The MC13-481Ex0-R is a four-channel switching amplifier with intrinsically safe input circuits. Each channel has a relay output with two sets of hard gold-plated contacts suitable to reliably switch loads with minimum currents of 50 µA and maximum currents of up to 2 A.

The unit can be used as a three-channel device with a common alarm output. To activate the alarm, move both channel 4 jumper blocks labelled Su.

The input circuit monitoring can be disabled by programming jumper on the card. If a short or a wire-break occurs in either input circuit, the common alarm output turns off (green LED is off). During normal operation, if no faults are in any of the input circuits, the output relay is energised.
Switching Amplifiers

**Type**
MC13-481Ex0-R/24VDC

**Ident-No.**
90 266

**Supply Voltage** $U_B$
20.4...27.6 VDC

**Ripple $W_{pp}$**
$\leq 10 \%$

**Overvoltage release**
33 V ± 1.5 V

**Reverse polarity protection**
$\leq 250$ V

**Power/Current consumption**
$\leq 130$ mA

**Galvanic isolation**
between input circuit, output circuit and supply voltage for 250 Vrms, test voltage 2.5 kVrms

| Input Circuits | DIN 19234 (NAMUR), intrinsically safe per DIN EN 50020 |
| Programming: |
| - Voltage | 8 V |
| - Current | 8 mA |
| Switching threshold | 1.55 mA |
| Hysteresis | 0.2 mA |
| Wire-break threshold | $\leq 0.1$ mA |
| Short-circuit threshold | $\geq 6$ |

| Output Circuits | 4 relay outputs |
| Programming: |
| - Switching voltage | $\leq 30$ VAC/36 VDC |
| - Switching current | $\leq 2$ A |
| - Switching capacity | $\leq 60$ VA/50 W |
| - Switching frequency | $\leq 10$ Hz |

**Ex-Approval acc. to Certification of Conformity**
PTB No. Ex-84/2110X

Maximum nominal values
- No-load voltage $U_0$
  9.6 V
- Short-circuit current $I_k$
  46.7 mA

Maximum external inductances/capacitances
- [Ex ia] IIC
  1 mH/720 nF (alternatively: 5 mH/560 nF)
- [Ex ib] IIC
  19 mH/4 µF

**LED Indications**
- Power "ON" green (LED off in alarm condition)
- Status indication gelb
- Fault with common alarm monitoring

If the common alarm monitoring feature is used, the yellow LED of the fourth channel is de-energised during fault.

**Eurocard**
100 x 160 mm (DIN 41494)
glass-fiber reinforced epoxy resin, quality class FR4
plastic, 4TE = 20.32 mm,
individually interlocking

Connection
connector per DIN 41612,
type F, 32-pole (series z+d) or 48-pole

Operating temperature
-25...+60 °C

**Coding No. 19**

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The input functions are programmed via jumper blocks on the card.

The output functions are programmed via jumper blocks on the card.

The card can be connected via a 32- or 48-pole edge connector. Each output on the 48-pole edge connector has two SPDT contacts; on the 32-pole edge connector the required contact (N.O. or N.C.) is determined by programming jumpers on the card.