

MM 5019

Three-channel Intrinsically Safe Relay (Isolation Amplifier) 3 x Potential-Free Output Relays

INTRINSICALLY
SAFE
SECURITY SYSTEMS

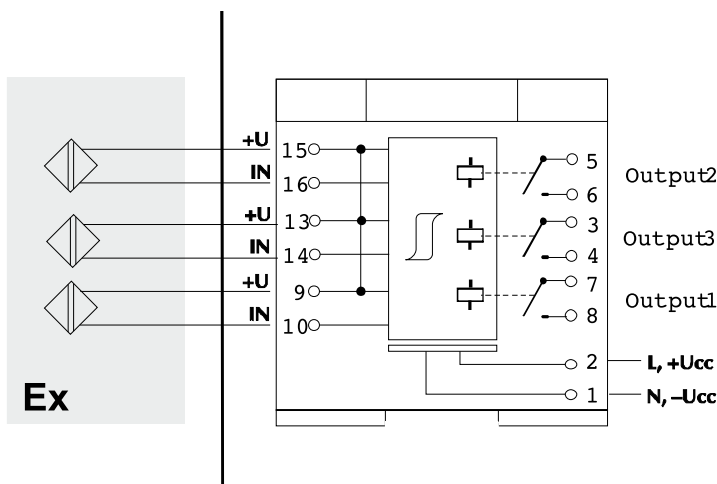
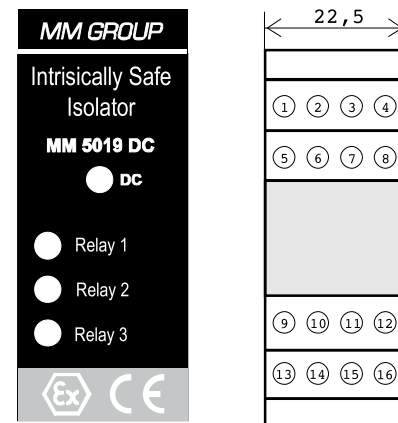
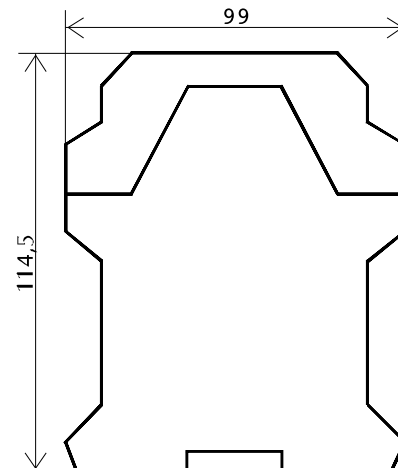


DESCRIPTION:

The MM 5019 amplifiers are three-channel amplifiers switches with three relay outputs. The input circuits comply with DIN19234 (NAMUR) for connecting magnetic, inductive and capacitive sensors, variable resistors or voltage-free mechanical relays. The amplifier output has three relay outputs. When sensor is connected according to the diagram shown on the side of the product, the output relay closes in operation mode (the power supply must be active). If the opposite case is required, where the relay is closed in the idle mode (no power supply) - it is necessary to provide this information with the order. The power supply status is indicated by a green LED. A short circuit of the output transistor is indicated by a yellow LED.

KEY POINTS:

- 3x Intrinsically Safe Inputs
- Three-channel Separation Amplifier
- Input Circuit According to DIN 19234 (NAMUR)
- Galvanically Separated Output Circuit from Input Circuit
- Galvanically Separated Output Voltage Circuit from The Input
- 3 x Potential Free Output Relays
- Space Saving
- Cost-Saving
- Reliable Connection



CONNECTION:

- 1 - Power Supply -Ucc/N
- 2 - Power Supply +Ucc/L
- 7,8 - Relay 1
- 5,6 - Relay 2
- 3,4 - Relay 3
- 9,10 - In 1 (vstup)
- 13, 14 - In 2 (vstup)
- 15,16 - In 3 (vstup)

INTRINSICALLY SAFE INPUTS PARAMETERS:

| IIC | IIB | I |
|------------------------------|----------------------------|------------------|
| $U_o = 9,87V,$ | $U_o = 9,87V,$ | $U_o = 9,87V,$ |
| $I_o = 9,97mA,$ | $I_o = 9,97mA,$ | $I_o = 9,97mA,$ |
| $P_o = 0,0246W$ | $P_o = 0,0246W$ | $P_o = 0,0246W$ |
| $C_o = 2,1\mu F / 0,55\mu F$ | $C_o = 18\mu F / 7,0\mu F$ | $C_o = 4,4\mu F$ |
| $L_o = 0mH / 7,1mH$ | $L_o = 0mH / 21mH$ | $L_o = 56,8mH$ |

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TECHNICAL DATA:

| Exemplary Marking | MM 5019 AC (230 V) | MM 5019 DC (24 V) | MM 5019 DC (12 V) |
|-------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| Identification Code | | | |
| Relay Closed In the Operation Mode | 5019 230 01 00 | 5019 024 01 00 | 5019 012 01 00 |
| Relay Closed In the Idle Mode | 5019 230 00 00 | 5019 024 00 00 | 5019 012 00 00 |
| Power Supply | | | |
| Voltage | 42 or 196 - 253 V AC | 19 - 28 V DC | 11 - 15 V DC |
| Frequency | 48 - 52 Hz | N/A | N/A |
| Power | 0.6 VA | 0.6 W | 0.6 W |
| Galvanic separation | Input from output and PS | Input from output and PS | Input from output and PS |
| Contacts | | | |
| Safe Zone Output | 3x change-over relays | 3x change-over relays | 3x change-over relays |
| Rated Voltage | 230 V/50 Hz | 230 V/50 Hz | 230 V/50 Hz |
| Rated Current | 10A | 10A | 10A |
| Rated Power | 100 VA/60V | 100 VA/60V | 100 VA/60V |
| Crosstalk | 2 Hz | 2 Hz | 2 Hz |
| Input From Hazardous Zone | NAMUR 19234 | NAMUR 19234 | NAMUR 19234 |
| Operation Parameters | | | |
| Voltage | 8 V | 8 V | 8 V |
| Current | 8 mA | 8 mA | 8 mA |
| Relay Thresholds | | | |
| Pull-in Current/Resistance | $I_{in} > 2.1 \text{ mA}$ or $R_{in} < 2 \text{ k}\Omega$ | $I_{in} > 2.1 \text{ mA}$ or $R_{in} < 2 \text{ k}\Omega$ | $I_{in} > 2.1 \text{ mA}$ or $R_{in} < 2 \text{ k}\Omega$ |
| Pull-out Current/Resistance | $I_{in} < 1.2 \text{ mA}$ or $R_{in} > 10 \text{ k}\Omega$ | $I_{in} > 1.2 \text{ mA}$ or $R_{in} > 10 \text{ k}\Omega$ | $I_{in} > 1.2 \text{ mA}$ or $R_{in} > 10 \text{ k}\Omega$ |
| Hysteresis | $250 \pm 100 \mu\text{A}$ | $250 \pm 100 \mu\text{A}$ | $250 \pm 100 \mu\text{A}$ |
| LED Indication | | | |
| Power Supply | Green | Green | Green |
| Output State | Yellow | Yellow | Yellow |
| Fault | Red | Red | Red |
| Line Fault Detection Control (LFD) | N/A | N/A | N/A |
| LFD Output - Open Collector | N/A | N/A | N/A |
| Environmental Class | II 2 G /EEx ia/ IIC, II 1 G /EEx ia/ IIC, I M1 /EEx ia/ I | II 2 G /EEx ia/ IIC, II 1 G /EEx ia/ IIC, I M1 /EEx ia/ I | II 2 G /EEx ia/ IIC, II 1 G /EEx ia/ IIC, I M1 /EEx ia/ I |
| Housing | | | |
| Dimensions | 99 mm x 22,5 mm x 114,5 mm (HxWxD) | 99 mm x 22,5 mm x 114,5 mm (HxWxD) | 99 mm x 22,5 mm x 114,5 mm (HxWxD) |
| Housing Type | 16 Contacts | 16 Contacts | 16 Contacts |
| Material | polycarbonate/ABS | polycarbonate/ABS | polycarbonate/ABS |
| Flammability Standard | V-0 according to UL94 | V-0 according to UL94 | V-0 according to UL94 |
| Mounting | DIN 35 | DIN 35 | DIN 35 |
| Fixing | Screws/Contacts | Screws/Contacts | Screws/Contacts |
| Max. Wire Diameter | 2 x 2,5 mm ² | 2 x 2,5 mm ² | 2 x 2,5 mm ² |
| IP Rating | IP20 | IP20 | IP20 |
| Temperature Range | -25 - 60°C | -25 - 60°C | -25 - 60°C |