1 HVB-G4-M

Master module for compressor racks with Modbus connection

1.1 Front view

Fig. 1: Front view

1.2 Features

- Simple start-up with configuration of the plants using default settings from the expert database
- Connection of 8 rack field modules
- Control of 16 compressors (depending on compressor type, field module type and operating mode)
- Compressor control according to COP
- Differentiation between unused sensors and faulty sensors
- Control circuits:
  - Suction pressure control or secondary refrigerant control
  - Condenser control
  - Control for the secondary refrigerant pumps
  - Control of electronic expansion valves
  - Monitoring of an individual system
- Control processes:
  - Standard multiple contact switch with base load change
  - Compressor control with frequency converter
  - Frigotakt+ and Frigotakt-G4
- Can be locked to prevent unwanted parameter adjustment (SAC – Security Access Control)
- Integrated relay outputs
- Multilingual menu navigation (DE/EN/FR/NL)
- Innovative G4 control concept with direct navigation by Quicklink
- Graphical display with backlighting, plain text, 6 operating keys, and 1 Info key
- Context-sensitive help with links to the paperless info Wurm app
- Interchangeable with FRIGOLINK-G3
- Connection to the Wurm system via Wurm CAN communication bus (C-BUS) and FRIGODATA XP
- High level of safety with galvanically isolated Wurm CAN buses

1.3 Safety instructions

Writing conventions

CAUTION

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

WARNING

- Avoid the described hazard: Otherwise there is danger from **electric voltage** that can lead to **death** or **serious** bodily 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 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	The **HVB-G4-M** is a master module for 1 rack system or 1 refrigerant system with Modbus connection.

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!
- 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	
V9.2.7 and higher	2024-11	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/en.

1.4 Installing the device

DANGER TO LIFE FROM ELECTRIC SHOCK AND/OR FIRE! **WARNING**

- 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!

Installing the device in the MGR131/141 and MGR231/241 installation frame

✓ The entire plant must be free of voltage.
1. Push the device into the installation frame up to the stop.
   ▶ The device locks into place between the spring clips.

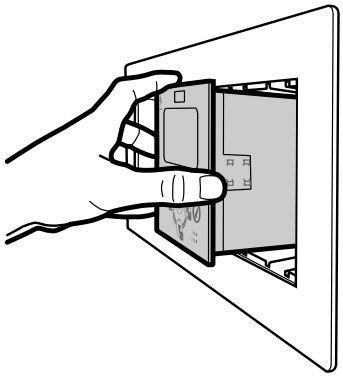

Fig. 2: Installing the device in the MGR131/141 installation frame

- Please refer to the product information for the MGR131/MGR141 and MGR231/MGR241 installation frames.

NOTICE

Installing the device with ZEM type screw-in clamps

✓ The entire plant must be free of voltage.
1. Insert the device up to the stop in a mounting cutout in the switch cabinet door.
2. Fix the device to the switch cabinet door using the ZEM type screw-in clamps.

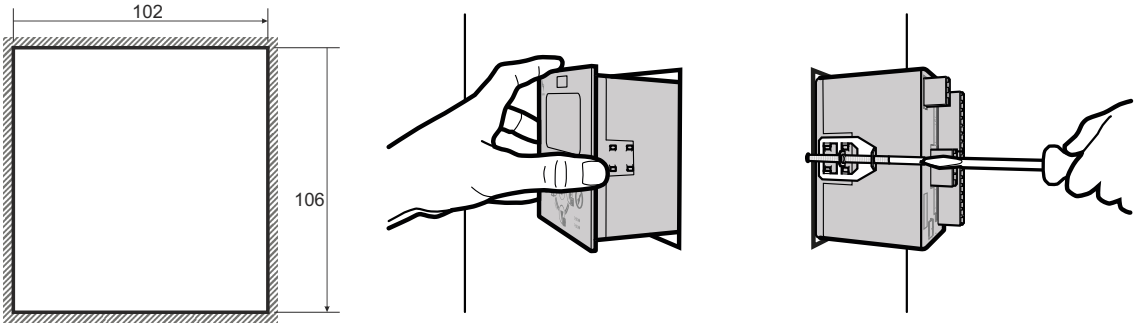

Fig. 3: Installing device in a mounting cut-out with ZEM clamps

1.5 Connection diagram

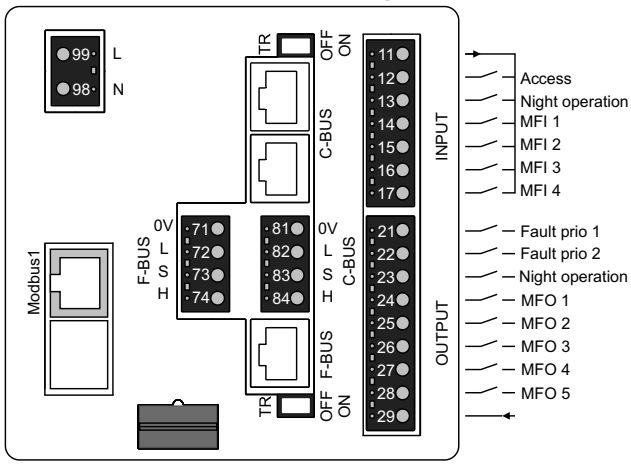

Fig. 4: Connection diagram

1.6 Technical data

Power supply	230V~, +10% / -15%, 50Hz, max. 13VA
Display	Graphical display with backlighting 1 x red LED, flashes in case of fault 1 x green LED, for parameter adjustment 1 x yellow LED, for C-BUS operating status 1 x yellow LED, for F-BUS operating status
C-BUS communication	3-conductor CAN bus interface, shielded, galvanically isolated, 2.5mm² push-in terminals / RJ45 socket and switchable terminating resistor for communication with system devices
F-BUS communication	3-conductor CAN bus interface, shielded, galvanically isolated, 2.5mm² push-in terminals / RJ45 socket and switchable terminating resistor for communication with field modules
Modbus communication	3-conductor Modbus RTU, galvanically isolated, RJ45 socket
Digital inputs	6 x 24V=, self-powered, 5mA approx. per input, push-in terminals 2.5mm²
Digital outputs	8 x normally open contact with common supply, 1A, rated voltage 230V~, push-in terminals 2.5mm²
Dimensions	(W x H x D) 109 x 109 x 92mm
Housing	Plastic, foil
Fastening	In MGR installation frame, individual installation with ZEM
Ambient temperature	Operation: 0...+55°C, storage: -25...+70°C
Vibration	Test in accordance with DIN EN 60068-2-64: frequency range 10–100Hz, noise excitation, RMS 1.0g, test in 3 spatial directions, test duration 1h per spatial direction
Shock	Test in accordance with DIN EN 60068-2-27: amplitude 15g, shock duration 11ms, semi-sinusoidal shock, test in 6 spatial directions, 3 shocks per spatial direction
Weight	About 650g
CE conformity	- 2014/30/EU (EMC Directive) - 2014/35/EU (Low Voltage Directive) CE
	RoHS II