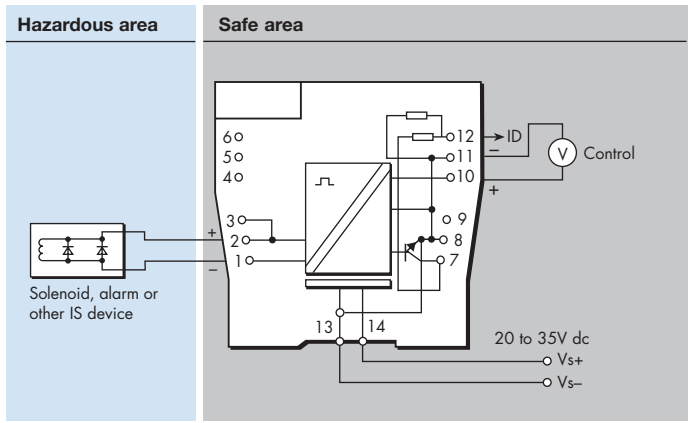
MTL4523Y
SOLENOID/ALARM DRIVER
with line fault detection, IIC

With the MTL4523Y interface, an on/off device in a hazardous area can be controlled by a voltage signal in the safe area. It is suitable for driving loads such as solenoids. Line fault detection (LFD), which operates irrespective of the output state, is signalled by a safe-area solid-state switch which de-energises if a field line is open or short–circuited. This switch changes the impendence of the ID resistor to signal a LFD to the system.

MTL4523Y



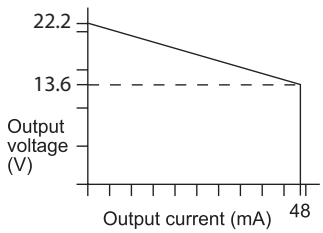
SPECIFICATION

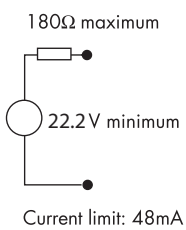
See also common specification

Number of channels
One

Location of load
Zone 0, IIC, T4–6 hazardous area if suitably certified
Div. 1, Group A, hazardous location

Minimum output voltage **Equivalent output circui**





Hazardous-area output

Minimum output voltage:	12.8V at 48mA
Maximum output voltage:	24V from 180Ω
Maximum off-state output voltage:	4V from 180Ω
Current limit:	48mA

Output ripple
< 0.5% of maximum output, peak to peak

Control input
Suitable for 24V logic drive
Output turns on if > 18V applied across control input
Output turns off if < 5V applied across control input
Maximum control input voltage: 28V
Maximum control system output leakage current: 0.5mA

Response time
Output within 10% of final value within 100ms

Line fault detection (LFD)
Open or short circuit in field cabling de-energises solid state line-fault signal.
LFD transistor is switched off, provided that the field circuit impedance is > 55Ω and < 4kΩ.

Line fault signal characteristics

Maximum off-state voltage:	35V
Maximum off-state leakage current:	10µA
Maximum on-state voltage drop:	2V
Maximum on-state current:	50mA

LED indicators
Green: power indication
Yellow: output status, on when output active
Red: LFD indication, on when line fault detected

Maximum current consumption
100mA at 24V dc

Power dissipation within unit
1.2W with typical solenoid valve, output on
2.0W worst case

Safety description
V_o=25V I_o=147mA P_o= 0.92W U_m = 253V rms or dc

ID Resistor
75kΩ no alarm
100kΩ LFD alarm active

SIL capable
These models have been assessed for use in IEC 61508 functional safety applications.
SIL2 capable for a single device (HFT=0)
SIL3 capable for multiple devices in safety redundant configurations (HFT=1)
See data on MTL web site and refer to the safety manual.

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