GM INTERNATIONAL
TECHNOLOGY FOR SAFETY

D1081

Flammable Liquid Presence Detector Interface Transistor Output DIN-Rail Model D1081D

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 wire opto-electronic sensor located in Hazardous Area.

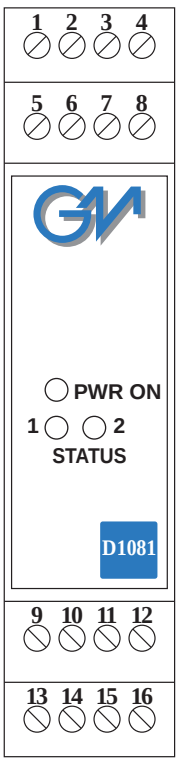
Function:
2 channels I.S. flammable liquid presence detector interface. Provides 3 port isolation (input/output/supply).

Signalling LEDs:
Power supply indication (green), Output status (yellow).

Field Configurability:
NO/NC input for sensor transistor input, NO/NC transistor operation, switching current levels.

EMC:
Fully compliant with CE marking applicable requirements.

Front Panel and Features:



- Dual Channel Flammable Liquid Presence Detector Interface Input.
- Two Voltage free optocoupled open-collector transistor Output Signals.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- Field programmability by DIP Switch.
- ATEX, 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:
15-24 V nom (14 to 30 V) reverse polarity protected
ripple within voltage limits ≤ 5 Vpp.
Current consumption @ 24 V: 55 mA for 2 channels with transistor energized.
Current consumption @ 15 V: 80 mA for 2 channels with transistor energized.
Max. power consumption: 2.00 W for 2 channels at 30 V supply voltage with transistor energized and short circuit input.

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 ≈ 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 SPST optocoupled open-collector transistor.
Open-collector rating: 50 mA at 35 V or 100 mA at 12 V (≤ 1.5 V voltage drop).
Leakage current: ≤ 50 µA at 35 V.
Response time: 500 µs.
Frequency response: 2 KHz maximum.

Compatibility:
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:
II (1) G D [EEx ia] IIC or I M2 [EEx ia] 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 ≤ Ta ≤ 60 °C.
Approvals: DMT 01 ATEX E 042 X conforms to EN50014, EN50020, 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 ExialIC X, Gosgortekhnadzor of Russia Permit Nr. PPC 04-11284.

Mounting:
T35 DIN Rail according to EN50022.
Weight: about 130 g.
Connection: By polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm^2.
Location: Safe Area.
Protection class: IP 20.
Dimensions: Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

Ordering Information:

Model:	**D1081D**	
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 13-16, 9-12				
Uo/Voc = 15.8 V	II C	0.478	3.0	83
Io/Isc = 109 mA	II B	2.880	12.0	337
Po/Po = 428 mW	II A	11.600	24.0	664
Terminals 14-16, 13-15, 10-12, 9-11				
Uo/Voc = 15.8 V	II C	0.478	217.6	706
Io/Isc = 13 mA	II B	2.880	870.7	2920
Po/Po = 51 mW	II A	11.600	1741.0	5650

Function Diagram:

HAZARDOUS AREA | SAFE AREA