420PC

Multijet meter Semi dry – Protected dial HRI AMR interface

Main Features

DN15 to 40 PN 16

Excellent legibility of the register on all networks due to the protected dial

AMR compatible with HRI systems providing a pulse weight from 1 litre

Strong protection against tampering

Robust, suited to extended periods of immersion

Optional customized meter marking (serial number, bar code, customer logo)

Accuracy

The balanced force and upward movement of the water in the injection box means that the starting flow rate is low.

The direct transmission gives the 420PC a good sensitivity, especially at low flow rates.

Reliability

The 420PC meter has high protection against corrosion, water hammer, pressure and heat due to the use of high quality copper alloy and thick polycarbonate window.

The internal components, made of high-grade polymers, have been designed to preserve the initial performance of the meter:

- the turbine is supported by sapphire which prevents shaft wear
- the surface finish of the injection box prevents deposits forming. The double filtration provided by the pipe strainer and the seat filter prevents foreign bodies passing through the mechanism.

Approvals

The 420PC meter is approved to the MID pattern approval for installation in horizontal position:

MID DE-18-MI001-PTB004

Q = 2,5; 4; 6,3; 10; 16

APPLICATIONS

As with all meters in the Sensus portfolio, the 420PC multijet meter benefits from our long experience in the manufacture of high-performance meters.

The 420PC reliability, resistance to bad water quality and quiet operation will satisfy both end users and network managers.

The dial is housed in a case filled with lubricant, which means it is protected from the impurities in the network. It can be read perfectly under all conditions and is not affected by fogging or the build up of algae.

The new oversized identification plate legibly shows all the meter characteristics and provides the possibility for a customized bar code or logo.

Through its standard HRI interface the 420PC can be used in any network where a reliable and versatile AMR systems is required. The HRI solution is retrofittable and can be added at any time after the meter has been installed.

AVAILABLE OPTIONS

Non return valve

HRI electronic sensor (Data Unit, Pulse Unit)

Connectors

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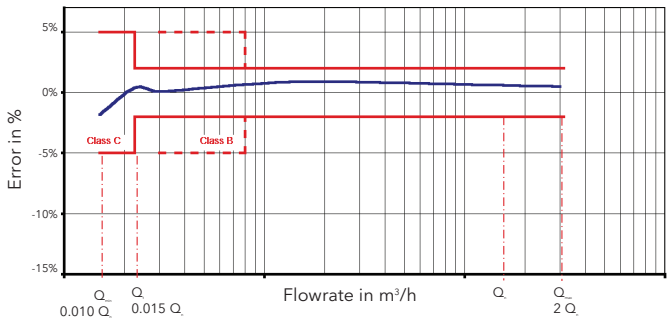
Register

The 5-drum display has large digits (5mm high) on a white background. This means the meter can be read from a distance of over one meter. Pointers on the dial show sub-multiples of a m³.

The register wheels for m³ and the first pointer are immersed in a lubricant, ensuring optimum operation and protection. This technique prevents any condensation and enables perfect legibility of the counter under all conditions, irrespective of the nature of the water.

The counter is protected by a very thick polymer glass designed to withstand the pressure and environment changes during all meter life.

Typical Accuracy Curve

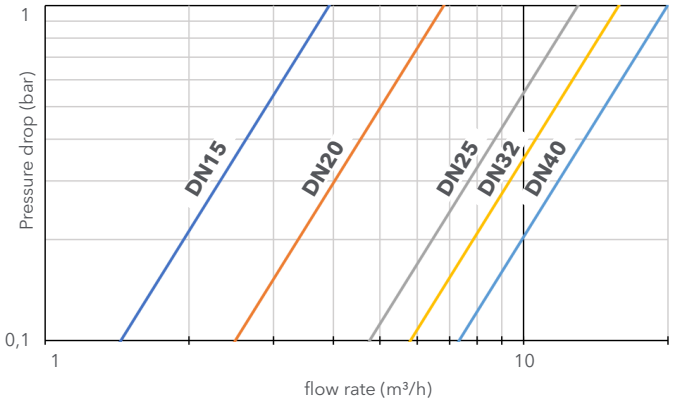


Tampering protection

Through its design, the 420PC offers extreme high protection against tampering to avoid any misuse of the meter:

- As the meter has no magnetic transmission and a magnet free HRI interface, it is totally unaffected by a magnet placed near the meter
- The use of a robust brass body combined with a thick (8 mm) polycarbonate window prevents any mechanical tampering.

Typical Head Loss Curve



Compliance

The 420PC meter complies with:

- ISO 4064,
- Recommendation n°49 of the OIML,
- EC directive 75/33.
- PN-ISO 14154

Installation and maintenance instructions

The 420PC meter must be installed in a low point of the pipeline.

The meter must be installed with the arrow cast on the body corresponding to the direction of water flow.

Before fitting the water meter, all pipe work must be flushed out to remove all foreign bodies.

An upstream valve is recommended to allow installation and removal of the meter. When turning on the water supply, the upstream valve must be opened slowly in order to fill the meter with water smoothly.

During tightening, the meter can be maintained in position with a standard tool using to the flats on the pipe.

No special maintenance is required.

Marking

Two arrows on the body show the direction of flow.

The nominal flowrate, the metrological class, the MID pattern approval number, the year of manufacture and the individual meter number are engraved on the identification plate on top of meter.

The manufacturer's name and the type of the meter are printed on the dial.

The meter can be customized on request with specific serial number, bar code or logo.

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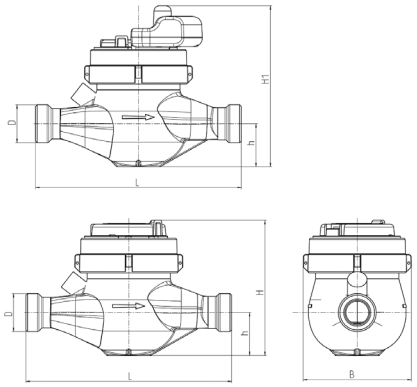
Dimensional Diagram



DIMENSIONS AND WEIGHTS

Dimensional characteristics							
Nominal size	DN (Q_n)	mm	15	20	25	32	40
Length	L	mm	165[2]	190[1]	260	260	300
Width	D	mm	96	96	103	103	134
Total Height	H	mm	120	120	135	135	152
Total height with assembled HRI			150	150	165	165	182
Height to pipe axis	h	mm	34	36.5	45	45	61
Piping dimension		inch	½"	¾"	1"	1¼"	1½"
Transitional flow rate		inch	¾"	1"	1¼"	1½"	2"
Tail		mm	¾"	1"	1¼"	1½"	2"
Piece	Diameter	mm	26.44	33.25	41.91	47.80	59.61
Thread	Pitch	kg	1.814	2.309	2.309	2.309	2.309
Weight		kg	1.4	1.6	2.3	2.5	5.0

[1] also available in length 145 and 170 mm [2] also available in length 165 mm

PERFORMANCE DATA

Metrological characteristics – ISO 14154							
Nominal size	DN	mm	15	20	25	32	40
Permanent flow rate	Q_3	m^3/h	2.5	4	6.3	10	16
Value of ratio R	Q_3/Q_1	-	160/80/40				
Overload flow rate	Q_4	m^3/h	3.125	5	7.875	12.5	20
Minimum flow rate	Q1 (tolerance ±5%)	l/h	16	25	39	63	100
Transitional flow rate	Q_2 (tolerance ±2%)	l/h	25	40	63	100	160
Ratio	Q_2/Q_1	-	1.6	1.6	1.6	1.6	1.6

Technical characteristics – ISO 14154						
Nominal size DN	mm	15	20	25	32	40
Nominal flow Q^3	m^3/h	2.5	2.5; 4	4	6.3 & 10	16
Register type	-	Semidry				
Indication range	m^3	10^5				
Calibration value	m^3	0.05				
Maximum admissible pressure /MAP/	bar	16				
Working pressure range / Δp/	bar	0.3 to 16				
Pressure loss	bar	0.63				
Temperature class / MAT/	°C	T 50				
Flow profile sensitivity classes	-	U0, D0				
Position	-	H				
Connection		G¾ B	G1"B	G1¼"B	G1½"B	G2"B
Climatic and mechanical environments	-	Closed spaces/from-10°C until 55 °C/ mech.class M2				
Electromagnetic environments	-	E1				

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HRI Options

The dial of the meter is equipped as standard with a pointer, which is prepared to be scanned with compatible modules such as HRI or CompactRF. This inductive scanning is extremely robust and also takes the flow direction into account. This ensures that the counter reading of the mechanical dial is accurately reproduced. The HRI provides a reliable pulse or data interface for both mobile and remote reading. The HRI or Sensus CompactRF can be field mounted to already installed Sensus water meters, or ordered factory mounted to the meter.

For more information, please refer to the HRI, Sensus CompactRF and Sensus PulseRF module data sheets.

The HRI is available in two variants:

HRI

1. HRI-A Pulse Unit

The resolution of the input pulses is 1 liter per pulse. Different versions of the HRI-A with fixed output pulse values are available.

2. HRI-B Data Unit

The HRI data unit integrates a data interface. The meter reading as well as the serial number can be read out via an M-Bus network according to EN 13757. Alternatively, the pulse output can be used. This can be configured via the data interface.

3. Sensus CompactRF and Sensus PulseRF-A3 radio modules

a. Sensus CompactRF

The module can be placed on the meter and thus forms a meter with radio module.

Sensus CompactRF

b. Sensus PulseRF-A3

The pulse pickup is placed on the meter. The actual radio module is connected with a cable and allows remote operation, e.g. to enable a secure radio connection in difficult radio conditions.

Sensus PulseRF-A3

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