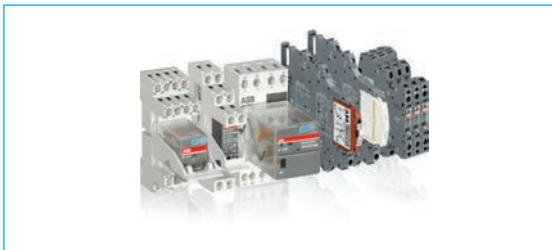




Short form catalogue

Electronic products and relays

Time relays, measuring and monitoring, power supplies, signal converters, interface relays and optocouplers



Contents

Time relays 4

Three ranges of electronic timers provide timing functions for all applications: the CT-D range with a width of just 17.5 mm; the CT-E range, the ideal solution for serial applications; and the CT-S range that has two different types of connection terminals and is ideally suited for universal use. The CT range has a wide variety of timing functions (from ON or OFF delay to star-delta changeover). The time relays are available with output relays, solid-state outputs and precise direct time adjustment.

Measuring and monitoring 11

State of the Art monitors for single and three-phase systems. Monitoring of: voltage, current, frequency, power factor (motor load), thermistors, temperature, liquid level, insulation resistance, and grid feeding. ABB has one of the world's widest product ranges of measuring and monitoring relays. The CM range is a key product line of the EPR range.

Power supplies 22

Modern power supply units are a vital component in most areas of energy management and automation technology. As your global partner in this area, ABB pays close attention to corresponding requirements. Innovation is the key to the substantial enlargement of our power supply product range. ABB offers four different product lines for single and three-phase supplies, output voltages 5/12/24, and 48 VDC in plastic and metal enclosure, as well as various accessories.

Signal converters 25

The ABB serial data converters allow communication to be established between units with different communication standards. In order to assure process continuity, existing systems must be updated consistently or connected to new devices. Serial data enables communication to be established if the communication standard of the existing system and the connected device vary. As well as converting signals, analog signal converters and serial data converters can amplify, filter or isolate signals

Interface relays & optocouplers 34

Interface relays and optocouplers are widely used in various industrial applications. As an interface, they link the controller, e.g. PLC (programmable logic controller), PC or field bus systems to the sensor/actuator level. Here, they have various functions: switching AC or DC loads with different resistive, inductive and capacitive parts, switching voltages from a few mV up to 250 V, switching currents from a few mA up to 16 A, amplification of weak control signals, electrical isolation of control and load circuits, and signal multiplying.

Electronic timers

Features



CT-D

LEDs for status indication

All actual operational states are displayed by front-face LEDs, thus simplifying commissioning and troubleshooting.

Direct reading scales

Direct setting of the time delay without any additional calculation allows accurate time delay adjustment.



CT-E

Connection screws in M3 (pozidrive)

Easy tightening and release of the connection screws using a pozidrive, panhead or crosshead screwdriver.



CT-S

Double-chamber cage connection terminals

Double-chamber cage connection terminals make it possible to connect wires up to $2 \times 2.5 \text{ mm}^2$ ($2 \times 14 \text{ AWG}$), rigid or fine-strand, with or without ferrules. Potential distribution does not require additional terminals.

Time range preselection and fine adjustment

Direct assignment of the preselected time range to the fine adjustment potentiometer scale by multicolor scales.



CT-S

Easy connect technology

Innovative Push-in connection terminals for tool-free installation. The connection has the same connection direction as the double-chamber cage connection terminals.

The CT range includes 103 electronic timers and switching relays with 16 different functions. The electronic timers are divided into three ranges with their individual benefits. A lot of different connection terminals such as screw, chamber,

double-chamber cage and push-in connection terminals are available. Furthermore, relay outputs and solid-state outputs are also available.

Electronic timers

Overview



CT-D range

CT-E range

CT-S range

Timing function	multifunctional	single-functional	multifunctional	single-functional	multifunctional	single-functional
ON-delay	CT-MFD	CT-ERD	CT-MFE, CT-MKE	CT-ERE, CT-EKE	CT-MVS, CT-MFS, CT-MBS, CT-WBS	CT-ERS
OFF-delay	CT-MFD	CT-AHD	CT-MFE	CT-AHE, CT-ARE, CT-AKE	CT-MVS, CT-MFS, CT-MBS	CT-APS, CT-AHS, CT-ARS, CT-VBS
ON- and OFF-delay					CT-MVS, CT-MXS, CT-MFS, CT-MBS	
Impulse-ON	CT-MFD	CT-VWD	CT-MFE, CT-MKE	CT-VWE	CT-MVS, CT-MFS, CT-MBS, CT-WBS	
Impulse-OFF	CT-MFD			CT-AWE	CT-MVS, CT-MFS, CT-MBS	
Impulse-ON and OFF					CT-MXS	
Flasher starting with ON	CT-MFD	CT-EBD	CT-MFE, CT-MKE		CT-MFS, CT-MBS, CT-WBS	
Flasher starting with OFF	CT-MFD		CT-MFE, CT-MKE	CT-EBE	CT-MFS, CT-MBS, CT-WBS	
Flasher starting with ON or OFF					CT-MVS	
Pulse generator starting with ON or OFF		CT-TGD			CT-MXS	
Pulse former	CT-MFD		CT-MFE		CT-MVS, CT-MFS, CT-MBS	
Star-delta change-over		CT-SDD, CT-SAD				CT-SDS
Star-delta change-over with impulse				CT-SDE	CT-MVS.2x, CT-MFS, CT-MBS	
Star-delta change-over twice ON-delayed				CT-YDE		
further functions (depending on device)					CT-MVS, CT-MXS, CT-MFS, CT-MBS, CT-WBS	
Switching relay				CT-IRE		CT-IRS

Technical data (extract)						
Time ranges	7 (0.05 s - 100 h) CT-SDD, CT-SAD: 4 (0.05 s - 10 min)		Multifunction devices: 8 (0.05 s - 100 h) Single-function devices: 5 single ranges (0.05-1 s, 0.1-10 s, 0.3-30 s, 3-300 s, 0.3-300 min)		10 (0.05 s - 300 h) CT-ARS, CT-SDS: 7 (0.05 s- 10 min)	
Control supply voltage	Wide and multi ranges		Wide ranges	Single and dual ranges	Wide, multi and single ranges	
Type and number of contacts	1 or 2 c/o contacts CT-SDD, CT-SAD: 2 n/o contacts		1 c/ o contact CT-SDE: 1 n/o contact and 1 n/c contact CT-MKE, CT-EKE, CT-AKE: 1 thyristor		1 or 2 c/o contacts CT-MVS.21, CT-MFS, CT-MBS: 2nd c/o contact selectable as inst. contact CT-SDS: 2 n/o contacts	
Control inputs	voltage-related triggering, polarized, capable of switching a parallel load		voltage-related triggering, polarized CT-MFE, CT-AHE, CT-AWE: with auxiliary voltage		voltage-related triggering, non-polarized, capable of switching a parallel load CT-MFS, CT-MBS, CT-AHS: volt-free triggering	

Timer relays CT-D



CT-MFD.12



CT-ERD.22

Type CT-D

Type	Time Range	Contact Arrangement	Number of LEDs	Rated control supply voltage	Control input	Product Hierarchy 400006 Order Code
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Multifunction timers

CT-MFD.12	0.05 s - 100 h	1 c/o	2	24-48 V DC, 24-240 V AC	•	1SVR500020R0000
CT-MFD.21	0.05 s - 100 h	2 c/o	2	12-240 V AC/DC	•	1SVR500020R1100

Functions - ON-Delay, OFF-delay, Impulse-ON, Impulse OFF, Flasher Starting with ON, Flasher starting with OFF, and Pulse Former

ON-delay timers

CT-ERD.12	0.05 s - 100 h	1 c/o	2	24-48 V DC, 24-240 V AC		1SVR500100R0000
CT-ERD.22	0.05 s - 100 h	2 c/o	2	24-240 V AC		1SVR500100R0100

OFF-delay timers

CT-AHD.12	0.05 s - 100 h	1 c/o	2	24-48 V DC, 24-240 V AC	•	1SVR500110R0000
CT-AHD.22		2 c/o			•	1SVR500110R0100

Impulse-ON timers

CT-VWD.12	0.05 s - 100 h	1c/o	2	24-48 V DC, 24-240 V AC		1SVR500130R0000
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Flasher, starting with ON

CT-EBD.12	0.05 s - 100 h	1c/o	2	24-48 V DC, 24-240 V AC		1SVR500150R0000
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Pulse generators

CT-TGD.12	0.05 s - 100 h	1c/o	2	24-48 V DC, 24-240 V AC	•	1SVR500160R0000
CT-TGD.22		2 c/o			•	1SVR500160R0100

Star-delta timers

CT-SAD.22	0.05 s - 100 h time adjustable	2 c/o	3	24-48 V DC, 24-240 V AC		1SVR500210R0100
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Timer relays CT-E



CT-MFE



CT-ERE



CT-AHE



CT-ARE

Type CT-E

Type	Time Range	Contact Arrangement	Number of LEDs	Rated control supply voltage	Control input	Product Hierarchy 400006 Order Code
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Multifunction timers

CT-MFE	0.05 s - 100 h	1 c/o	2	24-240 V AC/DC	•	1SVR550029R8100
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Functions - ON-Delay, OFF-delay, Impulse-ON, Flasher Starting with ON, Flasher starting with OFF, and Pulse Former

ON-delay timers

CT-ERE	0.1-10 s	1 c/o	2	24 V AC/DC, 220-240 V AC	•	1SVR550107R1100
	0.3-30 s					1SVR550107R4100
	3-300 s					1SVR550107R2100
	0.3-30 min					1SVR550107R5100
CT-ERE	0.1-10 s	1 c/o	2	110-130 V AC	•	1SVR550100R1100
	0.3-30 s					1SVR550100R4100
	3-300 s					1SVR550100R2100
	0.3-30 min					1SVR550100R5100

OFF-delay timers

CT-AHE	0.1-10 s	1 c/o	2	24 V AC/DC	•	1SVR550118R1100
	0.3-30 s					1SVR550118R4100
	3-300 s					1SVR550118R2100
CT-AHE	0.1-10 s	1 c/o	2	110-130 V AC	•	1SVR550110R1100
	0.3-30 s					1SVR550110R4100
	3-300 s					1SVR550110R2100
CT-AHE	0.1-10 s	1 c/o	2	220-240 V AC	•	1SVR550111R1100
	0.3-30 s					1SVR550111R4100
	3-300 s					1SVR550111R2100
CT-ARE without auxiliary voltage	0.1-10 s	1 c/o	1	24 V AC/DC, 220-240 V AC	•	1SVR550127R1100

Solid-state output / contactless multifunction timer

CT-MKE	0.1-10 s, 3-300 ss	solid state	1	24-240 V AC/DC		1SVR550019R0000
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Functions - ON-Delay, Impulse-ON, Flasher Starting with ON, Flasher starting with OFF

ON delay timers

CT-EKE	0.1-10 s	solid state	1	24-240 V AC/DC		1SVR550509R1000
	0.3-30 s					1SVR550509R4000
	3-300 s					1SVR550509R2000

OFF delay timers

CT-AKE	0.1-10 s	solid state	1	24-240 V AC/DC		1SVR550519R1000
	0.3-30 s					1SVR550519R4000
	3-300 s					1SVR550519R2000
	0.3-30 s					1SVR550127R4100

Impulse ON timers

CT-VWE	0.1-10 s	1 c/o	2	24 V AC/DC, 220-240 V AC		1SVR550137R1100
	0.3-30 s					1SVR550137R4100
	3-300 s					1SVR550137R2100
CT-VWE	0.1-10 s	1 c/o	2	110-130 V AC		1SVR550130R1100
	0.3-30 s					1SVR550130R4100
	3-300 s					1SVR550130R2100

Impulse OFF timers

CT-AWE without auxiliary voltage	0.05-1 s	1 c/o	2	24 V AC/DC 110-130 V AC 220-240 V AC	•	1SVR550158R3100 1SVR550150R3100 1SVR550151R3100
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Timer relays CT-E



CT-AWE

Type CT-E

Type	Time Range	Contact Arrangement	Number of LEDs	Rated control supply voltage	Control input	Product Hierarchy 400006 Order Code
CT-AWE without auxiliary voltage	0.1-10 s	1 c/o	2	24 V AC/DC	•	1SVR550148R1100
	0.3-30 s					1SVR550148R4100
	3-300 s					1SVR550148R2100
CT-AWE without auxiliary voltage	0.1-10 s	1 c/o	2	110-130 V AC	•	1SVR550140R1100
	0.3-30 s					1SVR550140R4100
	3-300 s					1SVR550140R2100
CT-AWE without auxiliary voltage	0.1-10 s	1 c/o	2	220-240 V AC	•	1SVR550141R1100
	0.3-30 s					1SVR550141R4100
	3-300 s					1SVR550141R2100

Flasher, starting with OFF

CT-EBE with symmetrical ON & OFF times	0.1-10 s	1 c/o	2	24 V AC/DC, 220-240 V AC		1SVR550167R1100
				110-130 V AC		1SVR550160R1100



CT-YDE

Star delta timers

CT-YDE On Delayed Without Auxiliary Voltage With Fixed Transition Time	0.1-10 s	1 c/o	2	24 V AC/DC, 220-240 V AC		1SVR550207R1100
	0.3-30 s					1SVR550207R4100
	3-300 s					1SVR550207R2100
CT-YDE On Delayed Without Auxiliary Voltage With Fixed Transition Time	0.1-10 s	1 c/o	2	110-130 V AC		1SVR550200R1100
	0.3-30 s					1SVR550200R4100
	3-300 s					1SVR550200R2100



CT-SDE

CT-SDE On Delayed With Fixed Transition Time	0.3-30 s	1 n/o + 1n/c	2	24 V AC/DC, 220-240 V AC		1SVR550217R4100
	0.3-30 s	1 n/o + 1n/c	2	110-130 V AC		1SVR550210R4100
	0.3-30 s	1 n/o + 1n/c	2	380-415 V AC		1SVR550212R4100

Timer relays CT-S

Type CT-S

Type	Rated control supply voltage	Control input	Remote potentiometer connection	2nd c/o cont. selectable as inst. contact	Product Hierarchy 400006 Order Code
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Multifunction timers

CT-MVS.21S	24-240 V AC/DC	■	1x	0	1SVR730020R0200
CT-MVS.21P					1SVR740020R0200

CT-MVS: 11 functions 1), 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 2 LEDs

CT-MVS.22S	24-48 V DC	■			1SVR730020R3300
CT-MVS.22P	24-240 V AC				1SVR740020R3300
CT-MVS.23S	380-440 V AC				1SVR730021R2300
CT-MVS.23P					1SVR740021R2300

CT-MVS: 10 functions 2), 10 time ranges (0.05 s- 300 h), 1 c/o contact, 2 LEDs

CT-MVS.12S	24-48 V DC	■			1SVR730020R3100
CT-MVS.12P	24-240 V AC				1SVR740020R3100

CT-MXS: 5 functions 3), 2 x 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 2 LEDs

CT-MXS.22S	24-48 V DC	■	2x		1SVR730030R3300
CT-MXS.22P	24-240 V AC				1SVR740030R3300

CT-MFS: 10 functions 4), 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 3 LEDs – 40 °C

CT-MFS.21S	24-48 V DC	□□	1x	•	1SVR730010R0200
CT-MFS.21P	24-240 V AC				1SVR740010R0200

CT-MBS: 10 functions 4), 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 3 LEDs

CT-MBS.22S	24-48 V DC	□	1x	•	1SVR730010R3200
CT-MBS.22P	24-240 V AC				1SVR740010R3200

Impulse and flasher timer

CT-WBS: 7 functions 5), 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 2 LEDs

CT-WBS.22S	24-48 V DC				1SVR730040R3300
CT-WBS.22P	24-240 V AC				1SVR740040R3300

- Control input with voltage-related triggering
- Control input with volt-free triggering

¹⁾ Functions: ON-delay, OFF-delay with auxiliary voltage, Impulse-ON, Impulse-OFF with auxiliary voltage, Symmetrical ON- and OFF-delay, Flasher starting with ON or OFF, Star-delta change-over with impulse, Pulse former, Accumulative ON-delay, ON/OFF-function

²⁾ Functions: ON-delay, OFF-delay with auxiliary voltage, Impulse-ON, Impulse-OFF with auxiliary voltage, Symmetrical ON- and OFF-delay, Flasher starting with ON or OFF, Pulse former, Accumulative ON-delay, ON/OFF-function

³⁾ Functions: Select function via DIP switches behind the marker label on the front of the unit, asymmetrical ON- and OFF-delay, Impulse-ON/OFF, Pulse generator starting with ON or OFF, Single pulse generator, ON/OFF-function

⁴⁾ Functions: ON-delay, OFF-delay with auxiliary voltage, Impulse-ON, Impulse-OFF with auxiliary voltage, Symmetrical ON- and OFF-delay, Flasher starting with ON, Flasher starting with OFF, Star-delta change-over with impulse, Pulse former, ON/OFF-function

⁵⁾ Functions: Flasher starting with ON, Flasher starting with OFF, Impulse-ON, ON-delay, fixed impulse with adjustable time delay, Adjustable impulse with fixed time delay, ON/OFF-function

S - Screw connection

P - Easy connect - Push in connection



CT-MVS.21P



CT-MBS.22P

Timer relays

CT-S

Type CT-S

Type	Rated control supply voltage	Control input	Product Hierarchy 400006 Order Code
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CT-ERS.21P

ON-delay timers

CT-ERS: 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 2 LEDs –40 °C

CT-ERS.21S	24-240 V AC/DC		1SVR730100R300
CT-ERS.21P			1SVR740100R300
CT-ERS.22S	24-48 V DC		1SVR730100R300
CT-ERS.22P	24-240 V AC		1SVR740100R300

CT-ERS: 10 time ranges (0.05 s- 300 h), 1 c/o contact, 2 LEDs

CT-ERS.12S	24-48 V DC		1SVR730100R3100
CT-ERS.12P	24-240 V AC		1SVR740100R3100



CT-AHS.22P

OFF-delay timers

CT-APS: 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 2 LEDs –40 °C

CT-APS.21S	24-240 V AC/DC	■	1SVR730180R300
CT-APS.21P			1SVR740180R300
CT-APS.22S	24-48 V DC	■	1SVR730180R300
CT-APS.22P	24-240 V AC		1SVR740180R300

CT-APS: 10 time ranges (0.05 s- 300 h), 1 c/o contact, 2 LEDs

CT-APS.12S	24-48 V DC	■	1SVR730180R3100
CT-APS.12P	24-240 V AC		1SVR740180R3100



CT-SDS.23P

CT-AHS: 10 time ranges (0.05 s- 300 h), 2 c/o contacts, 2 LEDs

CT-AHS.22S	24-48 V DC	□	1SVR730110R3300
CT-AHS.22P	24-240 V AC		1SVR740110R3300

CT-ARS: without auxiliary voltage, 7 time ranges (0.05 s- 10 min), 1 c/o contact, 1 LED

CT-ARS.11S	24-240 V AC/DC		1SVR730120R3300
CT-ARS.11P			1SVR740120R3300

Star-delta timers

CT-SDS: 7 time ranges (0.05 s- 10 min), 50 ms transition time, 2 n/o contacts, 3 LEDs

CT-SDS.22S	24-48 V DC		1SVR730210R3300
CT-SDS.22P	24-240 V AC		1SVR740210R3300
CT-SDS.23S	380-440 V AC		1SVR730211R2300
CT-SDS.23P			1SVR740211R2300

■ Control input with voltage-related triggering

□ Control input with volt-free triggering

S - Screw connection

P - Easy connect - Push in connection

Measuring and monitoring relays

Product group



Measuring and monitoring relays

Benefits and advantages

CM-N range: Multifunctional



- < 45 mm wide housing
- < Output contacts: 2 c/o (SPDT) contacts
- < Continuous voltage range (24-240 V AC/DC) or single-supply
- < Setting and operation via front-face operating controls
- < Adjustment of threshold values and switching hysteresis via direct reading scale
- < Adjustable time delays
- < Integrated and snap-fitted front-face marker label
- < Sealable transparent cover (accessory)

CM-S range: Universal and multifunctional



- < Only 22.5 mm wide housing
- < Output contacts: 1 or 2 c/o (SPDT) contacts
- < One supply voltage range or supplied by measuring circuit
- < Setting and operation via front-face operating controls
- < Adjustment of threshold values and switching hysteresis via direct reading scale
- < Integrated and snap-fitted front-face marker
- < Snap-on housing: The relays can be placed on a DIN rail tool-free - just snap it on or remove it tool-free
- < Sealable transparent cover (accessory)

CM-E range: Economy



- < Only 22.5 mm wide housing
- < Output contacts: 1 c/o contact or 1 n/o contact
- < One supply voltage range
- < One monitoring function
- < Cost-efficient solution for OEM applications
- < Preset monitoring ranges

ABB's measuring and monitoring relays in a new housing

Benefits at a glance

Easy Connect Technology

New options:

Additionally to the existing well established screw connections a new innovative connection technology can be offered: Easy Connect Technology with push-in terminals.

Tool-free wiring:

The push-in terminals can be wired with rigid or fine stranded wires with wire end ferrules totally tool-free. The connection direction is exactly the same as the screw version.

Higher utility class:

The Easy Connect Technology provides excellent vibration resistance with gas tight push-in terminals – the right solution for harsh environment.

Extended features

Flammability:

The plastic housing material used meets the requirements for the highest flammability class. (UL94 V-0 rated)

Look and feel:

The new housing fits perfectly with ABB's control products offer.

Measuring and monitoring relays

Benefits and advantages

Combination screws for CM-E range ①

Easy tightening and release of the connection screws with pozidrive, pan- or crosshead screwdriver.

Safety ②

The „real distance“ is hidden.
The clearance and the creepage distances of our products exceed international standards and substantially increase the safety of our products.

Easy Connect Technology ③

Tool-free wiring and excellent vibration resistance. Push-in terminals provide connection of wires up to $2 \times 0.5 - 1.5 \text{ mm}^2$ (2 x 20 -16 AWG), rigid or fine-strand with or without wire end ferrules. The extended type designators for products with push-in terminals are indicated by a P following the extended type designator e.g. CM-xxS.xxP.

Double-chamber cage connection terminals ④

Double-chamber cage connection terminals provide connection of wires up to $2 \times 0.5-2.5 \text{ mm}^2$ (2 x 20-14 AWG) rigid or fine-strand, with or without wire end ferrules. Potential distribution does not require additional terminals. The extended type designators for products with double-chamber cage connection terminals are indicated by a S following the extended type designator e.g. CM-xxS.xxS.

LED's for status indication ⑤

All actual operational states are displayed by front-face LEDs, thus simplifying commissioning and troubleshooting.

Integrated marker label ⑥

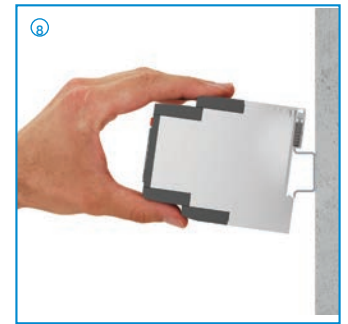
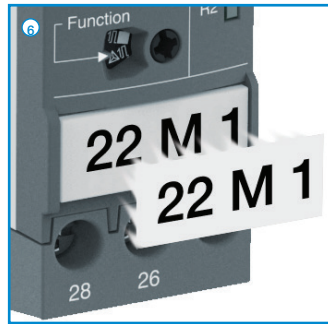
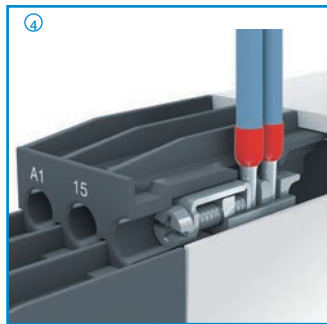
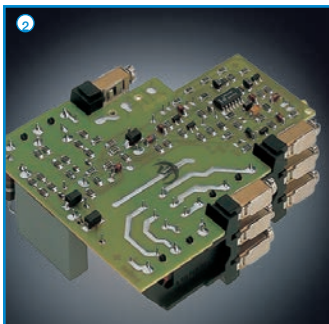
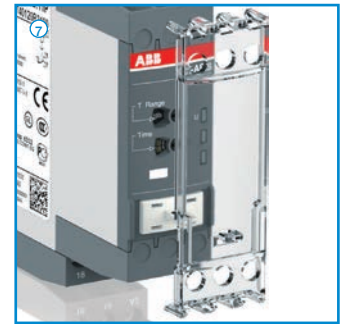
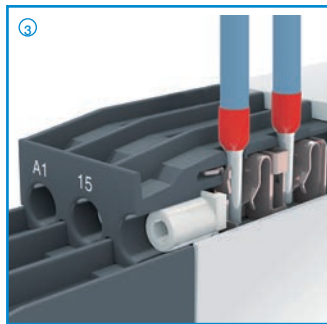
Integrated marker labels allow the product to be marked quickly and simply. No additional marker labels are required.

Sealable transparent cover ⑦

Protection against unauthorized changes of time and threshold values. Available as an accessory.

Snap-On housing ⑧

Tool-free DIN rail installation and deinstallation of the monitoring relay.



Measuring & monitoring relays

Single phase current monitors



Product Hierarchy 400004 Order Code	Type																										
	1SVR 730 840 R0200	1SVR 740 840 R0200	1SVR 730 841 R0200	1SVR 740 841 R0200	1SVR 730 841 R1200	1SVR 740 841 R1200	1SVR 730 840 R0300	1SVR 730 841 R0300	1SVR 730 841 R1300	1SVR 730 840 R0400	1SVR 740 840 R0400	1SVR 730 841 R0400	1SVR 740 841 R0400	1SVR 730 841 R1400	1SVR 740 841 R1400	1SVR 730 840 R0500	1SVR 730 841 R0500	1SVR 730 841 R1500	1SVR 730 840 R0600	1SVR 740 840 R0600	1SVR 730 840 R0700	1SVR 730 760 R0400	1SVR 740 760 R0400	1SVR 730 760 R0500			
CM-SRS.11S																											
CM-SRS.11P																											
CM-SRS.11S																											
CM-SRS.11P																											
CM-SRS.11S																											
CM-SRS.11P																											
CM-SRS.12S																											
CM-SRS.21S																											
CM-SRS.21P																											
CM-SRS.21S																											
CM-SRS.21P																											
CM-SRS.21S																											
CM-SRS.21P																											
CM-SRS.22S																											
CM-SRS.M1S																											
CM-SRS.M1P																											
CM-SRS.M2S																											
CM-SFS.21S																											
CM-SFS.21P																											
CM-SFS.22S																											
Rated control supply voltage Us																											
24 - 240 V AC/DC	•	•																									
110 - 130 V AC			•		•																						
220 - 240 V AC						•																					
Measuring ranges AC/DC																											
3 - 30 mA	•	•	•	•	•	•					•	•	•	•	•	•					•	•	•	•	•	•	
10 - 100 mA	•	•	•	•	•	•					•	•	•	•	•	•					•	•	•	•	•	•	
0.1 - 1 A	•	•	•	•	•	•					•	•	•	•	•	•					•	•	•	•	•	•	
0.3 - 1.5 A											•	•	•	•	•	•						•	•	•	•	•	
1 - 5 A											•	•	•	•	•	•						•	•	•	•	•	
3 - 15 A											•	•	•	•	•	•						•	•	•	•	•	
Monitoring function																											
Over- or undercurrent	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Windows current monitoring																								•	•	•	
Latching																							sel	sel	sel	sel	
Open circuit or closed circuit principle																							sel	sel	sel	sel	
Timing functions for tripping delay																											
ON delay, 0 or 0.1 - 30 s											ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	
ON or OFF delay																								sel	sel	sel	
Output																											
c/o contact	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Connection type																											
Push-in terminals		•			•							•	•	•	•							•			•	•	
Double-chamber cage connection terminals	•		•		•		•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	

adj: adjustable
sel: selectable

Measuring & monitoring relays

Single phase voltage monitors



	Product Hierarchy 400004															
	Order Code															
Type	1SVR 730 830 R0300	1SVR 740 830 R0300	1SVR 730 831 R0300	1SVR 740 831 R0300	1SVR 730 831 R1300	1SVR 740 831 R1300	1SVR 730 830 R0400	1SVR 740 830 R0400	1SVR 730 831 R0400	1SVR 740 831 R0400	1SVR 730 831 R1400	1SVR 740 831 R1400	1SVR 730 830 R0500	1SVR 740 830 R0500	1SVR 730 750 R0400	1SVR 740 750 R0400
Rated control supply voltage U_s																
24 - 240 V AC/DC	•	•					•	•					•	•	•	•
110 - 130 V AC			•	•					•	•						
220 - 240 V AC					•	•					•	•				
Measuring ranges AC/DC																
3 - 30 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
6 - 60 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
30 - 300 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
60 - 600 V	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Monitoring function																
Over- or undervoltage	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Windows voltage monitoring															•	•
Latching													sel	sel	sel	sel
Open circuit or closed circuit principle													sel	sel	sel	sel
Timing functions for tripping delay																
ON delay, 0 or 0.1 - 30 s							ad	ad	ad	ad	ad	ad	ad	ad		
ON or OFF delay															sel	sel
Output																
c/o contact	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Connection type																
Push-in terminals		•		•		•		•		•		•		•		•
Double-chamber cage connection terminals	•		•		•		•		•		•		•		•	

adj: adjustable
sel: selectable

Measuring & monitoring relays

Three phase monitors



CM-PBE	Product Hierarchy 400004 Order Code																					
Rated control supply voltage U_s	Type	1 SVR 550 881 R9400	1 SVR 550 882 R9500	1 SVR 550 870 R9400	1 SVR 550 871 R9500	1 SVR 550 824 R9100	1 SVR 730 824 R9300	1 SVR 740 824 R9300	1 SVR 730 784 R2300	1 SVR 740 784 R2300	1 SVR 730 784 R3300	1 SVR 740 784 R3300	1 SVR 730 794 R1300	1 SVR 730 794 R3300	1 SVR 740 794 R3300	1 SVR 730 794 R2300	1 SVR 740 794 R2300	1 SVR 730 774 R1300	1 SVR 740 774 R1300	1 SVR 730 774 R3300	1 SVR 740 774 R3300	
Phase to Phase	CM-PBE	CM-PBE	CM-PBE	CM-PVE	CM-PVE	CM-PFE	CM-PFS	CM-PFSP	CM-PSS.31S	CM-PSS.31P	CM-PSS.41S	CM-PSS.41P	CM-PVS.31S	CM-PVS.41S	CM-PVS.41P	CM-PVS.81S	CM-PVS.81P	CM-PAS.31S	CM-PAS.31P	CM-PAS.41S	CM-PAS.41P	
160-300 V AC																						
200-400 V AC																						
200-500 V AC																						
208-440 V AC																						
300-500 V AC																						
320-460 V AC																						
350-580 V AC																						
380 V AC																						
380-440 V AC																						
400 V AC																						
Phase to Neutral																						
185-265 V AC																						
220-240 V AC																						
Rated frequency																						
50/60 Hz																						
Suitable for monitoring																						
Single-phase mains																						
Three-phase mains																						
Monitoring function																						
Phase failure																						
Phase sequence									sel	sel	sel	sel	sel	sel	sel	sel	sel					
Automatic phase sequence correction																						
Overvoltage																						
Undervoltage																						
Unbalance																						
Neutral ¹⁾																						
Thresholds	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	fix	adj	adj	adj	adj	adj	adj	adj	adj	adj
Timing functions for tripping delay																						
ON delay							fix	fix											sel	sel	sel	sel
On and OFF delay	fix	fix	fix	fix	fix				adj	adj	adj	adj	adj	adj	adj	adj	adj					
Connection type																						
Push-in terminals																						
Double-chamber cage connection terminals																						

1) The external conductor voltage towards the neutral conductor is measured.

adj: adjustable
sel: selectable



Rated control supply voltage U_s	Product Hierarchy 400004 Order Code																		
	Type	1SVR 730 885 R1300	1SVR 740 885 R1300	1SVR 730 885 R3300	1SVR 740 885 R3300	1SVR 730 884 R1300	1SVR 740 884 R1300	1SVR 730 884 R3300	1SVR 740 884 R3300	1SVR 730 885 R4300	1SVR 740 885 R4300	1SVR 730 884 R4300	1SVR 740 884 R4300	1SVR 750 487 R8300	1SVR 760 487 R8300	1SVR 750 488 R8300	1SVR 760 488 R8300	1SVR 750 489 R8300	1SVR 760 489 R8300
Phase to Phase																			
160-300 V AC																			
300-500 V AC																			
350-580 V AC																			
450-720 V AC																			
530-820 V AC																			
Phase to Neutral																			
90-170 V AC																			
180-280 V AC																			
Rated frequency																			
50/60 Hz																			
50/60/400 Hz																			
Suitable for monitoring																			
Single-phase mains																			
Three-phase mains																			
Monitoring function																			
Phase failure																			
Phase sequence	sel	sel	sel	sel	sel	sel	sel	sel	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad
Automatic phase sequence correction									ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad
Overvoltage																			
Undervoltage																			
Unbalance																			
Neutral ¹⁾	2)	2)	2)	2)					2)	2)									
Thresholds	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad
Timing functions for tripping delay																			
On and OFF delay	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad	ad
Connection type																			
Push-in terminals																			
Double-chamber cage connection terminals																			

1) The external conductor voltage towards the neutral conductor is measured.
 2) Interrupted neutral monitoring

ad: adjustable
 sel: selectable

G59/3 Grid feeding monitoring for generating plants connected to distribution systems



CM-UFD.M33

The CM-UFD.M33 is a multifunctional grid feeding monitoring relay. It trips the section switch which is connected between the distributed generation and the public grid in order to disconnect the distributed generation in case of problems (e.g. unstable grid), faults or maintenance on the grid. The device provides different monitoring functions to detect 10 minutes average overvoltage, real time over- and undervoltage as well as over and under frequency. Additionally, monitoring of vector shift and ROCOF (rate of change of frequency) can be configured in order to trip the generation in case of loss of mains.

Characteristics

- Monitoring of voltage and frequency in single- and threephase mains (2-wire, 3-wire or 4-wire AC systems)
- Over- and undervoltage, 10-minutes average value as well as over and underfrequency monitoring
- Two-level threshold settings for over-/undervoltage and over-/underfrequency
- ROCOF (rate of change of frequency) monitoring and vector shift detection configurable
- Interrupted neutral detection
- True RMS measuring principle
- All threshold values and tripping delays adjustable
- Error memory for up to 99 entries (incl. cause of error, measured value, relative timestamp)
- Password setting protection
- 3 control inputs, e.g. for feedback signal, remote trip
- 3 c/o (SPDT) contacts
- Multiline, backlit LCD display



Type	Rated control supply voltage	Measuring range	Product Hierarchy 1400002 Order Code
CM-UFD.M33	24-240 V AC/DC	L-L: 0-540 V AC / L-N: 0-312 V AC	1SVR 560 730 R3402

Measuring & monitoring relays

Insulation monitoring relays



Type	Product Hierarchy 400004 Order Code
CM-IWS.2S	1SVR 730 670 R0200
CM-IWS.2P	1SVR 740 670 R0200
CM-IWS.1S	1SVR 730 660 R0100
CM-IWS.1P	1SVR 740 660 R0100
CM-IWN.1S	1SVR 750 660 R0200
CM-IWN.1P	1SVR 760 660 R0200
CM-IWN.4S	1SVR 750 660 R0300
CM-IWN.4P	1SVR 760 660 R0300
CM-IWN.5S	1SVR 750 660 R0400
CM-IWN.5P	1SVR 760 660 R0400
CM-IWN.6S	1SVR 750 660 R0500
CM-IWN.6P	1SVR 760 660 R0500

Rated control supply voltage U_c

24 - 240 VAC/DC	•	•	•	•	•	•	•	•	•	•	•
-----------------	---	---	---	---	---	---	---	---	---	---	---

Measuring voltages

250 V AC (L-PE)		•	•								
400 V AC (L-PE)	•	•			•	•	•	•	•	•	•
690 V AC (L-PE)					• 1)	• 1)	• 1)	• 1)	• 1)	• 1)	• 1)
300 V DC (L-PE)			•	•							
600 V DC (L-PE)					•	•	•	•	•	•	•
1000 V DC (L-PE)					• 1)	• 1)	• 1)	• 1)	• 1)	• 1)	• 1)

Measuring range

1 - 100 k Ω	•	•	•	•	•	•	•	•	•	•	•
2 - 200 k Ω					•	•	•	•	•	•	•

System leakage capacitance, max.

10 μ F	•	•	•	•							
20 μ F					•	•					
500 μ F							•	•			
1000 μ F									•	•	
2000 μ F										•	•

Output

1 c/o	•	•	•	•							
1 x 2 c/o or 2 x 1 c/o					•	•	•	•	•	•	•

Operating principle

Open-circuit principle	•	•	•	•							
Open- or closed-circuit principle adjustable					•	•	•	•	•	•	•

Test

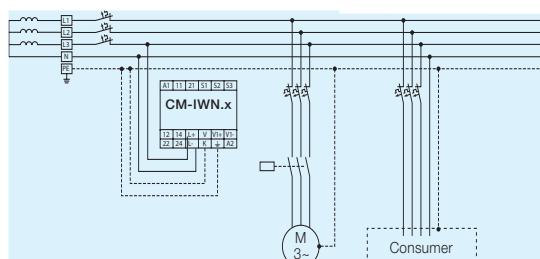
Front face button or control input	•	•	•	•	•	•	•	•	•	•	•
------------------------------------	---	---	---	---	---	---	---	---	---	---	---

Reset

Front-face button or control input	•	•	•	•	•	•	•	•	•	•	•
Fault storage / latching configurable	•	•	•	•	•	•	•	•	•	•	•
Non volatile storage configurable	•	•	•	•	•	•	•	•	•	•	•
Interrupted wire detection					•	•	•	•	•	•	•
Threshold values configurable	1	1	1	1	2	2	2	2	2	2	2

1) With coupling unit CM-IVN	screw version	CM-IVN.S: 1SVR750669R9400
	push-in version	CM-IVN.P: 1SVR760669R9400

Insulation monitors for unearthed supply systems (IT-Systems)



Measuring & monitoring relays

Motor protection - thermistor relays



CM-MSE



CM-MSS (5)



CM-MSN

Type	Product Hierarchy 400004																														
	Order Code																														
CM-MSE	1SVR 550 805 R9300	CM-MSE	1SVR 550 800 R9300	CM-MSE	1SVR 550 801 R9300	CM-MSS (1)	1SVR 430 800 R9100	CM-MSS (1)	1SVR 430 800 R9100	CM-MSS (2)	1SVR 430 811 R9300	CM-MSS (2)	1SVR 430 811 R9300	CM-MSS (3)	1SVR 430 710 R9300	CM-MSS (3)	1SVR 430 711 R0300	CM-MSS (3)	1SVR 430 711 R1300	CM-MSS (3)	1SVR 430 711 R2300	CM-MSS (4)	1SVR 430 720 R0400	CM-MSS (5)	1SVR 430 720 R0300	CM-MSS (6)	1SVR 430 710 R0200	CM-MSS (7)	1SVR 430 720 R0300	CM-MSN	1SVR 450 025 R0100
Function																															
Number of sensor circuits	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	6				
Wire break monitoring	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
Short-circuit detection ¹⁾																															
Non-volatile fault storage ²⁾																															
Operation / Reset																															
Auto reset	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
Manual reset																															
Remote reset																															
Test button																															
Output contacts																															
Operational principle	Closed-circuit principle																														
1 n/o	•	•	•																												
1 c/o				•	•																										
2 c/o																															
1 n/o + 1 n/c																															
1 c/o per sensor circuit																															
1 n/o + 1 n/c accumulative evaluation																															
Width of housing																															
22.5 mm	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
45 mm																															
Supply voltages																															
24 V AC	•																														
24 V AC/DC																															
110-130 V AC																															
220-240 V AC																															
380-440 V AC																															
24-240 V AC/DC																															

Temperature sensor C011, standard version acc. to DIN 44081



Rated response temperature T _{NE}	Color coding	Type	Order code
70 °C	white-brown	C011-70 ¹⁾	GHC0110003R0001
80 °C	white-white	C011-80 ¹⁾	GHC0110003R0002
90 °C	green-green	C011-90 ¹⁾	GHC0110003R0003
100 °C	red-red	C011-100 ¹⁾	GHC0110003R0004
110 °C	brown-brown	C011-110 ¹⁾	GHC0110003R0005
120 °C	gray-gray	C011-120 ¹⁾	GHC0110003R0006
130 °C	blue-blue	C011-130 ¹⁾	GHC0110003R0007
140 °C	white-blue	C011-140 ¹⁾	GHC0110003R0011
150 °C	black-black	C011-150 ¹⁾	GHC0110003R0008
160 °C	blue-red	C011-160 ¹⁾	GHC0110003R0009
170 °C	white-green	C011-170 ¹⁾	GHC0110003R0010

Triple temperature sensor C011-3

150 °C	black-black	C011-3-150	GHC0110033R0008
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¹⁾ For CM-MSS (3): configurable via terminals

²⁾ Auto reset without non-volatile fault storage configurable by permanent jumpering of connection terminals S1-T2 or S1/X1-S2/X2

Measuring and monitoring relays

Temperature monitoring relays



CM-TCS



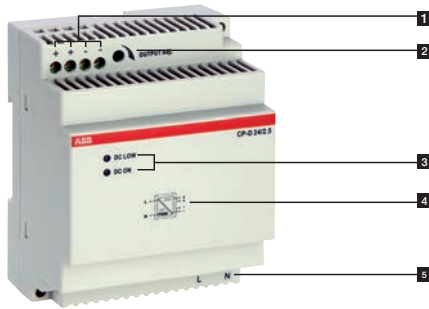
C512, C513

New range		Product Hierarchy 400004															
Type	Order Code	1SVR 730 740 R9100	1SVR 740 740 R9100	1SVR 730 740 R0100	1SVR 740 740 R0100	1SVR 730 740 R9200	1SVR 740 740 R9200	1SVR 730 740 R0200	1SVR 740 740 R0200	1SVR 730 740 R9300	1SVR 740 740 R9300	1SVR 730 740 R0300	1SVR 740 740 R0300	1SVR 730 740 R0005	1SVR 740 740 R0010	1SVR 740 740 R0010	
CM-TCS.21S																	
CM-TCS.21P																	
CM-TCS.11S																	
CM-TCS.11P																	
CM-TCS.22S																	
CM-TCS.22P																	
CM-TCS.12S																	
CM-TCS.12P																	
CM-TCS.23S																	
CM-TCS.23P																	
CM-TCS.13S																	
CM-TCS.13P																	
C512-24																	
C512-W																	
C513-W																	
Rated control supply voltage U_s																	
24 V AC/DC																	
24-240 V AC/DC																	
Technology																	
analogue																	
digital																	
Sensor circuits (2 or 3 wire)																	
number of temperature sensors		1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3
number of thresholds		2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3
Sensor type																	
PT100																	
PT100, KTY83, KTY84, NTC, PT1000																	
Measuring temperature range																	
-50...+50 °C																	
0...+100 °C																	
0...+200 °C																	
-50...+500 °C																	
Monitoring function																	
overtemperature																	
undertemperature																	
window temperature																	
Operating principle																	
open or closed principle																	
Output contacts																	
n/o																	
c/o		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

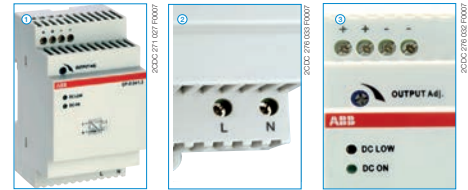
Power supplies

Features and benefits

Type CP-D



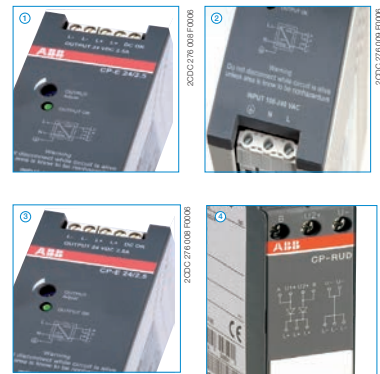
- 1 OUTPUT +/- terminals - output
- 2 INPUT L, N: terminals - input
- 3 Indication of operational states
DC ON: green LED - output voltage applied
DC LOW: red LED - output voltage too low
- 4 Circuit diagram
- 5 OUTPUT Adjust: potentiometer - adjustment of output voltage



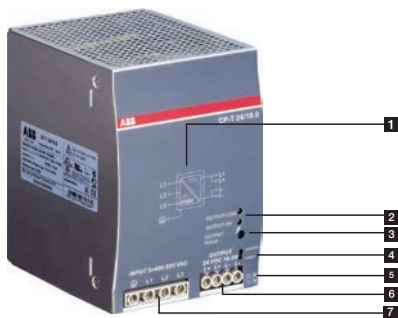
Type CP-E



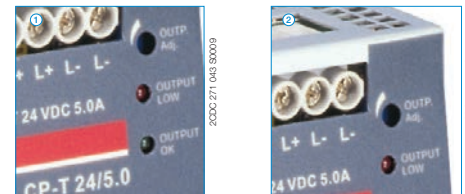
- 1 INPUT L, N, PE: terminals - input
- 2 Circuit diagram
- 3 single/parallel: sliding switch - adjustment of single or parallel operation
- 4 Indication of operational states
DC ON: green LED - green LED - output voltage OK
DC LOW: red LED - output voltage too low
- 5 OUTPUT L+, L-, L-, L-: terminals - output
- 6 OUTPUT Adjust: potentiometer - adjustment of output voltage



Type CP-T



- 1 Circuit diagram
- 2 Indication of operational states
DC ON: green LED - green LED - output voltage OK
DC LOW: red LED - output voltage too low
- 3 single/parallel: sliding switch - adjustment of single or parallel operation
- 4 Configuration of single or parallel operation
- 5 Signalling contact
OUTPUT 13-14: terminals - signalling contact
A solid-state output indicates the error-free operation of the output voltage.
- 6 OUTPUT L+, L-, L-, L-: terminals - output
- 7 INPUT L1, L2, L3, PE: terminals - input



Type CP-C



- 1 OUTPUT L+, L-: terminals - output
- 2 Indication of operational states
OUTPUT OK: green LED - output voltage OK
- 3 OUTPUT Adj: rotary potentiometer - adjustment of output voltage
- 4 Circuit diagram
- 5 INPUT L, N, PE: terminals - input

Primary switch mode power supplies

CP-D and CP-E



CP-D 12/0.83,
CP-D 24/0.42



CP-D 12/2.1
CP-D 24/1.3



CP-E 5/3.0



CP-E 24/5.0



CP-RUD



CP-A RU

CP-D range

Type	Input voltage range	Rated output voltage / current	Product Hierarchy 400002 Order Code
CP-D 12/0.83	90-264 V AC/ 120-370 V DC	12 V DC /0.83 A	1SVR427041R1000
CP-D 12/2.1	90-264 V AC/ 120-370 V DC	12 V DC /2.1 A	1SVR427043R1200
CP-D 24/0.42	90-264 V AC/ 120-370 V DC	24 V DC /0.42 A	1SVR427041R0000
CP-D 24/1.3	90-264 V AC/ 120-370 V DC	24 V DC /1.3 A	1SVR427043R0100
CP-D 24/2.5	90-264 V AC/ 120-370 V DC	24 V DC /2.5 A	1SVR427044R0200
CP-D 24/4.2	90-264 V AC/ 120-370 V DC	24 V DC /4.2 A	1SVR427045R0400

CP-E range

Type	Input voltage range	Rated output voltage / current	Product Hierarchy 400002 Order Code
CP-E 5/3.0	90-265 V AC/ 120-370 V DC	5 V DC /3 A	1SVR427033R3000
CP-E 12/2.5	85-264 V AC/ 90-375 V DC	12 V DC /2.5 A	1SVR427032R1000
CP-E 12/10.0	90-132 V AC, 186-264 V AC/ 210-370 V DC	12 V DC /10 A	1SVR427035R1000
CP-E 24/0.75	90-265 V AC/ 120-370 V DC	24 V DC /0.75 A	1SVR427030R0000
CP-E 24/1.25	85-264 V AC/ 90-375 V DC	24 V DC /1.25 A	1SVR427031R0000
CP-E 24/2.5	85-264 V AC/ 90-375 V DC	24 V DC /2.5 A	1SVR427032R0000
CP-E 24/5.0	90-132 V AC, 186-264 V AC/ 210-370 V DC	24 V DC /5 A	1SVR427034R0000
CP-E 24/10.0	93-132 V AC, 186-264 V AC/ 210-370 V DC	24 V DC /10 A	1SVR427035R0000
CP-E 24/20.0	90-264 V AC/ 120-370 V DC	24 V DC /20 A	1SVR427036R0000
CP-E 48/0.62	85-264 V AC/ 90-375 V DC	48 V DC / 0.625 A	1SVR427030R2000
CP-E 48/1.25	85-264 V AC/ 90-375 V DC	48 V DC /1.25 A	1SVR427031R2000
CP-E 48/5.0	93-132 V AC, 186-264 V AC/ 210-370 V DC	48 V DC /5 A	1SVR427034R2000
CP-E 48/10.0	90-264 V AC/ 120-370 V DC	48 V DC /10 A	1SVR427035R2000

Redundancy units

Description	Suitable for decoupling of two CP-24 V DC power supply units or suitable for decoupling of CP-E power supply units	Type	Product Hierarchy 400002 Order Code
2 inputs each up to 20 A and 1 output up to 40 A	< 40 V and > 5 A	CP-A RU	1SVR427071R0000
Control module for CP-A RU redundancy units	-	CP-A CM	1SVR427075R0000
2 inputs each up to 2.5 A and 1 output up to 5 A	< 35 V and 5 A	CP-RUD	1SVR423418R9000

CP-D RU for decoupling of two CP-D power supply units

Input voltage range	Rated input current	Rated output voltage / current	Type	Product Hierarchy 400002 Order Code
CP-A RU	2 x 5 A	24 V DC / 1 x 10 A	CP-D RU	1SVR427049R0000

Primary switch mode power supplies

CP-T, CP-C



CP-T 24/5.0



CP-T 24/10.0
CP-T 48/5.0



CP-A RU



CP-A RU + CP-A CM

Type	Three Phase Input voltage range	Rated output voltage / current	Product Hierarchy 400002 Order Code
------	------------------------------------	--------------------------------	--

CP-T range

CP-T 24/5.0	340-575 V AC/ 480-820 V DC	24 V DC /5 A	1SVR427054R0000
CP-T 24/10.0	340-575 V AC/ 480-820 V DC	24 V DC /10 A	1SVR427055R0000
CP-T 24/20.0	340-575 V AC/ 480-820 V DC	24 V DC /20 A	1SVR427056R0000
CP-T 24/40.0	340-575 V AC/ 480-820 V DC	24 V DC /40 A	1SVR427057R0000

CP-T 48/5.0	340-575 V AC/480-820 V DC	48 V DC /5 A	1SVR427054R2000
CP-T 48/10.0	340-575 V AC/ 480-820 V DC	48 V DC /10 A	1SVR427055R2000
CP-T 48/20.0	340-575 V AC/ 480-820 V DC	48 V DC /20 A	1SVR427056R2000

CP-C range

CP-C 24/5.0	85-264 V AC/ 110-350 V DC	24 V DC /5 A	1SVR427024R0000
CP-C 24/10.0	85-264 V AC/ 110-350 V DC	24 V DC /10 A	1SVR427025R0000
CP-C 24/20.0	85-264 V AC/ 110-350 V DC	24 V DC / 20 A	1SVR427026R0000

Accessories for CP-C range

Type	Description	Product Hierarchy 400002 Order Code
CP-C IMM	Messaging module	1SVR427081R0000
CP-A CM	Control module	1SVR427075R0000

Redundancy unit

Type	Suitable for decoupling CP-T, CP-S, CP-E, CP-C	Product Hierarchy 400002 Order Code
CP-A-RU	2 inputs each up to 20 A and 1 output up to 40 A	1SVR427071R0000

Analogue standard signal converters

Product group



Analogue standard signal converters

Application, approvals & marks

Applications for analog signal processing and correct solution using CC-E and CC-U converters

Nearly every process includes a control system that receives data by means of analog signals and then evaluates the data and sets the respective parameters correspondingly.

When transmitting analog signals numerous problems may arise which can disturb or even block an ideal behavior of the process.

Below we have listed some processing problems together with the respective solutions to solve these problems:

Signal conversion

Sometimes the available signals cannot be processed by the controller or the actuator. In this case, signal converters are required to convert the input signal (or different input signals) to the desired output signal.

Signal amplification

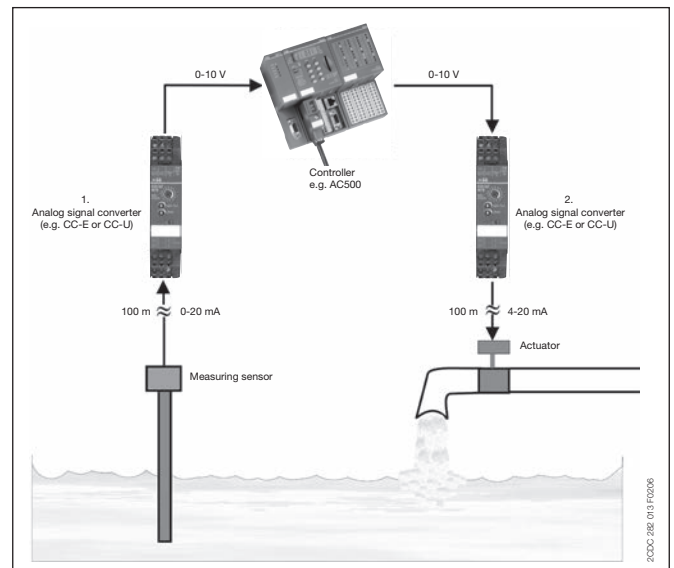
If long lines or high burdens have to be operated, it may be necessary to amplify the signal. CC analog signal converters require only low input power and provide high output power.

Thus, there are no restrictions for the converter's position on the line, i.e. it can be used

- < for signal refreshing a at the end of the line (low input power)
- < or for signal amplification b at the beginning of the line (high output power).

Signal filtering

Particularly on long lines or in rough industrial environments the signals are exposed to high electromagnetic interferences. The frequency of the coupled interference signals may be in the range of the common mains frequency (50 Hz) or even much higher (in case of frequency converters). According to the specific requirements, analog signal converters are available which provide reliable suppression of those interferences by means of an input low-pass filter.



Signal separation

< Protection against overvoltage

The increased use of micro-electronics make controls much more sensitive against overvoltages, resulting from lightning discharges or switching processes. Suppression diodes are incorporated in the input of the CC analog signal converters which enable the converters to arrest overvoltages with low energy level (resulting from switching processes) by themselves. The products furthermore provide electrical isolation between input, output and supply circuit for protection of the controller connected to the output.

< Protection against ground loops

If components are used which refer to ground, the measuring signals can be falsified by a so-called ground loop. In this case, certain parts of the signal are transmitted via earth and not via the analog transmission line, thus causing incorrect evaluation of the signal. The electrical isolation between the input and the output disconnects these ground loops and thus enables correct signal transmission.

- existing
- ▲ existing for some devices
- pending

		CC-E/STD	CC-E/I	CC-U/STD	CC-U/STDR	CC-E/RTD	CC-U/RTD	CC-U/RTDR	CC-E/TC	CC-U/TC	CC-U/TCR	CC-E/I	CC-E I _{Ac} /LPO	CC-U/I	CC-U/V
Approvals															
	UL 508, CAN/CSA C22.2 No.14	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	UL 1604 (Class I, Div 2, hazardous locations), CAN/CSA C22.2 No.213	▲		■		▲	■		▲	■		▲		■	■
	CB scheme				■			■			■				
	CCC				■			■			■				
Marks															
	CE	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	C-Tick	■	■	■	■	■	■	■	■	■	■	■	■	■	■

Analogue signal converters

CC range, standard signal converters



CC-E/I



CC-E V/V



CC-E I/I-2



CC-U/STDR

Standard signal converters

Supply voltage range	Input signal	Output signal	Type	Product Hierarchy 400001 Order Code
24 V DC	0-5 V, 0-10 V 0-20 mA, 4-20 mA	0-5 V, 0-10 V 0-20 mA, 4-20 mA	CC-E/STD ^{1) 3)}	1SVR011700R0000
	0-10 V	0-10 V	CC-E V/V	1SVR011710R2100
		0-20 mA	CC-E V/I	1SVR011711R1600
		4-20 mA	CC-E V/I	1SVR011712R1700
	0-20 mA	0-10 V	CC-E I/V	1SVR011713R1000
		0-20 mA	CC-E I/I	1SVR011714R1100
		4-20 mA	CC-E I/I	1SVR011715R1200
		0-10 V	CC-E I/V	1SVR011716R1300
	4-20 mA	0-20 mA	CC-E I/I	1SVR011717R1400
		4-20 mA	CC-E I/I	1SVR011718R2500
-10...+10 V	-10...+10 V	CC-E V/V	1SVR011719R2600	
110-240 V AC	0-5 V, 0-10 V 0-20 mA, 4-20 mA	0-5 V, 0-10 V 0-20 mA, 4-20 mA	CC-E/STD ³⁾	1SVR011705R2100
	0-10 V	0-10 V	CC-E V/V	1SVR011720R2300
		0-20 mA	CC-E V/I	1SVR011721R1000
		4-20 mA	CC-E V/I	1SVR011722R1100
	0-20 mA	0-10 V	CC-E V/V	1SVR011723R1200
		0-20 mA	CC-E I/I	1SVR011724R1300
	4-20 mA	4-20 mA	CC-E I/I	1SVR011725R1400
		0-10 V	CC-E V/V	1SVR011726R1500
		0-20 mA	CC-E I/I	1SVR011727R1600
		4-20 mA	CC-E I/I	1SVR011728R2700
0-10 V		CC-E V/V	1SVR011729R2000	
loop powered	-10...+10 V	-10...+10 V	CC-E V/V	1SVR011729R2000
	0-20 mA, 4-20 mA	0-20 mA, 4-20 mA	CC-E I/I-1 ²⁾ CC-E I/I-2 ²⁾	1SVR010200R1600 1SVR010201R0300
24-48 V DC, 24 V AC	refer to table	refer to table 2 c/o	CC-U/STD	1SVR040000R1700
110-240 V AC, 100-300 V DC			1SVR040001R0400	
24-48 V DC, 24 V AC			CC-U/STDR ¹⁾	1SVR040010R0000
110-240 V AC, 100-300 V DC			1SVR040011R2500	

¹⁾ B 1604 Class I, Div.2 (universal device)

²⁾ CC-E-I/I-1 has 1 channel, CC-E-I/I-1 has 2 channels

³⁾ 3-way electrical isolation

⁴⁾ with relay output

Temperature signal converters

CC range, RTD converters



CC-E/RTD



CC-U/RTD

RTD converters

Supply voltage range	Input signal	Output signal	Type	Product Hierarchy 400001 Order Code	
24 V DC	refer to table	0-10 V, 0-20 mA, 4-20 mA	CC-E/RTD ¹⁾	1SVR011701R2500	
	PT100 0...100 °C	0-10 V	CC-E RTD/V	1SVR011730R2500	
		0-20 mA	CC-E RTD/I	1SVR011731R1200	
		4-20 mA	CC-E RTD/I	1SVR011732R1300	
		0-10 V	CC-E RTD/V	1SVR011733R1400	
	PT100 -50...+50 °C	0-20 mA	CC-E RTD/I	1SVR011734R1500	
		4-20 mA	CC-E RTD/I	1SVR011735R1600	
		0-10 V	CC-E RTD/V	1SVR011736R1700	
		0-20 mA	CC-E RTD/I	1SVR011737R1000	
	PT100 0...300 °C	4-20 mA	CC-E RTD/I	1SVR011738R2100	
		0-10 V	CC-E RTD/V	1SVR011739R2200	
		0-20 mA	CC-E RTD/I	1SVR011740R0700	
		4-20 mA	CC-E RTD/I	1SVR011741R2400	
	110-240 V AC	refer to table	0-10 V, 0-20 mA, 4-20 mA	CC-E/RTD	1SVR011706R2200
		PT100 0...100 °C	0-10 V	CC-E RTD/V	1SVR011788R2400
			0-20 mA	CC-E RTD/I	1SVR011789R2500
4-20 mA			CC-E RTD/I	1SVR011790R2200	
0-10 V			CC-E RTD/V	1SVR011791R1700	
PT100 -50...+50 °C		0-20 mA	CC-E RTD/I	1SVR011792R1000	
		4-20 mA	CC-E RTD/I	1SVR011793R1100	
		0-10 V	CC-E RTD/V	1SVR011794R1200	
		0-20 mA	CC-E RTD/I	1SVR011795R1300	
PT100 0...300 °C		4-20 mA	CC-E RTD/I	1SVR011796R1400	
		0-10 V	CC-E RTD/V	1SVR011797R1500	
		0-20 mA	CC-E RTD/I	1SVR011798R2600	
		4-20 mA	CC-E RTD/I	1SVR011799R2700	
24-48 V DC, 24 V AC		refer to table	refer to table 2 c/o	CC-U/RTD	1SVR040002R0500
110-240 V AC, 100-300 V DC				1SVR040003R0600	
24-48 V DC, 24 V AC				CC-U/RTDR1)	1SVR040012R2600
110-240 V AC, 100-300 V DC	1SVR040013R2700				

¹⁾ with relay output

¹⁾ 1604 Class I, Div.2 (universal device)

²⁾ CC-E-I/-1 has 1 channel, CC-E-I/-1 has 2 channels

Temperature signal converters

CC-E range, thermocouple converters

Thermocouple Converters



CC-E TC



CC-U/TC

Supply voltage range	Input signal	Output signal	Type	Product Hierarchy 400001 Order Code
24 V DC	thermocouple types J and K	0-10 V, 0-20 mA, 4-20 mA	CC-E/TC ⁴⁾	1SVR011702R2600
		0-10 V	CC-E TC/V	1SVR011750R0100
	type J 0...600 °C	0-20 mA	CC-E TC/I	1SVR011751R2600
		4-20 mA	CC-E TC/I	1SVR011752R2700
		0-10 V	CC-E TC/V	1SVR011753R2000
		0-20 mA	CC-E TC/I	1SVR011754R2100
	type K 0...1000 °C	4-20 mA	CC-E TC/I	1SVR011755R2200
		0-10 V, 0-20 mA, 4-20 mA	CC-E/TC	1SVR011707R2300
0-10 V		CC-E TC/V	1SVR011760R0300	
0-20 mA		CC-E TC/I	1SVR011761R2000	
110-240 V AC	type J 0...600 °C	4-20 mA	CC-E TC/I	1SVR011762R2100
		0-10 V	CC-E TC/V	1SVR011763R2200
		0-20 mA	CC-E TC/I	1SVR011764R2300
		4-20 mA	CC-E TC/I	1SVR011765R2400
	type K 0...1000 °C	0-10 V	CC-E TC/V	1SVR011763R2200
		0-20 mA	CC-E TC/I	1SVR011764R2300
		4-20 mA	CC-E TC/I	1SVR011765R2400
		24-48 V DC, 24 V AC	refer to table	refer to table 2 c/o
110-240 V AC, 100-300 V DC	refer to table	refer to table 2 c/o	CC-U/TCR ⁴⁾	1SVR040005R0000
24-48 V DC, 24 V AC				1SVR040014R2000
110-240 V AC, 100-300 V DC				1SVR040015R2100

4) with relay output

Measuring converters

CC-E range

Measuring Converters



CC-E IAC/ILPO



CC-U/I

Supply voltage range	Input signal	Output signal	Type	Order code	
24 V DC	0-5 A, 0-20 A, AC/DC	0-10 V, 0-20 mA, 4-20 mA	CC-E/I ⁵⁾	1SVR011703R2700	
		0-10 V	CC-E IAC/V ⁶⁾	1SVR011770R0500	
	0-5 A, 0-20 A, AC	0-20 mA	CC-E IAC/I ⁶⁾	1SVR011771R2200	
		4-20 mA	CC-E IAC/I ⁶⁾	1SVR011772R2300	
	0-5 A, 0-20 A, DC	0-10 V	CC-E IDC/V ⁶⁾	1SVR011773R2400	
		0-20 mA	CC-E IDC/I ⁶⁾	1SVR011774R2500	
		4-20 mA	CC-E IDC/I ⁶⁾	1SVR011775R2600	
		0-10 V, 0-20 mA, 4-20 mA	CC-E/I ⁶⁾	1SVR011708R0400	
110-240 V AC	0-5 A, 0-20 A, AC	0-10 V	CC-E IAC/V ⁶⁾	1SVR011780R1100	
		0-20 mA	CC-E IAC/I ⁶⁾	1SVR011781R0600	
	0-5 A, 0-20 A, DC	4-20 mA	CC-E IAC/I ⁶⁾	1SVR011782R0700	
		0-10 V	CC-E IDC/V ⁶⁾	1SVR011783R0000	
	0-1 A, 0-5 A, AC	0-20 mA	CC-E IDC/I ⁶⁾	1SVR011784R0100	
		4-20 mA	CC-E IDC/I ⁶⁾	1SVR011785R1100	
	loop powered	0-1 A, 0-5 A, AC	4-20 mA	CC-E IAC/ILPO ⁶⁾	1SVR010203R0500
	24-48 V DC, 24 V AC	refer to table	refer to table	CC-U/I2)	1SVR040006R0100
110-240 V AC, 100-300 V DC	1SVR040007R0200				
24-48 V DC, 24 V AC	CC-U/V3)			1SVR040008R1300	
110-240 V AC, 100-300 V DC				1SVR040009R1400	

⁵⁾ with relay output

⁶⁾ for sinusoidal currents

Analog signal converters - CC-U range

DIP switch settings

CC-U/STD

Input	Switch 1								Gain	Coarse Type
	1	2	3	4	5	6	7	8		
Potentiometer									0	0
0...50 mV									A..D	C
0...100 mV									4..5	5
0...250 mV									0..1	1
0...500 mV									7..9	8
0...1 V									3..4	3
0...2.5 V									0	0
0...5 V									5..7	6
0...10 V									7..9	8
1...5 V									2	2
2...10 V									2..4	3
-10...+10 V									0	0
0...125 mV									3..4	3
0...8 V									3..4	3
-22.5...+22.5 mV									B..F	D
-11...+11 V									0	0
2.5...7.5 V									5..7	6
3.33...9.99 V									3..4	4
10...0 V									2	2
100...0 mV									4..5	5
0...1 mA									A..D	B
0...20 mA									2..4	3
4...20 mA									4..5	4
10...50 mA									0..1	1
20...4 mA									4..5	4
20...0 mA									4..2	3
0...10 mA									4..2	3
0...0.5 mA									B..F	D
0...13.33 mA									4..6	5
0...666 µA									-	-
0...16 mA									-	-
0...800 µA									-	-
0...8 mA									-	-
0...400 µA									-	-
2.5...12.5 mA									-	-
125...625 µA									-	-
3.33...16.66 mA									-	-
166...833 µA									-	-
0.2...1 mA									-	-
2...10 mA									-	-
100...500 µA									-	-

*) Detection of input voltage signal interruptions:

If the input signal circuit is interrupted, the output signal changes to the adjusted minimum value (low fail safe) or maximum value (high fail safe).
If "No fail safe" is configured, input signal interruptions are not detected.

Output	Switch 2					
	1	2	3	4	5	6
0...5 V						
0...10 V						
1...5 V						
2...10 V						
-10...+10 V						
-5...+5 V						
-10...0 V						
-5...0 V						
0...6.66 V						
-10...+3.33 V						
-5...+1.66 V						
0...8 V						
0...4 V						
-10...-2 V						
-5...-1 V						
1.25...6.25 V						
-7.5...+2.5 V						
-3.75...+1.25 V						
1.66...8.33 V						
-6.66...+6.66 V						
-3.33...+3.33 V						
-8...0 V						
-4...0 V						
0...1 mA						
0...20 mA						
4...20 mA						
0...10 mA						
0...0.5 mA						
0...13.33 mA						
0...666 µA						
0...16 mA						
0...800 µA						
0...8 mA						
0...400 µA						
2.5...12.5 mA						
125...625 µA						
3.33...16.66 mA						
166...833 µA						
0.2...1 mA						
2...10 mA						
100...500 µA						

Legend	
■	ON
□	OFF
■	no influence

CC-U/STDR with relay output

Input	Switch					
	1	2	3	4	5	6
0...0 V						
0...5 V						
0...1 V						
-10...+10 V						
1...5 V						
0...20 mA						
4...20 mA						
Output						
Closed-circuit principle						
Open-circuit principle						

Legend	
■	ON
□	OFF
■	no influence

CC-U/RTD

Type	Input Range	Switch 1						Switch 2						Gain Coarse	
		1	2	3	4	5	6	1	2	3	4	5	6		
PT10	0...500 °C														F
	0...550 °C														E
	0...600 °C														D
	0...650 °C														C
	0...700 °C														B
	0...750 °C														A
PT100	0...800 °C														9
	0...850 °C														8
	0...50 °C														F
	0...60 °C														E
	0...70 °C														B
	0...80 °C														A
	0...90 °C														9
	0...100 °C														8
	0...200 °C														3
	0...300 °C														2
PT1000	0...400 °C														1
	0...500 °C														0
	0...10 °C														8
	0...20 °C														3
	0...30 °C														2
	0...40 °C														1
	0...50 °C														0
	0...60 °C														0
Low fail safe *)														-	
High fail safe *)														-	

*) Detection of input signal interruptions:
If the input signal circuit is interrupted, the output signal changes to the adjusted minimum value (low fail safe) or maximum value (high fail safe).

CC-U/RTDR with relay output

Input PT100	Switch					
	1	2	3	4	5	6
0...100 °C						
0...200 °C						
0...400 °C						
0...600 °C						
0...800 °C						
Output						
Closed-circuit principle						
Open-circuit principle						

Legend	
■	ON
□	OFF
■	no influence

Output	Switch 3					
	1	2	3	4	5	6
0...5 V						
0...10 V						
1...5 V						
2...10 V						
-10...+10 V						
-5...+5 V						
-10...0 V						
-5...0 V						
0...6.66 V						
-10...+3.33 V						
-5...+1.66 V						
0...8 V						
0...4 V						
-10...-2 V						
-5...-1 V						
1.25...6.25 V						
-7.5...+2.5 V						
-3.75...+1.25 V						
1.66...8.33 V						
-6.66...+6.66 V						
-3.33...+3.33 V						
-8...0 V						
-4...0 V						
0...1 mA						
0...20 mA						
4...20 mA						
0...10 mA						
0...0.5 mA						
0...13.33 mA						
0...666 µA						
0...16 mA						
0...8 mA						
0...400 µA						
2.5...12.5 mA						
125...625 µA						
3.33...16.66 mA						
166...833 µA						
0.2...1 mA						
2...10 mA						
100...500 µA						

Legend	
■	ON
□	OFF
■	no influence

Analog signal converters - CC-U range

DIP switch settings

CC-U/V

Output	Switch					
	1	2	3	4	5	6
0..5 V						
0..10 V						
1..5 V						
2..10 V						
-10...+10 V						
-5...+5 V						
-10...0 V						
-5..0 V						
0..6.66 V						
-10...+3.33 V						
-5...+1.66 V						
0..8 V						
0..4 V						
-10...-2 V						
-5...-1 V						
1.25...6.25 V						
-7.5...+2.5 V						
-3.75...+1.25 V						
1.66...8.33 V						
-6.66...+6.66 V						
-3.33...+3.33 V						
-8...0 V						
-4...0 V						
0..1 mA						
0..20 mA						
4..20 mA						
0..10 mA						
0..0.5 mA						
0..13.33 mA						
0..666 μA						
0..16 mA						
0..800 μA						
0..8 mA						
0..400 μA						
2.5...12.5 mA						
125...625 μA						
3.33...16.66 mA						
166...833 μA						
0.2...1 mA						
2...10 mA						
100...500 μA						

Legend	
■	ON
□	OFF
◻	no influence

2CDC 286 005 F004 2CDC 286 029 F0203

CC-U/TC

Output	Switch 3					
	1	2	3	4	5	6
0..5 V						
0..10 V						
1..5 V						
2..10 V						
-10...+10 V						
-5...+5 V						
-10...0 V						
-5..0 V						
0..6.66 V						
-10...+3.33 V						
-5...+1.66 V						
0..8 V						
0..4 V						
-10...-2 V						
-5...-1 V						
1.25...6.25 V						
-7.5...+2.5 V						
-3.75...+1.25 V						
1.66...8.33 V						
-6.66...+6.66 V						
-3.33...+3.33 V						
-8...0 V						
-4...0 V						
0..1 mA						
0..20 mA						
4..20 mA						
0..10 mA						
0..0.5 mA						
0..13.33 mA						
0..666 μA						
0..16 mA						
0..800 μA						
0..8 mA						
0..400 μA						
2.5...12.5 mA						
125...625 μA						
3.33...16.66 mA						
166...833 μA						
0.2...1 mA						
2...10 mA						
100...500 μA						

Legend	
■	ON
□	OFF
◻	no influence

Input Type	Range	Switch 1						Switch 2							
		1	2	3	4	5	6	1	2	3	4	5	6		
K	0-100...800 °C														
K	0-250...1350 °C														
J	0-100...750 °C														
T	0-100...400 °C														
T	-150-0...400 °C														
S	0-250...1550 °C														
S	0-100...700 °C														
E	0-200...1000 °C														
N	0-100...650 °C														
N	0-200...1300 °C														
R	0-250...1350 °C														
R	0-450...1700 °C														
B	0-700...1750 °C														
mV	0-2...10 mV														
	0-10...50 mV														
	Low fail safe *)														
	High fail safe *)														

*) Detection of input signal interruptions:

If the input signal circuit is interrupted, the output signal changes to the adjusted minimum value (low fail safe) or maximum value (high fail safe).

CC-U/I

Output	Switch					
	1	2	3	4	5	6
0..5 V						
0..10 V						
1..5 V						
2..10 V						
-10...+10 V						
-5...+5 V						
-10...0 V						
-5..0 V						
0..6.66 V						
-10...+3.33 V						
-5...+1.66 V						
0..8 V						
0..4 V						
-10...-2 V						
-5...-1 V						
1.25...6.25 V						
-7.5...+2.5 V						
-3.75...+1.25 V						
1.66...8.33 V						
-6.66...+6.66 V						
-3.33...+3.33 V						
-8...0 V						
-4...0 V						
0..1 mA						
0..20 mA						
4..20 mA						
0..10 mA						
0..0.5 mA						
0..13.33 mA						
0..666 μA						
0..16 mA						
0..800 μA						
0..8 mA						
0..400 μA						
2.5...12.5 mA						
125...625 μA						
3.33...16.66 mA						
166...833 μA						
0.2...1 mA						
2...10 mA						
100...500 μA						

Legend	
■	ON
□	OFF
◻	no influence

CC-U/TCR with relay output

Input Type	Range	Switch					
		1	2	3	4	5	6
J	0..240 °C						
J	0..480 °C						
J	0..1200 °C						
K	0..250 °C						
K	0..500 °C						
K	0..1350 °C						
T	-150...+120 °C						
T	0..220 °C						
S	0..400 °C						
S	0..210 °C						
S	0..380 °C						
S	0..860 °C						
S	0...1550 °C						
Output							
Closed-circuit principle							
Open-circuit principle							

Legend	
■	ON
□	OFF
◻	no influence

Serial data converters

Product group



Serial data converters

Overview

In the field of industrial data transmission, various processes of data transmission and interfaces are used today. Already existing systems need to be updated or connected to new devices for continuity of process. When new communication functions are not build-in, ABB propose a range of converters to be able to use from the standard RS232 or RS485, to the Ethernet open products or the Optical Fiber. Ethernet communication is now one of the main features need in open communication, ABB propose the e-ILPH to connect the serial devices to the web world.

Uses

Adaptation

The use of converters allows the connection of two devices using different interfaces. To add new equipment to existing installations.

Electrical Isolation

To protect sensitive equipment it is sometimes necessary to use converters which allow electrical isolation.

To cross a disturbed environment

Some interfaces are more sensitive to noise. Electrically, it is preferable, in some cases, to change the interface or support.

Type of connection	Immunity to noise
RS232	Low
RS422	High
RS485	High
CL	High
OF	Very high
Ethernet	High

Multipoint connections

Some equipments are only designed to communicate in RS232 point to point connection. To communicate with several devices it is then necessary to use converters RS232 to RS422, RS485, CL or OF to reach multipoint mode.

Type of connection	Connection
RS232	Point to point
RS422	12 points
RS485	32 points
CL	5-6 points
OF	32 points
Ethernet	Point to point or multipoint

Increase in the transmission and amplification distances of the signals

Every connection has its own limits, to increase the communication distances you only have to change the type of link (converter) or amplify the signal (Repeater) using an ILPH.

Type of connection	Max. distances *
RS232	15m
RS422	1.2km
RS485	1.2km
CL	300-500m
OF	4km
Ethernet	100 m with CAT5 cable

* Depending on transmission speed.

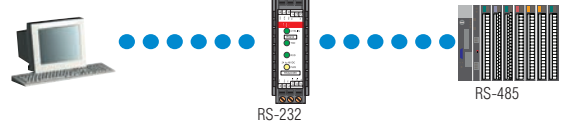
"World Wide" communication

Communication is more and more used with Ethernet support. The interests are to have a distant access, to use an already existing network and to upload information and data on a supervisor or a computer. The conversions from serial to Ethernet protocol are used to connect local network to Ethernet.

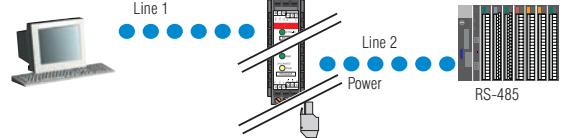
Protocol conversion

Modbus is one of the main protocols used in the industrial networks. The creation of Modbus/TCP allows an adapted access to the Ethernet network. So, the conversion between these 2 protocols is necessary.

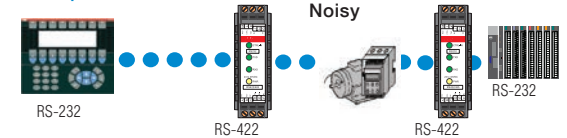
Example :



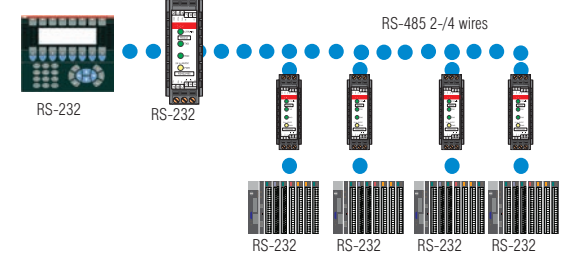
Example :



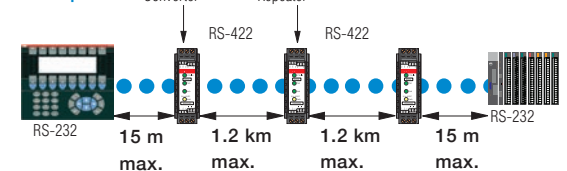
Example :



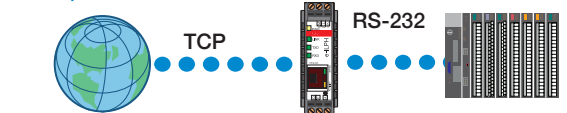
Example :



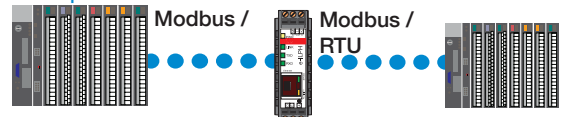
Example :



Example :



Example :



Serial data converters

ILPH



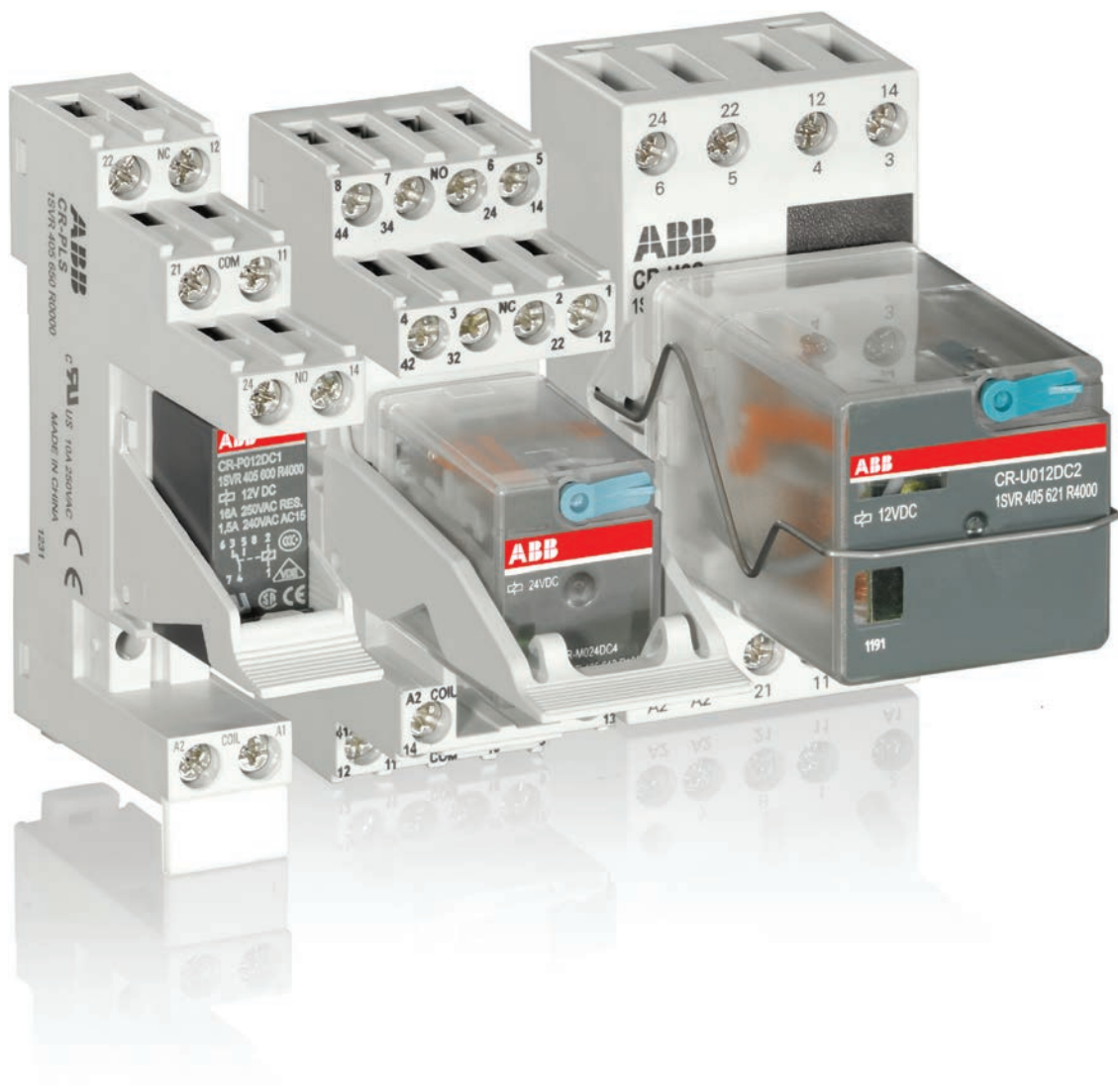
ILPH RS 232-RS 485 / Ethernet



ILPH RS 232 / RS 422-485

Description	Type	Product Hierarchy 400003 Order Code
Serial data converter e-ILPH	ILPH RS 232-RS 485 / Ethernet	1SNA684252R0200
Serial link interface without electrical isolation	ILPH RS 232 / RS 422-485	1SNA684231R2500
Serial link interface with electrical isolation	ILPH RS 232 / RS 422-485	1SNA684233R2700
Serial link interface 3 way electrical isolation	ILPH RS 232 / RS 422-485 (24-48 V DC power supply)	1SNA684333R2300
	ILPH RS 232 / RS 422-485 (115-230 V DC power supply)	1SNA684334R2400
Serial link interface 3 way electrical isolation	ILPH RS 232 / RS 232 (24-48 V DC power supply)	1SNA684234R2000
	ILPH RS 232 / RS 232 (115-230 V DC power supply)	1SNA684234R0200
Serial link interface with electrical isolation	ILPH RS 422 - 485 / RS 422 - 485 (24 V DC power supply)	1SNA684212R2200
Serial link interface 3 way electrical isolation	ILPH RS 232 / FO-S (24...42 V AC/DC power supply)	1SNA684236R2200
	ILPH RS 232 / FO-S (110...240 V AC/DC power supply)	1SNA684237R2300
	ILPH RS 232 / FO-P (24...42 V AC/DC power supply)	1SNA684238R0400
	ILPH RS 232 / FO-P (110...240 V AC/DC power supply)	1SNA684239R0500
Serial link interface 3 way electrical isolation	ILPH RS 485 / FO-S (24...42 V AC/DC power supply)	1SNA684246R0400
	ILPH RS 485 / FO-S (110...240 V AC/DC power supply)	1SNA684247R0500
	ILPH RS 485 / FO-P (24...42 V AC/DC power supply)	1SNA684248R1600
Serial link interface with electrical isoalition	ILPH RS 485 / FO-P (110...240 V AC/DC power supply)	1SNA684249R1700
Serial link interface with electrical isolation	ILPH BdC / RS 422 - 485 (24 V DC power supply)	1SNA684232R2600
Serial link interface with electrical isolation	ILPH RS 232 (24 V DC power supply)	1SNA684202R0100

Pluggable interface relays Product group



Pluggable interface relays

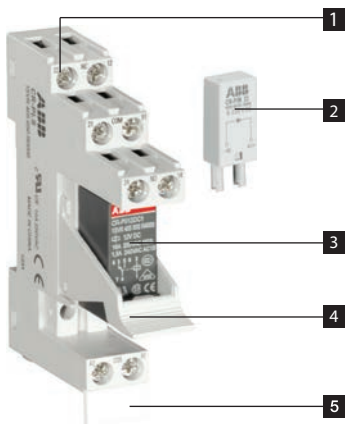
Benefits and advantages

Pluggable pcb relays CR-P

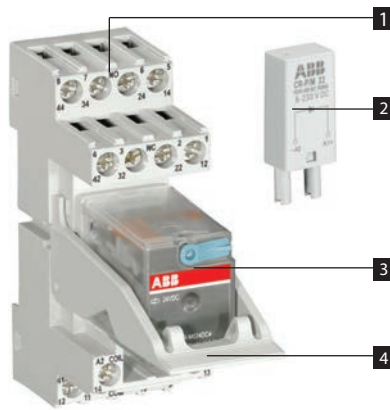
- < 9 different coil voltages
 - < DC versions: 12 V, 24 V, 48 V, 110 V
 - < AC versions: 24 V, 48 V, 110 V, 120 V, 230 V
- < Output contacts:
 - < 1 c/o contact (16 A) or
 - < 2 c/o contacts (8 A) optionally equipped with gold contacts
- < Logical or standard sockets
- < Cadmium-free contact material
- < Width of socket: 15,5 mm
- < Pluggable function modules
 - < Reverse polarity protection/ Free wheeling diode
 - < LED indication
 - < RC elements
 - < Overvoltage protection

Pluggable miniature relays CR-M

- < 12 different coil voltages
 - < DC versions: 12 V, 24 V, 48 V, 60 V, 110 V, 125 V, 220 V
 - < AC versions: 24 V, 48 V, 110 V, 120 V, 230 V
- < Output contacts
 - < 2 c/o contacts (12 A) or
 - < 3 c/o contacts (10 A) or
 - < 4 c/o contacts (6 A) optionally equipped with gold contacts, LED and free wheeling diode
- < Integrated test button for manual actuation and locking of the output contacts (blue = DC, orange = AC) that can be removed if necessary
- < With or without integrated LED
- < Logical or standard sockets
- < Cadmium-free contact material
- < Width on socket: 27 mm
- < Pluggable function modules
 - < Reverse polarity protection/ Free wheeling diode
 - < LED indication
 - < RC elements
 - < Overvoltage protection



- 1** Socket
- 2** Pluggable function module
- 3** Interface relay
- 4** Holder
- 5** Marker label



- 1** Socket
- 2** Pluggable function module
- 3** Interface relay
- 4** Holder



- 1** Socket
- 2** Pluggable function module
- 3** Interface relay
- 4** Holder

Pluggable pcb relays CR-P

Product overview



Type	Rated control supply voltage	Product Hierarchy 500003 Order Code
------	------------------------------	-------------------------------------

Interface relays

1 c/o contact: 250 V, 16 A

CR-P012DC1	12V DC	1SVR405600R4000
CR-P024DC1	24V DC	1SVR405600R0000
CR-P048DC1	48V DC	1SVR405600R6000
CR-P110DC1	110V DC	1SVR405600R8000
CR-P024AC1	24V AC	1SVR405600R1000
CR-P048AC1	48V AC	1SVR405600R5000
CR-P110AC1	110V AC	1SVR405600R7000
CR-P120AC1	120V AC	1SVR405600R2000
CR-P230AC1	230V AC	1SVR405600R3000

2 c/o contacts: 250 V, 8 A

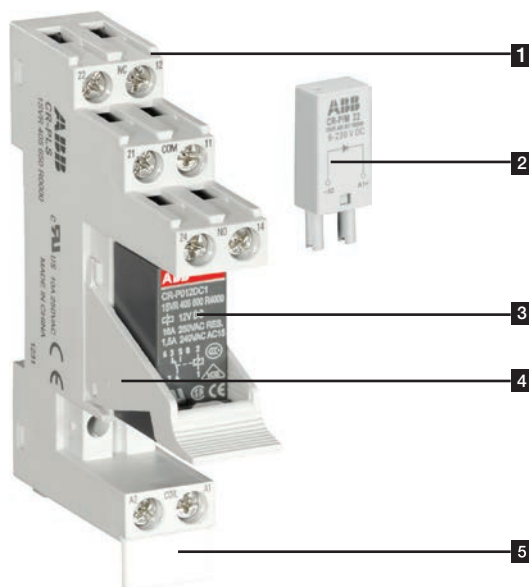
CR-P012DC2	12V DC	1SVR405601R4000
CR-P024DC2	24V DC	1SVR405601R1000
CR-P048DC2	48V DC	1SVR405601R6000
CR-P024AC2	24V AC	1SVR405601R0000
CR-P048AC22	48V AC	1SVR405601R5000
CR-P110AC2	110V AC	1SVR405601R7000
CR-P120AC2	120V AC	1SVR405601R2000
CR-P230AC2	230V AC	1SVR405601R3000

Interface relays with gold contacts

2 c/o gold contacts: 250 V, 8 A

CR-P024DC2G	24 V DC	1SVR405606R1000
CR-P024AC2G	24 V AC	1SVR405606R0000
CR-P110AC2G	110 V AC	1SVR405606R7000
CR-P230AC2G	230 V AC	1SVR405606R3000

Type	Rated control supply voltage	Product Hierarchy 500003 Order Code
Logical socket with protective separation screw	CR-PLS	1SVR405650R0000
Logical socket screw	CR-PLSx	1SVR405650R0100
Logical socket spring	CR-PLC	1SVR405650R0200
Standard socket screw	CR-PSS	1SVR405650R1000
Plastic holder for socket	CR-PH	1SVR405659R0000
Jumper bar for sockets with screw connection	CR-PJ	1SVR405658R5000
Marker	CR-PM	1SVR405658R0000



- 1 Socket
- 2 Pluggable function module
- 3 Interface relays
- 4 Holder
- 5 Marker

Pluggable interface relays CR-M

Miniature relays



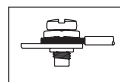
Connection terminals



screw



spring



fork-type

CR-P/M range

Rated supply voltage	Description	Version	Part Number	Product Hierarchy 500003 Order Code
6-220 V DC	Diode - Reverse polarity protection/free wheeling diode	A1+, A2-	CR-P/M 22	1SVR405651R0000
6-24V DC		red, A1+, A2-	CR-P/M 42	1SVR405652R0000
24-60V DC		green, A1+, A2-	CR-P/M 42V	1SVR405652R1000
110V DC		red, A1+, A2-	CR-P/M 42B	1SVR405652R4000
6-24V AC	Diode and LED - Reverse polarity protection/free wheeling diode	green, A1+, A2-	CR-P/M 42BV	1SVR405652R4100
24-60V AC		red, A1+, A2-	CR-P/M 42C	1SVR405652R9000
110-230V AC/DC		green, A1+, A2-	CR-P/M 42CV	1SVR405652R9100
6-24V AC/DC	Spark quenching		CR-P/M 52B	1SVR405653R0000
24-60V AC/DC			CR-P/M 52D	1SVR405653R4000
110V DC 110-230V AC			CR-P/M 52C	1SVR405653R1000
-24 V AC/DC	Diode, LED and reverse polarity protection	red, for DC A1+, A2-	CR-P/M 62	1SVR405654R0000
24-60 V AC/DC		green, for DC A1+, A2-	CR-P/M 62V	1SVR405654R1000
		red, for DC A1+, A2-	CR-P/M 62E	1SVR405654R4000
110 V DC, 110-230 V AC		green, for DC A1+, A2-	CR-P/M 62EV	1SVR405654R4100
		red, for DC A1+, A2-	CR-P/M 92	1SVR405654R0100
		green, for DC A1+, A2-	CR-P/M 92V	1SVR405654R1100
6-24 V AC/DC	Varistor and LED, Overvoltage protection	red, for DC A1+, A2-	CR-P/M 62C	1SVR405655R0000
24-60 V AC/DC		green, for DC A1+, A2	CR-P/M 62CV	1SVR405655R1000
		red, for DC A1+, A2-	CR-P/M 62D	1SVR405655R4000
110 V DC, 110-230 V AC		green, for DC A1+, A2-	CR-P/M 62DV	1SVR405655R4100
		red, for DC A1+, A2-	CR-P/M 92C	1SVR405655R0100
		green, for DC A1+, A2-	CR-P/M 92CV	1SVR405655R1100
24 V AC	Overvoltage protection		CR-P/M 72	1SVR405656R0000
115 V AC			CR-P/M 72A	1SVR405656R1000
230 V AC			CR-P/M 82	1SVR405656R2000

Pluggable interface relays CR-M

Miniature relays



CR-M

Description

Interface relays are widely used in various industrial applications:

As an interface they link the electronic controlling, e.g. PLC (programmable logic controller), PC or field bus systems, to the sensor / actuator level. Here, they take on various functions: Switching of AC or DC loads with different resistive, inductive and capacitive parts, switching voltages from a few mV up to 250V, switching currents from a few mA up to 16 A, amplification of weak control signals, electrical isolation of control and load circuits, and signal multiplying. In contrast to electronic switching devices, interface relays don't use additional internal protective circuits and thus are overload-proof against short-time variations like current or voltage peaks.

CR-M range without LED

Rated control supply voltage	Outputs	Contact ratings	Type	Product Hierarchy 500003 Order Code		
12 V DC	2 c/o (SPDT)	250 V, 12 A	CR-M012DC2	1SVR405611R4000		
24 V DC			CR-M024DC2	1SVR405611R1000		
48 V DC			CR-M048DC2	1SVR405611R6000		
60 V DC			CR-M060DC2	1SVR405611R4200		
110 V DC			CR-M110DC2	1SVR405611R8000		
125 V DC			CR-M125DC2	1SVR405611R8200		
220 V DC			CR-M220DC2	1SVR405611R9000		
24 V AC			CR-M024AC2	1SVR405611R0000		
48 V AC			CR-M048AC2	1SVR405611R5000		
110 V AC			CR-M110AC2	1SVR405611R7000		
120 V AC			CR-M120AC2	1SVR405611R2000		
230 V AC			CR-M230AC2	1SVR405611R3000		
12 V DC			3 c/o (SPDT)	250 V, 10 A	CR-M012DC3	1SVR405612R4000
24 V DC					CR-M024DC3	1SVR405612R1000
48 V DC	CR-M048DC3	1SVR405612R6000				
60 V DC	CR-M060DC3	1SVR405612R4200				
110 V DC	CR-M110DC3	1SVR405612R8000				
125 V DC	CR-M125DC3	1SVR405612R8200				
220 V DC	CR-M220DC3	1SVR405612R9000				
24 V AC	CR-M024AC3	1SVR405612R0000				
48 V AC	CR-M048AC3	1SVR405612R5000				
60 V AC	CR-M060AC3	1SVR405612R5200				
110 V AC	CR-M110AC3	1SVR405612R7000				
120 V AC	CR-M120AC3	1SVR405612R2000				
230 V AC	CR-M230AC3	1SVR405612R3000				
12 V DC	4 c/o (SPDT)	250 V, 6 A			CR-M012DC4	1SVR405613R4000
24 V DC			CR-M024DC4	1SVR405613R1000		
48 V DC			CR-M048DC4	1SVR405613R6000		
60 V DC			CR-M060DC4	1SVR405613R4200		
110 V DC			CR-M110DC4	1SVR405613R8000		
125 V DC			CR-M125DC4	1SVR405613R8200		
220 V DC			CR-M220DC4	1SVR405613R9000		
24 V AC			CR-M024AC4	1SVR405613R0000		
48 V AC			CR-M048AC4	1SVR405613R5000		
110 V AC			CR-M110AC4	1SVR405613R7000		
120 V AC			CR-M120AC4	1SVR405613R2000		
230 V AC			CR-M230AC4	1SVR405613R3000		

Pluggable interface relays

Miniature relays



CR-M

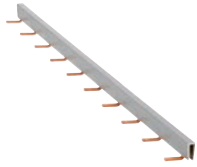
Rated control supply voltage	Outputs	Contact ratings	Type	Product Hierarchy 500003 Order Code
12 V DC	2 c/o (SPDT) with LED	250 V, 12 A	CR-M012DC2L	1SVR405611R4100
24 V DC			CR-M024DC2L	1SVR405611R1100
48 V DC			CR-M048DC2L	1SVR405611R6100
60 V DC			CR-M060DC2L	1SVR405611R4300
110 V DC			CR-M110DC2L	1SVR405611R8100
125 V DC			CR-M125DC2L	1SVR405611R8300
220 V DC			CR-M220DC2L	1SVR405611R9100
24 V AC			CR-M024AC2L	1SVR405611R0100
48 V AC			CR-M048AC2L	1SVR405611R5100
110 V AC			CR-M110AC2L	1SVR405611R7100
120 V AC			CR-M120AC2L	1SVR405611R2100
230 V AC			CR-M230AC2L	1SVR405611R3100
12 V DC	3 c/o (SPDT) with LED	250 V, 10 A	CR-M012DC3L	1SVR405612R4100
24 V DC			CR-M024DC3L	1SVR405612R1100
48 V DC			CR-M048DC3L	1SVR405612R6100
60 V DC			CR-M060DC3L	1SVR405612R4300
110 V DC			CR-M110DC3L	1SVR405612R8100
125 V DC			CR-M125DC3L	1SVR405612R8300
220 V DC			CR-M220DC3L	1SVR405612R9100
24 V AC			CR-M024AC3L	1SVR405612R0100
48 V AC			CR-M048AC3L	1SVR405612R5100
110 V AC			CR-M110AC3L	1SVR405612R7100
120 V AC			CR-M120AC3L	1SVR405612R2100
230 V AC			CR-M230AC3L	1SVR405612R3100
12 V DC	4 c/o (SPDT) with LED	250 V, 6 A	CR-M012DC4L	1SVR405613R4100
24 V DC			CR-M024DC4L	1SVR405613R1100
48 V DC			CR-M048DC4L	1SVR405613R6100
60 V DC			CR-M060DC4L	1SVR405613R4300
110 V DC			CR-M110DC4L	1SVR405613R8100
125 V DC			CR-M125DC4L	1SVR405613R8300
220 V DC			CR-M220DC4L	1SVR405613R9100
24 V AC			CR-M024AC4L	1SVR405613R0100
48 V AC			CR-M048AC4L	1SVR405613R5100
110 V AC			CR-M110AC4L	1SVR405613R7100
120 V AC			CR-M120AC4L	1SVR405613R2100
230 V AC2			CR-M230AC4L	1SVR405613R3100
24 V DC	4 c/o (SPDT), LED and free-wheeling diode	250 V, 6 A	CR-M024DC4LD	1SVR405614R1100
24 V DC	4 c/o (SPDT), gold contacts	250 V, 6 A	CR-M024DC4G	1SVR405618R1000
24 V AC			CR-M024AC4G	1SVR405618R0000
110 V AC			CR-M110AC4G	1SVR405618R7000
230 V AC			CR-M230AC4G	1SVR405618R3000
12 V DC	4 c/o (SPDT) with gold contacts and LED	250 V / 6 A	CR-M012DC4LG	1SVR405618R4100
24 V DC			CR-M024DC4LG	1SVR405618R1100
48 V DC			CR-M048DC4LG	1SVR405618R6100
60 V DC			CR-M060DC4LG	1SVR405618R4300
110 V DC			CR-M110DC4LG	1SVR405618R8100
125 V DC			CR-M125DC4LG	1SVR405618R8300
220 V DC			CR-M220DC4LG	1SVR405618R9100
24 V AC			CR-M024AC4LG	1SVR405618R0100
48 V AC			CR-M048AC4LG	1SVR405618R5100
110 V AC			CR-M110AC4LG	1SVR405618R7100
120 V AC			CR-M120AC4LG	1SVR405618R2100
230 V AC			CR-M230AC4LG	1SVR405618R3100
12 V DC	4 c/o (SPDT) with gold contacts, LED and free-wheeling diode		CR-M012DC4LDG	1SVR405618R4400
24 V DC			CR-M024DC4LDG	1SVR405618R1400

Pluggable interface relays CR-M

Miniature relays



CR-M4SS



CR-MJ

Version	Connection terminal	Type	Product Hierarchy 500003 Order Code
Logical socket for 2 c/o	screw	CR-M2LS	1SVR405651R1100
Logical socket for 3 c/o		CR-M3LS	1SVR405651R2100
Logical socket for 2/4 c/o		CR-M4LS	1SVR405651R3100
Logical socket for 2 c/o	spring	CR-M2LC	1SVR405651R1200
Logical socket for 2/4 c/o		CR-M4LC	1SVR405651R3200
Standard socket for 2 c/o	screw	CR-M2SS	1SVR405651R1000
Standard socket for 3 c/o		CR-M3SS	1SVR405651R2000
Standard socket for 2/4 c/o		CR-M4SS	1SVR405651R3000
Standard socket for 2 c/o	fork type	CR-M2SF	1SVR405651R1300
Standard socket for 2/4 c/o		CR-M4SF	1SVR405651R3300
Plastic holder		CR-MH	1SVR405659R1000
Metal holder		CR-MH1	1SVR405659R1100
Jumper bar for sockets with screw connection		CR-MJ	1SVR405658R6000
Marker		CR-MM	1SVR405658R1000

Pluggable universal relays CR-U

Miniature relays

Description

Interface relays are widely used in various industrial applications:

As an interface they link the electronic controlling, e.g. PLC (programmable logic controller), PC or field bus systems, to the sensor / actuator level. Here, they take on various functions: Switching of AC or DC loads with different resistive, inductive and capacitive parts, switching voltages from a few mV up to 250 V, switching currents from a few mA up to 16 A, amplification of weak control signals, electrical isolation of control and load circuits, and signal multiplying. In contrast to electronic switching devices, interface relays don't use additional internal protective circuits and thus are overload-proof against short-time variations like current or voltage peaks.



CR-U

Rated control supply voltage	Outputs	Contact ratings	Type	Product Hierarchy 500003 Order Code
12 V DC	2 c/o without LED	250 V, 10 A	CR-U012DC2	1SVR405621R4000
24 V DC			CR-U024DC2	1SVR405621R1000
48 V DC			CR-U048DC2	1SVR405621R6000
110 V DC			CR-U110DC2	1SVR405621R8000
220 V DC			CR-U220DC2	1SVR405621R9000
24 V AC			CR-U024AC2	1SVR405621R0000
48 V AC			CR-U048AC2	1SVR405621R5000
110 V AC			CR-U110AC2	1SVR405621R7000
120 V AC			CR-U120AC2	1SVR405621R2000
230 V AC			CR-U230AC2	1SVR405621R3000
12 V DC	3 c/o without LED	250 V, 10 A	CR-U012DC3	1SVR405622R4000
24 V DC			CR-U024DC3	1SVR405622R1000
48 V DC			CR-U048DC3	1SVR405622R6000
110 V DC			CR-U110DC3	1SVR405622R8000
125 V DC			CR-U125DC3	1SVR405622R8200
220 V DC			CR-U220DC3	1SVR405622R9000
24 V AC			CR-U024AC3	1SVR405622R0000
48 V AC			CR-U048AC3	1SVR405622R5000
60 V AC			CR-U060AC3	1SVR405622R5200
110 V AC			CR-U110AC3	1SVR405622R7000
120 V AC	CR-U120AC3	1SVR405622R2000		
230 V AC	CR-U230AC3	1SVR405622R3000		
12 V DC	2 c/o with LED	250 V, 10 A	CR-U012DC2L	1SVR405621R4100
24 V DC			CR-U024DC2L	1SVR405621R1100
48 V DC			CR-U048DC2L	1SVR405621R6100
110 V DC			CR-U110DC2L	1SVR405621R8100
220 V DC			CR-U220DC2L	1SVR405621R9100
24 V AC			CR-U024AC2L	1SVR405621R0100
48 V AC			CR-U048AC2L	1SVR405621R5100
110 V AC			CR-U110AC2L	1SVR405621R7100
120 V AC			CR-U120AC2L	1SVR405621R2100
230 V AC			CR-U230AC2L	1SVR405621R3100
12 V DC	3 c/o with LED	250 V, 10 A	CR-U012DC3L	1SVR405622R4100
24 V DC			CR-U024DC3L	1SVR405622R1100
48 V DC			CR-U048DC3L	1SVR405622R6100
110 V DC			CR-U110DC3L	1SVR405622R8100
220 V DC			CR-U220DC3L	1SVR405622R9100
24 V AC			CR-U024AC3L	1SVR405622R0100
48 V AC			CR-U048AC3L	1SVR405622R5100
110 V AC			CR-U110AC3L	1SVR405622R7100
120 V AC			CR-U120AC3L	1SVR405622R2100
230 V AC			CR-U230AC3L	1SVR405622R3100



CR-U2S

Version	Type	Product Hierarchy 500003 Order Code
Socket for 2 c/o and module	CR-U2S	1SVR405670R0000
Socket for 3 c/o and module	CR-U3S	1SVR405660R0000
Socket for 3 c/o	CR-U3E	1SVR405660R0100
Socket small for 2 c/o	CR-U2SM	1SVR405670R1100
Socket small for 3 c/o	CR-U3SM	1SVR405660R1100
Holder for CR-U socket	CR-UH	1SVR405669R0000

Pluggable universal relays CR-U

Miniature relays



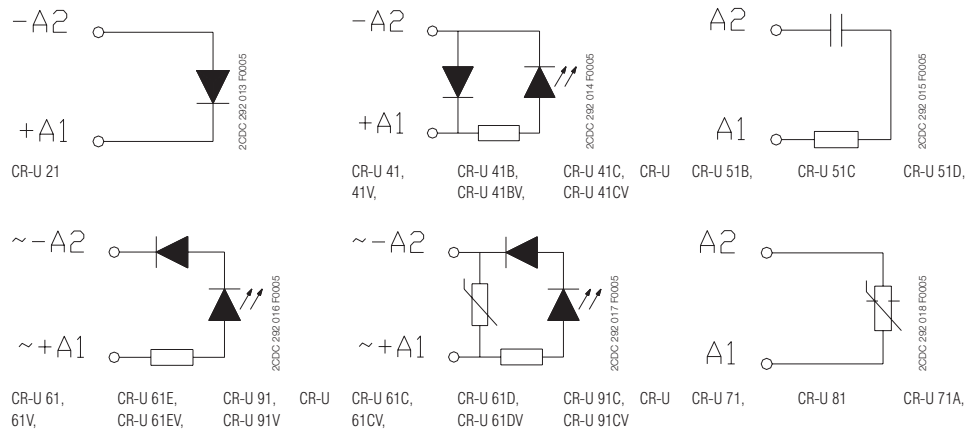
CR-U...



CR-U T

Rated control supply voltage	Description	Version	Type	Product Hierarchy 500003 Order Code
6-220 V DC	Diode - Reverse polarity protection/free wheeling diode	A1+, A2-	CR-U 21	1SVR405661R0000
6-24 V DC	Diode and LED - Reverse polarity protection/free wheeling diode	red, A1+, A2- green, A1+, A2-	CR-U 41	1SVR405662R0000
24-60 V DC		red, A1+, A2-	CR-U 41V	1SVR405662R1000
110 V DC		green, A1+, A2- red, A1+, A2-	CR-U 41B	1SVR405662R4000
6-24 V AC/DC		green, A1+, A2-	CR-U 41BV	1SVR405662R4100
24-60 V AC/DC		red, A1+, A2-	CR-U 41C	1SVR405662R9000
110-230 V AC/DC		green, A1+, A2-	CR-U 41CV	1SVR405662R9100
6-24 V AC/DC	Spark quenching		CR-U 51B	1SVR405663R0000
24-60 V AC/DC			CR-U 51D	1SVR405663R4000
110-230 V AC/DC			CR-U 51C	1SVR405663R1000
6-24 V AC/DC	Diode and LED	red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61	1SVR405664R0000
24-60 V AC/DC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61V	1SVR405664R1000
110 V DC 110-230 V AC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61E	1SVR405664R4000
6-24 V AC/DC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61EV	1SVR405664R4100
24-60 V AC/DC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 91	1SVR405664R0100
110 V DC 110-230 V AC		green, for DC A1+, A2-	CR-U 91V	1SVR405664R1100
6-24 V AC/DC	Varistor and LED Overvoltage protection	red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61C	1SVR405665R0000
24-60 V AC/DC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61CV	1SVR405665R1000
110 V DC 110-230 V AC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61D	1SVR405665R4000
24 V AC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 61DV	1SVR405665R4100
115 V AC		red, for DC A1+, A2- green, for DC A1+, A2-	CR-U 91C	1SVR405665R0100
230 V AC		green, for DC A1+, A2-	CR-U 91CV	1SVR405665R1100
24 V AC	Overvoltage protection, varistor		CR-U 71	1SVR405666R0000
115 V AC			CR-U 71A	1SVR405666R1000
230 V AC			CR-U 81	1SVR405666R2000
24-240 V AC/DC	Multifunction time module	pluggable onto CR-U2S and CR-U3S	CR-U T	1SVR405667R0000

All CR-U modules can be plugged onto sockets CR-U2S and CR-U3S.



Pluggable interface relays CR-S

Miniature relays

Pluggable complete interface relays (relay + socket)

Description	Connection	Rated control supply voltage Us	Part No	Product Hierarchy 400005 Order Code
1 c/o (SPDT) contact, standard contact: 250 V, 6 A	Screw	24 V AC/DC	CR-S024VADC1CRS	1SVR405541R3110
	Spring	24 V AC/DC	CR-S024VADC1CRZ	1SVR405541R3210
	Screw	110 V AC/DC	CR-S110VADC1CRS	1SVR405541R6110
	Spring	110 V AC/DC	CR-S110VADC1CRZ	1SVR405541R6210
	Screw	230 V AC/DC	CR-S230VADC1CRS	1SVR405541R7110
	Spring	230 V AC/DC	CR-S230VADC1CRZ	1SVR405541R7210
1 c/o (SPDT) contact, gold contact: 12 V, 250 mA (3 W)1	Screw	24 V AC/DC	CR-S024VADC1CRGS	1SVR405541R3120
	Spring	24 V AC/DC	CR-S024VADC1CRGZ	1SVR405541R3220
	Screw	110 V AC/DC	CR-S110VADC1CRGS	1SVR405541R6120
	Spring	110 V AC/DC	CR-S110VADC1CRGZ	1SVR405541R6220
	Screw	230 V AC/DC	CR-S230VADC1CRGS	1SVR405541R7120
	Spring	230 V AC/DC	CR-S230VADC1CRGZ	1SVR405541R7220

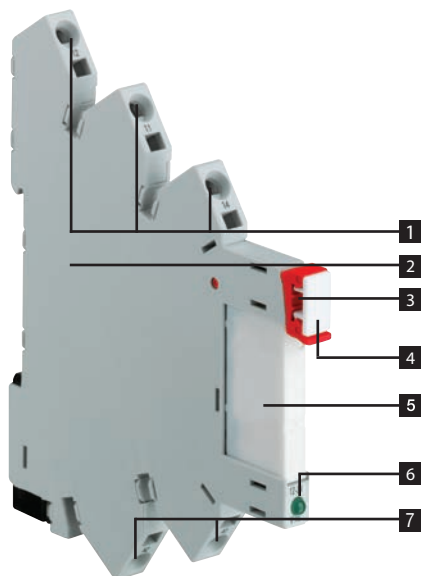
Pluggable interface relays

Description	Rated control supply voltage Us	Part No	Product Hierarchy 400005 Order Code
1 c/o (SPDT) contact, standard contact: 250 V, 6 A	5 V DC	CR-S005VDC1R	1SVR405501R1010
	12 V DC	CR-S012VDC1R	1SVR405501R2010
	24 V DC	CR-S024VDC1R	1SVR405501R3010
	48 V DC	CR-S048VDC1R	1SVR405501R4010
	60 V DC	CR-S060VDC1R	1SVR405501R5010
1 c/o (SPDT) contact, gold contact: 12 V, 250 mA (3 W)1	5 V DC	CR-S005VDC1RG	1SVR405501R1020
	12 V DC	CR-S012VDC1RG	1SVR405501R2020
	24 V DC	CR-S024VDC1RG	1SVR405501R3020
	48 V DC	CR-S048VDC1RG	1SVR405501R4020
	60 V DC	CR-S060VDC1RG	1SVR405501R5020

1) If specified maximum values exceeded, the gold plating is destroyed. The maximum values of the standard contacts are then valid.

Socket

Rated control supply voltage Us	Connection	Part No	Product Hierarchy 400005 Order Code
6-24 V DC	Screw	CR-S006/024VDC1SS	1SVR405521R1100
6-24 V DC	Spring	CR-S006/024VDC1SZ	1SVR405521R1200
12-24 V AC/DC	Screw	CR-S012/024VADC1SS	1SVR405521R3100
12-24 V AC/DC	Spring	CR-S012/024VADC1SZ	1SVR405521R3200
48-60 V AC/DC	Screw	CR-S048/060VADC1SS	1SVR405521R5100
48-60 V AC/DC	Spring	CR-S048/060VADC1SZ	1SVR405521R5200
110-125 V AC/DC	Screw	CR-S110/125VADC1SS	1SVR405521R6100
110-125 V AC/DC	Spring	CR-S110/125VADC1SZ	1SVR405521R6200
220-240 V AC/DC	Screw	CR-S220/240VADC1SS	1SVR405521R7100
220-240 V AC/DC	Spring	CR-S220/240VADC1SZ	1SVR405521R7200



- 1 Output contacts
- 2 Socket
- 3 Relay holder
- 4 Marker
- 5 Interface relay
- 6 LED green: Control supply voltage applied
- 7 Control supply voltage

Pluggable interface relays CR-S

Accessories and assembled combinations

CR-S Range accessories

Version	Part No	Product Hierarchy 400005 Order Code
Jumper bar 20 pole, blue color	CR-SJB20-BLUE	1SVR405598R0700
Jumper bar 20 pole, red color	CR-SJB20-RED	1SVR405598R0800
Jumper bar 20 pole, black color	CR-SJB20-BLACK	1SVR405598R0900
Marker block	CR-SM	1SNB041391R0610
Separator	CR-SSEP	1SVR405599R0000

Relays assemblies

Control Voltage	Connection Terminal	Contact Material	Socket Part No	Socket Order Code	Relay Part No	Relay Order Code
5 V DC	Screw	standard	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1R	1SVR405501R1010
		gold	CR-S006/024VDC1SS	1SVR405521R1100	CR-S005VDC1RG	1SVR405501R1020
	Spring	standard	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1R	1SVR405501R1010
		gold	CR-S006/024VDC1SZ	1SVR405521R1200	CR-S005VDC1RG	1SVR405501R1020
12 V DC	Screw	standard	CR-S006/024VDC1SS or CR-S012/024VADC1SS"	"1SVR405521R1100 or 1SVR405521R3100"	CR-S012VDC1R	1SVR405501R2010
		gold	"CR-S006/024VDC1SS or CR-S012/024VADC1SS"	"1SVR405521R1100 or 1SVR405521R3100"	CR-S012VDC1RG	1SVR405501R2020
	Spring	standard	"CR-S006/024VDC1SZ or CR-S012/024VADC1SZ"	"1SVR405521R1200 or 1SVR405521R3200"	CR-S012VDC1R	1SVR405501R2010
		gold	"CR-S006/024VDC1SZ or CR-S012/024VADC1SZ"	"1SVR405521R1200 or 1SVR405521R3200"	CR-S012VDC1RG	1SVR405501R2020
12 V AC	Screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1R	1SVR405501R2010
		gold	CR-S012/024VADC1SS	1SVR405521R3100	CR-S012VDC1RG	1SVR405501R2020
	Spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1R	1SVR405501R2010
		gold	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S012VDC1RG	1SVR405501R2020
24 V DC	Screw	standard	"CR-S006/024VDC1SS or CR-S012/024VADC1SS"	"1SVR405521R1100 or 1SVR405521R3100"	CR-S024VDC1R	1SVR405501R3010
		gold	"CR-S006/024VDC1SS or CR-S012/024VADC1SS"	"1SVR405521R1100 or 1SVR405521R3100"	CR-S024VDC1RG	1SVR405501R3020
	Spring	standard	"CR-S006/024VDC1SZ or CR-S012/024VADC1SZ"	"1SVR405521R1200 or 1SVR405521R3200"	CR-S024VDC1R	1SVR405501R3010
		gold	"CR-S006/024VDC1SZ or CR-S012/024VADC1SZ"	"1SVR405521R1200 or 1SVR405521R3200"	CR-S024VDC1RG	1SVR405501R3020
24 V AC	Screw	standard	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1R	1SVR405501R3010
		gold	CR-S012/024VADC1SS	1SVR405521R3100	CR-S024VDC1RG	1SVR405501R3020
	Spring	standard	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1R	1SVR405501R3010
		gold	CR-S012/024VADC1SZ	1SVR405521R3200	CR-S024VDC1RG	1SVR405501R3020
48 V AC/DC	Screw	standard	CR-S048/060VADC1SS	1SVR405521R5100	CR-S048VDC1R	1SVR405501R4010
		gold	CR-S048/060VADC1SS	1SVR405521R5100	CR-S048VDC1RG	1SVR405501R4020
	Spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1R	1SVR405501R4010
		gold	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S048VDC1RG	1SVR405501R4020
60 V AC/DC	Screw	standard	CR-S048/060VADC1SS	1SVR405521R5100	CR-S060VDC1R	1SVR405501R5010
		gold	CR-S048/060VADC1SS	1SVR405521R5100	CR-S060VDC1RG	1SVR405501R5020
	Spring	standard	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1R	1SVR405501R5010
		gold	CR-S048/060VADC1SZ	1SVR405521R5200	CR-S060VDC1RG	1SVR405501R5020
110-125 V AC/DC	Screw	standard	CR-S110/125VADC1SS	1SVR405521R6100	CR-S060VDC1R	1SVR405501R5010
		gold	CR-S110/125VADC1SS	1SVR405521R6100	CR-S060VDC1RG	1SVR405501R5020
	Spring	standard	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1R	1SVR405501R5010
		gold	CR-S110/125VADC1SZ	1SVR405521R6200	CR-S060VDC1RG	1SVR405501R5020
220-240 V AC/DC	Screw	standard	CR-S220/240VADC1SS	1SVR405521R7100	CR-S060VDC1R	1SVR405501R5010
		gold	CR-S220/240VADC1SS	1SVR405521R7100	CR-S060VDC1RG	1SVR405501R5020
	Spring	standard	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1R	1SVR405501R5010
		gold	CR-S220/240VADC1SZ	1SVR405521R7200	CR-S060VDC1RG	1SVR405501R5020

Interface relays and optocouplers

R600 optocouplers



	Type	Product Hierarchy 400005 Order Code
	OBIC 0100 5-12VDC	1SNA645047R0000
	OBIC 0100 5-12VDC	1SNA645547R0200
	OBIC 0100 24VDC	1SNA645021R2600
	OBIC 0100 24VDC	1SNA645521R2000
	OBIC 0100 48-60VAC/DC	1SNA645049R1200
	OBIC 0100 48-60VAC/DC	1SNA64549R1400
	OBIC 0100 115-230VAC/DC	1SNA645022R2700
	OBIC 0100 115-230VAC/DC	1SNA645522R2100
	OBIC 1000-5-12VDC	1SNA645050R1700
	OBROC 1000-5-12VDC	1SNA645550R1100
	OBIC 1000-24VDC	1SNA645051R0400
	OBIC 1500-24VAC/DC	1SNA645025R2200
	OBIC 5000-24VDC	1SNA645024R2100
	OBROC 1000-24VDC	1SNA645551R0600
	OBROC 1500-24VAC/DC	1SNA645525R2400
	OBROC 5000-24VDC	1SNA645524R2300
	OBIC 1000-48-60VAC/DC	1SNA645053R0600
	OBROC 1000-48-60VAC/DC	1SNA645553R0000
	OBIC 1000-115VAC/DC	1SNA645054R0700
	OBIC 5000-115VAC/DC	1SNA645058R1300
	OBROC 1000-115VAC/DC	1SNA645554R0100
	OBROC 5000-115VAC/DC	1SNA645558R1500
	OBIC 1000-230VAC/DC	1SNA645026R2300
	OBIC 5000-230VAC/DC	1SNA645059R1400

	OBIC 0100 5-12VDC	OBIC 0100 5-12VDC	OBIC 0100 24VDC	OBIC 0100 24VDC	OBIC 0100 48-60VAC/DC	OBIC 0100 48-60VAC/DC	OBIC 0100 115-230VAC/DC	OBIC 0100 115-230VAC/DC	OBIC 1000-5-12VDC	OBROC 1000-5-12VDC	OBIC 1000-24VDC	OBIC 1500-24VAC/DC	OBIC 5000-24VDC	OBROC 1000-24VDC	OBROC 1500-24VAC/DC	OBROC 5000-24VDC	OBIC 1000-48-60VAC/DC	OBROC 1000-48-60VAC/DC	OBIC 1000-115VAC/DC	OBIC 5000-115VAC/DC	OBROC 1000-115VAC/DC	OBROC 5000-115VAC/DC	OBIC 1000-230VAC/DC	OBIC 5000-230VAC/DC	
Input voltage																									
5 - 12 V DC	■	■							■	■															
24 V DC			■	■							■	■	■	■	■										
48 - 60 V DC					■	■																			
115 - 230 V DC							■	■																	
115 V DC																					■	■	■	■	
230 V DC																								■	■
24 V AC															■										
48 - 60 V AC					■	■																			
115-230 V AC							■	■																	
115 V AC																					■	■	■	■	
230 V AC																								■	■
Output rating																									
100 mA	■	■	■	■	■	■	■	■																	
2 A									■	■	■	■									■	■	■	■	
5 A													■												
1 A														■											
Output voltage																									
58 V DC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
400 V AC																									
Terminal type																									
Screw	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Spring		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

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