

D6020

SIL2 HART® Isolating Driver

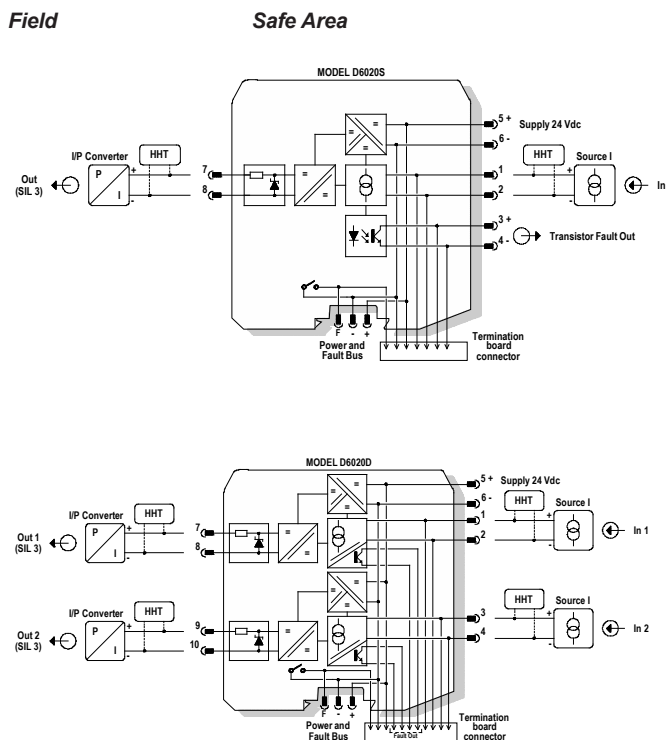
The Isolating Driver D6020 module is a high integrity analog output interface suitable for applications requiring SIL 2 level in safety related systems for high risk industries. It isolates and transfers a 4-20 mA signal from a controller to a load. It has a high output capacity combined with a low drop across its input terminals. The circuit allows bi-directional communication signals, for HART® smart positioners. Line and load open/short circuit detection is provided: the fault in the field is directly mirrored to the PLC AO and it is also reported by opening the fault output.

FEATURES

- SIL 2 / SC 3
- 2 fully independent channels
- 4-20 mA Input, Output Signal
- HART® compatible
- Line & Load short/open circuit detection
- Field fault mirroring to the PLC AO
- 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.



TECHNICAL DATA

Supply

24 Vdc nom (18 to 30 Vdc), reverse polarity protected.

Current consumption: 70 mA (D6020D), 35 mA (D6020S), @ 24 Vdc with 20 mA output on 500 Ω load, typical.

Power dissipation: 1.3 W (D6020D), 0.65 W (D6020S), @ 24 Vdc with 20 mA output on 500 Ω load, typical.

Input

4 to 20 mA with ≤ 2.5 V voltage drop, reverse polarity protected in normal operation, ≥ 5 kΩ impedance (≈ 2 mA sinking from 10 to 30 Vdc) when fault condition detected.

Output

4 to 20 mA, on max. 700 Ω load.

Response time: 25 ms (0 to 100 % step change).

Fault

Field device and wiring open circuit or short circuit detection; short circuit detection can be disabled via dip-switch.

Short output: load resistance < 50 Ω or < 100 Ω dip-switch selectable (≈ 2 mA forcing to detect fault).

Open output: load resistance > (21 V / Loop current) -300 Ω (for example, if Loop current = 20 mA: load resistance > (21 V / 20 mA) -300 Ω = 750 Ω).

Fault signaling: voltage free NE SPST optocoupled open-collector transistor (output de-energized in fault condition).

Open-collector/drain rating: 100 mA @ 35 Vdc (≤ 1.5 V voltage drop).

Leakage current: ≤ 50 μA @ 35 Vdc.

Response time: ≤ 30 ms.

Performance

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

Calibration accuracy: ≤ ± 0.1 % FSR.

Linearity accuracy: ≤ ± 0.1 % FSR.

Temp. influence: ≤ ± 0.01 % FSR on zero/span for a 1 °C change.

Isolation

Out/In 2.5 kV; Out/Supply 2.5 kV; Out/Fault 2.5 kV; Out/Out 500 V; In/Supply 500 V; In/In 500 V; Fault/In 500 V; Fault/Supply 500 V; Fault/Fault 500 V.

Environmental conditions

Operating temperature: temperature limits -40 to +70 °C.

Storage temperature: temperature limits -45 to +80 °C.

Mounting

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

Weight: about 145 g (D6020D), 130 g (D6020S).

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.

ORDERING INFORMATION

D6020S: 1 channel

D6020D: 2 channels

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.