The MC13-241Ex0-T/24 VDC is a two-channel switching amplifier with intrinsically safe input circuits. Each channel is provided with two short-circuit protected, non-polarised transistor outputs. Both outputs change state simultaneously. The device has an alarm output that remains on during normal operation.

In addition, the device provides a dedicated common alarm circuit to indicate faults in the input circuits of the two channels.

The input circuits are monitored for wire-break and short-circuit condition. The monitoring function can be disabled via jumper blocks on the card. If a short-circuit or wire-break occurs in either input circuit, the common alarm output turns off (transistor not conducting). If no faults are in any of the input circuits and the power is applied, the common alarm output is on (transistor conducting).

When mechanical contacts are used as input devices, the input circuit monitoring must be disabled, or resistors connected to the contacts.
Switching Amplifiers

Type | MC13-241Ex0-R/24VDC
Ident-No. | 90 246

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 | $\leq$ 80 mA
Galvanic isolation | between input circuit, output circuit and supply voltage for 250 $V_{ins}$,
| test voltage 2.5 $kV_{rms}$

Input Circuits

DIN 19234 (NAMUR), intrinsically safe per DIN EN 50020

Operating characteristics
- Voltage | 8.0 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 mA

Programming:

Channel 1
- K: NAMUR
- N: No-load current
- A: Load current

Channel 2
- K: Contact

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

Output Circuits
two potential-free transistor outputs,
short-circuit protected, non-polarised

Switching voltage | $\leq$ 30 V
Switching current | $\leq$ 200 mA
Voltage drop | approx. 4 V/200 mA and approx. 2.7 V/50 mA
Switching frequency | $\leq$ 1 kHz

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 $I_k$ | 42.3 mA

Maximum external inductances/capacitances
- $[EEx \, ia]$ IIC | 1 mH/720 nF (alternatively: 5 mH/560 nF)
- $[EEx \, ib]$ IIC | 19 mH/4 $\mu$F

LED Indications
- Power "ON" | green
- Status indication | yellow
- Fault | red (1 LED for each channel)

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.17