The MS1-33Ex0-R switching amplifier is a 3-channel device with intrinsically safe input circuits. All three output circuits have individual relays with one NO contact.

The selected output mode applies to all three channels. Program for normally closed (NC/R) mode by leaving terminals 15 and 16 open, or normally open (NO/A) mode by jumpering terminals 15 and 16 (I).

This unit does not have input circuit monitoring. Therefore, this device provides an inexpensive alternative in systems which use NAMUR sensors or mechanical contacts.

The MS1-33Ex0-R 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 relay 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

<table>
<thead>
<tr>
<th>Type</th>
<th>MS1-33Ex0-R/230VAC</th>
<th>MS1-33Ex0-R/24VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ident-No.</td>
<td>53 131</td>
<td>53 137</td>
</tr>
</tbody>
</table>

### Supply Voltage $U_B$
- 196...250 VAC
- 48...62 Hz
- $\leq 3.5$ VA
- between input circuit, output circuit and supply voltage for $250 \text{ V}_{\text{rms}}$, test voltage $2.5 \text{ kV}_{\text{rms}}$
- $\leq 10$ %
- $\leq 3.6$ W
- between input circuit, output circuit and supply voltage for $250 \text{ V}_{\text{rms}}$, test voltage $2.5 \text{ kV}_{\text{rms}}$

### Input Circuits
- acc. to EN 50227 (NAMUR), intrinsically safe 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 relay outputs
- 1 NO contact, AgCdO
- $\leq 4$ A
- $\leq 1000 \text{ VA/60 W}$
- $\leq 10$ Hz

### Ex-Approval acc. to Certificate of Conformity
- BV5 94.C.2006 X
- BV5 94.C.2006 X

### Maximum nominal values
- No load voltage $U_0$: 11.0 V
- Short-circuit current $I_k$: 41.0 mA

### Maximum external inductances/capacitances
- $[\text{EEx ia}]$ IIC: 1 mH/500 nF
- $[\text{EEx ib}]$ IIC: -

### LED Indications
- Status indication: yellow

### Housing
- 50 mm wide, Polycarbonate/ABS
- panel mounting or snap-on clamps for top-hat rail (DIN 50022)
- Connection profile: 2 x 8 self-lifting pressure plates with wire sleeves
- Degree of protection (IEC 60529/EN 60529): IP20
- Operating temperature: -25...+60 °C