

# D5264

# I.S. SIL2 Load Cell/Strain Gauge Bridge Converter

The Load Cell/Strain Gauge Bridge Converter D5264 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 in Safe Area and a load cell (or a group of load cells) in Hazardous Area. Up to four 350  $\Omega$  load cells, or five 450  $\Omega$  load cells, or ten 1000  $\Omega$  load cells can be connected in parallel. It provides a fully floating power supply voltage with remote sensing capabilities to load cells located in Hazardous Area 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**

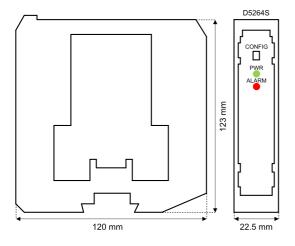
- SIL 2 / SC 3 (pending)
- Input from Zone 0
- Installation in Zone 2
- Strain Gauge Bridge Isolated Converter
- Up to four 350  $\Omega$  load cells in parallel
- 0/4-20 mA sink/source output current
- Modbus RTU RS-485 for monitor & configuration
- Field Automatic Calibration
- Fully programmable operating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

### ORDERING INFORMATION

Ordering codes D5264S: 1 channel

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  $\Omega$  load cells

connected and 20 mA output, typical. Power dissipation: 2.1 W @ 24 Vdc with four 350  $\Omega$  load cells connected and 20 mA output, typical.

Up to four 350  $\Omega$  load cells (parallel connection). up to five 450  $\Omega$  load cells (parallel connection). up to ten 1000  $\Omega$  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:  $\leq$  20 ms (10 to 90 % step).

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

Ref. Conditions: 24 V supply, 250 Ω load, 23 ± 1 °C ambient temperature.

Calibration accuracy: ≤ ± 0.05 % FSR.

Linearity accuracy: ≤ ± 0.02 % FSR.

**Temp. influence:** ≤ ± 0.002 % FSR for a 1 °C change.

Calibration accuracy: ≤ ± 0.05 % FS.

Linearity accuracy: ≤ ± 0.05 % FS.

**Temp. influence:** ≤ ± 0.01 % FS on zero/span for a 1 °C change.

### Isolation

I.S. In/Out 2.5 kV; I.S. In/Modbus Out 2.5 kV; I.S. 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

### **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 = 7.2 V, Io = 177 mA, Po = 471 mW at terminals 13-14-15-16-17-18. Um = 250 Vrms or Vdc, -40 °C  $\leq$  Ta  $\leq$  70°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.



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.

Data specified in this document are merely descriptive of the products and should be integrated with relevant technical specifications. Our products are in constant development and the information presented herein refers to the time of document issue. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. Terms & Conditions can be found at our website. For more information refer to istruction manual.

### **FUNCTION DIAGRAM**

Additional installation diagrams may be found in Instruction Manual.

## Hazardous Area Safe Area/Zone 2 D5264S Configurator 13 +EXC +Sense 15 -Sense 16 -EXC +IN 18 Supply MODBUS IN/OUT RS485

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