D5062

I.S. SIL2 Vibration Transducer Interface

The Vibration Transducer Interface D5062S is a high integrity analog input interface suitable for applications requiring SIL 2 level in safety related systems for high risk industries. It provides a fully floating dc supply for energizing vibration transducers, accelerometers or 2-3 wires sensors located in Hazardous Area, and repeats the sensor input voltage in a totally isolated circuit located in Safe Area to drive vibration monitors or analyzers for rotating machinery control and supervision purposes.

FEATURES

- SIL 2 / SC 3
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- 0 to –20 V Input/Output Signal
- Wide band signal transfer
- Input and Output short circuit proof
- In-field programmability by DIP Switch
- High Accuracy
- Three port isolation, Input/Output/Supply

ORDERING INFORMATION

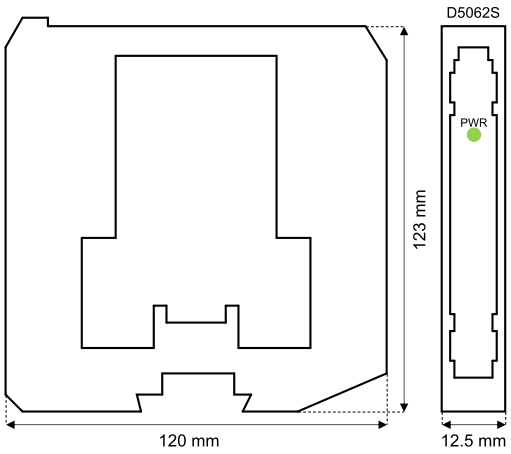
Ordering codes

D5062S: 1 channel

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.

OVERALL DIMENSIONS



TECHNICAL DATA

Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.
Current consumption: 90 mA @ 24 Vdc with 20 mA transducer consumption and 2 mA output load, typical.
Power dissipation: 2.0 W @ 24 Vdc with 20 mA transducer consumption and 2 mA output load, typical.

Input

0 V to -20 V (10 kΩ impedance at terminals 7-8 or 8-9).
3 wires sensor supply voltage: more than -22 V @ 0 mA supply, more than -17 V @ 15 mA supply (current limited @ ≈ 23 mA).
2 wires sensor supply voltage: more than -17 V with constant current supply.
2 wires sensor supply current: selectable @ 4 mA, 6 mA or 10 mA via internal DIP–Switch.

Output

0 to -20 V on 10 kΩ load, with 10 Ω output resistance.
Response time: ≤ 10 µs (10 to 90 % step change).
Frequency response: DC to 20 kHz within 1 dB maximum.

Performance

Ref. Conditions: 24 V supply, 10 kΩ load, 23 ± 1 °C ambient temperature.
Calibration accuracy: ≤ ± 0.1 % FSR.
Linearity accuracy: ≤ ± 0.05 % FSR.
Temp. influence: ≤ ± 0.005 % on zero/span for a 1 °C change.

Isolation

I.S. In/Out 1.5 kV; I.S. In/Supply 1.5 kV; Out/Supply 500 V.

Environmental conditions

Operating temperature: temperature limits –40 to +70 °C.
Storage temperature: temperature limits –45 to +80 °C.

Safety description

Associated apparatus and non-sparking electrical equipment.
Uo = 27 V, Io = 90 mA, Po = 576 mW at terminals 7-8-9-10.
Ui = 30 V, Ci = 0 nF, Li = 0 nH at terminals 7-8-9.
Um = 250 Vrms or Vdc, -40 °C ≤ Ta ≤ 70 °C.

Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.
Weight: about 125 g.
Connection: by polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm² (13 AWG).
Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.