

Characteristics:
General Description:

The Flammable Liquid Presence Detector Interface type D1180D is a DIN Rail unit configurable with two isolated independent channels. The unit can be configured for NPN or PNP transistor type input, NO or NC and for NE or ND SPDT relay output. Each channel enables a Safe Area load to be controlled by 3 wires opto-electronic sensors or 3 wires proximity sensors located in Hazardous Area.

Function:

2 channels I.S. flammable liquid presence detector interface or 3 wires proximity sensor. Provides 3 port isolation (input/output/supply).

Signalling LEDs:

Power supply indication (green), output status (yellow).

Field Configurability:

NO/NC input for sensor transistor input, NE/ND relay operation, switching current levels.

EMC:

Fully compliant with CE marking applicable requirements.

Technical Data:
Supply:

115-230 Vac, 50-60 Hz nom (85 to 264 Vac, 48 to 400 Hz) or 100 to 350 Vdc, ripple within voltage limits ≤ 10 Vpp.

Limit supply voltage to 250 Vrms for Intrinsic Safety applications.

Current consumption @ 115 Vac: 30 mA with short input and relays energized.

Current consumption @ 230 Vac: 20 mA with short input and relays energized.

Max. power consumption: at 264 Vac supply voltage, short circuit input and relays energized, 2.2 W.

Isolation (Test Voltage):

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.

Input switching current levels:

DIP switch settable at $\approx 8.0, 11.0, 14.0, 17.0$ mA trip point.

Sensor supply current range is 0 to 5, 3 to 8, 6 to 11, 9 to 14 mA, switching current ≈ 8.0 mA ± 0.5 mA hysteresis.

Input equivalent source: 13.0 V 150 Ω typical (13 V no load, 25 mA short circuit limited current).

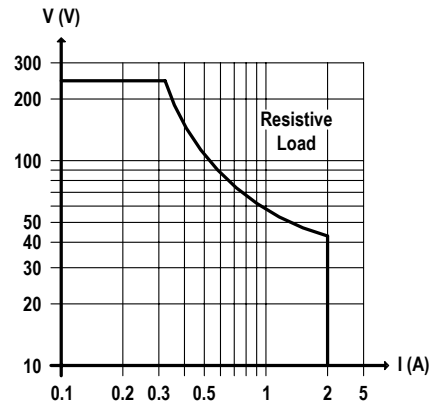
Output:

voltage free SPDT relay contact.

Contact material: AgCdO.

Contact rating: 2 A 250 Vac 500 VA, 2 A 250 Vdc 80 W (resistive load).

DC Load breaking capacity:



Mechanical / Electrical life: $30 \times 10^6 / 1 \times 10^5$ operation, typical.

Operate / Release time: 7 / 3 ms typical.

Bounce time NO / NC contact: 3 / 5 ms.

Response time: 20 ms.

Frequency response: 10 Hz maximum.

Compatibility:

CE CE mark compliant, conforms to 94/9/EC Atex Directive and to 2004/108/CE EMC Directive.

Environmental conditions:

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

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

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

Safety Description:


II (1) G [Ex ia Ga] IIC, II (1) D [Ex ia Da] IIC, I (M1) [Ex ia Ma] I,

[Ex ia Ga] IIC, [Ex ia Da] IIC, [Ex ia Ma] I associated electrical apparatus.

Uo/Voc = 15.8 V, Io/Isc = 109 mA, Po/Po = 428 mW at terminals 13-16, 9-12.

Uo/Voc = 15.8 V, Io/Isc = 13 mA, Po/Po = 51 mW at terminals 14-16, 13-15, 10-12, 9-11.

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

Approvals:

DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-26,

EN61241-0, EN61241-11, IECEx BVS 07.0027X conforms to IEC60079-0,

IEC60079-11, IEC60079-26, IEC61241-0, IEC61241-11,

Russia according to GOST 12.2.007.0-75, R 51330.0-99, R 51330.10-99 [Exia] IIC X,

Ukraine according to GOST 12.2.007.0, 22782.0, 22782.5 Exia IIC X,

KR Type Approval Certificate for marine applications.

Mounting:

T35 DIN Rail according to EN50022.

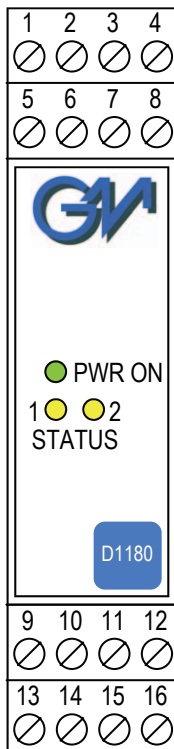
Weight: about 160 g.

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

Location: Safe Area installation.

Protection class: IP 20.

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

Front Panel and Features:


- Input from Zone 0 (Zone 20).
- Universal AC supply voltage (85 to 264 Vac or 100 to 350 Vdc).
- Dual channel Flammable Liquid Presence Detector Interface Input.
- NPN/PNP 3 wires proximity Detector Input.
- Two SPDT Relay Output Signals.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- In-field programmability by DIP Switch.
- ATEX, IECEx, Russian and Ukrainian Certifications.
- Type Approval Certificate KR for marine applications.
- High Reliability, SMD components.
- High Density, two channels per unit.
- Simplified installation using standard DIN Rail and plug-in terminal blocks.
- 250 Vrms (Um) max. voltage allowed to the instruments associated with the barrier.

Ordering Information:

Model: D1180D

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (μF)	Lo/La (mH)	Lo/Ro (μH/Ω)
Terminals 13-16, 9-12 Uo/Voc = 15.8 V Io/Isc = 109 mA Po/Po = 428 mW	IIC IIB IIA	0.478 2.880 11.600	3.0 12.0 24.0	83 332 664
Terminals 14-16, 13-15, 10-12, 9-11 Uo/Voc = 15.8 V Io/Isc = 13 mA Po/Po = 51 mW	IIC IIB IIA	0.478 2.880 11.600	217.6 870.7 1741.0	706 2820 5650

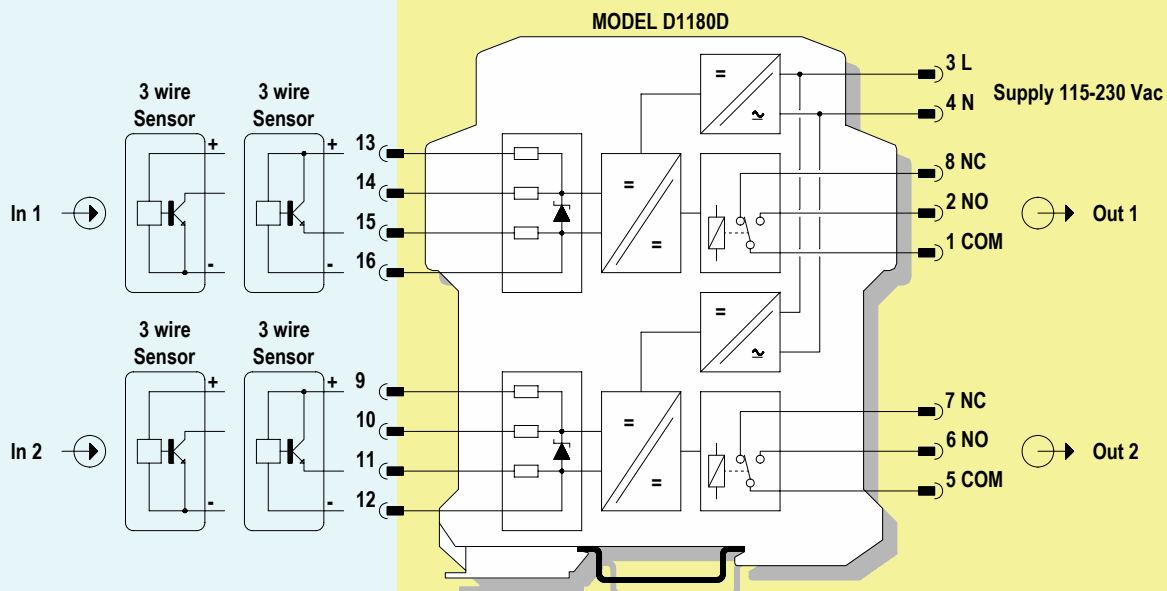
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Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20), GROUP IIC

SAFE AREA



Relay contact shown in de-energized position