Intelligent Building Solutions

Installation Manual

CTM 2012 D
THERMOMETER UNIT

- up to 4 sensors
- DIN-rail mounting

CIB-tech

Introduction

The CTM 2012 D is a 4-channel thermometer using external temperature sensors, part of the CIB-tech automation system.

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. **Temperature sensors (1 to 4 sensors)**
   For temperature sensing one SMARTEC SMT16030 digital temperature sensor is required per channel[2]. Up to 4 temperature sensors can be connected.

NOTE: IBS provides various encapsulated or enclosed versions of easy to install, SMT16030-based temperature sensors[3].

Technical Specifications

Electrical characteristics

- **Power Supply**
  The CTM 2012 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 : 17mA
    - Maximum current: 35mA

- **Power output (for temperature sensor)**
  - Output voltage: 5V DC
  - Maximum output current: 100mA (for all 4 sensors)

- **Signal Input (from temperature sensor)**
  - Duty-cycle measurement input, conform SMT16030 specifications:
    - supported input voltage levels: 0 - 5V
    - input impedance: >1.5KOhm

NOTE: The maximum cable length between the CTM 2012 D and the SMT16030 temperature sensor is 20m

Temperature measurement

- Measured temperature range: -45ºC to +130ºC
- Temperature resolution: 1ºC
- Typical accuracy[4]: ±0.7ºC

Mechanical characteristics

The CTM 2012 D has a standard 3-module wide enclosure for M36 type DIN-Rail

- Dimensions: 100mm W x 53mm L x 60mm D
- Weight: 95g

Environmental characteristics

- Operating temperature: -10ºC to 85ºC
- Storage temperature: -25ºC to 100ºC

1 See “CIB-tech installation manual” for details.
2 For detail on SMARTECs SMT16030 digital temperature sensor visit SMARTEC home page: http://www.smartec.nl/ .
3 For details, visit IBS homepage or see “IBS equipment list”.
4 Accuracy depends on the type of SMT16030 used.

Key Features

- Up to 4 temperature sensors connected to a single CTM 2012 D device
- 64-entry temperature history per channel with configurable logging interval
- Measured temperature are remotely viewable via the CIB-tech system
- Internal bi-color LED, indicating correct sensor operation (green: at least one sensor is present / red: all sensors are faulty or missing)

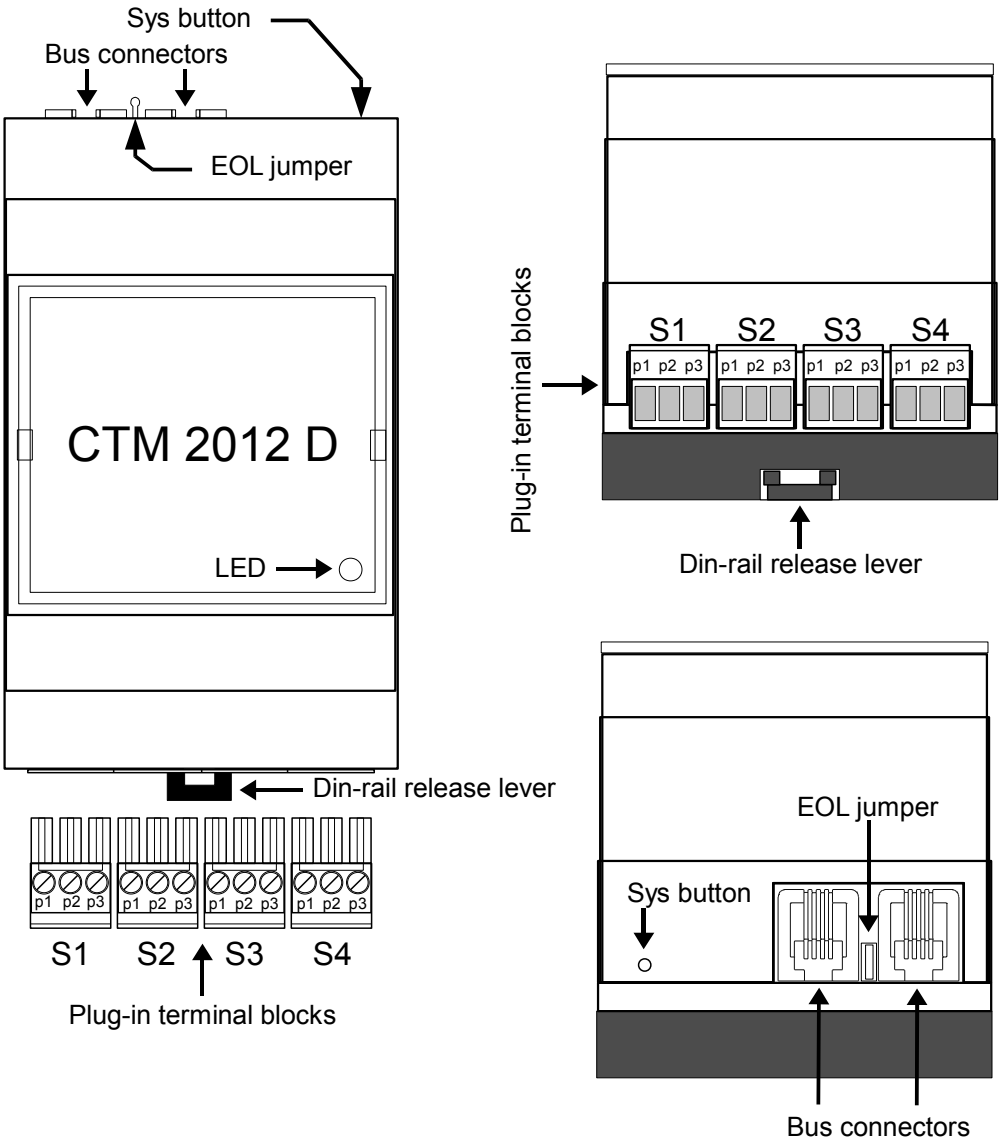
Installation

The CTM 2012 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 sensor presence
- **Din-rail release lever:**
  - lever for removing the device from the M36 DIN-Rail
- **Plug-in terminal blocks:**
  4 plug-in terminal blocks for connecting the temperature sensors (one for each sensor).
  - S1 – Sensor 1 connector
  - S2 – Sensor 2 connector
  - S3 – Sensor 3 connector
  - S4 – Sensor 4 connector
- **Terminal block contacts for S1 to S4**
  p1. Temperature sensor – GND
  p2. Temperature sensor – Data
  p3. Temperature sensor – +5V

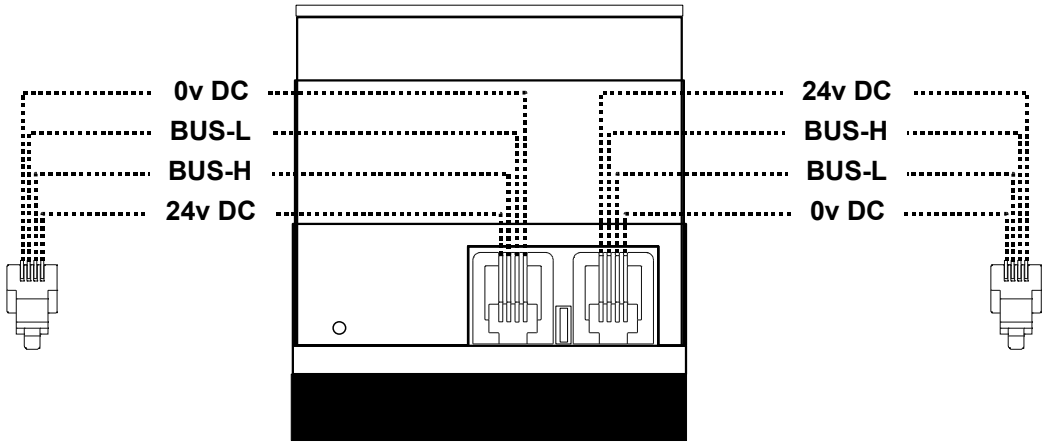
1 See “CIB-tech installation manual” for details.



Wiring diagrams

Connection to CIB-tech system:

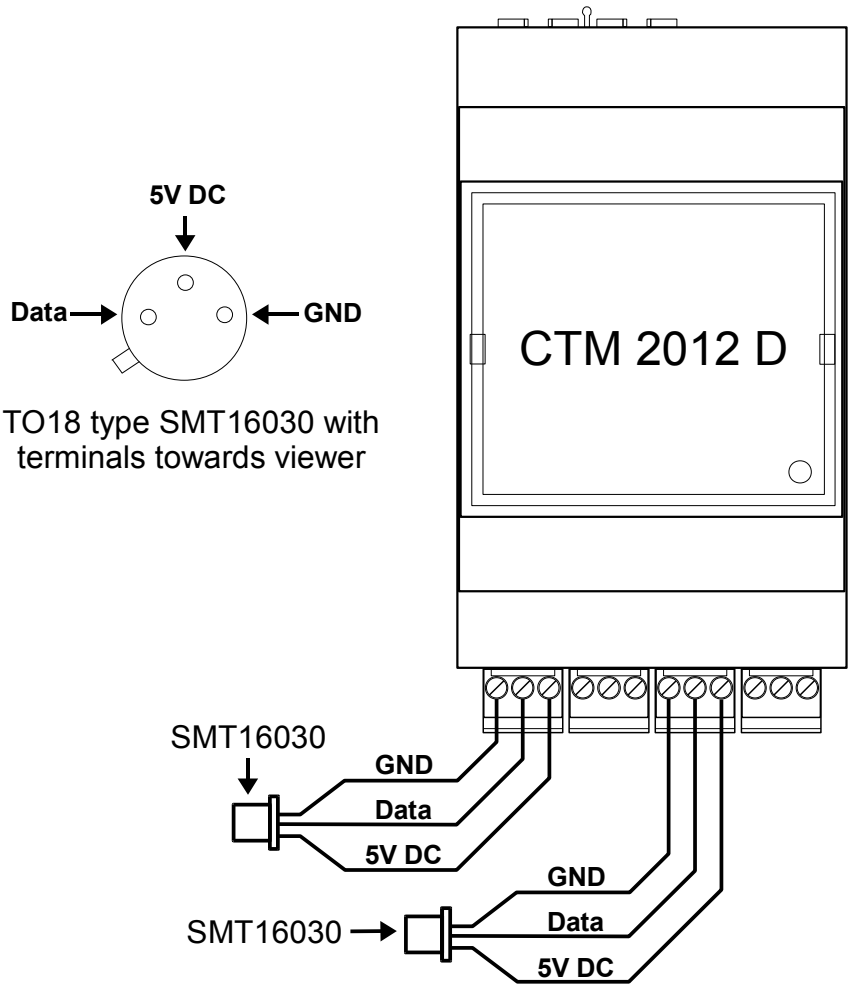
Use the CTM 2012 D device's two 4P4C modular jack connectors to connect it to the CIB-tech systems (chain like) bus. Do not forget to remove the EOL jumper if the device is not the last element of the chain[1]



1 See "CIB-tech installation manual" for details.

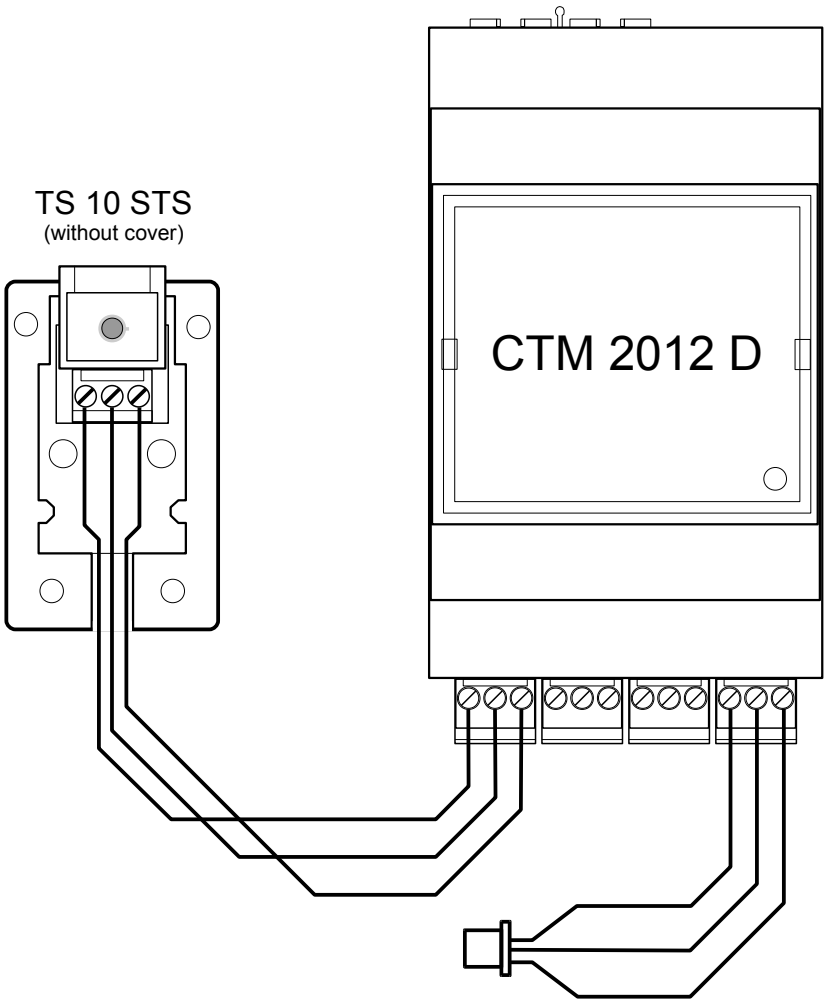
Connecting the temperature sensors

Connection example for two temperature sensors (channel 1 and 3) to the CTM 2012 D:



NOTE: This connection example is for a TO18 type SMT16030. To connect other types of SMT16030, check SMARTEC home page for SMT16030 data sheet.

Connection example with one enclosed, wall mounting temperature sensor TS 10 STS (channel 1) and one simple SMT16030 sensor (channel 4):



NOTE: Up to 4 temperature sensors can be connected to the CTM 2012 D in any possible combination.

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Technical Support:
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