

**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:**

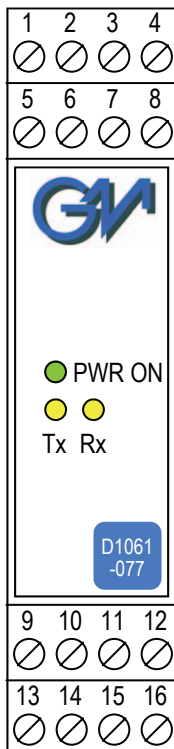
Power supply indication (green), Rx-Tx transmission (yellow).

**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 Certifications.
- 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  $\leq 5$  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:**  $\leq 1200$  m up to 93.75 Kbit/s,  $\leq 1000$  m up to 187.5 Kbit/s,  $\leq 400$  m up to 500 Kbit/s,  $\leq 200$  m up to 1.5 Mbit/s.

**Connection:** by plug-in disconnect screw terminal block to accommodate terminations up to 2.5 mm<sup>2</sup>, 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:**  $\leq 1200$  m up to 93.75 Kbit/s,  $\leq 1000$  m up to 187.5 Kbit/s,  $\leq 400$  m up to 500 Kbit/s,  $\leq 200$  m up to 1.5 Mbit/s.

**RS422 / RS485 Connection:** by plug-in disconnect screw terminal block to accommodate terminations up to 2.5 mm<sup>2</sup> 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:**  $\leq 15$  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** 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 °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 nA [ia Ga] IIC T4 Gc, II (1) D [Ex ia Da] IIIC, I (M1) [Ex ia Ma] I

**IECEx:** Ex nA [ia Ga] IIC T4 Gc, [Ex ia Da] IIIC, [Ex ia Ma] I,

associated apparatus and non-sparking electrical equipment.

Uo/Voc = 3.7 V, Io/Isc = 93 mA, Po/Po = 85 mW at terminals 13-14 and 15-16.

Ui/Vmax = 30 V, li/lmax = 136 mA, Ci = 0 nF, Li = 0 nH at terminals 13-14 and 15-16.

Um = 250 Vrms, -20 °C  $\leq$  Ta  $\leq$  60 °C.

**Approvals:**

DMT 01 ATEX E 042 X conforms to EN60079-0, EN60079-11, EN60079-15, EN60079-26, EN61241-11,

IECEx BVS 07.0027X conforms to IEC60079-0, IEC60079-11, IEC60079-15, IEC60079-26, IEC61241-11.

**Mounting:**

T35 DIN Rail according to EN50022.

**Weight:** about 170 g.

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

