1 CRE-BL

Cold location controller with EEV control, separate control panel for installation on the front panel

1.1 Front view

Fig. 1: Front view

1.2 Features

- Suitable for all cold location types, such as cold rooms and refrigeration units
- Superheating and modulated temperature control with clocked EEV or 0...10V
- Connection for 4 temperature sensors (supply air, return air, limit and suction gas sensor)
- Weighting of 2 control sensors
- 2nd setpoint and independent day/night changeover
- Input for door contact switch with timed cooling interruption of 15min and adjustable alarm
- Circulated air defrost, electric defrost, hot gas defrost and cool gas defrost
- Defrosting can be set over 8 fixed times daily or for weekday
- Thermostatic fan control
- Fan control with run-up and run-down function
- Operation-dependent fan control through analogue output with adjustable speeds
- Oscillation protection and runtime monitoring
- 3-point control, e.g. for heating function
- Integrated real-time clock with power reserve
- Large data memory for temperature list
- Quick installation on top-hat rail
- Plug-in screw terminals
- Support for higher baud rates on the Wurm CAN communication bus (C-BUS)
- Direct connection of a CAN-USB to the service socket
- Connection to the Wurm system via C-BUS and FRIGODATA XP

Accessories

- OPM-E control panel

1.3 Safety instructions

Writing conventions

WARNING

- Avoid the described hazard: otherwise, **electric voltage** represents a danger that could lead to **fatal** or **serious** bodily injury.

CAUTION

- Avoid the described hazard: otherwise **minor** or **medium** bodily injury or damage to property will result.

For your safety

For safe operation and to avoid personal injury and equipment damage through operator error, always read these instructions, become familiar with the device, and follow all safety instructions on the product and in this document, as well as the safety guidelines of Wurm GmbH & Co. KG Elektronische Systeme. Keep these instructions ready to hand for quick reference and pass them on with the device if the product is sold.

Wurm GmbH & Co. KG Elektronische Systeme accepts no liability in the case of improper use or use for purposes other than the intended purpose.

Target group	This manual is intended for "service technician" personnel.
Intended use	**CRE-BL** is a cold location controller with EEV control and separate control panel for front panel installation

WARNING

DANGER TO LIFE FROM ELECTRIC SHOCK AND/OR FIRE!

- Switch off the power to the entire plant when carrying out installation, wiring or disassembly work! Otherwise, mains voltage and/or external voltage may still be present, even if the control voltage is switched off! Always remove both power plugs (L and N).
- The wiring of the device must be carried out only by qualified electricians!
- Use the correct tools for any work!
- Check the entire wiring after connection!
- Observe the maximum loads for all connections!
- Never expose the device to moisture, for example due to condensation or cleaning agents.
- Stop operating the device if it is faulty or damaged and its safe operation is compromised!
- Do not open the device.
- Do not repair the device yourself! If the device requires repairs, send it in with an exact description of the fault!

CAUTION

ELECTROMAGNETIC INTERFERENCE MAY CAUSE FAULTS!

- Always use shielded data cables and place them far away from power lines.

Wurm Infocenter

paperless info

Version and validity of the documentation

Version	Date	
V1.2.0 and higher	2023-10	Documentation status

Any versions not listed are special solutions for individual projects and are not described in detail in this document.
This document will automatically cease to be valid if a new technical description is issued.
Manufacturer: Wurm GmbH & Co. KG Elektronische Systeme, Morsbachtalstraße 30, D-42857 Remscheid
You can find more information on our website at www.wurm.de.

1.4 Connection diagram

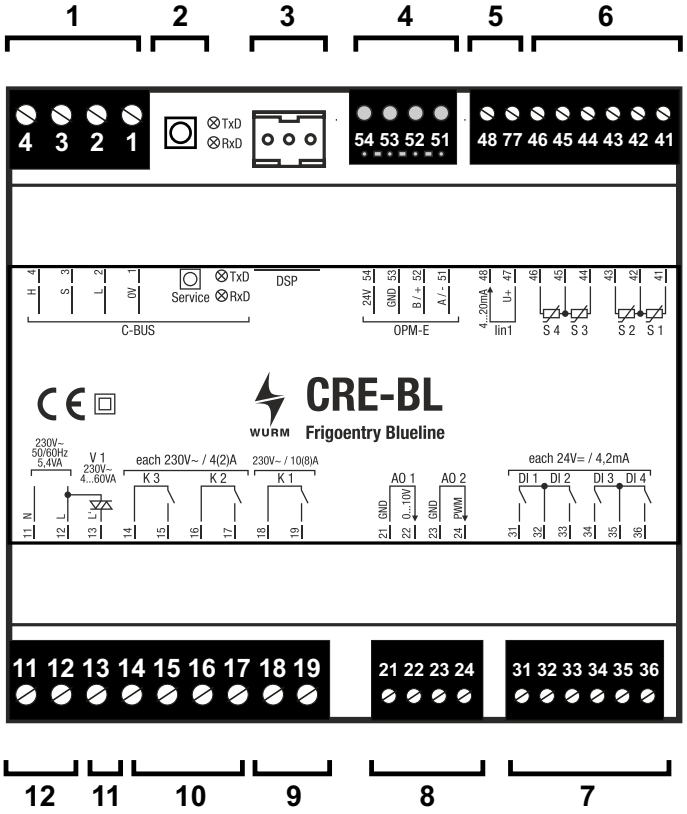

Fig. 2: Connection diagram

Pos.	Designation	Function
1	C-BUS interface	Data communication (H = CAN high, S = shield, L = CAN low, 0V = CAN-0V)
2	Service socket	CAN-USB
3	Display socket	External displays DSP002, DSP100, DSP-LCD
4	OPM-E interface	Connection for external control panel with 3 keys and 3-digit, 7-segment display
5	Analogue input lin 1	Pressure sensor, 4…20mA
6	Sensor inputs S 1...S 4	Temperature sensor TRK277/7 PLUS, TRK-EEV (S 1 supply air, S 2 return air, S 3 limit, S 4 suction gas)
7	Digital inputs DI 1...DI 4	24V=, 4.2mA
8	Analogue outputs AO 1...AO 2	0...10V, max. 10mA PWM
9	Output relay K 1	Defrost, 230V~, 10(8)A
10	Output relays K 2...K 3	Fan, 230V~, 4(2)A Alarm, 230V~, 4(2)A
11	Digital output (SSR) V 1	Cooling, 230V~, 4…60VA
12	Power supply L, N	230V~/50Hz, neutral conductor

1.5 Installing the device

This device is designed for top-hat rail installation. The housing has standard DIN 43880 dimensions and is also suitable for operation in fuse boxes and distribution cabinets.

The device can be positioned immediately adjacent to another device without gaps.

WARNING

DANGER TO LIFE FROM ELECTRIC SHOCK AND/OR FIRE!

- Switch off the power to the entire plant before installing. Otherwise, mains voltage and/or external voltage may still be present, even if the control voltage is switched off. Always remove both power plugs (L and N).

✓ **The entire plant must be free of voltage.**

1. **(A)** Place the device with the leading edge at an acute angle to the top-hat rail.
2. **(B)** Push the device downwards onto the top-hat rail.
   - ▶ The device snaps into place with the fastening safety catch **(a)** on the top-hat rail.
   - ▶ You can now connect the device.

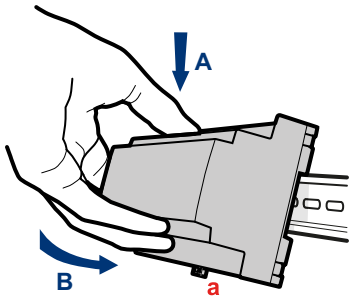

Fig. 3: Top-hat rail installation

1.6 Technical data

Power supply	230V~, +10% / -15%, max. 5.4VA
Display	2 x green LED, C-BUS data traffic (CAN Tx, CAN Rx)
C-BUS communication	3-wire CAN bus interface with integrated power supply, galvanically isolated, service socket
Communication Expansion module	Interface for OPM-E connection: 4-wire interface with integrated power supply, max. 40mA
Temperature sensor	4 x TRK277, DGF (TF201/231, K243) supply air, return air, limit, suction gas
Digital inputs	4 x floating
Output relays	2 x normally open contacts, 230V~, 4(2)A 1 x normally open contact, 230V~, 10(8)A 1 x semiconductor relay 230V~, 4…60VA
Display connection	1 x socket for pre-assembled line to display DSP002, DSP100, DSP-LCD
Analogue input	1 x 4…20mA
Analogue outputs	1 x 0...10V=, non-floating, max. load 10mA 1 x PWM
Real-time clock	Battery-buffered
Monitoring system	Monitoring of data memory and connected sensors
Dimensions	(W x H x D) 106mm x 90mm x 58mm (DIN 43880)
Fastening	Top-hat rail TH 35-15 or TH 35-7.5 (DIN EN 60715)
Ambient temperature	Operation: -20...+55°C, storage: -25...+70°C
Weight	About 270g
CE conformity	- 2014/30/EU (EMC Directive) - 2014/35/EU (Low Voltage Directive) CE
	RoHS II