

Switch/Proximity Detector Repeater Relay Output DIN-Rail Models D1130S, D1130D

Characteristics:

General Description:

The Switch/Proximity Detector Repeater type D1130 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.

D1130D 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).

D1130S 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 NAMUR Prox. Provides 3 port isolation (input/output/supply).

Signalling LEDs:

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

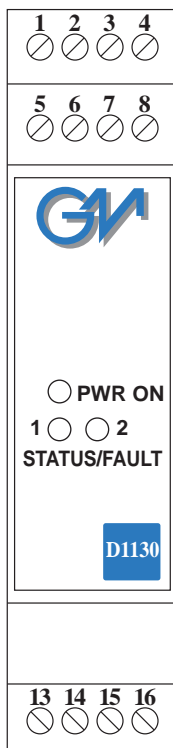
Field Configurability:

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.
- Universal AC Supply Voltage (85 to 264 Vac or 100 to 350 Vdc).
- 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:

115-230 Vac (85 to 264 Vac), 50 to 400 Hz or 110 Vdc (100 to 350 Vdc). Limit supply voltage to 250 Vrms for Intrinsic Safety applications.

Current consumption: 25 mA @ 115 Vac, 17 mA @ 230 Vac with relays energized.

Max. power consumption: 2.00 W for 2 channels, 1.90 W for 1 channel at 264 Vac supply voltage, short circuit input and relays energized.

Isolation (Test Voltage):

I.S. In/Out 2.5 KV; I.S. In/Supply 2.5 KV;

Out/Supply 2500 V, Out/Out 2500 V.

Input switching current levels:

ON \geq 2.1 mA, OFF \leq 1.2 mA.

Switch current \approx 1.65 mA \pm 0.2 mA hysteresis.

Fault current levels: Open fault \leq 0.2 mA, Short fault \geq 6.8 mA (when enabled both faults de-energize channel relay with dual channel unit D1130D or actuate fault relay with single channel unit D1130S).

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. U_o/V_{oc} = 10.9 V, I_o/I_{sc} = 15 mA, P_o/P_o = 40 mW at terminals 13-14, 15-16.

U_m = 250 Vrms, -20 °C \leq T_a \leq 60 °C.

UL **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 Exia IIC X, Gosortekhnadzor of Russia Permit Nr. PPC 04-11284.

Mounting:

T35 DIN Rail according to EN50022.

Weight: about 150 g D1130D, 145 g D1130S.

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:	D1130	
1 channel		S
2 channels		D

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	Lo/Ro (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.

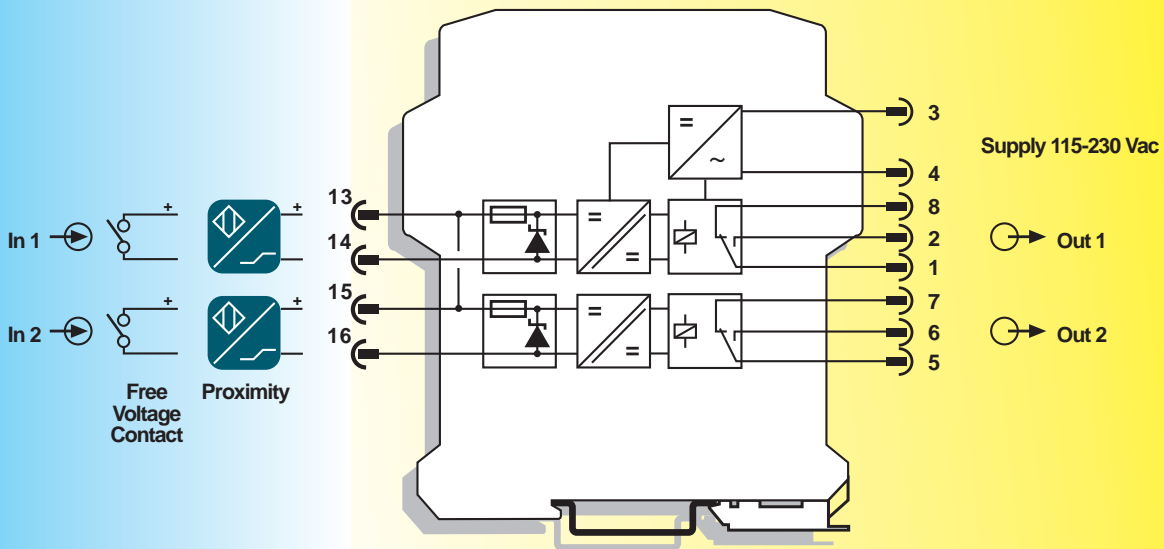


Function Diagram:

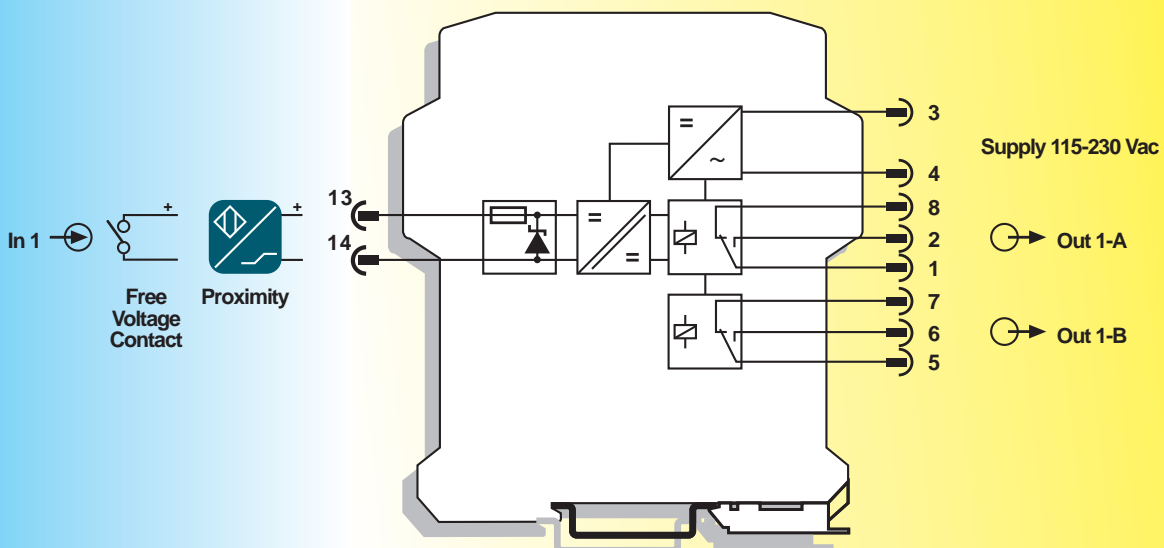
HAZARDOUS AREA / HAZARDOUS LOCATIONS
 CLASS I, DIVISION 1, GROUPS A, B, C, D and
 CLASS II, DIVISION 1, GROUPS E, F, G or CLASS I, Zone 0, GROUP IIC

SAFE AREA

MODEL D1130D



MODEL D1130S



Relay contact shown in de-energized position