



#### Main applications

- Extrusion lines and injection moulding machines for the plastics industry
- Polymerisation plants for synthetic fibre production
- Rubber vulcanisation plant
- Climatic chambers and test benches
- Dryers for ceramics and building materials
- Chemical and pharmaceutical industries
- Food processing plant
- Packaging machinery
- Machines with instrumentation connected in network

#### Main features

- RS232, RS485/422, Current Loop (passive) and RS485/422, Current Loop (active) converter
- Baudrate max 9600 baud
- Optical isolation
- Up to 10 CLB94 in parallel on the RS232C line
- Up to 10 instruments connecte to each CLB94 (32 with RS485)
- Parallel and cascade connection
- Versions for front and rear of panel mounting

#### GENERAL

Optical isolation between the two sections (digital communications serial1 and serial 2) is standard on all versions.

It is used to connect instruments with passive Current Loop serial port or RS422/485 to an industrial terminal or PC that uses the RS232 or RS422/485 standard.

It can also be configured with passive Current Loop serial port for cascade connection.

The connections to the first section (serial 1) are available both on the 25-pole D-connector on the front and the rear of the instrument.

The CLB94 is available for mounting on the front of the panel or the rear of the panel.

The latter version does not have the front D-connector since the front of the instrument is mounted against the DIN rail EN50022 and all connections to the screw terminals on the rear of the instrument.

Every CLB94 can link a maximum number of instruments in parallel (serial 2) configured with passive Current Loop digital communications.

Up to 32 instruments can be connected for RS422/485 communications.

The maximum distance for a Current Loop link, without additional equipment such as a modem, is 100 metres with a

transmission speed of 9600 baud.

With the RS422/485 standard, the distance can be extended to 500 metres.

There are two versions with different options: CLB94-1 and CLB94-2:

The version CLB94-2 is the most complete.

It is fully configurable using hardware jumpers and can accept any combination of the communication standards described.

The version CLB94-1 is a simplified version that is used only to convert RS232C or passive Current Loop to active Current Loop.

The following description for the configuration refers only to the complete version CLB94-2.

#### TECHNICAL DATA

##### POWER SUPPLY

110...220Vac  $\pm 10\%$   
50/60Hz, 10VA max.

##### AMBIENT CONDITIONS

Working temperature: 0...50°C

Storage temperature: -20...70°C

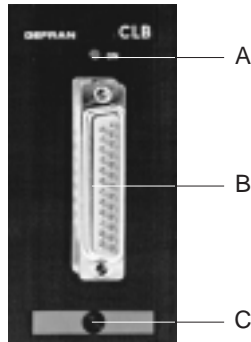
Humidity: 20...85%Ur non condensing

##### WEIGHT

500g

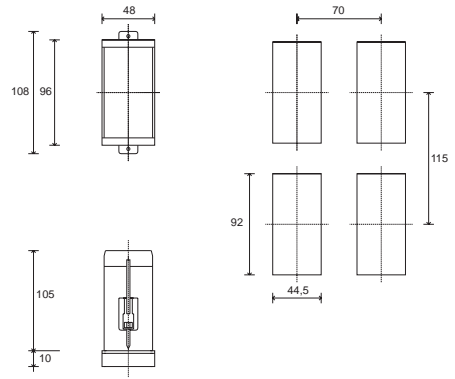
## FACEPLATE DESCRIPTION

- A** - Power indication  
(green LED)
- B** - Faceplate 25-pole female  
D-connector
- C** - Fixing screw



IP20 faceplate protection

## DIMENSIONS AND CUT-OUT



Dimensions:  
48x96mm (1/8 DIN), depth 105mm

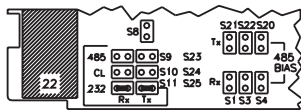
## CONFIGURATION

### DIGITAL COMMUNICATIONS I

(Jumper Bank A)

#### RS232C

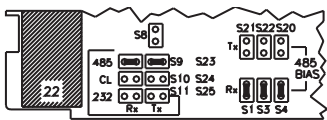
Up to 10 CLB94 instruments can be connected in parallel on the same RS232 link. If more than 3 CLB94 units are connected, it is necessary to remove the "Loop" connection on the remainder, leaving it on the first three.



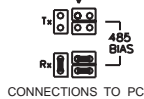
S22, S21, S20, S3, S1, S4, S8 = IRRELEVANTS

#### RS485/422

Link biasing is provided by the jumpers labelled "485 BIAS".  
S22, S20: Tx biasing  
S3, S4: Rx biasing  
S21: Tx termination (220Ω)  
S1: Rx termination (220Ω)

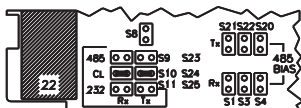


S8 = IRRELEVANTS  
S3, S1, S4 = DEFAULT 485 BIAS



#### Current Loop (passive)

The reception line R+ has an impedance of 1,2KΩ which reduces to 100Ω when jumper S8 = ON. The transmission line T+ has an impedance of 100Ω.



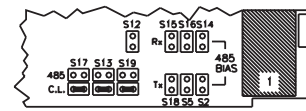
S22, S21, S20, S3, S1, S4, S8 = IRRELEVANTS

### DIGITAL COMMUNICATIONS II

(Jumper Bank B)

#### Current Loop (active)

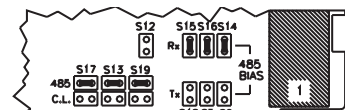
The reception line R+ may be considered a constant current generator of 20mA: load ≤ 600Ω (S12 = OFF)  
load ≤ 1600Ω (S12 = ON) standard  
The transmission line T+ (20V) provides a 20V supply with shortcircuit protection (approx. 300mA) suitable for parallel connection. As an alternative there is a constant current T2 (20mA), load ≤ 600Ω, for series connection.



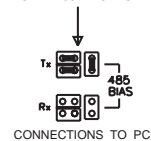
S15, S14, S16, S18, S2, S5 = IRRELEVANTS

#### RS485/422

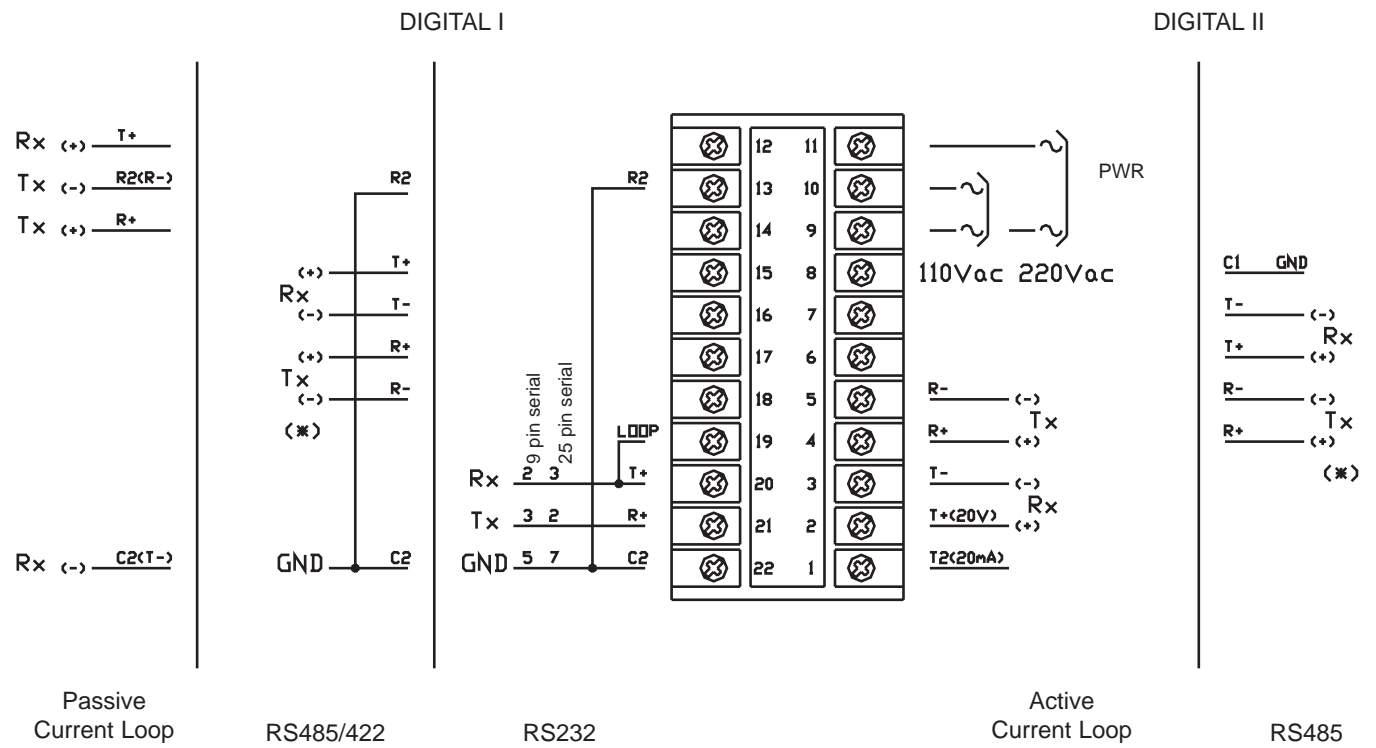
Link biasing is provided using the jumpers labelled "485 BIAS".  
S18, S5: Tx biasing  
S15, S16: Rx biasing  
S2: Tx termination(220Ω)  
S14: Rx termination(220Ω)



S15, S14, S16 = DEFAULT 485 BIAS S12 = IRRELEVANTS

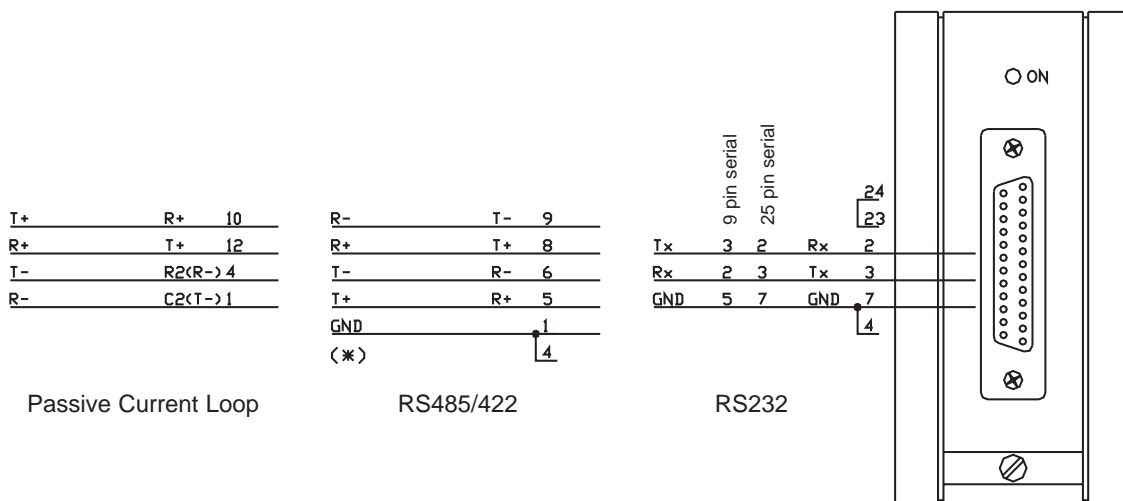


# CONNECTION DIAGRAM



(\*) For the PC connection, the polarity must be inverted: **T+ with T- ; R+ with R-**

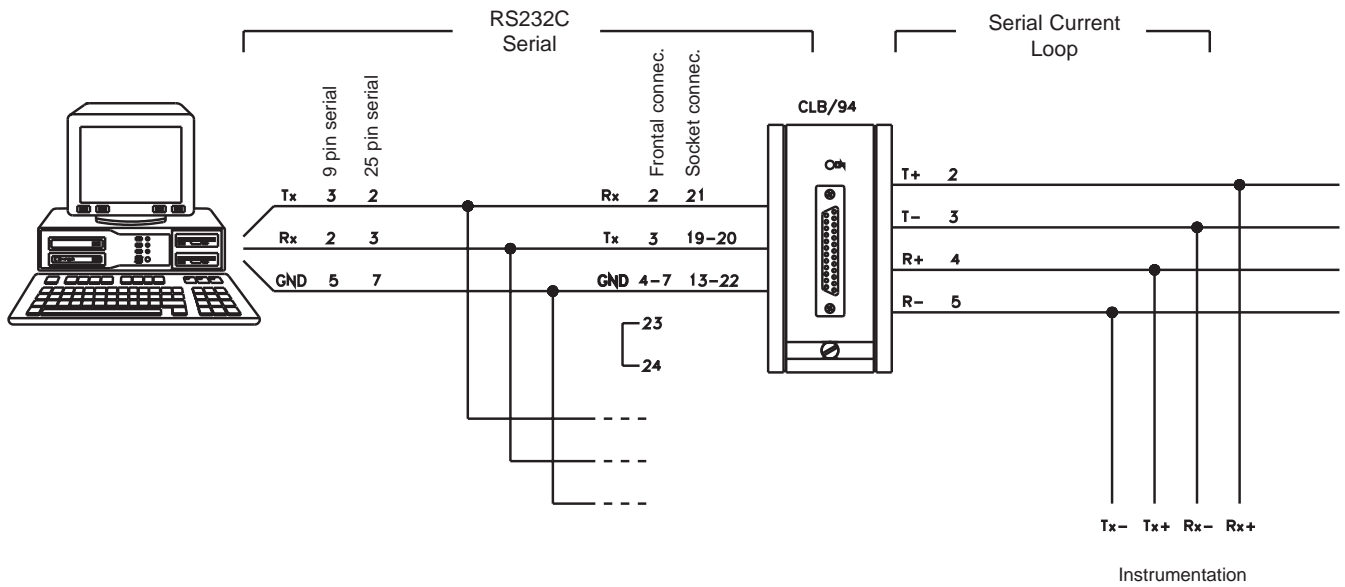
## Connection to DIGITAL I section through frontal connector



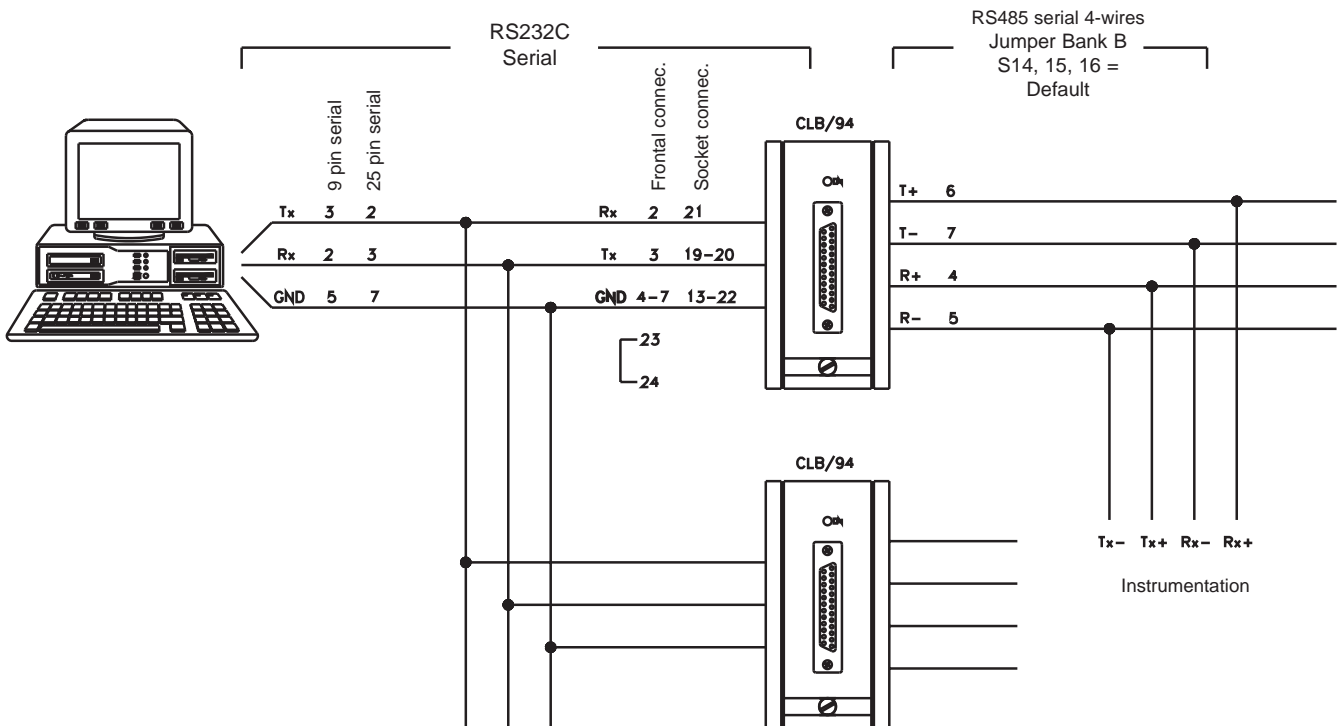
(\*) For the PC connection, the polarity must be inverted: **T+ with T- ; R+ with R-**

## CONNECTION DIAGRAM

### PC RS232 - Instrument with Passive Current Loop serial

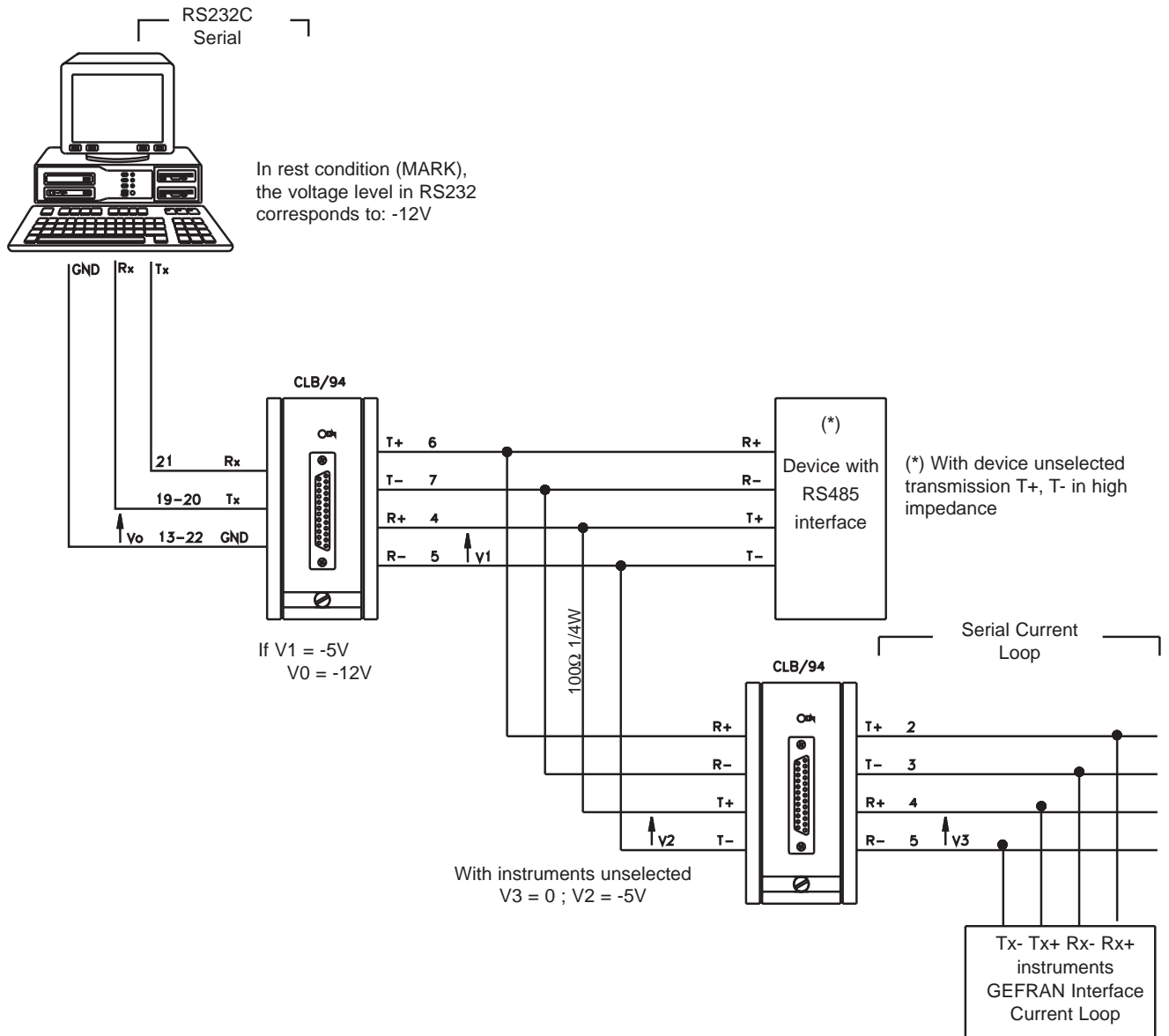


### PC RS232 - Instrument CLB with RS485 serial

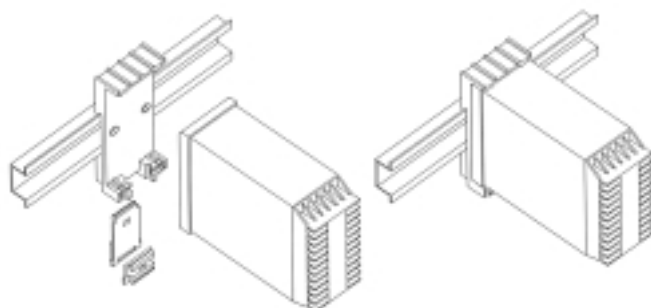


## APPLICATIVE EXAMPLE

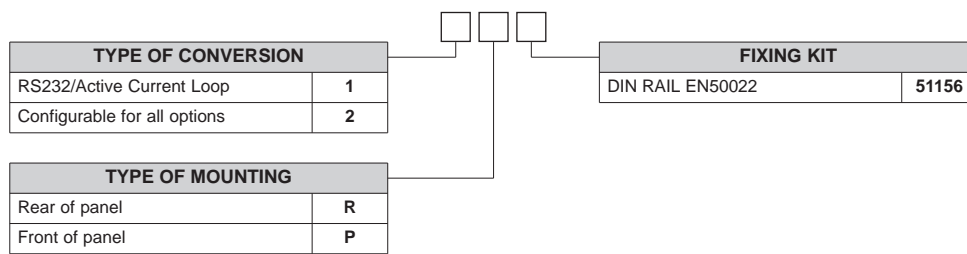
Applicative example for connecting devices with RS485 interface and Current Loop instruments on a single RS232 line.



## ACCESSORIES for DIN RAIL EN50022



## ORDER CODE



Please, contact GEFRAN sales people for the codes availability.

GEFRAN spa reserves the right to make any kind of design or functional modification at any moment without prior notice



In conformity to ECC 89/336/CEE and 73/23/CEE with reference to standards:  
**EN 61000-6-2** (immunity in industrial environment) - **EN 61000-6-3** (emission in residential environment) - **EN 61010-1** (safety))