Intelligent Building Solutions

Installation Manual

CSI 20 D
Analog sensor interface

Voltage and current loop measurement, DIN-rail mounting

CIB-tech

Introduction

The CSI 20 D is an interface device for acquisition of industry standard analog signals, part of the CIB-tech automation system. It supports sensors with analog voltage (0-10V) or current loop (0-20 / 4-20mA) output.

Additional equipment required

1. **Functional CIB-tech system**
   A minimal number of essential CIB-tech components to make a functional CIB-tech system[1]

2. **Sensor with analog signaling**
   Various type of sensors that provides the measured value using industry standard analog signaling output.

Technical Specifications

Electrical characteristics

- **Power Supply**
  The CSI 20 D functions as a node in a CIB-tech system, being powered from the CIB-tech system's power supply via the CIB-tech connectors.
  - Operating voltage range: 20 to 28V DC (nominal 24V DC)
  - Supply current
    - Standby current (without powered sensor): 50 mA
    - Maximum current (without powered sensor): 55 mA
    - Absolute maximum current (with powered sensor): 100 mA

- **Power output**
  - Output voltage: 24V (Input voltage – 0.6V)
  - Maximum output current: 50 mA
    Note: The 24V output voltage is not locally stabilized and is affected by voltage changes on the CIB-tech systems power supply.

- **Analog measuring input**
  - Voltage input
    - Nominal voltage range: 0...10V DC
    - Maximum rated input: -0.5...+12V DC
    - Input impedance: 250KOhm min.

  - Current input:
    - Nominal current range: 0...20 mA
    - Maximum rated input: -1.5...30 mA
    - Input impedance: 200 Ohm rated

  - Measurement accuracy: 0.5% of full scale
  - Acquisition resolution: 1/8000
  - Scaled data units: 1/10000 of full scale

- **I/O isolation**
  - The analog inputs (voltage and current) are galvanically isolated from the CIB-tech system;
  - The power supply output of the CSI 20 D is not isolated from the CIB-tech system;

  NOTE: The analog sensor will only be isolated form the CIB-tech system if it uses a different power supply. Therefore, in order to maintain galvanic isolation, if the analog sensor is also connected to

1 See “CIB-tech installation manual” for details.

other (third party) sensor interfaces, the CSI 20 D's power supply output must not be used to power the sensor.

Mechanical characteristics

The CSI 20 D has a standard 2-module wide enclosure for M36 type DIN-Rail

- Dimensions: 102mm W x 35mm L x 60mm D
- Weight: 85g

Environmental characteristics

- Operating temperature: -0ºC to 85ºC
- Storage temperature: -25ºC to 100ºC

Key Features

- Support for industry standard voltage output or current loop based sensors;
- Software selectable input type: 0-10V, 4-20mA, 0-20mA (using dedicated voltage/current inputs);
- Software input filter;
- Sensor value is remotely viewable via the CIB-tech system;
- Internal bi-color LED, indicating the input state (green: input in nominal range/ red: input out of nominal range)

Installation

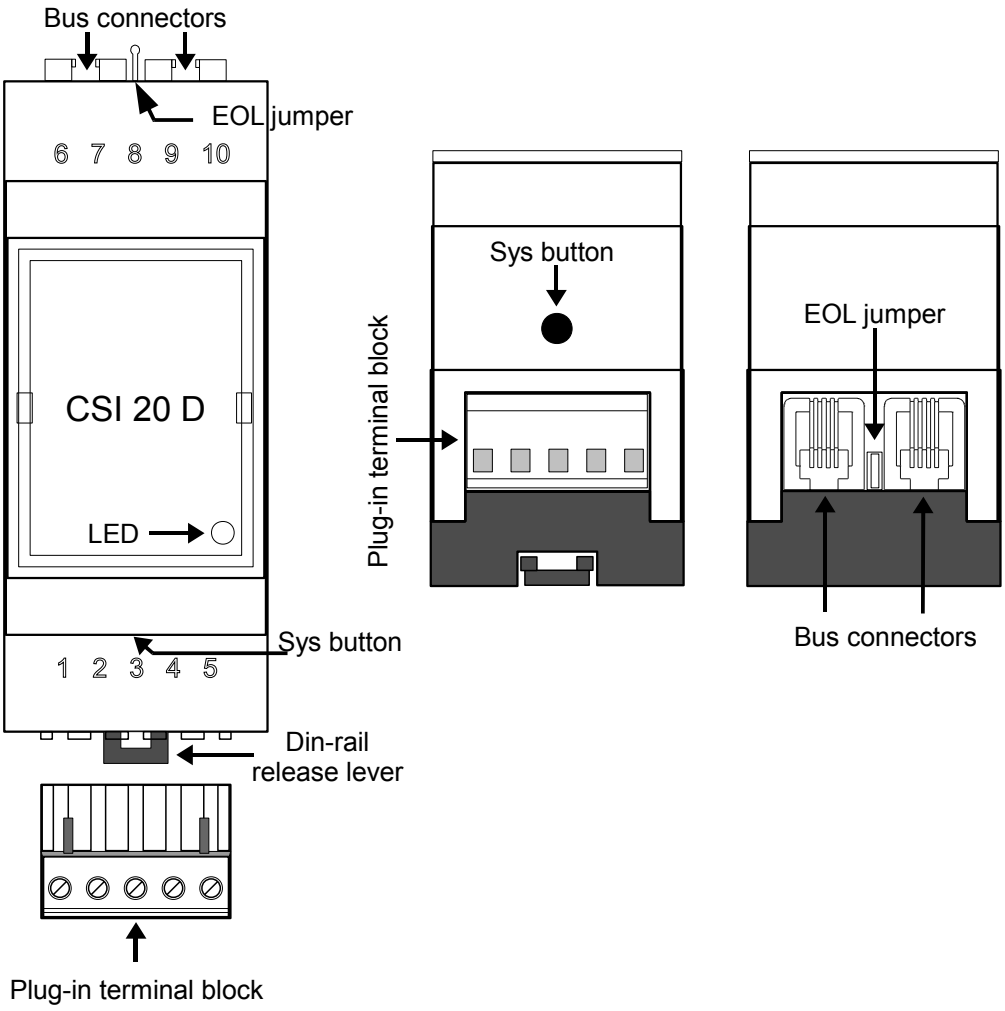
The CSI 20 D is meant to be installed on a standard M36 type DIN-Rail.

Part description

- **Bus connectors:**
  - 4P4C modular jack connectors for CIB-tech connection[1]
- **Sys button:**
  - pushbutton for CIB-tech system configuration
- **EOL jumper:**
  - CIB-tech system's End Of Line jumper[1];
- **LED:**
  - indicator LED for output state (green: input good / red: input out of scale);
- **Din-rail release lever:**
  - lever for removing the device from the M36 DIN-Rail
- **Connector type terminal block:** terminals for connecting external devices
  1. Output power - GND
  2. Output power - +24V
  3. Analog input - GND
  4. Analog input – current loop - (0)4-20mA
  5. Analog input - voltage input – 0-10V DC

NOTE: Never connect both current and voltage inputs. Only one of the inputs can be connected and in use at any given time.

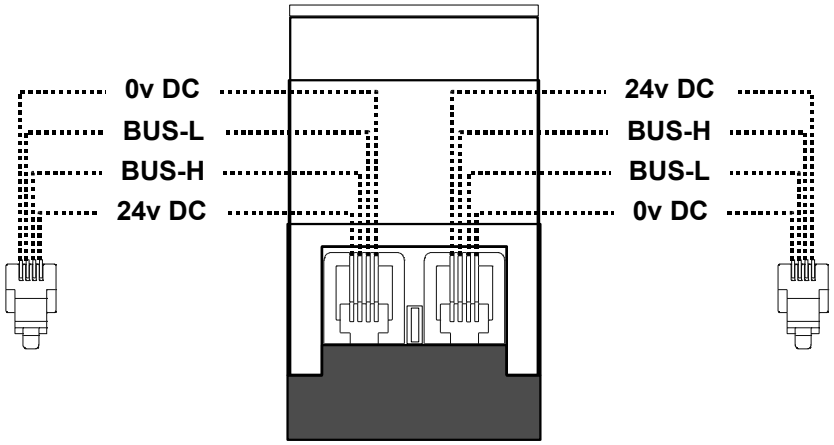
1 See “CIB-tech installation manual” for details.



Wiring diagrams

Connection to CIB-tech system:

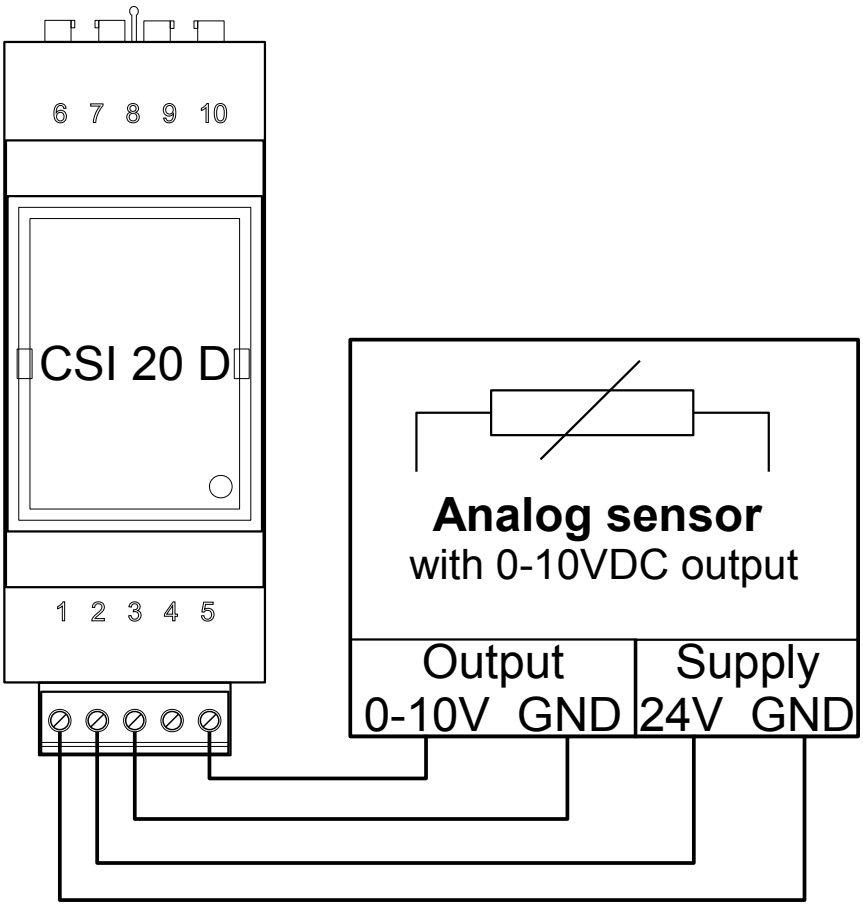
Use the CSI 20 D device's two 4P4C modular jack connectors to connect it to the CIB-tech systems (chain like) bus. Do not forget to remove the EOL jumper if the device is not the last element of the chain[1]



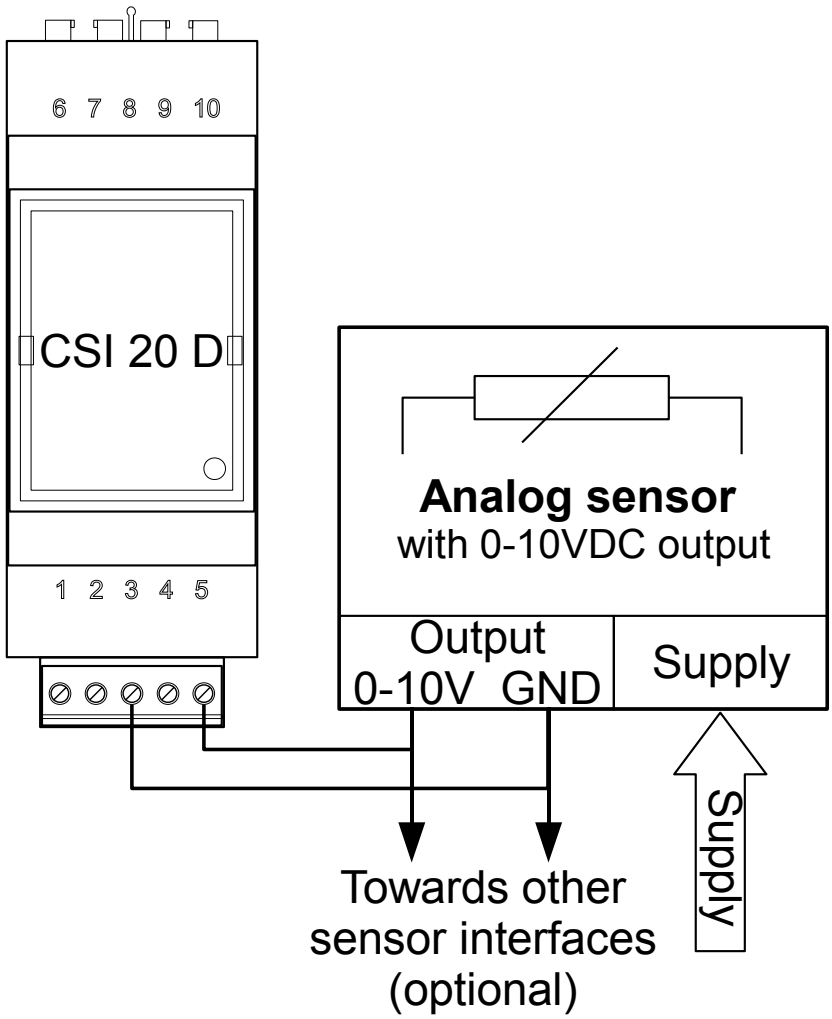
1 See “CIB-tech installation manual” for details.

Connecting the input devices

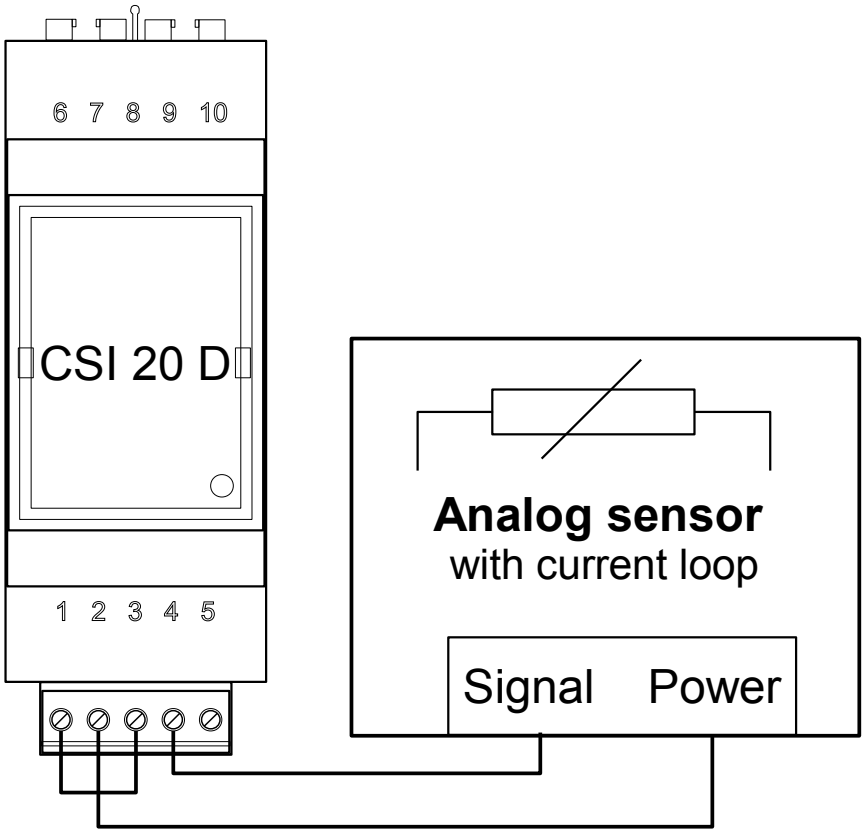
Connection example for sensor with voltage output (non isolated connection):



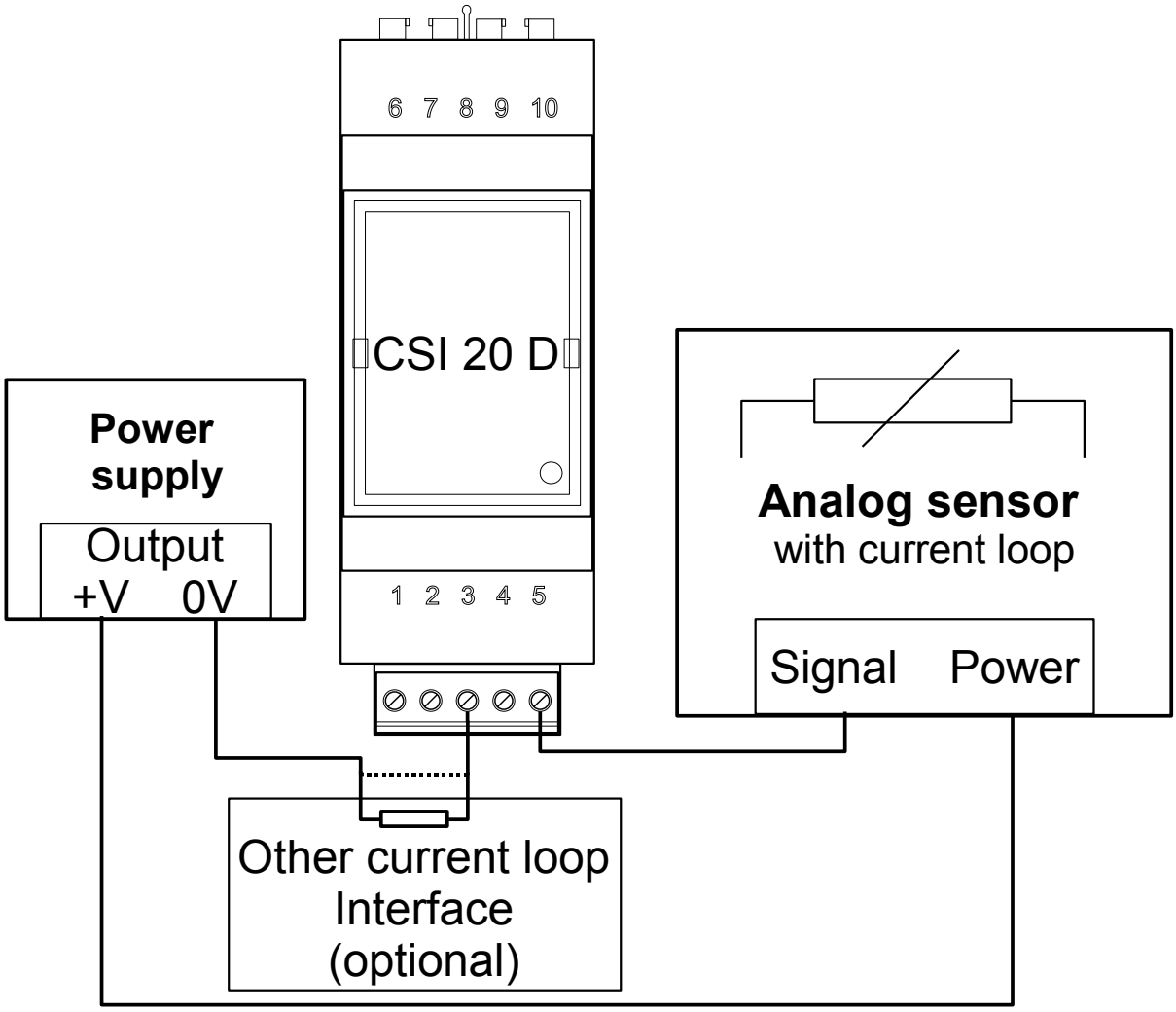
Connection example for sensor with voltage output (isolated connection):



Connection example for sensor with current loop (non isolated connection):



Connection example for sensor with current loop (isolated connection):



Dotted line: If there is no other current loop interface this is a direct connection otherwise it is ignored.

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Technical Support:
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