INTERNATIONAL
TECHNOLOGY FOR SAFETY

D1034

SIL 3 Contact/Proximity Detector Interface DIN-Rail Models D1034S, D1034D

Characteristics:

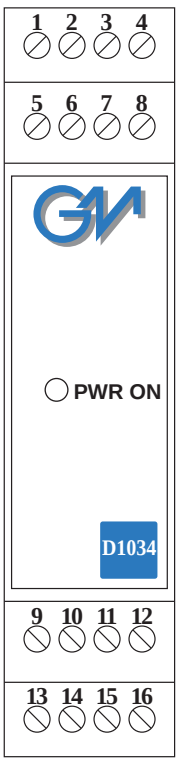
General Description:
D1034 is a single (D1034S) or double (D1034D) channel Intrinsically Safe interface with galvanic isolation, designed to interface contacts or proximity detectors maintaining a high level of loop integrity (safety integrity level SIL 2 according to EN61508). Field loop integrity and status (line plus contact or proximitor) are continuously and directly monitored, in transparent mode, into the PLC, ESD, DCS using their existing input line, without requiring an additional channel for failure detection. This solution results in 100% input channel saving with evident space cost and failure risk benefits.

Function:
1 or 2 totally independent and isolated channels I.S. for contact or EN60947-5-6 Proximity switches. Provides 3 port isolation (input/output/supply).

Signalling LED:
Power supply indication (green).

EMC:
Fully compliant with CE marking applicable requirements.

Front Panel and Features:



- SIL 2 according to IEC 61508, IEC 61511 for T_{proof} = 10 years.
- SIL 3 according to IEC 61508, IEC 61511 for T_{proof} = 1 year.
- Contact/Proximity Detector Input.
- Two independent Output Signals.
- Short and open circuit fault detection.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- ATEX, UL & C-UL, FM & FM-C, 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:
12-24 V nom (10 to 30 V) reverse polarity protected
ripple within voltage limits ≤ 5 Vpp.
Current consumption @ 24 V: 60 mA for 2 channels D1034D,
35 mA for 1 channel D1034S.
Current consumption @ 12 V: 130 mA for 2 channels D1034D,
80 mA for 1 channel D1034S.
Max. power consumption: 1.90 W for 2 channels, 1.20 W for 1 channel with 30 V supply voltage and short circuit input.

Isolation (Test Voltage):
I.S. In/Out 1.5 KV; I.S. In/Supply 1.5 KV;
Out/Supply 500 V, Out/Out 500 V.

Input:
Current levels: ≥ 0.1 mA, ≤ 7.0 mA
Input equivalent source: 8 V 1 KΩ typical
(8 V no load 8 mA short circuit).

Output:
Repeats input current level.
Response time: 5 ms (10 to 90 % step change).

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, I M2 [EEx ia] I, II 3 G EEx nA IIC T4 associated electrical apparatus.
Uo/Voc = 9.6 V, Io/Isc = 11 mA, Po/Po = 25 mW at terminals 14-15, 10-11.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 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), UL60079-15 ("n" Zone 2), UL 1604 (Div.2) 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), CSA-C22.2 No. 213-M1987 (Div. 2) and CSA-E60079-15 ("n" Zone 2) for C-UL, FM & FM-C No. 3024643, 3024643C, conforms to Class 3600, 3610, 3611, 3810 and C22.2 No.142, C22.2 No.157, C22.2 No.213, E60079-0, E60079-11, E60079-15, 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, Gosgortekhnadzor of Russia Permit Nr. PPC 04-11284.
EXIDA Report No. GM03/07-24 R001, SIL 2 / SIL 3 according to IEC 61508, IEC 61511. Please refer to Functional Safety Manual for SIL applications.

Mounting:
T35 DIN Rail according to EN50022.
Weight: about 140 g D1034D, 130 g D1034S.
Connection: By polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm^2.
Location: Safe Area/Non Hazardous Locations or Zone 2, Group IIC T4, Class I, Division 2, Groups A, B, C, D Temperature Code T4 and Class I, Zone 2, Group IIC, IIB, IIA T4 installation.
Protection class: IP 20.
Dimensions: Width 22.5 mm, Depth 99 mm, Height 114.5 mm.

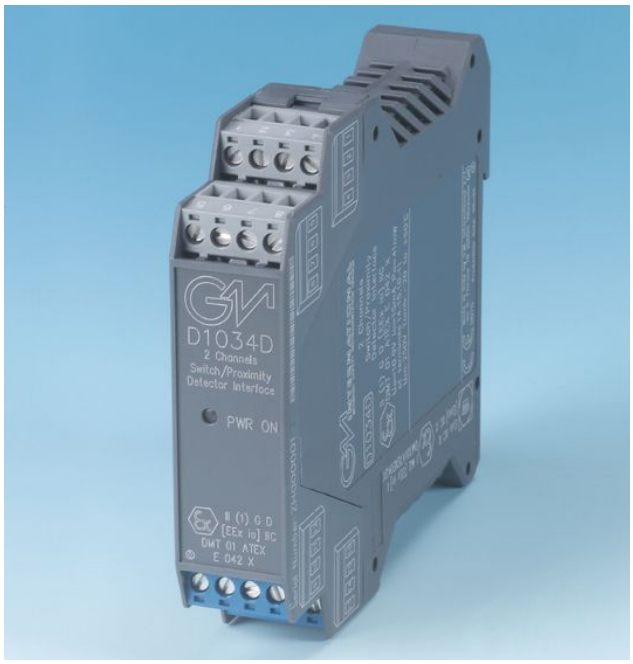
Ordering Information:

Model:	**D1034**		
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)	Lo/Ro (µH/Ω)
Terminals 14-15, 10-11				
Uo/Voc = 9.6 V	II C	3.60	263	1448
Io/Isc = 11 mA	II B	26.00	1345	5790
Po/Po = 25 mW	II A	210.00	2690	11580

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 / NON HAZARDOUS LOCATIONS or
ZONE 2, GROUP IIC T4, CLASS I, DIVISION 2, GROUPS A, B, C, D T-Code T4,
CLASS I, ZONE 2, GROUP IIC T4