

Switch/Proximity Detector Repeater Relay Output, DIN-Rail Models D1030S, D1030D

Characteristics:

General Description:

The Switch/Proximity Detector Repeater type D1030 is a DIN Rail unit with one or two independent channels.

The unit can be configured for contact or proximity detector, NO or NC and for NE or ND SPDT relay output contact.

Each channel enables a Safe Area load to be controlled by a switch, or a proximity detector, located in Hazardous Area.

D1030D dual channel type has two independent input channels and actuates the corresponding output relay. Two actuation modes can be independently DIP switch configured on each input channel: NO In/NE relay or NO In/ND relay. Contact or proximity sensor and its connection line short or open circuit fault detection is also DIP switch configurable: fault detection can be enabled (in case of fault it de-energizes the corresponding output relay and turns the fault LED on) or disabled (in case of fault the corresponding output relay repeats the input line open or closed status as configured).

D1030S single channel type has one input channel and two output relays; the unit has two DIP switch configurable operating modes:

Mode A) Input channel actuates in parallel the two output relays (DPDT contact).

Relay actuation mode can be independently configured for each output in two modes: NO In/NE relay or NO In/ND relay.

Mode B) Input channel actuates output relay (A) configurable in two modes as in mode A above. Output relay B operates as a fault output (in case of input fault, relay B actuates and the fault LED turns on while relay A repeats the input line as configured). Actuation can be DIP switch configured in two modes: No input fault/Energized relay (it de-energizes in case of fault) or No input fault/De-energized relay (it energizes in case of fault).

Function:

1 or 2 channels I.S. switch repeater for contact or EN60947-5-6 Proximity Provides 3 port isolation (input/output/supply).

Signalling LEDs:

Power supply indication (green), Output status (yellow), Line fault (red).

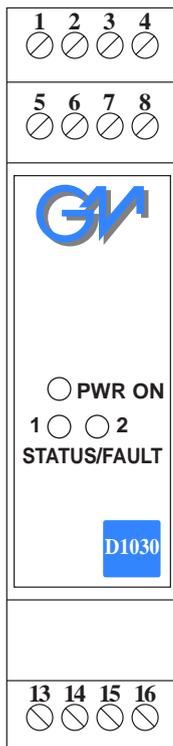
Field Configurability:

NO/NC input for Contact/Proximitior, NE/ND relay operation and Fault detection enable/disable.

EMC:

Fully compliant with CE marking applicable requirements.

Front Panel and Features:



- NO/NC Contact/Proximity Detector Input.
- Two SPDT Relay Output Signals.
- SPDT Relay Output for fault detection on 1 channel version.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- Field programmability by DIP Switch.
- ATEX, UL & C-UL, Russia and Ukraine Certifications.
- High Reliability, SMD components.
- High Density, two channels per unit.
- Simplified installation using standard DIN Rail plug-in terminal blocks.
- 250 Vrms (Um) max. voltage applied to the instruments associated with barrier.

Technical Data:

Supply:

24 V nom (20 to 30 V) reverse polarity protected ripple within voltage limits ≤ 5 Vpp.

Current consumption @ 24 V: 85 mA for 2 channels D1030D, 65 mA for 1 channel D1030S with relays energized.

Max. power consumption: 2.60 W for 2 channels, 2.20 W for 1 channel with 30 V supply voltage, short circuit input and relays energized.

Isolation (Test Voltage):

I.S. In/Out 1.5 KV; I.S. In/Supply 1.5 KV;

Out/Supply 1500 V, Out/Out 1500 V.

Input switching current levels:

ON ≥ 2.1 mA, OFF ≤ 1.2 mA,

Switch current ≈ 1.65 mA \pm 0.2 mA hysteresis.

Fault current levels: Open fault ≤ 0.2 mA, Short fault ≥ 6.8 mA (when enabled both faults de-energize channel relay with dual channel unit D1030D or actuate fault relay with single channel unit D1030S).

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

Output:

Voltage free SPDT relay contact.

Contact rating: 2 A 250 V 100 VA or 2 A 250 V 80 W (resistive load).

Response time: 20 ms.

Frequency response: 10 Hz maximum.

Compatibility:

CE CE mark compliant, conforms to 94/9/EC Atex Directive and to 89/336/CEE EMC Directive.

Environmental conditions:

Operating: Temperature limits -20 to + 60 °C,

relative humidity max 90 % non condensing, up to 35 °C.

Storage: Temperature limits - 40 to + 80 °C.

Safety Description:

Ex II (1) G D [EEx ia] IIC or I M2 [EEx ia] I associated electrical apparatus. Uo/Voc = 10.9 V, Io/Isc = 15 mA, Po/Po = 40 mW at terminals 13-14, 15-16.

Um = 250 Vrms, -20 °C \leq Ta \leq 60 °C.

Approvals: DMT 01 ATEX E 042 X conforms to EN50014, EN50020, UL & C-UL E222308 conforms to UL913 (Div.1), UL 60079-0 (General, All Zones), UL60079-11 (Intrinsic Safety "i" Zones 0 & 1), for UL and CSA-C22.2 No.157-92 (Div.1), CSA-E60079-0 (General, All Zones), CSA-E60079-11 (Intrinsic Safety "i" Zones 0 & 1) for C-UL, TCCEXEE (Russia) Nr.665 according to GOST R 51330.0-99, 51330.10-99 [Exia]IIC X, TCCEXEE (Ukraine) Nr.665 according to GOST 12.2.007.0, 22782.0, 22782.5 ExialIIC X, Gosgortekhnadzor of Russia Permit Nr. PPC 04-11284.

Mounting:

T35 DIN Rail according to EN50022.

Weight: about 140 g D1030D, 130 g D1030S.

Connection: By polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm².

Location: Safe Area / Non Hazardous Locations installation.

Protection class: IP 20.

Dimensions: Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

Ordering Information:

Model:	D1030		
1 channel		S	
2 channels		D	
Power Bus enclosure			/B

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	L/R/La/Ra (μH/Ω)
Terminals 13-14, 15-16				
Uo/Voc = 10.9 V	II C	2.05	165	890
Io/Isc = 15 mA	II B	14.40	661	3580
Po/Po = 40 mW	II A	63.00	1320	7160

NOTE for USA and Canada:

II C equal to Gas Groups A, B, C, D, E, F and G.

II B equal to Gas Groups C, D, E, F and G.

II A equal to Gas Groups D, E, F and G.

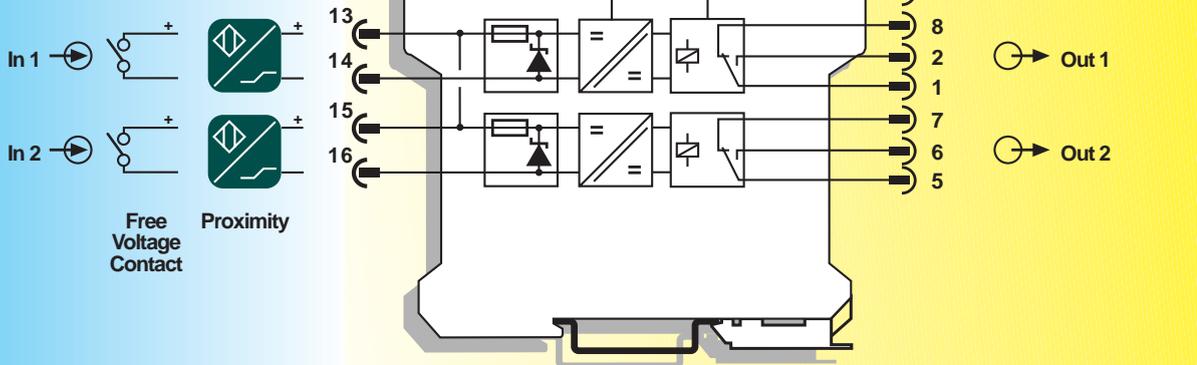


Function Diagram:

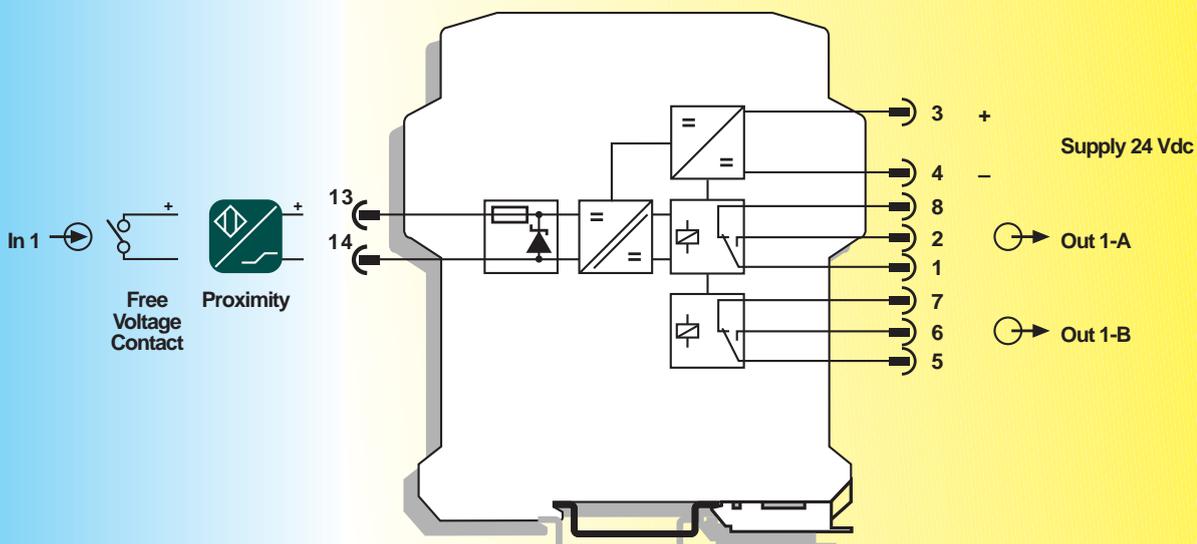
HAZARDOUS AREA / HAZARDOUS LOCATIONS
CLASS I, DIVISION 1 and CLASS II, DIVISION 1 or
CLASS I, Zone 0

SAFE AREA / NON HAZARDOUS LOCATIONS

MODEL D1030D



MODEL D1030S



Relay contact shown in de-energized position