Water meter
Ultrasonic

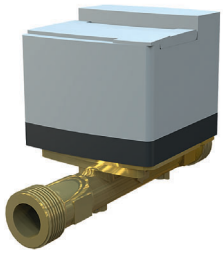
AT 7450A

Internet_Variants

Dimension range	PN	Temperature range	Material
G 3/4 - G 2	16	+0,1 °C to +70 °C	Brass/Composite

Range of application

Measurent of cold and warm water through a digital display showing total consumed amount. The area of use is applications with high demands of accuracy, meter data like instantaneous and peak flows in combination with leakage indication. The measurement principle of the meter is based on the ultrasonic principle,thereof has no movable parts (static flow metering). Meter consumption is registred electronically and intergrated remote reading with possibility the chose either wired M-Bus or wireless M-Bus communication (OMS).



Program text

UGE.35 Meter for flow, pipe mounted with digital display, accumulated value.
Meter for cold tap water AT 7450A-...., Q_3 .... m^3/h, DN ...., PN16, in composite. Including remote reading by wired M-Bus or wireless M-Bus.

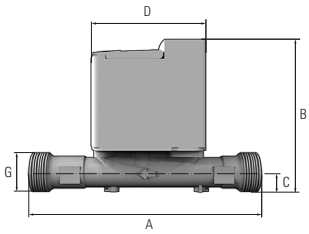
Quality assurance

2004/22/EC (MID), CE, EN 14154:2007, OIML R49:2006. Drinking water approval KTW/DVGW (D), WRAS (UK), ACS (F)

Dimensions and weight

	Q_3 2,5	Q_3 4	Q_3 6,3/10	Q_3 16
Connection after DN	15	20	25	40
A (Length)	110	190	260	300
B wM-bus	113	113	124	139,5
B M-bus	132	132	142,4	158
C	17	17	25,4	33
D	93	93	93	93
Connection, meter	3/4"	1"	11/2"	2"
Weight	1	1,2	1,8	2,4

Measurements in mm, weight kg



Function and design

The water meter is an ultrasonic meter with an accuracy Ratio of R400. This means that the meter measures extremely thoroughly even at a low flow and across the entire flow range. The meter has an electronic counter and is battery driven with up to 15 years life span under normal operational conditions. The meter has no moveable parts and is therefore mostly maintenance free. It is not affected by air bubbles, sand, particles or network-specific features such as pressure drops or overload flow.

The meter has a high update frequency with low power consumption. The meters design allows mounting of the the meter in any position under the condition that the meter is installed with the flow arrow in the the flow direction.

Remote reading possibilities are wired M-Bus and wMbus (wireless M-bus). Wired M-Bus with baudrate 300-2400 bp according to EN 13757. The wireless M-Bus protocol, supports OMS. Signal power is 25 mW and signal strength is 12 dBm.

Technical information

	Meteorological properties	7450A 15-2,5	7450-20-A	7450A 25-6,3	7450A 25-10	7450A 40-16
Q_3	Permanent flow, m^3/h (meter size)	2,5	4	6,3	10	16
R	Ratio (Q_3/Q_1)	400	400	400	400	400
	Start flow, l/h	2,0	2,0	6	6	15
Q_1	Minimum flow, l/h (tolerance +- 5%).	6,4	10	15,8	25	40
Q_2	Boundary flow, l/h (tolerance +-2%).	10	16	25	40	64
Q_4	Overload flow, m^3/h	3,125	5	8	12,5	20

The values in the table above are well within the meteorological properties that are described in Swedac's regulations for MID 2004/22/EC and EN 14154 (Machine Instrument Directive)

Data

Material meter body	Brass CW617N
Temperature range cold water:	0,1° C up to 70° C
Ambient temperature:	5 oC till 35oC
Nominal Pressure class:	PN 16
Mechanical environment class	M2 acc. to. MID, fixed installation with minimal vibration
Electromechanical environment class	E1 och E2 acc. to. MID, residential houses and commercial properties
Protection class:	IP68
Operational temperature:	-15° C (min. flow 100 l/h to prevent freezing) up to + 60° C
Remote reading radio:	- Wireless wM-Bus mode T enl. EN13757-4 - T1 mode, OMS - Wired M-Bus
Radio frequency:	868 MHz (standard)

Largest allowed margin of error according to Swedac's regulations

Flow range	Q_1 - Q_2 (Q_{min} - Q_t)	± 5%
	Q_2 - Q_4 (Q_n - Q_{max})	± 2%

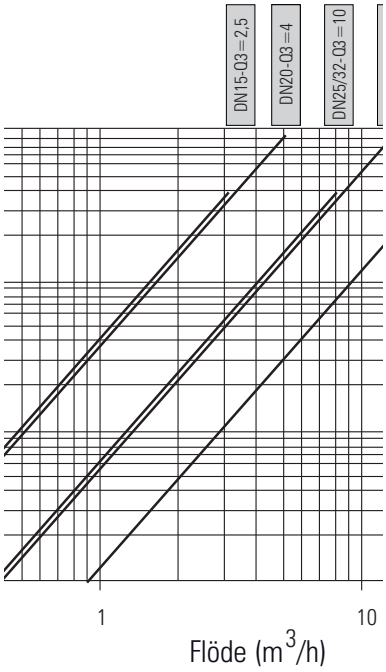
Sizing

During sizing the pressure drop in the water meter can be allowed to reach up to 0,5 bar (500 mbar) under probable flow according to Svenskt Vatten's regulations P100.

Accessories and options

- Couplings and consoles
- Transition valve from Q3 2,5 to Q3 4 190mm
- Other lengths on request
- Installation accessories, consoles and parallel couplings see product sheet for AT 7358, 7359, 7360
- Customer specific serial number, bar code, logotype printed on the gauges top part/side.

For remote reading through wM-Bus or wired M-Bus , the meter needs to be connected to a M-Bus master unit/gateway.



Installation

The meter body can be installed in any position, regardless of flow direction without affecting its meteorological properties. The meter measuring principle is based on the ultrasonic principle and is activated when installed. Surrounding operational temperature should be within +60°C down to -15°C (assuming a minimum flow of 100 l/h to prevent freezing). For more detailed information regarding installation see the instruction manual.

To secure the long term operation, the installation should always be performed with a water meter console (see under accessories). Shut-off valves should always be mounted on the console's in and output.

The back flow protection after the water meter should be a protection module type EA (controllable check valve) AT 1159 with shut-off valve mounted on the input side, alternatively cartridge check valve AT 7059 should be mounted in the meter's output.

Before the water meter is mounted, it's important to flush the pipeline.

Maintenance and spare parts

When charging of household consumption using the meter's registreted counter it should be done according to Swedacs regulations STAFS 2007:2, which means that recurring control of (meter revision) with an interval of at max 10 year for Q3 4 and max 5 years for Q3 10-16. Control and revision is performed by the meter workshop that is the accredited control body.

The meter has no movable parts. The life span of the lithium battery is calculated to be up to 15 year under normal operational conditions. The battery is not replacable but extractable for recycling.

Marking

The meter is marked Intelis and provided with a barcode of serial numbers. It's also marked with Q_3, R-values, manufacturing year, CE, MID-approval number and serial number.

How to order

Dimension DN	Meter size (m^3/h)	Article number	Communication	RSK-number
15	Q_3 2,5	AT 7450A15-2,5M	M-Bus	5182371
		AT 7450A15-2,5wM	wM-Bus	5182366
20	Q_3 4	AT 7450A20-4M	M-Bus	5182372
		AT 7450A20-4wM	wM-Bus	5182367
25	Q_3 6,3	AT 7450A25-6,3M	M-Bus	5182373
		AT 7450A25-6,3wM	wM-Bus	5182368
25	Q_3 10	AT 7450A25-10M	M-Bus	5182374
		AT 7450A25-10wM	wM-Bus	5182369
40	Q_3 16	AT 7450A40-16M	M-Bus	5182375
		AT 7450A40-16wM	wM-Bus	5182370