

# Intelligent Building Solutions

## Installation Manual



## CTM 2010 D THERMOMETER UNIT

- DIN-rail mounting

**CIB-tech**

# Introduction

The CTM 2010 D is a single-channel thermometer using an external temperature sensor, 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<sup>1</sup>

### 2. Temperature sensor

For temperature sensing a SMARTEC SMT16030 digital temperature sensor is required<sup>2</sup>

**NOTE:** IBS provides various encapsulated or enclosed versions of easy to install, SMT16030-based temperature sensors<sup>3</sup>.

# Technical Specifications

## Electrical characteristics

### ● Power Supply

The CTM 2010 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

### ● 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 2010 D and the SMT16030 temperature sensor is 20 m

### ● Temperature measurement

- Measured temperature range: -45°C to +130°C
- Temperature resolution: 1°C
- Typical accuracy<sup>4</sup>: ±0.7°C

## Mechanical characteristics

The CTM 2010 D has a standard 2-module wide enclosure for M36 type DIN-Rail

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

2 For details 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.

- Dimensions: 102mm W x 35mm L x 60mm D
- Weight: 80g

### Environmental characteristics

- Operating temperature: -10°C to 85°C
- Storage temperature: -25°C to 100°C

## Key Features

- High speed temperature acquisition (up to 40 samples/second)
- 256-entry temperature history with configurable logging interval
- Measured temperature remotely viewable via the CIB-tech system
- Internal bi-color LED, indicating correct sensor operation (green: sensor is present / red: sensor is faulty or missing)

## Installation

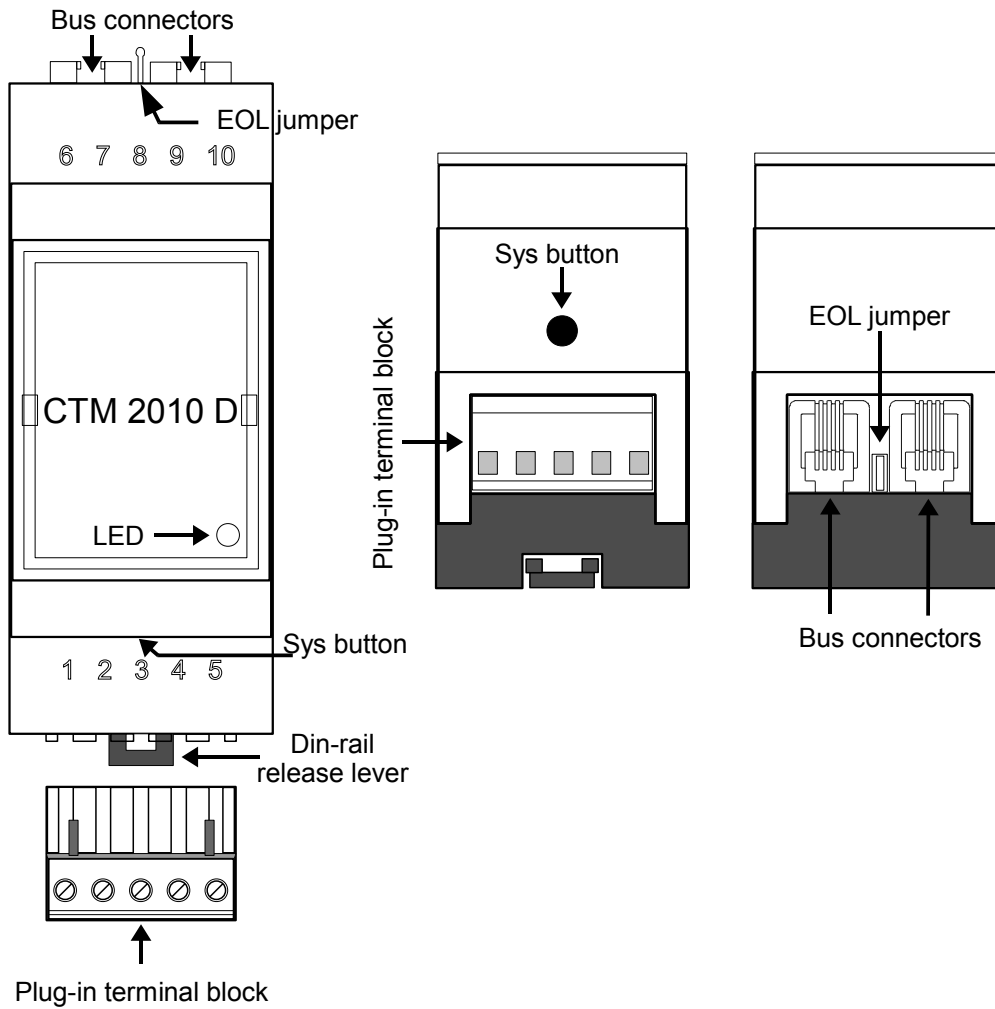
The CTM 2010 D is meant to be installed on a standard M36 type DIN-Rail.

### Part description

- **Bus connectors:**
  - 4P4C modular jack connectors for CIB-tech connection<sup>1</sup>
- **Sys button:**
  - pushbutton for CIB-tech system configuration
- **EOL jumper:**
  - CIB-tech system's End Of Line jumper<sup>1</sup>
- **LED:**
  - indicator LED for sensor presence
- **Din-rail release lever:**
  - lever for removing the device from the M36 DIN-Rail
- **Plug-in terminal block:** terminals for connecting the temperature sensor:
  1. Temperature sensor – GND
  2. Temperature sensor – Data
  3. Temperature sensor – +5V
  4. Do not connect
  5. Do not connect

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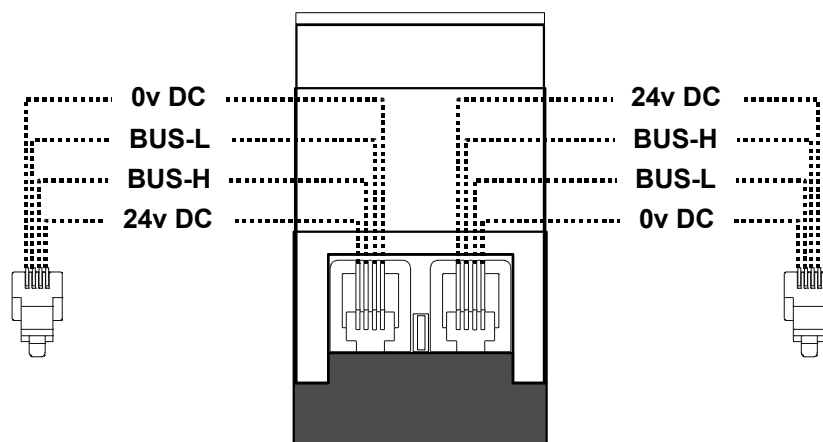
<sup>1</sup> See “CIB-tech installation manual” for details.



## Wiring diagrams

### Connection to CIB-tech system:

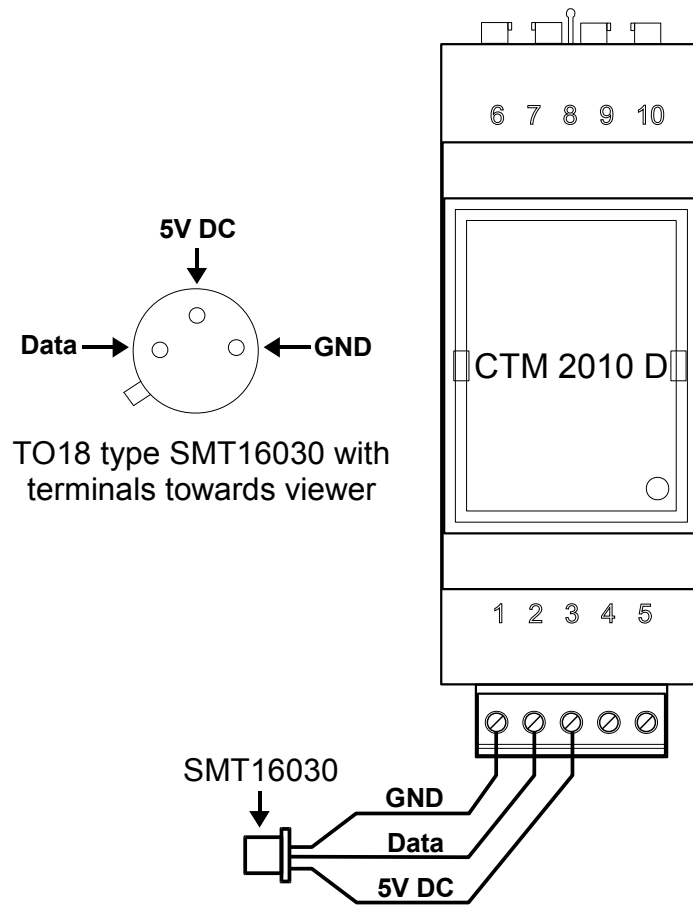
Use the CTM 2010 D device's two 4P4C modular jack connectors to connect it to the CIB-tech systems (chain like) bus. Do not forget to remove the EOL jumper if the device is not the last element of the chain<sup>1</sup>:



<sup>1</sup> See "CIB-tech installation manual" for details.

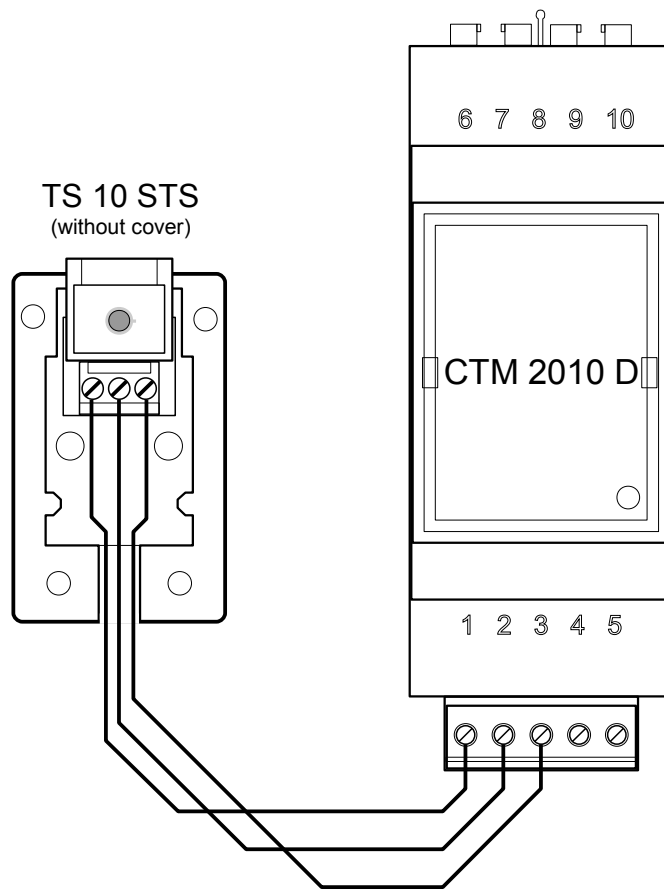
## Connecting the temperature sensor

Typical connection:



**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 enclosed, wall mounting temperature sensor TS 10 STS:



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