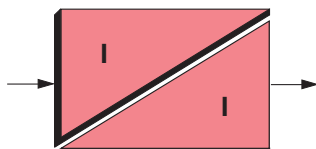


Passive Isolator With Safe Isolation MCR-SL-1CLP-I/I-00-4KV

- Electrical isolation without auxiliary power
- Safe isolation according to EN 61 010
- Current signal 0(4)...20 mA
- 12.5 mm (0.492 in.) ME housing



1. Description

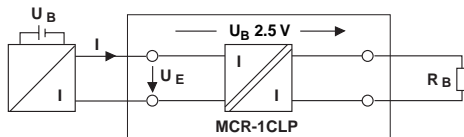
The MCR-SL-1CLP-I/I-00-4KV passive isolator is used for the electrical isolation and processing of analog 0(4)... 20 mA current signals. The block provides electrical isolation between control electronics and the process I/O. It also suppresses interference signals greater than 75 Hz.

Input and output circuits do not require separate auxiliary power. The module obtains this from the input signal.

The module is snapped onto symmetrical DIN rails according to EN 50 022.

When using passive isolators, please note that the current voltage of the measurement converter U_B is sufficient to supply the maximum current of 20 mA via the passive isolator with a voltage dissipation of $U_V = 2.5 \text{ V}$ and a load of R_B , where:

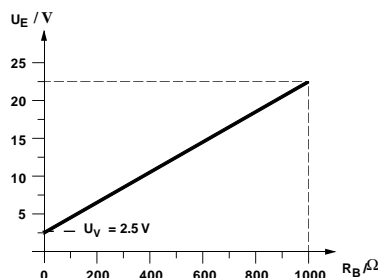
$$U_B \geq U_E = 2.5 \text{ V} + 20 \text{ mA} \cdot R_B$$



The graphic shows the input voltage U_E dependant on the load R_B , with a voltage dissipation of U_V .

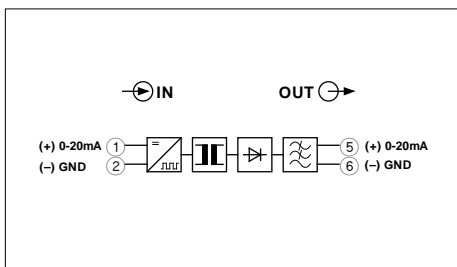
If you know the load dimensions, the minimum voltage that the sensor must supply for a maximum current of 20 mA via passive converters and loads can be read from the Y-axis.

Input voltage dependent on the load at $I_A = 20 \text{ mA}$



Passive Isolator With Safe Isolation – MCR-SL-1CLP-I/I-00-4KV

2. Technical Data

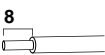


MCR-SL-1CLP-I/I-00-4KV

with signal conversion: 0(4)...20 mA/0(4)...20 mA



M 3



8

	fixed [mm ²]	flexible AWG
Connection data	0.2-2.5	0.2-2.5 24-14

Housing width 12.5 mm (0.492 in.)

(planned)

Description

MCR passive isolator
for electrical isolation of current signals without auxiliary power

Type

MCR-SL-1CLP-I/I-00-4KV

Order No.

28 14 84 1

Pcs. Pkt.

1

Technical Data

Input

Input signal
Voltage dissipation
Maximum input current/overload
Maximum input voltage/overload
Voltage limitation with zener diode

0(4)...20 mA
2.5 V at I = 20 mA
50 mA / 100 mA
30 V / 30 V
33 V ± 5%

Output

Output signal
Maximum output signal
Maximum load
Ripple

0(4)...20 mA
< 50 mA
1375 Ω at I = 20 mA output signal
< 5 mV_{eff}

General Data

Transmission error
Additional error per 100 Ω load
Temperature coefficient
Cut-off frequency (3 dB)
Response time (10-90%)
Test voltage:
Protection against dangerous housing currents (Safe isolation)

Input/output

0.1% of the final value
0.02% of the measured value
≤ 0.002%/K of the measured value / 100 Ω load
< 75 Hz at I = 20 mA and maximum load
5 ms at 500 Ω load
4 kV ~
Increased isolation according to DIN EN 61 010 section 1 and safe isolation according to VDE 0100 section 410 in the sense of VDE 0106 section 101 up to 300 V AC/DC at overvoltage category II and pollution degree 2 between all isolating distances
– 10°C (-14°F) to +70°C (158°F)

Ambient temperature range

Passive Isolator With Safe Isolation – MCR-SL-1CLP-I/I-00-4KV

Conforms to the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC

EMC (Electromagnetic Compatibility)

Noise immunity according to EN 50082-2

• Electrostatic discharge (ESD)	EN 61000-4-2	8 kV air discharge ²⁾
• Electromagnetic HF field Amplitude modulation Pulsed modulation	EN 61000-4-3	10 V/m ¹⁾ 10 V/m ¹⁾
• Fast transients (burst)	EN 61000-4-4	Input/output: 2 kV/5 kHz ²⁾
• Surge current load (surge)	EN 61000-4-5	Input/output: 2 kV/42 Ω ²⁾
• Conducted interference	EN 61000-4-6	Input/output 10 V ¹⁾
• Network frequency magnetic field	EN 61000-4-8	30 A/m ¹⁾

Noise emission according to EN 50081-1

EN 55022 Class B

EN 61000 corresponds to IEC 1000/
EN 55022 corresponds to CISPR22

¹⁾Criterion A: Normal operating characteristics within the specified limits.

²⁾Criterion B: Temporary adverse effects on the operating characteristics, which the device corrects itself.

Class B: Industrial and domestic applications



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