technology for safety

D1061 -077

RS422 / RS485 Fieldbus Isolating Repeater DIN-Rail Model D1061S-077

Characteristics:

General Description:
The DIN-Rail RS422 / RS485 Fieldbus Isolating Repeater type D1061S-077 is used to separate Intrinsically Safe RS422 / RS485 equipment located in Hazardous Area from a RS232 / RS422 / RS485 controller located in Safe Area.
Transmission speed is DIP-switch adjustable from 1.2 Kbit/s up to 1.5 Mbit/s.
Terminating impedance is DIP-switch selectable inside the unit (200 Ω value) for both sides of communication lines (Hazardous Area and Safe Area side).
RS422 / RS485 connection in Safe Area is provided both on terminal block and SUB D 9 poles female connector on the unit.
RS232 connection is provided on SUB D 9 poles female connector only.
The module also provides a shield terminal block for connecting cable shielding on Hazardous Area side.

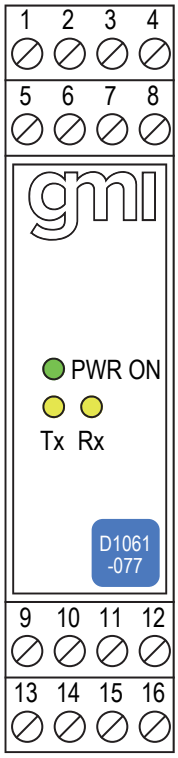
Function:
1 channel I.S. RS422 / RS485 isolating repeater, provides 3 port isolation (input/output/supply).

Signalling LEDs:
Power supply indication (green), Rx-Tx transmission (yellow).

Field Configurability:
Hardware is totally configurable via DIP-switches; parameters are: transmission speed adjustable from 1.2 Kbit/s up to 1.5 Mbit/s; terminating impedance enabled or disabled in both communication lines; RS422 / RS485 connection selection from terminal blocks or SUB D 9 poles female connector.

EMC:
Fully compliant with CE marking applicable requirements.

Front Panel and Features:



- Input/Output from Zone 0 (Zone 20), installation in Zone 2.
- RS422 / RS485 Hazardous Area I.S. Signal.
- RS232 / RS422 / RS485 Safe Area Signal.
- Transmission speed up to 1.5 Mbit/s.
- Three port isolation, Input/Output/Supply.
- EMC Compatibility to EN61000-6-2, EN61000-6-4.
- In-field programmability by DIP Switch.
- ATEX, IECEx, INMETRO, EAC-EX Certifications.
- Type Approval Certificate DNV and KR for maritime 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:	D1061S-077	
Power Bus enclosure		/B

Technical Data:

Supply:
24 Vdc nom (20 to 30 Vdc) reverse polarity protected,
ripple within voltage limits ≤ 5 Vpp.
Current consumption @ 24 V: 100 mA with 1.5 Mbit/s transmission speed, typical.
Power dissipation: 2.0 W with 24 V supply and 1.5 Mbit/s transmission speed typical.
Max. power consumption: at 30 V supply and 1.5 Mbit/s transmission speed, 2.8 W.

Isolation (Test Voltage):
I.S. RS422-RS485 / RS232-RS422-RS485 1.5 KV; I.S. RS422-RS485 / Supply 1.5 KV; RS232-RS422-RS485 / Supply 500 V.

Input/Output I.S. Hazardous Area:
RS422 / RS485 Intrinsically Safe connection
(EIA RS422-A and EIA RS485 applicable standard).
Terminating impedance: 200 Ω DIP-switch selectable.
Transmission speed: 1.2, 2.4, 4.8, 9.6, 14.4, 19.2, 38.4, 57.6, 93.75, 115.2, 187.5, 375, 500, 750 Kbit/s or 1.0, 1.5 Mbit/s DIP-switch configurable.
Transmission cable length: ≤ 1200 m up to 93.75 Kbit/s, ≤ 1000 m up to 187.5 Kbit/s, ≤ 400 m up to 500 Kbit/s, ≤ 200 m up to 1.5 Mbit/s.
Connection: by plug-in disconnect screw terminal block to accomodate terminations up to 2.5 mm², shield terminal block provided for cable connection.

Output/Input Safe Area:
RS232 / RS422 / RS485 connection
(EIA RS232-C, EIA RS422-A and EIA RS485 applicable standard).
RS422 / RS485 Terminating impedance: 200 Ω DIP-switch selectable.
RS422 / RS485 Transmission speed: 1.2, 2.4, 4.8, 9.6, 14.4, 19.2, 38.4, 57.6, 93.75, 115.2, 187.5, 375, 500, 750 Kbit/s or 1.0, 1.5 Mbit/s DIP-switch configurable.
RS422 / RS485 Transmission cable length: ≤ 1200 m up to 93.75 Kbit/s, ≤ 1000 m up to 187.5 Kbit/s, ≤ 400 m up to 500 Kbit/s, ≤ 200 m up to 1.5 Mbit/s.
RS422 / RS485 Connection: by plug-in disconnect screw terminal block to accomodate terminations up to 2.5 mm² or SUB D 9 poles female connector (requires SUB D 9 poles male mating connector), DIP-switch configurable.
RS232 Transmission speed: 1.2, 2.4, 4.8, 9.6, 14.4, 19.2, 38.4, 57.6, 93.75, 115.2 Kbit/s DIP-switch configurable.
RS232 Transmission cable length: ≤ 15 m up to 115.2 Kbit/s.
RS232 Connection: SUB D 9 poles female connector (requires SUB D 9 poles male mating connector).

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.

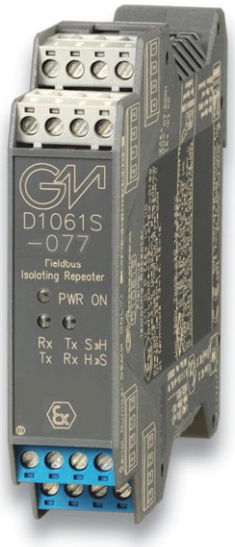
Safety Description:
ATEX: II 3(1)G Ex ec [ia Ga] IIC T4 Gc, II (1)D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I
IECEx / INMETRO: Ex ec [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I,
EAC-EX: 2Ex nA [ia Ga] IIC T4 Gc X, [Ex ia Da] IIIC X, [Ex ia Ma] I X
Uo/Voc = 3.7 V, Io/Isc = 93 mA, Po/Po = 85 mW at terminals 13-14 and 15-16.
Ui/Vmax = 30 V, Ii/Imax = 136 mA, Ci = 0 nF, Li = 0 nH at terminals 13-14 and 15-16.
Um = 250 Vrms, -20 °C ≤ Ta ≤ 60 °C.
Approvals:
DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-7, EN60079-11
IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-7, IEC60079-11
INMETRO DNV 13.0108 X conforms to ABNT NBR IEC60079-0, ABNT NBR IEC60079-11.
EAЭC RU C-IT.HA67.B.00113/20 conforms to GOST 31610.0, GOST 31610.11, GOST 31610.15.
DNV No. TAA00002BM and KR No.MIL20769-EL001 Cert. for maritime applications.

Mounting:
EN/IEC60715 TH 35 DIN-Rail.
Weight: about 170 g.
Connection: by polarized plug-in disconnect screw terminal blocks to accomodate terminations up to 2.5 mm² and SUB D 9 poles (DB9) DIN 41652 female connector (only for RS232, RS422, RS485 Safe Area connection).
Location: Safe Area or Zone 2, Group IIC 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 13-14, 15-16				
Uo/Voc = 3.7 V	IIC	100	4.1	422.7
Io/Isc = 93 mA	IIB	1000	16.7	1690.9
Po/Po = 85 mW	IIA	1000	33.4	3381.9

Image:



Function Diagram:

HAZARDOUS AREA ZONE 0 (ZONE 20) GROUP IIC

SAFE AREA, ZONE 2 GROUP IIC T4