

# SERIAL LINK INTERFACE

## USER GUIDE

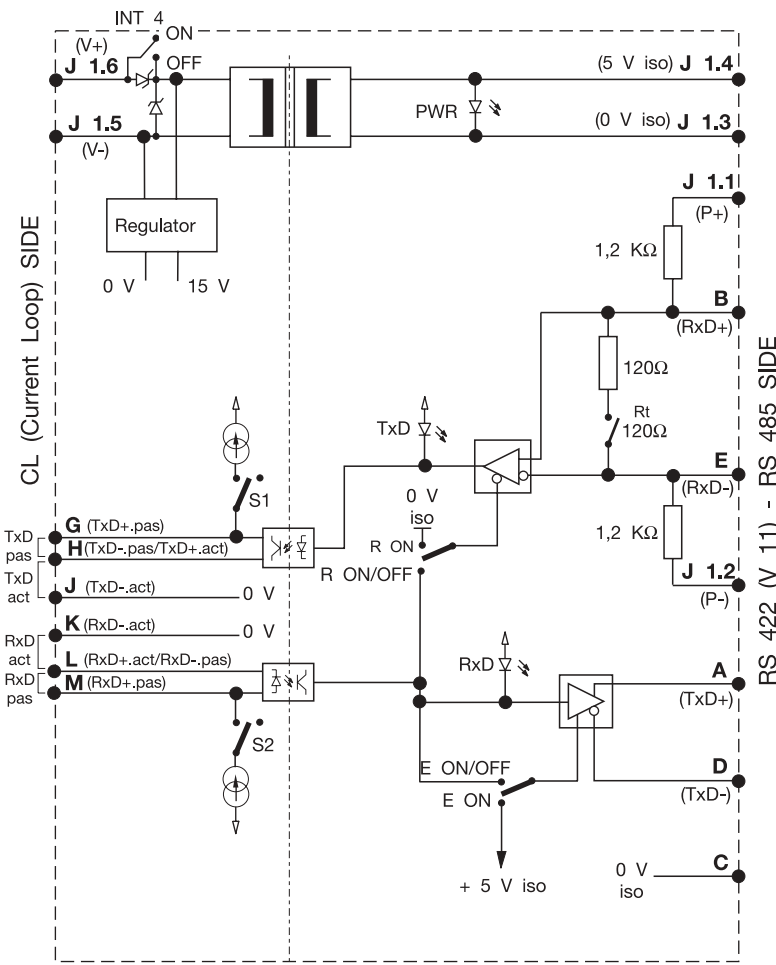
MODEL ILPH CL (Current Loop) / RS 422 - RS 485

<b>Part/Number</b>	<b>Black body ENT</b>	<b>0084 232.10</b>
	<b>Grey body ABB V0</b>	1SNA 684 232 R2600

### 1. GENERAL

Interface between a CL (Current Loop) serial link, Transmission Reception in active or passive mode, and an RS 422 or RS 485 serial link with 500 VDC insulation (active Current Loop Transmission or Reception) or 2000 VDC insulation (passive Current Loop Transmission and Reception). Isolates the 2 systems. Performs multipointing (network), and so on...

### 2. SCHEMATIC DIAGRAM



Legend :

H (TxD-.pas/TxD+.act) means:

H = TxD-.pas Transmission TxD- ILPH passive mode  
 H = TxD+.act Transmission TxD+ ILPH active mode

### 3. TECHNICAL SPECIFICATIONS

#### 3.1 POWER SUPPLY

- Power supply voltage : 24 VDC (+/- 10%)
- Protection : polarity inversion (shuntable)
- Power requirement : 120 mA Maxi
- Galvanic isolation :  
 Power supply / RS 422 - RS 485 : 500 VDC
- 1 yellow "Power On" led.
- Screw-type plug-in connector.

#### 3.2 CL (Current Loop) LINK

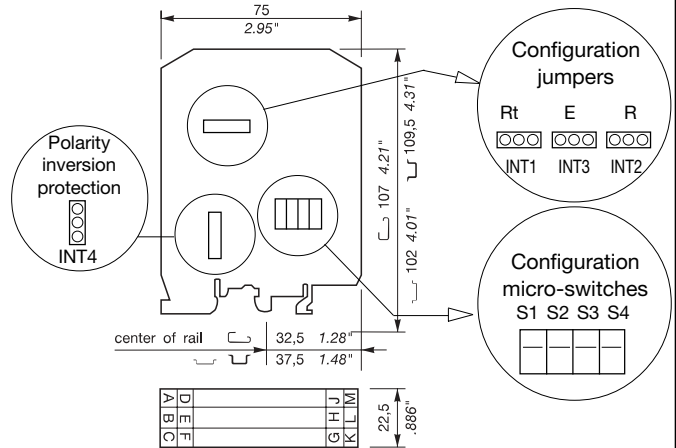
- Transmission Reception in active or passive mode.
- Current Loop type 0-20 mA ou 4-20 mA
- Negative logic ( 1 logic = 20 mA ) or Positive logic ( 0 logique = 20 mA ).
- Speed / Distance : 38400 Bauds / 1200 m
- Galvanic isolation :  
 CL (Current Loop) / RS 422 - RS 485 : 500 VDC (active)  
 2000 VDC (passive)
- 2 green leds (RxD, TxD)
- Screw-type connectors.

#### 3.3 RS 422 - RS 485 LINK

- EIA RS 485 and compatible EIA RS 422 / CCITT V11
- I/O protection : over-voltage
- Speed / Distance : 38400 Bauds / 1200m
- Galvanic isolation :  
 RS 422 - RS 485 / Power supply : 500 VDC  
 RS 422 - RS 485 / Current Loop : 500 VDC (active)  
 2000 VDC (passive).
- Transmitter can communicate with up to 32 receivers simultaneously.
- Screw-type connectors.

#### 3.4 PHYSICAL CHARACTERISTICS

- Box series 11000 ABB Entelec, snaps onto DIN rail.
- Temperature :  
 operation : 0 to 50° C  
 storage : - 20 to 70° C



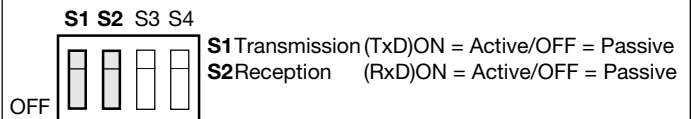
### 4. CONFIGURATION

#### 4.1 CL (Current Loop) LINK

The various configurations can be selected using the 4 micro-switches located inside the box.

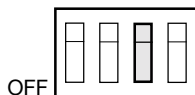
##### 4.1.1 ACTIVE OR PASSIVE MODE

The Current Loop's Transmission and Reception can be independant in active or passive mode. Selection using **S1** and **S2** micro-switches.



### 4.1.2 TYPE OF THE SIGNAL

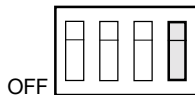
Select signal 4-20 mA or signal 0-20 mA.  
 Selection using **S3** micro-switch  
 S1 S2 **S3** S4      **S3** ON = 4-20 mA / OFF = 0-20 mA



Note : It is not possible to select a 4-20 mA signal when the Reception is in active mode.

### 4.1.3 LOGIC OF THE SIGNAL

Selection :      positive logic      (0 logic = 20 mA)  
                   negative logic      (1 logic = 20 mA)  
 Selection using **S4** micro-switch  
 S1 S2 S3 **S4**      **S4** (ON = (1=20 mA) / OFF = (0=20 mA))



## 4.2 RS 422 - RS 485 LINK

### 4.2.1 LINE AMPLIFIER CONFIGURATION

Configuration of amplifiers of the RS 422 - RS 485 (Receiver, Transmitter) line provides greater flexibility of use. The various configurations can be selected using the 2 jumpers (R INT2, E INT1) located inside the box.

#### 4.2.1.1 RS 485 LINK ON ONE PAIR

**R** INT2 R ON/OFF Jumper R in position R ON/OFF  
**E** INT3 E ON/OFF Jumper E in position E ON/OFF  
 The Receiver and the Transmitter are activated alternately (never at the same time) depending on the status of the Current Loop Reception signal.

#### 4.2.1.2 RS 485 LINK ON TWO PAIRS

**R** INT2 R ON Jumper R in position R ON  
**E** INT3 E ON/OFF Jumper E in position E ON/OFF  
 Receiver permanently active  
 Transmitter controlled by the Current Loop Reception signal

#### 4.2.1.3 RS 422 LINK ON TWO PAIRS

**R** INT2 R ON Jumper R in position R ON  
**E** INT3 E ON Jumper E in position E ON  
 The Receiver and the Transmitter are both permanently active.

### 4.2.2 POLARIZATION OF THE RS 422 - RS 485 LINE

The line must always be polarized. The ILPH is used to polarize the reception channel :

Connection by 1 wire P+ (J1.1) with 5 Viso (J1.4)  
 Connection by 1 wire P- (J1.2) with 0 Viso (J1.3)

### 4.2.3 ADAPTING THE RS 422 - RS 485 LINE

The line must always be adapted to the level of the reception channel of each subscriber forming the end of the bus. The ILPH is used to adapt the reception channel by setting the jumper Rt correctly :

**Rt** INT1 \* Line adaptation, Rt = 120 Ω (Cas général)  
**Rt** INT1 \* No line adaptation, Rt = ∞

### 4.2.4 POLARITY INVERSION PROTECTION

The protection between polarity inversion can be selected by jumper INT4.

INT4 Protection ON

INT4 Protection OFF, used if power supply at minimum value (21,6 V).

Réf. 100.208.711

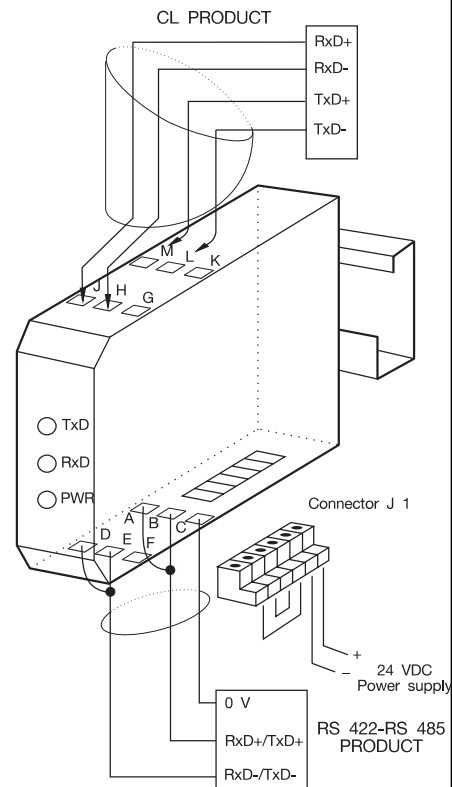
### RS 422 - RS 485 LINK ON 1 PAIR

## 5. CONNECTIONS

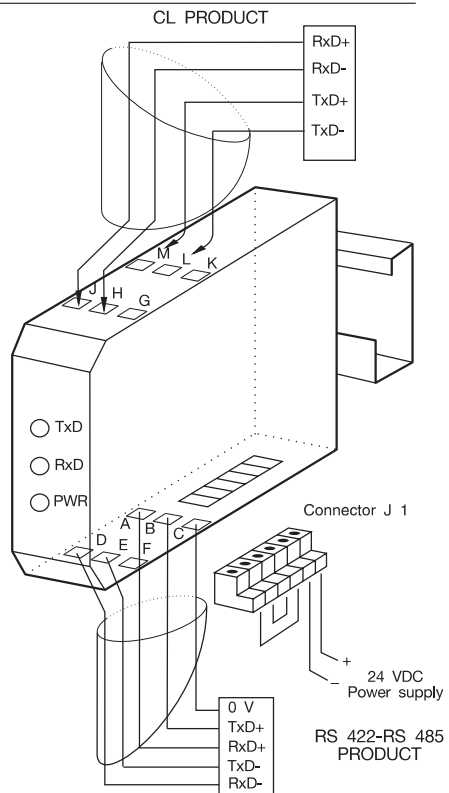
Example of connection with a CL (current Loop) product, Transmission (TxD) in active mode and Reception (Rx) in passive mode.

Then, the ILPH must be configured and connected Reception (Rx) in passive mode and Transmission (Tx) in active mode.

**Note :** For any other configuration, see schematic diagram or front sticker of the product.



### RS 422 - RS 485 LINK ON 2 PAIR



**NOTE :** The TxD channel of the RS 422 - RS 485 link must be polarized independently too.