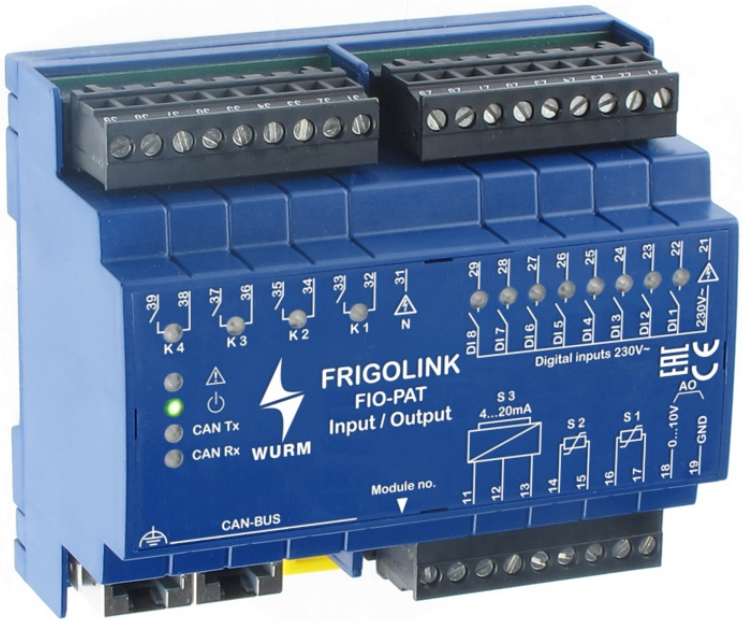
Front view



Features of universal input and output module (Wurm CAN communication bus (C-BUS))

- The functions of the inputs and outputs depend on the particular application!
- 8 operating messages or fault messages and 230V~ control commands
- 4 relay switching outputs 230V~
- Integrated power supply for CAN bus and relay
- No parameters to be set on the device
- Module number setting with user-friendly coding switch
- Connection to the Wurm system via C-BUS and FRIGODATA XP

Features of defrost module (Wurm CAN field bus (F-BUS) of HKS-G3/G4)

- One defrost module per F-BUS possible
- Forced cooling for cold location groups (hot gas and cool gas defrost)
- Additional safety functions can be implemented for the associated rack by suppressing the cooling command for all cold locations in a defrost group
- The digital outputs (K1...K3) are set if a cold location within a defrost group is defrosting
- Integrated power supply for CAN bus and relay
- Connection to master module via F-BUS

Writing conventions

Symbol	Meaning
CAUTION	Avoid the described hazard: otherwise **minor** or **medium** physical injury or damage to property will result.
WARNING	Avoid the described hazard: otherwise there is danger from **electric voltage** that could lead to death or **serious** physical injury.

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	These instructions are intended for “service technicians”.
Intended use	The FIO-PAT is a universal input and output module for 8 operating or fault messages and for control commands.

WARNING
Danger to life from electric shock and/or fire!

- Switch off the power to the entire plant when carrying out installation, wiring or removal work. Otherwise a mains voltage and/or external voltage may still be present even if the control voltage is switched off. Always remove both power plugs (230V~ and N).
- The wiring of the device must be carried out only by qualified electricians.
- Use only the correct tools for all work.
- Check all wiring after connection.
- Take note of the maximum loads on all connections.
- Never expose the device to moisture, for example due to condensation or cleaning agents.
- Take the device out of operation if it is faulty or damaged and is therefore compromising safe operation.
- 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 can cause faults!

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

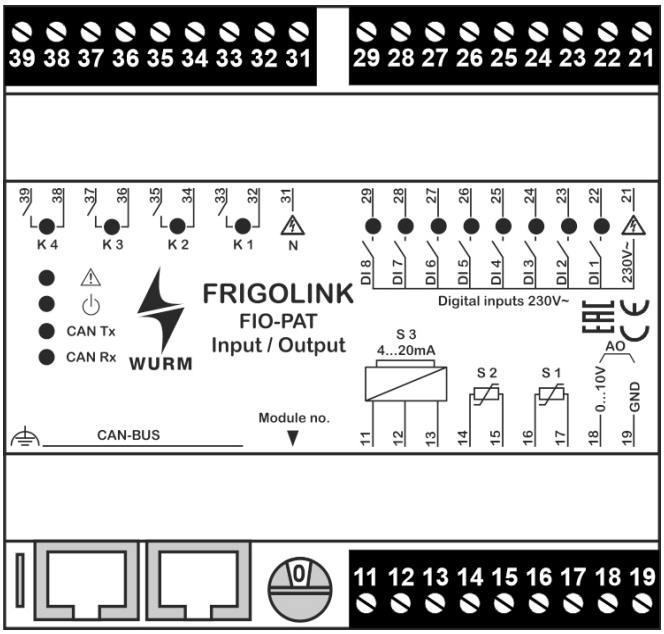
	Wurm Infocenter	paperless info

Version and validity of documentation

Version	Date	
V3.30	2021-11	Documentation status

Any versions not listed are special solutions for individual projects and are not described in detail in this document. This document automatically ceases 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

Circuit diagram



NOTICE

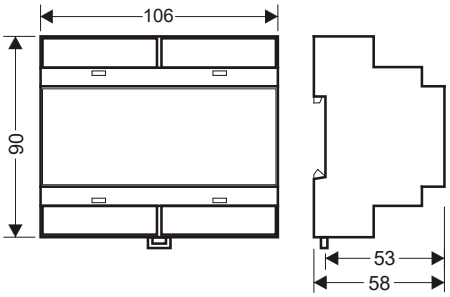
- The CAN bus shield must be connected at only one (!) CAN bus end by means of the 6.3mm connecting lug with PE.
- Further information on the CAN bus can be found in the FRIGOLINK bus system manual.

Installing

WARNING

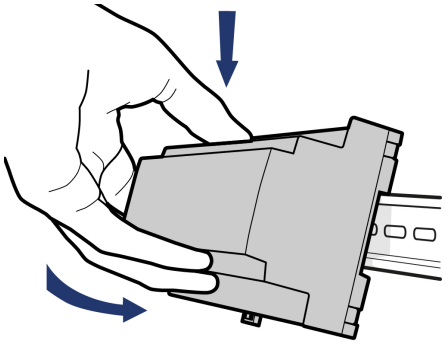
Danger to life from electric shock and/or fire!

- Switch off the power to the entire plant before installing. Otherwise a mains voltage and/or external voltage may still be present even if the control voltage is switched off. Always remove both power plugs (230V~ and N).



This device is designed for top-hat rail installation. The housing is a standard size and is also suitable for installation in fuse boxes, distribution switch boxes, or the load sections of refrigeration units.

The devices can be positioned next to one another without gaps.



Place the device with the upper guide edge on the top-hat rail.

Then press the device gently downward until it engages with the fastening safety catch on the top-hat rail.

Technical data

Power supply	230V~, +10% / -15%, 7VA approx.
Display	1 x red LED, flashes in case of fault 1 x green LED, operating voltage 2 x green LED, CAN bus data traffic (CAN Tx, CAN Rx) 8 x yellow LED, for signal at the input 4 x green LED, for controlling the relays
Communication	2 x RJ45 sockets for the CAN bus connection with integrated power supply, galvanically isolated
Digital inputs	8 x 230V~, galvanically isolated by optocoupler
Temperature sensor	2 x TRK277/7 PLUS, TRK277/G2 (outside temperature, cold zone temperature)
Analogue input	4…20mA, output voltage 18V=, max. 22mA (humidity sensor)
Output relay	4 x normally open contact 230V~, 4(2)A
Analogue output	Not used (1 x 0...10V=, non-floating, max. load 10mA)
Connection cross-section	2.5mm²
Dimensions	(W x H x D) 106 x 90 x 58mm (DIN 43880)
Fastening	Top-hat rail TH 35-15 or TH 35-7.5 (DIN EN 60715)
Ambient temperature	Operation: 0...+55°C, storage: -25…+70°C
Weight	About 450g
CE conformity	– 2014/30/EU (EMC Directive) – 2014/35/EU (Low Voltage Directive) CE
EAC conformity	– TR CU 004/2011 – TR CU 020/2011 EAC
	RoHS II
Valid from	Version 3.30