WMZ-G1

RESOL®

Calorimeter

Manual for the
specialised craftsman

Mounting
Connection
Operation

48004731

Thank you for buying this RESOL product.
Please read this manual carefully to get the best performance from this unit.
Please keep this manual safe.

en
Manual
www.resol.com

Safety advice

Please pay attention to the following safety advice in order to avoid danger and damage to people and property.

Instructions

Attention must be paid to the valid local standards, regulations and directives!

Information about the product

Proper usage

The WMZ-G1 is to be used for the measurement and the display of system data by means of Grundfos Direct Sensors™ in compliance with the technical data specified in this manual.

Improper use excludes all liability claims.

CE Declaration of conformity

The product complies with the relevant directives and is therefore labelled with the CE mark. The Declaration of Conformity is available on request, please contact the manufacturer.

Note

Strong electromagnetic fields can impair the function of the device.

➔ Make sure the device as well as the system are not exposed to strong electromagnetic fields.

Target group

These instructions are exclusively addressed to authorised skilled personnel.
Only qualified electricians should carry out electrical works.
Initial installation must be effected by the system owner or qualified personnel named by the system owner.

Description of symbols

WARNING!

Warnings are indicated with a warning triangle!

➔ **They contain information on how to avoid the danger described.**

Signal words describe the danger that may occur, when it is not avoided.

- **WARNING** means that injury, possibly life-threatening injury, can occur.
- **ATTENTION** means that damage to the appliance can occur.

Note

Notes are indicated with an information symbol.

➔ Arrows indicate instruction steps that should be carried out.

Disposal

- Dispose of the packaging in an environmentally sound manner.
- Dispose of old appliances in an environmentally sound manner. On request we will take back your old appliances bought from us and guarantee an environmentally sound disposal of the devices.

WMZ-G1 Calorimeter

The WMZ-G1 is a measurement and display unit for solar thermal systems and conventional heating systems. It is possible to connect up to two Grundfos Direct Sensors™, which measure the temperature as well as one additional value – depending on the type: flow rate, relative or differential pressure.
Heat quanity measurement is possible when two Grundfos Direct Sensors™ are connected and at least one of them is a VFS type sensor. The WMZ-G1 also monitors the operating status of the system and displays deviations.

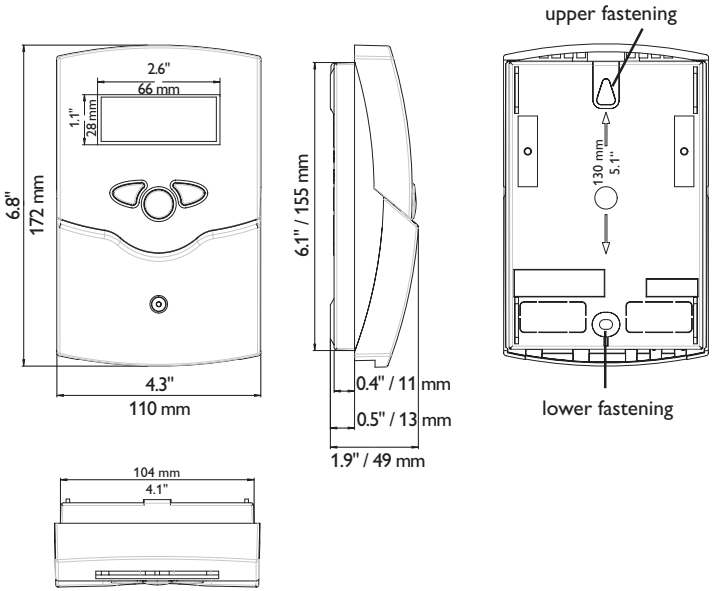
Contents

Overview

- **Recording of:**
  flow temperature
  return temperature
  power
  heat quantity
  flow rate
  pressure
  differential pressure
  system errors
- **Especially for Grundfos Direct Sensors™**
- **Easy connection**
- **Dot matrix display**
- **Function control**
- **Configurable control parameters**

Technical Data:

Housing: plastic, PC ABS and PMMA
Protection class: IP 20 / DIN 40050
Ambient temperature: 0 … 40 °C
Size: 172 x 110 x 47 mm
Installation: wall mounting, mounting into patch panels is possible
Operation: 3 push buttons at the front of the housing
Inputs: 2 Grundfos Direct Sensors™ VFS, RPS or DPS
Power supply: 220 … 240 V~



1 Installation

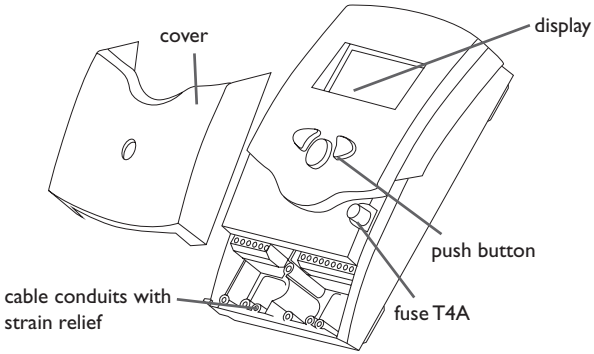
1.1 Mounting

WARNING! Electric shock!
Upon opening the housing, live parts are exposed!
➔ **Always disconnect the device from power supply before opening the housing!**

Note
Strong electromagnetic fields can impair the function of the device.
➔ Make sure the device as well as the system are not exposed to strong electromagnetic fields.

The device must only be located in dry interior rooms.
The device must additionally be supplied from a double pole switch with contact gap of at least 3 mm.
Please pay attention to separate routing of sensor cables and mains cables.
In order to mount the device to the wall, carry out the following steps:

➔ Unscrew the crosshead screw from the cover and remove it along with the cover from the housing.
➔ Mark the upper fastening point on the wall. Drill and fasten the enclosed wall plug and screw leaving the head protruding.
➔ Hang the housing from the upper fastening point and mark the lower fastening point (centres 130 mm).
➔ Insert lower wall plug.
➔ Fasten the housing to the wall with the lower fastening screw and tighten.
➔ Carry out the electrical wiring in accordance with the terminal allocation (see chap. 1.2).
➔ Put the cover on the housing.
➔ Attach with the fastening screw.



1.2 Electrical connection

WARNING! Electric shock!
Upon opening the housing, live parts are exposed!
➔ **Always disconnect the device from power supply before opening the housing!**

ATTENTION! ESD damage!
Electrostatic discharge can lead to damage to electronic components!
➔ **Take care to discharge properly before touching the inside of the device!**

Note
Connecting the device to the power supply must always be the last step of the installation!

Note
It must be possible to disconnect the device from the mains at any time.
➔ Install the mains plug such that it is accessible at any time.
➔ If this is not possible, install a switch that can be accessed.

Do not use the device if it is visibly damaged!
The power supply of the device must be carried out via an external power supply switch only (last step of installation!) and the line voltage must be 220 … 240 V (50 … 60 Hz). Flexible lines have to be attached to the housing by means of the enclosed strain relief and screws.

The device is equipped with 1 relay to which a **load** can be connected:

Relay 1

R1 = conductor R1
N = neutral line N
12, 13, 14 = grounding ⏚

The **sensors** (S1, S2) are connected to the following terminals:

The **RESOL VBus®** connection is carried out at the terminals marked "VBus" with either polarity.

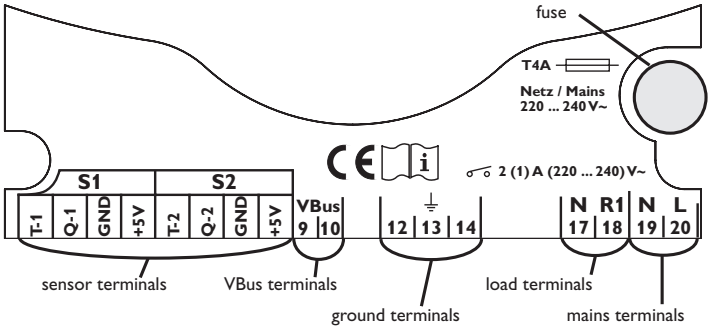
Mains connection is at the mains terminals (see figure):

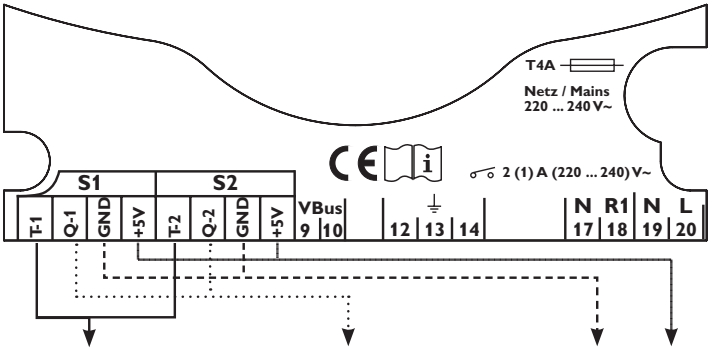
N = neutral line N
L = conductor L
12, 13, 14 = grounding ⏚

Note

The device must be grounded in order to function faultlessly.

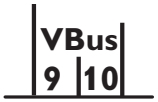
➔ Ground the device properly.





T-1 / T-2	Q-1 / Q-2	GND	+5V
yellow	white	green	brown
temperature signal 1 / 2	flow rate signal 1 / 2 (or relative pressure signal or differential pressure signal depending on the sensor type)	ground	supply

1.3 Data communication / Bus

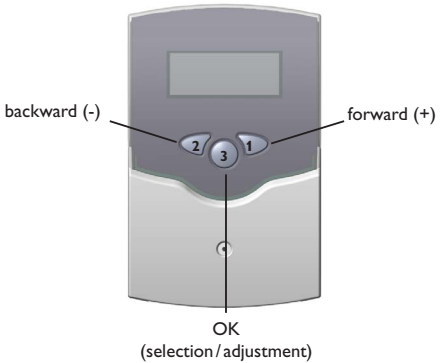


VBus® terminals

The WMZ-G1 is equipped with the RESOL VBus® for data transfer with and energy supply to external modules. The connection is carried out at the two terminals marked "VBus" (either polarity). One or more RESOL VBus® modules can be connected via this data bus:

2 Operation and function

2.1 Push buttons for adjustment



The device is operated via 3 push buttons below the display. The forward-button (1) is used for scrolling forward through the menu or to increase the adjustment values. The backwards-button (2) is correspondingly used for the reverse function.

- ➔ Select the desired sub-menu using buttons 1 and 2
- ➔ Briefly press button 3 in order to enter the sub-menu,
- ➔ The selected sub-menu is now shown on the display. By pressing the "back"-button, the display returns to the former menu level.
- ➔ Press buttons 1, 2 and 3 several times until the desired menu line is reached.
- ➔ Briefly press button 3 in the relevant menu line for modification of adjustment values – "change value" appears on the display – adjust the requested value by pressing buttons 1 and 2
- ➔ Briefly press button 3 in order to confirm the adjustment.
- ➔ Please reply to the following security inquiry "Save?" by choosing "yes" or "no" (buttons 1 and 2) and confirm with button 3.

Note
If button 3 is kept pressed for 2 seconds, the display goes back to the main menu

2.2 Menu structure

```
    MainMenu
1.  Measuredvalues
2.  Reports
3.  Balancevalues
4.  Adjust.values
```

The clear text display shows a 4-line extract of the selected menu.
In the first line of each submenu you will find the option "back" (except in submenu "measured values"), by means of which you can return to the former display level.

After a short time of operation, the display switches to the submenu "measured values" which is then indicated during normal operation.

2.3 Initial commissioning

```
ADJ. VALUES:
LANGUAGE          ENGLISH
DATE           01.01.2009
TIME              00:00
```

- ➔ Establish the power supply

In the "Adjust. Values" menu, carry out the adjustments mentioned below. For further information on the adjustment values, see chap. 5.

Language:

- ➔ Select the menu item "Language" with button 1 and confirm with button 3
- ➔ Select the desired language with buttons 1 and 2
- ➔ In order to confirm the selection, briefly press button 3 and answer the security inquiry with "Yes"
- ➔ In order to change to the adjustment values menu, select the menu item "back" and confirm with button 3

The following languages are available: German ("Deutsch"), English, Spanish ("Castellano"), French ("Français"), Italian ("Italiano"). The factory setting is "English".

Date:

- ➔ Select the menu item "Date" with button 1 and confirm with button 3
- ➔ Adjust the year, the month and the day with buttons 1 and 2 and confirm each with button 3
- ➔ In order to confirm the adjustment, briefly press button 3 and answer the security inquiry with "Yes"

Time:

➔ Select the menu item "Time" with button 1 and confirm with button 3

➔ Adjust the hours and the minutes with buttons 1 and 2 and confirm each with button 3

➔ In order to confirm the adjustment, briefly press button 3 and answer the security inquiry with "Yes"

2.4 Operating control lamp

The device is equipped with a red/green operating control lamp. The following operating states can be visualised:

- green constant — normal operation;
- green flashing — measured value outside alarm limit
- red flashing — defective sensor
- not illumated — no voltage

3 Measured values

In the submenu "Measured values", different measurement values are shown: the measured values depend on the sensor type and can be the following:

S1:	S2:
T1: 74,8 °C	T2: 23,9 °C
p1: 0,14 BAR	Q2: 5,55 L/MIN
P: 9 W	HEAT: 19944 WH

Sensor 1: T1 (temperature in °C or °F)
p1 (pressure in bar)
Q2 (flow rate in l/min, m³/h or gallon/h)
P (in W) – values over 999,999 W cannot be processed. In such a case, both the displayed value and the VBus® data packet value remain at 999,999 W.

Sensor 2: T2 (temperature in °C or °F)
p2 (pressure in bar)
Q2 (flow rate in l/min, m³/h or gallon/h)
Heat (in Wh, kWh, MWh, kJ, MJ or GJ.)

Note
"Power" and "Heat" are only indicated when at least one of the sensors connected is a VFS type sensor and the option "Heatmeter" in the submenu "Adj. values" has previously been set to "Yes".

4 Balance values

Note
The indicated balance values depend on the selected sensor type!

Display of balance values "Sensor 1":

SENSOR 1		SENSOR 2	
TEMPERATURE:		TEMPERATURE:	
MIN	23,8 °C	MIN	0,0 °C
MAX	172,0 °C	MAX	23,9 °C

- TEMPERATURE:
  MIN: minimum temperature at sensor 1 in °C or °F
  MAX: maximum temperature at sensor 1 in °C or °F
- PRESSURE:
  MIN: minimum pressure at sensor 1 in bar
  MAX: maximum pressure at sensor 1 in bar
- DIFF-PRESSURE:
  MIN: minimum differential pressure at sensor 1 in bar
  MAX: maximum differential pressure at sensor 1 in bar
- FLOW RATE:
  MIN: minimum flow rate at sensor 1 in l/min, m³/h, gallon/h
  MAX: maximum flow rate at sensor 1 in l/min, m³/h, gallon/h
  ACC: accumulated volume since commissioning / last reset in l, m³ or gallons

Display of balance values "Sensor 2":

- TEMPERATURE:
  MIN: minimum temperature at sensor 2 in °C or °F
  MAX: maximum temperature at sensor 2 in °C or °F

PRESSURE:	
MIN	0,14 BAR
MAX	0,14 BAR

- PRESSURE:
  MIN: minimum pressure at sensor 2 in bar
  MAX: maximum pressure at sensor 2 in bar

```
DIFF-PRESSURE:
        MIN      0,14 BAR
        MAX      0,14 BAR
```

- *DIFF-PRESSURE*:
  MIN: minimum differential pressure at sensor 2 in bar
  MAX: maximum differential pressure at sensor 2 in bar

```
FLOW RATE:
        MIN 5,55   L/MIN
        MAX 6,11   L/MIN
        ACC 4322,7 L
```

- *FLOW RATE*:
  MIN: minimum flow rate at sensor 2 in l/min, m³/h, gallon/h
  MAX: maximum flow rate at sensor 2 in l/min, m³/h, gallon/h
  ACC: accumulated volume since commissioning / last reset in l, m³ or gallons

In this submenu, the balance values for "Sensor 1", "Sensor 2" and "Others" are indicated. When "Heatmeter" has previously been set to "Yes" in the submenu "Adj. values", the balance values for this item are also indicated. The balance values refer to the period of time the device has been in use. If these values are reset to zero, a new operating period starts.

```
BALANCE VALUES
HEATMETER
HEAT              62254 WH
```

Display of balance values "Heatmeter":

- *HEAT*:
  Heat quantity in Wh, kWh, MWh, kJ, MJ or GJ.

```
BALANCE VALUES
OTHERS
OPERATING DAYS        0
```

Display of balance values "Others":

- *OPERATING DAYS*:
  Number of operating days

5 Adjustment values

In this menu the parameters and values for Sensor 1 and Sensor 2, heat quantity measurement and bus mode can be selected and adjusted. Furthermore, date and time have to be set in this menu, see chap. 2.3.
Each sensor has two signals. The first signal of each sensor refers to temperature. The second signal of each sensor depends on the sensor type which can either be VFS for flow rate, RPS for relative pressure or DPS for differential pressure.

Signal 1

Select and adjust the parameters and values for the selected sensor

```
SENSOR 1
AUTO-DETECT...
TYPE              RPS-...
RANGE          0-0,6 BAR
```

- *AUTO-DETECT...*

Start automatic sensor identification
If you select auto-detect, the sensor identifies itself: type and sensor range are transmitted to the device. If no automatic detection is possible, the type and range of the sensor can be adjusted manually.

- *TYPE*:

Select the sensor type by choosing between:

Off:	no sensor type is selected
VFS:	Flow rate sensor: sensor for detecting flow rate
RPS:	Relative Pressure Sensor: sensor for detecting relative pressure
DPS:	Differential Pressure Sensor: sensor for detecting differential pressure

- *RANGE:*

Select the sensor range.
The range depends on the previously selected sensor type (see tables to the left).

VFS Range:	**RPS Range:**	**DPS Range:**
Custom:	**Custom:** Min: 0,00-39,99 bar,	**Custom:**
Min: 1-19,99 l/min,	Max: 0,01-40,00 bar	Min: 0,00-15,99 bar,
Max: 1,01-600,00 l/min	0-0,6 bar	Max: 0,00-16,00 bar
1-20 l/min	0-1 bar	0-0,6 bar
2-40 l/min	0-1,6 bar	0-1 bar
5-100 l/min	0-2,5 bar	0-1,6 bar
10-200 l/min	0-4 bar	0-2,5 bar
20-400 l/min	0-6 bar	0-4 bar
	0-10 bar	0-6 bar
	0-16 bar	0-10 bar
	0-25 bar	0-16 bar
	0-40 bar	

Adjust the parameters referring to temperature (signal 1):

```
ADJ. VALUES:
TEMPERATURE
UNIT                °C
OFFSET          0,0 °C
```

• *UNIT:*
Select the unit of temperature. A selection can be made between °C and °F.

• *OFFSET:*
A sensor offset can be carried out.
Adjustment range: -99,9 … 99,9 °C or °F

```
MIN ALARM          YES
    MIN        0,0 ° C
MAX ALARM          YES
    MAX      100,0 ° C
```

• *MIN ALARM:*
If the minimum temperature is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the minimum value for the alarm has to be adjusted.
Adjustment range: -888,8 … 999,9 °C or °F.

• *MAX ALARM:*
If the maximum temperature is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the maximum value for the alarm has to be adjusted.
Adjustment range: -888,8 … 999,9 °C or °F.

Signal 2
Adjust the parameters and values for the second sensor signal. The second signal of each sensor depends on the sensor type. Therefore, the following parameters and adjustment values depend on the sensor type (flow rate for VFS, pressure for RPS, differential pressure for DPS)

```
ADJ. VALUES:
FLOW RATE
UNIT                L/MIN
OFFSET      0,0     L/MIN
```

Adjust the parameters referring to the flow rate (signal 2) if a VFS is used:
• *UNIT:* Select the unit of flow rate.
A selection can be made between l/min, m³/h and gallon/h.
• *OFFSET:* An offset can be carried out. The adjustment range depends on the previously selected unit.

```
MIN ALARM          YES
    MIN      0,0 L/MIN
MAX ALARM          YES
    MAX    100,0 L/MIN
```

• *MIN ALARM:*
If the minimum flow rate is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the minimum value for the alarm has to be adjusted. The adjustment range depends on the previously selected unit.

• *MAX ALARM:*
If the maximum flow rate is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the maximum value for the alarm has to be adjusted. The adjustment range depends on the previously selected unit.

Adjust the parameters referring to relative pressure (signal 2) if a RPS is used:

```
ADJ. VALUES:
PRESSURE
      OFFSET     0,00 BAR
      MIN ALARM  NO
```

• *OFFSET:*
An offset can be carried out.
Adjustment range: 0 … 99,99 bar

MIN ALARM	YES
MIN	0,0 BAR
MAX ALARM	YES
MAX	12,0 BAR

• MIN ALARM:
If the minimum relative pressure is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the minimum value for the alarm has to be adjusted.
Adjustment range: 0 … 99,9 bar

• MAX ALARM:
If the maximum relative pressure is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the maximum value for the alarm has to be adjusted.
Adjustment range: 0 … 99,99 bar

Adjust the parameters referring to differential pressure (signal 2) if a DPS is used:

ADJ. VALUES:	
DIFF.-PRESSURE	
MIN ALARM	NO
MAX ALARM	NO

MIN ALARM	YES
MIN	0,0 BAR
MAX ALARM	YES
MAX	12,0 BAR

• MIN ALARM:
If the minimum differential pressure is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the minimum value for the alarm has to be adjusted.
Adjustment range: 0 … 99,9 bar

• MAX ALARM:
If the maximum differential pressure is reached, the relay is energised, ⚠ appears in the display, the LED flashes green and an alarm message appears in the submenu "Reports".
➔ Select "Yes" or "No" to activate or deactivate the function.
If this function is selected, the maximum value for the alarm has to be adjusted.
Adjustment range: 0 … 99,9 bar

Heat quantity measurement
Heat quantity measurement is carried out by means of the difference between the flow and the return temperature as well as the measured flow rate. If the function is activated (factory setting), make the following adjustments:
Adjustments for heat quantity measurement.

ADJ. VALUES:	
HEATMETER	YES
UNIT	WH
TYPE	WATER

• HEATMETER:
Heat quantity measurement can be activated or deactivated with this option.

ADJ. VALUES:	
UNIT	WH
TYPE	PROPYLENE
ANTIFREEZE	38%

• UNIT:
➔ Select a unit for the indication of the heat quantity
The units Wh or kJ can be selected.

• TYPE:
➔ Select the type of heat transfer fluid
Water, Propylene, Ethylene or Tyfocor ®LS can be selected.

• ANTIFREEZE:
➔ Adjust the concentration of propylene or ethylene glycol in the heat transfer fluid
This adjustment channel is only visible if "Propylene" or "Ethylene" is selected as "Type".
Adjustment range: 20 … 70 %.

Note
The parameters and adjustments have to be selected and adjusted for sensor 2 as well. For adjustment, please carry out the steps described for sensor 1!

VBus® adjustments

```
ADJ. VALUES:
VBUS
SUBADDRESS          0
BUS MODE       ACTIVE
```

• SUBADDRESS:

➔ Adjust a subaddress for a WMZ-G1

An individual module address can be adjusted for a WMZ-G1. This way, it is possible to use several WMZ-G1 with individual addresses in one system. If several WMZ-G1 (up to 16 in total are possible) are connected to one PC or datalogger, the WMZ-G1 have to be numbered serially, starting with 0. The connection sequence at the VBus®-connection is arbitrary.

Adjustment range: 0 … 15.

• BUS MODE:

➔ Adjust the bus mode

Do not change the factory setting if the WMZ-G1 is connected to a RESOL controller with VBus® output terminal (corresponds to the bus mode "Passive").

Select bus mode "Active", if the WMZ-G1 is not connected to a controller and if data are recorded on a PC or datalogger.

Select bus mode "Cascaded", if several WMZ-G1 are connected to a PC or datalogger. The WMZ-G1 modules are serially numbered starting with 0 (see above).

Adjustment range: Active, Passive, Cascaded.

```
ADJ. VALUES:
SUBADDRESS          0
BUS MODE      CASCADED
BUS MASTER         YES
```

If subaddress "0" and bus mode "Cascaded" are selected, adjustments for the bus master have to be made:

• BUS MASTER:

➔ Adjust the bus master

Select bus master "No" when several WMZ-G1 modules are cascaded and used along with a controller.

Select bus master "Yes" when several WMZ-G1 modules are cascaded and used without a controller.

Note

For detailed examples of connection see chap. 7 on page 14 of this manual.

6 Reports

```
REPORTS:
BACK
EVERYTHING OK
VERSION
```

In the submenu "Reports" different messages are indicated. During normal operation, the messages to the left are displayed.

Note

Error messages depend on the error and on the sensor type selected previously!

Sensor 1

```
REPORTS:
SENSOR 1
!SIGNAL 1 FAIL
```

Signal failure at sensor 1, signal 1 (temperature).

```
REPORTS:
SENSOR 1
!SIGNAL 2 FAIL
```

Signal failure at sensor 1, signal 2 (this can be flow rate, relative pressure or differential pressure depending on the sensor type).

```
REPORTS:
SENSOR 1
!MAX TEMP. ALARM
```

The adjusted maximum temperature at sensor 1 is exceeded!

```
REPORTS:
SENSOR 1
!MIN TEMP. ALARM
```

The temperature at sensor 1 has fallen below the adjusted minimum value!

REPORTS:
SENSOR 1
!MAX FLOW ALARM

The adjusted maximum flow rate at sensor 1 is exceeded!

REPORTS:
SENSOR 1
!MIN FLOW ALARM

The flow rate at sensor 1 has fallen below the adjusted minimum value!

REPORTS:
SENSOR 1
!MAX PRESS. ALARM

The adjusted maximum relative pressure at sensor 1 is exceeded!

REPORTS:
SENSOR 1
!MIN PRESS. ALARM

The relative pressure at sensor 1 has fallen below the adjusted minimum value!

REPORTS:
SENSOR 1
!MAX D.P. ALARM

The adjusted maximum differential pressure at sensor 1 is exceeded!

REPORTS:
SENSOR 1
!MIN D.P. ALARM

The differential pressure at sensor 1 has fallen below the adjusted minimum value!

Sensor 2

REPORTS:
SENSOR 2
!SIGNAL 1 FAIL

Signal failure at sensor 2, signal 1 (temperature).

REPORTS:
SENSOR 2
!SIGNAL 2 FAIL

Signal failure at sensor 2, signal 2 (this can be flow rate, relative pressure or differential pressure depending on the sensor type)

REPORTS:
SENSOR 2
!MAX TEMP. ALARM

The adjusted maximum temperature at sensor 2 is exceeded!

REPORTS:
SENSOR 2
!MIN TEMP. ALARM

The temperature at sensor 2 has fallen below the adjusted minimum value!

REPORTS:
SENSOR 2
!MAX FLOW ALARM

The adjusted maximum flow rate at sensor 2 is exceeded!

REPORTS:
SENSOR 2
!MIN FLOW ALARM

The flow rate at sensor 2 has fallen below the adjusted minimum value!

REPORTS:
SENSOR 2
!MAX PRESS. ALARM

The adjusted maximum relative pressure at sensor 2 is exceeded!

REPORTS:
SENSOR 2
!MIN PRESS. ALARM

The relative pressure at sensor 2 has fallen below the adjusted minimum value!

REPORTS:
SENSOR 2
!MAX D.P. ALARM

The adjusted maximum differential pressure at sensor 2 is exceeded!

REPORTS:
SENSOR 2
!MIN D.P. ALARM

The differential pressure at sensor 2 has fallen below the adjusted minimum value!

7 Examples of connection

WMZ-G1 module in individual operation mode

- WMZ-G1: master board
  subaddress: "0"
  bus mode: "Active"

WMZ-G1 with controller

- controller: register WMZ-G1 module
- WMZ-G1: slave board
  subaddress: "0"
  bus mode: "Passive"

Cascade without controller

- WMZ-G1 0: master board
  subaddress "0"
  bus mode: "Cascaded"
  bus master: "Yes"
- WMZ-G1 1 … 15: slave board
  subaddress: 1 … 15*
  bus mode: "Cascaded"

The connection sequence at the VBus® is arbitrary.

Cascade with controller

- controller: No adjustments have to be made (**WMZ-G1 module must not be registered!**)
- WMZ-G1 0: slave board
  subaddress: "0"
  bus mode: "Cascaded",
  bus master: "No"
- WMZ-G1 1 … 15: Slave board
  subaddress: 1 … 15*
  Bus mode: "Cascaded"

The connection sequence at the VBus® is arbitrary.

* The maximum number of cascaded WMZ-G1 modules is 16. Whether this number can be reached depends on the construction.

Disturbing factors can be the following: distances, voltage- carrying lines etc.

8 VBus® board

Replacing the VBus® board

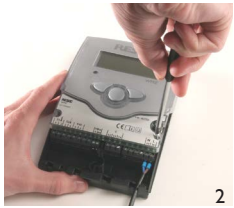
Note
When the WMZ-G1 is connected to a controller, the VBus® master board has to be replaced with the VBus® slave board!.

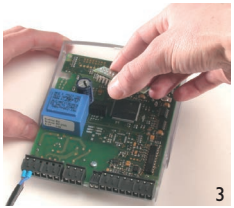
Note
When several WMZ-G1 modules are cascaded and connected to a datalogger or PC (see p. 14), only the VBus® master boards of the WMZ-G1 modules with the subaddress 1 or higher have to be replaced with the VBus® slave boards!

WARNING! Electric shock!
Upon opening the housing, live parts are exposed!
➔ **Always disconnect the device from power supply before opening the housing!**

ATTENTION! ESD damage!
Electrostatic discharge can lead to damage to electronic components!
➔ **Take care to discharge properly before touching the inside of the device!**


1


2


3

➔ Unscrew the cross-head screw of the cover and remove the cover from the housing.
➔ Unscrew the two lateral srews of the transparent shield and remove the shield.
➔ Pull out the board which has to be replaced carefully.Replace with new board.

Carry out assembly in reverse order.

Note
The VBus® master board is marked with a "B", the VBus® slave board with a "J" in the upper right corner of the populated side of the board.

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Important note

The texts and drawings in this manual are correct to the best of our knowledge. As faults can never be excluded, please note:
Your own calculations and plans, under consideration of the current standards and directions should only be basis for your projects. We do not offer a guarantee for the completeness of the drawings and texts of this manual - they only represent some examples. They can only be used at your own risk. No liability is assumed for incorrect, incomplete or false information and / or the resulting damages.

Note

The design and the specifications can be changed without notice.
The illustrations may differ from the original product.

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