

# MTL4523V/VL – MTL5523V/VL SOLENOID/ALARM DRIVER with line fault detection, IIC

With the MTLx523V/VL 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 energises if a field line is open or short-circuited. Earth fault detection can be provided by connecting an MTL4220 earth leakage detector to terminal 3.

## SPECIFICATION

See also common specification



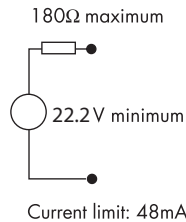
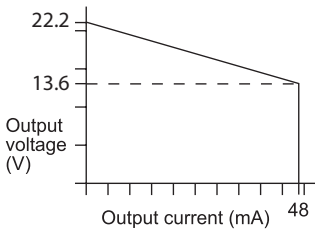
### Number of channels

One

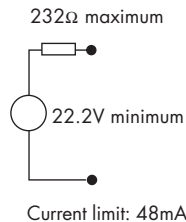
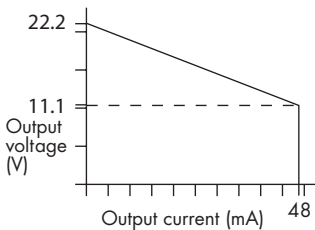
### Location of load

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

### Minimum output voltage      Equivalent output circuit (MTLx523V)



### Minimum output voltage      Equivalent output circuit (MTLx523VL)



### Hazardous-area output (MTLx523V)

Minimum output voltage: 13.6V at 48mA  
Maximum output voltage: 24V from 180Ω  
Maximum off-state output voltage: 4V from 180Ω  
Current limit: 48mA minimum

### Hazardous-area output (MTLx523VL)

Minimum output voltage: 11.1V at 48mA  
Maximum output voltage: 24V from 232Ω  
Maximum off-state output voltage: 4V from 232Ω  
Current limit: 48mA minimum

### Output ripple

< 0.5% of maximum output, peak to peak

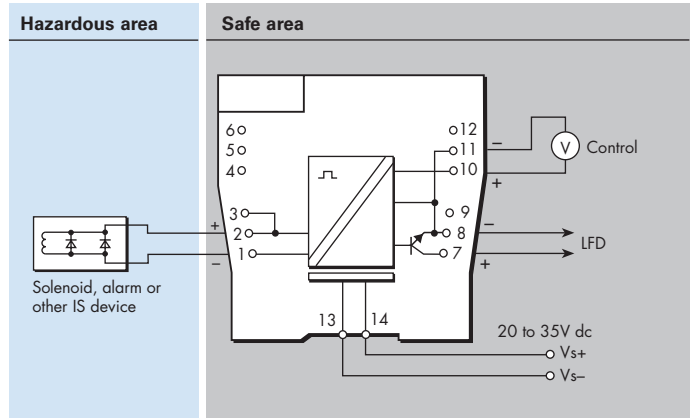
### Control input

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

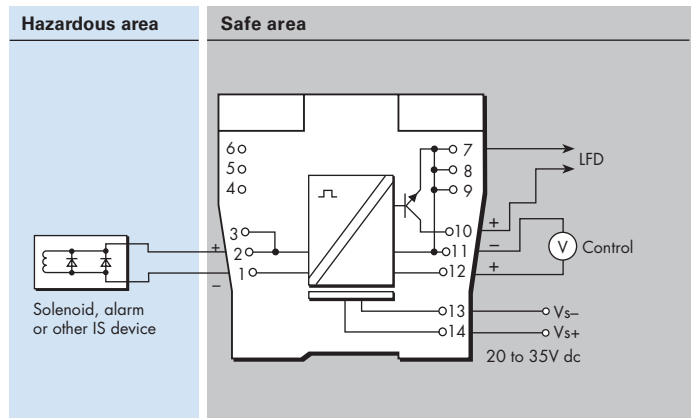
### Response time

Output within 10% of final value within 100ms

## MTL4523V/MTL4523VL



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### Line fault detection (LFD)

Open or short circuit in field cabling 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 (MTLx523V)

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

### Safety description (MTLx523VL)

$V_o=25V$   $I_o=108mA$   $P_o=0.68W$   $U_m=253V$  rms or dc



### 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.

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee.  
In the interest of further technical developments, we reserve the right to make design changes.