

Signal converter SMI473



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Device features

- 12 digital inputs
- Indicator LED for each channel
- LEDs: Power On, ALARM, activities on the RS-485 interface
- RS-485 interface (BMS bus)
- Operating principle selectable: N/O or N/C operation

Product description

The signal converter SMI473 converts digital signals (operating and alarm messages) to serial output signals for the BMS bus. Its 12 digital inputs for potential-free contacts can be split into two groups as alarm or operating messages. Factory setting: 8 inputs for alarm messages and 4 inputs for operating messages.

Function

The potential-free contacts of the alarm relays of the respective monitoring devices are connected to the digital inputs. One LED indicator is assigned to each of the inputs "IN1" to "IN12". The operating principle of the inputs can be set to N/O or N/C operation via BMS bus.

The SMI473 converts the input signals into serial information for the BMS bus. Via this interface the message can be transferred to other Bender devices (such as MK2430/MK800 alarm indicator and test combinations, TM... indicator and operator panels, COM465xx gateways or CP9xx touch panels).

One common alarm relay is available for the transfer of alarm messages. The operating principle is selectable (factory setting: N/O operation). The SMI473 is suitable for internal as well as external BMS buses. It automatically adjusts to the appropriate baud rate.

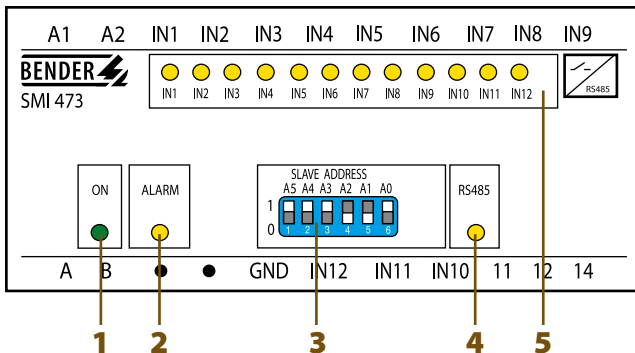
MK2430/MK800 alarm indicator and test combinations, TM... indicator and operator panels or gateways are capable of monitoring the SMI473 for failure.

Note: A BMS bus master is required to operate the SMI473.

Warning!

This is a class A Product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Operating elements



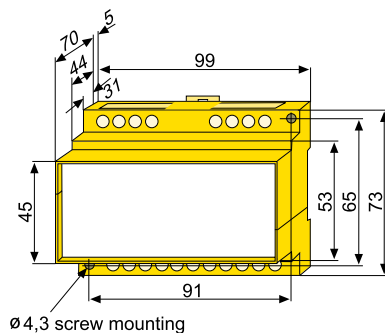
- 1 - "ON" LED: operation indicator
- 2 - "Alarm" LED: lights while an alarm is present at one of the alarm inputs. The LED flashes when a fault has occurred.
- 3 - DIP switch to set the device address (address range 3...63).
- 4 - "RS-485" LED: lights in case of activities on the BMS bus
- 5 - "IN1...IN12" LED: LED lights while an alarm or operating message (high) is present at the respective input.

Ordering information

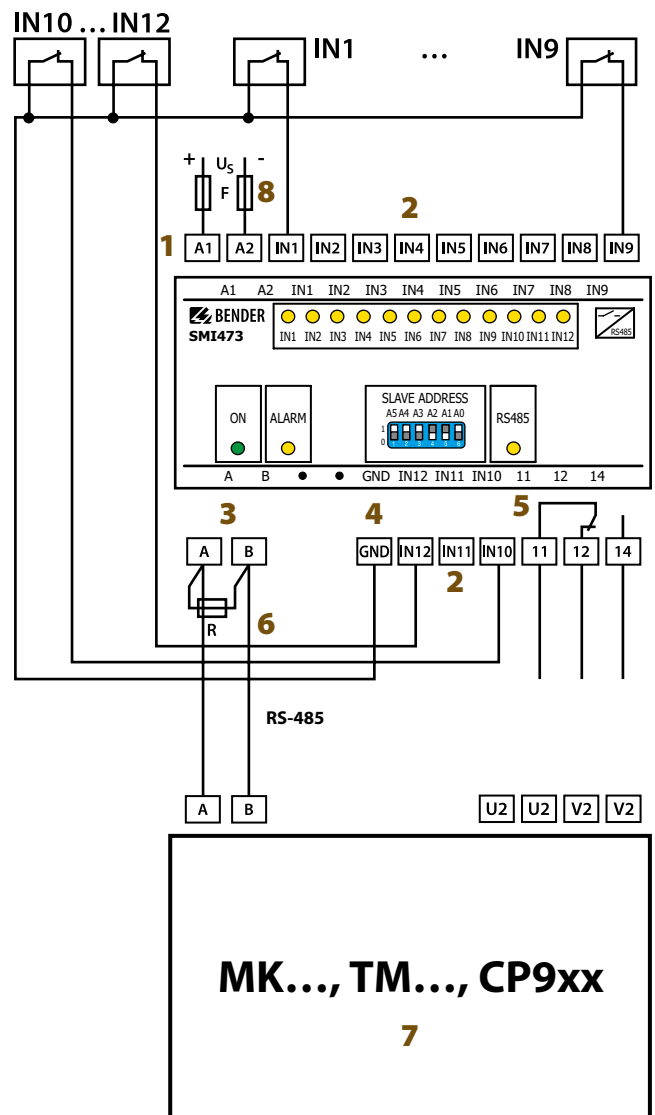
| Supply voltage U_s | Type | Art. No. |
|---|-------------|-----------|
| DC 77...286 V/AC 85...265 V, 50...60 Hz | SMI473-12 | B92047023 |
| DC 12.5...80 V | SMI473-1221 | B92047024 |

Dimension diagram X470

Dimensions are given in mm



Wiring diagram



- 1 - A1, A2 Connection supply voltage U_s .
- 2 - IN1...IN12 Digital inputs for operating or alarm messages. Recommended cable: 0.8 mm², max. 30 m
- 3 - A, B Connection BMS bus
- 4 - GND Common connection of the digital inputs to earth
- 5 - 11, 12, 14 Alarm relay, potential-free changeover contact, trips in case of an alarm
- 6 - R Terminating resistor of the BMS bus: $R = 120 \Omega$
- 7 - MK..., TM..., CP9... MK2430/MK800 alarm indicator and test combination, TM... alarm indicator and operator panel or CP9xx touch panel with freely configurable alarm texts. Enable the address of SMI473 in the alarm addresses menu (factory-set to address 3) or create individual messages.
- 8 - F Short-circuit protection for supply voltage U_s , recommended: 6 A.

Only permanently installed equipment providing at least overvoltage category II (300 V) may be connected to the outputs.

Technical data

Insulation coordination according to IEC 60664-1

| | |
|--|----------|
| Rated insulation voltage | AC 250 V |
| Rated impulse voltage/pollution degree | 4 kV/3 |

Supply voltage

| | |
|-----------------------|----------------------|
| Supply voltage U_s | see ordering details |
| Frequency range U_s | AC 50...60 Hz |
| Operating range U_s | 0.8...1.15 x U_s |
| Power consumption | ≤ 3 W |

Inputs

| | |
|---------------------------|--|
| Digital inputs | 12 (IN1...IN12) |
| | Alarm/operating message can be parameterised via BMS bus |
| Operating principle | N/C operation or N/O operation selectable via BMS bus |
| Voltage at the contacts | 5 V |
| Factory setting | N/O operation |
| Galvanic separation | no |
| Cable length | ≤ 30 m |
| Control of digital inputs | via potential-free contacts |

Indication

| | |
|------|------------------------------------|
| LEDs | 15 (ON, Alarm, RS-485, IN1...IN12) |
|------|------------------------------------|

Interface

| | |
|--|------------------------------------|
| Interface/protocol | RS-485/BMS |
| Baud rate | 9.6...57.6 kbit/s |
| Cable length | ≤ 1200 m |
| Cable: twisted pair, one end of shield connected to PE | recommended: J-Y(St)Y min. 2 x 0.8 |
| Terminating resistor (connectable via DIP switch) | 120 Ω (0.25 W) |
| Device address, BMS bus | 2...63 |
| Factory setting, device address | 3 |

Switching elements (alarm relay)

| | |
|--|--------------------------------|
| Number | 1 changeover contact |
| Operating principle programmable via BMS bus | factory setting: N/O operation |

Contact data acc. to IEC 60947-5-1

| | |
|--|----------------------|
| Rated operational voltage U_e | AC 230 V/DC 220 V |
| Rated operational current I_e | AC 5 A/DC 0.2 A |
| Utilisation category | AC 14/DC 12 |
| Electrical endurance, number of cycles | 10,000 |
| Minimum contact current | 1 mA at AC/DC > 10 V |

Environment/EMC

| | |
|-----------------------|----------------------|
| EMC immunity | acc. to EN 61000-6-2 |
| EMC emission | acc. to EN 61000-6-4 |
| Operating temperature | -10...+55 °C |

Classification of climatic conditions acc. to IEC 60721:

| | |
|-------------------|-----|
| Stationary use | 3K5 |
| Transport | 2K3 |
| Long-term storage | 1K4 |

Classification of mechanical conditions acc. to IEC 60721:

| | |
|-------------------|-----|
| Stationary use | 3M4 |
| Transport | 2M2 |
| Long-term storage | 1M3 |

Connection

| | |
|--|--|
| Connection type | screw-type terminals |
| Connection properties: | |
| rigid/flexible/conductor sizes | 0.2...4/0.2...2.5 mm ² /AWG 22...12 |
| flexible with ferrule, with/without plastic sleeve | 0.25...2 mm ² |
| Stripping length | 8 mm |
| Tightening torque | 0.5 Nm |

Other

| | |
|---|------------------------|
| Operating mode | continuous operation |
| Mounting | any position |
| Degree of protection, internal components/terminals (DIN EN 60529 (VDE 0470-1)) | IP30/IP20 |
| Type of enclosure/Dimension diagram | X470 |
| Screw mounting | 2 x M4 |
| DIN rail mounting | DIN EN 60715/IEC 60715 |
| Flammability class | UL94V-0 |
| Documentation number | D00360 |
| Weight | ≤ 320 g |



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