Electronic products for electrical board

2002-2003 Edition

UNI EN-ISO 14001

UNI EN-ISO 9001

cabur

Pages are not missing in the Catalogue....they are ON LINE.
Looking at the product index, you will find the indication of the relevant pages only if the product is present; otherwise it will be available on the web.
Our web site is becoming the most interesting appointment of Your connection!

Welcome on board!

Publishing IN-Consult - Milano - Italy

Summary

Signal coditioners

Power supply

Terminal blocks with electronic components

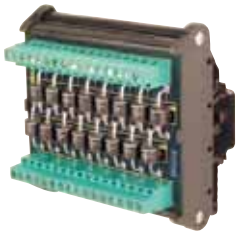
Accessories

New products on this catalogue

In this catalogue the technical characteristics of around 300 products (of which 72 are new) are described; among these the main ones are:

Page 16 - Super compact passive interface modules with D-Sub connector

Page 18 - Super compact passive interface modules with I.D.C. connector

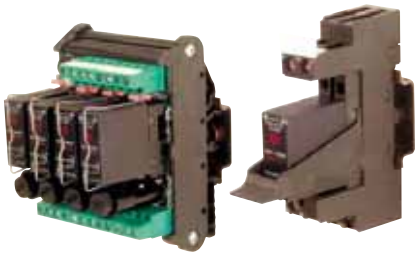


Page 22 - 3 A diode-holder module

Pages 30-36 - New versions for CM series with SPDT, DPDT,3PDT and 4PDT

Page 38 - Super compact relay modules

Pages 59-67 - I/O interface modules for PLC and numeric controls



Pages 76≤ -81 - Solid state relay interface modules with protection fuse and for AC loads

Page 91 - Programmable analogue signal converters

Page 94 - Programmable RTD to analogue signal converters

Page 96 - Programmable thermocouple to analogue signal converters

Page 127 - Switching power supply with adjustable output 9-15 Vdc

Page 124 - New versions of power supply with 12 Vdc output

Page 132 - New versions of power supply with 48 Vdc output

Pages 133-134 - New series of high efficiency three-phase switching power supply

Page 137 - 48 Vdc / 24 Vdc converter

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We hereby invite you to fill in, correctly and in every part, the herewith attached form, and to send it via fax to us. This will enable us to include your name into our registers. By doing this, you will be able to receive from now on also all future release of our literature and invitations to participate to every event attende by Cabur

At your service

COMPANY .....

BUSINESS SECTOR .....

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FAX .....

E-mail .....

CONTACT PERSON .....

I WOULD LIKE TO RECEIVE

❑ **Terminal blocks for electrical boards Catalogue**

❑ **Electronic products Catalogue**

❑ IN ITALIAN ❑ IN FRENCH

❑ IN ENGLISH ❑ IN GERMAN

❑ CD ROM

❑ **Price List**

❑ PAPER VERSION

❑ MET.EL FORMAT

❑ Excel FORMAT

I WOULD LIKE TO BE CONTACTED

❑ BY YOUR REGIONAL AGENT

❑ BY THE EXPORT MANAGER

❑ BY THE TECHNICAL MANAGER ❑ Electronic division ❑ Terminal blocks and accessories

❑ BY THE MARKETING MANAGER

In conformity to the law n° 675/96, on tuition of private information, We hereby inform you that the information which you will send us will be used to propose you offers or send technical/commercial information, by Cabur S.r.l. or by other Companies of proven reliability. You have free access to your information, in order to update or modify it, by writing to: Cabur Srl - Via delle Industrie 129 - 17012 Albissola Marina (SV) Italy.

❑ Tick this box only if you do not accept this opportunity.

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Cabur

1952
2002

Cabur was founded in 1952.
It quickly became the leading Company amongst Italian producers of terminal blocks for electrical panels, as it has always paid particular attention to the actual installation needs, proposing avant-garde technological solutions, which in certain cases went on to become the standard and, above all, forerunning particularly relevant quality choices regarding the use of raw materials, the guarantee of functionality and reliability through time and providing products that are environmental-free.

50 years

The company, which employs about one hundred people, is situated in Albissola Marina (SV), on the Western coast of Liguria, at about 40 km from Genoa, Italy.

Cabur reliability = COMPETENCE:

- In pinpointing the requirements given for the connection and the processing of signals
- In planning and producing products/services that are able to satisfy the reasonable expectations of customer

Products offering

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

Current production of::

- **Terminal blocks and accessories**
- **Electronic products**

for electrical panels, responds fully to users' varied and complex installation needs. Our production, varied and diversified, represents the optimal synthesis of Cabur's long experience as a partner of Italy's most important Companies and Certification Bodies, combined with foreign action and collaboration, always with the aim of pinpointing and responding in the best possible way to users' installation needs.

Mass produced ...high quality

In particular it should be noted that, as a result of precise planning decisions, an envelope environment has been taken as a reference point; this means that the company does not produce special products or series of products, suitable exclusively for specific environments, but that the products of our "normal" series have been designed to meet the fundamental requirements of the most varied conditions of installation.

This approach has brought about a clear improvement in terms of quality throughout the range, as well as slimming down and simplifying the management of the products, especially for our clients.

As well as the traditional terminal block, Cabur also proposes, to its national and international clients, a range of other products and accessories relating to installation in general.

Commercial organisation

Cabur's commercial structure is divided in specialised internal and support structures for direct customers and for national and foreign distributors. The logistics centre in Zibido S.G. (Milan) is capable of immediately satisfying any supply requirement using express couriers, in order to offer the best transport quality standards and the required timeliness to guarantee the best economic satisfaction for direct customers and distributors.
Foreign markets, in continuous expansion in terms of turnover and penetration, are entrusted to the most significant import companies, with good and consolidated presence on their territory in order to guarantee to the Cabur product availability in these countries.

The best compliment we give our customers is our pledge towards reliability.

Manufacturer's liability

As known, in July 1985, the EEC approved and issued Directive 85/374 in order to allow "the unification of legislative, regulating and administrative provisions of the member states subject to liability for damages due to defective products". The Directive forced the same member states to conform their internal laws to the Directive within the following three years; Italy has conformed with D.P.R. n° 224 dated May 24th 1988 (published in the Gazzetta Ufficiale n° 146, dated June 23rd 1988), now becoming a law in force (recently revised with law n° 218 dated May 31st 1995). As a consequence, it is important to precisely establish when a product is to be considered defective. The law on this aspect, gives the following definition:

"A product is defective when it does not offer the expected safety, taking into consideration all circumstances, among which:

– The way in which the product has been put on the market, its presentation, its evident characteristics, the instructions and warnings supplied.
– The use to which the product can be reasonably employed and the behaviour that consequently can be expected.
– The time in which the product was distributed.

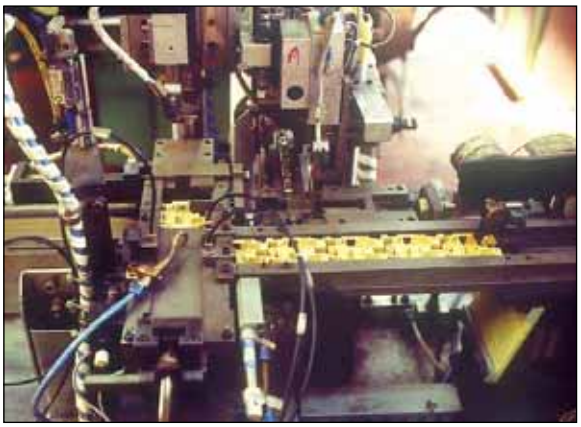
Furthermore, a product is defective if it does not offer the safety normally provided by other items belonging to the same series; on the other hand, however, it cannot be considered defective, if an improved version has been placed on the market at any other time. Article 6 clearly states also the situations in which liability is excluded; among these the following must be mentioned:

– If the defect that caused the damage **did not exist when the manufacturer distributed the product**
– If the **defect is due to product conformity to a legal regulation or to a binding provision**
– If the state **of scientific and technical knowledge** at the moment the manufacturer distributed the product **did not allow the product to be considered defective**
– In the case of the producer or supplier of a component or of a raw material, where **the defect is entirely due to the conception of the product, in which the component or raw material has been incorporated, or to the conformity of the raw material to the instructions given by the producer who employed it.**

From the above, it can be clearly deducted that a manufacturer, in addition to designing and manufacturing good and free from defect products, must arrange everything possible to place the end user in the condition to use the same product in the most appropriate way. For this, Cabur has already carried out a certain number of actions to comply with requirements of the new legislation:

– The company works, since 1985, on the basis of its own Quality Assurance Programme, applied to both design and production activities (ISO 9001 Certification). Special attention is placed to the selection of raw material Suppliers, implementing very strict controls in supply and quality choices
– All products are designed and manufactured according to the requirements given by the applicable Standards and are therefore subjected to prescribed tests; these are carried out both in the Company's own test laboratory with systematic sampling of production and in the most qualified are world-wide referenced laboratories in order to continually verify their conformance.
– Instruction leaflets have been issued and are constantly integrated and extended; they are

inserted in every product box and have the function to indicate the appropriate use or any limitations.



It is evident that beside these direct actions carried out by Cabur, all consequent activities connected to Cabur must be coherent with the approach undertaken; therefore, distribution operators, prescribers, panel buiders, installers and, last but not least, the end users must take these problems into utmost consideration to guarantee, the best usage quality of a Cabur product; quality which is is demonstrated by the excellent installations completed throughout the world by ENEL, Sceco, Aramco, Omnitel, Telecom Italia, Ansaldo, Fiat, Rai, Mediaset; Alsthom, ABB, GE, Siemens, Groupe Schneider and others.

CSQ Certification (ISO 9001 and 14001)

Quality

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 product offering to the sector of “electronic products” with reliability level recognised on both Italian and foreign markets.

The Quality system refers to the most complete and severe standard found amongst the 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 servicing.

Examples of Declaration of Conformity

Nothing is the result of improvisation, but the result of a constant organisation process begun in 1985 with the definition and implementation of a Quality Assurance Programme based on ANSI N 45.2 Std. (referred to the particularly severe nuclear environment) that has involved the entire structure of the company and making responsible the various functions and workers.

Since 1995, CSQ has certified the Quality system designed by Cabur, giving full credit to the validity of the operative and organisational choices adopted to satisfy its customers. .

CERTIFICAZIONE DEI SISTEMI QUALITÀ DELLE AZIENDE

UNI EN-ISO 9001

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

Control leaflet

A leaflet having dual purpose is inserted in every package. It includes some general **INSTRUCTIONS**, useful for the correct use of the product and, if its prescriptions are duly followed, guarantees usage in the best safety conditions.
Among the system of procedures adopted within the Quality System of the Company, the leaflet has been granted with **CONTROL** functions and is a fundamental reference needed to trace material. In fact, it includes information regarding the production batch and reference number of the operator who performed the assembly process. End user therefore is warmly recommended to keep the Control leaflet or the references it bears.

This will allow the production batch to be identified, analysed and, if the case, recalled in the event of defective claims.

Instruction

Environment

In its constant 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 by the company for the respect to surrounding environment as well as the demonstration of the adoption of environmental safeguard rules and, additionally, a pledge for constant ecological improvement.

This kind of Certification is still It is still quite uncommon in Italy; Cabur has nevertheless been able to achieve and to add it to its corporate philosophy, which always is aimed towards the anticipation of needs that are forever more global and urgent rather that passive adaptation.
Environment is undoubtedly an included aspect and in anticipation with regards to many other companies, not only Italian.
Cabur has 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 have been 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.

UNI EN-ISO 14001

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 servicing. Cabur can provide you with a copy of both CSQ and EQNET certificates, or with a copy of the Quality and Environmental Management manual.

Passive interface selection table

D-Sub / Terminals modules

Version	Dimension AxBxC	Typology	Type	Code	Page
9 poles	37x66x93	FM	ISD09FM	XISD09FM	14
	37x66x93	F	ISD09PF	XISD09PF	14
	37x66x93	M	ISD09PM	XISD09PM	14
	27x80x93	F/S	CPD09F	XCPD09F	16
	27x80x93	M/S	CPD09M	XCPD09M	16
15 poles	47x66x93	FM	ISD15FM	XISD15FM	14
	47x66x93	F	ISD15PF	XISD15PF	14
	47x66x93	M	ISD15PM	XISD15PM	14
	42x80x93	F/S	CPD15F	XCPD15F	16
	42x80x93	M/S	CPD15M	XCPD15M	16
25 poles	70x66x93	FM	ISD25FM	XISD25FM	14
	70x66x93	F	ISD25PF	XISD25PF	14
	80x66x93	F/L	ISD25PFL	XISD25PFL	15
	70x66x93	M	ISD25PM	XISD25PM	14
	80x66x93	M/L	ISD25PML	XISD25PML	15
	57x80x93	F/S	CPD25F	XCPD25F	16
	57x80x93	M/S	CPD25M	XCPD25M	16
37 poles	107x66x93	FM	ISD37FM	XISD37FM	14
	107x66x93	F	ISD37PF	XISD37PF	14
	109x66x93	F/L	ISD37PFL	XISD37PFL	15
	107x66x93	M	ISD37PM	XISD37PM	14
	109x66x93	M/L	ISD37PML	XISD37PML	15
	77x80x93	F/S	CPD37F	XCPD37F	16
	77x80x93	M/S	CPD37M	XCPD37M	16
50 poles	92x80x93	F/S	CPD50F	XCPD50F	16
	92x80x93	M/S	CPD50M	XCPD50M	16

Flat / Terminals modules

Version	Dimension AxBxC	Typology	Type	Code	Page
10 poles	42x66x93	M	IF10PMS	XIF10PMS	17
	42x66x93	M/L	IF10PML	XIF10PML	17
14 poles	48x66x93	M	IF14PMS	XIF14PMS	17
	48x66x93	M/L	IF14PML	XIF14PML	17
16 poles	58x66x93	M	IF16PMS	XIF16PMS	17
	58x66x93	M/L	IF16PML	XIF16PML	17
	45x80x93	M/S	CPC16M	XCPC16M	18
20 poles	70x66x93	M	IF20PMS	XIF20PMS	17
	70x66x93	M/L	IF20PML	XIF20PML	17
	47x80x93	M/S	CPC20M	XCPC20M	18
26 poles	86x66x93	M	IF26PMS	XIF26PMS	17
	86x66x93	M/L	IF26PML	XIF26PML	17
	57x80x93	M/S	CPC26M	XCPC26M	18
34 poles	107x66x93	M	IF34PMS	XIF34PMS	17
	107x66x93	M/L	IF34PML	XIF34PML	17
	70x80x93	M/S	CPC34M	XCPC34M	18
40 poles	122x66x93	M	IF40PMS	XIF40PMS	17
	122x66x93	M/L	IF40PML	XIF40PML	17
	77x80x93	M/S	CPC40M	XCPC40M	18
50 poles	92x80x93	M/S	CPC50M	XCPC50M	18
60 poles	107x80x93	M/S	CPC60M	XCPC60M	18
64 poles	117x80x93	M/S	CPC64M	XCPC64M	18

Diode-holder modules

Version	Dimension AxBxC	Typology	Type	Code	Page
8 diodes	47x46x45	DP	CD8P4007	XD0008P	22
10 diodes	36x46x45	AC	CD10PAC	XD0010AC	23
10 diodes	36x46x45	CC	CD10PCC	XD0010CC	23
16 diodes	92x46x45	DP	CD16P4007	XD0016P	22
16 diodes	88x66x93	DP	CD16P600K	XD016PK	22
16 diodes	59x46x45	AC	CD16PAC	XD0016AC	23
16 diodes	59x46x45	CC	CD16PCC	XD0016CC	23
22 diodes	70x46x45	AC	CD22PAC	XD0022AC	23
22 diodes	70x46x45	CC	CD22PCC	XD0022CC	23

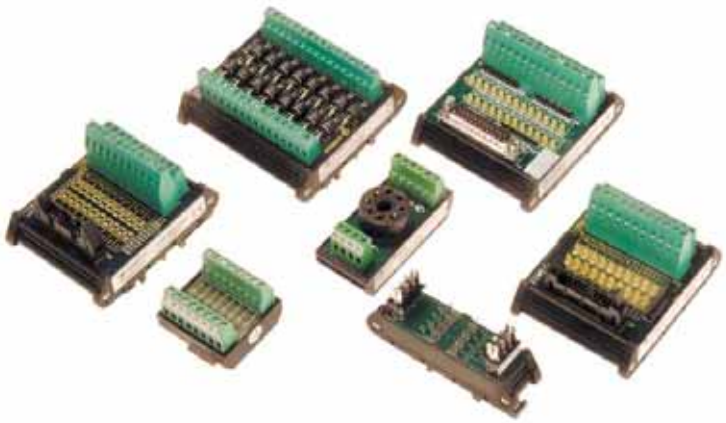
Lamp testing modules

Version	Dimension AxBxC	Typology	Type	Code	Page
8 diodes	47x46x45	–	CD8PL	XD008PL	24
16 diodes	92x46x45	–	CD16PL	XD016PL	24

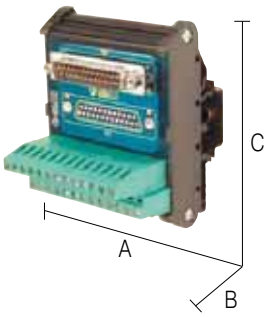
Component-holder modules

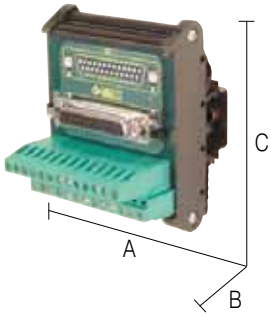
Version	Dimension AxBxC	Typology	Type	Code	Page
4 components	25x66x93	PF	PMC0005	XPMC0005	21
8 components	25x66x93	PM	PMC0002	XPMC0002	21
8 components	47x66x93	PF	PMC0006	XPMC0006	21
10 components	38x66x93	CO	PMC0001	XPMC0001	21
12 components	70x66x93	PF	PMC0007	XPMC0007	21
16 components	47x66x93	PM	PMC0003	XPMC0003	21
24 components	70x66x93	PM	PMC0004	XPMC0004	21

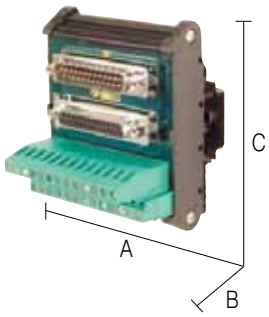
Legend
AC = common anode
CC = common cathode
CO = with common terminal
DP = single diode
F = female connector
FM = female + male connectors
L = with LED for display signal
M = male connector
PF = single components with fast-on terminals
PM = single component with terminal blocks
S = compact dimension



Passive interface (d-sub/terminals)



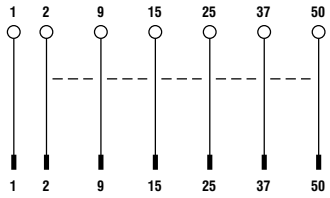


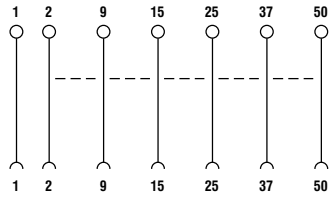


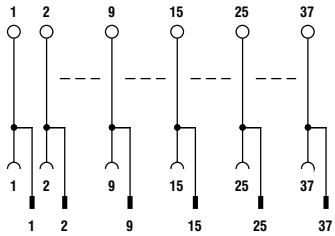
BLOCK DIAGRAMS / NOTES

The modules allow the transfering to the terminals of the deriving signals on a cable with connector type D-Sub.
The numeration is "pin - to - pin."
They are available in version equipped with LED of signaling for an input voltage of 24 Vdc.

Block diagram



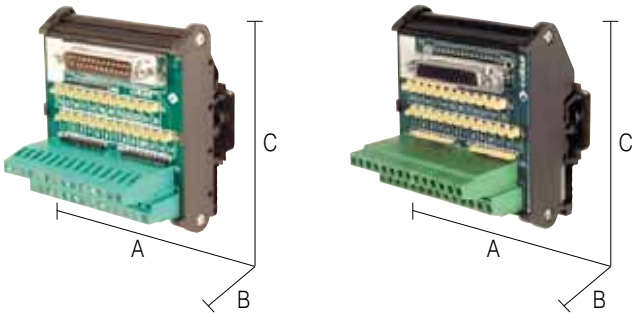




VERSION	DIMENSION (A x B x C)	ORDERING INFORMATION					
		male		female		male + female	
9 poles	37x66x93	**ISD09PM**	Cod. XISD09PM	**ISD09PF**	Cod. XISD09PF	**ISD09FM**	Cod. XISD09FM
15 poles	47x66x93	**ISD15PM**	Cod. XISD15PM	**ISD15PF**	Cod. XISD15PF	**ISD15FM**	Cod. XISD15FM
25 poles	70x66x93	**ISD25PM**	Cod. XISD25PM	**ISD25PF**	Cod. XISD25PF	**ISD25FM**	Cod. XISD25FM
37 poles	107x66x93	**ISD37PM**	Cod. XISD37PM	**ISD37PF**	Cod. XISD37PF	**ISD37FM**	Cod. XISD37FM

GENERAL TECHNICAL DATA			
Rated voltage	50 Vac, 75 Vdc	50 Vac, 75 Vdc	50 Vac, 75 Vdc
Rated current	2 A	2 A	2 A
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Display	–	–	–
Type / section terminals	terminal block 2.5 mm^2	terminal block 2.5 mm^2	terminal block 2.5 mm^2
Mounting information	adjacent without gap	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

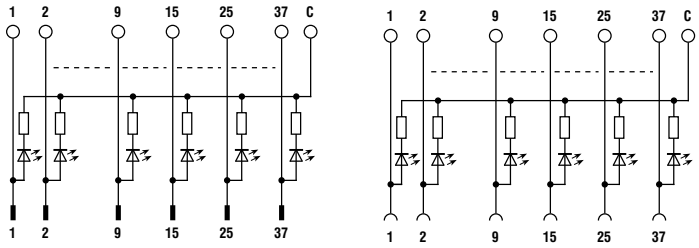
Passive interface
(d-sub/terminals)



BLOCK DIAGRAMS / NOTES

The modules allow the transfering to the terminals of the deriving signals on a cable with connector type D-Sub.
The numeration is "pin - to - pin."
The block diagram is reported to the version without LED.
(1) The LED have predisposed for a nominal voltage of 24 Vdc.

Block diagram

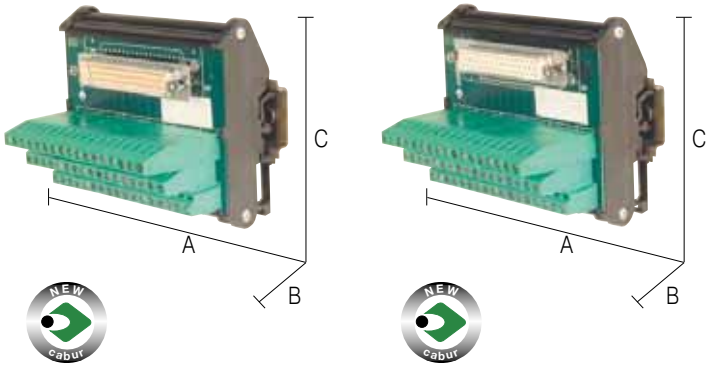


VERSION	DIMENSION (A x B x C)	ORDERING INFORMATION male with LED		ORDERING INFORMATION female with LED	
9 poles	–	–		–	
15 poles	–	–		–	
25 poles	80x66x93	**ISD25PML**	Cod. XISD25PML	**ISD25PFL**	Cod. XISD25PFL
37 poles	109x66x93	**ISD37PML**	Cod. XISD37PML	**ISD37PFL**	Cod. XISD37PFL

GENERAL TECHNICAL DATA		
Rated voltage	24 Vdc (1)	24 Vdc (1)
Rated current	2 A	2 A
Housing material	polyamide UL94V-0	polyamide UL94V-0
Display	LED	LED
Type / section terminals	terminal block 2.5 mm²	terminal block 2.5 mm²
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Passive interface
(d-sub/terminals)

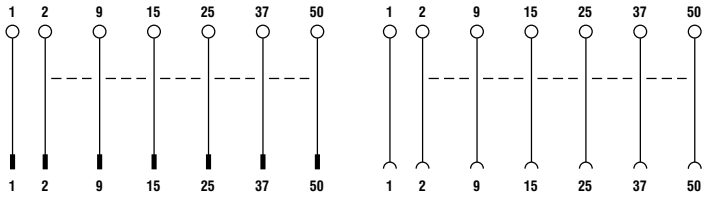
- Compact dimensions



BLOCK DIAGRAMS / NOTES

The modules allow the transfering to the terminals of the deriving signals on a cable with connector type D-Sub.
The numeration is "pin - to - pin."
(1) Available upon request

Block diagram

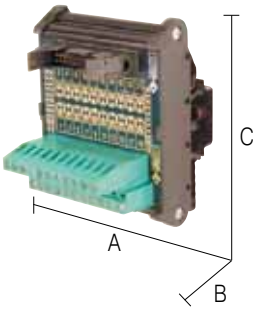


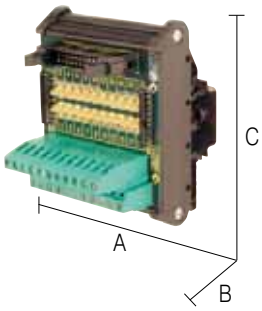
VERSION	DIMENSION (A x B x C)
9 poles	27x80x93
15 poles	42x80x93
25 poles	57x80x93
37 poles	77x80x93
50 poles	92x80x93

ORDERING INFORMATION			
male whit LED		female with LED	
CPD09M (1)	Cod. XCPD09M	**CPD09F** (1)	Cod. XCPD09F
CPD15M (1)	Cod. XCPD15M	**CPD15F** (1)	Cod. XCPD15F
CPD25M	Cod. XCPD25M	**CPD25F**	Cod. XCPD25F
CPD37M	Cod. XCPD37M	**CPD37F**	Cod. XCPD37F
CPD50M	Cod. XCPD50M	**CPD50F**	Cod. XCPD50F

GENERAL TECHNICAL DATA		
Rated voltage	50 Vac, 75 Vdc	50 Vac, 75 Vdc
Rated current	2 A	2 A
Housing material	polyamide UL94V-0	polyamide UL94V-0
Display	–	–
Type / section terminals	terminal block 2.5 mm^2	terminal block 2.5 mm^2
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Passive interface (flat-cable/ terminals)

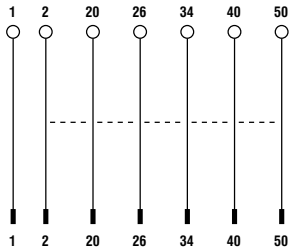


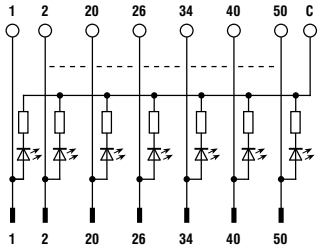


BLOCK DIAGRAMS / NOTES

The modules allow the transfering to the terminals the deriving signals on Flat-cable through the employment of connectors IDC (to perforation of insulator).
The numeration is "pin - to - pin."
They are available in version equipped with LED for nominal voltage of 24 Vdc.
(1) Available upon request
(2) They are available in version equipped with LED for nominal voltage of 24 Vdc.

Block diagram





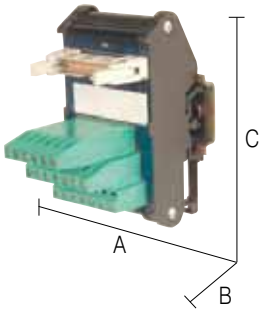
VERSION	DIMENSION (A x B x C)
10 poles	42x66x93
14 poles	48x66x93
16 poles	58x66x93
20 poles	70x66x93
26 poles	86x66x93
34 poles	107x66x93
40 poles	122x66x93

ORDERING INFORMATION			
male without LED		male with LED	
IF10PMS (1)	Cod. XIF10PMS	**IF10PML** (1)	Cod. XIF10PML
IF14PMS (1)	Cod. XIF14PMS	**IF14PML** (1)	Cod. XIF14PML
IF16PMS	Cod. XIF16PMS	**IF16PML**	Cod. XIF16PML
IF20PMS	Cod. XIF20PMS	**IF20PML**	Cod. XIF20PML
IF26PMS	Cod. XIF26PMS	**IF26PML**	Cod. XIF26PML
IF34PMS	Cod. XIF34PMS	**IF34PML**	Cod. XIF34PML
IF40PMS	Cod. XIF40PMS	**IF40PML**	Cod. XIF40PML

GENERAL TECHNICAL DATA		
Rated voltage	50 Vac, 75 Vdc	24 Vdc (2)
Rated current	750 mA	750 mA
Housing material	polyamide UL94V-0	polyamide UL94V-0
Display	–	–
Type / section terminals	terminal block 2.5 mm²	terminal block 2.5 mm²
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Passive interface (flat-cable/ terminals)

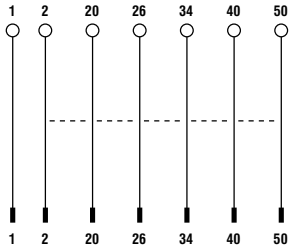
- Compact dimensions



BLOCK DIAGRAMS / NOTES

The modules allow the transfering to the terminals the deriving signals on Flat-cable through the employment of connectors IDC (to perforation of insulator).
The numeration is "pin - to - pin."
They are available in version equipped with LED for nominal voltage of 24 Vdc.
(1) Available upon request

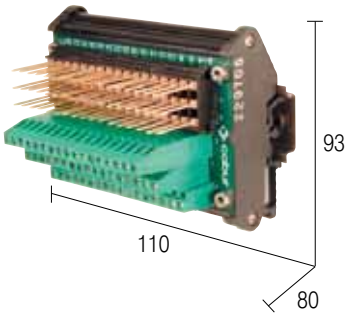
Block diagram



VERSION	DIMENSION (A x B x C)	ORDERING INFORMATION	
10 poles	–	–	
14 poles	–	–	
16 poles	45x80x93	**CPC16M** (1)	Cod. XCPC16M
20 poles	47x80x93	**CPC20M**	Cod. XCPC20M
26 poles	57x80x93	**CPC26M**	Cod. XCPC26M
34 poles	70x80x93	**CPC34M**	Cod. XCPC34M
40 poles	77x80x93	**CPC40M**	Cod. XCPC40M
50 poles	92x80x93	**CPC50M**	Cod. XCPC50M
60 poles	107x80x93	**CPC60M**	Cod. XCPC60M
64 poles	117x80x93	**CPC64M**	Cod. XCPC64M

GENERAL TECHNICAL DATA	
Rated voltage	50 Vac, 75 Vdc
Rated current	750 mA
Housing material	polyamide UL94V-0
Display	–
Type / section terminals	terminal block 2.5 mm²
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

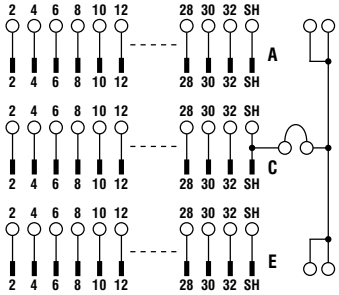
Passive interface (termipoint®/ terminals)



BLOCK DIAGRAMS / NOTES

® Termipoint is a trade mark of AMP
(1) Available upon request
(2) Use with the clips AMP-2-330491-1 AWG 24-0.22 mm²

Block diagram



VERSION	DIMENSION (A x B x C)
3x17 poles	80x110x93

ORDERING INFORMATION

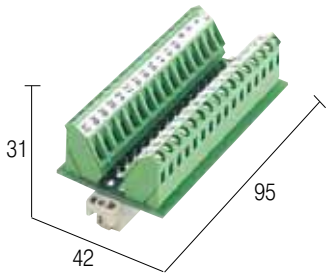
ISD32CO (1) Cod. XISD32CO

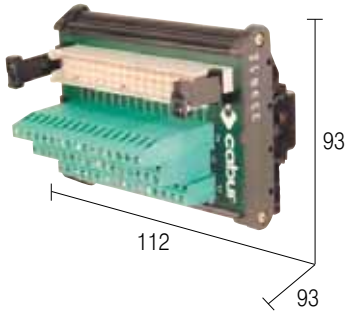
GENERAL TECHNICAL DATA

Rated voltage	75 Vac max
Rated current	3 A
Connector type	Termipoint® 1.6 x 0.8 mm (2)
Equipment lines	–
Housing material	polyamide UL94V-0
Display	–
Type / section terminals	terminal block 2.5 mm²
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

®Termipoint is a trade mark of AMP

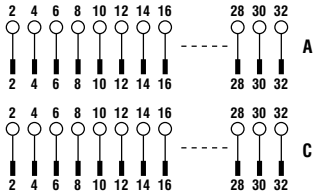
Passive interface (connettor/ terminals)

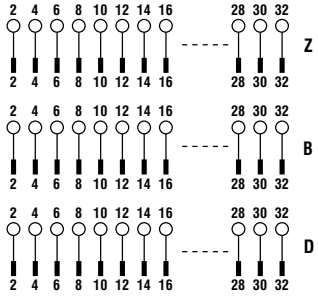




BLOCK DIAGRAMS / NOTES

Block diagram





VERSION	DIMENSION (A x B x C)
32 poles	42x95x31
48 poles	112x93x93

ORDERING INFORMATION

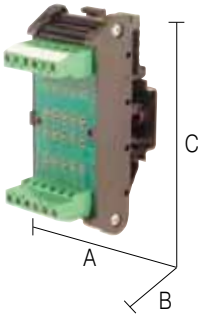
ID320AC	Cod. XID320AC
–	

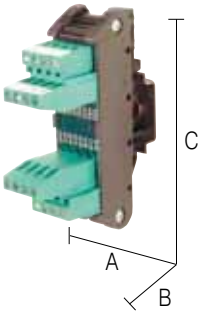
–	
CID048F	Cod. XID048F

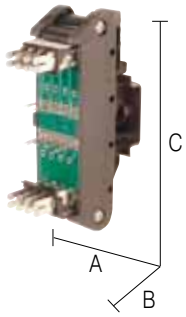
GENERAL TECHNICAL DATA

Rated voltage	50 Vac, 75 Vdc	50 Vac, 75 Vdc
Rated current	1 A	4 A
Connector type	DIN 41612-C	DIN 41612-C
Equipment lines	a + c	b + d + z
Housing material	–	polyamide UL94V-O
Display	–	–
Type / section terminals	terminal block 2.5 mm²	terminal block 2.5 mm²
Mounting information	directly on DIN connector	adjacent without gap
Mounting rail according to IEC60715/TH35	–	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Components-holder modules



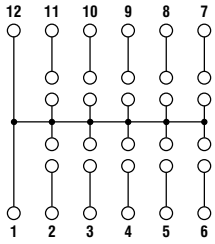


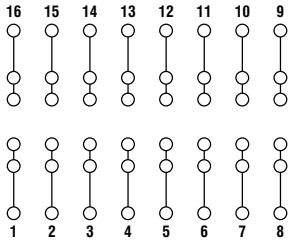


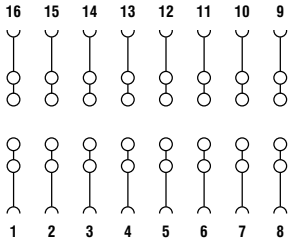
BLOCK DIAGRAMS / NOTES

The components-holder modules allow the montage of electronic components (diodes, resistors, capacitors etc.) according to customer needs.
They are available with connections with terminal blocks or Fast-on , and with different holes diameter for the terminals of the components.

Block diagram



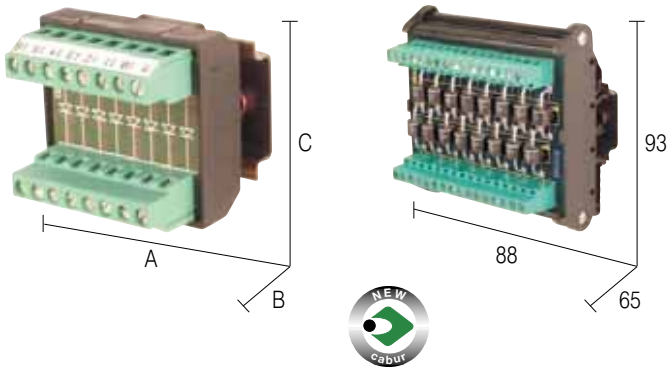




VERSION	DIMENSION (A x B x C)	ORDERING INFORMATION					
		con comune		passanti con morsetto		passanti con faston	
4 components	25x66x93	–		–		**PMC0005**	Cod. XPMC0005
8 components	25x66x93	–		**PMC0002**	Cod. XPMC0002	–	
8 components	47x66x93	–		–		**PMC0006**	Cod. XPMC0006
10 components	38x55x93	**PMC0001**	Cod. XPMC0001	–		–	
12 components	70x66x93	–		–		**PMC0007**	Cod. XPMC0007
16 components	47x66x93	–		**PMC0003**	Cod. XPMC0003	–	
24 components	70x66x93	–		**PMC0004**	Cod. XPMC0004	–	

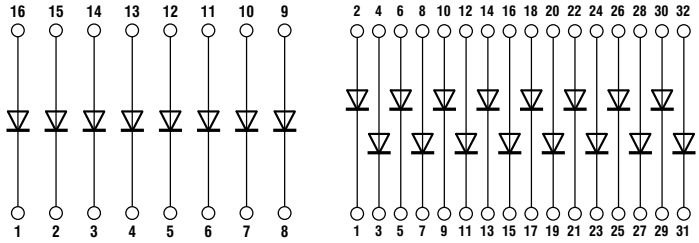
GENERAL TECHNICAL DATA			
Rated voltage	120 Vac ± 10%	120 Vac ± 10%	120 Vac ± 10%
Rated current	4 A max (on the common)	2 A max (on the common)	1 A max (on the common)
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Protection degree	–	–	–
Type / section terminals	terminal block 2.5 mm^2	terminal block 2.5 mm^2	faston 6.3 x 0.8 (2 x 2.8 x 0.8)
Mounting information	adjacent without gap	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Single diode modules



BLOCK DIAGRAMS / NOTES

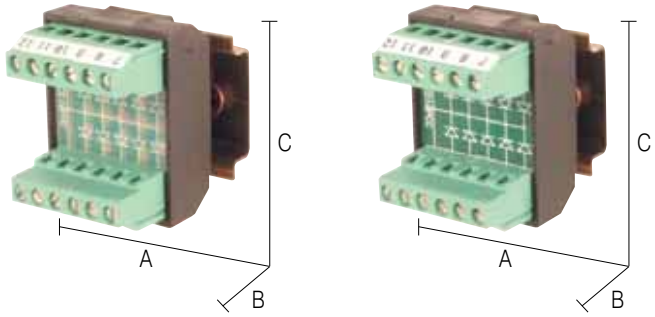
Block diagram



VERSION	DIMENSION (A x B x C)	ORDERING INFORMATION	
		Single diode	Single diode
8 diodes	47x46x45	**CD8P4007** Cod. XD0008P	–
16 diodes	92x65x45	**CD16P4007** Cod. XD0016P	**CD16P600K** Cod. XD016PK

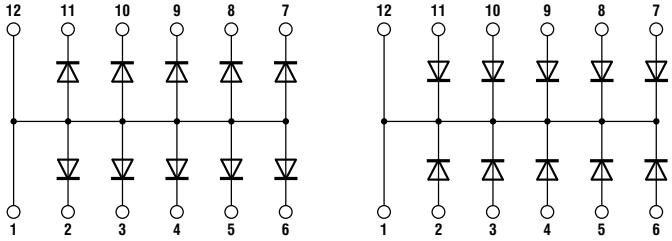
GENERAL TECHNICAL DATA		
Rated voltage	120 Vac ± 10%	120 Vac ± 10%
Rated current	1 A max (diode 14007)	3 A max (diode P600K)
Housing material	polyamide UL94V-0	polyamide UL94V-0
Protection degree	IP20	IP00
Type / section terminals	terminal block 2.5 mm²	terminal block 2.5 mm²
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Diode - holder modules



BLOCK DIAGRAMS / NOTES

Block diagram



VERSION	DIMENSION (A x B x C)
10 diodes	36x46x45
16 diodes	59x46x45
22 diodes	70x46x45

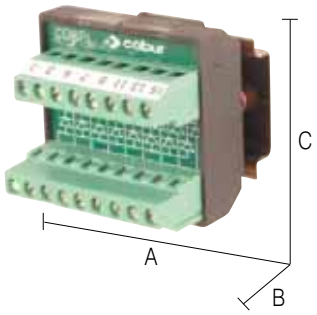
ORDERING INFORMATION

male		female	
CD10PAC	Cod. XD0010AC	**CD10PCC**	Cod. XD0010CC
CD16PAC	Cod. XD0016AC	**CD16PCC**	Cod. XD0016CC
CD22PAC	Cod. XD0022AC	**CD22PCC**	Cod. XD0022CC

GENERAL TECHNICAL DATA

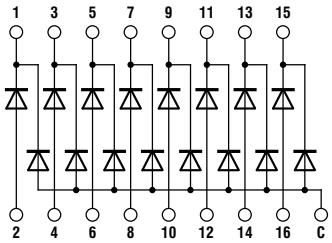
Rated voltage	120 Vac ± 10%	120 Vac ± 10%
Rated current	1 A max (diode 1N4007)	1 A max (diode 1N4007)
Housing material	polyamide UL94V-0	polyamide UL94V-0
Display	IP20	IP20
Type / section terminals	terminal block 2.5 mm²	terminal block 2.5 mm²
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Lamp testing modules



BLOCK DIAGRAMS / NOTES

Block diagram



VERSION (A x B x C)	DIMENSION
8 lamp-testing circuit	47x46x45
16 lamp-testing circuit	92x46x45

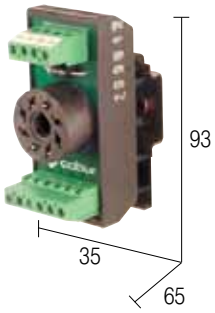
ORDERING INFORMATION

CD8PL	Cod. XD008PL
CD16PL	Cod. XD016 PL

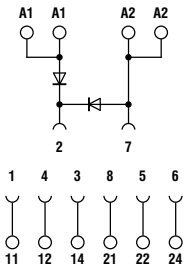
GENERAL TECHNICAL DATA

Rated voltage	120 Vac ± 10%
Rated current	1 A max (diode 1N4007)
Housing material	polyamide UL94V-0
Protection degree	IP20
Type / section terminals	terminal block 2.5 mm²
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Octal socket module



BLOCK DIAGRAMS / NOTES	Block diagram



VERSION DIMENSION	ORDERING INFORMATION	
Socket for alternate current relay	–	
Socket for direct current relay	**ZPR008**	Cod. XZPR0008

INPUT TECHNICAL DATA	
Rated voltage	250 Vdc max
Rated current	1 A max

OUTPUT TECHNICAL DATA	
Rated voltage	250 Vac
Rated current of contact	5 A
Number of contact	DPDT

GENERAL TECHNICAL DATA	
Housing material	polyamide UL94V-0
Protection	anti inversion diode and overvoltage diode
Display	–
Type / section terminals	terminal block 2.5 mm^2
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Single relay modules selection table

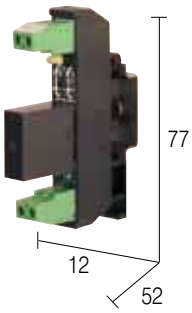
INPUT rated voltage	OUTPUT type of the contact	OUTPUT rated current	RELAY INFORMATION number of the relay	RELAY INFORMATION relay mounting	DIMENSIONS A x B x C (mm)	TYPE	CODE	PAGE
12 Vdc	SPDT	10 A	1	E	18 x 68 x 75	CM1C012	XCM1C012	30
12 Vdc	DPDT	5 A	1	E	18 x 75 x 75	CM2C012	XCM2C012	33
24 Vdc	SPTS(NO)	5 A	1	S	11 x 52 x 77	RFA024D	XRFA024D	27
24 Vdc	SPDT	10 A	1	S	16.4 x 70 x 77	RF1824D	XRF1824D	28
24 Vdc	SPDT	10 A	1	E	16.4 x 70 x 77	RE1824D	XRE1824D	28
24 Vdc	SPDT	10 A	1	E	18 x 68 x 75	CM1C024	XCM1C024	30
24 Vdc	SPDT	10 A	1	E	18 x 68 x 75	CM1C024Z	XCM1C024Z	30
24 Vdc	SPDT	16 A	1	S	16.4 x 70 x 77	RF1024D	XRF1024D	28
24 Vdc	SPDT	16 A	1	E	16.4 x 70 x 77	RE1024D	XRE1024D	28
24 Vdc	SPDT	16 A	1	E	18 x 75 x 75	CM1C024H	XCM1C024H	30
24 Vdc	DPDT	5 A	1	E	18 x 75 x 75	CM2C024	XCM2C024	33
24 Vdc	DPDT	5 A	1	E	18 x 75 x 75	CM2C024Z	XCM2C024Z	33
24 Vdc	4PDT	3 A	1	E	27 x 75 x 75	CM4C024	XCM4C024	36
24 Vac	SPDT	10 A	1	E	18 x 68 x 75	CM1A024	XCM1A024	31
24 Vac	DPDT	5 A	1	E	18 x 75 x 75	CM2A024	XCM2A024	34
24 Vac/dc	SPTS(NO)	5 A	1	S	12 x 52 x 77	RFA24AD	XRFA24AD	27
24 Vac/dc	SPDT	5 A	1	S	11 x 70 x 77	RF1024AD	XRF1024AD	27
24 Vac/dc	DPDT	5 A	1	S	26 x 75 x 93	RF2024D	XRF2024D	29
24 Vac/dc	DPDT	5 A	1	E	26 x 75 x 93	RE2024D	XRE2024D	29
48 Vdc	SPDT	10 A	1	E	18 x 68 x 75	CM1C048	XCM1C048	31
48 Vdc	DPDT	5 A	1	E	18 x 75 x 75	CM2C048	XCM2C048	33
48 Vac/dc	DPDT	5 A	1	E	26 x 75 x 93	RE2048D	XRE2048D	29
110 Vdc	SPDT	10 A	1	E	18 x 68 x 75	CM1C110	XCM1C110	31
110 Vdc	DPDT	5 A	1	E	18 x 75 x 75	CM2C110	XCM2C110	34
120 Vac	SPDT	10 A	1	E	16.4 x 70 x 77	RE1110A	XRE1110A	28
120 Vac	DPDT	5 A	1	E	26 x 75 x 93	RE2110A	XRE2110A	29
120 Vac	SPDT	10 A	1	E	18 x 68 x 75	CM1A120	XCM1A120	32
120 Vac	DPDT	5 A	1	E	18 x 75 x 75	CM2A120	XCM2A120	34
230 Vac	SPDT	10 A	1	E	18 x 68 x 75	CM1A230	XCM1A230	32
230 Vac	DPDT	5 A	1	E	18 x 75 x 75	CM2A230	XCM2A230	35

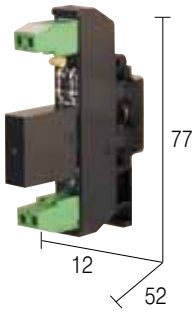
E = pluggable relay

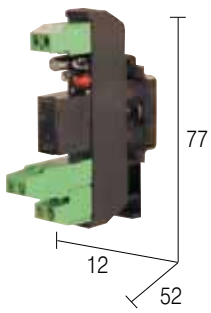
S = fixed relay

SPDT Single-relay modules
RE & RF Series

- Compact dimensions



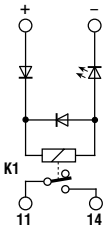


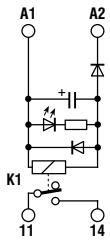


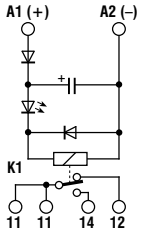
BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

Block diagram







VERSION			
Pluggable relay	–	–	–
Fixed relay	**RFA024D** (2) Cod. XRFA024D	**RFA24AD** Cod. XRFA24AD	**RF1024AD** Cod. XRF1024AD
Relé estraibile, senza diodo e LED	–	–	–

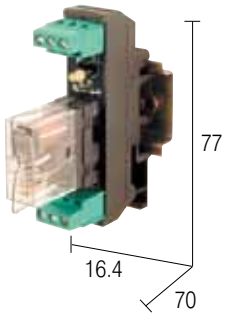
INPUT TECHNICAL DATA			
Rated voltage	24 Vdc ± 10%	24 Vac / dc ± 10%	24 Vac / dc ± 10%
Rated current (1 channel)	22 mA ± 10%	22 mA ± 10%	17 mA ± 10%
Turn ON time	15 ms	15 ms	6 ms
Turn OFF time	5 ms	5 ms	4 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

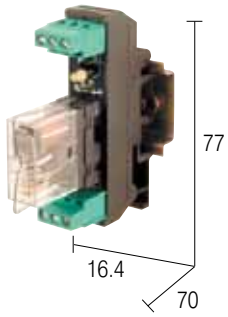
OUTPUT TECHNICAL DATA			
Type and number of contact	SPST (NO)	SPST (NO)	SPDT
Rated voltage	250 Vac / 30 Vdc	250 Vac / 30 Vdc	250 Vac
Rated voltage	5 A	5 A	5 A
Current breaking power	5 A	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s

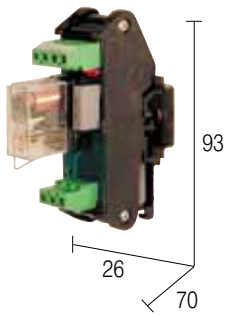
GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1,, DIN VDE 0110.10	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2	2
Overvoltage category	3	3	3
Relay model (1)	OMRON G5PA-1-24 DC	OMRON G5PA-1-24 DC	MATSUSHITA JQ 1-24 V
Status display	LED	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	30.2 g	31 g	31 g
Mounting information	adjacent without gap	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT Single-relay modules
RE & RF Series

- Availbale in fixed and pluggable version



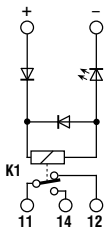


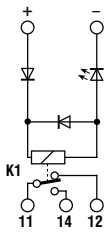


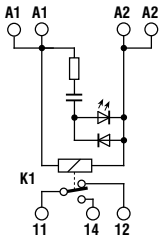
BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

Block diagram







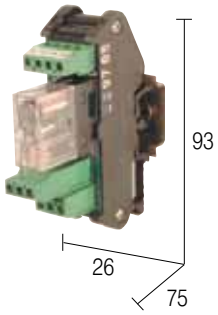
VERSION			
Pluggable relay	**RE1824D** Cod. XRE1824D	**RE1024D** Cod. XRE1024D	**RE1110A** (2) Cod. XRE1110A
Fixed relay	**RF1824D** Cod. XRF1824D	**RF1024D** (2) Cod. XRF1024D	–
Pluggable relay without diode and relay	–	–	–

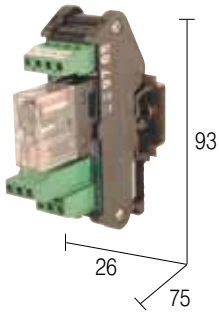
INPUT TECHNICAL DATA			
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%	120 Vac ± 10%
Rated current (1 channel)	22 mA ± 10%	22 mA ± 10%	10.5 mA ± 10%
Turn ON time	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

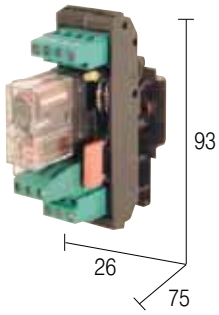
OUTPUT TECHNICAL DATA			
Type and number of contact	SPDT	SPDT	SPDT
Rated voltage	250 Vac	250 Vac	250 Vac / 125 Vdc
Rated voltage	10 A	16 A	10 A
Current breaking power	10 A	16 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00	IP 00
Reference standards	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	3	3	3
Relay model (1)	OMRON G2R-1-24 VDC	OMRON G2R-1-24 VDC	OMRON G2R-1-120 VAC
Status display	LED	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	44 g (pluggable relay version)	44 g (pluggable relay version)	44 g
Mounting information	adjacent without gap	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

DPDT Single-relay modules
RE & RF Series







BLOCK DIAGRAMS / NOTES

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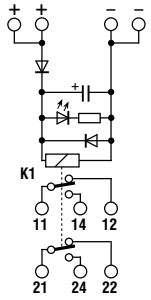
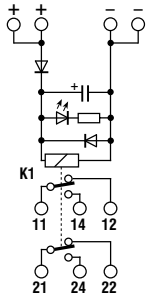
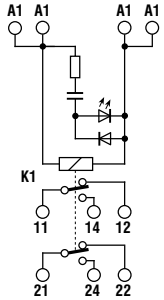
(2) Available upon request.

Block diagram







VERSION			
Pluggable relay	**RE2024D** Cod. XRE2024D	**RE2048D** Cod. XRE2048D	**RE2110A** Cod. XRE2110A
Fixed relay	**RF2024D** (2) Cod. XRF2024D	–	–
Pluggable relay without diode and relay	–	–	–

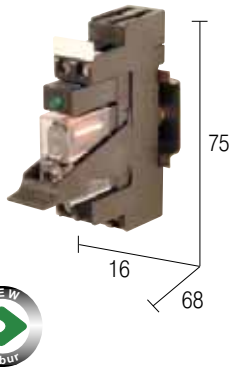
INPUT TECHNICAL DATA			
Rated voltage	24 Vac / dc ± 10%	48 Vac / dc ± 10%	120 Vac ± 10%
Rated current (1 channel)	22 mA ± 10%	12 mA ± 10%	10.5 mA ± 10%
Turn ON time	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

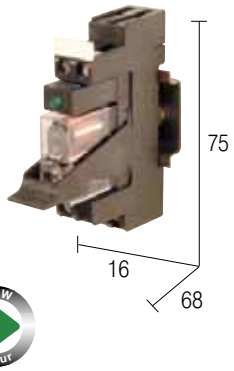
OUTPUT TECHNICAL DATA			
Type and number of contact	DPDT	DPDT	DPDT
Rated voltage	250 Vac / 125 Vdc	250 Vac	250 Vac
Rated voltage	5 A	5 A	5 A
Current breaking power	5 A	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s

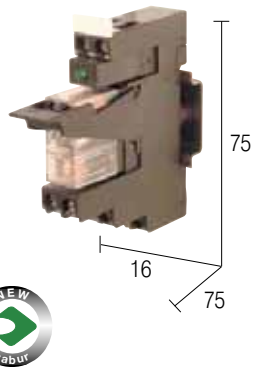
GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1,, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2	2
Overvoltage category	3	3	3
Relay model (1)	OMRON G2R-2-24 VDC	OMRON G2R-2-48 VDC	OMRON G2R-2-120 VAC
Status display	LED	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	76 g (pluggable relay version)	76 g (pluggable relay version)	76 g
Mounting information	adjacent without gap	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw
- Low cost



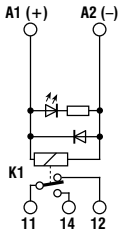


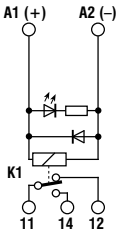


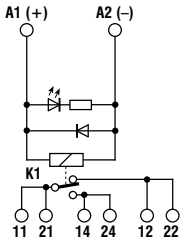
BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram



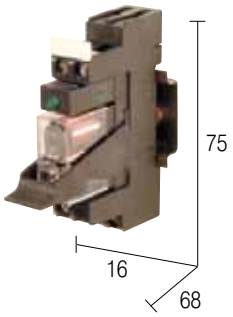


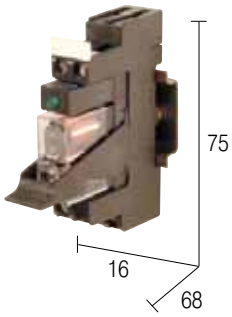


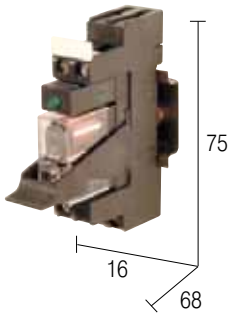
VERSION			
Pluggable relay	**CM1C012** Cod. XCM1C012	**CM1C024** Cod. XCM1C024	**CM1C024H** Cod. XCM1C024H
Fixed relay	–	–	–
Pluggable relay without diode and relay	–	**CM1C024Z** Cod. XCM1C024Z	–
INPUT TECHNICAL DATA			
Rated voltage	12 Vdc ± 10%	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	44 mA ± 10%	22 mA ± 10%	22 mA ± 10%
Turn ON time	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
OUTPUT TECHNICAL DATA			
Type and number of contact	SPDT	SPDT	SPDT
Rated voltage	250 Vac	250 Vac	250 Vac
Rated voltage	10 A	10 A	16 A
Current breaking power	10 A	10 A	16 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s
GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP20B	IP20B	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	3	3	3
Overvoltage category	3	3	3
Relay model (1)	OMRON G2R-1-12 VDC	OMRON G2R-1-24 VDC	OMRON G2R-1E-24 VDC
Status display	LED	LED	LED
Housing material	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1
Approximative weight	67 g	54 g	54 g
Mounting information	on rail or panel with screw	on rail or panel with screw	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–	–

SPDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw
- Low cost







BLOCK DIAGRAMS / NOTES

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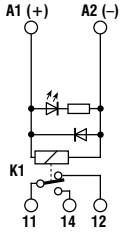
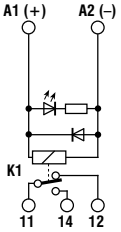
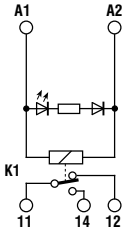
(2) Available upon request.

Block diagram



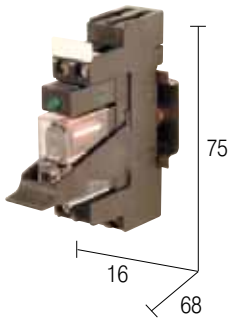


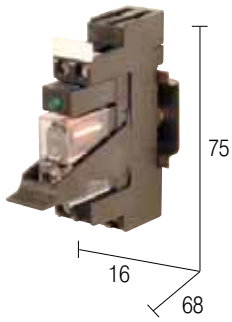


VERSION			
Pluggable relay	**CM1C048** Cod. XCM1C048	**CM1C110** (2) Cod. XCM1C110	**CM1A024** Cod. XCM1A024
Fixed relay	–	–	–
Pluggable relay without diode and relay	–	–	–
INPUT TECHNICAL DATA			
Rated voltage	48 Vdc ± 10%	110 Vdc ± 10%	24 Vac ± 10%
Rated current (1 channel)	12 mA ± 10%	11 mA ± 10%	48 mA ± 10%
Turn ON time	15 ms	15 ms	15 ms
Turn OFF time	5 ms	20 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
OUTPUT TECHNICAL DATA			
Type and number of contact	SPDT	SPDT	SPDT
Rated voltage	250 Vac	250 Vac	250 Vac
Rated voltage	10 A	10 A	10 A
Current breaking power	10 A	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s
GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP20B	IP20B	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	3	3	3
Overvoltage category	3	3	3
Relay model (1)	OMRON G2R-1-48 VDC	FINDER 40.31.9.125	OMRON G2R-1-24 VAC
Status display	LED	LED	LED
Housing material	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1
Approximative weight	54 g	54 g	54 g
Mounting information	on rail or panel with screw	on rail or panel with screw	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–	–

SPDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw
- Low cost

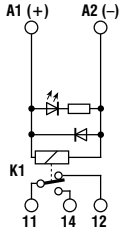


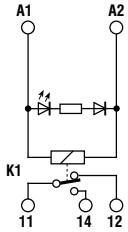


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram

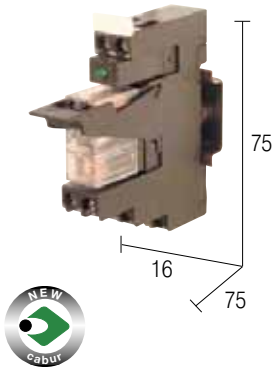


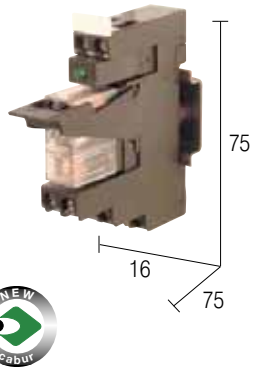


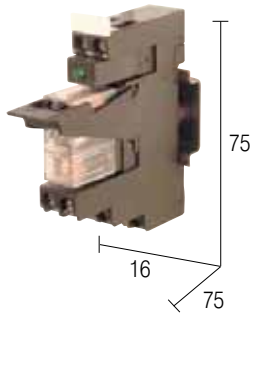
VERSION		
Pluggable relay	**CM1A120** Cod. XCM1A120	**CM1A230** Cod. XCM1A230
Fixed relay	–	–
Pluggable relay without diode and relay	–	–
INPUT TECHNICAL DATA		
Rated voltage	120 Vac ± 10%	230 Vac ± 10%
Rated current (1 channel)	10.5 mA ± 10%	6 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT	SPDT
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	4 kVac / 60 s
Protection degree	IP20B	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	3	3
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1-120 VAC	OMRON G2R-1-230 VAC
Status display	LED	LED
Housing material	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1
Approximative weight	54 g	54 g
Mounting information	on rail or panel with screw	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

DPDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw
- Low cost







BLOCK DIAGRAMS / NOTES

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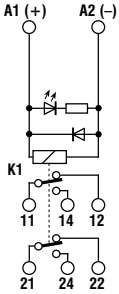
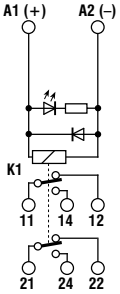
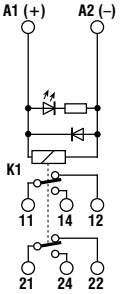
Block diagram



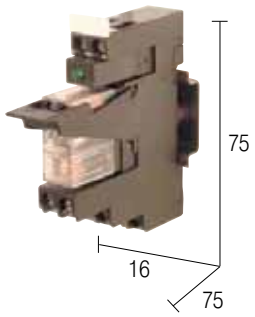


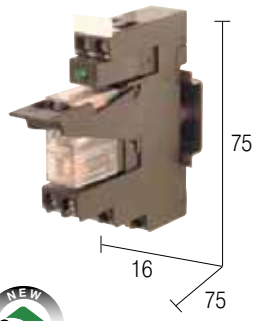


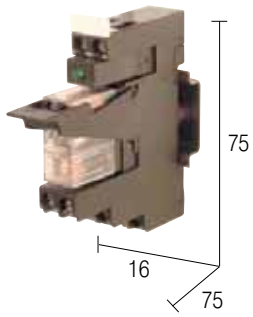
VERSION			
Pluggable relay	**CM2C012** Cod. XCM2C012	**CM2C024** Cod. XCM2C024	**CM2C048** Cod. XCM2048
Fixed relay	–	–	–
Pluggable relay without diode and relay	–	**CM2C024Z** Cod. XCM2C024Z	–
INPUT TECHNICAL DATA			
Rated voltage	12 Vdc ± 10%	24 Vdc ± 10%	48 Vdc ± 10%
Rated current (1 channel)	44 mA ± 10%	48 mA ± 10%	24 mA ± 10%
Turn ON time	15 ms	15 ms	15 ms
Turn OFF time	5 ms	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm^2	terminal blocks 2.5 mm^2	terminal blocks 2.5 mm^2
OUTPUT TECHNICAL DATA			
Type and number of contact	DPDT	DPDT	DPDT
Rated voltage	250 Vac	250 Vac	250 Vac
Rated voltage	5 A	5 A	5 A
Current breaking power	5 A	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm^2	terminal blocks 2.5 mm^2	terminal blocks 2.5 mm^2
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s
GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP20B	IP20B	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	3	3	3
Overvoltage category	3	3	3
Relay model (1)	OMRON G2R-2-12 VDC	OMRON G2R-2-24 VDC	OMRON G2R-1-48 VDC
Status display	LED	LED	LED
Housing material	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1
Approximative weight	67 g	67 g	67 g
Mounting information	on rail or panel with screw	on rail or panel with screw	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–	–

DPDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw
- Low cost







BLOCK DIAGRAMS / NOTES

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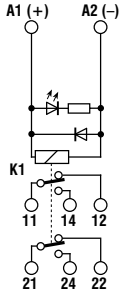
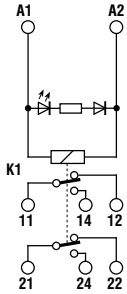
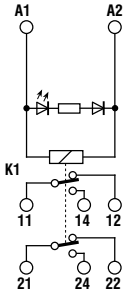
Block diagram



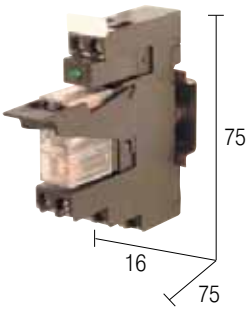




VERSION			
Pluggable relay	**CM2C110** Cod. XCM2C110	**CM2A024** Cod. XCM2A024	**CM2A120** Cod. XCM2A120
Fixed relay	–	–	–
Pluggable relay without diode and relay	–	–	–
INPUT TECHNICAL DATA			
Rated voltage	110 Vdc ± 10%	24 Vac ± 10%	115 Vac ± 10%
Rated current (1 channel)	11 mA ± 10%	48 mA ± 10%	10.5 mA ± 10%
Turn ON time	15 ms	15 ms	15 ms
Turn OFF time	20 ms	10 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
OUTPUT TECHNICAL DATA			
Type and number of contact	DPDT	DPDT	DPDT
Rated voltage	250 Vac	250 Vac	250 Vac
Rated voltage	5 A	5 A	5 A
Current breaking power	5 A	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s	1 kVac / 60 s
GENERAL TECHNICAL DATA			
Operating temperature	- 10 – 50°C	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP20B	IP20B	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	3	3	3
Overvoltage category	3	3	3
Relay model (1)	FINDER 40.52.9.110	OMRON G2R-2-24 VAC	OMRON G2R-2-120 VAC
Status display	LED	LED	LED
Housing material	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1	PA 66 + FV self-extinguishing V1
Approximative weight	67 g	67 g	67 g
Mounting information	on rail or panel with screw	on rail or panel with screw	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–	–

DPDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw



BLOCK DIAGRAMS / NOTES

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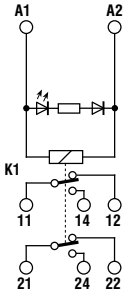
Block diagram



VERSION	
Pluggable relay	**CM2A230** Cod. XCM2A230
Fixed relay	–
Pluggable relay without diode and relay	–

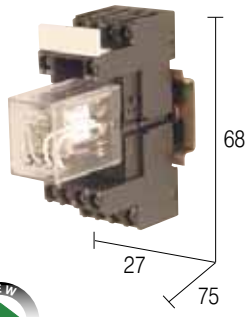
INPUT TECHNICAL DATA	
Rated voltage	230 Vac ± 10%
Rated current (1 channel)	6 mA ± 10%
Turn ON time	15 ms
Turn OFF time	10 ms
Terminals / connectors	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA	
Type and number of contact	DPDT
Rated voltage	250 Vac
Rated voltage	5 A
Current breaking power	5 A
Terminals / connectors	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s

GENERAL TECHNICAL DATA	
Operating temperature	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s
Protection degree	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	3
Overvoltage category	3
Relay model (1)	OMRON G2R-2-230 VAC
Status display	LED
Housing material	PA 66 + FV self-extinguishing V1
Approximative weight	67 g
Mounting information	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

4PDT Single-relay modules CM Series

- Compact dimensions
- DIN rail mounting
- Mountin on the panel through central screw
- Low cost



BLOCK DIAGRAMS / NOTES

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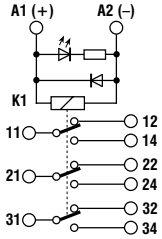
Block diagram



VERSION	
Pluggable relay	**CM4C024** Cod. XCM4C024
Fixed relay	–
Pluggable relay without diode and relay	–

INPUT TECHNICAL DATA	
Rated voltage	24 Vdc ± 10%
Rated current (1 channel)	38 mA ± 10%
Turn ON time	20 ms
Turn OFF time	20 ms
Terminals / connectors	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA	
Type and number of contact	4PDT
Rated voltage	230 Vac / 24 Vdc
Rated voltage	3 A
Current breaking power	3 A
Terminals / connectors	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s

GENERAL TECHNICAL DATA	
Operating temperature	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s
Protection degree	IP20B
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	3
Overvoltage category	3
Relay model (1)	OMRON MY4-24 VDC
Status display	LED
Housing material	PA66 + FV self-extinguishing V1
Approximative weight	–
Mounting information	on rail or panel with screw
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

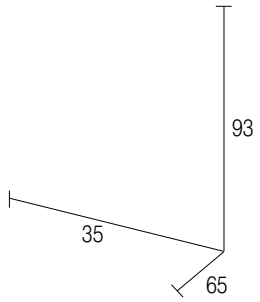
Multi - relay modules selection table

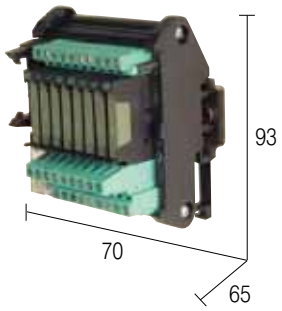
INPUT rated voltage	OUTPUT type of the contact	OUTPUT rated current	RELAY INFORMATION number of the relay	RELAY INFORMATION relay mounting	DIMENSIONS A x B x C (mm)	TYPE	CODE	PAGE
24 Vdc	SPDT	6 A	4	E/CN	35 x 65 x 93	CRN04	XCRN04	36
24 Vdc	SPDT	10 A	4	E/CN	70 x 75 x 93	R41E24	XR041E24	39
24 Vdc	SPDT	10 A	4	E/CP	70 x 75 x 93	R41E24P	XR041E24P	39
24 Vdc	SPDT	10 A	4	Z/CN	70 x 75 x 93	Z4124D	XZ04124D	39
24 Vdc	SPDT	6 A	8	E/CN	70 x 65 x 93	CRN08	XCRN08	36
24 Vdc	SPDT	10 A	8	E/CN	137 x 75 x 93	R81E24	XR081E24	39
24 Vdc	SPDT	10 A	8	E/CP	137 x 75 x 93	R81E24P	XR081E24P	39
24 Vdc	SPDT	10 A	8	Z/CN	137 x 75 x 93	Z8124D	XZ08124D	39
24 Vdc	SPDT	10 A	16	E/CN	250 x 75 x 93	R161E24	XR161E24	40
24 Vdc	SPDT	10 A	16	E/CP	250 x 75 x 93	R161E24P	XR161E24P	40
24 Vdc	SPDT	10 A	16	Z/CN	250 x 75 x 93	Z16124D	XZ16124D	40
24 Vdc	DPDT	5 A	4	E/CN	70 x 75 x 93	R42E24	XR042E24	41
24 Vdc	DPDT	5 A	4	E/CP	70 x 75 x 93	R42E24P	XR042E24P	41
24 Vdc	DPDT	5 A	4	Z/CN	70 x 75 x 93	Z4224D	XZ04224D	41
24 Vdc	DPDT	5 A	8	E/CN	137 x 75 x 93	R82E24	XR082E24	42
24 Vdc	DPDT	5 A	8	E/CP	137 x 75 x 93	R82E24P	XR082E24P	42
24 Vdc	DPDT	5 A	8	Z/CN	137 x 75 x 93	Z8224D	XZ08224D	42
24 Vdc	DPDT	5 A	16	E/CN	250 x 75 x 93	R162E24	XR162E24	43
24 Vdc	DPDT	5 A	16	E/CP	250 x 75 x 93	R162E24P	XR162E24P	43
24 Vdc	DPDT	5 A	16	Z/CN	250 x 75 x 93	Z16224D	XZ16224D	43
24 Vac/dc	SPST(NO)	8 A	8	E/CU	35 x 119 x 108	CRE8-1	XCRE81	55
24 Vac/dc	SPST(NO)	8 A	8	S/CU	22.5 x 119 x 108	CR8-1	XCR81	55
24 Vac/dc	SPST(NO)	8 A	8	S/CU	22.5 x 119 x 108	CR8-2	XCR82	56
24 Vac/dc	SPST(NO)	8 A	8	E/CU/IDC	35 x 119 x 108	CRE8-3	XCRE83	56
24 Vac/dc	SPST(NO)	8 A	8	E/CU/IDC	22.5 x 119 x 108	CR8-3	XCR83	56
24 Vac/dc	SPDT	8 A	4	E/CU	35 x 119 x 108	CRE4-1	XCRE41	53
24 Vac/dc	SPDT	8 A	4	S/CU	22.5 x 119 x 108	CR4-1	XCR41	53
24 Vac/dc	SPDT	8 A	4	S/CU	22.5 x 119 x 108	CR4-2	XCR42	53
24 Vac/dc	SPDT	8 A	4	E/CU/IDC	35 x 119 x 108	CRE4-3	XCRE43	54
24 Vac/dc	SPDT	8 A	4	E/CU/IDC	22.5 x 119 x 108	CR4-3	XCR43	54
24 Vac/dc	SPDT	8 A	4	E/CU/IDC	22.5 x 119 x 108	CR4-4	XCR44	54
24 Vac/dc	SPDT	8 A	4	S/CU/F	22.5 x 119 x 108	CR4F-1	XCR4F1	57
24 Vac/dc	SPDT	10 A	4	E/CU	70 x 75 x 93	R41EAD	XR041EAD	43
24 Vac/dc	SPDT	10 A	4	E/CU/F	70 x 75 x 93	R41U24F	XR041U24F	50
24 Vac/dc	SPDT	10 A	8	E/CU	137 x 75 x 93	R81EAD	XR081EAD	43
24 Vac/dc	SPDT	10 A	8	E/CU/F	137 x 75 x 93	R81U24F	XR081U24F	50
24 Vac/dc	SPDT	10 A	8	E/CU/PU	137 x 75 x 93	RP8124	XRP08124	52
24 Vac/dc	SPDT	10 A	8	E/CU/PU/DS	137 x 75 x 93	RD8124	XRD08124	52
24 Vac/dc	SPDT	10 A	12	E/CU/F	192 x 75 x 93	R121U24F	XR121U24F	51
24 Vac/dc	SPDT	10 A	16	E/CU	250 x 75 x 93	R161EAD	XR161EAD	44
24 Vac/dc	SPDT	10 A	16	E/CU/F	257 x 75 x 93	R161U24F	XR161U24F	51
24 Vac/dc	DPDT	5 A	4	E/CU	70 x 75 x 93	R42EAD	XR042EAD	48
24 Vac/dc	DPDT	5 A	8	E/CU	137 x 75 x 93	R82EAD	XR082EAD	48
24 Vac/dc	DPDT	5 A	16	E/CU	250 x 75 x 93	R162EAD	XR162EAD	49
24 Vac/dc	DPDT	8 A	4	E/CU	35 x 119 x 108	CRE4-2SC	XCRE42SC	55
24 Vac/dc	DPDT	8 A	4	S/CU	22.5 x 119 x 108	CR4-2SC	XCR42SC	55
48 Vdc	DPDT	5 A	16	E/CN	251 x 75 x 93	R162E48	XR162E48	42
110–125 Vac/dc	SPDT	10 A	4	E/CU	70 x 75 x 93	R41E11A	XR041E1A	44
110–125 Vac/dc	SPDT	10 A	8	E/CU	137 x 75 x 93	R81E11A	XR081E1A	45
110–125 Vac/dc	SPDT	10 A	16	E/CU	250 x 75 x 93	R161E11A	XR161E1A	45
230 Vac	SPDT	10 A	4	E/CU	70 x 75 x 93	R41E22A	XR041E2A	46
230 Vac	SPDT	10 A	8	E/CU	137 x 75 x 93	R81E22A	XR081E2A	46
230 Vac	SPDT	10 A	16	E/CU	230 x 75 x 93	R161E22A	XR161E2A	47

E = pluggable relay / S = fixed relay / Z = with socket but without relay / CN = negative common of the coil / CP = positive common of the coil / CU = universal control voltage (positive & negative) / IDC = with connector input command (IDC or D-Sub) / F = with the fuse on the contact of the relay / PU = with push button command / DS = with dip-switch command

DC Multi-relay modules
CRN Series

- Pluggable relay
- 11, 21...81 contact connected on C terminals
- Protection fuse on the common of the contacts
- Very compact design

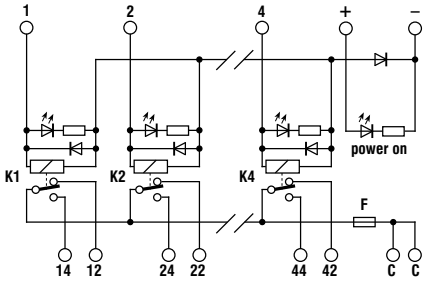


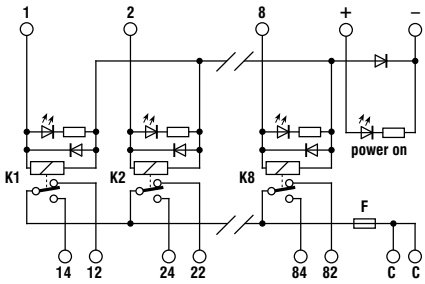


BLOCK DIAGRAMS / NOTES

(1) Available upon request.
(2) The continuous current of the common is 10 A (16 A max), this value must be leaves again among the present relays on the module. The presence of the fuse limits the value of the current to the value of the same fuse, it is possible to employ to the place of the same the short circuit bar CO/5 (code VL103).

Block diagram





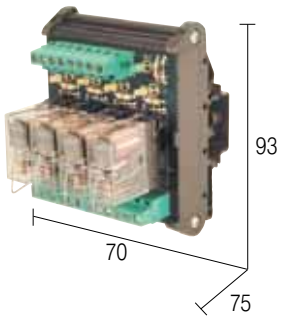
VERSION		
Pluggable relay, negative common	**CRN04** (1) Cod. XCRN04	**CRN08** Cod. XCRN08
Fixed relay, negative common	(1)	(1)
Socket without relay, negative common	–	–

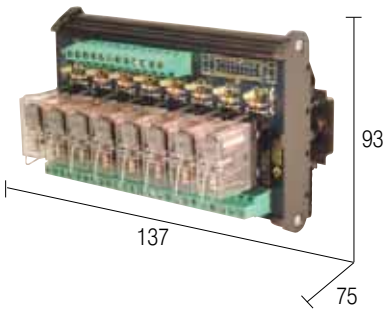
INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	20 mA	20 mA
Turn ON time	5 ms	5 ms
Turn OFF time	3 ms	3 ms
Terminals / connectors	terminal blocks1.5 mm²	terminal blocks 2.5 mm² and IDC 16 pole

OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 4 relay	SPDT x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	6 A (2)	6 A (2)
Current breaking power	6 A (2)	6 A (2)
Terminals / connectors	1.5 mm²	terminal blocks 2.5 mm²
Isolation between the channel	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 60°C	- 10 – 60°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	NaiS APE 30024	NaiS APE 30024
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	–	–
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT DC Multi-relay modules

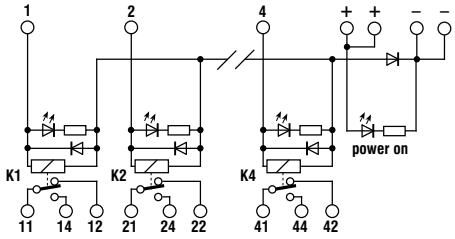


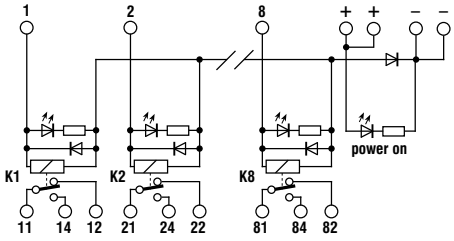


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION

Pluggable relay, negative common	**R41E24**	Cod. XR041E24	**R81E24**	Cod. XR081E24
Pluggable relay, positive common	**R41E24P**	Cod. XR041E24P	**R81E24P**	Cod. XR081E24P
Socket without relay, negative common	**Z4124D**	Cod. XZ04124D	**Z8124D**	Cod. XZ08124D

INPUT TECHNICAL DATA

Rated voltage	24 Vac / dc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	25 mA ± 10%	20 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

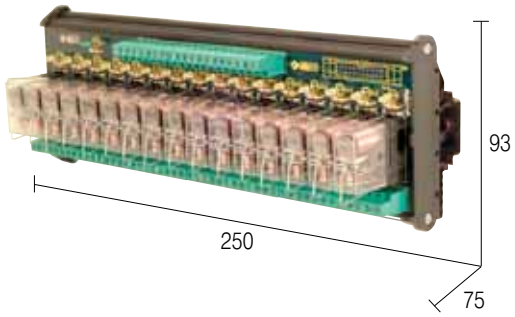
OUTPUT TECHNICAL DATA

Type and number of contact	SPDT x 4 relay	SPDT x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1	IEC 664-1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	188 g (pluggable relay version)	342 g (pluggable relay version)
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

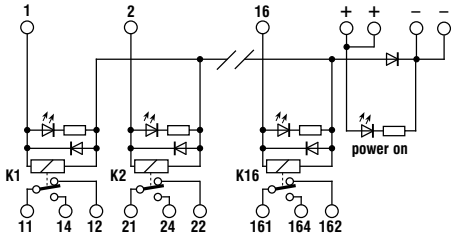
SPDT DC Multi-relay modules



BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram



VERSION

Pluggable relay, negative common	**R161E24**	Cod. XR161E24
Pluggable relay, positive common	**R161E24P**	Cod. XR161E24P
Socket without relay, negative common	**Z16124D**	Cod. XZ16124D

INPUT TECHNICAL DATA

Rated voltage	24 Vdc ± 10%
Rated current (1 channel)	20 mA ± 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Terminals / connectors	terminal blocks 2.5 mm²

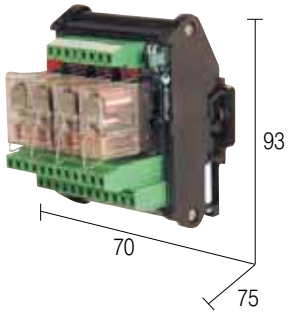
OUTPUT TECHNICAL DATA

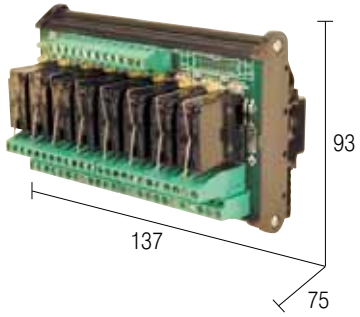
Type and number of contact	SPDT x 16 relay
Rated voltage	250 Vac
Rated voltage	10 A
Current breaking power	10 A
Terminals / connectors	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s

GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1
Pollution degree	2
Overvoltage category	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	657 g (pluggable relay version)
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

DPDT DC Multi-relay modules

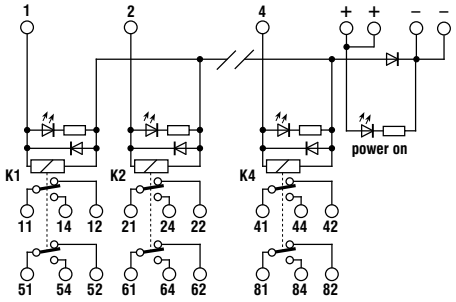


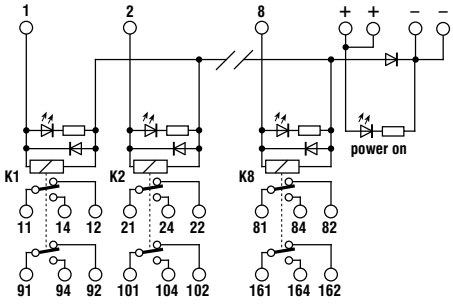


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION		
Pluggable relay, negative common	**R42E24**	Cod. XR042E24
Pluggable relay, positive common	**R42E24P**	Cod. XR042E24P
Socket without relay, negative common	**Z4224D**	Cod. XZ4224D

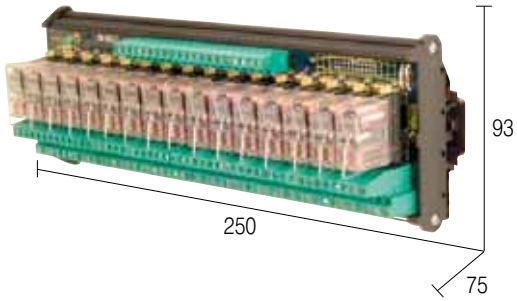
VERSION		
Pluggable relay, negative common	**R82E24**	Cod. XR082E24
Pluggable relay, positive common	**R82E24P**	Cod. XR082E24P
Socket without relay, negative common	**Z8224D**	Cod. XZ08224D

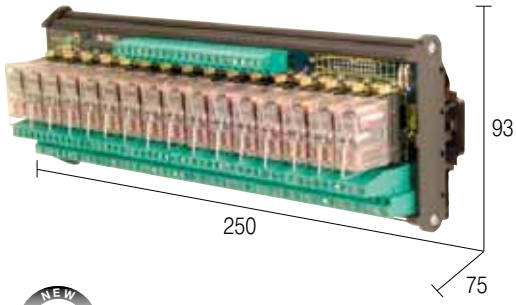
INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	20 mA ± 10%	20 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA		
Type and number of contact	DPDT x 4 relay	DPDT x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	5 A	5 A
Current breaking power	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1	IEC 664-1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	225 g (pluggable relay version)	419 g (pluggable relay version)
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

DPDT DC Multi-relay modules

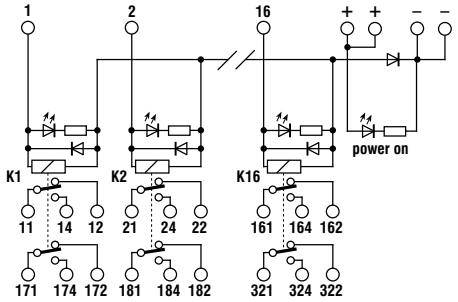




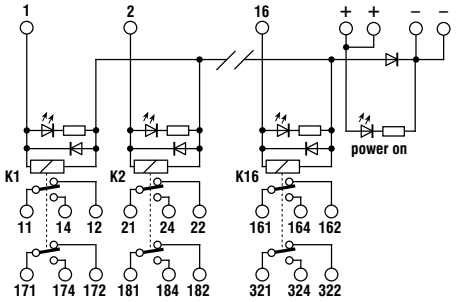
BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

Block diagram



Block diagram



VERSION

Pluggable relay, negative common	**R162E24**	Cod. XR162E24	**R162E48** (2)	Cod. XR162E48
Pluggable relay, positive common	**R162E24P**	Cod. XR162E24P	–	
Socket without relay, negative common	**Z16224D**	Cod. XZ16224D	–	

INPUT TECHNICAL DATA

Rated voltage	24 Vdc ± 10%	48 Vdc ± 10%
Rated current (1 channel)	20 mA ± 10%	16 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA

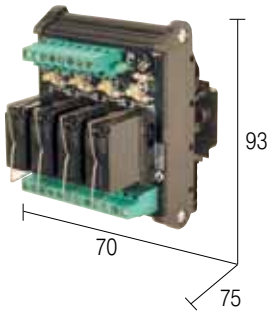
Type and number of contact	DPDT x 16 relay	DPDT x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	5 A	5 A
Current breaking power	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

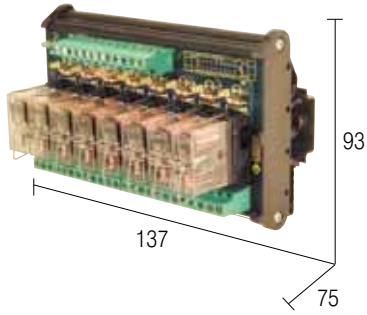
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1	IEC 664-1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52	–
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	811 g	811 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT AC/DC Multi-relay modules

- DC and AC control voltage
- Positive or negative control voltage





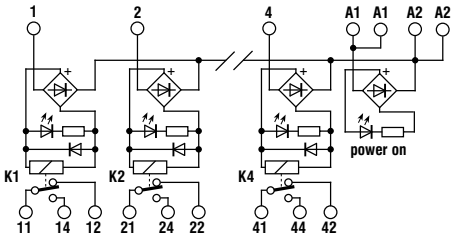
BLOCK DIAGRAMS / NOTES

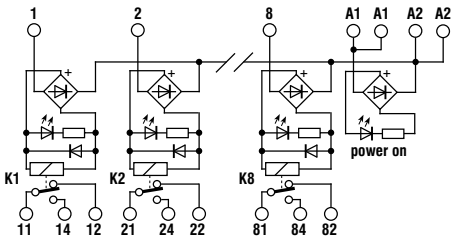
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

Block diagram





VERSION

Pluggable relay
Socket without relay

R41EAD Cod. XR041EAD (2)

R81EAD Cod. XR081EAD (2)

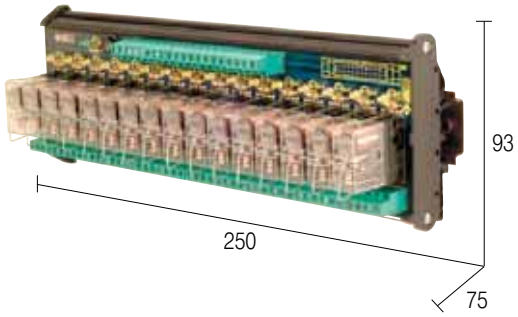
INPUT TECHNICAL DATA	R41EAD	R81EAD
Rated voltage	24 Vac/dc ± 10%	24 Vac/dc ± 10%
Rated current (1 channel)	25 mA ± 10%	25 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

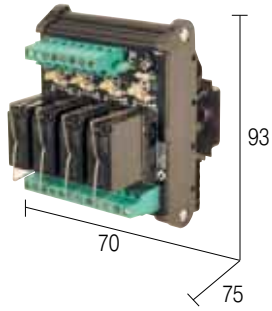
OUTPUT TECHNICAL DATA	R41EAD	R81EAD
Type and number of contact	SPDT x 4 relay	SPDT x 8 relay
Rated voltage	250 Vac / 250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA	R41EAD	R81EAD
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	192 g	345 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT AC/DC Multi-relay modules

- DC and AC control voltage
- Positive or negative control voltage





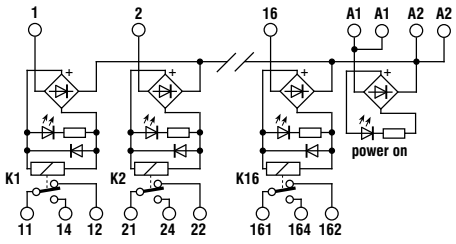
BLOCK DIAGRAMS / NOTES

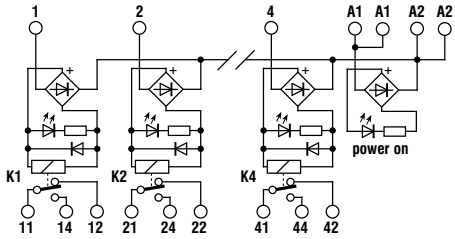
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

Block diagram





VERSION		
Pluggable relay	**R161EAD** Cod. XR161EAD (2)	**R41E11A** Cod. XR041E1A
Socket without relay		–

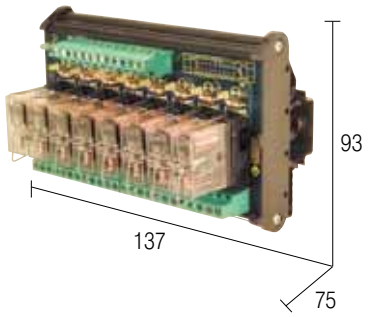
INPUT TECHNICAL DATA		
Rated voltage	24 Vac/dc ± 10%	110 – 125 Vac/dc
Rated current (1 channel)	25 mA ± 10%	11 mA
Turn ON time	15 ms	15 ms
Turn OFF time	20 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

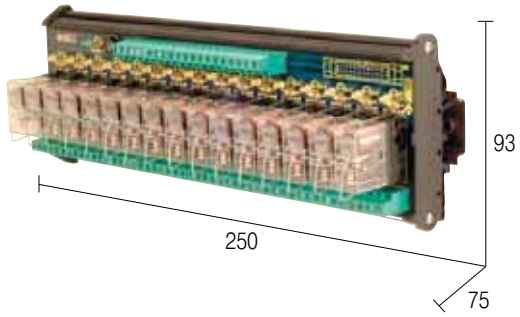
OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 16 relay	SPDT x 4 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	FINDER 40.31.125 VDC
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	688 g	192 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT AC/DC Multi-relay modules

- DC and AC control voltage
- Positive or negative control voltage





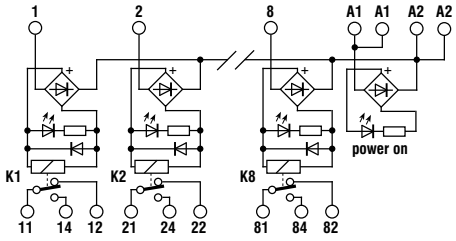
BLOCK DIAGRAMS / NOTES

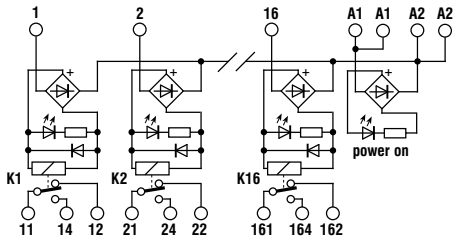
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

Block diagram





VERSION

Pluggable relay	**R81E11A**	Cod. XR081E1A
Socket without relay	–	

Pluggable relay	**R161E11A**	Cod. XR161E1A
Socket without relay	–	

INPUT TECHNICAL DATA

Rated voltage	110 – 125 Vac/dc	110 – 125 Vac/dc
Rated current (1 channel)	11 mA ± 10%	11 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	20 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

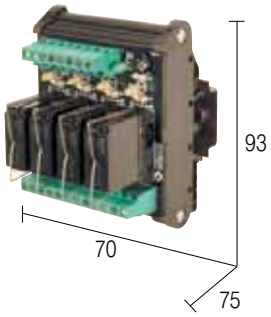
OUTPUT TECHNICAL DATA

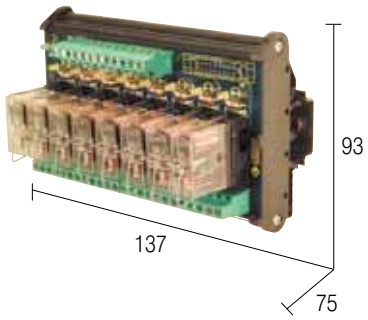
Type and number of contact	SPDT x 8 relay	SPDT x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	FINDER 40.31.125 VDC	FINDER 40.31.125 VDC
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	345 g	688 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

SPDT AC Multi-relay modules

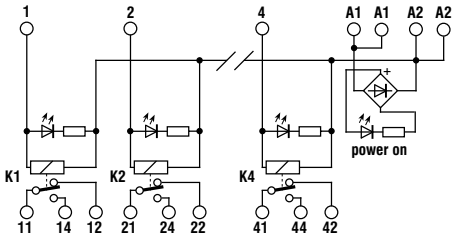


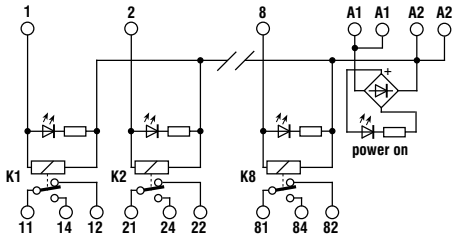


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





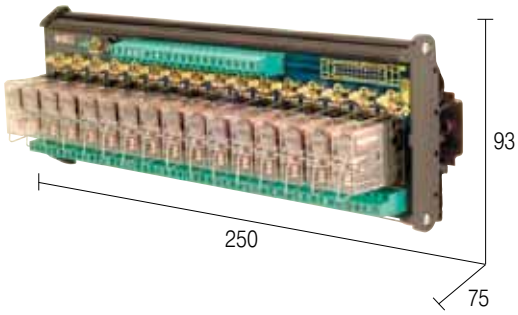
VERSION		
Pluggable relay	**R41E22A**	Cod. XR041E2A
Socket without relay	–	
	R81E22A	Cod. XR081E2A
	–	

INPUT TECHNICAL DATA		
Rated voltage	230 Vac ± 10%	230 Vac ± 10%
Rated current (1 channel)	6 mA ± 10%	6 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	10 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 4 relay	SPDT x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1-220 VAC	OMRON G2R-1-220 VAC
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	192 g	345 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

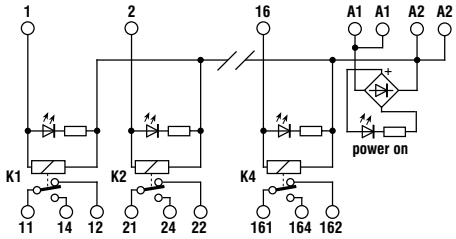
SPDT AC Multi-relay modules



BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram



VERSION

Pluggable relay	**R161E22A**	Cod. XR161E2A
Socket without relay	–	

INPUT TECHNICAL DATA

Rated voltage	230 Vac ± 10%
Rated current (1 channel)	6 mA ± 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Terminals / connectors	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA

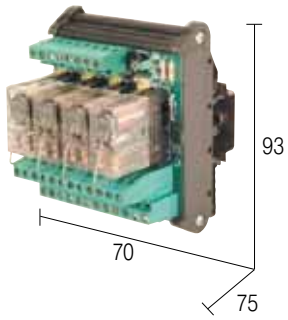
Type and number of contact	SPDT x 16 relay
Rated voltage	250 Vac
Rated voltage	10 A
Current breaking power	10 A
Terminals / connectors	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s

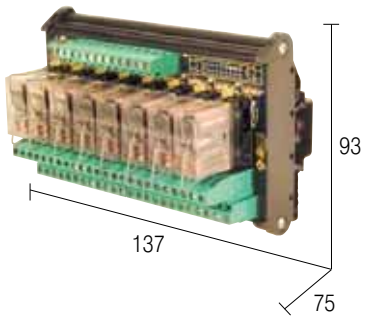
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	OMRON G2R-1-220 Vac
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	688 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

DPDT AC/PC Multi-relay modules

- DC and AC control voltage
- Positive or negative control voltage





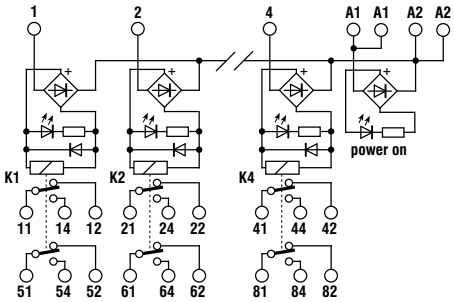
BLOCK DIAGRAMS / NOTES

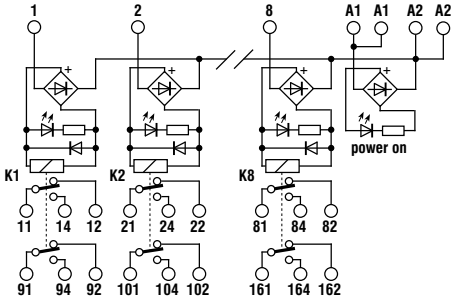
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

Block diagram





VERSION

Pluggable relay
Socket without relay

R42EAD Cod. XR042EAD (2)

R82EAD Cod. XR082EAD (2)

INPUT TECHNICAL DATA

Rated voltage	24 Vac / dc ± 10%	24 Vac / dc ± 10%
Rated current (1 channel)	25 mA ± 10%	25 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

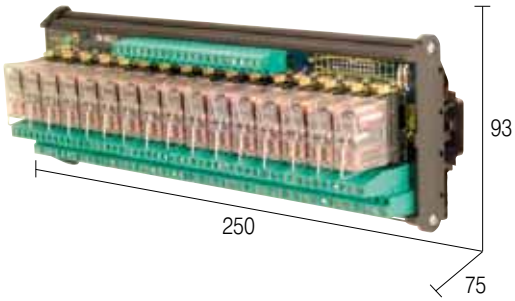
OUTPUT TECHNICAL DATA

Type and number of contact	DPDT x 4 relay	DPDT x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	5 A	5 A
Current breaking power	5 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	227 g	427 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

DPDT AC/PC Multi-relay modules



- DC and AC control voltage
- Positive or negative control voltage

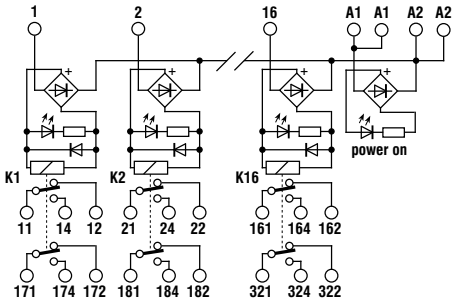
BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) Available upon request.

POWER SUPPLY

A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

Block diagram



VERSION

Pluggable relay
Socket without relay

R162EAD Cod. XR162EAD (2)

INPUT TECHNICAL DATA

Rated voltage	24 Vac / dc ± 10%
Rated current (1 channel)	25 mA ± 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Terminals / connectors	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA

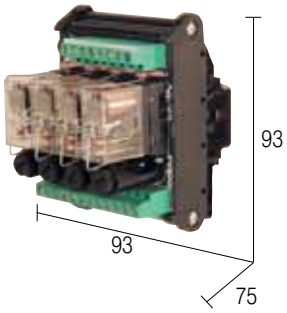
Type and number of contact	DPDT x 16 relay
Rated voltage	250 Vac /250 Vac
Rated voltage	10 A
Current breaking power	10 A
Terminals / connectors	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s

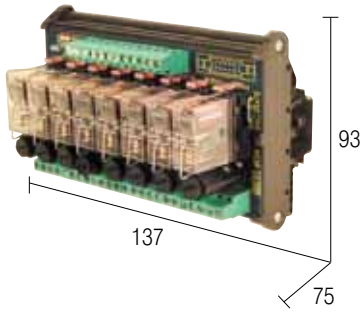
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	835 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Multi-relay modules with protection fuse

- Output contact with protection fuse
- AC/DC control voltage
- Positive or negative control voltage





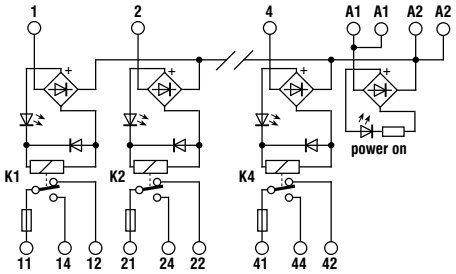
POWER SUPPLY

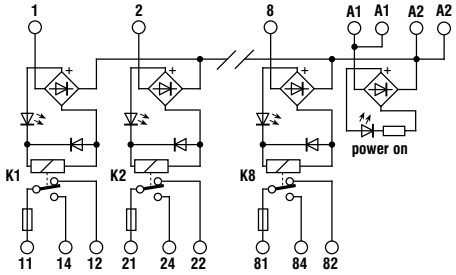
A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(3) 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 fuse-holder. Fuses of a higher value may damage the fuse-holder and module.

Block diagram

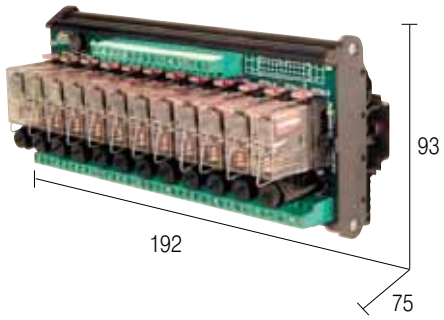


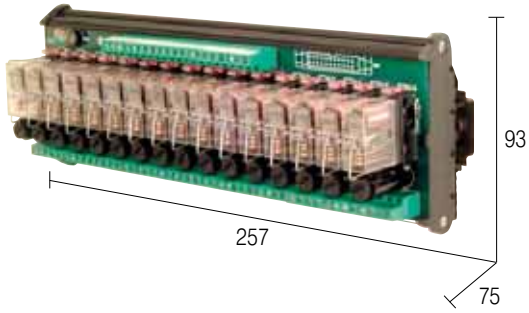


VERSION	R41U24F	R81U24F
Pluggable relay	Cod. XR041U24F	Cod. XR081U24F
INPUT TECHNICAL DATA		
Rated voltage	24 Vac / dc ± 10%	24 Vac / dc ± 10%
Rated current (1 channel)	20 mA ± 10%	20 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	10 ms	10 ms
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 4 relay	SPDT x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s
Current of the fuse max.	6.3 A / 5 x 20 (3)	6.3 A / 5 x 20 (3)
Current of the fuse holder max.	10 A / 250 Vac	10 A / 250 Vac
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN; FINDER 40.31	OMRON G2R-1, NAIS JW1FSN; FINDER 40.31
Status display	LED	LED
Housing material	polyamide UL94	polyamide UL94
Approximative weight	210 g	326 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Multi-relay modules with protection fuse

- Output contact with protection fuse
- AC/DC control voltage
- Positive or negative control voltage





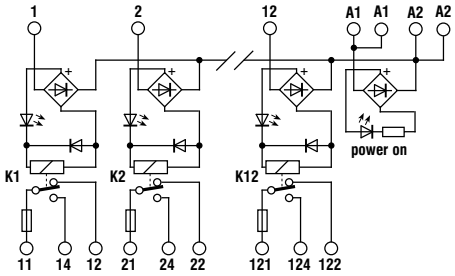
POWER SUPPLY

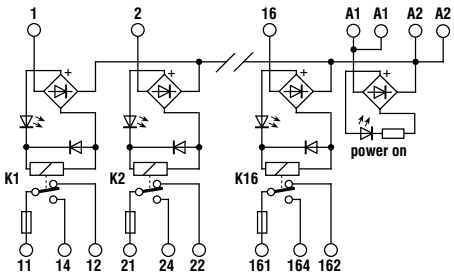
A1 = +	A2 = -	negative common
A1 = -	A2 = +	positive common

BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(3) 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 fuse-holder. Fuses of a higher value may damage the fuse-holder and module.

Block diagram





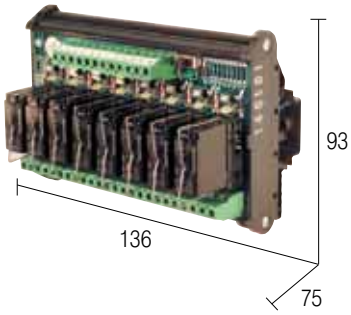
VERSION

Pluggable relay

	R121U24F	Cod. XR121U24F	**R161U24F**	Cod. XR161U24F
INPUT TECHNICAL DATA				
Rated voltage	24 Vac / dc ± 10%		24 Vac / dc ± 10%	
Rated current (1 channel)	20 mA ± 10%		20 mA ± 10%	
Turn ON time	15 ms		15 ms	
Turn OFF time	10 ms		10 ms	
Terminals / connectors	terminal blocks 2.5 mm²		terminal blocks 2.5 mm²	
OUTPUT TECHNICAL DATA				
Type and number of contact	SPDT x 12 relay		SPDT x 16 relay	
Rated voltage	250 Vac		250 Vac	
Rated voltage	10 A		10 A	
Current breaking power	10 A		10 A	
Terminals / connectors	terminal blocks 2.5 mm²		terminal blocks 2.5 mm²	
Isolation between output terminals	1 K Vac / 60 s		1 K Vac / 60 s	
Current of the fuse max.	6.3 A / 5 x 20 (3)		6.3 A / 5 x 20 (3)	
Current of the fuse holder max.	10 A / 250 Vac		10 A / 250 Vac	
GENERAL TECHNICAL DATA				
Operating temperature	- 10 – 50°C		- 10 – 50°C	
Coil / contact isolation	2.5 kVac / 60 s		2.5 kVac / 60 s	
Protection degree	IP 00		IP 00	
Reference standards	IEC 664-1, DIN VDE 0110.1		IEC 664-1, DIN VDE 0110.1	
Pollution degree	2		2	
Overvoltage category	3		3	
Relay model (1)	OMRON G2R-1, NAIS JW1FSN; FINDER 40.31		OMRON G2R-1, NAIS JW1FSN; FINDER 40.31	
Status display	LED		LED	
Housing material	polyamide UL94		polyamide UL94V-0	
Approximative weight	577 g		770 g	
Mounting information	adjacent without gap		adjacent without gap	
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**		**PR/3/0AC - PR/3/AS**	
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**		**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	

Multi-relay module with push button

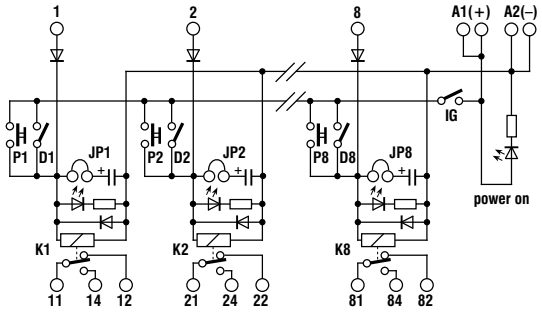
- AC/DC control
- Negative control voltage



BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram



P = *push button*
D = *Dip-Switch*
IG = *master switch (disable the push button and dip-switch*
JP = *bridge for AC command, cut on DC command for enable the capacitor*

VERSION

With push button command	**RP08124**	Cod. XRP08124
With dip-switch command	**RD08124**	Cod. XRD08124

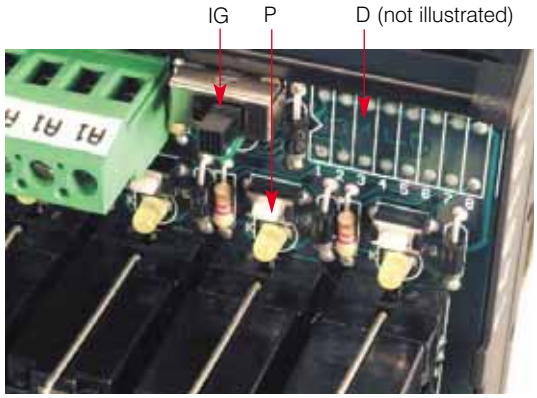
INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc ± 10%
Rated current (1 channel)	25 mA ± 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Terminals / connectors	terminal blocks 2.5 mm²

*This series of products allows piloting with alternating and direct current, in which case **only negative control** is possible. We also recommend cutting JP jumpers should piloting take place via low-current devices (e.g. proximity sensors).*
On both versions it is possible the temporary turn on of the relay pushing the relative push button.
On the model RD08124 it is possible to switch on the relays permanently with a Dip-Switch.

OUTPUT TECHNICAL DATA

Type and number of contact	SPDT x 8 relay
Rated voltage	250 Vac
Rated voltage	10 A
Current breaking power	10 A
Terminals / connectors	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s

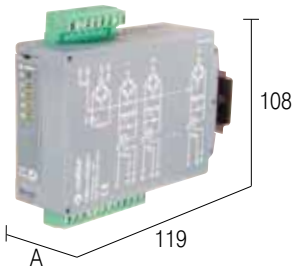


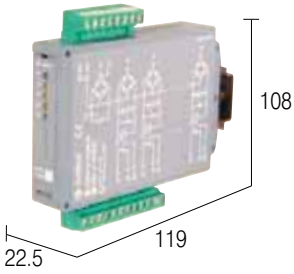
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	350 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Super compact relay modules CR & CRE Series

- 3 kV IN/OUT isolation
- 1 kV isolation between output contact
- fast and sure connection whit pluggable terminals or I.D.C. connector





A = 22.5 mm CR version, 35 mm CRE version

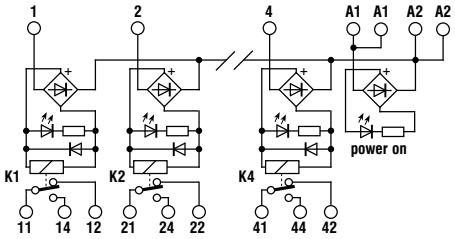
BLOCK DIAGRAMS / NOTES

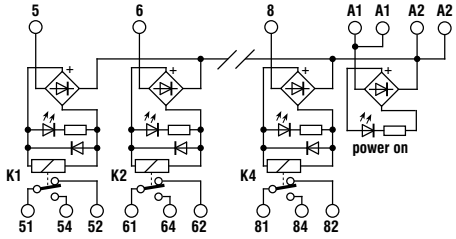
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

CR4-1 and **CRE4-1**: 4 relay module with SPDT, inputs and outputs with pluggable terminals.

CR4-2: expansion module (4 relays with codes K5....K8, contacts with codes 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





VERSION

Pluggable relay	**CRE4-1**	Cod. XCRE41	–	
Fixed relay	**CR4-1**	Cod. XCR41	**CR4-2**	Cod. XCR42

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc ± 10%	24 Vac/dc ± 10%
Rated current (1 channel)	16 mA ± 10%	16 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable

OUTPUT TECHNICAL DATA

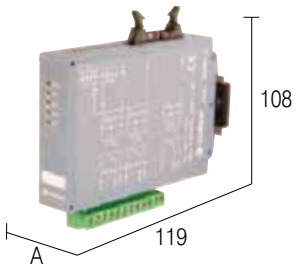
Type and number of contact	SPDT x 4 relay	SPDT x 4 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	2000 VA	2000 A
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

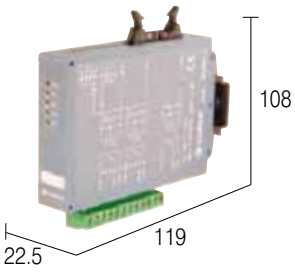
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	3 kVac / 60 s	3 kVac / 60 s
Protection degree	IP20	IP20
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	143 g (180 g pluggable version)	143 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Super compact relay modules
CR & CRE Series

- 3 kV IN/OUT isolation
- 1 kV isolation between output contact
- fast and sure connection whit pluggable terminals or I.D.C. connector





A = 22.5 mm CR version, 35 mm CRE version

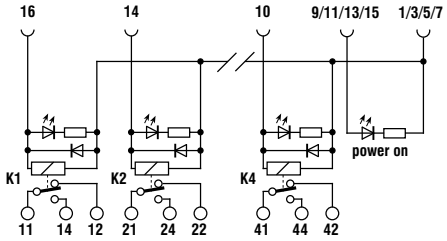
BLOCK DIAGRAMS / NOTES

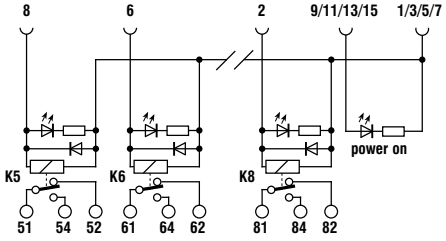
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

CR4-3 and **CRE4-1**: same as CR4-1, input with 16-pole I.D.C. connector and outputs with pluggable terminals.

CR4-4: expansion module (4 relays with codes K5....K8, contacts with codes 51-52-53 ...81-82-84) input with 16-pole I.D.C. connector which, combined with the CR4-3, enables 8 relays to be obtained, with SPDT in 45 mm width.

Block diagram





VERSION		
Pluggable relay	**CRE4-3** Cod. XCRE43	–
Fixed relay	**CR4-3** Cod. XCR43	**CR4-4** Cod. XCR44

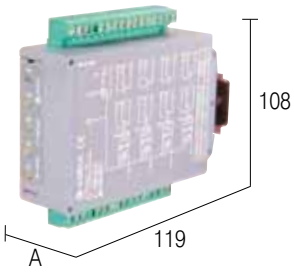
INPUT TECHNICAL DATA		
Rated voltage	24 Vac/dc ± 10%	24 Vac/dc ± 10%
Rated current (1 channel)	16 mA ± 10%	16 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	flat cable 16 poles	flat cable 16 poles

OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 4 relay	SPDT x 4 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	2000 VA	2000 A
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s
Current of the fuse max.		
Current of the fuse holder max.		

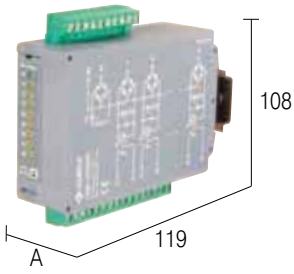
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	3 kVac / 60 s	3 kVac / 60 s
Protection degree	IP20	IP20
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	137 g (180 g pluggable version)	137 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Super compact relay modules CR & CRE Series

- 3 kV IN/OUT isolation
- 1 kV isolation between output contact
- fast and sure connection whit pluggable terminals or I.D.C. connector



A = 22.5 mm versione CR, 35 mm versione CRE



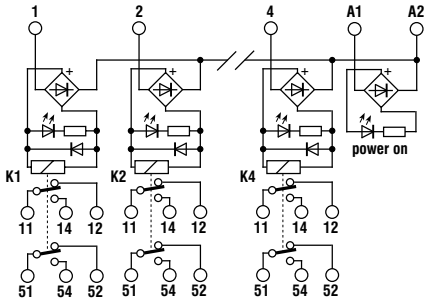
A = 22.5 mm versione CR, 35 mm versione CRE

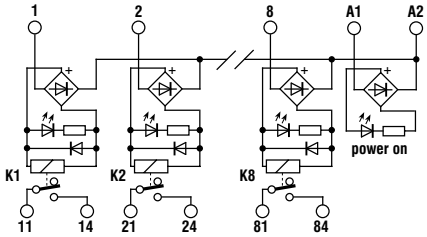
BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

CR8-1 and **CR8E-1**: 8 relay module with SPST (NO), inputs and outputs with pluggable terminals.

Block diagram





VERSION

Pluggable relay	**CRE4-2SC**	Cod. XCRE42SC	**CRE8-1**	Cod. XCRE81
Fixed relay	**CR4-2SC**	Cod. XCR42SC	**CR8-1**	Cod. XCR81

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc ± 10%	24 Vac/dc ± 10%
Rated current (1 channel)	16.6 mA ± 10%	16 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable

OUTPUT TECHNICAL DATA

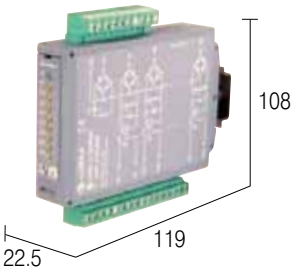
Type and number of contact	DPDT x 4 relay	SPST(NO) x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	8 A 250 Vac	10 A
Current breaking power	2000 AV	2000 VA
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

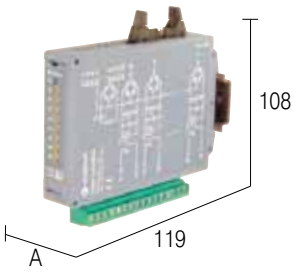
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	4 kVac / 60 s	3 kVac / 60 s
Protection degree	IP20	IP20
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	137 g (180 g pluggable version)	199 g (250 g pluggable version)
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Super compact relay modules
CR & CRE Series

- 3 kV IN/OUT isolation
- 1 kV isolation between output contact
- fast and sure connection whit pluggable terminals or I.D.C. connector





A = 22.5 mm versione CR, 35 mm versione CRE

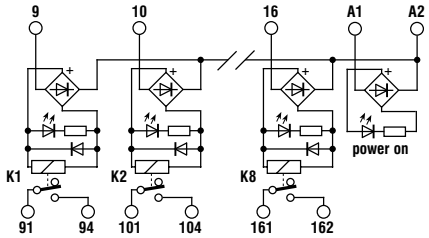
BLOCK DIAGRAMS / NOTES

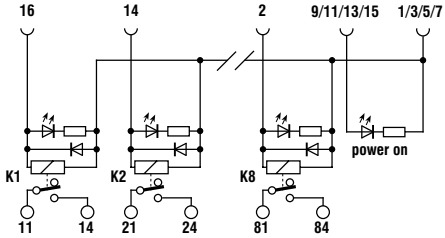
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

CR8-2: expansion module (8 relays with codes K9....K16, contacts with codes 91-94...161-164) which, combined with the CR8-1, allows to get a 16 relays module with SPST contacts in 45 mm width.

CR8-3 and **CRE8-3**: 8 relay module with SPST (NO), inputs with 16-pole I.D.C. connector suitable for Siemens S7 PLC, and outputs are equipped with pluggable terminals.

Block diagram





VERSION

Pluggable relay	–		**CRE8-3**	Cod. XCRE83
Fixed relay	**CR8-2**	Cod. XCR82	**CR8-3**	Cod. XCR83

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc ± 10%	24 Vac/dc ± 10%
Rated current (1 channel)	17 mA ± 10%	16 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm² pluggable	flat cable 16 poles

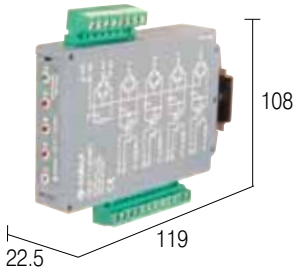
OUTPUT TECHNICAL DATA

Type and number of contact	SPST(NO) x 8 relay	SPST(NO) x 8 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A 250 Vac	10 A
Current breaking power	2000 VA	2000 VA
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	3 kVac / 60 s	3 kVac / 60 s
Protection degree	IP20	IP20
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	199 g	199 g (250 g pluggable version)
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Super compact relay modules with protection fuse

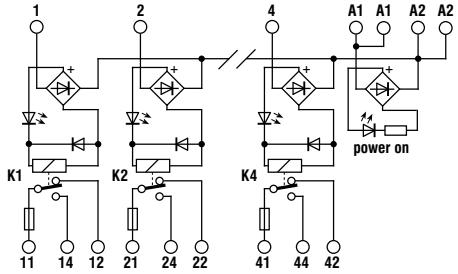


- Output contact protection fuse accessible on the front panel
- Very compact dimension
- 1 kV isolation between output contact
- fast and sure connection whit pluggable terminals

BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(2) The interface is supplied with a 6.3 A fuse
(3) 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



Protection fuse accessible from the openable front panel

VERSION

Pluggable relay	–	
Fixed relay	**CR4F-1**	Cod. XCR4F1

INPUT TECHNICAL DATA

Rated voltage	24 Vac/dc ± 10%
Rated current (1 channel)	17 mA ± 10%
Turn ON time	15 ms
Turn OFF time	5 ms
Terminals / connectors	terminal blocks 2.5 mm² pluggable

OUTPUT TECHNICAL DATA

Type and number of contact	SPDT x 4 relay
Rated voltage	250 Vac
Rated voltage	10 A
Current breaking power	2000 VA
Terminals / connectors	terminal blocks 2.5 mm² pluggable
Isolation between output terminals	1 K Vac / 60 s
Current of the fuse max.	6.3 A sec. EN60127 (2) (3)
Current of the fuse holder max.	10 A / 250 Vac

GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C
Coil / contact isolation	3 kVac / 60 s
Protection degree	IP20
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43
Status display	LED
Housing material	polyamide 6.6 VO sec. UL94
Approximative weight	185 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

PLC / CN interface modules selection table

Output modules

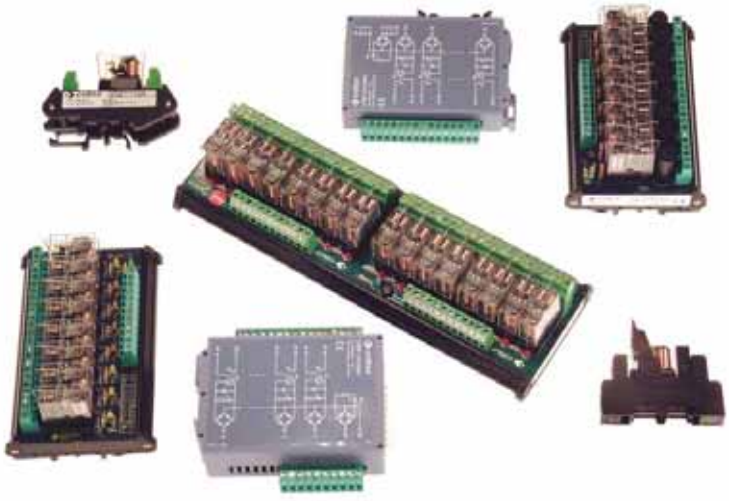
INPUT rated voltage	OUTPUT type of the contact	OUTPUT rated current	RELAY INFORMATION number of the relay	RELAY INFORMATION type PLC/CN	DIMENSION A x B x C (mm)	TYPE	CODE	PAGE
24 Vdc	SPDT/SPST(NO)	10 A	24	Siemens 850	198 x 198 x 75	C24S850	XC24S850	65
24 Vdc	SPDT/SPST(NO)	10 A	32	Siemens 850	198 x 198 x 75	C32S850	XC32S850	65
24 Vdc	SPDT	6 A	8	Siemens S7	60 x 65 x 93	CRN08	XCRN08	62
24 Vdc	SPST(NO)	8 A	8	Siemens S7	22.5 x 119 x 108	CR8-3	XCR83	60
24 Vdc	SPST(NO)	8 A	8	Siemens S7	35 x 119 x 108	CRE8-3	XCRE83	60
24 Vdc	SPDT	10 A	8	Siemens S7	132 x 75 x 93	RFE8124	XRFE8124	60
24 Vdc	SPDT	10 A	8	Siemens S7	137 x 75 x 93	RFE8124K	XRFE8124K	60
24 Vdc	SPDT	10 A	8	Siemens S7	132 x 75 x 93	R81F24F	XR81F24F	61
24 Vdc	DPDT	5 A	8	Siemens S7	132 x 75 x 93	RFE8224	XRFE8224	61
24 Vdc	DPDT	5 A	8	Siemens S7	137 x 75 x 93	RFE8224K	XRFE8224K	61
24 Vdc	SPDT/SPST(NO)	10 A	24	Fanuc M16	198 x 198 x 75	C24FM16	XC24FM16	66
24 Vdc	SPDT/SPST(NO)	10 A	40	Fanuc M16	198 x 198 x 75	C40FM16	XC40Fç16	66
24 Vdc	SPDT	10 A	16	Telemecanique	250 x 75 x 93	RFE16124	XRFE16124	63
24 Vdc	DPDT	5 A	16	Telemecanique	250 x 75 x 93	RFE16224	XRFE16224	63
24 Vdc	SPDT	10 A	8	Sia Burgess	132 x 75 x 93	CH081PCD/O	XK010597	64
24 Vdc	SPDT	10 A	16	ECS	250 x 75 x 93	C16ECS1	XC16ECS1	67

Input modules

INPUT tipo di connessione	OUTPUT number of the channel	RELAY INFORMATION typology	RELAY INFORMATION type PLC/CN	DIMENSION A x B x C (mm)	TYPE	CODE	PAGE
I.D.C. 16 poles x 1	8 without isolation	–	Siemens S7	50 x 78 x 93	IF16S7	XIF16S7	59
I.D.C. 16 poles x 1	8 without isolation	L	Siemens S7	50 x 78 x 93	IF16LS7	XIF16LS7	59
I.D.C. 16 poles x 4	32 without isolation	–	Siemens S7	110 x 78 x 93	IF16S7	XIF16S7	59
I.DC. 16 poles x 4	32 without isolation	L	Siemens S7	110 x 78 x 93	IF16LS7	XIF16LS7	59
I.D.C. 10 poles x 1	8 without isolation	–	Sia Burgess	68 x 78 x 93	CH08PCD/I	XK010097	64

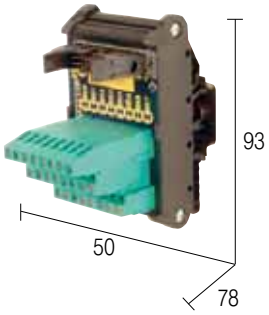
Legend

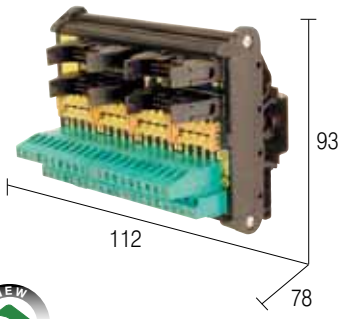
L = with LED for display signal



S7 300 & S7 400 Interface modules

- I/O modules
- With or without LED to display the status
- Fast and sure connection with I.D.C. connector

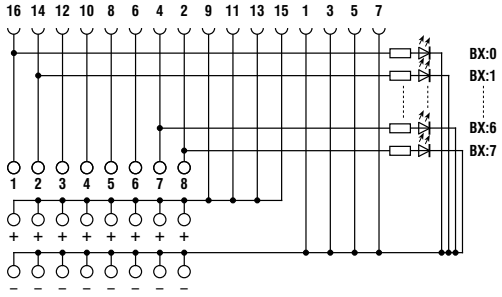


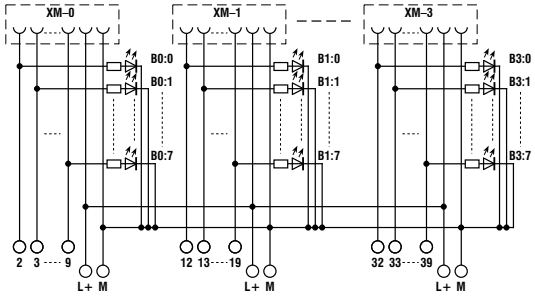


BLOCK DIAGRAMS / NOTES

(1) Available upon request.

Block diagram





VERSION

With LED to display the status	**IF16LS7** (1)	Cod. XIF16LS7	**IF416LS7**	Cod. XIF416LS7
Without LED to display the status	**IF16S7**	Cod. XIF16S7	**IF416S7**	Cod. XIF416S7

INPUT TECHNICAL DATA

Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	5 mA ± 10° (only on IF16LS7)	5 mA ± 10° (only on IF416LS7)
Turn ON time	–	–
Turn OFF time	–	–
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

OUTPUT TECHNICAL DATA

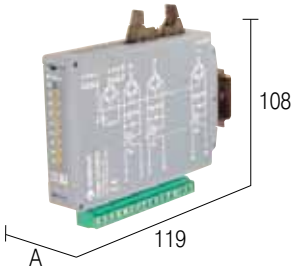
Type and number of contact	8 channel without isolation	4 x 8 channel without isolation
Rated voltage	–	–
Rated voltage	–	–
Current breaking power	–	–
Terminals / connectors	I.D.C. 16 poles male	I.D.C. 16 poles male
Isolation between output terminals		
Current of the fuse max.		
Current of the fuse holder max.		

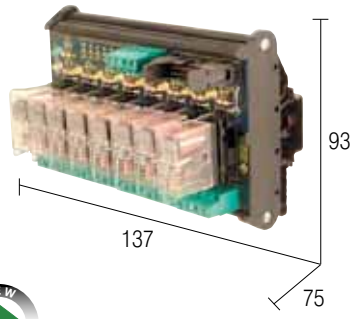
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	–	–
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1	IEC 664-1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	–	–
Status display	LED (only on IF16LS7)	LED (only on IF416LS7)
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	–	–
Mounting information	–	–
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

S7 300 & S7 400 Interface modules

- Very compact dimension
- Fast and sure connection with I.D.C. connector



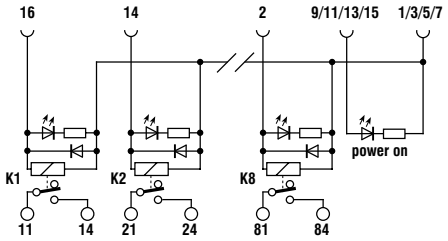


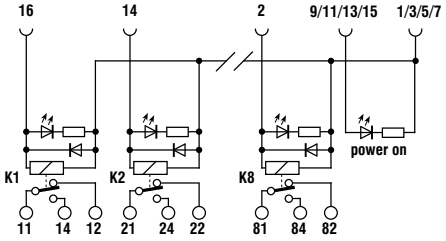
A = 22.5 mm CR version, 35 mm CRE version

BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION				
Pluggable relay	**CRE8-3**	Cod. XCRE83	**RFE8124**	Cod. XRFE8124
Fixed relay	**CR8-3**	Cod. XCR83	**RFE8124K**	Cod. XRFE8124K

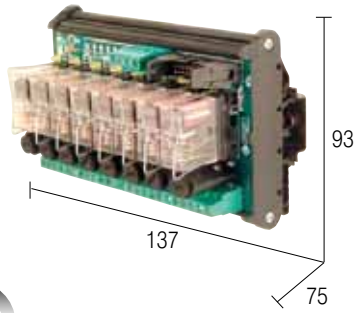
INPUT TECHNICAL DATA		
Rated voltage	24 Vac/dc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	16 mA ± 10%	20 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	10 ms
Terminals / connectors	I.D.C. 16 poles male	I.D.C. 16 poles male

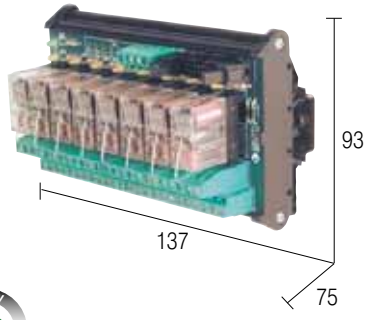
OUTPUT TECHNICAL DATA		
Type and number of contact	SPST(NO) x 8 relay	SPDT x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	2000 VA	10 A
Terminals / connectors	terminal blocks 2.5 mm^2 pluggable	terminal blocks 2.5 mm^2
Isolation between output terminals	1 K Vac / 60 s	1 kVac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	3 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP20	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G6RN, SCHRACK RYII, TAKAMISAWA FTR-H1, FINDER 43	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	199 g	342 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

S7 300 & S7 400 Interface modules

- Fast and sure connection with I.D.C. connector

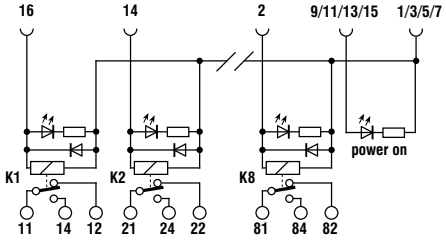


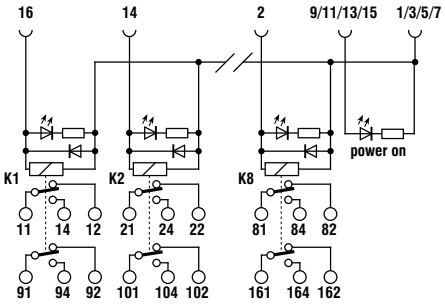


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION				
Pluggable relay	**R81F24F**	Cod. XR081F24F	**RFE8224**	Cod. XRFE8224
Fixed relay	–		**RFE8224K**	Cod. XRFE8224K

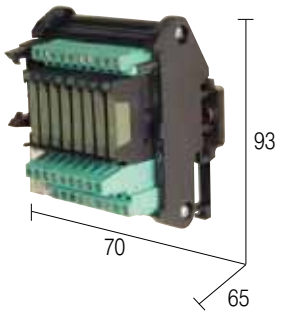
INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	20 mA ± 10%	20 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	10 ms	5 ms
Terminals / connectors	I.D.C. 16 poles male	I.D.C. 16 poles male

OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 8 relay	DPDT x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	5 A
Current breaking power	10 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 kVac / 60 s	1 K Vac / 60 s
Current of the fuse max.	6.3 A / 5 x 20	–
Current of the fuse holder max.	10 A / 250 Vac	–

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN; FINDER 40.31	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	326 g	419 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

S7 300 & S7 400 Interface modules

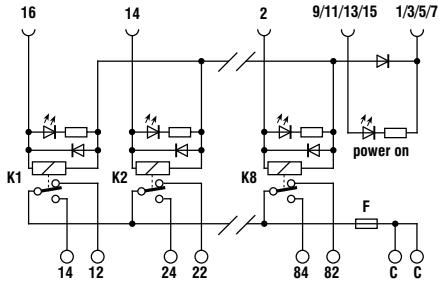
- Pluggable relay
- 11, 21...81 contact connected on C terminal
- Protection fuse on the common of the contacts
- Very compact dimension



BLOCK DIAGRAMS / NOTES

(1) Available upon request.
(2) The continuous current of the common is 10 A (16 A max), this value must be leaves again among the present relays on the module. The presence of the fuse limits the value of the current to the value of the same fuse, it is possible to employ to the place of the same the short circuit bar CO/5 (code VL103)

Block diagram



VERSION

	CRN08	Cod. XCRN08
Pluggable relay, negative common	(1)	
Fixed relay, negative common	–	
Socket without relay, negative common		

INPUT TECHNICAL DATA

Rated voltage	24 Vdc ± 10%
Rated current (1 channel)	20 mA
Turn ON time	5 ms
Turn OFF time	3 ms
Terminals / connectors	terminal blocks1.5 mm²

OUTPUT TECHNICAL DATA

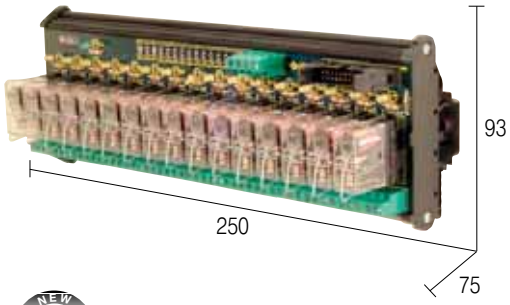
Type and number of contact	SPDT x 8 relay
Rated voltage	250 Vac
Rated voltage	6 A (2)
Current breaking power	6 A (2)
Terminals / connectors	1.5 mm²
Isolation between the channel	1 K Vac / 60 s

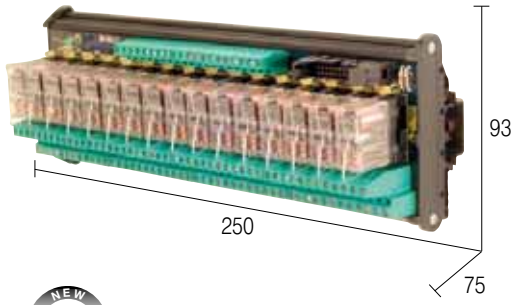
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 60°C
Coil / contact isolation	2.5 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	NaiS APE 30024
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	–
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Telemecanique PLC interface modules

- Fast and sure connection with I.D.C. connector
- Pluggable relay

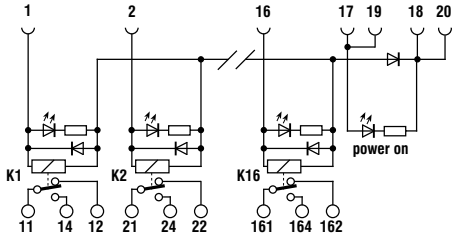


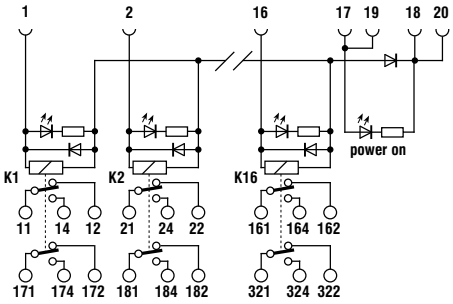


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION		
Pluggable relay	**RFE16124**	**RFE16224**
Fixed relay	–	–
	Cod. XRFE16124	Cod. XRFE16224

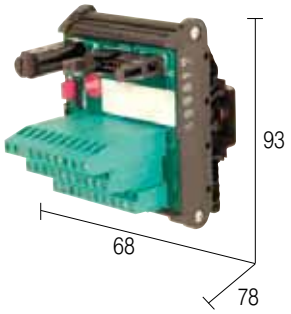
INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	20 mA ± 10%	20 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	I.D.C. 20 poles male	I.D.C. 20 pole male

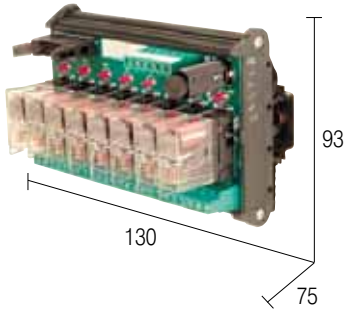
OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 16 relay	DPDT x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	5 A
Current breaking power	10 A	5 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1	IEC 664-1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	OMRON G2R-2, NAIS JW2FSN, FINDER 40.52
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	657 g	811 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

PCD Saia Burgess interface modules

- Fast and sure connection with I.D.C. connector
- Pluggable relay

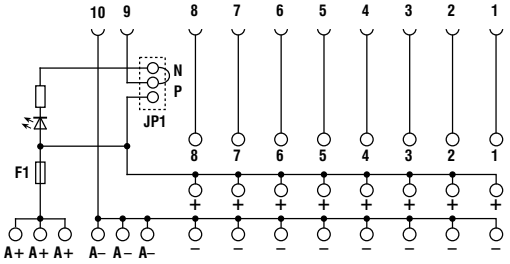


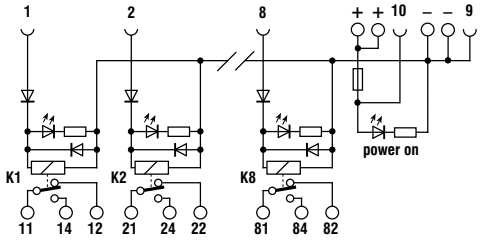


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
These modules are for PCD series of Saia Burgess with the output with the terminal blocks, they are "pin – to – pin" for a fast and easy connection with a cable.
For the PCD series with the output with I.D.C. connector can be use the RFE8124 and RFE8224 modules.

Block diagram





VERSION

8 bit input module	**CH08PCD/I**	Cod. XK010097
8 bit output module	–	**CH081PCD/O** Cod. XK010597

INPUT TECHNICAL DATA

Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	-	20 mA ± 10
Turn ON time	-	15 ms
Turn OFF time	-	5 ms
Terminals / connectors	terminal blocks 2.5 mm²	flat cable 10 poles male

OUTPUT TECHNICAL DATA

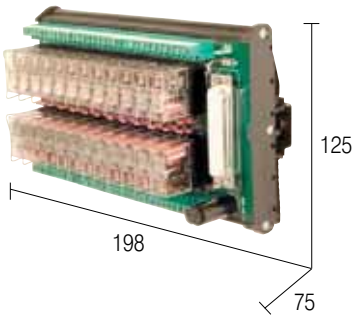
Type and number of contact	8 canali non isolati	SPDT x 8 relay
Rated voltage	-	230 Vac
Rated voltage	-	10 A
Current breaking power	-	10 A
Terminals / connectors	flat cable male 10 poles	terminal blocks 2.5 mm²
Isolation between output terminals		1 kVac / 60 s

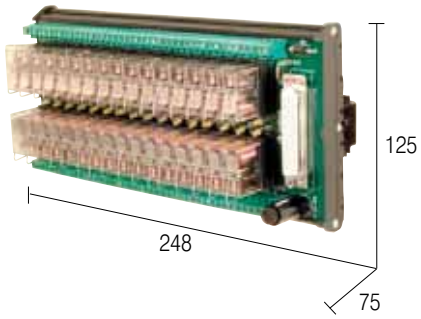
GENERAL TECHNICAL DATA

Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	-	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	-	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	-	135 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

CN 850 Siemens interface modules

- 50 poles D-SUB connector input
- Positive control voltage
- SPDT on output even
- SPST (NO) on output odd
- Pluggable relay

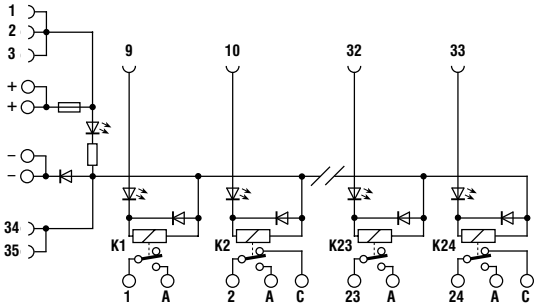


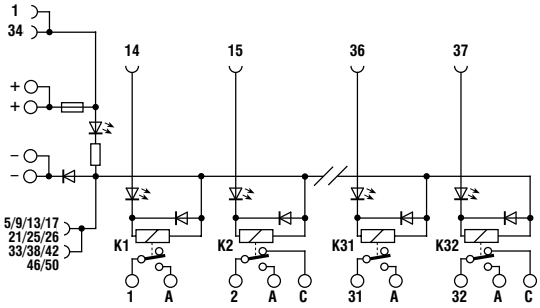


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION		
24 relay	**C24S850**	Cod. XC24S850
32 relay	–	**CS32S850** Cod. XC32S850

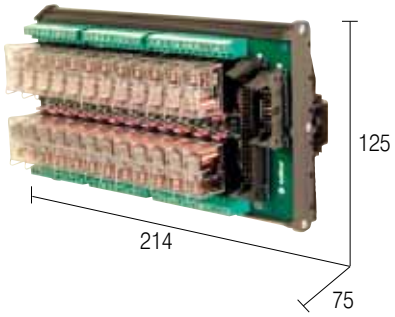
INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	22 mA ± 10%	22 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	D-SUB 50 poles female	D-SUB 50 poles female

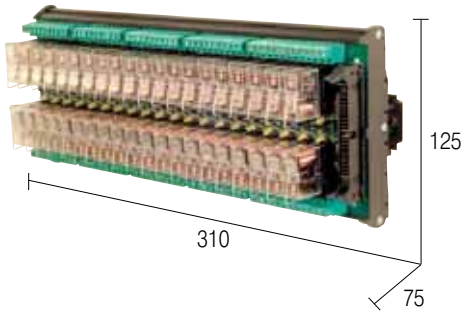
OUTPUT TECHNICAL DATA		
Type and number of contact	even out - SPDT x 12 relay add out - SPST (NO) x 12 relay	even out - SPDT x 16 relay add out - SPST (NO) x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	VO sec. UL94	VO sec. UL94
Approximative weight	850 g	1.15 Kg
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

CN Fanuc M16 Interface modules

- 50 poles D-SUB connector input
- Positive control voltage
- SPDT on output even
- SPST (NO) on output odd
- Pluggable relay

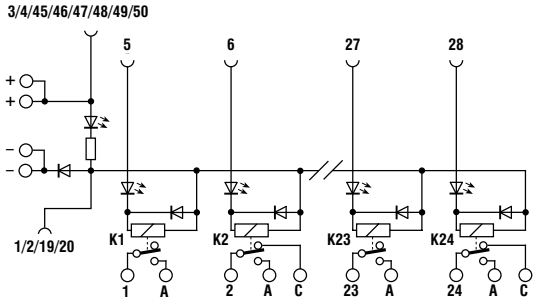


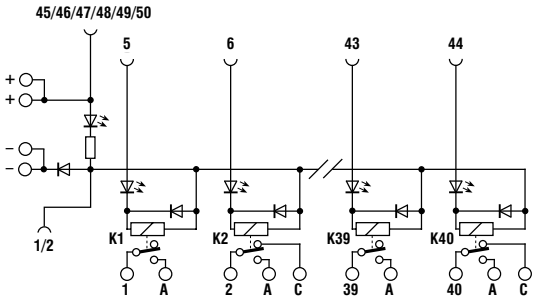


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.

Block diagram





VERSION		
24 relay	**C24FM16** Cod. XC24FM16	–
32 relay	–	**C40FM16** Cod. XC40FM16

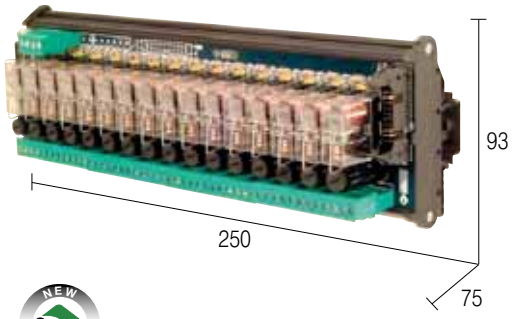
INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	25 mA ± 10%	25 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	I.D.C. 50 poles male	I.D.C. 50 poles male

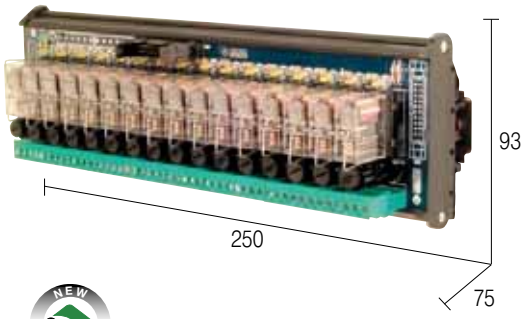
OUTPUT TECHNICAL DATA		
Type and number of contact	even out - SPDT x 12 relay add out - SPST (NO) x 12 relay	even out - SPDT x 20 relay add out - SPST (NO) x 20 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s

GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	VO sec. UL94	VO sec. UL94
Approximative weight	850 g	1.35 Kg
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

CN ECS Interface modules

- Fast and sure connection with I.D.C. connector
- Pluggable relay
- Pluggable terminals

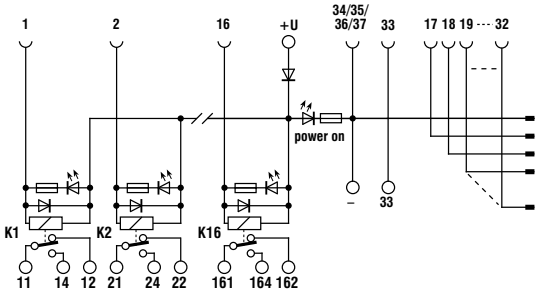


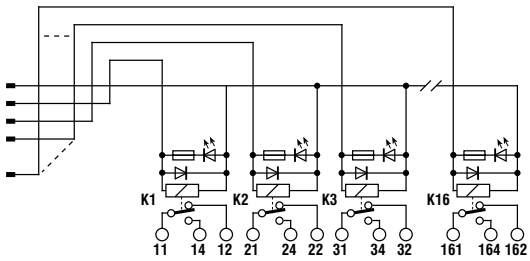


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 68 through 73.
(3) 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





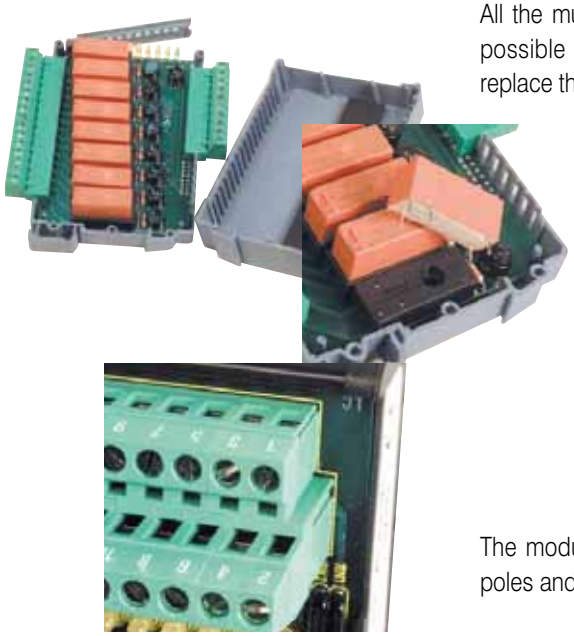
VERSION		
16 bit modules	**C16ECS1** Cod. XC16ECS1	–
32 bit expansion modules	–	**C16ECS2** Cod. XC16ECS2

INPUT TECHNICAL DATA		
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current (1 channel)	25 mA ± 10%	25 mA ± 10%
Turn ON time	15 ms	15 ms
Turn OFF time	5 ms	5 ms
Terminals / connectors	terminal blocks 2.5 mm², pluggable, Flat	Flat

OUTPUT TECHNICAL DATA		
Type and number of contact	SPDT x 16 relay	SPDT x 16 relay
Rated voltage	250 Vac	250 Vac
Rated voltage	10 A	10 A
Current breaking power	10 A	10 A
Terminals / connectors	terminal blocks 2.5 mm² pluggable	terminal blocks 2.5 mm² pluggable
Isolation between output terminals	1 K Vac / 60 s	1 K Vac / 60 s
Current of the fuse max.	6.3 A / 5 x 20 (2)	6.3 A / 5 x 20 (2)
Current of the fuse holder max.	10 A / 250 Vac	10 A / 250 Vac

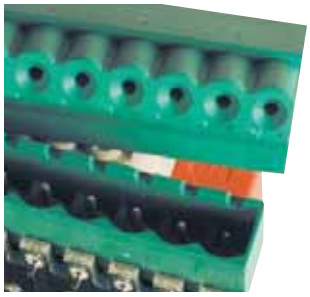
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50°C	- 10 – 50°C
Coil / contact isolation	2.5 kVac / 60 s	2.5 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31	OMRON G2R-1, NAIS JW1FSN, FINDER 40.31
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	192 g	192 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Constructive particularity



All the multi-relay modules **have the relays mounted on sockets**; the pluggable relay makes possible an easy replacement for maintenance ; also on the CRE modules it is possible to replace the relay, wich can be replaced by simply opening of the plastic housing.

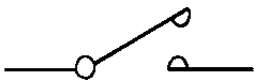
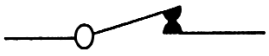
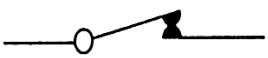
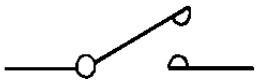
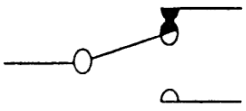
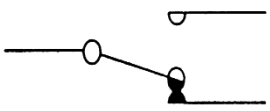
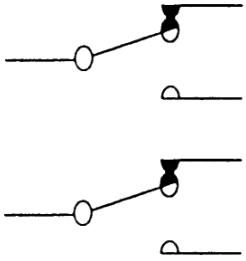
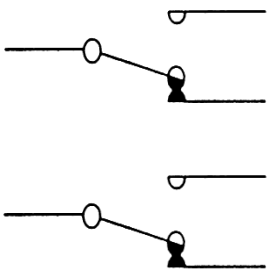
CR and CRE series are equipped with pluggable terminal blocks and don not need further accessories, eg. like bridges or labels ; **such products can be considered the real "plug & play" without any additional cost.**



The modules have milled cuts on the printed circuit, to increase isolation between the output poles and channels.

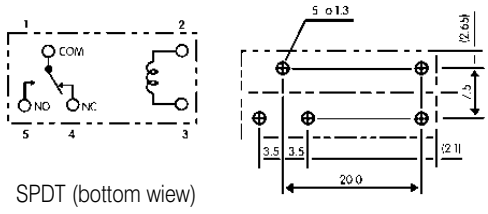
Electromechanic relay technical data

Type and contact names

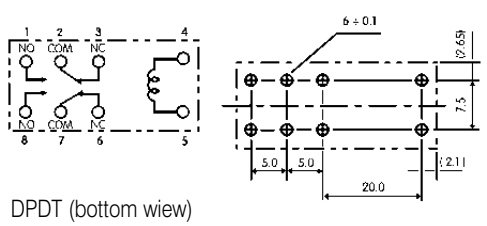
DESIGNATION AND ABBREVIATION	STATE	
	TURN OF	TURN ON
1 contact normally open **SPST (NO) 1 form A**		
1 contact normally closed **SPST (NC) 1 form B**		
1 change-over contact **SPDT 1 form C**		
2 change-over contact **DPDT 2 form C**		

Size of relay used

Cabur products also include **boards with socket without relay**. A suitable model is also recommended for obtaining the properties described; if a different product is chosen, the relay must have the following pins and sizes.



SPDT (bottom wiew)



DPDT (bottom wiew)

Electromechanic relay technical data

BLOCK DIAGRAMS / NOTES

The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

VERSION	Electromechanical relay		
Producer	**OMROM**	**OMROM**	**OMROM**
Model	**G5PA-1-24 VDC**	**G2R-1-24 VDC**	**G2R-1E-24 VDC**
Applications	general purpouse	general purpouse	general purpouse
INPUT TECHNICAL DATA			
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%	24 Vdc
Power consumption	approx 0.53 W	approx 0.53 W	approx 0.53 W
Resistance	1.1 KΩ ± 10%	1.1 KΩ ± 10%	1.1 KΩ ± 10%
Turn on voltage	17 Vdc	17 Vdc	17 Vdc
Turn off voltage	3.6 Vdc	3.6 Vdc	3.6 Vdc
Turn ON time	15 ms max	15 ms max	15 ms max
Turn OFF time	5 ms max	5 ms max	5 ms max
Maximum voltage	26.4 Vdc	26.4 Vdc	26.4 Vdc
OUTPUT TECHNICAL DATA			
Type and number of contact	1 contact NO / SPST (NC)	1 SPDT	1 SPDT
Contact resistance	-	30 mΩ	30 mΩ
Resistive rated load (cos ϕ =1)	50 A a 250 Vac / 5 A a 30 Vdc	10 A a 250 Vac / 10 A a 30 Vdc	16 A a 250 Vac / 16 A a 30 Vdc
Induttive rated load (cos ϕ = 0,4 L / R=7 ms)	-	7 A a 250 Vac / 5 A a 30 Vdc	8 A a 250 Vac / 8 A a 30 Vdc
Resistive maximum load	1250 VA / 150 W	2500 VA / 300 W	4000 VA / 480 W
Inductive maximum load	-	1875 VA / 150 W	2000 VA / 240 W
Minimum rated load	100 mA	100 mA a 5 Vdc	100 mA a 5 Vdc
Rated current	5 A	10 A	16 A
Rated switching current	5 A	10 A	16 A
Rated swhitching voltage	250 Vac / 30 Vdc	380 Vac / 125 Vdc	380 Vac / 125 Vdc
GENERAL TECHNICAL DATA			
Electrical switching frequency	1800 operations / h	1800 operations / h	1800 operations / h
Mechanical switching frequency	18000 operations / h	18000 operations / h	18000 operations / h
Dielectric strenght	4000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole
Maximum electrical life	1 x 10^5	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)
Maximum mechanical life	2 x 10^6 operations frequency (18000 operations/h)	2 x 10^6 operations frequency (18000 operations/h)	1 x 10^6 operations
Operating temperature	-40 – 70°C	-40 – 70°C (no ice formation)	-40 – 70°C (no ice formation)
Relative humidity	40 – 70% U.R.	35 – 70% U.R.	35 – 70% U.R.
Approvals	UL, CSA, SEV	UL, CSA, SEV, SEMKO, DEMKO, SETI, TÛV, VDE, IMQ	UL, CSA, SEV, SEMKO, DEMKO, SETI, TÛV, VDE, IMQ

Electromechanic relay technical data

BLOCK DIAGRAMS / NOTES

The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

VERSION	Electromechanical relay		
Producer	**OMROM**	**OMROM**	**OMROM**
Model	**G2R-1-120 VAC**	**G2R-1-220 VAC**	**G2R-2-24 VDC**
Applications	general purpouse	general purpouse	general purpouse
INPUT TECHNICAL DATA			
Rated voltage	120 Vac ± 10%	220 Vac ± 10%	24 Vdc ± 10%
Power consumption	approx 0.9 VA a 60 Hz	approx 0.9 VA a 60 Hz	approx 0.53 W
Resistance	6.5 KΩ ± 10%	25 KΩ	1.1 KΩ ± 10%
Turn on voltage	88 Vac	176 Vac	17 Vdc
Turn off voltage	36 Vac	60 Vac	3.6 Vdc
Turn ON time	15 ms max	15 ms max	15 ms max
Turn OFF time	10 ms max	5 ms max	5 ms max
Maximum voltage	132 Vac	242 Vac	26.4 Vdc
OUTPUT TECHNICAL DATA			
Type and number of contact	1 SPDT	1 SPDT	2 DPDT
Contact resistance	30 mΩ	30 mΩ	50 mΩ
Resistive rated load (cos ϕ =1)	10 A a 250 Vac / 10 A a 30 Vdc	10 A a 250 Vac / 10 A a 30 Vdc	5 A a 250 Vac / 5 A a 30 Vdc
Induttive rated load (cos ϕ = 0,4 L / R=7 ms)	7.5 A a 250 Vac / 5 A a 30 Vdc	7 A a 250 Vac / 5 A a 30 Vdc	2 A a 250 Vac / 3 A a 30 Vdc
Resistive maximum load	2500 VA / 300 W	2500 VA / 300 W	1250 VA / 150 W
Inductive maximum load	1875 VA / 150 W	1875 VA / 150 W	500 VA / 90 W
Minimum rated load	100 mA a 5 Vdc	100 mA a 5 Vdc	10 mA a 5 Vdc
Rated current	10 A	10 A	5 A
Rated switching current	10 A	10 A	5 A
Rated swhitching voltage	250 Vac / 30 Vdc	380 Vac / 125 Vdc	380 Vac / 125 Vdc
GENERAL TECHNICAL DATA			
Electrical switching frequency	1800 operations / h	1800 operations / h	1800 operations / h
Mechanical switching frequency	18000 operations / h	18000 operations / h	18000 operations / h
Dielectric strenght	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole
Maximum electrical life	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)
Maximum mechanical life	1 x 10^6 operations	1 x 10^6 operations	1 x 10^6 operations
Operating temperature	-40 – 70°C (no ice formation)	-40 – 70°C (no ice formation)	-40 – 70°C (no ice formation)
Relative humidity	35 – 70% U.R.	35 – 70% U.R.	35 – 70% U.R.
Approvals	UL, CSA, SEV, SEMKO, DEMKO, TÛV, VDE, IMQ	UL, CSA, SEV, SEMKO, DEMKO, TÛV, VDE, IMQ	UL, CSA, SEV, SEMKO, DEMKO, TÛV, VDE, IMQ

Electromechanic relay technical data

BLOCK DIAGRAMS / NOTES

The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

VERSION	Electromechanical relay		
Producer	**OMROM**	**OMROM**	**OMROM**
Model	**G2R-2-48 VDC**	**G2R-2-110 VAC**	**G2R-2-220 VAC**
Applications	general purpouse	general purpouse	general purpouse
INPUT TECHNICAL DATA			
Rated voltage	48 Vdc ± 10%	120 Vac ± 10%	220 Vac ± 10%
Power consumption	approx 0.4 W	approx 0.9 VA a 60 Hz	approx 0.9 VA a 60 Hz
Resistance	4.1 KΩ	6.5 KΩ ± 10%	25 KΩ ± 10%
Turn on voltage	33.6 Vdc	88 Vac	176 Vdc
Turn off voltage	7.2 Vdc	36 Vac	66 Vdc
Turn ON time	15 ms max	15 ms max	15 ms max
Turn OFF time	5 ms max	10 ms max	10 ms max
Maximum voltage	52.8 Vdc	132 Vac	242 Vdc
OUTPUT TECHNICAL DATA			
Type and number of contact	2 DPDT	2 DPDT	2 DPDT
Contact resistance	50 mΩ	50 mΩ	50 mΩ
Resistive rated load (cos ϕ =1)	5 A a 250 Vac / 5 A a 30 Vdc	5 A a 250 Vac / 5 A a 30 Vdc	5 A a 250 Vac / 5 A a 30 Vdc
Induttive rated load (cos ϕ = 0,4 L / R=7 ms)	2 A a 250 Vac / 3 A a 30 Vdc	2 A a 250 Vac / 3 A a 30 Vdc	2 A a 250 Vac / 3 A a 30 Vdc
Resistive maximum load	1250 VA / 1500 W	1250 VA / 150 W	1250 VA / 150 W
Inductive maximum load	500 VA / 90 W	500 VA / 90 W	500 VA / 90 W
Minimum rated load	10 mA a 5 Vdc	10 mA a 5 Vdc	100 mA a 5 Vdc
Rated current	5 A	5 A	5 A
Rated switching current	5 A	5 A	5 A
Rated swhitching voltage	380 Vac / 125 Vdc	380 Vac / 125 Vdc	380 Vac / 125 Vdc
GENERAL TECHNICAL DATA			
Electrical switching frequency	1800 operations / h	1800 operations / h	1800 operations / h
Mechanical switching frequency	18000 operations / h	18000 operations / h	18000 operations / h
Dielectric strenght	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole	5000 Vac, 50/60 Hz for 1 minute between coils and contacts - 1000 Vac, 50/60 Hz for 1 minute, contacts of the same pole
Maximum electrical life	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)	100.000 operations (with rated load at a frequency of 1.8 x 10^3 operations/h)
Maximum mechanical life	1 x 10^6 operations	1 x 10^6 operations	1 x 10^6 operations
Operating temperature	-40 – 70°C (no ice formation)	-40 – 70°C (no ice formation)	-40 – 70°C (no ice formation)
Relative humidity	35 – 70% U.R.	35 – 70% U.R.	35 – 70% U.R.
Approvals	UL, CSA, SEV, SEMKO, DEMKO, TÛV, VDE, IMQ	UL, CSA, SEV, SEMKO, DEMKO, TÛV, VDE, IMQ	UL, CSA, SEV, SEMKO, DEMKO, TÛV, VDE, IMQ

Electromechanic relay technical data

BLOCK DIAGRAMS / NOTES

The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

VERSION	Electromechanical relay		
Producer	**OMROM**	**MATSUSHITA**	**FINDER**
Model	**G6RN-1-24 VDC/G6RN-1A-24 VDC**	**JQ1-24 V**	**40.31.125 VDC**
Applications	–	–	general purpouse
INPUT TECHNICAL DATA			
Rated voltage	24 Vdc ± 10%	24 Vdc ± 10%	125 Vdc ± 10%
Power consumption	approx 220 mW	approx 0.4 W	approx 0.6 W
Resistance	2.6 KΩ ± 10%	1.5 KΩ ± 10%	23.5 KΩ
Turn on voltage	16.8 Vdc	18 Vdc	50 Vdc
Turn off voltage	2.4 Vdc	1.2 Vdc	12.5 Vdc
Turn ON time	15 ms max	6 ms max	15 ms
Turn OFF time	5 ms max	4 ms max	5 ms
Maximum voltage	26.4 Vdc	30 Vdc (a 20°C)	1884 Vdc
OUTPUT TECHNICAL DATA			
Type and number of contact	1 SPDT / 1 NO (version 1 A)	1 SPDT	1 change-over contact / SPDT
Contact resistance	–	–	≤ 50 mΩ
Resistive rated load (cos ϕ =1)	8 A a 250 Vac	5 A a 125 Vac / 5 A a 30 Vdc	10 A a 250 Vac
Induttive rated load (cos ϕ = 0,4 L / R=7 ms)	–	–	–
Resistive maximum load	2000 VA	1250 VA	–
Inductive maximum load	–	–	–
Minimum rated load	10 mA a 5 V	–	–
Rated current	8 A	–	10 A
Rated switching current	8 A	5 A	10 A
Rated swhitching voltage	250 Vac	250 Vac / 110 Vdc	400 Vac
GENERAL TECHNICAL DATA			
Electrical switching frequency	360 operations / h	–	1800 operations / h
Mechanical switching frequency	36000 operations / h	20 cpm	–
Dielectric strenght	4000 Vac between coil and contacts - 1000 Vac between contacts	4000 Vac, 50/60 Hz for 1 minute between coils and contacts - 750 Vac, 50/60 Hz for 1 minute, contacts of the same pole	4000 Vac / 60 s between coil and contacts 1000 Vac / 60 s between contacts
Maximum electrical life	100.000 operations (average)	5 x 10^4 operations	–
Maximum mechanical life	10 x 10^6 operations / min	–	20 x 10^6 operations
Operating temperature	-40 – 85°C	-40 – 70°C	-40 – 70°C
Relative humidity	35 – 85% U.R.	–	–
Approvals	UL, CSA, TÜV	UL, CSA, SEV, VDE	–

Electromechanic relay technical data

BLOCK DIAGRAMS / NOTES

The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

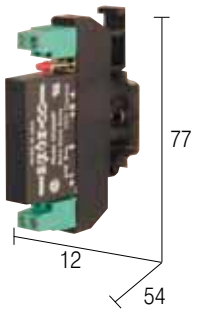
VERSION	Electromechanical relay		
Producer	**SCHRACK**	**FUJITSU TAKAMISAWA**	**MATSUSHITA**
Model	**RY210024**	**FTR-H1-CD024V**	**APE30024C**
Applications	general purpouse	general purpouse	general purpouse
INPUT TECHNICAL DATA			
Rated voltage	24 Vdc	24 Vdc ± 10%	24 Vdc ± 10%
Power consumption	approx 0.25 W	approx 0.4 W	approx 0.17 W
Resistance	2.35 KΩ ± 10%	1.1 KΩ	3.4 KΩ
Turn on voltage	16.8 Vdc	16.8 Vdc	15.7 Vdc
Turn off voltage	2.4 Vdc	–	–
Turn ON time	7 ms	10 ms	5 ms
Turn OFF time	3 ms	5 ms	3 ms
Maximum voltage		26.4 Vdc	52.8 Vdc
OUTPUT TECHNICAL DATA			
Type and number of contact	1 SPDT	1 SPDT	1 SPDT
Contact resistance	–	100 mΩ	100 mΩ
Resistive rated load (cos ϕ =1)	8 A a 250 Vac	10 A a 250 Vac / 10 A a 30 Vdc	6 A a 250 Vac
Induttive rated load (cos ϕ = 0,4 L / R=7 ms)	–	–	–
Resistive maximum load	–	–	6 A
Inductive maximum load	–	–	–
Minimum rated load	–	10 mA a 5 Vdc	100 mA a 12 Vdc
Rated current	8 A	10 A	–
Rated switching current	8 A	14 A	6 A
Rated swhitching voltage	440 Vac	330 Vac / 330 Vdc	400 Vac / 300 Vdc
GENERAL TECHNICAL DATA			
Electrical switching frequency	7200 operations / h	–	–
Mechanical switching frequency	–	–	–
Dielectric strenght	5000 Vac / 60 s between coil and contacts 1000 Vac / 60 s between contacts	5000 Vac / 60 s between coil and contacts 1000 Vac / 60 s between contacts	4000 Vac / 60 s between coil and contacts 1000 Vac / 60 s between contacts
Maximum electrical life	–	100 x 10^3 operations	5 x 10^4 operations
Maximum mechanical life	30 x 10^6 operations	20 x 10^6 operations	5 x 10^6 operations
Operating temperature	-40 – 75°C	-40 – 75°C (no ice formations)	-45 – 85°C (no ice formations)
Relative humidity	–	–	–
Approvals	UL, CSA, SEMKO, NEMKO, DEMKO	VDE, CSA pending	–

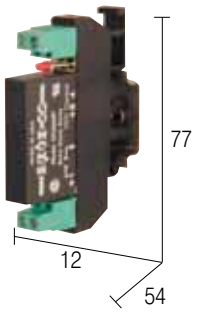
Solid state relay modules selection table

INPUT voltage	OUTPUT voltage	OUTPUT current	RELAY INFORMATION number of the relay	RELAY INFORMATION mounting	DIMENSIONS A x B x C (mm)	TYPE	CODE	PAGE
3–30 Vdc	5–60 Vdc	3 A	1	S/CI	12 x 54 x 77	O332060	XO332060	75
12–30 Vdc	5–60 Vdc	2 A	1	E/CI	16 x 68 x 75	CM1S024	XCM1S024	76
12–30 Vdc	5–60 Vdc	2 A	4	E/CI/CU	70 x 75 x 93	R42S24	XR042S24	77
12–30 Vdc	5–60 Vdc	2 A	4	E/CI/CU/F	67 x 75 x 93	R41S24F	XR041S24F	80
12–30 Vdc	5–60 Vdc	2 A	8	E/CI/CU	132 x 75 x 93	R82S24	XR082S24	77
12–30 Vdc	5–60 Vdc	2 A	8	E/CI/CU/F	137 x 75 x 93	R81S24F	XR081S24F	80
12–30 Vdc	5–60 Vdc	2 A	16	E/CI/CU	250 x 75 x 93	R162S24	XR162S24	78
12–30 Vdc	5–60 Vdc	2 A	16	E/CI/CU/F	250 x 75 x 93	R161S24F	XR161S24F	81
3–30 Vdc	24–240 Vdc	4 A	1	S/ZC	12 x 54 x 77	O332060	XO332060	75
12–30 Vdc	20–240 Vdc	2 A	1	E/ZC	16 x 68 x 75	CM1T024	XCM1T024	76
12–30 Vdc	20–240 Vdc	2 A	4	E/CI/CU	70 x 75 x 93	R42T24	XR042T24	78
12–30 Vdc	20–240 Vdc	2 A	8	E/CI/CU	132 x 75 x 93	R82T24	XR082T24	79
12–30 Vdc	20–240 Vdc	2 A	16	E/CI/CU	250 x 75 x 93	R162T24	XR162T24	79

E = pluggable relay / S = fixed relay / Z = with socket but without relay / CN = negative common of the coil / CP = positive common of the coil / CU = universal control voltage (positive & negative) / IDC = with connector input command (IDC or D-Sub) / F = with the fuse on the contact of the relay / PU = with push button command / DS = with dip-switch command

Single solid state relay modules

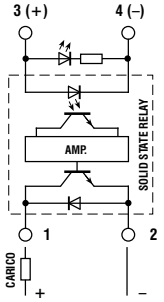


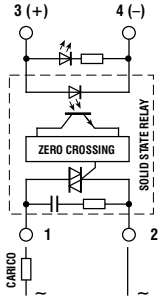


BLOCK DIAGRAMS / NOTES

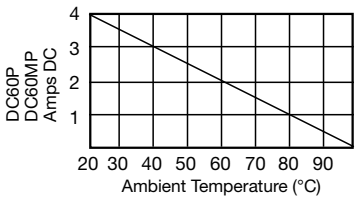
(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.

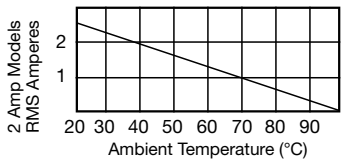
Block diagram





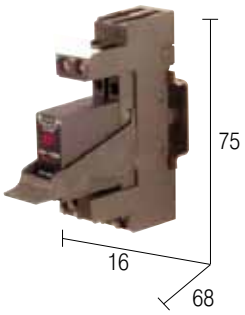
VERSION		
Pluggable relay	–	–
Fixed relay	**O332060** Cod. XO332060	**O332240** Cod. XO332240
INPUT TECHNICAL DATA		
Input voltage	3 – 30 Vdc	3 – 30 Vdc
Level 1 (high) input signal	> 3 Vdc	> 3 Vdc
Level 0 (low) input signal	< 1 Vdc	< 1 Vdc
Rated current	< 35 mA	< 35 mA
Switching frequency	25 – 65 Hz	25 – 65 Hz
Terminals block connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
OUTPUT TECHNICAL DATA		
Output voltage	5 – 60 Vdc	24 – 280 Vac (zero crossing)
Continuous load current	3 A a 20°C	4 A a 20°C
Max current	4 A a 20°C	5 A a 20°C
Stray current, 0 signal	1 mA	5 mA
OFF/ON switching time	–	–
Protection circuit	–	10 ms max
Terminals blocks connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
GENERAL TECHNICAL DATA		
Operating temperature	see chart	see chart
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	Opto 22 / CRYDOM	Opto 22 / CRYDOM
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	36 g	36 g
Mounting information	on rail, allow 4 mm specing between adjacent components	on rail, allow 4 mm specing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

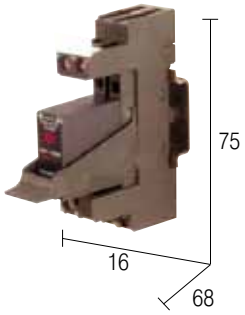




Single solid state relay modules

- Low cost
- For DC load (S version)
- For AC load (T version)
- Pluggable relays

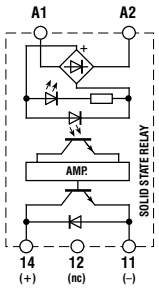


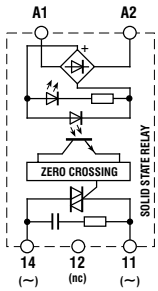


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.
This series can be mounted without any spacing between adjacent components

Block diagram





VERSION		
Pluggable relay	**CM1S024** Cod. XCM1S024	**CM1T024** Cod. XCM1T024
Fixed relay	–	–

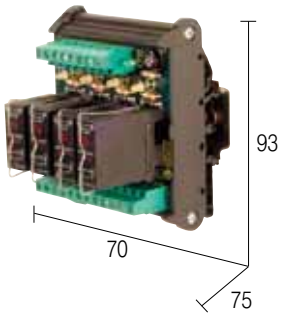
INPUT TECHNICAL DATA		
Input voltage	12 – 30 Vdc	12 – 30 Vdc
Level 1 (high) input signal	> 12 Vdc	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc	< 6 Vdc
Rated current (1 channel)	< 20 mA	< 20 mA
Frequenza di commutazione	–	–
Terminals block connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

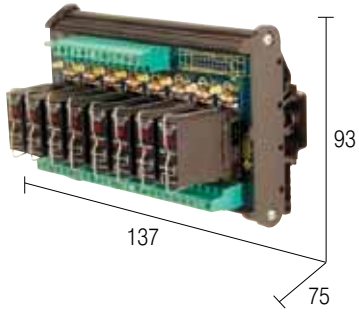
OUTPUT TECHNICAL DATA		
Output voltage	5 – 60 Vdc	20 – 240 Vac (zero crossing)
Continuous load current	2 A a 20°C	2 A a 20°C
Max current	2.5 A	2.5 A
Stray current, 0 signal	1 mA	2 mA
OFF/ON switching time	100 µs / 1 ms	20 ms
Protection circuit	diode	diode
Terminals blocks connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

GENERAL TECHNICAL DATA		
Operating temperature	see note (1)	see note (1)
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	3	3
Overvoltage category	3	3
Relay model (1)	EL.CO. SSR91-60B	EL.CO. SSR91-60B
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	–	–
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Single solid state relay modules

- For DC load (S version)

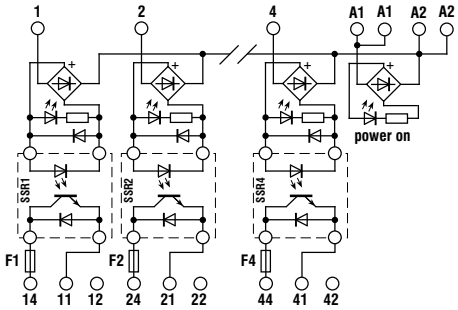


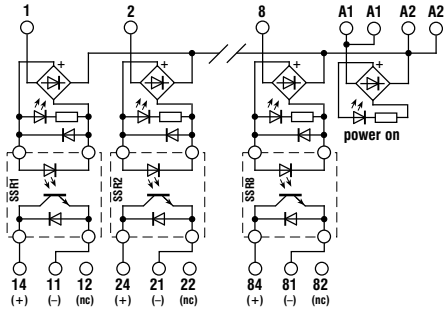


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.

Block diagram





VERSION		
Pluggable relay	**R42S24** Cod. XR042S24	**R82S24** Cod. XR082S24
Fixed relay	–	–

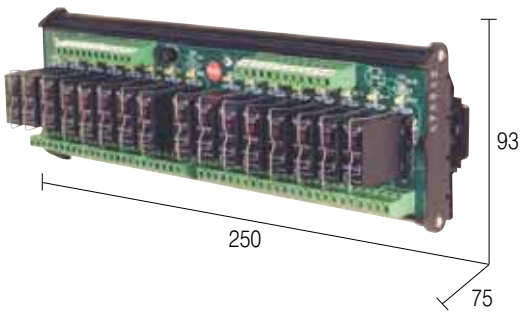
INPUT TECHNICAL DATA		
Input voltage	12 – 30 Vdc (x 4 channels)	12 – 30 Vdc (x 8 channels)
Level 1 (high) input signal	> 12 Vdc	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc	< 6 Vdc
Rated current (1 channel)	< 20 mA	< 20 mA
Frequenza di commutazione	-	-
Terminals block connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

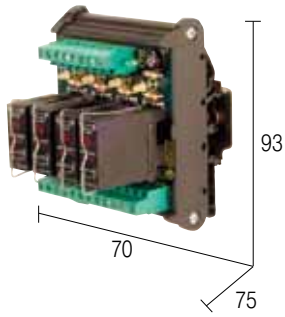
OUTPUT TECHNICAL DATA		
Output voltage	5 – 60 Vdc	5 – 60 Vdc
Continuous load current	2 A a 20°C	2 A a 20°C
Max current	2.5 A	2.5 A
Stray current, 0 signal	1 mA	1 mA
OFF/ON switching time	100 µs / 1 ms	100 µs / 1 ms
Protection circuit	-	-
Terminals blocks connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

GENERAL TECHNICAL DATA		
Operating temperature	see note (1)	see note (1)
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	EL.CO. SSR91-60B	EL.CO. SSR91-60B
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	207 g	379 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Multiple solid state relay modules

- For DC load (S version)
- For AC load (T version)

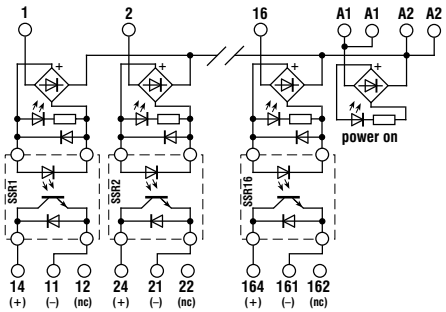


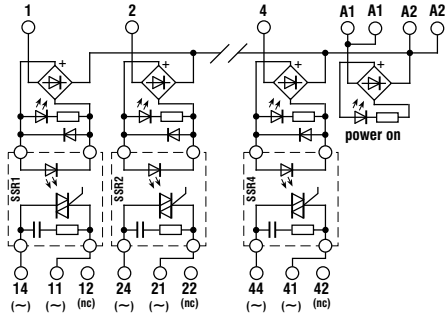


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.
(2) Available upon request.

Block diagram





VERSION		
Pluggable relay	**R162S24** Cod. XR162S24	**R42T24** (2) Cod. XR042T24
Fixed relay	–	–

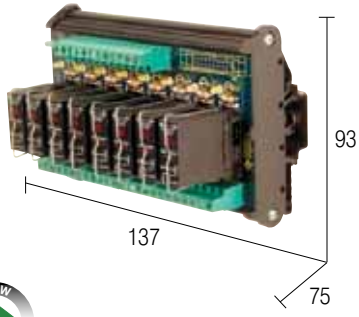
INPUT TECHNICAL DATA		
Input voltage	12 – 30 Vdc (x 16 channels)	12 – 30 Vdc (x 4 channels)
Level 1 (high) input signal	> 12 Vdc	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc	< 6 Vdc
Rated current (1 channel)	< 20 mA	< 20 mA
Switching frequency	–	–
Terminals block connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

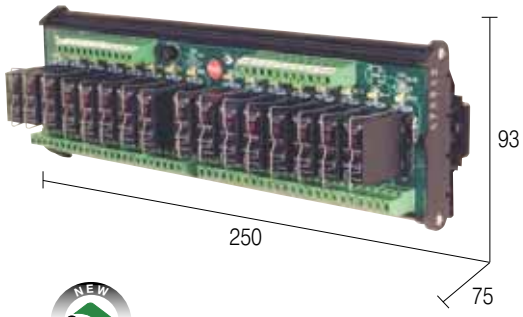
OUTPUT TECHNICAL DATA		
Output voltage	5 – 60 Vdc	20 – 240 Vac (zero crossing switching)
Continuous load current	2 A a 20°C	2 A a 20°C
Max current	2.5 A	2.5 A
Stray current, 0 signal	1 mA	2 mA
OFF/ON switching time	100 µs / 1 ms	10 ms / 10 ms
Protection circuit	–	filter RC
Terminals blocks connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

GENERAL TECHNICAL DATA		
Operating temperature	see note (1)	see note (1)
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	EL.CO. SSR91-60B	EL.CO. SSR90-240B
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	756 g	207 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Multiple solid state relay modules

- For DC load

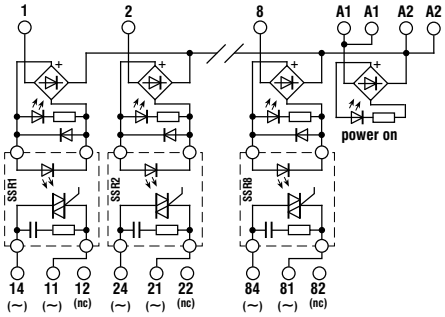


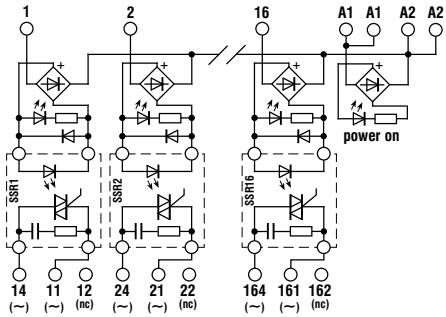


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.
(2) Available upon request.

Block diagram





VERSION		
Pluggable relay	**R82T24**	Cod. XR082T24
Fixed relay	–	
	R162T24 (2)	Cod. XR162T24
	–	

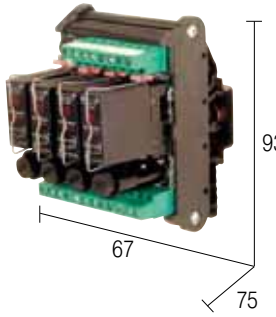
INPUT TECHNICAL DATA		
Input voltage	12 – 30 Vdc (x 8 channels)	12 – 30 Vdc (x 16 channels)
Level 1 (high) input signal	> 12 Vdc	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc	< 6 Vdc
Rated current	< 20 mA	< 20 mA
Switching frequency	–	–
Terminals block connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
		75
		93
		250

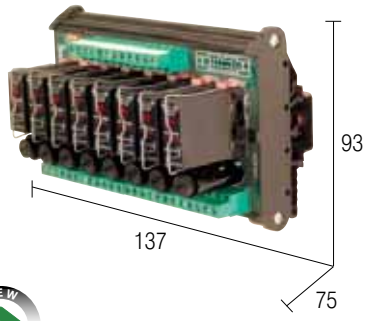
OUTPUT TECHNICAL DATA		
Output voltage	20 – 240 Vac (zero crossing switching)	20 – 240 Vac (zero crossing switching)
Continuous load current	2 A a 20°C	2 A a 20°C
Max current	2.5 A	2.5 A
Stray current, 0 signal	2 mA	2 mA
OFF/ON switching time	10 ms / 10 ms	10 ms / 10 ms
Protection circuit	filter RC	filter RC
Terminals blocks connectors	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²

GENERAL TECHNICAL DATA		
Operating temperature	see note (1)	see note (1)
Coil / contact isolation	4 kVac / 60 s	4 kVac / 60 s
Protection degree	IP 00	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1	IEC 664-1, DIN VDE 0110.1
Pollution degree	2	2
Overvoltage category	3	3
Relay model (1)	EL.CO. SSR90-240B	EL.CO. SSR90-240B
Status display	LED	LED
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	379 g	756 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Multiple solid state relay modules with fuse

- For DC load

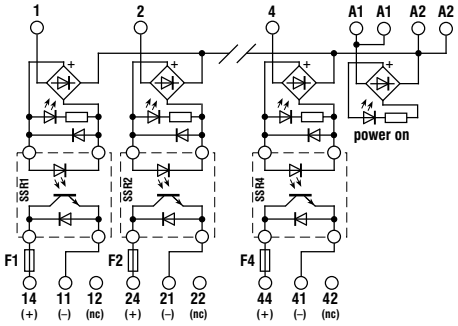


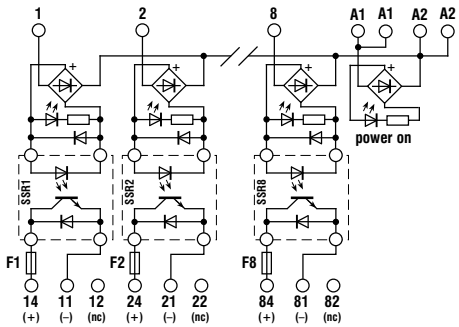


BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.
(2) Available upon request.
(3) 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





VERSION		
Pluggable relay	**R41S24F** (2)	Cod. XR041S24F
Fixed relay	–	

VERSION		
Pluggable relay	**R81S24F** (2)	Cod. XR081S24F
Fixed relay	–	

INPUT TECHNICAL DATA	
Input voltage	12 – 30 Vdc (x 4 channels)
Level 1 (high) input signal	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	–
Terminals / connectors	terminal blocks 2.5 mm²
Corrente max fusibili	6.3 A / 5 x 20 (3)
Corrente max portafusibili	10 A / 250 Vac

INPUT TECHNICAL DATA	
Input voltage	12 – 30 Vdc (x 8 channels)
Level 1 (high) input signal	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	–
Terminals / connectors	terminal blocks 2.5 mm²
Corrente max fusibili	6.3 A / 5 x 20 (3)
Corrente max portafusibili	10 A / 250 Vac

OUTPUT TECHNICAL DATA	
Output voltage	5 – 60 Vdc
Continuous load current	2 A a 20°C
Max current	2.5 A
Stray current, 0 signal	1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	-
Terminals blocks connectors	terminal blocks 2.5 mm²

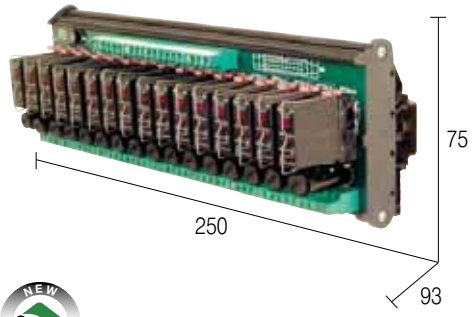
OUTPUT TECHNICAL DATA	
Output voltage	5 – 60 Vdc
Continuous load current	2 A a 20°C
Max current	2.5 A
Stray current, 0 signal	1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	-
Terminals blocks connectors	terminal blocks 2.5 mm²

GENERAL TECHNICAL DATA	
Operating temperature	see note (1)
Coil / contact isolation	4 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	EL.CO. SSR91-60B
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	207 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

GENERAL TECHNICAL DATA	
Operating temperature	see note (1)
Coil / contact isolation	4 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	EL.CO. SSR91-60B
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	379 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Multiple solid state relay modules with fuse

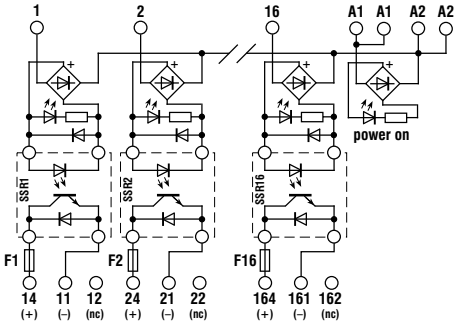
- For DC load



BLOCK DIAGRAMS / NOTES

(1) Relay model is not binding, they may be modified without prior warning. The technical data reported refer to the user relays, for more detail see pages 82 through 83.
(2) Available upon request.
(3) 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



VERSION

Pluggable relay	**R161S24F**	Cod. XR161S24F
Fixed relay	–	

INPUT TECHNICAL DATA

Input voltage	12 – 30 Vdc (x 16 channels)
Level 1 (high) input signal	> 12 Vdc
Level 0 (low) input signal	< 6 Vdc
Rated current (1 channel)	< 20 mA
Switching frequency	–
Terminals / connectors	terminal blocks 2.5 mm²
Corrente max fusibili	6.3 A / 5 x 20 (3)
Corrente max portafusibili	10 A / 250 Vac

OUTPUT TECHNICAL DATA

Output voltage	5 – 60 Vdc
Continuous load current	2 A a 20°C
Max current	2.5 A
Stray current, 0 signal	1 mA
OFF/ON switching time	100 µs / 1 ms
Protection circuit	–
Terminals blocks connectors	terminal blocks 2.5 mm²

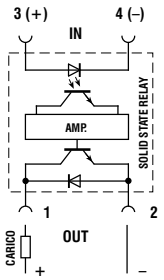
GENERAL TECHNICAL DATA

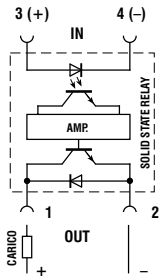
Operating temperature	see note
Coil / contact isolation	4 kVac / 60 s
Protection degree	IP 00
Reference standards	IEC 664-1, DIN VDE 0110.1
Pollution degree	2
Overvoltage category	3
Relay model (1)	EL.CO. SSR91-60B
Status display	LED
Housing material	polyamide UL94V-0
Approximative weight	756 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

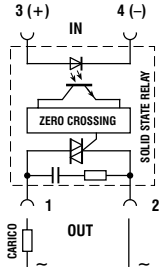
Solid state relay technical data

BLOCK DIAGRAMS / NOTES

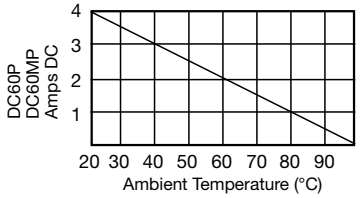
The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

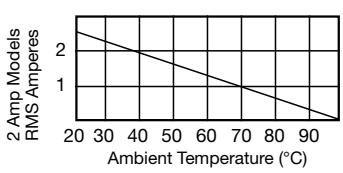






VERSION	Solid state relays		
Producer	**OPTO 22**	**CRYDOM**	**OPTO 22**
Model	**DC60MP**	**MPDCD3**	**MP240D4**
Applications	AC load switching	AC load switching	zero crossing switching of AC loads
INPUT TECHNICAL DATA			
Input voltage	3 – 30 Vdc	3 – 30 Vdc	3 – 30 Vdc
Level 1 (high) input signal	> 3 Vdc	3 Vdc	> 3 Vdc
Level 0 (low) input signal	> 1 Vdc	1 Vdc	> 1 Vdc
Input resistance	1 KΩ	1,5 KΩ	1 KΩ
OUTPUT TECHNICAL DATA			
Contact number	1 NA (transistor)	1 NA (transistor)	1 NA (triac)
Rated load voltage	60 Vdc	60 Vdc	240 Vdc
Rated load current	3 A	3 A	4 A
Max current	–	–	5 A
Minimum load voltage	1.5 Vdc a 3 A	1.5 Vdc	–
OFF state current leakage	1 mA	1 mA	5 mA
Unrepeated inrush current (t=10 ms)	5 A	5 A	–
Max voltage, zero crossing triggering	–	–	–
Residual voltage drop	–	–	–
GENERAL TECHNICAL DATA			
Turn ON time	–	–	1/2 cycle max
Turn OFF time	–	–	1/2 cycle max
Max switching frequency	25 – 65 Hz	25 – 65 Hz	25 – 65 Hz
Dielectric strenght	4000 V between input and output	4000 V between input and output	4000 V between input and output
Operating temperature	-40 – 100°C (see chart)	-40 – 80°C (see chart)	-40 – 100°C (see chart)
Approvals	UL, CSA, VDE	UL, CSA, VDE	UL, CSA, VDE

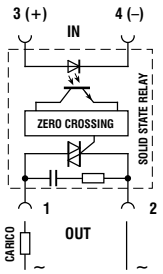


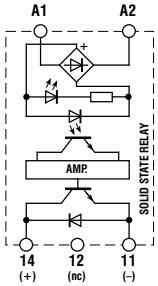


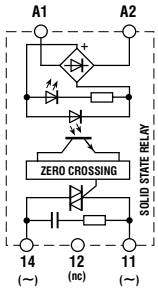
Solid state relay technical data

BLOCK DIAGRAMS / NOTES

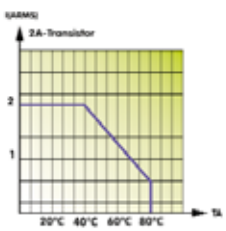
The following data were drawn from manufacturer's catalogues and are subject to change without notice, advises to consult the original documentation.

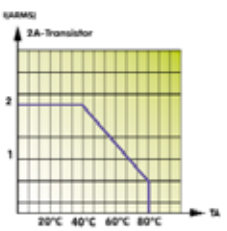






VERSION	Solid state relays		
Producer	**CRYDOM**	**ELCO**	**ELCO**
Model	**MP240D4**	**SSR91-60B**	**SSR91-240B**
Applications	zero crossing switching of AC loads	AC load switching	zero crossing switching of AC loads
INPUT TECHNICAL DATA			
Input voltage	3 – 30 Vdc	12 – 30 Vdc	12 – 30 Vdc
Level 1 (high) input signal	3 Vdc	> 12 Vdc	> 12 Vdc
Level 0 (low) input signal	1 Vdc	> 6 Vdc	> 6 Vdc
Input resistance	1,5 KΩ	2 KΩ	2 KΩ
OUTPUT TECHNICAL DATA			
Contact number	1 NA (triac)	1 NA (triac)	1 NA (triac)
Rated load voltage	280 Vac	60 Vdc	240 Vdc
Rated load current	4 A	2 A (a 20°C)	2 A (a 20°C)
Max current	-	2.5 A	2.5 A
Minimum load voltage	24 Vac	5 Vdc	20 Vdc
OFF state current leakage	5 mA	1 mA	1 mA
Unrepeated inrush current (t=10 ms)	130 A	5A	100A
Max voltage, zero crossing triggering	–	–	± 20 V
Residual voltage drop	–	1.5 Vdc a 2 A	1.5 Vdc a 2 A
GENERAL TECHNICAL DATA			
Turn ON time	1/2 cycle max (20 ms)	100 µs	1/2 cycle max. (20 ms)
Turn OFF time	1/2 cycle max (20 ms)	1 ms	1/2 cycle max. (20 ms)
Max switching frequency	25 – 65 Hz	–	–
Dielectric strenght	4000 V between input and output	4000 V between input and output	4000 V between input and output
Operating temperature	-40 – 80°C (see chart)	-30 – 85°C (see chart)	-30 – 85°C (see chart)
Approvals	UL, CSA, VDE	VDE	VDE

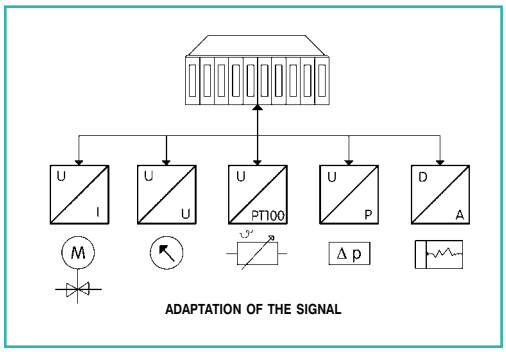




Analog converters

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).



ADAPTATION OF THE SIGNAL

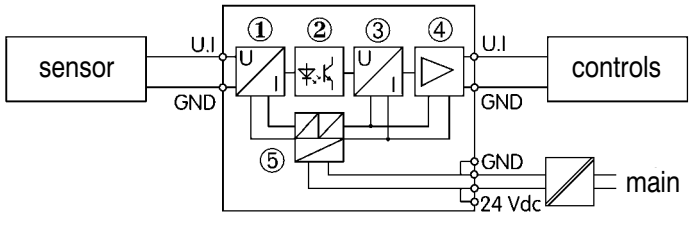
fig.1

ADAPTATION BETWEEN SENSOR OUTPUT SIGNAL AND CONTROL INPUT SIGNAL:

physical quantity measured	sensor output	converter input		converter output	
Temperature Frequency Current Resistance Voltage Pressure Level measurement	Normally one of the signals indicated in the next column	0÷60 mV 0÷100 mV 0÷500 mV 0÷1 V 0÷5 V 0÷10 V 0÷5 mA 0÷10 mA 0÷20 mA 0÷20 mA	±60 mV ±100 mV ±500 mV ±1 V ±5 V ±10 V ±5 mA ±10 mA ±20 mA	0÷5 V 0÷10 V 0÷20 mA 4÷20 mA	±5 V ±10 V ±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).



BLOCK DIAGRAM OF AN AMPLIFIER WITH GALVANIC ISOLATION

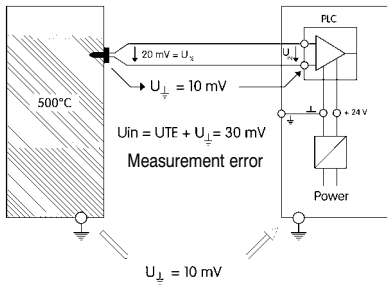
fig.2

① Input amplifier
② Opto-isolator
③ Signal adapter
④ Output amplifier
⑤ DC/DC convertitor

- 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.

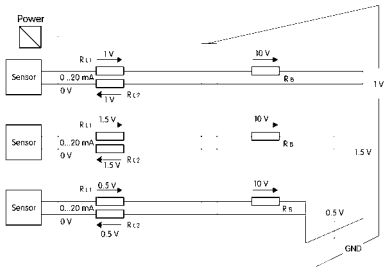
Galvanic isolation of the signal:

- isolates and separates electrically 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 the other circuits, cannot be altered by the differences in potential always present between different earth references (Figs. 3 and 4)



NON-ISOLATED THERMOCOUPLE AND DIFFERENT ZERO POTENTIALS

fig.3

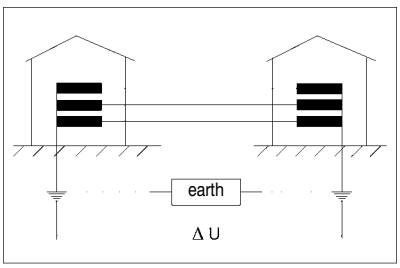


CIRCUIT WITH EARTH REFERENCE

Earthing through the resistance of the conductors. Consequently on the computer side potential combinations and equalising currents are created which lead to a measurement error.

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)

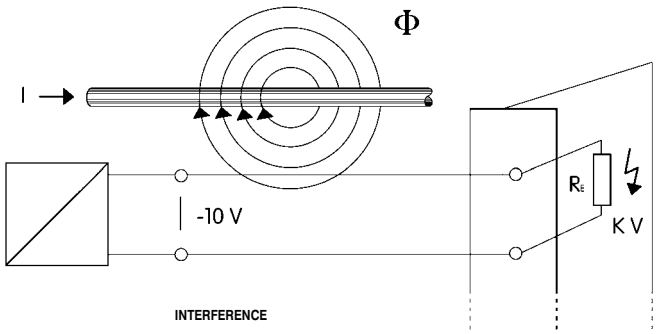


POTENTIAL DIFFERENCE AND EARTH CIRCUITS

fig.5

galvanic isolation is inecessary 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)



INTERFERENCE

fig.6

Analog converters selection table

Galvanic isolators

Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	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	P/SG3/CA/AS	22.5x119x108	CA-PI/PO	XSSAPIPO	88
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	P/SG3/AS	22.5x119x108	CA-PI/PO1	XSSAPIPO1	88
0–5/0–10/±10 V 0–20/4–20 mA	0–5/0–10 V 0–20/4–20 mA	P/SG3/AS	22.5x119x108	CA-PI	XCAPI	91
0–20/4-20 mA	0-20/4–20 mA	F/SG2	12.5x84x43	TWPAABT	XW001253	93
0–20/4-20 mA	0–10 V	F/SG2	12.5x84x43	TWPA0V10BT	XW001313	93

Temperature converter

Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	Page
TE: J/K/R/S/T/B PT100/NI100 2,3,4 fili	0–5/0–10/±5/±10 V 0–20/4–20 mA	P/SG3/CA	22.5x119x108	CAT-1	XCAT1	98
0–50/0–100/0–150/0–200/ 0–300/0–400/±50/-50–100 °C	0–20/4–20 mA/0-10 V	P	22.5x119x108	CA-RTD2	XCARTD2	94
0–50/0–100/0–150/0–200/ 0–300/0–400/±50/-50–100 °C	0–20/4–20 mA/0-10 V	P/SG2	22.5x119x108	CA-RTDI2	XCARTDI2	94
J: 0–500/0–600/0–700/0–800 °C K: 0–600/0–800/0–1000/0–1200 °C	0–20/4–20 mA/0-10 V	P	22.5x119x108	CA-TC	XCATC	96
J: 0–500/0–600/0–700/0–800 °C K: 0–600/0–800/0–1000/0–1200 °C	0–20/4–20 mA/0-10 V	P/SG2	22.5x119x108	CA-TC	XCATCI	97

Current converter

Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	Page
0–1 A ac/dc	0v20/4–20 mA/0–10 V	F	25x99x94	SW01VA	XW000928	100
0–1 A ac/dc	0–10 V	F	25x99x94	SW01V10	XW001197	100
0–1 A ac/dc	0–20 mA	F	25x99x94	SW01A0	XW001202	101
0–1 A ac/dc	4–20 mA	F	25x99x94	SW01A4	XW001207	101
0–5 A ac/dc	0–20/4–20 mA/0–10 V	F	25x99x94	SW05VA	XW000929	102
0–5 A ac/dc	0–10 V	F	25x99x94	SW05V10	XW001198	102
0–5 A ac/dc	0–20 mA	F	25x99x94	SW05A0	XW001203	103
0–5 A ac/dc	4–20 mA	F	25x99x94	SW05A4	XW001208	103
0–10 A ac/dc	0–20/4–20 mA/0–10 V	F	25x99x94	SW10VA	XW000930	104
0–10 A ac/dc	0–10 V	F	25x99x94	SW10V10	XW001199	104
0–10 A ac/dc	0–20 mA	F	25x99x94	SW10A0	XW001204	105
0–10 A ac/dc	4–20 mA	F	25x99x94	SW10A4	XW001209	105
0–20 A ac/dc	0–20/4–20 mA/0–10 V	F	25x99x94	SW20VA	XW000931	106
0–20 A ac/dc	0–10 V	F	25x99x94	SW20V10	XW001200	106
0–20 A ac/dc	0–20 mA	F	25x99x94	SW20A0	XW001205	107
0–20 A ac/dc	4–20 mA	F	25x99x94	SW20A4	XW001210	107
0–50 A ac/dc	0–20/4–20 mA/0–10 V	F	25x99x94	SW50VA	XW000932	108
0–50 A ac/dc	0–10 V	F	25x99x94	SW50V10	XW001201	108
0–50 A ac/dc	0–20 mA	F	25x99x94	SW50A0	XW001206	109
0–50 A ac/dc	4–20 mA	F	25x99x94	SW50A4	XW001211	109
0v50 A ac	adjustable threshold 1–30 A	open collector output	37x75x93	CCIS-1	XCCIS1	99
0–50 A ac	adjustable threshold 2–40 A	output with relay 1SC	43x75x93	CCIS-R	XCCISR	99

Analog converters selection table

Frequency converter

Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	Page
0–100/0–200/0–500 Hz	0–20/4–20 mA/0–10 V	P/AS	22.5x119x108	CFC1	XCFC1	110
0–1/0–2/0–5 kHz	0–20/4–20 mA/0–10 V	P/AS	22.5x119x108	CFC2	XCFC2	110

A/D and D/A converter

Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	Page
0–10 V	8 bit	F	25x99x94	ADC08V10	XW000933	112
0–20 mA	8 bit	F	25x99x94	ADC08A0	XW000934	112
4–20 mA	8 bit	F	25x99x94	ADC08A4	XW000935	113
8 bit	0–10 V	F	25x99x94	DAC08V10	XW000936	114
8 bit	0–20 mA	F	25x99x94	DAC08A0	XW000937	114
8 bit	4–20 mA	F	25x99x94	DAC08A4	XW000938	115

Threshold modules

Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	Page
0–10 V	output with SPDT relay	threshold 0.3–10 V hysteresis 0.1–10 V	25x99x94	GWMV10	XW000926	116
0–20 mA	output with SPDT relay	threshold 0.6–20 mA hysteresis 0.2v–20 mA	25x99x94	GWMA0	XW000927	116

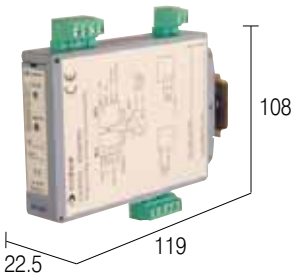
Signal polarity inverter

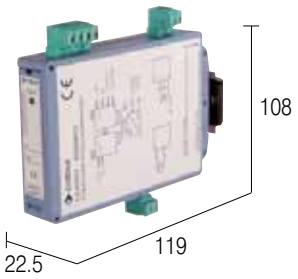
Input signal	Output signal	Typology	Dimension AxBxC	Type	Code	Page
17–30 Vdc	NPN	PNP	12x45x77	CI-NPN/PNP	XNPNPNP	117
17–30 Vdc	PNP	NPN	12x45x77	CI-NPN/PNP	XNPNPNP	117

Legend
AS = with auxiliary sensor feed
CA = with alarm contact
F = fixed value
P = programmable
SG2 = with 2-way galvanic isolation
SG3 = with 3-way galvanic isolation

Programmable analog signal converter three way galvanic isolation

- 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

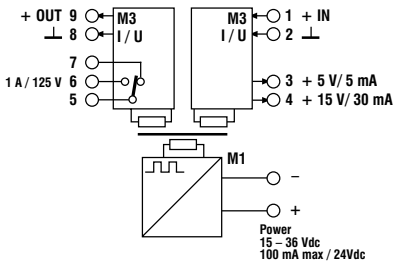


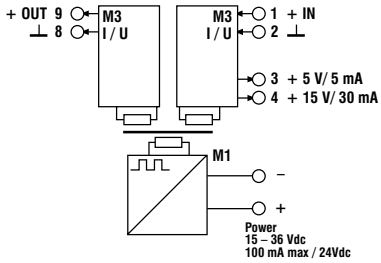


BLOCK DIAGRAMS / NOTES

The height measurement of 108 mm includes the pluggable terminals.
(I) 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.
See application on page 89 and 90.

Block diagram





VERSIONS

	CA-PI/PO	CA-PI/PO1
With alarm contact	Cod. XSSAPIPO	
Without alarm contact		Cod. XSSAPIPO1

OUTPUT TECHNICAL DATA

Input signal (1)	19 programmable ranges (see tab.1)	19 programmable ranges (see tab.1)
Inpedance voltage/current mode	1 MΩ / 50 Ω	1 MΩ / 50 Ω
Max. input voltage	15 V	15 V
Max. input current	30 mA	30 mA

DATI TECNICI DI USCITA

Output signal (1)	7 programmable ranges (see tab. 2)	7 programmable ranges (see tab. 2)
Load impedance (voltage/current model)	≥ 10 Ω / ≤ 500 Ω	≥ 10 Ω / ≤ 500 Ω
Max. output voltage	12 V	12 V
Max. output current	25 mA	25 mA

GENERAL TECHNICAL DATA

Supply voltage	15–36 Vdc	15–36 Vdc
Rated current	100 mA max. a 24 Vdc	100 mA max. a 24 Vdc
Auxiliary DC feed output max. current	5 mA / 5 Vdc, 30mA / 15 Vdc	5 mA / 5 Vdc, 30mA / 15 Vdc
Gain error	< 0.1% full-scale	< 0.1% full-scale
Offset error	< 0.05 % full-scale	< 0.05 % full-scale
Linearity error	< 0.1% full-scale	< 0.1% full-scale
Zero adjustement	± 10% full-scale	± 10% full-scale
Span adjustement	± 10% full-scale	± 10% full-scale
Max frequency	400Hz–1kHz according to full-scale	400Hz–1kHz according to full-scale
Rise time	150 mV / μs	150 mV / μs
Bandwidth	1 kHz a -6 dB	1 kHz a -6 dB
Phase delay	< 10 μs	< 10 μs
I/O/supply isolation	> 3 kVac /60 s	> 3 kVac /60 s
Contact/analog output isolation	≥ 500 Vac /60 s	–
Continuous voltage isolation	Max 800 Vac	Max 800 Vac
Reference Standards	IEC 664-1, DIN VDE0110.1	IEC 664-1, DIN VDE0110.1
Over-voltage category	3	3
Pollution group	3	3
Operating temperature	-10 + 65°C	-10 + 65°C
Δ T	5°C	5°C
Contact rated current	1 A / 30 Vdc , 0.5 A / 125 Vac	–
Protection degree	IP30	IP30
EMC standards	EN 50081-2 , EN 50082-2	EN 50081-2 , EN 50082-2
Connection terminal blocks	2.5 mm² pluggable	2.5 mm² pluggable
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	160 g ca	150 g ca
Mounting information	adjacent without group	adjacent without group
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

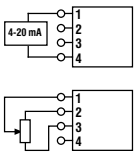
INPUT STAGE

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 – 1V ± 1 V
- 0 – 5V ± 5 V
- 0 – 10V ± 10 V
- 0 – 5 mA ± 5 mA
- 0 – 10 mA ± 10 mA
- 0 – 20 mA ± 20 mA
- 4 – 20 mA

The input stage provide two auxiliary suply outputs, for feeding loop powered sensor and potentiometer directly from the module (5 V and 15 V)

Example of connection:



The converter have an auxiliary 15Vdc/30mA voltage output, useful to feed remote loop sensor ; to compensate the voltage dropo on very long wires, the 15Vdc can be rised to 24Vdc, by connecting to M2 output terminal blocks the CSLOOP additional module (see more details on page 158).

OUTPUT STAGE

The modules supplies in output single-pole and two-pole signals with the following ranges (see Table 2):

- 0 – 5V ± 5V
- 0 – 10V ± 10V
- 0 – 20 mA ± 20 mA
- 4 – 20 mA

The LIMITER function limits the output to the maximum (or minimum) range value in the case of an overloaded input. This condition is indicated by the lighting of the red LED. The fault also causes switching of a pure contact. The contact, available on terminals 5, 6 and 7 of M3, can be used for process alarms.

TAB.1 - INPUT SELECTION TABLE

INPUT RANGE		SW1 (INPUT)							
UNIPOLAR	BIPOLAR	1	2	3	4	5	6	7	8
0 – 60mV	± 60mV								
0 – 100mV	± 100mV		•						
0 – 500mV	± 500mV			•					
0 – 1V	± 1V				•				
0 – 2V	± 2V						•		
0 – 5V	± 5V			•	•	•	•		
0 – 10V	± 10V							•	
0 – 5mA	± 5mA	•		•					
0 – 10mA	± 10mA	•			•				
0 – 20mA	± 20mA	•					•		
4 – 20mA		•				•			•

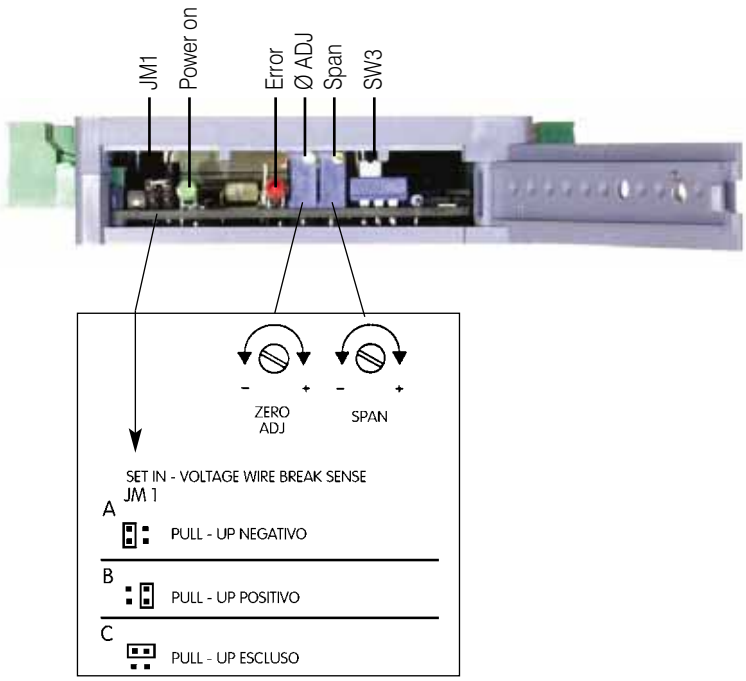
• = ON
= OFF
X = ANY

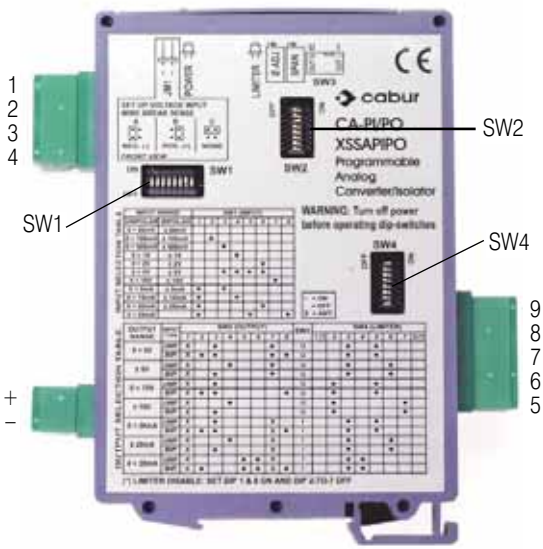
TAB.2 - OUTPUT SELECTION TABLE

OUTPUT RANGE	INPUT TYPE	SW2 (OUTPUT)								SW3	SW4 (LIMITER)							
		1	2	3	4	5	6	7	8		1 (*)	2	3	4	5	6	7	8 (*)
0 – 5V	UNIP.	X		•				•		U			•		•			
	BIP.	X	•	•				•	•	U			•		•			
± 5V	UNIP.	X			•			•		U			•			•		
	BIP.	X		•				•		U			•					
0 – 10V	UNIP.	X		•						U		•			•			
	BIP.	X	•	•					•	U		•			•			
± 10V	UNIP.	X			•					U		•					•	
	BIP.	X		•						U		•					•	
0 – 20mA	UNIP.	X		•				X		I			•		•			
	BIP.	X	•	•				X	•	I			•		•			
± 20mA	UNIP.	X			•			X		I			•			•		
	BIP.	X		•				X		I			•			•		
4 – 20mA	UNIP.	X				•	•	X		I			•	•				
	BIP.	X	•			•	•	X	•	I			•	•				

(*) LIMITER DISABLE: SET DIP 1 & 8 ON AND DIP 2 TO 7 OFF

CSLOOP





Description of functions

LIMITER: (only CA-PI/PO) if the minimum or maximum level of the input signal is exceeded, or with a broken wire in input, the LIMITER attracts the relay, switches the SPDT and limits the output signal to the maximum or minimum range value according to the setting. N.B.: the module is delivered with the LIMITER disabled (dip 1,8 ON and 2, 4, 5, 6, 7 OFF, SW4 and jumper JM1 at setting C). The limiter is enabled by setting SW4 (see Table 1).

ZERO ADJ: ±10% regulation of the minimum level of the signal range.

SPAN: ±10% regulation of the maximum level of the signal range.

N.B.: by regulating one trimmer, the regulation set with the other one also varies slightly. Subsequent adjustments are necessary for achieving the maximum precision.

BROKEN WIRE INDICATION: the function is available for 4-20mA current and voltage signals. It is set with jumper JM1 at setting A, B or C (see Table 4) and enabling the LIMITER function.

JM1 setting A: the output goes to the negative end of scale -10.05V, -5-05V, -20.05mA with two-pole signals; -0.1V, -0.05mA, 2mA (with 4-20mA) with single-pole signals; the relay is attracted, the red LED is lit.

JM1 setting B: the output goes to the negative end of scale 10.1V, 20.05mA with both single-pole and two-pole signals; the relay is attracted, the red LED is lit.

JM1 setting C: function disabled; in output there is a signal as if 0.V were applied in input; the function is always enabled with a 4-20 mA input and the limiter set

N.B: with current input the function is only possible with a 4-20mA signal; the output behaves as "JM1 setting A", but JM1 has to be at setting C.

LIMITER red RED: if the function is set, it indicates tripping of the LIMITER when the input signal exceeds the minimum or maximum range level, or with wire broken in input. With a current output, it also indicates the wire broken in output; with the red LED lit, the relay is always attracted.

POWER green LED: indicates that power is supplied

Terminal block 1: positive of the input signal
Terminal block 2: negative of the input signal
Terminal block 3: 5Vdc /5 mA auxiliary power supply, e.g. for potentiometers
Terminal block 4: 115Vdc /30 mA auxiliary power supply for 4-20 mA two-wire loop sensors
Terminal block 5: contact 14 of the relay
Terminal block 6: contact 11 of the relay
Terminal block 7: contact 12 of the relayt
Terminal block 8: output signal negative
Terminal block 9: output signal positive
Terminal block +: power supply positive
Terminal block -: power supply negative

Programming of the module

The module can be programmed with the dip-switches located on one side, the ZERO ADJ and SPAN trimmers, the switch SW3 and the jumper JM1, located behind the front openable panel.

■ ANALOG CONVERTER/GALVANIC ISOLATOR: RAPID PROGRAMMING

N.B.: only switch the micro-switches when power is not supplied

1 input: set the range with SW1 (see Table 1)
2 output: set the signal mode with SW3; U = voltage, I = current (see Table 4)
3 output: set the output range with SW2 (see Table 2)
4 if required, set the LIMITER function with SW4 in relation to the output range (see Table 1) and with JM1 (see Table 4)
5 if required, set the "broken wire indication" function with JM1 (see Table 4).

N.B: by this procedure the error may reach 2% with single-pole/single-pole or two-pole/two-pole conversions, 4% with single-pole/two-pole conversions or vice versa. The error depends on the deviation of the ranges set in relation to the 0-10V/0-10V works calibration.

■ ANALOG CONVERTER/GALVANIC ISOLATOR: PRECISION CALIBRATION

To achieve < 0.1% error, supply power to the module for 5 minutes before calibration as indicated in points A to K. Use a 24Vdc stabilised power supply, a calibrated source of standard signals to generate the input signal and a multimeter with scale of 41/2 figures for displaying the output signal.
Precision of the calibration depends on the precision of the instruments used.

N.B.: only switch the micro-switches when power is not supplied

A check that the LIMITER is disabled or disable it by setting dip-switches 1,8 to ON, 1,8 to OFF, 2,3,4,5,6 of SW4 to OFF
B input: set the signal range with SW1 (see Table 1)
C output: set the signal mode; voltage SW3 setting U, current SW3 setting I (see Table 4)
D output: set the signal range with SW2 (see Table 2). The setting of SW2 varies according to whether the input signal is single-pole or two-pole, as indicated in the INPUT TYPE column of Table 1, SW2
E connect the multimeter to the output, terminals 9(+) and 8(-)
F supply power to the module at terminals + and -
G set the source to the required signal and connect it to the terminals 1(+) and 2(-)
H regulate the source to the minimum range level with single-pole signals or at the max. negative level with two-pole signals; regulate ZERO ADJ until the minimum range value is read on the multimeter with single-pole signals or the max. negative value with two-pole signals (regulate the signal in output from the source beyond the min. value to cause tripping of the LIMITER and check its operation, if the function is enabled).
I regulate the source to the max. positive level of the signal; regulate SPAN until the value equal to the signal in input is read on the multimeter (regulate the signal in output from the source beyond the max. value to cause tripping of the LIMITER and check its operation, if the function is enabled)
L repeat points H and I until the required precision is obtained (normally three times)
J setting of the LIMITER function: power supply OFF: switch SW4 as per Table 3 in relation to the range set (to check operation repeat points H and I after having set the LIMITER function)
K if one of the signals set is two-pole, check calibration also at the centre of the range value for precise calibration of the offset.

N.B: the loop-powered sensors must be connected to terminals 4 (+15 VDC) and 1 (+IN)

■ **POTENTIOMETRIC CONVERTER: RAPID PROGRAMMING**

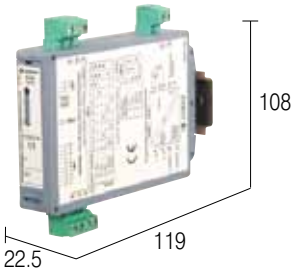
1 set the input range to 0-5V with SW1 (see Table 1)
2 set the output range and mode with SW3 (see Table 4) and SW2 (see Table 2
3 connect one pole of the potentiometer (value > 1 kW) to terminal 3 (output +5V / 5 mA of power supply of the potentiometer)
4 connect the cursor of the potentiometer to terminal 1 (signal positive)
5 connect the other pole of the potentiometer to terminal 2 (signal negative)
6 set the output range with SW3 (see Table 4) and SW2 (see Table 2)
7 if required, set the LIMITER with SW4 at 0 - 5 V (see Table 3) and with JM1 (see Table 4)
8 if required, set the broken wire indication function with JM1 (see Table 4)
9 supply power to the module at terminals + and -

■ **POTENTIOMETRIC CONVERTER: PRECISION CALIBRATION**

9 proceed as above from points 1 to 8
10 connect to the terminals 9 (+) and 8 (-) a 4-figure multimeter for reading the signal
11 with the potentiometer at zero calibrate ZERO ADJ until zero is read on the multimeter or with a two-pole output the max. negative value
12 with the potentiometer at max. calibrate SPAN until the max. signal is read on the multimeter
13 repeat points 11 and 12 until the required precision is obtained..

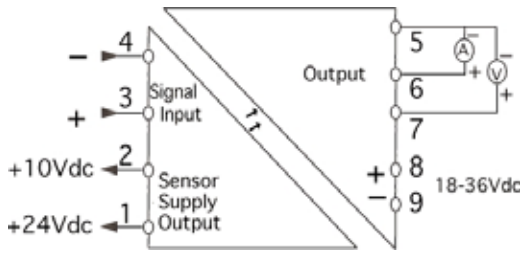
Programmable analog signal converter with galvanic isolation

- 5 input scales
- 7 output scales
- IN/OUT isolation >3 kVac
- Auxiliary supply output for loop-powered sensors
- Input for potentiometer



BLOCK DIAGRAMS / NOTES

The height measurement of 108 mm includes the pluggable terminals.
(I) The modules in stock are programmed and calibrated 0-10 V input and 0-10 V output.
See the application on page 92.



VERSIONS

Without galvanic isolation	–	
With galvanic isolation	**CA-PI**	Cod. XCAPI

INPUT TECHNICAL DATA

Input signal (1)	0-5 V, 0-10 V, ±10 V, 0-20 mA, 4-20 mA (see tab.1)
Inpedance voltage/current mode	100 kΩ / 100 Ω
Max. input voltage	15 V
Max. input current	30 mA

OUTPUT TECHNICAL DATA

	TENSIONE	CORRENTE
Output signal (1)	0-5 V / 0-10 V	0÷20 mA / 4÷20 mA
Max. output signal	12 V	24 mA
Applicable load	> 10 kΩ	< 400 Ω
Impedance with voltage output	1 kΩ	–

GENERAL TECHNICAL DATA

Supply voltage	18-36 Vdc
Rated current	50 mA a 24 Vdc
Auxiliary DC feed output max. current	10 Vdc - 10 mA max. / 24 Vdc - 25 mA max.
IN/OUT & SUPPLY isolation	3 kVac / 60 s
ZERO / SPAN range regulation	± 15% / -30% +10%
Linearity error	< ±0.1% full range
Temperature coefficient	< ±0.02%
EMC Standards	EN 50081-2, EN 50082-1, EN 61000-4-4 liv. 4
Overvoltage category	II
Pollution group	2
Operating temperature	-20° C +70° C
Protection degree	IP 20
Connection terminal blocks	2.5 mm² pluggable
Housing material	polyamide UL94V-0
Approximative weight	120 g
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components for operating temperature > 45°C
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	

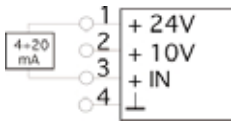
INPUT STAGE

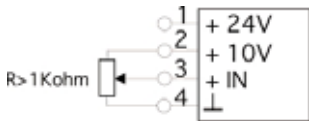
The module can convert single polarity and double polarity inputs signals, choosing from the belove listed scales (see Table 1):

- 0 ÷ 5 V
- 0 ÷ 10 V
- ± 10 V
- 0 ÷ 20 mA
- 4 ÷ 20 mA

The input stage provide two auxiliary suply outputs, for feeding loop powered sensor and potentiometer directly from the module (10 V and 24 V)

Fig.1 Example of connection





General characteristic

The module provides input/output galvanic isolation and converts voltage and current analog input signals, into analoge signal output. Input and output signals are programmable by changing the position of the jumper bridges placed behind the front openable hinged cover. ZERO and SPAN trimmers allows to get an accurate calibration or to set up custom values.
The negative of the signal output is connected to the negative of the 18-36Vdc supply input. The module is provided with two auxiliary Vdc output supplies for feeding loop powered sensor or a potentiometer; the aux. Vdc supplies are

Description of functions

LED (green) **"POWER"**: it is ON when the modules is powered.
TERMINALS 1: auxiliary loop sensor feed 24 Vdc / 30 mA
TERMINALS 2: auxiliary potentiometer feed 10 Vdc / 10 mA
TERMINALS 3: positive voltage / current input signal
TERMINALS 4: negative voltage / current input signal
TERMINALS 5: negative voltage / current output signal
TERMINALS 6: current output signal
TERMINALS 7: voltage output signal
TERMINALS 8: +positive supply input
TERMINALS 9: – negative supply input

Programming of the module

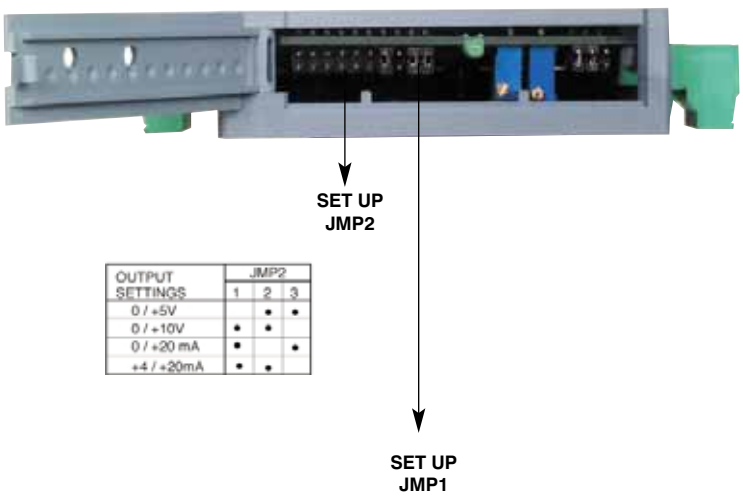
N.B.: only switch the micro-switches when power is not supplied

RAPID PROGRAMMING
This procedure allows ±1% accuracy at full scale ; for set-up, see TAB.1 and TAB.2, and set up the jumpers according to required input/output signal; no instruments are needed for this calibration procedure.

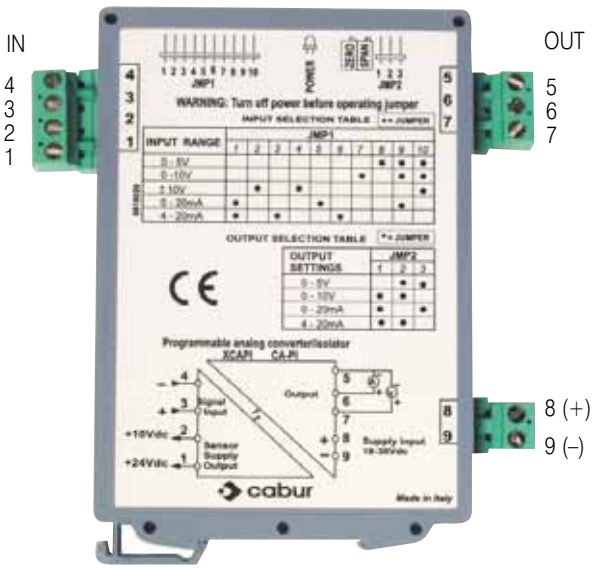
PRECISION CALIBRATION
This procedure allows to achieve 0.1% full-scale accuracy:
A - set JUMP1 for input signal set up (see TAB.1) ; set JUMP2 for output signal set up (see TAB.2)
B - feed the module to the terminals 8 (+) e 9 (-) , and wait 5 minutes for thermal stabilization
C - connect a U / mA meter to the output terminal blocks 5-7 for voltage output signal , or 5-6 for current output signal
D - set the source to the required signal and connect it to the terminals 3 + and 4
E - adjust the source to minimum range level; adjust ZERO ADJ until the minimum range value is read on the U / mA meter
F - adjust the source to max. positive signal level ; adjust SPAN until a value equal to input signal is read on the U / mA meter
scala in uscita uguale all'ingresso
G - repeat points E and F to achieve the required accuracy (normally three times)
Required instruments : 18-36Vdc/100mA stabilized power supply; calibrated standard signals source to generate the input
signal ; U / mA meter with 4 or 4,1/2 digit display for reading the output signal.
Accuracy of the calibration depends on the precision of used instruments.

POTENTIOMETRIC CONVERTER FUNCTION
Connect the potentiometer as in diagrams page 3; set input on 0-10V scale, then set up required output range; potentiometer value : ≥ 1 kΩ , ≤ 10kΩ

TAB. 2 - OUTPUT SELECTION (FRONT VIEW)



OUTPUT SETTINGS	JMP2 1	2	3
0 / +5V		•	•
0 / +10V	•	•	
0 / +20 mA	•		•
+4 / +20mA	•	•	



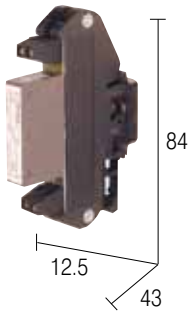
TAB. 1 - SELECTION TABLE

• = JUMPER

INPUT RANGE	JMP1 1	2	3	4	5	6	7	8	9	10
0 - 5V								•	•	•
0 - 10V							•		•	•
-10 - 10V		•		•						•
0 - 20mA	•				•				•	
4 - 20mA	•		•			•				

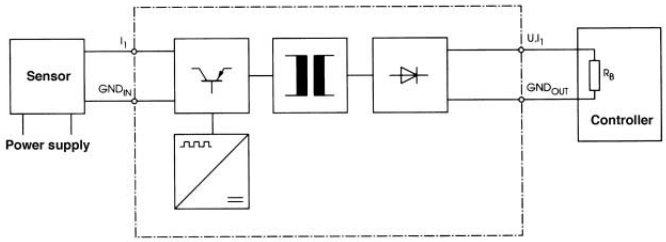
Passive galvanic isolators

- Do not require power supply
- Low energy requirement



BLOCK DIAGRAMS / NOTES

Block diagram



APPLICATIONS

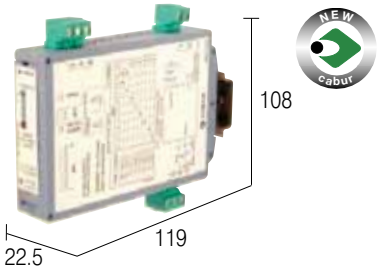
Passive galvanic isolators can be used for separating the signals generated by active sensors (i.e. with power supplied ones).
The input of the controller must have resistance less than 500 W for the types with 0(4) 20 mA output or higher than 50 kW for the versions with voltage outputs and these values must also include the resistance of the signal conductors.
When these conditions of use are met, the passive isolators/converters allow the costs of wiring to be reduced and avoid the use of external power supplies.

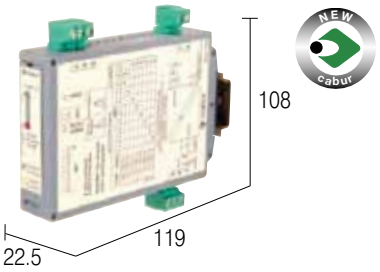
VERSIONS

	TWPAABT Cod. XW001253	**TWPA0V10BT** Cod. XW001313
INPUT TECHNICAL DATA		
Input signal	0 – 20 mA / 4 – 20 mA	0 – 20 mA
Max. input current	50 mA	50 mA
Max. input voltage	17 V	17 V
Voltage drop	> 2 V	> 2 V
OUTPUT TECHNICAL DATA		
Input signal	0 –20 mA / 4–20 mA	0 –10 V
Max. output current	$U_{II}=I_{II}$ x R_{II}	-
Max. output voltage	-	$I_U=UI_U$ / R_U
Load impedance	<500 Ω	<00 Ω
GENERAL TECHNICAL DATA		
Operating temperature	-20 –65°C	-20 –65°C
IN/OUT isolation	0.5 kVac /60 s	0.5 kVac /60 s
Transmission error	< 0.1%	< 0.1%
Load influence	< 0.2% con 100 kW	< 0.2% con 100 kW
Temperature coefficient	< 50 ppm/k	< 50 ppm/k
Max frequency	30 Hz	30 Hz
Protection degree	IP20	IP20
Reference standard	EN55011, IEC801.2, 3, 4	EN55011, IEC801.2, 3, 4
Housing materials	–	–
Approximative weight	polyamide UL94V-0	polyamide UL94V-0
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

RTD programmable converter

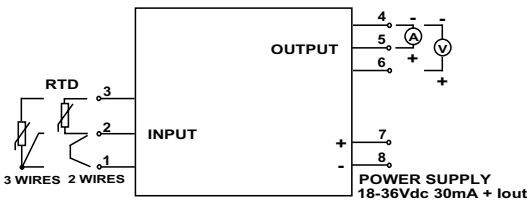
- For 2 or 3-wire RTD
- Eight programmable temperature range
- 3 programmable output
- Available with and without galvanic isolation

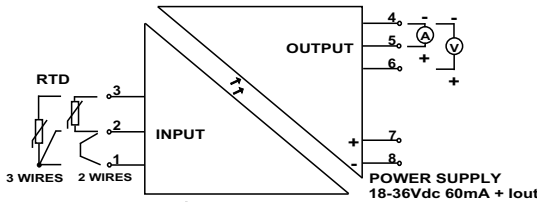




BLOCK DIAGRAMS / NOTES

(1) The output of the converter offers a voltage signal and two current signals; the voltage signal is always available, even if one current signal is used. Set up is possible changing the position of jumper bridges accessible behind the openable front panel.
(2) The transmission error can be reduce to a ±1% value by a full range precision calibration.





VERSIONS

Without galvanic isolation	**CA-RTD2**	Cod. XCARTD2
With galvanic isolation	**CA-RTDI2**	Cod. XCARTDI

INPUT TECHNICAL DATA

Input signal	3 or 2 wire PT100	3 or 2 wire PT100
Temperature range	0–50° / 0–100° / 0–150° / 0–200° / 0–300° / 0–400° ±50° / -50°–100° C	0–50° / 0–100° / 0–150° / 0–200° / 0–300° / 0–400° ±50° / -50°–100° C
Turn on current PT100	< 1,3 mA	< 1,3 mA
Max resistance (3 wires)	< 10 Ω	< 10 Ω

OUTPUT TECHNICAL DATA

	VOLTAGE	CURRENT	VOLTAGE	CURRENT
Max. output current (1)	0–10 V	0–20 mA / 4–20 mA	0–10 V	0–20 mA / 4–20 mA
Max. output signal	12 V	24 mA	12 V	24 mA
Load impedance	> 10 kΩ	< 400 Ω	> 10 kΩ	< 400 Ω
Broken wire output signal	>11 V	>22 mA	>11 V	>22 mA

GENERAL TECHNICAL DATA

Supply voltage	18–36 Vdc	18–36 Vdc
Rated current	70 mA a 24 Vdc	70 mA a 24 Vdc
I/O & MAIN ISOLATION	–	3 kVac / 60 s
Transmission error	< ±1% c.a.(2)"	< ±1% c.a.(2)"
Temperature coefficient	< ±0,02%	< ±0,02%
EMC Standard	EN 50081-2 EN 50082-1	EN 50081-2 EN 50082-1
Overvoltage category	II	II
Pollution degree	2	2
Operating temperature	-20° C – +70° C	-20° C – +70° C
Protection degree	IP 30	IP 30
Terminals / connectors	2.5 mm² pluggable	2.5 mm² pluggable
Housing materials	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	100 g	115 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

General characteristics

The module converts signals from an RTD sensor into an analogue signal. It is programmable into 8 temperature ranges and its output offers one voltage signal and two current signals; the voltage signal is always available, even if one current signal is used. Set up is possible changing the position of jumper bridges accessible behind the openable front panel.

The negative pole of the analogue output is in common with the negative pole of the supply input.
ATTENTION If the temperature sensor is not isolated from the ground, or if distance between the converter and the sensor is longer than 10-15m, it is recommended to use the input/output isolated converter CA-RTDI2

Description of the function

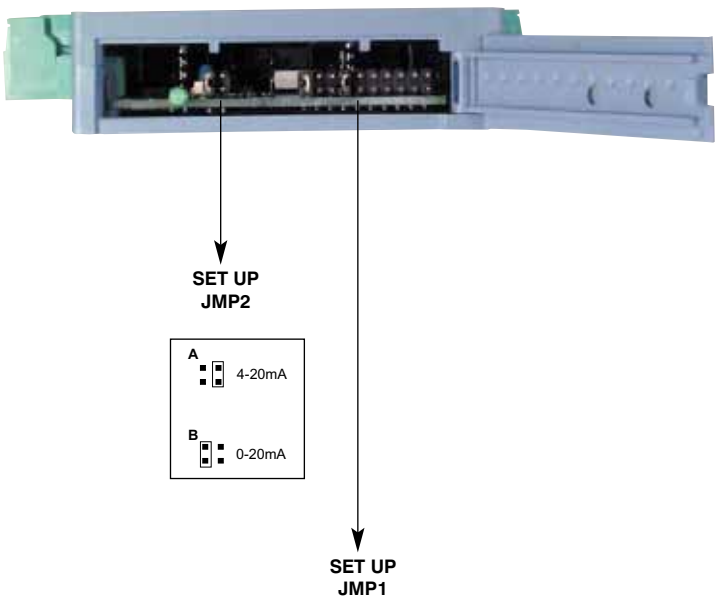
LED (red) **SENSOR FAILURE:** "broken wire" or "broken RTD" display
LED (green) **"POWER":** displays that the module is powered
TERMINALS 1: RTD feed ouptut
TERMINALS 2: RTD signal input
TERMINALS 3: common RTD input
TERMINALS 4: output common
TERMINALS 5: output signal (current)
TERMINALS 6: output signal (voltage)
TERMINALS +: positive supply input
TERMINALS –: negative supply input

Programming the converter

ATTENTION: turn off power before switching the jumper bridges

1 open the front cover
2 set up the input temperature range, selecting the position of the jumper bridge JMP1 (see TAB.1)
3 3. the converter offers one voltage and two current output signals; the voltage signal is always available, even if one current signal is used. The current signals are available on terminal block 5; 0-20mA or 4-20mA can be selected with jumper JMP2 : position A=0-20mA , position B=4-20 mA.
4 close the front cover, connect the input terminals M1, the output terminals M2 and the main terminals M3.

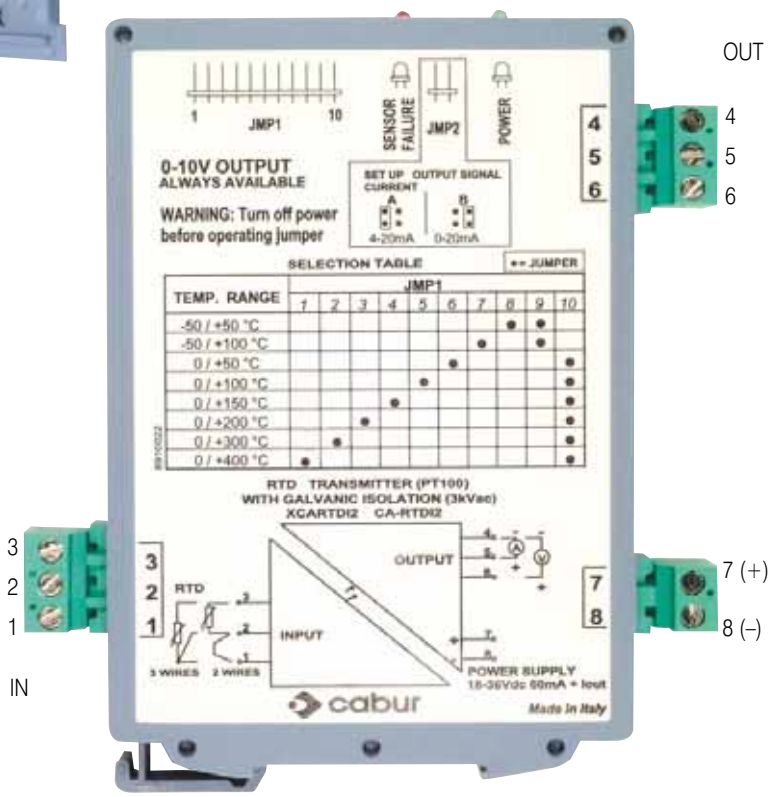
TAB. 2 - OUTPUT SELECTION (FRONT VIEW)



TAB. 1 - SELECTION TABLE

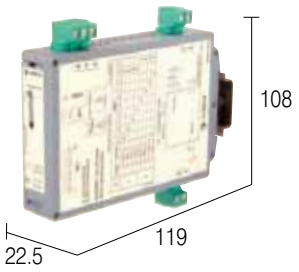
¥ JUMPER

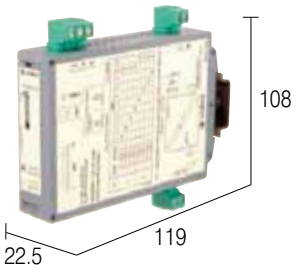
TEMP. RANGE	JMP1									
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
-50 / +50 ¡C								¥	¥	
-50 / +100 ¡C							¥		¥	
0 / +50 ¡C						¥				¥
0 / +100 ¡C					¥					¥
0 / +150 ¡C				¥						¥
0 / +200 ¡C			¥							¥
0 / +300 ¡C		¥								¥
0 / +400 ¡C	¥									¥



J & K TC programmable converter

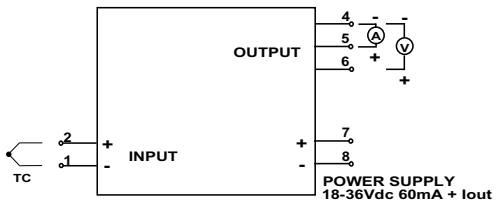
- For TC J and K
- 8 programmable temperature range
- 3 programmable output
- Available with and without galvanic isolation

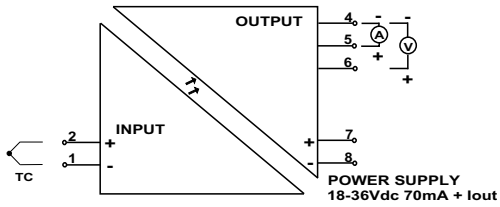




BLOCK DIAGRAMS / NOTES

(1) The output of the converter offers a voltage signal and two current signals; the voltage signal is always available, even if one current signal is used. Set up is possible changing the position of jumper bridges accessible behind the openable front panel.
(2) The transmission error can be reduce to a ±1% value by a full range precision calibration.





VERSIONS

Without galvanic isolation	**CA-TC**	Cod. XCATC
With galvanic isolation	**CA-TCI**	Cod. XCATCI

INPUT TECHNICAL DATA

Input signal	Termocouples J and K	Termocouples J and K
Temperature range (J)	0–500° / 0–600° / 0–700° / 0–800° C	0–500° / 0–600° / 0–700° / 0–800° C
Temperature range (K)	0–600° / 0–800° / 0–1000° / 0–1200° C	0–600° / 0–800° / 0–1000° / 0–1200° C

OUTPUT TECHNICAL DATA

	VOLTAGE	CURRENT	VOLTAGE	CURRENT
Max. output current (1)	0–10 V	0–20 mA / 4–20 mA	0–10 V	0–20 mA / 4–20 mA
Max. output signal	12 V	24 mA	12 V	24 mA
Load impedance	> 10 kΩ	< 400 Ω	> 10 kΩ	< 400 Ω
Broken wire output signal	–	–	–	–

GENERAL TECHNICAL DATA

Supply voltage	18–36 Vdc	18–36 Vdc
Rated current	80 mA a 24 Vdc	80 mA a 24 Vdc
I/O & MAIN ISOLATION	–	2 kVac / 60 s
Transmission error	< ±1% c.a.(2)"	< ±1% c.a.(2)"
Temperature coefficient	< ±0,02%	< ±0,02%
EMC Standard	EN 50081-2 EN 50082-1	EN 50081-2 EN 50082-1
Overvoltage category	II	II
Pollution degree	2	2
Operating temperature	-20° C – +70° C	-20° C – +70° C
Protection degree	IP 30	IP 30
Terminals / connectors	2.5 mm² pluggable	2.5 mm² pluggable
Housing materials	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	100 g	115 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

General characteristics

The module converts thermocouple sensor signal into an analogue signal. It is programmable into 8 temperature ranges and it offers one voltage and two current output signals ; the voltage signal is always available, even if one current signal is used. Set up is possible changing the position of jumper bridges accessible behind the openable front panel. The negative pole of the analogue output is in common with the negative pole of the supply input.
ATTENTION If the temperature sensor is not isolated from the ground or if distance between the converter and the sensor is longer than 10-15m, it is recommended to use the input/output isolated converter CA-TCI.

Description of the function

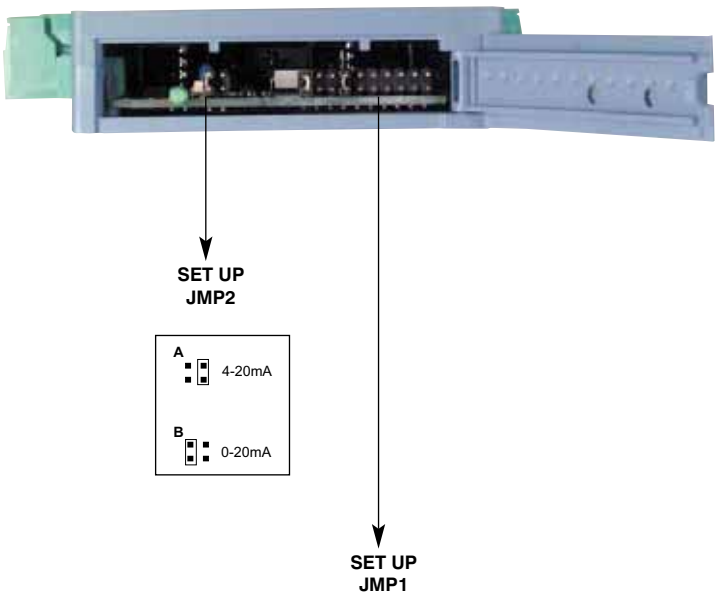
LED (green) **"POWER"**: displays that the module is powered
TERMINALS 1: negativeTC input
TERMINALS 2: positive TC input
TERMINALS 4: output common
TERMINALS 5: output signal (current)
TERMINALS 6: output signal (voltage)
TERMINALS +: positive supply input
TERMINALS –: negative supply input

Programming the converter

ATTENTION: turn off power before switching the jumper bridges

1 open the front cover
2 set up the input temperature range, selecting the position of the jumper bridge JMP1 (see TAB.1)
3 the converter offers one voltage and two current output signals; the voltage signal is always available, even if one current signal is used. The current signals are available on terminal block 5; 0-20mA or 4-20mA can be selected with jumper JMP2 : position A=0-20mA , position B=4-20 mA.
4 close the front cover, connect the input terminals M1, the output terminals M2 and the main terminals M3.

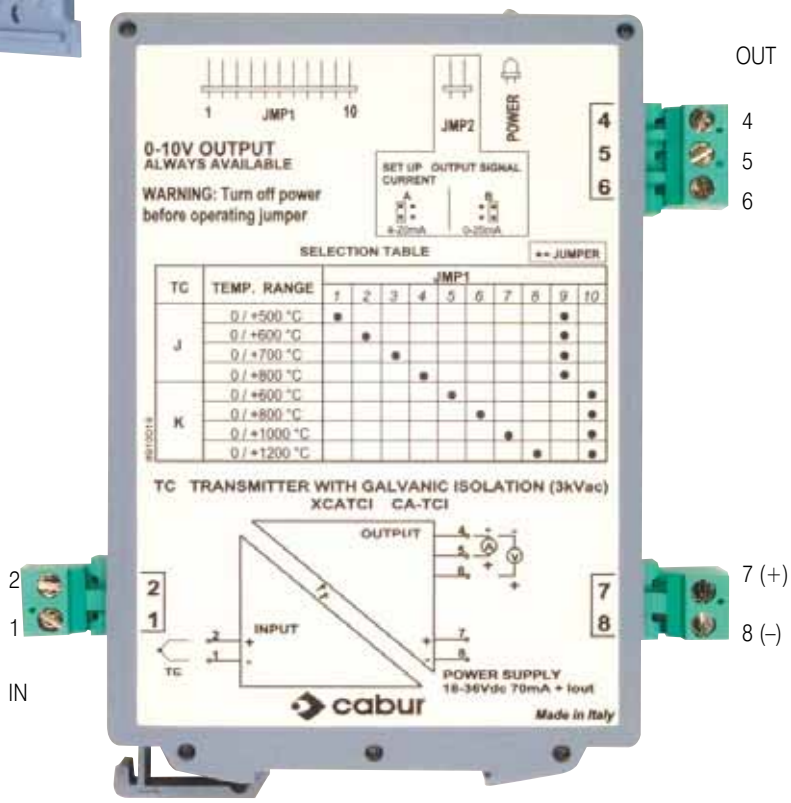
TAB. 2 - OUTPUT SELECTION (FRONT VIEW)



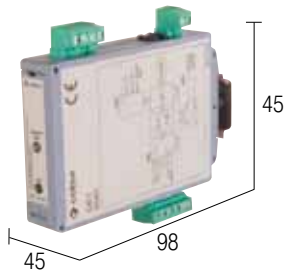
TAB. 1 - SELECTION TABLE

¥ JUMPER

TC	TEMP. RANGE	JMP1									
		1	2	3	4	5	6	7	8	9	10
J	0 / +500 ¡C	¥								¥	
	0 / +600 ¡C		¥							¥	
	0 / +700 ¡C			¥						¥	
	0 / +800 ¡C				¥					¥	
K	0 / +600 ¡C					¥					¥
	0 / +800 ¡C						¥				¥
	0 / +1000 ¡C							¥			¥
	0 / +1200 ¡C								¥		¥



TC & RTD programmable converter

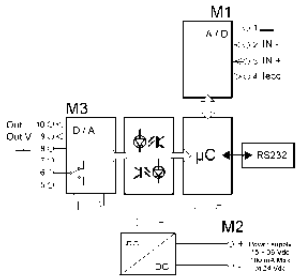


- Six programmable analog output signals
- Fault, sensor or broken wire signal contact
- IN/OUT/power>3 kV isolation
- Programmable with PC DOS

BLOCK DIAGRAMS / NOTES

(1) The standard modules are programmed for TE K, 0–1000°C 4–20 mA. Modules programmed for all the other possible configurations can be supplied on request.
Available upon request.

Block diagram

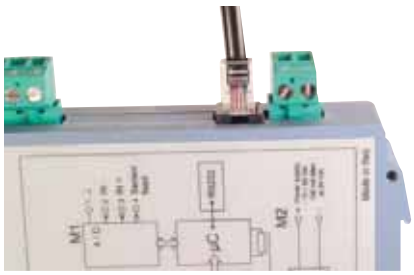


APPLICATIONS

VERSIONS

Converter	**CAT-1**	Cod. XCAT1
Connection cable	**CAT-1CC**	Cod. XCAT1CC
Programming software	**CAT-1SW**	Cod. XCAT1SW

Programming
Use PC DOS 3.10 or higher, or 486 microprocessor or higher.



INPUT TECHNICAL DATA

Input signal (1)	TE: J, K, R, S, T, B PT100, NI100 2, 3, 4 fili -
Temperature range	according to the linear used
Programming port	RS232 with connector RJ45

OUTPUT TECHNICAL DATA

Input signal (1)	0–5 V, ±5 V, 0–10 V,±10 V, 0–20 mA, 4–20 mA
Broken wire output signal	SPDT, 1 A / 30 Vdc, 0.5 A / 125 Vac

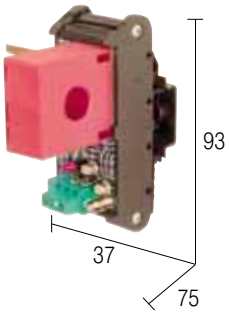
GENERAL TECHNICAL DATA

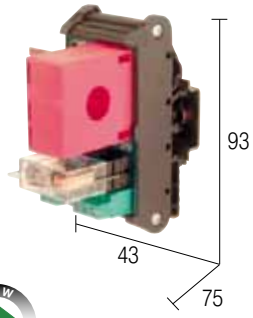
Supply voltage	15–36 Vdc
Rated current	100 mA a 24 Vdc
Operating temperature	-10 +65°C
I/O/supply isolation	3 kVac / 60 s
Contact/OUT isolation	0.5 kVac / 60 s
Linearization error	0.01°C – 0.1°C according to sensor
D/A conversion error	< 0.1% full-scale
Cold joint error	± 0.5°C
Conversion time	< 100 ms
Contact/output isolation	500 Vac / 60 s
Protection degree	IP30
Reference standards	IEC664-1
EMC standars	EN 50081-2, EN 50082-2
Terminal blocks	2.5 mm², screw, pluggable
Housing materials	polyamide UL94V-0
Approximative weight	160 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Programming kit
CAT1SW, code XCAT1SW, 31/2 floppy with programming software; CATICC, code XCATICC, PC connection cable, RS232 Sub/D 9 poles female /RJ45 length 1 m.

Current/threshold converter

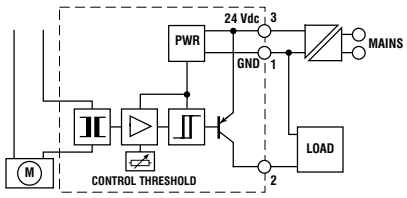
- Thresold value can be regulated
- Transistor or relay output
- IN/OUT isolation

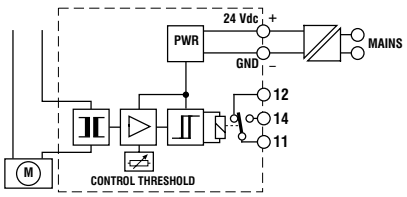




BLOCK DIAGRAMS / NOTES

Block diagram





APPLICATIONS

The module converts a current flowing through a circuit into a on/of threshold that can be adjusted with the potentiometer; when the current reaches the setted up current value, the relay (or the open collector transistor output in the CCIS model) swithces ; the wire must be feeded through the hole of the current sensor for current detection.
Attention : due to its speed, the module can detect also 10ms duration current peacks, so if threshold is setted up with a high accuracy, turning on loads that requires high inrush peack current, the peack is detected the relay or the transitor output switch on ; as soon as current returns to normal value, the relay or the transitor output switch off; to avoid the detection of inrush current peacks, set up the threshold to a lower accuracy, so leaving a certain histeresys to the current threshold detection; this set up can be achieved by making some trials and after this set up, make you sure that the threshold set up can detect dangerous currents.

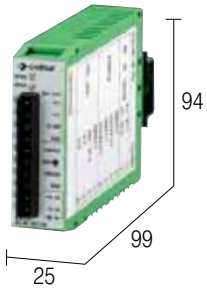
VERSIONS

Transistor output
Relé output

	CCIS-1 Cod. XCCIS1	**CCIS-R** Cod. XCCIS-R
INPUT TECHNICAL DATA		
Max. measured current	50A	50A
Max. measured voltage	600 Vac (1)	600 Vac (1)
Frequency	50–60 Hz	50–60 Hz
Hole's sensor diameter	13 mm	13 mm
OUTPUT TECHNICAL DATA		
Threshold regulation	1–30A	2–40A
Threshold hysteresis	± 10%	± 10%
Max. output current	100 mA open collector PNP	–
Output status	"high" 24 V (closed) with I < threshold "low" 0 V (open) with I > threshold	Turn off with I < threshold Turn on with I > threshold
Response time	20 ms	20 ms
Terminals / connectors	2.5 mm² fixed	2.5 mm² fixed
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	100 mA	100 mA
Operating temperature	0 – 60°C	0 – 60°C
I/O isolation	> 3 kVac /60 s	> 3 kVac /60 s
Housing materials	polyamide UL94V-03	polyamide UL94V-03
Approximative weight	100 g	120 g
Mounting inormation	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-1 A AC/DC current/analog converter

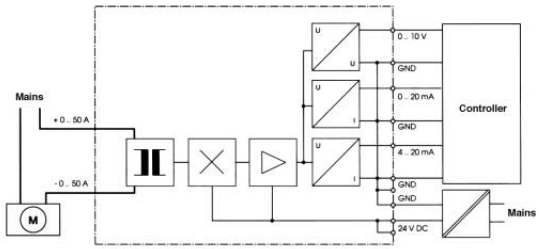
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
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. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

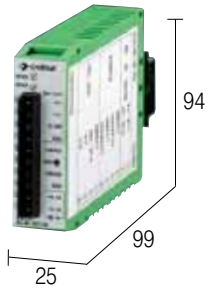
VERSIONS

Standard
With integral diode

	SW01VA Cod. XW000928	**SW01V10** Cod. XW001197
INPUT TECHNICAL DATA		
Input signal	0–1 A ac/dc	0–1 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	2.5 mm² screw connection	2.5 mm² screw connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	0–10 V / 0–20 mA / 4–20 mA	0–10 V / –
Max. output signal	11 V / 22 mA	11 V / –
Load impedance	>2 kΩ / <500 Ω	>2 kΩ / –
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-1 A AC/DC current/analog converter

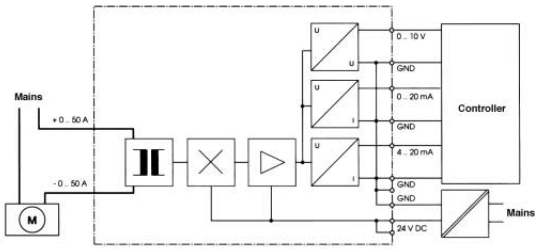
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

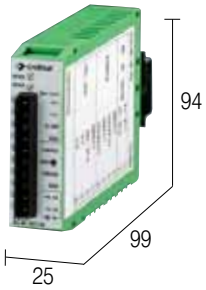
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW01A0 Cod. XW001202	**SW01A4** Cod. XW001207
INPUT TECHNICAL DATA		
Input signal	0–1 A ac/dc	0–1 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	2.5 mm² screw connection	2.5 mm² screw connection
OUTPUT TECHNICAL DATA	**VOLTAGE** **CURRENT**	**VOLTAGE** **CURRENT**
Input signal	– 0–20 mA	– 4–20 mA
Max. output signal	– 22 mA	– 22 mA
Load impedance	– <500 Ω	– <500 Ω
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-5 A AC/DC current/analog converter

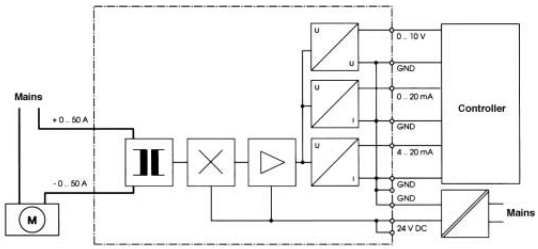
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

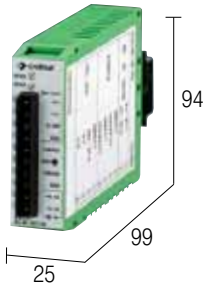
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW05VA Cod. XW000929	**SW05V10** Cod. XW001198
INPUT TECHNICAL DATA		
Input signal	0–5 A ac/dc	0–5 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	2.5 mm² screw connection	screw connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	0–10 V / 0–20 mA / 4–20 mA	0–10 V / –
Max. output signal	11 V / 22 mA	11 V / –
Load impedance	>2 kΩ / <500 Ω	>2 kΩ / –
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-5 A AC/DC current/analog converter

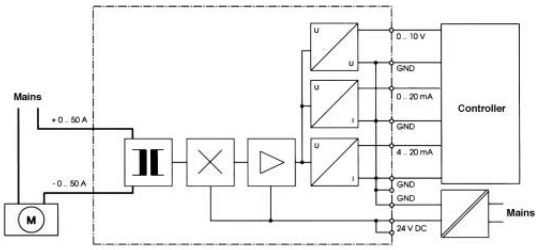
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

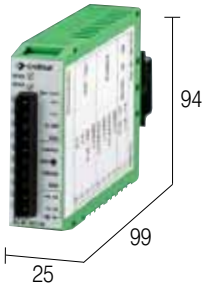
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW05A0 Cod. XW001203	**SW05A4** Cod. XW001208
INPUT TECHNICAL DATA		
Input signal	0–5 A ac/dc	0–5 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	2.5 mm² screw connection	2.5 mm² screw connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	– / 0–20 mA	– / 4–20 mA
Max. output signal	– / 22 mA	– / 22 mA
Load impedance	– / <500 Ω	– / <500 Ω
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-10 A AC/DC current/analog converter

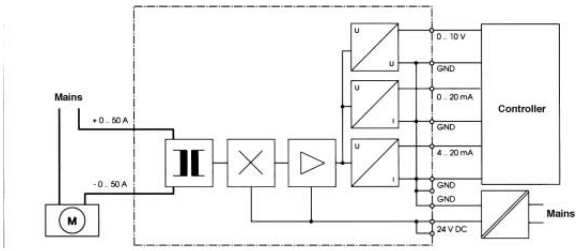
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

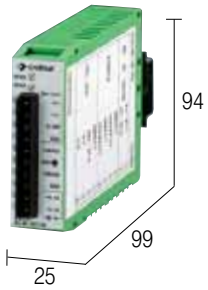
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW10VA Cod. XW000930	**SW10V10** Cod. XW001199
INPUT TECHNICAL DATA		
Input signal	0–10 A ac/dc	0–10 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	2.5 mm² screw connection	2.5 mm² screw connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	0–10 V / 0–20 mA / 4–20 mA	0–10 V / –
Max. output signal	11 V / 22 mA	11 V / –
Load impedance	>2 kΩ / <500 Ω	>2 kΩ / –
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-10 A AC/DC current/analog converter

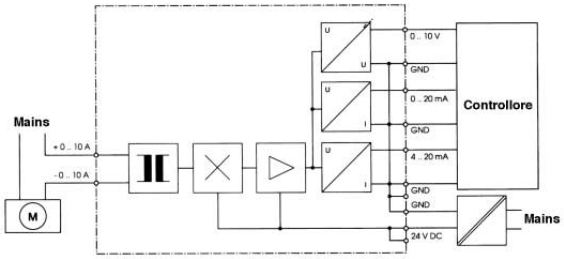
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

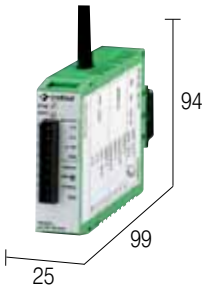
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW10A0 Cod. XW001204	**SW10A4** Cod. XW001209
INPUT TECHNICAL DATA		
Input signal	0–10 A ac/dc	0–10 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	2.5 mm² screw connection	2.5 mm² screw connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	– / 0–20 mA	– / 4–20 mA
Max. output signal	– / 22 mA	– / 22 mA
Load impedance	– / <500 Ω	– / <500 Ω
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-20 A AC/DC current/analog converter

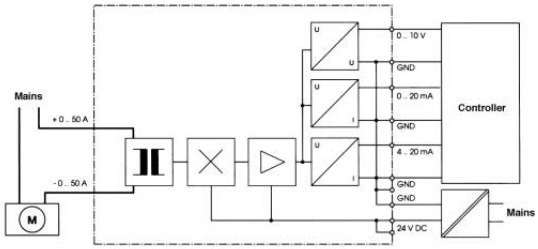
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

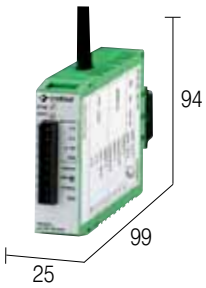
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW20VA Cod. XW000931	**SW20V10** Cod. XW001200
INPUT TECHNICAL DATA		
Input signal	0–20 A ac/dc	0–20 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	Ø 8 mm through-hole connection	Ø 8 mm through-hole connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	0–10 V / 0–20 mA / 4–20 mA	0–10 V / –
Max. output signal	11 V / 22 mA	11 V / –
Load impedance	>2 kΩ / <500 Ω	>2 kΩ / –
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-20 A AC/DC current/analog converter

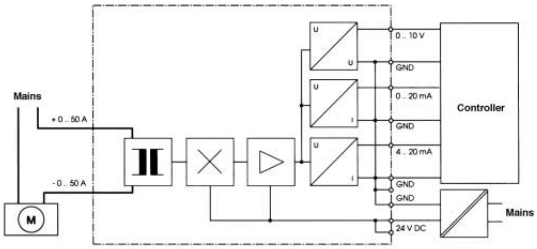
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

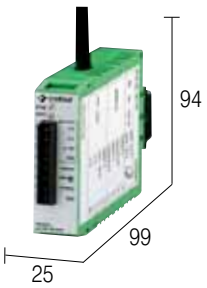
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW20A0 Cod. XW001205	**SW20A4** Cod. XW001210
INPUT TECHNICAL DATA		
Input signal	0–20 A ac/dc	0–20 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	Ø 8 mm through-hole connection	Ø 8 mm through-hole connection
OUTPUT TECHNICAL DATA	**VOLTAGE** **CURRENT**	**VOLTAGE** **CURRENT**
Input signal	– 0–20 mA	– 4–20 mA
Max. output signal	– 22 mA	– 11 mA
Load impedance	– <500 Ω	– <500 Ω
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-50 A AC/DC current/analog converter

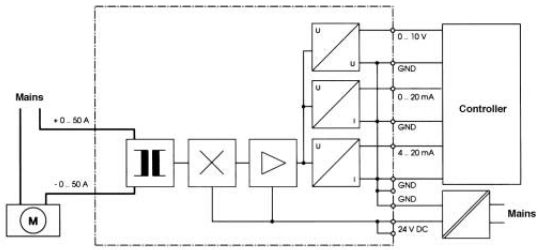
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

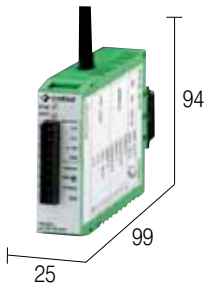
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW50VA Cod. XW000932	**SW50V10** Cod. XW001201
INPUT TECHNICAL DATA		
Input signal	0–50 A ac/dc	0–50 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	Ø 8 mm through-hole connection	Ø 8 mm through-hole connection
OUTPUT TECHNICAL DATA	**VOLTAGE** / **CURRENT**	**VOLTAGE** / **CURRENT**
Input signal	0–10 V / 0–20 mA / 4–20 mA	0–10 V / –
Max. output signal	11 V / 22 mA	11 V / –
Load impedance	>2 kΩ / <500 Ω	>2 kΩ / –
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

0-50 A AC/DC current/analog converter

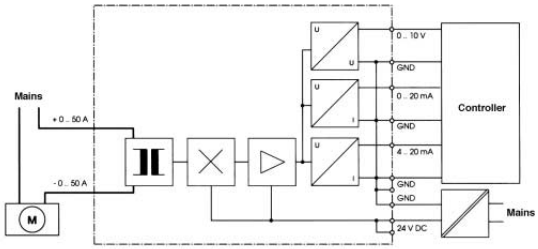
- For AC and DC measurements
- Protected against transients
- Power supplied LED
- The SW-VA models have three analog signals: 0–10 V, 20mA and 4–20mA



BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

Block diagram



APPLICATIONS

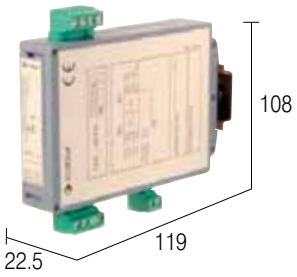
They allow the electronic controls with analog inputs to measure the value of a current. The current is read by a Hall sensor also capable of measuring in DC.
The presence of current in a circuit indicates not only that power is supplied but also that the circuit is closed and the load connected and active. The current measurement indicates the working conditions of the circuit controlled.
The module guarantees galvanic isolation between the current conductor and the analog output and, not being connected in series to the controlled current, cannot be damaged by power surges or short circuits.

VERSIONS

	SW50A0 Cod. XW001206	**SW50A4** Cod. XW001211
INPUT TECHNICAL DATA		
Input signal	0–50 A ac/dc	0–50 A ac/dc
Max. input voltage	380 V	380 V
Current wire connection	Ø 8 mm through-hole connection	Ø 8 mm through-hole connection
OUTPUT TECHNICAL DATA	**VOLTAGE** **CURRENT**	**VOLTAGE** **CURRENT**
Input signal	– 0–20 mA	– 4–20 mA
Max. output signal	– 22 mA	– 22 mA
Load impedance	– <500 Ω	– <500 Ω
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	60 mA	60 mA
Operating temperature	0 – 55°C	0 – 55°C
Linearity error	< 0.5%	< 0.5%
Offset error	< 0.5%	< 0.5%
Amplification error	< 0.2%	< 0.2%
Temperature coefficient	< 0.02%/K	< 0.02%/K
Surge immunity	200 V	200 V
Response time	10 mS	10 mS
Protection degree	IP20	IP20
Approximative weight	100 g	100 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Frequency/analog converter

- 3 programmable frequencies
- Auxiliary supply output for sensors
- Voltage and current outputs
- 12 Vpp or 24 Vpp input programmable signal
- High input signal acceptance

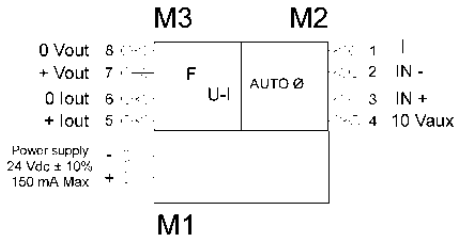


BLOCK DIAGRAMS / NOTES

The 108 mm height measurement includes the pluggable terminals.

(1) the current output of the modules is set to 0–20 mA; the 4–20 mA output can be obtained by setting the I Ø ADJ trimmer so as to read 4 mA in output without an input signal. Apply to the input a frequency equal to the end of scale set and regulate the I SPAN trimmer until an output of 2 mA is read. Repeat calibration until the maximum precision is obtained.

Block diagram



VERSIONS

CFC1	Cod. XCFC1	**CFC2**	Cod. XCFC2

INPUT TECHNICAL DATA		
Frequency	100 - 200 - 500 Hz programmable	1k - 2k - 5k Hz
Min. frequency	7 Hz	7 Hz
Max signal voltage	±12 Vpp / ±24 Vpp programmable	±12 Vpp / ±24 Vpp programmable
Min. signal voltage	200 mV	200 mV
Max. signal current	25 mA	25 mA
Min. signal current	2 mA	2 mA
Impedance (voltage input)	1 MΩ	1 MΩ
Impedance (current inout)	100 Ω	100 Ω

OUTPUT TECHNICAL DATA		
Input signal	0–10 V and 0–20 mA / 4–20 mA	0–10 V and 0–20 mA / 4–20 mA
Max. utput current	11 Vdc - 50 mA	11 Vdc - 50 mA
Conversion time	<300 ms 10/90%	<300 ms 10/90%

GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Max. rated current	150 mA	150 mA
Max. linearity error	< 0.1% full-scale	< 0.1% full-scale
Max. offset error	< 0.1% full-scale	< 0.1% full-scale
Operating temperature	-10 +65°C	-10 +65°C
Protection degree	IP30	IP30
EMC standards	EN 50081-2, EN 50082-2	EN 50081-2, EN 50082-2
Connection terminal blocks	2.5 mm² screw, pluggable	2.5 mm² screw, pluggable
Housing materials	polyamide UL94V-0	polyamide UL94V-0
Mounting position	adjacent without gap	adjacent without gap
Approximative weight	130 g	130 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

General characteristics

The CFC module converts a frequency into a voltage or current signal. The input stage features a filter, to clean up from ac noise the input signal. The differential input can handle floating signal and grounded signals as well ; anyway ground reference of the input signal is not needed, so all floating signals can be converted The converter allows to select between three different frequency scale values, wich can be simply selected by means of changing the position of a jumper bridge, anf gives also an auxiliary output voltage, to feed the sensor.

Description of the function

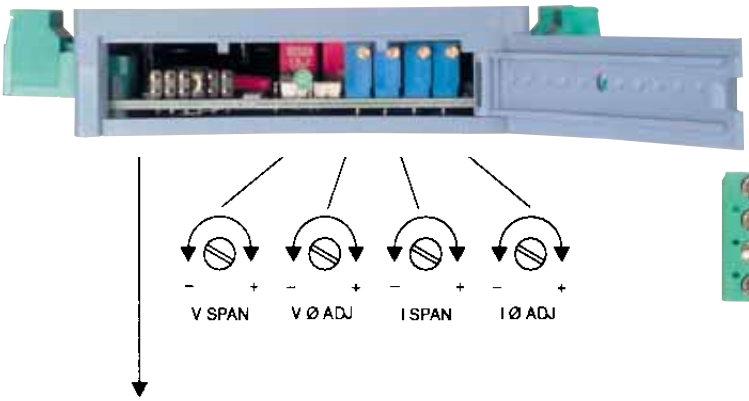
LED (green) **"POWER ON"**: displays that the module is powered.
TERMINALS 1: GND input
TERMINALS 2: negative signal input
TERMINALS 3: positive signal input
TERMINALS 4: auxiliary output voltage for sensor
TERMINALS 5: positive output current signal
TERMINALS 6: negative output current signal
TERMINALS 7: positive output voltage signal
TERMINALS 8: negative output voltage signal
TERMINALS +: positive supply input
TERMINALS –: negative supply input

Programming the converter

ATTENTION: turn off power before switching the jumper bridges

1 Select input type as differential (no jumper in A position) or ground referred (plug a jumper in A position).
2 Select signal type: current (no jumper in B position) , or voltage (plug a jumper in B position).
3 Select max. input signal voltage level ±12Vpp (no jumper in C position) or ±24Vpp (plug a jumper in C position).
4 Select input frequency range by plugging a jumper in D or E or F positions.
5 Select output signal ; the module is factory setted for output signals 0-1V and 0-20mA ; 4-20mA output signal can be setted up by adjusting IΔAdj trimmer in such a way to read 4mA output with no input signal ; apply a frequency equal to the full scale selected range and adjust span trimmer to read 20mA output signal ; Repeat procedure two times to get a better accuracy.

INDICATORS / ADJUSTMENT



A
INPUT TYPE
OPEN = DIFFERENTIAL
CLOSED = REFERRED TO THE SUPPLY NEGATIVE

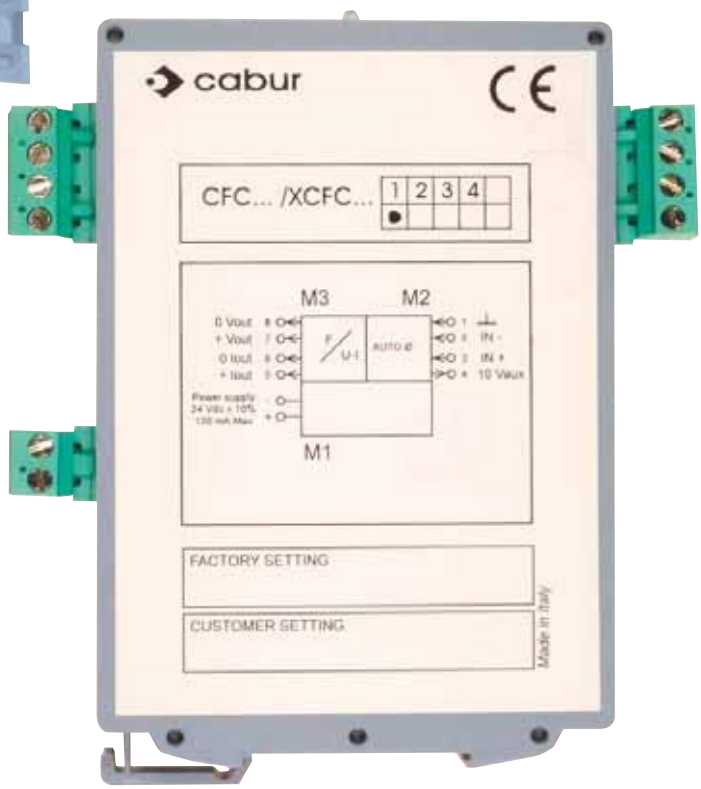
B
INPUT VARIABLE
OPEN = VOLTAGE INPUT
CLOSED = CURRENT INPUT (Zin=100Ω)

C
INPUT ATTENUATOR
OPEN = Vin max = +/-12 Vpp
CLOSED = Vin max = +/-12 Vpp

D E F
POWER SELECTION

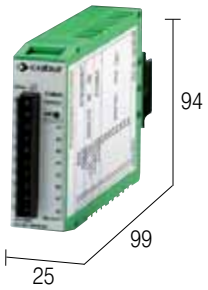
MODEL	POS. D	POS. E	POS. F
CFC 1	500 Hz	200 Hz	100 Hz
CFC 2	5 KHz	2 KHz	1 KHz

WARNING
Insert only one jumper in the power selector.



Analog/digital converters

- 8 bit resolution
- Possibility of connection in parallel
- Protected against transients
- Power supplied LED
- Pluggable terminals



BLOCK DIAGRAMS / NOTES

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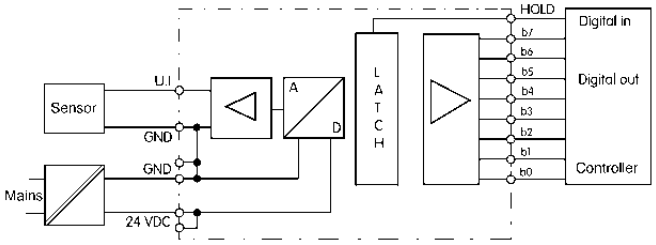
Block diagram



APPLICATIONS

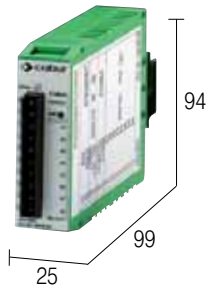
It allows the digital boards of PLCs to be used - more economical than analog ones - to acquire analog signals. A more rational and flexible management of the I/Os of the PLC is thus possible with a reduction in costs.
In the converter the analog signal is decoupled in the input circuit of the converter and then digitalised. Finally the 8 bit signal is recorded in an intermediate memory (LATCH).
This intermediate memory is piloted by the controller via the hold signal. If the hold signal is active, the memory does not accept further values from the input stage and "freezes" the last signal converted.
In order to read the data of the memory the output stage is piloted via the bus signal. The output stage is structured with tri-state drivers which are enabled and disabled with the aid of the BUS signal. These drivers also allow parallel connection of several analog/digital converters.

VERSIONS

	ADC08V10 Cod. XW000933	**ADC08A0** Cod. XW000934
INPUT TECHNICAL DATA		
Input signal	0–10 V	0-20 mA
Resistance	400 kΩ	400 kΩ
OUTPUT TECHNICAL DATA		
Input signal	8 bit	8 bit
Max. output signal	25 mA	25 mA
Signal level	"L" = 0, "H" = V_{IN} - 2 V	"L" = 0, "H" = V_{IN} - 2 V
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	25 mA	25 mA
Operating temperature	0 – 55°C	0 – 55°C
Transmission error	±1 LSB	±1 LSB
Hold signal	enabled > 5 V	enabled > 5 V
Bus signal	enabled > 5 V	enabled > 5 V
Conversion time	1.5 ms	1.5 ms
Resolution	39 mV	78 μa
Temperature coefficient	0.01% k	0.01% k
Surge immunity	200 V	200 V
Protection degree	IP20	IP20
Approximative weight	103 g	103 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

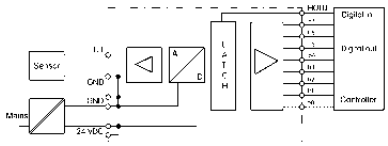
Analog/digital converters

- 8 bit resolution
- Possibility of connection in parallel
- Protected against transients
- Power supplied LED
- Pluggable terminals



BLOCK DIAGRAMS / NOTES

Block diagram



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In order to read the data of the memory the output stage is piloted via the bus signal. The output stage is structured with tri-state drivers which are enabled and disabled with the aid of the BUS signal. These drivers also allow parallel connection of several analog/digital converters.

VERSIONS

ADC08A4 Cod. XW000935

INPUT TECHNICAL DATA

Input signal	4–20 mA
Resistance	200 kΩ

OUTPUT TECHNICAL DATA

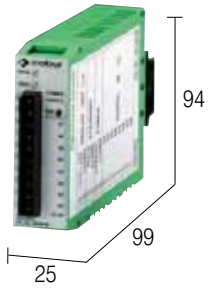
Input signal	8 bit
Max. output signal	25 mA
Signal level	"L" = 0, "H" = V_{IN} - 2 V

GENERAL TECHNICAL DATA

Supply voltage	24 Vdc ± 10%
Rated current	25 mA
Operating temperature	0 – 55°C
Transmission error	±1 LSB
Hold signal	enabled > 5 V
Bus signal	enabled > 5 V
Conversion time	1.5 ms
Resolution	63 μA
Temperature coefficient	0.01% k
Surge immunity	200 V
Protection degree	IP20
Approximative weight	103 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Analog/digital converters

- 8 bit resolution
- START/STOP function
- Protected against transients
- Pluggable terminals



BLOCK DIAGRAMS / NOTES

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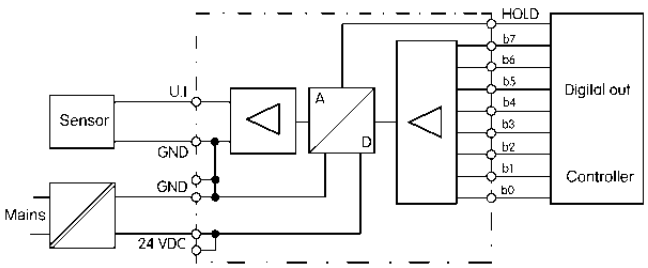
Block diagram



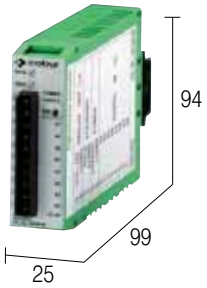
APPLICATIONS

Digital output modules for PLCs are more economical than analog output modules. In a system or machine most of the signals handled are digital with a smaller number of analog ones. It is a good idea to equip PLCs with digital I/Os and use digital/analog converters for the necessary proportional commands.
The module decouples the signal at the input of the digital/analog converter from the system of the computer or controller. The next stage converts the signal into analog values. This stage of the converter is commanded by the controller by means of the HOLD signal. If the HOLD signal is active, it stops conversion of the signal and the last value converted is "frozen". If the converter has to work continuously, the HOLD signal is connected to GND potential.
The HOLD signal also allows addressing of individual modules in the case of parallel connection to several digital/analog converters.
The conversion into the respective standard analog signals, according to the variant, takes place in the output stage.

VERSIONS	**DAC08V10** Cod. XW000936	**DAC08A0** Cod. XW000937
INPUT TECHNICAL DATA		
Input signal	8 bit	8 bit
Max. input current	25 mA	25 mA
Signal level	"L" < 2.5 V, "H"> 15 V	"L" < 2.5 V, "H"> 15 V
OUTPUT TECHNICAL DATA		
Input signal	0–10 V	0–20 mA
Max. output signal	11 V	22 mA
Signal level	> 2 kΩ	<500 kΩ
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	40 mA	40 mA
Operating temperature	0 – 55°C	0 – 55°C
Transmission error	±1 LSB	±1 LSB
Hold signal	attivo con > 5 V	attivo con > 5 V
Conversion time	100 µs	100 µs
Resolution	39 mV	78 mV
Temperature coefficient	0.01% k	0.01% k
Surge immunity	200 V	200 V
Protection degree	IP20	IP20
Approximative weight	103 g	103 g
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Analog/digital converters

- 8 bit resolution
- START/STOP function
- Protected against transients
- Pluggable terminals



BLOCK DIAGRAMS / NOTES

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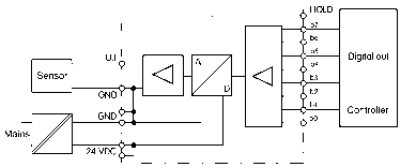
Block diagram



APPLICATIONS

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The module decouples the signal at the input of the digital/analog converter from the system of the computer or controller. The next stage converts the signal into analog values. This stage of the converter is commanded by the controller by means of the HOLD signal. If the HOLD signal is active, it stops conversion of the signal and the last value converted is "frozen". If the converter has to work continuously, the HOLD signal is connected to GND potential.
The HOLD signal also allows addressing of individual modules in the case of parallel connection to several digital/analog converters.
The conversion into the respective standard analog signals, according to the variant, takes place in the output stage.

VERSIONS

DAC08A4 Cod. XW000938

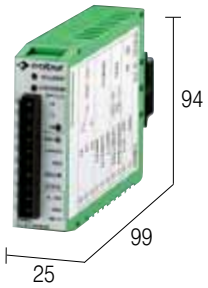
INPUT TECHNICAL DATA	
Input signal	8 bit
Max. input current	25 mA
Signal level	"L" < 2.5 V, "H"> 15 V

OUTPUT TECHNICAL DATA	
Input signal	4–20 mA
Max. output signal	22 mA
Signal level	<500 kΩ

GENERAL TECHNICAL DATA	
Supply voltage	24 Vdc ± 10%
Rated current	40 mA
Operating temperature	0 – 55°C
Transmission error	±1 LSB
Hold signal	attivo con > 5 V
Conversion time	100 μs
Resolution	63 μA
Temperature coefficient	0.01% k
Surge immunity	200 V
Protection degree	IP20
Approximative weight	103 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Threshold converters

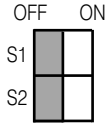
- Analog input
- Threshold value regulation trimmer
- Output relay status LED
- Protected against transients
- Pluggable terminals



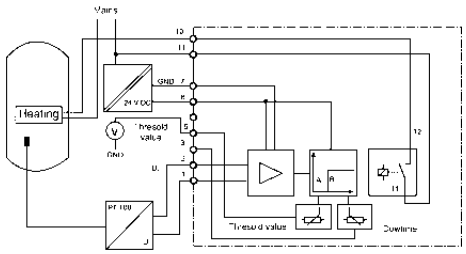
BLOCK DIAGRAMS / NOTES

The 99 mm depth measure-ment takes account of the overall dimensions of the front connector, supplied with the product, but not shown in the photo.

S1=OFF/S2=ON Relay is turned ON below the threshold (minimum function)
S1=OFF/S2=ON 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



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.

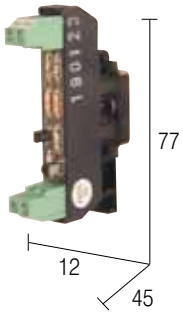
2. Minimum/maximum function

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).

VERSIONS

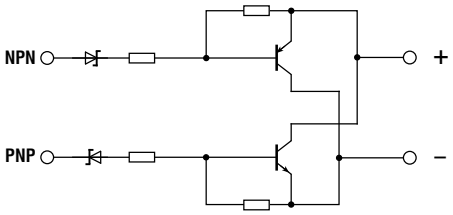
	GWMV10 Cod. XW000926	**GWMA0** Cod. XW000927
INPUT TECHNICAL DATA		
Input signal	0–10 V	0–20 mA
Max. input corrent	11 V	11 V
Surge immunity	200 V	200 V
Resistance	> 100 kΩ	50 kΩ
OUTPUT TECHNICAL DATA		
Relay contact	SPDT AgCdO	SPDT AgCdO
Rated voltage	250 Vdc, 230 Vdc	250 Vdc, 230 Vdc
Rated current	5 A	5 A
Max. continuon current	2 A	2 A
Min. contact current	-	-
Response time	100% contact ratio	100% contact ratio
Delay time	20 ms	20 ms
GENERAL TECHNICAL DATA		
Supply voltage	24 Vdc ± 10%	24 Vdc ± 10%
Rated current	40 mA	40 mA
Surge immunity	200 V	200 V
Setpoint setting range	0.3–10 V	0.6–20 V
Hysteresis setting range	0.1–10 V	0.2–20 V
Max. hysteresis offset	±30 mV	±60 μA
Transmission error	0.5%	0.5%
Operating temperature	0–55 °C	0–55 °C
Mounting information	adjacent without gap	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

NPN and PNP signal polarity inverter



BLOCK DIAGRAMS / NOTES

Block diagram



VERSIONS

CI-NPN/PNP Cod. XNPNPNP

INPUT TECHNICAL DATA

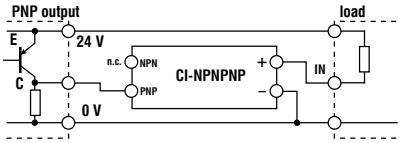
Input voltage	17–30 Vdc
Max. current	200 mA
Max. frequency	120 kHz

GENERAL TECHNICAL DATA

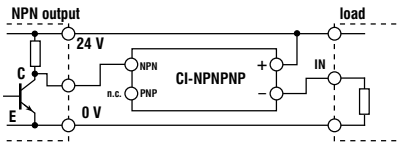
Operating temperature	0 – 55°C
OFF state current	100 mA
Terminals type / cross section	2.5 mm² screw connection
Housing materials	polyamide UL94V-O
Approximative weight	20 g
Mounting information	adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Connection example

From PNP to NPN conversion



From NPN to PNP conversion



Cabur power house

Cabur continues to renew and expand the range of power supply units for use in industrial environments for machine automation, process control and electrical systems improving product technology and performance and adding new models.
Cabur also designs and produces "custom" power supply units that can satisfy the most rigorous Standards and requirements. Together with the products our laboratory provides technical documentation and measurements that attest product conformity with the Electrical Safety Standards and Electromagnetic Compatibility as well as the technical support required to define product characteristics based on the Customer's needs and out experience.
Investments in highly qualified technicians and advanced laboratory and testing instruments permits us to control all safety and functional parameters and all the EMI emissions, conducts, burst and surge.
Our experience permits us to rapidly supply complete technical support, thanks to which we have achieved important supplies of standard and custom power supply units for Customers that are leaders in the automation, process control and telecommunication fields.

Quality and Safety: Cabur is the first Italian company to obtain UL508 Industrial Control Equipment approval specific to equipment for application in industrial automation.
The CS series from 1A to 6A is UL508, UL1950 and CSA22.2 approval, while the IMQ markings certify conformity with IEC950, EN60950 standards on Electrical Safety and therefore the appropriateness of CE markings.

Innovation and research: in 1997 Cabur was the first Italian company to produce "primary switching" advanced technology power supply units mounted on DIN guides with universal 100-120-230- 240Vac input voltage while the competition offered "secondary" switching power supply units with the large and superseded transformers.
With the new generation of products presented in this catalogue, Cabur aims to obtain the highest yield possible, reduce energy consumption, working temperature and heat stress of all components promoting the reliability and working economies as well as the duration of the power supply unit.
By applying the latest circuits and components we have improved yield by 88% in single-phase models and by more than 92% in three-phase models.
The new 20A / 24V three-phase power supply unit with 93% yield, supplies 480W with only 35W dissipation compared to the 65W dissipation of previous models with 88% yield or with other models with similar yields: 30W saved, that much less heat with much more reliability.

The continual technological product improvements have reduced electromagnetic emissions to levels under the limits set by the Standards for Civilian applications which are known as being stricter than Industrial Standards also for interference emissions on 24Vdc output, particularly insidious for electronic controls.

The new generation of power supply units has all the flexibility and functional characteristics of the previous series:
- all models adapt to 100-120- 230- 240Vac mains with limit values from 90 to 264Vac, that make them suitable to work all over the world
- the mains variance tolerance of the new three-phase units is now extended from 340 to 550Vac with a single model, where many others require two
- the output voltage of the new models can be adjusted from 24 to 28Vdc
- high output current peaks to drive harder loads and ensure the selectivity of protection fuses on 24V lines in case of breakdown
- the versions with alarm contact and "o-ring" diodes for redundant parallel connections is always available even for new models

Overload protection: high power models are equipped with protection against full load overload to prevent the power supply unit from overheating leading to breakdowns due to insufficient panel ventilation or continual overload and high room temperatures.
Intervention of overload protection causes the power supply unit to turn off preventing damage to the unit.
Maintenance personnel can immediately identify the problem, restoring normal ventilation or load conditions and restart the system.
Overload protection combined with high yield extend the field of working room temperature from –20 to + 55° C in every load condition **without derating**.

EN61000-3-2 Standard on Mains harmonic emissions
Since 01/01/2001 standard EN61000-3-2 "Restrictions on mains frequency harmonic emissions conducted towards the line" has been in force that is applied in the following cases:

- the power supply unit is directly connected to the public electrical mains
- the power supply unit has rated power over 125W and under 1000W
- the power supply unit works continually at power over 125W or under 1000W
- mains tolerance is between 230Vac and 400Vac rated (limits 207Vac and 440Vac)

It follows that the Standard is not applied:
- if the power supply unit is powered through insulating or reducing transformers placed between the unit and the public mains
- if the power is under 125W (3A to 24V) or over 1000W (41A to 24V)
- if the power supply unit is not continually used at power over 125W and under 1000W
- in the USA and in Japan, or in European products destined for the USA and Japan

Standards on emissions and control and command electrical panels
All electrical devices with non-linear absorption (rectifiers, dimmer, PWM controls, linear and switching power supply units, etc…), therefore also control and command electrical panels that use these products as components must observe the standard if used for purposes included in points 1, 2, 3, 4.
It is obvious that the purposes that may require harmonic reduction are unknown to the power supply unit manufacturer and that their variableness from one installation to another, from one country to another places the end user in a difficult situation: the problem "harmonic reduction yes or no" and of panel certification remains.

Practical solution to the "harmonic reduction yes or no" problem: if a power supply unit generates harmonic emissions over the levels established by EN61000-3-2, these can be reduced by inserting a simple and convenient inductance in the input phase, whose cost is so limited that it does not justify the creation of two versions (with and without filter) of the same power supply unit model, whose prices would be very similar.
Cabur has decided to equip the series of power supply unit series that require it with a **PFC** (Power Factor Correction) harmonic reduction filter.
The user can declare conformity of his panel with the EMC standards without

be concerned about answering to points 1, 2, 3, 4 whose conditions may not be known or have changed in time.
For users who are certain to do without **PFC**, who plan high quantities of power supply units where cost reduction is important, Cabur can supply products without **PFC** inductance.

Protection circuit from short circuit and overload
Protection from short circuit and overload works to protect the power supply unit from breakdown sue to overload and therefore overheating over the components' approved limits.
There are many types of protection circuits that vary in performance, compatible with the final applications, costs and efficiency but they all must prevent voltages and times that exceed supported limits from passing through the power supply unit.
Consequently the technology of this function can be chosen and designed starting from different application requirements and with different practical results and costs.

Power supply unit protection for automation: in these applications the use conditions, value and type of load are variable and are not completely known by the power supply unit designer.
Therefore the power supply unit for automation must reconcile conflicting needs: protect itself while at the same time succeed in powering loads that require high current peaks, work at room temperatures of at least 45° C in critical ventilation conditions, all at acceptable costs.

In choosing power supply unit protection technology for automation we know that:
– the protection from overload must support high current peaks required by hard loads such as white heat lamps that cold are short, capacity loads such as ac/dc converters, large filter capacitors on electronic appliances, or inductive load such as motors in dc, electromagnets etc… all of these loads can require current peaks up to 3-5 times the working current even when they are simultaneously commuted,
– high current peak must be supplied for a length adequate to "start" loads such as those listed, therefore at least a few tens of ms, up to 100-200 ms according to the strength of the power supply unit,
– room temperature to which the design must refer to size the components, accepted overload and its length, must be at least equal to or over the 45° C foreseen by electrical panel standards; from temperature is a critical reference parameter because component overheating depends on the voltage and power and length of supply, but also on room temperature,
– if the power supply unit is high strength and powers several fuse protected users, the short circuit/overload protection circuit must guarantee intervention selectivity of the protections from overload; therefore if a 10 A power supply unit supplies three different loads of which one fuse protected 6A delayed by 8A, in the event of short circuit the power supply unit must be able to burn the fuse before its internal protection circuit intervenes.

Several solutions can be used to protect the power supply unit:
– output totally cut-off
– constant strength protection
– reduce voltage and maintain constant current
– reduce current and maintain constant voltage
– combine the above three techniques
Overload and short circuit protection technologies are very different but what counts for the user is that they satisfy the typical automation requisites explained in the above-mentioned points.
Cabur has adopted protections with constant and Hiccup voltage, with accepted peak overvoltage from 3 up to 5 times rated voltage, for 50 to 200 ms according to the strength of the model, sufficient yields in most automation applications.

Environment: Cabur is one of the first companies in Italy to obtain International Environmental Certification UNI EN ISO14001, certified by CSQ, on ecologically compatible treatment of all materials that enter in the process cycle of its products.

Filtered power supply: a few components for a simple, reliable and economical solution for supplying loads such as relays, contactors, solenoid valves, DC motors or loads capable of functioning normally with relatively high alternating residues in output (ripple) and ±10% variations in the output voltage due to variations in the load and system.
Filtered power supplies provide non-stabilised continuous voltage and, if combined with under dimensioned transforms if the load requires high peaks in current simultaneous with voltage drops, the output current may fall considerably and cause the powered appliances to malfunction.
They are not recommended for applications whose mains do not assure stability better than or equal to ±10% the rated current foreseen by the Standard.

Linear power supply: Cabur CL series linear power supply units have made a name for themselves for their good yield, reliability, reduced size and rational construction compared to other similar products. The high market demand makes them a standard offer even though the high quality switching technology permits the manufacture of more compact and superior performance power supply units.

Cabur offers three different technologies with the right performances and costs

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

Which power supply unit to use

Switching
- with highly variable line voltages (from 90 to 246 Vac)
- with electronic loads
- when high stability is required
- to reduce energy consumption, dissipated heat, weight, bulk

Linear
- with line voltages stable within +10%
- with electronic loads
- for applications with very low electromagnetic emissions

Filtered
- with very stable line voltages within +5%
- with loads having high tolerance to high ripple
- with loads having high tolerance to variations of 25 Vdc
- to reduce costs

GENERAL NOTES

LENGTH OF CONDUCTOR PEELING: 9 mm, model with fixed terminals; 6 mm, model with pluggable terminals.

COOLING: distance the power supply units 2 cm from adjacent equipment and at least 5 cm from other equipment on the upper and lower sides. At a room temperature **>45°C** and constant supply at 100%, reduce the current supplied by calculating: **-0 ...A for °C over 45°C**. The item of data **-0 ...A** is given for each model in the specifications. Max. room temperature 60°C with constant current supplied, reduced as indicated. We recommend to assemble with vertical dissipators (guide in horizontal position).

ASSEMBLY: the power supply units are equipped with an EN 50.022 guide fitting. For a better (assembly) stability of the CS2024/90-264 models (and version P), we recommend attaching the guide to the panel, also in the point where the power supply unit is to be mounted.

NOTES FOR CS SERIES SWITCHING POWER SUPPLY UNITS WITH 90-264 Vac / 110 - 220 Vdc SINGLE-PHASE INPUT

REDUNDANT PARALLEL AND PARALLEL CONNECTION: the models with the letter **P** in the initials and code are supplied as standard with the output protection diode for redundant parallel and parallel connection.
We recommend regulating to the same voltage (tolerance + 10mV) the outputs of all the power supply units, applying the same calibration load, before connecting them in parallel. Use 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 carried out.

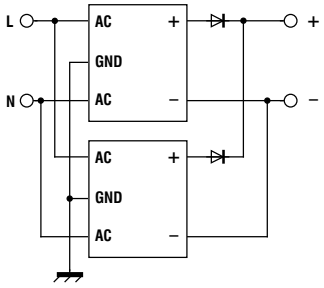


figure 1

CONNECTION IN SERIES of two power supply units: this is 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).

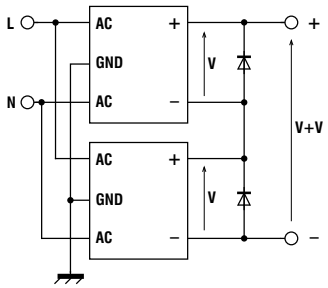


figure 2

POWER GOOD SIGNAL in the models CS624/90-264p, CS1224/90.264p, CS2024/90264P: NO2 A /24 Vdc clean contact output, closed with 24 Vdc output OK; open with: zero output due to line failure, or fault in power supply, or short circuit/overload in output.

POWER SUPPLY WITH 110 Vdc BATTERIES possible on all models in accordance with the following indications: **with 110 Vdc power supply, reduce the output current by 25%; minimum voltage 100 Vdc; observe the polarities of the input connections indicated:**

CS224/90-264 (also P version):
CS424/90-264 (also P version):
CS624/90-264 (also P version):
connect the positive pole to the terminal **L**

In the models CS224/90-264(P) and CS424/90-264 (P) the polarity of connection to the terminals L and N is indifferent.

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 **P**rotective **E**xtra **L**ow **V**oltage earthed) and **SELV** (**S**afety **E**xtra **L**ow **V**oltage, 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.
The earthing of a pole of the transformer secondary and 24 Vdc of the power supply unit would damage the latter.

Power supply Selection table

Switching power supply

Output voltage	Current	Input voltage	Tipology	Dimensions A x B x C	Type	Cod.	Page
±12 Vdc	2x0,5 A	90–264 Vac / 110 Vdc	C	35x133x80	CS5	XAS5	126
±15 Vdc	2x0,5 A	90–264 Vac / 110 Vdc	C	35x133x80	CS6	XAS6	126
5 Vdc	1 A	90–264 Vac / 110 Vdc	C	35x133x80	CS1	XAS1	123
9 ÷ 15 Vdc	1 A	90–264 Vac / 110 Vdc	C / I	35x133x80	CS7	XAS7	127
12 Vdc	1 A	90–264 Vac / 110 Vdc	C	35x133x80	CS2	XAS2	123
12 Vdc	1,5 A	90–264 Vac / 110 Vdc	C	34x90x70	CS2CV	XAS2CV	124
12 Vdc	4 A	90–264 Vac / 110 Vdc	C	55x130x125	CS412/ 90- 264	XAS04WH	124
15 Vdc	1 A	90–264 Vac / 110 Vdc	C	35x133x80	CS3	XAS3	125
24 Vdc	1 A	90–264 Vac / 110 Vdc	C	35x133x80	CS4	XAS4	128
24 Vdc	2.5 A	22–30 Vac	B	45x133x107	CS224/ 24	XAS02VC	135
24 Vdc	2.5 A	90–264 Vac / 110 Vdc	C	50x113x90	CS224/ 90- 264	XAS02VH	128
24 Vdc	3 A	36–72 Vdc		55x130x125	CS324/ 48	XAS03VD	137
24 Vdc	4 A	22–30 Vac	B	55x130x125	CS424/ 24	XAS04VC	135
24 Vdc	4 A	90–264 Vac / 110 Vdc	C	55x130x125	CS424/ 90- 264	XAS04VH	129
24 Vdc	4 A	90–264 Vac / 110 Vdc	C / G	55x130x125	CS424/ 90- 264P	XAS04VHP	129
24 Vdc	6 A	22–30 Vac	B	55x130x125	CS624/24	XAS06VC	136
24 Vdc	6 A	90–264 Vac / 110 Vdc	C	55x130x125	CS624/ 90- 264N	XAS06VHN	129
24 Vdc	6 A	90–264 Vac / 110 Vdc	C / G	55x130x125	CS624/ 90- 264P	XAS06VHP	129
24 Vdc	6 A	3x360–550 Vac / 3x507–780 Vdc	A	90x90x130	CSG06	XCSG06	133
24 Vdc	6 A	3x360–550 Vac / 3x507–780 Vdc	A / G	90x90x130	CSG06P	XCSG06P	133
24 Vdc	10 A	120 Vca / 230 Vac	D	75x130x150	CS1024/ 120- 230	XAS10VH	130
24 Vdc	10 A	120 Vca / 230 Vac	D / G	75x130x150	CS1024/ 120- 230P	XAS10VHP	130
24 Vdc	10 A	3x360–550 Vac / 3x507–780 Vdc	A	90x90x130	CSG10	XCSG10	133
24 Vdc	10 A	3x360–550 Vac / 3x507–780 Vdc	A / G	90x90x130	CSG10P	XCSG10P	133
24 Vdc	12 A	22–30 Vac	B	70x122x150	CS1224/ 24	XAS12VC	136
24 Vdc	20 A	120 Vca / 230 Vac / 110 Vdc	D / F	220x90x130	CSF20	XCSF20	131
24 Vdc	20 A	120 Vac / 230 Vac	D / F / G	220x90x130	CSF20P	XCSF20P	131
24 Vdc	20 A	3x360–550 Vac / 3x507–780 Vdc	A	220x90x130	CSG20	XCSG20	134
24 Vdc	0 A	3x360–550 Vac / 3x507–780 Vdc	A	220x90x130	CSG20P	XCSG20P	134
48 Vdc	0.4 A	90v264 Vac / 110 Vdc	C	80x40x130	CS0448/ H- B	XAS004YHB	132
48 Vdc	2 A	90–264 Vac / 110 Vdc	C / G	55x130x125	CS248/ 90- 264P	XAS02YHP	132

Legend

A = three phase input
B = input from a secondary of a transformer
C = wide range single phase input
D = double range single phase input
E = single range single phase input
F = with PFC (Power Factor Circuit)
G = with Power Good and oring diode
I = with adjustable output

Power supply Selection table

Linear power supply

Output voltage	Output currents	Input voltage	Tipology	Dimensions AxBxC	Type	Cod. No.	Page
24 Vdc	1 A	24 ÷ 25 Vac	B	65x78x64	AL24327/1A	XAL24127	143
3 ÷ 24 Vdc	4 A	6.5 ÷ 25 Vac	B/I	43x123x120	CL3R/24	XAL03RC	142
24 Vdc	4 A	25 ÷ 27 Vac	B	55x150x123	CL424/24	XAL04VC	143
24 Vdc	4 A	115 Vac	E	105x155x122	CL424/115	XAL04VE	138
24 Vdc	4 A	230 Vac	E	105x155x122	CL424/230	XAL04VF	138
24 Vdc	6 A	25 ÷27 Vac	B	69x170x145	CL624/24	XAL06VC	144
24Vdc	6 A	115 Vac	E	120x175x142x190	CL624/115	XAL06VE	139
24 Vdc	6 A	230 Vac	E	120x175x142x190	CL624/230	XAL06VF	139
24 Vdc	6 A	400 Vac	E	120x175x142x190	CL624/400	XAL06VG	140
24 Vdc	10 A	25 ÷ 27 Vac	B	82x175x145	CL1024/24	XAL10VC	144
24 Vdc	10 A	115 Vac	E	137x175x142x190	CL1024/115	XAL10VE	140
24 Vdc	10 A	230 Vac	E	137x175x142x190	CL1024/230	XAL10VF	141
24 Vdc	10 A	400 Vac	E	142x137x175x190	CL1024/400	XAL10VG	141

Filtered power supply

Output voltage	Output currents	Input voltage	Tipology	Dimensions AxBxC	Type	Cod. No.	Page
24 Vdc	2 A	9 ÷ 20 Vac	B	93x70x62	AR2624/2A	XAR26002	145
24 Vdc	4 A	9 ÷ 20 Vac	B	93x70x62	AR2624/4A	XAR26004	145
24 Vdc	6 A	9 ÷ 20 Vac	B	93x90x75	AR2624/6A	XAR26006	146
24 Vdc	10 A	9 ÷ 20 Vac	B	130x110x100	AR2624/10A	XAR26010	146
24 Vdc	10 A	3x380/400/420 Vac	A	156x165x110x140x100	RDRKN10K	XM28K01	148
24 Vdc	15 A	9 ÷ 20 Vac	B	130x110x125	AR2624/15A	XAR26015	147
24 Vdc	16 A	3x380/400/420 Vac	A	156x165x125x140x100	RDRKN16K	XM28K02	148
24 Vdc	20 A	3x380/400/420 Vac	A	206x190x140x184x120	RDRKN20K	XM28K03	148
24 Vdc	25 A	3x380/400/420 Vac	A	206x190x150x184x120	RDRKN25K	XM28K04	148
24 Vdc	30 A	3x380/400/420 Vac	A	206x190x150x184x120	RDRKN30K	XM28K05	148
24 Vdc	40 A	3x380/400/420 Vac	A	254x235x155x228x152	RDRKN40K	XM28K06	148
24 Vdc	60 A	3x380/400/420 Vac	A	254x235x180x228x152	RDRKN60K	XM28K07	148

Legend

A = three phase input

B = input from a secondary of a transformer

C = wide range single phase input

D = double range single phase input

E = single range single phase input

F = with PFC (Power Factor Circuit)

G = with Power Good and oring diode

I = with adjustable output

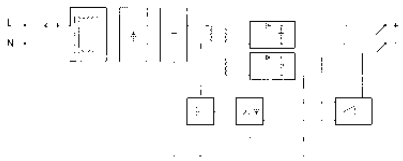
Single phase switching power supply out 5, 12 Vdc

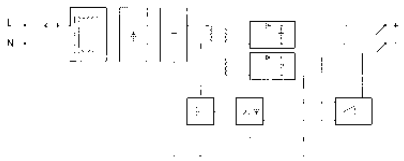
- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- IP 30 protection degree
- Low noise
- DIN rail mounting

BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

Block diagram





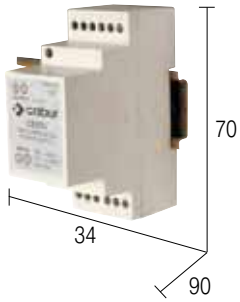
APPLICATIONS

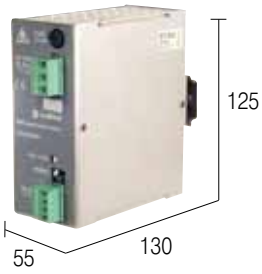
The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C room temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with 100 Vac mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP30 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

VERSIONS	**CS1** Cod. XAS1	**CS2** Cod. XAS2
INPUT TECHNICAL DATA		
Rated voltage	90-264 Vac / 110 Vdc ± 10%	90 – 264 Vac / 110 – 220 Vdc
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	88 mA @ 120 Vac / 33 mA @ 230 Vac ± 10%	220 mA @ 120 Vac / 77 mA @ 230 Vac ± 10%
Inrush current at cold start at 230 Vac	< 20 A	< 20 A
Power factor	> 0.6 full load	> 0.6 full load
Protection fuse	T 0.8 A (inside mounted)	T 0.8 A (inside mounted)
OUTPUT TECHNICAL DATA		
Voltage	5 Vdc - 0 + 5% (not adjustable)	12 Vdc - 0 + 5% (not adjustable)
Maximum current	1.2 A	1.2 A
Continuous current	1 A	1 A
Load regulation	< 1.5%	< 1.5%
Ripple at Iout max	< 50 mVpp	< 50 mVpp
Hold up time	> 100 ms a 230 Vac, > 10 ms a 90 Vac	> 100 ms a 230 Vac, > 10 ms a 90 Vac
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
APPROVALS		
GENERAL TECHNICAL DATA		
Efficiency	≥ 85% at 230 Vac, ≥ 80% at 115 Vac	≥ 85% at 230 Vac, ≥ 80% at 115 Vac
Potenza dissipata	< 1.25 W	< 3 W
Operating temperature	-10 – 60°C, -0.015 A/°C over 45°C	-10 – 60°C, -0.015 A/°C over 45°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	> 1.5 KVac / 60 s	> 1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 30	IP 30
Standard / Approlvas	EN 60950, IEC950, UL 1950, UL 508C	EN 60950, IEC950, UL 1950, UL 508C
EMC standards	EN 50081-1, EN 50082-2, EN 61000-3-2,3	EN 50081-1, EN 50082-2, EN 61000-3-2,3
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	0.3 kg ca.	0.3 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Single phase switching power supply 12 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Standard housing accordin to DIN 43880 (CS2CV)
- IP 20 protection degree
- Overtemperature protection (CS2CV)
- DIN rail mounting

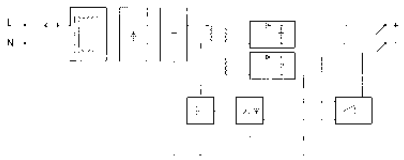


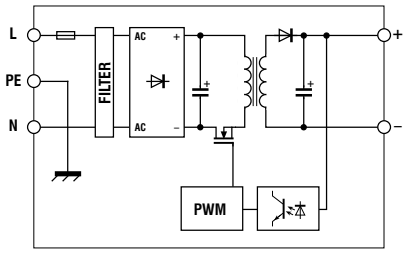


BLOCK DIAGRAMS / NOTES

(1) Available from october 2002

Block diagram





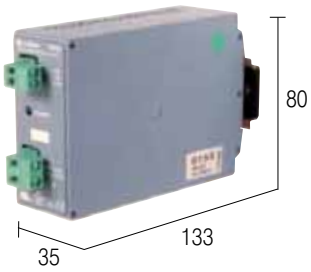
APPLICATIONS

VERSIONS

	CS2CV (1) Cod. XAS2CV	**CS412/90-264** Cod. XAS04WH
INPUT TECHNICAL DATA		
Rated voltage	90-264 Vac / 110 Vdc ± 10%	90-264 Vac / 110 Vdc ± 10%
Frequency	47 – 63 Hz	50 – 60 Hz
Current at Iout max	0.23 A @ 120 Vac / 0.12 A @ 230 Vac	2.2 A @ 120 Vac / 1.2 A @ 230 Vac
Inrush current at cold start at 230 Vac	< 7 A	< 20 A
Power factor	0.66	–
Protection fuse	T 1 A (inside mounted)	T 3.15 A
OUTPUT TECHNICAL DATA		
Voltage	12 Vdc ± 1% (not adjustable)	12 Vdc adjustable ± 5%
Maximum current	1.5 A	4 A
Continuous current	1.25 A	4 A
Load regulation	< 1%	0.5%
Ripple at Iout max	< 50 mVpp	< 120 mVpp
Hold up time	> 11 ms	20 ms a 120 Vac
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
APPROVALS		
GENERAL TECHNICAL DATA		
Efficiency	> 86%	> 84%
Dissipated power	1.5 W	9.2 W
Operating temperature	-20 – 60°C	-10 – 60°C, -0.2 A/°C over 45°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 KVac / 60 s	> 1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
Standard / Approlvas	EC 950, EN 60950	EN 60950
EMC standards	EN 50081-1, EN 50082-2	EN 50022A
Surge immunity	EN61000-4-2, EN61000-4-4 liv. 4	–
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0	metallic
Approximative weight	0.13 kg	0.6 kg
Mounting information	su guida, adiacenti senza interspazio	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Single phase switching power supply 15 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- IP 30 protection degree
- Low noise
- DIN rail mounting

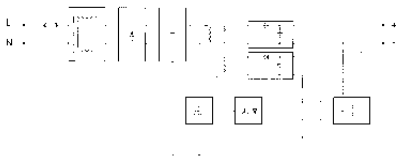


BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

(1) with an input of 110 Vdc, reduce the output current to 25%

Block diagram



APPLICATIONS

The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C room temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with 100 Vac mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP30 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

VERSIONS

CS3	Cod. XAS3

INPUT TECHNICAL DATA

Rated voltage	90-264 Vac / 110 Vdc ± 10% (1)
Frequency	50 – 60 Hz
Current at Iout max	240 mA @ 120 Vac / 88 mA @ 230 Vac ± 10%
Inrush current at cold start at 230 Vac	< 20 A
Power factor	> 0.6 full load
Protection fuse	T 0.8 A (inside mounted)

OUTPUT TECHNICAL DATA

Voltage	15 Vdc - 0 + 5% (not adjustable)
Maximum current	1.2 A
Continuous current	1 A
Load regulation	< 1.5%
Ripple at Iout max	< 50 mVpp
Hold up time	> 100 ms at 230 Vac, > 10 ms ta 90 Vac
Overload/short circuit protection	Hiccup circuit, auto reset
Output signal	–
Parallel connection	possible with external protection diode

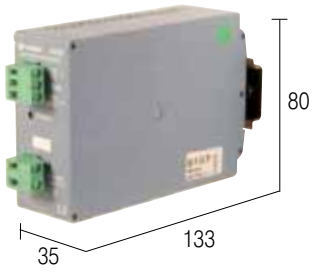
APPROVALS

GENERAL TECHNICAL DATA

Efficiency	≥ 85% at 230 Vac, ≥ 80% at 115 Vac
Dissipated power	< 3.8 W
Operating temperature	-10 – 60°C, -0.015 A/°C over 45°C
Input / output isolation	3 kVac /60 s
Input / ground isolation	> 1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Protection degree	IP 30
Standard / Approlvas	EN 60950, IEC950, UL 1950, UL508C
EMC standards	EN 50081-1, EN 50082-2, EN 61000-3-2,3
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0
Approximative weight	0.3 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Single phase switching power supply ±12, ±15 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- IP 30 protection degree
- Low noise
- DIN rail mounting

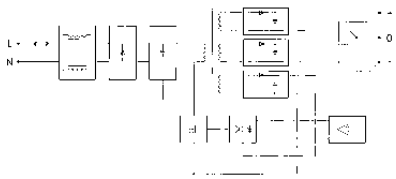


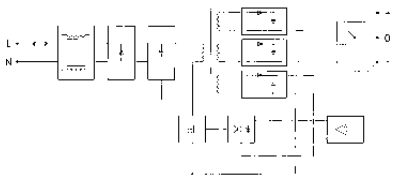
BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

(1) with an input of 110 Vdc, riduce the output current to 25%

Block diagram





APPLICATIONS

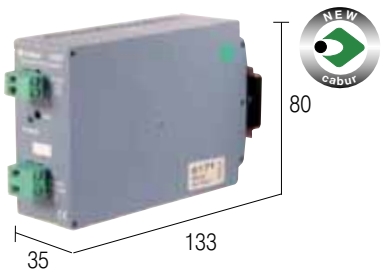
The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C room temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with 100 Vac mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP30 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

VERSIONS

	CS5 Cod. XAS5	**CS6** Cod. XAS6
INPUT TECHNICAL DATA		
Rated voltage	90-264 Vac / 110 Vdc ± 10% (1)	90-264 Vac / 110 Vdc ± 10% (1)
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	220 mA @ 120 Vac / 77 mA @ 230 Vac ± 10%	240 mA @ 90 Vac / 88 mA @ 230 Vac ± 10%
Inrush current at cold start at 230 Vac	< 20 A	< 20 A
Power factor	> 0.6 full load	> 0.6 full load
Protection fuse	T 0.8 A (inside mounted)	0.8 A (inside mounted)
OUTPUT TECHNICAL DATA		
Voltage	±12 Vdc - 0 + 5%	±15 Vdc - 0 + 5%
Maximum current	2 x 0.6 A	2 x 0.6 A
Continuous current	2 x 0.5 A	2 x 0.5 A
Load regulation	< 1.5%	< 1.5%
Ripple at Iout max	< 50 mVpp	< 50 mVpp
Hold up time	> 100 ms at 230 Vac, > 10 ms at 90 Vac	> 100 ms at 230 Vac, > 10 ms at 90 Vac
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
APPROVALS		
GENERAL TECHNICAL DATA		
Efficiency	≥ 85% at 230 Vac, ≥ 80% at 115 Vac	≥ 85% at 230 Vac, ≥ 80% at 115 Vac
Dissipated power	< 6 W	< 7,5 W
Operating temperature	-10 – 60°C, -0.033 A/°C over 45°C	-10 – 60°C, -0.033 A/°C over 45°C
Input / output isolation	3 kVac /60 s	3 kVac /60 s
Input / ground isolation	> 1.5 KVac / 60 s	> 1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 30	IP 30
Standard / Approlvas	EN 60950, IEC950, UL 1950, UL508C	EN 60950, IEC950, UL 1950, UL508C
EMC standards	EN 50081-1, EN 50082-2, EN 61000-3-2,3	EN 50081-1, EN 50082-2, EN 61000-3-2,3
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	0.3 kg ca.	0.3 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Switching power supply with adjustable output 9-15 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- IP 30 protection degree
- Regulation from the front panel
- DIN rail mounting

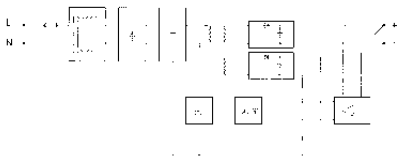


BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

(1) with an input of 110 Vdc, riduce the output current to 25%

Block diagram



APPLICATIONS

The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C room temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with 100 Vac mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP30 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

VERSIONS

CS7	Cod. XAS7

INPUT TECHNICAL DATA	
Rated voltage	90-264 Vac / 110 Vdc ± 10% (1)
Frequency	50 – 60 Hz
Current at Iout max	240 mA @ 120 Vac / 88 mA @ 230 Vac ± 10%
Inrush current at cold start at 230 Vac	< 20 A
Power factor	> 0.6 full load
Protection fuse	T 0.8 A (inside mounted)

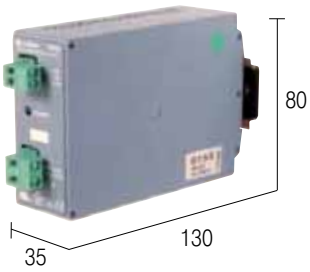
OUTPUT TECHNICAL DATA	
Voltage	9 – 15 Vdc (adjustable)
Maximum current	1.2 A
Continuous current	1 A
Load regulation	< 1.5%
Ripple at Iout max	< 50 mVpp
Hold up time	> 100 ms at 230 Vac, > 10 ms at 90 Vac
Overload/short circuit protection	Hiccup circuit, auto reset
Output signal	–
Parallel connection	possible with external protection diode

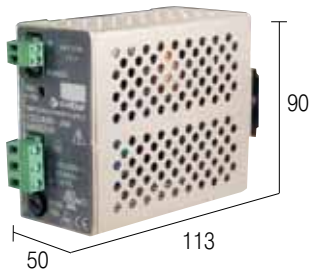
APPROVALS

GENERAL TECHNICAL DATA	
Efficiency	≥ 85% at 230 Vac, ≥ 80% at 115 Vac
Dissipated power	< 3.8 W
Operating temperature	-10 – 60°C, -0.015 A/°C over 45°C
Input / output isolation	3 kVac / 60 s
Input / ground isolation	> 1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Protection degree	IP 30
Standard / Approlvas	EN 60950, IEC950
EMC standards	EN 50081-1, EN 50082-2, EN 61000-3-2,3
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0
Approximative weight	0.3 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Single phase switching power supply out 24 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- Low noise
- DIN rail mounting
- Functions and description on the frontal panel
- Suited for SELV and PELV



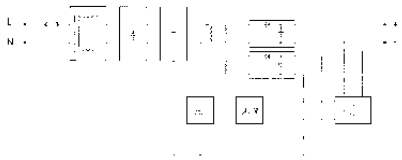


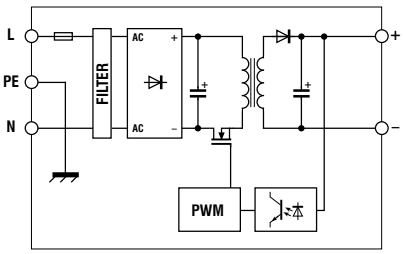
BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

(1) with an input of 110 Vdc, riduce the output current to 25%

Block diagram





APPLICATIONS

The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C operating temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with low mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP20 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

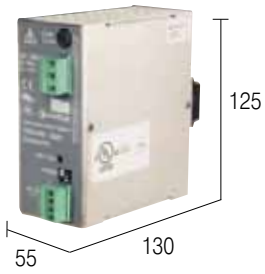
Battery charger

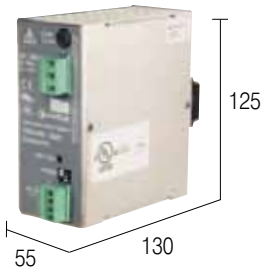
These unit allow to use a standard power supply as battery chargers while it is feeding other loads (max. I = 6A). For this purpose, we have developed the simple **CSBC** module (cod. **XCSBC**), featuring protection diodes, current limiting resistor and protection fuses. For more details, see on accessories section.

VERSIONS	**CS4** Cod. XAS4	**CS224/90-264** Cod. XAS02VH
Standard	–	–
With integral diode		
INPUT TECHNICAL DATA		
Rated voltage	90-264 Vac / 110 Vdc ± 10% (1)	90-264 Vac / 110 Vdc ± 10% (1)
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	440 mA @ 120 Vac / 165 mA @ 230 Vac ± 10%	1.1 A @ 120 Vac / 0.6 A @ 230 Vac ± 10%
Inrush current at cold start at 230 Vac	< 20 A	< 20 A
Power factor	> 0.6 full load	> 0.6 full load
Protection fuse	T 0.8 A (inside mounted)	T 2 A
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc - 0 + 5% (not adjustable)	24 Vdc regolabile ±5% (adjustable)
Maximum current	1.2 A	3.5 A
Continuous current	1 A	2.5 A
Load regulation	< 1.5%	< 1.5%
Ripple at Iout max	< 50 mVpp	< 50 mVpp
Hold up time	> 100 ms at 230 Vac, > 10 ms at 90 Vac	> 50 ms at 230 Vac, > 12 ms at 90 Vac
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
APPROVALS		
GENERAL TECHNICAL DATA		
Efficiency	≥ 85% at 230 Vac, ≥ 80% at 115 Vac	≥ 85% at 230 Vac, ≥ 80% at 115 Vac
Dissipated power	< 6 W	< 6 W
Operating temperature	-10 – 60°C, -0.033 A/°C over 45°C	-10 – 60°C, -0.08 A/°C over 45°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	> 1.5 KVac / 60 s	> 1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 30	IP 20
Standard / Approlvas	EN 60950, IEC950, UL 1950, UL508C	EN 60950, IEC950, UL 1950, UL508C
EMC standards	EN 50081-1, EN 50082-2, EN 61000-3-2,3	EN 50081-1, EN 50082-2, EN 61000-3-2,3
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0	polyamide UL94V-0
Approximative weight	0.3 kg ca.	0.3 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Single phase switching power supply out 24 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- Functions and description on the frontal panel
- Suited for SELV and PELV
- Available in parallelable version



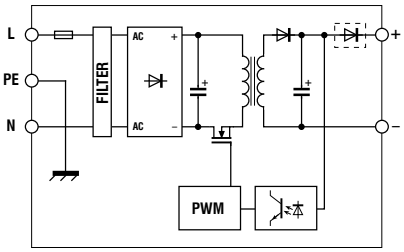


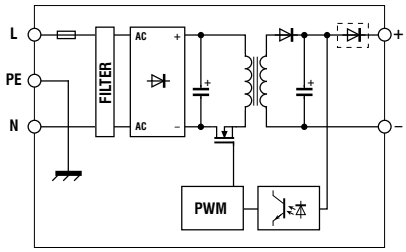
BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

(1) Version with output protection diode for parallel connection.
(2) With an input of 110 Vdc, riduce the output current to 25%
(3) solo per la versione standard

Block diagram





APPLICATIONS

The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C operating temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with low mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP30 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

Battery charger

These unit allow to use a standard power supply as battery chargers while it is feeding other loads (max. I = 6A). For this purpose, we have developed the simple **CSBC** module (cod. **XCSBC**), featuring protection diodes, current limiting resistor and protection fuses. For more details, see on accessories section.

VERSIONS

Standard	**CS424/90-264**	Cod. XAS04VH	**CS624/90-264N**	Cod. XAS06VHN
With integral diode	**CS424/90-264P**	Cod. XAS04VHP (1)	**CS624/90-264P**	Cod. XAS06VHP (1)

INPUT TECHNICAL DATA

Rated voltage	90-264 Vac / 110 Vdc ± 10% (2)	90-264 Vac / 110 Vdc ± 10% (2)
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	1.5 A @ 120 Vac / 0.8 A @ 230 Vac ± 10%	2.1 A @ 90 Vac / 1.2 A @ 230 Vac ± 10%
Corrente con uscita in c.cto	< 0.2 A	< 0.3 A.
Power factor	> 0.6 full load	> 0.6 full load
Protection fuse	T 3 A	T 3.15 A

OUTPUT TECHNICAL DATA

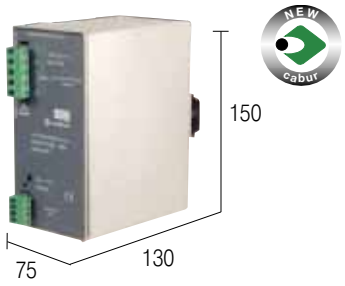
Voltage	24 Vdc adjustable ±5%		24 Vdc adjustable ±5%	
Maximum current	6 A		8 A	
Continuous current	4 A		6 A	
Load regulation	< 1%		< 1%	
Ripple at Iout max	< 100 mVpp		< 100 mVpp	
Hold up time	> 50 ms at 230 Vac, > 12 ms at 90 Vac		> 50 ms at 230 Vac, > 12 ms at 90 Vac	
Overload/short circuit protection	Hiccup circuit, auto reset		Hiccup circuit, auto reset	
Output signal	standard: version	-	standard: version	-
	"P": version	NO contact 2 A / 24 Vdc	"P": version	NO contact 2 A / 24 Vdc
Parallel connection	standard version	possible with external diode	standard version	possible with external diode
	"P" version:	already predisposed	"P" version:	already predisposed

APPROVALS

GENERAL TECHNICAL DATA

Efficiency	≥ 85% at 230 Vac, ≥ 80% at 115 Vac	≥ 85% at 230 Vac, ≥ 80% at 115 Vac
Dissipated power	< 24 W	< 24 W
Operating temperature	-10 – 60°C, -0.13 A/°C over 45°C	-10 – 60°C, -0.13 A/°C over 45°C
Input / output isolation	3 kVac /60 s	3 kVac /60 s
Input / ground isolation	1.5 KVac / 60 s	1.5 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
Standard / Approlvas	EN 60950, IEC950, UL 1950, UL508C	EN 60950, IEC950, UL 1950, UL508C
EMC standards	EN 50081-1, EN 50082-2, EN 61000-3-2,3	EN 50081-1, EN 50082-2, EN 61000-3-2,3
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	metallic	metallic
Approximative weight	0.6 kg ca.	0.73 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Single phase switching power supply OUT 24 Vdc

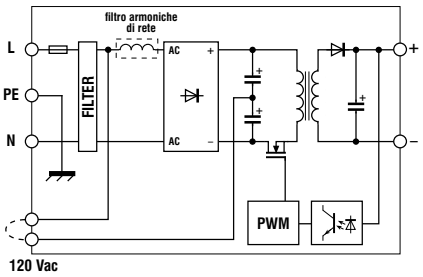


- Input voltage 120 Vac / 230 Vac / 110 Vdc
- Compact dimension
- Function and description on the frontal panel
- Suited for SELV and PELV
- Available in parallelable version
- Pluggable terminal blocks
- Low cost

BLOCK DIAGRAMS / NOTES

The measure of the height includes the height of the terminals and the DIN rail mounting clamp.
(1) With a feed of 120 Vac (range 100-132 Vac), connecting a jumper wire (not furnished) to the "120 Vac voltage selection bridge" terminal blocks; the jumper wire must have the same cross section of L and N wires and must be fully isolated in order to keep the IP20 protection degree offered by the power supply.
With a feed of 230 Vac (range 185-264 Vac), DO NOT CONNECT the "120 Vac voltage selection bridge" terminal blocks; otherwise can be damage the power supply.

Block diagram



APPLICATIONS

The CABUR switching power supply units of the CS series are designed and developed for industrial uses where safety, ease of use and reliability are essential. These units comply with the parameters set out by the Low Voltage Directive.
The low working temperature at full power with 45°C operating temperature combined with the use of first quality components ensure high reliability and duration. CABUR switching power supply units comply with EMI standards. The CS series with 90 – 264 Vac input has no ignition problems at full load even with low mains voltage and is therefore suitable for critical supply mains. This series is very compact and has an IP30 degree of protection against incidental contacts according to IEC529. All the functions are located on the front panel and marked with IEC symbols, which makes its use very simple, even on site.

Battery charger

These unit allow to use a standard power supply as battery chargers while it is feeding other loads (max. I = 6A). For this purpose, we have developed the simple **CSBC** module (cod. **XCSBC**), featuring protection diodes, current limiting resistor and protection fuses. For more details, see on accessories section.

VERSIONS

Standard	**CS1024/120-230** Cod. XAS10VH
With integral diode	**CS1024/120-230P** Cod. XAS10VHP

INPUT TECHNICAL DATA

Rated voltage	120 Vac / 230 Vac ± 10% (1)
Frequency	50 ÷ 60 Hz
Corrente at Iout max	3.5 A @ 120 Vac - 1.75 A @ 230 Vac ± 10%
Inrush current at cold start at 230 Vac	< 30 A @ 120 Vac < 30 A @ 230 Vac
Power factor	> 0.6 ÷ 0.8
Protection fuse	T 5 A (inside mounted)

OUTPUT TECHNICAL DATA

Voltage	24 Vdc adjustable ±5%
Maximum current	11 A
Continuous current	10 A
Load regulation	< 1%
Ripple at Iout max	< 100 mVpp
Hold up time	> 30 ms @ 90 Vac, > 100 ms @ 230 Vac
Overload/short circuit protection	Hiccup/1.1 circuit, auto reset
Output signal	Standard version: - "P" version: NO contact 2 A / 24 Vdc
Parallel connection	Standard version: possible with external diode "P" version: already predisposed

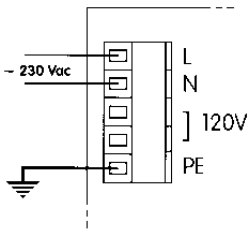
APPROVALS

UL, CSA pending

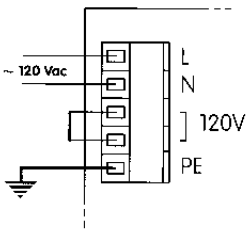
GENERAL TECHNICAL DATA

Efficiency	≥ 86% @ 120 Vac, ≥ 88% @ 230 Vac
Dissipated power	< 40 W
Operating temperature	-10 60°C, -0.3 A/°C over 45°C
Input / output isolation	3 kVac / 60 s
Input / ground isolation	1.5 KVac / 60 s
Input / ground isolation	0.5 kVac / 60 s
Protection degree	IP 20
Standard / Approvals	EN 60950, IEC950
EMC Standards	EN 50081-1, EN 50082-2, EN 61000-3-2
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	2.5 mm², pluggable
Housing material	metallic
Weight	1.05 kg ca.
Mounting information	Vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

230 Vac voltage connection



a120 Vac voltage connection



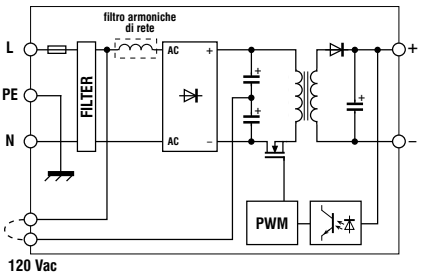
Single phase switching power supply OUT 24 Vdc

- High efficiency and low dissipated power
- 50 A outrush current per 1.5 s for starting-up heavy loads and to guarantee the selectivity of the 24 V lines
- Electronic protection from schort circuit, overload, overtemperature
- Electronic output voltage limiting at 32 V
- Adjustable output 24-28 Vdc
- With PFC filter

BLOCK DIAGRAMS / NOTES

The measure of the height includes the height of the terminals and the DIN rail mounting clamp.
(1) With a feed of 120 Vac (range 100-132 Vac), connecting a jumper wire (not furnished) to the "120 Vac voltage selection bridge" terminal blocks; the jumper wire must have the same cross section of L and N wires and must be fully isolated in order to keep the IP20 protection degree offered by the power supply.
With a feed of 230 Vac (range 185-264 Vac), DO NOT CONNECT the "120 Vac voltage selection bridge" terminal blocks; otherwise can be damage the power supply.

Block diagram



APPLICATIONS

The CSF series switching power supply units of CABUR have been designed and developed for industrial applications where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive. The three different overvoltage and short circuit protections can be set according to the different type of application. The thermal protection turns off the device if the air temperature is 60°C along with continuous full load protection; when the temperature cools down the power supply restarts itself automatically. These models have an electronic output voltage limitation at ≤ 32 Vdc which, if in case of failure, prevents damage to the downstream feeded devices. CABUR switching power supply units comply with EMI standards.
The CS series with 120, 230 Vac and 110 Vdc settable input have no ignition problems at full load even with low mains voltage and are therefore suitable for critical supply mains.
This series is very compact and has an IPXXB protection degree against accidental contacts according to IEC 529 Std. All the functions are located on the front panel and marked with standard IEC symbols, which makes use very easy, even on site.

Battery charger

These units can be used also to charge batteries while feeding the load; it is only necessary to set the current share ON and to set the constant power protection. We recommend to protect the battery with a fuse.

VERSIONS

Standard	**CSF20** Cod. XCSF20
With failure contact	**CSF20P** (1) Cod. XCSF20P

INPUT TECHNICAL DATA

Rated voltage	120 Vac / 230 Vac (1)
Frequency	47 – 63 Hz
Corrente at Iout max	4.4 A @ 120 Vac / 2.2 A @ 230 Vac
Inrush current at cold start at 230 Vac	< 25 A
Power factor	0.76 with PFC
Protection fuse	T 10 A @ 120 Vac – T 5 A @ 230 Vac (external)

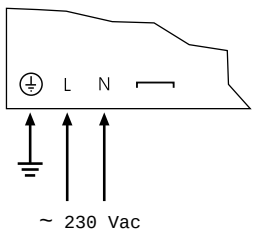
OUTPUT TECHNICAL DATA

Voltage	24 – 28 Vdc adjustable
Maximum current	28 A (overload/short circuit), ~ 50 A per 1.5 s
Continuous current	20 A
Load regulation	< 1%
Ripple at Iout max	50 mVpp
Hold up time	> 11 ms a full load
Overload/short circuit protection	Hiccup 1.4 circuit, auto reset Manual reset Costant current (to select)
Output signal	Standard version: – "P" version: SPDT 2 A / 250 Vac
Parallel connection	possible with Current Share activated

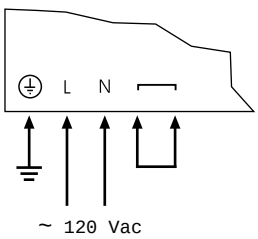
GENERAL TECHNICAL DATA

Efficiency	>91% @ 230 Vac
Dissipated power	47 W max.
Operating temperature	-10 +60°C with overtemperature protection
Input / output isolation	3 kVac / 60 s
Input / ground isolation	1.5 KVac / 60 s
Input / ground isolation	0.5 kVac / 60 s
Protection degree	IP 20
Standard / Approvals	IEC950, EN 60950
EMC Standards	EN 50081-1, EN 50082-2, EN 61000-3-2
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5 lev. 4
Connection terminal blocks	4 mm², fixed
Housing material	metallic
Weight	2 kg
Mounting information	Vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

230 Vac voltage connection

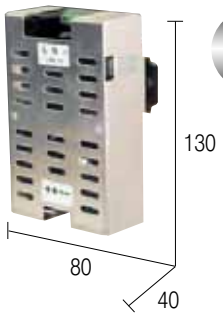


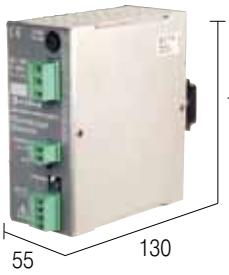
120 Vac voltage connection



Single phase switching power supply out 48 Vdc

- Input voltage 90–264 Vac / 110 Vdc
- Compact dimension
- IP 20 protection degree
- Low noise
- DIN rail mounting
- Functions and description on the frontal panel
- Suited for SELV and PELV

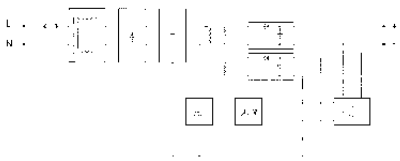


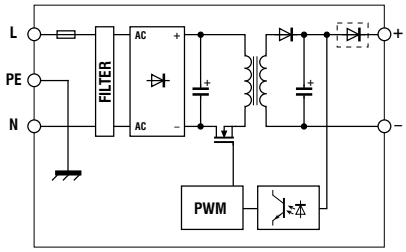


BLOCK DIAGRAMS / NOTES

(1) with an input of 110 Vdc, riduce the output current to 25%

Block diagram





APPLICATIONS

VERSIONS

Standard	**CS0448/H-B** Cod. XAS004YHB	–
With integral diode	–	**CS248/90-264P** Cod. XAS02YHP

INPUT TECHNICAL DATA

Rated voltage	90-264 Vac / 110 Vdc ± 10% (1)	90-264 Vac / 110 Vdc ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	0.35 A @ 120 Vac / 0.15 A @ 230 Vac	1.5 A @ 120 Vac / 0.8 A @ 230 Vac
Inrush current at cold start at 230 Vac	< 20 A	< 20 A
Power factor	–	–
Protection fuse	T 3.15 A	T 3 A

OUTPUT TECHNICAL DATA

Voltage	48 Vdc ± 10%	48 Vdc adjustable ± 5%
Maximum current	0.6 A	2.5 A
Continuous current	0.4 A	2 A
Load regulation	0.5%	0.5%
Ripple at Iout max	< 100 mV	< 200 mVpp
Hold up time	300 ms	20 ms at 230 Vac
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	No contact 3 A / 250 Vac
Parallel connection	possible with external protection diode	already predisposed

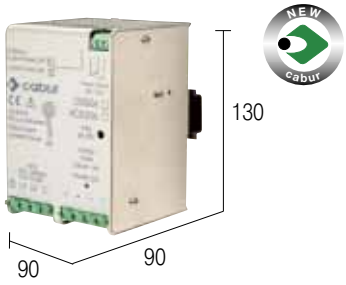
APPROVALS

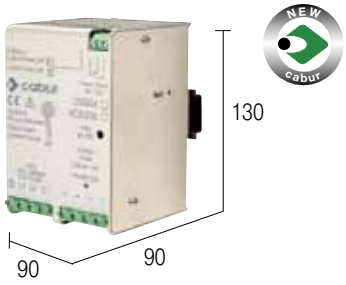
GENERAL TECHNICAL DATA

Efficiency	> 78%	> 85% a 120 Vac
Dissipated power	5.5 W	17 W
Operating temperature	-10 – 50°C	-10 – 50°Cm -0.1 A/°C over 45 °C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 KVac / 60 s	1.7 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
Standard / Approlvas	EN 60950	EN 60950
EMC standards	EN 50022-A	EN 50022-A
Surge immunity	–	–
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	metallic	metallic
Approximative weight	0.4 kg ca.	0.6 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Three phase switching power supply OUT 24 Vdc

- High efficiency and low dissipated power
- High current for hardly load
- Electronic protection against schort circuit, overload, overtemperature
- Electronic output voltage limiting at 32 V
- Adjustable output 24-28 Vdc

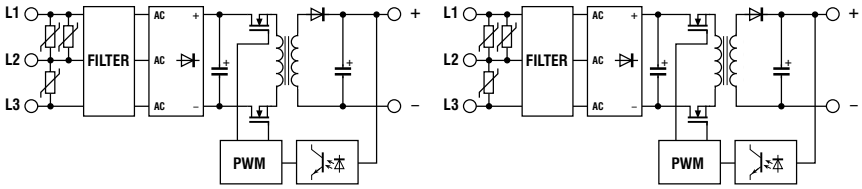




BLOCK DIAGRAMS / NOTES

The measure of the height includes the height of the terminals and the DIN rail mounting clamp.
(1) Like the standard version but with the relay for failure contact inside mounted, available upon request.
(2) Max 575 Vac / 60 s

Block diagram



APPLICATIONS

The CSG series switching power supply units of CABUR have been designed and developed for industrial uses where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive. The three different overvoltage and short circuit protections can be set according to the different type of application. The thermal protection turns off the device if the air temperature is 60°C along with continuous full load protection; when the temperature cools down the power supply restarts itself automatically. These models have an electronic output voltage limitation at ≤ 32 Vdc which, in case of failure, prevents damage of the devices feeded downstream. CABUR switching power supply units comply with EMI standards.
The CSG series with 360-550 Vac and 507-780 Vdc input have no ignition problems at full load even with low mains voltage and are therefore suitable for critical supply mains. This series is very compact and has an IPXXB protection degree against accidental contacts according to IEC 529 Std. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

Battery charger

These units can be used also to charge batteries while feeding the load, it is only necessary to set the current share ON and to set the constant power protection. We recommend to protect the battery with a fuse.

VERSIONS

Standard	**CSG06**	Cod. XCSG06
With failure contact	**CSG06P** (1)	Cod. XCSG06P

	CSG10	Cod. XCSG10
	CSG10P (1)	Cod. XCSG10P

INPUT TECHNICAL DATA

Rated voltage	360 ÷ 550 Vac (2) / 507 ÷ 780 Vdc	360 ÷ 550 Vac (2) / 507 ÷ 780 Vdc
Frequency	47 ÷ 63 Hz	47 ÷ 63 Hz
Corrente at Iout max	3 x 0.4 A @ 340 Vac / 3 x 0.25 A @ 550 Vac	3 x 0.6 A @ 340 Vac / 3 x 0.42 A @ 550 Vac
Inrush current at cold start at 230 Vac	< 12 A with electronic limiter	< 12 A with electronic limiter
Power factor	0.7	0.7
Protection fuse	3 x T 1 (external)	3 x T 1.5 (external)

OUTPUT TECHNICAL DATA

Voltage	24 ÷ 28 Vdc adjustable, max 32 Vdc with crow-bar	24 ÷ 28 Vdc adjustable, max 32 Vdc with crow-bar
Maximum current	8.5 A, > 15 A per 1.5 s	14 A, > 25 A per 1.5 s
Continuous current	6 A	10 A
Load regulation	< 1 %	< 1 %
Ripple at Iout max	50 mVpp	50 mVpp
Hold up time	> 11 ms	> 11 ms
Overload/short circuit protection	Hiccup 1.4 circuit, auto reset Manual reset Costant current (to select)	Hiccup 1.4 circuit, auto reset Manual reset Costant current (to select)
Output signal	Standard version: – "P" version: SPDT 2 A / 250 Vac	Standard version: – "P" version: SPDT 2 A / 250 Vac
Parallel connection	possible with Current Share activated	possible with Current Share activated

GENERAL TECHNICAL DATA

Efficiency	> 89%	> 90%
Dissipated power	18 W max.	27 W max.
Operating temperature	-20 ÷ 60°C	-20 ÷ 60°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 KVac / 60 s	1.5 KVac / 60 s
Input / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
Standard / Approvals	EN 60950, IEC950, UL 1950, CSA22.2	EN 60950, IEC950, UL 1950, CSA22.2
EMC Standards	EN 50081-1, EN 50082-2	EN 50081-1, EN 50082-2
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5	EN61000-4-2, EN61000-4-4, EN 61000-4-5
Connection terminal blocks	2.5 mm^2 , fixed	2.5 mm^2 , fixed
Housing material	metallic	metallic
Weight	0.8 kg ca.	1 kg ca.
Mounting information	Vertical on rail, allow 20 mm spacing between adjacent components	Vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

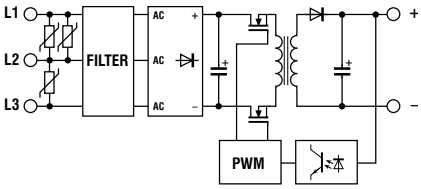
Three phase switching power supply OUT 24 Vdc

- High efficiency and low dissipated power
- 50 A outrush current per 1.5 s for starting-up heavy loads and to guarantee the selectivity of the 24 V lines
- Electronic protection from schort circuit, overload, overtemperature
- Electronic output voltage limiting at 32 V
- Adjustable output 24-28 Vdc
- With PFC filter

BLOCK DIAGRAMS / NOTES

The measure of the height includes the height of the terminals and the DIN rail mounting clamp.
(1) Like the standard version but with the relay for alarm contact inside mounted, available upon request.
(2) Max 575 Vac / 60 s

Block diagram



APPLICATIONS

The CSG series switching power supply units of CABUR have been designed and developed for industrial uses where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive. The three different overvoltage and short circuit protections can be set according to the different type of application. The thermal protection turns off the device if the air temperature is 60°C along with continuous full load protection; when the temperature cools down the power supply restarts itself automatically. These models have an electronic output voltage limitation at ≤ 32 Vdc which, in case of failure, prevents damage of the devices feeded downstream. CABUR switching power supply units comply with EMI standards.
The CSG series with 360-550 Vac and 507-780 Vdc input have no ignition problems at full load even with low mains voltage and are therefore suitable for critical supply mains. This series is very compact and has an IPXXB protection degree against accidental contacts according to IEC 529 Std. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

Battery charger

These units can be used also to charge batteries while feeding the load, it is only necessary to set the current share ON and to set the constant power protection. We recommend to protect the battery with a fuse.

VERSIONS

Standard	**CSG20**	Cod. XCSG20
With alarm contact	**CSG20C** (1)	Cod. XCSG20C

INPUT TECHNICAL DATA

Rated voltage	360 ÷ 550 Vac (2) / 507 ÷ 780 Vdc
Frequency	47 ÷ 63 Hz
Corrente at Iout max	3 x 1.3 A a 360 Vac / 3 x 0.8 A a 550 Vac
Inrush current at cold start at 230 Vac	< 12 A with electronic limitation
Power factor	>0.76 with PFC
Protection fuse	3 x T 3.15 A (external)

OUTPUT TECHNICAL DATA

Voltage	24 ÷ 28 Vdc adjustable, max 32 Vdc with crow-bar
Maximum current	28 A, > 50 A per 1.5 s
Continuous current	20 A
Load regulation	< 0.5 %
Ripple at Iout max	50 mVpp
Hold up time	> 11 ms
Overload/short circuit protection	Hiccup 1.4 circuit, auto reset Manual reset Costant current (to select)
Output signal	Standard version: – "P" version: SPDT 2 A / 250 Vac
Parallel connection	possible with Current Share activated

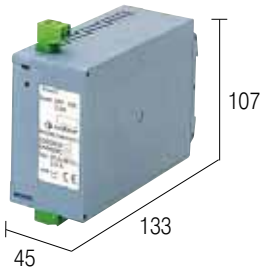
APPROVALS

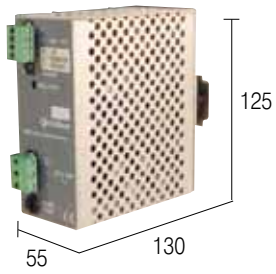
GENERAL TECHNICAL DATA

Efficiency	> 93% a 400 Vac
Dissipated power	40 W max.
Operating temperature	-10 ÷ 60°C
Input / output isolation	3 kVac / 60 s
Input / ground isolation	1.5 KVac / 60 s
Input / ground isolation	0.5 kVac / 60 s
Protection degree	IP 20
Standard / Approvals	EN 60950, IEC950, UL 1950, CSA22.2
EMC Standards	EN 50081-1, EN 50082-2, EN 61000-3-2
Surge immunity	EN61000-4-2, EN61000-4-4, EN 61000-4-5, liv. 4
Connection terminal blocks	4 mm², fixed
Housing material	metallic
Weight	2 kg ca.
Mounting information	Vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Switching power supply input 22–30 Vac

- Standard input voltage 24 Vac
- Dissipated power inferior to 10%
- Overload/short circuit protection with automatic reset
- Input protection fuse
- Compact designe save panel space

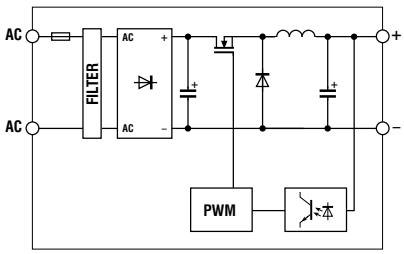


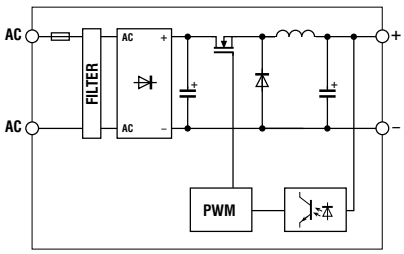


BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

Block diagram





APPLICATIONS

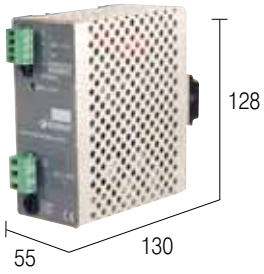
The CABUR power supply units series CS .../24 with 22 - 30 Vac input allow transformers with standard secondary voltage of 24 Vac to be used, more economical and more readily available than transformers with special voltages.
They are suitable for use in SELV and PELV circuits. In PELV circuits, in which one safety low voltage pole has to be earthed, taking care not to earth the secondary winding of the transformer too, but only one pole, normally the negative, of the 24 Vdc output of the power supply effectively used as control voltage.
The earthing together of a pole of the secondary of the transformer and a pole of the 24 Vdc of the power supply unit would inevitably damage the power supply unit itself.
The purpose of the earthing connection is to discharge the interference trapped by the input filter and must be as short as possible.
Do not connect the earth terminal in SELV circuits.
The input and output of the power supply units in the CS .../24 series are not isolated. The safety isolation function is therefore assigned to the external transformer which has to conform with the standard CEI 14-6 and/or EN60742.

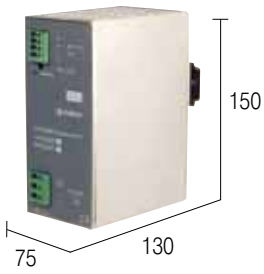
VERSIONS

	CS224/24 Cod. XAS02VC	**CS424/24** Cod. XAS04VC
INPUT TECHNICAL DATA		
Rated voltage	22 – 30 Vac	22 – 30 Vac
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	2.8 A	4.6 A
Protection fuse	T 5 A (inside mounted)	T 10 A
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc	24 Vdc adjustable ± 8%
Maximum current	3.5 A	6 A
Continuous current	2.5 A	4 A
Load regulation	< 1%	< 1%
Ripple at Iout max	< 50 mVpp	< 100 mVpp
Hold up time	> 15 ms	> 15 ms
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	–
Parallel connection	–	–
APPROVALS		
GENERAL TECHNICAL DATA		
Efficiency	≥ 90%	≥ 90%
Dissipated power	< 6.7 W	< 10.7 W
Operating temperature	-10 – 60°C, -0.08 A/°C over 45°C	-10 – 60°C, -0.13 A/°C over 45°C
Input / output isolation	–	–
Input / ground isolation	–	–
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
Standard / Approlvas	–	–
EMC standards	EN 50081-1, EN 50082-2	EN 50081-1, EN 50082-2
Surge immunity	varistor - 4.5 kA 8/20 in input	varistor - 4.5 kA 8/20 in input
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V-0	metallic
Approximative weight	0.5 kg ca.	0.65 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Switching power supply input 22–30 Vac

- Standard input voltage 24 Vac
- Dissipated power inferior to 10%
- Overload/short circuit protection with automatic restore
- Input protection fuse
- Compact designe save panel space

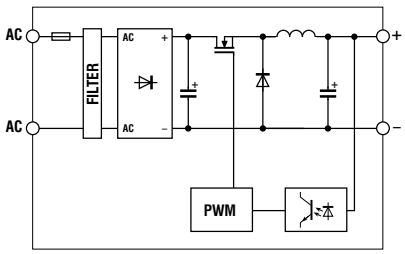


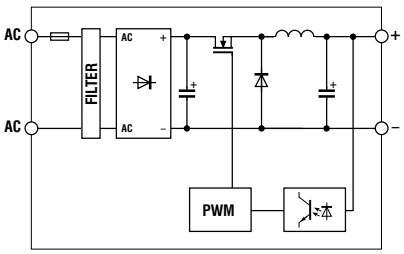


BLOCK DIAGRAMS / NOTES

The measure of depth includes the encumbrance of the clamps and the attack to the rail.

Block diagram





APPLICATIONS

The CABUR power supply units series CS .../24 with 22 - 30 Vac input allow transformers with standard secondary voltage of 24 Vac to be used, more economical and more readily available than transformers with special voltages.
They are suitable for use in SELV and PELV circuits. In PELV circuits, in which one safety low voltage pole has to be earthed, taking care not to earth the secondary winding of the transformer too, but only one pole, normally the negative, of the 24 Vdc output of the power supply effectively used as control voltage.
The earthing together of a pole of the secondary of the transformer and a pole of the 24 Vdc of the power supply unit would inevitably damage the power supply unit itself.
The purpose of the earthing connection is to discharge the interference trapped by the input filter and must be as short as possible.
Do not connect the earth terminal in SELV circuits.
The input and output of the power supply units in the CS .../24 series are not isolated. The safety isolation function is therefore assigned to the external transformer which has to conform with the standard CEI 14-6 and/or EN60742.

VERSIONS

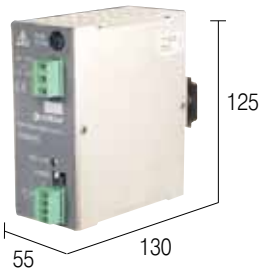
	CS624/24 Cod. XAS06VC	**CS1224/24** Cod. XAS12VC
INPUT TECHNICAL DATA		
Rated voltage	22 – 30 Vac	22 – 30 Vac
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	6.6 A	13.2 A
Protection fuse	T 10 A	T 16 A (inside mounted)
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc adjustable ± 8%	24 Vdc adjustable ± 8%
Maximum current	8 A	14 A
Continuous current	6 A	12 A
Load regulation	< 1 %	< 1 %
Ripple at Iout max	< 100 mVpp	< 100 mVpp
Hold up time	> 15 ms	> 15 ms
Overload/short circuit protection	Hiccup circuit, auto reset	Hiccup circuit, auto reset
Output signal	–	–
Parallel connection	–	–

APPROVALS

GENERAL TECHNICAL DATA		
Efficiency	≥ 90%	≥ 90%
Dissipated power	< 16 W	< 32 W
Operating temperature	-10 – 60°C, -0.2 A/°C over 45°C	-10 – 50°C, -0.5 A/°C over 45°C
Input / output isolation	–	–
Input / ground isolation	–	–
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
Standard / Approlvas	–	–
EMC standards	EN 50081-1, EN 50082-2	EN 50081-1, EN 50082-2
Surge immunity	varistor - 4.5 kA 8/20 in input	varistor - 4.5 kA 8/20 in input
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	metallic	metallic
Approximative weight	0.7 kg ca.	0.9 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

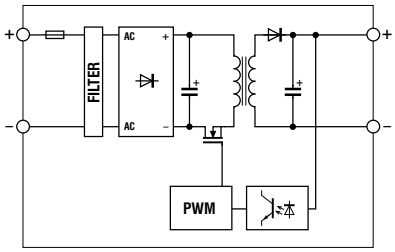
DC/DC Converter

- Compact dimension
- IP 20 protection degree
- Converter a 48 Vdc in a 24 Vdc



BLOCK DIAGRAMS / NOTES

Block diagram



APPLICATIONS

VERSIONS

CS324/48 Cod. XAS03VD

INPUT TECHNICAL DATA	
Rated voltage	36 – 72 Vdc
Frequency	–
Current at Iout max	2.5 A
Inrush current at cold start at 230 Vac	–
Power factor	–
Protection fuse	T 3.15 A

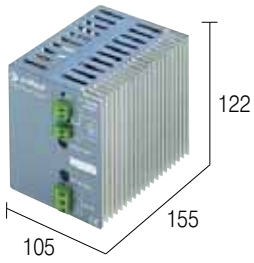
OUTPUT TECHNICAL DATA	
Voltage	24 Vdc adjustable ± 5%
Maximum current	3 A
Continuous current	–
Load regulation	–
Ripple at Iout max	240 mVpp
Hold up time	–
Overload/short circuit protection	Hiccup circuit, auto reset
Output signal	–
Parallel connection	possible with external protection diode

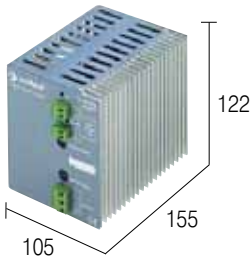
APPROVALS

GENERAL TECHNICAL DATA	
Efficiency	≥ 85%
Dissipated power	12.7 W
Operating temperature	0 – 50°C
Input / output isolation	1 kVac / 60 s
Input / ground isolation	> 1 KVac / 60 s
Output / ground isolation	0.5 kVac / 60 s
Protection degree	IP 20
Standard / Approlvas	EN 60950
EMC standards	EN 55022-A
Surge immunity	–
Connection terminal blocks	terminal blocks 2.5 mm², pluggable
Housing material	metallic
Approximative weight	0.6 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Linear power supply with transformer

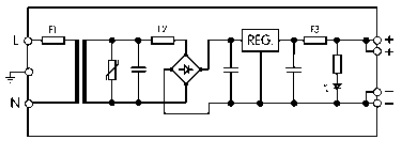
- DIN rail mounting
- Technical data and accessible fuses on the frontal side
- Constant operation during the micro interruptions of main (Hold up time)
- Suited for the employment of circuits SELV and PELV
- Strengthened toridal transformer according to EN60742 standard

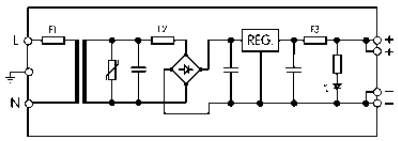




BLOCK DIAGRAMS / NOTES

Block diagram





APPLICATIONS

The CL Series linear power supply units of CABUR have been designed and developed for industrial uses where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive and have a strengthened toroidal transformer according to EN 60724 Standard.

These power supplies have a very compact design and have an IPXXB protection degree against accidental contacts according to IEC 529 Std., the large dissipation surface is designed to reduce the operating temperature. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

The 4 A versions can be mounted directly on the mounting rail with their hook, the 6 A and 10 A versions are more heavy and are provided with a support flange on the mounting rail that facilitates their fixing by means of a screw onto the panel.

Battery charger

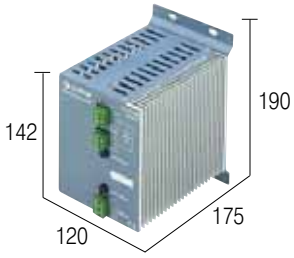
These units can be used also to charge batteries while feeding the load (maximun 6 A). To this purpose, Cabur has developed a module with equipped with the necessary diodes and resistances, the CSBC modules (Cat. No. XCSBC). See the accessories section for more details.

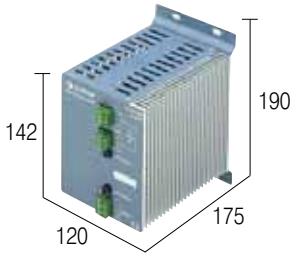
VERSIONS

	CL424/115 Cod. XAL04VE	**CL424/230** Cod. XAL04VF
INPUT TECHNICAL DATA		
Rated voltage	115 Vac ± 10%	230 Vac ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	1.4 A	0.7 A
Protection fuse	T 1.4 A	T 1.6 A
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc and adjustable ± 10%	24 Vdc and adjustable ± 10%
Maximum current	4 A	4 A
Load regulation	± 0.5 V with Δ I out 90%	± 0.6 V with Δ I out 90%
Ripple at Iout max	30 mVpp	30 mVpp
Hold up time	90 ms	90 ms
Overload/short circuit protection	fuse F 5 A	fuse F 5 A
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C, -0.1 A /°C over 40°C	- 10 – 50 °C, -0.1 A /°C over 40°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
EMC standards	EN 55011-A1	EN 55011-A1
Standard / Approlvas	EN60950, IEC950	EN60950, IEC950
Surge immunity	EN 61000-4-2, EN 61000-4-4	EN 61000-4-2, EN 61000-4-4
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	metallic	metallic
Approximative weight	3 kg ca.	3 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

Linear power supply with transformer

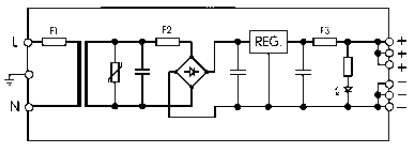
- DIN rail mounting
- Technical data and accessible fuses on the frontal side
- Constant operation during the micro interruptions of main (Hold up time)
- Suited for the employment of circuits SELV and PELV
- Strengthened toridal transformer according to EN60742 standard

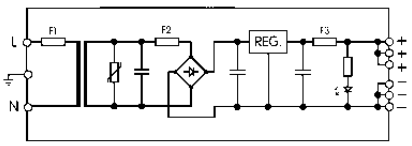




BLOCK DIAGRAMS / NOTES

Block diagram





APPLICATIONS

The CL Series linear power supply units of CABUR have been designed and developed for industrial uses where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive and have a strengthened toroidal transformer according to EN 60724 Standard.

These power supplies have a very compact design and have an IPXXB protection degree against accidental contacts according to IEC 529 Std., the large dissipation surface is designed to reduce the operating temperature. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

The 4 A versions can be mounted directly on the mounting rail with their hook, the 6 A and 10 A versions are more heavy and are provided with a support flange on the mounting rail that facilitates their fixing by means of a screw onto the panel.

Battery charger

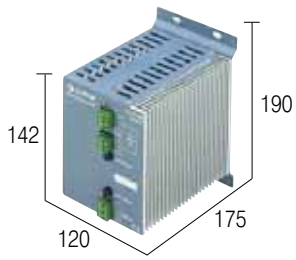
These units can be used also to charge batteries while feeding the load (maximun 6 A). To this purpose, Cabur has developed a module with equipped with the necessary diodes and resistances, the CSBC modules (Cat. No. XCSBC). See the accessories section for more details.

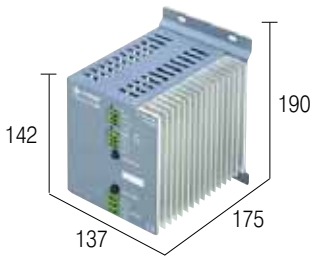
VERSIONS

	CL624/115 Cod. XAL06VE	**CL624/230** Cod. XAL06VF
INPUT TECHNICAL DATA		
Rated voltage	115 Vac ± 10%	230 Vac ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	2 A	2 A
Protection fuse	T 5 A	T 2.5 A
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc adjustable ± 10%	24 Vdc adjustable ± 10%
Maximum current	6 A	6 A
Load regulation	± 0.6 V with Δ I out 90%	± 0.6 V with Δ I out 90%
Ripple at Iout max	40 mVpp	40 mVpp
Hold up time	100 ms	100 ms
Overload/short circuit protection	fuse F 8 A	fuse F 8 A
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C, -0.15 A /°C over 40°C	- 10 – 50 °C, -0.15 A /°C over 40°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
EMC standards	EN 55011-A1	EN 55011-A1
Standard / Approlvas	EN60950, IEC950	EN60950, IEC950
Surge immunity	EN 61000-4-2, EN 61000-4-4	EN 61000-4-2, EN 61000-4-4
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², pluggable
Housing material	metallic	metallic
Approximative weight	4.1 kg ca.	4.1 kg ca.
Mounting information	Vertical; fixing with screw, to outdistance 20 mm from the adjacent components	Vertical; fixing with screw, to outdistance 20 mm from the adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS** (from to use only as support)	**PR/3/AC - PR/3/AS** (from to use only as support)
Mounting rail according to IEC60715/G32	–	–

Linear power supply with transformer

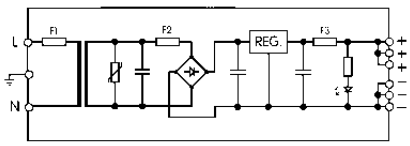
- DIN rail mounting
- Technical data and accessible fuses on the frontal side
- Constant operation during the micro interruptions of main (Hold up time)
- Suited for the employment of circuits SELV and PELV
- Strengthened toridal transformer according to EN60742 standard

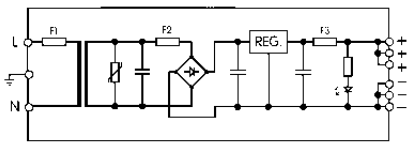




BLOCK DIAGRAMS / NOTES

Block diagram





APPLICATIONS

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These power supplies have a very compact design and have an IPXXB protection degree against accidental contacts according to IEC 529 Std., the large dissipation surface is designed to reduce the operating temperature. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

The 4 A versions can be mounted directly on the mounting rail with their hook, the 6 A and 10 A versions are more heavy and are provided with a support flange on the mounting rail that facilitates their fixing by means of a screw onto the panel.

Battery charger

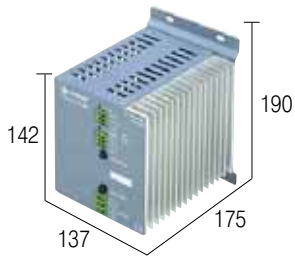
These units can be used also to charge batteries while feeding the load (maximun 6 A). To this purpose, Cabur has developed a module with equipped with the necessary diodes and resistances, the CSBC modules (Cat. No. XCSBC). See the accessories section for more details.

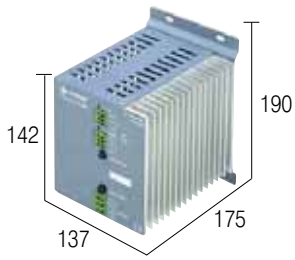
VERSIONS

	CL624/400 Cod. XAL06VG	**CL1024/115** Cod. XAL10VE
INPUT TECHNICAL DATA		
Rated voltage	400 Vac ± 10%	115 Vac ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	0.52 A	3 A
Protection fuse	T 1.6 A	T 6.3 A
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc adjustable ± 10%	24 Vdc adjustable ± 10%
Maximum current	6 A	10 A
Load regulation	± 0.6 V with Δ I out 90%	± 0.6 V with Δ I out 90%
Ripple at Iout max	40 mVpp	60 mVpp
Hold up time	100 ms	90 ms
Overload/short circuit protection	fuse F 8 A	fuse F 12 A
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C, -0.15 A /°C over 40°C	- 10 – 50 °C, -0.15 A /°C over 40°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
EMC standards	EN 55011-A1	EN 55011-A1
Standard / Approlvas	EN60950, IEC950	EN60950, IEC950
Surge immunity	EN 61000-4-2, EN 61000-4-4	EN 61000-4-2, EN 61000-4-4
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², fixed
Housing material	metallic	metallic
Approximative weight	4.1 kg ca.	5.6 kg ca.
Mounting information	Vertical; fixing with screw, to outdistance 20 mm from the adjacent components	Vertical; fixing with screw, to outdistance 20 mm from the adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS** (from to use only as support)	**PR/3/AC - PR/3/AS** (from to use only as support)
Mounting rail according to IEC60715/G32	–	–

Linear power supply with transformer

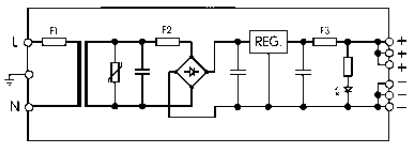
- DIN rail mounting
- Technical data and accessible fuses on the frontal side
- Constant operation during the micro interruptions of main (Hold up time)
- Suited for the employment of circuits SELV and PELV
- Strengthened toridal transformer according to EN60742 standard

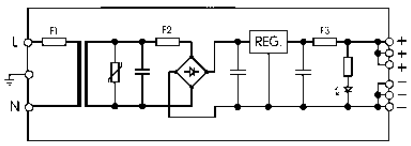




BLOCK DIAGRAMS / NOTES

Block diagram





APPLICATIONS

The CL Series linear power supply units of CABUR have been designed and developed for industrial uses where safety, easy use and reliability are essential. These units comply with the requirements given by the Low Voltage Directive and have a strengthened toroidal transformer according to EN 60724 Standard.

These power supplies have a very compact design and have an IPXXB protection degree against accidental contacts according to IEC 529 Std., the large dissipation surface is designed to reduce the operating temperature. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

The 4 A versions can be mounted directly on the mounting rail with their hook, the 6 A and 10 A versions are more heavy and are provided with a support flange on the mounting rail that facilitates their fixing by means of a screw onto the panel.

Battery charger

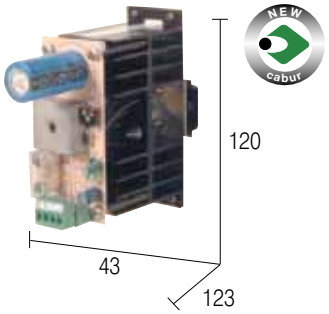
These units can be used also to charge batteries while feeding the load (maximun 6 A). To this purpose, Cabur has developed a module with equipped with the necessary diodes and resistances, the CSBC modules (Cat. No. XCSBC). See the accessories section for more details.

VERSIONS

	CL1024/230 Cod. XAL10VF	**CL1024/400** Cod. XAL10VG
INPUT TECHNICAL DATA		
Rated voltage	230 Vac ± 10%	400 Vac ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	1.5 A	0.8 A
Protection fuse	T 3.15 A	T 2 A
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc and adjustable ± 10%	24 Vdc and adjustable ± 10%
Maximum current	10 A	10 A
Load regulation	± 0.6 V with Δ I out 90%	± 0.6 V with Δ I out 90%
Ripple at Iout max	60 mVpp	60 mVpp
Hold up time	90 ms	90 ms
Overload/short circuit protection	fuse F 12 A	fuse F 12 A
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C, -0.25 A /°C over 40°C	- 10 – 50 °C, -0.25 A /°C over 40°C
Input / output isolation	3 kVac / 60 s	3 kVac / 60 s
Input / ground isolation	1.5 kVac / 60 s	1.5 kVac / 60 s
Output / ground isolation	0.5 kVac / 60 s	0.5 kVac / 60 s
Protection degree	IP 20	IP 20
EMC standards	EN 55011-A1	EN 55011-A1
Standard / Approlvas	EN60950, IEC950	EN60950, IEC950
Surge immunity	EN 61000-4-2, EN 61000-4-4	EN 61000-4-2, EN 61000-4-4
Connection terminal blocks	terminal blocks 2.5 mm², fixed	terminal blocks 2.5 mm², fixed
Housing material	metallic	metallic
Approximative weight	4.1 kg ca.	4.1 kg ca.
Mounting information	Vertical; fixing with screw, to outdistance 20 mm from the adjacent components	Vertical; fixing with screw, to outdistance 20 mm from the adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS** (from to use only as support)	**PR/3/AC - PR/3/AS** (from to use only as support)
Mounting rail according to IEC60715/G32	–	–

Adjustable linear power supply

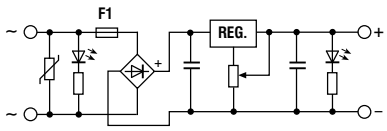
- Adjustable output from 3 to 27 Vdc
- Output current 4 A max.
- Electronic overload / short circuit protection
- Pluggable terminal blocks
- Low cost



BLOCK DIAGRAMS / NOTES

For the correct operation of the CL3R/24 power supply and in order to obtain the maximum performances, we recommend to use transformers with rated voltage on secondary as indicated in table. N° 1; if the output of secondary of the transformer is 24 Vac, the maximum rated current values at the output of the device, and according to the different output voltages, are indicated in the table. N° 2

Block diagram



Tab. 1

INPUT (Vac)	OUTPUT (Vdc)	I OUT max. (A)
24±25	24	4
15±15.5	15	4.2
12.5	12	4.4
10.5	10	4.7
9.5	9	5
6.5	5	5

Tab. 2

INPUT (Vac)	OUTPUT (Vdc)	I OUT max. (A)
24	24	4
24	15	2
24	12	1,5A
24	10	1.2
24	5	0.75

APPLICATIONS

The CL3R/24 linear stabilised power supply 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; by having an IP 00 protection degree its use is intended inside a protected enclosure. It can be fixed on IEC 60715/TH35 mounting rails thanks to its hook, or to the panel by means of screws to be inserted in the two slots of the metallic dissipator and by removing the plate with the hook. Even if the power supply is protected from over-current it is advisable to respect the rated values shown in table 1 and 2.

VERSIONS

CL3R/24 Cod. XAL03RC

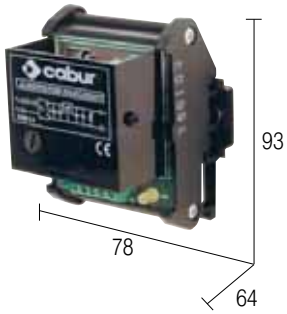
INPUT TECHNICAL DATA	
Rated voltage	6.5 – 25 Vac (see tab. 1)
Frequency	50 – 60 Hz
Current at Iout max	7.5 A
Protection fuse	T 8 A

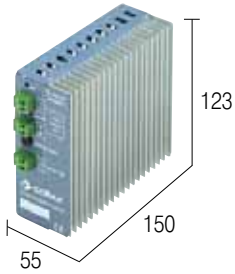
OUTPUT TECHNICAL DATA	
Voltage	3 – 27 Vdc e adjustable (see tab. 1)
Maximum current	4 A a 24 Vdc (see notea *1)
Load regulation	± 100 mV with variations I out 90%
Ripple at Iout max	< 30 mVpp
Hold up time	20 ms
Overload/short circuit protection	electronic with auto reset
Output signal	–
Parallel connection	possible

GENERAL TECHNICAL DATA	
Operating temperature	- 10 – 50 °C protezione elettronica
Input / output isolation	–
Input / ground isolation	0.5 kVac / 60s
Output / ground isolation	0.5 kVac / 60s
Protection degree	IP 00
Norme EMC	EN 50081-1, EN 50082-2
Connection terminal blocks	terminal blocks 2.5 mm², pluggable
Housing material	–
Approximative weight	265 gr ca.
Mounting information	see application
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Linear power supply without transformer

- DIN rail mounting
- IP20 metallic housing
- Technical data and accessible fuses on the frontal side
- Constant operation during the micro interruptions of main (Hold up time)

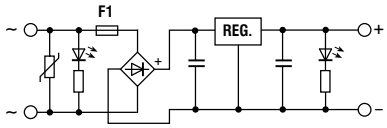


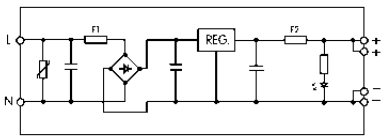


BLOCK DIAGRAMS / NOTES

(1) green LED ON = input voltage is OK
yellow LED ON = output voltage is OK
yellow LED OFF = overtemperature or short circuit in output

Block diagram





APPLICATIONS

The CL-/24 series linear power supply units of CABUR represent an economic solution if in the cabinet a low voltage (24÷27 Vac) feeding is already available and coming from a transformer. This series has been designed and developed for industrial applications where safety, easy use and reliability are essential; these units comply with the requirements given by the Low Voltage Directive. Power supplies of this series have a very compact design and are IP20 protected against accidental contacts according to IEC 529 Std. The large dissipation surface is designed in order to reduce the operating temperature. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

Battery charger

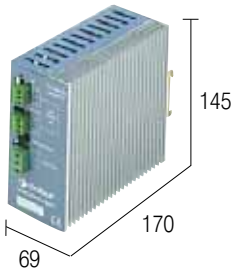
These units can be used also to charge batteries while feeding the load (maximun 6 A). For this purpose, Cabur has developed a module with the necessary diodes and resistances, the CSBC modules (Cat. No. XCSBC). See the accessories section for more details.

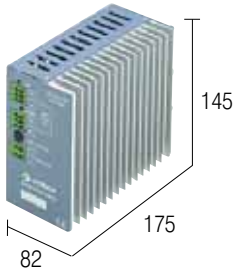
VERSIONS

	AL24327/1A Cod. XAL24127	**CL424/24** Cod. XAL04VC
INPUT TECHNICAL DATA		
Rated voltage	24 – 25 Vac ± 10%	25 – 27% Vac ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	2.5 A	8 A
Protection fuse	T 2.5 A	15 A (inside mounted)
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc ± 3% (not adjustable)	24 Vdc adjustable ± 10%
Maximum current	1 A	4 A
Load regulation	± 0.5 V with Δ I out 90%	± 0.5 V with Δ I out 90%
Ripple at Iout max	< 50 mVpp	30 mVpp
Hold up time	30 ms	90 ms
Overload/short circuit protection	electronic with auto reset (1)	fuse F 5 A
Output signal	–	–
Parallel connection	–	possible with external protection diode
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C, -0.025 A /°C over 40°C	- 10 – 50 °C, -0.1 A /°C over 40°C
Dissipated power	< 24 W	< 96 W
Input / output isolation	–	–
Input / ground isolation	0.5 kVac / 60 s	–
Output / ground isolation	0.5 kVac / 60 s	–
Protection degree	IP 00	IP 20
EMC standards	EN 55011-A1	EN 55011-A1
Standard / Approlvas	–	–
Surge immunity	EN 61000-4-2, EN 61000-4-4	EN 61000-4-2, EN 61000-4-4
Connection terminal blocks	terminal blocks 2.5 mm², fixed	terminal blocks 2.5 mm², pluggable
Housing material	polyamide UL94V0	metallic
Approximative weight	0.13 kg	0.8 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	–

Linear power supply without transformer

- DIN rail mounting
- IP20 metallic housing
- Technical data and accessible fuses on the frontal side
- Constant operation during the micro interruptions of main (Hold up time)

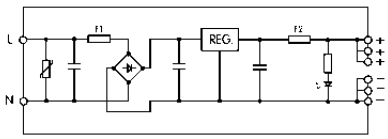


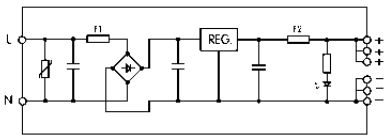


BLOCK DIAGRAMS / NOTES

(1) green LED ON = input voltage is OK
yellow LED ON = output voltage is OK
yellow LED OFF = overtemperature or short circuit in output

Block diagram





APPLICATIONS

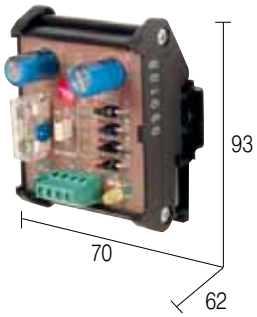
The CL-·/24 series linear power supply units of CABUR represent an economic solution if in the cabinet a low voltage (24÷27 Vac) feeding is already available and coming from a transformer. This series has been designed and developed for industrial applications where safety, easy use and reliability are essential; these units comply with the requirements given by the Low Voltage Directive. Power supplies of this series have a very compact design and are IP20 protected against accidental contacts according to IEC 529 Std. The large dissipation surface is designed in order to reduce the operating temperature. All the functions are located on the front panel and marked with standard IEC symbols, which makes its use very easy, even on site.

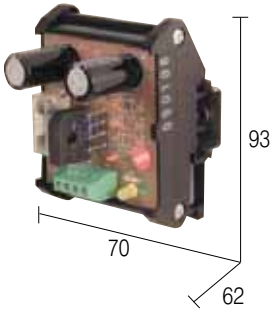
Battery charger

These units can be used also to charge batteries while feeding the load (maximun 6 A). For this purpose, Cabur has developed a module with the necessary diodes and resistances, the CSBC modules (Cat. No. XCSBC). See the accessories section for more details.

VERSIONS	**CL624/24** Cod. XAL06VC	**CL1024/24** Cod. XAL10VC
INPUT TECHNICAL DATA		
Rated voltage	25 – 27 Vac ± 10%	25 – 27 Vac ± 10%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	12 A	20 A
Protection fuse	20 A internal	30 A (inside mounted)
OUTPUT TECHNICAL DATA		
Voltage	24 Vdc adjustable ± 10%	24 Vdc adjustable ± 10%
Maximum current	6 A	10 A
Load regulation	± 0.6 V with Δ I out 90%	± 0.6 V with Δ I out 90%
Ripple at Iout max	40 mVpp	60 mVpp
Hold up time	100 ms	90 ms
Overload/short circuit protection	fuse F 8 A	fuse F 12 A
Output signal	–	–
Parallel connection	possible with external protection diode	possible with external protection diode
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C, -0.1 A /°C over 40°C	- 10 – 50 °C, -0.1 A /°C over 40°C
Dissipated power	< 144 W	< 2404 W
Input / output isolation	–	–
Input / ground isolation	–	–
Output / ground isolation	–	–
Protection degree	IP 20	IP 20
EMC standards	EN 55011-A1	EN 55011-A1
Standard / Approlvas	-	-
Surge immunity	EN 61000-4-2, EN 61000-4-4	EN 61000-4-2, EN 61000-4-4
Connection terminal blocks	terminal blocks 2.5 mm², pluggable	terminal blocks 2.5 mm², fixed
Housing material	metallic	metallic
Approximative weight	2.05 kg ca.	2.35 kg ca.
Mounting information	vertical on rail, allow 20 mm spacing between adjacent components	vertical on rail, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

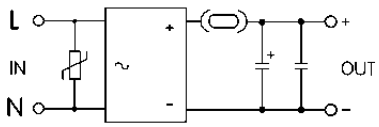
Filtered power supply without transformer AR Series

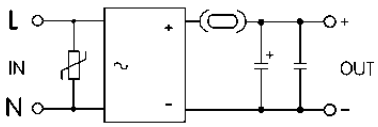




BLOCK DIAGRAMS / NOTES

Block diagram





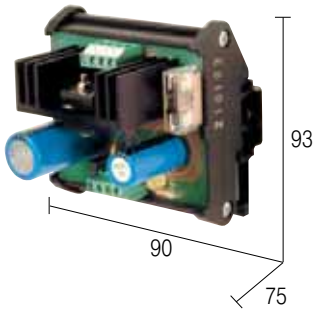
APPLICATIONS

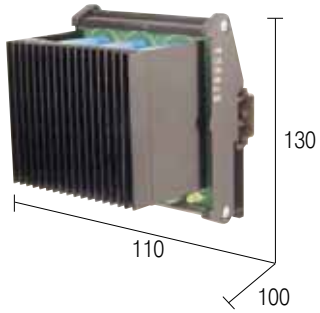
By means of an external transformer (not supplied) the line voltage is reduced to the required level. A rectifier bridge and a filter capacity convert the alternating voltage into a continuous voltage. Since the power supply unit is not stabilised, the level of the output varies considerably according to the absorption required and according to the oscillations of the line voltage. The formulae included in the output specifications allow an indication of the loadless voltage, that at 50% of the load and full load to be obtained. This will enable you to chose the most suitable transformer for your needs.
These units offer a low cost and a reliable solution suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide range of output voltages.
Not suitable to feed electronic loads as converters and PLC's.

VERSIONS

	AR2624/2A Cod. XAR26002	**AR2624/4A** Cod. XAR26004
INPUT TECHNICAL DATA		
Rated voltage	9 – 24 Vac ± 5%	9 – 24 Vac ± 5%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	2.4 A	4.8 A
Protection fuse	T 3.15 A external (not furnished)	T 6 A external (not furnished)
OUTPUT TECHNICAL DATA		
Voltage (0 load)	Vout = (Vin x 1.41) – 1.2	Vout = (Vin x 1.41) – 1.2
Voltage (50% load)	Vout = (Vin x 1.41) – 3.6	Vout = (Vin x 1.41) – 3.6
Voltage (100% load)	Vout = (Vin x 1.41) – 4.8	Vout = (Vin x 1.41) – 4.8
Maximum current	2 A	4 A
Ripple	< 10%	<10%
Protection fuse	T 3.15 A	T 3.15 A
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 50 °C	- 10 – 50 °C
Protection degree	IP 00	IP 00
Surge immunity	Varistor 1 kA	Varistor 1 kA
Connection terminal blocks	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Housing material	Polyamide UL94V-0	Polyamide UL94V-0
Approximative weight	80 gr ca.	100 gr ca.
Mounting information	Vertical, allow 20 mm spacing between adjacent components	Vertical, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

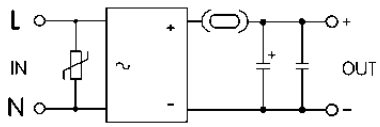
Filtered power supply without transformer AR Series

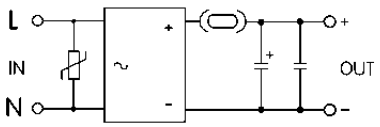




BLOCK DIAGRAMS / NOTES

Block diagram





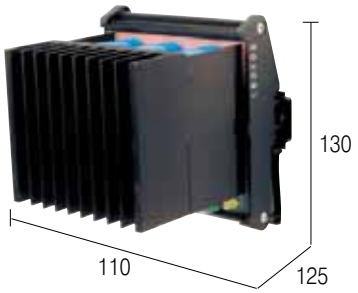
APPLICATIONS

By means of an external transformer (not supplied) the line voltage is reduced to the required level. A rectifier bridge and a filter capacity convert the alternating voltage into a continuous voltage. Since the power supply unit is not stabilised, the level of the output varies considerably according to the absorption required and according to the oscillations of the line voltage. The formulae included in the output specifications allow an indication of the loadless voltage, that at 50% of the load and full load to be obtained. This will enable you to chose the most suitable transformer for your needs.
These units offer a low cost and a reliable solution suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide range of output voltages.
Not suitable to feed electronic loads as converters and PLC's.

VERSIONS

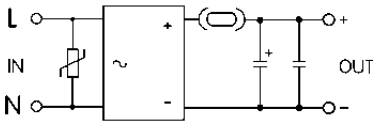
	AR2624/6A Cod. XAR26006	**AR2624/10A** Cod. XAR26010
INPUT TECHNICAL DATA		
Rated voltage	9 – 24 Vac ± 5%	9 – 24 Vac ± 5%
Frequency	50 – 60 Hz	50 – 60 Hz
Current at Iout max	7.2 A	12 A
Protection fuse	T 8 A external (not furnished)	T 15 A external (not furnished)
OUTPUT TECHNICAL DATA		
Voltage (0 load)	Vout = (Vin x 1.41) – 1.2	Vout = (Vin x 1.41) – 1.2
Voltage (50% load)	Vout = (Vin x 1.41) – 3.6	Vout = (Vin x 1.41) – 3.6
Voltage (100% load)	Vout = (Vin x 1.41) – 4.8	Vout = (Vin x 1.41) – 4.8
Maximum current	6 A	10 A
Ripple	<10%	<10%
Protection fuse	T 8 A	T 15 A
GENERAL TECHNICAL DATA		
Operating temperature	- 10 – 45 °C	- 10 – 45 °C
Protection degree	IP 00	IP 00
Surge immunity	Varistor 1 kA	Varistor 1 kA
Connection terminal blocks	terminal blocks 2.5 mm²	terminal blocks 2.5 mm²
Housing material	Polyamide UL94V-0	Polyamide UL94V-0
Approximative weight	180 gr ca.	3900 gr ca.
Mounting information	Vertical, allow 20 mm spacing between adjacent components	Vertical, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

Filtered power supply without transformer AR Series



BLOCK DIAGRAMS / NOTES

Block diagram



APPLICATIONS

By means of an external transformer (not supplied) the line voltage is reduced to the required level. A rectifier bridge and a filter capacity convert the alternating voltage into a continuous voltage. Since the power supply unit is not stabilised, the level of the output varies considerably according to the absorption required and according to the oscillations of the line voltage. The formulae included in the output specifications allow an indication of the loadless voltage, that at 50% of the load and full load to be obtained. This will enable you to chose the most suitable transformer for your needs.
These units offer a low cost and a reliable solution suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide range of output voltages.
Not suitable to feed electronic loads as converters and PLC's.

VERSIONS

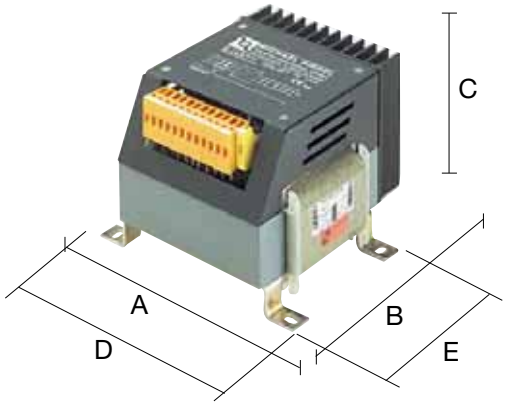
AR2624/15A Cod. XAR26015

INPUT TECHNICAL DATA	
Rated voltage	9 – 24 Vac ± 5%
Frequency	50 – 60 Hz
Current at Iout max	18 A
Protection fuse	T 20 A external (not furnished)

OUTPUT TECHNICAL DATA	
Voltage (0 load)	Vout = (Vin x 1.41) – 1.2
Voltage (50% load)	Vout = (Vin x 1.41) – 3.6
Voltage (100% load)	Vout = (Vin x 1.41) – 4.8
Maximum current	15 A
Ripple	<10%
Protection fuse	T 20 A

GENERAL TECHNICAL DATA	
Operating temperature	- 10 – 50 °C
Protection degree	IP 00
Surge immunity	Varistor 1 kA
Connection terminal blocks	terminal blocks 2.5 mm²
Housing material	Polyamide UL94V-0
Approximative weight	480 gr ca.
Mounting information	Vertical, allow 20 mm spacing between adjacent components
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC - PR/DIN/AS - PR/DIN/AL**

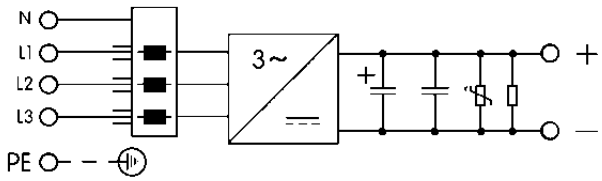
Three phase filtered power supply RDRKN Series



BLOCK DIAGRAMS / NOTES

(1) execution: in closed version with assemblage in panell with stirrups of fixing.
(2) connections with screw terminal blocks for transformer and faston 6,3 x 0,8 mm up to 20 A.

Block diagram



APPLICATIONS

Through a 3-phase rectifier with filtering capacitors, these units support an input voltage of 3 x 380-400-420 Vac and deliver an output voltage of 24 Vdc with a residual ondulation lower than 2%.
These units offer a low cost and a reliable solution suitable for loads such as relays, contactors, solenoid valves or loads that can work with relatively high ripple and wide range of output voltages.
Not suitable to feed electronic loads as converters and PLC's.

VERSIONS maximum current	DIMENSIONS (A x B x C x D x E)	WEIGHT
10 A	156 x 165 x 110 x 140 x 100 mm	4,9 kg
16 A	156 x 165 x 125 x 140 x 100 mm	6,5 kg
20 A	206 x 190 x 140 x 184 x 120 mm	9,8 kg
25 A	206 x 190 x 150 x 184 x 120 mm	10,7 kg
30 A	206 x 190x 150 x 184 x 120 mm	11,5 kg
40 A	254 x 235 x 155 x 228 x 152 mm	17,0 kg
60 A	254 x 235 x 180 x 228 x 152 mm	22,0 kg

ODERING INFORMATION	
RDRKN10K	Cod. XM28K01
RDRKN16K	Cod. XM28K02
RDRKN20K	Cod. XM28K03
RDRKN25K	Cod. XM28K04
RDRKN30K	Cod. XM28K05
RDRKN40K	Cod. XM28K06
RDRKN60K	Cod. XM28K07

INPUT TECHNICAL DATA	
Rated voltage	3 x 380 / 400 / 420 Vac ± 10%
Frequency	50 – 60 Hz

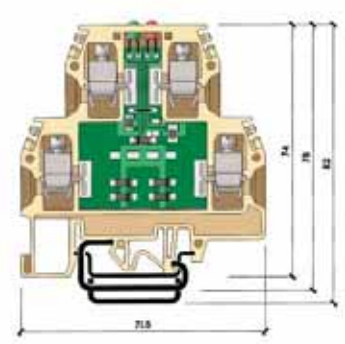
OUTPUT TECHNICAL DATA	
Rated voltage	24 Vdc ± 3%
Maximum current	see table
Ripple	< 2%
Protection fuse	external (not furnished)

GENERAL TECHNICAL DATA	
Operating temperature max.	40 °C
Protection degree	IP 00
Standard / Approlvas	EN 60742, EN 60204
Protezione contro transitori	32 V with varistor
Connection terminal blocks	terminal blocks 4 mm² (2)
Housing material	metallic
Approximative weight	see table
Mounting information	on the panel (1)
Mounting rail according to IEC60715/TH35	–
Mounting rail according to IEC60715/G32	–

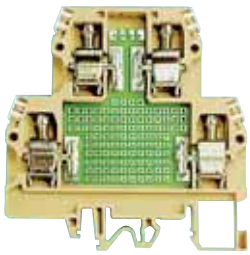
With electronic components

with UL94V-0 polyamide insulating body

- universal mounting onto both PR/DIN and PR/3 type rails - according to IEC 60715 Std., “G32” and “TH/35” types



* products with technology based on SMT component mounting on the printed circuit and consequent soldering.
* can be customised according to specific needs of the customers.
* printed circuit in fibergrass-reinforced plastic - thickness 0,8 mm - tracks in tin-plated copper with solder/resist. protection - green colour.



PCE.4/X Cat. No. PE100

PCE.4/XX Ca. No. PE995

PCE.4/X and **PCE.4/XX** configurations are suited to house multiple combinations of components as per customer choice.

	PCE.4/6/... cat. No.
basic version	
(Ex)i version	

TECHNICAL CHARACTERISTICS

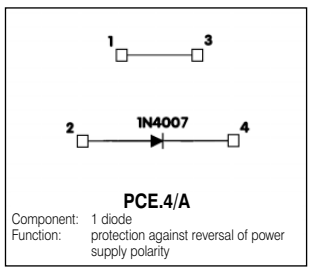
function / type		on two levels - component-holder
rated cross section	(mm²)	4
connecting capacity		
flexible	(mm²)	0,2 ÷ 6
rigid	(mm²)	0,2 ÷ 6
rat. voltage / rat. current / gauge	conf. to IEC 60947-7-1	800 V(*)/ 1 A max/ A4
rat. voltage / rat. current / AWG	UL - cUL	–
rated impulse withstand voltage / pollution degree		8 kV / 3
insulation stripping lenght	(mm)	11
tightening torque value (test / recommended)	(Nm)	0,8 / 1,4
position on type MK6703D power screwdriver (see page 163)		2
pitch	(mm)	6,5

APPROVALS

(*) values referred to insulation characteristics

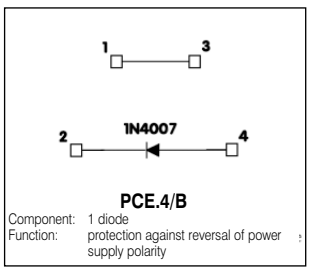
ACCESSORIES

		Type	Cat. No.
End sections	beige blue	**PCE/PT**	PE101
Permanent cross connection (pre-assembled)		-	
		-	
		-	
		-	
Switchable cross connection		-	
Multiple common bar	250 mm	-	
Shunting screw and sleeve		-	
Coloured partition	red, green, white	**DFU/6**	DU06..
Cross connection barrier	red	-	
Test plug socket		-	
Test plug		-	
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/65**	SN006
Warning plate	on adjacent terminal blocks	-	
Cover for cross-connection		-	
Marking tag	printed or blank	**CNU/8**	NU...
		CSC	CS....
End bracket		**BTU** for PR/DIN and PR/3	BT005
		BT/DIN/PO for PR/DIN only	BT001
		BT/3 for PR/3 only	BT003
Mounting rail according to IEC 60715 Std.	⊏	**PR/DIN/AC** of steel	PR001
		PR/DIN/AS same with slots	PR004
		PR/DIN/AL of aluminium	PR002
	⌙	**PR/3/AC** of steel	PR003
		PR/3/AS same with slots	PR005



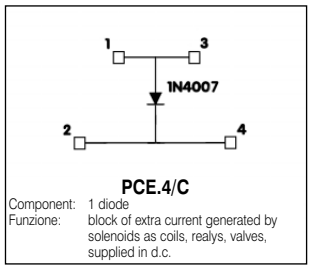
PCE.4/A
Component: 1 diode
Function: protection against reversal of power supply polarity

Cat. No. PE111



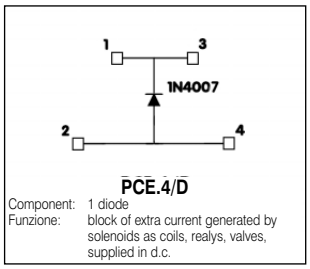
PCE.4/B
Component: 1 diode
Function: protection against reversal of power supply polarity

Cat. No. PE112



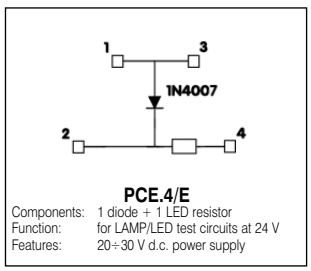
PCE.4/C
Component: 1 diode
Funzione: block of extra current generated by solenoids as coils, realys, valves, supplied in d.c.

Cat. No. PE113



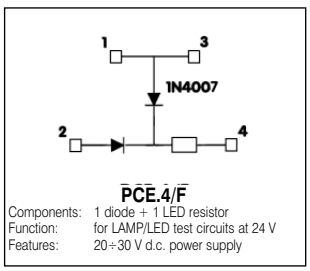
PCE.4/D
Component: 1 diode
Funzione: block of extra current generated by solenoids as coils, realys, valves, supplied in d.c.

Cat. No. PE114



PCE.4/E
Components: 1 diode + 1 LED resistor
Function: for LAMP/LED test circuits at 24 V
Features: 20÷30 V d.c. power supply

Cat. No. PE115



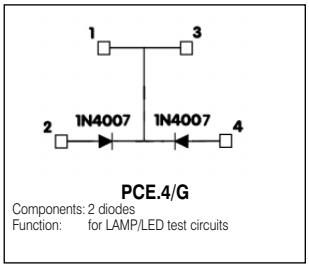
PCE.4/F
Components: 1 diode + 1 LED resistor
Function: for LAMP/LED test circuits at 24 V
Features: 20÷30 V d.c. power supply

Cat. No. PE116

With electronic components

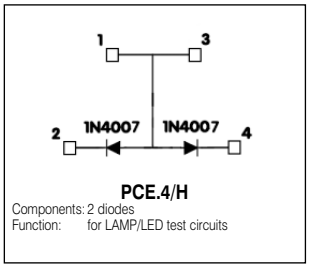
with UL94V-0 polyamide insulating body

- universal mounting onto both PR/DIN and PR/3 type rails - according to IEC 60715 Std., “G32” and “TH/35” types



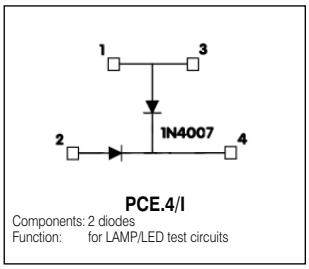
PCE.4/G
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. PE117



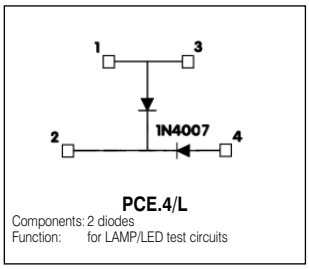
PCE.4/H
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. PE118



PCE.4/I
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. PE119



PCE.4/L
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. PE120

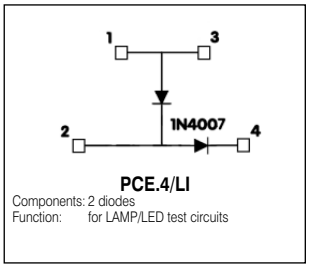
basic version	**PCE.4/6/...** cat. No.
(Ex)i version	

TECHNICAL CHARACTERISTICS

function / type		overlapped circuits component-holder
rated cross section	(mm²)	4
connecting capacity		
flexible	(mm²)	0,2 ÷ 6
rigid	(mm²)	0,2 ÷ 6
rat. voltage / rat. current / gauge	conf. to IEC 60947-7-1	800 V(*)/ 1 A max/ A4
rat. voltage / rat. current / AWG	UL - cUL	–
rated impulse withstand voltage / pollution degree		8 kV / 3
insulation stripping lenght	(mm)	11
tightening torque value (test / recommended)	(Nm)	0,8 / 1,4
position on type MK6703D power screwdriver (see page 163)		2
pitch	(mm)	6,5

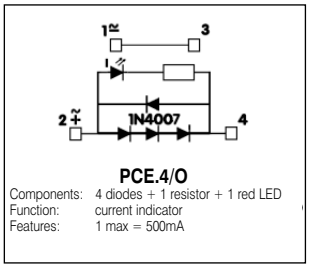
APPROVALS

(*) values referred to the insulation characteristics of the terminal block



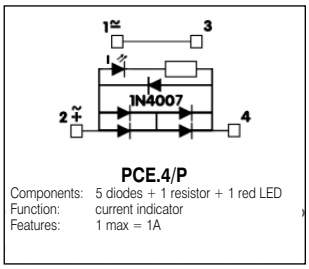
PCE.4/LI
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. PE134



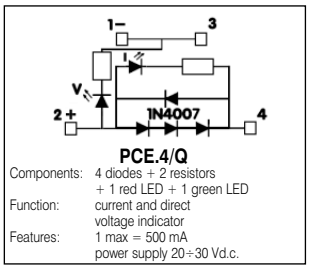
PCE.4/O
Components: 4 diodes + 1 resistor + 1 red LED
Function: current indicator
Features: 1 max = 500mA

Cat. No. PE123



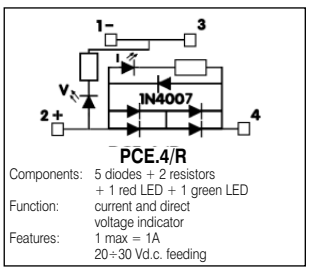
PCE.4/P
Components: 5 diodes + 1 resistor + 1 red LED
Function: current indicator
Features: 1 max = 1A

Cat. No. PE124



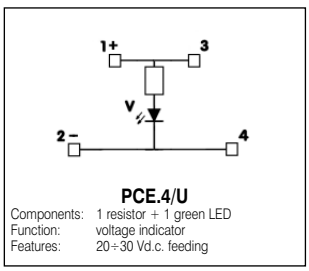
PCE.4/Q
Components: 4 diodes + 2 resistors + 1 red LED + 1 green LED
Function: current and direct voltage indicator
Features: 1 max = 500 mA power supply 20÷30 Vd.c.

Cat. No. PE125



PCE.4/R
Components: 5 diodes + 2 resistors + 1 red LED + 1 green LED
Function: current and direct voltage indicator
Features: 1 max = 1A 20÷30 Vd.c. feeding

Cat. No. PE126



PCE.4/U
Components: 1 resistor + 1 green LED
Function: voltage indicator
Features: 20÷30 Vd.c. feeding

Cat. No. PE129

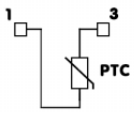
ACCESSORIES

		Type	Cat. No.
End sections	beige blue	**PCE/PT**	PE101
Permanent cross connection (pre-assembled)		-	
		-	
		-	
		-	
Switchable cross connection		-	
Multiple common bar	250 mm	-	
Shunting screw and sleeve		-	
Coloured partition	red, green, white	**DFU/6**	DU06..
Cross connection barrier	red	-	
Test plug socket		-	
Test plug		-	
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/65**	SN006
Warning plate	on adjacent terminal blocks	-	
Cover for cross-connection		-	
Marking tag	printed or blank	**CNU/8**	NU...
		CSC	CS....
End bracket		**BTU** for PR/DIN and PR/3	BT005
		BT/DIN/PO for PR/DIN only	BT001
		BT/3 for PR/3 only	BT003
Mounting rail according to IEC 60715		**PR/DIN/AC** of steel	PR001
		PR/DIN/AS same with slots	PR004
		PR/DIN/AL of aluminium	PR002
		PR/3/AC of steel	PR003
		PR/3/AS same with slots	PR005

With electronic components

with UL94V-0 polyamide insulating body

- universal mounting onto both PR/DIN and PR/3 type rails - according to IEC 60715 Std., “G32” and “TH/35” types



PCE.4/X..

Component: 1 PTC
Function: protection against overvoltage in d.c. and a.c.

PCE.4/X range of terminals uses a special PTC Thermistor (Positive Temperature Coefficient) by Siemens-Matsushita.
PTC are passive components that can be used to replace protection devices like fuses and bimetallic switches (ref. IEC 60738-1, CECC 44 000, DIN 44 080 Standards .
In case of overload in the protected circuit, the PTC integrated in the PCE terminal increases its electrical resistance
By drastically reducing the circulating current. The PTC does not get destroyed in this process and therefore it does not need replacing like a traditional fuse. Back to normal conditions the PTC is still a device with negligible resistance.

basic version

(Ex)i version

PCE.4/X....
cat. No.

TECHNICAL CHARACTERISTICS

function / type		two-levels component-holder
rated cross-section	(mm^2)	4
connecting capacity		
flexible	(mm^2)	0,2 ÷ 6
rigid	(mm^2)	0,2 ÷ 6
rat. voltage / rat. current / gauge	conf. to IEC 60947-7-1	800 V(*)/ A4
rat. voltage / rat. current / AWG	UL - cUL	–
rated impulse withstand voltage / pollution degree		8 kV / 3
insulation stripping lenght	(mm)	11
tightening torque value (test / recommended)	(Nm)	0,8 / 1,4
position on type MK6703D power screwdriver (see page 163)		2
pitch	(mm)	6,5

APPROVALS

(*) values referred to insulation characteristics

ACCESSORIES

		Type	Cat. No.
End sections	beige blue	**PCE/PT**	PE101
Permanent cross connection (pre-assembled)		-	
		-	
		-	
		-	
Switchable cross connection		-	
Multiple common bar	250 mm	-	
Shunting screw and sleeve		-	
Coloured partition	red, green, white	**DFU/6**	DU06..
Cross connection barrier	red	-	
Test plug socket		-	
Test plug		-	
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/65**	SN006
Warning plate	on adjacent terminal blocks	-	
Cover for cross-connection		-	
Marking tag	printed or blank	**CNU/8**	NU...
		CSC	CS....
End bracket		**BTU** for PR/DIN and PR/3	BT005
		BT/DIN/PO for PR/DIN only	BT001
		BT/3 for PR/3 only	BT003
Mounting rail according to IEC 60715		**PR/DIN/AC** of steel	PR001
		PR/DIN/AS same with slots	PR004
		PR/DIN/AL of aluminium	PR002
		PR/3/AC of steel	PR003
		PR/3/AS same with slots	PR005

(Data and information about PTC are taken from the original catalogue of Thermistors-Siemens Matsushita Components).

Operative temperature
T_{op} = -25 ÷ 125 °C (V=0) 0 ÷ 60 °C (V=V max)

V_N	Rated voltage
V_{MAX}	Maximum continuos voltage a T_{25} =25 °C (V_N +15%)
I_N	Rated current
I_S	Commutation current
$I_{S\,max}$	Maximum commutation current
I_R	Residual current at V_{max} (in protection state)
R_{25}	Rated resistance at T_{25} =25 °C
R_{min}	Minimum PTC resistance T_{Rmin} temperature
T_{PTC}	Warranty temperature for R_{PTC}
t_S	Time for initial $I_{S\,max}$ valute to1/2 $I_{S\,max}$ (with a V_{max}, supply)
N	Number of commutations at $I_{S\,max}$ without damages for PTC.

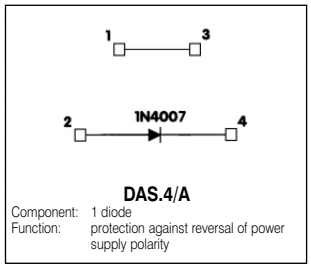
Type	Cat. No.	V_N	V_N T_a=60°C	I_N mA	I_S mA	I_{SMAX} A	I_g mA
PCE.4/XA	**PE991**	220	220	350	710	10	20
PCE.4/XB	**PE992**	220	220	170	350	4,1	10
PCE.4/XC	**PE993**	63	63	530	1110	15	50

Type	Cat. No.	R_{25} Ω	R_{min} Ω	T_{PTC} °C	t_S s.	N
PCE.4/XA	**PE991**	2,6	1,6	80	6	100
PCE.4/XB	**PE992**	6,0	3,6	80	6	100
PCE.4/XC	**PE993**	0,9	0,6	80	6	100

With electronic components

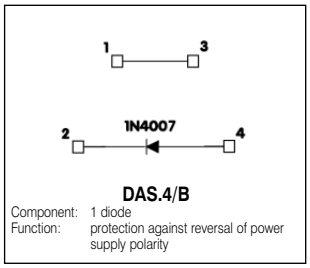
with polyamide
insulating body UL94V-0

- for overlapped circuits
- possibility to perform cross-connections



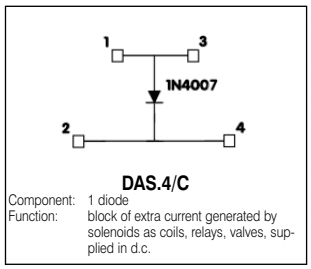
DAS.4/A
Component: 1 diode
Function: protection against reversal of power supply polarity

Cod. DS111



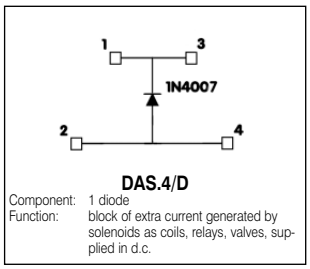
DAS.4/B
Component: 1 diode
Function: protection against reversal of power supply polarity

Cod. DS112



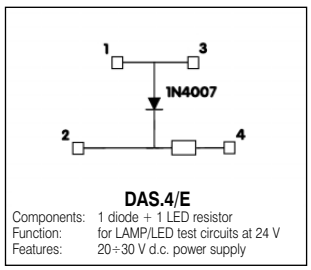
DAS.4/C
Component: 1 diode
Function: block of extra current generated by solenoids as coils, relays, valves, supplied in d.c.

Cod. DS113



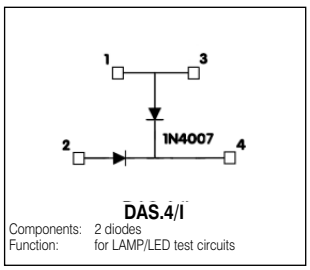
DAS.4/D
Component: 1 diode
Function: block of extra current generated by solenoids as coils, relays, valves, supplied in d.c.

Cod. DS114



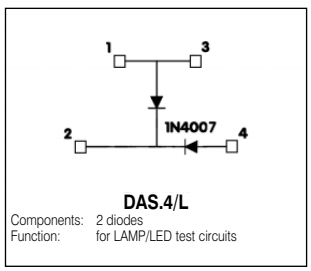
DAS.4/E
Components: 1 diode + 1 LED resistor
Function: for LAMP/LED test circuits at 24 V
Features: 20÷30 V d.c. power supply

Cod. DS115



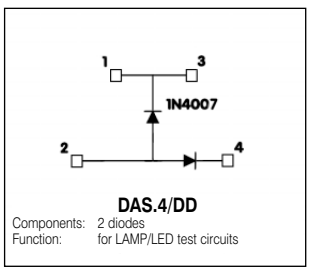
DAS.4/I
Components: 2 diodes
Function: for LAMP/LED test circuits

Cod. DS119



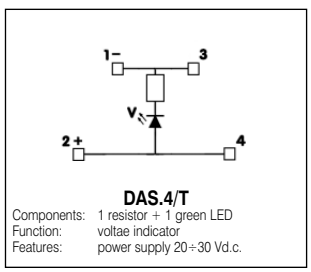
DAS.4/L
Components: 2 diodes
Function: for LAMP/LED test circuits

Cod. DS130



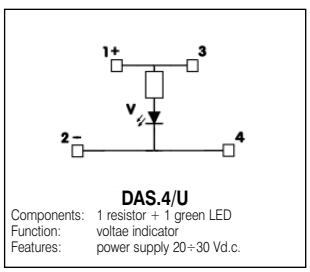
DAS.4/DD
Components: 2 diodes
Function: for LAMP/LED test circuits

Cod. DS120



DAS.4/T
Components: 1 resistor + 1 green LED
Function: voltae indicator
Features: power supply 20÷30 Vd.c.

Cat. No. DS128



DAS.4/U
Components: 1 resistor + 1 green LED
Function: voltae indicator
Features: power supply 20÷30 Vd.c.

Cat. No. DS129

NOTA: The voltage and current ratings given for the various versions are based on the various type of components and to their connection

basic version	**DAS.4/...** cod.
(Ex)i version	

TECHNICAL CHARACTERISTICS

function / type		passante a due piani, portacomponenti
rated cross section	(mm²)	4
connecting capacity		
flexible	(mm²)	0,2 ÷6
rigid	(mm²)	0,2 ÷6
rat. voltage / rat. current / gauge	conf. to IEC 60947-7-1	630 V/ 32 A/ A4
rat. voltage / rat. current / AWG	UL	
rat. voltage / rat. current / AWG	CSA	
test voltage (conf. to IEC 60947-7-1)	(V)	2500
insulation stripping lenght	(mm)	9
bar connection torque value (test / recommended)	(Nm)	0,5 / 1,2
position on type MK6703D power screwdriver (see page 163)		1
pitch	(mm)	6

APPROVALS

Approvals referred to the DAS.4 basic version

ACCESSORIES

		Type	Cod.
End sections	beige	**DAS/PT**	DS101
	blue		
Permanent cross connection (pre-assembled)		**PM/41/2** poles	PM412
		PM/51/3 poles	PM513
		PM/51/5 poles	PM515
		PM51/10 poles	PM510
Switchable cross connection		**POS/43**	POS43
Multiple common bar	250 mm	**PMP/58**	PMP58
Shunting screw and sleeve		**CPM/01**	CPM01
Coloured partition	red, green, white	**DFU/7**	DU07..
Cross connection barrier	red	-	
Test plug socket		**PSD/A**	PD001
Test plug		**SDD/1**	DD001
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/60**	SN007
Warning plate	an adjacent terminal blocks	-	
Cover for cross-connection	red, blue, white	**PRP/5**	PRP05
Marking tag	printed or blank	**CNU/8**	NU...
		CSC	CS....
End bracket		**BTU** for PR/DIN and PR/3	BT005
		BT/DIN/PO for PR/DIN only	BT001
		BT/3 for PR/3 only	BT003
Mounting rail according to IEC 60715		**PR/DIN/AC** of steel	PR001
		PR/DIN/AS same with slots	PR004
		PR/DIN/AL of aluminium	PR002
		PR/3/AC of steel	PR003
		PR/3/AS same with slots	PR005

With electronic components

with UL94V-0 polyamide insulating body

- for overlapped circuits
- possibility to perform cross-connections

	DAS.4/... cat. No.
basic version	
(Ex)i version	

TECHNICAL CHARACTERISTICS

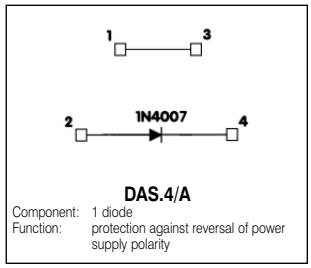
function / type		on two levels - component-holder
rated cross section	(mm²)	4
connecting capacity		
flexible	(mm²)	0,2 ÷ 6
rigid	(mm²)	0,2 ÷ 6
rat. voltage / rat. current / gauge	conf. to IEC 60947-7-1	630 V/ 32 A/ A4
rat. voltage / rat. current / AWG	UL - cUL	–
rated impulse withstand voltage / pollution degree		8 kV / 3
insulation stripping lenght	(mm)	9
tightening torque value (test / recommended)	(Nm)	0,5 / 1,2
position on type MK6703D power screwdriver (see page 163)		2
pitch	(mm)	6

APPROVALS

Approvals referred terminal block type DAS.4

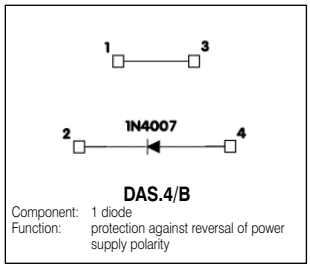
ACCESSORIES

		Type	Cat. No.
End sections	beige blue	**DAS/PT**	DS101
Permanent cross connection (pre-assembled)		**PM/41/2** poles **PM/51/3** poles **PM/51/5** poles **PM/51/10** poles	PM412 PM513 PM515 PM510
Switchable cross connection		**POS/43**	POS43
Multiple common bar	250 mm	**PMP/58**	PMP58
Shunting screw and sleeve		**CPM/01**	CPM01
Coloured partition	red, green, white	**DFU/7**	DU07..
Cross connection barrier	red	-	
Test plug socket		**PSD/A**	PD001
Test plug		**SDD/1**	DD001
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/60**	SN007
Warning plate	on adjacent terminal blocks	-	
Cover for cross-connection	red, blue, white	**PRP/5**	PRP05
Marking tag	printed or blank	**CNU/8**	NU...
		CSC	CS....
End bracket		**BTU** for PR/DIN and PR/3	BT005
		BT/DIN/PO for PR/DIN only	BT001
		BT/3 for PR/3 only	BT003
Mounting rail according to IEC 60715 Std.		**PR/DIN/AC** of steel	PR001
		PR/DIN/AS same with slots	PR004
		PR/DIN/AL of aluminium	PR002
		PR/3/AC of steel	PR003
		PR/3/AS same with slots	PR005



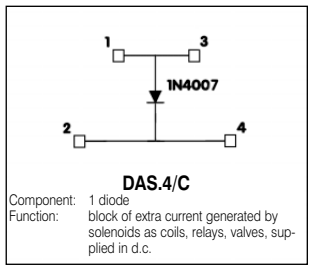
DAS.4/A
Component: 1 diode
Function: protection against reversal of power supply polarity

Cat. No. DS111



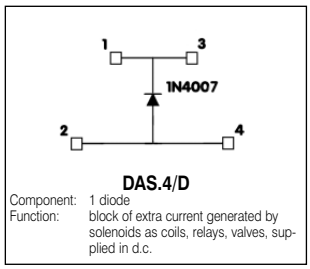
DAS.4/B
Component: 1 diode
Function: protection against reversal of power supply polarity

Cat. No. DS112



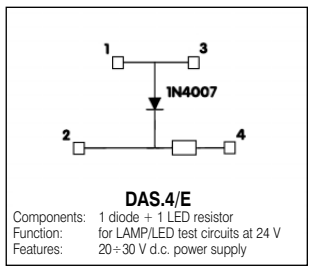
DAS.4/C
Component: 1 diode
Function: block of extra current generated by solenoids as coils, relays, valves, supplied in d.c.

Cat. No. DS113



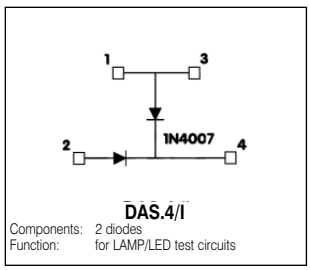
DAS.4/D
Component: 1 diode
Function: block of extra current generated by solenoids as coils, relays, valves, supplied in d.c.

Cat. No. DS114



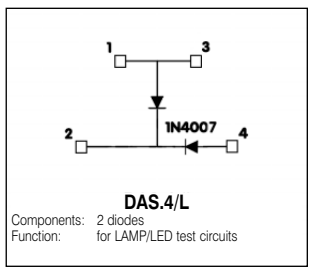
DAS.4/E
Components: 1 diode + 1 LED resistor
Function: for LAMP/LED test circuits at 24 V
Features: 20÷30 V d.c. power supply

Cat. No. DS115



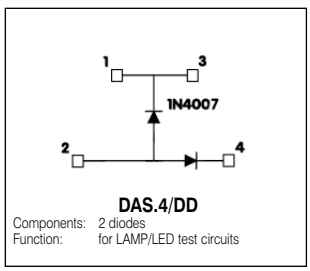
DAS.4/I
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. DS119



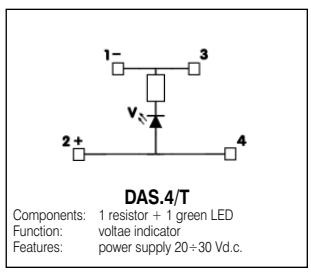
DAS.4/L
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. DS130



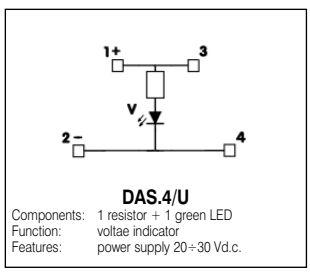
DAS.4/DD
Components: 2 diodes
Function: for LAMP/LED test circuits

Cat. No. DS120



DAS.4/T
Components: 1 resistor + 1 green LED
Function: voltae indicator
Features: power supply 20÷30 Vd.c.

Cat. No. DS128



DAS.4/U
Components: 1 resistor + 1 green LED
Function: voltae indicator
Features: power supply 20÷30 Vd.c.

Cat. No. DS129

NOTE: The voltage and current ratings given for the various versions are based on the various type of components and to their circuity

With electronic components

with UL94V-0 polyamide insulating body

- for developped circuits with varistor
- cross-connection possibility on lower level

* protection against overvoltage, transistor, pulse jamming
* Class D protection according to DIN VDE 0675. 1989 Std.
* Overvoltage category <1,5 kV, II DIN VDE 0110.1

The terminals **DAS 4/V ....**, with varistor inserted as in **diagram 1**, restrict voltage peaks due to surges, indirect atmospheric discharges and inductive load switching and enable the equipment to pass the tests on immunity to the electromagnetic interference defined by the standards EN 61000-4-2 (electrostatic discharge), EN 61000-4-4 (fast transient/burst) and EN 61000-4-5 (surge test).

The varistors have a response time (20-25 ns) which is longer than that of the suppresser diodes (< 1 ns) and a higher response voltage, although they withstand much higher discharge currents. The high discharge current makes them suitable for uses with strong transients, with currents up to 4500A pulse 8/20ms.

The range of models available provides a choice between rated voltages suitable for protecting both signals and power supply units with standard voltages of 24 V dc and 48 V dc or for power supply voltages of 120 V ac and 230 V ac.

The **DAS 4/V ....**, connected as shown in **diagram 2**, provides effective protection against differential mode interference for inputs and outputs of industrial PLCs, DCSs and PCs, signal conditioners and sensors, and also for power supply units of electronic equipment in general.

The **DAS 4/V ....** does not have a signal wiring direction to observe and the positive and negative polarity connection is carried out at both the upper and lower level.

basic version

DAS.4/*6*/V....
cat. No.

ACCESSORIES		Type	Cat. No.
End sections	beige blue	**DAS/PT**	DS101
Permanent cross connection (pre-assembled)		**PM/41/2** poles **PM/51/3** poles **PM/51/5** poles **PM/51/10** poles	PM412 PM513 PM515 PM510
Switchable cross connection		**POS/43**	POS43
Multiple common bar	250 mm	**PMP/58**	PMP58
Shunting screw and sleeve		**CPM/01**	CPM01
Coloured partition	red, green, white	**DFU/7**	DU07..
Cross connection barrier	red	-	
Test plug socket		**PSD/A**	PD001
Test plug		**SDD/1**	DD001
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/60**	SN007
Warning plate	on adjacent terminal blocks	-	
Cover for cross-connection	red, blue, white	**PRP/5**	PRP05
Marking tag	printed or blank	**CNU/8** **CSC**	NU... CS....
End bracket		**BTU** for PR/DIN and PR/3 **BT/DIN/PO** for PR/DIN only **BT/3** for PR/3 only	BT005 BT001 BT003
Mounting rail according to IEC 60715 Std.		**PR/DIN/AC** of steel **PR/DIN/AS** same with slots **PR/DIN/AL** of aluminium **PR/3/AC** of steel **PR/3/AS** same with slots	PR001 PR004 PR002 PR003 PR005

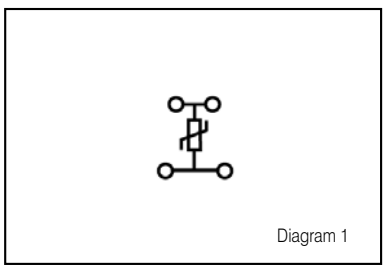


Diagram 1

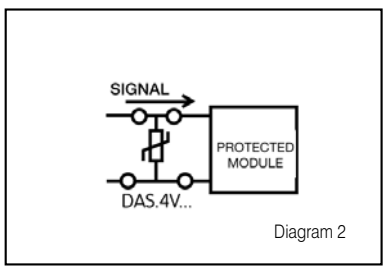


Diagram 2

With electronic components

with UL94V-0 polyamide insulating body

- cross-connection possibility on lower level
- universal mounting onto both PR/DIN and PR/3 type rails - according to IEC 60715 Std., “G32” and “TH/35” types

* 2-level terminal block with bi-directional suppresser diode
* protection against overvoltage, transistor, pulse jamming
* Class D protection according to DIN VDE 0675. 1989 Std.
* Overvoltage category <1,5 kV, II DIN VDE 0110.1

(*): values referred to the characteristics of the connection

basic version	**DAS.4/6/D....** cat. No.
(Ex)i version	

TECHNICAL CHARACTERISTICS		
function / type		2 levels with diode
rated cross section	(mm²)	4
connecting capacity		
flexible	(mm²)	0,2 ÷ 6
rigid	(mm²)	0,2 ÷ 6
rat. voltage / rat. current / gauge	conf. to IEC 60947-7-1	630 V/ 32 A/ A4 (*)
rat. voltage / rat. current / AWG	UL - cUL	–
rated impulse withstand voltage / pollution degree		8 kV / 3
insulation stripping lenght	(mm)	9
tightening torque value (test / recommended)	(Nm)	0,5 / 1,2
position on type MK6703D power screwdriver (see page 163)		2
pitch	(mm)	6

APPROVALS
referred to the DAS.4 basic version

DAS.4/D5
cat. No. **DSD005**

TECHNICAL DATA		
Rated voltage		5
Vdc max.	(Vdc)	6,45
Vac max.		-
breakdown voltage (1 mA)		6,8±5%
max clamping voltage	(V)	11
Response time		<1ns
Isc pulse 8/20µs	(A)	750
C (1kHz)		5nF

DAS.4/D12
cat. No. **DSD012**

TECHNICAL DATA		
Rated voltage		12
Vdc max.	(Vdc)	15,2
Vac max.		-
breakdown voltage (1 mA)		16V±5%
max clamping voltage	(V)	23
Response time		<1ns
Isc pulse 8/20µs	(A)	350
C (1kHz)		3nF

DAS.4/D24
cat. No. **DSD024**

TECHNICAL DATA		
Rated voltage		24
Vdc max.	(Vdc)	28,5
Vac max.		-
breakdown voltage (1 mA)		30V±5%
max clamping voltage	(V)	41
Response time		<1ns
Isc pulse 8/20µs	(A)	160
C (1kHz)		1,5nF

DAS.4/D60
cat. No. **DSD060**

TECHNICAL DATA		
Rated voltage		60
Vdc max.	(Vdc)	77,9
Vac max.		-
breakdown voltage (1 mA)		82V±5%
max clamping voltage	(V)	113
Response time		<1ns
Isc pulse 8/20µs	(A)	70
C (1kHz)		0,6nF

With electronic components

with UL94V-0 polyamide insulating body

- with cross-connection possibility
- universal mounting onto both PR/DIN and PR/3 type rails - according to IEC 60715 Std., “G32” and “TH/35” types

* 2-level terminal block with bi-directional suppresser diode
* protection against overvoltage, transistor, pulse jamming
* Class D protection according to DIN VDE 0675. 1989 Std.
* Overvoltage category <1,5 kV, II DIN VDE 0110.1

The terminals **DAS 4/D ...**, with suppresser diodes inserted as in **diagram 3**, restrict voltage peaks due to surges, electrostatic discharges and inductive load switching and enable the equipment to pass the tests on immunity to the electromagnetic interference defined by the standards EN 61000-4-2 (electrostatic discharge), EN 61000-4-4 (fast transient/burst) and EN 61000-4-5 (surge test).
The suppresser diodes have a response time (< 1ns) which is much faster than that of the varistors (approximately 25 ns) and a lower and more accurate response voltage, although compared to varistors they withstand lower discharge currents.
The high precision of the trip voltage and the high speed make them suitable for protecting I/O signal inputs of industrial PLCs, DCSs and PCs against discharge current and voltage interference below 500 A pulse 8/20ms. This type of interference is usually caused by the normal operation of the actual systems due to switching of high inductive loads, dispersed currents, faults etc.
The range of models available provides a choice between rated voltages suitable for protecting signals with standard voltages of 5 V dc, V dc, 24 V dc and 60 V dc.

The **DAS 4/D ...**, connected as shown in diagram 4, provides effective protection against differential mode interference for inputs and outputs of industrial PLCs, DCSs and PCs, signal conditioners and sensors, and also for stabilised continuous voltage power supply units of electronic equipment in general.

The **DAS 4/D ...**, does not have a signal wiring direction to observe and the positive and negative polarity connection can be carried out at both the upper and lower level.

Differential mode interference (diagram 5): generates a strong difference in potential between the two positive and negative signal conductors of the pair or power supply unit and, being applied directly to the input/output circuits of the equipment, always causes a fault in the same.

Common mode interference (diagram 6): generates a strong difference in potential between the two conductors of a signal or power supply unit and the reference earth. It is less destructive than differential mode interference.

Caution: the installation of devices for protection against power surges with varistors, diodes and other components between signal and/or power supply conductors and the protection earth reduces the isolation voltage to approximately the value V of breakdown of the discharger used. To carry out isolation tests on the equipment disconnect the dischargers (standard CEI EN60950).

basic version

DAS.4/D....
cat. No.

ACCESSORIES		Type	Cat. No.
End sections	beige blue	**DAS/PT**	DS101
Permanent cross connection (pre-assembled)		**PM/41/2** poles **PM/51/3** poles **PM/51/5** poles **PM/51/10** poles	PM412 PM513 PM515 PM510
Switchable cross connection		**POS/43**	POS43
Multiple common bar	250 mm	**PMP/58**	PMP58
Shunting screw and sleeve		**CPM/01**	CPM01
Coloured partition	red, green, white	**DFU/7**	DU07..
Cross connection barrier	red	-	
Test plug socket		**PSD/A**	PD001
Test plug		**SDD/1**	DD001
Composable test plug		-	
End section for composable test plug		-	
Numbering strip		**SNZ/60**	SN007
Warning plate	on adjacent terminal blocks	-	
Cover for cross-connection	red, blue, white	**PRP/5**	PRP05
Marking tag	printed or blank	**CNU/8**	NU...
		CSC	CS....
End bracket		**BTU** for PR/DIN and PR/3 **BT/DIN/PO** for PR/DIN only **BT/3** for PR/3 only	BT005 BT001 BT003
Mounting rail according to IEC 60715 Std.	⊏⊐	**PR/DIN/AC** of steel **PR/DIN/AS** same with slots **PR/DIN/AL** of aluminium	PR001 PR004 PR002
	⊐⊏	**PR/3/AC** of steel **PR/3/AS** same with slots	PR003 PR005

Note for wiring: wiring of the power surge protection devices greatly influences their actual efficacy and we recommend following the instructions below:

– the protection device must be placed as close as possible to the equipment to be protected;
– the connection wires must be as short and straight as possible, interwoven with each other and with the largest possible cross section;
– the earth conductors between common mode dischargers and the equipotential busbar must be as short as possible and with the largest possible cross section and their path must not be parallel to other conductors. The earth of the protected equipment must be connected to the same earth of its discharger and from there to the general protection earthing.

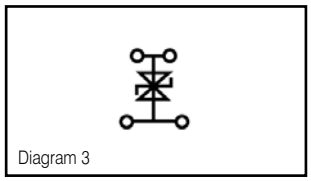


Diagram 3

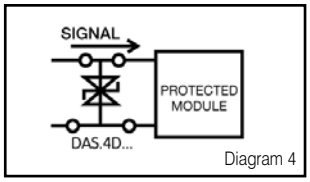


Diagram 4

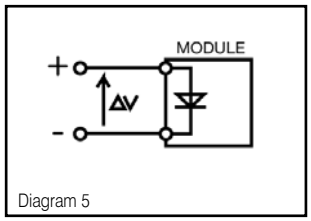


Diagram 5

Differential mode interference.
The potential difference is applied between positive and negative poles of the power supply signal.

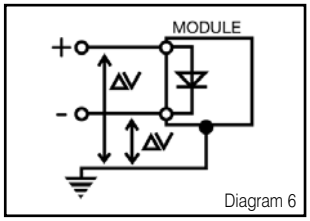
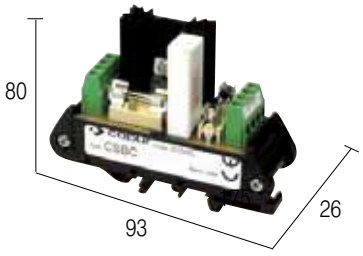


Diagram 6

Common mode interference.
The potential difference is applied between the poles of the signal/power supply unit and the earth.

Accessory for the charging of a battery

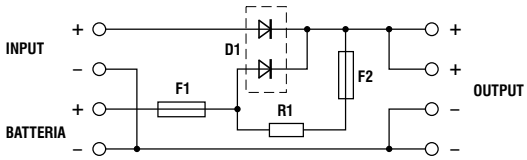
- For power supply from 1 to 6 A
- Protection fuse included



BLOCK DIAGRAMS / NOTES

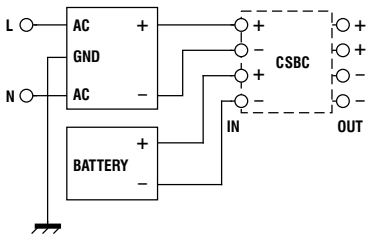
(1) The charging current depend from the battery type and from the level of the charge

Block diagram

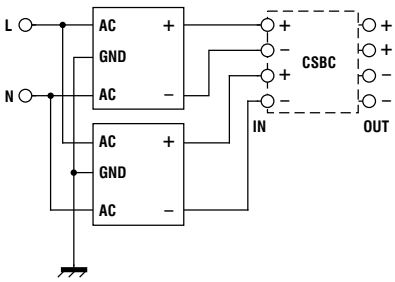


APPLICATIONS

With this module is possible to use a 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 avoiding to overheath the battery; the F1 fuse protects the battery and its wiring against short circuit.
The next pictures shows the connections.



Is possible to use this modules also to connect two power supplies in parallel; the double diode can be used as oring diode for decoupling two power supplies outputs ; if the module is used as "oring diode" it is necessary to remove F2 fuse; the next pictures shows the connections.



CSBC Cod. XCSBC

GENERAL TECHNICAL DATA

Rated voltage	24 Vdc max. 30 Vdc
Min. battery voltage	20 Vdc 0.4 A
Rated current	6 A max
Charging current	0.6 A (1)
Protection fuse	F1 = T 6.3 A F2 = T 1 A
I/O drop voltage	0.5 V
Operating temperature	-10°C – +50°C
Connection terminal blocks	terminal blocks 2.5 mm², fixed
Housing material	polyamide UL94V-0
Approximative weight	80 gr
Mounting information	on rail, adjacent without gap
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	**PR/DIN/AC** - **PR/DIN/AS** - **PR/DIN/AL**

DC/DC converter for CA-PI/PO Series

BLOCK DIAGRAMS / NOTES

Block diagram

APPLICATIONS

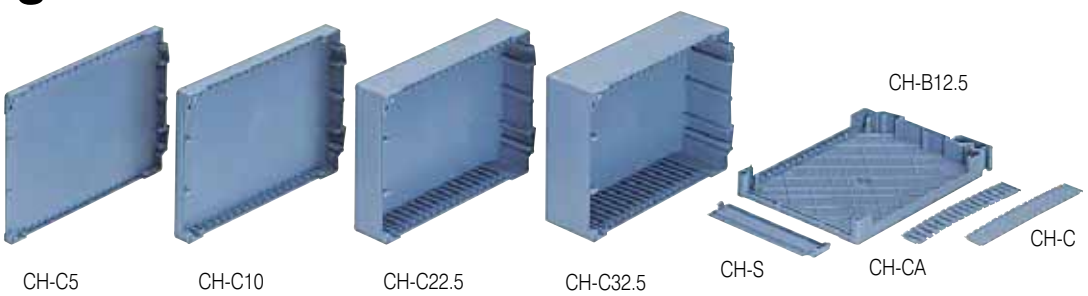
Connecting this dc/dc converter to the CA-PI/PO converter / isolator input terminal block, it is possible to increase the auxiliary 15Vdc output voltage to 24 Vdc, making possible to feed loop sensors with 24 Vdc rated voltage or loop sensor conncted with very long wyres.
The module can be directly connect between the M2 male input connector of the CA-PI/PO converter and the female pluggable connector, as shown in the picture.

CSLOOP Cod. XCSLOOP

GENERAL TECHNICAL DATA	
Rated input voltage	15 Vdc
Rated output voltage	24 Vdc 30 mA
Rated current	30 mA
Connection terminal blocks	Through the pluggable terminal blocks of the CA-PI/PO
Housing material	polyamide UL94V-0
Approximative weight	–
Mounting information	directly on the converter (see the photo)
Mounting rail according to IEC60715/TH35	–
Mounting rail according to IEC60715/G32	–

Cabur Housing

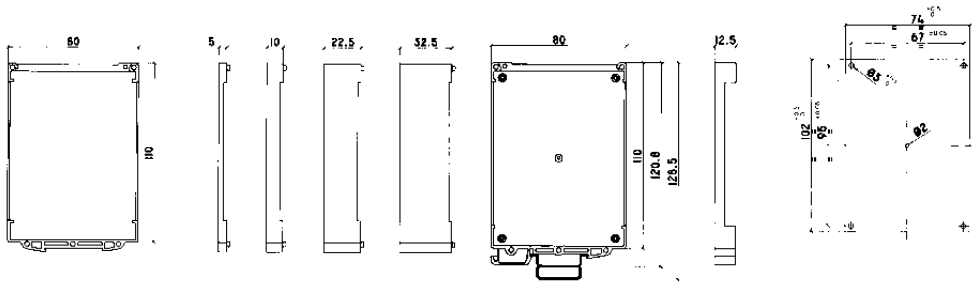
- Available on 4 finally measure
- Nobody milling operation



BLOCK DIAGRAMS / NOTES

(1) Maximum height of the components measured between the circuit and the cover

Block diagram



APPLICATIONS

CH electronic housings

With the CH (Cabur Housing) series containers, Cabur proposes a modular system which enables boxes to be obtained with four width sizes 17.5 mm - 35 mm - 45 mm - composed of 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 hold 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 availbale with ventilating holes or closed, and are pre-cutted with 5.08mm pitch, to make possible an easy cut into necessary lenght with a pair of scissors, for an easy fit to final dimensions.

The following are required for 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 wide 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

CH-B12.5	right side with hook for DIN rail, mm 12.5	Cod. XBB125
CH-C5	left side housing, mm 5.5	Cod. XBC050
CH-C10	left side housing, mm 10	Cod. XBC010
CH-C22.5	left side housing, 22.5	Cod. XBC225
CH-C32.5	left side housing, 32.5	Cod. XBC325
CH-S	openable hinged cover	Cod. XBS000
CH-CA	vented cover	Cod. XBCA00
CH-C	enclosed cover	Cod. XBC000
CH-CF	fixed hinged cover	Cod. XBCF00

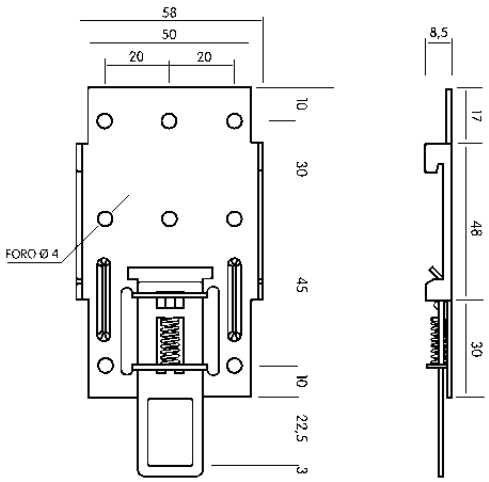
GENERAL TECHNICAL DATA

Material	polyamide UL94V-0
Colour	RAL 5014
Temperature	max 80°C
Dissipated power	max 7 W
Protection degree	fino a IP30
Number of ples for every side	16 +16 (5.08)
Number of poles on the top	10 (5.08)
Mounting information	
Mounting rail according to IEC60715/TH35	**PR/3/AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–

Maximum inside heigh (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

Hook for DIN rail

Block diagram



VERSIONS	Ordering information	Ordering information
	CDIN-1 Cod. XCDIN1	**CDIN-2** Cod. XCDIN2

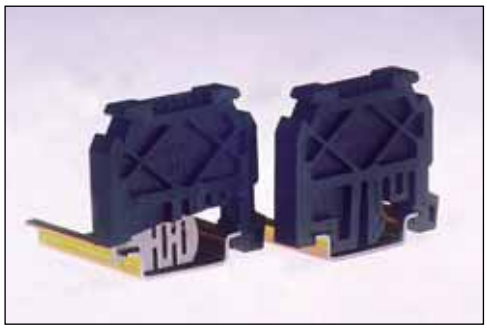
GENERAL TECHNICAL DATA		
Type of material	P13-FE00	P13-FE00
Treatment	gold passivated	black passivated
Mounting information		
Mounting rail according to IEC60715/TH35	**PR/3/0AC - PR/3/AS**	**PR/3/0AC - PR/3/AS**
Mounting rail according to IEC60715/G32	–	–

End brackets

BTU

cat. No. **BT005**

Universal end bracket, suitable for rails according to either IEC 60715 type "G32" or IEC 60715/TH35 (types PR/DIN and PR/3); can be mounted directly in the desired position and does not require screw fixing.
- in black polyamide
- thickness: 8 mm

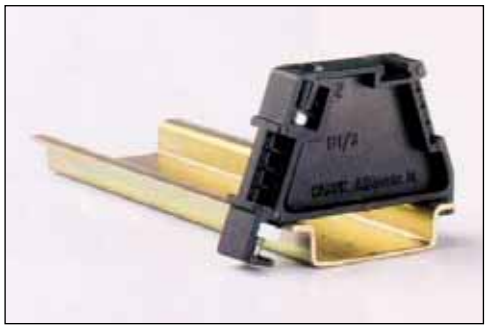


BT/3

cat. No. **BT003**

To be mounted on rails according to IEC 60715/TH35 Std.
(type PR/3)

- in black polyamide
- thickness: 7,5 mm



BT/2

cat. No. **BT006**

To be mounted on rails according to IEC 60715/TH35 Std.
(type PR/2)

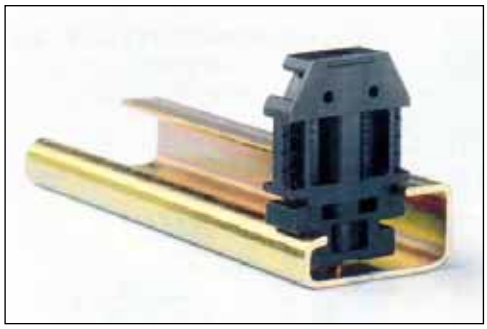
- in black polyamide
- thickness: 8 mm

BT/DIN/PO

cat. No. **BT001**

To be mounted on rails according to IEC 60715 Std. type "G32"
(type PR/DIN)

- in black polyamide
- thickness: 8 mm



CDA/BT

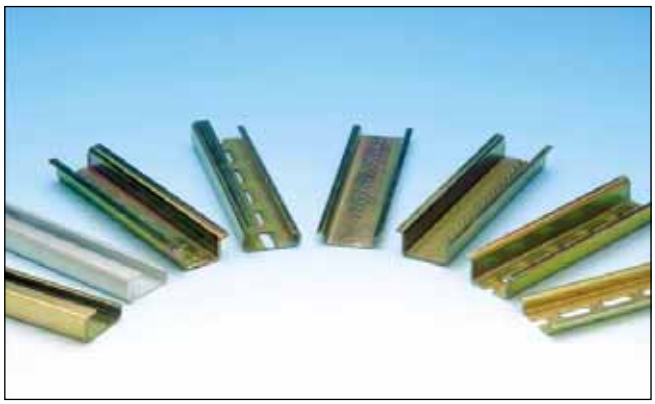
cat. No. **CD003**

To be mounted on rails according to IEC 60715 Std. type "G32"
(type PR/DIN)

- in brass (particularly suitable for rail assemblies formed by terminal blocks of larger dimensions, such as GPM, CDA and ACB)
- thickness: 11 mm

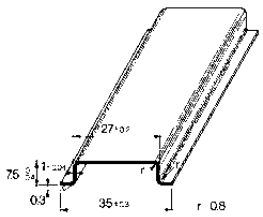
Mounting rails

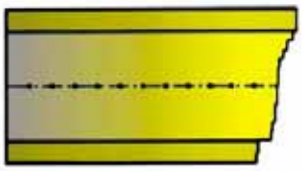
Of passivated and tropicalised steel – available lengths of 2 m



PR/3/AC cat. No. **PR003**

Of passivated and tropicalised steel



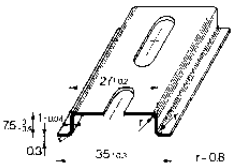


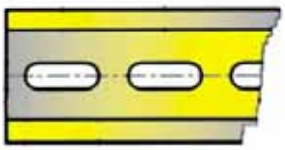
PR/3/AC/ZB cat. No. **PR903**

Of white zinc-plated steel - "SENDZMIR" system

PR/3/AS cat. No. **PR005**

Of passivated and tropicalised steel with slots





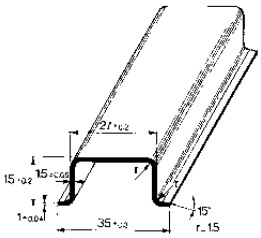
PR/3/AS/ZB cat. No. **PR905**

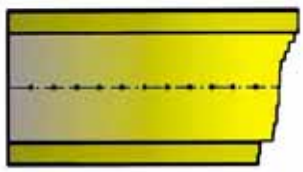
Of white zinc-plated steel - "SENDZMIR" system
with slots

IEC 60715/TH35 - 7,5

PR/3/PP cat. No. **PR007**

Of passivated and tropicalised steel



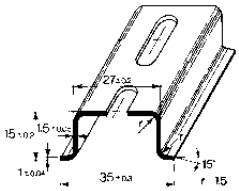


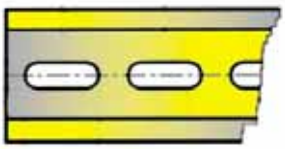
PR/3/PP/ZB cat. No. **PR907**

Of white zinc-plated steel - "SENDZMIR" system
IEC 60715/TH35 - 15

PR/3/PA cat. No. **PR006**

Of passivated and tropicalised steel with slots





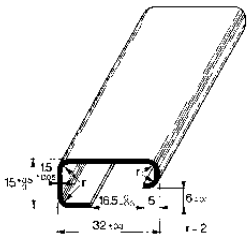
PR/3/PA/ZB cat. No. **PR906**

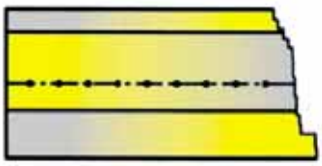
Of white zinc-plated steel - "SENDZMIR" system
with slots

IEC 60715/TH35 - 15

PR/DIN/AC cat. No. **PR001**

Of passivated and tropicalised steel



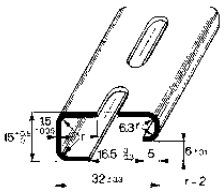


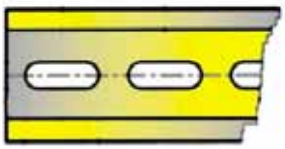
PR/DIN/AC/ZB cat. No. **PR901**

Of white zinc-plated steel - "SENDZMIR" system
IEC 60715 type "G32"

PR/DIN/A cat. No. **PR004**

Of passivated and tropicalised steel with slots





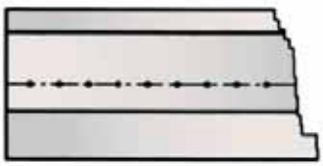
PR/DIN/AS/ZB cat. No. **PR904**

Of white zinc-plated steel - "SENDZMIR" system
with slots

IEC 60715 ype "G32"

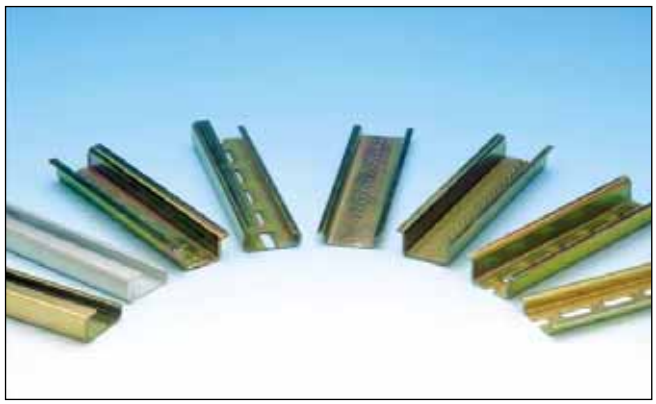
PR/DIN/AL cat. No. **PR002**

IEC 60715 type "G32" **of aluminium**



Mounting rails

Of passivated and tropicalised steel – available lengths of 2 m

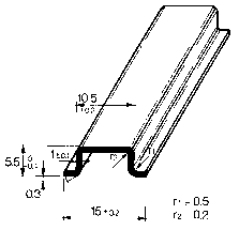


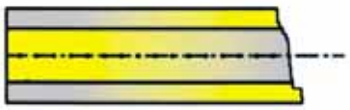
PR/2/AC cat. No. **PR009**

Of passivated and tropicalised steel

PR/2/AC/ZB cat. No. **PR909**

Of white zinc-plated steel - "SENDZMIR" system
IEC 60715/TH15



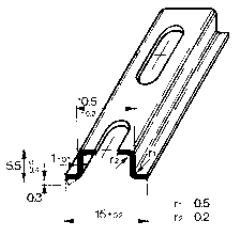


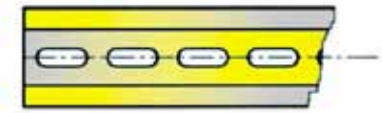
PR/2/AS cat. No. **PR010**

Of passivated and tropicalised steel

PR/2/AS/ZB cat. No. **PR910**

Of white zinc-plated steel - "SENDZMIR" system
with slots
IEC 60715/TH15 - 5,5





MAXIMUM SHORT-TIME WITH STAND CURRENT ALLOCATED TO THE RAIL PROFILE

Rail profile	Material	Equivalent E-cu Cross-section mm^2	Short-time with stand current 1 s kA	Thermal rated current of a PEN husbar A
"Top hat" rail	Steel	10	1,2	-
IEC 60715/TH 15 - 5,5	Copper	25	3	101
	Aluminium	16	1,92	76
G type rail	Steel	35	4,2	-
IEC 60715/G32	Copper	120	14,4	269
	Aluminium	70	8,4	192
"Top hat" rail	Steel	16	1,92	-
IEC 60715/TH 35 - 7,5	Copper	50	6	150
	Aluminium	35	4,2	125
"Top hat" rail	Steel	50	6	-
IEC 60715/TH 35 - 15	Copper	150	18	309
	Aluminium	95	11,4	232

Taken from CEI EN 60947-7-2 Technical Standards

Type index

Type index

TYPE	PRODUCT	CODE	PAGE
CL1024/24	Linear power supply	XAL10VC	see our web site (ex page 144)
CL1024/400	Linear power supply	XAL10VG	see our web site (ex page 141)
CL3R/24	Linear power supply	XAL03RC	see our web site (ex page 142)
CL424/115	Linear power supply	XAL04VE	see our web site (ex page 138)
CL424/230	Linear power supply	XAL04VF	see our web site (ex page 138)
CL424/24	Linear power supply	XAL04VC	see our web site (ex page 143)
CL624/115	Linear power supply	XAL06VE	see our web site (ex page 139)
CL624/230	Linear power supply	XAL06VF	see our web site (ex page 139)
CL624/24	Linear power supply	XAL06VC	see our web site (ex page 144)
CL624/400	Linear power supply	XAL06VG	see our web site (ex page 140)
CM1A024	24 Vac 1-relay module	XCM1A024	31
CM1A120	120 Vac 1-relay module	XCM1A120	32
CM1A230	230 Vac 1-relay module	XCM1A230	32
CM1C012	12 Vdc 1-relay module	XCM1C012	30
CM1C024	24 Vdc 1-relay module	XCM1C024	30
CM1C024H	24 Vdc 1-relay module	XCM1C024H	30
CM1C024Z	24 Vdc 1-relay module	XCM1C024Z	30
CM1C048	48 Vdc 1-relay module	XCM1C048	31
CM1C110	110 Vdc 1-relay module	XCM1C110	31
CM1S024	Opto-isolated 1-relay module	XCM1S024	76
CM1T024	Opto-isolated 1-relay module	XCM1T024	76
CM2A024	24 Vac 1-relay module	XCM2A024	34
CM2A120	120 Vac 1-relay module	XCM2A120	34
CM2A230	230 Vac 1-relay module	XCM2A230	35
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CM2C024	24 Vdc 1-relay module	XCM2C024	33
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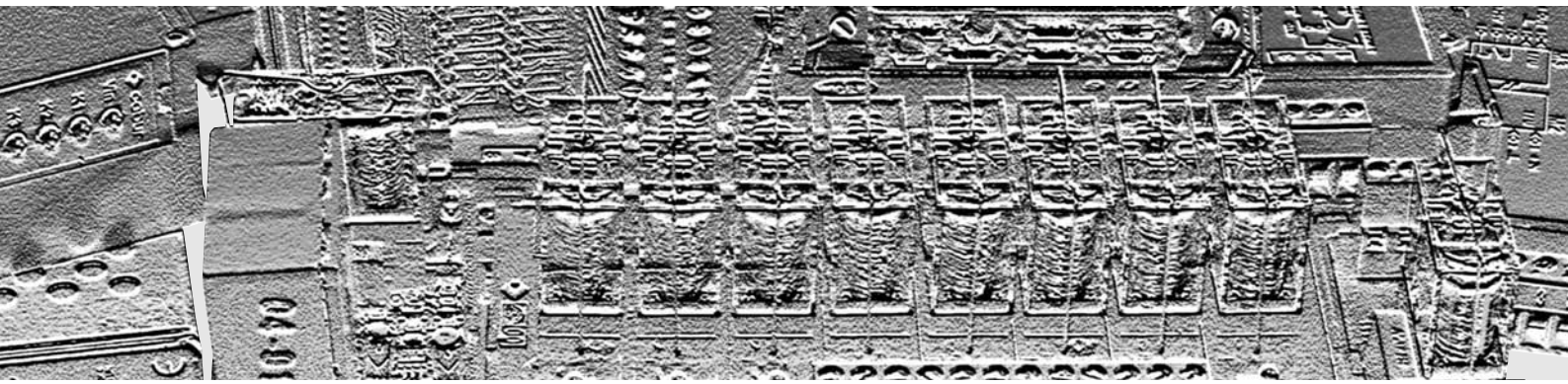

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