

- visualisation of system temperatures, pump speed and heat amount volume flow
- 6-digit, seven segment-LED-display
- simple connection via RESOL VBus®
- antireflective filterglass
- power supply unit



Technical data RESOL large display

• Type GA1

plastic/aluminium-housing

Size:

365 x 89 x 44 mm

Protection type:

IP30 / DIN 40050

• Type GA1N

without housing, but filterglass.

Size:

361 x 85 x 15 mm

Protection type:

IP00 / DIN 40050

Display:

numerical seven segment-LED-display

Segment-size:

45 x 26 mm, 10°-figures inclination

Ambient temperature:

0 ... 40 °C

Power supply:

by an optional 9V-plug-in power supply type NG1 (Input: 100 ... 240 V AC)

Power consumption:

max. 4,5 W

Bus-connection:

RESOL VBus®



The RESOL large display GA1 is developed for a simple connection to RESOL controllers via RESOL VBus®. It is used for visualisation of the data recorded by the controller, e. g. system temperatures, temporary pump speed, heat amount and volume flow in the solar system.

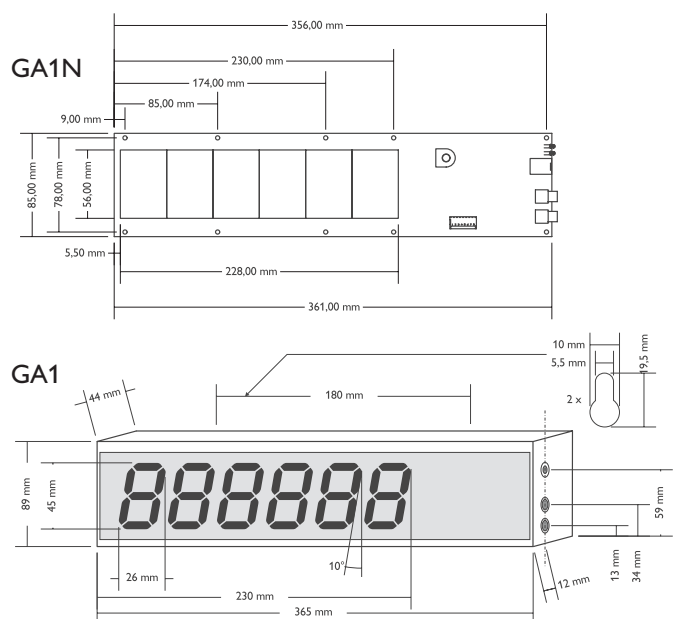
For simultaneous presentation of different system characteristics, several large displays can be directly connected to the RESOL VBus®-data line and mounted into a large displaymodule table. The display module automatically detects the connected controller; the selection of the indicated value is effected by DIP-switch.

The application of highly efficient LEDs and antireflective filter glass generates a highly optical brilliance and a good readability even with bad light conditions and from a greater distance.

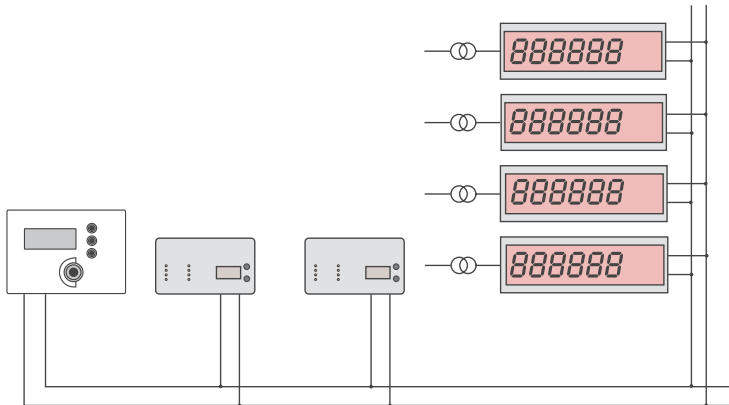
available versions:

GA1: with a housing for wall mounting.

GA1N: without housing for adaptation to customer's large display module table..



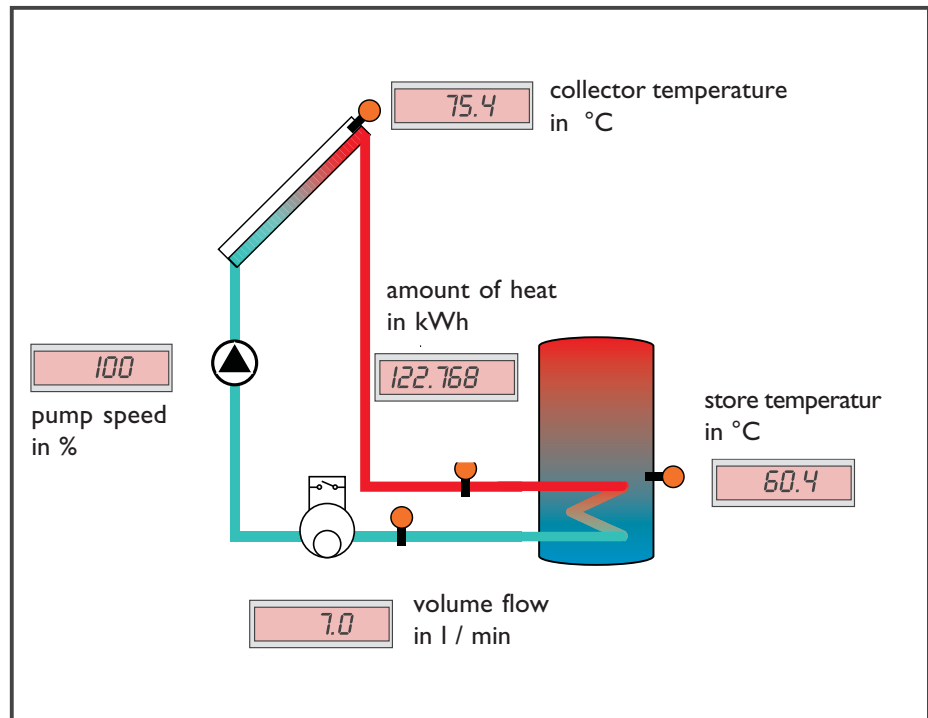
Errors and technical changes exepcted



It is possible to connect up to 8 large displays for simultaneous presentation of system characteristics as well as other VBus®-modules via RESOL VBus®. The Bus wiring is an ordinary bifilar wire (bell wire) and it can be easily extended.

Large display module board

The combination of several large displays to a large display module board is already prepared: You just need to connect the display via the provided cinch-wire!



GA1N



RESOL NG1
Switched mode mains power supply
Art: 280 006 60

RESOL GA1
Large display in aluminium housing
Art: 180 002 90

Adapter-Set
for connection to DeltaSol Plus
Art: 180 001 20

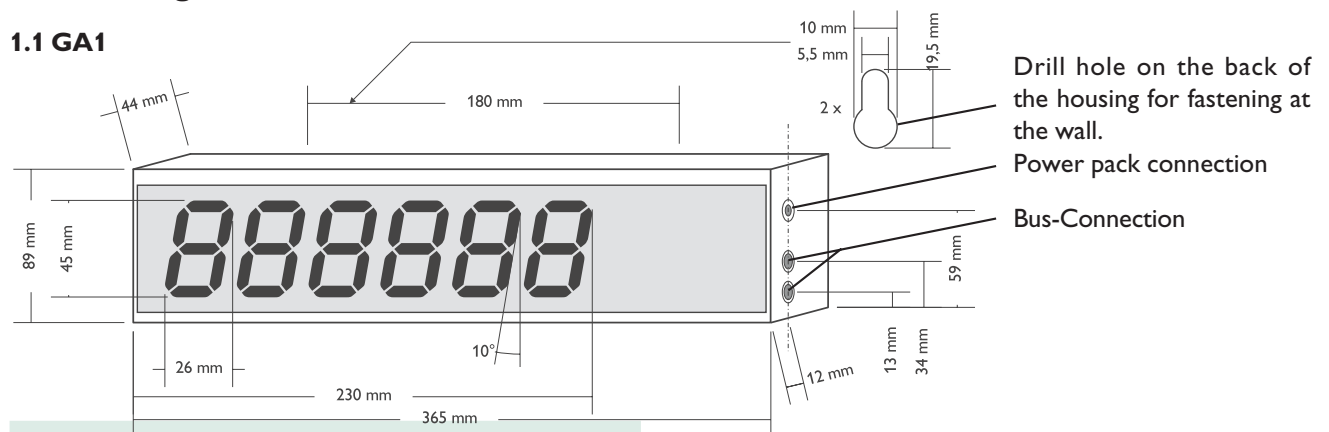
RESOL GA1 N
Large display without housing, with filterglass
Art: 180 002 30

Security advice

Please carefully read the manual for mounting and installation before commissioning the large display. In this way damages to the system can be avoided. Please also note that the installation must be adapted to the conditions provided by the customer. The installation and operation must be executed according to the approved technical regulations. The regulations for prevention of industrial accidents of industrial injuries corporations must be observed. The improper use as well as the incorrect modification of installation and construction result in the exclusion of any kind of liability.

1. Mounting

1.1 GA1

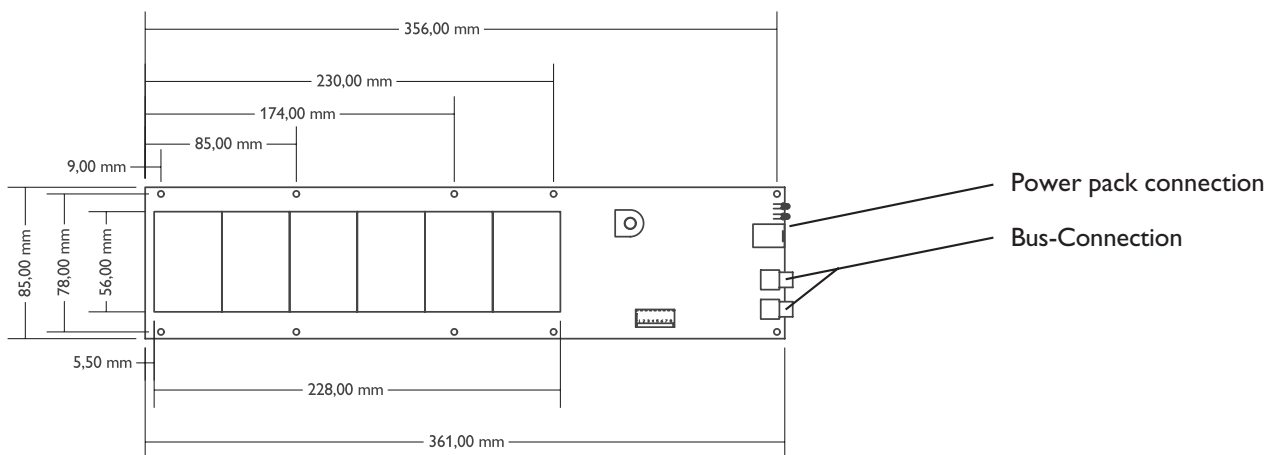


Note:

The choice of the shown system characteristic is effected by a DIP-switch, which is located on the circuit board.

Mount the housing to a flat wall by means of the provided drills and dowels. The mounting of the large display exclusively take place in dry rooms. Please note that the large display is not faced with electrical radiation to be sure that there are no operating errors.

1.2 GA1 N



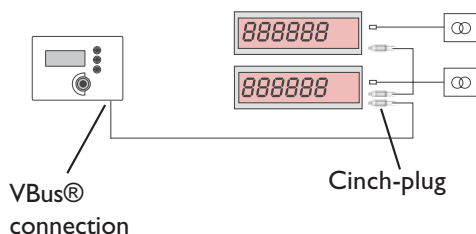
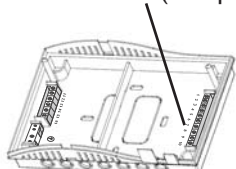
For mounting to customized large display module boards the circuit board needs to be drilled to the mounting plate with a minimum distance of 10mm and the aid of the drill holes. The provided antireflective filterglass has to be installed positively to the plate.

2. Commissioning

2.1 Connection

2.1.1 Connection to DeltaSol® Pro

RESOL VBus® (clamp 7 and 8)



The controller RESOL DeltaSol Pro offers the possibility to transmit data via RESOL VBus® (terminals 7 and 8). Several RESOL VBus® modules e.g. large displays can be connected via the data-bus.

The connecting cable has to be connected to the bus terminals of the controller with the screened endings.

Pay attention to the polarity!

The cable is included in delivery. Connect the chinch-plug of the cable to the upper or lower (parallel connection) chinch-connector of the large display.

2.1.2 Connection to MidiPro and RESOL DeltaSol® M

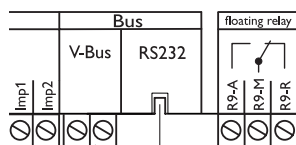
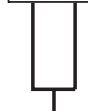
MidiPro

DeltaSol® M/ES

VBus® connection



CON601



RS232 connection

VBus® connection

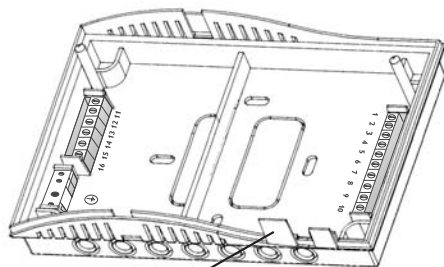
Midi Pro: Please connect the line with insulated ends and any polarity (included in delivery) to the terminals marked "Bus" and CON601.

DeltaSol M / ES: Please connect the line with insulated ends and any polarity (included in delivery) to the terminals marked "Bus" and "VBus®". You can also connect the GA3 by RS232 interface (see 2.1.3. connection to RESOL controllers by interface-set)

Connection to GA3:

The chinch-plug of the line with the upper or lower chinch-bush (parallel switching) of the GA3 must be connected.

2.1.3 Connection to the RESOL DeltaSol® Plus



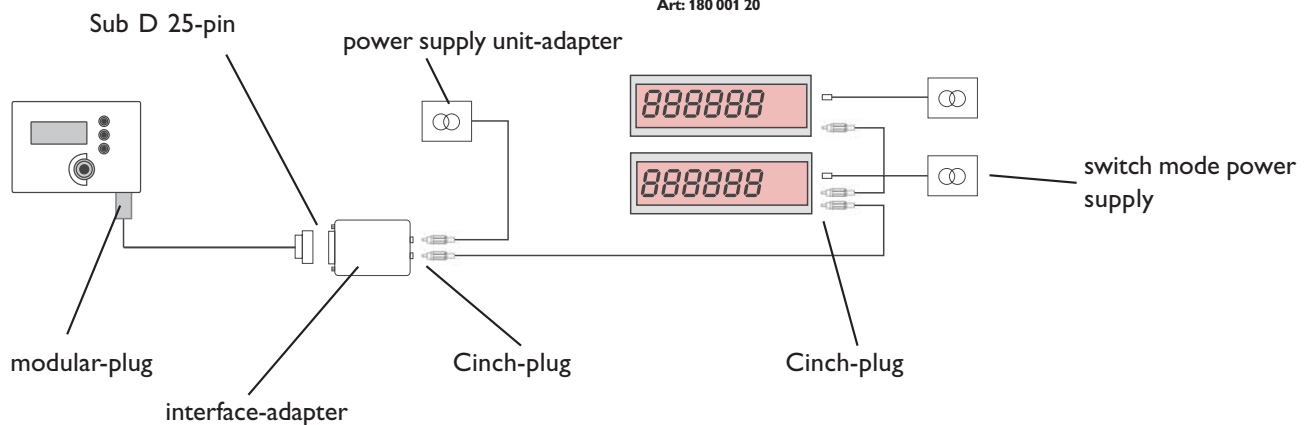
connector of modular plug, RS232 (housing-top)

The controller RESOL DeltaSol Plus is equipped with a RS232 interface for connection to other modules. The connection between the controller and the large display is made by an optional interface-set*. The connection needs to be placed according to the drawing.

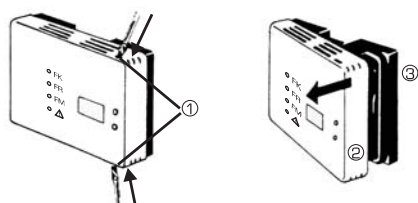
* Interface-Adapter-Set to connect the large display to the RESOL DeltaSol Plus
Art: 180 001 20

□ Adapter-Set

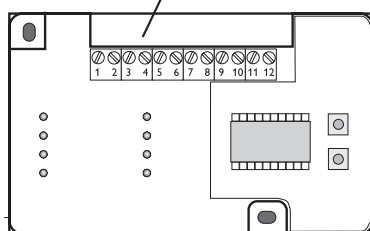
Interface-Adapter-Set to connect the large display to the RESOL DeltaSol Plus
Art: 180 001 20



2.1.4 Connection to the RESOL WMZ-M1



VBus®-connection

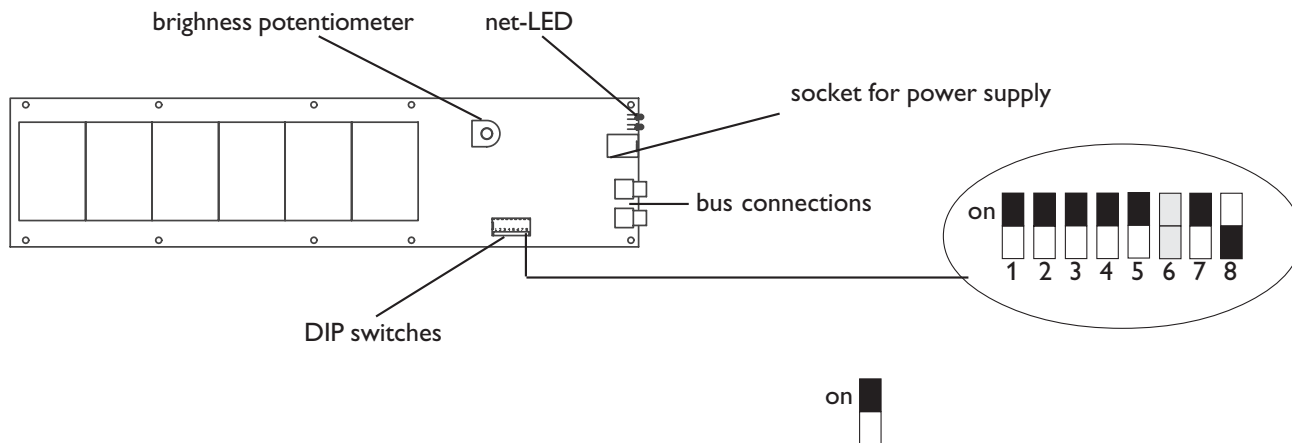


The calimeter module RESOL WMZ-M1 possesses a RESOL VBus® connection (clamps 3 and 4) to transfer data. How to connect the large display to the controller is defined in 2.1.1 .

Note:

If you use the WMZ-M1 as a single device, you would need to adjust the module's channel S to value: "1" (for an independent checking of system values) and additionally the channel I to value: "0" (cp. the manual RESOL WMZ-M1). If the calorimeter is connected via the RESOL VBus® to a superior RESOL controller, the channel S would be needed to be adjusted to the value "0" as well as the channel I.

2.2 Adjustments



2.3 Dip switches

DeltaSol Pro

Displayed value	1	2	3	4	5	6	7	8
Sensor 1						x	x	x
Sensor 2		■				x	x	x
Sensor 3			■			x	x	x
Rotation speed relay 1		■	■			x	x	x
Rotation speed relay 2				■		x	x	x

DeltaSol Plus

Displayed value	1	2	3	4	5	6	7	8
Sensor 1						x	x	x
Sensor 2		■				x	x	x
Sensor 3			■			x	x	x
Sensor 4		■	■			x	x	x
Sensor 5				■		x	x	x
Rotation speed relay 1		■	■			x	x	x
Rotation speed relay 2				■		x	x	x
Volume flow (l/h)		■	■			x	x	x
Heat quantity WWh				■		x	x	x
Heat quantity kWh		■		■		x	x	x
Heat quantity MWh			■	■		x	x	x
System time		■	■	■		x	x	x

WMZ-M1

Displayed value	1	2	3	4	5	6	7	8
Sensor feed flow					■		x	x
Sensor return flow		■			■		x	x
Volume flow (l/h)			■		■		x	x
Heat quantity WWh		■	■		■		x	x
Heat quantity kWh				■	■		x	x
Heat quantity MWh		■	■		■		x	x

- Depending on the local conditions, the brightness of the display segments must be adjusted by means of the potentiometer.
- DIP-switches 1 ... 4 are to be adjusted as per required values and superior controller or module (please see enclosed schedule).
- DIP-switch 7 is to be adjusted for right-justified (= off) or left-justified (= on) value indication with less than 6 numbers.
- DIP-switch 8 is to be adjusted for a 4- or 6-digit value indication:
off = 4-digit indication
on = 6-digit indication
- DIP-switch 5 is to be adjusted for utilization of a RESOL WMZ-M1:
off = no WMZ-M1 is connected to the data bus line
on = WMZ-M1 is connected to data bus line

Please note:

The DIP-switch 6 is used for control purpose, please don't change the adjustment made by RESOL.

Dip-switch 6 = off

Midi Pro

Displayed value	1	2	3	4	5	6	7	8
Sensor 1						x	x	x
Sensor 2	■					x	x	x
Sensor 3		■				x	x	x
Sensor 4	■	■				x	x	x
Sensor 5			■			x	x	x
Sensor 6	■	■				x	x	x
CS10 (W/m²)		■	■			x	x	x
Rotation speed Relais 1	■	■	■			x	x	x
Rotation speed Relais 2				■		x	x	x
Rotation speed Relais 3	■		■			x	x	x
System time		■		■		x	x	x

DeltaSol M

Anzeigewert	1	2	3	4	5	6	7	8
Sensor 1						x	x	x
Sensor 2	■					x	x	x
Sensor 3		■				x	x	x
Sensor 4	■	■				x	x	x
Sensor 5			■			x	x	x
Sensor 6	■	■				x	x	x
Sensor 7		■	■			x	x	x
Sensor 8	■	■	■			x	x	x
Sensor 9				■		x	x	x
Sensor 10	■			■		x	x	x
Sensor 11		■	■			x	x	x
Sensor 12	■	■	■			x	x	x
Rotation speed relay 1			■	■		x	x	x
Rotation speed relay 2	■	■	■			x	x	x
Rotation speed relay 3	■	■	■			x	x	x

DeltaSol BS

Displayed value	1	2	3	4	5	6	7	8
Sensor 1						x	x	x
Sensor 2	■					x	x	x
Sensor 3		■				x	x	x
Rotation speed 1	■	■				x	x	x

DeltaSol B

Displayed value	1	2	3	4	5	6	7	8
Sensor 1						x	x	x
Sensor 2	■					x	x	x
Sensor 3		■				x	x	x
Rotation speed	■	■				x	x	x

DeltaSol ES

Displayed value	1	2	3	4	5	6	7	8
Sensor 1							x	x
Sensor 2	■						x	x
Sensor 3		■					x	x
Sensor 4	■	■					x	x
Sensor 5			■				x	x
Sensor 6	■	■					x	x
Sensor 7		■	■				x	x
Sensor 8	■	■	■				x	x
Volume flow (l/h)				■			x	x
CS10 (W/m²)	■		■				x	x
Rotation speed relay 1		■	■				x	x
Rotation speed relay 2	■	■	■				x	x
Rotation speed relay 3			■	■			x	x
System time	■	■	■				x	x
Hours of operation relay 1						■	x	x
Hours of operation relay 2	■					■	x	x
Hours of operation relay 3		■				■	x	x
Hours of operation relay 4	■	■				■	x	x
Hours of operation relay 5			■			■	x	x
Hours of operation relay 6	■	■				■	x	x
Heat quantity Wh		■	■			■	x	x
Heat quantity kWh (from DeltaSol ES v1.1)	■	■	■			■	x	x
Heat quantity MWh (from DeltaSol ES v1.1)			■			■	x	x

DeltaSol BS Plus

Displayed value	1	2	3	4	5	6	7	8
Sensor 1							x	x
Sensor 2	■						x	x
Sensor 3		■					x	x
Sensor 4	■	■					x	x
System time			■				x	x
Rotation speed relay 1	■	■					x	x
Rotation speed relay 2		■	■				x	x
Heat quantity Wh	■	■	■				x	x
Heat quantity kWh				■			x	x
Heat quantity MWh	■		■				x	x

Solex

Displayed value	1	2	3	4	5	6	7	8
Sensor 1							x	x
Sensor 2	■						x	x
Sensor 3		■					x	x
Sensor 4	■	■					x	x
Sensor 5			■				x	x
Sensor 6	■	■					x	x
Sensor 7		■	■				x	x
Volume flow (l/h)	■	■	■				x	x
CS10 (W/m ²)				■			x	x
System time	■			■			x	x
Rotation speed relay 1		■		■			x	x
Rotation speed relay 2	■	■		■			x	x
Rotation speed relay 3			■	■			x	x
Rotation speed relay 4	■	■	■				x	x
Rotation speed relay 5		■	■	■			x	x

Friwa

Displayed value	1	2	3	4	5	6	7	8
Sensor 1							x	x
Sensor 2		■					x	x
Sensor 3			■				x	x
Sensor 4		■	■				x	x
Sensor 5				■			x	x
Sensor 6		■	■				x	x
Sensor 7			■	■			x	x
Volume flow (l/h)	■	■	■				x	x
System time				■			x	x
Rotation speed relay 1	■			■			x	x
Rotation speed relay 2		■		■			x	x
Heat quantity Wh	■	■		■			x	x
Heat quantity kWh			■	■			x	x
Heat quantity MWh	■	■	■				x	x

EL2 / EL3

Displayed value	1	2	3	4	5	6	7	8
Sensor 1							x	x
Sensor 2	■						x	x
Sensor 3		■					x	x
Sensor 4	■	■					x	x
Rotation speed relay 1			■				x	x

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Notes

Design and specifications are subject to change without notice.

Illustrations may differ slightly from production models.