



Impuls.Ing

Elektronik, Hard- & Software

DATASHEET

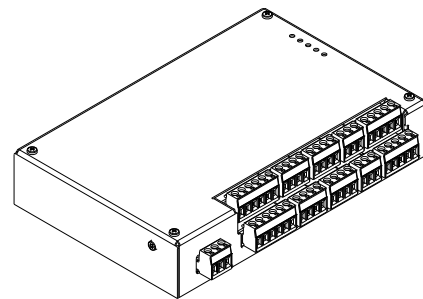
Climate

Description

- Control unit for valves and fans
- Multiple devices can be connected and operated as a network

Application

- Control of trench heaters
- 2-pipe and 4-pipe heating/cooling systems
- Control of up to 4 fans



Detailed Description

The Climate device is a purpose-built control unit designed for integration into trench heaters. It can process a variety of input signals, which may be either 0–10 VDC or 24 VDC. Its primary function is to interpret these signals and determine the appropriate outputs to control fans and heating or cooling valves.

A key feature of this device is its ability to connect with other Climate devices to form a network. In this configuration, the devices coordinate their outputs based on a common input signal, for example from a wall-mounted control unit.

This functionality significantly simplifies system setup and reduces wiring complexity, as all connected devices operate in a synchronised manner, resulting in an efficient and streamlined system.

Features

IP Protection Rating	IP20 ¹
Enclosure Type	Metal enclosure for installation in OEM device
Color	Black (with white labels)
Enclosure Material	Aluminium AlMg3, Powder-coated
Enclosure Dimensions [mm]	190x132x41 (L x W x H)
Weight	670 g
Enclosure Flammability Class (UL 94)	V0

Table 1: Device Features

Operating Conditions

	MIN	MAX	UNIT
Mains Connection 230 V (50 Hz)	90	260	VAC
Cumulative Output Power	-	75	W
Number of Climate Devices Connected per BUS	-	50	Units
Cumulative BUS Cable Length	-	300	m
Power / Fan / Valve / IO Cable Lengths	-	3	m
I/O Connection: Heating-/ Cooling-/ Fan Input Voltage	0	28	VDC
I/O Connection: Error Output Current ²	-20	0.1	mA
I/O Connection: 24 V Current	0	1	A
Fan Connection: Continuous Output Current	0	40	mA
Fan Connection: Tacho Input Voltage	0	28	V
Fan Connection: 24 V Current	0	1	A
Valve Connection ³ : Continuous Output Current	0	40	mA
Valve Connection ³ : Continuous Input Voltage	0	28	V
Valve Connection ³ : Digital Output Current	0	250	mA
Valve Connection ³ : 24V Current	0	1	A
Ambient Temperature	-20	55	°C

Table 2: System Operating Conditions

¹This only applies when all plugs are mounted on the device.

²This is an open drain output with 10 k Ω pull-up.

👉 Operating outside these specifications can damage the device.

Electrical Characteristics

	MIN	MAX	UNIT
I/O Connection: Heating-/ Cooling-/ Fan Input Impedance	9	10	kΩ
I/O Connection: Error Output Impedance (Source)	9	11	kΩ
I/O Connection: Error Output Impedance (Sink)	95	105	Ω
Fan Connection: Tacho Input Impedance	1	1.15	MΩ
Fan Connection: Continuous Output Impedance	95	105	Ω
Valve Connection ³ : Continuous Input Impedance	102	108	kΩ
Valve Connection ³ : Continuous Output Impedance	95	105	Ω
Valve Connection ³ : Digital Output Impedance	0.1	5	Ω

Table 3: Electrical Properties

Mechanical Specification

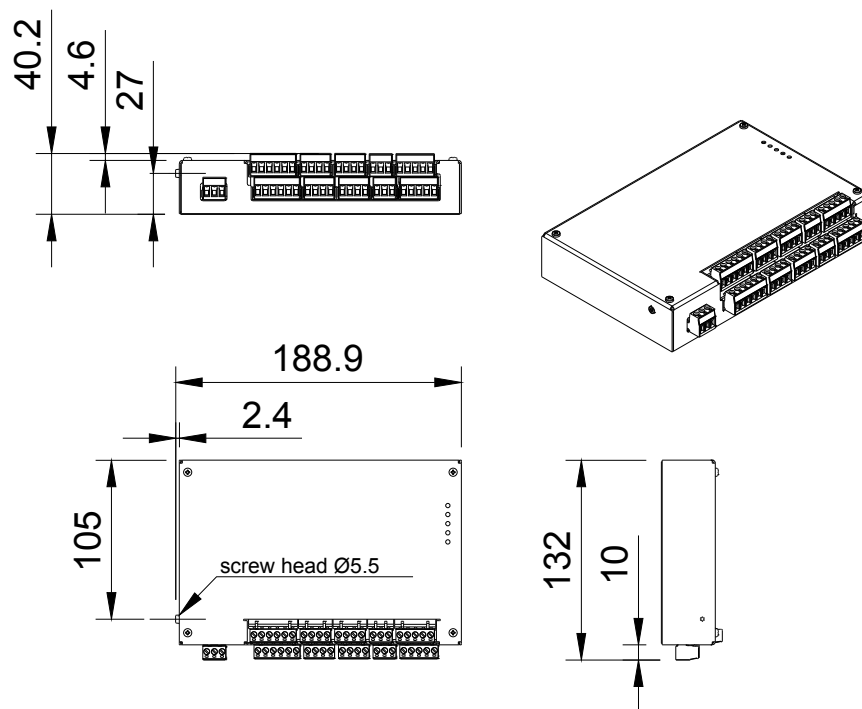


Figure 1: Mechanical Dimensions

³This applies to Heating and Cooling Valve connections.

Revision History

Revision 1.0 – July 2023

First release

Revision 1.1 – September 2023

Adjustment of maximum cable length

Revision 1.2 – March 2024

Adjustment in Electrical Characteristics

Revision 1.3 – April 2024

Adjustment in Operating Conditions, Rewording description