Heat Metering
EW600 Series

Singlejet Heat Meters

DN15 and DN20 for Heating and Chilled Water Applications

Application

EW600 Series mechanical singlejet heat meters are used for heating and/or cooling energy measurement in hydronic heating, cooling or air conditioning systems. They are typically used for submetering applications.

Water meters are used to record the consumption of drinking water and are exclusively intended for this purpose. Any other use of the device is considered to be improper. Changes to the unit must be approved.

Approvals

- MID approved DE12-MI004-PTB009, class 3
- CE
- EN 1434

Special Features

- The meter can be integrated into a RF system of Walk-By or AMR Network or into a M-Bus System
- IrDA interface
- Communication modules retrofittable in the field
  - RF AMR / Walk-By S-Mode according OMS
  - RF AMR / Walk-By C-Mode according OMS
  - M-Bus with 2 x Pulse In
- Suitable for horizontal and vertical installation
- 10 year battery lifetime
- Hydraulic impeller wheel sensor with magnet-free scanning according to the inductive principle for low-wear and reliable long-term measuring operation
- Storage of the maximum supply flow and return flow temperatures as well as the maximum current flow with date
- Monthly consumption values will be stored for 15 months (revolving)
- 8-digit LCD to indicate current value, old value, check number and many service and operating parameters
- Programming of the device-specific parameters (e.g. due date) is possible on site using the control keys or the IrDA interface
- The wheel impeller speed is scanned electronically. Incorrect direction of flow is detected and indicated by a fault message in the display

EW600 Energy calculator

The EW600 electronic calculator unit continually calculates the difference in temperature between the supply and return flow and multiplies the value by the flow rate. The result of this (current heating or cooling capacity) is cumulated, displayed or forwarded to a data-processing system by radio or cable.

The meter can be read from a display with units and symbols. A push button provides control of various display loops. All failures and faults are recorded automatically and displayed on the LCD screen. For protection all relevant data is saved in a memory. This memory saves measured values, device parameters and types of error at regular intervals.

The heat consumption values are continually cumulated.

The EW600 has up to two communication interfaces:

- The IrDA interface accessible from outside. This allows parameters to be set for the EW600 on site at any time
- The module interface, which can be used to retrofit the EW600 for RF or M-Bus. The respective modules are simply mounted on the calculator unit

Technical Data

General Specifications	
Sizes:	DN15, DN20 Qp 0.6 - 2.5 m^3/h
Protection class:	IP65
Measuring process:	Singlejet flow sensor with electronic calculator
Display:	LCD, 8-digit + pictograms
Display unit:	kWh↔MWh (optionally MJ ↔ GJ)
Power supply:	Lithium Battery (3.0 V), non replaceable
Battery lifetime:	10 years + 6 months reserve
Interfaces:	Standard: - IrDA Optional Modules*1 - RF AMR / Walk-By S-Mode - RF AMR / Walk-By C-Mode - M-Bus with 2 x Pulse In according to EN13757-2
Temperature sensors:	PT1000 according to EN 60751
Diameter:	5.2 mm
Type of installation:	Direct (ball valve) / Indirect (immersion sleeve)*2
Cable length:	1.5 m

Operating Conditions	
Medium:	Heating water according to VDI 2035 Chilled water
medium temperature:	10 - 90 °C
Ambient temperature:	5 - 55 °C
Temperature difference:	3 - 70 K
Starting temperature difference:	Heating water: 1 K Chilled water: 0.2 K
Temperature sensors:	- PT1000 permanently fixed to calculator - Cable length supply: approx. 1.5 m - Cable lenght calculator unit to return flow sensor: approx. 0.4 m
Operating pressure:	max. 16 bar min. 1 bar
Electromagnetic class:	E1
Mechanical class:	M1
Environment class:	A
Precision class:	3
Installation position:	Horizontal, vertical
Installation place:	Return pipeline

*1 The installation of add-on modules is not possible with heat meters with integrated M-BUS (EW6001BK...)

*2 National and country-specific regulations concerning the use of immersion sleeves.

Measuring principle

The flow sensor of the screw-type meter works according to the single-jet impeller wheel sensor principle.

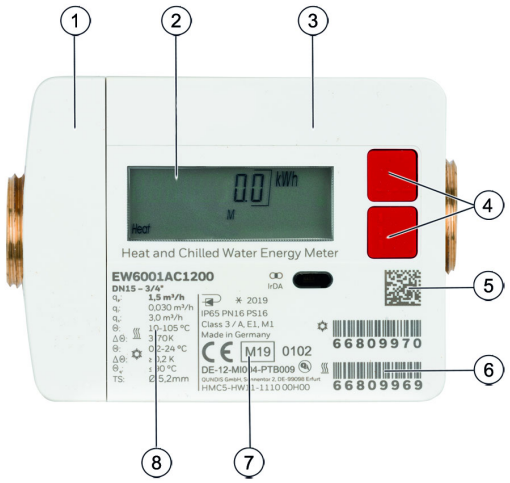
The water flow hits an impeller wheel radially.

The wheel impeller speed is scanned electronically.

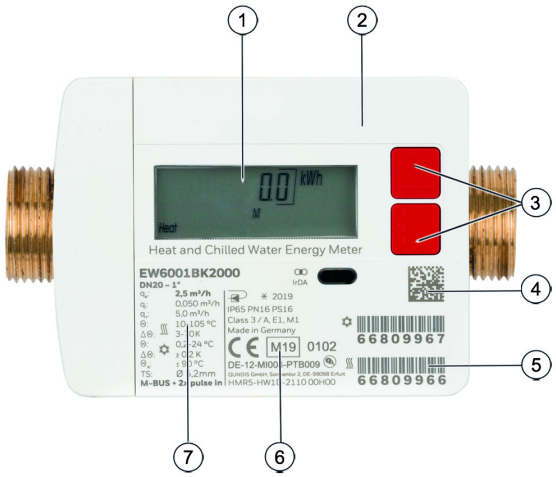
Incorrect direction of flow is detected and indicated by a fault message in the display.

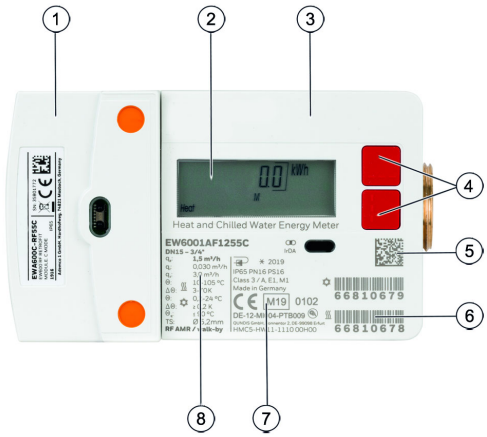
Construction

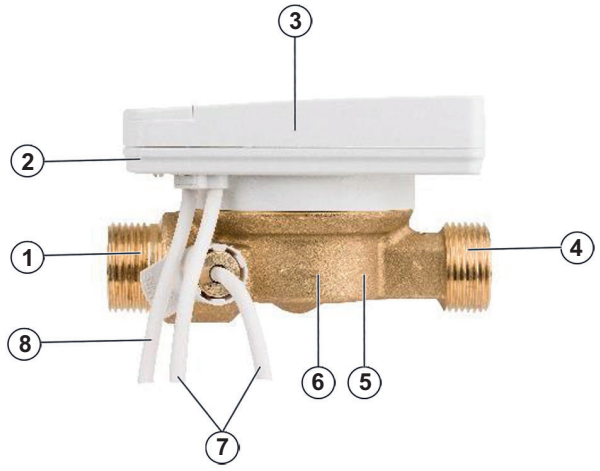
Overview EW6001AC range without Com-Module



	Components	Material/Comment
1	Comms module bay	-
2	LCD	-
3	Front housing	Plastic
4	Push button	Rubber
5	2D barcode with meter specifications	Barcode containing of: • Item No. • Datecode • Serialnumber (heating)
6	Serial numbers with barcodes	-
7	Approval data	-
8	Specifications	-

Overview EW6001AF range with RF-Module		Components	Material/Comment
	**1**	RF-Module	-
	2	LCD	-
	3	Front housing	Plastic
	4	Push button	Rubber
	5	2D barcode with meter specifications	Barcode containing of: • Item No. • Datecode • Serialnumber (heating)
	6	Serial numbers with barcodes	-
	7	Approval data	-
	8	Specifications	-

Overview EW6001BK range with M-Bus Module		Components	Material/Comment
	**1**	M-Bus OUT	-
	2	LCD	-
	3	Front housing	Plastic
	4	Push button	Rubber
	5	2D barcode with meter specifications	Barcode containing of: • Item No. • Datecode • Serialnumber (heating)
	6	Serial numbers with barcodes	-
	7	Approval data	-
	8	Specifications	-
	9	Impuls IN	

Overview		Components	Materials
	**1**	Outlet with external thread	-
	2	Baseplate	Plastic
	3	Front housing	Plastic
	4	Inlet with external thread	-
	5	Flow sensor housing	Brass
	6	Flow arrow	-
	7	Return temperature sensor	-
	8	Supply temperature sensor	-

Transportation and Storage

EW600 Series is a precision measuring instrument and must be treated accordingly. The following parameters apply during transportation and storage:

- Units should only be transported in their original packaging
- Keep parts in their original packaging and unpack them shortly before use
- Appropriate lifting gear must be used where applicable
- Units should be handled carefully right way up and must not be dropped
- Units should be stored in a clean, dry and dust free environment

Parameter	Value
Environment:	Clean and dust free
Min. ambient temperature:	-5 °C (storage) / -25 °C (transport)
Max. ambient temperature:	45 °C (storage) / 70 °C (transport)
Min. ambient relative humidity:	0 %*
Max. ambient relative humidity:	93 %*

* non condensing

Installation Guidelines

Setup requirements

- Meter must be installed in the return pipeline
- Observe the correct flow direction. Flow direction is indicated on the housing of the flow sensor
- Calming legs are not required
- All sizes may be installed in either horizontal or vertical position
- Avoid installation at highest point of system or system part as air may be trapped in meter
- During measurement the meter must be completely filled with water
- It is the responsibility of the purchaser and the installers and users of this unit to ensure that it is wired or installed into a secure network which prevents any unauthorised security intrusion or any other external risk

Technical Characteristics

Flow Data

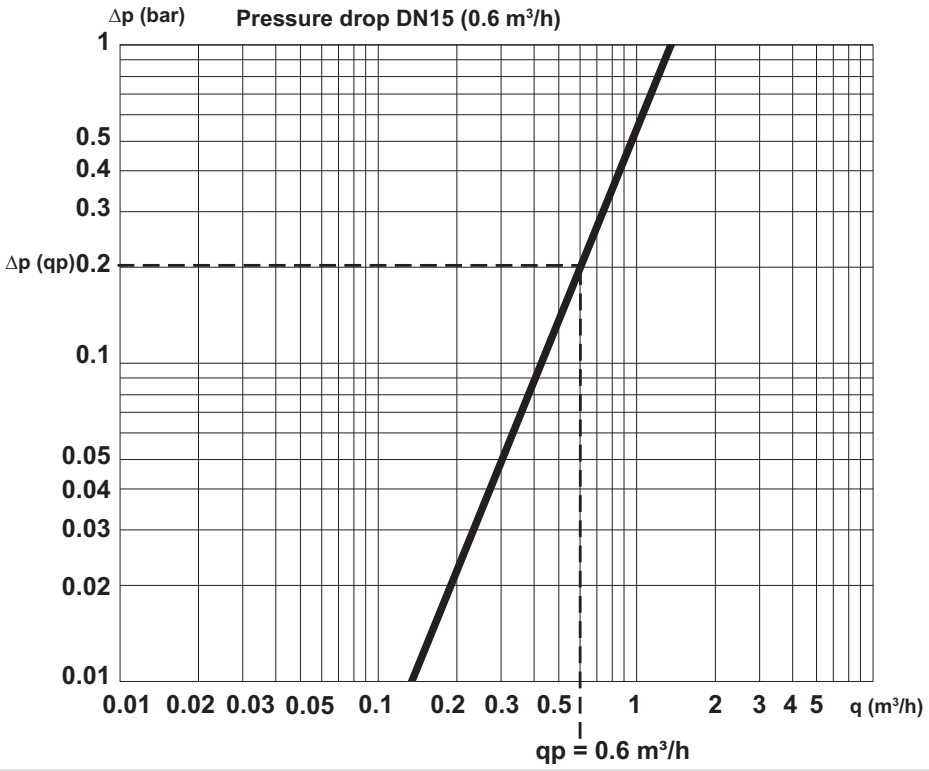
Nominal size diameter:	DN	15	15	20
Flow rates according to MID				
Minimum (qi):	l/h	24	30	50
Nominal (qp)	**m^3/h**	**0.6**	**1.5**	**2.5**
Maximum (qs):	m^3/h	1.2	3.0	5.0
Dynamic range:	qp/qi	25:1	50:1	50:1
Additional flow data				
Starting flow:	l/h	3 - 4	4 - 5	6 -7
Pressure loss at qp:	mbar	200	240	170

Devices with integrated communication interface M-Bus

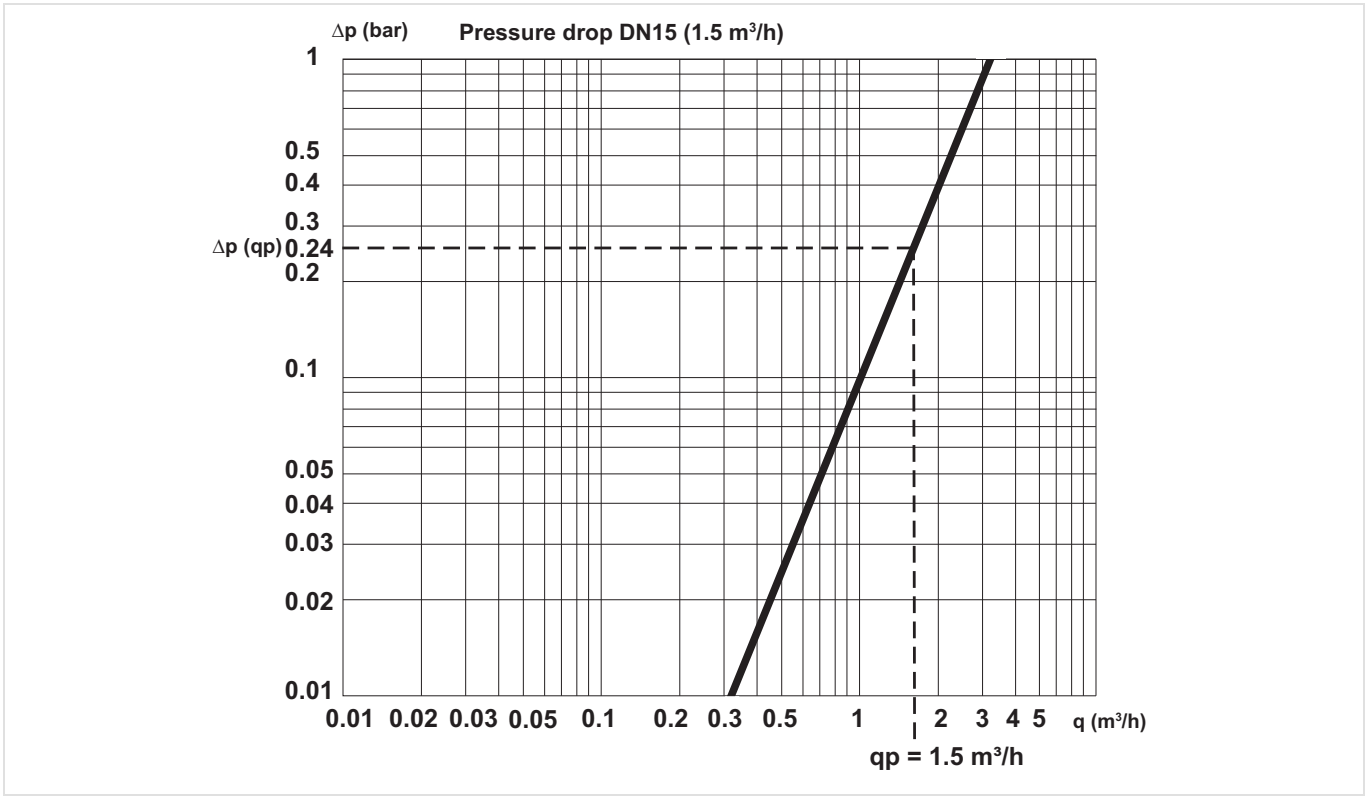
Technical data for integrated communication			
Connection cable:		"OUT"	"IN"
Function:		M-Bus	Impulse inputs
Length:		3 m	1 m
Supply:		Included in scope of supply	Included in scope of supply
Protection class:		IP65	
Wire ends:		Wire-end ferrules	
Cable sheathing:		PVS	
Colour assignment connection cable			
Impulse input:	Imp1	orange (ground)	brown
	Imp2	red (ground)	black
M - Bus:	M-Bus	orange (not occupied)	brown (not occupied)
	M-Bus	red	black
Impulse input device			
Classification:		in accordance with EN 1432 - 2, Class IB Restriction: Switching threshold at low level max. 0.25 V	
Impulse length:		≥100 ms	
Impulse frequency:		≤5 Hz (2.5 Hz with filter setting "on")	
Source current:		≤0.1 mA	
Number of impulse inputs:		2	
Impulse outputs			
Solenoid switch:		Reed contact	
Integrated circuit:		Open collector	
Namur sensor:		Not possible	

Pressure loss curves

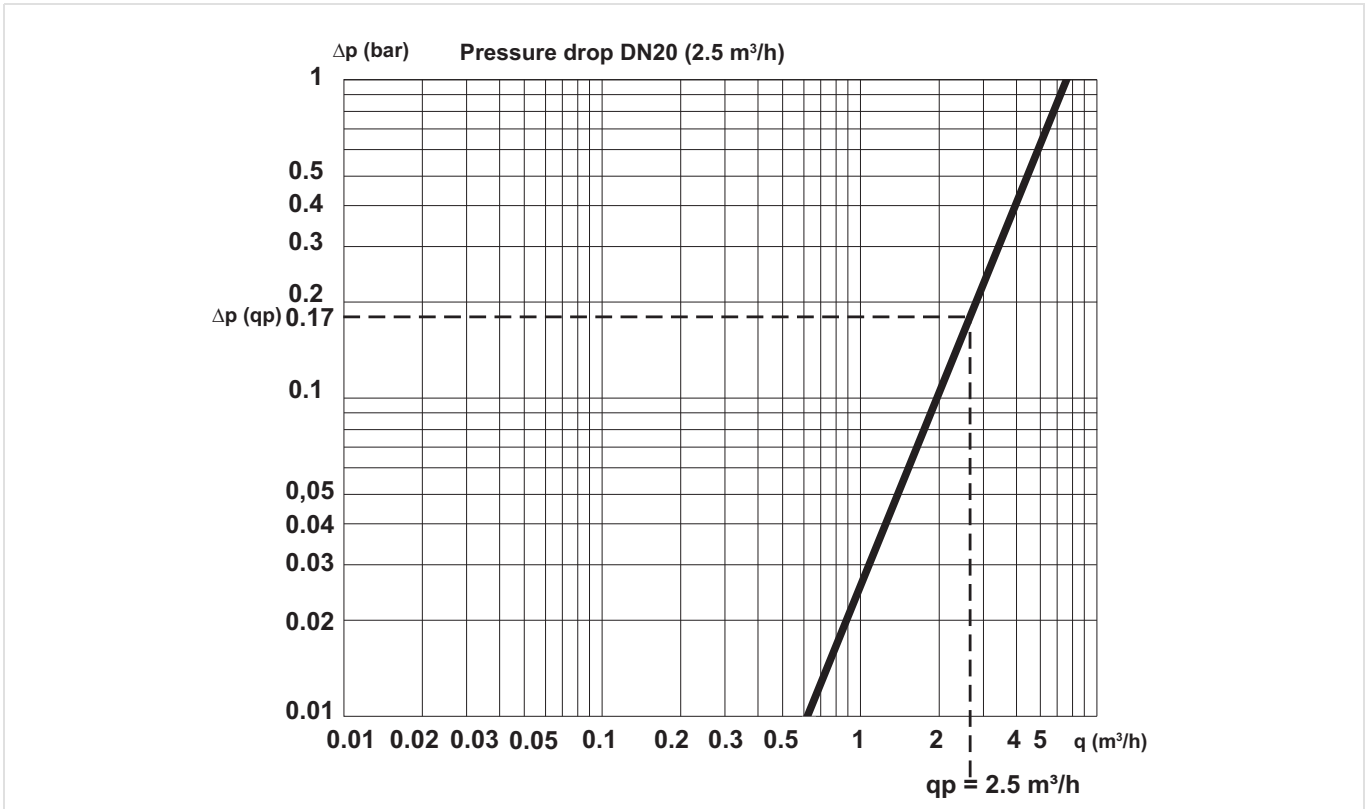
DN15 (0.6 m³/h)



DN15 (1.5 m³/h)

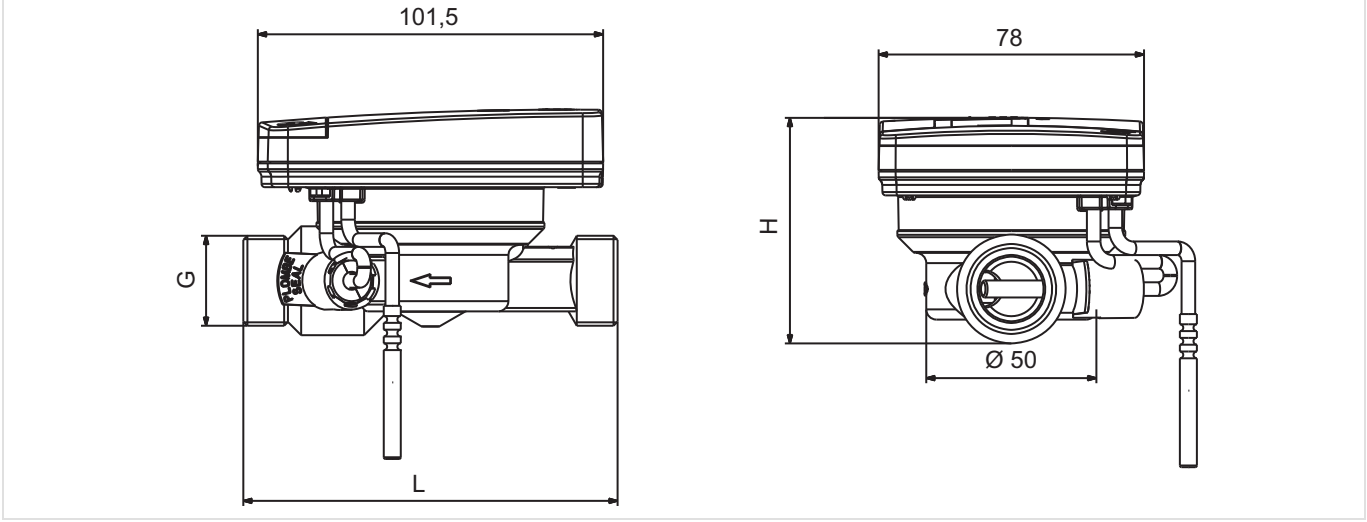


DN20 (2.5 m³/h)



Dimensions

Overview

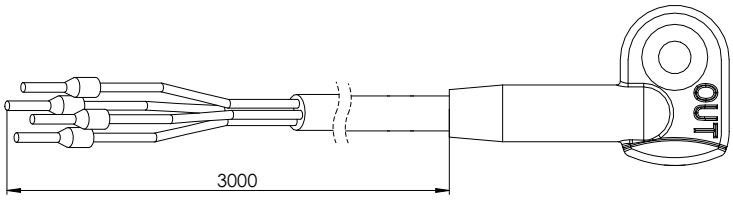


Nominal size diameter:		DN	15 (0.6 m³/h)	15 (1.5 m³/h)	20 (2.5 m³/h)
Dimensions:		L	110	110	130
		H	66.1	66.1	68.5
		G	G $^{3}/_{4}$"	G $^{3}/_{4}$"	G 1"
Weight:	EW6001A	g	668	650	743
	EW6001B	g	820	802	895

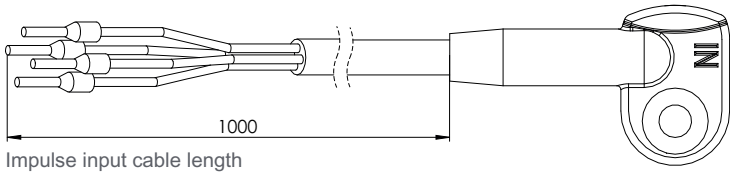
Note: All dimensions in mm unless stated otherwise

M-Bus Dimensional drawings - with integrated communication interface

Connection cable

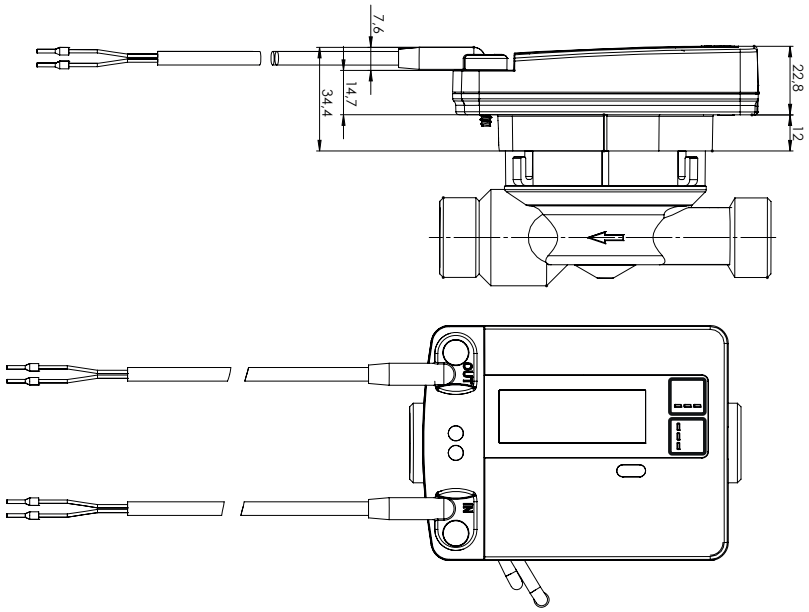


M Bus cable length

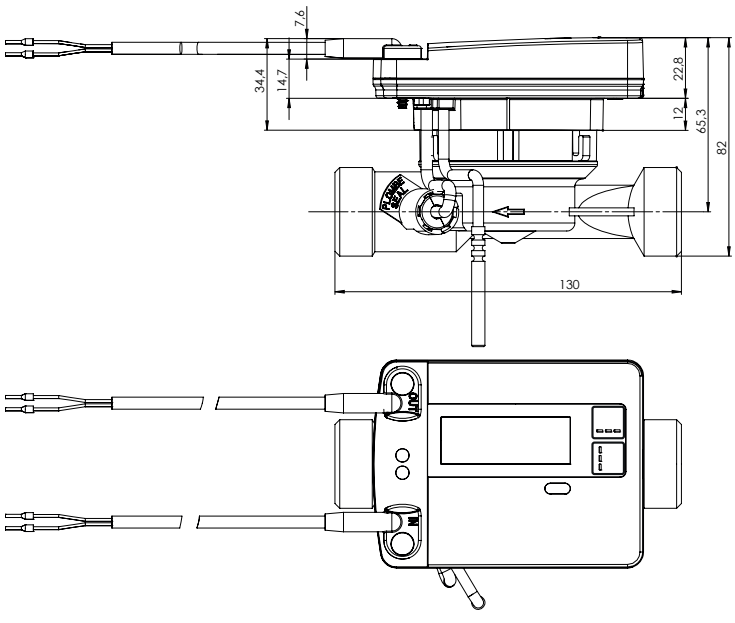


Impulse input cable length

M-Bus Installation length (110 mm for qp 0.6 and 1.5 m³/h)



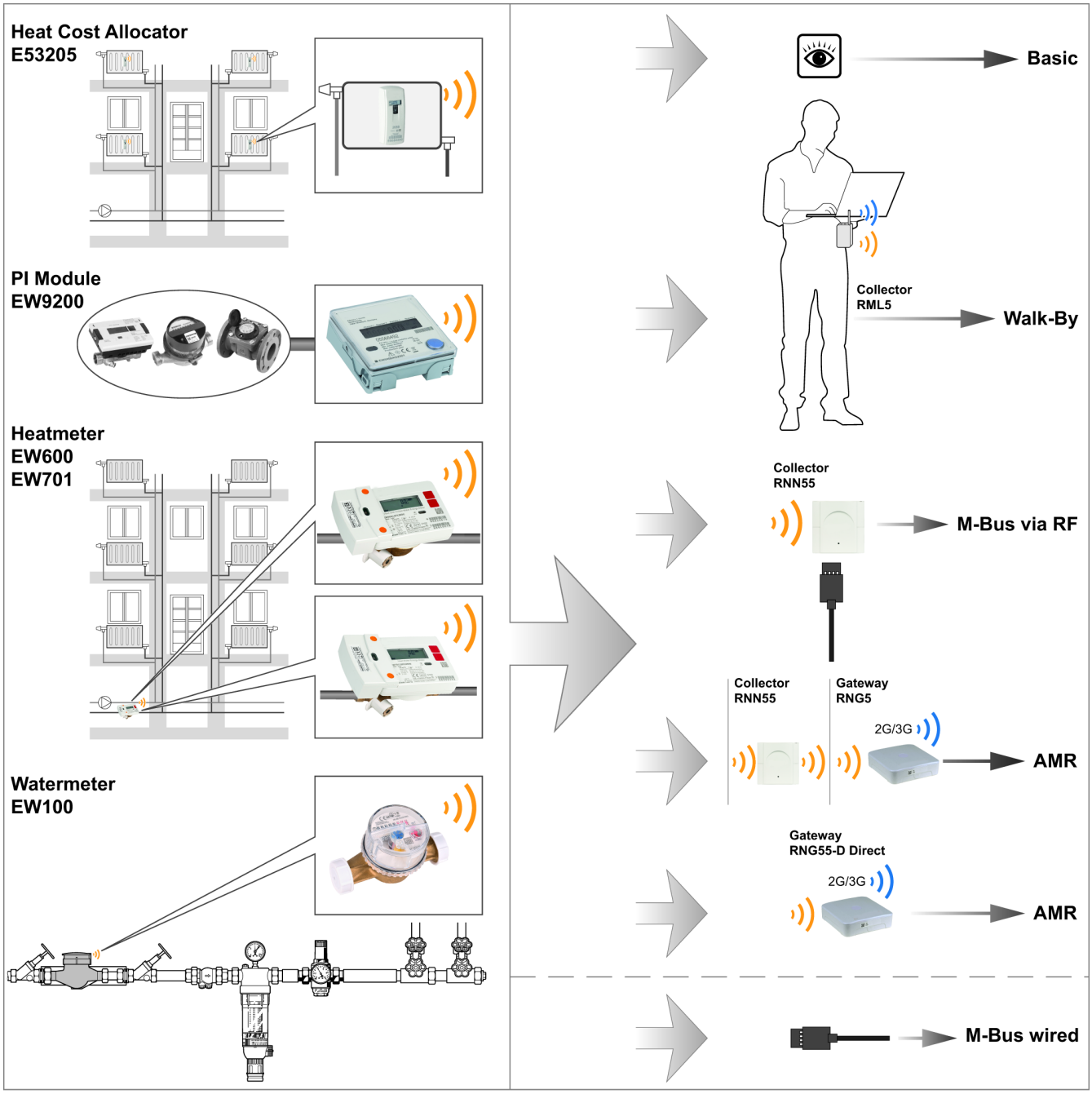
M-Bus Installation length (130 mm for qp 2.5 m³/h)



System Overview

The EW600 heat meter can be integrated into various type of systems.

For further details or variants of the systems pls contact your account manager.



Ordering Information

The following tables contain all the information you need to make an order of an item of your choice.
When ordering, please always state the type, the ordering or the part number.

Options

EW6001AC - without communication module

Item	DN	Nominal flow [m³/h]	Length [mm]	Communication	Item Number	EAN Code
EW6001AC	15	0.6	110	-	EW6001AC0100	40 29289 08197 1
	15	1.5	110		EW6001AC1200	40 29289 08198 8
	20	2.5	130		EW6001AC2000	40 29289 08199 5

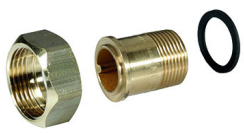
EW6001AF - with integrated RF communication module

Item	DN	Nominal flow [m³/h]	Length [mm]	Communication	Item Number	EAN Code
T6001AF C-Mode	15	0.6	110	C-Mode 5.5	EW6001AF0155C	40 29289 08200 8
	15	1.5	110		EW6001AF1255C	40 29289 08201 5
	20	2.5	130		EW6001AF2055C	40 29289 08202 2
T6001AF S-Mode	15	0.6	110	S-Mode 5.5	EW6001AF0155S	40 29289 08203 9
	15	1.5	110		EW6001AF1255S	40 29289 08204 6
	20	2.5	130		EW6001AF2055S	40 29289 08205 3

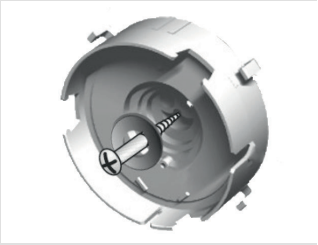
EW6001BK - with integrated M-Bus plus 2 PI communication module

Item	DN	Nominal flow [m³/h]	Length [mm]	Communication	Item Number	EAN Code
EW6001BK	15	0.6	110	M-Bus and 2 x pulse in	EW6001BK0100	40 29289 08206 0
	15	1.5	110		EW6001BK1200	40 29289 08207 7
	20	2.5	130		EW6001BK2000	40 29289 08208 4

Accessories

	Item No.	Description	EAN Code
	**EWA600C**	**Retrofittable communication modules, suitable for all EW7011BC…**	
	EWA600C-MBUS	M-Bus	40 29289 08210 7
	EWA600C-RF55S	RF AMR / Walk-By S-Mode	40 29289 08214 5
	EWA600C-RF55C	RF AMR / Walk-By C-Mode	40 29289 08213 8
	**EWA15000xx**	**Set of union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)**	
	EWA1500035	For DN15, $^1/_2$" x $^3/_4$"	40 29289 07276 4
	EWA1500042	For DN20, $^3/_4$" x 1"	40 29289 05121 9
	**EWAxx**	**Tailpiece for direct connection of supply temperature sensor** Temperature sensor installation kit required	
	EWA087HY003	R $^1/_2$" external thread, M10x1 sensor thread	40 29289 05390 9
	EWA354830	G $^1/_4$" external thread, M10x1 sensor thread	40 29289 06217 8
	**EWA087HYxxx**	**Ball valve with internal threads**	
	EWA087HY004	For DN15, G $^1/_2$" internal threads	40 29289 05391 6
	EWA087HY005	For DN20, G $^3/_4$" internal threads	40 29289 05392 3

Optional Wall bracket for separate installation of the calculator



HMRIK001 001	Wall bracket for EW600 meter	
		40 29289 08380 7

Associated Products

Item No.:	Description:	EAN Code:
Associated Datacollector (fixed):		
RNN55-STD	Network node G5.5 C/S - 230V	50 59087 00173 3
RNN55-230V	Network node G5.5 C/S - STD	50 59087 00174 0
Associated Datacollector (mobile):		
RML5-STD	WALKBY ACT46 BLUETOOTH V.5	40 29289 08136 0
Associated Gateway:		
RNG5-STD	RNG5 Gateway (Battery supply)	40 29289 08160 5
RNG5-230V	RNG5 Gateway (230 V AC supply)	40 29289 08305 0
RNG55-D-STD	Network Gateway 5.5 Direct 2G/2G - 230V	50 59087 00171 9
RNG55-D-230V	Network Gateway 5.5 Direct 2G/2G - STD	50 59087 00172 6

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Subject to change.
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For more information
resideo.com