

# 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

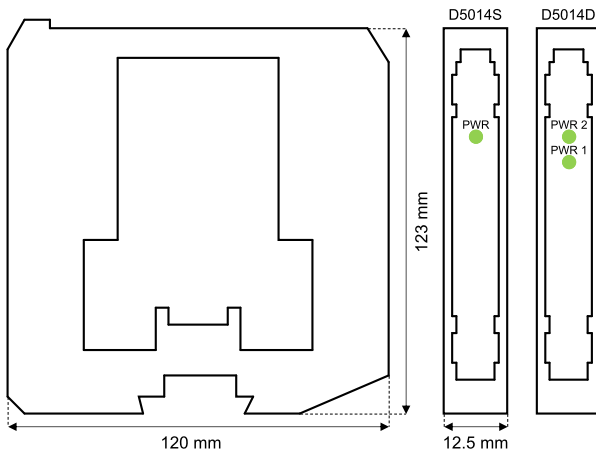
D5014S: 1 channel

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  $\leq 0.5$  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. Output current duplication available (D5014D).

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

#### Performance

**Ref. Conditions:** 24 V supply, 250  $\Omega$  load, 23  $\pm 1$  °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 mm<sup>2</sup> (13 AWG).

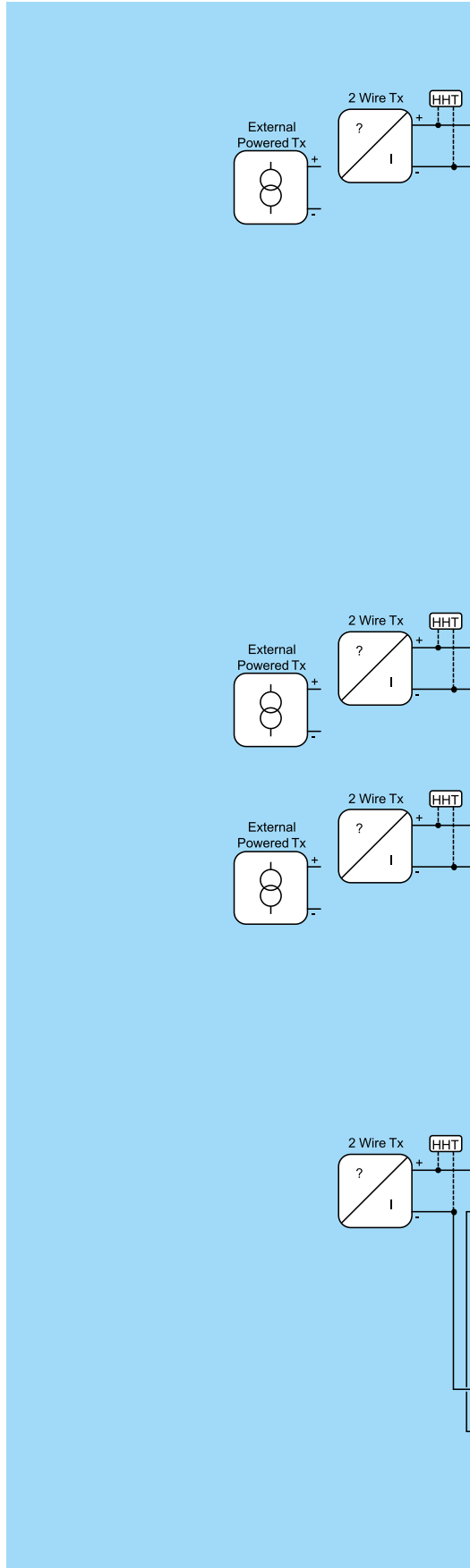
**Dimensions:** Width 12.5 mm, Depth 123 mm, Height 120 mm.

# FUNCTION DIAGRAM

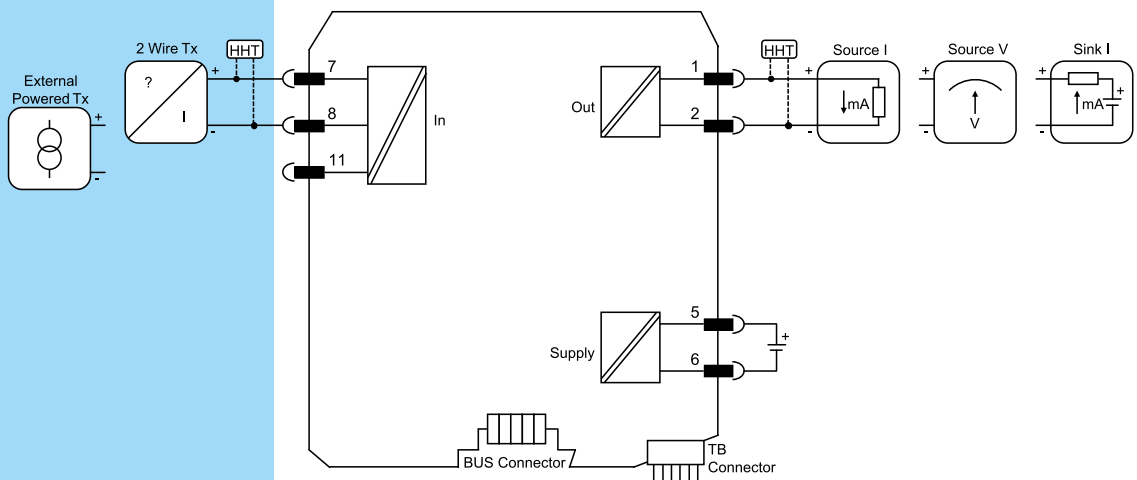
Additional installation diagrams may be found in Instruction Manual.

## Hazardous Area

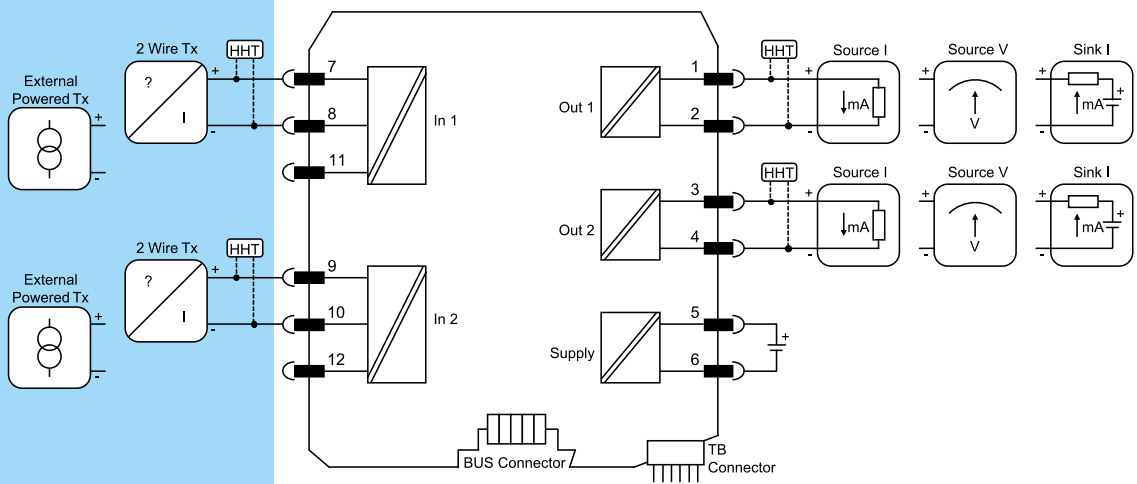
## Safe Area/Zone 2/Div. 2



D5014S



D5014D



D5014D Duplicator

