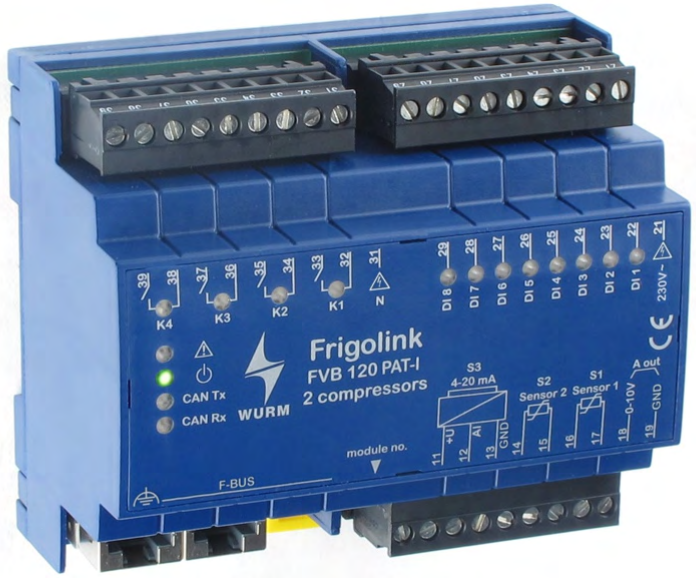
Front view

Field module for switching and monitoring 2 compressors



Features

- 4 relay switch outputs 230V~ for 2 compressors
- 230V~ inputs for operation feedback messages and detailed fault chain monitoring
- Control of a screw compressor by ASV001 and HVI-G3/G4
- Control of a reciprocating compressor by ASV101 and HVB-G3/G4, HVI-G3/G4, HVV-G3/G4
- Emergency program in case of CAN bus errors
- No parameters to be set on the device
- Connection to master module via Wurm CAN field bus (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 operating 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 case of improper use or use for other than the intended purpose.

Target group	These instructions are intended for "service technicians".
Intended use	The FVB120-PAT is a field module for switching and monitoring 2 compressors.

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

- Switch off the power to the entire plant when installing, wiring or removing! 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 should be carried out only by a qualified electrician!
- 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 required, send it in for repair with an exact description of the fault!

⚠ **CAUTION!**
Electromagnetic interference can cause faults!

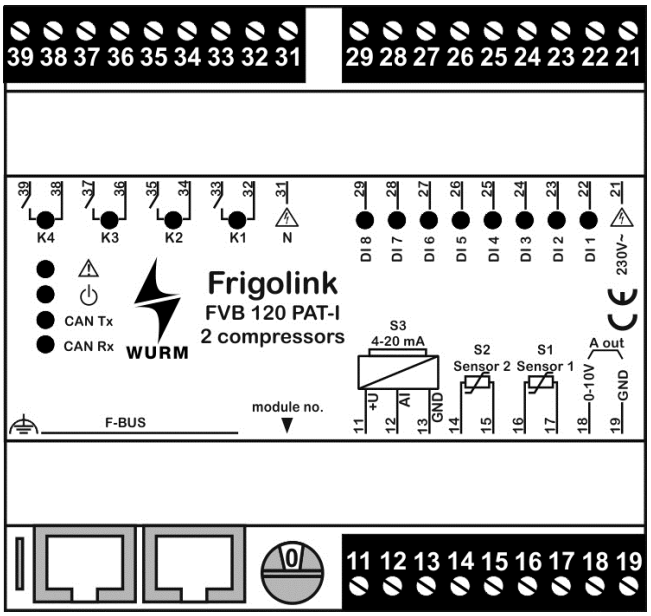
- Use only shielded data lines and place them far away from power lines!

Software revision and validity of documentation

Software version		
V3.30	2018-01	Documentation status

Any software 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



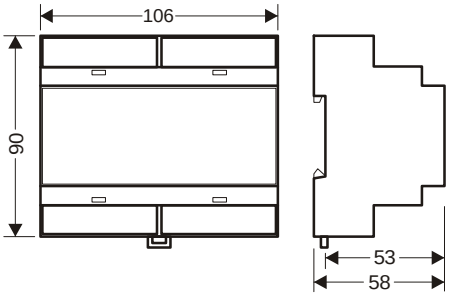
Notes!

- 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

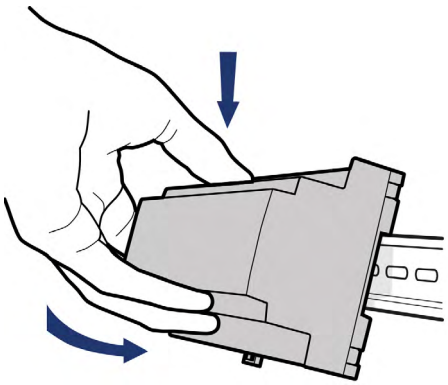
WARNING! Danger to life from electric shock and/or fire!

- 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 of a standard size and is also suitable for installation in fuse boxes, distribution switch boxes or electric boxes of refrigeration units.

The devices can be positioned immediately next to one another and 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.

Fault inputs that are not used

In order to obtain correct fault information, fault inputs that are not used must be jumpered with the fault signal that is connected upstream within the alarm routing. The input "Operation 1/2" (terminal 22/26) is used for measuring the operating hours. If no corresponding signal is available from the machine protection, then it is advisable to jumper the output relay.

Monitoring function / emergency program

In the event of an F-BUS fault, the field module enters an emergency program corresponding to the operating mode.
If a problem with the cover identification arises at the same time, then all of the output relays are switched off and the analogue output "A out" is set to 0V.

Module addressing

Make sure that each of the 8 field modules per master module (HVI-G3/G4: 12) has a different module address. Permissible addresses are the values 0-7 (HVI-G3/G4: 0-B). No other settings are permitted. The address of the module FIO001B / FIO-PAT and the addresses of the field modules FVBxxxB / FVBxxx-PAT must not overlap. In the event of an address collision, an entry is made in the fault list of the master module and the LED "⚠" (fault) on the field modules flashes.

Technical data

Power supply	230V~, +10% / -15%, approx. 7VA
Display	1 x red LED, flashing 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 CAN bus connection, with integrated power supply, galvanically isolated
Digital inputs	8 x 230V~, galvanically isolated by optocoupler
Temperature sensor	1 x TRK277, S1 for cold zone temperature 1 x TRK277, S2 for suction gas temperature
Analogue input	4...20mA, output voltage 18V=, max. 22mA, suction pressure
Output relay	4 x normally open contact 230V~, 4(2)A
Analogue output	1 x 0...10V=, non-isolated, max. load 10mA
Connection cross-section	2.5mm²
Dimensions	(WxHxD) 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

Note!
- Please observe the detailed descriptions in the chapters of the FRIGOLINK system manual.