

D5030

I.S. SIL3 Switch/Proximity Relay-Out Repeater

The Switch/Proximity Detector Repeater D5030 is a module suitable for applications requiring SIL 3 level in safety related systems for high risk industries. The unit can be configured for switches or proximity detectors, located in Hazardous Area, and repeats the input state to a relay contact in Safe Area. The selectable fault detection circuit is available for proximity sensors or switches equipped with end of line resistors. In the double-channel model, the second output can be configured to repeat the second input, to duplicate the first input or to report the first input fault. If needed, the output can also be inverted.

FEATURES

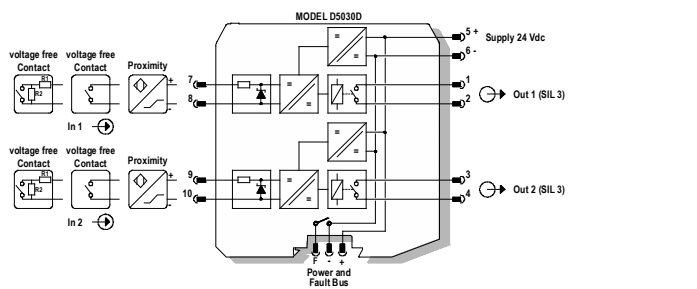
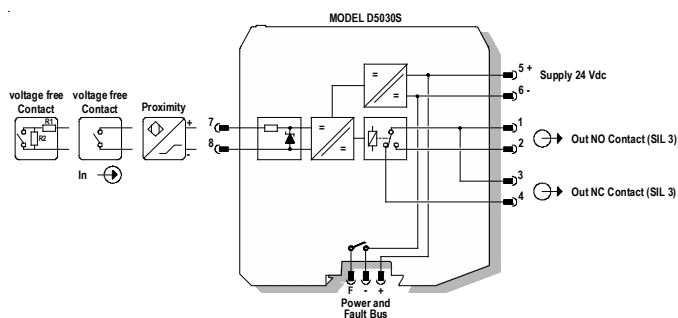
- SIL 3 / SC 3
- Input from Zone 0/Div. 1
- Installation in Zone 2/Div. 2
- 2 fully independent channels
- High voltage/current rating relay output
- Field open and short circuit detection
- In-field programmability by DIP Switch
- Three port isolation, Input/Output/Supply
- High Density, two channels 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: 35 mA (D5030D), 18 mA (D5030S), @ 24 Vdc with short circuit input and relay energized, typical.

Power dissipation: 0.85 W (D5030D), 0.45 W (D5030S), @ 24 Vdc with short circuit input and relay energized, typical.

Input

Input switching current levels: ON ≥ 2.1 mA, OFF ≤ 1.2 mA.

Fault current levels: open fault ≤ 0.2 mA, short fault ≥ 6.8 mA.

Input equivalent source: 8 V 1 k Ω typical (8 V no load, 8 mA short).

Output

Voltage free SPST (D5030D) or SPDT (D5030S) relay contact.

Contact material: Ag Alloy (Cd free), gold plated.

Contact rating: 4 A 250 Vac 1000 VA, 4 A 250 Vdc 120 W (resistive load).

Contact min. switching current: 1 mA.

DC and AC load breaking capacity: refer to Instruction Manual.

Mechanical / electrical life: 5 * 10⁶ / 3 * 10⁴ operation, typical.

Operate / release time: 8 / 4 ms, typical.

Frequency response: 10 Hz maximum.

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 2.5 kV; Out/Out 2.5 kV.

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 = 10.5 V, I_o = 22 mA, P_o = 56 mW at terminals 7-8, 9-10.

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

Mounting

DIN-Rail 35 mm, with or without Power Bus.

Weight: about 140 g (D5030D), 120 g (D5030S).

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

D5030S: 1 channel

D5030D: 2 channels

Accessories

Bus Connector JDFT049, Bus Mounting Kit OPT5096.