

WZM Multi-Stream Energy Meters

WZM multi-stream energy meters are used to measure heating/cooling energy in all water based plants with flow temperatures up to 120°C.

M-bus versions allow accurate transfer of flow and energy readings to M-Bus masters such as HRP22-M optimiser / compensators. M-bus is the approved European Standard for remote reading of meters (EN 1434-3).

LON versions allow the meters to be connected to LON systems using FTT-10 .



Features

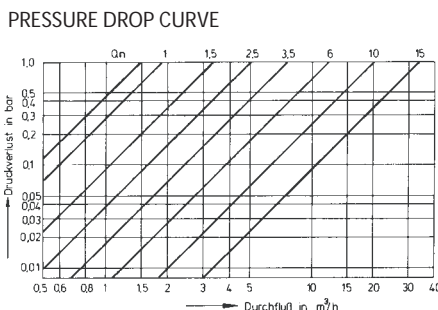
- Multiple options for remote data reading; impulse output, M-bus connection, LON network option (EIB/KNX interface available on request)
- Temperature Difference 2..130K
- 7-Digit Multi-Function LCD
- Non-contact Display Switching
- Counter Rotateable by 355°C
- Ecofriendly 3V Lithium Battery with 5 + 1 Year Life
- Automatically Calibrating Temperature Range

Model Type	Model	Description
	WZM-IMP-3-5	DN25 Multi-Stream Heat Meter up to 2.5m ³ /h. Impulse Output.
	WZM-IMP-6	DN25 Multi-Stream Heat Meter up to 6m ³ /h. Impulse Output.
	WZM-IMP-10	DN40 Multi-Stream Heat Meter up to 10m ³ /h. Impulse Output.
	WZM-IMP-15F	DN50 Multi-Stream Heat Meter up to 15m ³ /h. Impulse Output.
	WZM-M-BUS-3-5	DN25 Multi-Stream Heat Meter up to 2.5m ³ /h. M-bus Connection.
	WZM-M-BUS-6	DN25 Multi-Stream Heat Meter up to 6m ³ /h. M-bus Connection..
	WZM-M-BUS-10	DN40 Multi-Stream Heat Meter up to 10m ³ /h. M-bus Connection.
	WZM-M-BUS-15F	DN50 Multi-Stream Heat Meter up to 15m ³ /h. M-bus Connection.
	WZM-LON-3-5	DN25 Multi-Stream Heat Meter up to 2.5m ³ /h. LON FTT-10 Network.
	WZM-LON-6	DN25 Multi-Stream Heat Meter up to 6m ³ /h. LON FTT-10 Network.
	WZM-LON-10	DN40 Multi-Stream Heat Meter up to 10m ³ /h. LON FTT-10 Network.
	WZM-LON-15F	DN50 Multi-Stream Heat Meter up to 15m ³ /h. LON FTT-10 Network.
Technical Data	Display	7-Digit Multifunction LCD
	Display Position	Rotateable 355°
	Remote Communication	Impulse Output M-bus (according to EN 1434-3)
	Options	LON FTT-10 (EIB/KNX on request)
	Battery	3V Lithium Battery, 5 + 1 Year Battery Life
	Counter Temperature Range	Up to 180°C
Temperature Sensor	Type	Pt500
	Diameter	5.2 mm
	Temperature Range	5...150°C
	Cable Length	1.5m

Volume Device	Installation Position	Horizontal - Mounted on return flow (vertical mounted versions available on request)
	Measurement Method	Multi-stream impeller, Magnet Free Sensing Low Pressure Loss
Impulse Output	Type	SO (open collector) or potential-free contact
	Value	1kWh / Impulse with up to 10m ³ /h 10 kWh / Impulse from 15 m ³ /h
M-Bus Interface	Interface	M-bus accordance with EN1434-4
	Readable Data	Serial number, energy value, cut-off date value, volume, flow rate, heating power, supply and return temperature, temperature difference
LON Interface	Technology	Neuron 3120 with FTT-10A Transceiver
	Network Variables	SNVT support according to LonMark
	Readable Data	Serial number, energy value, cut-off date value, volume, flow rate, heating power, supply and return temperature, temperature difference

Volume Device Technical Data	Model	Unit	WZM-x-3-5	WZM-x-6	WZM-x-10	WZM-x-15F
Flow Rate		m ³ /h	3.5	6	10	15
Nominal Diameter		mm	25	25	40	50
Max Flow Rate		m ³ /h	7	12	20	30
Transitional Flow Rate		l/h	350	600	1000	1500
Min Flow Rate		l/h	65	90	160	200
Starting Flow Rate		l/h	2.2	3.8	6.3	9.5
Meter Connection			G11/4B	G11/4B	G2B	Flanged
Screw Connection			1	1	1.5	
Length	L - mm		260	260	300	270
Height	H - mm		140	140	155	180
	h - mm		45	45	50	80
Weight (with screw connectors / flange)		kg	3.5	3.5	6.3	12.5
Flange PN16 Outside Diameter	D - mm					165
Flange Hole Circle	K - mm					125
Flange Number of Holes						4

Pressure Drop Curve



Mounting and Installation

For a safe and reliable operation, a specialist installer should be used.

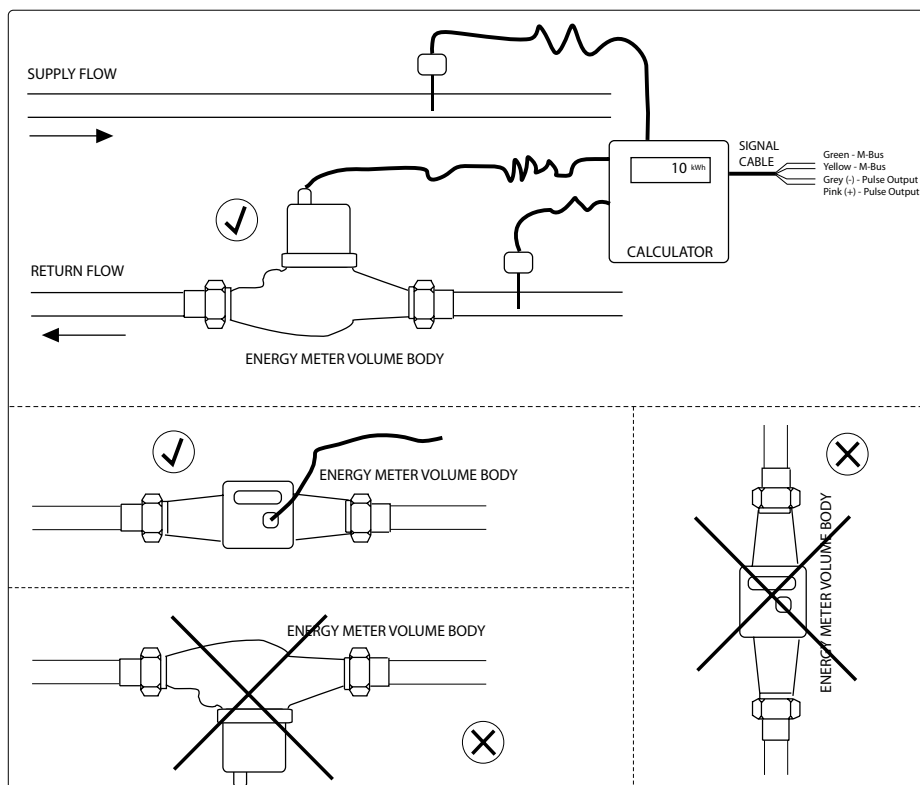
1.1 Legislative Requirement

The WZM should remain in the protective packaging until the preparatory works, insulation, welding, and the purging of the heating system is complete.

1.2. Location

The choice of installation location, the following conditions need to be met.

- The mounting position must be horizontal.
- The volume body display may be mounted upwards or sideways, NOT downwards e.g. in ceiling installation. The volume measurement head should be mounted in the return pipe for heating energy measurement.
- Sensor location is the distance of at least 5 x DN.
- The flow temperature sensor (red) and the return temperature sensor (blue) should be mounted more than 1.5m away from the volume sensor.
- It is important to make sure that the volume measurement, as well as the flow and return sensors are in the same circuit.
- The display of the meter should be readily accessible and freely readable.
- All elements are for the service easily accessible and easy to remove.
- Commission only with sensors correctly fitted.
- Ensure associated water pumps are running.
- Ambient temperature <math>< 50^{\circ}\text{C}</math>.



1.3. Volume part of the heat meter is to be installed in the return pipe.

In front of and behind the meter, it is standard practice for isolation valves to be fitted. They enable the service of the meter installation without emptying of the heating system. A dirt filter is also recommended.

- To help provide the highest possible accuracy, a meter location should be selected so that pipes run of min. 3 x DN is available. In gauged meters, this requirement is mandatory!
- The pipe work cross-section should not be reduced directly in front of or behind the meter.
- Components to stop the water flow (e.g. isolation valves) should be fitted either side of the meter.
- In the selection of the meter location please note the horizontal installation position
- The volume part must be incorporated mechanically tension free into the piping.
- Flange seal, if applicable, must not enter into the pipe work.
- Before installation of the meter, the pipe work must be carefully rinsed.
- The flow direction of the meter (marked on the housing) matches the water flow direction.
- After the installation the piping must be slowly filled in order to exclude damage by pressure.
- The location should be selected so that no air bubbles in the meter can form and the pipe work is always completely filled. The meter should never be installed at the highest place of the piping.
- The manufacturers statement of the Maximum Flow Rate should not be exceeded.
- The maximum medium temperature may not exceed the stated value on the meter.

- m) The water pressure may not be higher than the statement on the meter.
- n) The meter should be protected from stones, sand and fibres by a suitable filter.

Carry out reference marking after the assembly: The flow and return sensors and pipe work should be checked and clearly marked. On systems where there is a low delta t, pipe markings are very important.

1.4 Flow Temperature Sensor and Pockets

The correct installation of the flow temperature sensor with original accessories is extremely important! Plan on an optimal immersion depth into the pipe work and the maximum possible distance of the pipe work to the flow temperature sensor insertion. The sensor cable of the temperature sensor should be limited to a length of 1.5 m.

2 Commissioning

2.1. Flow Adjustment

The WZ-display is already programmed and shows the flow through a blinking asterisk (symbol) right on the LCD display. By swiping a magnet (provided with the meter) the displayed item can be changed.

3 Operating

After commissioning, it is required to train the users.

3.1 Calibration validity

The meter type WZ-as a rule has a calibration validity period of 5 years, during this period no maintenance is needed. During this time, the user - if desired - can make numerous readings and test the operating condition.

After the expiry of 5 years, the unit is out of calibration, and it is legally required for a new device with a valid calibration mark to be fitted if billing is in practice.

3.2 LCD display

The LCD display shows the normal amount of heat.

3.2.1 switching the LCD display (function of the reed switch)

The reed switch on the circuit board allows for a switching of the additional menus and is on the right side of the unit slightly below the midline. By means of an appropriate magnet, users can operate the reed switch. If a permanent magnet fitted, then every 2 seconds of the next menu item selected. If the magnet is taken away, it maintains the current display for the duration of time specified in the Menu Display diagram (below). Thereafter, the display automatically returns to the current consumption value.

3.2.2 LCD Display Menus

MENU DISPLAYS

Menu	Description	Time	Display
1	Current consumption value (display in kWh/MWh possible)	10	
2	Serial number (6-digit)	10	
3	Consumption value previous year (consumption on cut-off date)	10	
4	Display test	4	
5	Current date	5	
6	12 month end value	Je 6	
7	Supply temperature in °C	125	
8	Return temperature in °C	125	
9	Accumulated volume in m³	10	
10	current flow rate	125	
11	current power	125	
12	Error display	5	
13	calibrated till month/year	5	
14	high precision with 3 decimal places	5	
15	impulse calculator [liter]	5	
16	impulse volume part [liter]	5	

FUNCTION DISPLAYS

Volume Impulse	Symbol "star" shows incoming volume impulse.	
Communication	Symbol "phone" shows updating of network variables.	
Service	Symbol "battery" shows low battery capacity..	

4 Interference

The chapter 3.2, parameters can be helpful to spot possible disruptions to the heating system. If, for example, the flow rate reduces, perhaps cleaning the dirt filter needed.

4.1 Customer Service

If more than 256 errors in a row, then the device is then in the error mode. The current consumption value flashes on the display and every 8 seconds, the message "Error".

Time and date of the error event and the data are stored. The device needs to be exchanged.

4.2 Peculiarity Error.051

From transport or during the mounting, a volume rate can be generated. If in a subsequent measurement of a negative difference between supply and return sensor, it is an Error 051. This error is a correct observation reset. (When a normal positive temperature difference is seen)

4.3 Common Errors:

- device incorrectly assembled in the pipe
- flow of the water is in the opposite direction
- volumetric flow in place and flow temperature sensor is not mounted
- flow and return sensors have been swapped over (wall unit)

Dimensions

VOLUME TYPE HORIZONTAL

