

Undercurrent relay CSE140

for AC currents





CSE140

Device features

- Undercurrent relays for AC currents
- External supply voltage
- 4 device variants with adjustable response values: 0.5...5 A, 0.1...1 A, 1...10 A, 5...50 A (with measuring current transformer)
- 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



Product description

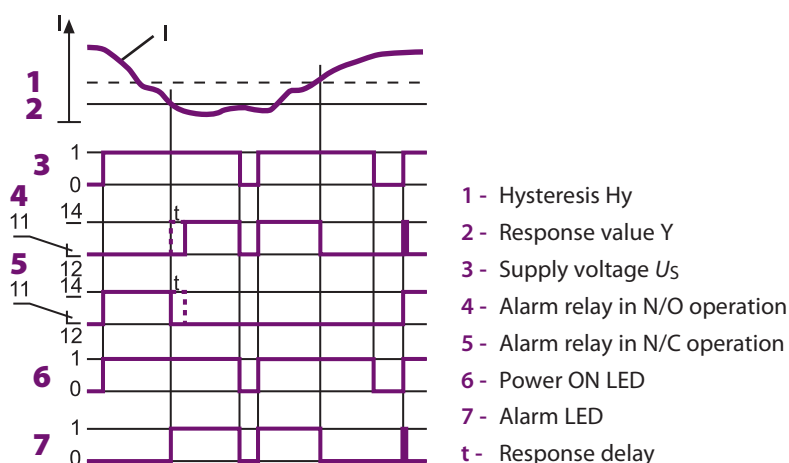
The relays of the CSE140 series monitor the undercurrent in AC systems. External supply voltage is required. The response value, response delay and hysteresis are set via potentiometers.

Typical applications

- Monitoring the load and functionality of electric loads
- Power consumption monitoring
- Monitoring of lighting circuits, screw conveyors, dust removal etc.
- On/off switching of loads when a certain voltage value is reached

Function

The current to be monitored is connected to the terminals K and L. If the current drops below 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.



Note

False alarms resulting from operational measurement errors can be suppressed by setting a time delay. The set response delay remains effective even in case of complete supply voltage failure.

Ordering information

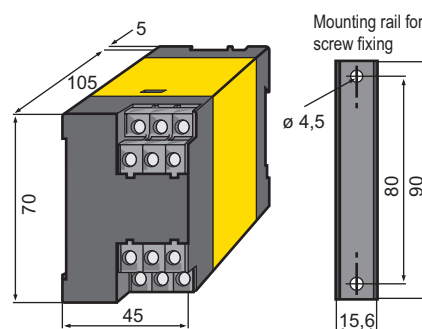
Supply voltage U_s	Response value	Type	Art. No.
AC 85...275 V, 50...60 Hz	1...10 A	CSE140	B 942 612
	0.5...5 A	CSE140	B 942 614
	0.1...1 A	CSE140	B 942 616
	5...50 A	CSE140	B 942 617
(AC 85...275 V, 50...60 Hz)	(50...500 mA)	(CSE140)	(B 942 630)
AC 50...60 Hz/DC 9.6...84 V	0.5...5 A	CSE140	B 942 624
	1...10 A	CSE140	B 942 503
AC 50...60 Hz/DC 77...286 V	0.5...5 A	CSE140	B 942 628

Accessories

Type designation	Art. No.
Measuring current transformers STW2 for B 942 617	B 942 709
Mounting rail for screw fixing	B 974 728

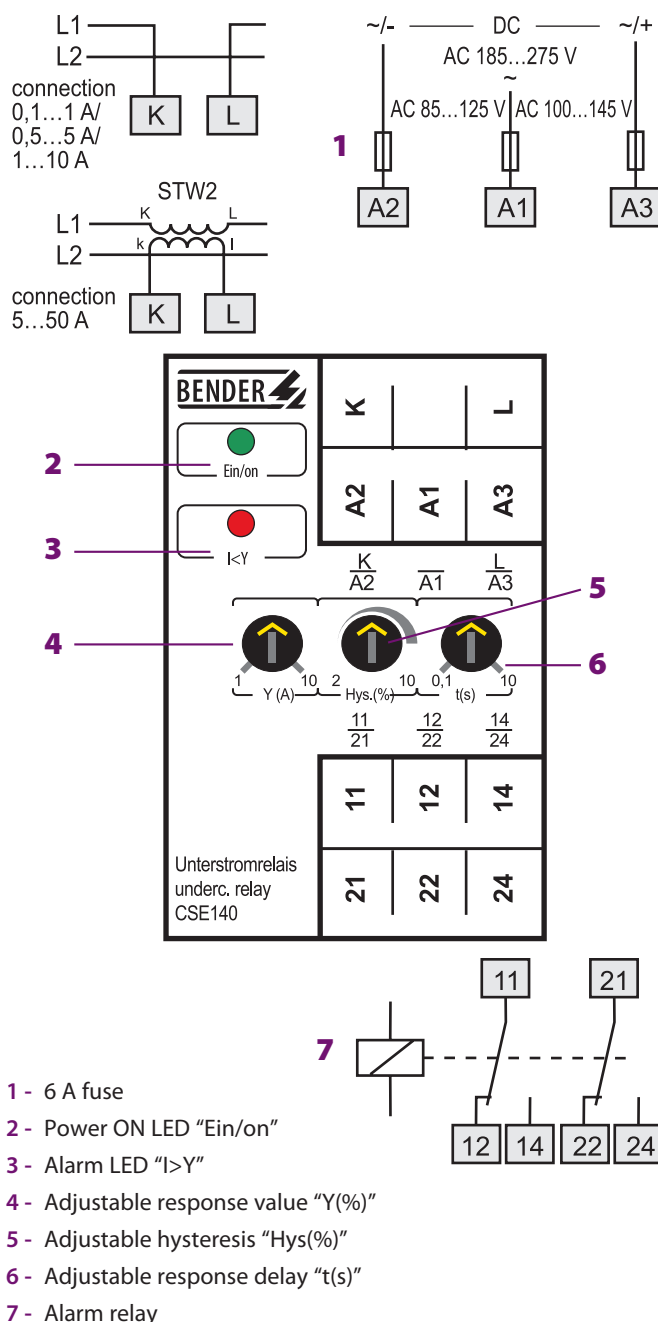
Dimension diagram X140

Dimensions in mm

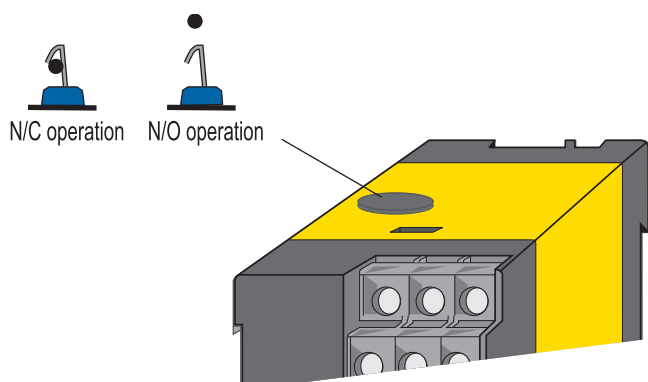




Wiring diagram



Setting of the operating principle of the alarm relay



Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 440 V
Rated impulse voltage/pollution degree	4 kV/3

Supply voltage

Supply voltage U_s	see ordering information
Power consumption	≤ 3 VA

Measuring circuit

Frequency f_n	50...60 Hz
Response values	0.1...1 A 0.5...5 A 1...10 A 5...50 A (with STW2)
Overload capability	40 A 1 s/12 A DB Transformer 10 x I_n
Response delay t	0.1...10 s (0.1)*
Hysteresis	2...10% (2%)*
Delay on release	approx. 70 ms
Repetition accuracy	± 1.5 %
Temperature influence	< 0.05 %/°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 °C
Ambient temperature, during storage	-20...+70 °C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

Connection

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

Other

Operating mode	continuous operation
Mounting	any position
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	BP306002
Weight	≤ 250 g

(*) factory setting



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