ABB

73 - 1 - 5855
22870

ABB i-bus® EIB
4-fold analog input
6157 EB - 500
for Installation

Operating instructions
only for authorized, skilled electricians with
EIB training

Important instructions

Attention

It is absolutely essential that the EIB bus is installed by an authorized electrician. Laying and connection of bus line and applications devices must be effected in conformity with valid regulations according to DIN - VDE and the EIB manual of the ZVEI/ZVEH.

For the connection of sensors, only line type PYCYM (e. g. 2 x 2 x 0,8) may be used.

Only such sensors may be connected the nominal voltage range of which permits 18 V.

The maximum current output for supplying the sensors amounts to 100 mA (total, all channels).

Technical data

Sensor connection

Output voltage:	(optional): 18 V = ± 10%
Total current output:	max. 100 mA
Number of inputs:	4

Current inputs (per channel):
- Input range: 0 - 20 mA, 4 - 20 mA
- Input resistance: approx. 250 kΩ

Voltage inputs (per channel):
- Input range: 0 - 10 V
- Input resistance: approx. 20 kΩ

Line length: max. 30 m

Mains connection

Nominal voltage: 230 V~, 50 Hz

EIB connection

Current consumption: ≤ 10 mA

Accuracy:	2% ± 1 LSB
Operating temperature:	-5 °C to +45 °C
Degree of protection:	IP 20
Dimensions (h x w x d):	42 x 240 x 32 mm

Fields of application / functions

The device is used to receive analog input quantities and to convert them into digital switching and value signals for the ABB installation bus.

For the transmission of digital value signals, a mixed operation of sensors running at 4 - 20 mA and 0 - 20 mA or 0 - 10 V, resp., will cause erroneous measured values. Therefore, sensors running at 4 - 20 mA always have to be used with the proper software provided for them.

The manufacturer database of ABB is continuously updated. It stores the latest applications.

You will find their related descriptions in our technical manual.

If you need a copy of the database and/or technical manual, please contact your national distributor.

As far as the mentioned technical data are concerned, please refer to the device window under the ETS for further information.

Fig. 1

Attention
The 4-fold analog input has two input terminals for each channel. Depending on the sensor type, only one terminal may be connected per channel, either the current or the voltage terminal. For sensors, the device provides an operating voltage of 18 V.
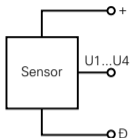
```
+ U1.....U4 –         N L
┌─┬─┬─┬─┬─┐          ┌─┬─┐
│ │ │ │ │ │          │ │ │
└─┴─┴─┴─┴─┘          └─┴─┘
┌─┬─┬─┬─┬─┐
│ │ │ │ │ │
└─┴─┴─┴─┴─┘
+ I1 ..... I4 –

   ◯
```
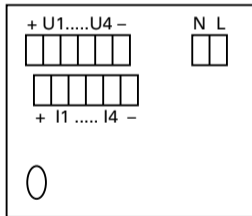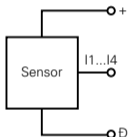
Terminal assignment:
+ / −   : 18 V = operating voltage
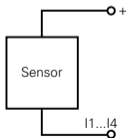U1 ... U4 : voltage inputs 0 - 10 V
I1 ... I4 : current inputs 0/4 - 20 mA

Fig. 2 / a-e / wiring diagrams for sensors

Sensor — U1...U4

Connection of externally supplied sensors of the range 0 - 10 V
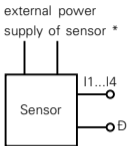
Sensor — I1...I4

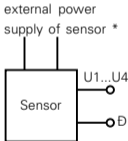Connection of externally supplied sensors of the range 0 - 20 mA

Sensor — I1...I4

Connection of externally supplied sensors of the range 4 - 20 mA

Fig. 2 / a-e / wiring diagrams for sensors

external power
supply of sensor *

Sensor — I1...I4 — Ð

Connection of internally supplied
sensors of the range 0 - 20 mA

external power
supply of sensor *

Sensor — U1...U4 — Ð

Connection of internally supplied
sensors of the range 0 - 10 V

* = can be seen from the dtasheet of the sensor
manufacturer.
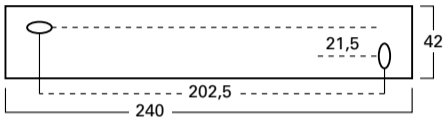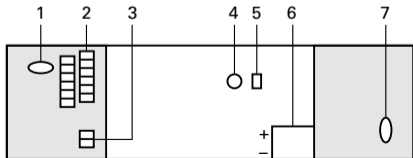
Fig. 3 / Fig. 4

Fig. 3 / dimensions

Fig. 4 / installation

Installation

Attention
Switch off supply voltage !

Remove both outer covers from the device. The device is fixed by means of screws put through the oval holes (cf. fig. 3 and fig. 4, positions 1; 7).

The mains voltage is connected via terminals L and N (max. 2 x 2,5 mm^2).

The connection to the EIB bus is made by means of a 2-pin bus terminal (item no. 6183) which is plugged into the entrance (fig. 4, pos. 6). Please make sure that the polarity of terminals is correct (red = +, grey = -).

Sensors are connected via the 12-way screw terminal block (0,14 - 1,5 mm^2 rigid, 0,14 - 1 mm^2 flexible).

Please note the wiring diagrams for the various sensors (see fig. 2 a to e).

Commissioning

Assign physical address
- Connect a PC equipped with the EIBA TOOL software (ETS) to the EIB bus line via an EIB-RS 232 interface.

- Press the programming key (fig. 3, pos. 5) at the analog input 6157: the red programming LED (fig. 3, pos. 4) will become illuminated.

- After the physical address has been programmed, the red LED will go out.

Select / parameterize application
The behaviour of the 4 analog inputs can be parameterized individually by means for the ETS.

For the available applications and related parameters, please refer to our technical EIB manual.

Note
A separate application version is available for value transmissions with sensors running at 4 - 20 mA.