D1035

Frequency-Pulse Isolating Repeater DIN-Rail Model D1035S

Characteristics:

General Description:
The single channel DIN Rail Frequency-Pulse Repeater D1035S, repeats a low level frequency signal from magnetic pick-up, contact, proximity, open-collector transistor sensor, TTL CMOS located in Hazardous Area, into pulse signal to drive a Safe Area load.

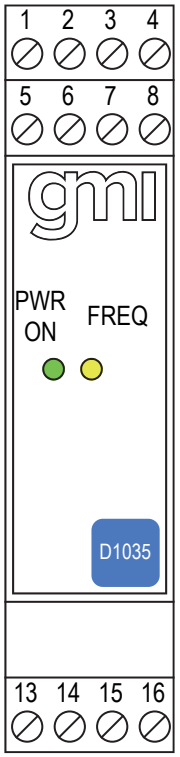
Function:
1 channel I.S. input from frequency-pulse signals, provides 3 port isolation (input/output/supply). Repeats the frequency input and provides one SPST transistor output.

Signalling LED:
Power supply indication (green), frequency input (yellow).

Field Configurability:
DIP switch configurable for hardware setting of input sensor.

EMC:
Fully compliant with CE marking applicable requirements.

Front Panel and Features:



- Input from Zone 0 (Zone 20), Division 1, installation in Zone 2, Division 2.
- Magnetic pick-up or proximity input sensor.
- Input frequency range from 0 to 50 KHz.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- In-field programmability by DIP Switch.
- ATEX, IECEx, FM & FM-C Certifications.
- Type Approval Certificate KR for marine applications.
- High Reliability, SMD components.
- 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:	D1035S	
Power Bus enclosure		/B

Technical Data:

Supply:
12-24 Vdc nom (10 to 30 Vdc) reverse polarity protected,
ripple within voltage limits ≤ 5 Vpp.
Current consumption @ 24 V: 40 mA with output transistor energized.
Current consumption @ 12 V: 60 mA with output transistor energized.
Power dissipation: 1.0 W with 24 V supply voltage and output transistor energized.
Max. power consumption: at 30 V supply voltage, output transistor energized, 1.2 W.

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

Input:
magnetic pick-up, contact, proximity to EN60947-5-6, open-collector transistor for frequency signals up to 50 KHz, TTL CMOS.
Input range: 0 to 50 KHz maximum.
Magnetic pick-up sensitivity: ≥ 20 mVpp up to 100 Hz input, ≥ 50 mVpp up to 1 KHz, ≥ 100 mVpp up to 5 KHz, ≥ 500 mVpp up to 20 KHz, ≥ 1 Vpp up to 50 KHz.
Switching current levels: ON ≥ 2.1 mA, OFF ≤ 1.2 mA,
switch current ≈ 1.65 mA ± 0.2 mA hysteresis (for proximity or transistor input).
Equivalent source: 8 V 1 KΩ typical (8 V no load, 8 mA short circuit).

Repeater Output:
voltage free SPST optocoupled open-collector transistor.
Open-collector rating: 100 mA at 35 V (≤ 1.5 V voltage drop).
Leakage current: ≤ 50 µA at 35 V.
Frequency response: 50 KHz maximum.

Compatibility:
CE mark compliant, conforms to Directive:
2014/34/EU ATEX, 2014/30/EU EMC, 2014/35/EU LVD, 2011/65/EU RoHS.

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:
ATEX: II (1)G [Ex ia Ga] IIC, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I; II 3G Ex ec IIC T4 Gc
IECEx: [Ex ia Ga] IIC, [Ex ia Da] IIIC, [Ex ia Ma] I; Ex ec IIC T4 Gc
Uo/Voc = 10.9 V, Io/Isc = 1.1 mA, Po/Po = 3 mW at terminals 13-16.
Uo/Voc = 15.5 V, Io/Isc = 13 mA, Po/Po = 48 mW at terminals 14-15.
Uo/Voc = 10.9 V, Io/Isc = 23 mA, Po/Po = 60 mW at terminals 15-16.
Ui/Vmax = 30 V, Ci = 0 nF, Li = 0 nH at terminals 13-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11.
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11.
IMQ 09 ATEX 013 X conforms to EN60079-0, EN60079-7.
IECEx IMQ 13.0011X conforms to IEC60079-0, IEC60079-7.
FM & FM-C No. 3024643, 3029921C, 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, DNV No. TAA00002BM and KR No.MIL20769-EL001 Cert. for maritime applications.

Mounting:
EN/IEC60715 TH 35 DIN-Rail.
Weight: about 145 g.
Connection: by polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm².
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.

Parameters Table:

Safety Description	Maximum External Parameters			
	Group Cenelec	Co/Ca (µF)	Lo/La (mH)	Lo/Ro (µH/Ω)
Terminals 13-16				
Uo/Voc = 10.9 V	IIC	2.05	29000	12000
Io/Isc = 1.1 mA	IIB	14.40	117000	48100
Po/Po = 3 mW	IIA	63.00	235000	96200
Terminals 14-15				
Uo/Voc = 15.5 V	IIC	0.508	235	585
Io/Isc = 13 mA	IIB	3.110	941	2342
Po/Po = 48 mW	IIA	12.500	1883	4685
Terminals 15-16				
Uo/Voc = 10.9 V	IIC	2.05	72	594
Io/Isc = 23 mA	IIB	14.40	290	2378
Po/Po = 60 mW	IIA	63.00	580	4757

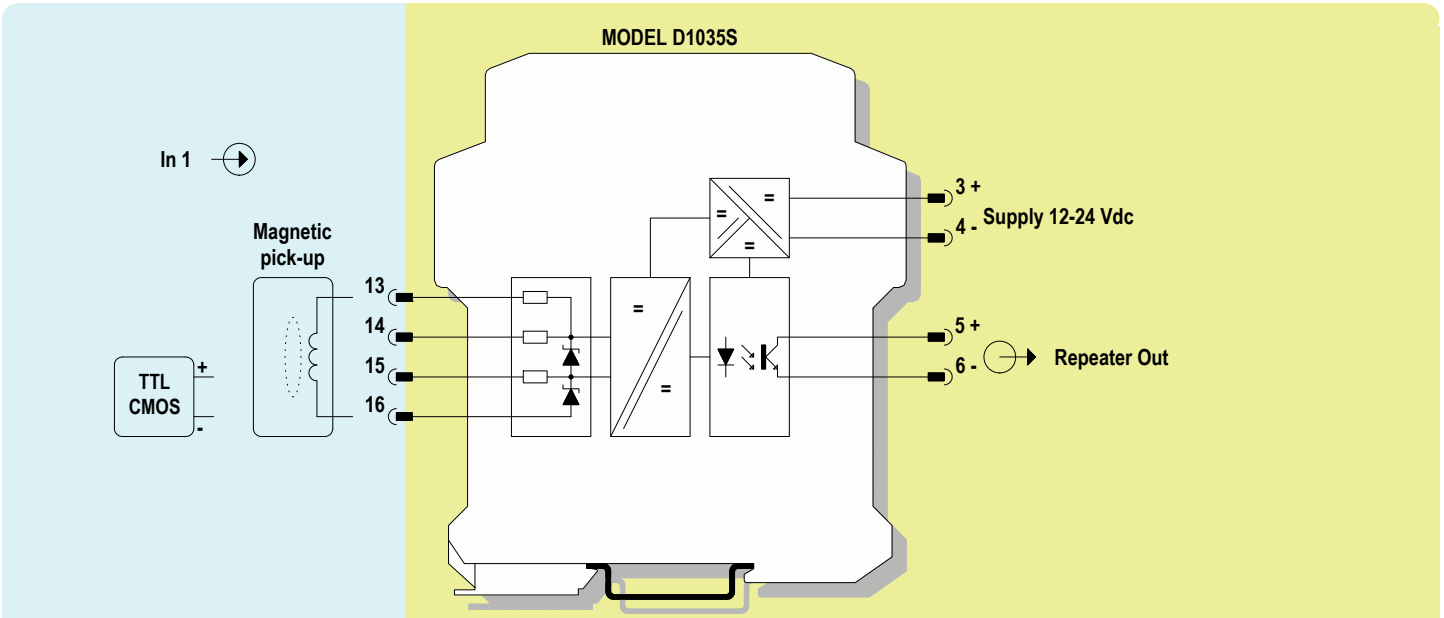
NOTE for USA and Canada:
IIC equal to Gas Groups A, B, C, D, E, F and G
IIB equal to Gas Groups C, D, E, F and G
IIA equal to Gas Groups D, E, F and G

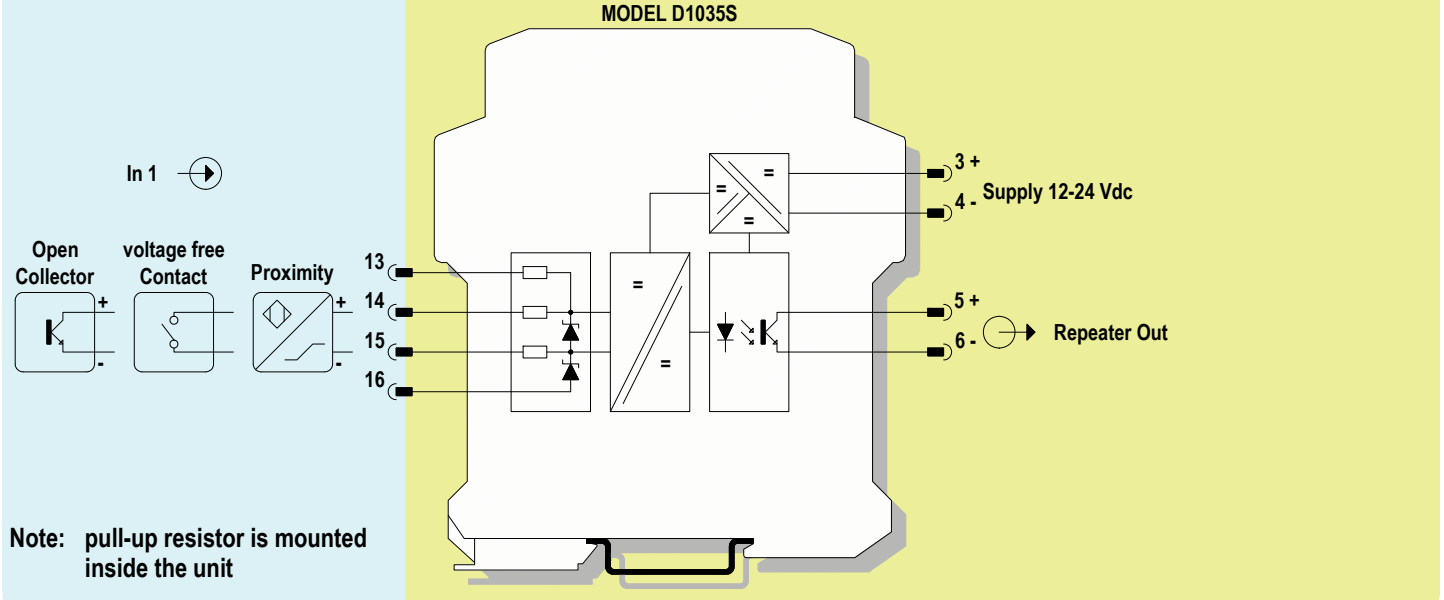
Image:

Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC,
HAZARDOUS LOCATIONS CLASS I, DIVISION 1, GROUPS A, B, C, D,
CLASS II, DIVISION 1, GROUPS E, F, G, CLASS III, DIVISION 1,
CLASS I, ZONE 0, GROUP IIC

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





Note: pull-up resistor is mounted inside the unit