

# AURIGA DN 15/20

User guide



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# 1 PRODUCT DESCRIPTION

## 1.1 GENERAL PRINCIPLE

AURIGA is a single jet water meter designed in accordance with EN 14154, ISO 4064 and OIML R49 standards. It has a MID certification and complies with the standard applying to materials in contact with water. It is a measuring device approved for invoicing that must be handled with care.

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

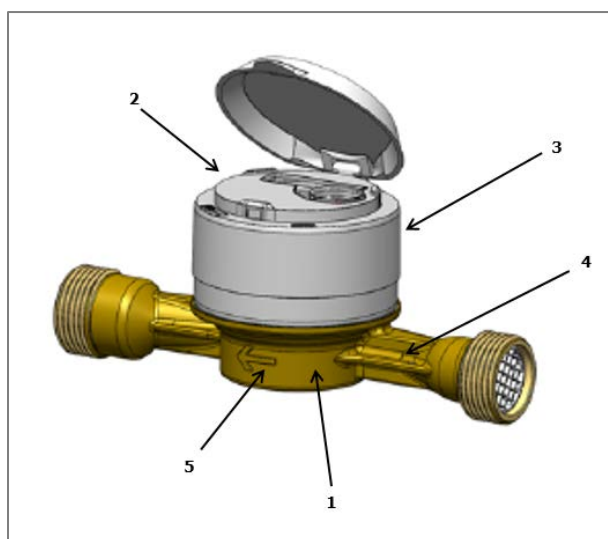


fig.1

## 1.2 METROLOGICAL FEATURES

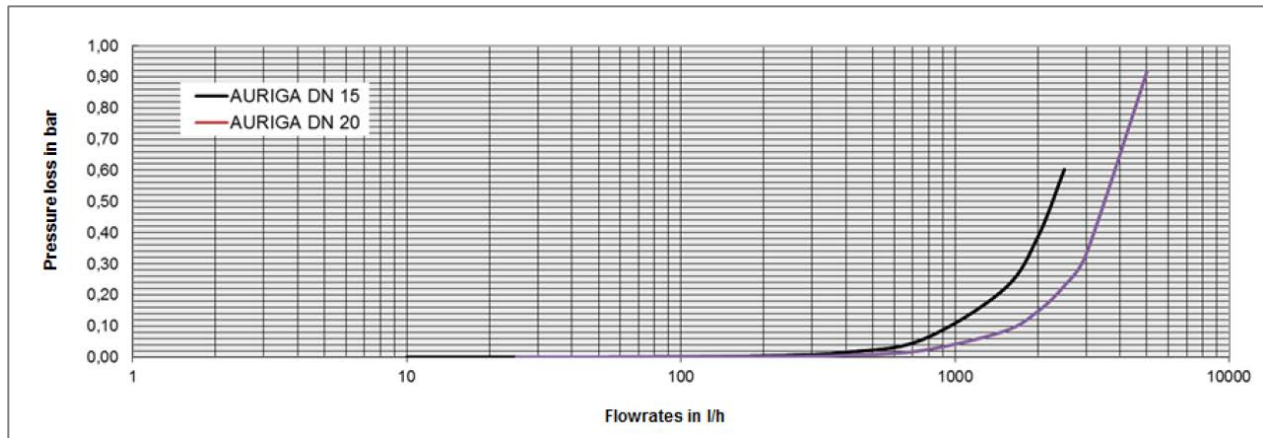
### 1.2.1 CALIBRATION CURVE

AURIGA has been manufactured with care to ensure high precision and reduced standard deviation. It is MID approved up to R=160H and R=63V (see metrological curves chapter 5).

Nominal diameter	DN	mm	15	15	20	20
Length	L	mm	165/170	165/170	190	190
R standard*	Q <sub>3</sub> /Q <sub>1</sub>		160H-63V	125H-63V	160H-63V	125H-63V
Nominal flowrate	Q <sub>3</sub>	m <sup>3</sup> /h	2.5	2.5	4	4
Starting flowrate horizontal		l/h	3	6	8	12
Minimum flowrate horizontal	Q <sub>1</sub>	l/h	15.625	20	25	32
Transition flowrate horizontal	Q <sub>2</sub>	l/h	25	32	40	51.2
Minimum flowrate vertical	Q <sub>1</sub>	l/h	39.7	39.7	63.5	63.5
Transition flowrate vertical	Q <sub>2</sub>	l/h	63.5	63.5	101.6	101.6
Maximum flowrate	Q <sub>4</sub>	m <sup>3</sup> /h	3.125	3.125	5	5
Head loss at Q <sub>3</sub>		bar	0.60	0.60	0.58	0.58
Head loss at Q <sub>4</sub>		bar	0.94	0.94	0.91	0.91
kvs (deltaP=Q <sup>2</sup> /Kvs <sup>2</sup> )			3.22	3.22	5.25	5.25

\*Other values on request - H=horizontal installation position / V=vertical installation position

### 1.2.2 PRESSURE LOSS



### 1.3 TECHNICAL FEATURES

<b>Body</b>	Brass
<b>Ring</b>	Grey -> cold water
<b>Register</b>	Glass in standard -> high resistance to moisture in extreme environments (e.g. a manhole that is flooded on a regular basis). Plastic in option Waterproof -> the register withstands prolonged immersion.
<b>Modularity</b>	Pre-equipped to be fitted (even on-site) with clip-on modules of the IZAR range: <ul style="list-style-type: none"> <li>• IZAR RC i – radio module</li> <li>• IZAR PULSE i – pulse emitter</li> <li>• IZAR MBUS COMPACT i – MBus emitter</li> <li>• IZAR DOSING – electronic register with reset</li> </ul>
<b>Temperatures</b>	Water temperature: +0.1 ... +50°C (T50) Operating ambient temperature: +1... +55°C max. Storage temperature: -10 ...+55°C max.
<b>Frost protection</b>	Protect the meter from frost by completely draining all the water it contains. Shut the valve upstream the meter and purge the circuit (remove the non-return valve if necessary).  <b>Caution:</b> the pressure plate may break if the meter is not drained.
<b>Filtration</b>	Plastic filter located in the inlet nozzle. The filter can be easily checked and cleaned.  <b>Caution:</b> 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.
<b>Clogging</b>	Withstands occasional sanding (i.e. following work carried out on a pipe) without sustaining damage.

<b>Static pressure</b>	Nominal pressure: 16 bars. Test pressure: 32 bars (in accordance with ISO4064 / EN14154 / OIMLR49). Breaking pressure greater than 70 bars.
<b>Resistance to pressure changes</b>	Withstands at least 15,000 cycles of 0.6 second from 3 to 32 bars.
<b>Sudden influx of water</b>	<b>Caution:</b> 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.
<b>Overflow</b>	Resistance to a flowrate of 2XQ <sub>4</sub> without damaging its parts for a limited period of time.
<b>Endurance</b>	Compliant with the MID regulatory tests. Resistance: 100,000 cycles at Q <sub>3</sub> and 100 hours at Q <sub>4</sub> .
<b>Non-return valve</b>	Possibility to add a non-return valve in the outlet pipe.
<b>Fraud resistance</b>	Fraud attempt with a clamp: -> The glass of the glass/metal register will break or the orange pin indicator of the plastic register will disappear.  Fraud attempt by opening the sealed ring: -> visible deterioration of the sealing ring.

### 1.4 DIMENSIONS

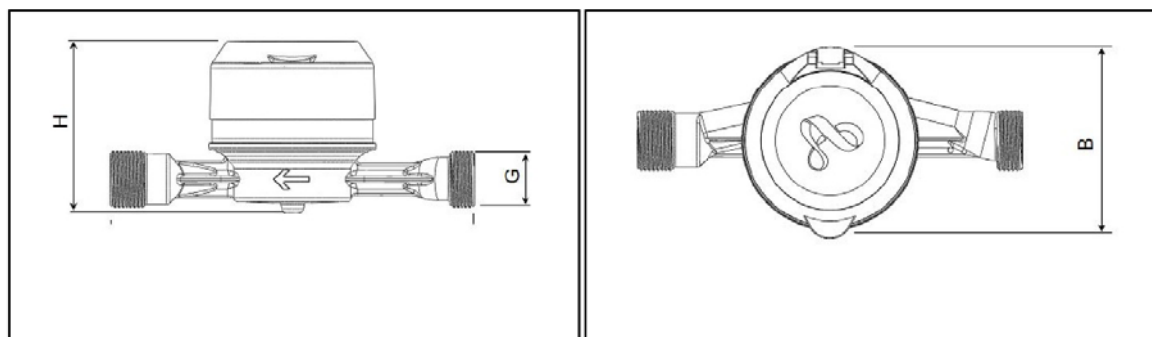


fig.2

Nominal diameter	DN	mm	15	15	20	20
Length	L	mm	165/170	165/170	190	190
R standard*	Q <sub>3</sub> /Q <sub>1</sub>		160H-63V	125H-63V	160H-63V	125H-63V
Width	B	mm	73	73	90	90
Height	H	mm	75	75	80	80
Thread connections	G	inch	3/4"	3/4"	1"	1"
Weight		kg	0.53	0.53	0.73	0.73

\*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

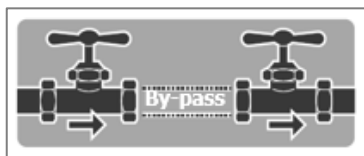


fig.3

AURIGA must be installed on a clean pipe free from solid particles on the inside.

If in doubt, insert a by-pass sleeve in place of the meter and clean the pipe out with high flowrate water flushing.

#### 2.1.2 PIPES ALIGNMENT

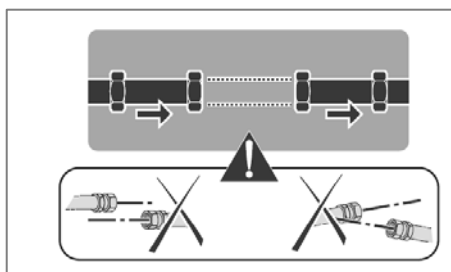


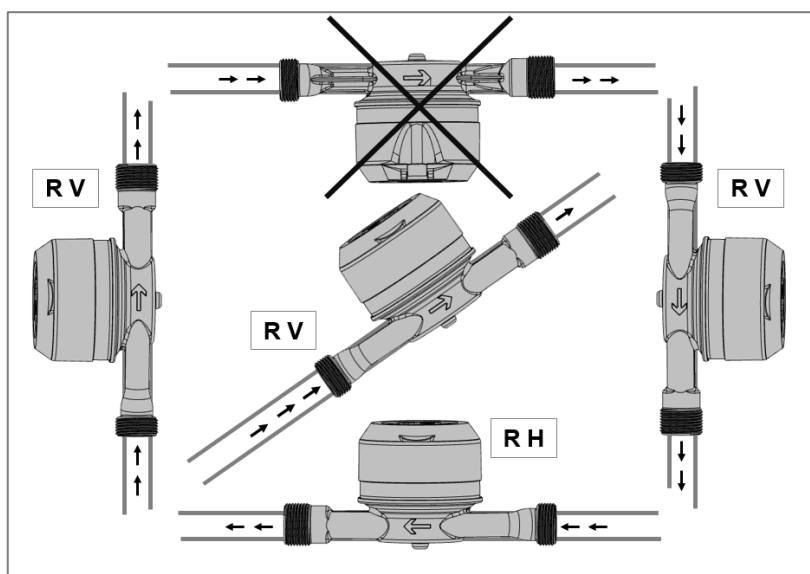
fig.4

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

Use a drill nut to seal the meter on the inlet pipe.

### 2.2 INSTALLATION PRINCIPLE

#### 2.2.1 INSTALLATION POSITION



H=horizontal installation position / V=vertical installation position

fig.5

AURIGA meter is sensitive to the position in which it is installed.

To optimize its metering properties, the meter should preferably be installed horizontally (top of register facing up and horizontal).

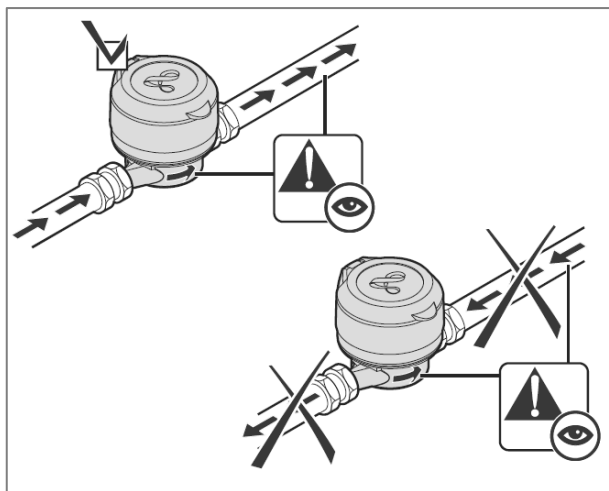


fig.6

**Caution:** Make sure 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

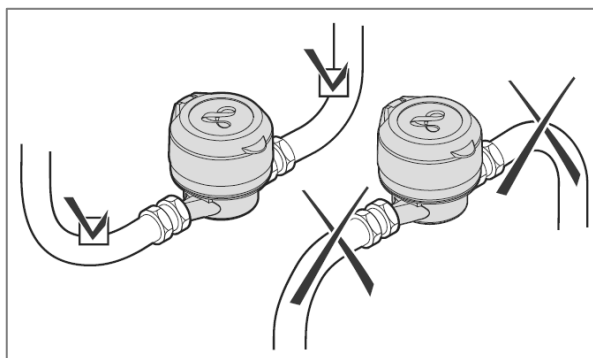


fig.7

The metered water must be free from gas.

Install AURIGA at a low point of a pipe to prevent the formation of air pockets.

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

### 2.2.3 INSTALLATION RECOMMENDATIONS

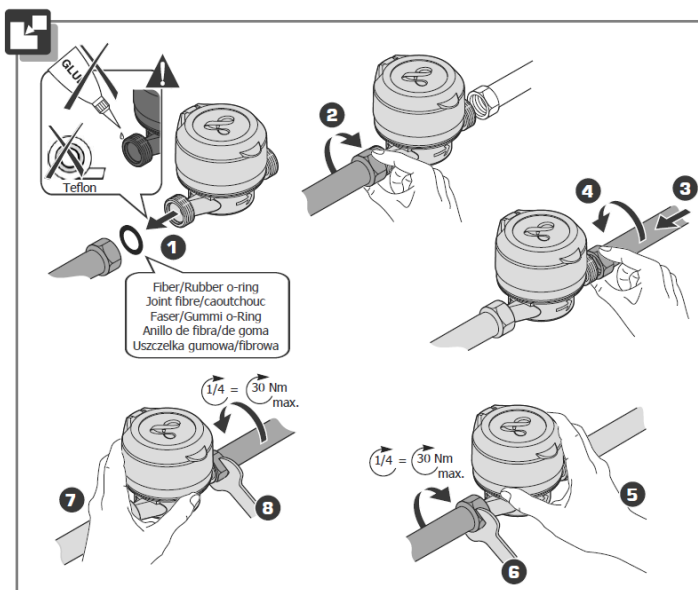


fig.8

The body of the meter incorporates 2 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 Teflon tape or threadlocker.

To prevent the meter from rotating during tightening, thus damaging the gaskets, the use of a spanner on each end of the inlet and outlet nozzle is recommended.

Do not exceed the maximum tightening torque of 3 m.kg. or 30 Nm.

### 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.



If there are additives or additional substances in the water or any process of the installation, 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

<b>Storage</b>	Do not store the meters for more than 3 months. Do not stack the pallets. Do not place loads heavier than 80 kg on the meter.
<b>Cleaning</b>	Use only soapy or slightly acidified water to clean the meter. The use of solvents or abrasive cleaners is prohibited.
<b>Stepping</b>	AURIGA 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.
<b>Drop test</b>	Designed to withstand a 1 m fall onto a hard floor. In case of a fall, or if the meter shows traces of impact, we recommend testing it prior to installation.

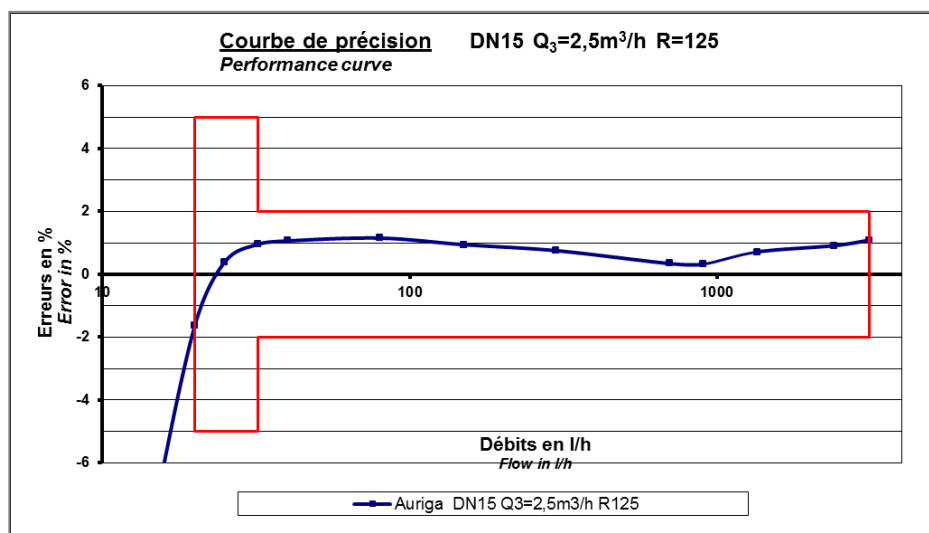
## 4 REGULATIONS

AURIGA DN15/20 complies with the European directives as indicated on the EU declaration of conformity delivered with the product and available at:

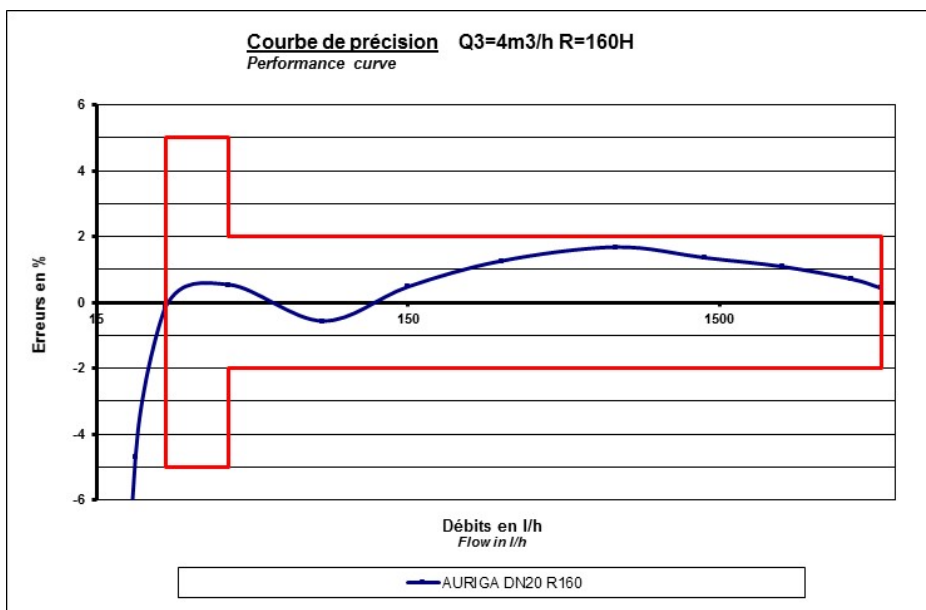
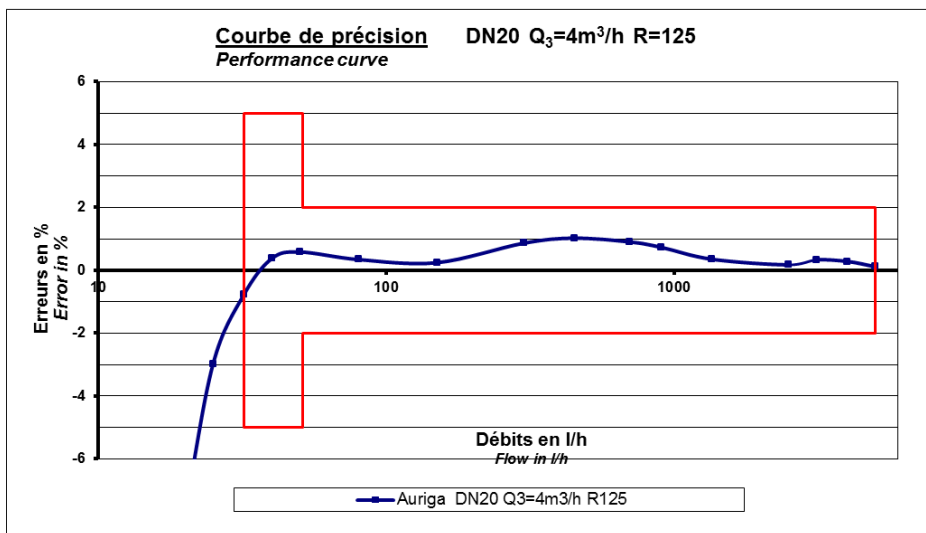
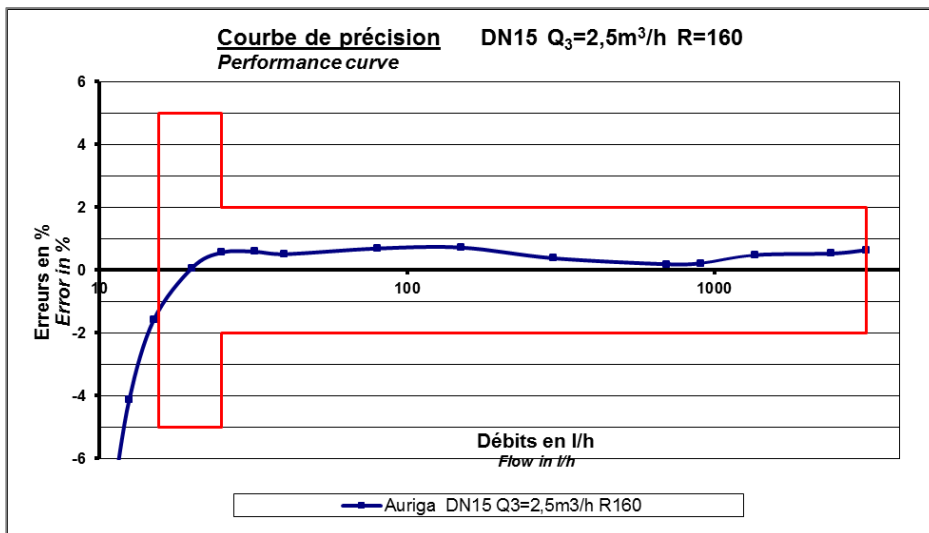
<https://www.diehl.com/metering/en/diehl-metering/support-center/downloads>

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

## 5 METROLOGICAL CURVES







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