

D5016

I.S. SIL3 2-Wire Active HART® Tx Current Repeater

The Current Repeater D5016 module is a high integrity analog input interface suitable for applications requiring SIL 3 level in safety related systems for high risk industries. It repeats a 2-wire active 4-20 mA current signal input in floating circuit to drive a Safe Area load. The module 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 Source-Sink Output
- HART® compatible
- High Accuracy
- Three port isolation, Input/Output/Supply
- High Density, two channels per unit

ORDERING INFORMATION

Ordering codes

D5016xy

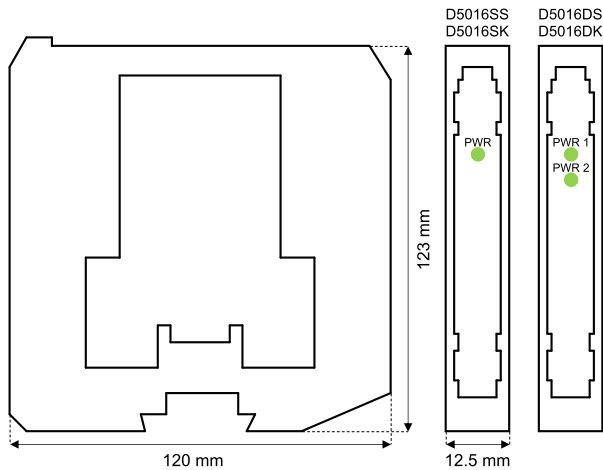
x: S → 1 channel; D → 2 channels

y: S → source current output; K → sink current output

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: 33 mA (D5016SS), 20 mA (D5016SK), 57 mA (D5016DS), 31 mA (D5016DK) @ 24 Vdc with 20 mA output, typical.

Power dissipation: 0.90 W (D5016SS), 1.00 W (D5016SK), 1.50 W (D5016DS), 1.80 W (D5016DK) @ 24 Vdc with 20 mA output on 250 Ω load and 24 Vdc output supply for sink models, typical.

Input

4 to 20 mA (separately powered input, voltage drop ≤ 7 V), reading range 0 to 22 mA.

HART Impedance: 225 Ω, typical.

Output

4 to 20 mA.

Sink out voltage range: 2 to 30 V.

Load range: 0 to 500 Ω, with conventional Tx input

250 Ω nom (160 to 500 Ω), with smart Tx input.

Current limitation: 24 mA (up to 450 Ω load) ≤ max current ≤ 26 mA.

Response time: 20 ms (10 to 90 % step change).

Performance

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

Calibration accuracy: ≤ ± 20 μA.

Linearity accuracy: ≤ ± 20 μA.

Temp. influence: ≤ ± 2 μA/°C.

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.

$U_o = 8.8 \text{ V}$, $I_o = 0 \text{ mA}$, $P_o = 0 \text{ mW}$ at terminals 7-8, 9-10.

$U_i = 30 \text{ V}$, $I_i = 100 \text{ mA}$, $C_i = 1.1 \text{ nF}$, $L_i = 0 \text{ nH}$ at terminals 7-8, 9-10.

$U_m = 250 \text{ Vrms}$ or Vdc, $-40 \text{ °C} \leq T_a \leq 70 \text{ °C}$.

Mounting

DIN-Rail 35 mm, with or without Power Bus or on custom Term. Board.

Weight: about 135 g (D5016DS and D5016DK), 115 g (D5016SS and D5016SK).

Connection: by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm² (13 AWG).

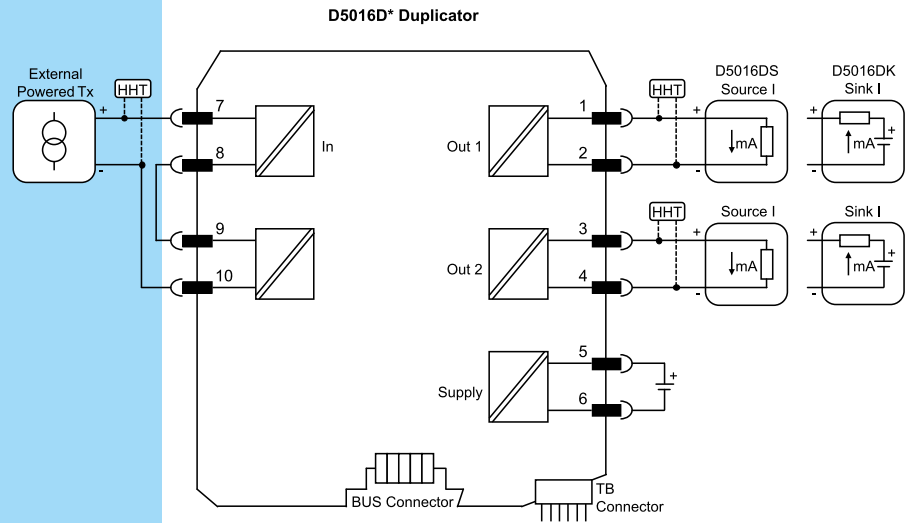
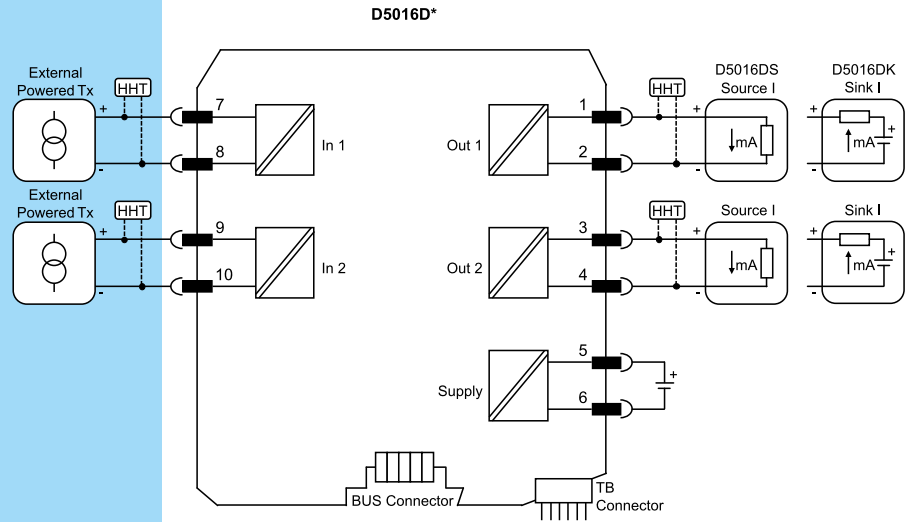
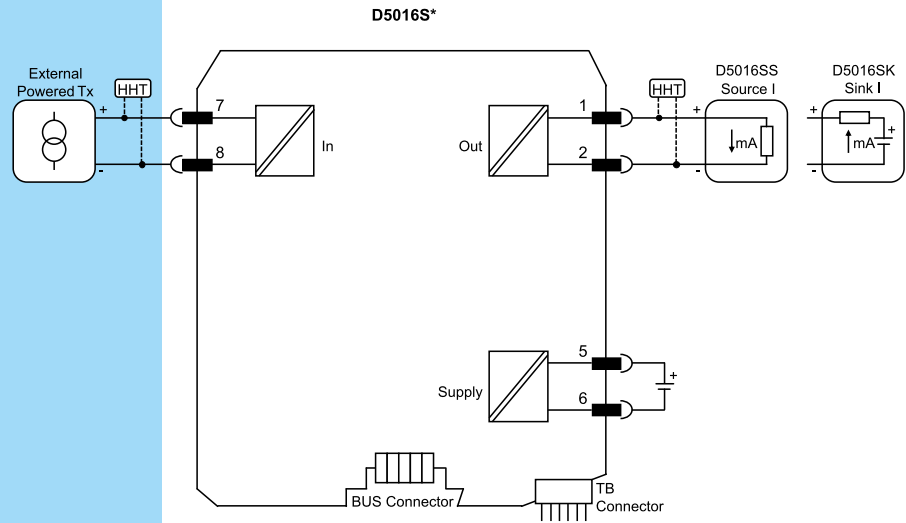
Dimensions: Width 12.5 mm, Depth 123 mm, Height 120 mm.

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.