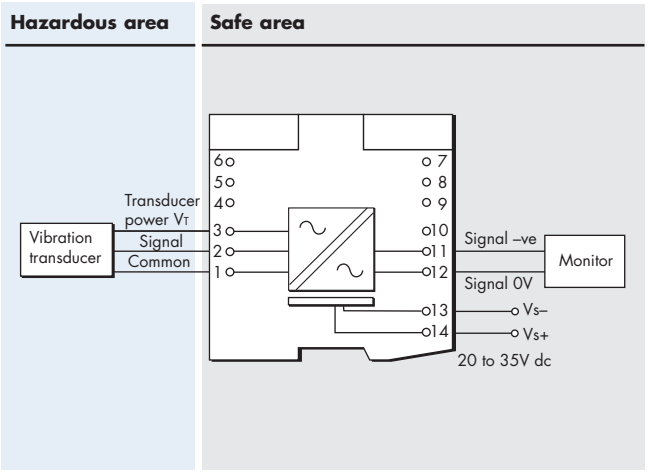
MTL5031 VIBRATION TRANSDUCER INTERFACE

CE

The MTL5031 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.



SPECIFICATION

See also common specification

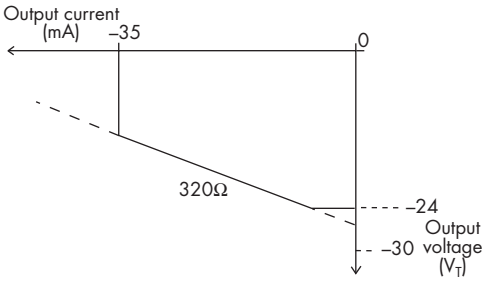
Number of channels
One

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

Safe-area output
Output impedance
(terminals 11 and 12): <20Ω

Hazardous-area input
Input impedance
(terminals 1 and 2): 10kΩ –1%, +2%

Transducer supply voltage (terminals 3 and 1)



Signal range (terminals 1 and 2, 11 and 12)
Minimum –20V, maximum –0.5V, for dc transfer error <±100mV

DC transfer accuracy at 20°C
<±100mV

AC transfer accuracy at 20°C
0Hz to 1kHz: ±1%
1kHz to 10kHz: –5% to +1%
10kHz to 20kHz: –10% to +1%

Temperature coefficient
±50ppm/°C (10 to 65°C)
±100ppm/°C (–20 to 10°C)

Voltage bandwidth
–3dB at 43kHz (typical)

Phase response
<14µs, equivalent to:
–1° at 200Hz
–3° at 600Hz
–5° at 1kHz
–50° at 10kHz
–100° at 20kHz

Terminal	Function
1	Common
2	Signal
3	Transducer power VT
11	Signal –ve
12	Signal 0V
13	Supply –ve
14	Supply +ve

LED indicator
Green: power indication

Supply voltage
20 to 35V dc

Maximum current consumption (with 22mA transducer load)
80mA at 24V
88mA at 20V
63mA at 35V

Maximum power dissipation within unit
<1.7W

Safety description
Terminals 3 to 1
26.6V, 94mA, 0.66W
Terminals 2 to 1
Non-energy-storing apparatus ≤1.2V, ≤0.1A, ≤20µJ and ≤25mW

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