Building technology

GWF

Operating manual

Integral UltraMaXX

1. Explanation of the displays

1. LCD level consumption data
1.1 Cumulative energy in kWh
1.2 Cumulative volume in m^3
1.3 Segment test (function test of all display segments)

2. LCD level period-end figures
The UltraMaXX saves the cumulative month-end energy and volume figures for the last 18 months.
These figures are displayed in the level 2 LCD display. The display starts with the month-end figure of the cumulative energy of the previous month counting from the date of the reading and then goes back one further month into the past every two seconds until the figure for the 18th month is reached. The display then moves back from the eighteenth month to the first figure displayed (the previous month).

2.1 / 2.1.1 Energy month-end figure, previous month

2.1.2 Volume month-end figure, previous month

2.2 / 2.2.1 Energy month-end figure, 2 months ago
2.2.2 Volume month-end figure, 2 months ago
2.3 / 2.3.1 Energy month-end figure, 3 months ago
2.3.2 Volume month-end figure, 3 months ago
2.4 - 2.17 see above
2.18 / 2.18.1 Energy month-end figure, 18 months ago
2.18.2 Volume month-end figure, 18 months ago

3. LCD level service data
3.1 Current flow in m^3/h
3.2 Current thermal power in kW
3.3 Current supply temperature in °C
3.4 Current return temperature in °C
3.5 Current temperature difference in °C
3.6 Time in error status in hours
3.7 Operating time

3.8 Time with excessive flow in hours (h)
3.9 Error code:
1------- = Error in the supply sensor >> check the supply sensor including cable for correct function and check that they are correctly installed
-2------ = Error in the return sensor >> check the return sensor including cable for correct function and check that they are correctly installed
--3----- = Temperature sensor transposed >> check that the temperature sensors are correctly installed
---4---- = Error A/D transducer >> replace the meter by a new meter
----5--- = Return flow in the flow sensor >> check that the flow sensor has been installed correctly (flow direction)
-----6-- = Air in the flow sensor >> flush the air out of the flow sensor by means of a high flow rate
------7- = Current flow over maximum flow >> reduce the flow in the flow sensor
-------8 = Electronic error >> replace the meter by a new meter
If there is more than one error, these are displayed at the same time (e.g. 12---6--)

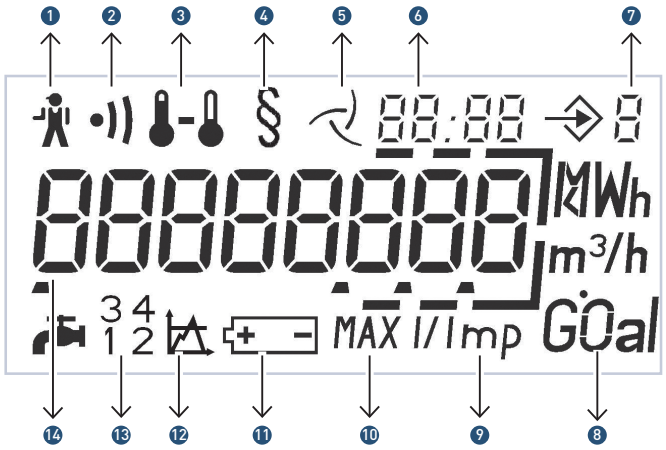
3.10 Firmware-Version

2. Optional displays
(dependant on the options ordered)

1.4 Cumulative cooling energy in the case of combimeters, heating energy is displayed in 1.1
1.5 Energy at the year-end
1.6 Cooling energy at the year-end in the case of combimeters
1.7 Volume water meter 1
1.8 Volume water meter 2
1.9 Volume water meter 3
1.10 Volume water meter 4
1.11 Threshold value tariff 1
1.12 Energy over threshold value 1
1.13 Volume over threshold value 1
1.14 Threshold value tariff 2
1.15 Energy over threshold value 2
1.16 Volume over threshold value 2
x = 1-18 Months in the case of month-end function
2.x.3 Cooling energy month-end figure in case of combimeters x months ago
2.x.4 Volume water meter 1, x months ago
2.x.5 Volume water meter 2, x months ago
2.x.6 Volume water meter 3, x months ago
2.x.7 Volume water meter 4, x months ago
2.x.8 Maximum thermal power, x months ago
2.x.8.1 Thermal power
2.x.8.2 Time
2.x.8.3 Date
2.x.9 Maximum flow, x months ago
2.x.9.1 Flow
2.x.9.2 Time
2.x.9.3 Date
2.x.10 Maximum temperature x months ago
2.x.10.1 Temperature

2.x.10.2 Time
2.x.10.3 Date
3.11 Maximum thermal power
3.11.1 Power + Time
3.11.2 Power + Day
3.11.3 Power + Year
3.12 Maximum flow
3.12.1 Flow + Time
3.12.2 Flow + Day
3.12.3 Flow + Yyear
3.13 Maximum temperature
3.13.1 Temperature + Time
3.13.2 Temperature + Day
3.13.3 Temperature + Year
3.14 Threshold value temperature difference for combi-meters
3.15 Threshold value supply temperature for combi-meters
3.16 Date and time
3.17 M-Bus primary address
3.18 M-Bus secondary address
3.19 Baud rate communication interfaces
3.20 Water meter pulse value
3.21 Number of water meters

3. Display

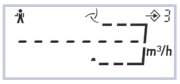


1. **The service man:** Energy measurement stopped
2. **Warning ultra-sonic signal level:** Low signal level
3. **Temperatures:** Permanent: Tv, Tr oder ΔT
   Flashing: Error
4. **Metrology indicator:** Display figure approved for commercial purposes (dependant on the state)
5. **Metered flow indicator:** Permanent: flow
   Flashing: no flow
6. **Date and Time:** e.g. month end figures, maximum figures
7. **Display level:** Display level currently selected
8. **Units:** Physical unit
9. **Impulse value:** External water meter
10. **Maximum figure:** Thermal power, flow, supply temperature
11. **Battery warning:** Battery empty
12. **Tariff function**
13. **External water meter:** Number of water meters connected
14. **Main display 8 figures:** Figure size: 6,5 x 3,3 mm

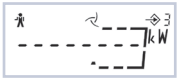
4. Possible displays in the error function

If the miniature service technician is visible in the display, the UltraMaXX ceases to calculate the energy consumed.
Possible errors are displayed in the error code display (3.9).

Meter not programmed.
Replace the meter by a new one.



No figure in the flow at present (3.1).
See error code in display 3.9.



No figure in the thermal power at present (3.2).
See error code in display 3.9.

No figure in the supply temperature, return temperature or temperature difference (3.3, 3.4 or 3.5). See error code in display 3.9.

5. Additional functions

5.1 Optical interface

The UltraMaXX has an optical interface which conforms to EN1434 and EN60870-5. Service staff can use service software to read out data and program parameters for the options via this interface.

5.2 Status logger

The status logger saves the last 100 status changes of the warning and error messages of the UltraMaXX. It can be read out by service staff with the aid of service software via the integrated optical interface or via an integrated M-Bus option and displayed on a PC or laptop.

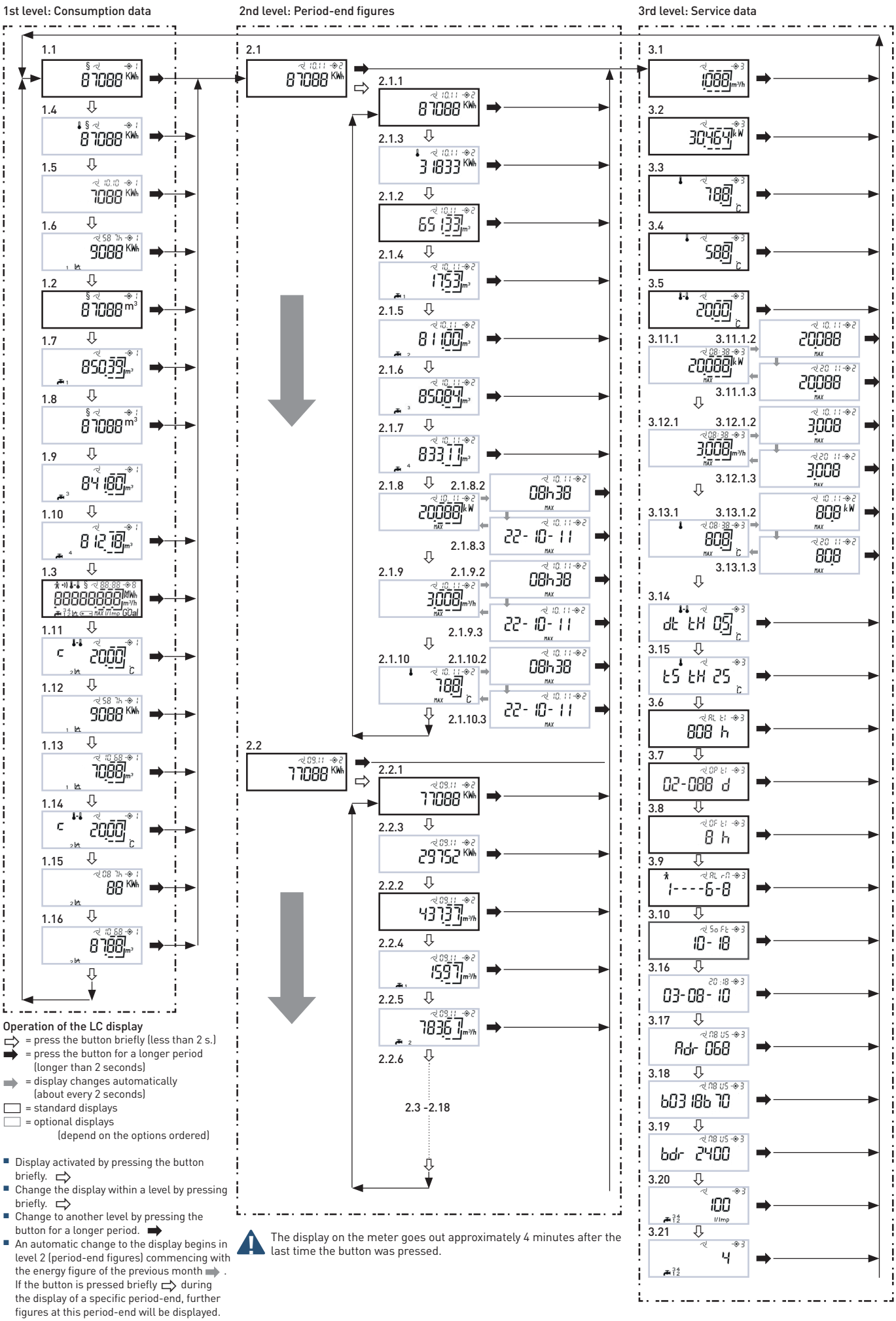
6. Options

Options must be specified when the UltraMaXX is ordered so that they are integrated into the product. It is not possible to retro-fit the options onto the UltraMaXX.

7. Combi-meters

The UltraMaXX can be ordered as a heat meter, cooling meter or as a combi-meter.
The combi-meter combines the functions of a cooling and heat meter into a single meter and displays the energy figures in separate displays.

The heating energy is displayed in display 1.1 and the cooling energy is displayed in display 1.4. In addition, the energy figures are displayed in the period-end level in displays 2.x.1 for heat and in 2.x.3 for cooling. Switching between the metering of heat and cold is fully automatic.
The metering of cooling occurs when there is a negative temperature difference between the supply and return.
The metering of heat occurs when there is a positive temperature difference between the supply and return.



Operation of the LC display

- ⇨ = press the button briefly (less than 2 s.)
- ➡ = press the button for a longer period (longer than 2 seconds)
- ➡ = display changes automatically (about every 2 seconds)
- ▭ = standard displays
- ▭ = optional displays (depend on the options ordered)

- Display activated by pressing the button briefly. ⇨
- Change the display within a level by pressing briefly. ⇨
- Change to another level by pressing the button for a longer period. ➡
- An automatic change to the display begins in level 2 (period-end figures) commencing with the energy figure of the previous month ➡. If the button is pressed briefly ⇨ during the display of a specific period-end, further figures at this period-end will be displayed.

⚠ The display on the meter goes out approximately 4 minutes after the last time the button was pressed.

8. M-Bus

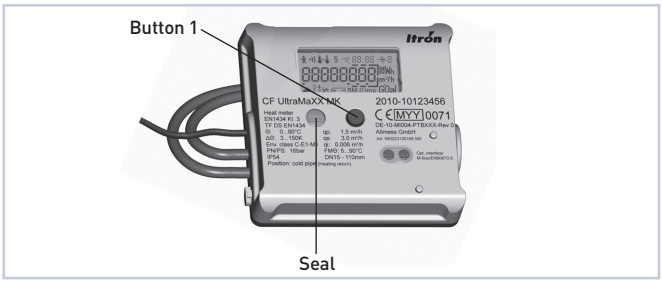
In the M-Bus option the UltraMaXX can be connected to a cabled M-Bus remote read-out system. The communication parameters of primary address, secondary address and baud rate can be displayed in the LCD display. The parameters can be set by authorised service staff using the service software via the optical interface / M-Bus option or directly by the buttons on the UltraMaXX.

Standard works setting:

Primary address:	0
Secondary address:	Meter number
Baud rate:	2400 Baud

Setting the M-Bus parameters using the buttons on the meter:

1. Remove the seal over button 2
2. Use button 1 to select the display of the figure to be amended
   Primary address: Display 3.17
   Secondary address: Display 3.18
   Baud rate: Display 3.19
3. Press button 2 for longer than 2 seconds: The display or the righthand figure in the display flashes
4. Set the required figure by pressing button 1
5. Press button 2: The figure one position further to the left flashes (only in the case of the primary / secondary address)
6. Repeat steps 4. and 5. until the required value is set.
   Possible settings:
   Primary address: 1 - 250
   Secondary address: 00000001-99999999
   Baud rate: 300, 2400 Baud
7. Leave the setting mode by pressing button 2 for longer than 2 seconds.
8. Secure button 2 against fraud by applying a new seal.



9. Water meter inputs

The UltraMaXX provides the user with the possibility of connecting up to 4 water meters with remote display to the calculator unit. The metered values in the water meters (displays 1.7 / 1.8 / 1.9 /1.10) including the period-end figures (displays 2.x.4 / 2.x.5 / 2.x.6/ 2.x.7) can be read out via the display, M-Bus or optical interface on the UltraMaXX. The metered values, the number of the water meters and the impulse values of the water meters can be set by authorised service staff using the service software via the optical interface / M-Bus option or directly by the buttons on the UltraMaXX.

Programming the water meter inputs

1. Remove the seal over button 2
   Water meter pulse values
2. Use button 1 to select the display water meter pulse value (3.20)
3. Press button 2 for longer than 2 seconds >> the display flashes
4. Set the required figure using button 1
5. Leave the setting mode by pressing button 2 for longer than 2 seconds
   Number of water meters
6. Use button 1 to go to the water meter number display (3.21)
7. Press button 2 for longer than 2 seconds >> the display flashes
8. Set the required figure (1-4) using button 1
9. Leave the setting mode by pressing button 2 for longer than 2 seconds
   Metered values in the water meters
10. Use button 1 to select the volume display (1.7)
11. Press button 2 for longer than 2 seconds: the righthand figure in the display flashes
12. Set the required figure using button 1
13. Press button 2: the figure one position to the left flashes
14. Repeat steps 12. and 13. until the required figure has been set
15. Leave the setting mode by pressing button 2 for longer than 2 seconds
16. Repeat steps 10 to 15 as required for additional water meters
    Water meter 2 >> Display 1.8
    Water meter 3 >> Display 1.9
    Water meter 4 >> Display 1.10
17. Secure button 2 against interference by applying a new seal

10. Maximum figures

The current month's maximum figures for thermal power (3.11), flow (3.12) and supply temperature (3.13) are displayed with a time stamp. 18 month's maximum figures are saved in the meter, these can be read out in the period-end level (2.x.8 / 2.x.9 / 2.x.10) via the M-Bus, optical interface or LCD display. The period of time necessary to determine the maximum figures is 30 minutes.

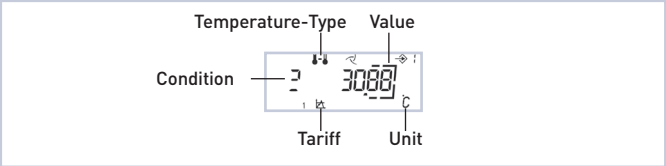
11. Tariff function
(not available in combi-meters)

In the tariff function the figures for energy (1.12 / 1.15) and volume (1.13 / 1.16) are displayed in additional displays under predefined operating conditions.
These operating conditions can be defined using one of the following parameters:

- Temperature difference
- Supply temperature
- Return temperature
- Metered flow
- Thermal power
- Time window

This parameter is programmed in the works and can be changed by authorised service staff using the service software via the optical interface / M-Bus option if the displays are not marked with the § symbol. The parameters cannot be changed using the buttons on the UltraMaXX.

11.1 Description of the displays: Threshold value tariff 1/2



Temperature-Type	
	Temperature difference
	Supply temperature
	Return temperature

Tariff	
1	Tariff 1
2	Tariff 2

Unit	
°C	Temperature
m³/h	Flow
kW	Thermal power

Condition	
	Smaller
	Greater / equal

11.2 Time

A time window can be selected as a tariff. The starting (St) and endti En ( ) is represented as follows:

11.3. Energy over the treshold figure 1/2

Time over/under threshold figure in hours
Energy figure over/under threshold figure
Tariff (1 or 2)

11.4. Volume over the treshold figure 1/2

Time over/under threshold figure in days
Volume figure over/under threshold figure
Tariff (1 or 2)

12. Data logger

The UltraMaXX is able to save pre-defined parameters at a fixed time interval via 4 data registers working in parallel. The figures which are saved can be read out by authorised service staff via the optical interface / M-Bus option using the service software. The figures cannot be displayed in the LCD display.

12.1 Year logger

Up to 6 parameters are saved once per year at 24.00 hrs on a defined day over a period of 16 years.

12.2. Month logger

Up to 6 parameters are saved at 24.00 hrs on the last day of the month over a period of 48 months.

12.3 Day logger

Up to 6 parameters are saved at 24.00 hrs once per day over a period of 460 days.

12.4 Programmable logger

Up to 6 parameters are saved for 1500 steps with a programmable time from 1 minute up to 7 days.

The time and the internal error messages are also saved in all loggers. If the maximum amount of saved information is reached in a logger, the oldest figure is deleted when each new entry is made and the new entry saved (rolling cycle).

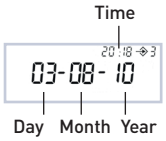
12.5 Saveable parameters

- Volume water meter 1 - 4
- Volume
- Volume tariff 1
- Volume tariff 2
- Heat energy
- Cold energy
- Current flow maximum figure
- Time current flow maximum figure
- Current maximum power
- Time current maximum power
- Current maximum supply temperature
- Time current maximum supply temperature
- Time tariff 1
- Time tariff 2
- Flow
- Return temperature
- Supply temperature
- Thermal power

Up to 6 parameters can be allocated separately to each data logger. The parameters are programmed by the authorised service staff using the service software via the optical interface / M-Bus option.

13. Date and time

The UltraMaXX provides the user with the possibility of displaying and setting the time used in the meter. Setting the time can be done by authorised service staff using the service software via the optical interface / M-Bus option or directly by the buttons on the UltraMaXX.



Programming directly on the meter

1. Remove the seal above button 2
2. Go to display 3.16 with button 1
3. Press button 2 for longer than 2 seconds >> the set of figures for the year flashes
4. Set the required figures by pressing button 1
5. Press button 2 >> the next set of figures flashes (sequence: year > month > day > hours > minutes)
6. Repeat steps 4. and 5. until the required figures have been set.
7. Leave the setting mode by pressing button 2 for longer than 2 seconds.
8. Secure button 2 against fraud by applying a new seal.

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