

Intelligent Building Solutions

Installation Manual



CDM 2040 D Analog Dimmer

- 0(1)-10v analog output
- Relay output with zero chaos
- DIN-rail mounting

CIB-tech

Introduction

The CDM 2040 D is an interface device for light intensity control devices such as controllable ballasts, LED drivers etc, with 0(1)-10v DC control interface. The CDM 2040 D generates the 0(1)-10v input signal for these ballasts/LED drivers and it switches its supply for complete power off.

In AC current the CDM 2040 D can handle ballasts that are heavily inductive or take large surge currents at start-up due to its zero cross circuit. In this case the the zero cross circuit must be enabled!

Additional equipment required

1. Functional CIB-tech system

A minimal number of essential CIB-tech components to make a functional CIB-tech system¹

2. Command button (optional)

Simple normally-open type (contact is closed when button is pressed) push button. Most types of flush mounted or DIN-rail mounted simple push buttons are suitable²

3. Controllable Ballast / LED driver

Adequate lamp, ballast, LED driver, etc that is controllable via 0(1)-10V analog interface.

Technical Specifications

Electrical characteristics

● Power Supply

The CDM 2040 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: 17.5 to 28V DC (nominal 24V DC)
- Supply current (at nominal voltage)
 - Standby current: 40mA
 - Maximum current: 50mA

● Analog output:

- Output voltage range (see output characteristics below): 0-10V DC
- Maximum current: 1mA
- Output accuracy: 1%
- Output resolution: 0.1V

● Voltage-free relay output

- Rated AC voltage: 250V AC (with zero cross enabled)
- Rated DC voltage: 30V DC (resistive load)
- Rated current: 6A

● I/O isolation

The CDM 2040 D device has an internal galvanic isolation, that separates the CIB-tech system from the 0-10V analog output and the relay output.

NOTE: The command button input is on the CIB-tech system side of the isolation.

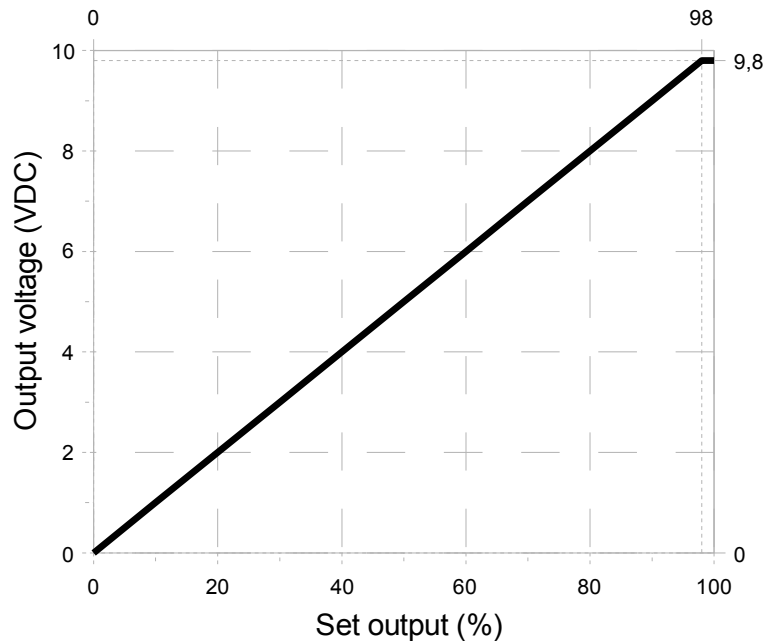
● Signal Input

- Command button: N.O. with voltage free contacts

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

² For din-rail type push-button, IBS product BSS 10 DM or BSD 10 DM might be used.

- **Analog output characteristics**



Mechanical characteristics

The CDM 2040 D has a standard 2-module wide enclosure for M36 type DIN-Rail

- Dimensions: 102mm W x 35mm L x 60mm D
- Weight: 100g

Environmental characteristics

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

Key Features

- Digitally controls ballasts/LED drivers with analog input in 100 steps via industry standard 0-10VDC interface;
- Internal relay with zero cross, for switching off the ballast/LED driver completely.
- Zero cross circuit can be enabled-disabled by software, making the device usable for switching both AC and DC.
- Single push button is required to change output value (up / down) and switch on / off;
- Maintains previously set output level when switched off;
- Soft on / off and output change transitions
- Output state and level remotely controllable via the CIB-tech system
- Internal bi-color LED, indicating the output state (green: off / red: on)

NOTE: Make sure that the zero cross circuit is disabled if the device is used for switching DC. Otherwise the switching unit of the device will suffer permanent damage!

Output is considered OFF when output value is 0VDC and the relay contacts are open, output is considered ON when output value is greater than 0VDC and the relay contacts are closed. Switching ON is considered setting the output to the last value that was set before the last switching OFF condition. Switching ON after a power on or reset condition, the output will go to 100%.

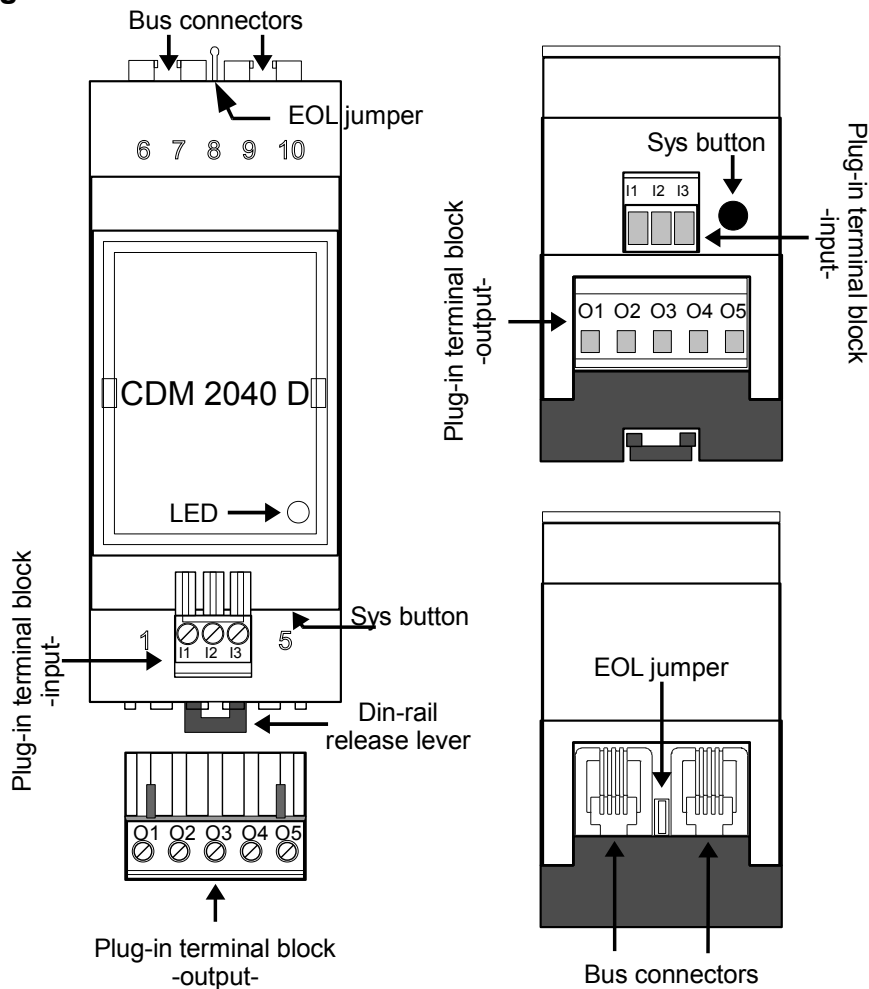
Switching ON/OFF using the push button is done by pushing (for a short time) the push-button. Changing the output value is done by keeping the push-button pressed until desired value is reached (if the change direction is the desired one). The direction of output change toggles each time the push-button pressed.

The CDM 2040 D is meant to be installed on a standard M36 type DIN-Rail.

Part description

- Bus connectors:
 - 4P4C modular jack connectors for CIB-tech connection¹
- **Sys button:**
 - push-button for CIB-tech system configuration
- **EOL jumper:**
 - CIB-tech system's End Of Line jumper¹;
- **LED:**
 - indicator LED for output state (green: off / red: on);
- **Din-rail release lever:**
 - lever for removing the device from the M36 DIN-Rail
- **Plug-in terminal Block - output:** terminals for connecting the controlled Blast/LED driver
 - O1. Analog output - GND
 - O2. Analog output – 0-10VDC
 - O3. Do not connect
 - O4. Relay output – contact 1
 - O5. Relay output – contact 2
- **Plug-in terminal Block - input:** terminals for connecting the push button
 - I1. Push button – Common contact
 - I2. Push button – Normally open contact
 - I3. Do not connect

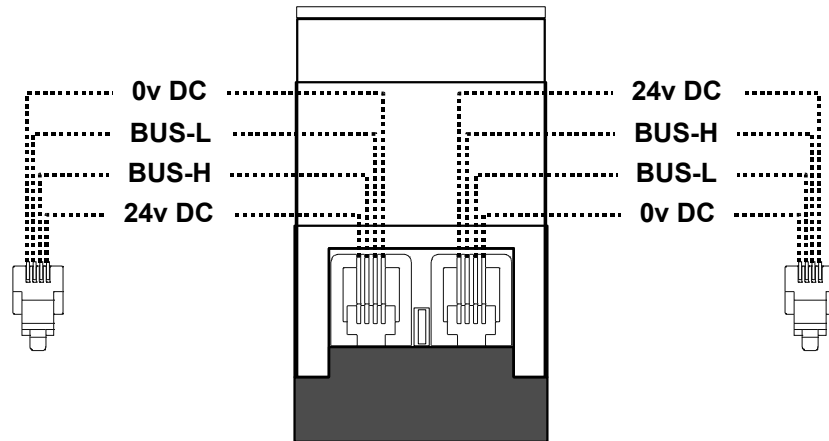
Wiring diagrams



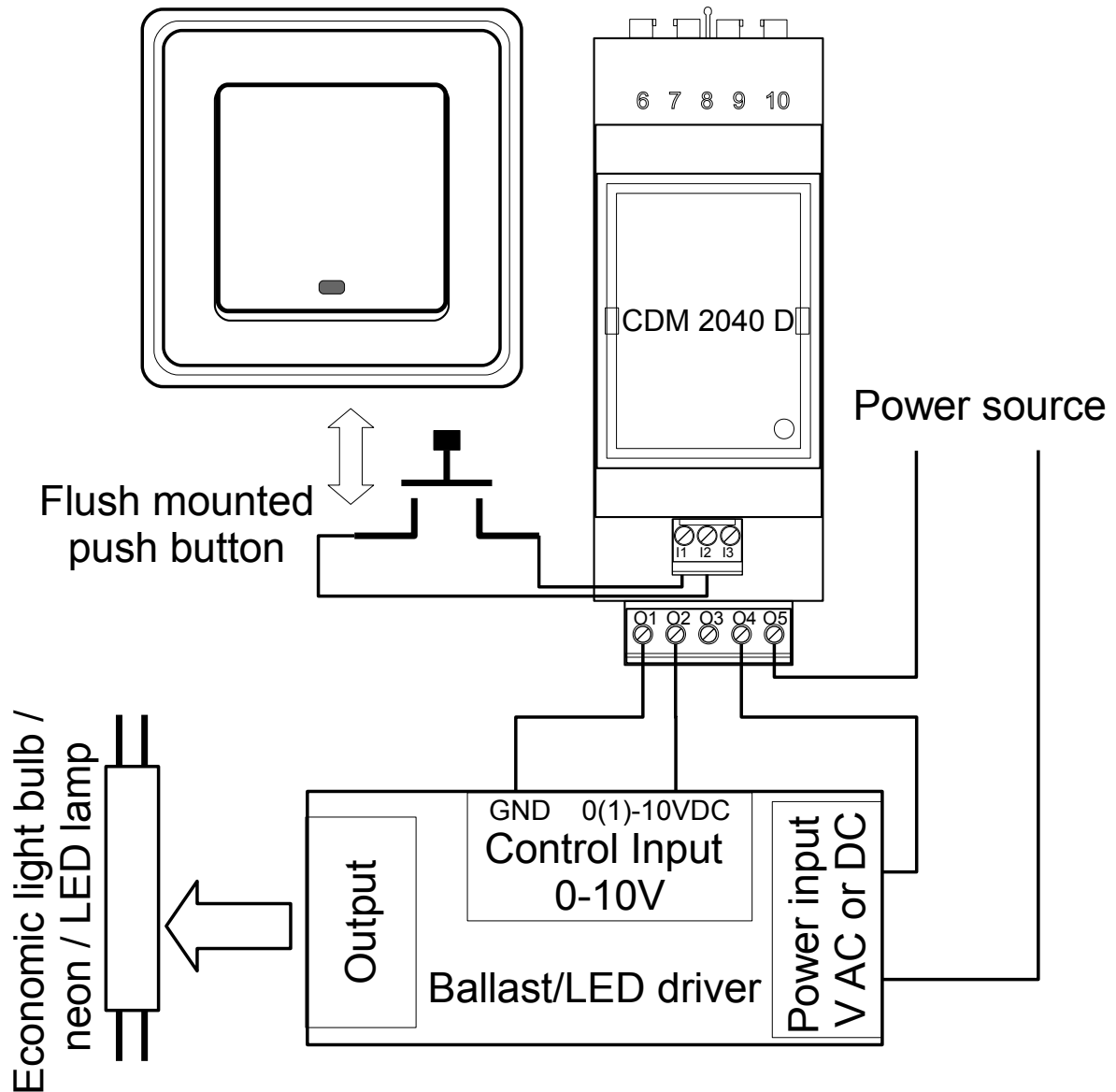
¹ See "CIB-tech installation manual" for details.

Connection to CIB-tech system:

Use the CDM 2040 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 chain¹



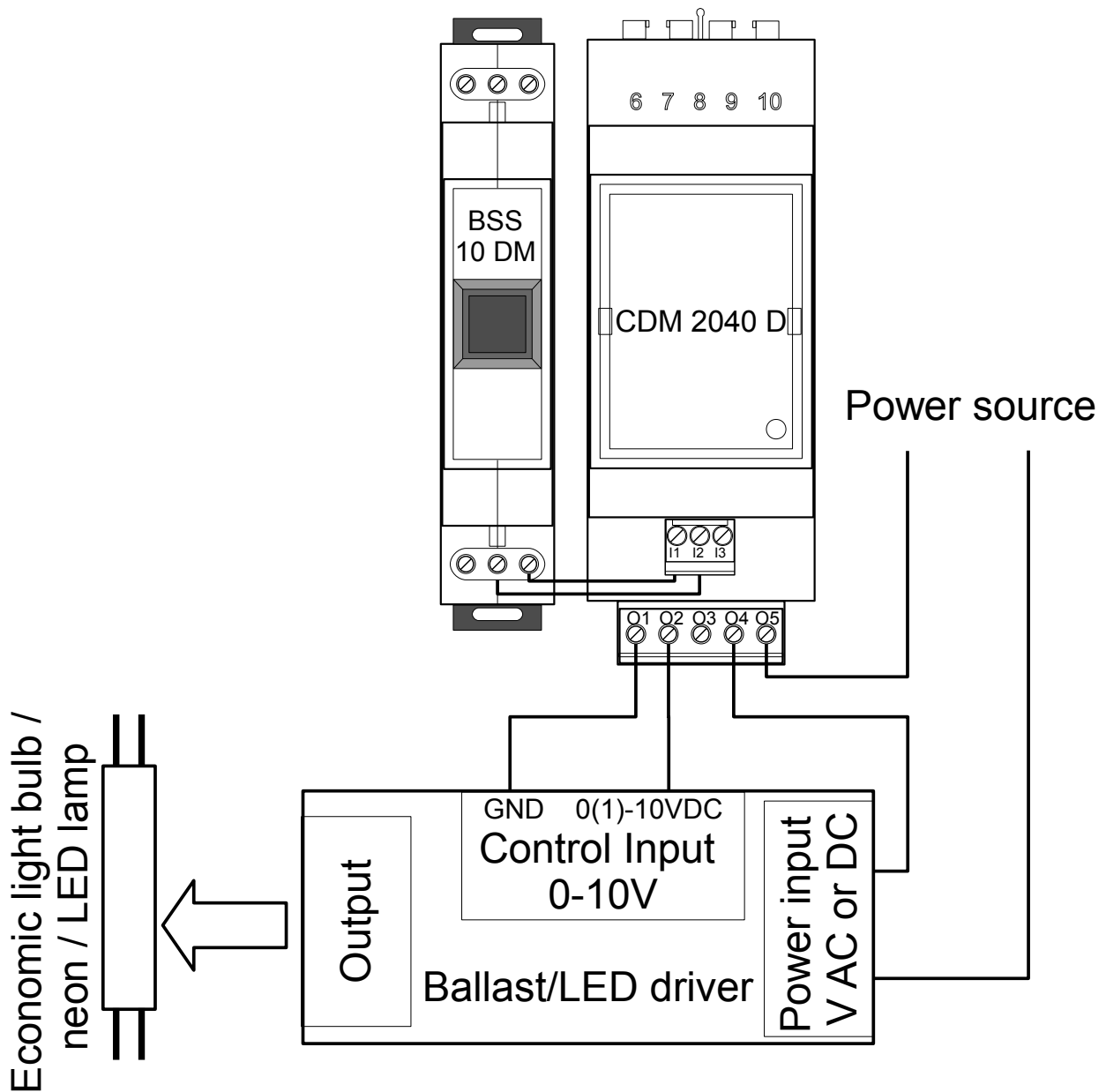
Connecting the input devices



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

Typical connection:

Connection example with local, DIN-Rail mounted, push button :



NOTE: If two CDM 2040 D are connected to a double push button, always the terminal block contact I1 of each CDM 2040 D shall be connected together (to the common contact of the double push button), and never the terminal block contact I2.

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Technical Support:

<http://www.ibs-smarthouse.com/>
info@ibs-smarthouse.com

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