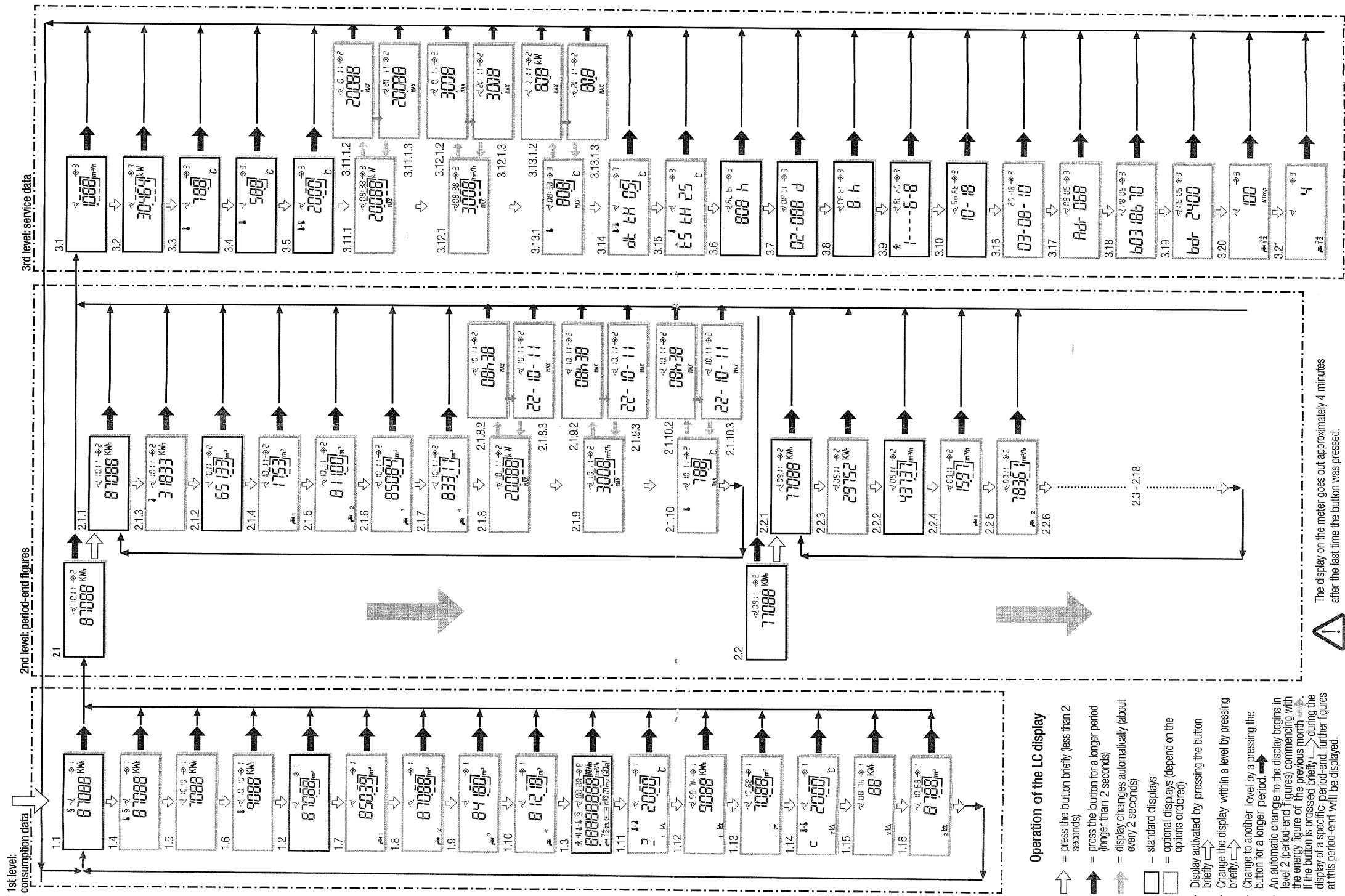


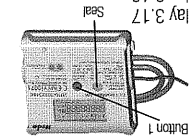


> M-BUS

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



3) Press button 2 for longer than 2 seconds: the display or the right-hand 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.

> 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
- 2) Use button 1 to select the required 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.

> 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 months' 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 60 minutes (factory setting). However, the time period can be varied within the range of 1 minute to 1440 minutes (= 1 day) via the M-Bus or optical interface with the aid of service software.

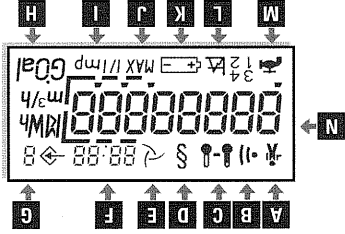
- Number of water meters**
- 6) Use button 1 to go to the water meter number display (3.21)
 - 7) Press button 2 for longer than 2 seconds >> the display flashes
 - 8) Set the required figure (1-4) using button 1
 - 9) Leave the setting mode by pressing button 2 for longer than 2 seconds
 - 10) Use button 1 to select the volume display (1.7)
 - 11) Press button 2 for longer than 2 seconds: the right-hand 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
 - 17) Secure button 2 against interference by applying a new seal

> Tariff function (not available in combi-meters)

In the tariff function the figures for energy (1.12 / 1.14) and volume (1.13 / 1.14) are displayed in additional displays under pre-defined operating conditions. These operating conditions can be defined using one of the following parameters:
 - metered flow
 - thermal power
 - supply temperature
 - return temperature
 - 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 display is not marked with the \$ symbol. The parameters cannot be changed using the buttons on the UltraMaxX.

> Display



- A The service-man:**
 - energy measurement stopped
- B Warning ultra-sonic signal level:**
 - low signal level
- C Temperatures:**
 - permanent supply temperature, return temperature or temperature difference
 - flashing: error
- D Metrology indicator:**
 - display figure approved for commercial purposes (dependent on the State)
- E Metered flow indicator:**
 - permanent flow
 - flashing: no flow
- F Date and time stamp:**
 - e.g. month and figures, - display level currently selected
- G Display level:**
 - maximum figures
- H Units:**
 - physical unit
- I Maximum figure:**
 - thermal power, flow, - permanent supply temperature, return temperature or temperature difference
- J Impulse value:**
 - external water meter
- K Battery warning:**
 - battery empty
- L Tariff function:**
 - number of water meters connected
- M External water meter:**
 - figure size 6.5 x 3.3 mm
- N Main display 8 figures:**
 - connected

> 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**
 (3.4, or 3.5). See error code in display 3.9.

> Additional functions

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 (see the Service Software Operating Manual).

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 lap-top.

> 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.

> Year-end recording date

With the UltraMaxX it is possible to define one of the 12 month-end figures as the year-end recording date for energy and to have it displayed in display 1.5 of display level 1.
 In the case of combi-meters, the heating energy as at the year-end recording date is displayed in display 1.5 and the cooling energy in display 1.6. The year-end recording date for the year must be programmed in the works before delivery.

> 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 cooling occurs when supply temperatures are below 25°C (20°C is possible as an option) and there is a negative temperature difference between the supply and return. The metering of heat occurs when supply temperatures are above 25°C (20°C possible as an option) and there is a positive temperature difference between the supply and return.

> Explanation of the displays (see also page 4 and 5)

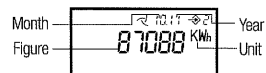
1. LCD level 1, consumption data

- 1.1 Cumulative energy in kWh, MWh or GJ
- 1.2 Cumulative volume in m³
- 1.3 Segment test (function test of all display segments)

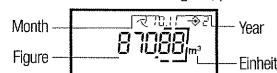
2. LCD level 2, period-end figures

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



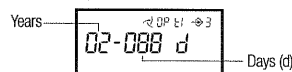
2.1.2 Volume month-end figure, previous month



- 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 3, Service data

- 3.1 Current flow in m³/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

> Optional displays (dependant on the options ordered)

- 1.4 Cumulative cooling energy – in the case of combi-meters 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 combi-meters
- 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

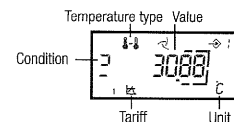
2.x.3 Cooling energy month-end figure in case of combi-meters x months ago

- 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 + year
- 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

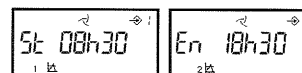
Description of the displays: Threshold value tariff 1 / 2



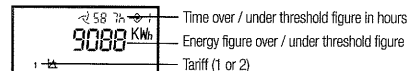
Temperature type:		Tariff	
↓↑	Temperature difference	1	Tariff 1
↑	Supply temperature	2	Tariff 2
↓	Return temperature		
Unit:		Condition:	
°C	Temperatures	c	Smaller
m³/h	flow	≥	Greater / equal
kW	Thermal power		

Time window

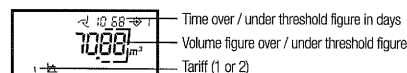
A time window can be selected as a tariff. The starting (St) and end (En) time is represented as follows:



Energy over the threshold figure 1/2



Volume over threshold figure 1/2



> 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.

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.

Month logger

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

Day logger

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

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).

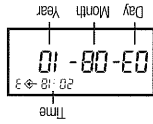
Saveable parameters:

- Volume water meter 1
- Volume water meter 2
- Volume water meter 3
- Volume water meter 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
- energy tariff 1
- energy 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 via the optical interface or the M-BUS option using the service software.

> 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 personnel using the service software via the M-Bus option, the optical interface or the buttons on the meter.



Programming directly on the meter:
1.) Remove the seal above button 2 (see the picture on page 6).

- 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
- 6.) Repeat steps 4.) and 5.) until the required figures month > day > hours > minutes > the next set of figures flashes (sequence: year > the next set of figures flashes)
- 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.

A company certified to DIN ISO 9001 · Registration number 000468 QM · Recognised Quality Management System to EC Directive 2004/22/EC, Annex D · Certificate number LNE-18199

With government-recognised testing laboratories:

for water meters



for water meters



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Integral UltraMaxx CF-UltraMaxx

Operating Manual
for the Options Model

