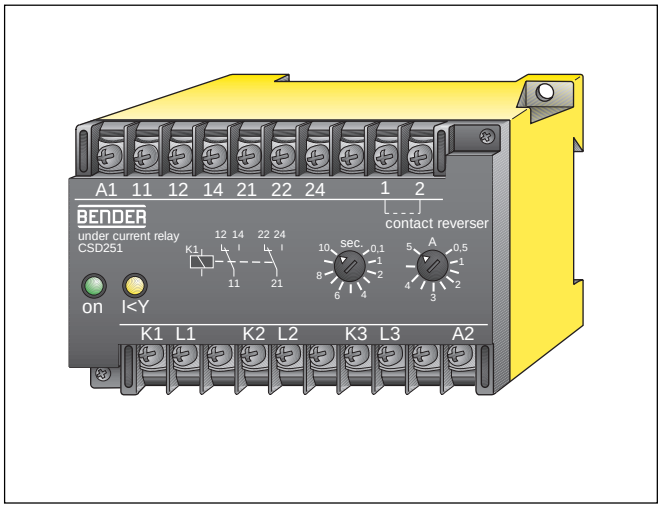
Undercurrent relay

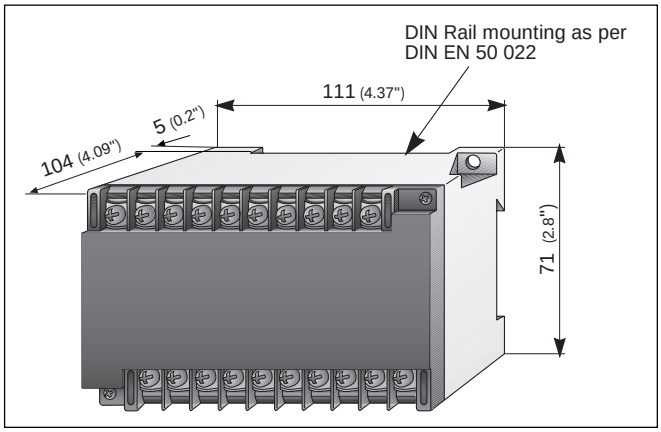
Current monitoring in 3 AC or 3 N/AC mains

CSD250
CSD251
CSD252



- **3 measurement ranges**
  Type CSD250 0,1...1A
  Type CSD251 0,5...5 A
  Type CSD252 1...10 A
- **signals decreasing current in three-phase mains**
- **high reliability and galvanically separation by built-in current transformer**
- **impulse-voltage proof and HF-noise resistant in accordance with VDE and IEC**
- **output relay with two change-over contacts**
- **built-in LED**

Dimension diagram



Function

The response value is adjusted to decreasing current (use as an undercurrent relay). When the system current of one or more conductors decreases the adjusted response value Y, the output relay drops out and the LED I < Y lights up after the selected delay time is exceeded.
The adjustable response delay takes only effect for decreasing current. The response time for increasing current is in a range from ca. 0,1...0,2 s.

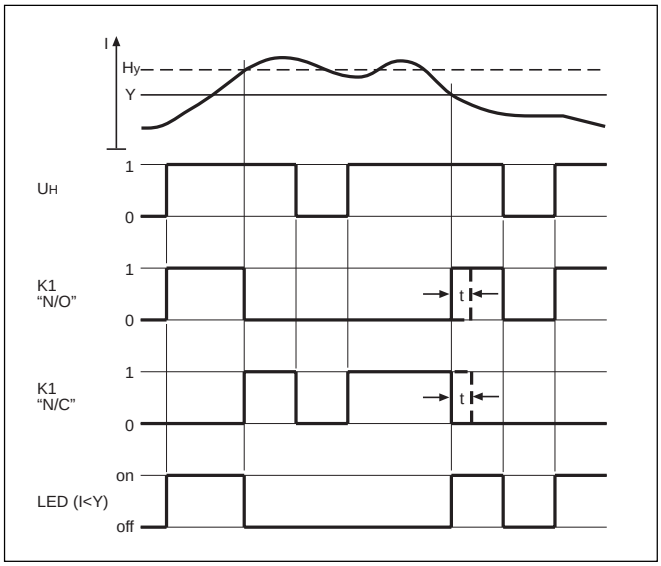
Response values:

Type CSD250 = 0,1...1 A steplessly.
Type CSD251 = 0,5...5 A steplessly.
Type CSD252 = 1...10 A steplessly.

The auxiliary voltage for the internal electronic has to be connected to the terminals A1 and A2.

The function of the output relay is selectable beween normally open and normally closed (see wiring diagram).

Functional diagram



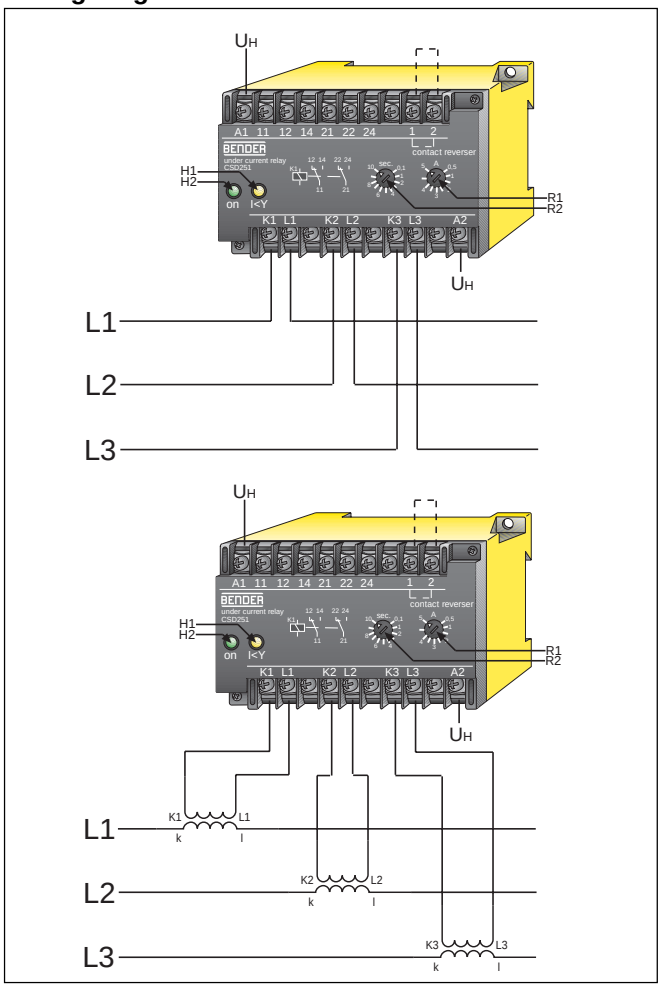
Legend

Hy	switching Hysteresis
K1	output relay
LED	built-in light emitting diode
I	current
U_H	auxiliary voltage
Y	adjusted response value
t	adjusted response retardation
0	relay deenergized
1	relay energized

Technical Data

Nominal insulation voltage:	
Measuring circuit	500 V
Auxiliary voltage circuits	250 V
Contact circuits	250 V
Insulation group	C
Test voltage	2500 / 2000 V
Rated mains current:	
CSD250	1 A
CSD251	5 A
CSD252	10 A
Overload capacity	12 A (permanent operation)
	40 A (1 s)
Frequency range	40...70 Hz
Load:	
CSD250/CSD251	3 x < 0,5 VA
CSD252	3 x < 1,5 VA
Auxiliary voltage U_H	AC 240/220/127/110/100/42/24 V
Voltage range of U_H	80...115%
Frequency range of U_H	40...70 Hz
Max. self-consumption	2,5 VA
Response value (steplessly adjustable):	
CSD250	0,1...1 A
CSD251	0,5...5 A
CSD252	1...10 A
Temperature influence	< 0,05% / °C
Frequency influence	< 0,1% / Hz
Switching hysteresis	ca. 4%
Response time:	
Response retardation (adjustable)	0,1...10 s
Ready to trip time (max.)	0,2 s
off-delay	ca. 0,1...0,2 s
Repeat accuracy	< +/- 1,5%
Temperature influence	< 0,2% / °C
Output relay:	
Switch components	two change-over contacts
Nominal contact voltage	220 V
Switch capacity max.	1100 VA, 55W
at AC 220 V and cos. Phi = 0,4	3 A
at DC 110 V and L/R = 0	0,3 A
Make current / Permanent current	6 A / 5 A
Operating principle,	circuit-opening-or
reversible	circuit-closing connection
Connection diagram no.	Z 320 082
Other details:	
Admissible ambient temperature	
when operating	-15°...+50°C (258...323 K)
when stored	-20°...+70°C (253...343 K)
Tests according to VDE 0435, part 303 and IEC 255-4:	
Impulse voltage strength	class III
HF-noise reststance	class III
Vibration resistance	0,7 mm, 55 Hz
Climatic class according to DIN 40 040	F
Mounting	indifferent
Type of connection	terminal screws M 3,5 with self-lifting clamp-washers clip up terminal covers
Wire cross section	
single wire	2 x (1...1,5 mm²)
fine braid with end sleeve	2 x (0,75...1,5 mm²)
Protection class according to DIN 40 050	
Internal components	IP 50
Terminals	IP 10
with terminal covers	IP 20
Mounting in accordance to DIN EN 50 022	
Weight	approx. 550 g

Wiring diagram



Legend to wiring diagram

R1	Potentiometer for response value
R2	Potentiometer for response retardation
H1	LED (signals I < Y)
H2	LED (signals “operation”)
K1	Output relay with two free change-over contacts
U_H	Auxiliary voltage on terminal A1 and A2

The function of the output relay K1 is free selectable by the terminals 1 and 2.

Notes

Please check the correct auxiliary voltage!

Ordering Details

When ordering, please specify type, rated mains voltage U_N, rated mains current I_N, auxiliary voltage U_H and the rated frequency of rated mains current and auxiliary voltage!
Example: “Current relay type CSD251,
U_N = 3 AC 380 V, 60 Hz; I_N = 5 A
U_H = 24 V, 60 Hz.”

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