



# WSTH/WPTH

## Woltmann type combined energy meter

Woltmann flow meters for large nominal flows combined with calculator and temperature sensors.

The WSTH and WPTH meters are designed for flow measurements in large plants, such as those found in district heating systems.

### Function

The menu system, available in the display, makes it possible to read a large number of parameters, such as heat and cold consumption, total energy spent on heating and cooling, temperatures along with current energy consumption.

Installation is normally in the return pipe.

The WSTH and WPTH combined energy meters come equipped with two PT500 temperature sensors. The resistors for the sensors are composed of platinum and maintain a standard of DIN IEC 60751.

In the flow meters, only the turbine wheel operates inside the wet chamber. The impeller has a hard bearing. In order to protect against magnetic interference, the counters are shielded.

### Mounting

The WSTH model flow meters are designed for horizontal mounting positions and have flanged connections. The WPTH models can be mounted both horizontally and vertically (rising or falling pipes). See selection tables on page 2.

The calculator can be wall mounted or DIN rail mounted.

### Measuring distance

In case of changes in pipe diameter (narrowing or widening), a 3x DN straight pipe must be used both before and after the flow meter (inlet/outlet). The pipe must be of the same diameter as the meter.

In cases where pipe elbows exist, a 5x DN straight pipe of the same diameter as the meter must be used before the flow meter (inlet) to avoid turbulence.

### Short facts about WSTH/WPTH

- Flow meters for large nominal flows from 15 up to 600 m<sup>3</sup>/h
- EEPROM prevents data loss
- For horizontal or vertical pipe mounting
- Available with M-Bus, pulse output or M-Bus and 2 pulse inputs

### Nominal flow sizes and pulse values

Woltmann flow meters in the WSTH series can be ordered in nominal flow sizes from 15 to 150 and WPTH to 600 m<sup>3</sup>/h. Depending on nominal size, the pulse values may range from 100 liters/pulse to 1000 liters/pulse.

### High reliability

The calculator features a high accuracy of measurement, in addition to a long life and robust design. The calculator utilizes EEPROM memory, meaning loss of data does not occur if the battery is changed.

### Flexible design

Due to the multiple combination options offered by its components, meters in the WSTH and WPTH range can easily be adapted to suit a large number of individual requirements. Models with M-Bus, pulse output or M-Bus + pulse input are available.

Energy meters with M-Bus have a default address of "0", which is not a valid primary communication address. This primary address can be changed by searching for secondary addresses (i.e., the ID number of the meter). For more information on different options, see ordering examples and item number structure overleaf.

**Ordering code selection table WPTH, horizontal or vertical mounting**

Options	WPTH				
Flow select m <sup>3</sup> /h (DN) (Flange) (Length of meter)	15 m <sup>3</sup> /h (DN50) (PN16 flange with 4 bolt holes) (200 mm)	50-15			
	25 m <sup>3</sup> /h (DN65) (PN16 flange with 4 bolt holes) (200 mm)	65-25			
	32 m <sup>3</sup> /h (DN80) (PN16 flange with 8 bolt holes) (225 mm)	80-32			
	60 m <sup>3</sup> /h (DN100) (PN16 flange with 8 bolt holes) (250 mm)	100-60			
	100 m <sup>3</sup> /h (DN125) (PN16 flange with 8 bolt holes) (250 mm)	125-100			
	200 m <sup>3</sup> /h (DN150) (PN16 flange with 8 bolt holes) (300 mm)	150-200			
	250 m <sup>3</sup> /h (DN200) (PN16 flange with 12 bolt holes) (350 mm)	200-250			
	400 m <sup>3</sup> /h (DN250) (PN16 flange with 12 bolt holes) (450 mm)	250-400			
	600 m <sup>3</sup> /h (DN300) (PN16 flange with 12 bolt holes) (500 mm)	300-600			
Type of measurement and installation point	Heating, installation of flow meter in return pipe (MID approval)		-	HR	
	Cooling <sup>1</sup> , installation of flow meter in return pipe		-	CR	
	Heating and cooling in combination <sup>2</sup> installation of flow meter in return pipe.		-	HCR	
Communication interface	M-Bus				- M
	M-Bus with 2 pulse inputs				- MPI
	Pulse output for energy				- PO

<sup>1</sup> National German approval.

<sup>2</sup> MID approval for heating, not for cooling.

If any further requirements or options are needed, please contact Regin.

**Ordering code table explanation****Example:**

Desired application: Meter with 60 m<sup>3</sup>/h. Heating, vertical installation in return pipe. M-Bus.

Resulting item ordering number: **WPTH100-60-HR-M**

**Possible accessories needed:**

- Sensor pockets (2pcs): TH-120-½

**Ordering code selection table WSTH, horizontal mounting only**

Options	WSTH				
Flow select m <sup>3</sup> /h (DN) (Flange) (Length of meter)	15 m <sup>3</sup> /h (DN50) (PN16 flange with 4 bolt holes) (270 mm)	50-15			
	25 m <sup>3</sup> /h (DN65) (PN16 flange with 4 bolt holes) (300 mm)	65-25			
	40 m <sup>3</sup> /h (DN80) (PN16 flange with 8 bolt holes) (300 mm)	80-40			
	60 m <sup>3</sup> /h (DN100) (PN16 flange with 8 bolt holes) (360 mm)	100-60			
	150 m <sup>3</sup> /h (DN150) (PN16 flange with 8 bolt holes) (500 mm)	150-150			
Type of measurement and installation point	Heating installation of flow meter in return pipe (MID approval)		-	HR	
	Cooling <sup>1</sup> installation of flow meter in return pipe		-	CR	
	Heating and cooling in combination <sup>2</sup> installation of flow meter in return pipe.		-	HCR	
Communication interface	M-Bus				- M
	M-Bus with 2 pulse inputs				- MPI
	Pulse output for energy				- PO

<sup>1</sup> National German approval.

<sup>2</sup> MID approval for heating, not for cooling.

If any further requirements or options are needed, please contact Regin.

**Ordering code table explanation****Example**

Desired application: Meter with 150 m<sup>3</sup>/h. Cooling, horizontal installation of flow meter in return pipe. M-Bus + 2 pulse inputs.

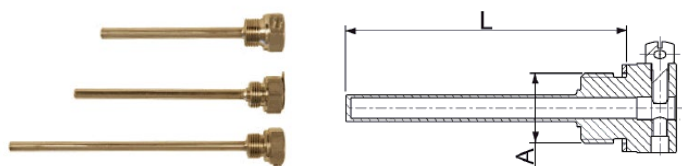
Resulting item ordering number: **WSTH20-2,5-CR-MPI**

**Possible accessories needed:**

- Sensor pockets (2pcs): TH-210-½

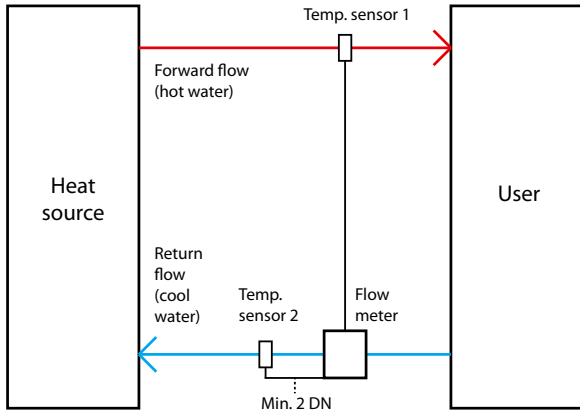
**Accessories**

Temperature pockets for installation of universal temperature sensor with 6 mm sheath diameter

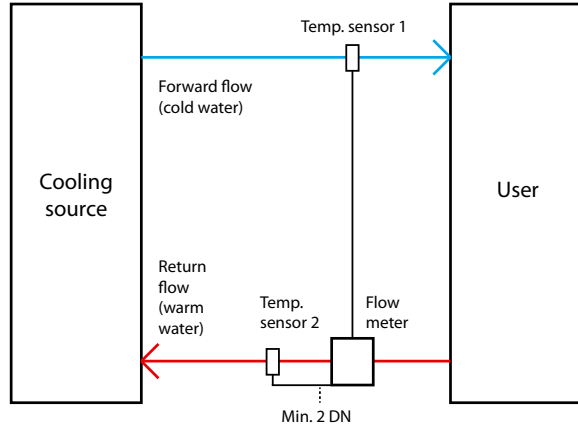


Connection A	Installation length L	Compatible with	Article number
G½	120 mm	q <sub>p</sub> 15-100 m <sup>3</sup> /h	TH-120-½
G½	210 mm	> q <sub>p</sub> 150 m <sup>3</sup> /h	TH-210-½

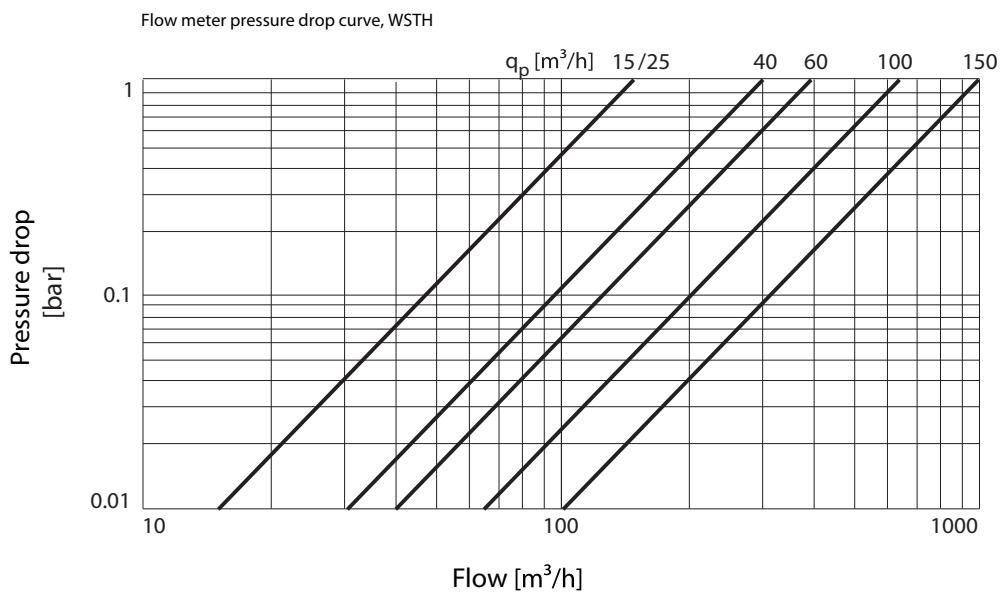
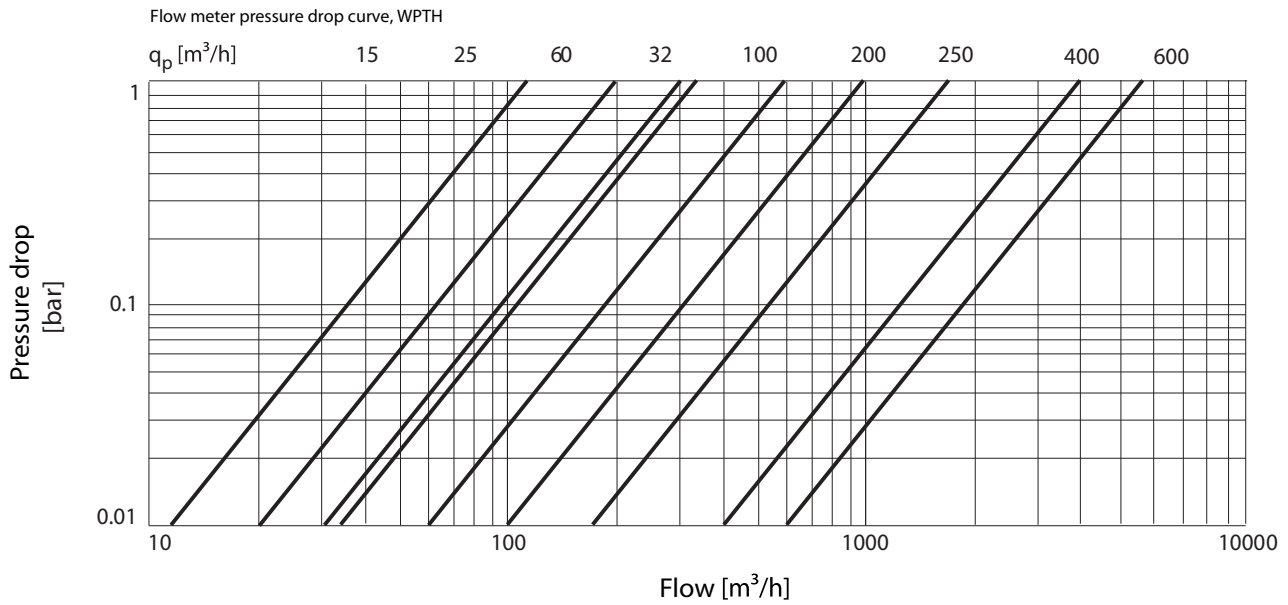
### Installation example, heating



### Installation example, cooling



### Pressure drop curves



**Technical data WSTH**

Nominal flow $q_p$	15...150 m <sup>3</sup> /h
Nominal diameter DN	50...150 mm
Pressure rating	PN16
Maximum flow $q_s$	50...350 m <sup>3</sup> /h
Minimum flow $q_i$	0.2...2 m <sup>3</sup> /h
Flow at 0.1 bar pressure drop	19...160 m <sup>3</sup> /h
Media	Water (only permissible media)
Maximum temperature range	120°C
Pulse value	100...1000 l/imp
Mounting position	horizontal
Cable length (to calculator)	3 m
Dial indication range for volume	
Min.	0.05...0.5 l
Max.	10 <sup>6</sup> ...10 <sup>7</sup> m <sup>3</sup>

**Technical data WPTH**

Nominal flow $q_p$	15...600 m <sup>3</sup> /h
Nominal diameter DN	50...300 mm
Pressure rating	PN16
Maximum flow $q_s$	30...600 m <sup>3</sup> /h
Minimum flow $q_i$	0.6...32 m <sup>3</sup> /h
Flow at 0.1 bar pressure drop	45...310 m <sup>3</sup> /h
Media	Water (only permissible media)
Maximum temperature range	120°C
Pulse value	100...1000 l/imp
Mounting position	any
Cable length (to calculator)	3 m
Dial indication range for volume	
Min.	0.05...0.5 l
Max.	10 <sup>6</sup> ...10 <sup>7</sup> m <sup>3</sup>

**Technical data, calculator**

Power supply	3V lithium AA battery, replaceable
Temperature range	1...150°C
Temperature difference	
cooling	3...100 K
heating	3...100 K
Temperature resolution	0.01°C
Measurement frequency	Every 30 s
Ambient temperature	5...55°C
Storage temperature	5...55°C
Protection class	IP65
Memory	EEPROM, data stored daily
Billing dates	24 monthly values (15 in display), annual billing date selectable
Interfaces	M-Bus, pulse output or M-Bus with 2 pulse inputs
Display	LCD, 8 digits + additional symbols



**Measuring Instruments Directive:** This product conforms to the requirements of the Measuring Instruments Directive 2004/22/EC through product standards OIML R75, EN 1434, EN 60751, EN 14154 and PTB-Richtlinie K 7.1.

**Low Voltage Directive (LVD) standards:** This product conforms to the requirements of the European Low Voltage Directive (LVD) 2006/95/EC through product standards EN 61140, VDE 0140-1, EN 60529 and DIN 40050.

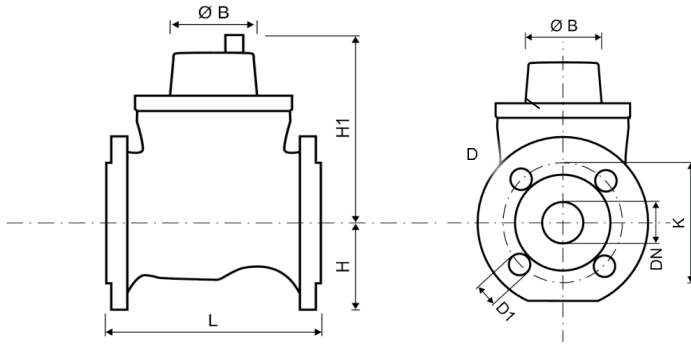
**EMC emissions & immunity standards:** This product conforms to the requirements of the EMC Directive 2004/108/EC through product standards EN 13757-2, EN 13757-3 and DIN 12900-1.

**RoHS:** This product conforms to the Directive 2011/65/EU of the European Parliament and of the Council.

**Technical data, temperature sensors**

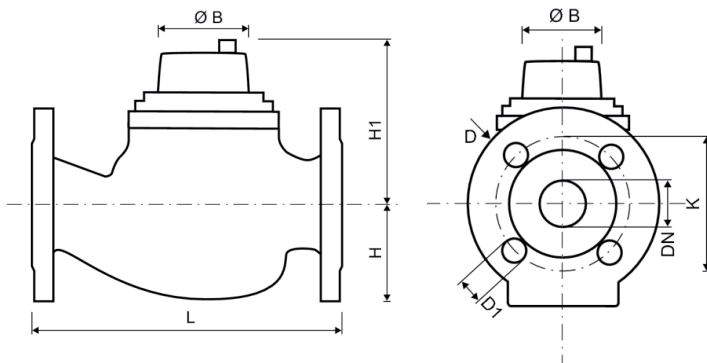
Platinum precision resistors	PT500; separately approved type as per EN60751, unshielded
Sensor diameter	Ø 6.0 mm
Sensor cable length	3 m (2-wire technique)
Installation	Indirect in temperature pocket or direct (up to 50 mm) as per EN1434

## Dimensions, WPTH



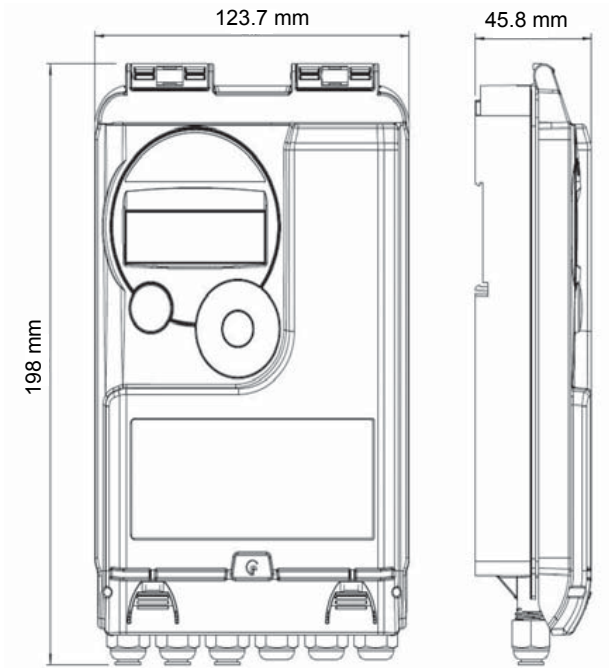
Dimensions, WPTH (mm)									
Diameter DN	50	65	80	100	125	150	200	250	300
Nominal flow $q_p$ (m <sup>3</sup> /h)	15	25	32	60	100	200	250	400	600
Flange diameter D	165	185	200	220	250	285	340	405	460
Bolt hole diameter $\varnothing K$	125	145	160	180	210	240	295	355	410
No. of screws	4	4	8	8	8	8	12	12	12
Screw hole diameter D1	18	18	18	18	18	22	22	26	26
Installation length L	200	200	225	250	250	300	350	450	500
Diameter $\varnothing B$	165	185	200	220	250	285	340	405	460
Height H	75	82,5	94	110	200	244	244	240	270
Height with counter extension H1	182	182	182	240	240	284	284	280	310

## Dimensions, WSTH



Dimensions, WSTH (mm)					
Diameter DN	50	65	80	100	150
Nominal flow $q_p$ (m <sup>3</sup> /h)	15	25	40	60	150
Flange diameter	165	185	200	220	285
Bolt hole diameter $\varnothing K$	125	145	160	180	240
No. of screws	4	4	8	8	8
Screw hole diameter D1	18	18	18	18	23
Installation length L	270	300	300	360	500
Diameter $\varnothing B$	165	185	200	220	285
Height H	84	97	102	113	285
Height with counter extension H1	195	195	230	240	440

## Dimensions, calculator



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