

CSG141

Overcurrent relay for DC currents



CSG140

Product description

The relays of the CSG141 series are designed to monitor the overcurrent of DC systems. The current is measured directly or by means of a shunt. External supply voltage is required. The response value, response delay and hysteresis are set via potentiometers.

Typical applications

- Monitoring the load and functionality of electric loads
- Power consumption monitoring
- Monitoring of low-power motors, displays

Function

The current to be monitored is connected to the terminals L1+ or L2+ or L3+. If the current exceeds the set response value "Y", the alarm relay switches after the response delay has elapsed and the alarm LED "I>Y" lights up. When the measured quantity exceeds the set response value plus hysteresis "Hy", the relay switches back to its original state within approximately 70 ms. The operating principle of the alarm relay can be set to N/O or N/C operation.

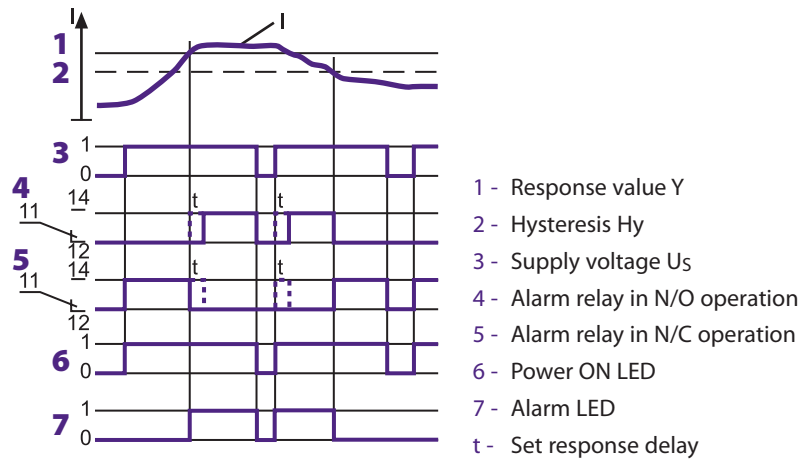
Device features

- Overcurrent relay for DC currents
- External supply voltage
- 4 device variants with adjustable response values: 0.5...5/2...20 mA, 0.5...5 A, 1...10 A, 6...60/50...500 mV
- Adjustable response delay 0.1...10 s
- Adjustable hysteresis 2...10 %
- Power On LED, Alarm LED
- Alarm relay with two potential-free changeover contacts
- 45 mm enclosure

Note

In case of new installations refer to CME420.

Approvals



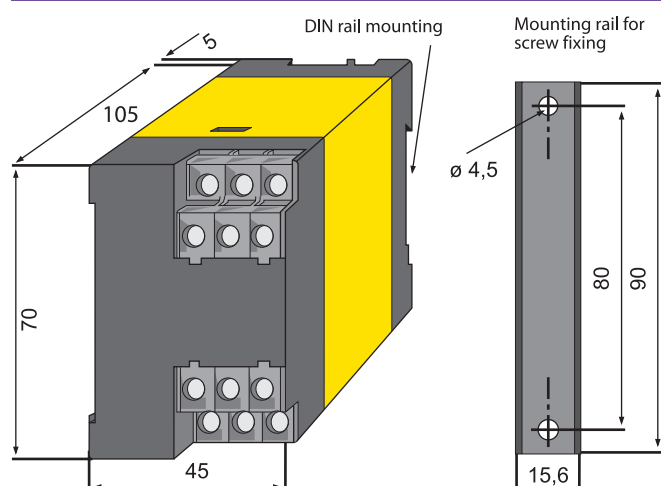
Ordering information

Type	Supply voltage Us	Response value	Art. No.
CSG141	AC 50...60 Hz 85...275 V	0.5...5 A	B 943 605
CSG141	AC 50...60 Hz 85...275 V	0.5...5 mA / 2...20 mA	B 943 602
CSG141	AC 50...60 Hz 85...275 V	1...10 A	B 943 603
CSG141	AC 50...60 Hz 85...275 V	6...60 mV / 50...500 mV	B 943 607
CSG141	DC 9.6...84 V	0.5...5 mA / 2...20 mA	B 943 617
CSG141	DC 9.6...84 V	DC 1...10 A	B 943 618
CSG141	DC 9.6...84 V	6...60 mV / 50...500 mV	B 943 251
CSG141	DC 77...286 V	0.5...5 mA / 2...20 mA	B 943 612
CSG141	DC 77...286 V	6...60 mV / 50...500 mV	B 943 624

Accessories

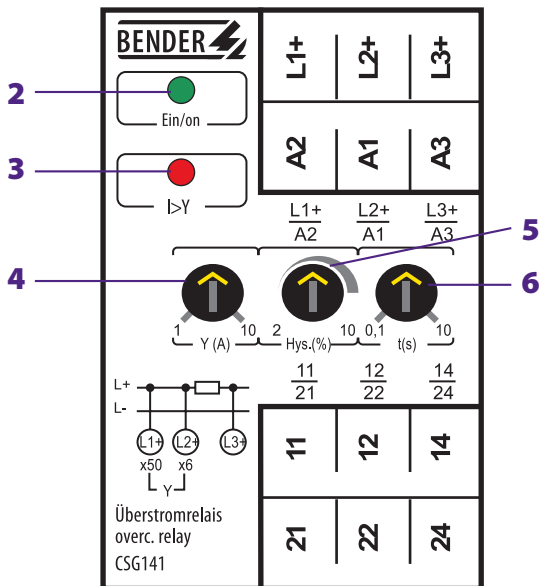
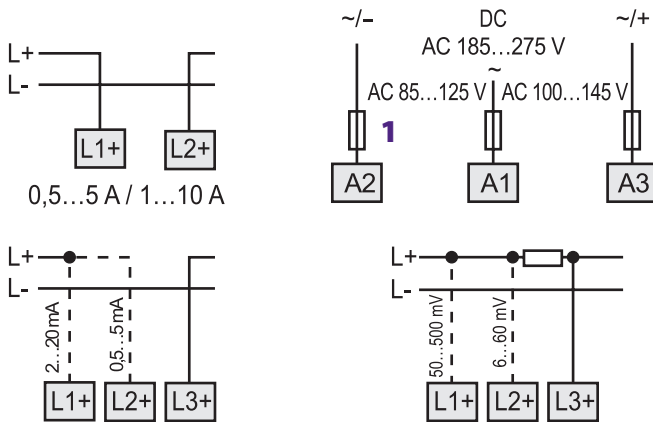
Mounting rail for screw fixing	B974728
--------------------------------	---------

Dimension diagram X140 Dimensions in mm



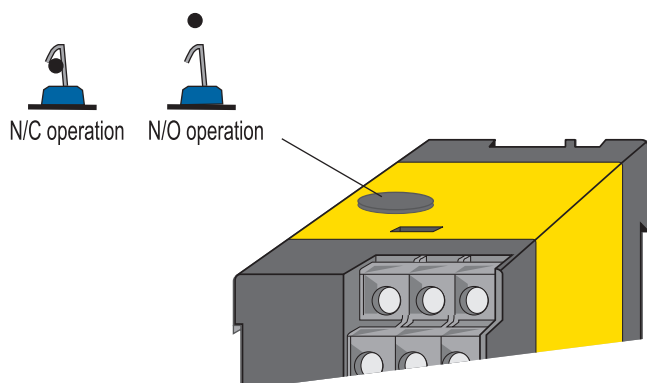


Wiring diagram



- 1 - 6 A fuse
- 2 - Power ON LED "Ein/on"
- 3 - Alarm LED "UVW>Y"
- 4 - Adjustable response value "Y(%)"
- 5 - Adjustable hysteresis "Hys(%)"
- 6 - Adjustable response delay "t(s)"
- 7 - Alarm relay

Setting of the operating principle of the alarm relay



Technical data overcurrent relay CSG141

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	DC 300 V
Rated impulse voltage/pollution degree	4 kV/3

Supply voltage

Supply voltage U_S	see ordering information
Power consumption	≤ 3 VA

Measuring circuit

Response values	DC 0.5...5 A
	DC 0.5...5 / 2...20 mA
	DC 1...10 A
	DC 6...60 / 50...500 mV

Overload capability measuring input

Response value	0.5...5 mA	2...20 mA	6...60 mV	50...500 mV	0.5...5 A	1...10 A
Load	12 Ω	3 Ω	1 k Ω	8,2 k Ω	10 m Ω	10 m Ω
Overload capability	0.5 A 1s	0.5 A 1s	30V 1s	100V 1s	40 A 1s	40 A 1s
	0.2 A DB	0.2 A DB	6V DB	50V DB	12 A DB	12 A DB
Response delay t	0.1...10 s (0.1)*					
Hysteresis, adjustable	2...10 % (2 %)*					
Delay on release	approx. 70 ms					
Repetition accuracy	± 1.5 %					
Temperature influence	< 0.05 % / $^{\circ}$ C					
Recovery time t_b	≤ 200 ms					

Switching elements

Number of changeover contacts	1 x 2
Operating principle	N/C operation/ N/O operation (N/O operation)*
Electrical service life, number of cycles	12000
Contact class IEC 60255 Part 0-20	IIB
Rated contact voltage	AC 250 V/DC 300 V
Limited making capacity	AC/DC 5 A
Breaking capacity	2 A, AC 230 V, cos phi 0.4 0.2 A, DC 220 V, L/R = 0.04 s

Environment / EMC

EMC immunity	acc. to IEC 61000-6-2
EMC emission	acc. to IEC 61000-6-4
Shock resistance IEC 60068-2-27 (during operation)	15 g/11 ms
Bumping IEC 60068-2-29 (during transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (during operation)	1 g / 10...150 Hz
Vibration resistance IEC 60068-2-6 (during transport)	2 g / 10...150 Hz
Ambient temperature, during operation	-15...+50 $^{\circ}$ C
Ambient temperature, during storage	-20...+70 $^{\circ}$ C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

Other

Operating mode	continuous operation
Mounting	any position
Connection	Flat terminals with self-lifting clamp washers
Connection properties	
single wire	2 x (1...1.5) mm ²
flexible with end ferrule	2 x (0.75...1.5) mm ²
Degree of protection, internal components (IEC 60529)	IP50
Degree of protection, terminals/with terminal covers (IEC 60529)	IP10/IP20
Screw fixing	with mounting rail
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Product standard	IEC 60255-6
Operating manual	BP307002
Weight	≤ 250 g

() * factory setting