MTL3043 DC ISOLATOR, 1/40mA

for fire and smoke detectors

The MTL3043 is similar in principle to the MTL3042, but with a higher current range for use primarily with fire and smoke detectors or similar high integrity switched-resistor systems. In these applications the unit shows, by a change in the safe-area current, when one of the detectors across the 2-wire circuit in a hazardous area has been triggered. With a suitable receiving instrument in use, line short circuits do not give a false alarm and – if an end-of-line resistor is added to the system – open circuits do not give the operator a false sense of security. Further, the isolation feature eliminates the multiple earths that can arise in conventional barrier systems when the supply is earthed, and permits earth faults in field wiring to be detected and cured while the unit continues working.

SPECIFICATION

See also 'Common specification'

Number of channels
> One, fully floating

Location of fire & smoke detectors
> Zone 0, IIC, T4–6 hazardous area if suitably certified
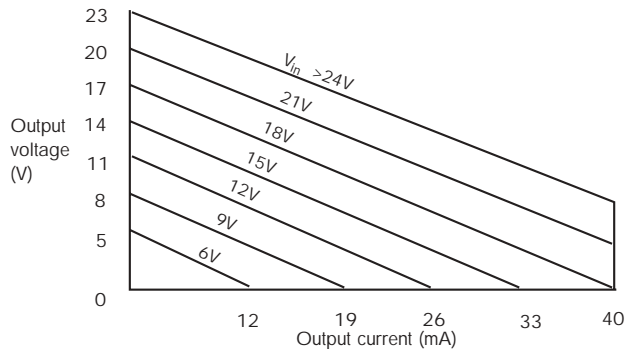> Div 1, Group A, hazardous location

Input voltage
> 6 to 35V dc

Input and output signal range
> 1 to 40mA, nominal

Minimum output voltage
> V_{in} minus (0.42 x current in mA) minus 1V, V_{in} <24V
> 23V minus (0.42 x current in mA) V_{in} >24V

Maximum output voltage
> 28V from 300Ω

Input and output circuit ripple
> <500µA peak-to-peak

Transfer accuracy at 20°C
> Better than 500µA

Temperature drift
> <10µA/°C

Response time
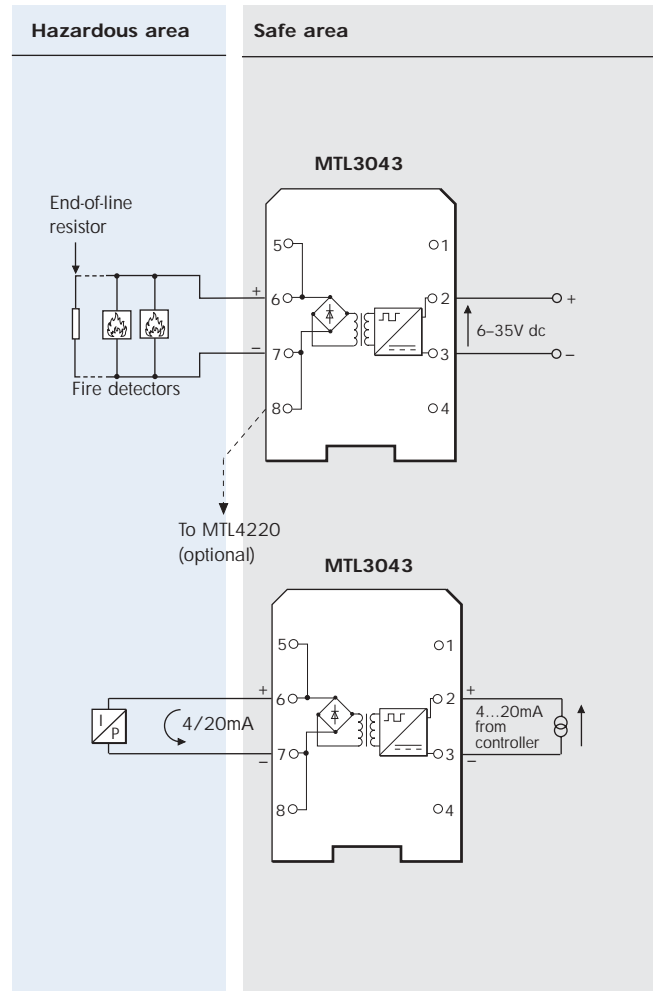> Settles to within 10% of final value after typically 50ms

Power dissipation within unit
> 1.0W typical at 24V with 40mA signal
> 1.2W maximum at 35V with 40mA signal

Replaceable fuse
> 50mA, 5x20mm glass to DIN 41571 sht.2, semi-time-lag (M)

Safety description
> 28V, 300Ω, 93mA, U_m = 250V rms or dc

FM max entity parameters
> V_{oc} = 28V, I_{sc} = 93mA, C_a = 0.13µF, L_a = 4.0mH

Weight
> 130g

OTHER APPLICATIONS

The MTL3043 can also be used for driving I/P converters in many closed-loop applications, especially those with integral control, where its lower accuracy is acceptable.