



4 NEW MASTER MODULES WITH THE G4 OPERATING CONCEPT

The FRIGOLINK G4 family keeps growing

FRIGOLINK – PROVEN SYSTEM WITH A CLEAR PHILOSOPHY

The Wurm FRIGOLINK system offers comprehensive control solutions for industry and supermarket refrigeration as well as for building technology.

Instead of a confusing multitude of specific controllers for each function, the concept is based on only a few different components, master modules and field modules.

The master module is implemented in the control cabinet and enables the centralised control and coordination of the field modules. There are different versions of master module available, adjusted to the respective application, which are differentiated in terms of the software installed.

The field modules for data logging and the input and output of switching signals can be installed in electric distributions or load sections of refrigeration units. In this way wiring becomes much easier.

Standard settings for a multitude of applications are recorded in the expert database of the master module and can be applied for almost all plant types and components. The entire parameterisation, from setpoints to individual texts in the controllers, is saved in the plug-in memory module. The great advantage is that the plant configuration can be prepared in advance. As soon as the parameterised memory module is implemented, all values are directly available in the control. This enables a fast and efficient start-up and facilitates matters in the event of malfunctions.

The system communication is based on the approved CAN bus technology. Two CAN bus systems are used: The communication bus (C-Bus) is used for the exchange of control signals and management signals between the master modules and for remote management via a gateway. The field bus (F-Bus) manages the data exchange between mas-

ter and field modules. Both systems are electrically isolated. The redundant net/sub-net architecture ensures that in the event of a failure of the communication bus all master modules can communicate with their assigned field modules without restriction. If there is a field bus malfunction, the field modules of the respective master module will run in emergency operation mode. All other devices will continue working via the communication bus without restrictions.

The FRIGOLINK system is connected with FRIGODATA XP via the Wurm gateways. As a consequence, it can be controlled and observed via remote access. The optional connection with the FRIGODATA ONLINE server platform enables additional automated analyses of operation parameters with the help of AI algorithms.

NEW FUNCTIONS FOR THE WURM G4 MODULES

The operation concept is not the only thing that has been revised. The complex development of our own programming environment enabled us to add new functions to the controllers and thus add value to them.

With an even more powerful CPU, the 4th generation of Wurm master modules is well prepared for the future. This means that

control requirements in modern plants can also be fulfilled without problems.

Moreover, the control devices are able to undergo an automated analysis of AI algorithms in FRIGODATA ONLINE. This is possible through the clear (and automatically analysable) identification of each parameter and value with Quicklinks.

All G4 master modules have been equipped with the SAC (Secure Access Control) security function. Unauthorised access to the parameter setting is thus impossible when the plant has been locked after the start-up.

POWERFUL – THE NEW HKS G4

The HKS G4 comes along with the adaptive control process, Frigotakt+, and its further development Frigotakt G4, which also allows particularly dynamic processes in a complex refrigeration plant to be accounted for. The range of functions also includes the intelligent EC defrost and the EEV control with Smartflow+.

Controlled defrost heating and continuous fan control are possible for almost all types of cold locations. Apart from that, an intelligent overtemperature alarm is integrated: Unnecessary alarms can be avoided by a trend evaluation of the temperature.

In the event of an exchange, an HKS G4 can be installed instead of an HKS G3 without any problems. Just plug in the memory module of the previous device and the complete configuration will be adopted.



A SUITABLE G4 MASTER MODULE FOR EACH COMPRESSOR RACK

The Wurm master modules for the compressor racks, HVB, HVV and HVI, have also been equipped with the user-friendly operation concept G4. Various versions enable 12 or 16 compressors to be controlled. All versions allow control to be optimised according to the COP (Coefficient of Performance). The control circuits include the suction pressure control, secondary refrigerant control, condenser control, the control of secondary refrigerant pumps, the control of electronic expansion valves on heat exchangers and the monitoring of a single plant. As control process, all rack controls of G4 models offer a tap-changer with base load change and a condenser control with a frequency converter. The operation of the frequency converter has once more been optimised with regard to efficiency and operating behaviour in the new G4 master modules.

For each rack condensers can be subdivided into two groups with different operating modes. This makes the plant constellation even more flexible.

Frigotakt+ and Frigotakt G4 are, of course, supported by all HVx modules.

The master modules in the versions with Modbus connections support direct communication with condenser fans with compatible connections. A separate motor management is not required.

The integrated calculation of mass flow and refrigerating capacity is of interest when evaluating efficiency.

Continuous calculation of the power coefficient is also important for evaluating plant behaviour. For this purpose, the ratio of

the refrigerating capacity to the energy consumption obtained from the installed consumption meters of the PIC family via the bus system will be calculated.

The corresponding master modules used will also have further specific functions depending on the plant type.

In the event of an exchange, an HVB-G4, HVVG4 or HVI-G4 can replace a G3 module without any problems.

HIGH USER COMFORT WITH THE G4 FRIGOLINK OPERATION CONCEPT

Due to the increasing complexity of modern refrigeration plants, the number of control parameters is continuously rising. The new G4 operation concept considers this, convincing through significantly improved user-friendliness and high user comfort. Further central master modules have now been equipped with G4.

OVERVIEW OF THE ADVANTAGES OF THE G4 OPERATION CONCEPT

Intuitive operation: With Wurm's G4 operation concept you can benefit from innovative navigation and a graphic display with backlight and plain text. The text display of the current navigation path, symbolic representation of operating options and self-explanatory symbols enable

you to navigate comfortably with one finger. The G4 operating concept is divided into 4 main menus, thus facilitating orientation.

Feedback function for better orientation:

Your most recently entered settings will be confirmed in the display.

Assistance function for complex operating steps:

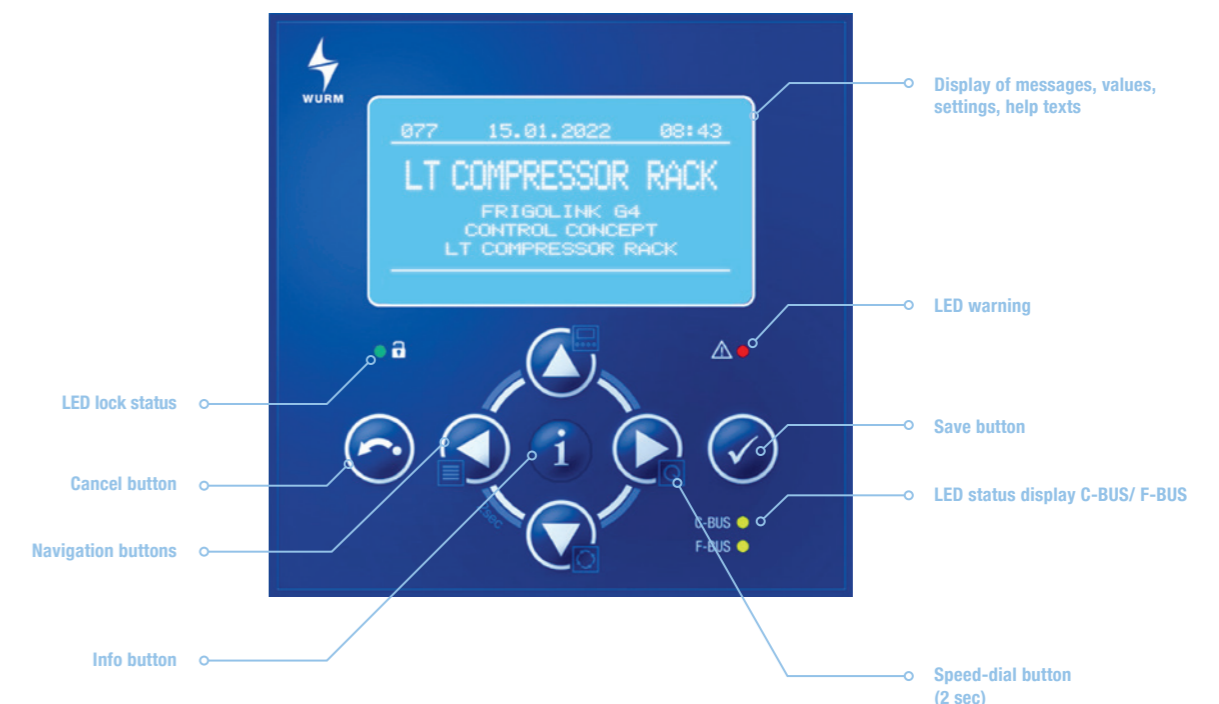
The proven parameterisation of cold locations and racks supported by the integrated expert database has been applied in G4 again. Configurations that require several steps are supported by assistants. For a first installation of a cold location, you can simply copy the parameters of one that has already been installed.

Direct access to the Wurm paperless info app via QR code:

You can use the function-specific QR code in the display to access the context-sensitive help and detailed information in the electronic manual with your smartphone.

Multilingualism:

Our G4 modules support multilingual menu navigation. The master modules for cold locations and racks are already available in 4 languages (DE/EN/FR/NL).





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