The MS1-33Ex0-T switching amplifiers are 3-channel devices with intrinsically safe input circuits. All three output circuits are provided with an isolated, short-circuit protected transistor output.

The selected output mode applies to all three channels. Program normally closed mode (NC/R) by leaving terminals 15 and 16 open, or normally open mode (NO/A) by linking terminals 15 and 16 (I). These units do not have input circuit monitoring. Therefore these devices provide an inexpensive alternative in systems which use NAMUR sensors or mechanical contacts.

The MS1-33Ex0-T switching amplifier has an alternate configuration used to multiply outputs. This is achieved by connecting a single input device to terminals 15 and 16 (II). All three transistor outputs will then operate in parallel according to the selected output mode (each output is programmed by linking the appropriate input channels).
### Isolating Switching Amplifiers

**Type**
- MS1-33Ex0-T/230VAC
- MS1-33Ex0-T/24VDC

**Ident-No.**
- 54 131
- 54 137

**Supply Voltage $U_b$**
- Line frequency/ripple $W_{pp}$
  - 196...250 VAC
  - 48...62 Hz

**Power/current consumption**
- ≤ 3.5 VA
- ≤ 3.6 W

**Galvanic isolation**
- between input circuit, output circuit and supply voltage for 250 V<sub>rms</sub>
- test voltage 2.5 kV<sub>rms</sub>

**Input Circuits**
- according to EN 50020

**Operating characteristics**
- Voltage
  - 8 V
- Current
  - 4.5 mA
- Switching threshold
  - 1.55 mA
- Hysteresis
  - 0.2 mA

**Output Circuits**
- 3 transistor outputs, potential-free, short-circuit protected
- ≤ 30 VDC
- ≤ 50 mA
- ≤ 2.5 V
- ≤ 2 kHz

**Ex-Approval acc. to Certificate of Conformity**
- BVS 94.C.2006 X

**Maximum nominal values**
- No load voltage $U_0$
  - 11.0 V
- Short-circuit current $I_K$
  - 41.0 mA
- [EEx ia] IIC
  - 1 mH/500 nF
- [EEx ib] IIC
  - -

**LED Indication**
- Status indication yellow

**Housing**
- 50 mm wide, Polycarbonate/ABS
- Panel mounting or snap-on clamps for top-hat rail (DIN 50022)
- 2 x 8 self-lifting pressure plates
- ≤ 2 x 2.5 mm<sup>2</sup> or 2 x 1.5 mm<sup>2</sup>
- Degree of protection (IEC 60529/EN 60529)
  - IP20
- Operating temperature
  - -25...+60 °C