



## EW701 Series

### Ultrasonic Heat Meters

DN15 and DN20 for Heating Applications

#### APPLICATION

Honeywell EW701 Series ultrasonic heat meters are used for heating energy measurement in hot water hydronic central heating systems. They are typically used for submetering applications in apartments, offices or administration buildings. The meter enables an exact measurement of even very small flow quantities. They can be installed in any position. Within the flow there are no moving parts.

The EW701 meter do have an extremely compact design height and a detachable calculator unit as standard with long connection cable for universal use.

#### APPROVALS

- MID approved DE14-MI004-PTB006, class 3
- CE
- CEN EN1434

#### SPECIAL FEATURES

- The meter can be integrated into a HON 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
- Suitable for any installation position
- 10 year battery lifetime
- Ultrasonic measuring principle
- No moving parts in the flow
- Detachable calculator unit with connection cable 80 cm long and clip ring for wall attachment
- 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



#### EW701 Energy calculator

The EW701 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 heating 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 EW701 has up to two communication interfaces:

- The IrDA interface accessible from outside. This allows parameters to be set for the EW701 on site at any time
- The module interface, which can be used to retrofit the EW701 for RF or M-Bus. The respective modules are simply mounted on the calculator unit

## TECHNICAL DATA

General Specifications	
Sizes:	DN15, DN20 Qp 1.5, 2.5 m <sup>3</sup> /h
Protection class:	IP65 (EN60529)
Measuring process:	Ultrasonic 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 - RF AMR / Walk-By S-Mode - RF AMR / Walk-By C-Mode - M-Bus according to EN13757-2
Temperature sensors:	PT1000 (EN60751)
Diameter:	5.2 mm
Type of installation:	Direct (ball valve) / Indirect (immersion sleeve)*
Cable length:	1.5 m

Operating Conditions	
Medium:	Heating water according to VDI 2035 and AGFW 510
Medium temperature:	20 - 90 °C
Ambient temperature:	5 - 55 °C
Temperature difference:	3k - 160K
Starting temperature difference:	Heating water: 1 K
Temperature sensors:	- PT1000 permanently fixed to calculator - Cable length supply: approx. 1.5 m - Cable length calculator unit to return flow sensor: approx. 0.8 m
Operating pressure:	max. 16 bar min. 1 bar
Electromagnetic class:	E1
Mechanical class:	M2
Environment class:	A
Precision class:	3
Installation position:	Horizontal, vertical
Installation place:	Return pipeline

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

## MEASURING PRINCIPLE

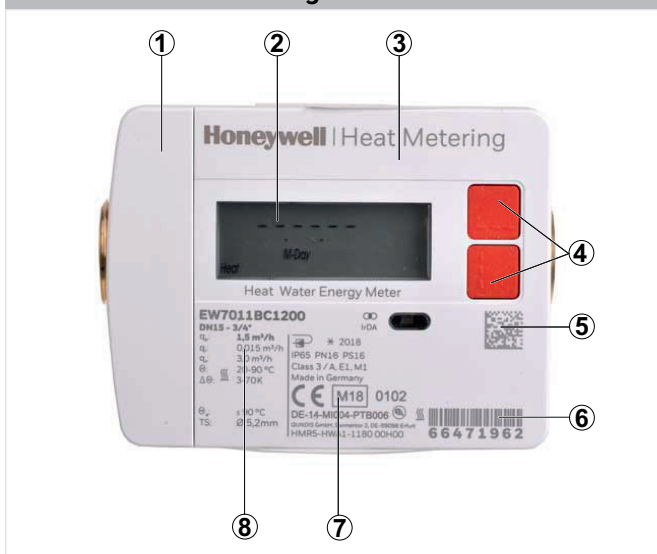
The flow sensor of the screw-type meter works according to the ultrasonic measuring principle. The water flow through the meter is measured using acoustic sensors. The low-maintenance design and lack of mechanically moving parts for the determination of exact volume flow are the key features of this measuring principle.

Incorrect direction of flow is detected and indicated by an error message in the display.

Note: Only use water without chemical additives as the medium for this device. Glycol additives are expressly not permitted. Heating systems must be bled completely before start-up.

## CONSTRUCTION

### Overview EW7011BC 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: <ul style="list-style-type: none"> <li>• OS-Number</li> <li>• Datecode</li> <li>• Serialnumber</li> </ul>
6 Serial number with barcodes	-
7 Approval data	-
8 Specifications	-

Overview EW7011BK range with M-Bus Module	Components	Material/Comment	
	<b>1</b>	M-Bus module	-
	<b>2</b>	LCD	-
	<b>3</b>	Front housing	Plastic
	<b>4</b>	Push button	Rubber
	<b>5</b>	2D barcode with meter specifications	Barcode containing of: <ul style="list-style-type: none"> <li>• OS-Number</li> <li>• Datecode</li> <li>• Serialnumber</li> </ul>
	<b>6</b>	Serial number with barcodes	-
	<b>7</b>	Approval data	-
	<b>8</b>	Specifications	-

Overview EW7011BF range with RF-Module	Components	Material/Comment	
	<b>1</b>	RF-Module	-
	<b>2</b>	LCD	-
	<b>3</b>	Front housing	Plastic
	<b>4</b>	Push button	Rubber
	<b>5</b>	2D barcode with meter specifications	Barcode containing of: <ul style="list-style-type: none"> <li>• OS-Number</li> <li>• Datecode</li> <li>• Serialnumber</li> </ul>
	<b>6</b>	Serial number with barcodes	-
	<b>7</b>	Approval data	-
	<b>8</b>	Specifications	-

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

## TRANSPORTATION AND STORAGE

EW701 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 %*

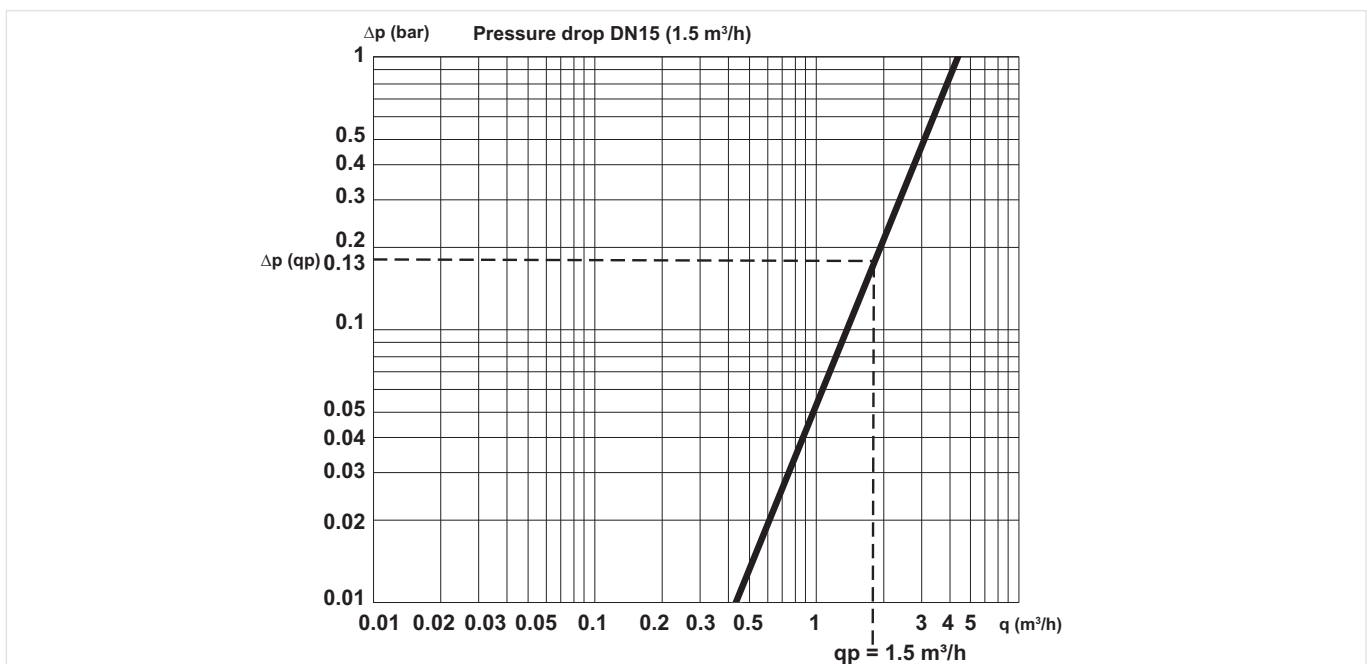
\* non condensing

## TECHNICAL CHARACTERISTICS

### Flow Data

Nominal size diameter:	DN	15	20
<b>Flow rates according to MID</b>			
Minimum (qi):	l/h	15	25
<b>Nominal (qp)</b>	<b>m<sup>3</sup>/h</b>	<b>1.5</b>	<b>2.5</b>
Maximum (qs):	m <sup>3</sup> /h	3.0	5.0
Dynamic range:	qp/qi	100:1	100:1
<b>Additional flow data</b>			
Starting flow:	l/h	1.5 - 4.0	2.5 - 6.5
Pressure loss at qp:	mbar	130	180

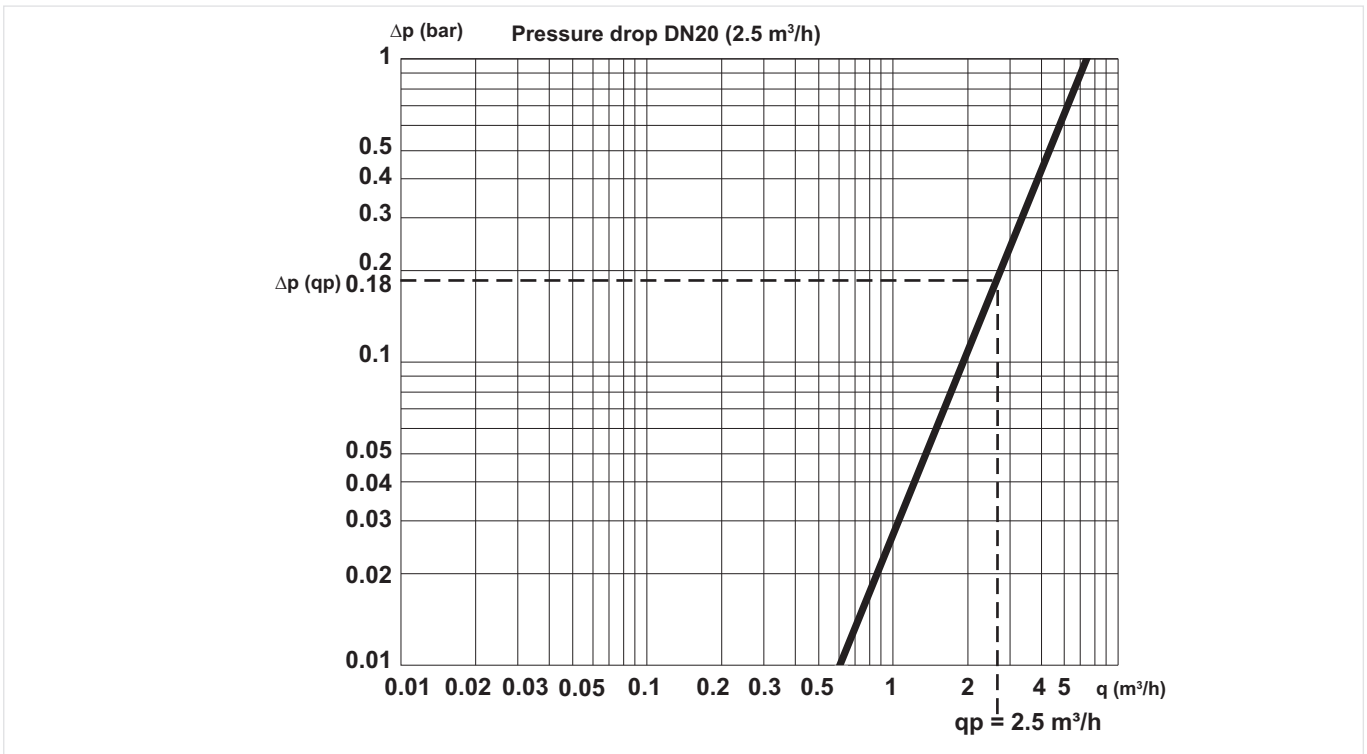
### Pressure loss curves



## INSTALLATION GUIDELINES

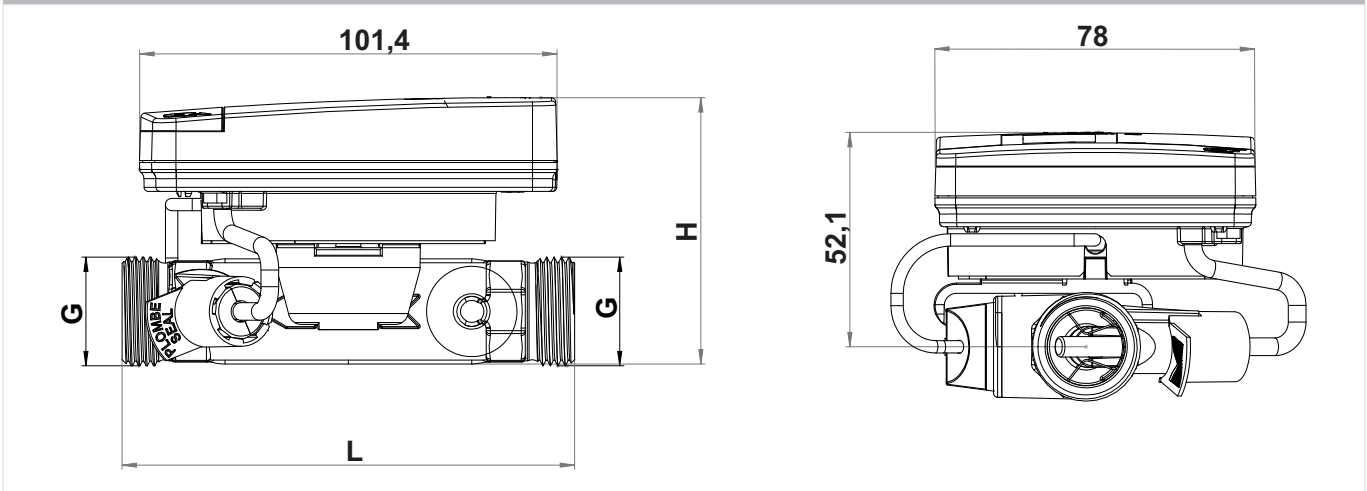
### Setup requirements

- Meter must be installed in the return pipeline
- During measurement the meter must be completely filled with water
- 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



## DIMENSIONS

### Overview



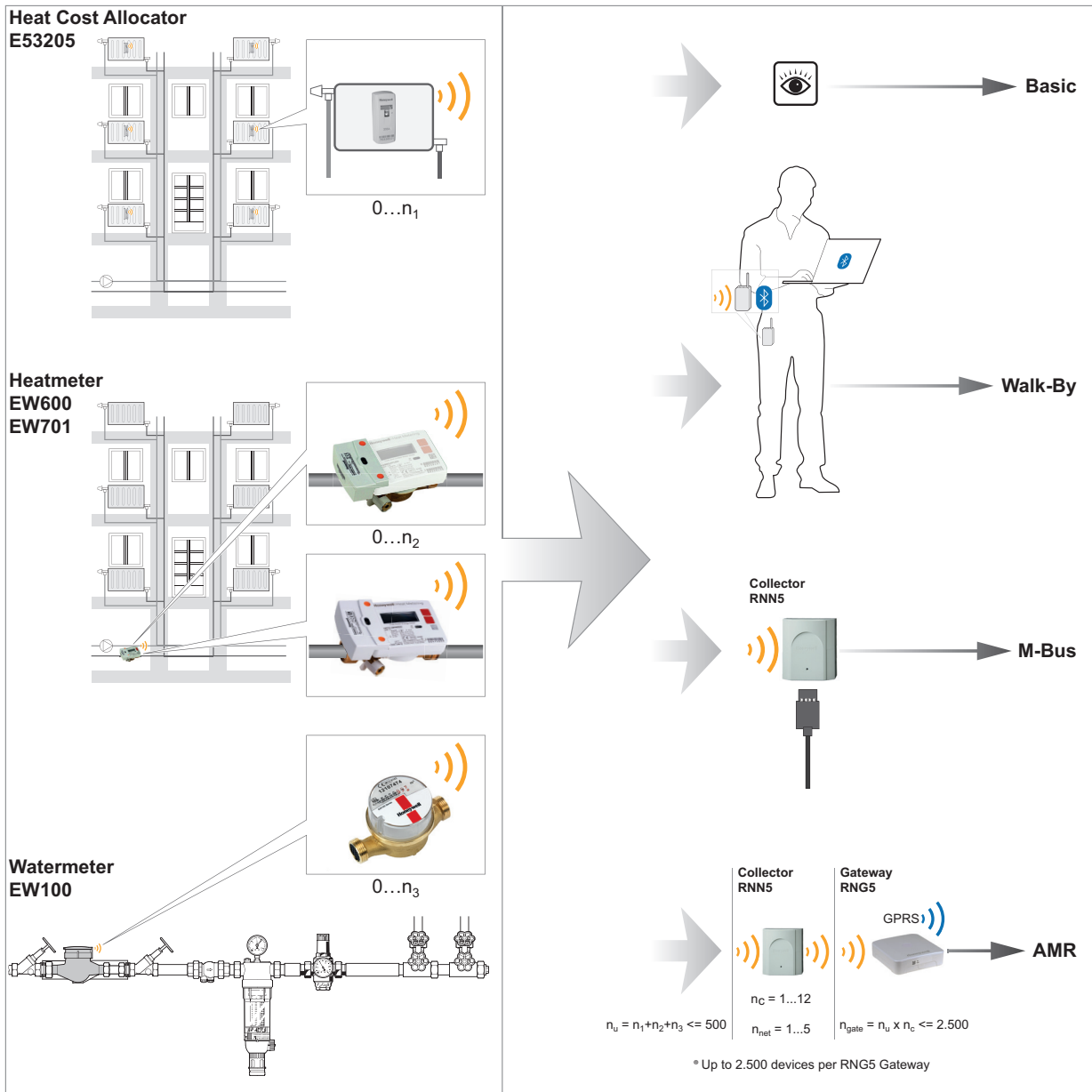
Nominal size diameter:		DN	15 (1.5 m³/h)	20 (2.5 m³/h)
Dimensions:		L	110	130
		H	64.8	68.8
		G	G 3/4"	G 1"
Weight:	EW7011BC	g	530	660
	EW7011BF		690	720
	EW7011BK		690	720

Note: All dimensions in mm unless stated otherwise

## SYSTEM OVERVIEW

The EW701 heat meter can be integrated into various type of HON systems.

For further details or variants of the HON systems (e.g. M-Bus etc.) pls contact your HON account manager.



## ORDERING INFORMATION

### Options

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 ordering number.

#### EW7011 BC type (no communication modules installed), for heating water

Item:	DN size:	Nominal flow qp m <sup>3</sup> /h:	Length mm:	Communication:	Ordering Number	EAN Code:
EW7011BC	15	1.5	110	-	EW7011BC1200	40 29289 08366 1
	20	2.5	130		EW7011BC2000	40 29289 08367 8





#### EW7011 BF type (RF communication modules installed), for heating water

Item:	DN size:	Nominal flow qp m <sup>3</sup> /h:	Length mm:	Communication:	Ordering Number	EAN Code:
EW7011BF C-Mode	15	1.5	110	C-Mode 5.5	EW7011BF1255C	40 29289 08368 5
	20	2.5	130		EW7011BF2055C	40 29289 08369 2
EW7011BF S-Mode	15	1.5	110	S-Mode 5.5	EW7011BF1255S	40 29289 08370 8
	20	2.5	130		EW7011BF2055S	40 29289 08371 5

#### EW7011 BK type (M-Bus communication modules installed), for heating water

Item:	DN size:	Nominal flow qp m <sup>3</sup> /h:	Length mm:	Communication:	Ordering Number	EAN Code:
EW7011BK	15	1.5	110	M-Bus	EW7011BK1200	40 29289 08339 5
	20	2.5	130		EW7011BK2000	40 29289 08340 1

**Accessories**

	<b>Ordering Number</b>	<b>Description</b>	<b>EAN Code</b>
	<b>EWA600C</b>	<b>Retrofittable communication modules, suitable for all EW7011BC...</b>	
	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
	<b>EWA15000xx</b>	<b>Set of union nuts, sealings and externally threaded brass tailpieces (one pack per meter required)</b>	
	EWA1500035	For DN15, 1/2" x 3/4"	4029289072764
	EWA1500042	For DN20, 3/4" x 1"	4029289051219
	<b>EWAxx</b>	<b>Tailpiece for direct connection of supply temperature sensor</b> 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
	<b>EWA087HYxxx</b>	<b>Ball valve with internal threads</b>	
	EWA087HY004	For DN15, G 1/2" internal threads	40 29289 05391 6
	EWA087HY005	For DN20, G 3/4" internal threads	40 29289 05392 3

Note: RF AMR / Walk-By C-Mode according to OMS konform

**Associated Products**

<b>OS-No.:</b>	<b>Description:</b>	<b>EAN Code:</b>
<b>Associated Datacollector (fixed):</b>		
RNN5-STD	G5 Network node (Battery supply)	50 25121 38142 0
RNN5-230V	G5 Network node (230VAC supply)	40 29289 08304 3
<b>Associated Datacollector (mobile):</b>		
RML5-STD	WALKBY ACT46 BLUETOOTH V.5	40 29289 08136 0
<b>Associated Gateway:</b>		
RNG5-STD	RNG5 Gateway (Battery supply)	40 29289 08160 5
RNG5-230V	RNG5 Gateway (230VAC supply)	40 29289 08305 0

**For more information**

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