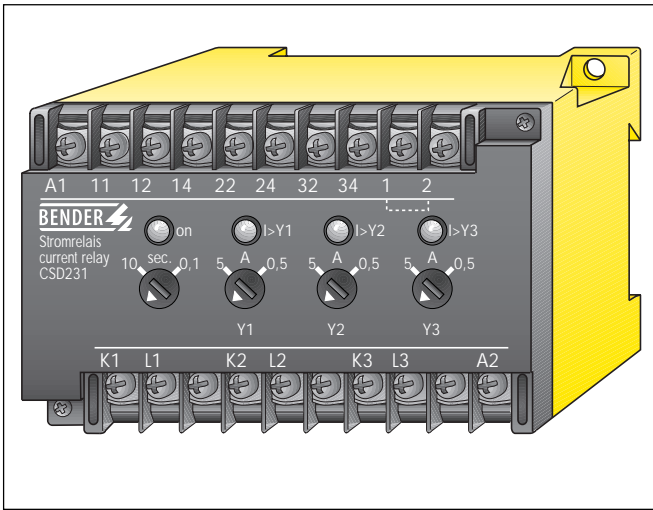




for direct or indirect current monitoring in 3-phase AC,  
3-phase N/AC or up to 3 AC circuits



### Product description

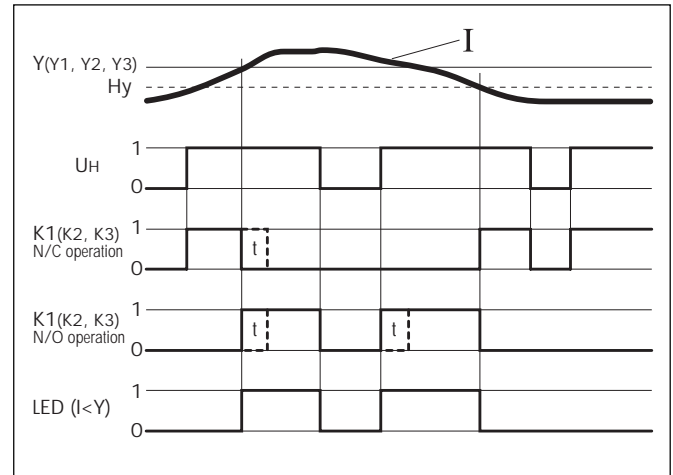
The response values marked on the setting scale are adjusted for current rise (use as overcurrent relay). If one or several input currents exceed the response setting  $Y$ , the output relay receives a switching signal after the selected delay period has expired, and the corresponding LED indicates  $I > Y$ . The selectable response delay is effective only with current rise. With current drop the unit will switch within approx. 0.1 - 0.2 seconds.

The output relay function can be selected (N/C or N/O operation).

### Note:

With relay types CSD230/CSD231/CSD232 the time delay is effective only for the first overcurrent signal. Once the first signal has arrived, subsequent signals coming from the remaining measuring circuits are output without delay.

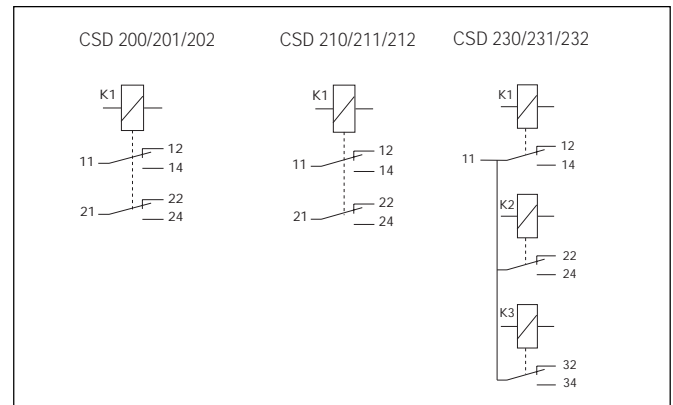
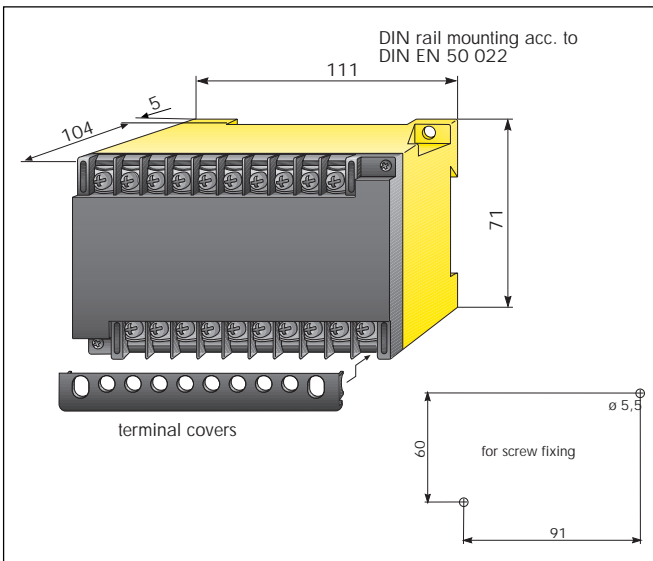
- electronic measuring relay
- high reliability and galvanically separation by built-in current transformer
- impulse-voltage proof and HF-noise resistant in accordance with VDE and IEC
- built-in alarm LEDs
- stepless adjustable range
- stepless adjustable response time
- connection terminals for easy assembly
- three respectively one separated measuring inputs
- three respectively one alarm relay



### Legend

- $H_y$  switching hysteresis
- $K1...$  output relay
- LED built-in alarm LED
- $I$  current
- $U_H$  auxiliary voltage
- $Y...$  adjusted response value
- $t$  adjusted response delay

### Dimension diagram



## Technical Data

### Insulation coordination acc. to IEC 60664-1:

|   |          |
|---|----------|
| Rated insulation voltage                            | AC 250 V |
| Rated impulse withstand voltage/contamination level | 4 kV/3   |
| Dielectric test acc. to IEC 60255                   | 2.5 kV   |

### Supply voltage

|                        |   |
|------------------------|---|
| Supply voltage $U_H$   | AC 40...70 Hz 240/220/127/110/100/42/24 V |
| Voltage range of $U_H$ | 0.8 ... 1.15 x $U_H$                      |
| Max. power consumption | 4.5 VA                                    |

### Response values

|  |                          |
|--|--------------------------|
| Response value (steplessly adjustable) |                          |
| CSD210/CSD230                          | 0.1 ... 1 A              |
| CSD211/CSD231                          | 0.5 ... 5 A              |
| CSD212/CSD232                          | 1 ... 10 A               |
| Influence of ambient temperature       | < 0.05 % / °C            |
| Influence of frequency                 | < 0.1 % / Hz             |
| Switching hysteresis                   | ca. 3 %                  |
| Response delay (steplessly adjustable) | 0.1 ... 10 sec.          |
| Ready to trip time (max.)              | 0.2 sec.                 |
| OFF-delay                              | approx. 0.1 ... 0.2 sec. |
| Influence of ambient temperature       | < 0.2 % / °C             |

### Contact circuit

|   |                       |
|---|-----------------------|
| Switching components                          | see wiring diagram    |
| Contact class acc. to DIN IEC 60255 Teil 0-20 | IIB                   |
| Rated contact voltage                         | AC 250 V/DC 300 V     |
| Admissible number of operations               | 12000 cycles          |
| Limited making capacity                       | UC 5 A                |
| Limited breaking capacity                     |                       |
| at AC 230 V and $\cos \phi = 0.4$             | AC 2 A                |
| at DC 220 V and $L/R = 0.04$ s                | DC 0.2 A              |
| Operating principle                           | N/C- or N/O operation |

### Type tests

#### Test of the Electromagnetic Compatibility (EMC):

##### Immunity against electromagnetic

##### Interferences acc. prEN 50082-2:

##### Impulse voltage and electrical disturbance test acc. to IEC 60255:

|   |           |
|---|-----------|
| Impulse voltage test acc. to IEC 60255-5        | class III |
| Electrical disturbance test acc. to IEC 60255-5 | class III |

##### Emissions acc. to EN 50081-2:

|                                    |                       |
|------------------------------------|-----------------------|
| Emissions acc. to EN 55011/CISPR11 | class B <sup>1)</sup> |
|------------------------------------|-----------------------|

##### Mechanical tests:

|   |                             |
|---|-----------------------------|
| Shock resistance acc. to IEC 6068-2-27  | 15 g/11 ms                  |
| Bumping acc. to IEC 6068-2-29           | 40 g/6 ms                   |
| Vibration strength acc. to IEC 6068-2-6 | 10 ... 150 Hz/0.15 mm - 2 g |

### Environmental conditions

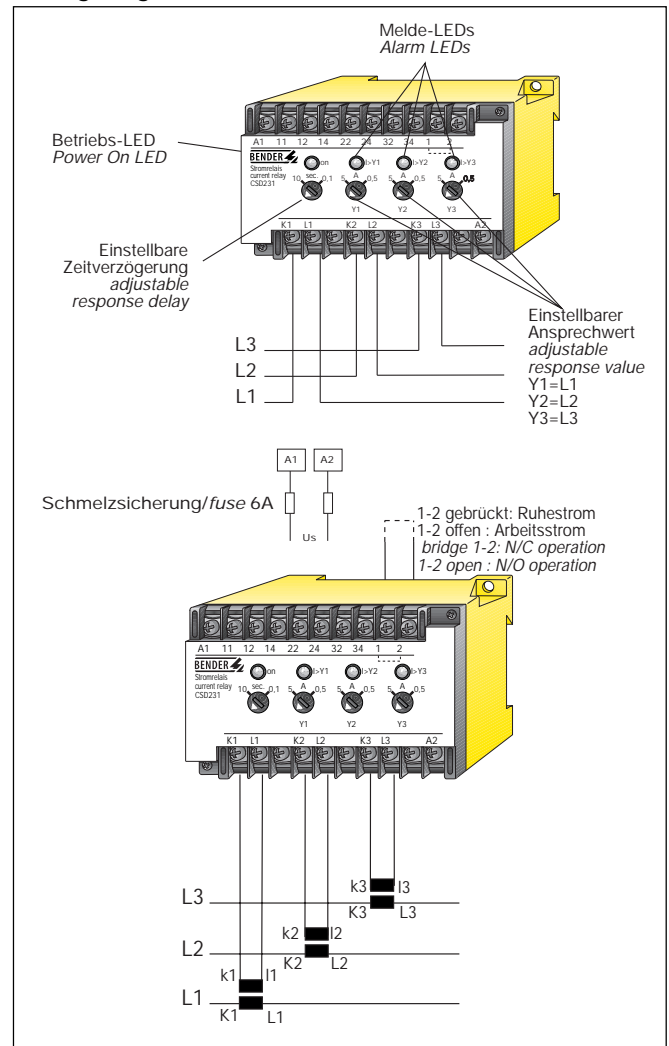
|                                       |   |
|---------------------------------------|---|
| Ambient temperature, during operation | -15°C ... +50°C                               |
| Storage temperature range             | -20°C ... +70°C                               |
| Climatic class acc. to IEC 60721      | 3K5, except condensation and formation of ice |

### General data

|                                   |  |
|-----------------------------------|--|
| Operation class                   | continuous operation                         |
| Mounting position                 | any position                                 |
| Type of connection                | terminals with self-lifting clamp-washers    |
| Wire cross section                |  |
| single wire                       | 2 x (1...1,5 mm <sup>2</sup> )               |
| fine braid                        | 2 x (0.75...1,5 mm <sup>2</sup> )            |
| DIN rail                          | according to DIN EN 50 022 or screw mounting |
| Protection class acc. to EN 60529 |  |
| Internal components               | IP 50  |
| Terminals/with terminal covers    | IP10/IP 20                                   |
| Type of casing                    | X200   |
| Flammability class                | UL94V-0                                      |
| Weight approx.                    | 650 g  |

<sup>1)</sup> Class B devices are suitable for household and industrial use.

## Wiring diagram



## Safety instructions

Please check for correct supply voltage !

Electrical equipment shall only be installed by qualified personnel in consideration of the current safety regulations.

Supplementary to this data sheet you will find enclosed "important safety instructions on the proper use of BENDER products."

## Ordering details

| Type    | Supply voltage $U_H$ | Response value | Art.No.   |
|---------|----------------------|----------------|-----------|
| CSD210  | AC 220 V             | 0.1 ... 1 A    | B 942 179 |
| CSD211Z | AC 220 V             | 0.5 ... 5 A    | B 942 180 |
| CSD212  | AC 220 V             | 0.1 ... 1 A    | B 942 181 |
|         | AC 230 V             | 2 ... 7 A      | B 942 199 |
|         | DC 110 V             | 1 ... 10 A     | B 942 209 |
|         | AC 24 V              | 1 ... 10 A     | B 942 368 |
|         | DC 24 V              | 1 ... 10 A     | B 942 369 |
| CSD230  | AC 220 V             | 0.1 ... 1 A    | B 942 182 |
|         | DC 24 V              | 0.1 ... 1 A    | B 942 213 |
| CSD231  | AC 220 V             | 0.5 ... 5 A    | B 942 183 |
| CSD232  | AC 220 V             | 1 ... 10 A     | B 942 184 |
|         | DC 24 V              | 1 ... 10 A     | B 942 362 |

Other values on request.

Right to modifications reserved