

## Characteristics:

### General Description:

The Flammable Liquid Presence Detector Interface type D1081D 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 NC or NO optocoupled open-collector transistor 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, NC/NO transistor operation, switching current levels.

### EMC:

Fully compliant with CE marking applicable requirements.

## Technical Data:

### Supply:

15-24 Vdc nom (14 to 30 Vdc) reverse polarity protected, ripple within voltage limits  $\leq 5$  Vpp.

**Current consumption @ 24 V:** 55 mA with input closed and transistors energized.

**Current consumption @ 15 V:** 85 mA with input closed and transistors energized.

**Power dissipation:** 1.0 W with 24 V supply, input closed and transistors energized.

**Max. power consumption:** at 30 V supply voltage, short circuit input and transistors energized, 1.6 W.

### Isolation (Test Voltage):

I.S. In/Out 1.5 KV; I.S. In/Supply 1.5 KV; I.S. In/I.S. In 500 V; Out/Supply 500 V; Out/Out 500 V.

### 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  $\approx 8.0$  mA  $\pm 0.5$  mA hysteresis.

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

### Output:

voltage free SPST optocoupled open-collector transistor.


**Open-collector rating:** 100 mA at 35 V ( $\leq 1.5$  V voltage drop).

**Leakage current:**  $\leq 50$   $\mu$ A at 35 V.

**Response time:** 500  $\mu$ s.

**Frequency response:** 2 KHz maximum.

### Compatibility:

 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  $^{\circ}$ C,

relative humidity max 90 % non condensing, up to 35  $^{\circ}$ C.

**Storage:** temperature limits -45 to +80  $^{\circ}$ C.

### Safety Description:



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

[Ex ia Ga] IIC, [Ex ia Da] IIIC, [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  $^{\circ}$ C  $\leq$  Ta  $\leq$  60  $^{\circ}$ 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 130 g.

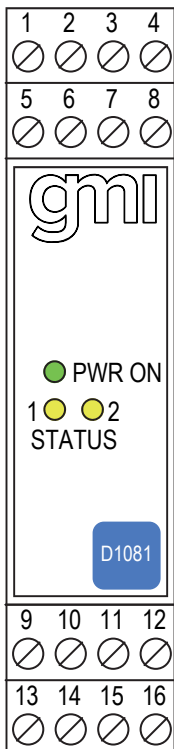
**Connection:** by polarized plug-in disconnect screw terminal blocks to accommodate terminations up to 2.5 mm<sup>2</sup>.

**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).
- Dual channel Flammable Liquid Presence Detector Interface Input.
- NPN/PNP 3 wires proximity Detector Input.
- Two opto isolated voltage free Transistor 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:	D1081D
Power Bus enclosure	/B

**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	0.478	3.0	83
	IIB	2.880	12.0	332
	IIA	11.600	24.0	664
Terminals 14-16, 13-15, 10-12, 9-11 Uo/Voc = 15.8 V Io/Isc = 13 mA Po/Po = 51 mW	IIC	0.478	217.6	706
	IIB	2.880	870.7	2820
	IIA	11.600	1741.0	5650

**Image:**



**Function Diagram:**

