

# 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,  $\mu$ P controlled A/D converter
- Three port isolation, Input/Output/Supply

### ORDERING INFORMATION

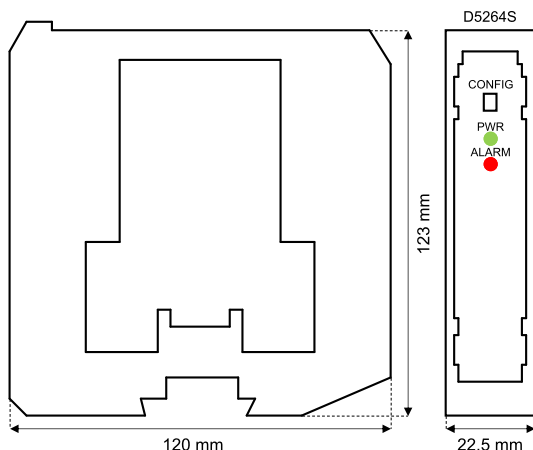
#### Ordering codes

D5264S: 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  $\Omega$  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.

#### Input

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  $\Omega$  load, current limited @ 24 mA.

**Response time:**  $\leq$  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 ( $\leq$  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  $\Omega$  load,  $23 \pm 1$   $^{\circ}$ C ambient temperature.

#### Input:

**Calibration accuracy:**  $\leq \pm 0.05$  % FSR.

**Linearity accuracy:**  $\leq \pm 0.02$  % FSR.

**Temp. influence:**  $\leq \pm 0.002$  % FSR for a 1  $^{\circ}$ C change.

#### Out:

**Calibration accuracy:**  $\leq \pm 0.05$  % FS.

**Linearity accuracy:**  $\leq \pm 0.05$  % FS.

**Temp. influence:**  $\leq \pm 0.01$  % FS on zero/span for a 1  $^{\circ}$ 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 V.

#### Environmental conditions

**Operating temperature:** temperature limits  $-40$  to  $+70$   $^{\circ}$ C.

**Storage temperature:** temperature limits  $-45$  to  $+80$   $^{\circ}$ C.

#### Safety description

Associated apparatus and non-sparking electrical equipment.

$U_o = 7.2$  V,  $I_o = 177$  mA,  $P_o = 471$  mW at terminals 13-14-15-16-17-18.

$U_m = 250$  Vrms or Vdc,  $-40$   $^{\circ}$ C  $\leq T_a \leq 70$   $^{\circ}$ 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 accommodate terminations up to 2.5 mm<sup>2</sup> (13 AWG).

**Dimensions:** Width 22.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.

