D6264

SIL2 Load Cell/Strain Gauge Bridge Converter

The Load Cell/Strain Gauge Bridge Converter D6264 module is a unit suitable for applications requiring SIL 2 level in safety related systems for high risk industries. The unit acts as a galvanically isolated interface installed between a PLC/DCS and a load cell (or a group of load cells). Up to four 350 Ω load cells, or five 450 Ω load cells, or ten 1000 Ω load cells can be connected in parallel. It provides a fully floating power supply voltage with remote sensing capabilities to load cells and converts the mV signal from the load cell into a 0/4-20 mA, providing both current source and sink capabilities. The module is also provided with PhotoMOS alarm output. A modbus output is also provided to interface the PLC/DCS using digital communication.

FEATURES

- SIL 2 / SC 3
- Strain Gauge Bridge Isolated Converter
- Up to four 350 Ω load cells in parallel
- 0/4-20 mA sink/source output current
- Modbus RTU RS-485 for monitor & configuration
- Field Automatic Calibration
- Fully programmable operating parameters
- High Accuracy, µP controlled A/D converter
- Three port isolation, Input/Output/Supply

ORDERING INFORMATION

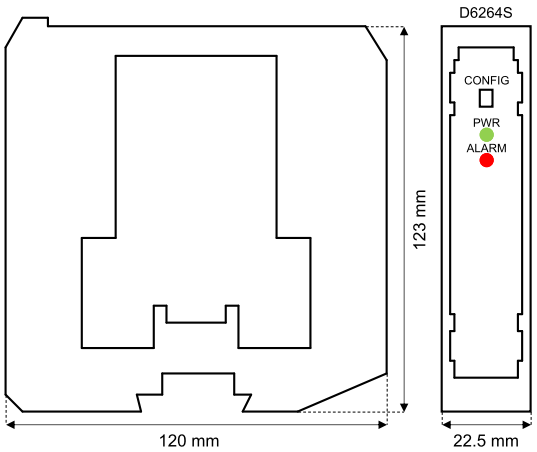
Ordering codes

D6264S: 1 channel

Accessories

Bus Connector JDFT050, Bus Mounting Kit OPT5096.
Programmable USB serial line Kit PPC5092 + SWC5090.

OVERALL DIMENSIONS



TECHNICAL DATA

Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.
Current consumption: 90 mA @ 24 Vdc with four 350 Ω load cells connected and 20 mA output, typical.
Power dissipation: 2.1 W @ 24 Vdc with four 350 Ω load cells connected and 20 mA output, typical.

Input

Up to four 350 Ω load cells (parallel connection). up to five 450 Ω load cells (parallel connection). up to ten 1000 Ω load cells (parallel connection).
Integration time: 100 ms (slow) or 12.5 ms (fast).
Bridge supply voltage: 4.0 Vdc nominal.
Bridge output signal: 1 to 4 mV/V.

Output

0/4 to 20 mA, on max. 400 Ω load, current limited @ 24 mA.
Response time: ≤ 20 ms (10 to 90 % step).

Alarm

Trip point range: within rated limits of the input sensor.
ON-OFF delay time: 0 to 1000 s, 100 ms step.
Hysteresis: within rated limits of input sensor.
Output: voltage free SPST photoMOS: 100 mA, 60 Vdc (≤ 1 V drop).

Modbus interface

Modbus RTU RS-485 up to 115.2 kbps for monitor/configuration/control.

Performance

Ref. Conditions: 24 V supply, 250 Ω load, 23 ± 1 °C ambient temperature.
Input:
Calibration accuracy: ≤ ± 0.05 % FSR.
Linearity accuracy: ≤ ± 0.02 % FSR.
Temp. influence: ≤ ± 0.002 % FSR for a 1 °C change.
Out:
Calibration accuracy: ≤ ± 0.05 % FS.
Linearity accuracy: ≤ ± 0.05 % FS.
Temp. influence: ≤ ± 0.01 % FS on zero/span for a 1 °C change.

Isolation

In/Out 2.5 kV; In/Modbus Out 2.5 kV; In/Supply 2.5 kV; Out/Supply 500 V; Modbus Out/Supply 500 V; Out/Modbus Out 500 V; Out/Alarm Out 500 V; Alarm Out/Modbus Out 500 V; Supply/Alarm Out 500 V.

Environmental conditions

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

Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.
Weight: about 160 g.
Connection: by polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm² (13 AWG).
Dimensions: Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.