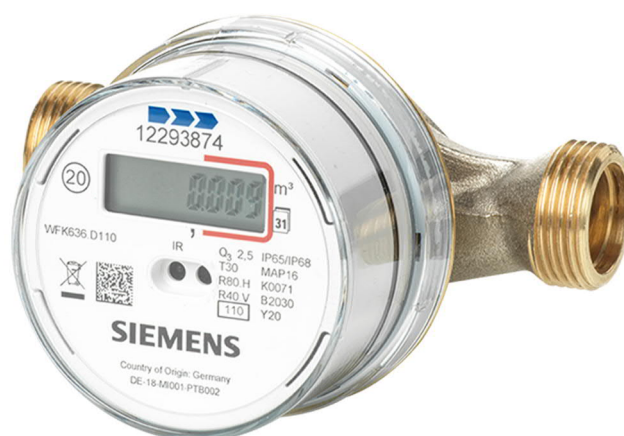# SIEMENS

Meters and Energy Cost Allocation

Electronic water meters

WFK636.. WFW636.., WMK636.., WMW636..

Electronic, mains-independent meter for measuring consumption of cold and hot water

- Nominal flow Q_3 = 2.5 m³/h or 4 m³/h
- Available as screw-type water meter WF.636.. or measuring capsule water meter WM.636..
- Single-jet impeller type (screw-type water meter) or multi-jet impeller meter (measuring capsule water meter)
- Parallel transmission of AMR and walk-by telegrams
- Communication in S-mode or C-mode
- OMS compliant AMR telegrams in C-mode
- Any mounting position (horizontal or vertical)
- Operating and configuration software to configure specific devices via the meter's optical interface
- Leakage detection
- Displays cumulated consumption and due date consumption

CE

Screw-type cold water (WFK..) and hot water meters (WFW..) as well as cold water measuring capsule meters (WMK..) The impeller type hot water meter (WMW) is compact in design and used for measuring physical cold or hot water consumption. The meter consists of a flow element and a totalizer.

Functions

The compact, single-jet impeller type meter (screw-type water meter) or multi-jet impeller meter (measuring capsule water meter) is used for drinking water (cold or hot) and consists of a flow element and a totalizer with LCD display.

In most cases, the single-pipe connection piece (EAT) is already present on the measuring capsule water meters and embedded in the masonry.

The totalizer can be rotated 360° on the fitting.

The flow measuring section on the screw-type water meter is made of brass and includes a sieve at the input to collect larger dirt particles.

The water flows through the flow measuring section to drive the single-jet impeller. The speed is sampled inductively via coils to provide low wear and long-term stable measuring.

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

The resulting volume is added up, displayed and can be transmitted via RF to a data processing system. A long-life battery powers the processor for up to 10 years with 1 year of reserve capacity.

Dry rotor

The water meter is a dry rotor with high pressure resistance.

This prevents the totalizer from exposure to the medium and protects against dirt. The impeller has double bearings and the meter is protected against external magnetic influence to guarantee the highest accuracy and security under all installation conditions.

Infrared interface

The water meters can be read out on site via the optical close-range interface. The meter is read out and configured with the WFZ.IRDA-USB optical reading head and associated configuration software.

Communication

The water meter sends parallel AMR and walk-by data telegrams in S-mode or C-mode. You can switch from S-mode to C-mode with the configuration software. RF is activated using the WFZ.PS tool, ACT50 software or automatically after consuming 50 liters.

The AMR telegrams are automatically collected and saved by a network node WTT662.. or WTT561... RF converter. The walk-by telegram can be collected during a walk by using a mobile data logger. The customer can remotely read out all plant consumption data.

Leakage detection

The meter generates an alarm if the water meter detects flow (between 4 and 5 liters per hour depending on the version) over a longer period (factory setting of 24 hours).

A leak is indicated on the display by 'LEAC'. At the same time, an error message is transmitted via RF.

The configuration software can adapt the threshold value between 1 and 24 hours.

Tampering

The meters are tested against electromagnetic and magnetic disturbances per EN14154.

Function check

The flow is acquired continuously. The volume is displayed in real time. Any errors are immediately displayed. The meter conducts the following self-tests:

- Leakage detection
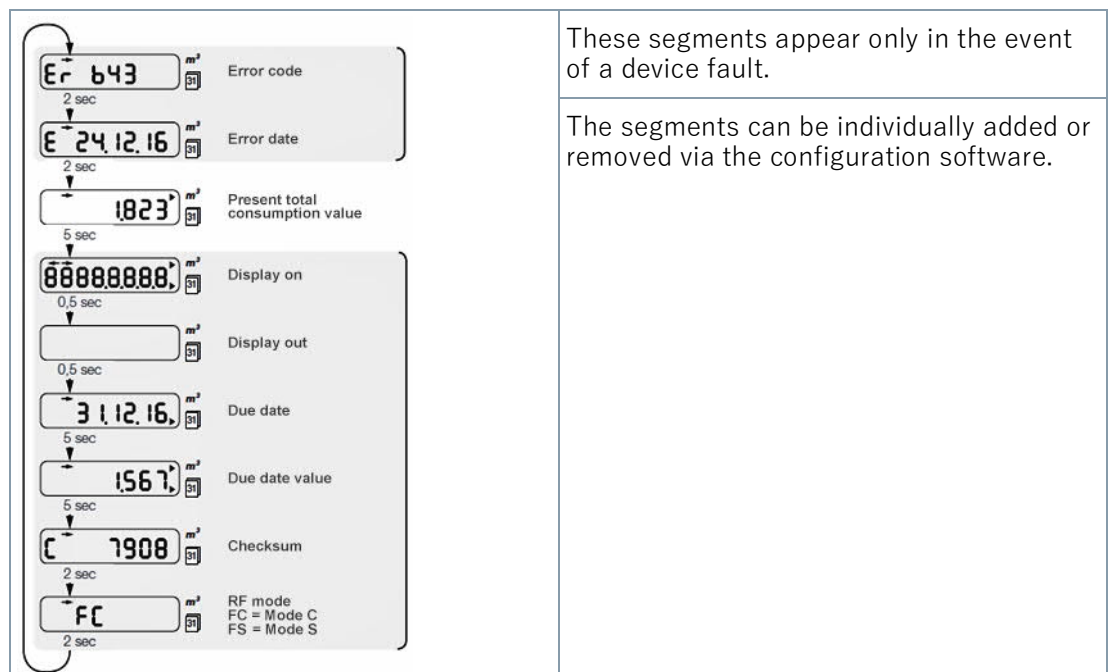- Reverse flow
- Error detection

Display

Water consumption values are continuously cumulated. The current state is stored at 11:59 pm on the next due date.

The due date is factory programmed to 31.12 and can be configured with the ACT50 software.

The water meter calculates a checksum at the same time it saves the annual consumption. The self-reader provides the checksum together with the due date value to the evaluation office so that it can check the correct read out of the display. The stored due date remains in place for one year.

The water meter has a display loop. The following data can be readout on the display of the water meter:

- Error code
- Error date
- Present total consumption value
- Due date
- Due date value
- Checksum
- RF mode

	These segments appear only in the event of a device fault.
	The segments can be individually added or removed via the configuration software.

The following parameters can be read out and/or configured using the configuration software via the IrDA interface:

Read out only:
General
- Serial number
- Mounting place
- SW version
- Medium
- Commissioning date
- Battery life
- Stock number
- Leakage detection
- Device date
- Error date
- Error code

Device information
- Device name/password
- Current flow rate

Meter states
- Current meter state
- Reverse volume indication
- Last due date
- Meter state on last due date
- Next due date
- Maximum flow rate
- Leakage

Statistical values
- 13 monthly values

RF settings
- RF mode
- RF system
- Walk-by readout type (S-mode only)
- Walk-by transmission delay (S-mode only)
- Walk-by transmission timeframe (S-mode only)
- Walk-by transmission-free days (S-mode only)

Configuration:
General
- Mounting place
- Display loop
- Leakage detection

Due date
- Next due date

Device information
- Device name/password

RF settings
- RF mode
- RF system
- Walk-by readout type (S-mode only)
- Walk-by transmission delay (S-mode only)
- Walk-by transmission timeframe
- Walk-by transmission-free days (S-mode only)

Error messages

Error code	Error description	Measures/notes
LEAC	Leakage in the system	Check piping, eliminate leakage. The error automatically resets once the leakage is eliminated.
0	Flow direction negative	Check meter installation / flow direction
2	Operating hours expired	Replace the device during the next service appointment.
3	Hardware error	Replace the device!
4	Permanently stored error	Replace the device!
b	Communicated too much in the month via OPTO	The lock is automatically lifted each month!
d	Too much flow	Check installation conditions! Eventually replace by a meter with a larger Q_3.
f	The device lost power for a short period. The entire configuration is lost.	Replace the device!

Pressure drop characteristic
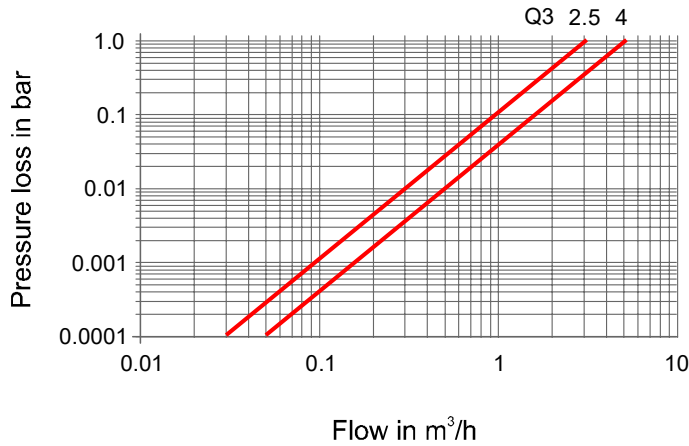
RF features in S-mode

The following values are transmitted by default in the RF telegram in S-mode:

Electronic water meters in S-mode have the following features:		
RF system	Parallel transmission of data telegrams	• AMR • Walk-by
Transmission delay (Offset)	Time delay for sending out telegrams after the due date Time delay for sending out telegrams after the start of the month in days (Default = 0 days)	
Transmission-free days	A maximum of 2 days of the week can be defined as transmission-free days. At least 1 day of the week must be set (Default = Sunday)	

Transmission response		
AMR telegrams	Every 4 hours, 24 hours a day, 365 days a year Data telegrams with the current consumption value and due date value as well as monthly telegram with consumption value at the end of the last month	
Walk-by telegrams	Every 128 seconds, 10 hours a day (from 8:00 am to 6:00 pm)	
	Readout type	Monthly: 4 readout days as of the first of each month Annually: 48 readout days, once a year by due date
	Transmission-free days	Monthly: Saturday and Sunday Annually: Sunday
	Current consumption value, due date value, due date as well as end of month values for the last 13 months	

RF features in C-mode

The following values are transmitted by default in the RF telegram in C-mode:

Electronic water meters in C-mode have the following features:		
RF system	Parallel transmission of data telegrams	• AMR • Walk-by
	Increase RF output (typically 10 dBm)	
AMR telegrams	Every 7.5 hours, 24 hours a day, 365 days a year	
	Data telegram with current consumption value	
Walk-by telegrams	Every 112 seconds, 10 hours a day (from 8:00 am to 6:00 pm) 365 days a year	
	Current consumption value, due date value, due date as well as end of month values for the last 13 months	

Change of mode

You can switch between S-mode and C-mode any time with the help of the configuration software and the infrared read head WFZ.IRDA-USB.

Type summary

Features of the water meters listed below:	
Design	Screw-type water meter: Single-jet dry runner Measuring capsule water meter: Multi-jet dry runner
Rated pressure	PN 16
Communication	Wireless M-bus, S-mode
Due date	31.12.
Display	m^3

Screw-type cold water meter

Description	Ordering number	Type
Q_3 = 2.5 m^3/h, mounting length 80 mm, connecting thread G ¾", up to 30° C	S55560-F116	WFK636.D080
Q_3 = 2.5 m^3/h, mounting length 110 mm, connecting thread G ¾", up to 30° C	S55560-F117	WFK636.D110
Q_3 = 4 m^3/h, mounting length 130 mm, connecting thread G 1", up to 30° C	JXF:WFK636.E130	WFK636.E130

Screw-type hot water meter

Description	Ordering number	Type
$Q_3 = 2.5$ m³/h, mounting length 80 mm, connecting thread G ¾", up to 90 ° C	S55560-F118	WFW636.D080
$Q_3 = 2.5$ m³/h, mounting length 110 mm, connecting thread G ¾", up to 90 ° C	S55560-F119	WFW636.D110
$Q_3 = 4$ m³/h, mounting length 130 mm, Connecting thread G 1", up to 90 ° C	JXF:WFW636.E130	WFW636.E130

Cold water measuring capsule water meter

Description	Ordering number	Type
The cold water meter for the IST measuring capsule $Q_3 = 2.5$ m³/h, connecting thread G2", up to 30 ° C	JXF:WMK636.DIS00	WMK636.DIS00
The cold water meter for the TE1 measuring capsule $Q_3 = 2.5$ m³/h, connecting thread M62 x 2 mm, up to 30 ° C	JXF:WMK636.DTE00	WMK636.DTE00
The cold water meter for the A34 measuring capsule $Q_3 = 2.5$ m³/h, connecting thread M77 x 1.5 mm, up to 30 ° C	JXF:WMK636.DAL00	WMK636.DAL00

Hot water measuring capsule water meter

Description	Ordering number	Type
The hot water meter for the IST measuring capsule $Q_3 = 2.5$ m³/h, connecting thread G 2", up to 90 ° C	JXF:WMW636.DIS00	WMW636.DIS00
The hot water meter for the TE1 measuring capsule $Q_3 = 2.5$ m³/h, connecting thread M62 x 2 mm, up to 90 ° C	JXF:WMW636.DTE00	WMW636.DEL00
The hot water meter for the A34 measuring capsule $Q_3 = 2.5$ m³/h, connecting thread M77 x 1.5 mm, up to 90 ° C	JXF:WMW636.DAL00	WMW636.DAL00

Accessories for screw-type water meters

Order accessories separately.

Spacer

Description	Ordering number	Type
Spacer G ¾", length 80 mm	JXF:WFZ.R80	WFZ.R80
Spacer G ¾", length 110 mm	JXF:WFZ.R110	WFZ.R110
Spacer G 1", length 130 mm	JXF: WFZ.R130	WFZ.R130

Adapter pieces

Description	Ordering number	Type
Adapter set 80 mm G ¾" to 110 mm 1", consisting off: 2 adapter pieces G ¾" to G 1" 2 flat gaskets 2 mm, 1"	JXF:WZM-V110	WZM-V110
Extension set 110 mm G ¾" to 130 mm G ¾", consisting off: 1 extension 27 mm 2 flat gaskets 2 mm, ¾" 1 gasket made of copper ¾" x 1.5 mm	JXF: WZM-V130	WZM-V130
Extension set 110 mm G ¾" to 165 mm G ¾", consisting off: 1 extension 27 mm 1 extension 42 mm 2 flat gaskets 2 mm, ¾" 1 gasket made of copper ¾" x 1.5 mm	JXF: WZM-V165	WZM-V165
Extension set 110 mm G ¾" to 190 mm G 1", consisting off: 2 adapter pieces from 110 mm G ¾" to 190 mm G 1" 2 flat gaskets 2 mm, 1" 1 gasket made of copper ¾" x 1.5 mm	JXF: WZM-V190	WZM-V190

Installation sets

Description	Ordering number	Type
Mounting set, pair of fittings G ¾" x R ½" with gaskets	S55563-F151	WFZ.R2
Mounting set, pair of fittings G 1" x R ¾" with gaskets	S55563-F152	WFZ.R2-1

Other

Description	Ordering number	Type
Mounting kit, complete for washstand water meters	JXF:WFZ.W	WFZ.W
Mounting kit for tap water meters	JXF:WFZ.Z	WFZ.Z
Self-lock seal with sealing wire	JXF:WFZ.P	WFZ.P

Accessories for measuring capsule water meters

Order accessories separately.

Mounting materials

Description	Ordering number	Type
Single-pipe connect piece (EAT) without cover, without seal and plastering aid, compatible with EAS and VAS 2" systems, internal thread ¾", mounting length 80 mm	JXF:WME.G20/OV/H	WME.G20/OV/H
Single-pipe connect piece (EAT) without cover, without seal and plastering aid, compatible with EAS and VAS 2" systems, internal thread ½" or 15 mm soldering connection, mounting length 110 mm	JXF:WME.L15/OV/H	WME.L15/OV/H
Single-pipe connect piece (EAT) without cover, without seal and plastering aid, compatible with EAS and VAS 2" systems, connecting thread ¾", mounting length 110 mm	JXF:WME.L18/OV/H	WME.L18/OV/H

Single-pipe connect piece (EAT) without cover, without seal and plastering aid, compatible with EAS and VAS 2" systems, connecting thread ¾" or 22 mm soldering connection, mounting length 130 mm	JXF:WME.L22/OV/H	WME.L22/OV/H
Profiled seal fir EAS und VAS 2", dimensions: 57 x 46 x 4 mm	JXF:WME.PRODICHT	WME.PRODICHT
Cover for 2" flow measuring section	JXF:WME-VRING	WME-VRING
Mounting aid	JXF:WME.EINPUTZ1	WME.EINPUTZ1
Guide piece to A34l measuring capsule water meter M77 x 1.5 mm	XF:FKK0173	FKK0173
O-ring for A34l measuring capsule water meter M77 x 1.5 mm	JXF:FKS0034	FKS0034
Mounting tool for measuring capsule water meter	JXF:WMZ.K5	WMZ.K5

Extensions and covers

Description	Ordering number	Type
Round cover with pressure pipe, chrome	JXF:WMXI.KCR1-001	WMXI.KCR1-001
Round cover with pressure pipe, white	JXF:WMXI.KBL1-001	WMXI.KBL1-001
Inside extension for pressure pipe (5 pcs../ VE), chrome	JXF:WMXI.KCR1-002	WMXI.KCR1-002
Inside extension for pressure pipe (5 pcs../ VE), white	JXF:WMXI.KBL1-002	WMXI.KBL1-002
Outside extension for pressure pipe (5 pcs../ VE), chrome	JXF:WMXI.KCR1-003	WMXI.KCR1-003
Outside extension for pressure pipe (5 pcs../ VE), white	JXF:WMXI.KBL1-003	WMXI.KBL1-003

Other

Description	Ordering number	Type
Lead seal for measuring capsule water meter	JXF:FKK0139	FKK0139
Self-lock seal with sealing wire	JXF:WFZ.P	WFZ.P

Programming accessories for all types

Description	Ordering number	Type
Readout and parameterization software	JXF:ACT20	ACT50
Infrared read head (with USB interface)	JXF:WFZ.IRDA-USB	WFZ.IRDA USB
Triggering tool for radio telegrams	JXF:WFZ.PS	WFZ.PS

Ordering

When ordering, please provide the quantity, description, type, and stock no.

Description	Ordering number	Type
Electronic water meter	See "Type summary"	WFx636

Product documentation

Topic	Title	Document ID
Mounting instructions for screw-type and measuring capsule water meters	Electronic water meter	A6V12239416

Product inserts

Two flat gaskets, a seal with sealing wire, and mounting instructions in the following languages are provided with the water meters:

Bulgarian, German, English, Finnish, French, Greek, Italian, Croatian, Lithuanian, Dutch, Norwegian, Polish, Rumanian, Russian, Slovakian, Slovenian, Spanish, Czech, Turkish, and Hungarian.

Related documents such as the environmental declarations, CE declarations, etc., can be downloaded from the following Internet address:

https://siemens.com/bt/download

Notes

Mounting

Note the following:

- The water meter can be installed horizontally or vertically.
- Ensure there is sufficient space for installation.
- Horizontal installation is more accurate (i.e. a higher metrological class).
- The meter must be easily accessible for readout.
- Settling paths are not required, neither upstream of nor downstream from the meter.
- Install the flow measuring section between 2 shutoff valves; the arrow must be in the direction of the flow.
- Install a spacer in place of the meter during construction (screw-type water meter) or a cover lid (measuring capsule water meter).
- Thoroughly flush the plant prior to installing the meter.
- Comply with all local regulations and potable water permits on the use of water meters (installation, sealing, etc.)

Device sealing

- After mounting the meter, seal all components to prevent tampering (observe national regulations):
- Flow measuring section with fitting (inlet)

Maintenance

The meters are maintenance-free. Comply with all national calibration regulations.

Disposal

	The device is considered an electronic device for disposal in accordance with the European Guidelines and may not be disposed of as domestic garbage. • Dispose of the device through channels provided for this purpose. • Comply with all local and currently applicable laws and regulations. • Dispose of empty batteries in designated collection points.

Warranty service

User-related technical data are only guaranteed in connection with the Siemens products listed in sections 'Type summary' and 'Accessories' in this data sheet. Siemens rejects any and all warranties in the event that third-party products are used.

Power supply	
Battery type	Lithium battery (cannot be replaced)
Battery voltage	3.0 V
Battery life	1 year storage, 10 year RF operation, 1 year reserve

Display	
Display	8-digit LCD
Volume display is based on device configuration	m^3: Decimal with 3 digits

Communication	
Optical interface • Protocol	Per EN13757-2,3,7
RF:	
Frequency band	S-Mode: 868.3 ± 0.3 MHz; C-mode: 868.95 ± 0.25) MHz
RF protocol	Wireless M-bus per EN 13757-4
Transmission power	Typically 10 dBm, max. 14 dBm
Duty cycle	< 1 % (50 ms/128s)

Cold water/hot water screw-type water meter				
Continuous flow Q_3	m^3/h	2.5	2.5	4
Mounting length	mm	80	110	130
Connecting thread		G ¾ B"	G ¾ B"	G ¾ B"
Metrological class • Horizontal • Vertical		R80 R40	R80 R40	R80 R40
Overload flow rate Q_4	m^3/h	3.13	3.13	5.0
Minimum flow rate Q_1 • Horizontal (R80) • Vertical (R40)	 l/h l/h	 31.25 62.5	 31.25 62.5	 50.0 100.0
Transitional flow rate Q_2 • Horizontal (R80) • Vertical (R40)	 l/h l/h	 50.0 100.0	 50.0 100.0	 80.0 160.0
Response threshold (typical)	l/h	ca. 4 -5 l	ca. 4 -5 l	approx. 5-6

Cold water/hot water screw-type water meter	
Measuring range • Cold water meter WFK636.. • Hot water meter WFW636..	5°C···≤30°C 30°C··· ≤90°C
Rated pressure	1.6 MPa (PN16)
Mounting position	Horizontal/vertical
Display	8-digit LCD field

Cold water/hot water measuring capsule water meter				
Continuous flow Q_3	m³/h	2.5		
Metrological class • Horizontal • Vertical		R80 R40		
Overload flow rate Q_4	m³/h	3.13		
Minimum flow rate Q_1 • Horizontal (R80) • Vertical (R40)	l/h l/h	31.25 62.5		
Transitional flow rate Q_2 • Horizontal (R80) • Vertical (R40)	l/h l/h	50.0 100.0		
Response threshold (typical)	l/h	ca. 4 -5 l		
Measuring range • Cold water meter WFK636.. • Hot water meter WMW636..	5°C···≤30°C 30°C··· ≤90°C			
Rated pressure	1.6 MPa (PN16)			
Mounting position	Horizontal/vertical			
Display	8-digit LCD field			

Housing type	
Protection class	III
Degree of protection	
Computer electronics	IP65 / IP68 per EN 60529
Flow measuring section	IP65 / IP68 per EN 60529

Ambient conditions	Operation EN 60721-3-3	Transportation EN 60721-3-2	Storage EN 60721-3-1
Climatic conditions	3K4	2K3	1K3
Temperature	5···55 ° C	-25···70 ° C	-5···45 ° C
Humidity	<93 % r.h. at 25 ° C (non-condensing)		
Mechanical conditions	3M2	2M2	1M2

Standards, directives and approvals	
EU conformity (CE)	A5W00152985A *)
Flow profile sensitivity classes	U0 / D0
Product standard	EN14154

Environmental compatibility
The product environmental declaration A5W00146668 *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

Dimensions
See "Dimensions"

Housing material	
Flow measuring section	Screw-type water meter: Brass Measuring capsule water meter: Plastic
Totalizer	Plastic

Housing colors	
Totalizer	Transparent

Weight of screw-type water meter WF.636..	
Device packed complete with inserts	2.5 m^3/h / 80 mm: 0.403 kg 2.5 m^3/h / 110 mm: 0.437 kg 4 m^3/h / 130 mm: 0.31 kg

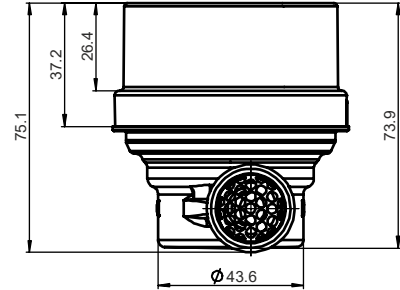| Weight measuring capsule water meter WM.636..	
Device packed complete with inserts	IST: 2.5 m^3/h / 80 mm: 0.279 kg TE1: 2.5 m^3/h / 110 mm: 0.233 kg A34: 4.0 m^3/h / 130 mm: 0.523 kg

*) The documents can be downloaded at http://siemens.com/bt/download.

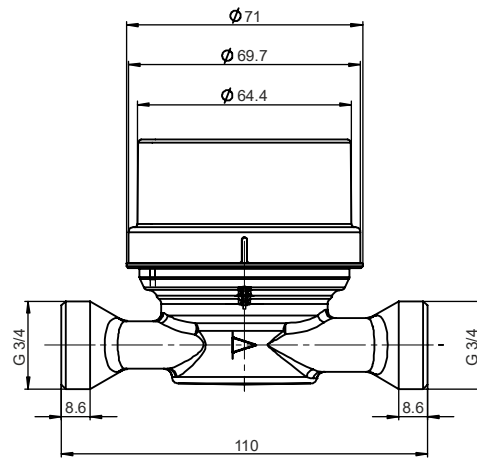### Screwed-type water meter
Dimensions in mm
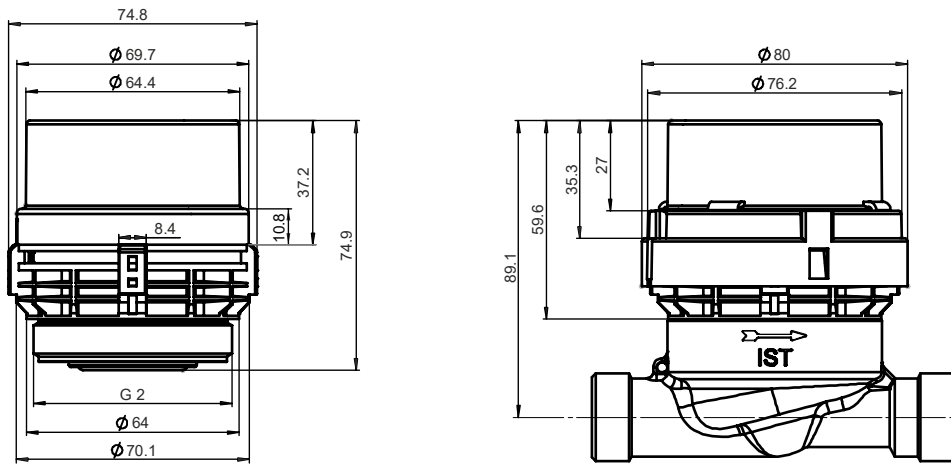
$Q_3 = 2.5 \ m^3/h$, L = 80 mm,
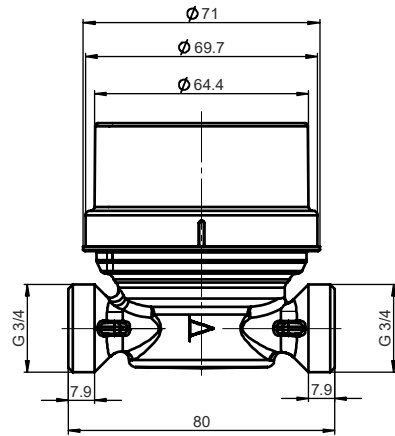
$Q_3 = 2.5 \ m^3/h$, L = 110 mm
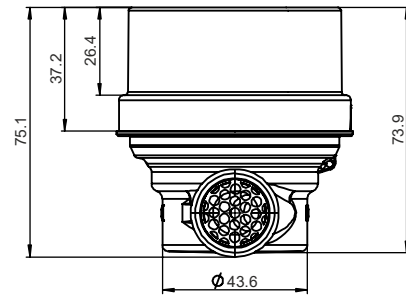
$Q_3 = 4\ m3/h,\ L = 130\ mm$
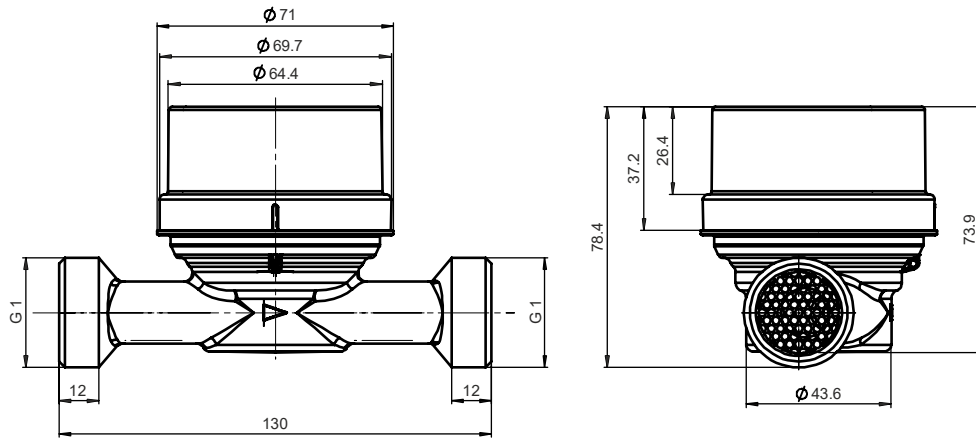
Measuring capsule water meter
Dimensions in mm
Type IS, connecting thread G 2"

Type AL, connecting thread M77 x 1.5 mm"

Type TE – Connecting thread M62 x 2 mm"

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