

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 module supports output current duplication and it allows bi-directional communication signals, for HART® devices.

FEATURES

- SIL 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
- Output current duplication available
- 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

ORDERING INFORMATION

Ordering codes

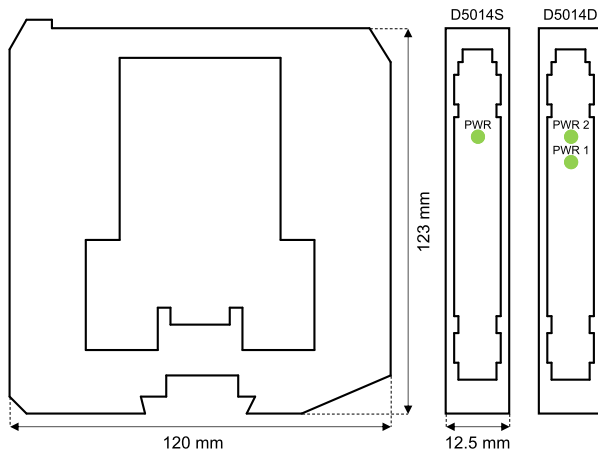
D5014S: 1 channel

D5014D: 2 channels

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.

OVERALL DIMENSIONS



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 ≈ 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 Ω load in source mode (typical 12 V compliance); V min. 8 V @ 0 Ω load V max. 30 V in sink mode, current limited ≈ 25 mA or 1 to 5 V on internal 250 Ω shunt (or 2 to 10 V on internal 500 Ω shunt on request). Output current duplication available (D5014D).

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: $\leq \pm 0.05$ % 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.

$U_o = 25.9$ V, $I_o = 92$ mA, $P_o = 594$ mW at terminals 7-8, 9-10.

$U_o = 1.1$ V, $I_o = 56$ mA, $P_o = 16$ mW at terminals 8-11, 10-12.

$U_i = 30$ V, $I_i = 128$ mA, $C_i = 0$ nF, $L_i = 0$ nH at terminals 8-11, 10-12.

$U_m = 250$ Vrms or Vdc, -40 °C $\leq T_a \leq 70$ °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 mm² (13 AWG).

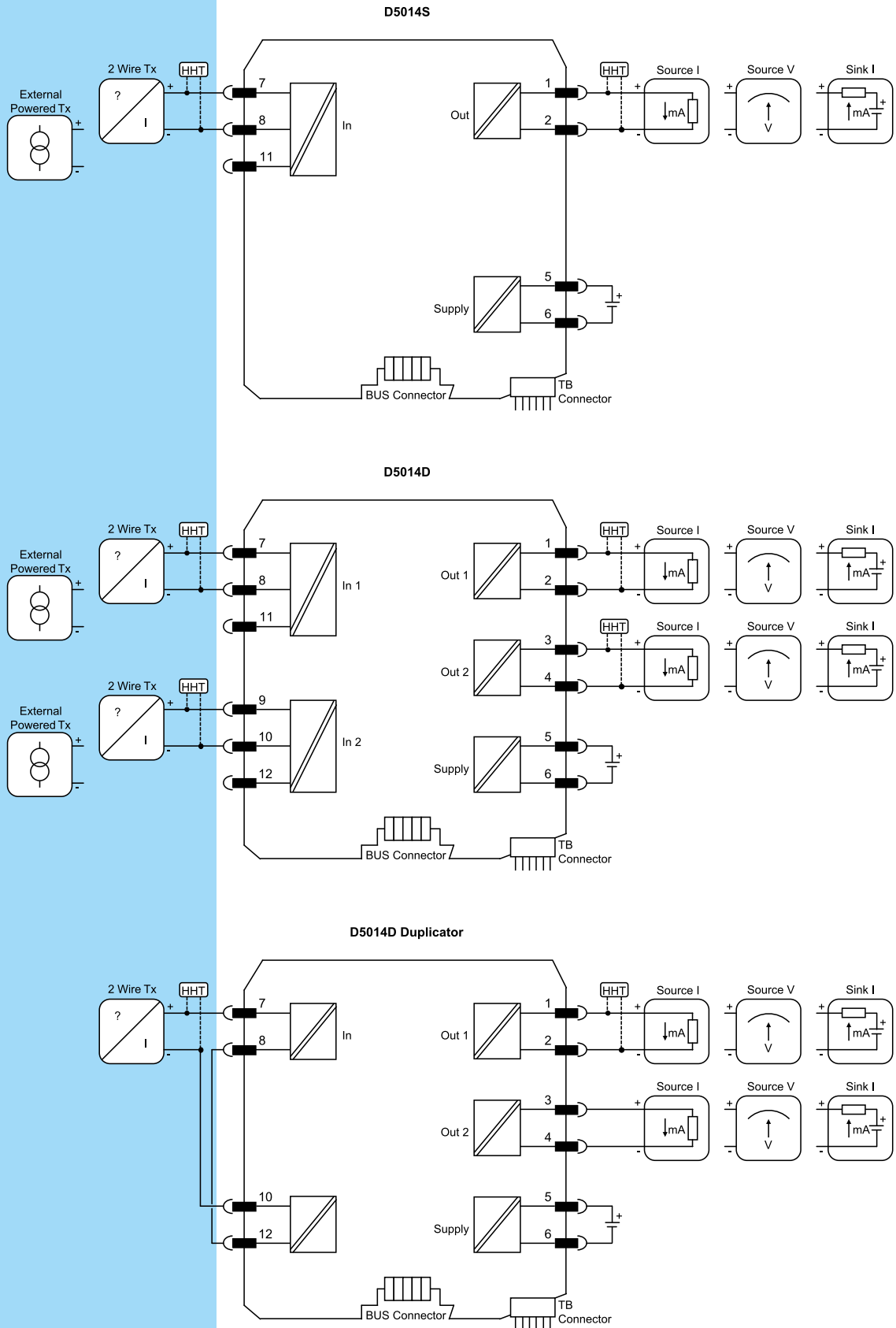
Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

FUNCTION DIAGRAM

Additional installation diagrams may be found in Instruction Manual.

Hazardous Area

Safe Area/Zone 2/Div. 2



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 instruction manual.