

# D5014

## I.S. SIL3 2/4-Wire HART® Transmitter Power Supply

The Repeater Power Supply D5014 module is a high integrity analog input interface suitable for applications requiring SIL 3 level in safety related systems for high risk industries. It provides a fully floating dc supply for energizing conventional 2 wires 4-20 mA, active or passive, transmitters located in Hazardous Area, and repeats the current in floating circuit to drive a Safe Area load. The circuit allows bi-directional communication signals, for HART® devices.

#### **FEATURES**

#### SII 3/SC 3

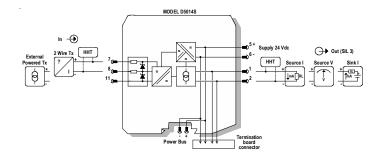
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- 2 fully independent channels
- 4-20 mA Active-Passive Input, Source-Sink Output
- HART® compatible
- Input and Output short circuit proof
- In-field programmability by DIP Switch
- High Accuracy
- Three port isolation, Input/Output/Supply
- High Density, two channels per unit

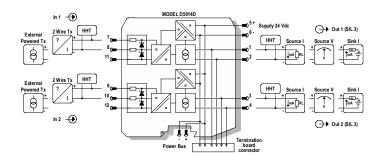
#### **FUNCTION DIAGRAM**

Additional installation diagrams may be found in Instruction Manual.

#### Hazardous Area

Safe Area/Zone 2/Div. 2





#### **TECHNICAL DATA**

#### Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected. Current consumption: 90 mA (D5014D), 45 mA (D5014S), @ 24 Vdc with 20 mA output. typical. Power dissipation: 1.35 W (D5014D), 0.68 W (D5014S), @ 24 Vdc with

20 mA output, typical.

#### Input

4 to 20 mA (separately powered input, voltage drop ≤ 0.5 V) or 4 to 20 mA (2 wires Tx current limited  $\approx$  25 mA), reading range 0 to 24 mA. Transmitter line voltage: 15.0 V typical, 14.5 V minimum, @ 20 mA.

#### Output

4 to 20 mA, on max. 550  $\Omega$  load in source mode (typical 12 V compliance); V min. 8 V @ 0  $\Omega$  load V max. 30 V in sink mode, current limited  $\approx$  25 mA or 1 to 5 V on internal 250  $\Omega$  shunt (or 2 to 10 V on internal 500  $\Omega$  shunt on request).

#### Response time: 5 ms (0 to 100 % step change).

#### Performance

Ref. Conditions: 24 V supply, 250 Ω load, 23 ± 1 °C ambient temperature. Calibration accuracy:  $\leq \pm 0.1$  % FSR.

Linearity accuracy: ≤ ± 0.05 % FSR. **Temp. influence:**  $\leq \pm 0.01$  % FSR on zero/span for a 1 °C change.

#### Isolation

I.S. In/Out 2.5 kV; I.S. In/Supply 2.5 kV; I.S. In/I.S. In 500 V; Out/Supply 500 V; Out/Out 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 = 25.9 V, lo = 92 mA, Po = 594 mW at terminals 7-8, 9-10. Uo = 1.1 V. lo = 56 mA. Po = 16 mW at terminals 8-11, 10-12. Ui = 30 V, li = 128 mA, Ci = 0 nF, Li = 0 nH at terminals 8-11, 10-12. 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 155 g (D5014D), 130 g (D5014S). Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm<sup>2</sup> (13 AWG). Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

### **ORDERING INFORMATION**

#### D5014S: 1 channel D5014D: 2 channels

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.



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.

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