

ALTAIR V4 DN15/20

User guide



Table of contents

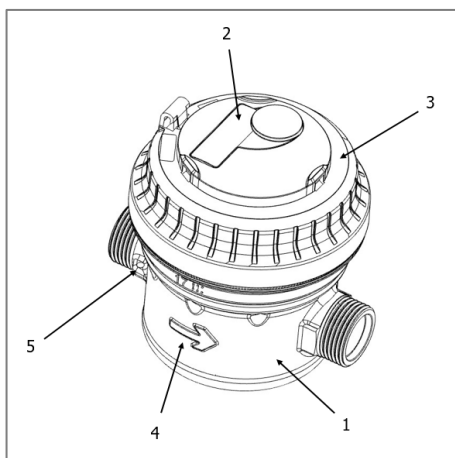
1	Product description	3
1.1	General principle	3
1.2	Metrological features	4
1.2.1	Calibration curve.....	4
1.2.2	Pressure loss	4
1.3	Technical features.....	5
1.4	Dimensions.....	6
2	Installation	7
2.1	Installation precautions	7
2.1.1	Cleaning the pipes	7
2.1.2	Pipes alignment.....	7
2.2	Installation principle	7
2.2.1	Installation position	7
2.2.2	Place of installation.....	8
2.2.3	Installation recommendations.....	8
2.2.4	Liability	9
3	Precautions of use	10
4	Regulations	10
5	Metrological curve.....	11

1 PRODUCT DESCRIPTION

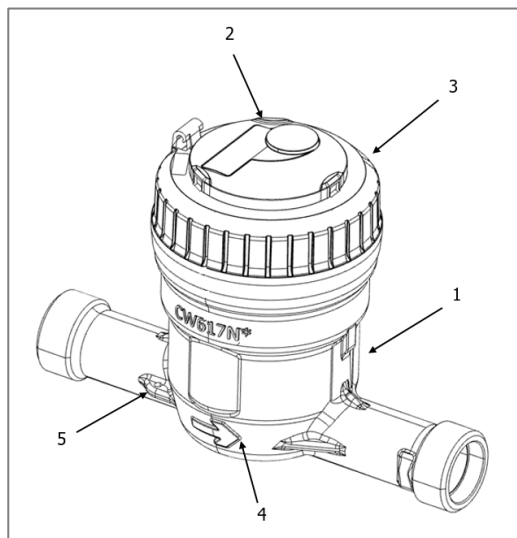
1.1 GENERAL PRINCIPLE

ALTAIR V4 is a volumetric water meter designed in accordance with EN 14154, ISO 4064 and OIML R49 standards. It has a MID certification and complies with the sanitary standards applicable to materials in contact with water. It is a measuring device approved for invoicing that must be handled with care.

ALTAIR V4 is made of a brass or composite body (1) containing the hydraulic parts, a register (2) and a grey ring (3) that seals the register to the body. This ring rotates freely ensuring optimal legibility of the data. 2 arrows (4) indicate which way the water is flowing. The hole (5) enables on-site sealing of the meter.



ALTAIR V4 DN15



ALTAIR V4 DN20

fig.1

1.2 METROLOGICAL FEATURES

1.2.1 CALIBRATION CURVE

ALTAIR V4 has been manufactured with care to ensure high precision and reduced standard deviation (see chapter 5: metrological curves). It is MID approved up to R=800.

Nominal diameter	mm	15	15	15	15	15	20
Length*	L mm	110	115	134	165	170	115
Nominal flow rate	Q ₃ m ³ /h	2.5	2.5	2.5	2.5	2.5	2.5
R standard*	Q ₃ /Q ₁	160	160	160	160	160	160
Starting flow rate	l/h	0.4	0.4	0.4	0.4	0.4	0.4
Minimum flow rate*	Q ₁ l/h	15.62	15.62	15.62	15.62	15.62	15.62
Transition flow rate*	Q ₂ l/h	25	25	25	25	25	25
Maximum flow rate	Q ₄ m ³ /h	3.125	3.125	3.125	3.125	3.125	3.125
Head loss at Q ₃	bar	0.59	0.59	0.59	0.59	0.59	0.59
Head loss at Q ₄	bar	0.92	0.92	0.92	0.92	0.92	0.92
Kvs (deltaP=Q ² /Kvs ²)		3.25	3.25	3.25	3.25	3.25	3.25
Nominal diameter	mm	20	20	20	20	20	
Length*	L mm	165	190	110	165	190	
Nominal flow rate	Q ₃ m ³ /h	2.5	2.5	4	4	4	
R standard*	Q ₃ /Q ₁	160	160	160	160	160	
Starting flow rate	l/h	0.4	0.4	0.7	0.7	0.7	
Minimum flow rate*	Q ₁ l/h	15.62	15.62	25	25	25	
Transition flow rate*	Q ₂ l/h	25	25	40	40	40	
Maximum flow rate	Q ₄ m ³ /h	3.125	3.125	5	5	5	
Head loss at Q ₃	bar	0.59	0.59	0.55	0.55	0.55 / 0.57**	
Head loss at Q ₄	bar	0.92	0.92	0.85	0.85	0.85 / 0.89**	
Kvs (deltaP=Q ² /Kvs ²)		3.25	3.25	5.41	5.41	5.41 / 5.30**	

* other values on request

** composite version

1.2.2 PRESSURE LOSS

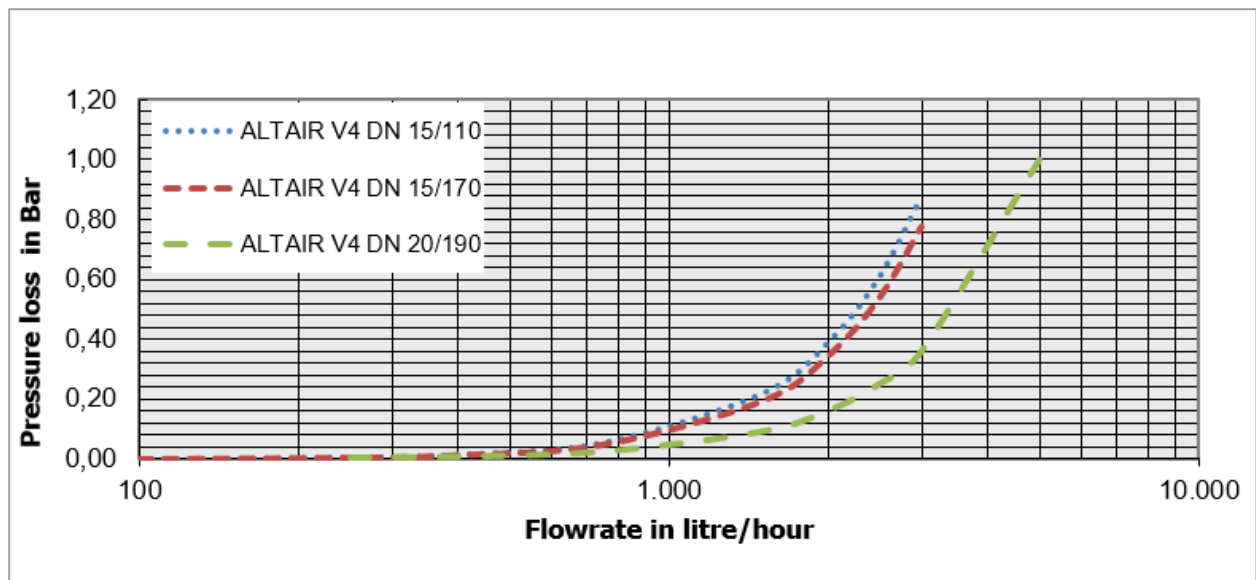


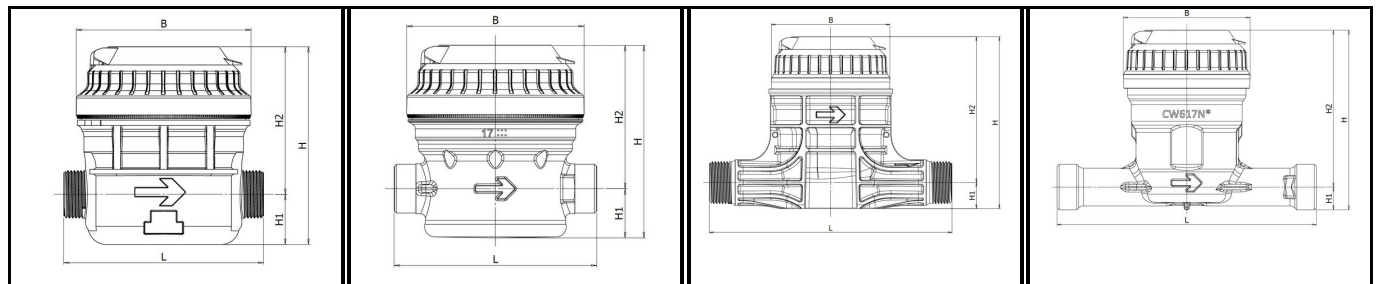
fig.2

1.3 TECHNICAL FEATURES

Features	Description
Body	Brass or composite.
Ring	Grey → cold water.
Register	Plastic by default. Glass-metal in option. Waterproof → the register withstands prolonged immersion.
Modularity	Pre-equipped to be fitted (even on-site) with clip-on modules of the IZAR range: <ul style="list-style-type: none"> • IZAR RC i - Radio module • IZAR PULSE i - pulse emitter • IZAR MBUS COMPACT i - M-Bus emitter • IZAR DOSING - electronic register with reset
Temperatures	Water temperature: +0.1 ... +50°C (T50) Ambient operating temperature: +1 ... +55°C max Storage temperature: -10 ... +55°C max
Frost protection	Protect the meter from frost by completely draining all the water it contains. Shut the upstream valve of the meter and open the downstream valve to purge the circuit. Caution: The pressure plate may break if the meter is not drained.
Filtration	Clog-proof plastic filter located under the measuring chamber. The filter is tear resistant and can withstand the pressure of the network (max. 16 bars). Caution: during normal operation, water going through the meter must not contain any suspended solid particles larger than 0.1 mm for a concentration of 0.1 gram/litre. A stainless steel gasket filter available in option can also be installed in the inlet pipe of the meter.
Clogging	Patented fluid collector enabling solid particles to go through the measuring chamber without damaging its walls.
Static pressure	Nominal pressure: 16 bars max. Test pressure: 32 bars (in accordance with ISO4064 / EN14154 / OIML R49). Breaking pressure greater than 70 bars.
Resistance to pressure loss	Withstands at least 15,000 cycles of 0.6 seconds from 3 to 32 bars.
Sudden influx of water	Caution: while working on the pipes, carefully bleed the pipes in order to prevent the formation of air bubbles, which could damage the meter when the water is turned back on.

Features	Description
Endurance	Compliant with the MID regulatory tests. Resistance: 100,000 cycles at Q ₃ and 100 hours at Q ₄ .
Overflow	Resistance to a flowrate of 2xQ ₄ during 10 minutes without any damage to the parts.
Non-return valve	Possibility of adding a non-return valve in the outlet nozzle.
Fraud resistance	Fraud attempt with a clamp: → the orange pin indicator of the plastic register will disappear or the glass/metal register will crush. Fraud attempt by opening the sealed ring: → visible deterioration of the sealing ring.

1.4 DIMENSIONS



DN 15 - composite

DN 15 - brass

DN 20 - composite

DN 20 - brass

fig.3

Nominal diameter	mm	15	15	15	15	15	20	
Length*	L	mm	110	115	134	165	170	115
Nominal flow rate	Q ₃	m ³ /h	2.5	2.5	2.5	2.5	2.5	2.5
Housing			brass / composite	brass / composite	brass / composite	brass / composite	brass / composite	composite
Width	B	mm	96.2	96.2	96.2	96.2	96.2	96.2
Height	H	mm	104.4 / 109	104.4 / 109	104.4 / 109	104.4 / 109	104.4 / 109	109
Height	H1	mm	26.7 / 28	26.7 / 28	26.7 / 28	26.7 / 28	26.7 / 28	28
Height	H2	mm	77.7 / 81	77.7 / 81	77.7 / 81	77.7 / 81	77.7 / 81	81
Thread connections	inch		3/4"	3/4" - 7/8"	3/4"	3/4"	3/4"	1"
Weight	kg		0.9 / 0.5	1 / 0.5	1 / 0.6	1 / 0.6	1 / 0.6	0.5

Nominal diameter	mm	20	20	20	20	20	
Length*	L	mm	165	190	110	165	190
Nominal flow rate	Q ₃	m ³ /h	2.5	2.5	4	4	4
Housing			brass / composite	brass	brass	brass	brass / composite
Width	B	mm	96.2	95.9	92.7	92.7	92.7
Height	H	mm	104.4 / 109	104.1	131	131	131 / 134.8
Height	H1	mm	26.7 / 28	26.1	16.6	16.6	16.6 / 20.4
Height	H2	mm	77.7 / 81	78	114.4	114.4	114.4
Thread connections	inch		1"	1"	1"	1"	1"
Weight	kg		1 / 0.6	1	1.2	1.4	1.4 / 0.7

*other values on request

2 INSTALLATION

2.1 INSTALLATION PRECAUTIONS

To be carried out in accordance with EN ISO 4064-5:2017 and EN14154-2:2005 +A2:2011.

2.1.1 CLEANING THE PIPES

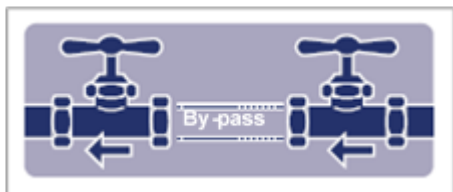


fig.4

ALTAIR V4 meter must be installed on a clean pipe, free from solid particles on the inside.

If in doubt, replace the meter by a bypass sleeve and clean the pipe out with high-flowrate water flushing.

2.1.2 PIPES ALIGNMENT

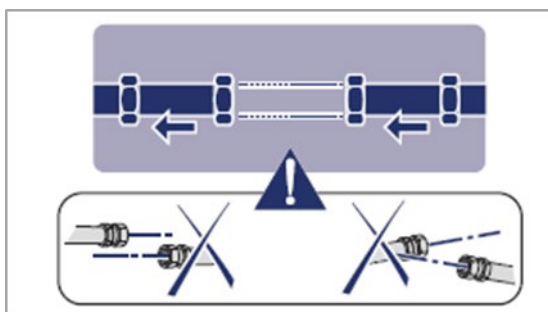


fig.5

The pipes must be perfectly aligned in order to minimize mechanical stresses on the body of the meter.

Use a drilled nut (or a plastic seal) to seal the meter on the inlet side.

2.2 INSTALLATION PRINCIPLE

2.2.1 INSTALLATION POSITION

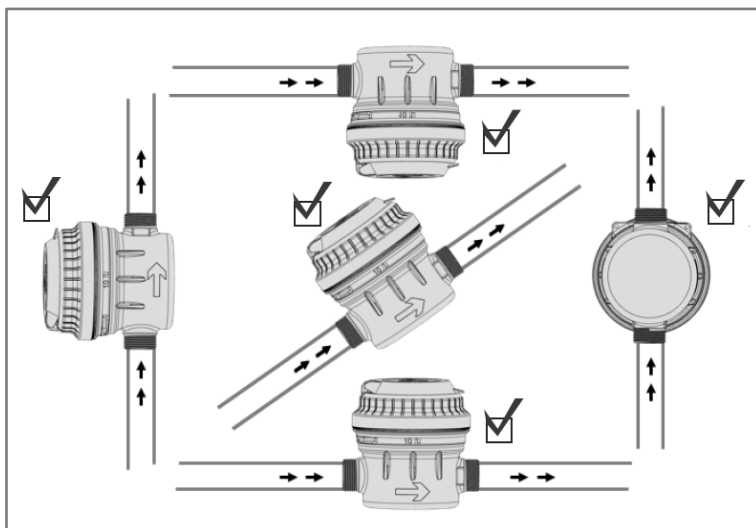


fig.6

ALTAIR V4 retains its metrological properties regardless of its installation position - horizontal or vertical.

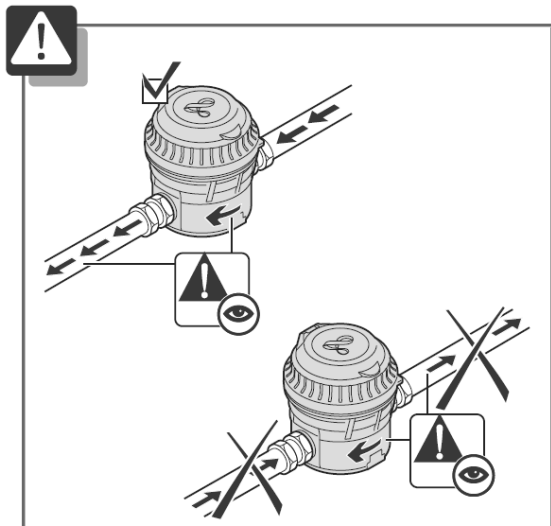


fig.7

Check that the direction of the water flow matches the direction of the arrows located on the meter's body.

2.2.2 PLACE OF INSTALLATION

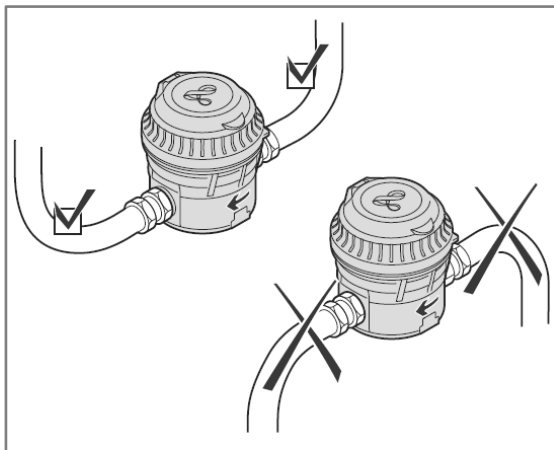


fig.8

The metered water must be free from gas.

Install ALTAIR V4 DN15/20 at a low point of a pipe to prevent the formation of air pockets.

No straight length is required either before or after the meter (U0 / D0 approved).

2.2.3 INSTALLATION RECOMMENDATIONS

The body of the meter incorporates two nozzles, each with a standard connection thread. The gaskets that form the seal between the meter and the connectors are not included.

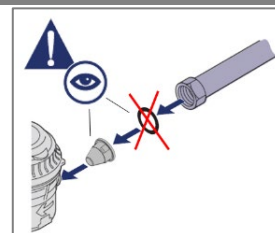


Caution: do not use any Teflon tape or threadlocker.



Caution: if a gasket filter is installed in the inlet pipe, do not install an additional gasket.

Note: a gasket (fibre, rubber or filter gasket) is for single use only.



Brass body: flat retaining areas have been provided on the outlet nozzle. The use of a second spanner will keep the meter from rotating when it is being tightened, thereby preventing any harm to the seal (max. torque: 30 Nm).

Composite body: Start to screw the inlet pipe first. Do not use a second spanner to hold the meter. Holding it by hand during screwing is enough. Screw reasonably tight according to good workmanship practices (30 Nm max.).

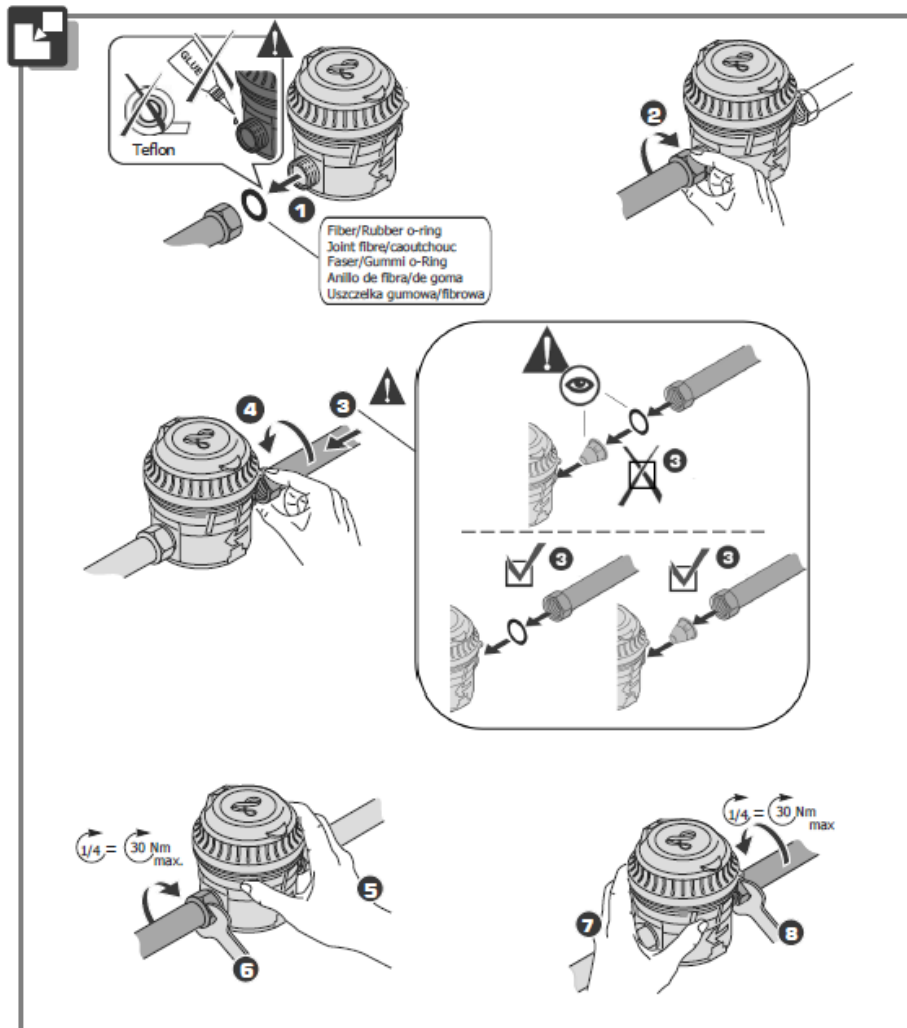


fig.9

2.2.4 LIABILITY



If the installation is not carried out in accordance with good workmanship practices, and if the above mentioned procedures are not followed, the warranty shall be null and void.



In case of any treatment or additional substances in the water (additives), the installer or the operator has to make sure that the characteristics of the drinking water and the materials of the installation -meter included- are not altered.

3 PRECAUTIONS OF USE

Storage	Do not store the meters for more than 3 months. Do not stack the pallets. Do not place loads of more than 80 kg on the meter.
Cleaning	Use only soapy water or slightly acidified water to clean the meter. The use of solvents or abrasive cleaners is prohibited.
Stepping	ALTAIR V4 DN15/20 should not be used as a step. However with its cover closed, it can withstand the load of a person weighing less than 80 kg.
Drop test	Designed to withstand a fall of 1 m onto a hard floor. In the event of a fall, or if the meter shows traces of impact, we recommend testing it prior to installation.

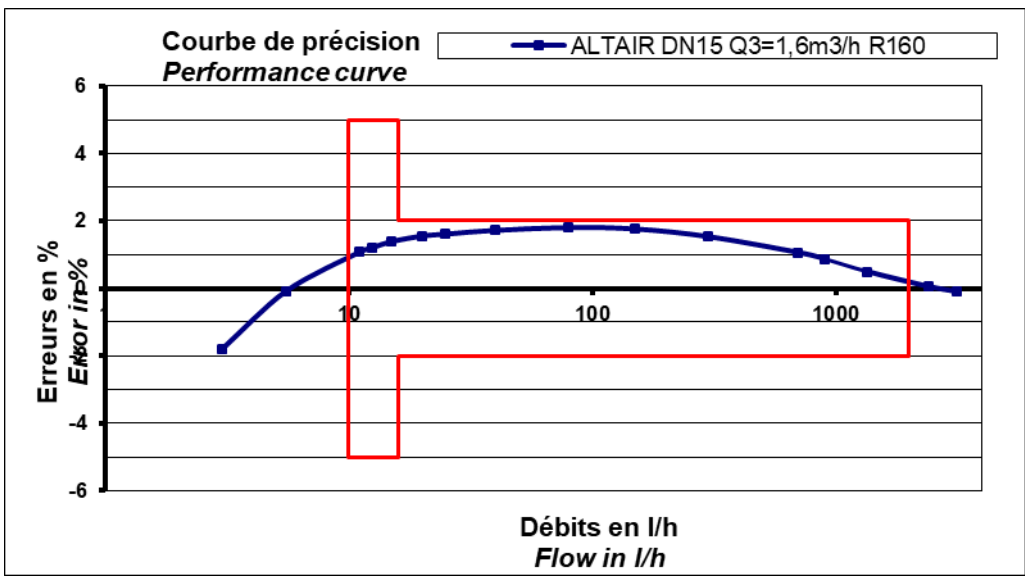
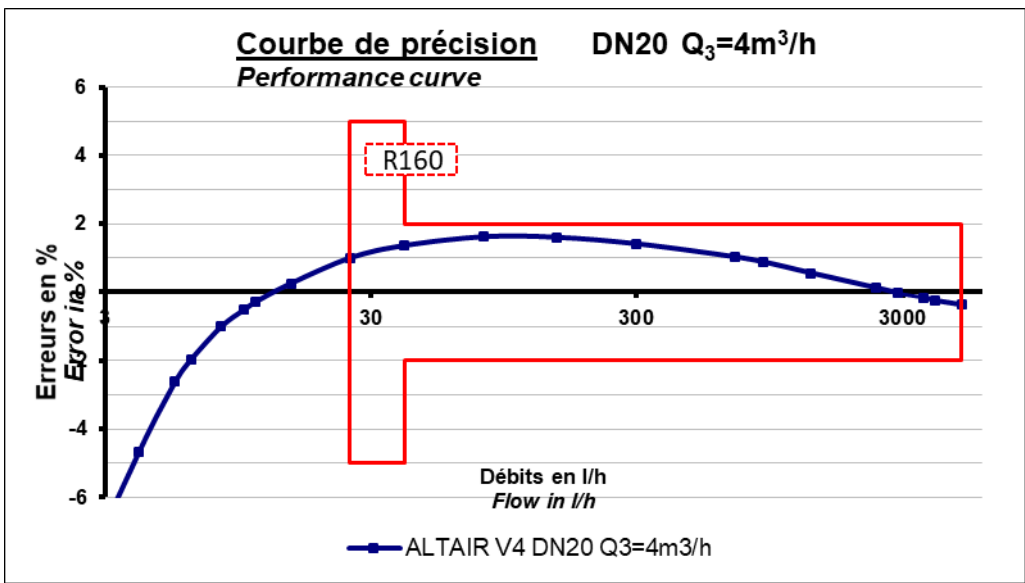
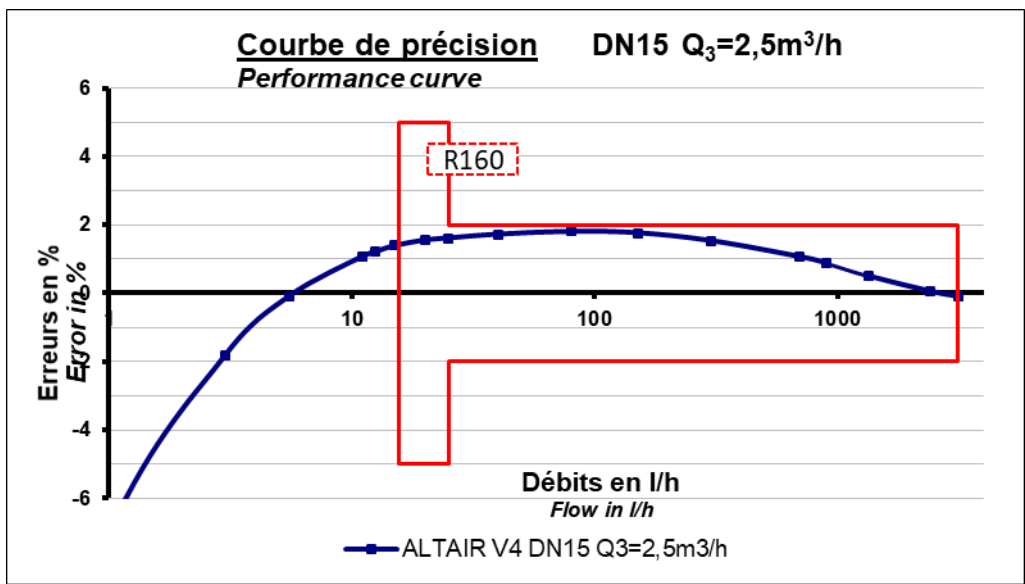
4 REGULATIONS

ALTAIR V4 DN15/20 meters comply with the European directives as indicated on the EU declaration of conformity delivered with the product and available at:

<https://www.diehl.com/metering/en/diehl-metering/support-center/downloads>

It also meets the food-grade requirements relating to materials in contact with water.

5 METROLOGICAL CURVE



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