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 (pending)
- 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

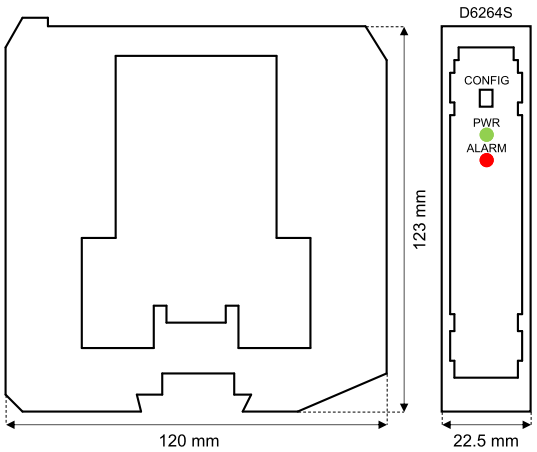
Ordering codes

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.

FSM SIL 3

Functional Safety Management Certification:
GM International is certified to conform to IEC61508:2010 part 1 clauses 5-6 for safety related systems up to and included SIL3. In addition, GM International products have been granted I.S. certificates from the most credited Notified Bodies in the world.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.