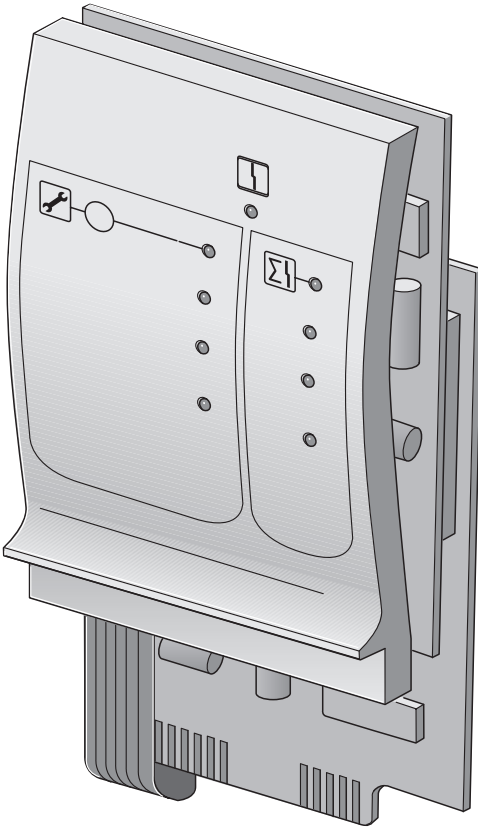


# Operating instructions

## FM 448 function module Fault reporting module



Buddebus

## Publishing information

These operating instructions contain important information for the safe and intended operation of your heating system with the Logamatic 4000 controls.

Read these operating instructions thoroughly before start-up. All work which involves opening the controls must be carried out by a trained technician. There are no user-servicable parts inside this controls.

Disconnect the heating system and controls from the main power by shutting off the emergency shutoff switch or by disengaging the heating system circuit breaker and lock to prevent from accidental reconnection.

Have malfunctions repaired immediately by a trained technician.



**WARNING!**

**WARNING:** Hot water can scald. A thermostatic or tempering valve is strongly recommended on the DHW for anti scald protection.

This product has been tested and is certified for both the U.S. and Canadian markets, to the applicable U.S. and Canadian standards.



It is the installer's responsibility to ensure that the heating system and all of its components meet all applicable local and national codes.

**The right to make technical changes is reserved.**

Illustrations, function steps and specifications may vary slightly as a result of continuous development.

### Updating documentation

If you have any suggestions for improvement or if you have discovered any errors, please contact us.

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## 1 Safety

### 1.1 Correct use

The Logamatic 4000 controls are only for controlling heating systems in apartment buildings, residential buildings and other buildings.

### 1.2 Please observe these notes

- Only use the controls for the purposes for which they are intended and only use if they are in perfect working order.
- Read the service manual carefully before starting work on the control.



**WARNING!**

#### **DANGER TO LIFE**

from electric shock.

- Make sure that all electrical work is carried out by a licensed contractor.
- Before opening the control: disconnect electrical power completely and lock to prevent accidental reconnection.



**CAUTION!**

#### **SYSTEM DAMAGE**

from freezing.

The heating system can freeze up in cold weather if it is shut down.

- Protect a disabled heating system from freezing by draining the boiler and water pipes at the lowest point.

**NOTICE**

Make sure that a circuit-breaker for disconnecting all poles from the mains is present. If there is no circuit-breaker, you will need to install one.

**NOTICE**

Only use original Buderus spare parts. Losses caused by the use of parts not supplied by Buderus are excluded from the Buderus warranty.

## 1.3 Important instructions for commissioning

- Before switching on the control check that the manual switches on the control and the function modules are set to "AUT".
- A setup log is included in the operating instructions for information of the system operator. Record the settings made during initial setup and the layout of the heating circuits in the setup log.

## 1.4 Cleaning control

- Clean the control with a damp cloth only.

## 1.5 Disposal

- Dispose of the controller packaging in an environmentally responsible manner.
- Dispose of a discarded control in an environmentally responsible manner through an approved organization. The lithium battery on the CM431 module must be removed from the control and disposed of separately.

## 2 FM 448 function module

The FM 448 function module has been designed exclusively for use with the Logamatic 4000 modular control system.

The main function of the FM 448 function module is to output a fault message via a relay with a potential-free contact. It is always activated if errors or faults occur anywhere in the entire installation.

The following functions can be used after installation of the FM 448 function module:

- Remote display of heat consumption data (WMZ)
- Output of a group fault to an external alarm unit (e. g. horn)
- Service/Alarm suppression during faults
- Display of a level sensor falling below a limit value (e.g. level of heating oil tank)
- Input/output of system supplyreference values via 0–10 V or 0–20 mA alarms

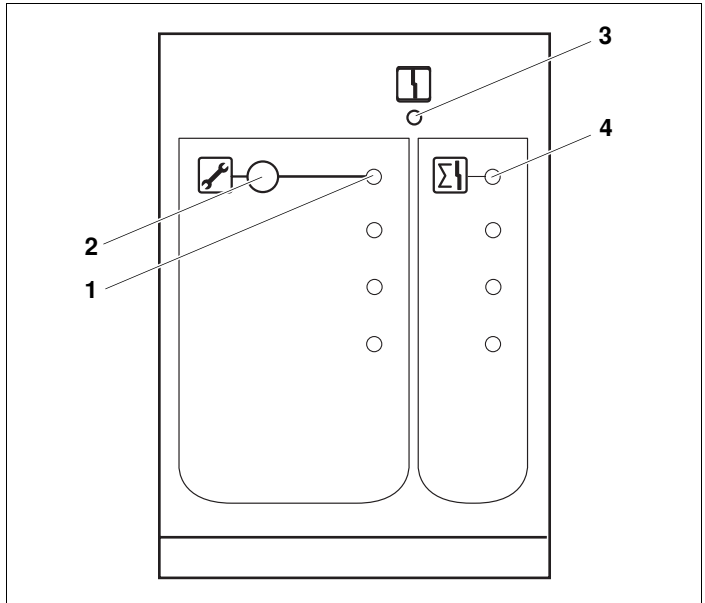


Fig. 1 Front panel of FM 448 function module

- Item 1:** "Service/Alarm Reset" LED (red) – service function active
- Item 2:** Button for activating/deactivating "Service/Alarm Reset"; suppression of alarm forwarding
- Item 3:** "Module Fault" LED (red) – general module fault
- Item 4:** "Group Fault" LED (red) – a group fault is pending

### 3 Functions of the FM 448

#### 3.1 Remote display of heat consumption

The basic equipment of the Logamatic 4000 control software allows you to calculate the heat consumption of the heating installation by adjusting the burner output – **with single-stage burners only**.

You can also display the heat consumption of your installation in the MEC 2 programming unit in combination with standard heat consumption meters.

If your heating contractor has set the "remote display of heat consumption" function, you will have the following query options available:

- daily heat consumption
- weekly heat consumption
- annual heat consumption



#### NOTICE

The heat consumption recording using the burner output is **not** suitable for billing purposes, because it is calculated from the installed burner output and operating hours!

Multi-stage or modulating burners have different burner outputs which vary depending on the requirements of the system.



#### NOTICE

If you require the heat consumption for billing, have a heat meter installed.

Only remote display of the heat meter is possible with the FM 448 function module.

## Checking heat consumption

Open the cover of the MEC 2 programming unit.



Rotate the dial until the display shows the various heat consumption values.

You can check the daily, weekly and annual heat consumption.

Daily consumption  
Current

500 kBTU

Weekly consumption  
Current

2430 kBTU

Annual consumption  
Current

354 kBTU

Display of recorded heat consumption		
Daily consumption	Weekly consumption	Annual consumption
Current	Current	Current
Yesterday	1 week ago	1 year ago
Day before yesterday	2 weeks ago	2 years ago
Record period		
from 00.00 to 00.00	from Monday to Sunday	from 01/01/XX to 12/31/XX

Tab. 1 Available heat consumption displays



### NOTICE

Changes to the date and time will affect the correct display of the consumption values and may result in loss of data.



### NOTICE

Your heating contractor can tell you the total heat consumption of your installation. The contractor can also reset the consumption values.

## 3.2 Group fault

The FM 448 function module always reports a group faults if a fault occurs in the control or the control system (e.g. faulty sensor, burner fault, ...).

All faults in the installation are shown regardless of where the FM 448 function module is installed (slot or control).



### NOTICE

If the control or the function module is in manual mode, it will only be displayed at the MEC 2 programming unit but not as a group fault.

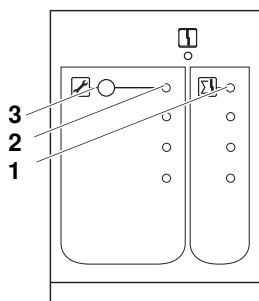


Fig. 2 Front panel of FM 448 function module

**Item 1:** "Group Fault" LED

**Item 2:** "Service/Alarm Reset" LED

**Item 3:** "Service/Alarm Reset" button

If a current group fault has occurred in the control or the control system, the "Group Fault" LED (Fig. 2, **Item 1**) in the FM 448 function module lights.

Notify your heating contractor.



### NOTICE

A alarm device (e.g. horn or warning light) connected to the output can be reset on the FM 448 function module. However, the group fault remains pending.

- Press the "Service/alarm Reset" button (Fig. 2, **Item 3**) until the "Service/alarm Reset" LED (Fig. 2, **Item 2**) lights to switch off the connected alarm device temporarily (maximum 2 hours).

### 3.3 Maintenance

If the heating contractor has activated the "Service" function, the "Service/alarm Reset" LED (Fig. 2, **Item 2**) in the FM 448 function module lights.

The fault message is not sent in this case.



#### NOTICE

The "service" function can be disabled immediately by pressing (Fig. 2, **Item 3**) again.

The alarm suppression is automatically reset after two hours.

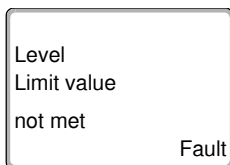
### 3.4 Level sensor

If your system has a level sensor installed, the level faults can also be displayed in the MEC 2 with the FM 448 function module.

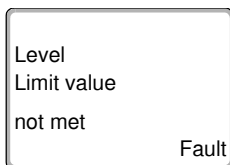
#### A fault is pending

Open the cover of the MEC 2 programming unit.

If multiple faults are pending, rotate the dial until the fault that affects the level is displayed.



The limit value of the level is not met.



This fault may have the following meaning:

- The level has fallen below the limit value.  
Refill the tank!
- If the level did not fall below the limit value, there may be an electrical or electronic fault.

Notify your heating contractor.



#### NOTICE

The level fault remains pending until the limit value is exceeded again.



**WARNING!**

#### DANGER TO LIFE

from electric shock.

- Note that electrical or electronic faults must be repaired by a licensed contractor.







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