

# MTL4021S

## SOLENOID/ALARM DRIVER

with 24V logic override facility



The MTL4021S enables an on/off device in a hazardous area to be controlled by a volt-free contact or logic signal in the safe area. It can drive loads such as solenoids, alarms, LEDs and other low power devices that are certified as intrinsically safe or are classified as non-energy storing simple apparatus. Provided that 24V dc is applied to the override input, the solenoid/alarm can be operated by the control input. However, if the 24V dc signal is removed, the solenoid/alarm is turned off. Earth fault detection can be provided by connecting an MTL4220 earth leakage detector to terminal 6.

### SPECIFICATION

See also common specification, cable parameters and approvals

#### Number of channels

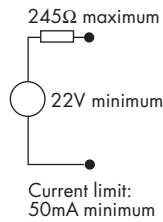
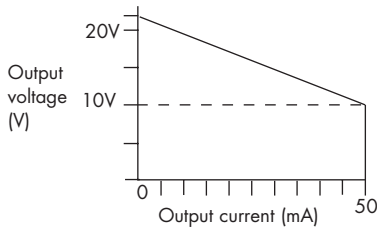
One

#### 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



#### Maximum output voltage

25.5V from 232Ω

#### Output ripple

<0.5% of maximum output, peak-to-peak

#### Control input

Suitable for switch contacts, an open collector transistor or logic drive

0 = input switch closed, transistor on or <1.4V applied across terminals 10 & 11

1 = input switch open, transistor off or >4.5V applied across terminals 10 & 11

#### Override input

A 24V logic signal applied across terminals 8 and 9 allows the solenoid/alarm to be operated by the control input. If it is disconnected, the solenoid/alarm is off.

0 = <2.0V applied across terminals 8 & 9

1 = >9.0V applied across terminals 8 & 9  
(nominal switching point 4.5V)

#### Control and override inputs

Control input	Override input	Output state
0	0	off
0	1	on
1	0	off
1	1	off

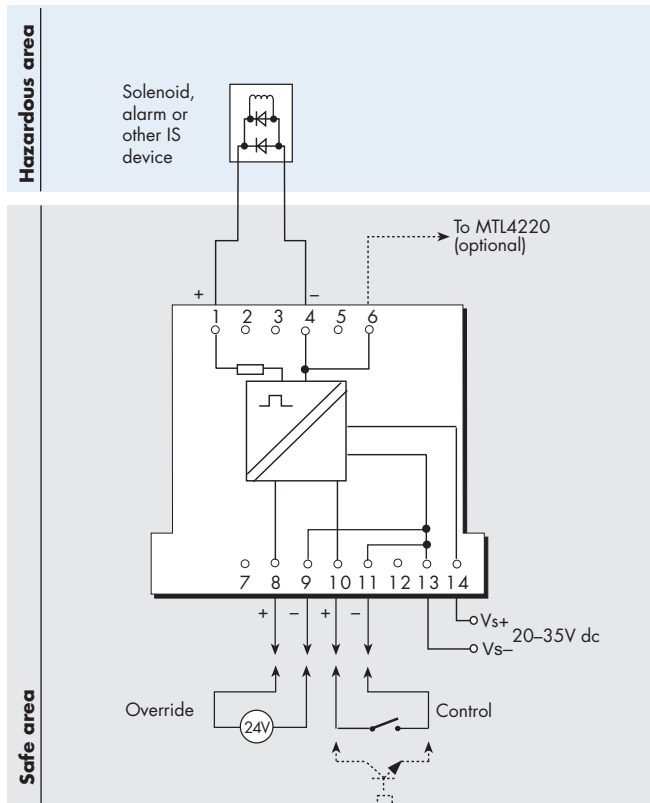
#### Response time

Output within 10% of final value within 100ms

#### No-fail earth fault protection

Enabled by connecting terminal 6 to an MTL4220 earth leakage detector

Fault on either line proclaimed: unit continues working



Terminal	Function
1	Output +ve
4	Output -ve
6	Optional link to MTL4220
8	Override +ve
9	Override -ve
10	Control +ve
11	Control -ve
13	Supply -ve
14	Supply +ve

#### LED indicators

Amber: one provided for status, ON when output circuit is active  
Green: one provided for power indication

#### Power requirement, Vs

100mA at 24V dc

120mA at 20V dc

75mA at 35V dc

#### Power dissipation within unit

1.3W with typical solenoid valve, output on

1.9W worst case

#### Isolation

250V ac between safe- and hazardous-area circuits

#### Safety description

25.5V, 232Ω, 110mA

#### FM entity parameters

$V_{OC} = 25.5V$  dc,  $I_{SC} = 110mA$ ,  $C_Q = 0.17\mu F$ ,  $L_Q = 3mH$



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