

MTL4531 – MTL5531 VIBRATION TRANSDUCER INTERFACE

The MTLx531 repeats a signal from a vibration sensor in a hazardous area, providing an output for a monitoring system in the safe area. The interface is compatible with 3-wire eddy-current probes and accelerometers or 2-wire current sensors; the selection is made by a switch on the side of the module.

SPECIFICATION

See also common specification

Number of channels

One

Sensor type

2- or 3-wire vibration transducer

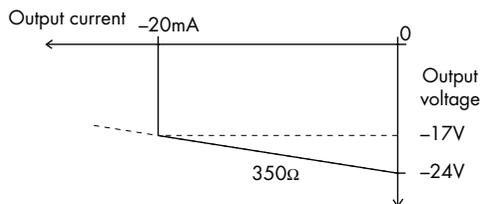
Location of signal source

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

Hazardous-area input

Input impedance
(terminals 2 & 3): 10k Ω

Transducer supply voltage, 3-wire (terminals 3 & 1)



Transducer supply current, 2-wire

3.3mA (nom.) for 2-wire sensors, user selectable by switch

Signal range

Minimum -20V, maximum -0.5V

DC transfer accuracy at 20°C

< \pm 50mV

AC transfer accuracy at 20°C

0Hz to 1kHz: \pm 1%
1kHz to 10kHz: -5% to +1%
10kHz to 20kHz: -10% to +1%

Temperature coefficient

\pm 50ppm/ $^{\circ}$ C (10 to 65 $^{\circ}$ C)
 \pm 100ppm/ $^{\circ}$ C (-20 to 10 $^{\circ}$ C)

Voltage bandwidth

-3dB at 47kHz (typical)

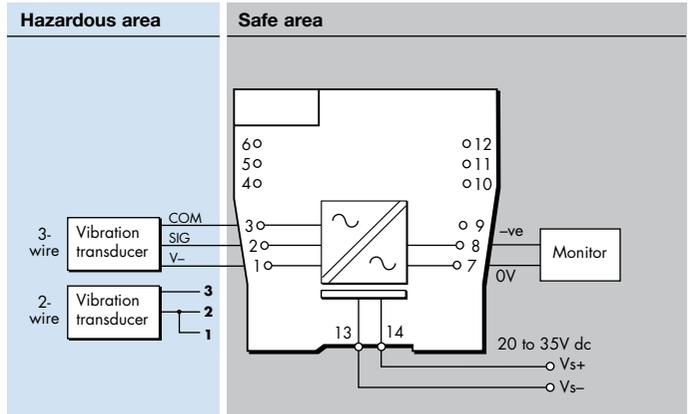
Phase response

<14 μ s, equivalent to:
-1 $^{\circ}$ at 200Hz
-3 $^{\circ}$ at 600Hz
-5 $^{\circ}$ at 1kHz
-50 $^{\circ}$ at 10kHz
-100 $^{\circ}$ at 20kHz

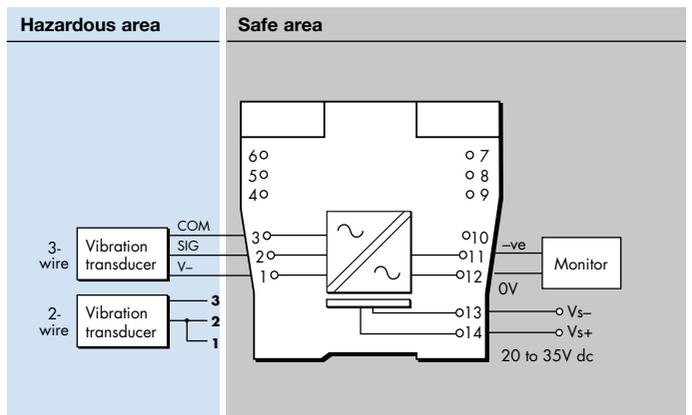
Safe-area output impedance

<20 Ω

MTL4531



MTL5531



LED indicator

Green: power indication

Supply voltage

20 to 35V dc

Maximum current consumption (10mA transducer load)

96mA at 24V

Maximum power dissipation within unit

2W

Safety description

Terminals 3 to 1

$U_o=26.6V$ $I_o=94mA$ $P_o=0.66W$ $U_m = 253V$ rms or dc

Terminals 3 to 2

Non-energy-storing apparatus $\leq 1.5V$, $\leq 0.1A$ and $\leq 25mW$

Note -

Refer to the Instruction Manual for recommendations on mounting of these modules.

Due to the high power dissipation the maximum ambient temperature for these modules when mounted in horizontal orientation is:

- close packed 45 $^{\circ}$ C
- minimum of 10mm spacing 55 $^{\circ}$ C

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.



EUROPE (EMEA): +44 (0)1582 723633
enquiry@mtl-inst.com

THE AMERICAS: +1 800 835 7075
csinfo@mtl-inst.com

ASIA-PACIFIC: +65 6 645 9888
sales.mtlsing@cooperindustries.com

EPSx531 Rev4 120913