	XF06DKBG5B
12 A	F 12 DK BG5B	XF12DKBG5B
16 A	F 16 DK CG5B	XF16DKCG5B
20 A	F 20 DK CG5B	XF20DKCG5B
30 A	F 30 DK CS5B	XF30DKCS5B

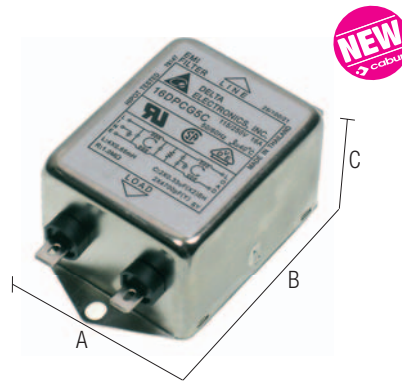
Dimensions			Weight (kg)
A	B	C	
64,5 (2,54 in)	34 (1,34 in)	30 (1,18 in)	
64,5 (2,54 in)	34 (1,34 in)	30 (1,18 in)	
64,5 (2,54 in)	34 (1,34 in)	30 (1,18 in)	
45,5 (1,79 in)	71,5 (2,82 in)	30 (1,18 in)	
51,8 (2,04 in)	84,8 (3,34 in)	30 (1,18 in)	
56,5 (2,23 in)	114 (4,49 in)	46,4 (1,83 in)	

GENERAL TECHNICAL DATA	
Rated voltage	115–250 Vac $\pm$ 10%
Rated current	see versions table
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	0.25...1 mA / 0.45...2 mA (1)
Operating temperature range	–25...+85°C
Insulation line/line	1.45 KVdc / 60 s (2)
Insulation line/PE	2.25 KVdc / 60 s (2)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	with flat plug (from 3 to 20 A) / with screw bolt (30 A) (3)
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 03 DK BG5B	20	30	35	45	50	45	7	35	50	45	45	45
F 06 DK BG5B	15	20	25	40	45	45	10	20	45	45	50	45
F 12 DK BG5B	10	20	22	35	45	40	10	20	40	45	45	45
F 16 DK CG5B	10	18	20	35	45	30	10	18	40	40	40	35
F 20 DK CG5B	10	18	20	30	35	35	10	12	35	35	40	40
F 30 DK CS5B	10	25	30	45	50	35	12	40	50	50	50	45

Double-cell single-phase filter DP series

- Models from 3 to 30 A
- High attenuation from 150 kHz to 30 MHz
- High attenuation also with long cables
- Minimum space on the panel

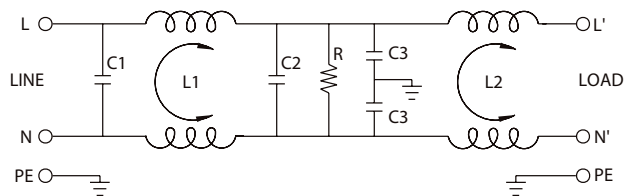


NOTES

Dimensions and diagrams are indicative, for more details see the products data sheet.

- (1) 0.25 mA @ 115 Vac e 0.45 mA @ 250 Vac for models from 3...20 A - 1 mA @ 115 Vac e 2 mA @ 250 Vac for the model of 30 A.
- (2) According to EN60950 insulation tests on input side must be made only with DC instruments.
- (3) With flat plug for models from 3...20 A – with screw bolt for the model from 30 A.

BLOCK DIAGRAM



VERSIONS

Rated current	Type	Cat. No.
3 A	F 03 DP CG5C	XF03DPCG5C
6 A	F 06 DP CG5C	XF06DPCG5C
12 A	F 12 DP CG5C	XF12DPCG5C
16 A	F 16 DP CG5C	XF16DPCG5C
20 A	F 20 DP CG5C	XF20DPCG5C
30 A	F 30 DP GS5C	XF30DPGS5C

GENERAL TECHNICAL DATA

Rated voltage	115–250 Vac ± 10%
Rated current	see versions table
Frequency	50...60 Hz
Leakage current at 480 Vac 60 Hz	0.25...1 mA / 0.45...2 mA (1)
Operating temperature range	–25...+85°C
Insulation line/line	1.45 KVdc / 60 s (2)
Insulation line/PE	2.25 KVdc / 60 s (2)
Overvoltage category/Pollution degree	—
Protection degree	IP 20 IEC 529, EN60529
Connection terminal	with flat plug (from 3 to 20 A) / with screw bolt (30 A) (3)
Housing material	metal
Approx. weight	see versions table
Mounting information	on the panel with screws

Dimensions			Weight (kg)
A	B	C	
84,8 (3,34 in)	75 (2,96 in)	52 (2,05 in)	
152,9 (6,02 in)	143 (5,63 in)	51,3 (2,02 in)	
84,8 (3,34 in)	75 (2,96 in)	52 (2,05 in)	
56,5 (2,23 in)		46,4 (1,83 in)	

Type	Common mode (L / PE) attenuation (dB)						Differential mode (L / L) attenuation (dB)					
	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz	0.15 MHz	0.5 MHz	1 MHz	5 MHz	10 MHz	30 MHz
F 03 DP CG5C	45	60	60	55	45	45	12	45	45	45	45	45
F 06 DP CG5C	30	50	60	55	50	35	8	45	45	45	45	45
F 12 DP CG5C	15	25	35	55	55	35	12	40	40	35	35	40
F 16 DP CG5C	20	35	45	60	50	35	12	40	40	45	45	50
F 20 DP CG5C	15	40	45	50	50	40	12	45	45	40	35	50
F 30 DP GS5C	10	30	35	55	45	30	18	45	50	40	40	40

Analog converters

Applications of analog converters and galvanic isolation

These convert electric signals generated by sensors for measuring physical quantities such as: temperature (RTD thermocouples and PT100 thermal resistors), frequency (proximity, contacts, photoelectric cells), current (HV, Hall sensors), resistance (potentiometers), voltage, pressure, level etc., into standardised electrical signals, adapting them to the I/O of industrial PLC's, DCS's, and PC's (control), or they convert a given analog signal into a different one, adapting it to the inputs/outputs of the control, or allow remote transmission of the signal without interference via galvanic isolation (Fig. 1).

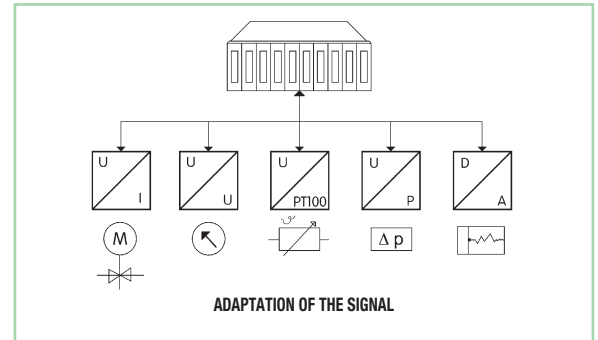


fig. 1

Adaptation between sensor output signal and control input signal:

physical quantity measured	sensor output	converter input		converter output	
Temperature	Normally one of the signals indicated in the next column	0 – 60 mV	±60 mV	0 – 5 V	±5 V
Frequency		0 – 100 mV	±100 mV	0 – 10 V	±10 V
Current		0 – 500 mV	±500 mV	0 – 20 mA	±20 mA
Resistance		0 – 1 V	±1 V	4 – 20 mA	
Voltage		0 – 5 V	±5 V		
Pressure		0 – 10 V	±10 V		
Level measurement		0 – 5 mA	±5 mA		
		0 – 10 mA	±10 mA		
	0 – 20 mA	±20 mA			
		0 – 20 mA			

Remote transmission of the signal:

The voltage signals reach a max. distance of 10-20 m, beyond this they lose reliability and become very sensitive to earth and induced interference (to transmit at a distance > 20 m a voltage signal must be converted into a current signal and galvanically isolated) (Fig. 2).

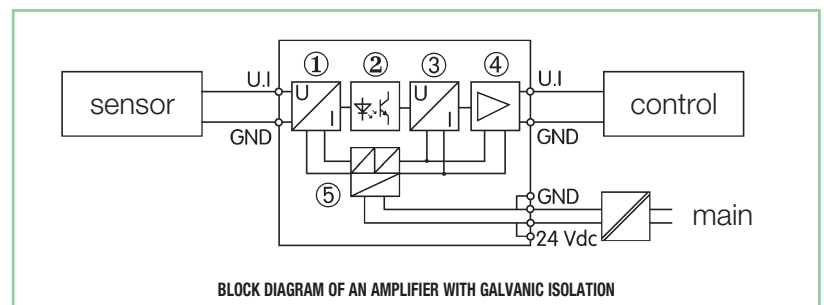


fig. 2

- current signals exceed 300 m of transmission distance and are less sensitive to induced interference. In order to transmit a current signal at a distance galvanic isolation is required.

- ① Input amplifier
- ② Opto-isolator
- ③ Signal adapter
- ④ Output amplifier
- ⑤ DC/DC converter

Galvanic isolation of the signal:

- electrically isolates and separates the circuit of the sensor from the control and power supply circuits. Thus each circuit operates with reference to its own zero potential which, being isolated from other circuits, cannot be altered by differences in potential always present between different earth references (Figs. 3 and 4).

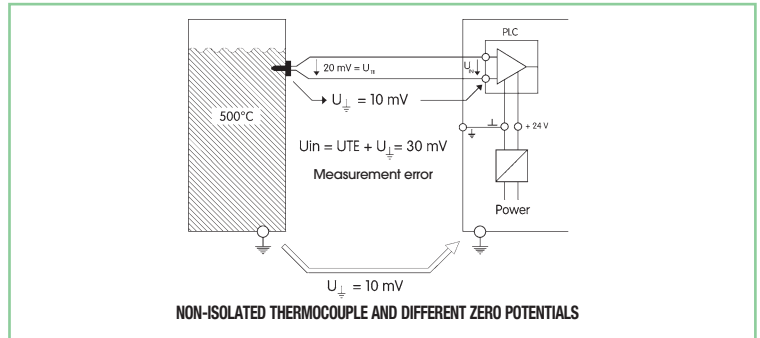


fig. 3

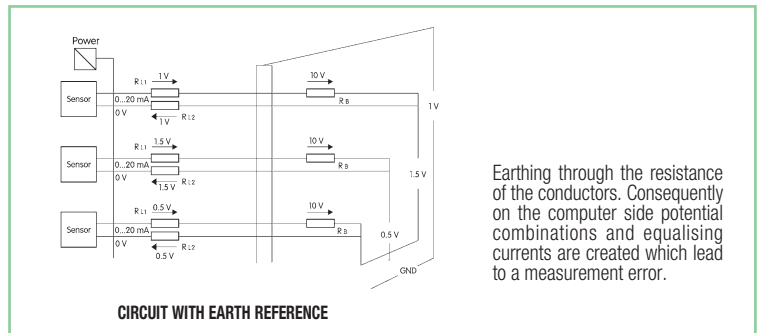


fig. 4

- isolates and separates the various zero potentials between power supply, control and sensors/actuators;
- allows transmission of the signal without errors or interference and with greater reliability;
- the higher the isolation (in KV), the greater the security of transmission where there are zero potentials, electromagnetic interference, transients (lightning, discharges etc.) (Fig. 5).

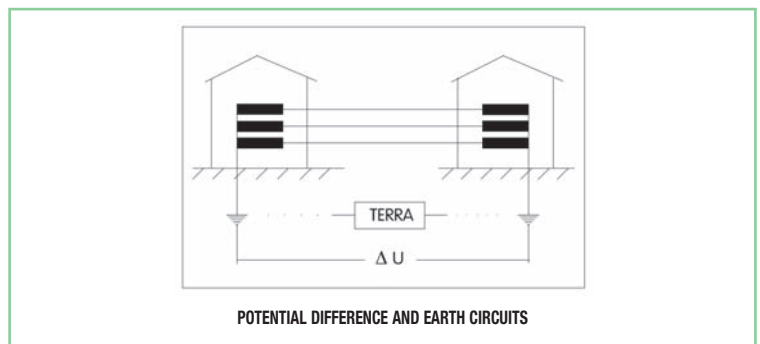


fig. 5

Galvanic isolation is necessary when:

- the distance between control and sensor/actuator is more than 20 m;
- the earth references are different;
- the zero potentials are high, or potentially high in the case of discharges or earth dispersed currents;
- electromagnetic interference is present;
- the signal cables are wired in conduits with power cables (Fig. 6).

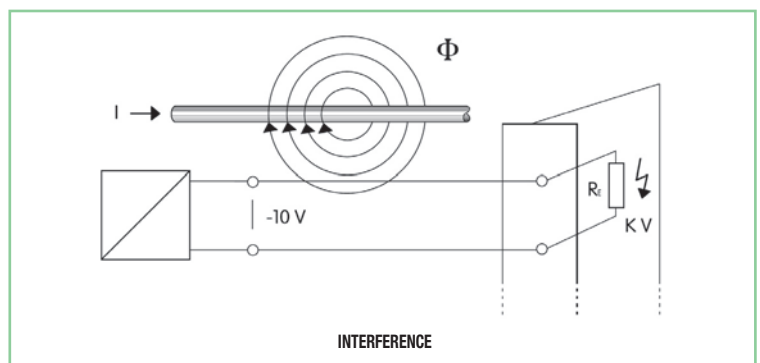


fig. 6

Analog converters selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Analog converters and isolators

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...60 / 0...100 / 0...500 mV ±60 / ±100 / ±500 mV 0...1 / 0...2 / 0...5 / 0...10 V ±1 / ±2 / ±5 / ±10 V 0...5 / 0...10 / 0...20 / 4...20 mA ±5 / ±10 / ±20 mA	0...5 / 0...10 / ±5 / ±10 V 0...20 / 4...20 / ±20 mA	3 ways	24 Vdc	(1) (4)	CA-PI/PO1	XSSAPIPO1	78
0...60 / 0...100 / 0...300 / 0...500 mV 0...1 / 0...10 / 0...20 / 2...20 V 0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(1) (4)	CWUAA 6-0516	X756516	79
0...60 / 0...100 / 0...300 / 0...500 mV 0...1 / 0...10 / 0...20 / 2...20 V 0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(1) (5)	CWUAA 6-0517	X756517	79
0...10 V 0...20 / 4...20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(1) (4)	CWNAA 7-0539	X756539	80
0...10 V 0...20 / 4...20 mA	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(1) (5)	CWNAA 6-0510	X756510	80
0...10 V 0...20 / 4...20 mA	0...10 V 0...20 / 4...20 mA	2 ways	24 Vac/dc	(1) (4)	CWNAA 6-0509	X756509	81
0...10 V	0...10 V	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0530	X756530	82
0...10 V	0...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0531	X756531	82
0...10 V	4...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0532	X756532	82
0...20 mA	0...10 V	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0533	X756533	83
0...20 mA	0...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0534	X756534	83
0...20 mA	4...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0535	X756535	83
4...20 mA	0...10 V	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0536	X756536	84
4...20 mA	0...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0537	X756537	84
4...20 mA	4...20 mA	3 ways	24 Vac/dc	(2) (4)	CWAA 6-0538	X756538	84
0...10 V	0...10 V	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0500	X756500	85
0...10 V	0...20 mA	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0501	X756501	85
0...10 V	4...20 mA	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0502	X756502	85
0...20 mA	0...10 V	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0503	X756503	86
0...20 mA	0...20 mA	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0504	X756504	86
0...20 mA	4...20 mA	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0505	X756505	86
4...20 mA	0...10 V	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0506	X756506	87
4...20 mA	0...20 mA	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0507	X756507	87
4...20 mA	4...20 mA	2 ways	24 Vac/dc	(2) (4)	CWAA 6-0508	X756508	87
0...20 / 4...20 mA	0...20 / 4...20 mA	2 ways	—	(4)	CWPAA 7-0526	X756526	88
0...20 / 4...20 mA	0...20 / 4...20 mA	2 ways	—	(3) (4)	CWPAA 7-0527	X756527	88
0...10 V	0...50 / 0...100 Hz	2 ways	24 Vac/dc	(1)	CWNAF 6-0511	X756511	89
0...20 / 4...20 mA	0...1 / 0...10 kHz						
0...10 V 0...20 / 4...20 mA	0...50 / 0...100 Hz 0...1 / 0...10 kHz	3 ways	24...240 Vac/dc	(1)	CWNAF 6-0512	X756512	89

- Notes**
- (1) programmable input and output signal via DIP switches
- (2) single range input and output signal (not programmable), articles generally not in stock but available upon request, for info please contact our sales department
- (3) two channels version
- (4) 1.5 KVac / 60 s two way isolation (input / output) or 1.5 KVac / 60 s three way isolation (input / output / supply)
- (5) 4 KVac / 60 s three way isolation (input / output / supply)
- (6) 0.5 KVac / 60 s two way isolation (input / output)

Analog / digital and digital / analog converters

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...10 V	8 BIT		24 Vdc		ADC08V10	XW000933	98
0...20 mA	8 BIT		24 Vdc		ADC08A0	XW000934	98
4...20 mA	8 BIT		24 Vdc		ADC08A4	XW000935	98
8 BIT	0...10 V		24 Vdc		DAC08V10	XW000936	99
8 BIT	0...20 mA		24 Vdc		DAC08A0	XW000937	99
8 BIT	4...20 mA		24 Vdc		DAC08A4	XW000938	99

Analog converters selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Current converter

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...50 A ac	adjustable threshold 1...30 A	2 ways	24 Vdc	(3)	CCIS-1	XCCIS1	94
0...50 A ac	adjustable threshold 2...40 A	2 ways	24 Vdc	(4)	CCIS-R	XCCISR	94
0...1 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	SW01VA	XW000928	95
0...5 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	SW05VA	XW000929	95
0...10 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	SW10VA	XW000930	95
0...20 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	SW20VA	XW000931	96
0...50 A ac/dc	0...10 V 0...20 / 4...20 mA	2 ways	24 Vdc	(2)	SW50VA	XW000932	96

Notes

(1) single I/O version

(2) three programmable output signals

(3) open collector threshold output

(4) threshold output with one changeover relay

Programmable frequency to analog signal converters

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...28.8 kHz	0...10 V 0...20 / 4...20 mA	2 ways	24 Vac/dc	(1)	CWNFA 6-0524	X756524	96

Notes

(1) 21 input signals and 3 programmable output signals

(2) 3 input signals and 3 programmable output signal

Analog to threshold signal converters

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
0...10 V	relé 1 exchange	2 ways	24 Vdc	(1)	GWMV10	XW000926	100
0...20 mA	relé 1 exchange	2 ways	24 Vdc	(2)	GWMAO	XW000927	100

Notes

(1) programmable threshold output 0.3...10 V and 0.1...10 V hysteresis

(2) programmable threshold output 0.6...20 mA and 0.2...20 mA hysteresis

Load cells converters

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
Measuring bridge	0...10 V 0...20 / 4...20 mA		24 Vac/dc		CWBRA 6-0522	X756522	101

Analog converters selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Converters for temperature sensors

Sensor Type	Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
PT100, PT500, PT1000 Ni100, Ni1000 PTC, KTY Potentiometers 0...5 kOhm Thermocouples B, C, D, E, J, K, L, N, R, S, T, U	Programmable -200...+2400°C (-328...+4.352°F) according to sensor type	0...10 / 2...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(1)	CWTPT 7-0890	X756890	90
PT100 3 wires (RTD)	-50...+50°C (-58...+122°F) -50...+100°C (-58...+212°F) -50...+150°C (-58...+302°F) 0...+100°C (+32...+212°F) 0...+150°C (+32...+302°F) 0...+200°C (+32...+392°F) 0...+300°C (+32...+572°F) 0...+400°C (+32...+752°F)	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(2)	CWPT 6-0816	X756816	91
PT100 3 wires (RTD)	-50...+50°C (-58...+122°F) -50...+100°C (-58...+212°F) -50...+150°C (-58...+302°F) 0...+100°C (+32...+212°F) 0...+150°C (+32...+302°F) 0...+200°C (+32...+392°F) 0...+300°C (+32...+572°F) 0...+400°C (+32...+752°F)	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(2)	CWPT 6-0817	X756817	91
Thermocouples J (FeCuNi) and K (NiCrNi)	-50...+200°C (-58...+392°F) -50...+350°C (-58...+662°F) 0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F) 0...+600°C (+32...+1112°F) 0...+800°C (+32...+1472°F) 0...+1000°C (+32...+1832°F) 0...+1200°C (+32...+2192°F)	0...10 V 0...20 / 4...20 mA	3 ways	24 Vac/dc	(2)	CWTH 6-0844	X756844	92
Thermocouples J (FeCuNi) and K (NiCrNi)	-50...+200°C (-58...+392°F) -50...+350°C (-58...+662°F) 0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F) 0...+600°C (+32...+1112°F) 0...+800°C (+32...+1472°F) 0...+1000°C (+32...+1832°F) 0...+1200°C (+32...+2192°F)	0...10 V 0...20 / 4...20 mA	3 ways	24...240 Vac/dc	(2)	CWTH 6-0847	X756847	92
PT100 2 wires (RTD)	-50...+150°C (-58...+302°F) 0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F)	0...50 / 0...100 Hz 0...1 / 0...10 kHz	3 ways	24 Vac/dc	(2)	CWPTF 7-0811	X756811	93
Thermocouples J (FeCuNi)	0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F) 0...+600°C (+32...+1112°F)	0...50 / 0...100 Hz 0...1 / 0...10 kHz	3 ways	24 Vac/dc	(2)	CWTHF 7-0831	X756831	93
Thermocouples K (NiCrNi)	0...+200°C (+32...+392°F) 0...+400°C (+32...+752°F) 0...+600°C (+32...+1112°F)	0...50 / 0...100 Hz 0...1 / 0...10 kHz	3 ways	24 Vac/dc	(2)	CWTHF 7-0871	X756871	93

Notes

- (1) programmable input and output signals via software
(2) programmable input and output signals via dip-switch

Auxiliary power supply for sensors and potentiometers

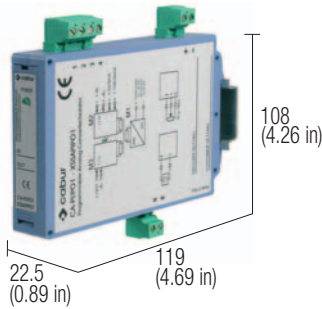
Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
24 Vdc	10 Vdc	2 Vie			CWCV 7-6184	X766184	102

NPN and PNP signal polarity inverter

Input	Output	Isolation	Power supply	Notes	Type	Cat. No.	Page
NPN (17...30 Vdc)	PNP				CI-NPN/PNP	XNPNPNP	103
PNP (17...30 Vdc)	NPN				CI-NPN/PNP	XNPNPNP	103

Programmable analog signal converter

- 19 input scales
- 7 output scales
- 1 SPST (NO) alarm contact
- IN/OUT isolation >3 kVAc
- Auxiliary supply output for loop-powered sensors
- Input for potentiometer

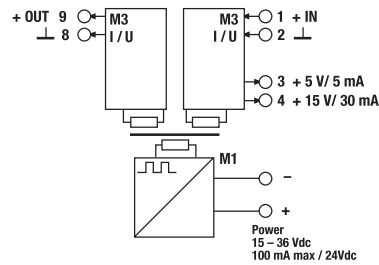


NOTES

The dimensions include the terminal blocks and the DIN clamp.

(1) The modules in stock are programmed and calibrated with 0 – 10 V and 0 – 15 V output. Modules programmed and calibrated for all other possible configurations can be supplied on request.

BLOCK DIAGRAM



VERSIONS

Cat. No. XSSAPIP01

CA-PI/P01

INPUT TECHNICAL DATA

Input signal (1)	19 programmable ranges (see Table 1)
Impedance voltage / current mode	1 M Ω / 50 Ω
Max. input voltage	15 V
Max. input current	30 mA

OUTPUT TECHNICAL DATA

Output signal (1)	7 programmable ranges (see Table 2)
Applicable load (voltage / current model)	≥ 10 K Ω / ≤ 500 Ω
Max. output voltage	12 V
Max. output current	25 mA

GENERAL TECHNICAL DATA

Supply voltage	15...36 Vdc
Rated current	100 mA max. @ 24 Vdc
Auxiliary DC feed output max. current	5 mA @ 5 Vdc / 30mA @ 15 Vdc
Gain error	< 0.1% FS
Offset error	< 0.05% FS
Linearity error	< 0.1% FS
Zero adjustment / Span adjustment	$\pm 10\%$ FS
Transmission frequency	400Hz...1kHz according to full-scale
Rise time	150 mV / μ s
Bandwidth	1 kHz @ -6 dB
Phase delay	< 10 μ s
I/O / supply isolation	> 3 kVAc / 60 s
Continuous voltage isolation	800 Vac max.
Reference Standard	IEC 664-1, DIN VDE0110.1
Overvoltage category/Pollution degree	III / 2
Operating temperature range	-10... +65°C
Δ T	5°C
Protection degree	IP 20 IEC 529, EN60529
ECM standards	EN 50081-2, EN 50082-2
Connection terminal	2.5 mm ² pluggable screw type (14 AWG)
Housing material	polyamide UL94V-0
Approx. weight	150 g (5.29 oz)
Mounting information	vertical on rail, allow 5 mm spacing between adjacent component

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Plug-in jumper	—
red	—
white	—
blue	—

TAB.1 - INPUT SELECTION TABLE

INPUT RANGE		SW1 (INPUT)							
UNIPOLAR	BIPOLAR	1	2	3	4	5	6	7	8
0 – 60 mV	± 60 mV								
0 – 100 mV	± 100 mV		•						
0 – 500 mV	± 500 mV			•					
0 – 1 V	± 1 V				•				
0 – 2 V	± 2 V						•		
0 – 5 V	± 5 V			•	•	•	•		
0 – 10 V	± 10 V								•
0 – 5 mA	± 5 mA			•					
0 – 10 mA	± 10 mA	•			•				
0 – 20 mA	± 20 mA	•					•		
4 – 20 mA	—	•					•		•

TAB.2 - OUTPUT SELECTION TABLE

OUTPUT RANGE	INPUT TYPE	SW2 (OUTPUT)								SW3
		1	2	3	4	5	6	7	8	
0 – 5 V	UNIP.	X		•				•		U
	BIP.	X	•	•				•	•	U
± 5 V	UNIP.	X		•				•		U
	BIP.	X		•				•		U
0 – 10 V	UNIP.	X		•						U
	BIP.	X	•	•				•		U
± 10 V	UNIP.	X		•						U
	BIP.	X		•						U
0 – 20 mA	UNIP.	X		•				X		I
	BIP.	X	•	•				X	•	I
± 20 mA	UNIP.	X		•				X		I
	BIP.	X		•				X		I
4 – 20 mA	UNIP.	X		•				X		I
	BIP.	X	•	•				X	•	I

• = ON
= OFF
X = ANY

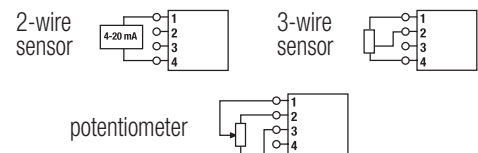
INPUT STAGE

The module can manage single-pole and two-pole inputs, choosing from among the ranges (see Table 1):

- 0...60 mV ± 60 mV
- 0...100 mV ± 100 mV
- 0...500 mV ± 500 mV
- 0...1 V ± 1 V
- 0...5 V ± 5 V
- 0...10 V ± 10 V
- 0...5 mA ± 5 mA
- 0...10 mA ± 10 mA
- 0...20 mA ± 20 mA
- 4...20 mA

The input stage provides two auxiliary supply outputs, for feeding loop powered sensor and potentiometer directly from the module (5 V and 15 V).

Example of connection:



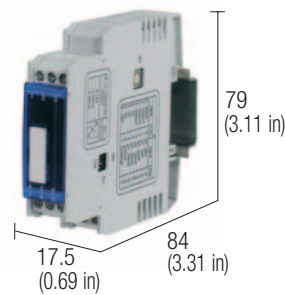
OUTPUT STAGE

The module supplies in output single-pole and two-pole signals with the following ranges (see Table 2):

- 0...5 V ± 5 V
- 0...10 V ± 10 V
- 0...20 mA ± 20 mA
- 4...20 mA

Programmable analog signal converters

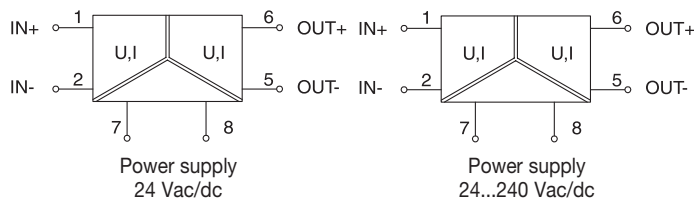
- 3 ways galvanic isolation
- 14 programmable input range
- 3 programmable output range
- Simple programming
- Available version with 24-240 Vac/dc supply voltage



NOTES

The dimensions include the DIN clamp.
 (1) Adjustable via rotary-switch
 (2) Adjustable via dip-switch
 (3) range 16.8...30 Vdc / 19.2...28.8 Vac
 (4) range 16.8...264 Vdc / 19.2...264 Vac
 (5) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal (1)

Input resistance

OUTPUT TECHNICAL DATA

Output signal (2)

Applicable load

GENERAL TECHNICAL DATA

Supply voltage
 Rated current
 Accuracy
 Transmission frequency
 Temperature coefficient
 Isolation
 ECM standards
 Reference Standard
 Overvoltage category/Pollution degree
 Protection degree
 Operating temperature range
 Connection terminal
 Housing material
 Approx. weight
 Mounting information

Cat. No. X756516

CWUAA 6-0516

0...60 / 0...100 / 0...300 / 0...500 mV
0...1 / 0...10 / 0...20 / 2...20 V
0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA
 330 KΩ with input voltage
 100 Ω with input current

0...10 V
0...20 / 4...20 mA
 >1 KΩ with output voltage
 <400 Ω with output current

Cat. No. X756517

CWUAA 6-0517

0...60 / 0...100 / 0...300 / 0...500 mV
0...1 / 0...10 / 0...20 / 2...20 V
0...5 / 0...10 / 0...20 / 4...20 / ±5 / ±20 mA
 330 KΩ with input voltage
 100 Ω with input current

0...10 V
0...20 / 4...20 mA
 >1 KΩ with output voltage
 <400 Ω with output current

APPLICATIONS

Multifunction converters can be used to convert and isolate the most common standard analog signals; the input of the modules can be set up into 14 signal ranges and the output can be set for up to 3 most important analog ranges. The set up is possible by simply switching the position of a dip switch on the side of the module.

The many different input / output combinations offered by multifunctions modules allows to reduce inventory for both new and replacement products and provides many signal conversion solutions.

The "3 ways" galvanic isolation assures total isolation between input, output and supply input; this feature, and the "self calibrating signal circuitry", gives excellent accuracy without any manual adjustment.

If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when signal is current.

MOUNTING ACCESSORIES

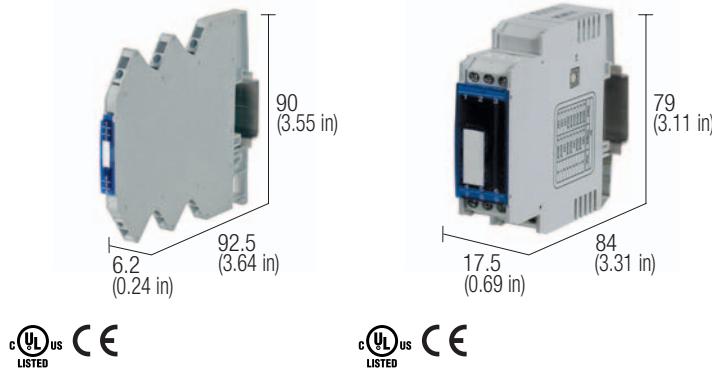
Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32
 Plug-in jumper
 (16 poles, 16 A)

red
 white
 blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Programmable analog signal converters

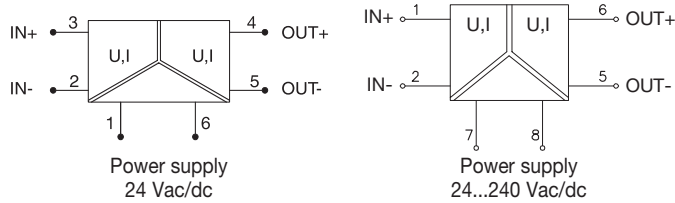
- 1.5 KV, 3 ways, IN/OUT/supply voltage isolation
- 3 programmable input range
- 3 programmable output range
- Simple programming and self calibrating
- Available version with 24-240 Vac/dc supply voltage



NOTES

The dimensions include the DIN clamp.
 (1) range 16.8...30 Vdc / 19.2...28.8 Vac
 (2) range 16.8...264 Vdc / 19.2...264 Vac
 (3) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal
 Input resistance

OUTPUT TECHNICAL DATA

Output signal
 Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Trasmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756539

CWNA-7-0539

0...10 V
0...20 / 4...20 mA
 330 K Ω with input voltage
 100 Ω with input current

0...10 V
0...20 / 4...20 mA
 >1 K Ω with output voltage
 <400 Ω with output current

24 Vac/dc (1)
 $\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$
 0.1% @ 23°C FS
 < 30 Hz
 0.02% / K FS
 1.5 KVac / 60 s (3)
 EN 61000-6-2, EN 61000-6-4
 IEC 664-1, DIN VDE
 III / 2
 IP 20 IEC 529, EN60529
 -25...+60°C
 2.5 mm² fixed screw type
 Noryl UL94V-0
 40 g (1.41 oz)
 vertical on rail adjacent without gap

Cat. No. X756510

CWNA-6-0510

0...10 V
0...20 / 4...20 mA
 330 K Ω with input voltage
 100 Ω with input current

0...10 V
0...20 / 4...20 mA
 >1 K Ω with output voltage
 <400 Ω with output current

24-240 Vac/dc (2)
 $\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$
 0.1% @ 23°C FS
 < 30 Hz
 0.02% / K FS
 4 KVac / 60 s (3)
 EN 50081-2, EN 50082-2
 IEC 664-1, DIN VDE
 III / 2
 IP 20 IEC 529, EN60529
 -25...+60°C
 2.5 mm² fixed screw type
 Noryl UL94V-0
 75 g (2.65 oz)
 vertical on rail adjacent without gap

APPLICATIONS

Multi-function converters can be used to convert and isolate the most common standard analog signals; the input and the output can be set up into 3 different signal ranges. The set up is possible by simply switching the position of a dip switch on the side of the module. The input / output combinations offered by these modules provide the most common input/output configurations more economically when compared to 14 input / 3 output modules and reduces inventory. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when signal is current.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
 Mounting rail type according to IEC60715/G32

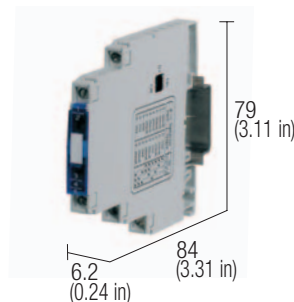
Plug-in jumper
 (16 poles, 16 A)
 red
 white
 blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
 CWBK 7-0803 Cat. No. X766803
 CWBK 7-0804 Cat. No. X766804

Programmable analog signal converters

- 2 ways galvanic isolation
- 3 programmable input range
- 3 programmable output range
- Simple programming
- Available version with 24-240 Vac/dc supply voltage



NOTES

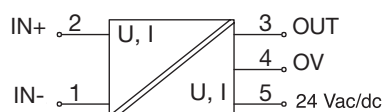
The dimensions include the DIN clamp.

(1) Adjustable via dip-switch in model CWNAA 6-0509 and via rotary-switch in model CWNAA 6-0510

(2) range 16.8...30 Vdc / 19.2...28.8 Vac

(3) 2-way isolation: IN/OUT

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage

24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal (1)

Input resistance

OUTPUT TECHNICAL DATA

Output signal (2)

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. X756509

CWNAA 6-0509

0...10 V

0...20 / 4...20 mA

330 K Ω with input voltage

100 Ω with input current

0...10 V

0...20 / 4...20 mA

>1 K Ω with output voltage

<400 Ω with output current

24 Vac/dc (2)

≤ 35 mA $\pm 10\%$ @ 24 Vdc

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (3)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

Noryl UL94V-0

35 g (1.24 oz)

vertical on rail adjacent without gap

APPLICATIONS

Multi-function converters can be used to convert and isolate the most common standard analog signals; the input and the output can be set up into 3 different signal ranges. The set up is possible by simply switching the position of a dip switch on the side of the module.

The input / output combinations offered by these modules provide the most common input/output configurations more economically when compared to 14 input / 3 output modules and reduces inventory.

The "2 way" galvanic isolation assures isolation only between input and output signal, the supply input has the negative pole in common with the output signal; this feature, and the "self calibrating signal circuitry", gives excellent accuracy without any manual adjustment.

These modules are the right solution in applications where analog converter are mounted in the same cabinet with PLC, DCS and CN, and when they are powered by the same supply; in this case they allow a cost reduction compared with 3 way fully isolated modules.

If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

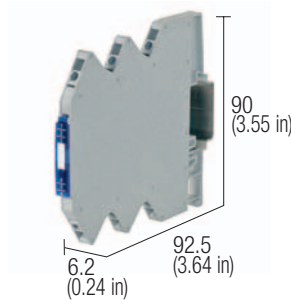
—

—

—

Analog signal converters

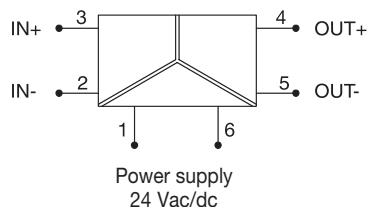
- 1.5 KV, 3 ways, IN/OUT/supply voltage isolation
- Fixed value
- Compact dimension, 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

IN: 0...10 V / OUT: 0...10 V
IN: 0...10 V / OUT: 0...20 mA
IN: 0...10 V / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756530

CWAA 7-0530

Cat. No. X756531

CWAA 7-0531

Cat. No. X756532

CWAA 7-0532

0...10 V
330 K Ω

0...10 V
330 K Ω

0...10 V
330 K Ω

0...10 V
>1 K Ω

0...20 mA
<400 Ω

4...20 mA
<400 Ω

24 Vac/dc (1)
 $\leq 13 \text{ mA} \pm 10\%$
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 KVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
PPE
40 g (1.41 oz)
vertical on rail adjacent without gap

24 Vac/dc (1)
 $\leq 13 \text{ mA} \pm 10\%$
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 KVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
PPE
40 g (1.41 oz)
vertical on rail adjacent without gap

24 Vac/dc (1)
 $\leq 13 \text{ mA} \pm 10\%$
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 KVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
PPE
40 g (1.41 oz)
vertical on rail adjacent without gap

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

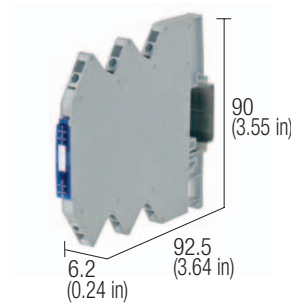
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

Analog signal converters

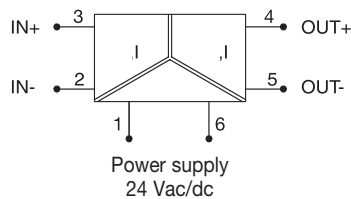
- 1.5 KV, 3 ways, IN/OUT/supply voltage isolation
- Fixed value
- Compact dimension, 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

IN: 0...20 mA / OUT: 0...10 V
IN: 0...20 mA / OUT: 0...20 mA
IN: 0...20 mA / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756533

CWAA 7-0533

Cat. No. X756534

CWAA 7-0534

Cat. No. X756535

CWAA 7-0535

0...20 mA
100 Ω

0...20 mA
100 Ω

0...20 mA
100 Ω

0...10 V
>1 KΩ

0...20 mA
<400 Ω

4...20 mA
<400 Ω

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

≤ 13 mA ± 10%

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

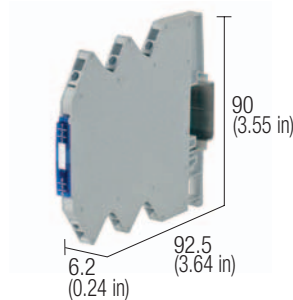
CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current.

Analog signal converters

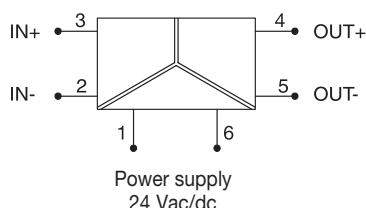
- 1.5 KV, 3 ways, IN/OUT/supply voltage isolation
- Fixed value
- Compact dimension, 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

IN: 4...20 mA / OUT: 0...10 V
IN: 4...20 mA / OUT: 0...20 mA
IN: 4...20 mA / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756536

CWAA 7-0536

Cat. No. X756537

CWAA 7-0537

Cat. No. X756538

CWAA 7-0538

4...20 mA
100 Ω

4...20 mA
100 Ω

4...20 mA
100 Ω

0...10 V
>1 KΩ

0...20 mA
<400 Ω

4...20 mA
<400 Ω

24 Vac/dc (1)
≤ 13 mA ± 10%
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 KVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
PPE
40 g (1.41 oz)
vertical on rail adjacent without gap

24 Vac/dc (1)
≤ 13 mA ± 10%
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 KVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
PPE
40 g (1.41 oz)
vertical on rail adjacent without gap

24 Vac/dc (1)
≤ 13 mA ± 10%
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 KVac / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
PPE
40 g (1.41 oz)
vertical on rail adjacent without gap

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

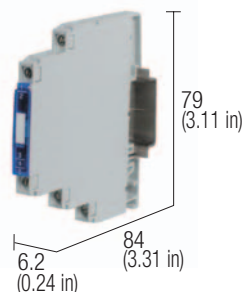
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

Analog signal converters

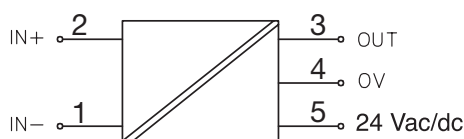
- 2 ways galvanic isolation
- Single signal range
- 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 2-way isolation: IN/OUT

BLOCK DIAGRAM



VERSIONS

IN: 0... 10 V / OUT: 0...10 V

IN: 0... 10 V / OUT: 0...20 mA

IN: 0... 10 V / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal

Input resistance

OUTPUT TECHNICAL DATA

Output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. X756500

CWAA 6-0500

Cat. No. X756501

CWAA 6-0501

Cat. No. X756502

CWAA 6-0502

0...10 V

330 K Ω

0...10 V

330 K Ω

0...10 V

330 K Ω

0...10 V

>1 K Ω

0...20 mA

<400 Ω

4...20 mA

<400 Ω

24 Vac/dc (1)

$\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 KVac / 60 s (2)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

35 g (1.24 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

$\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 KVac / 60 s (2)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

35 g (1.24 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

$\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$

0.1% @ 23°C FS

< 30 Hz

0.02% / K FS

1.5 KVac / 60 s (2)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP 20 IEC 529, EN60529

-25...+60°C

2.5 mm² fixed screw type

PPE

35 g (1.24 oz)

vertical on rail adjacent without gap

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

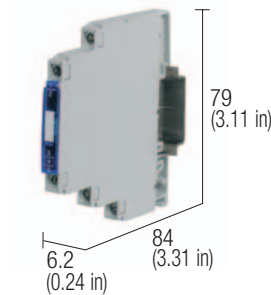
white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Analog signal converters

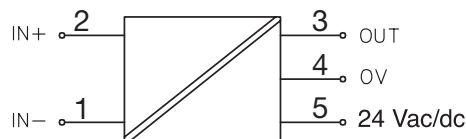
- 2 ways galvanic isolation
- Single signal range
- 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 2-way isolation: IN/OUT

BLOCK DIAGRAM



VERSIONS

IN: 0...20 mA / OUT: 0...10 V
IN: 0...20 mA / OUT: 0...20 mA
IN: 0...20 mA / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756503

CWAA 6-0503

Cat. No. X756504

CWAA 6-0504

Cat. No. X756505

CWAA 6-0505

0...20 mA
100 Ω

0...20 mA
100 Ω

0...20 mA
100 Ω

0...10 V
>1 KΩ

0...20 mA
<400 Ω

4...20 mA
<400 Ω

24 Vac/dc (1) ≤ 35 mA ± 10% @ 24 Vdc 0.1% @ 23°C FS < 30 Hz 0.02% / K FS 1.5 KVac / 60 s (2) EN 50081-2, EN 50082-2 IEC 664-1, DIN VDE III / 2 IP 20 IEC 529, EN60529 -25...+60°C 2.5 mm ² fixed screw type Noryl UL94V-0 35 g (1.24 oz) vertical on rail adjacent without gap	24 Vac/dc (1) ≤ 35 mA ± 10% @ 24 Vdc 0.1% @ 23°C FS < 30 Hz 0.02% / K FS 1.5 KVac / 60 s (2) EN 50081-2, EN 50082-2 IEC 664-1, DIN VDE III / 2 IP 20 IEC 529, EN60529 -25...+60°C 2.5 mm ² fixed screw type Noryl UL94V-0 35 g (1.24 oz) vertical on rail adjacent without gap	24 Vac/dc (1) ≤ 35 mA ± 10% @ 24 Vdc 0.1% @ 23°C FS < 30 Hz 0.02% / K FS 1.5 KVac / 60 s (2) EN 50081-2, EN 50082-2 IEC 664-1, DIN VDE III / 2 IP 20 IEC 529, EN60529 -25...+60°C 2.5 mm ² fixed screw type Noryl UL94V-0 35 g (1.24 oz) vertical on rail adjacent without gap
---	---	---

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

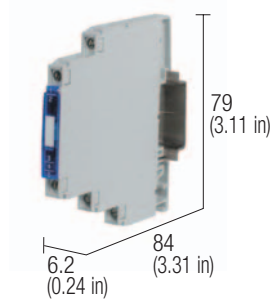
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
—
—

Analog signal converters

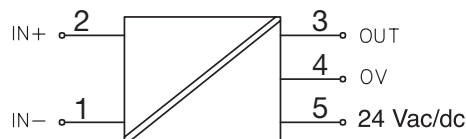
- 2 ways galvanic isolation
- Single signal range
- 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc / 19.2...28.8 Vac
(2) 2-way isolation: IN/OUT

BLOCK DIAGRAM



VERSIONS

IN: 4...20 mA / OUT: 0...10 V
IN: 4...20 mA / OUT: 0...20 mA
IN: 4...20 mA / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756506

CWAA 6-0506

Cat. No. X756507

CWAA 6-0507

Cat. No. X756508

CWAA 6-0508

4...20 mA
100 Ω

4...20 mA
100 Ω

4...20 mA
100 Ω

0...10 V
>1 KΩ

0...20 mA
<400 Ω

4...20 mA
<400 Ω

24 Vac/dc (1)
≤ 35 mA ± 10% @ 24 Vdc
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 kVdc / 60 s (2)
EN 50081-2, EN 50082-2
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
Noryl UL94V-0
35 g (1.24 oz)
vertical on rail adjacent without gap

24 Vac/dc (1)
≤ 35 mA ± 10% @ 24 Vdc
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 kVdc / 60 s (2)
EN 50081-2, EN 50082-2
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
Noryl UL94V-0
35 g (1.24 oz)
vertical on rail adjacent without gap

24 Vac/dc (1)
≤ 35 mA ± 10% @ 24 Vdc
0.1% @ 23°C FS
< 30 Hz
0.02% / K FS
1.5 kVdc / 60 s (2)
EN 50081-2, EN 50082-2
IEC 664-1, DIN VDE
III / 2
IP 20 IEC 529, EN60529
-25...+60°C
2.5 mm² fixed screw type
Noryl UL94V-0
35 g (1.24 oz)
vertical on rail adjacent without gap

APPLICATIONS

These converters can be used to convert and isolate the most common standard analog signals; each model is designed for a single input output signal function, and they are the right solution in applications where many modules handling the same signal are used, where they allow a large cost reduction compared with multi function modules. These modules are provided with 3 ways galvanic isolation between input output and supply voltage. If a single signal must provide several output channels it is possible to use many modules connecting their inputs in parallel as long as the signal is voltage, or in series when the signal is current

MOUNTING ACCESSORIES

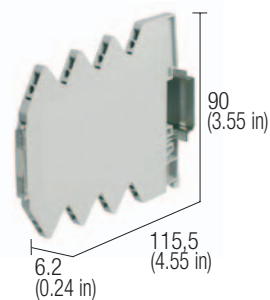
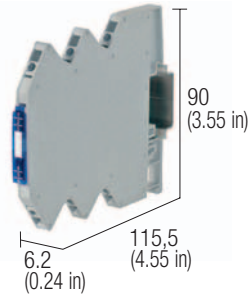
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper red
(16 poles, 16 A) white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—
—
—

Passive galvanic isolators

- Do not require power supply
- Suitable for loop powered sensors
- 2 Ways I/O 500 V isolation
- Single and double channel version
- Compact dimension, 6.2 mm pitch



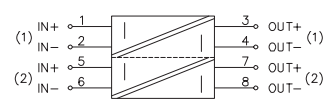
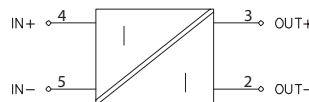
NOTES

The dimensions include the DIN clamp.

(1) Input voltage must have a value higher than the value calculated with this formula, where R_b is load resistance (see pic.1); for calculation refer to the diagram comparing minimum input voltage with output load and wires resistance values; refer to the diagram (see pic. 2) to define if application conditions allow to get full 20 mA output signal

(2) 2-way isolation: IN/OUT

BLOCK DIAGRAM



Item available till sell-out

VERSIONS

Single channel
Double channel

INPUT TECHNICAL DATA

Input signal
Input current
Input voltage (1)
Input resistance

OUTPUT TECHNICAL DATA

Output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Rise time (10...90%)
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32

Plug-in jumper
(16 poles, 16 A)

red
white
blue

Cat. No. X756526

CWPAA 7-0526

1 channel 0...20 mA, 4...20 mA
—
 $2.7 + (20 \text{ mA} \times R_b)$
100 Ω

1 channel 0...20 / 4...20 mA, (max 21 mA)
<400 Ω with output current

—
12 mA
0.1 FS (23°C)
10 ms
30 Hz @ 3 dB
0.02% FS
1.5 kVAc / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IED 664-1, DIN VDE
III / 2
IP 20 IEC 529 EN60529
-25...+60°C
1.5 mm² fixed screw type
Luranyl
35 g (1.24 oz)
vertical on rail adjacent without gap

Cat. No. X756527

CWPAA 7-0527

2 channels 0...20 mA, 4...20 mA
—
 $2.7 + (20 \text{ mA} \times R_b)$
100 Ω

2 channels 0...20 / 4...20 mA, (max 21 mA)
<400 Ω with output current

—
12 mA
0.1 FS (23°C)
10 ms
30 Hz @ 3 dB
0.02% FS
1.5 kVAc / 60 s (2)
EN 61000-6-2, EN 61000-6-4
IED 664-1, DIN VDE
III / 2
IP 20 IEC 529 EN60529
-25...+60°C
1.5 mm² fixed screw type
Luranyl
35 g (1.24 oz)
vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

APPLICATIONS

The passive galvanic isolators can isolate the signal generated by loop powered sensors, where the applied load must have a resistance lower than 400 Ω 20 mA, including the cable resistance; the applied input voltage has to be higher than 2.7 V compared with output voltage (see note 2). If above conditions are satisfied, passive isolators reduce cabling costs and eliminate power supplies thereby saving costs. If above conditions are not satisfied, passive module introduces a signal attenuation.

figure 1

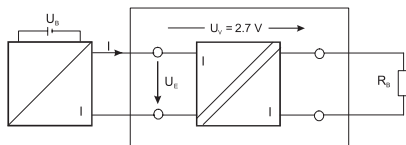
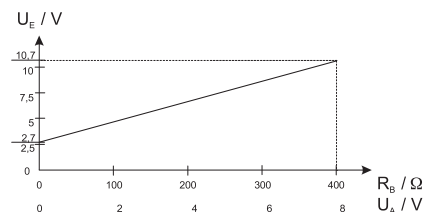


figure 2



Programmable converters for temperature sensors

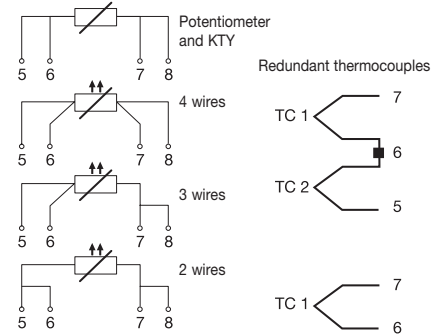
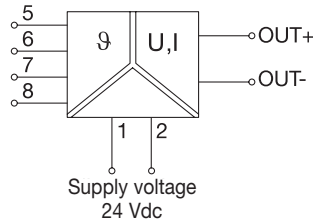
- For PT100, PT500, PT1000, Ni100, Ni1000, PTC, KTY sensors, thermocouples, potentiometers
- 3 ways I/O 2.5 KV isolation
- 3 programmable output signals
- Simple programming, self-adjusting zero and span
- Compact dimension, 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) Version with spring-clamp terminals available on request
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

With screw terminals (standard)

With spring terminals

Programming tool

INPUT TECHNICAL DATA

Input signal

Temperature range

OUTPUT TECHNICAL DATA

Output signal

Applicable load

Display signals

Cat. No. X756890

Cat. No. X756891

CWTPR 7-0890

(1)

CWPZB 7-0891

PT100, PT500, PT1000, Ni100, Ni1000, PTC, KTY, potentiometers 0...5 K Ω
thermocouples tipo B, C, D, E, J, K, L, N, R, S, T, U
-200...+2400°C, according to sensor (see table)

0...10 / 2...10 V, (max. 10.6 V)
0...20 / 4...20 mA, (max 21.2 mA)
>2 K Ω with output voltage
<400 Ω with output current
green LED = OK, flashing LED = error

APPLICATIONS

CSWTPR 7-0890 is a temperature to analog signal conversion module that provides high accuracy measurement and that can be connected to a really wide range of temperature sensors. The module can be used for a temperature range from -200 to +2.400°C. In case of failure of the sensor or short circuits on the cable, the module generates a signal that allows to get a back up safety function.

With resistive sensors it is possible to select among 2, 3, 4 wire connections. With 3 or 4 wires sensors it assures the "broken wire" function and a short circuit on sensor cables. It is also possible the redundant connection of thermocouples to the module, to increase reliability of the measurement system. Input and output are provided with over voltage protections.

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Linearity error

Temperature coefficient

Resolution

Connection terminals

Input resistance

Transmission frequency

Isolation

ECM standards

Reference Standard

Overvoltage category

Pollution degree

Protection degree

Operating temperature

Connection terminal

Housing material

Approx. weight

Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

red

white

blue

15...36 Vdc

100 mA max. @ 24 Vdc

PT, Ni, PTC, KTY, potentiometers

$\pm 0.03\%$ over FS

<30 ppm/°C

0.1°C, 16 bit

PT2, 3, 4-wire; with 2-wire offset correction measurement

Thermocouples

—

—

—

1 M Ω approx.

0.5 Hz

2.5 kVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IEC 664-1, DIN VDE

III

2

IP 20 IEC 529 EN60529

-25...+60°C

1.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

CWBK 7-0802 Cat. No. X766802

CWBK 7-0803 Cat. No. X766803

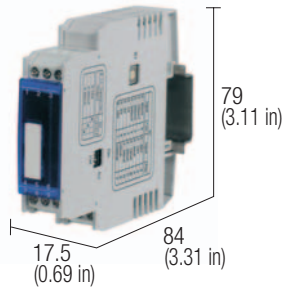
CWBK 7-0804 Cat. No. X766804

TABLE 1 - Temperature range

B type	0...+1820°C
C type	0...+2300°C
D type	0...+2400°C
E type	-200...+1000°C
J type	-200...+1200°C
K type	-200...+1372°C
L type	-200...+900°C
N type	-200...+1300°C
R type	-50...+1760°C
S type	-50...+1760°C
T type	-200...+400°C
U type	-200...+400°C
PT100	-200...+850°C
PT500	-200...+850°C
PT1000	-200...+850°C
Ni1000	-58...+208°C
KTY 81-110	-58...+150°C
KTY 81-120	-58...+150°C
KTY 81-121	-58...+150°C
KTY 82-122	-58...+150°C
KTY 82-150	-58...+150°C
KTY 82-151	-58...+150°C
KTY 82-152	-58...+150°C
KTY 83-110	-58...+150°C
KTY 83-120	-58...+150°C
KTY 83-121	-58...+150°C
KTY 83-122	-58...+150°C
KTY 83-150	-58...+150°C
KTY 83-151	-58...+150°C
KTY 83-152	-58...+150°C
KTY 84-130	-40...+300°C
KTY 84-150	-40...+300°C
KTY 84-151	-40...+300°C
KTY 84-152	-40...+300°C

Programmable converters for RTD sensors

- Converters for PT100 sensors
- 3 ways galvanic isolation
- 8 programmable input range
- 3 programmable output range
- Simple programming
- Version with 24-240 Vac/dc supply voltage

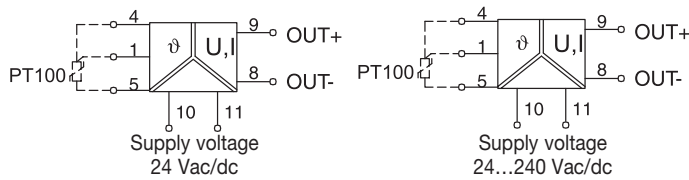


NOTES

The dimensions include the DIN clamp.

- (1) Adjustable via rotary-switch
- (2) Adjustable via dip-switch
- (3) They can also be used with 2 wire PT100 sensor, connecting the terminals 1 and 4
- (4) range 16.8...30 Vdc / 19.2...28.8 Vac
- (5) range 16.8...264 Vdc / 19.2...264 Vac
- (6) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal
Temperature range (1)

Supply current

OUTPUT TECHNICAL DATA

Output signal (2)
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Transmission frequency
Temperature coefficient
Isolation
ECM standards
Reference Standard
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. X756816

CWPT 6-0816

PT100 3 wires (3)
-50...+50°C (-58...+122°F)
-50...+100°C (-58...+212°F)
-50...+150°C (-58...+302°F)
0...+100°C (+32...+212°F)
0...+150°C (+32...+302°F)
0...+200°C (+32...+392°F)
0...+300°C (+32...+572°F)
0...+400°C (+32...+752°F)
0.5 mA

Cat. No. X756817

CWPT 6-0817

PT100 3 wires (3)
-50...+50°C (-58...+122°F)
-50...+100°C (-58...+212°F)
-50...+150°C (-58...+302°F)
0...+100°C (+32...+212°F)
0...+150°C (+32...+302°F)
0...+200°C (+32...+392°F)
0...+300°C (+32...+572°F)
0...+400°C (+32...+752°F)
0.5 mA

APPLICATIONS

The modules convert and isolate signals generated by 3 wire / 2 wire PT100 (RTD) sensors into analog signals; the module can be set into 8 temperature ranges and for up to 3 most important analog ranges. Set up is easily achieved by setting a dip-switch on one side of the module. The modules provide input and output isolation, assuring high signal accuracy, and can be used with isolated and not isolated sensors. Two wire sensors can be used by connecting a jumper wire between 1 and 4 terminal blocks.

MOUNTING ACCESSORIES

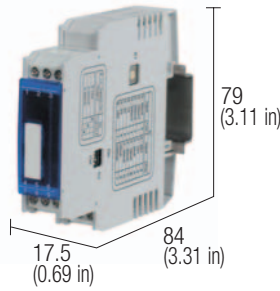
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Programmable converters for thermocouples

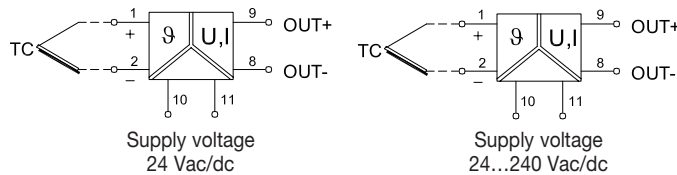
- Converters for sensors with thermocouples J and K type
- 3 ways galvanic isolation
- 8 programmable input range
- 3 programmable output range
- Simple programming
- Version with 24-240 Vac/dc supply voltage



NOTES

The dimensions include the DIN clamp.
 (1) Adjustable via rotary-switch
 (2) Adjustable via dip-switch
 (3) range 16.8...30 Vdc / 19.2...28.8 Vac
 (4) range 16.8...264 Vdc / 19.2...264 Vac
 (5) *3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

24 Vac/dc supply voltage
24-240 Vac/dc supply voltage

INPUT TECHNICAL DATA

Input signal

Temperature range (1)

Supply current

OUTPUT TECHNICAL DATA

Output signal (2)

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. X756844

CWTH 6-0844

Cat. No. X756847

CWTH 6-0847

thermocouples FeCuNi (J type) e NiCrNi (K type)
 according to DIN/IEC584-1
 -50...+200°C (-58...+392°F)
 -50...+350°C (-58...+662°F)
 0...+200°C (+32...+392°F)
 0...+400°C (+32...+752°F)
 0...+600°C (+32...+1112°F)
 0...+800°C (+32...+1472°F)
 0...+1000°C (+32...+1832°F)
 0...+1200°C (+32...+2192°F)

thermocouples FeCuNi (J type) e NiCrNi (K type)
 according to DIN/IEC584-1
 -50...+200°C (-58...+392°F)
 -50...+350°C (-58...+662°F)
 0...+200°C (+32...+392°F)
 0...+400°C (+32...+752°F)
 0...+600°C (+32...+1112°F)
 0...+800°C (+32...+1472°F)
 0...+1000°C (+32...+1832°F)
 0...+1200°C (+32...+2192°F)

0...10 V
 0...20 / 4...20 mA
 >1 K Ω with output voltage,
 <400 Ω with output current

0...10 V
 0...20 / 4...20 mA
 >1 K Ω with output voltage,
 <400 Ω with output current

24 Vac/dc (3)

$\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$

<0.5% FS

<30 Hz

0.015% / K FS

1.5 kVac / 60 s (5)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP20

-20...+60°C

2.5 mm² fixed screw type

Noryl UL94V-0

65 g (2.29 oz)

vertical on rail adjacent without gap

24-240 Vac/dc (4)

$\leq 35 \text{ mA} \pm 10\% @ 24 \text{ Vdc}$

<0.5% FS

<30 Hz

0.015% / K FS

4 kVac / 60 s (5)

EN 50081-2, EN 50082-2

IEC 664-1, DIN VDE

III / 2

IP20

-20...+60°C

2.5 mm² fixed screw type

Noryl UL94V-0

75 g (2.65 oz)

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

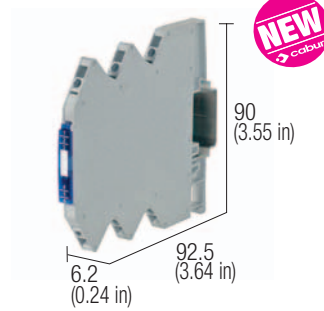
white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Temperature / frequency converters

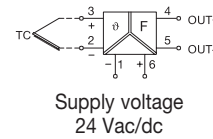
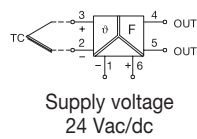
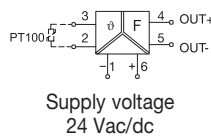
- Available for PT100 sensors, and thermocouples J or K
- 3 ways I/O 1.5 KV isolation
- 3 programmable temperature input range
- 4 programmable frequency output range
- Simple programming, self-adjusting zero and span
- Compact dimension, 6.2 mm pitch



NOTES

The dimensions include the DIN clamp.
(1) range 20...30 Vdc
(2) 3-way isolation: IN/OUT/power supply

BLOCK DIAGRAM



VERSIONS

PT100 / Frequency

Termocoppia J / Frequency

Termocoppia K / Frequency

INPUT TECHNICAL DATA

Input signal

Temperature range

Input current

OUTPUT TECHNICAL DATA

Output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Linearity error

Rise time (10...90%)

Setting time to accuracy 1%

Transmission frequency

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category/Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Approx. weight

Mounting information

Cat. No. X756811

CWTHF 7-0811

Cat. No. X756831

CWTHF 7-0831

Cat. No. X756871

CWTHF 7-0871

PT100 (2 wire)

-50...+150°C

0...+200°C

0...+400°C

0.5 mA

Thermocouples J type

0...+200°C

0...+400°C

0...+600°C

—

Thermocouples K type

0...+200°C

0...+400°C

0...+600°C

—

0...50 Hz / 0...100 Hz /
0...1 KHz / 0...10 KHz
>2.5 KΩ (amplitude approx.
10 V)

0...50 Hz / 0...100 Hz /
0...1 KHz / 0...10 KHz
>2.5 KΩ (amplitude approx.
10 V)

0...50 Hz / 0...100 Hz /
0...1 KHz / 0...10 KHz
>2.5 KΩ (amplitude approx.
10 V)

24 Vac/dc (1)

30 mA max

75x811: 0.3% FS;

75x831/871: 0.5% +2 K FS

0.1% FS

depends on frequency

depends on frequency

<30 Hz

150 ppm/K FS

1.5 kVac / 60 s (2)

EN 60721-3-3; EN 55011; EN

61000-4-2/6; EN 50178

IED 664-1, DIN VDE

III / 2

IP 20 IEC 529 EN60529

-25...+60°C

1.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

30 mA max

75x811: 0.3% FS;

75x831/871: 0.5% +2 K FS

0.1% FS

depends on frequency

depends on frequency

<30 Hz

150 ppm/K FS

1.5 kVac / 60 s (2)

EN 60721-3-3; EN 55011; EN

61000-4-2/6; EN 50178

IED 664-1, DIN VDE

III / 2

IP 20 IEC 529 EN60529

-25...+60°C

1.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

24 Vac/dc (1)

30 mA max

75x811: 0.3% FS;

75x831/871: 0.5% +2 K FS

0.1% FS

depends on frequency

depends on frequency

<30 Hz

150 ppm/K FS

1.5 kVac / 60 s (2)

EN 60721-3-3; EN 55011; EN

61000-4-2/6; EN 50178

IED 664-1, DIN VDE

III / 2

IP 20 IEC 529 EN60529

-25...+60°C

1.5 mm² fixed screw type

PPE

40 g (1.41 oz)

vertical on rail adjacent without gap

APPLICATIONS

Small control systems are used in simple applications. For economical reasons they often integrate digital inputs instead of analog inputs. The Temperature/Frequency converters offer a simple and economical solution to measure and convert temperatures, exploiting the digital inputs of the small control systems.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

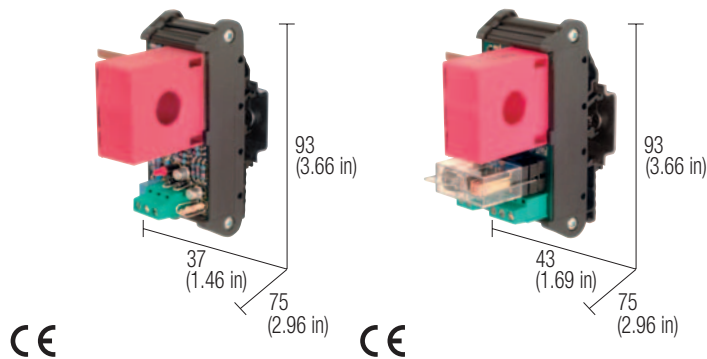
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

Current to threshold converters

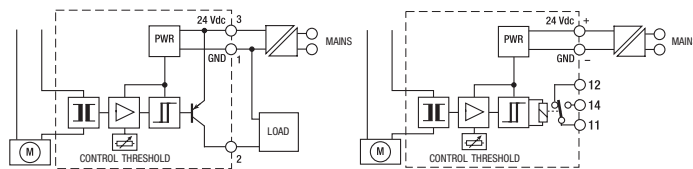
- For AC current measure
- Adjustable threshold value
- Versions with transistor or relay output
- IN/OUT 3 kV isolation



NOTES

The dimensions include the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

Transistor output
Relay output

INPUT TECHNICAL DATA

Max. measured current
Max. measured voltage
Frequency
Sensor's hole diameter

OUTPUT TECHNICAL DATA

Threshold regulation
Threshold hysteresis
Max. output current
Output status

Response time

GENERAL TECHNICAL DATA

Supply voltage
Max rated current
Operating temperature range
Input/output isolation
Connection terminal
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

red
white
blue

Cat. No. XCCIS1

CCIS-1

50 A (AC)
600 Vac
50...60 Hz
Ø 13 mm

1...30 A
± 10%

100 mA open collector PNP
"high" 24 V (closed) with I < threshold
"low" 0 V (open) with I > threshold
20 ms

24 Vdc ± 10%

100 mA

0...60°C

> 3 kVac /60 s

2.5 mm² fixed screw type (14 AWG)

polyamide UL94V-03

100 g (3.53 oz)

vertical on rail adjacent without gap

Cat. No. XCCIS-R

CCIS-R

50 A (AC)
600 Vac
50...60 Hz
Ø 13 mm

1...30 A
± 10%

100 mA open collector PNP
"high" 24 V (closed) with I < threshold
"low" 0 V (open) with I > threshold
20 ms

24 Vdc ± 10%

100 mA

0...60°C

> 3 kVac /60 s

2.5 mm² fixed screw type (14 AWG)

polyamide UL94V-03

100 g (3.53 oz)

vertical on rail adjacent without gap

APPLICATIONS

This module converts a current flowing through circuit into a threshold that can be adjusted by the potentiometer; when the current reaches the threshold value, the relay (or the transistor in the CCIS model) switches; the wire must be feed through the hole of the current sensor for current detection.

In model CCIS-1 the output will have "high" value (24 Vdc) for current higher than the threshold and "low" value (0 Vdc) for current lower than the threshold. The output is internally re-hooked to ground through a 10 k resistor, besides it is protected against overloads.

In model CCIS-R the relay will be turned on for current below the threshold, turned off for current over the threshold.

The output has all the contacts of an SPDT relay, the relay is also pluggable to allow its substitution in case of wear of the contacts.

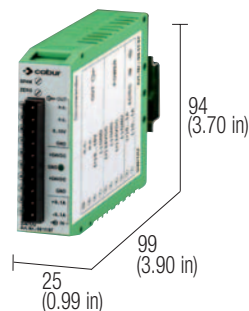
PR/3/AC, PR/3/AS

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

—
—
—

Current to analog converters

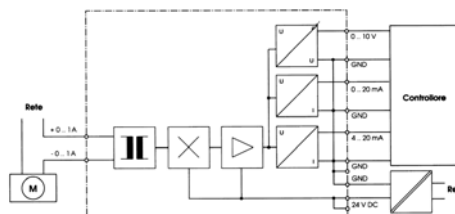
- For AC/DC current measurements
- Protected against transients
- Power supplied LED
- 3 output signals available



NOTES

The dimensions include the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

0...1 A input

0...5 A input

0...10 A input

INPUT TECHNICAL DATA

Input signal

Max. input voltage

Current wire connection

OUTPUT TECHNICAL DATA

Output signal

Max. output signal

Applicable load

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Operating temperature

Linearity error

Offset error

Amplification error

Temperature coefficient

Surge immunity

Response time

Protection degree

Connection terminal

Approx. weight

Mounting information

Cat. No. XW000928

SW01VA

Cat. No. XW000929

SW05VA

Cat. No. XW000930

SW10VA

0...1 A AC/DC

380 V

2.5 mm² pluggable screw type

0...5 A AC/DC

380 V

2.5 mm² pluggable screw type

0...10 A AC/DC

380 V

2.5 mm² pluggable screw type

VOLTAGE

0...10 V

11 V

>2 K Ω

CURRENT

0...20 mA / 4...20 mA

22 mA

<500 Ω

24 Vdc $\pm$ 10%

60 mA

0...55°C

< 0.5%

< 0.5%

< 0.2%

< 0.02%/K

200 V

10 mS

IP20

2.5 mm² pluggable screw type

100 g (3.53 oz)

vertical on rail adjacent without gap

24 Vdc $\pm$ 10%

60 mA

0...55°C

< 0.5%

< 0.5%

< 0.2%

< 0.02%/K

200 V

10 mS

IP20

2.5 mm² pluggable screw type

100 g (3.53 oz)

vertical on rail adjacent without gap

24 Vdc $\pm$ 10%

60 mA

0...55°C

< 0.5%

< 0.5%

< 0.2%

< 0.02%/K

200 V

10 mS

IP20

2.5 mm² pluggable screw type

100 g (3.53 oz)

vertical on rail adjacent without gap

APPLICATIONS

In 99 mm depth measure is included the space occupied by the terminal block provided with the product. Through a "HALL" sensor they grant AC/DC current measurements.

The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active.

It's also possible to know the work conditions of the circuit.

The module guarantees galvanic isolation between the current conductor and the analog output and, if not connected in series to the controlled current, cannot be damaged by power surges or short circuits.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

(16 poles, 16 A)

red

white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

—

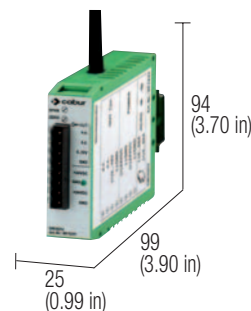
—

—

—

Current to analog converters

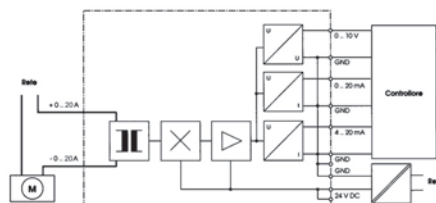
- For AC/DC current measurements
- Protected against transients
- Power supplied LED
- 3 output signals available



NOTES

The dimensions include the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

0...20 A input
0...50 A input

INPUT TECHNICAL DATA

Input signal
Max. input voltage
Current wire connection

OUTPUT TECHNICAL DATA

Output signal
Max. output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Operating temperature
Linearity error
Offset error
Amplification error
Temperature coefficient
Surge immunity
Response time
Protection degree
Connection terminal
Approx. weight
Mounting information

Cat. No. XW000931

SW20VA

Cat. No. XW000932

SW50VA

0...20 A AC/DC
380 V
Ø 8 mm

0...50 A AC/DC
380 V
Ø 8 mm

VOLTAGE

0...10 V
11 V
>2 KΩ

CURRENT

0...20 mA / 4...20 mA
22 mA
<500 Ω

24 Vdc ± 10%

60 mA

0...55°C

< 0.5%

< 0.5%

< 0.2%

< 0.02%/K

200 V

10 mS

IP20

2.5 mm² pluggable screw type (14 AWG)

100 g (3.53 oz)

vertical on rail adjacent without gap

24 Vdc ± 10%

60 mA

0...55°C

< 0.5%

< 0.5%

< 0.2%

< 0.02%/K

200 V

10 mS

IP20

2.5 mm² pluggable screw type (14 AWG)

100 g (3.53 oz)

vertical on rail adjacent without gap

APPLICATIONS

In 99 mm depth measure is included the space occupied by the terminal block provided with the product. They allow the user to measure AC/DC currents by an "HALL" sensor. The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. It is also possible to know the working conditions of the controlled circuit. The module guarantees galvanic isolation between the current conductor and the analog output and, if not connected in series to the controlled current, cannot be damaged by power surges or short circuits.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Plug-in jumper
(16 poles, 16 A)

red
white
blue

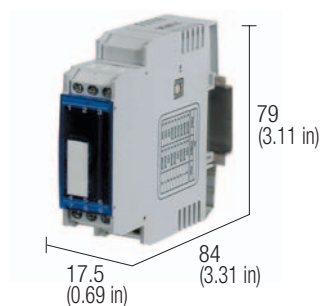
PR/3/AC, PR/3/AS

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

—
—
—

Frequency to analog signal converters

- Adjustable frequency range 0...28.8 KHz
- 3 programmable analog signal output ranges
- 3 ways I/O 2.5 KV isolation



CE

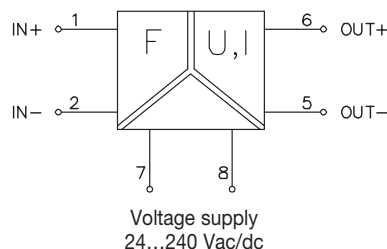
NOTES

The dimensions include the terminal blocks and the DIN clamp.

(1) range 16.8...30 Vdc / 19.2...28.8 Vac

(2) 3-way isolation: IN/OUT

BLOCK DIAGRAM



VERSIONS

Cat. No. X756524

CWNFA 6-0524

INPUT TECHNICAL DATA

Input signal (range)

Input signal (type)

Input resistance

Hysteresis

0...28.8 KHz adjustable via DIP switch

AC/DC 0.6...30 Vpp

50 K Ω

0.5 Vpp o 5 Vpp adjustable via DIP switch

OUTPUT TECHNICAL DATA

Output signal

Applicable load

Ripple

0...10 V, (max. 10.6 V)

0...20 / 4...20 mA, (max 21 mA)

>1 K Ω with output voltage

<400 Ω with output current

< 5 mVeff

GENERAL TECHNICAL DATA

Supply voltage

Rated current

Accuracy

Linearity error

Ripple

Setting time (accuracy 1%)

Temperature coefficient

Isolation

ECM standards

Reference Standard

Overvoltage category

Pollution degree

Protection degree

Operating temperature range

Connection terminal

Housing material

Peso approssimativo

Mounting information

24 Vac/dc (1)

20 mA

0.1 FS (23°C)

0.02%

0.1%

200 ms

70 ppm/K

1.5 KVac / 60 s (2)

EN 61000-6-2, EN 61000-6-4

IED 664-1, DIN VDE

III

2

IP 20 IEC 529 EN60529

-25...+60°C

1.5 mm² fixed screw type

PPE

70 g (2.47 oz)

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5

Mounting rail type according to IEC60715/G32

Plug-in jumper

red

white

blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

—

—

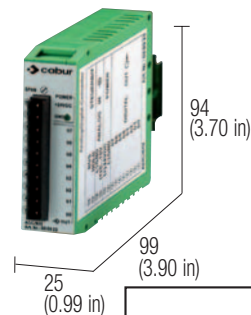
—

APPLICATIONS

This module is used to convert a frequency signal, with either sinusoidal or square waveform, into a standard analog signal (eg. 0...10 V, 0...20 mA, 4...20 mA). A microprocessor provides a high resolution, high stability and accuracy output signal and a dip switch gives the possibility to select a calibrated range of frequency measurement from 0 ... 100 Hz up to 0...28.8 kHz.

Analog to digital signal converters

- 8 bit resolution
- Possibility of connection in parallel
- Protected against transients
- Power supplied LED
- Pluggable terminals

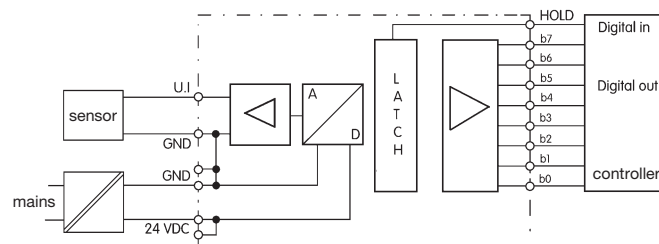


Item available till sell-out

NOTES

The dimensions include the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

IN: 0... 10 V / OUT: 8 bit
IN: 0...20 mA / OUT: 8 bit
IN: 4...20 mA / OUT: 8 bit

INPUT TECHNICAL DATA

Input signal
Resistance

OUTPUT TECHNICAL DATA

Output signal
Max. output signal
Signal level

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Operating temperature
Transmission error
Hold signal
Bus signal
Conversion time
Resolution
Temperature coefficient
Surge immunity
Protection degree
Connection terminal
Peso approssimativo
Mounting information

Cat. No. XW000933

ADC08V10

Cat. No. XW000934

ADC08A0

Cat. No. XW000935

ADC08A4

0...10 V
400 K Ω

0...20 mA
400 K Ω

4...20 mA
400 K Ω

8 bit
25 mA
"L" = 0, "H" = $V_N - 2 V$

8 bit
25 mA
"L" = 0, "H" = $V_N - 2 V$

8 bit
25 mA
"L" = 0, "H" = $V_N - 2 V$

24 Vdc $\pm 10\%$
25 mA
0...55°C
 ± 1 LSB
enabled > 5 V
1.5 ms
39 mV
0.01% k
200 V
IP20
2.5 mm² pluggable screw type
103 g (3.64 oz)
vertical on rail adjacent without gap

24 Vdc $\pm 10\%$
25 mA
0...55°C
 ± 1 LSB
enabled > 5 V
1.5 ms
78 μA
0.01% k
200 V
IP20
2.5 mm² pluggable screw type
103 g (3.64 oz)
vertical on rail adjacent without gap

24 Vdc $\pm 10\%$
25 mA
0...55°C
 ± 1 LSB
enabled > 5 V
1.5 ms
63 μA
0.01% k
200 V
IP20
2.5 mm² pluggable screw type
103 g (3.64 oz)
vertical on rail adjacent without gap

APPLICATIONS

It allows to convert analog input signals into digital 8 bit output signal, suitable to be used with the less expensive digital inputs of any PLC. The 8 bit signal stored in the LATCH memory is controlled by HOLD signal input. If HOLD is active, the memory does not convert any new signal from the input, and keeps the last stored signal which can be supplied to the output when the module receives a control signal on the bus, allowing connection in parallel of more modules.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper

red
white
blue

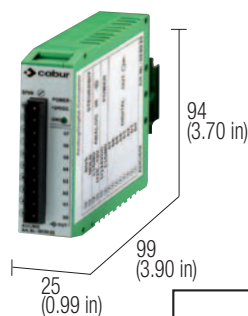
PR/3/AC, PR/3/AS

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

—
—
—

Digital to analog signal converters

- 8 bit resolution
- START/STOP function
- Protected against transients
- Pluggable terminals

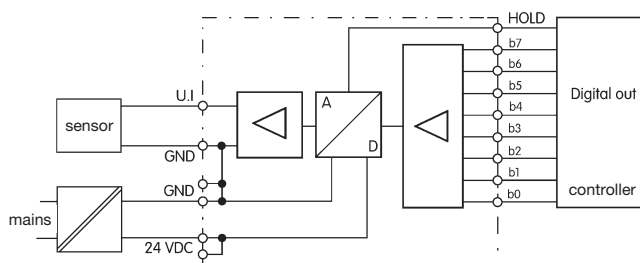


Item available till sell-out

NOTES

The dimensions include the terminal blocks and the DIN clamp.

BLOCK DIAGRAM



VERSIONS

IN: 8 bit / OUT: 0... 10 V
IN: 8 bit / OUT: 0...20 mA
IN: 8 bit / OUT: 4...20 mA

INPUT TECHNICAL DATA

Input signal
Max. input current
Signal level

OUTPUT TECHNICAL DATA

Output signal
Max. output signal
Applicable load

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Operating temperature
Transmission error
Hold signal
Conversion time
Resolution
Temperature coefficient
Surge immunity
Protection degree
Connection terminal
Peso approssimativo
Mounting information

Cat. No. XW000936

DAC08V10

Cat. No. XW000937

DAC08A0

Cat. No. XW000938

DAC08A4

8 bit
25 mA
"L" < 2.5 V, "H" > 15 V

8 bit
25 mA
"L" < 2.5 V, "H" > 15 V

8 bit
25 mA
"L" < 2.5 V, "H" > 15 V

0...10 V
11 V
> 2 KΩ

0...20 mA
25 mA
<500 KΩ

4...20 mA
25 mA
<500 KΩ

24 Vdc ± 10%
40 mA
0...55°C
±1 LSB
enabled > 5 V
100 μs
39 mV
0.01% k
200 V
IP20
2.5 mm² pluggable screw type
103 g (3.64 oz)
vertical on rail adjacent without gap

24 Vdc ± 10%
40 mA
0...55°C
±1 LSB
enabled > 5 V
100 μs
78 μA
0.01% k
200 V
IP20
2.5 mm² pluggable screw type
103 g (3.64 oz)
vertical on rail adjacent without gap

24 Vdc ± 10%
40 mA
0...55°C
±1 LSB
enabled > 5 V
100 μs
63 μA
0.01% k
200 V
IP20
2.5 mm² pluggable screw type
103 g (3.64 oz)
vertical on rail adjacent without gap

APPLICATIONS

This module allows to convert analog input signals into a digital 8 bit output signal, suitable to be used with the less expensive digital inputs of any PLC. The 8 bit signal stored in the LATCH memory is controlled by HOLD signal input. If HOLD is active, the memory does not convert any new signal from the input, and keeps the last stored signal which can be supplied to the output when the module receives a control signal on the bus, allowing connection in parallel of more modules.

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper

red
white
blue

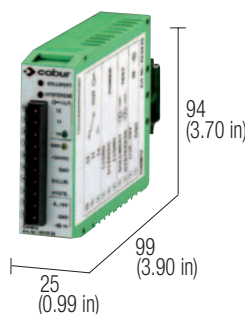
PR/3/AC, PR/3/AS

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

—
—
—

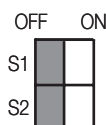
Analog signal to threshold converters

- Adjustable threshold and hysteresis
- Monitorable threshold value
- Programmable min./max. function

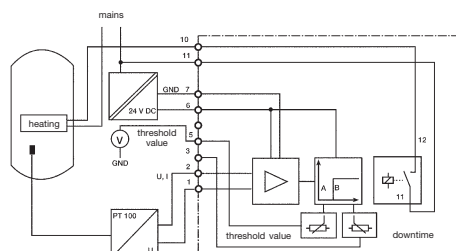


NOTES

The dimensions include the terminal blocks and the DIN clamp.
 S1=OFF/S2=ON Relay is turned ON below the threshold (minimum function)
 S1=OFF/S2=OFF Relay is turned ON above the threshold (minimum function)
 S1=ON/S2=ON Relay is turned ON inside the hysteresis range
 S1=ON/S2=OFF Relay is turned ON outside the hysteresis range



BLOCK DIAGRAM



VERSIONS

IN: 0... 10 V / OUT: 1 threshold
 IN: 0...20 mA / OUT: 1 threshold

INPUT TECHNICAL DATA

Input signal
 Max input signal
 Surge immunity
 Resistance

OUTPUT TECHNICAL DATA

Relay contact
 Rated voltage
 Rated current
 Max. continuous current
 Min. contact current
 Threshold value
 Response time

GENERAL TECHNICAL DATA

Supply voltage
 Rated current
 Surge immunity
 Setpoint setting range
 Hysteresis setting range
 Max. hysteresis offset
 Transmission error
 Operating temperature range
 Connection terminal
 Approx. weight
 Mounting information

Cat. No. XW000926

GWMV10

Cat. No. XW000927

GWMA0

0...10 V
 11 V
 200 V
 > 100 KΩ

0...20 mA
 22 mA
 200 V
 50 Ω

SPDT AgCdO
 250 Vdc, 230 Vac
 5 A
 2 A
 —
 100% contact ratio
 20 ms

SPDT AgCdO
 250 Vdc, 230 Vac
 5 A
 2 A
 —
 100% contact ratio
 20 ms

24 Vdc ± 10%
 40 mA
 200 V
 0.3...10 V
 0.1...10 V
 ±30 mV
 0.5%
 0...55°C

24 Vdc ± 10%
 40 mA
 200 V
 0.6...20 V
 0.2...20 V
 ±60 μA
 0.5%
 0...55°C

2.5 mm² pluggable screw type
 110 g (3.88 oz)
 vertical on rail adjacent without gap

2.5 mm² pluggable screw type
 110 g (3.88 oz)
 vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
 Mounting rail type according to IEC60715/G32
 Plug-in jumper
 (16 poles, 16 A)

red
 white
 blue

PR/3/AC, PR/3/AS

PR/DIN/AC, PR/DIN/AS, PR/DIN/AL

APPLICATIONS

The modules were designed above all for two examples of application:

1. Threshold value signal

With the aid of a trimmer integrated in the module, a threshold value is set. The base is represented by the input signal of the connected sensor.

If the input signal reaches the nominal value set, a relay is enabled in the output stage. By means of a dip-switch, energisation or de-energisation of the relay can be selected on reaching the nominal value.

2. Minimum/maximum function

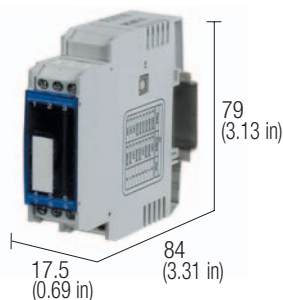
Having regulated the threshold, regulation of the hysteresis allows a non-intervention zone to be set between the minimum and maximum, of variable extent.

The relay does not operate on a threshold as constant on/off, but only if the upper and lower limits defined by the hysteresis set are exceeded.

On the THRESHOLD VALUE and HYSTERESIS terminals the limit value set can be displayed with the aid of an external voltmeter. The indication of this measuring instrument also allows the value to be read when setting the threshold and hysteresis values. If several switching points are required, there is the possibility of connecting the appliances with current input (in series).

Load cells converter

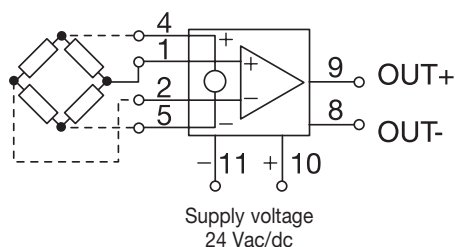
- Suitable for pressure sensors, for load cells, strain gauges and other measuring bridges
- High impedance differential input, bipolar input and output
- 3 programmable analog signal output ranges



NOTES

The dimensions include the DIN clamp.
(1) range 20.4...28.8 Vdc

BLOCK DIAGRAM



VERSIONS

Cat. No. X756522

CWBRA 6-0522

INPUT TECHNICAL DATA

Input current
Noise
Range changeover error
Common mode range

1 nA (typical)
1 mV (0.1...10 Hz, pp RTI, typical)
0.5%
-7 to +7 V

OUTPUT TECHNICAL DATA

Output signal
Output current

0...10 V
0...20 / 4...20 mA
<5 mA with output voltage
<21 mA with output current
min.: -10.2 V / max.: 10.5 V
>2 K Ω with output voltage
<400 Ω with output current
< 5 mV_{eff}

GENERAL TECHNICAL DATA

Supply voltage
Rated current
Accuracy
Linearity error
Transmission frequency
Setting time to accuracy 1%
Operating voltage influence
Isolation
ECM standards
Reference standards
Overvoltage category/Pollution degree
Protection degree
Operating temperature range
Connection terminal
Housing material
Approx. weight
Mounting information

24 Vac/dc (1)
<30 mA
0.1 FS (23°C)
0.02%
range 30 mV: 25 Hz/6 Hz; range 1 mV: 2 Hz/1.5 Hz; reversible
25 Hz: 50 ms; 6 Hz: 200 ms; 2 Hz: 600 ms; 1.5 Hz: 800 ms
0.005 %/V
—
EN 60721-3-3; EN 55011; EN 61000-4-2/6; EN 50178
IED 664-1; DIN VDE
III / 2
IP 20 IEC 529 EN60529
-25...+60°C
1.5 mm² fixed screw type
PPE
70 g (2.47 oz)
vertical on rail adjacent without gap

APPLICATIONS

These devices amplify the output signal of a measuring bridge and convert it in a standard analog signal (for example, 0...10 V, 0...20 mA, 4...20 mA). Suitable for pressure sensors, for load cells, strain gauges and other measuring bridges.
They have a high impedance differential input, bipolar I/O, and they supply the measuring bridge with an accurate auxiliary voltage. Moreover they are protected from short circuit, polarity inversion and from overvoltage up to 40 Vdc.

MOUNTING ACCESSORIES

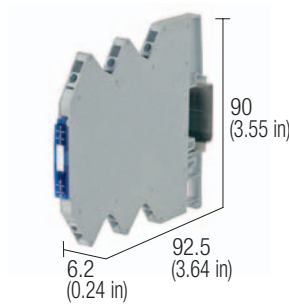
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

red
white
blue

Auxiliary supply output for sensors and potentiometers

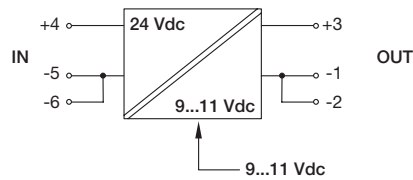
- Stabilized switching converter
- IN 16.8...20 Vdc / 9...11 Vdc 60 mA
- Suitable to feed potentiometers and sensors



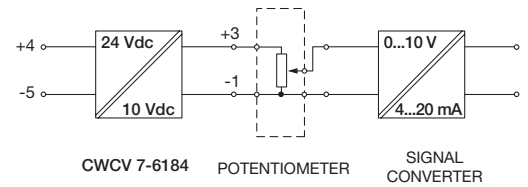
NOTES

The dimensions include the DIN clamp.
(1) range 16.8...30 Vdc

BLOCK DIAGRAM



EXAMPLE



VERSIONS

With screw connection (standard)
With spring connection

INPUT TECHNICAL DATA

Rated voltage
Current @ Iout max.
Protection fuse

Cat. No. X766184

CWCV 7-6184

24 Vdc (1)
30 mA @ 10 Vdc
T 1 A (external)

OUTPUT TECHNICAL DATA

Voltage
Maximum current
Continuous current
Load regulation
Ripple @ rated U-I output
Overload / short circuit protection
Output signal
Parallel connection

10 Vdc (9...11 Vdc adjustable)
60 mA
60 mA
< 1%
≤ 50 mVpp
si
yellow LED Power OK
possible with external diode

GENERAL TECHNICAL DATA

Operating temperature range
Input/output isolation
Protection degree
EMC Standards
Surge immunity
Connection terminal
Housing material
Approx. weight
Mounting information

-25...+60°C
50 Vac / 60 s
IP 20 IEC529, EN60529
EN 50081-1, EN 50082-2, EN 61000-3-2
EN61000-4-2, EN61000-4-4
1.5 mm² screw type / 1.5 mm² spring type (16 AWG)
Noryl UL94V-0
35 g (1.24 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

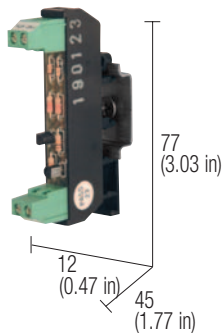
CWBK 7-0802 Cat. No. X766802
CWBK 7-0803 Cat. No. X766803
CWBK 7-0804 Cat. No. X766804

APPLICATIONS

For the highest accuracy of electronic measurements in process control and automation systems, a stable supply source is required to feed reference voltages. Accuracy of position sensors, such as linear or rotary potentiometers, depends greatly on the stability and accuracy of the DC supply of the sensor. For this reason our modules are provided with a calibrated DC output dedicated to feed the sensor for the highest accuracy, and this feature also helps to save space and the cost of an external DC supply source.

NPN and PNP signal polarity inverter

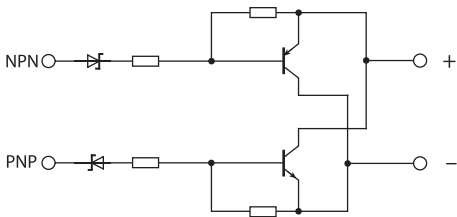
- Converts a NPN sensor in a PNP sensor and vice versa
- Compact design



NOTES

The dimensions include the terminal blocks and the DIN clamp.
(1) range 17...30 Vdc

BLOCK DIAGRAM



VERSIONS

Cat. No. XNPNPNP

CI-NPN/PNP

APPLICATIONS

It converts signal form PNP sensors into NPN signal and vice versa. It allows to adapt the PLC inputs to all sensors on the market, regardless of their output polarity, and it is a great help for maintenance and allows in any case a quick replacement of failed sensors when you need a PNP sensor but you have a NPN type.

INPUT TECHNICAL DATA

Input voltage	24 Vdc (1)
Max. current	200 mA
Max. frequency	120 KHz

GENERAL TECHNICAL DATA

OFF state current	—
ECM standards	EN 61000-6-2, EN 61000-6-4
Reference Standard	IEC 664-1, DIN VDE
Overvoltage category	II
Pollution degree	2
Protection degree	IP 20 IEC 529 EN60529
Operating temperature range	0...55°C
Connection terminal	morsetti a vite 2.5 mm2 fissi
Housing material	Poliammide UL94V-0
Approx. weight	20 g (0.71 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Plug-in jumper

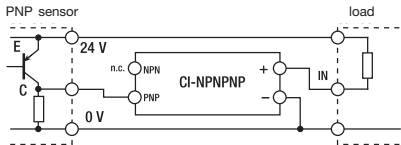
red
white
blue

PR/3/AC, PR/3/AS

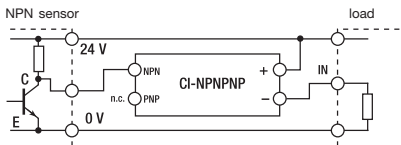
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

EXAMPLE

Conversion from PNP to NPN



Conversion from NPN to PNP



Single relay modules quick selection table

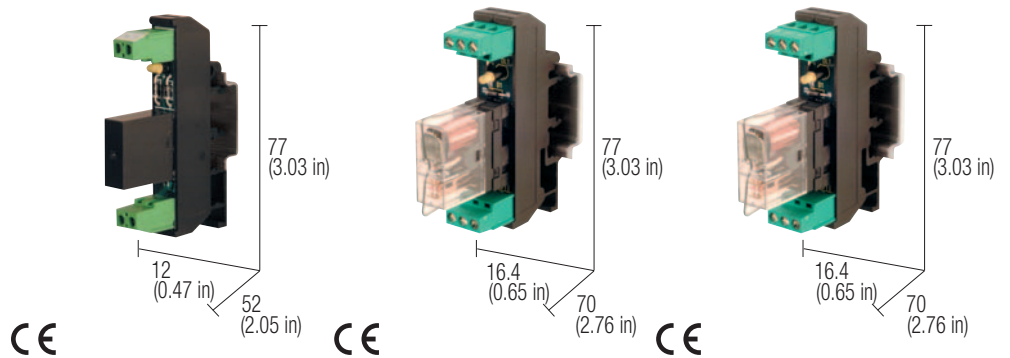
These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Number of relays	Input rated voltage	Output		Notes	Type	Cat. No.	Page
		type / no. of contacts	rated current				
1	12 Vdc	SPDT	16A	(2)	RF1012D	XRF1012D	106
1	12 Vdc	SPDT	10A	(1)	CM1C012	XCM1C012	107
1	12 Vdc	DPDT	5A	(1)	CM2C012	XCM2C012	108
1	12 Vdc	4PDT	3A	(1)	CM4C012	XCM4C012	109
1	12 Vac	SPDT	10A	(1)	CM1A012	XCM1A012	110
1	12 Vac	DPDT	5A	(1)	CM2A012	XCM2A012	111
1	12 Vac/dc	SPDT	6A	(1)	CWRE7-0848	X766848	115
1	24 Vdc	SPST(NO)	5A	(2)	RFA024D	XRFA024D	105
1	24 Vdc	SPDT	16A	(1)	RE1024D	XRE1024D	105
1	24 Vdc	SPDT	16A	(2)	RF1024D	XRF1024D	105
1	24 Vdc	SPDT	12A	(1)	CM1C024	XCM1C024	107
1	24 Vdc	SPDT	12A	(1)	RE1824D	XRE1824D	105
1	24 Vdc	SPDT	12A	(2)	RF1824D	XRF1824D	105
1	24 Vdc	DPDT	8A	(1)	CM2C024	XCM2C024	108
1	24 Vdc	4PDT	3A	(1)	CM4C024	XCM4C024	109
1	24 Vac/dc	SPDT	6A	(1)	CWRE7-0842	X766842	115
1	24 Vac/dc	SPDT	6A	(2) (3)	CKR16	XCKR16	114
1	24 Vac/dc	DPDT	8A	(1)	RE2024D	XRE2024D	106
2	24 Vac/dc	DPST(NO)	5A	(2)	CKR25	XCKR25	114
1	24 Vac	SPDT	12A	(1)	CM1A024	XCM1A024	110
1	24 Vac	DPDT	8A	(1)	CM2A024	XCM2A024	111
1	24 Vac	4PDT	3A	(1)	CM4A024	XCM4A024	112
1	48 Vdc	SPDT	10A	(1)	CM1C048	XCM1C048	107
1	48 Vdc	DPDT	5A	(1)	CM2C048	XCM2C048	108
1	48 Vac/dc	SPDT	6A	(1)	CWRE7-0845	X766845	115
1	110 Vdc	SPDT	10A	(1)	CM1C110	XCM1C110	107
1	110 Vdc	DPDT	5A	(1)	CM2C110	XCM2C110	108
1	110...120 Vac/dc	SPDT	6A	(1)	CWRE7-0846	X766846	115
1	120 Vac	SPDT	10A	(1)	CM1A120	XCM1A120	110
1	120 Vac	DPDT	5A	(1)	CM2A120	XCM2A120	111
1	230 Vac	SPDT	6A	(1)	CWRE7-0847	X766847	115
1	230 Vac	SPDT	10A	(1)	CM1A230	XCM1A230	110
1	230 Vac	DPDT	5A	(1)	CM2A230	XCM2A230	111

Notes

- (1) version with pluggable relay
- (2) version with fixed relay
- (3) protection fuse on the contact
- (4) without LED and protection diode

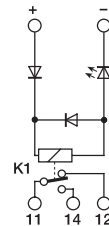
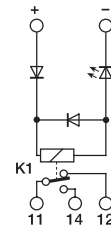
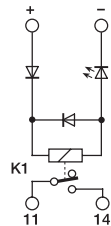
24 Vdc SPDT single relay R series



NOTES

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
(2) Version available upon request

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

GENERAL TECHNICAL DATA

Operating temperature
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / pollution degree
Reference Standard
Status display
Connection terminals
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper black

Cat. No. XRFA024D

—
RFA024D

Cat. No. XR?1824D

RE1824D
RF1824D

Cat. No. XR?1024D

RE1024D
RF1024D

24 Vdc $\pm 10\%$

22 mA $\pm 10\%$

15 ms

5 ms

damping & polarity protection diode

24 Vdc $\pm 10\%$

22 mA $\pm 10\%$

15 ms

5 ms

damping & polarity protection diode

24 Vdc $\pm 10\%$

22 mA $\pm 10\%$

15 ms

5 ms

damping & polarity protection diode

SPST(NO) AgSnO₂

5 A / 250 Vac

5 A

—

SPDT AgSnO₂

12 A / 250 Vac

12 A

—

SPDT AgSnO₂

12 A / 250 Vac

12 A

—

−10...+50°C

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

IP 00 IEC529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

30 g (1.07 oz)

vertical on rail adjacent without gap

−10...+50°C

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

IP 00 IEC529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

44 g (1.55 oz)

vertical on rail adjacent without gap

−10...+50°C

2.5 kVac / 60 s

0,5 kVac / 60 s (between open contact)

IP 00 IEC529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

44 g (1.55 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Cat. No. 8904000

—

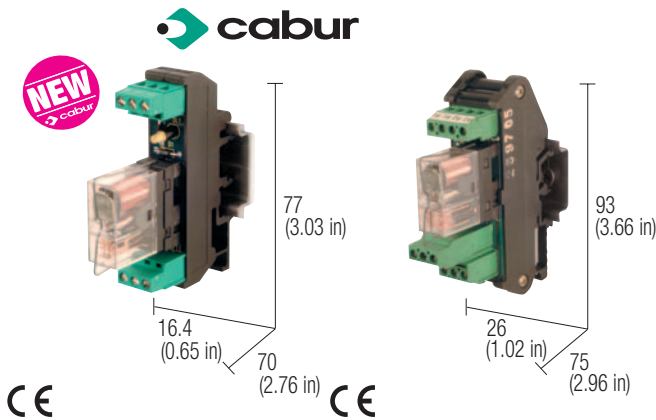
Cat. No. 8904001

—

Cat. No. 89040

—

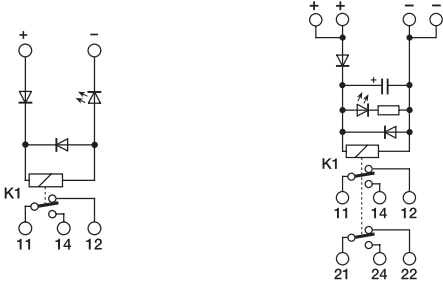
24 Vdc SPDT single relay
R series



NOTES

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
- (2) Version available upon request

BLOCK DIAGRAM

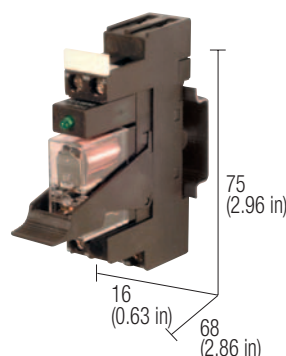


VERSIONS	
Pluggable relay	
Fixed relay	
INPUT TECHNICAL DATA	
Rated voltage	
Rated current (1 channel)	
Turn ON time	
Turn OFF time	
Protection circuit	
OUTPUT TECHNICAL DATA	
Type and number of contacts	
Nominal current (resistive load)	
Current breaking power	
Current of the fuse max.	
GENERAL TECHNICAL DATA	
Operating temperature	
Coil/contact isolation	
Isolation between output terminals	
Protection degree	
Overvoltage category / pollution degree	
Reference Standard	
Status display	
Connection terminals	
Housing material	
Approx. weight	
Mounting information	
MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Replacement relay	(1)
Screw type jumper	black

Cat. No. XRF1012D	Cat. No. XRE2024D
-	RE2024D
RF1012D	-
12 Vdc $\pm$ 10%	24 Vac / dc $\pm$ 10%
44 mA $\pm$ 10%	22 mA $\pm$ 10%
15 ms	15 ms
5 ms	5 ms
damping & polarity protection diode	damping & polarity protection diode
SPDT AgSnO ₂	DPDT AgSnO ₂
16 A / 250 Vac	8 A / 250 Vac
16 A	8 A
-	-
-10...+50°C	-10...+50°C
2.5 kVac / 60 s	2.5 kVac / 60 s
0,5 kVac / 60 s (between open contact)	0,5 kVac / 60 s (between open contact)
IP 20 IEC529, EN60529	IP 00 IEC529, EN60529
III / 2	III / 2
IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
green LED	green LED
2.5 mm ² fixed screw type AWG26-14	2.5 mm ² fixed screw type AWG26-14
UL94V-0 plastic material	UL94V-0 plastic material
44 g (1.55 oz)	76 g (2.68 oz)
vertical on rail adjacent without gap	vertical on rail adjacent without gap
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL	
Cat. No. 8904032	Cat. No. 8904002
-	-

Single relay DC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available

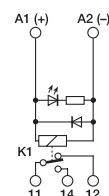


NOTES

The height dimension includes 35 mm DIN rail.

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
- (2) On request, there are available versions without signalling and protection circuit; for the order, please add the suffix "Z" to the item code (for example: XCM1C024Z).
- (3) On request, there are available versions with gold-plated contact; for the order, please add the suffix "U" to the item code (for example: XCM1C024U).

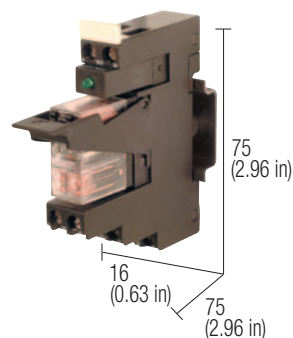
BLOCK DIAGRAM



VERSIONS	Cat. No. XCM1C012	Cat. No. XCM1C024	Cat. No. XCM1C048	Cat. No. XCM1C110
12 Vdc	CM1C012			
24 Vdc		CM1C024		
48 Vdc			CM1C048	
110 Vdc				CM1C110
INPUT TECHNICAL DATA				
Rated voltage	12 Vdc ±10%	24 Vdc ±10%	48 Vdc ±10%	110 Vdc ±10%
Rated current (1 channel)	44 mA ±10%	22 mA ±10%	12 mA ±10%	11 mA ±10%
Turn ON time	15 ms	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	5 ms	20 ms
Protection circuit	damping diode (2)			
OUTPUT TECHNICAL DATA				
Type and number of contacts	SPDT AgSnO ₂ (3)			
Nominal current (resistive load)	12 A / 250 Vac			
Current breaking power	12 A			
Current of the fuse max.	—			
GENERAL TECHNICAL DATA				
Operating temperature range	-10...+50°C			
Coil/contact isolation	4 kVac / 60 s			
Isolation between output terminals	1 kVac / 60 s (between open contact)			
Protection degree	IP 20 IEC 529, EN60529			
Overvoltage category/Pollution degree	III / 2			
Reference Standard	IEC 664-1, DIN VDE 0110.1			
Status display	green LED (2)			
Connection terminal	2.5 mm ² fixed screw type AWG26-14			
Housing material	UL94V-0 plastic material			
Approx. weight	54 g (1.90 oz)			
Mounting information	vertical on rail adjacent without gap or panel with screw			
MOUNTING ACCESSORIES	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
Mounting rail type according to IEC60715/TH35-7.5	—			
Mounting rail type according to IEC60715/G32	—			
Replacement relay (1)	Cat. No. 8904039	Cat. No. 8904001	Cat. No. 8904008	Cat. No. 8904047
Screw type jumper	Cat. No. XCMB16B			
	—			
	—			

DPDT single relay DC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available

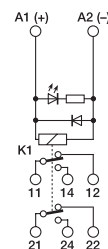


NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

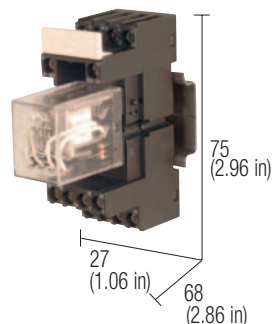
BLOCK DIAGRAM



VERSIONS	Cat. No. XCM2C012	Cat. No. XCM2C024	Cat. No. XCM2C048	Cat. No. XCM2C110
12 Vdc	CM2C012			
24 Vdc		CM2C024		
48 Vdc			CM2C048	
110 Vdc				CM2C110
INPUT TECHNICAL DATA				
Rated voltage	12 Vdc $\pm 10\%$	24 Vdc $\pm 10\%$	48 Vdc $\pm 10\%$	110 Vdc $\pm 10\%$
Rated current (1 channel)	44 mA $\pm 10\%$	22 mA $\pm 10\%$	24 mA $\pm 10\%$	11 mA $\pm 10\%$
Turn ON time	15 ms	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	5 ms	20 ms
Protection circuit	damping diode			
OUTPUT TECHNICAL DATA				
Type and number of contacts	DPDT AgSnO ₂			
Nominal current (resistive load)	8 A / 250 Vac			
Current breaking power	8 A			
Current of the fuse max.	—			
GENERAL TECHNICAL DATA				
Operating temperature range	-10...+50°C			
Coil/contact isolation	4 kVac / 60 s			
Isolation between output terminals	1 kVac / 60 s (between open contact)			
Protection degree	IP 20 IEC 529, EN60529			
Overvoltage category/Pollution degree	III / 2			
Reference Standard	IEC 664-1, DIN VDE 0110.1			
Status display	green LED			
Connection terminal	2.5 mm ² fixed screw type AWG26-14			
Housing material	UL94V-0 plastic material			
Approx. weight	67 g (2.37 oz)			
Mounting information	vertical on rail adjacent without gap or panel with screw			
MOUNTING ACCESSORIES				
Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
Mounting rail type according to IEC60715/G32	—			
Replacement relay	Cat. No. 8904040	Cat. No. 8904002	Cat. No. 8904009	Cat. No. 8904054
Screw type jumper	Cat. No. XCMB16B			
	—			
	—			
	—			

4PDT single relay DC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available

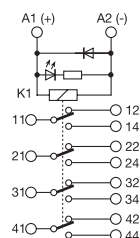


NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

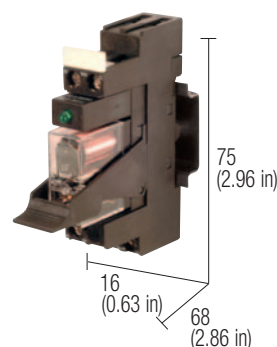
BLOCK DIAGRAM



VERSIONS	Cat. No. XCM4C012	Cat. No. XCM4C024	Cat. No. XCM1C048	Cat. No. XCM1C110
12 Vdc	CM4C012			
24 Vdc		CM4C024		
48 Vdc			—	
110 Vdc				—
INPUT TECHNICAL DATA				
Rated voltage	12 Vdc ±10%	24 Vdc ±10%		
Rated current (1 channel)	75 mA ±10%	38 mA ±10%		
Turn ON time	20 ms	20 ms		
Turn OFF time	20 ms	20 ms		
Protection circuit	damping diode			
OUTPUT TECHNICAL DATA				
Type and number of contacts	4PDT AgSnO ₂			
Nominal current (resistive load)	3 A / 250 Vac			
Current breaking power	3 A			
Current of the fuse max.	—			
GENERAL TECHNICAL DATA				
Operating temperature range	-10...+50°C			
Coil/contact isolation	4 kVac / 60 s			
Isolation between output terminals	1 kVac / 60 s (between open contact)			
Protection degree	IP 20 IEC 529, EN60529			
Overvoltage category/Pollution degree	III / 2			
Reference Standard	IEC 664-1, DIN VDE 0110.1			
Status display	green LED			
Connection terminal	2.5 mm ² fixed screw type AWG26-14			
Housing material	UL94V-0 plastic material			
Approx. weight				
Mounting information	vertical on rail adjacent without gap or panel with screw			
MOUNTING ACCESSORIES	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
Mounting rail type according to IEC60715/TH35-7.5				
Mounting rail type according to IEC60715/G32				
Replacement relay	(1)			
Screw type jumper	black	Cat. No. 8904018	Cat. No. 8904030	Cat. No. XCMB27B
	white			—
	blue			—

Single relay AC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available

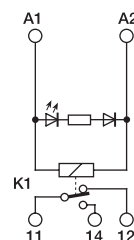


NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



VERSIONS

12 Vdc
24 Vdc
120 Vdc
230 Vdc

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category/Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

Cat. No. XCM1A012

CM1A012

Cat. No. XCM1A024

CM1A024

Cat. No. XCM1A120

CM1A120

Cat. No. XCM1A230

CM1A230

12 Vac $\pm 10\%$

95 mA $\pm 10\%$

15 ms

10 ms

24 Vac $\pm 10\%$

48 mA $\pm 10\%$

15 ms

10 ms

120 Vac $\pm 10\%$

10.5 mA $\pm 10\%$

15 ms

10 ms

230 Vac $\pm 10\%$

6 mA $\pm 10\%$

15 ms

10 ms

SPDT AgSnO₂
12 A / 250 Vac
12 A

—

—10...+50°C

4 kVac / 60 s

1 kVac / 60 s (between open contact)

IP 20 IEC 529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² fixed screw type AWG26-14

UL94V-0 plastic material

54 g (1.91 oz)

vertical on rail adjacent without gap or panel with screw

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper black
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Cat. No. 8904016

Cat. No. 8904048

Cat. No. 8904056

Cat. No. 8904050

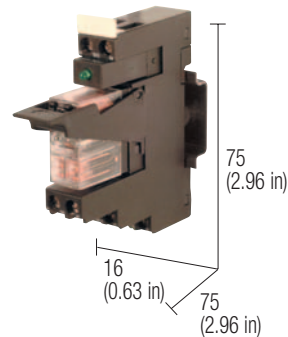
XCMB16B

—

—

DPDT single relay AC input series CM

- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available

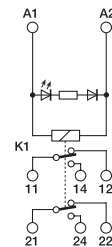


NOTES

The height dimension includes 35 mm DIN rail.

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

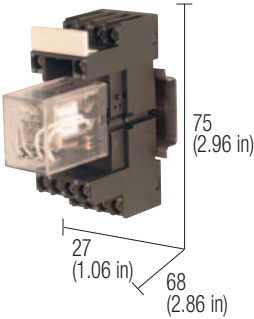
BLOCK DIAGRAM



VERSIONS	Cat. No. XCM2A012	Cat. No. XCM2A024	Cat. No. XCM2A120	Cat. No. XCM2A230
12 Vac	CM2A012			
24 Vac		CM2A024		
120 Vac			CM2A120	
230 Vac				CM2A230
INPUT TECHNICAL DATA				
Rated voltage	12 Vac $\pm 10\%$	24 Vac $\pm 10\%$	120 Vac $\pm 10\%$	230 Vac $\pm 10\%$
Rated current (1 channel)	95 mA $\pm 10\%$	48 mA $\pm 10\%$	10.5 mA $\pm 10\%$	6 mA $\pm 10\%$
Turn ON time	15 ms	15 ms	15 ms	15 ms
Turn OFF time	10 ms	10 ms	10 ms	10 ms
Protection circuit				
OUTPUT TECHNICAL DATA				
Type and number of contacts	DPDT AgSnO ₂			
Nominal current (resistive load)	8 A / 250 Vac			
Current breaking power	8 A			
Current of the fuse max.				
GENERAL TECHNICAL DATA				
Operating temperature range	-10...+50°C			
Coil/contact isolation	4 kVac / 60 s			
Isolation between output terminals	1 kVac / 60 s (between open contact)			
Protection degree	IP 20 IEC 529, EN60529			
Overvoltage category/Pollution degree	III / 2			
Reference Standard	IEC 664-1, DIN VDE 0110.1			
Status display	green LED			
Connection terminal	2.5 mm ² fixed screw type AWG26-14			
Housing material	UL94V-0 plastic material			
Approx. weight	67 g (2.37 oz)			
Mounting information	vertical on rail adjacent without gap or panel with screw			
MOUNTING ACCESSORIES	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB			
Mounting rail type according to IEC60715/TH35-7.5				
Mounting rail type according to IEC60715/G32				
Replacement relay (1)	Cat. No. 8904017	Cat. No. 8904055	Cat. No. 8904056	Cat. No. 8904057
Screw type jumper	black	Cat. No. XCMB16B		
	white			
	blue			

4PDT single relay AC input
series CM

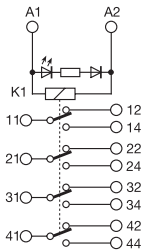
- Pluggable relay
- Mounting on DIN rail or panel through central screw
- Compact dimensions
- Cross and slotted screws
- Screw type jumper available



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

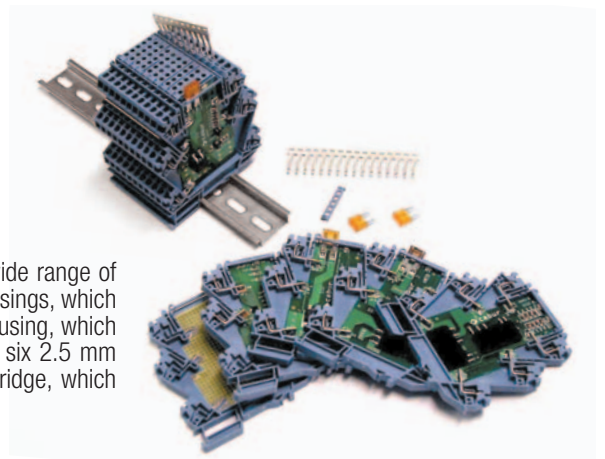
BLOCK DIAGRAM



VERSIONS		Cat. No. XCM4A024	
12 Vdc		—	
24 Vdc		CM4A024	
120 Vdc			—
230 Vdc			—
INPUT TECHNICAL DATA			
Rated voltage		24 Vac ±10%	
Rated current (1 channel)		38 mA ±10%	
Turn ON time		20 ms	
Turn OFF time		20 ms	
Protection circuit		—	
OUTPUT TECHNICAL DATA			
Type and number of contacts		DPDT AgSnO ₂	
Nominal current (resistive load)		3 A / 250 Vac	
Current breaking power		3 A	
Current of the fuse max.		—	
GENERAL TECHNICAL DATA			
Operating temperature range		−10...+50°C	
Coil/contact isolation		4 kVac / 60 s	
Isolation between output terminals		1 kVac / 60 s (between open contact)	
Protection degree		IP 20 IEC 529, EN60529	
Overvoltage category/Pollution degree		III / 2	
Reference Standard		IEC 664-1, DIN VDE 0110.1	
Status display		green LED	
Connection terminal		2.5 mm ² fixed screw type AWG26-14	
Housing material		UL94V-0 plastic material	
Approx. weight			
Mounting information		vertical on rail adjacent without gap or panel with screw	
MOUNTING ACCESSORIES		PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	
Mounting rail type according to IEC60715/TH35-7.5		—	
Mounting rail type according to IEC60715/G32		—	
Replacement relay	(1)	Cat. No. 8904033	
Screw type jumper	black	—	
	white	—	
	blue	—	

CK system interface

The CK series is a collection of interfaces for sensors and actuators, is composed by a wide range of electromechanical relay and solid state relay modules and passive interfaces in modular housings, which are only 6 mm wide thus saving valuable space. All products are mounted inside the CK housing, which is also available for use as a housing for custom. The CK housing can be equipped with six 2.5 mm spring-clamp terminals and four contacts for the insertion of a PTC parallel connection bridge, which provides for quick and easy circuit bridging and saves space and harness time.



The product range is currently composed by:

- Single electromechanical relay with 6 A/250 Vac SPDT protected with replaceable fuse, status Led display on front panel, AC/DC input and positive or negative common on relay coil.
- Double electromechanical relay with 5 A/250 Vac SPST (NO), two status LED displays on front panel, AC/DC input and positive or negative common on relay coil.
- Single solid state relay for common negative load, 5 A /48 Vdc output current, protected with replaceable fuse, status LED display on front panel and positive or negative common on input.
- Double solid state relay suitable for 12-24 Vdc 2.5 A loads, status LED display on front panel and positive or negative common of the input and output as well.
- Diode-holder modules with common anode (CK...AC) or common cathode (CK...CC).
- Lamp and LED test modules.
- Supply connection and distribution modules with LED display.

Composition of an interface with the CK System:

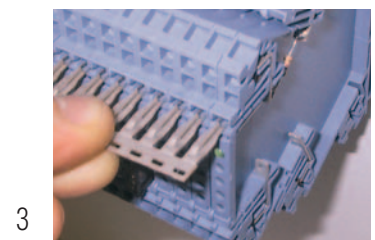
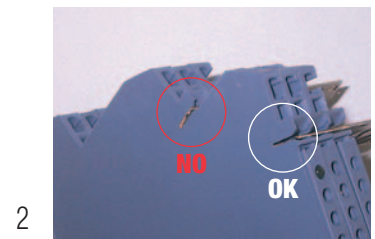
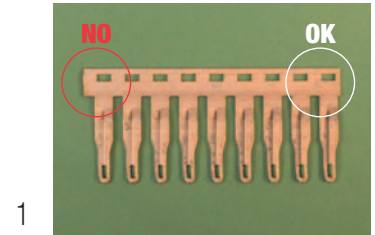
- The required modules must be selected and mounted on the DIN rail.
- The common poles of inputs and outputs can be connected in parallel using the fast connection bridges **PTC/CK/42**.
- For the connection of inputs and outputs of the relay module interface, we recommend to use the **CKF** supply distribution module: it allows to connect and distribute the feeding potential to inputs and outputs on all adjacent modules; the CKF module can be mounted as first module, or even better, in the middle position of the interfaces assembly, to divide 50+50% the current on the bridge and to reduce voltage drop and heating; the CKF- is available with LED for ON display, and is equipped with four 2.5 mm / AWG 26 ÷ 14 / 24 A rated spring-clamp terminals - input and output.
- In order to assure the IP XXB protection degree, the last module must be protected and insulated using the **CK/PT** end section.
- Main technical data and BLOCK DIAGRAM are printed on one side of each module; for individual terminal block marking, CNU/8 marking tags are available; CNU/8 marking tags are available in blank format for plotter or pen marking, or in CK dedicated series bearing numbers and/or symbols and allow to have 4, 8, 16 relay interface modules, each one individually marked on all poles.
- If the input and output power supply cables of the interface assembly are directly connected to eg. the first module, two cables must be connected on a single terminal block (feeding wire and load wire) forcing to reduce the cross-section of each conductor to less than 2,5 mm; consequently, this means a current and a reduction of the total number of relay modules that can be fed; the problem can be solved by using the CKF feeder distribution module as described in the third point.

Easy Bridge system

The fast connection bridge **PTC/CK/42** has 42 poles, and a rated current of 32 A; WARNING: the total current is limited by the rated current of the spring-clamp terminal block (24 A): if a PTC/CK serves 10 relays, a rated current of 2,4 A can be distributed on to each relay.

The use of PTC/CK bridges is simple and cost effective; the following instructions must be followed:

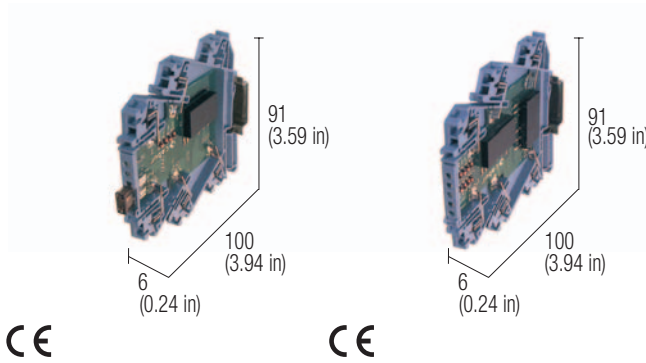
- after having cut the PTC/CK/42-pole bar according to required number of poles, in order to maintain the IPXXB protection degree the bar must be sheared in proximity of the end poles (see pictures 1 and 2);
- insert the jumper in the slot of the CK terminals (see picture 3);
- by using the blade of a screwdriver, the PTC bridge must be pushed down until it snaps into the female contacts; in case of long jumpers, the operation shall be started by pushing the bridge in the middle, then gradually on left / right sides; the jumper will then result completely IPXXB insulated (see picture 4);
- to remove the jumper, the blade of a screwdriver shall be inserted into the slot provided in the upper side of the PTC bridge, then lifted up and finally extracted; in case of long jumpers, the bridge shall be lifted in the middle, then gradually on left / right sides (pictures 5 and 6).



24 Vdc relay modules

CKR series

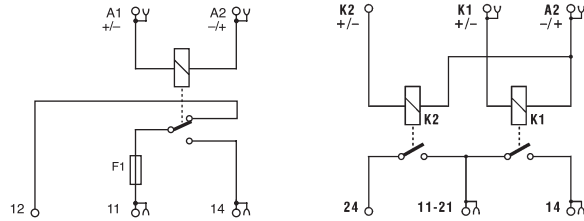
- Built-in replaceable contact protection fuse
- AC/DC common negative or positive input
- Status LED display, reverse polarity protection, crow-bar diode
- 6 mm wide
- Plug-in jumper available



NOTES

- (1) The contact rated voltage is 250 Vac; max operating voltage of the contact of the module is 50 Vac-Vdc, limited by the voltage ratings of the adopted type of fuse, which is rated for ≤ 50 Vac-75 Vdc SELV voltages; WARNING: if used with higher voltage, it does not guarantee breaking power and thus safety, and IP protection degree is lowered to IP 00; fuses with higher current ratings are not allowed and do not protect the contact against short circuit and overcurrents
- (2) Version available upon request.
- (3) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section.

BLOCK DIAGRAM



VERSIONS

- 1 channel
2 channels

INPUT TECHNICAL DATA

- Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

OUTPUT TECHNICAL DATA

- Type and number of contacts
Nominal current (resistive load)
Current breaking power
Current of the fuse max.

GENERAL TECHNICAL DATA

- Operating temperature
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / pollution degree
Reference Standard
Status display
Connection terminals
Housing material
Approx. weight
Mounting information

MOUNTING ACCESSORIES

- Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Plug-in jumper —
Marking tags blank printed printed
End plate

Cat. No. XCKR16

CKR16

Cat. No. XCKR25

CKR25

24 Vac/dc $\pm 10\%$

- ≤ 15 mA $\pm 10\%$ @ 24 Vdc
5 ms
10 ms
bridge rectifier

24 Vac/dc $\pm 10\%$

- ≤ 13 mA $\pm 10\%$ @ 24 Vdc
5 ms
10 ms
bridge rectifier

SPDT AgSnO₂

6 A / 250 Vac

30 A

2PST (NO) AgSnO₂

5 A / 250 Vac

30 A

-20...+60°C

3 kVac / 60 s

IP 00 IEC529, EN60529

II / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² AWG26-14 fixed spring type

polyamide UL94V-0

40 g (1.41 oz)

vertical on rail adjacent without gap

-20...+60°C

3 kVac / 60 s

IP 00 IEC529, EN60529

II / 2

IEC 664-1, DIN VDE 0110.1

green LED

2.5 mm² AWG26-14 fixed spring type

polyamide UL94V-0

43 g (1.52 oz)

vertical on rail adjacent without gap

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Cat. No. PTCCK42 (42 poles)

Cat. No. NU008

Cat. No. N8CK1610

Cat. No. N8CK1620

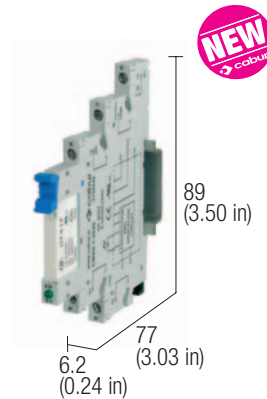
Cat. No. XCKPT

Cat. No. NU008

Cat. No. N8CK2518

Relay modules AC/DC input series CWRE

- Pluggable relay
- Status LED display
- 6.2 mm wide
- Plug-in jumper available



NOTES

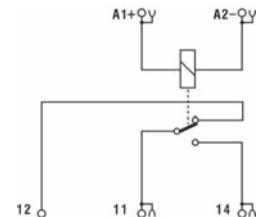
The height dimension includes 35 mm DIN rail.

- (1) Version available upon request; for information call our sales department, local agent or representative.
- (2) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

APPLICAZIONI

The CWRE series is suitable for the commutation of signals and is equipped with a pull-out relay to make the maintenance operations easy. Furthermore this series offers the possibility to execute the parallel on both the input and output side by the means of a proper comb jumper.

BLOCK DIAGRAM



VERSIONS	Cat. No. X766848	Cat. No. X766842	Cat. No. X766845	Cat. No. X766846	Cat. No. X766847
12 Vac/dc	CWRE7-0848				
24Vac/dc		CWRE7-0842			
48 Vac/dc (1)			CWRE7-0845 (1)		
115 Vac/dc				CWRE7-0846	
230 Vac/dc					CWRE7-0847
INPUT TECHNICAL DATA					
Rated voltage	12 Vac/dc ±10%	24 Vac/dc ±10%	48 Vac/dc ±10%	115 Vac/dc ±10%	230 Vac/dc ±10%
Rated current (1 channel)	10 mA ±10%	7 mA ±10%	5 mA ±10%	4 mA ±10%	4 mA ±10%
Turn ON time	8 ms	8 ms	7 ms	8 ms	8 ms
Turn OFF time	5 ms	5 ms	7 ms	13 ms	13 ms
Protection circuit	bridge rectifier				
OUTPUT TECHNICAL DATA					
Type and number of contacts	SPDT AgSnO ₂ (3)				
Nominal current (resistive load)	6 A / 250 Vac ; 6 A / 30 Vdc				
Current breaking power	DC 13: 24 V / 1A; 115V / 200 mA; 230 V / 100 mA				
Current of the fuse max.	—				
GENERAL TECHNICAL DATA					
Operating temperature	-40...+70°C				
Coil/contact isolation	4 kVac / 60 s				
Isolation between output terminals	1 kVac / 60 s (between open contact)				
Protection degree	IP 20 IEC 529, EN60529				
Overvoltage category / pollution degree	III / 2				
Reference Standard	IEC 664.1, DIN VDE 0110.1				
Status display	green LED				
Connection terminals	2.5 mm ² fixed screw type AWG26-14				
Housing material	UL94V-0 plastic material				
Approx. weight	35 g (1.23 oz)				
Mounting information	vertical on rail adjacent without gap				
MOUNTING ACCESSORIES					
Mounting rail type according to IEC60715/TH35-7.5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB				
Mounting rail type according to IEC60715/G32	—				
Replacement relay (2)	Cat. No. 8904027				
Plug-in jumper	—				
black	—				
white	—				
blue	CWBK7-0813 (Cat. No. X766813) (20 poli)				

Multiple relay modules quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

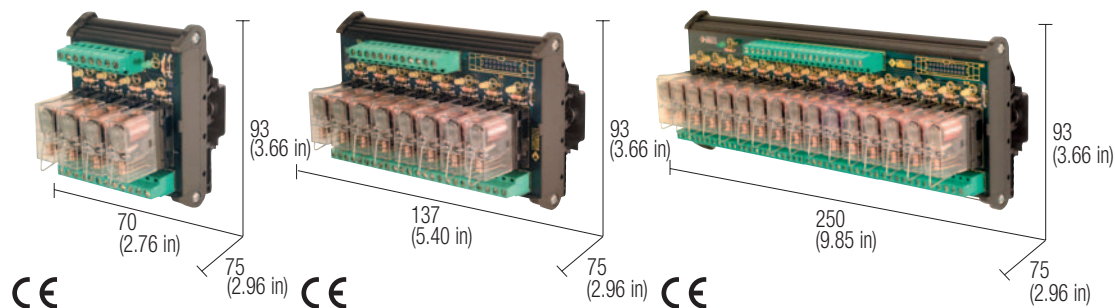
Number of relays	Input rated voltage	Output		Notes	Type	Cat. No.	Page
		type / no. of contacts	rated current				
4	12 Vdc	SPDT	10 A	(1) (4)	R41E12	XR041E12	125
4	12 Vdc	DPDT	5 A	(1) (4)	R42E12	XR042E12	126
4	24 Vdc	SPDT	12 A	(1) (4)	R41E24	XR041E24	117
4	24 Vdc	SPDT	12 A	(1) (5)	R41E24P	XR041E24P	118
4	24 Vdc	SPDT	12 A	(3) (4)	Z4124D	XZ04124D	130
4	24 Vdc	DPDT	8 A	(1) (4)	R42E24	XR042E24	121
4	24 Vdc	DPDT	8 A	(1) (5)	R42E24P	XR042E24P	122
4	24 Vdc	DPDT	8 A	(3) (4)	Z4224D	XZ04224D	131
4	24 Vac/dc	SPDT	8 A	(2) (6)	CR4-1	XCR41	132
4	24 Vac/dc	SPDT	8 A	(2) (6)	CR4-2	XCR42	132
4	24 Vac/dc	SPDT	8 A	(1) (6)	CRE4-1	XCRE41	132
4	24 Vac/dc	SPDT	12 A	(1) (6)	R41EAD	XR041EAD	119
4	24 Vac/dc	SPDT	12 A	(1) (6) (8)	R41U24F	XR041U24F	120
4	24 Vac/dc	DPDT	8 A	(1) (6)	R42EAD	XR042EAD	123
4	24 Vac/dc	DPDT	8 A	(2) (6)	CR4-2SC	XCR42SC	134
4	24 Vac/dc	DPDT	8 A	(1) (6)	CRE4-2SC	XCRE42SC	134
4	110 Vdc/120 Vac $\pm 10\%$	SPDT	10 A	(1) (6)	R41E11A	XR041E1A	128
4	230 Vac	SPDT	10 A	(1) (6)	R41E22A	XR041E2A	129
8	12 Vdc	SPDT	10 A	(1) (4)	R81E12	XR081E12	125
8	12 Vdc	DPDT	5 A	(1) (4)	R82E12	XR082E12	126
8	24 Vdc	SPDT	12 A	(1) (4)	R81E24	XR081E24	117
8	24 Vdc	SPDT	12 A	(1) (5)	R81E24P	XR081E24P	118
8	24 Vdc	SPDT	12 A	(3) (4)	Z8124D	XZ08124D	130
8	24 Vdc	DPDT	8 A	(1) (4)	R82E24	XR082E24	121
8	24 Vdc	DPDT	8 A	(1) (5)	R82E24P	XR082E24P	121
8	24 Vdc	DPDT	8 A	(3) (4)	Z8224D	XZ08224D	131
8	24 Vac/dc	SPST(NO)	8 A	(2) (6)	CR8-2	XCR82	133
8	24 Vac/dc	SPST(NO)	8 A	(1) (6) (7)	CR8-3	XCR83	137
8	24 Vac/dc	SPST(NO)	8 A	(1) (6)	CRE8-1	XCRE81	133
8	24 Vac/dc	SPST(NO)	8 A	(1) (6) (7)	CRE8-3	XCRE83	137
8	24 Vac/dc	SPDT	12 A	(1) (6)	R81EAD	XR081EAD	119
8	24 Vac/dc	SPDT	12 A	(1) (6) (8)	R81U24F	XR081U24F	120
8	24 Vac/dc	SPDT	12 A	1) (6) (9) (10)	RMP081CM	XRMP081CM	124
8	24 Vac/dc	SPST(NO)	8 A	(2) (6)	CR8-1	XCR81	133
8	24 Vac/dc	DPDT	8 A	(1) (6)	R82EAD	XR082EAD	123
8	48 Vdc	DPDT	8 A	(1) (4)	R82E48	XR082E48	127
8	110 Vdc/120 Vac $\pm 10\%$	SPDT	10 A	(1) (6)	R81E11A	XR081E1A	128
8	230 Vac	SPDT	10 A	(1) (6)	R81E22A	XR081E2A	129
16	12 Vdc	SPDT	10 A	(1) (4)	R161E12	XR161E12	125
16	12 Vdc	DPDT	5 A	(1) (4)	R162E12	XR162E12	126
16	24 Vdc	SPDT	12 A	(1) (4)	R161E24	XR161E24	117
16	24 Vdc	SPDT	12 A	(1) (5)	R161E24P	XR161E24P	118
16	24 Vdc	SPDT	12 A	(3) (4)	Z16124D	XZ16124D	130
16	24 Vdc	DPDT	8 A	(1) (4)	R162E24	XR162E24	121
16	24 Vdc	DPDT	8 A	(1) (5)	R162E24P	XR162E24P	121
16	24 Vdc	DPDT	8 A	(3) (4)	Z16224D	XZ16224D	131
16	24 Vac/dc	SPDT	12 A	(1) (6)	R161EAD	XR161EAD	119
16	24 Vac/dc	SPDT	12 A	(1) (6) (8)	R161U24F	XR161U24F	120
16	24 Vac/dc	DPDT	8 A	(1) (6)	R162EAD	XR162EAD	123
16	48 Vdc	DPDT	5 A	(1) (4)	R162E48	XR162E48	127
16	110 Vdc/120 Vac $\pm 10\%$	SPDT	10 A	(1) (6)	R161E11A	XR161E1A	128
16	230 Vac	SPDT	10 A	(1) (6)	R161E22A	XR161E2A	129

Note

- | | |
|---------------------------------------|---|
| (1) version with pluggable relay | (6) universal control voltage, negative DC command, positive DC, AC |
| (2) version with fixed relay | (7) with connector input command |
| (3) with socket but without relay | (8) with protection fuse on the relay contact |
| (4) negative common, positive command | (9) with test push button |
| (5) positive common, negative command | (10) with test switch |

24 Vdc SPDT relay modules negative common

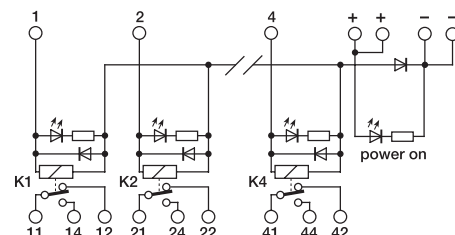
- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



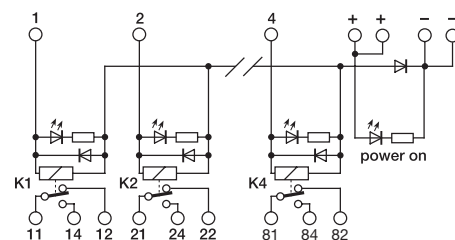
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

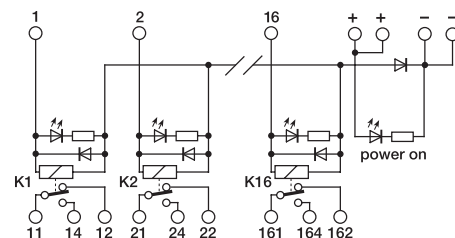
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

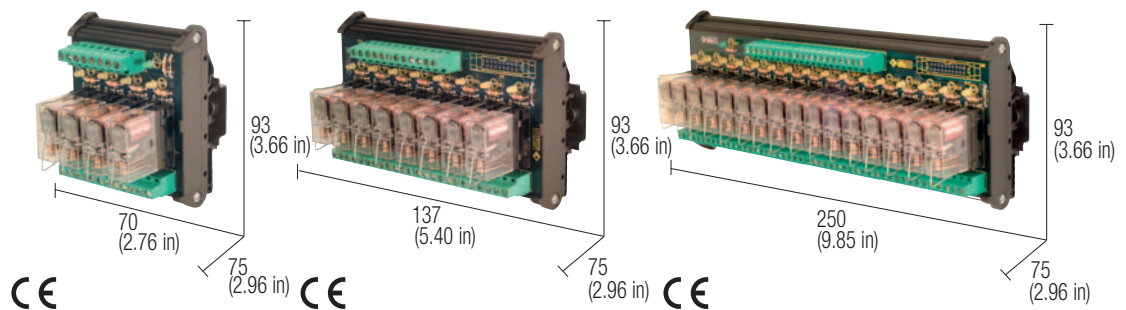
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 20 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	188 g (6.63 oz) 342 g (12.06 oz) 657 g (23.17 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red
	white
	blue

24 Vdc SPDT relay modules positive common

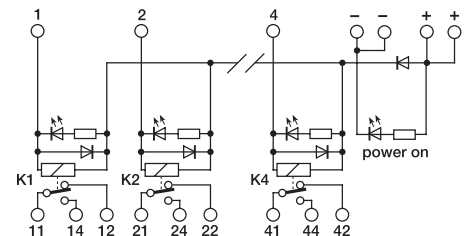
- DC control voltage
- Positive control voltage
- Status LED display
- Pluggable relay



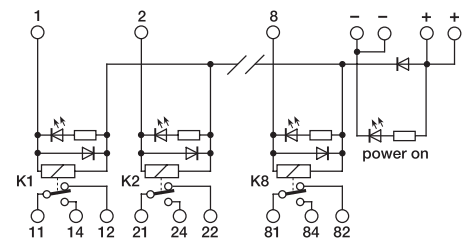
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical

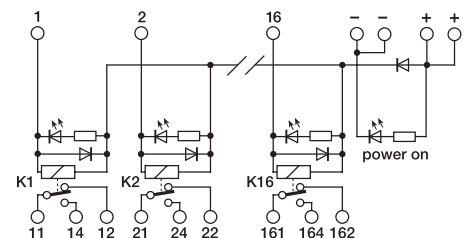
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

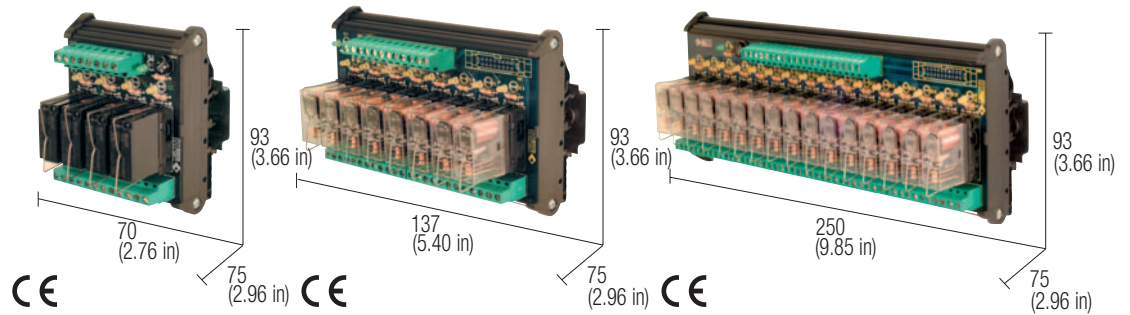
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	188 g (6.63 oz) 342 g (12.06 oz) 657 g (23.17 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red white blue

24 Vac/dc SPDT relay modules universal control voltage

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay



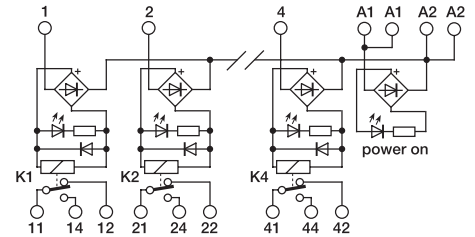
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical
(2) Version available upon request.

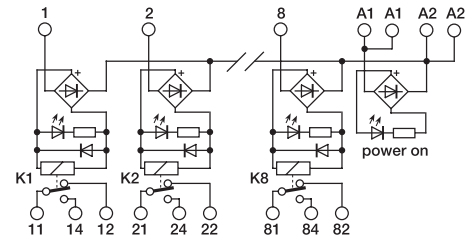
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

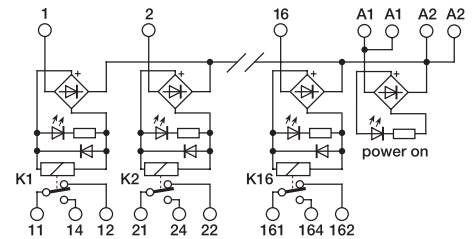
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

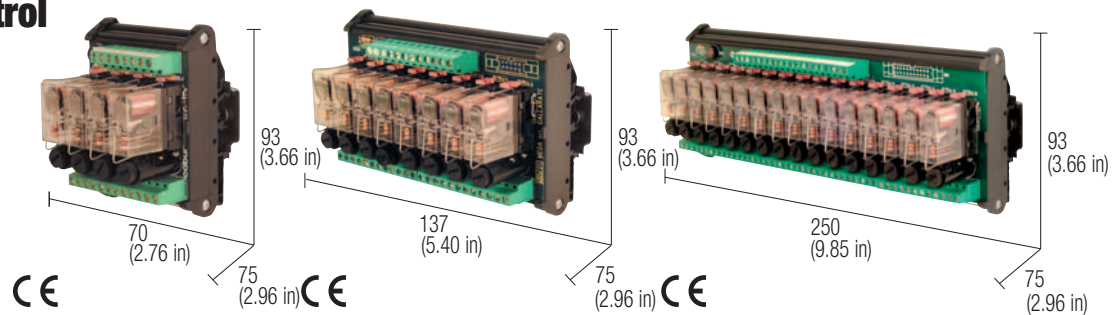
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	192 g (6.76 oz) 345 g (12.18 oz) 688 g (24.29 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red
	white
	blue

24 Vac/dc SPDT relay modules universal control voltage with fuse

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay
- Output contact with protection fuse



NOTES

The height dimension includes 35 mm DIN rail. (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical. (2) The interface is supplied without a fuse and the screw plug of the fuse-holder is provided in a bag inside the packaging. The fuse must be dimensioned according to load. The max. value of 6.3 A is referred to EN60127-complying fuses and the homologation rated current of the fuseholder. Fuses of a higher value may damage the fuseholder and module.

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage

Rated current (1 channel)

Turn ON time

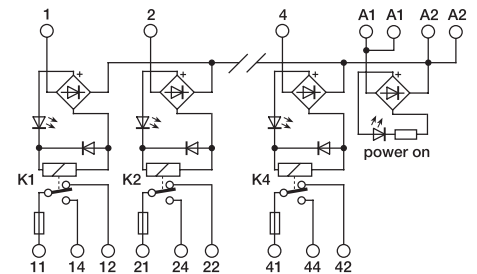
Turn OFF time

Protection circuit

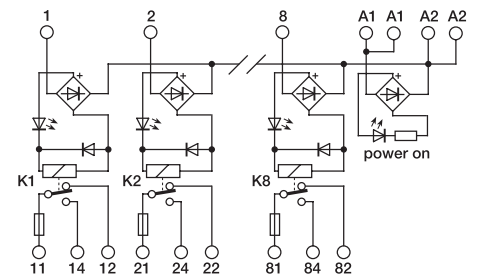
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

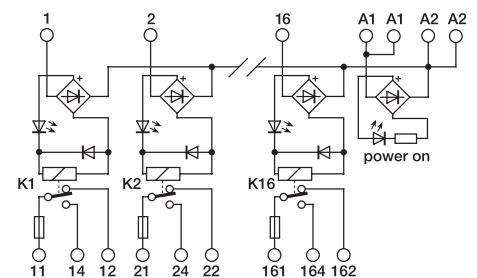
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

OUTPUT TECHNICAL DATA

Type and number of contacts

Nominal load (resistive)

Current breaking power

Current of the fuse max.

SPDT AgSnO₂ per 4 relé

12 A / 250 Vac

12 A

6,3 A (2)

GENERAL TECHNICAL DATA

Operating temperature range

Coil/contact isolation

Isolation between output terminals

Protection degree

Overvoltage category / Pollution degree

Reference Standard

Status display

Connection terminal

Housing material

Approx. weight

Mounting information

-10...+50°C

2.5 kVac / 60 s

1 kVac / 60 s (between open contact)

IP 00 IEC 529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED / yellow LED

2.5 mm² fixed screw type

UL94V-0 plastic material

210 g (7.41 oz)

326 g (11.51 oz)

770 g (27.18 oz)

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35

Mounting rail type according to IEC60715/G32

Replacement relay (1)

Screw type jumper

red

white

blue

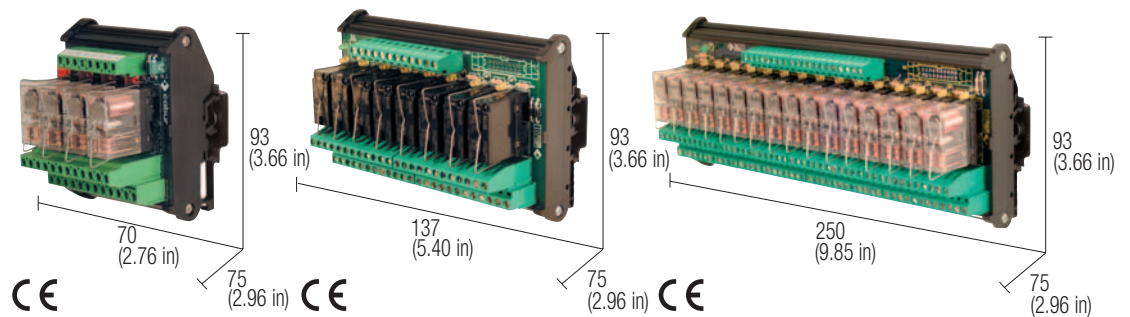
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Cat. No. 8904001

24 Vdc DPDT relay modules negative common

- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	10 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

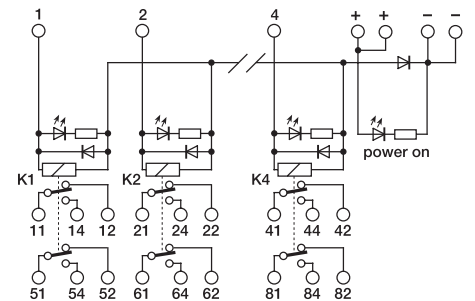
GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

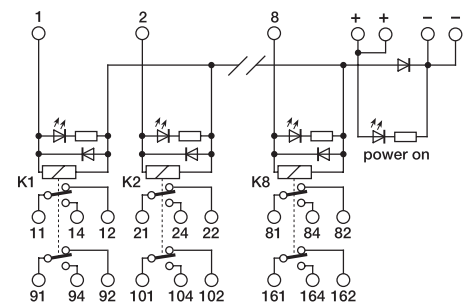
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	red white blue

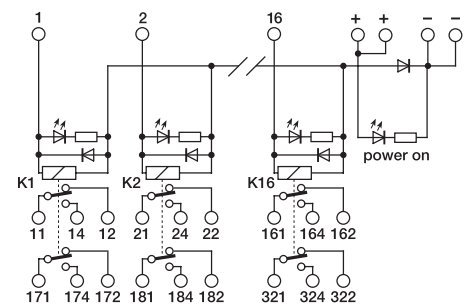
BLOCK DIAGRAM



4 relay module



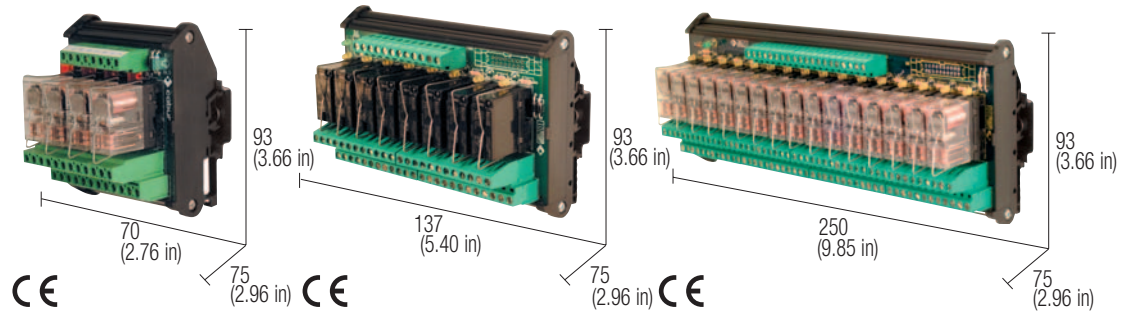
8 relay module



16 relay module

24 Vdc DPDT relay modules positive common

- DC control voltage
- Positive control voltage
- Status LED display
- Pluggable relay



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

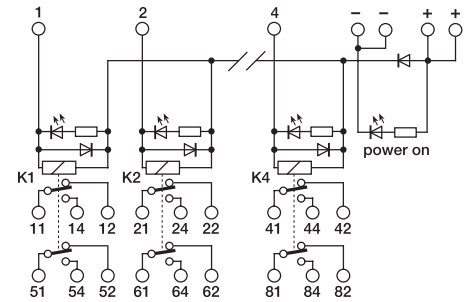
GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

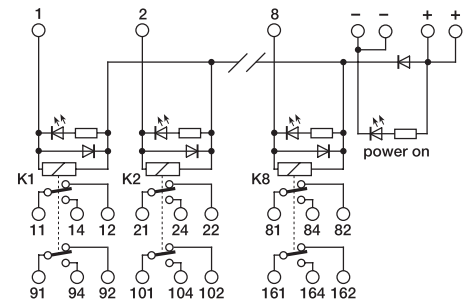
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	red white blue

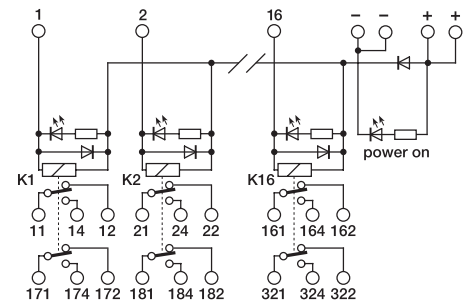
BLOCK DIAGRAM



4 relay module



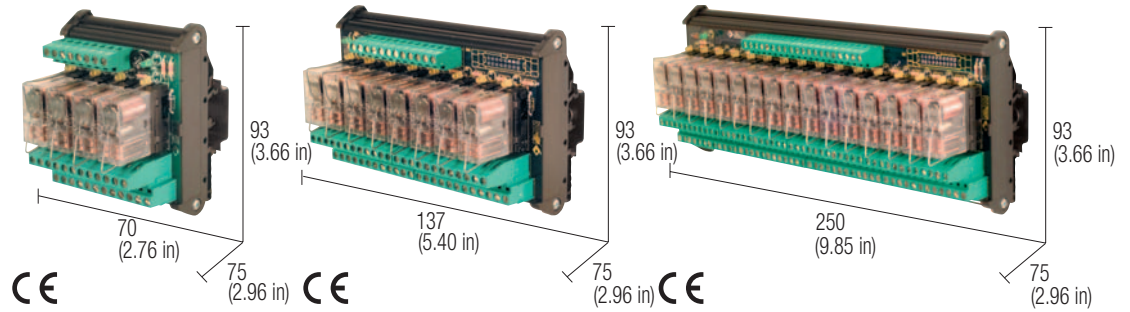
8 relay module



16 relay module

24 Vac/dc DPDT relay modules universal control voltage

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay



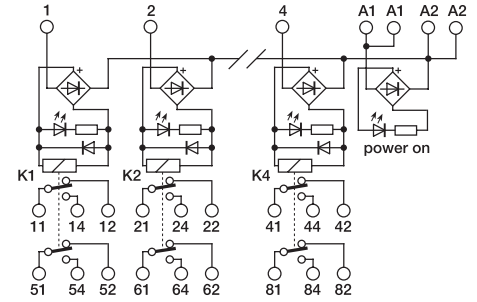
NOTES

The height dimension includes 35 mm DIN rail.
 (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
 (2) Version available upon request.

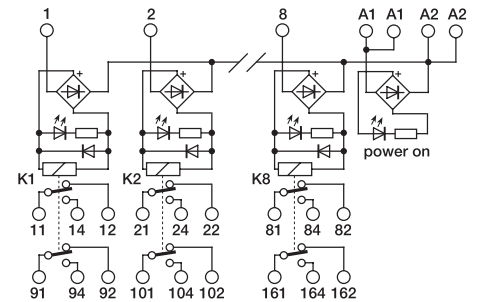
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

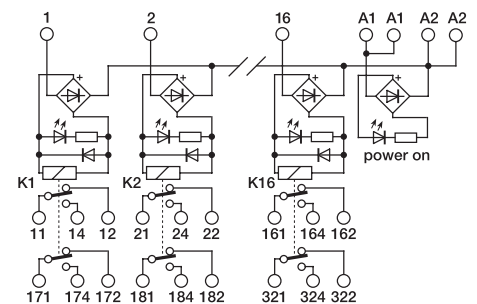
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

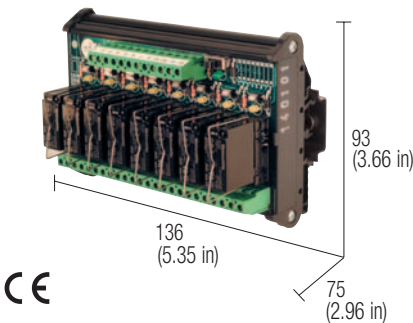
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	227 g (8.01 oz) 427 g (15.07 oz) 835 g (29.48 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	red white blue

24 Vac/dc relay
modules universal
control voltage with
test push button

- DC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay
- Test with push button and micro switch



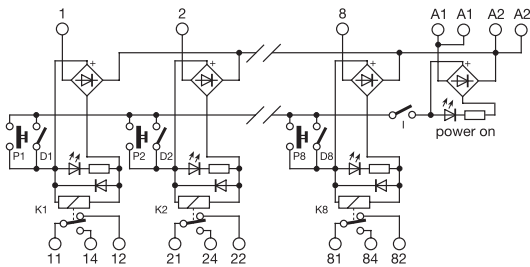
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) They replace XRP08124 and XRD08124 models.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

BLOCK DIAGRAM



- P = test button
D = dip-switch
IG = master switch (disable the push button and dip-switch)

VERSIONS

With test push button and dip switch

Cat. No. XRMPO81CM (2)

RMP081CM

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm$ 10%
Rated current (1 channel)	22 mA $\pm$ 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂ per 8 relé
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

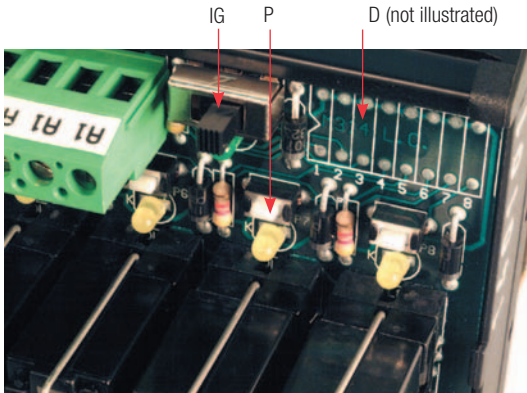
GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	350 g (12.36 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

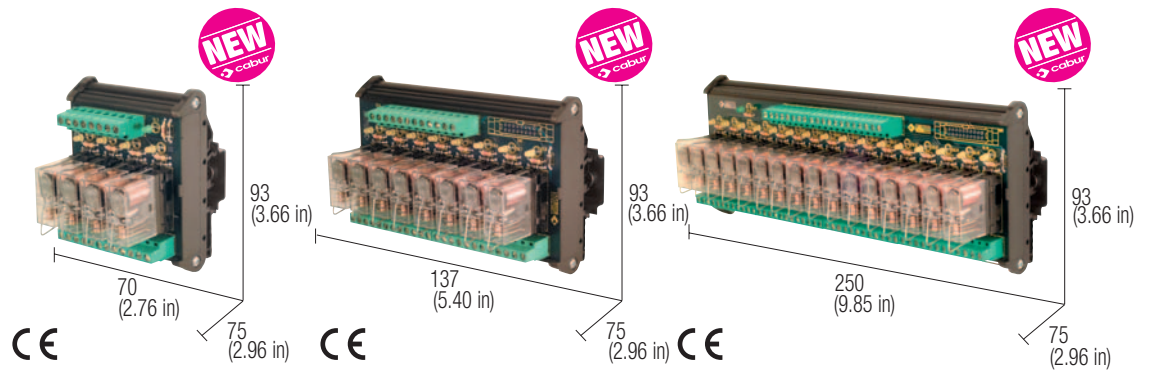
Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	—
red	—
white	—
blue	—

This series of products allows piloting with alternating and direct current, in which case only positive control is possible. We also recommend cutting JP jumpers if piloting takes place via low-current devices (e.g. proximity sensors).
On both versions it is possible the temporary turn on of the relay by pushing the relative button.
On model RD08124 it is possible to switch on the relays permanently with a Dip-Switch.



12 Vdc SPDT relay modules negative common

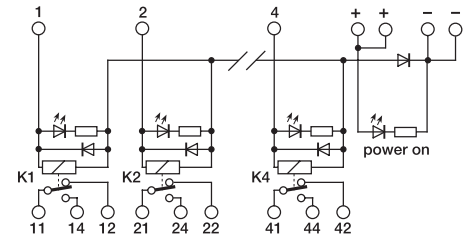
- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



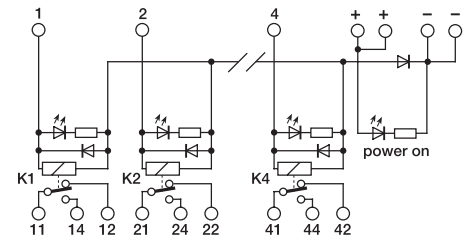
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

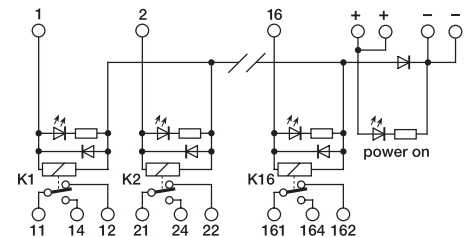
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR041E12

R41E12

Cat. No. XR081E12

R81E12

Cat. No. XR161E12

R161E12

INPUT TECHNICAL DATA

Rated voltage	12 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	188 g (6.63 oz) 342 g (12.06 oz) 657 g (23.17 oz)
Mounting information	vertical on rail adjacent without gap

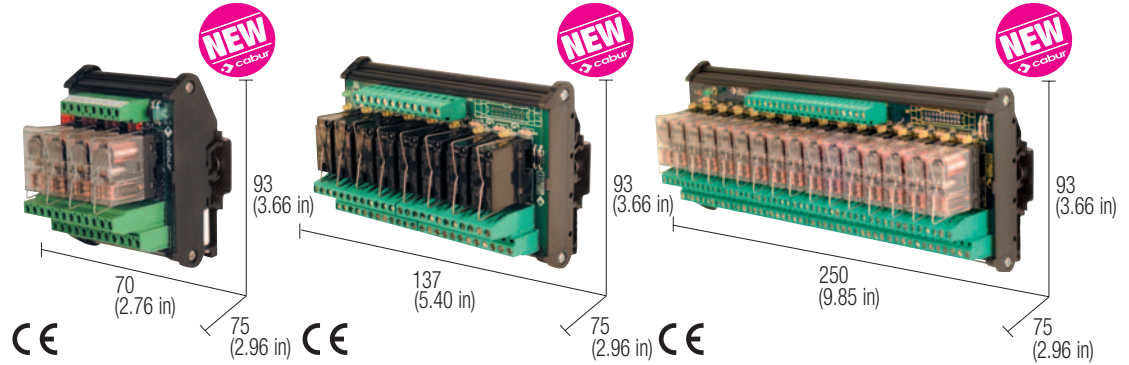
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001

Screw type jumper	red
	white
	blue

12 Vdc DPDT relay modules negative common

- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	12 Vdc $\pm$ 10%
Rated current (1 channel)	22 mA $\pm$ 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

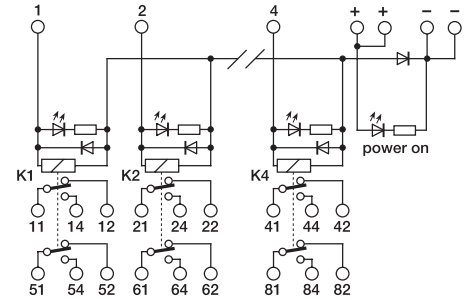
GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVAc / 60 s
Isolation between output terminals	1 KVAc / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

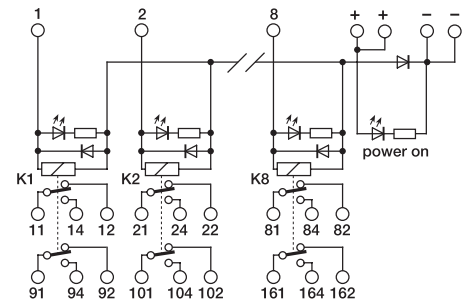
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red white blue

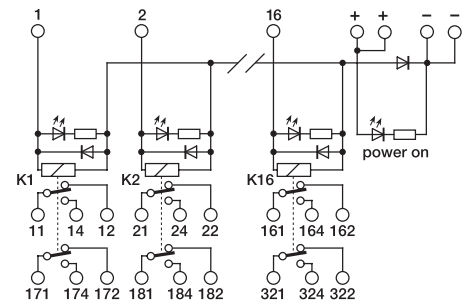
BLOCK DIAGRAM



4 relay module



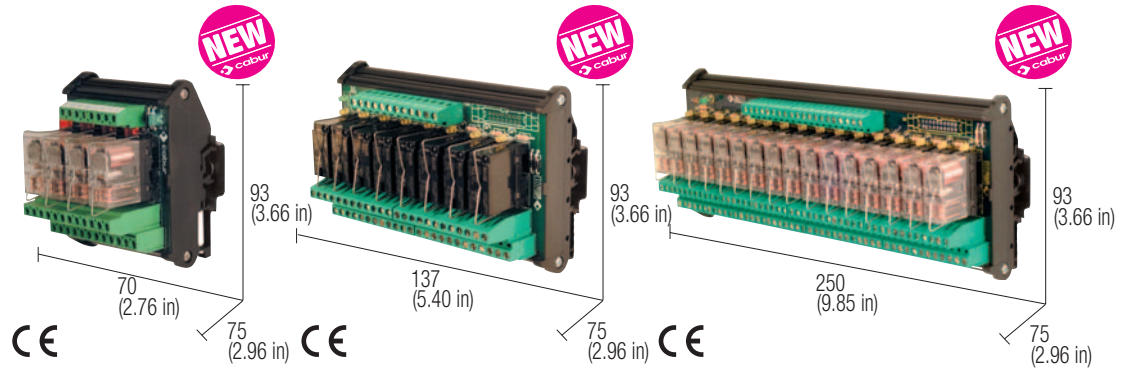
8 relay module



16 relay module

48 Vdc DPDT relay modules negative common

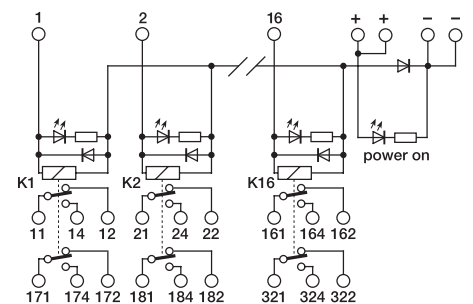
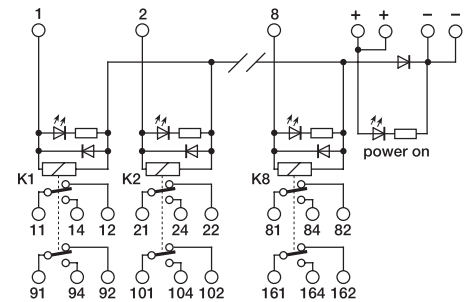
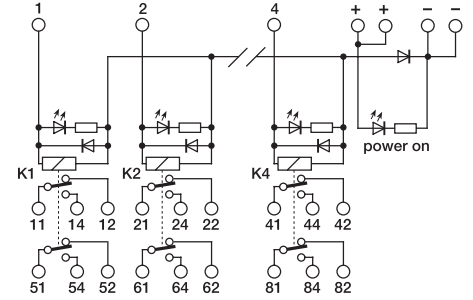
- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay



NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR042E48 Cat. No. XR082E48 Cat. No. XR162E48

R42E48

R82E48

R162E48

INPUT TECHNICAL DATA

Rated voltage	48 Vdc $\pm 10\%$
Rated current (1 channel)	16 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

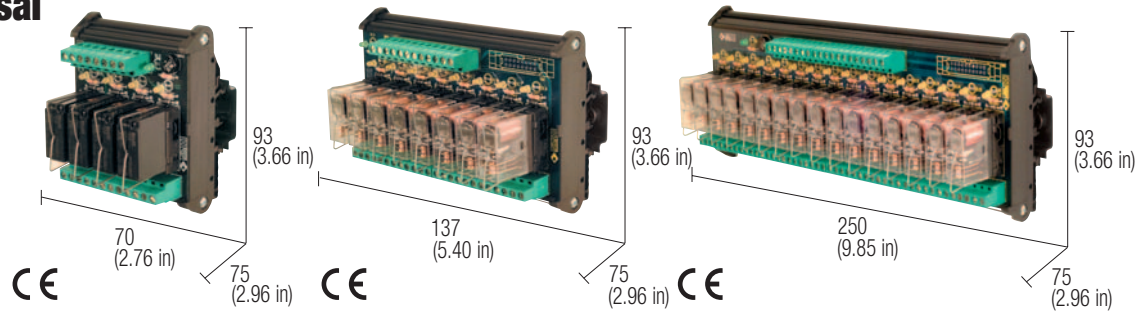
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904053

Screw type jumper	red
	white
	blue

110...120 Vac/dc SPDT relay modules universal control voltage

- DC and AC control voltage
- Positive or negative control voltage
- Status LED display
- Pluggable relay



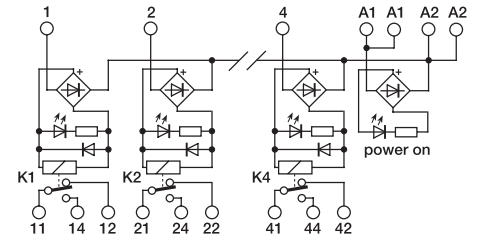
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

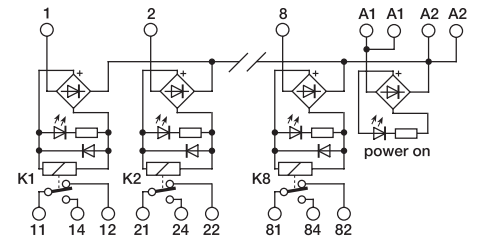
POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common
A1 = ~	A2 = ~	AC power supply

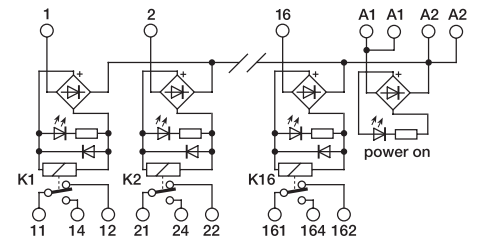
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR041E1A Cat. No. XR081E1A Cat. No. XR161E1A

R41E11A

R81E11A

R161E11A

INPUT TECHNICAL DATA

Rated voltage	110 Vdc / 120 Vac $\pm$ 10%
Rated current (1 channel)	11 mA $\pm$ 10%
Turn ON time	7 ms
Turn OFF time	3 ms
Protection circuit	bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgNi
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	192 g (6.76 oz) 345 g (12.18 oz) 688 g (24.29 oz)
Mounting information	vertical on rail adjacent without gap

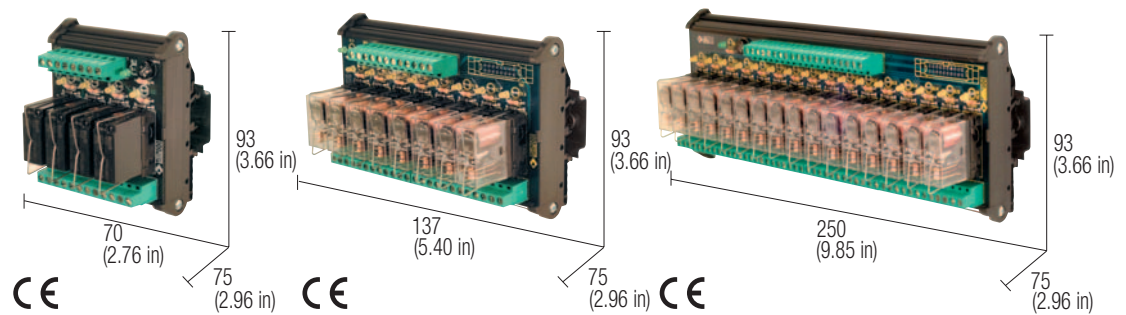
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904047

Screw type jumper	red
	white
	blue

230 Vac SPDT relay modules

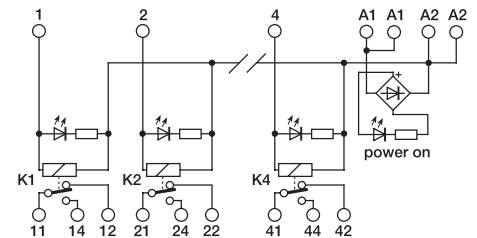
- AC control voltage
- Status LED display
- Pluggable relay



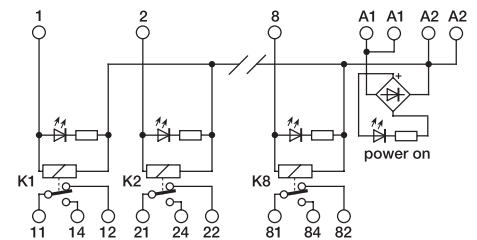
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

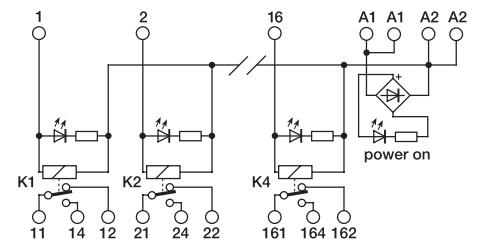
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage

230 Vac $\pm 10\%$

Rated current (1 channel)

10 mA $\pm 10\%$

Turn ON time

7 ms

Turn OFF time

2 ms

Protection circuit

—

OUTPUT TECHNICAL DATA

Type and number of contacts

SPDT AgSnO₂

Nominal load (resistive)

12 A / 250 Vac

Current breaking power

12 A

Current of the fuse max.

—

GENERAL TECHNICAL DATA

Operating temperature range

-10...+50°C

Coil/contact isolation

2.5 KVAc / 60 s

Isolation between output terminals

1 KVAc / 60 s (between open contact)

Protection degree

IP 00 IEC 529, EN60529

Overvoltage category / Pollution degree

III / 2

Reference Standard

IEC 664-1, DIN VDE 0110.1

Status display

green LED / yellow LED

Connection terminal

2.5 mm² fixed screw type

Housing material

UL94V-0 plastic material

Approx. weight

192 g (6.76 oz)

345 g (12.18 oz)

688 g (24.29 oz)

Mounting information

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

Mounting rail type according to IEC60715/G32

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

Replacement relay (1)

Cat. No. 8904050

Screw type jumper

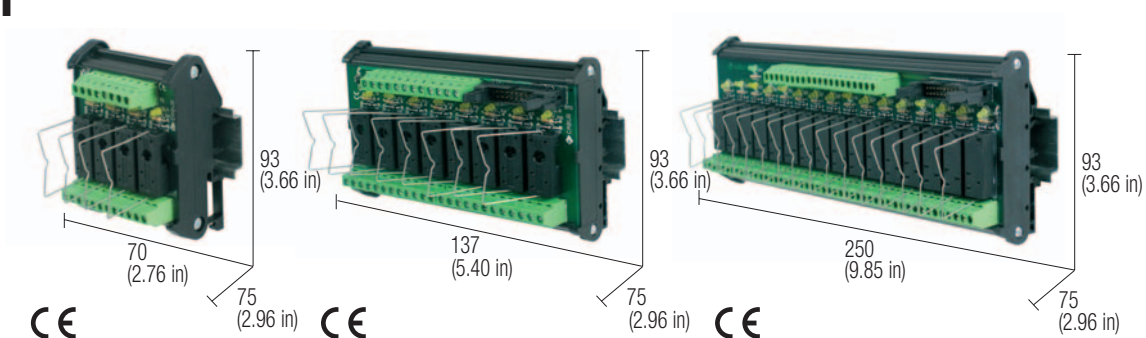
red

white

blue

Sockets without SPDT relay 12...24 Vdc negative common

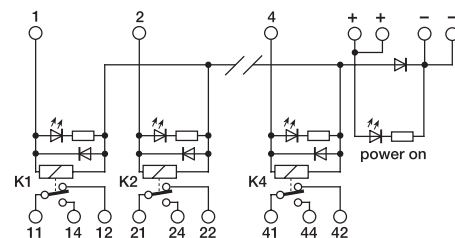
- With spring clips for 16 mm (height) relay
- With 16 or 20 poles IDC connector
- Suitable for relay with 3.5 mm pitch



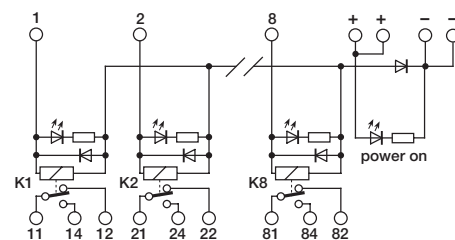
NOTES

The height dimension includes 35 mm DIN rail.

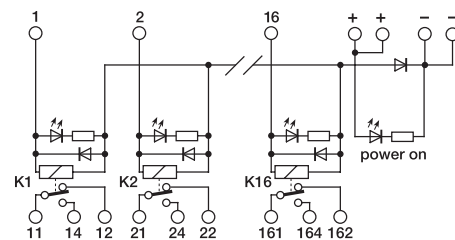
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm$ 10%
Rated current (1 channel)	22 mA $\pm$ 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgSnO ₂
Nominal load (resistive)	12 A / 250 Vac
Current breaking power	12 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

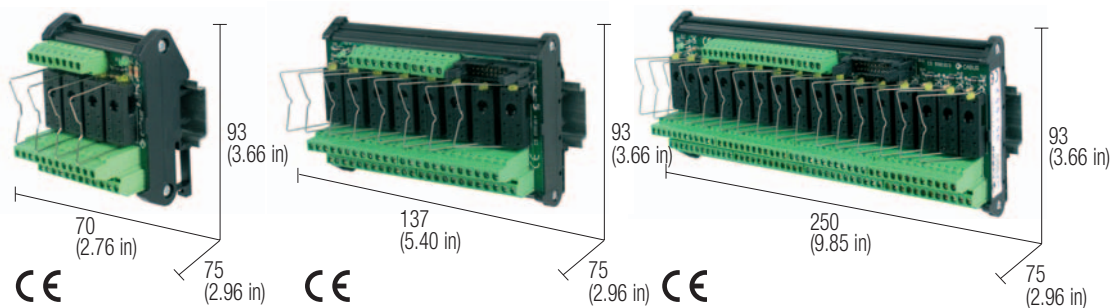
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type + connettore flat 16 poli (8 relè) e 20 poli (16 relè)
Housing material	UL94V-0 plastic material
Approx. weight	188 g (6.63 oz) 342 g (12.06 oz) 657 g (23.17 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay	—
Screw type jumper	red white blue

Sockets without DPDT relay 12...24 Vdc negative common

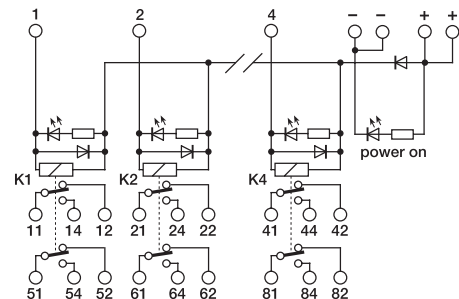
- With spring clips for 16 mm (height) relay
- 16 or 20 poles IDC connector
- Suitable for relay with 5 mm pitch
- Status LED display



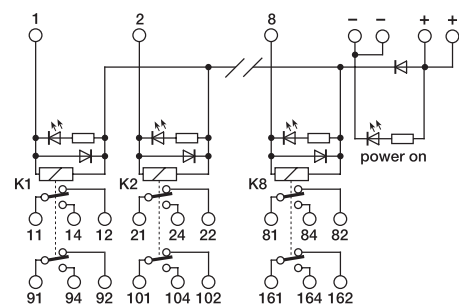
NOTES

The height dimension includes 35 mm DIN rail.

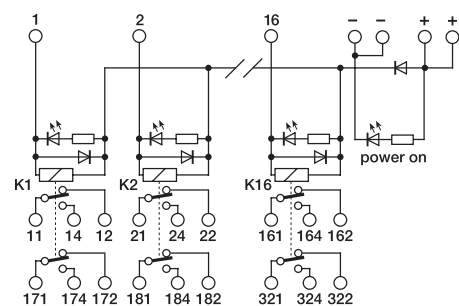
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XZ04224D Cat. No. XZ08224D Cat. No. XZ16224D

Z4224D

Z8224D

Z16224D

INPUT TECHNICAL DATA

Rated voltage	12...24 Vdc $\pm 10\%$
Rated current (1 channel)	22 mA $\pm 10\%$
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	8 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

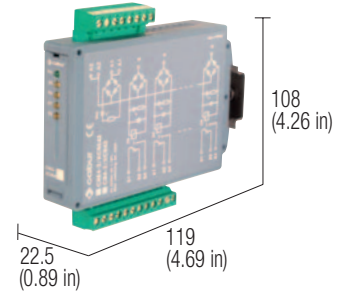
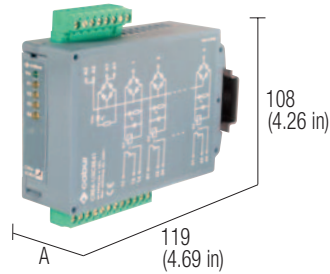
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type + connettore flat 16 poli (8 relè) e 20 poli (16 relè)
Housing material	UL94V-0 plastic material
Approx. weight	225 g (7.94 oz) 419 g (14.78 oz) 811 g (28.60 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay	—
Screw type jumper	red white blue

Super compact 24 Vac/dc relay modules universal control voltage

- 3 kV I/O isolation
- 1 kV isolation between output contact
- Fast connection whit pluggable terminals
- DC and AC control voltage
- Positive or negative control voltage

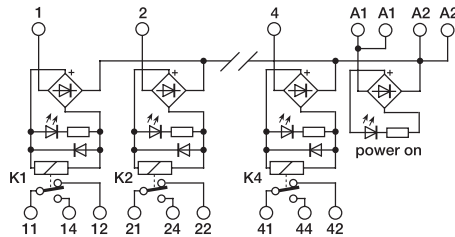


A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

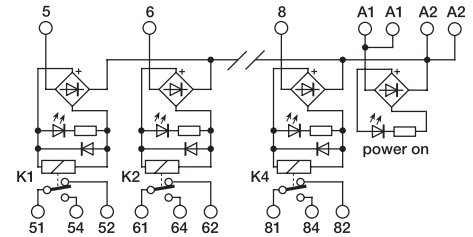
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
CR4-1 and **CRE4-1**: relay module with SPDT, inputs and outputs with pluggable terminals.
CR4-2: expansion module (4 relays with Cat. No.s K5...K8, contacts with Cat. No.s 51-52-54 ...81-82-84) which, combined with the CR4-1, enables 8 relays to be obtained, with SPDT in 45 mm width..

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE41

CRE4-1

Cat. No. XCR41

CR4-1

Cat. No. XCR42

CR4-2

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

24 Vac/dc $\pm 10\%$
16 mA $\pm 10\%$
7 ms
3 ms
bridge rectifier

24 Vac/dc $\pm 10\%$
16 mA $\pm 10\%$
7 ms
3 ms
bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal load (resistive)
Current breaking power
Current of the fuse max.

SPDT AgNiO per 4 relé
8 A / 250 Vac
2000 VA

SPDT AgNiO per 4 relé
8 A / 250 Vac
2000 VA

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

-10...+50°C
2.5 KVAc / 60 s
1 KVAc / 60 s (between open contact)
IP 20 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
2.5 mm² fixed screw type
UL94V-0 plastic material
143 g (5.05 oz) (180 g [6.35 oz] pluggable version)
vertical on rail adjacent without gap

-10...+50°C
3 KVAc / 60 s
1 KVAc / 60 s (between open contact)
IP 00 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
2.5 mm² fixed screw type
UL94V-0 plastic material
143 g (5.05 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper

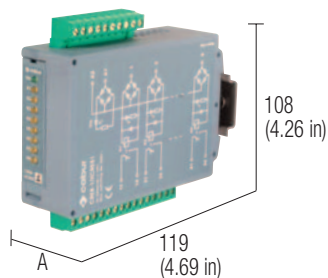
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904042

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904042

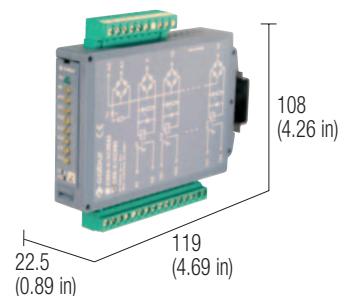
red
white
blue

Super compact 24 Vac/dc relay modules universal control voltage

- 3 kV I/O isolation
- 1 kV isolation between output contact
- Fast connection whit pluggable terminals
- DC and AC control voltage
- Positive or negative control voltage



A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version



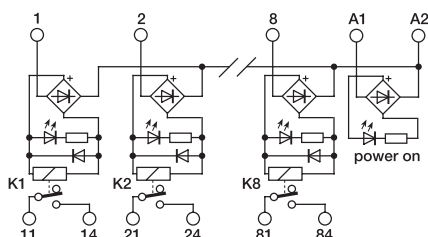
NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

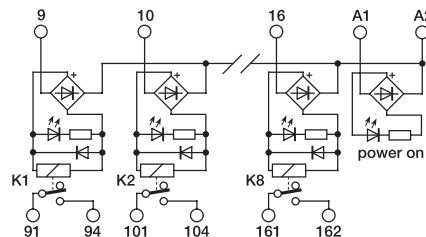
CR8-1 and **CR8E-1**: 8 relay module with SPST (NO), inputs and outputs with pluggable terminals.

CR8-2: expansion module (8 relays with Cat. No.s K9...K16, contacts with Cat. No.s 91-92-94 ...161-162-164) which, combined with the CR8-1, enables 16 relays to be obtained, with SPDT in 45 mm width.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE81

CRE8-1

Cat. No. XCR81

CR8-1

Cat. No. XCR82

CR8-2

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

24 Vac/dc $\pm 10\%$
16 mA $\pm 10\%$
7 ms
3 ms
bridge rectifier

24 Vac/dc $\pm 10\%$
17 mA $\pm 10\%$
7 ms
3 ms
bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal load (resistive)
Current breaking power
Current of the fuse max.

SPST(NO) per 8 relay
8 A / 250 Vac
2000 VA
—

SPST(NO) per 8 relay
8 A / 250 Vac
2000 VA
—

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

-10...+50°C
3 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 20 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
morsetti a vite 2.5 mm² estraibili
UL94V-0 plastic material
199 g (7.02 oz) (250 g [8.83 oz] pluggable version)
vertical on rail adjacent without gap

-10...+50°C
3 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 00 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
morsetti a vite 2.5 mm² estraibili
UL94V-0 plastic material
199 g (7.02 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper

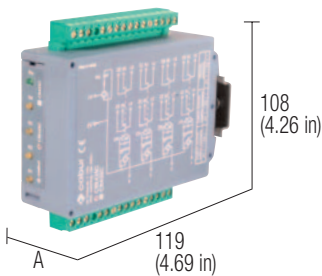
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904042

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904042

red
white
blue

Super compact 24
Vac/dc relay modules
universal control
voltage

- 3 kV I/O isolation
- 1 kV isolation between output contact
- Fast connection whit pluggable terminals
- DC and AC control voltage
- Positive or negative control voltage

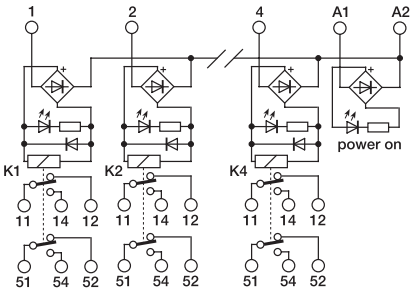


A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

NOTES

The height dimension includes 35 mm DIN rail.
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE42SC
CRE4-2SC

Cat. No. XCR42SC
CR4-2SC

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc $\pm$ 10%
Rated current (1 channel)	25 mA $\pm$ 10%
Turn ON time	7 ms
Turn OFF time	2 ms
Protection circuit	bridge rectifier

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNi per 4 relé
Nominal load (resistive)	8 A / 250 Vac
Current breaking power	2000 VA
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 20 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	morsetti a vite 2.5 mm ² estraibili
Housing material	UL94V-0 plastic material
Approx. weight	137 g (180 g pluggable version)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904052
Screw type jumper	red white blue

PLC interface modules quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Input modules

Number of channels	Connection type	Notes	Type	Cat. No.	Page
8 without isolation	12 Vdc	(1) (4)	IF16S7	XIF16S7	136
8 without isolation	12 Vdc	(1) (3)	IF16LS7	XIF16LS7	136
32 without isolation	12 Vdc	(1) (4)	IF416S7	XIF416S7	136
32 without isolation	12 Vdc	(1) (3)	IF416LS7	XIF416LS7	136

Output modules

Number of channels	Input voltage	Output		Notes	Type	Cat. No.	Page
		type / no. of contacts	rated current				
8	24 Vdc	SPST(NO)	8 A	(1) (3) (5)	CR8-3	XCR83	137
8	24 Vdc	SPST(NO)	8 A	(1) (3) (5)	CRE8-3	XCRE83	137
8	24 Vdc	SPDT	10 A	(1) (3) (5)	RFE8124	XRFE8124	137
8	24 Vdc	DPDT	5 A	(1) (3) (5)	RFE8224	XRFE8224	138
16	24 Vdc	SPDT	10 A	(2) (3) (5)	RFE16124	XRFE16124	139
16	24 Vdc	DPDT	5 A	(2) (3) (5)	RFE16224	XRFE16224	139

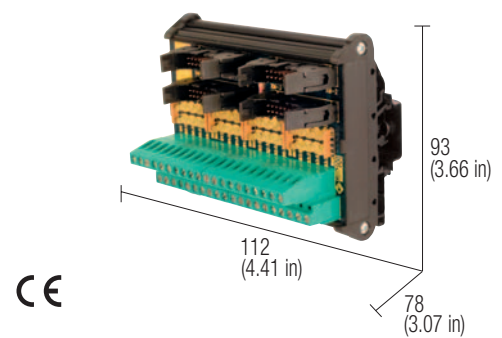
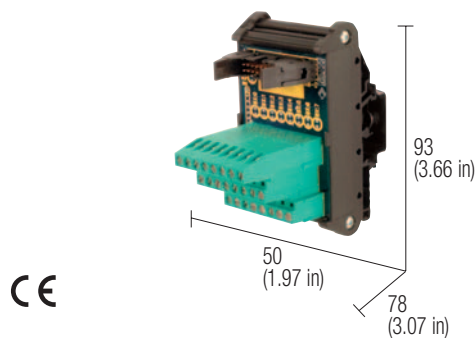
Notes

- (1) suitable for PLC Siemens S7 series
- (2) suitable for PLC Telemecanique
- (3) with LED to display the status

- (4) without LED to display the status
- (5) version with pluggable relay

PLC S7 300 & S7 400 Interface modules

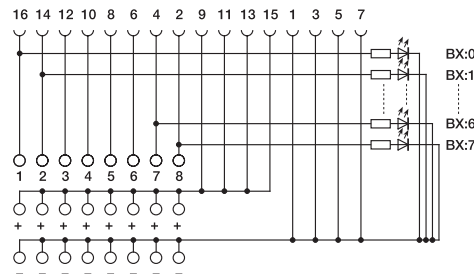
- I/O modules
- With or without status LED display
- Fast connection



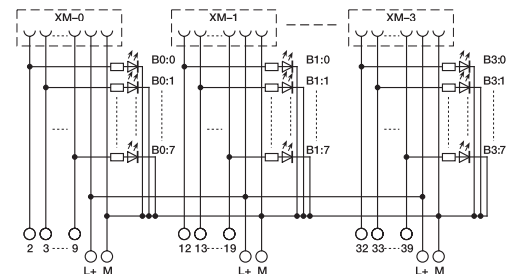
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

With LED to display the status
Without LED to display the status

Cat. No. XIF16S7

IF16S7

Cat. No. XIF416LS7

IF416LS7

Cat. No. XIF416S7

IF416S7

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm$ 10%
Rated current (1 channel)	5 mA $\pm$ 10% (only with "Status LED" version)
Turn ON time	—
Turn OFF time	—
Protection circuit	—

Rated voltage	24 Vdc $\pm$ 10%
Rated current (1 channel)	5 mA $\pm$ 10% (only with "Status LED" version)

OUTPUT TECHNICAL DATA

Type and number of contacts	8 channels without isolation
Nominal load (resistive)	—
Current breaking power	—
Current of the fuse max.	—

4 x 8 channels without isolation

GENERAL TECHNICAL DATA

Operating temperature	-10...+50°C
Coil/contact isolation	—
Isolation between output terminals	—
Protection degree	IP 00 IEC529, EN60529
Overvoltage category / Pollution degree	II / 2
Reference Standard	IEC 664-1
Status display	LED (solo su IF16LS7)
Connection terminals	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	polyamide UL94V-0
Approx. weight	—
Mounting information	—

Operating temperature	-10...+50°C
Coil/contact isolation	—
Isolation between output terminals	—
Protection degree	IP 00 IEC529, EN60529
Overvoltage category / Pollution degree	II / 2
Reference Standard	IEC 664-1
Status display	LED (solo su IF416LS7)
Connection terminals	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	polyamide UL94V-0

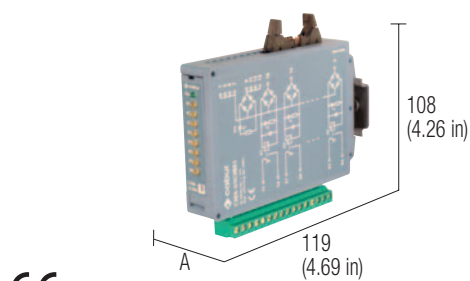
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AS
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	—
Screw type jumper	—
red	—
white	—
blue	—

PR/3/AC, PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

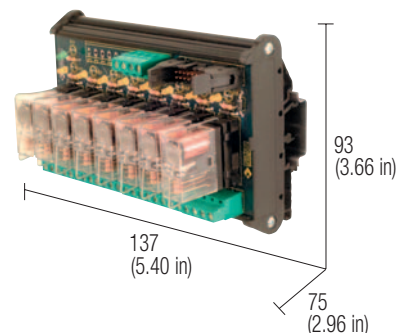
PLC S7 300 & S7 400 Interface modules

- Very compact dimension in CR version
- Fast connection
- Pluggable relay
- Status LED display



CE

A = 22.5 mm (0.88 in) CR version, 35 mm (1.38 in) CRE version

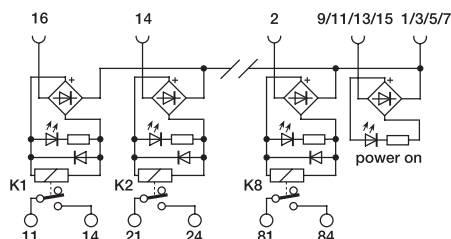


CE

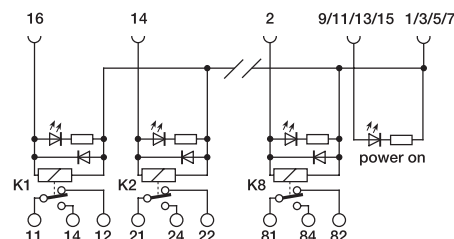
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCRE83

CRE8-3

Cat. No. XCR83

CR8-3

Cat. No. XRFE8124

RFE8124

—

INPUT TECHNICAL DATA

Rated voltage
Rated current (1 channel)
Turn ON time
Turn OFF time
Protection circuit

24 Vac/dc $\pm 10\%$
16 mA $\pm 10\%$
15 ms
5 ms
bridge rectifier

24 Vac/dc $\pm 10\%$
20 mA $\pm 10\%$
15 ms
10 ms
damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts
Nominal load (resistive)
Current breaking power
Current of the fuse max.

SPST(NO) per 8 relay
10 A / 250 Vac
2000 VA
—

SPDT AgNiO per 8 relé
10 A / 250 Vac
10 A
—

GENERAL TECHNICAL DATA

Operating temperature range
Coil/contact isolation
Isolation between output terminals
Protection degree
Overvoltage category / Pollution degree
Reference Standard
Status display
Connection terminal
Housing material
Approx. weight
Mounting information

-10...+50°C
3 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 20 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
flat cable 16 poles male
UL94V-0 plastic material
199 g (7.02 oz)
vertical on rail adjacent without gap

-10...+50°C
2.5 kVac / 60 s
1 kVac / 60 s (between open contact)
IP 00 IEC 529, EN60529
III / 2
IEC 664-1, DIN VDE 0110.1
green LED / yellow LED
flat cable 16 poles male and 2.5 mm² fixed screw type
UL94V-0 plastic material
342 g (12.07 oz)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

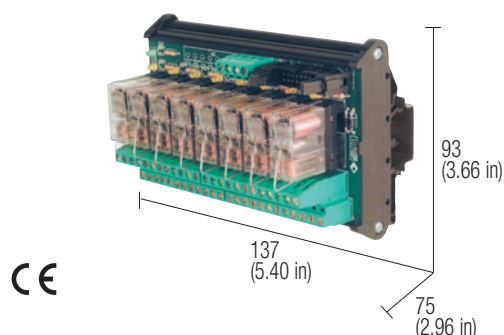
Mounting rail type according to IEC60715/TH35
Mounting rail type according to IEC60715/G32
Replacement relay (1)
Screw type jumper
red
white
blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
—
Cat. No. 8904042

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904001

PLC S7 300 & S7 400 Interface modules

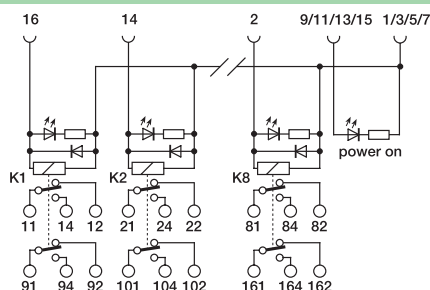
- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay
- Fast connection



NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
(2) Version available upon request.

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XRF8224

RFE8224

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm$ 10%
Rated current (1 channel)	20 mA $\pm$ 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	DPDT AgNiO per 8 relé
Nominal load (resistive)	5 A / 250 Vac
Current breaking power	5 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

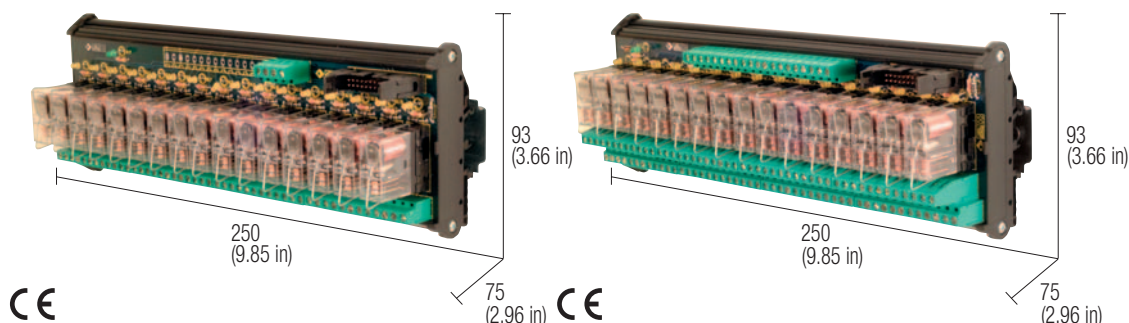
Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	419 g (14.79 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904002
Screw type jumper	—
red	—
white	—
blue	—

Telemecanique PLC interface modules

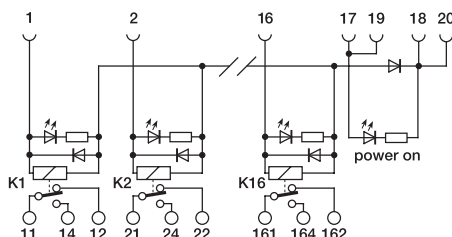
- DC control voltage
- Negative control voltage
- Status LED display
- Pluggable relay
- Fast connection



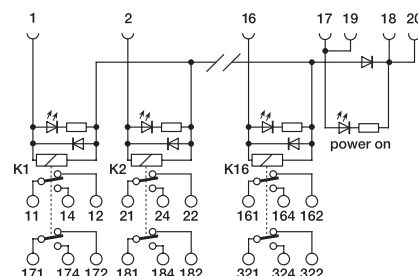
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XRFE16124

RFE16124

—

Cat. No. XRFE16224

RFE16224

—

INPUT TECHNICAL DATA

Rated voltage	24 Vdc $\pm$ 10%
Rated current (1 channel)	20 mA $\pm$ 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

Rated voltage	24 Vdc $\pm$ 10%
Rated current (1 channel)	20 mA $\pm$ 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Protection circuit	damping & polarity protection diode

OUTPUT TECHNICAL DATA

Type and number of contacts	SPDT AgNiO per 16 relé
Nominal load (resistive)	10 A / 250 Vac
Current breaking power	10 A
Current of the fuse max.	—

Type and number of contacts	DPDT AgNiO per 16 relé
Nominal load (resistive)	5 A / 250 Vac
Current breaking power	5 A
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	657 g (23.19 oz)
Mounting information	vertical on rail adjacent without gap

Operating temperature range	-10...+50°C
Coil/contact isolation	2.5 KVac / 60 s
Isolation between output terminals	1 KVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	flat cable 16 poles male and 2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	811 g (28.63 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904001
Screw type jumper	red white blue

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Cat. No. 8904002

Solid state relay modules quick selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Input modules

Number of channels	Input voltage	Applicable load		Notes	Type	Cat. No.	Page
		Voltage	Current				
1	5...24 Vdc	5...48 Vdc	3 A	(2)	O332060	X0332060	141
1	5...24 Vdc	5...48 Vdc	500 mA	(2)	CWOT 6-2082	X766082	147
1	12...24 Vdc	5...48 Vdc	500 mA	(2)	CWOT 6-2083	X766083	146
1	12...24 Vdc	5...48 Vdc	2 A	(1)	CM1S024E	XCM1S024E	142
1	24 Vdc	5...48 Vdc	2 A	(1)	CM1S024	XCM1S024	142
1	5...12 Vdc	5...24 Vdc	5 A	(2) (4)	CKS15NA	XCKS15NA	144
1	5...24 Vdc	5...24 Vdc	30 mA	(2)	CKS1S	XCKS1S	147
1	24 Vdc	5...24 Vdc	5 A	(2) (4)	CKS15NB	XCKS15NB	144
1	5...24 Vdc	5...24 Vdc	5 A	(2) (5)	CKS15E	XCKS15E	145
1	12...24 Vdc	12...240 Vac	2 A	(1)	CM1T024E	XCM1T024E	143
1	5...24 Vdc	24...240 Vac	4 A	(2)	O332240	X0332240	141
1	24 Vdc	48...240 Vac	2 A	(1)	CM1T024	XCM1T024	143
2	12...24 Vdc	12...24 Vdc	2 x 2.5 A	(2)	CKS22	XCKS22	145
4	24 Vdc	5...48 Vdc	2 A	(1) (3) (4)	R41S24F	XR041S24F	150
4	24 Vdc	5...48 Vdc	2 A	(1) (3)	R42S24	XR042S24	148
4	24 Vdc	48...240 Vac	2 A	(1) (3)	R42T24	XR042T24	149
8	24 Vdc	5...48 Vdc	2 A	(1) (3) (4)	R81S24F	XR081S24F	150
8	24 Vdc	5...48 Vdc	2 A	(1) (3)	R82S24	XR082S24	148
8	24 Vdc	48...240 Vac	2 A	(1) (3)	R82T24	XR082T24	149
8	5...24 Vdc	12...24 Vdc	8 x 2.5 A	(2) (5)	COP082	XCOP082	151
16	24 Vdc	5...48 Vdc	2 A	(1) (3) (4)	R161S24F	XR161S24F	150
16	24 Vdc	5...48 Vdc	2 A	(1) (3)	R162S24	XR162S24	148
16	24 Vdc	48...240 Vac	2 A	(1) (3)	R162T24	XR162T24	149

Notes

(1) version with pluggable relay

(2) version with fixed relay

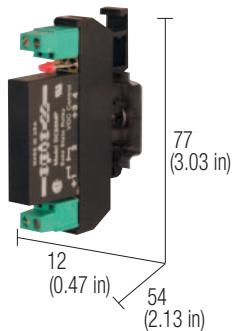
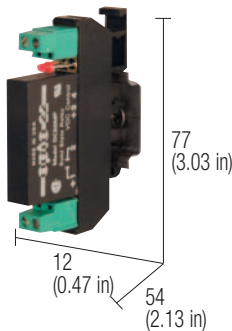
(3) universal control voltage, negative/positive DC command

(4) output contact with protection fuse

(5) electronic output protection

Solid state 5...24 Vdc
single relay

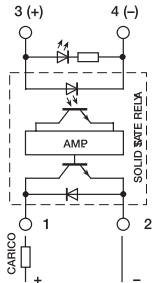
- Fixed relay
- Compact dimensions
- Status LED display



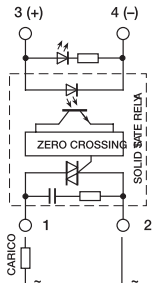
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. X0332060

0332060

Cat. No. X0332240

0332240

INPUT TECHNICAL DATA

Input voltage	4...30 Vdc
Level 1 (high) input signal	> 3 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current	< 35 mA
Switching frequency	100 Hz max
Connection terminals	2.5 mm ² fixed screw type

OUTPUT TECHNICAL DATA

Output voltage	5...60 Vdc
Continuous load current	3 A a 20°C (see chart)
Max. current	4 A a 20°C (5 A / 5 s - 25 A / 10 ms)
Leakage current 0 signal	1 mA
OFF/ON switching time	—
Protection circuit	—
Connection terminals	2.5 mm ² fixed screw type

GENERAL TECHNICAL DATA

Operating temperature	-20...-60°C (see chart)
I/O isolation bobina/contatti	4 kVac / 60 s
Protection degree	IP 00 IEC529, EN60529
Reference Standard	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	III
Modello del relé (1)	OPT022
Status display	LED
Housing material	Polyamide UL94V-0
Pesoapprossimativo	36 g (1.27 oz)
Mounting information	su guida, distanziare 4 mm dai componenti adiacenti

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Replacement relay (1)	
Screw type jumper	red white blue

PR/3/AC, PR/3/AS

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

—

—

—

PR/3/AC, PR/3/AS

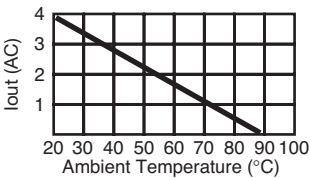
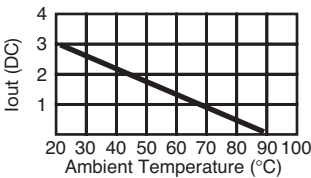
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

—

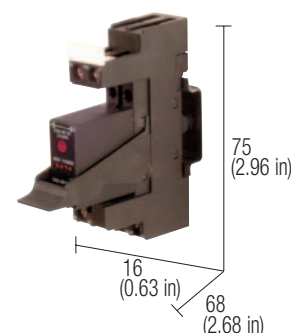
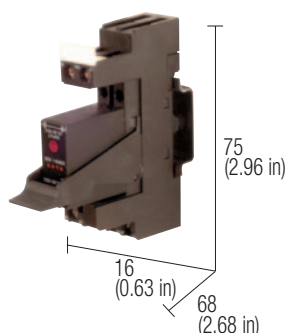
—

—



Solid state 12-24 Vdc single relay

- Low cost
- For DC load (S version)
- Pluggable relay
- Screw type jumper available
- Status LED display

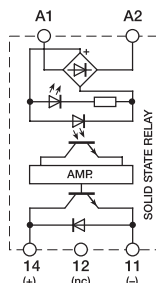


NOTES

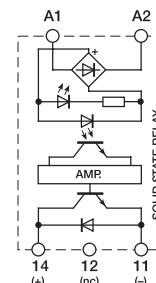
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

This series can be mounted without any spacing between adjacent components.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCM1S024

CM1S024

—

Cat. No. XCM1S024E

CM1S024E

—

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Frequenza di commutazione	100 Hz max
Connection terminals	2.5 mm ² fixed screw type

12-24 Vdc (10...30 Vdc)
> 10 Vdc
< 6 Vdc
< 26 mA
100 Hz max
2.5 mm ² fixed screw type

OUTPUT TECHNICAL DATA

Output voltage	3...50 Vdc
Continuous load current	2.5 A a 40°C (see chart)
Max. current	4 A / 5 s - 20 A / 10 ms
Leakage current 0 signal	0.1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	diode
Connection terminals	2.5 mm ² fixed screw type

5...60 Vdc
2 A a 40°C (see chart)
3 A / 5 s - 10 A / 10 ms
1 mA
100 µs / 1 ms
diode
2.5 mm ² fixed screw type

GENERAL TECHNICAL DATA

Operating temperature	-20...-60°C (see chart)
I/O isolation bobina/contatti	2.5 KVdc / 60 s
Protection degree	IP 00 IEC529, EN60529
Reference Standard	IEC 664-1, DIN VDE 0110.1
Pollution degree	3
Overvoltage category	III
Modello del relé (1)	HF JGX-40F
Status display	LED
Housing material	Polyamide UL94V-0
Approx. weight	—
Mounting information	vertical on rail adjacent without gap

-20...-60°C (see chart)
4 KVdc / 60 s
IP 00 IEC529, EN60529
IEC 664-1, DIN VDE 0110.1
3
III
ELCO SSR91-60B
LED
Polyamide UL94V-0
—
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

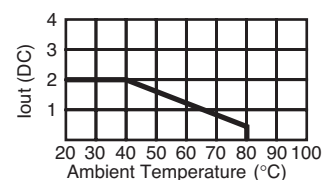
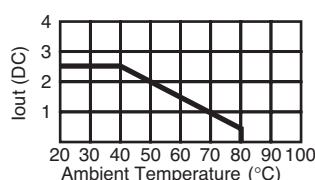
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Replacement relay (1)	
Screw type jumper	black white blue

PR/3/AC, PR/3/AS

—
Cat. No. 8904404
Cat. No. XCMB16B
—
—

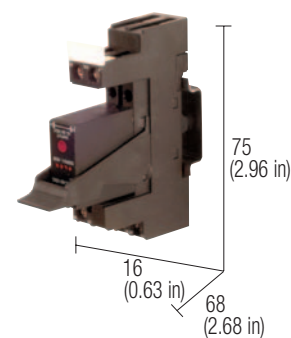
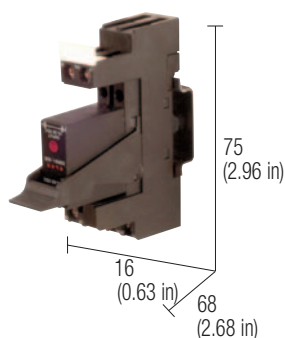
PR/3/AC, PR/3/AS

—
Cat. No. 8904402
Cat. No. XCMB16B
—
—



Solid state 12-24 Vdc single relay

- Low cost
- For AC load (T version)
- Pluggable relay
- Screw type jumper available
- Status LED display

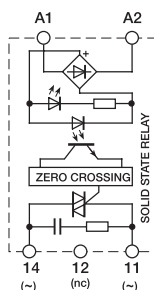


NOTES

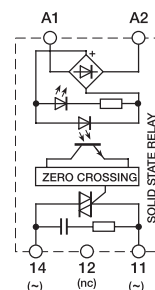
(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

This series can be mounted without any spacing between adjacent components.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCM1T024

CM1T024

—

Cat. No. XCM1T024E

CM1T024E

—

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Frequenza di commutazione	100 Hz max
Connection terminals	2.5 mm ² fixed screw ty ^e

12-24 Vdc (10...30 Vdc)
> 10 Vdc
< 6 Vdc
< 26 mA
100 Hz max
2.5 mm ² fixed screw ty ^e

OUTPUT TECHNICAL DATA

Output voltage	48...240 Vac (zero crossing)
Continuous load current	2.5 A a 40°C (see chart)
Max. current	4 A / 5 s - 20 A / 10 ms
Leakage current 0 signal	1.5 mA
OFF/ON switching time	10 ms / 10 ms max.
Protection circuit	—
Connection terminals	2.5 mm ² fixed screw ty ^e

20...240 Vac (zero crossing)
2 A a 40°C (see chart)
3 A / 5 s - 10 A / 10 ms
2 mA
10 ms / 10 ms max.
—
2.5 mm ² fixed screw ty ^e

GENERAL TECHNICAL DATA

Operating temperature	-20...-60°C (see chart)
I/O isolation bobina/contatti	2.5 kVac / 60 s
Protection degree	IP 00 IEC529, EN60529
Reference Standard	IEC 664-1, DIN VDE 0110.1
Pollution degree	3
Overvoltage category	III
Modello del relé (1)	HF JGX-40F
Status display	LED
Housing material	Polyamide UL94V-0
Approx. weight	—
Mounting information	vertical on rail adjacent without gap

-20...-60°C (see chart)
4 kVac / 60 s
IP 00 IEC529, EN60529
IEC 664-1, DIN VDE 0110.1
3
III
ELCO SSR91-60B
LED
Polyamide UL94V-0
—
vertical on rail adjacent without gap

MOUNTING ACCESSORIES

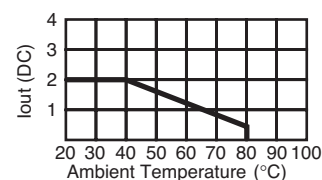
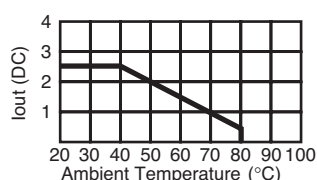
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Replacement relay (1)	
Screw type jumper	black white blue

PR/3/AC, PR/3/AS

—
Cat. No. 8904405
Cat. No. XCMB16B
—
—

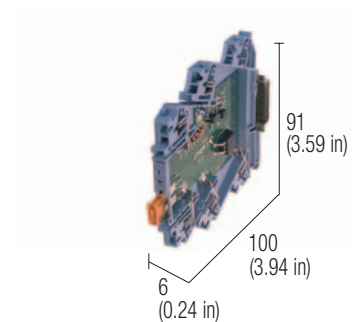
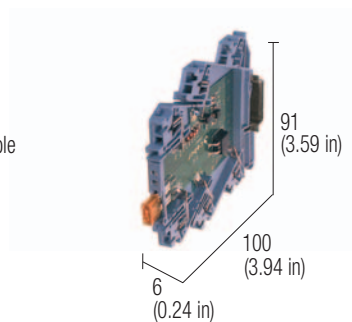
PR/3/AC, PR/3/AS

—
Cat. No. 8904403
Cat. No. XCMB16B
—
—



Solid state 12-24 Vdc single relay with fuse

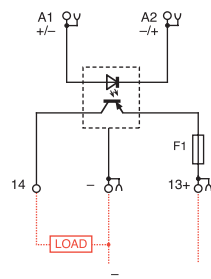
- 5 A / 24 Vdc rated current
- Common negative or positive input
- Overload, short-circuit protected output with replaceable fuse
- Status LED display, reverse polarity protection
- 6 mm wide
- Plug-in jumper available



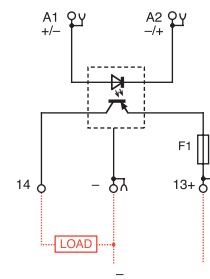
NOTES

(1) (1) The fast blow-out fuse is calibrated to protect the output stage of the module and it is connected in series to the positive pole; it is possible to replace the fuse with lower rated current values, selected to protect also the load and its wires; a fuse having a current rating higher than 5 A does not protect the output against short circuit and overloads.
(2) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/P.T end section.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCKS15NA

CKS15NA

Cat. No. XCKS15NB

CKS15NB

INPUT TECHNICAL DATA

Input voltage

4.5...12 Vdc

Level 1 (high) input signal

≥4.5 Vdc

Level 0 (low) input signal

≤4 Vdc

Rated current

≤5 mA @ 12 Vdc

19...30 Vdc

≥ 20 Vdc

≤18 Vdc

≤ 5 mA @ 24 Vdc

OUTPUT TECHNICAL DATA

Output voltage

5.2...60 Vdc, max. 100 V (peak)

Continuous load current

5 A / 24 Vdc @ 25°C

Max. current

7.5 A / 1 s, 25 A / 50 ms

Min. applicable load

5.2 V / 10 mA

Leakage current 0 signal

25 µA @ 60 Vdc between 13 and 14

Isolation between open contacts

3 kVdc / 60 s

Protection fuse (1)

F 5 A

5.2...60 Vdc, max. 100 V (peak)

5 A / 24 Vdc @ 25°C

7.5 A / 1 s, 25 A / 50 ms

5.2 V / 10 mA

25 µA @ 60 Vdc between 13 and 14

3 kVdc / 60 s

F 5 A

GENERAL TECHNICAL DATA

Operating temperature

-20...+60°C

I/O isolation

3 kVdc / 60 s

Max. switching frequency

400 Hz max.

Protection degree

IP20 IEC529 EN60529

Reference Standard

IEC 664-1, EN50081-1

Pollution degree

2

Overvoltage category

II

Connection terminals

2.5 mm² (AWG 14), AWG26-14 spring type

Housing material

Polyamide UL94V-0

Approx. weight

32 g (1.13 oz)

Mounting information

vertical on rail adjacent without gap

2.5 mm² (AWG 14), AWG26-14 spring type

Polyamide UL94V-0

32 g (1.13 oz)

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7,5

Mounting rail type according to IEC60715/G32

Replacement relay (1)

Plug-in jumper

—

white

blue

Marking tags

blank

printed

printed

End plate

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

Cat. No. PTCK42 (42 poles)

—

CNU/8/030 Cat. No. NU008

CNU/8/CK15/10 Cat. No. N8CK21510

CNU/8/CK15/20 Cat. No. N8CK21520

Cat. No. XCKPT

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—

Cat. No. PTCK42 (42 poles)

—

CNU/8/030 Cat. No. NU008

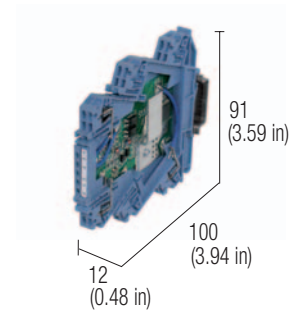
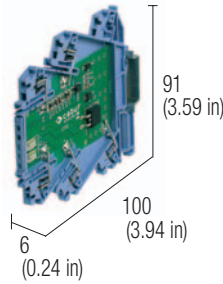
CNU/8/CK15/10 Cat. No. N8CK21510

CNU/8/CK15/20 Cat. No. N8CK21520

Cat. No. XCKPT

Solid state 12-24 Vdc single relay with electronic

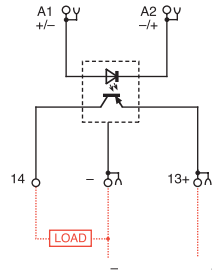
- Electronic protection from short circuit, overload, overtemperature
- Input and output status LED
- Output extravoltage suppressor diode
- Extralow current absorbing
- Plug-in jumper available



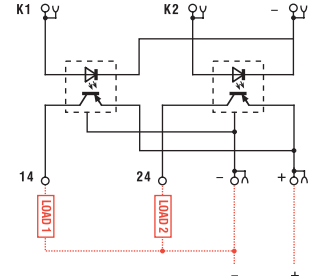
NOTES

- (1) Maximum output current of each channel depends on surrounding air temperature, on the number of output contemporarily active and on the current flowing through them; the given value is measured with 4 active outputs and 4 not active
- (2) All outputs are overcurrent and overtemperature; when ovd or ovt protections cuts off the output current, the output display led turns off or reduces its light depending on ovd degree; the output turns on automatically when the ovd or ovt are removed.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. XCKS15E

CKS15E

Cat. No. XCKS22

CKS22

INPUT TECHNICAL DATA

Input voltage	5...24 Vdc (4.2...32 Vdc)
Level 1 (high) input signal	> 3.5 Vdc
Level 0 (low) input signal	< 3.5 Vdc
Rated current	≤ 5 mA @ 24 Vdc
Input channels	1

12...24 Vdc (range 8...33 Vdc)
≥ 12 Vdc
≤ 11.7 Vdc
≤ 5 mA @ 24 Vdc
2 with common negative

OUTPUT TECHNICAL DATA

Output voltage	5...24 Vdc (5...32 Vdc)
Continuous load current	5 A / 24 Vdc @ 45°C (1)
Max. current	7.5 A / 60 s, 2.5 A / 50 ms peak (1)
Min. applicable load	5.2 V / 100 mA
Frequenza di commutazione	200 Hz max.
Leakage current 0 signal	< 25 µA @ 24 Vdc
Isolation between open contacts	—
Protezione	electronic from overload, overtemperature

12...24 Vdc (range 5...33 Vdc)
2 x 2.5 A / 24 Vdc @ 45°C
4.4 A
10 mA
—
1 mA @ 24 Vdc
3 KVac / 60 s

GENERAL TECHNICAL DATA

Operating temperature	-20 ... +60°C con protezione termica (2)
I/O isolation	3 KVac / 60 s
Max. switching frequency	—
Protection degree	IP20 IEC529 EN60529
Reference Standard	IEC 664-1, EN50081-1
Pollution degree	2
Overvoltage category	II
Connection terminals	2.5 mm² AWG26-14 fixed spring type
Housing material	Polyamide UL94V-0
Approx. weight	30 g (1.06 oz)
Mounting information	vertical on rail adjacent without gap

-20 ... +60°C con protezione termica (2)
3 KVac / 60 s
1 kHz (Ton <500 ms / Toff <500 ms)
IP20 IEC529 EN60529
IEC 664-1, EN50081-1
2
II
2.5 mm² AWG26-14 fixed spring type
Polyamide UL94V-0
32 g (1.13 oz)
vertical on rail adjacent without gap

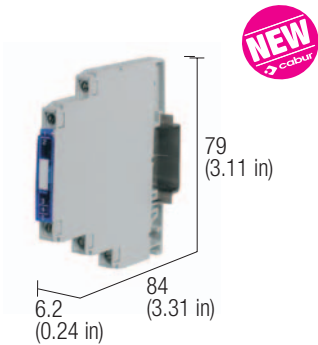
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7,5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	—
Plug-in jumper	Cat. No. PTCK42 (42 poles)
white	—
blue	—
blank	—
printed	CNU/8/030 Cat. No. NU008
printed	CNU/8/CK15/10 Cat. No. N8CK21510
	CNU/8/CK15/20 Cat. No. N8CK21520
	Cat. No. XCKPT

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
—
—
Cat. No. PTCK42 (42 poles)
—
—
CNU/8/030 Cat. No. NU008
CNU/8/CK15/10 Cat. No. N8CK21510
—
Cat. No. XCKPT

**Solid state 12-24 Vdc
single relay
with electronic SPDT**

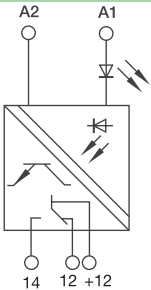
- 10...40 Vdc rated voltage
- Output with SPDT simulation
- Output voltage 5...48 Vdc 500 mA
- Max switching frequency 1 KHz
- I/O isolation 3.75 KV



NOTES

Compared with standard relays, solid state relays offers many advantages: much longer life, higher switching frequency, lower EMI emissions, higher vibrations withstand capability, wider input voltage range and 70% lower input current. The output of solid state relays is a N.O. type "contact" and up to now SPDT type was not available, forcing to use a standard relay when SPDT function was required. Thanks to a new technology, this new solid state relay offers all the advatages of solid state relays with a SPDT contact output type, making a step ahead possible.

BLOCK DIAGRAM



VERSIONS

Pluggable relay
Fixed relay

Cat. No. X766083

CWOT 6-2083

INPUT TECHNICAL DATA

Input signal	24 Vdc (range 10...40 Vdc)
Level 1 (high) input signal (ON)	>5 Vdc
Level 0 (low) input signal (OFF)	<5 Vdc
Rated current	6 mA
Protection device	suppressor diode

OUTPUT TECHNICAL DATA

Output signal	5...48 Vdc
Continuous load current	10...500 mA
Switching delay	12 µs ON / 12 µs OFF
Protection device	suppressor diode
Tipo di uscita	NPN / PNP transistor, with changeover contact simulation

GENERAL TECHNICAL DATA

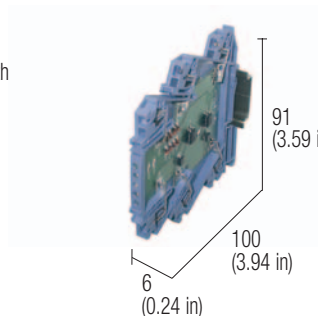
Operating temperature	-25 ...+60°C
I/O isolation	3.75 kVac / 60 s
Max. switching frequency	<1 KHz
Protection degree	IP 20 IEC529 EN60529
Reference Standard	IEC 664-1, DIN VDE
Pollution degree	2
Overvoltage category	III
Connection terminals	2.5 mm ² fixed screw type
Housing material	PPE
Approx. weight	29 g (1.02 oz)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

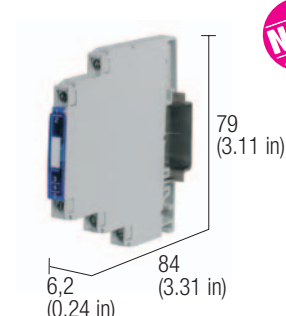
Mounting rail type according to IEC60715/TH35-7,5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—
Replacement relay (1)	—
Screw type jumper	—
red	—
white	—
blue	—

Signal optoisolators

- Suitable for isolation and transmission of digital signal with high frequency
- Status LED display
- 5, 12 and 24 rated voltage
- I/O isolation



CE



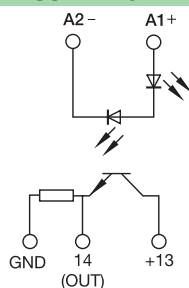
NEW
cabur

CE

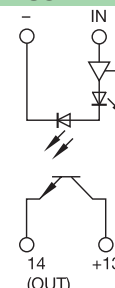
NOTES

(1) Version available upon request.
CKS1S can isolate I/O high frequency signal circuits (encoders, counters etc.) to eliminate influence of different ground reference voltages and ground loops, thus reducing EMI noise influence on signal transmission of sensitive signals; it is always recommended to use balanced type shielded cables (two signal wires + shield); at transmission frequencies higher than 25 Hz the LED light appears constant, it is to be intended as "transmission ON" signal.

BLOCK DIAGRAM



BLOCK DIAGRAM



VERSIONS

Cat. No. XCKS1S

CKS1S

Cat. No. X766082

CWOT 6-2082

INPUT TECHNICAL DATA

Input signal	3...30 Vdc
Level 1 (high) input signal (ON)	≥ 3 Vdc
Level 0 (low) input signal (OFF)	≤ 3 Vdc
Rated current	≤ 10 mA @ 24 Vdc

4.5...28 Vdc
>4.2 Vdc
<2.7 Vdc
0.1 mA

OUTPUT TECHNICAL DATA

Output signal	3...30 Vdc	5...48 Vdc
Continuous load current	80 mA / 30 Vdc @ 25°C	10...500 mA
Min. applicable load	10 mV / 2 mA	—
Switching delay	—	12 μs ON / 12 μs OFF

GENERAL TECHNICAL DATA

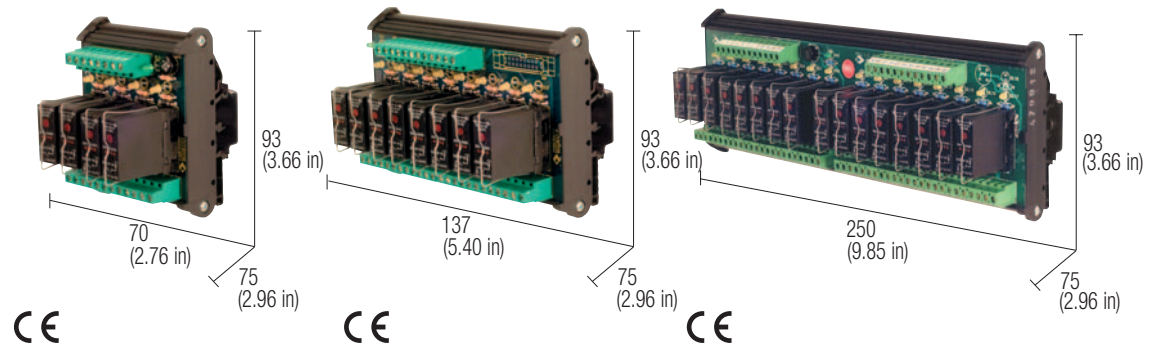
Operating temperature	-20...+60°C	-25...+60°C
I/O isolation	3 kVac / 60 s	3.75 kVac / 60 s
Max. switching frequency	100 kHz max. duty cycle 50/50, 70/30 max	<20 KHz
Protection degree	IP 20 IEC529 EN60529	IP 20 IEC529 EN60529
Reference Standard	IEC 664-1, EN50081-1	IEC 664-1, DIN VDE
Pollution degree	2	2
Overvoltage category	II	III
Connection terminals	2.5 mm ² (AWG 14), AWG26-14 spring type	2.5 mm ² , AWG26-14 a vite
Housing material	Polyamide UL94V-0	PPE
Approx. weight	32 g (1.13 oz)	29 g (1.02 oz)
Mounting information	vertical on rail adjacent without gap	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7,5	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	—	—
Replacement relay (1)	—	—
Plug-in jumper	—	—
	Cat. No. PTCK42 (42 poles)	—
	—	—
	—	—
Marking tags	CNU/8/030 Cat. No. NU008	—
	—	—
	—	—
End plate	Cat. No. XCKPT	—

Solid state 24 Vdc relay modules

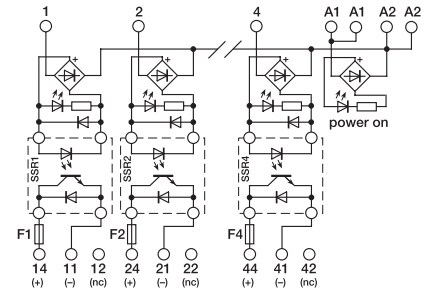
- For DC load
- Pluggable relay
- Status LED display



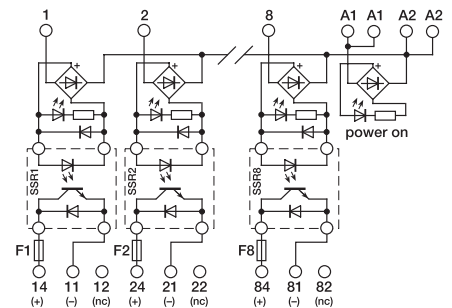
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

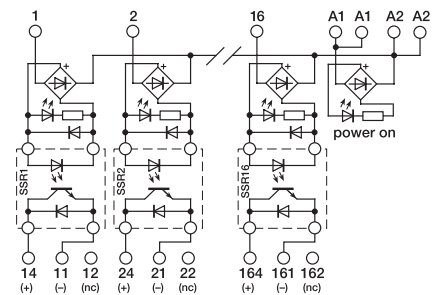
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR042S24

R42S24

Cat. No. XR082S24

R82S24

Cat. No. XR162S24

R162S24

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max

OUTPUT TECHNICAL DATA

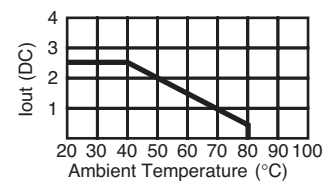
Output voltage	3...50 Vdc
Continuous load current	2.5 A a 40°C (see chart)
Max. current	4 A / 5 s - 20 A / 10 ms
Leakage current 0 signal	0.1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	diode
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-20...-60°C (see chart)
I/O isolation	2.5 kVac / 60 s
Isolation between output terminals	1 kVac / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	207 g (7.31 oz) 379 g (13.38 oz) 756 g (26.69 oz)
Mounting information	vertical on rail adjacent without gap

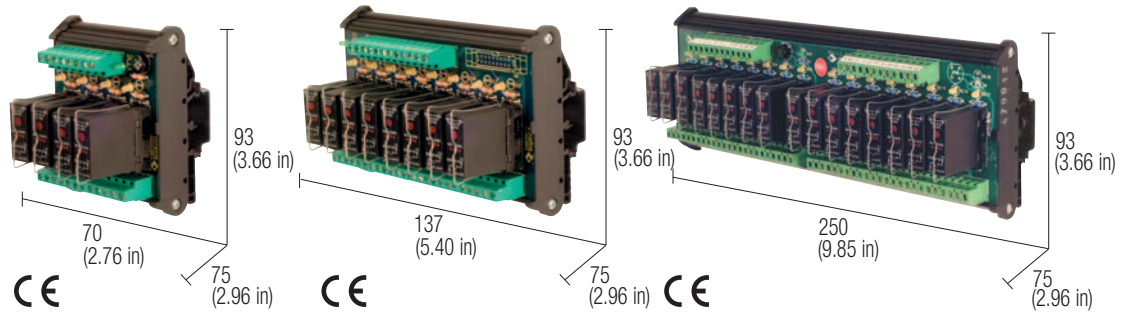
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904404
Screw type jumper	—



Solid state 24 Vdc relay modules

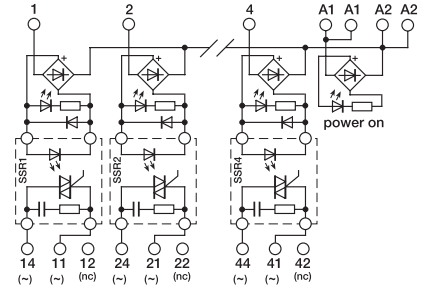
- For AC load
- Pluggable relay
- Status LED display



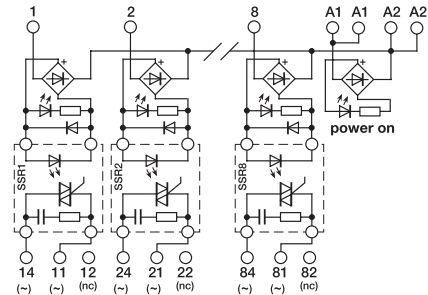
NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.

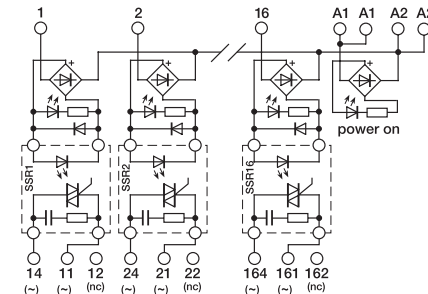
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR042T24

R42T24

Cat. No. XR082T24

R82T24

Cat. No. XR162T24

R162T24

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max

OUTPUT TECHNICAL DATA

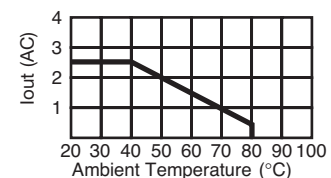
Output voltage	48...240 Vac (zero crossing)
Continuous load current	2.5 A a 40°C (see chart)
Max. current	4 A / 5 s - 20 A / 10 ms
Leakage current 0 signal	1.5 mA
OFF/ON switching time	10 ms / 10 ms max.
Protection circuit	—
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-20...-60°C (see chart)
I/O isolation bobina/contatti	2.5 KVdc / 60 s
Protection degree	1 KVdc / 60 s (between open contact)
Reference Standard	IP 00 IEC 529, EN60529
Pollution degree	III / 2
Overvoltage category	IEC 664-1, DIN VDE 0110.1
Modello del relé (1)	green LED / yellow LED
Status display	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight (4/8/16 relé)	207 g (7.31 oz) 379 g (13.38 oz) 756 g (26.69 oz)
Mounting information	vertical on rail adjacent without gap

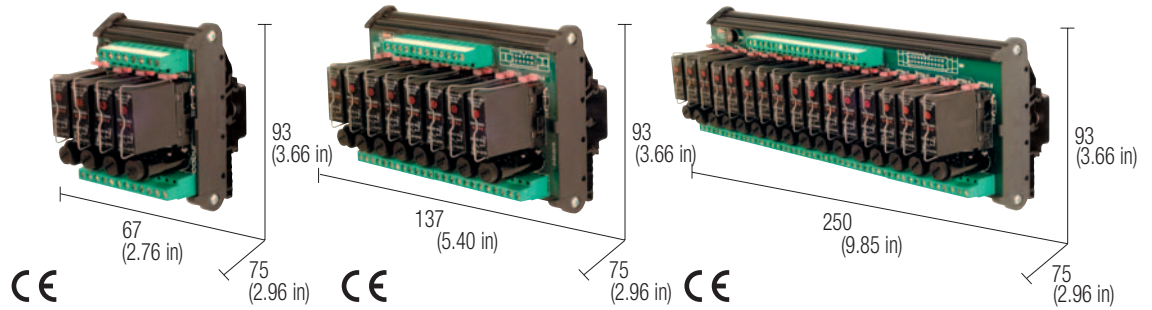
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904405
Screw type jumper	—



Solid state 24 Vdc relay modules with fuse

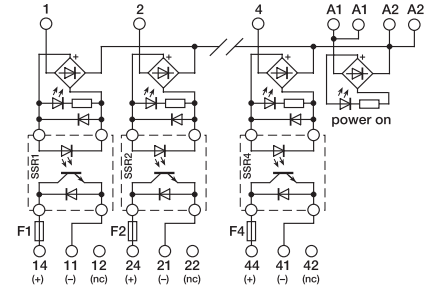
- For DC load
- Protection fuse on output
- Pluggable relay
- Status LED display



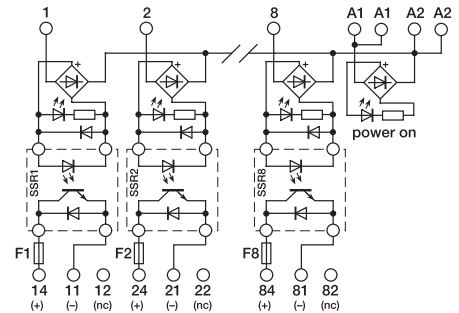
NOTES

- (1) Relay model is not binding, they may be modified without prior warning. The technical data shown here is to be considered typical.
- (2) The fuse must be dimensioned according to load. The max. value of 6.3 A is referred to EN60127-complying fuses and the homologation rated current of the fuse-holder. Fuses of a higher value may damage the fuse-holder and module.

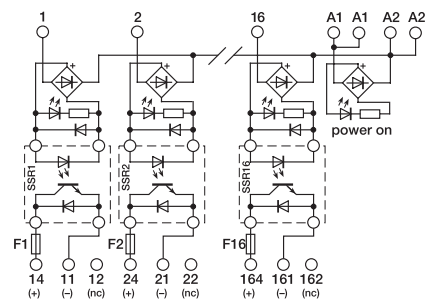
BLOCK DIAGRAM



4 relay module



8 relay module



16 relay module

VERSIONS

4 relay module

8 relay module

16 relay module

Cat. No. XR041S24F	Cat. No. XR081S24F	Cat. No. XR161S24F
R41S24F	R81S24F	R161S24F

INPUT TECHNICAL DATA

Input voltage	24 Vdc (19.2...28.8 Vdc)
Level 1 (high) input signal	> 19.2 Vdc
Level 0 (low) input signal	< 1 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	100 Hz max

OUTPUT TECHNICAL DATA

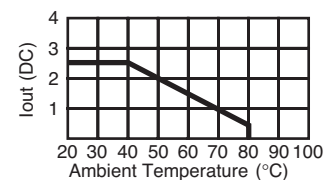
Output voltage	3...50 Vdc
Continuous load current	2.5 A a 40°C (see chart)
Max. current	4 A / 5 s - 20 A / 10 ms
Leakage current 0 signal	0.1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	diodo
Current of the fuse max.	—

GENERAL TECHNICAL DATA

Operating temperature range	-20...-60°C (see chart)
I/O isolation	2.5 KVdc / 60 s
Isolation between output terminals	1 KVdc / 60 s (between open contact)
Protection degree	IP 00 IEC 529, EN60529
Overvoltage category / Pollution degree	III / 2
Reference Standard	IEC 664-1, DIN VDE 0110.1
Status display	green LED / yellow LED
Connection terminal	2.5 mm ² fixed screw type
Housing material	UL94V-0 plastic material
Approx. weight	207 g (7.31 oz) 379 g (13.38 oz) 756 g (26.69 oz)
Mounting information	vertical on rail adjacent without gap

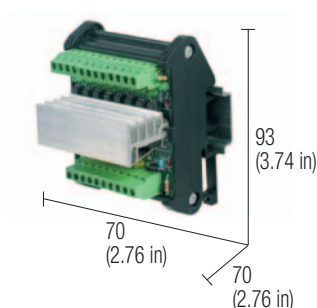
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Replacement relay (1)	Cat. No. 8904404
Screw type jumper	—



Solid state 24 Vdc relay modules with electronic protection

- Rated current output 8 x 2.5 A / 5 - 33 Vdc
- Short circuit, overload, over temperature, overvoltage output protection
- 12-24 Vdc negative common input, 8 status LED K1 and K8
- 8 output status LED, input/output anti polarity inversion diodes
- 70 mm wide



NOTES

- (1) Maximum output current of each channel depends on surrounding air temperature, on the number of output contemporarily active and on the current flowing through them; the given value is measured with 4 active outputs and 4 not active.
- (2) All outputs are overcurrent and overtemperature; when ovd or ovt protections cuts off the output current, the output display led turns off or reduce its light depending on ovd degree; the output turns on automatically when the ovd or ovt are removed.

BLOCK DIAGRAM

VERSIONS

4 relay module

8 relay module

16 relay module

INPUT TECHNICAL DATA

Input voltage

Level 1 (high) input signal

Level 0 (low) input signal

Rated current (1 channel)

Switching frequency

5-24 Vdc (range 4.2...32 Vdc) negative common

> 3.5 Vdc

< 3.5 Vdc

5 mA $\pm$ 10%.

500 Hz

OUTPUT TECHNICAL DATA

Output voltage

Continuous load current

Max. current

Leakage current 0 signal

OFF/ON switching time

Protection circuit

Min. applicable load

12-24 Vdc, (range 5...32 Vdc) negative common

8 x 2.5 A @ 25°C (1)

4.4 A

25 μ A max @ 24Vdc

200 Hz (Ton < 500 μ s / Toff < 500 μ s) (2)

electronic against short circuit / overload / overtemperature

5.2 Vdc/ 100 mA

GENERAL TECHNICAL DATA

Operating temperature range

I/O isolation

Isolation between output terminals

Protection degree

Overvoltage category / Pollution degree

Reference Standard

Status display

Connection terminal

Housing material

Approx. weight

Mounting information

-20...-60°C (see chart)

2.5 KVAc / 60 s

1 KVAc / 60 s (between open contact)

IP 00 IEC 529, EN60529

III / 2

IEC 664-1, DIN VDE 0110.1

green LED / yellow LED

2.5 mm² fixed screw type

UL94V-0 plastic material

vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35

Mounting rail type according to IEC60715/G32

Replacement relay (1)

Screw type jumper

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PR/DIN/AC - PR/DIN/AS - PR/DIN/AL

—

—

Passive interface modules selection table

These tables allow you to quickly select only the items, then check if all product's technical data meet your application requirements.

Sub-D / Terminal modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
9 poles	37x66x93	(6)	ISD09FM	XISD09FM	153
	37x66x93	(5)	ISD09PF	XISD09PF	153
	37x66x93	(8)	ISD09PM	XISD09PM	153
15 poles	47x66x93	(6)	ISD15FM	XISD15FM	153
	47x66x93	(5)	ISD15PF	XISD15PF	153
	47x66x93	(8)	ISD15PM	XISD15PM	153
25 poles	70x66x93	(6)	ISD25FM	XISD25FM	153
	70x66x93	(5)	ISD25PF	XISD25PF	153
	80x66x93	(5) (7)	ISD25PFL	XISD25PFL	154
	70x66x93	(8)	ISD25PM	XISD25PM	153
	80x66x93	(8) (7)	ISD25PML	XISD25PML	154
	57x80x93	(5) (11)	CPD25F	XCPD25F	155
	57x80x93	(8) (11)	CPD25M	XCPD25M	155
37 poles	107x66x93	(6)	ISD37FM	XISD37FM	153
	107x66x93	(5)	ISD37PF	XISD37PF	153
	109x66x93	(5) (7)	ISD37PFL	XISD37PFL	154
	107x66x93	(8)	ISD37PM	XISD37PM	153
	109x66x93	(8) (7)	ISD37PML	XISD37PML	154
	77x80x93	(5) (11)	CPD37F	XCPD37F	155
	77x80x93	(8) (11)	CPD37M	XCPD37M	155
50 poles	92x80x93	(5) (11)	CPD50F	XCPD50F	155
	92x80x93	(8) (11)	CPD50M	XCPD50M	155

Diode-holder modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
8 diodes	25x60x76	(4)	CDM08CS	XCDM08CS	159
	45x65x93	(1)	CDM08AC	XCDM08AC	160
	45x65x93	(2)	CDM08CC	XCDM08CC	160
16 diodes	50x65x93	(4)	CDM16CS	XCDM16CS	159
	92x65x93	(1)	CDM16AC	XCDM16AC	160
	92x65x93	(2)	CDM16CC	XCDM16CC	160
24 diodes	71x65x93	(4)	CDM24CS	XCDM24CS	159
	137x65x93	(1)	CDM24AC	XCDM24AC	160
	137x65x93	(2)	CDM24CC	XCDM24CC	160
	137x65x93	(2)	CDM24CC	XCDM24CC	160

Lamp testing modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
8 diodes	45x65x93	(1)	CLT08AC	XCLT08AC	161
	45x65x93	(2)	CLT08CC	XCLT08CC	161
	45x65x93		XCLP08CC	162	
16 diodes	92x65x93	(1)	CLT16AC	XCLT16AC	161
	92x65x93	(2)	CLT16CC	XCLT16CC	161
	92x65x93		CLP16CC	XCLP16CC	162

Flat / Terminal modules

Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
10 poles	42x66x93	(8)	IF10PMS	XIF10PMS	156
	42x66x93	(8) (7)	IF10PML	XIF10PML	156
14 poles	48x66x93	(8)	IF14PMS	XIF14PMS	156
	48x66x93	(8) (7)	IF14PML	XIF14PML	156
16 poles	58x66x93	(8)	IF16PMS	XIF16PMS	156
	58x66x93	(8) (7)	IF16PML	XIF16PML	156
20 poles	70x66x93	(8)	IF20PMS	XIF20PMS	156
	70x66x93	(8) (7)	IF20PML	XIF20PML	156
	47x80x93	(8) (11)	CPC20M	XCPC20M	157
26 poles	86x66x93	(8)	IF26PMS	XIF26PMS	156
	86x66x93	(8) (7)	IF26PML	XIF26PML	156
	57x80x93	(8) (11)	CPC26M	XCPC26M	157
34 poles	107x66x93	(8)	IF34PMS	XIF34PMS	156
	107x66x93	(8) (7)	IF34PML	XIF34PML	156
	70x80x93	(8) (11)	CPC34M	XCPC34M	157
40 poles	122x66x93	(8)	IF40PMS	XIF40PMS	156
	122x66x93	(8) (7)	IF40PML	XIF40PML	156
	77x80x93	(8) (11)	CPC40M	XCPC40M	157
50 poles	92x80x93	(8) (11)	CPC50M	XCPC50M	157
60 poles	107x80x93	(8) (11)	CPC60M	XCPC60M	157
64 poli	117x80x93	(8) (11)	CPC64M	XCPC64M	157
	92x80x93	(8) (11)	CPD50M	XCPD50M	155

Component-holder modules

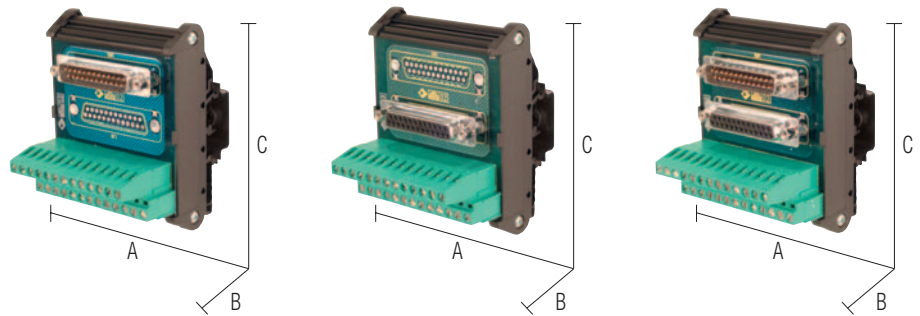
Version	Dimensions AxBxC	Tipology	Type	Cat. No.	Page
4 components	25x66x93	(9)	CCM04SF	XCCM04SF	158
8 components	25x66x93	(10)	CCM08SV	XCCM08SV	158
8 components	47x66x93	(9)	CCM08SF	XCCM08SF	158
10 components	38x66x93	(3)	CCM08CV	XCCM08CV	158
12 components	70x66x93	(9)	CCM12SV	XCCM12SV	158
16 components	47x66x93	(10)	CCM16SV	XCCM16SV	158
24 components	70x66x93	(10)	CCM24SV	XCCM24SV	158

Legenda

- (1) common anode
- (2) common cathode
- (3) with common terminal
- (4) single diode
- (5) female connector
- (6) female + male connector

- (7) with LED
- (8) male connector
- (9) single component with Faston terminals
- (10) single component with terminal blocks
- (11) compact dimensions

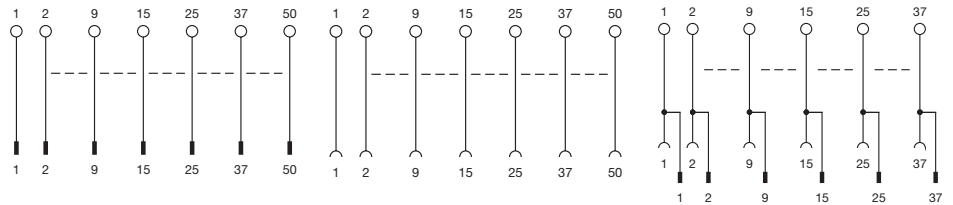
Passive interfaces (D-Sub/Terminals modules) ISD series



NOTES

These modules allow the transferring to the terminals of the deriving signals on a cable with D-Sub connector type
The numeration is "pin-to-pin".

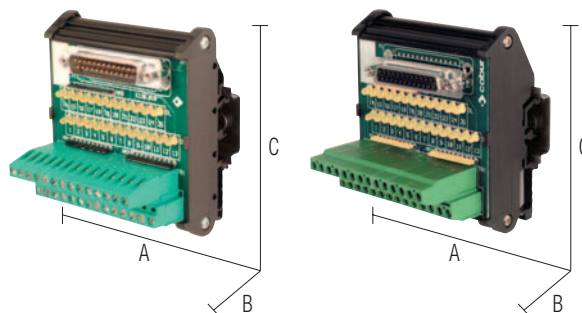
BLOCK DIAGRAM



VERSIONS		DIMENSIONS		male		female		male + female	
		(A x B x C)		Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
9 poles	37x66x93 (1.46x2.60x3.66 in)			ISD09PM	XISD09PM	ISD09PF	XISD09PF	ISD09FM	XISD09FM
15 poles	47x66x93 (1.85x2.60x3.66 in)			ISD15PM	XISD15PM	ISD15PF	XISD15PF	ISD15FM	XISD15FM
25 poles	70x66x93 (2.76x2.60x3.66 in)			ISD25PM	XISD25PM	ISD25PF	XISD25PF	ISD25FM	XISD25FM
37 poles	107x66x93 (4.21x2.60x3.66 in)			ISD37PM	XISD37PM	ISD37PF	XISD37PF	ISD37FM	XISD37FM
GENERAL TECHNICAL DATA									
Rated voltage		0...50 Vac / 0...75 Vdc				0...50 Vac / 0...75 Vdc		0...50 Vac / 0...75 Vdc	
Rated current		2 A max.				2 A max.		2 A max.	
Operating temperature		-20...+60°C				-20...+60°C		-20...+60°C	
Protection degree		IP00 IEC529; EN60529				IP00 IEC529; EN60529		IP00 IEC529; EN60529	
Reference Standard		IEC 664-1; DIN VDE 0110.1				IEC 664-1; DIN VDE 0110.1		IEC 664-1; DIN VDE 0110.1	
Pollution degree		2				2		2	
Overvoltage category		II				II		II	
Housing material		polyamide UL94V-0				polyamide UL94V-0		polyamide UL94V-0	
Connection terminal blocks		2.5 mm² fixed screw type (AWG 14)				2.5 mm² fixed screw type (AWG 14)		2.5 mm² fixed screw type (AWG 14)	
Mounting information		vertical on rail adjacent without gap				vertical on rail adjacent without gap		vertical on rail adjacent without gap	
MOUNTING ACCESSORIES									
Mounting rail type according to IEC60715/TH35									
Mounting rail type according to IEC60715/G32									
Jumper bridge									
black									

Passive interfaces (D-Sub/Terminals modules) ISD series

- With LED to display the status



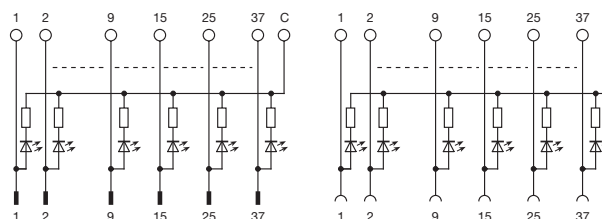
NOTES

These modules allow the transferring to the terminals of the deriving signals on a cable with D-Sub connector type

The numeration is "pin-to-pin"

(1) The LEDs are predisposed for a nominal voltage of 24 Vdc and negative common.

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)
25 poles	80x66x93 (3.15x2.60x3.66 in)
37 poles	109x66x93 (4.30x2.60x3.66 in)

male		female	
Item	Cat. No.	Item	Cat. No.
ISD25PML	XISD25PML	ISD25PFL	XISD25PFL
ISD37PML	XISD37PML	ISD37PFL	XISD37PFL

GENERAL TECHNICAL DATA

Rated voltage	12...24 Vdc ±10% (1)
Rated current	2 A max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

Rated voltage	12...24 Vdc ±10% (1)
Rated current	2 A max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

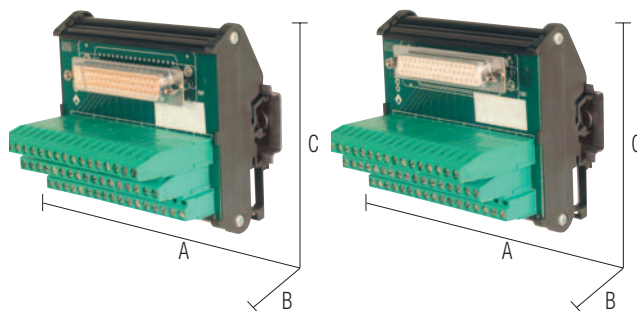
MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
—

Passive interfaces (D-Sub/Terminals modules) CPD series

- Compact dimensions



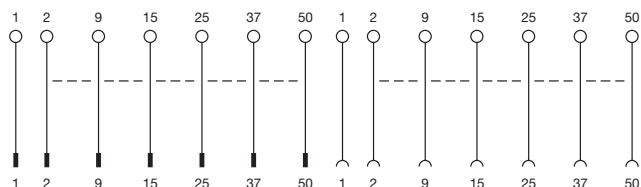
NOTES

These modules allow the transferring to the terminals of the deriving signals on a cable with D-Sub connector type.

The numeration is "pin-to-pin".

(1) Version available upon request

BLOCK DIAGRAM



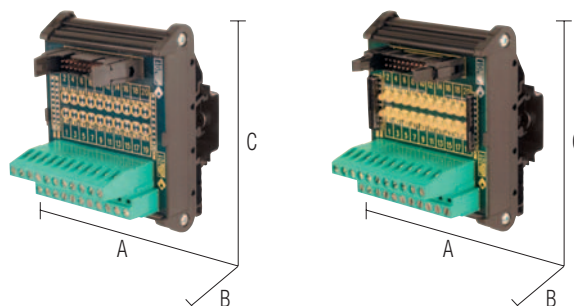
VERSIONS	DIMENSIONS (A x B x C)	male		female	
		Item	Cat. No.	Item	Cat. No.
25 poles	57x80x93 (2.24x3.15x3.66 in)	CPD25M	XCPD25M	CPD25F	XCPD25F
37 poles	77x80x93 (3.03x3.15x3.66 in)	CPD37M	XCPD37M	CPD37F	XCPD37F
50 poles	92x80x93 (3.62x3.15x3.66 in)	CPD50M	XCPD50M	CPD50F	XCPD50F

GENERAL TECHNICAL DATA	
Rated voltage	0...50 Vac / 0...75 Vdc
Rated current	2 A max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35	PR/3/AC - PR/3/AS
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Jumper bridge	black

Passive interfaces (I.D.C./Terminal blocks) IF series

- Available with LED to display the status



NOTES

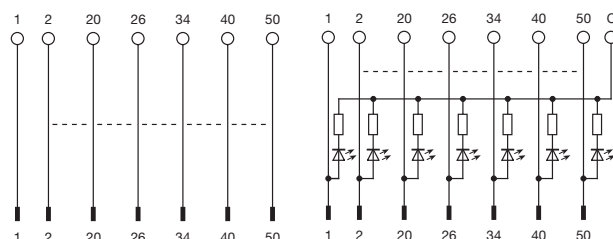
The modules allow the transferring to the terminals the deriving signals on Flat-cable through the employment of IDC ribbon cable connectors (with insulation displacement).

The numeration is "pin-to-pin".

(1) Version available upon request

(2) The LEDs are predisposed for a nominal voltage of 24 Vdc and negative common

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)	male		female	
		Item	Cat. No.	Item	Cat. No.
10 poles	42x66x93 (1.65x2.60x3.66 in)	IF10PMS (1)	XIF10PMS	IF10PML (1)	XIF10PML
14 poles	48x66x93 (1.89x2.60x3.66 in)	IF14PMS (1)	XIF14PMS	IF14PML (1)	XIF14PML
16 poles	58x66x93 (2.28x2.60x3.66 in)	IF16PMS	XIF16PMS	IF16PML	XIF16PML
20 poles	70x66x93 (2.76x2.60x3.66 in)	IF20PMS	XIF20PMS	IF20PML	XIF20PML
26 poles	86x66x93 (3.39x2.60x3.66 in)	IF26PMS	XIF26PMS	IF26PML	XIF26PML
34 poles	107x66x93 (4.21x2.60x3.66 in)	IF34PMS	XIF34PMS	IF34PML	XIF34PML
40 poles	122x66x93 (4.80x2.60x3.66 in)	IF40PMS	XIF40PMS	IF40PML	XIF40PML

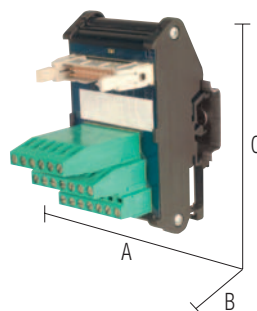
GENERAL TECHNICAL DATA	
Rated voltage	0...50 Vac / 0...75 Vdc
Rated current	750 mA max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS	
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL	

Passive interfaces (I.D.C./Terminal blocks) CPC series

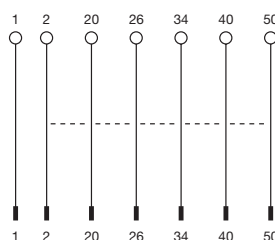
- Compact dimensions



NOTES

The modules allow the transferring to the terminals of the deriving signals on Flat-cable through the employment of IDC ribbon cable connectors (with insulation displacement).
The numeration is "pin-to-pin".

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)	without LED	
		Item	Cat. No.
20 poles	47x80x93 (1.85x3.15x3.66 in)	CPC20M	XCPC20M
26 poles	57x80x93 (2.24x3.15x3.66 in)	CPC26M	XCPC26M
34 poles	70x80x93 (2.76x3.15x3.66 in)	CPC34M	XCPC34M
40 poles	77x80x93 (3.03x3.15x3.66 in)	CPC40M	XCPC40M
50 poles	92x80x93 (3.62x3.15x3.66 in)	CPC50M	XCPC50M
60 poles	107x80x93 (4.21x3.15x3.66 in)	CPC60M	XCPC60M
64 poles	117x80x93 (4.61x3.15x3.66 in)	CPC64M	XCPC64M

GENERAL TECHNICAL DATA

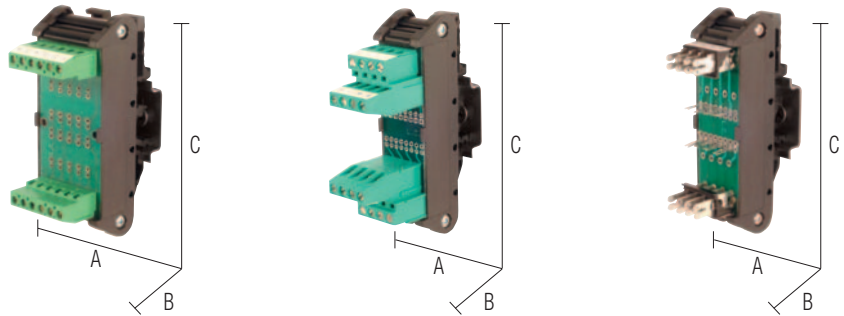
Rated voltage	0...50 Vac / 0...75 Vdc
Rated current	750 mA max.
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	PR/3/AC - PR/3/AS
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Jumper bridge	black

Component-holders modules CCM series

- Compact dimensions
- Available with fast-on connection



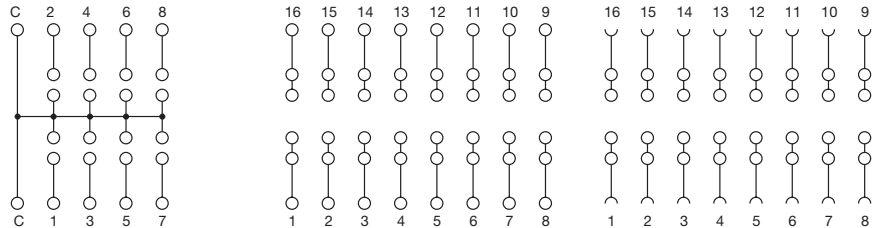
NOTES

The component-holders modules allow the montage of electronic components (diodes, resistors, capacitors etc.) according to customer needs.

They are available with connections with terminal blocks or Faston, and with holes of different diameters for the terminals of the components.

(1) Version available upon request; for info call our sales dept., local agent or representative

BLOCK DIAGRAM



VERSIONS	DIMENSIONS (A x B x C)	with common terminal		single with terminals		single with Faston	
		Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
4 components	25x66x93 (0.98x2.60x3.66 in)	—	—	—	—	CCM04SF	XCCM04SF
8 components	25x66x93 (0.98x2.60x3.66 in)	—	—	CCM08SV	XCCM08SV	—	—
8 components	47x66x93 (1.85x2.60x3.66 in)	—	—	—	—	CCM08SF	XCCM08SF
8 components	25x55x93 (0.98x2.17x3.66 in)	CCM08CV	XCCM08CV	—	—	—	—
12 components	70x66x93 (2.76x2.60x3.66 in)	—	—	—	—	CCM12SF (1)	XCCM12SF
16 components	47x66x93 (1.85x2.60x3.66 in)	CCM16CV	XCCM16CV	CCM16SV	XCCM16SV	—	—
24 components	70x66x93 (2.76x2.60x3.66 in)	—	—	CCM24SV (1)	XCCM24SV	—	—

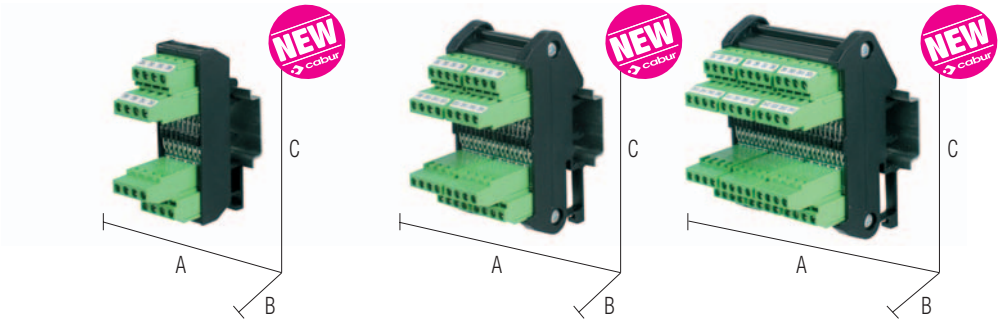
GENERAL TECHNICAL DATA			
Rated voltage	0...230 V ±10%	0...230 V ±10%	0...230 V ±10%
Rated current	4 A max. (on the common)	2 A max. (on the common)	2 A max. (on the common)
Operating temperature	-20...+60°C	-20...+60°C	-20...+60°C
Protection degree	IP00 IEC529; EN60529	IP00 IEC529; EN60529	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1	IEC 664-1; DIN VDE 0110.1	IEC 664-1; DIN VDE 0110.1
Pollution degree	2	2	2
Overvoltage category	II	II	II
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)	2.5 mm ² fixed screw type (AWG 14)	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap	vertical on rail adjacent without gap	vertical on rail adjacent without gap

MOUNTING ACCESSORIES		PR/3/AC - PR/3/AS	
Mounting rail type according to IEC60715/TH35	—	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL	—
Mounting rail type according to IEC60715/G32	—	—	—
Jumper bridge	black	—	—

The PMC series has changed its Cat. No. into CCM series, these are the cross reference list.

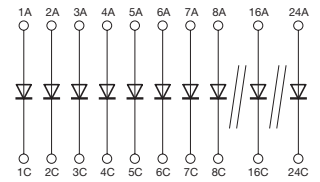
Old item	New item
PMC0001	CCM08CV
PMC0002	CCM08SV
PMC0003	CCM16SV
PMC0004	CCM24SV
PMC0005	CCM04SF
PMC0006	CCM08SF
PMC0007	CCM12SF

Diode-holder modules
with single diodes
CDM series



NOTES

BLOCK DIAGRAM



VERSIONS	DIMENSIONS
	(A x B x C)
8 diodes	25x60x76 (0.98x2.36x3.66 in)
16 diodes	50x65x93 (1.97x2.56x3.66 in)
24 diodes	71x65x93 (2.80x2.56x3.66 in)

single diode	
Item	Cat. No.
CDM08CS	XCDM08CS
CDM16CS	XCDM16CS
CDM24CS	XCDM24CS

GENERAL TECHNICAL DATA	
Rated voltage	0...230 V ±10%
Rated current	1 A max.
Diode type	1N4007
Repetitive peak reverse voltage	1000 V
Operating temperature	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

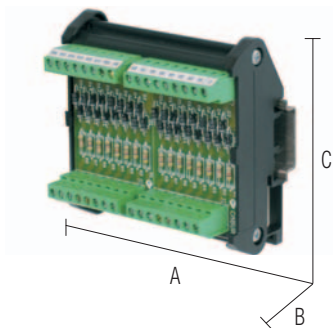
0...230 V ±10%
1 A max.
1N4007
1000 V
-20...+60°C
IP00 IEC529; EN60529
IEC 664-1; DIN VDE 0110.1
2
II
polyamide UL94V-0
2.5 mm² fixed screw type (AWG 14)
vertical on rail adjacent without gap

MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

PR/3/AC - PR/3/AS	
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL	

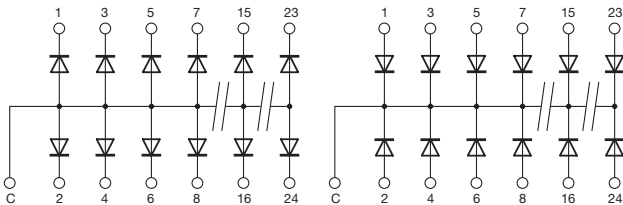


Diode-holder modules
with common terminal
CDM series



NOTES

BLOCK DIAGRAM



VERSIONS	DIMENSIONS
	(A x B x C)
8 diodes	45x65x93 (1.77x2.56x3.66 in)
16 diodes	92x65x93 (3.62x2.56x3.66 in)
24 diodes	137x65x93 (5.39x2.56x3.66 in)

common anode		common cathode	
Item	Cat. No.	Item	Cat. No.
CDM08AC	XCDM08AC	CDM08CC	XCDM08CC
CDM16AC	XCDM16AC	CDM16CC	XCDM16CC
CDM24AC	XCDM24AC	CDM24CC	XCDM24CC

GENERAL TECHNICAL DATA

Rated voltage	0...230 V $\pm 10\%$
Rated current	1 A max.
Operating temperature	1N4007
Diode type	1000 V
Repetitive peak reverse voltage	-20...+60°C
Protection degree	IP00 IEC529; EN60529
Reference Standard	IEC 664-1; DIN VDE 0110.1
Pollution degree	2
Overvoltage category	II
Housing material	polyamide UL94V-0
Connection terminal blocks	2.5 mm ² fixed screw type (AWG 14)
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	black

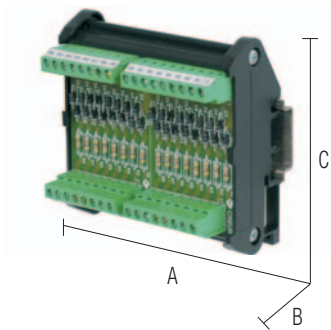
PR/3/AC - PR/3/AS
PR/DIN/AC - PR/DIN/AS - PR/DIN/AL



LED testing modules

CLT series

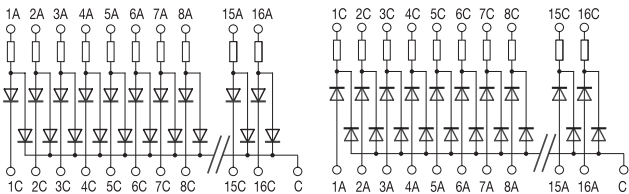
- Compact dimensions
- Integrated limitation resistance
- Suitable only for LED without resistance limiter



NOTES

- (1) Led test can be performed through a negative signal on the common output
- (2) Led test can be performed through a positive signal on the common input

BLOCK DIAGRAM



VERSIONS	DIMENSIONS
	(A x B x C)
8 channels	45x65x93 (1.77x2.56x3.66 in)
16 channels	92x65x93 (3.62x2.56x3.66 in)

common negative (1)		common positive (2)	
Item	Cat. No.	Item	Cat. No.
CLT08AC	XCLT08AC	CLT08CC	XCLT08CC
CLT16AC	XCLT16AC	CLT16CC	XCLT16CC

GENERAL TECHNICAL DATA

Rated voltage	24 Vdc max. 30 Vdc
Corrente singolo canale	5 mA @ 24 Vdc
Diodes utilizzati	1N4007
Resistenza di limitazione	4,7 KΩ 1/4 W ±5%
Repetitive peak reverse voltage	700 V
Operating temperature	-20...+45°C
Housing material	polyamide UL94V-0
Protection degree	IP 00 IEC529, EN60529
Connection terminal blocks	2.5 mm² fixed screw type
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES

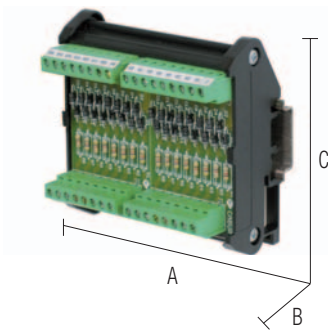
Mounting rail type according to IEC60715/TH35	PR/3/AC – PR/3/AC/ZB – PR/3/AS – PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC – PR/DIN/AS – PR/DIN/AL
Jumper bridge	black



Lamp testing modules

CLT series

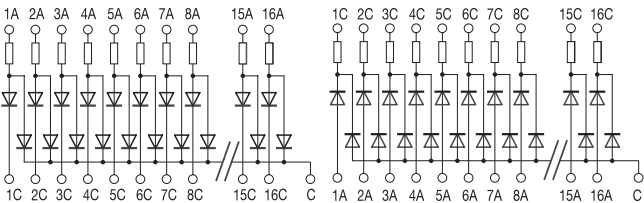
- Compact dimensions



NOTES

With AC input, the diodes rectify the current and the power will be halved.
(1) Led test can be performed through a negative signal on the common output
(2) Led test can be performed through a positive signal on the common input

BLOCK DIAGRAM



VERSIONS	DIMENSIONS
	(A x B x C)
8 channels	45x65x93 (1.77x2.56x3.66 in)
16 channels	92x65x93 (3.62x2.56x3.66 in)

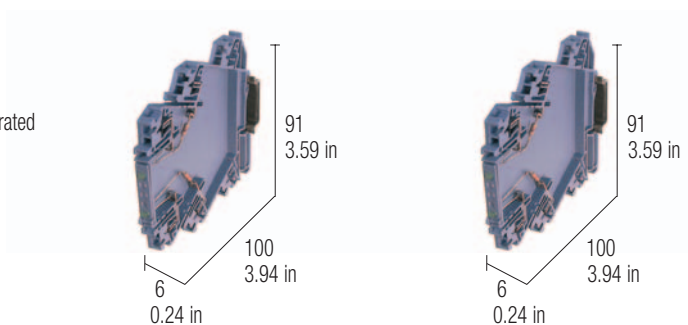
common negative (1)		common positive (2)	
Item	Cat. No.	Item	Cat. No.
		CLP08CC	XCLP08CC
		CLP16CC	XCLP16CC

GENERAL TECHNICAL DATA	
Rated voltage	230 Vac/dc
Rated current (1 channel)	100 mA @ 120 Vac/dc; 50 mA @ 230 Vac/dc
Diode type	1N4007
Limitation resistance	0
Repetitive peak reverse voltage	700 V
Operating temperature	-20...+45°C
Housing material	polyamide UL94V-0
Protection degree	IP 00 IEC529, EN60529
Connection terminal blocks	2.5 mm² fixed screw type
Mounting information	vertical on rail adjacent without gap

MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35	PR/3/AC – PR/3/AC/ZB – PR/3/AS – PR/3/AS/ZB
Mounting rail type according to IEC60715/G32	PR/DIN/AC - PR/DIN/AS - PR/DIN/AL
Jumper bridge	black

Distribution modules CKF series

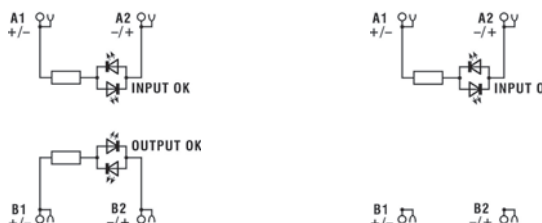
- Terminal blocks having a rated current of 24 A and 250 Vac rated voltage
- Four slots for four parallel connections
- Available with and without LED status display
- 6 mm wide



NOTES

- 1) Modules without output status LED display allow the distribution of any voltage up to 250 V
- 2) Modules with output status LED display allow the distribution of 12-24 Vac/dc voltage and are available on request; modules suitable for 48 Vac/dc, 120 Vac/dc with status LED display are available upon request
- (3) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section

BLOCK DIAGRAM



VERSIONS

Status signal on input and output side
Status signal on input side

INPUT TECHNICAL DATA

Input voltage
Rated current (1 channel)
Bridge voltage
Distributable current to the bridge

OUTPUT TECHNICAL DATA

Output voltage
Rated current (1 channel)
Distributable voltage to the bridge
Distributable current to the bridge

GENERAL TECHNICAL DATA

Operating temperature	-20 – +60°C	
I/O isolation	3 kVac / 60 s	
Isolation between terminals	3 kVac / 60 s	
Protection degree (3)	IP20 IEC529 EN60529	
Reference Standard	IEC 664.1, EN50081-1	
Pollution degree	2	
Overvoltage category	II	
Connection terminals	2.5 mm ² AWG26-14 spring type	
Housing material	polyamide UL94V-0	
Approx. weight	24 g (0.85 oz)	40 g (1.41 oz)
Mounting information	adjacent without gap	

MOUNTING ACCESSORIES

Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Jumper bridge	
End section	
Marking tags	blank printed printed

Item	Cat. No.	Item	Cat. No.
CKFAA	XCKFAA	CKFAX	XCKFAX

APPLICATIONS

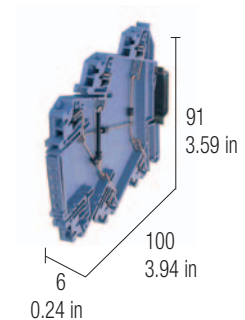
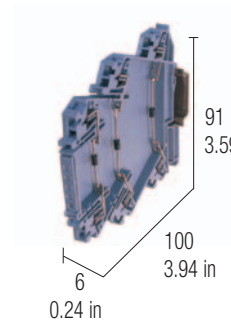
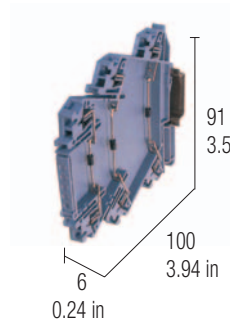
The use of the CKF modules for the connection and distribution of the common input and output supplies allows of to feed a maximum number of modules which is limited by the 24 A maximum current allowed by its 2.5mm² (AWG 26-14) terminal blocks; calculation of the distributed maximum current must consider the maximum simultaneous activation of all relays; if the distributed current exceeds 24 A, it will be necessary to divide it on more CKF modules.

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

PTC/CK/42	Cat. No. PTCCK42 (42 poles)
CK/PT	Cat. No. XCKPT
CNU/8/030	Cat. No. NU008
CNU/8/023	Cat. No. N8023
CNU/8/024	Cat. No. N8024

Modular diodes-holder modules CKD series

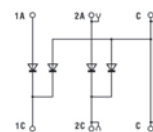
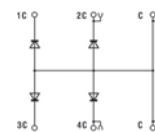
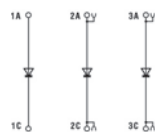
- Easily expandable modules by means of a jumper
- Jumper insertion possibility on each of the 4 levels
- 6 mm wide



NOTES

- (1) In this model 1N4007 type diodes are mounted, their maximum average forward rectifier current is 1 A @ 50°C and 0.75 A @ 100°C. A model with BY255 type diodes and with an average forward rectifier current of 3 A @ 50°C, is also available but only upon request
- (2) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section

BLOCK DIAGRAM



VERSIONS
Single diode
Common anode diodes array
Common cathode diodes array
Lamp / LED test circuits

Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
CKD3CS	XCKD3CS	—	—	—	—
		CKD4AC	XCKD4AC	—	—
		CKD4CC	XCKD4CC	—	—
		—	—	CKD2LT	XCKD2LT

GENERAL TECHNICAL DATA

Rated voltage	230 Vac/dc
Rated current	≤ 1 A @ 25°C (diode type 1N4007) (1)
Repetitive peak reverse voltage	1000 V
Distributable voltage to the bridge	≤ 230 Vac/dc
Distributable current to the bridge	≤ 24 A
Operating temperature	-20 – + 60 °C
Protection degree (3)	IP20 IEC529 EN60529
Reference Standard	IEC 664.1, EN50081-1
Pollution degree	2
Overvoltage category	II
Connection terminals	2.5 mm ² , AWG26-14 spring type
Housing material	polyamide UL 94V0
Approx. weight	27 g (0.95 oz)
Mounting information	adjacent without gap

MOUNTING ACCESSORIES

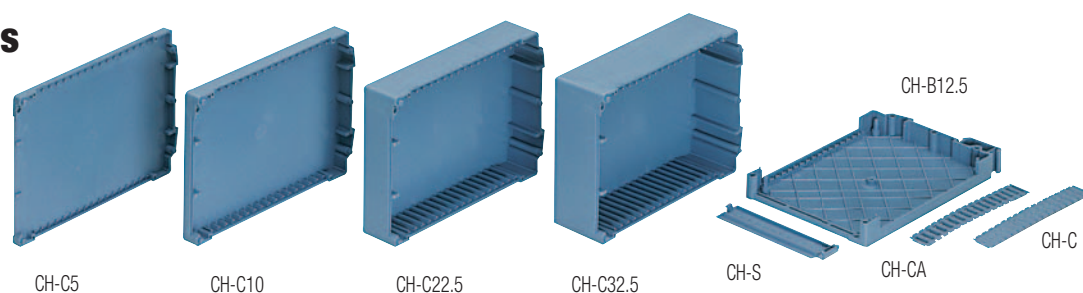
Mounting rail type according to IEC60715/TH35	
Mounting rail type according to IEC60715/G32	
Jumper bridge	
End section	
Marking tags	blank printed printed

PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB

—	
PTC/CK/42	Cat. No. PTCK42 (42 poles)
CK/PT	Cat. No. XCKPT
CNU/8/030	Cat. No. NU008
CNU/8/CKD	Cat. No. N8CKD020

Housing for custom applications CH series

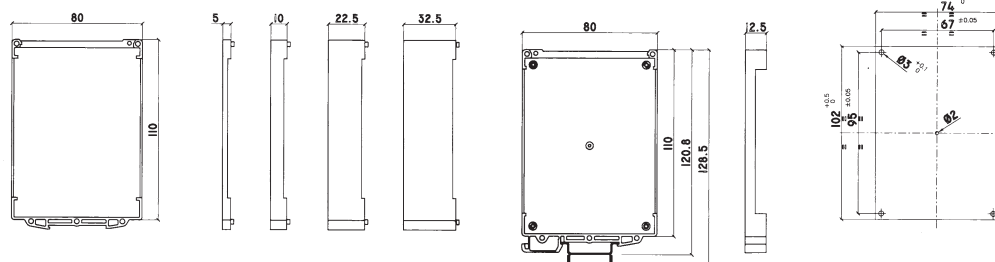
• Available on 4 measures



NOTES

(1) Maximum height of the components measured between the circuit and the cover

BLOCK DIAGRAM



VERSIONS

right side with hook for DIN rail, 12.5 mm
left side housing, 5.5 mm
left side housing, 10 mm
left side housing, 22.5 mm
left side housing, 32.5 mm
openable hinged cover
vented cover
enclosed cover
fixed hinged cover

Item	Cat. No.
CH-B12.5	XBB125
CH-C5	XBC050
CH-C10	XBC010
CH-C22.5	XBC225
CH-C32.5	XBC325
CH-S	XBS000
CH-CA	XBCA00
CH-C	XBC000
CH-CF	XBCF00

APPLICATIONS

CH electronic housings

With the CH (Cabur Housing) series containers, Cabur proposes a modular system which allows you to obtain boxes with four width sizes 17.5 mm - 35 mm - 45 mm - composed by 10 easy-to-assemble parts.

The CS can have a maximum size of 102 x 74 mm and can be inserted on 4 small columns formed in the base which holds it in position.

Additional anchorage of the CS is possible with a 2.2 x 4.5 mm self-threading screw to be screwed into the central column, also allowing small CS to be mounted.

The conductors are connected with 2.5 mm pluggable terminals, which are readily available.

16 connection poles which can be used with pitch of 5.08 on each side and 10 on the front side.

The CH-S front closure, with panel opening, provides access to the internal circuit for work on the potentiometers, jumpers and micro-switches.

The side covers are available with ventilating holes or closed, and are pre-cut with 5.08 mm pitch, to make possible an easy cut into necessary length with a pair of scissors, for an easy fit to final dimensions.

The following are required for a composition of a housing::

- 1 CH-B12.5 base 12.5 mm wide
- 1 cover (4 sizes available)

CH-C5	5 mm wide
CH-C10	10 mm wide
CH-C22.5	22.5 mm wide
CH-C32.5	32.5 mm wide

(by adding together the width of the base 12.5 mm with the width of the cover chosen from the 4 available, the total width of the housing is obtained)

- 1 front closure in two versions:

CH-S	with panel opening
CH-CF	fixed

- 2 side closures in two versions:

CH-C	without vents
CH-CA	with vents

GENERAL TECHNICAL DATA

Material	Poliammide UL94V-0
Colour	RAL 5014
Temperature	max 80 °C
Dissipated power	max 7 W
Protection degree	fino a IP30
Number of poles for every side	16 +16 (5.08)
Number of poles on the top	10 (5.08)
Mounting information	

MOUNTING ACCESSORIES

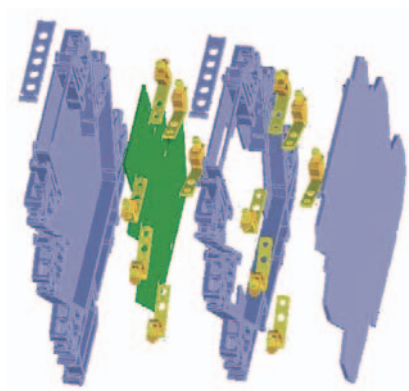
Mounting rail type according to IEC60715/TH35-7.5
Mounting rail type according to IEC60715/G32
Jumper bridge red
white
blue

PR/3/AC, PR/3/AS

Maximum inside height (1)	CH-B12.5	CH-C5	CH-C10	CH-C22.5	CH-C32.5	CH-S	CH-CA CH-C
12.1 mm	1	1				1	2
19.1 mm	1		1			1	2
31.6 mm	1			1		1	2
41.6 mm	1				1	1	2

Housing for custom applications CK series

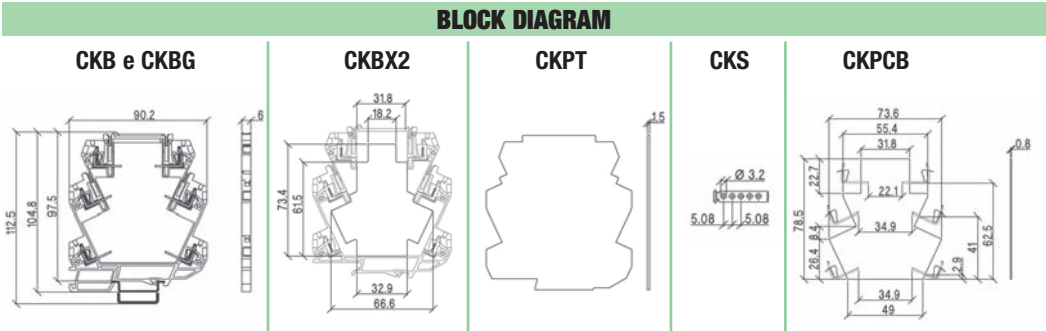
- 6 mm wide, expandable modules
- 6 spring-clamp 2,5 mm² / AWG 26 ÷ 14 terminal blocks
- Jumper insertion possibility on each of the 4 levels
- Hinged front cover access to the printed circuit board



NOTES

(1) 6 spring-clamp terminal blocks included with solder contact

(2) In order to assure the IP20 protection degree, the last module must be protected and insulated using the CK/PT end section



VERSIONS	
standard base	
base element with ground contact	
expansion module	
end section	
front hinge cover	
printed circuit board	

Item	Cat. No.
CKB (1)	XCKB
CKBG (1)	XCKBG
CKBX2 (1)	XCKX2
CK/PT	XCKPT
CK/S	XCKS
CK/PCB	8901028

GENERAL TECHNICAL DATA	
Rated voltage of each terminal block	230 Vac/dc ± 10%
Rated current of each terminal block	≤ 24 A
Operating temperature	-40...+ 100°C
Protection degree (2)	IP20 IEC529 EN60529
Connection terminals	2.5 mm², AWG26-14 spring type
Housing material	polyamide UL 94V0
Approx. weight	20 g (CKB, CKBG), 15 g (CKX2, CK/PT) 20 g (CK/PT), 1 g (CK/S), 5 g (CK/PCB)

PTC/CK/42	Cat. No. PTCCK42 (42 poli)
CNU/8/030	Cat. No. NU008
CNU/8/- - -	(see terminal blocks catalogue) on rail

Parallel bridge	
Marking tags	blank printed

MOUNTING ACCESSORIES	
Mounting rail type according to IEC60715/TH35-7.5	
Mounting rail type according to IEC60715/G32	
Jumper bridge	red white blue

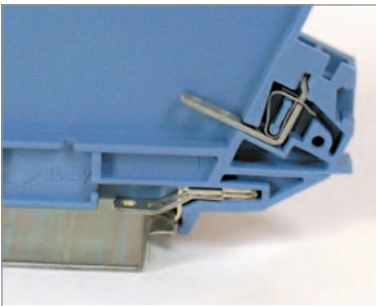
PR/3/AC, PR/3/AC/ZB, PR/3/AS, PR/3/AS/ZB	
—	
—	
—	
—	

APPLICATIONS

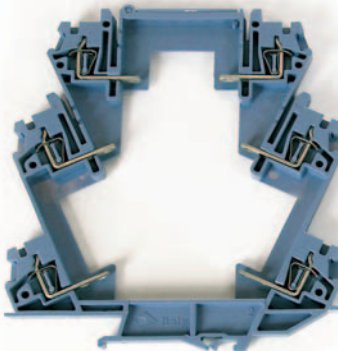
With the CK series modular housings, Cabur offers a modular system that provides housings with increasing dimensions in width for simple components as diodes, resistors or more complex circuits with or without the support of a printed circuit board. For the composition of an housing the following items are necessary:

- a base support element, available in two versions: CKB and CKBG; the latter is provided with an electric metal contact on the DIN rail that allows to connect the internal circuit to the ground. Ground contact towards the DIN rail can carry an impulsive current value of 5 KA (8/20 peak). Both models have an external width of 6 mm and internal width of 5 mm; they are also equipped with 6 springclamp terminal blocks and 4 slots for the insertion of a jumper;
- one or more CKBX2 type expansion modules similar to the base support element, having therefore an external width of 6 mm and a central slot that allows the housing of the bulky components with a height exceeding the overall height of the base support element; the expansion module is also equipped with 6 spring-clamp terminal blocks and 4 slots for the insertion of a jumper;
- the CK/S front cover, granting access to the interior of the product, is also available. Once in open position it has such a dimension in order to guarantee a IPXXB degree of protection, even when it is not employed;
- in order to assure the IPXXB protection degree, the last module must be protected and insulated using the CK/PT end section;
- the CK/PCB printed circuit board is also available; it is useful in low volume custom applications where a special pcb is not designed and also where one requires a prototype without tooling a special printed circuit board.

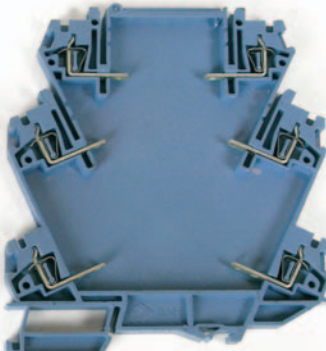
Ground contact on CKBG



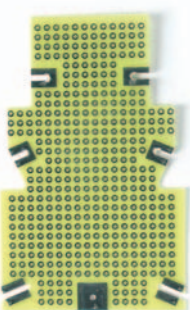
CKBX2



CKB



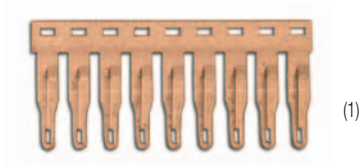
CK/PCB



Plug-in jumper for CK series

Notes:

- (1) Example of a pre-cut 9 position jumper
- (2) CK/PT end section must be mounted on last module to assure IP20 protection degree
- (3) 32 A is the maximum current; however this value is limited by the rated current of the spring-clamp terminal blocks down to 24 A; for instance, having a jumper of 11 poles (1 for common and 10 for distribution) a current of 2.4 A can be distributed on every poles



VERSIONS	Item	Cat. No.
	PTC/CK/42	PTCCK42
GENERAL TECHNICAL DATA		
Protection degree (2)	IP20 IEC529; EN60529	
Number of poles	42	
Pitch	6 mm (0.24 in)	
Rated current carrying capacity of jumper (3)	32 A	
Insulation color	—	
Material	tin copper alloy	
Approx. weight	27 g (0.95 oz) (42 poles)	

Plug-in jumper for CW..7 series



VERSIONS	Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
	CWBK 7-0802	X766802	CWBK 7-0803	X766803	CWBK 7-0804	X766804
GENERAL TECHNICAL DATA						
Protection degree	IP20 IEC529; EN60529		IP20 IEC529; EN60529		IP20 IEC529; EN60529	
Number of poles	16		16		16	
Pitch	6.2 mm (2.44 in)		6.2 mm (2.44 in)		6.2 mm (2.44 in)	
Rated current carrying capacity of jumper	16 A		16 A		16 A	
Insulation color	red		white		blue	
Material	—		—		—	
Approx. weight	4 g (0.14 oz)		4 g (0.14 oz)		4 g (0.14 oz)	

Plug-in jumper for CWRE series

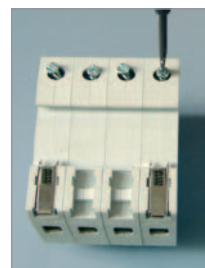
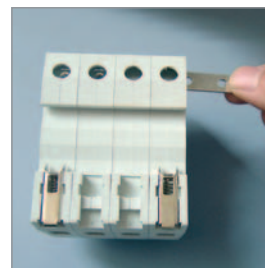
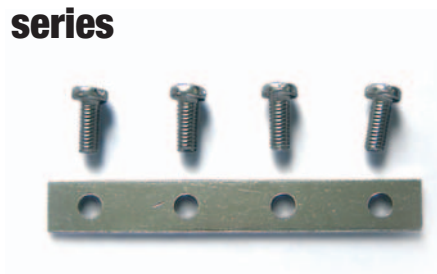


VERSIONS	Item	Cat. No.
	CWBK 7-0813	X766813
GENERAL TECHNICAL DATA		
Protection degree	IP20 IEC529; EN60529	
Number of poles	16	
Pitch	6.2 mm (2.44 in)	
Rated current carrying capacity of jumper	16 A	
Insulation color	blue	
Material	—	
Approx. weight	6 g (0.21 oz)	

Screw type jumper for JVS series

Notes:

Suitable for JVS protection devices



VERSIONS	Item	Cat. No.	Item	Cat. No.	Item	Cat. No.
	JGB2P	XJGB2P	JGB3P	XJGB3P	JGB4P	XJGB4P

GENERAL TECHNICAL DATA						
Protection degree	IP20 IEC529; EN60529		IP20 IEC529; EN60529		IP20 IEC529; EN60529	
Number of poles	2		3		4	
Pitch	18 mm (0.71 in)		18 mm (0.71 in)		18 mm (0.71 in)	
Rated current carrying capacity of jumper	100 A		100 A		100 A	
Insulation color	—		—		—	
Material	T2 copper		T2 copper		T2 copper	
Treatment	silver plated		silver plated		silver plated	

Screw type jumper for CM series



VERSIONS	Item	Cat. No.	Item	Cat. No.
	XCMB16B	XCMB16B	XCMB27B	XCMB27B

GENERAL TECHNICAL DATA				
Protection degree	IP20 IEC529; EN60529		IP20 IEC529; EN60529	
Number of poles	8		8	
Pitch	16 mm (0.63 in)		27 mm (1.06 in)	
Rated current carrying capacity of jumper	10 A @ 250 V		10 A @ 250 V	
Insulation color	black		black	
Material	—		—	
Approx. weight	3 g (0.10 oz)		3 g (0.10 oz)	

Marking system

CNU/8 series

Notes:
These are the tags suited to be used for the marking of the terminals on CK series, supplied in tables of 100 elements. They are manufactured in white polyamide and are provided with black printing; to be applied directly into position either before or after assembling the relays to the din rail. They have a 6 mm standard pitch and are 8 mm high. In the table below the types suited to be used with CK interface modules are listed; they are available in numbers or symbols marking patterns. For the complete range, please refer to the terminal blocks catalogue on the accessories section.

—	K10	104	101	102	—	K10	104	101	102
+	K3	34	31	32	+	K3	34	31	32
—	K8	84	81	82	—	K8	84	81	82
+	K7	74	71	72	+	K7	74	71	72
—	K6	64	61	62	—	K6	64	61	62
+	K5	54	51	52	+	K5	54	51	52
—	K4	44	41	42	—	K4	44	41	42
+	K3	34	31	32	+	K3	34	31	32
—	K2	24	21	22	—	K2	24	21	22
+	K1	14	11	12	+	K1	14	11	12

N8CK1610

—	K10	104	101	102	—	K10	104	101	102
+	K3	34	31	32	+	K3	34	31	32
—	K8	84	81	82	—	K8	84	81	82
+	K7	74	71	72	+	K7	74	71	72
—	K6	64	61	62	—	K6	64	61	62
+	K5	54	51	52	+	K5	54	51	52
—	K4	44	41	42	—	K4	44	41	42
+	K3	34	31	32	+	K3	34	31	32
—	K2	24	21	22	—	K2	24	21	22
+	K1	14	11	12	+	K1	14	11	12

N8CK1620

+	—	+	—	+	—	+	—	+	—
18	K17	174	171-181	184	K18	K17	174	171-181	18
16	K15	154	151-161	164	K16	K15	154	151-161	16
14	K13	134	131-141	144	K14	K13	134	131-141	14
12	K11	114	111-121	124	K12	K11	114	111-121	12
10	K9	94	91-101	104	K10	K9	94	91-101	10
8	K7	74	71-81	84	K8	K7	74	71-81	8
6	K5	54	51-62	64	K6	K5	54	51-62	6
4	K3	34	31-41	44	K4	K3	34	31-41	4
2	K1	14	11-21	24	K2	K1	14	11-21	2

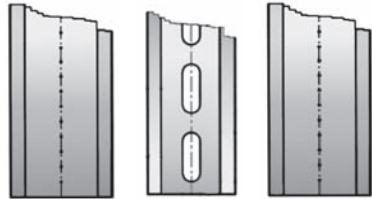
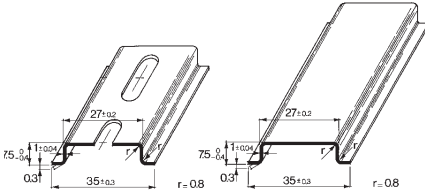
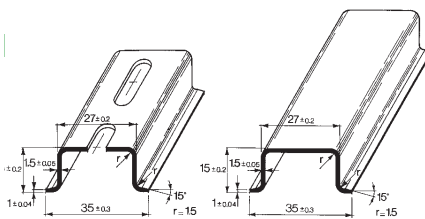
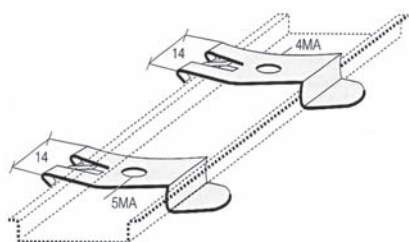
N8CK2518

	C	C	C	C	C	C	C	C	C
13C	13C	13C	14C	15C	16C	17C	18C	19C	20C
13A	13A	13A	14A	15A	16A	17A	18A	19A	20A
C	2C	3C	4C	5C	6C	7C	8C	9C	10C
A	2A	3A	4A	5A	6A	7A	8A	9A	10A
	C	C	C	C	C	C	C	C	C
13C	13C	13C	14C	15C	16C	17C	18C	19C	20C
13A	13A	13A	14A	15A	16A	17A	18A	19A	20A
C	2C	3C	4C	5C	6C	7C	8C	9C	10C
A	2A	3A	4A	5A	6A	7A	8A	9A	10A

Mounting rails

- according to IEC 60715/TH35 - 7,5
- according to IEC 60715/TH35 - 15
- supports for TH/35 type rail

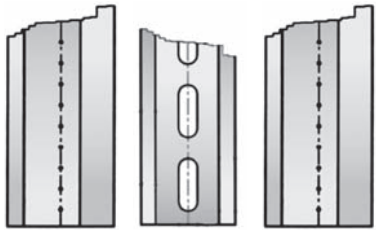
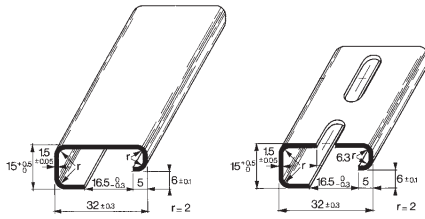
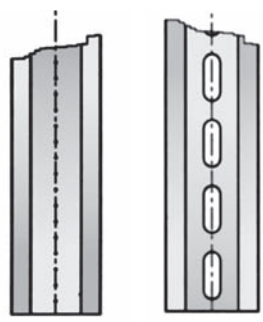
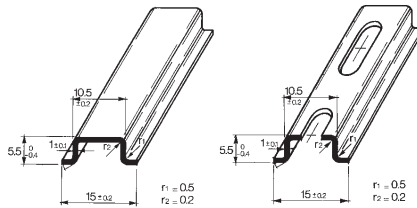


DESCRIPTION	TYPE / CAT. NO.	BLOCK DIAGRAMS
IEC 60715/TH35 - 7.5 rail of passivated steel	PR/3/AC Cat. No. PR003	
IEC 60715/TH35 - 7.5 rail of white zinc-plated steel "SENDZMIR" system	PR/3/AC/ZB Cat. No. PR903	
IEC 60715/TH35 - 7.5 rail of passivated steel with slots	PR/3/AS Cat. No. PR005	
IEC 60715/TH35 - 7.5 rail of white zinc-plated steel "SENDZMIR" system with slots	PR/3/AS/ZB Cat. No. PR905	
IEC 60715/TH35 - 15 rail of passivated steel	PR/3/PP Cat. No. PR007	
IEC 60715/TH35 - 15 rail of white zinc-plated steel "SENDZMIR" system	PR/3/PP/ZB Cat. No. PR907	
IEC 60715/TH35 - 15 rail of passivated steel with slots	PR/3/PA Cat. No. PR006	
IEC 60715/TH35 - 15 rail of white zinc-plated steel "SENDZMIR" system with slots	PR/3/PA/ZB Cat. No. PR906	
Support for IEC 60715/TH35 rail of nickel plated steel and with rapid mounting system 4 MA	ACI121017 Cat. No. Z121017	
Support for IEC 60715/TH35 rail of nickel plated steel and with rapid mounting system 5 MA	ACI121019 Cat. No. Z121019	

Mounting rails

- according to IEC 60715 "G32" type rail
- according to IEC 60715/TH15 - 5.5



DESCRIPTION	TYPE / CAT. NO.	IMAGES
IEC 60715 "G32" type rail of passivated steel	PR/DIN/AC Cat. No. PR001	
IEC 60715 "G32" type rail of white zinc-plated steel "SENDZMIR" system	PR/DIN/AC/ZB Cat. No. PR901	
IEC 60715 "G32" type rail of passivated steel with slots	PR/DIN/AS Cat. No. PR004	
IEC 60715 "G32" type rail of white zinc-plated steel "SENDZMIR" system with slots	PR/DIN/AS/ZB Cat. No. PR904	
IEC 60715 "G32" type rail of aluminium	PR/DIN/AL Cat. No. PR002	
IEC 60715/TH15 – 5.5 rail of passivated steel	PR/2/AC Cat. No. PR009	 
IEC 60715/TH15 – 5.5 rail of white zinc-plated steel "SENDZMIR" system	PR/2/AC/ZB Cat. No. PR909	
IEC 60715/TH15 – 5.5 rail of passivated steel with slots	PR/2/AS Cat. No. PR010	
IEC 60715/TH15 – 5.5 rail of white zinc-plated steel "SENDZMIR" system with slots	PR/2/AS/ZB Cat. No. PR910	

Index by Catalogue number

CAT. NO.	TYPE	PAGE	CAT. NO.	TYPE	PAGE	CAT. NO.	TYPE	PAGE
8901027	CH/PCB	165	XCDM08CC	CDM08CC	160	XCSB85C	CSB85C	39
8901028	CK/PCB	166	XCDM08CS	CDM08CS	159	XCSBC	CSBC	55
N8023	CNU/8/023	169	XCDM16AC	CDM16AC	160	XCSBD	CSBD	59
N8024	CNU/8/024	169	XCDM16CC	CDM16CC	160	XCSBP30	CSBP30	57
N8026	CNU/8/026	169	XCDM16CS	CDM16CS	159	XCSG75B	CSG75B	58
N8CK1510	CNU/8/CK15/10	169	XCDM24AC	CDM24AC	160	XCSD15B	CSD15B	17
N8CK1520	CNU/8/CK15/20	169	XCDM24CC	CDM24CC	160	XCSD15C	CSD15C	17
N8CK1610	CNU/8/CK16/10	169	XCDM24CS	CDM24CS	159	XCSD30C	CSD30C	18
N8CK1620	CNU/8/CK16/20	169	XCEPBCB	CEP-BCB	168	XCSD30E	CSD30E	18
N8CK2518	CNU/8/CK25/18	169	XCEPBCR	CEP-BCR	168	XCSD30F	CSD30F	18
N8CKD020	CNU/8/CKD	169	XCEPD1	CEP-D1	63	XCSD50B	CSD50B	19
NU008	CNU/8/030	169	XCEPD3	CEP-D3	63	XCSD50C	CSD50C	19
PR001	PR/DIN/AC	171	XCEPMITW	CEP-MITW	168	XCSD70C	CSD70C	20
PR002	PR/DIN/AL	171	XCEPRCC	CEP-RCC	168	XCSE10	CSE10	51
PR003	PR/3/AC	170	XCEPRCP	CEP-RCP	168	XCSE3	CSE3	50
PR004	PR/DIN/AS	171	XCEPSS	CEP-SS	168	XCSE5	CSE5	50
PR005	PR/3/AS	170	XCKB	CKB	166	XCSF10	CSF10	27
PR006	PR/3/PA	170	XCKBG	CKBG	166	XCSF10B	CSF10B	27
PR007	PR/3/PP	170	XCKD2LT	CKD2LT	164	XCSF10D	CSF10D	27
PR009	PR/2/AC	171	XCKD3CS	CKD3CS	164	XCSF10P	CSF10P	27
PR010	PR/2/AS	171	XCKD4AC	CKD4AC	164	XCSF120B	CSF120B	26
PR901	PR/DIN/AC/ZB	171	XCKD4CC	CKD4CC	164	XCSF120C	CSF120C	26
PR903	PR/3/AC/ZB	170	XCKFAA	CKFAA	163	XCSF120CP	CSF120CP	26
PR904	PR/DIN/AS/ZB	171	XCKFAX	CKFAX	163	XCSF120D	CSF120D	26
PR905	PR/3/AS/ZB	170	XCKPT	CKPT	166	XCSF240B	CSF240B	28
PR906	PR/3/PA/ZB	170	XCKR16	CKR16	114	XCSF240C	CSF240C	28
PR907	PR/3/PP/ZB	170	XCKR25	CKR25	114	XCSF240CP	CSF240CP	28
PR909	PR/2/AC/ZB	171	XCKS	CKS	166	XCSF240D	CSF240D	28
PR910	PR/2/AS/ZB	171	XCKS15E	CKS15E	145	XCSF3	CSF3	23
PTCCK42	PTC/CK/42	167	XCKS15NA	CKS15NA	144	XCSF30B	CSF30B	22
X756500	CWAA6-0500	85	XCKS15NB	CKS15NB	144	XCSF30C	CSF30C	22
X756501	CWAA6-0501	85	XCKS1S	CKS1S	147	XCSF3A	CSF3A	23
X756502	CWAA6-0502	85	XCKS22	CKS22	145	XCSF3B	CSF3B	23
X756503	CWAA6-0503	86	XCKX2	CKX2	166	XCSF3P	CSF3P	23
X756504	CWAA6-0504	86	XCL1R	CL1R	52	XCSF5	CSF5	25
X756505	CWAA6-0505	86	XCL5R	CL5R	52	XCSF500C	CSF500C	29
X756506	CWAA6-0506	87	XCLP08CC	CLP08CC	162	XCSF500D	CSF500D	29
X756507	CWAA6-0507	87	XCLP16CC	CLP16CC	162	XCSF565	CSF5-65	30
X756508	CWAA6-0508	87	XCLT08AC	CLT08AC	161	XCSF5B	CSF5B	25
X756509	CWNA6-0509	81	XCLT08CC	CLT08CC	161	XCSF5BP	CSF5BP	25
X756510	CWNA6-0510	80	XCLT16AC	CLT16AC	161	XCSF5D	CSF5D	25
X756511	CWNAF6-0511	89	XCLT16CC	CLT16CC	161	XCSF85B	CSF85B	24
X756512	CWNAF6-0512	89	XCMI1A012	CM1A012	110	XCSF85C	CSF85C	24
X756516	CWUAA6-0516	79	XCMI1A024	CM1A024	110	XCSF85CP	CSF85CP	24
X756517	CWUAA6-0517	79	XCMI1A120	CM1A120	110	XCSG10	CSG10	41
X756522	CWBRA6-0522	101	XCMI1A230	CM1A230	110	XCSG2400C	CSG2400C	47
X756524	CWNFA6-0524	96	XCMI1A230Z	CM1A230Z	110	XCSG2400D	CSG2400D	47
X756526	CWPA7-0526	88	XCMI1C012	CM1C012	107	XCSG240C	CSG240C	42
X756527	CWPA7-0527	88	XCMI1C024	CM1C024	107	XCSG42	CSG42	45
X756530	CWAA7-0530	82	XCMI1C024Z	CM1C024Z	107	XCSG500C	CSG500C	43
X756531	CWAA7-0531	82	XCMI1C048	CM1C048	107	XCSG500D	CSG500D	43
X756532	CWAA7-0532	82	XCMI1C110	CM1C110	107	XCSG720C	CSG720C	44
X756533	CWAA7-0533	83	XCMI1C110U	CM1C110U	107	XCSG720D	CSG720D	44
X756534	CWAA7-0534	83	XCMI1S024	CM1S024	142	XCSG960C	CSG960C	46
X756535	CWAA7-0535	83	XCMI1S024E	CM1S024E	142	XCSG960D	CSG960D	46
X756536	CWAA7-0536	84	XCMI1T024	CM1T024	143	XCSPT20C	CSPT20C	33
X756537	CWAA7-0537	84	XCMI1T024E	CM1T024E	143	XCSPT240C	CSPT240C	34
X756538	CWAA7-0538	84	XCMI2A012	CM2A012	111	XCSPT85C	CSPT85C	32
X756539	CWNA7-0539	80	XCMI2A024	CM2A024	111	XCSUPS1	CS-UPS1	56
X756811	CWTPF7-0811	93	XCMI2A024Z	CM2A024Z	111	XCSUPS2	CS-UPS2	56
X756816	CWPT6-0816	91	XCMI2A120	CM2A120	111	XCSW120B	CSW120B	36
X756817	CWPT6-0817	91	XCMI2A230	CM2A230	111	XCSW120C	CSW120C	36
X756831	CWTHF7-0831	93	XCMI2A230Z	CM2A230Z	111	XCSW240B	CSW240B	37
X756844	CWTH6-0844	92	XCMI2C012	CM2C012	108	XCSW240C	CSW240C	37
X756847	CWTH6-0847	92	XCMI2C024	CM2C024	108	XCSW240D	CSW240D	37
X756871	CWTHF7-0871	93	XCMI2C024U	CM2C024U	108	XF03DKG5B	F03DKG5B	71
X756890	CWTPR7-0890	90	XCMI2C024Z	CM2C024Z	108	XF03DPCG5C	F03DPCG5C	72
X756891	CWPZB7-0891	90	XCMI2C048	CM2C048	108	XF06DKG5B	F06DKG5B	71
X766082	CWOT6-2082	147	XCMI2C110	CM2C110	108	XF06DPCG5C	F06DPCG5C	72
X766083	CWOT6-2083	146	XCMI2C110Z	CM2C110Z	108	XF07TDVST2	F07TDVST2	65
X766184	CWCV7-6184	102	XCMI4A024	CM4A024	112	XF100TDVST2	F100TDVST2	65
X766813	CWKB7-0813	167	XCMI4C012	CM4C012	109	XF100TYT2	F100TYT2	69
X766842	CWRE7-0842	115	XCMI4C024	CM4C024	109	XF10TYG9	F10TYG9	70
X766845	CWRE7-0845	115	XCOP082	COP082	151	XF12DKG5B	F12DKG5B	71
X766846	CWRE7-0846	115	XCPC20M	CPC20M	157	XF12DPCG5C	F12DPCG5C	72
X766847	CWRE7-0847	115	XCPC26M	CPC26M	157	XF150TDS84C	F150TDS84C	66
X766848	CWRE7-0848	115	XCPC34M	CPC34M	157	XF16DKG5B	F16DKG5B	71
XAR1	AR1	53	XCPC40M	CPC40M	157	XF16DPCG5C	F16DPCG5C	72
XAR2	AR2	53	XCPC50M	CPC50M	157	XF16TDVST2	F16TDVST2	65
XAR4	AR4	54	XCPC60M	CPC60M	157	XF16TYT2	F16TYT2	69
XAR6	AR6	54	XCPC64M	CPC64M	157	XF180TDS84C	F180TDS84C	66
XBB125	CH-B12.5	165	XCPD25F	CPD25F	155	XF200TDS84C	F200TDS84C	67
XBC000	CH-C	165	XCPD25M	CPD25M	155	XF20DKG5B	F20DKG5B	71
XBC010	CH-C10	165	XCPD37F	CPD37F	155	XF20DPCG5C	F20DPCG5C	72
XBC050	CH-C5	165	XCPD37M	CPD37M	155	XF20TYS9	F20TYS9	70
XBC225	CH-C22.5	165	XCPD50F	CPD50F	155	XF25TYT2	F25TYT2	69
XBC325	CH-C32.5	165	XCPD50M	CPD50M	155	XF300TDS84C	F300TDS84C	68
XBCA00	CH-CA	165	XCR41	CR4-1	132	XF30DKG5B	F30DKG5B	71
XBCF00	CH-CF	165	XCR42	CR4-2	132	XF30DPCG5C	F30DPCG5C	72
XBS000	CH-S	165	XCR42SC	CR4-2SC	134	XF30TDVST2	F30TDVST2	65
XCCIS1	CCIS-1	94	XCR81	CR8-1	133	XF36TYT2	F36TYT2	69
XCCISR	CCIS-R	94	XCR82	CR8-2	133	XF400TDS84C	F400TDS84C	68
XCCM04SF	CCM04SF	158	XCR83	CR8-3	137	XF42TDVST2	F42TDVST2	65
XCCM08CV	CCM08CV	158	XCRE41	CRE4-1	132	XF500TDS84C	F500TDS84C	68
XCCM08SF	CCM08SF	158	XCRE42SC	CRE4-2SC	134	XF50TYT2	F50TYT2	69
XCCM08SV	CCM08SV	158	XCRE81	CRE8-1	133	XF55TDVST2	F07TDVST2	65
XCCM12SF	CCM12SF	158	XCRE83	CRE8-3	137	XF600TDS84C	F600TDS84C	68
XCCM16CV	CCM16CV	158	XCSA120BC	CSA120BC	48	XF75TDVST2	F75TDVST2	65
XCCM16SV	CCM16SV	158	XCSA120CB	CSA120CB	48	XIF10PML	IF10PML	156
XCCM24SV	CCM24SV	158	XCSA120CC	CSA120CC	48	XIF10PMS	IF10PMS	156
XCDIN2	CDIN-2	169	XCSA120DC	CSA120DC	48	XIF14PML	IF14PML	156
XCDIN4	CDIN-4	169	XCSA240FC	CSA240FC	49	XIF14PMS	IF14PMS	156
XCDM08AC	CDM08AC	160	XCSB150C	CSB150C	40	XIF16PML	IF16PML	156
						XIF16PMS	IF16PMS	156

Index by Catalogue number

CAT. NO.	TYPE	PAGE	CAT. NO.	TYPE	PAGE
XIF16S7	IF16S7	136	XW000936	DAC08V10	99
XIF20PML	IF20PML	156	XW000937	DAC08A0	99
XIF20PMS	IF20PMS	156	XW000938	DAC08A4	99
XIF26PML	IF26PML	156	IZ04124D	Z4124D	130
XIF26PMS	IF26PMS	156	XZ04224D	Z4224D	131
XIF34PML	IF34PML	156	XZ08124D	Z8124D	130
XIF34PMS	IF34PMS	156	XZ08224D	Z8224D	131
XIF40PML	IF40PML	156	XZ16124D	Z16124D	130
XIF40PMS	IF40PMS	156	XZ16224D	Z16224D	131
XIF416LS7	IF416LS7	136	Z121017	AC121017	170
XIF416S7	IF416S7	136	Z121019	AC121019	170
XISD09FM	ISD09FM	153			
XISD09PF	ISD09PF	153			
XISD09PM	ISD09PM	153			
XISD15FM	ISD15FM	153			
XISD15PF	ISD15PF	153			
XISD15PM	ISD15PM	153			
XISD25FM	ISD25FM	153			
XISD25PF	ISD25PF	153			
XISD25PFL	ISD25PFL	154			
XISD25PM	ISD25PM	153			
XISD25PML	ISD25PML	154			
XISD37FM	ISD37FM	153			
XISD37PF	ISD37PF	153			
XISD37PFL	ISD37PFL	154			
XISD37PM	ISD37PM	153			
XISD37PML	ISD37PML	154			
XJGB2P	JGBG2P	167			
XJGB3P	JGBG3P	167			
XJGB4P	JGBG4P	167			
XJVS1C1P	JVS1-C1P	61			
XJVS1E1P	JVS1-E1P	61			
XJVS1N1P	JVS1-N1P	61			
XNPNPNP	CI-NPNPNP	103			
XO332060	O332060	141			
XO332240	O332240	141			
XR041E12	R41E12	125			
XR041E1A	R41E11A	128			
XR041E24	R41E24	117			
XR041E24P	R41E24P	118			
XR041E2A	R41E22A	129			
XR041EAD	R41EAD	119			
XR041S24F	R41S24F	150			
XR041U24F	R41U24F	120			
XR042E12	R42E12	126			
XR042E24	R42E24	121			
XR042E24P	R42E24P	122			
XR042E48	R42E48	127			
XR042EAD	R42EAD	123			
XR042S24	R42S24	148			
XR042T24	R42T24	149			
XR081E12	R81E12	125			
XR081E1A	R81E11A	128			
XR081E24	R81E24	117			
XR081E24P	R81E24P	118			
XR081E2A	R81E22A	129			
XR081EAD	R81EAD	119			
XR081S24F	R81S24F	150			
XR081U24F	R81U24F	120			
XR082E12	R82E12	126			
XR082E24	R82E24	121			
XR082E24P	R82E24P	121			
XR082E48	R82E48	127			
XR082EAD	R82EAD	123			
XR082S24	R82S24	148			
XR082T24	R82T24	149			
XR161E12	R161E12	125			
XR161E1A	R161E11A	128			
XR161E24	R161E24	117			
XR161E24P	R161E24P	118			
XR161E2A	R161E22A	129			
XR161EAD	R161EAD	119			
XR161S24F	R161S24F	150			
XR161U24F	R161U24F	120			
XR162E12	R162E12	126			
XR162E24	R162E24	121			
XR162E24P	R162E24P	121			
XR162E48	R162E48	127			
XR162EAD	R162EAD	123			
XR162S24	R162S24	148			
XR162T24	R162T24	149			
XRE1024D	RE1024D	105			
XRE1824D	RE1824D	105			
XRE2024D	RE2024D	106			
XRF1012D	RF1012D	106			
XRF1024D	RF1024D	105			
XRF1824D	RF1824D	105			
XRFA024D	RFA024D	105			
XRFE16124	RFE16124	139			
XRFE16224	RFE16224	139			
XRFE8124	RFE8124	137			
XRFE8224	RFE8224	138			
XRMP081CM	RMP081CM	124			
XSSAPIP01	CA-PI/P01	78			
XW000926	GWMMV10	100			
XW000927	GWMA0	100			
XW000928	SW01VA	95			
XW000929	SW05VA	95			
XW000930	SW10VA	95			
XW000931	SW20VA	96			
XW000932	SW50VA	96			
XW000933	ADC08V10	98			
XW000934	ADC08A0	98			
XW000935	ADC08A4	98			

Alphabetical index

CAT. NO.	CODE	PAGE
AC121017	Z121017	170
AC121019	Z121019	170
ADC08A0	XW000934	98
ADC08A4	XW000935	98
ADC08V10	XW000933	98
AR1	XAR1	53
AR2	XAR2	53
AR4	XAR4	54
AR6	XAR6	54
CA-PI/P01	XSSAPIP01	78
CCIS-1	XCCIS1	94
CCIS-R	XCCISR	94
CCM04SF	XCCM04SF	158
CCM08CV	XCCM08CV	158
CCM08SF	XCCM08SF	158
CCM08SV	XCCM08SV	158
CCM12SF	XCCM12SF	158
CCM16CV	XCCM16CV	158
CCM16SV	CCM16SV	158
CCM24SV	XCCM24SV	158
CDIN-2	XCDIN2	169
CDIN-4	XCDIN4	169
CDM08AC	XCDM08AC	160
CDM08CC	XCDM08CC	160
CDM08CS	XCDM08CS	159
CDM16AC	XCDM16AC	160
CDM16CC	XCDM16CC	160
CDM16CS	XCDM16CS	159
CDM24AC	XCDM24AC	160
CDM24CC	XCDM24CC	160
CDM24CS	XCDM24CS	159
CEP-BCB	XCEPBCB	168
CEP-BCR	XCEPBCR	168
CEP-D1	XCEPD1	63
CEP-D3	XCEPD3	63
CEP-MTW	XCEPMTW	168
CEP-RCC	XCEPRCC	168
CEP-RCP	XCEPRCP	168
CEP-SS	XCEPSS	168
CH/PCB	8901027	165
CH-B12.5	XBB125	165
CH-C	XBC000	165
CH-C10	XBC010	165
CH-C22.5	XBC225	165
CH-C32.5	XBC325	165
CH-C5	XBC050	165
CH-CA	XBCA00	165
CH-CF	XBCF00	165
CH-S	XBS000	165
CI-NPN/PNP	XNPNPNP	103
CK/PCB	8901028	166
CK/PT	XCKPT	166
CK/S	XCKS	166
CKB	XCKB	166
CKBG	XCKBG	166
CKBX2	XCKX2	166
CKD2LT	XCKD2LT	164
CKD3CS	XCKD3CS	164
CKD4AC	XCKD4AC	164
CKD4CC	XCKD4CC	164
CKFAA	XCKFAA	163
CKFAX	XCKFAX	163
CKR16	XCKR16	114
CKR25	XCKR25	114
CKS15E	XCKS15E	145
CKS15NA	XCKS15NA	144
CKS15NB	XCKS15NB	144
CKS1S	XCKS1S	147
CKS22	XCKS22	145
CL1R	XCL1R	52
CL5R	XCL5R	52
CLP08CC	XCLP08CC	162
CLP16CC	XCLP16CC	162
CLT08AC	XCLT08AC	161
CLT08CC	XCLT08CC	161
CLT16AC	XCLT16AC	161
CLT16CC	XCLT16CC	161
CM1A012	XCM1A012	110
CM1A024	XCM1A024	110
CM1A120	XCM1A120	110
CM1A230	XCM1A230	110
CM1A230Z	XCM1A230Z	110
CM1C012	XCM1C012	107
CM1C024	XCM1C024	107
CM1C024Z	XCM1C024Z	107
CM1C048	XCM1C048	107
CM1C110	XCM1C110	107
CM1C110U	XCM1C110U	107
CM1S024	XCM1S024	142
CM1S024E	XCM1S024E	142
CM1T024	XCM1T024	143
CM1T024E	XCM1T024E	143
CM2A012	XCM2A012	111
CM2A024	XCM2A024	111
CM2A024Z	XCM2A024Z	111
CM2A120	XCM2A120	111
CM2A230	XCM2A230	111
CM2A230Z	XCM2A230Z	111
CM2C012	XCM2C012	108
CM2C024	XCM2C024	108
CM2C024U	XCM2C024U	108
CM2C024Z	XCM2C024Z	108
CM2C048	XCM2C048	108

Alphabetical index

CAT. NO.	CODE	PAGE	CAT. NO.	CODE	PAGE	CAT. NO.	CODE	PAGE
CM2C110	XCM2C110	108	CS-UPS1	XCSUPS1	56	IF34PML	XIF34PML	156
CM2C110Z	XCM2C110Z	108	CS-UPS2	XCSUPS2	56	IF34PMS	XIF34PMS	156
CM4A024	XCM4A024	112	CSW120B	XCSW120B	36	IF40PML	XIF40PML	156
CM4C012	XCM4C012	109	CSW120C	XCSW120C	36	IF40PMS	XIF40PMS	156
CM4C024	XCM4C024	109	CSW240B	XCSW240B	37	IF416LS7	XIF416LS7	136
CNU/8/023	N8023	169	CSW240C	XCSW240C	37	IF416S7	XIF416S7	136
CNU/8/024	N8024	169	CSW240D	XCSW240D	37	ISD09FM	XISD09FM	153
CNU/8/026	N8026	169	CWAA6-0500	X756500	85	ISD09PF	XISD09PF	153
CNU/8/030	NU008	169	CWAA6-0501	X756501	85	ISD09PM	XISD09PM	153
CNU/8/CK15/10	N8CK1510	169	CWAA6-0502	X756502	85	ISD15FM	XISD15FM	153
CNU/8/CK15/20	N8CK1520	169	CWAA6-0503	X756503	86	ISD15PF	XISD15PF	153
CNU/8/CK16/10	N8CK1610	169	CWAA6-0504	X756504	86	ISD15PM	XISD15PM	153
CNU/8/CK16/20	N8CK1620	169	CWAA6-0505	X756505	86	ISD25FM	XISD25FM	153
CNU/8/CK25/18	N8CK2518	169	CWAA6-0506	X756506	87	ISD25PF	XISD25PF	153
CNU/8/CKD	N8CKD020	169	CWAA6-0507	X756507	87	ISD25PFL	XISD25PFL	154
COP082	XCP082	151	CWAA6-0508	X756508	87	ISD25PM	XISD25PM	153
CPC20M	XCP20M	157	CWAA7-0530	X756530	82	ISD25PML	XISD25PML	154
CPC26M	XCP26M	157	CWAA7-0531	X756531	82	ISD37FM	XISD37FM	153
CPC34M	XCP34M	157	CWAA7-0532	X756532	82	ISD37PF	XISD37PF	153
CPC40M	XCP40M	157	CWAA7-0533	X756533	83	ISD37PFL	XISD37PFL	154
CPC50M	XCP50M	157	CWAA7-0534	X756534	83	ISD37PM	XISD37PM	153
CPC60M	XCP60M	157	CWAA7-0535	X756535	83	ISD37PML	XISD37PML	154
CPC64M	XCP64M	157	CWAA7-0536	X756536	84	JGBG2P	XJGB2P	167
CPD25F	XCPD25F	155	CWAA7-0537	X756537	84	JGBG3P	XJGB3P	167
CPD25M	XCPD25M	155	CWAA7-0538	X756538	84	JGBG4P	XJGB4P	167
CPD37F	XCPD37F	155	CWBK7-0813	X766813	167	JVS1-C1P	XJVS1C1P	61
CPD37M	XCPD37M	155	CWBR6-0522	X756522	101	JVS1-E1P	XJVS1E1P	61
CPD50F	XCPD50F	155	CWCV7-6184	X766184	102	JVS1-N1P	XJVS1N1P	61
CPD50M	XCPD50M	155	CWNA6-0509	X756509	81	O332060	XO332060	141
CR4-1	XCR41	132	CWNA6-0510	X756510	80	O332240	XO332240	141
CR4-2	XCR42	132	CWNA7-0539	X756539	80	PR/2/AC	PR009	171
CR4-2SC	XCR42SC	134	CWNAF6-0511	X756511	89	PR/2/AC/ZB	PR909	171
CR8-1	XCR81	133	CWNAF6-0512	X756512	89	PR/2/AS	PR010	171
CR8-2	XCR82	133	CWNAF6-0524	X756524	96	PR/2/AS/ZB	PR910	171
CR8-3	XCR83	137	CWOT6-2082	X766082	147	PR/3/AC	PR003	170
CRE4-1	XCRE41	132	CWOT6-2083	X766083	146	PR/3/AC/ZB	PR903	170
CRE4-2SC	XCRE42SC	134	CWPAA7-0526	X756526	88	PR/3/AS	PR005	170
CRE8-1	XCRE81	133	CWPAA7-0527	X756527	88	PR/3/AS/ZB	PR905	170
CRE8-3	XCRE83	137	CWPT6-0816	X756816	91	PR/3/PA	PR006	170
CSA120BC	XCSA120BC	48	CWPT6-0817	X756817	91	PR/3/PA/ZB	PR906	170
CSA120CB	XCSA120CB	48	CWPZB7-0891	X756891	90	PR/3/PP	PR007	170
CSA120CC	XCSA120CC	48	CWRE7-0842	X766842	115	PR/3/PP/ZB	PR907	170
CSA120DC	XCSA120DC	48	CWRE7-0845	X766845	115	PR/DIN/AC	PR001	171
CSA240FC	XCSA240FC	49	CWRE7-0846	X766846	115	PR/DIN/AC/ZB	PR901	171
CSB150C	XCSB150C	40	CWRE7-0847	X766847	115	PR/DIN/AL	PR002	171
CSB85C	XCSB85C	39	CWRE7-0848	X766848	115	PR/DIN/AS	PR004	171
CSBC	XCSBC	55	CWTH6-0844	X756844	92	PR/DIN/AS/ZB	PR904	171
CSBD	XCSBD	59	CWTH6-0847	X756847	92	PTC/CK/42	PTCCK42	167
CSBP30	XCSBP30	57	CWTHF7-0831	X756831	93	R161E11A	XR161E1A	128
CSC75B	XCSC75B	58	CWTHF7-0871	X756871	93	R161E12	XR161E12	125
CSD15B	XCSD15B	17	CWTPF7-0811	X756811	93	R161E22A	XR161E2A	129
CSD15C	XCSD15C	17	CWTPT7-0890	X756890	90	R161E24	XR161E24	117
CSD30C	XCSD30C	18	CWUAA6-0516	X756516	79	R161E24P	XR161E24P	118
CSD30E	XCSD30E	18	CWUAA6-0517	X756517	79	R161EAD	XR161EAD	119
CSD30F	XCSD30F	18	DAC08A0	XW000937	99	R161S24F	XR161S24F	150
CSD50B	XCSD50B	19	DAC08A4	XW000938	99	R161U24F	XR161U24F	120
CSD50C	XCSD50C	19	DAC08V10	XW000936	99	R162E12	XR162E12	126
CSD70C	XCSD70C	20	F03DKBG5B	XF03DKBG5B	71	R162E24	XR162E24	121
CSE10	XCSE10	51	F03DPCG5C	XF03DPCG5C	72	R162E24P	XR162E24P	121
CSE3	XCSE3	50	F06DKBG5B	XF06DKBG5B	71	R162E48	XR162E48	127
CSE5	XCSE5	50	F06DPCG5C	XF06DPCG5C	72	R162EAD	XR162EAD	123
CSF10	XCSF10	27	F07TDVST2	XF07TDVST2	65	R162S24	XR162S24	148
CSF10B	XCSF10B	27	F07TDVST2	XF55TDVST2	65	R162T24	XR162T24	149
CSF10D	XCSF10D	27	F100TDVST2	XF100TDVST2	65	R41E11A	XR041E1A	128
CSF10P	XCSF10P	27	F100TYT2	XF100TYT2	69	R41E12	XR041E12	125
CSF120B	XCSF120B	26	F10TYG9	XF10TYG9	70	R41E22A	XR041E2A	129
CSF120C	XCSF120C	26	F12DKBG5B	XF12DKBG5B	71	R41E24	XR041E24	117
CSF120CP	XCSF120CP	26	F12DPCG5C	XF12DPCG5C	72	R41E24P	XR041E24P	118
CSF120D	XCSF120D	26	F150TDS84C	XF150TDS84C	66	R41EAD	XR041EAD	119
CSF240B	XCSF240B	28	F16DKCG5B	XF16DKCG5B	71	R41S24F	XR041S24F	150
CSF240C	XCSF240C	28	F16DPCG5C	XF16DPCG5C	72	R41U24F	XR041U24F	120
CSF240CP	XCSF240CP	28	F16TDVST2	XF16TDVST2	65	R42E12	XR042E12	126
CSF240D	XCSF240D	28	F16TYT2	XF16TYT2	69	R42E24	XR042E24	121
CSF3	XCSF3	23	F180TDS84C	XF180TDS84C	66	R42E24P	XR042E24P	122
CSF30B	XCSF30B	22	F200TDS84C	XF200TDS84C	67	R42E48	XR042E48	127
CSF30C	XCSF30C	22	F20DKCG5B	XF20DKCG5B	71	R42EAD	XR042EAD	123
CSF3A	XCSF3A	23	F20DPCG5C	XF20DPCG5C	72	R42S24	XR042S24	148
CSF3B	XCSF3B	23	F20TYG9	XF20TYG9	70	R42T24	XR042T24	149
CSF3P	XCSF3P	23	F25TYT2	XF25TYT2	69	R81E11A	XR081E1A	128
CSF5	XCSF5	25	F300TDS84C	XF300TDS84C	68	R81E12	XR081E12	125
CSF500C	XCSF500C	29	F30DKCS5B	XF30DKCS5B	71	R81E22A	XR081E2A	129
CSF500D	XCSF500D	29	F30DPCG5C	XF30DPCG5C	72	R81E24	XR081E24	117
CSF5-65	XCSF565	30	F30TDVST2	XF30TDVST2	65	R81E24P	XR081E24P	118
CSF5B	XCSF5B	25	F36TYT2	XF36TYT2	69	R81EAD	XR081EAD	119
CSF5BP	XCSF5BP	25	F400TDS84C	XF400TDS84C	68	R81S24F	XR081S24F	150
CSF5D	XCSF5D	25	F42TDVST2	XF42TDVST2	65	R81U24F	XR081U24F	120
CSF85B	XCSF85B	24	F500TDS84C	XF500TDS84C	68	R82E12	XR082E12	126
CSF85C	XCSF85C	24	F50TYT2	XF50TYT2	69	R82E24	XR082E24	121
CSF85CP	XCSF85CP	24	F600TDS84C	XF600TDS84C	68	R82E24P	XR082E24P	121
CSG10	XCSG10	41	F75TDVST2	XF75TDVST2	65	R82E48	XR082E48	127
CSG2400C	XCSG2400C	47	GWMMA0	XW000927	100	R82EAD	XR082EAD	123
CSG2400D	XCSG2400D	47	GWMW10	XW000926	100	R82S24	XR082S24	148
CSG240C	XCSG240C	42	IF10PML	XIF10PML	156	R82T24	XR082T24	149
CSG42	XCSG42	45	IF10PMS	XIF10PMS	156	RE1024D	XRE1024D	105
CSG500C	XCSG500C	43	IF14PML	XIF14PML	156	RE1824D	XRE1824D	105
CSG500D	XCSG500D	43	IF14PMS	XIF14PMS	156	RE2024D	XRE2024D	106
CSG720C	XCSG720C	44	IF16PML	XIF16PML	156	RF1012D	XRF1012D	106
CSG720D	XCSG720D	44	IF16PMS	XIF16PMS	156	RF1024D	XRF1024D	105
CSG960C	XCSG960C	46	IF16S7	XIF16S7	136	RF1824D	XRF1824D	105
CSG960D	XCSG960D	46	IF20PML	XIF20PML	156	RFA024D	XRFA024D	105
CSP120C	XCSP120C	33	IF20PMS	XIF20PMS	156	RFE16124	XRFE16124	139
CSP240C	XCSP240C	34	IF26PML	XIF26PML	156	RFE16224	XRFE16224	139
CSP85C	XCSP85C	32	IF26PMS	XIF26PMS	156	RFE8124	XRFE8124	137
						RFE8224	XRFE8224	138

Alphabetical index

CAT. NO.	CODE	PAGE
RMP081CM	XRMP081CM	124
SW01VA	XW000928	95
SW05VA	XW000929	95
SW10VA	XW000930	95
SW20VA	XW000931	96
SW50VA	XW000932	96
Z16124D	XZ16124D	130
Z16224D	XZ16224D	131
Z4124D	XZ04124D	130
Z4224D	XZ04224D	131
Z8124D	XZ08124D	130
Z8224D	XZ08224D	131