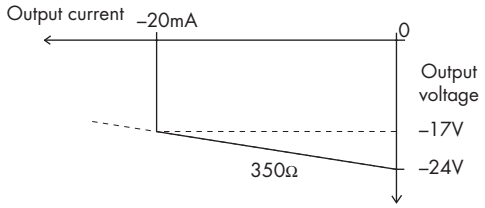
MTL4531 – MTL5531 VIBRATION TRANSDUCER INTERFACE

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): 10kΩ
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
<±50mV
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 47kHz (typical)
Phase response
<14µs, equivalent to:
–1° at 200Hz
–3° at 600Hz
–5° at 1kHz
–50° at 10kHz
–100° at 20kHz
Safe-area output impedance
<20Ω
LED indicator
Green: power indication

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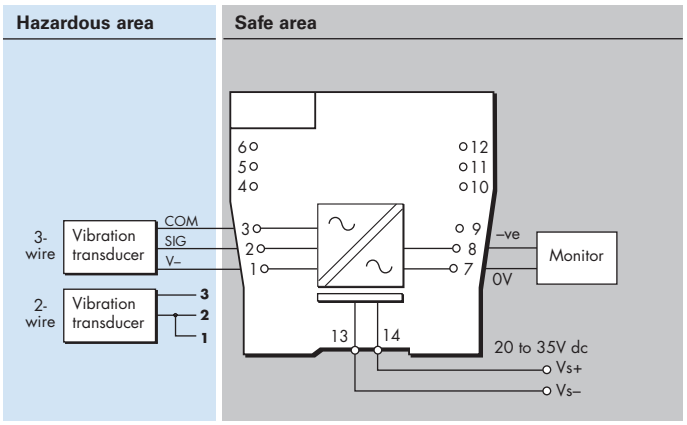

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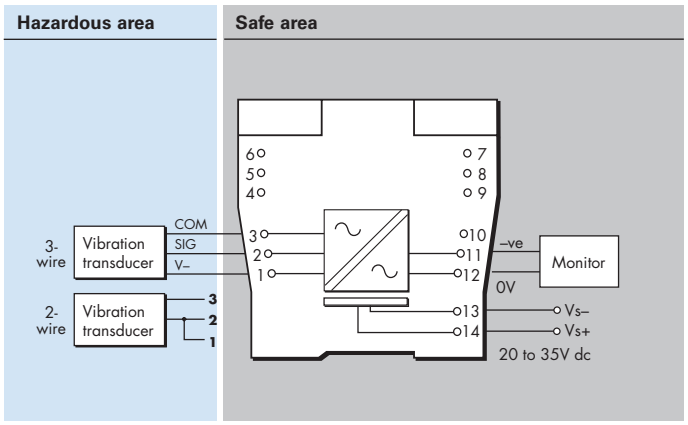

Supply voltage
20 to 35V dc
Maximum current consumption (10mA transducer load)
65mA at 24V
Maximum power dissipation within unit
1.33W
Safety description
Terminals 3 to 1
U_o=26.6V I_o=94mA P_o=0.66W U_m = 253V rms or dc
Terminals 3 to 2
Non-energy-storing apparatus ≤1.5V, ≤0.1A and ≤25mW

SIL capable
These models have been assessed for use in IEC 61508 functional safety applications up to SIL2.
See data on MTL web site and refer to the safety manual.

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