

## **WESAN WP G**

User guide



**Diese  
Anleitung ist  
dem Endkunden  
auszuhändigen.**

**This guide must be given  
to the end consumer.**  
**Ce guide doit être donné  
au client final.**

**Esta guía se debe dar  
al cliente final.**

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# 1 PRODUCT DESCRIPTION

## 1.1 GENERAL PRINCIPLE

WESAN WP G is a WOLTMAN Parallel bulk water meter designed in accordance with EN 14154, OIML R49 and ISO 4064 standards. It has a MID certification and complies with the standards applying to material in contact with water. It is a measuring device approved for invoicing and as such it must be handled with care.

WESAN WP G is made of a coated cast iron housing (1) with flange connections (2) on both sides of the housing. While unpacking the meter, check the indications on the register to make sure it is the required product and check that the gaskets are present.

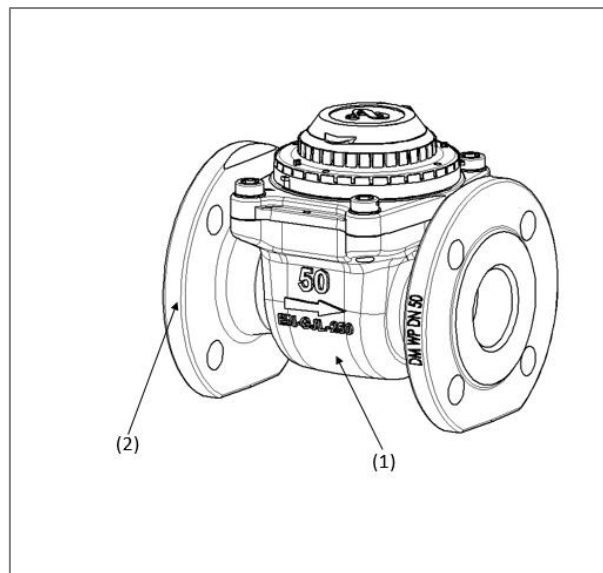


fig.1

## 1.2 METROLOGICAL FEATURES

### 1.2.1 CALIBRATION CURVE

The meter has been manufactured with care in order to ensure a high durability, lifetime and precision. The standard metrology is up to R100. (other values on request).

Nominal diameter	DN	mm	50	65	80	100	125
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	40	63	100	160	160
Starting flow rate		l/h	90	130	160	190	190
Minimum flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	0.63	0.63	1	1.6	1.6
Transitional flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	1.02	1.01	1.6	2.56	2.56
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	50	78.75	125	200	200
Flow rate at 0.1 bar pressure loss		m <sup>3</sup> /h	29	50	95	95	95
Pressure loss at Q <sub>3</sub>		bar	0.19	0.16	0.14	0.28	0.29

Nominal diameter	DN	mm	150	200	250 <sup>2</sup>	300 <sup>2</sup>
Permanent flow rate	Q <sub>3</sub>	m <sup>3</sup> /h	250	250	1,000	1,600
Starting flow rate		l/h	1,500	2,500	5,000	10,000
Minimum flow rate	Q <sub>1</sub>	m <sup>3</sup> /h	5	5	10	16
Transitional flow rate	Q <sub>2</sub>	m <sup>3</sup> /h	8	8	16	25.6
Overload flow rate	Q <sub>4</sub>	m <sup>3</sup> /h	312.5	312.5	1,250	2,000
Flow rate at 0.1 bar pressure loss		m <sup>3</sup> /h	290	550	800	1,250
Pressure loss at Q <sub>3</sub>		bar	0.08	0.02	0.16	0.16

<sup>2</sup> only available without approval

### 1.2.2 PRESSURE LOSS

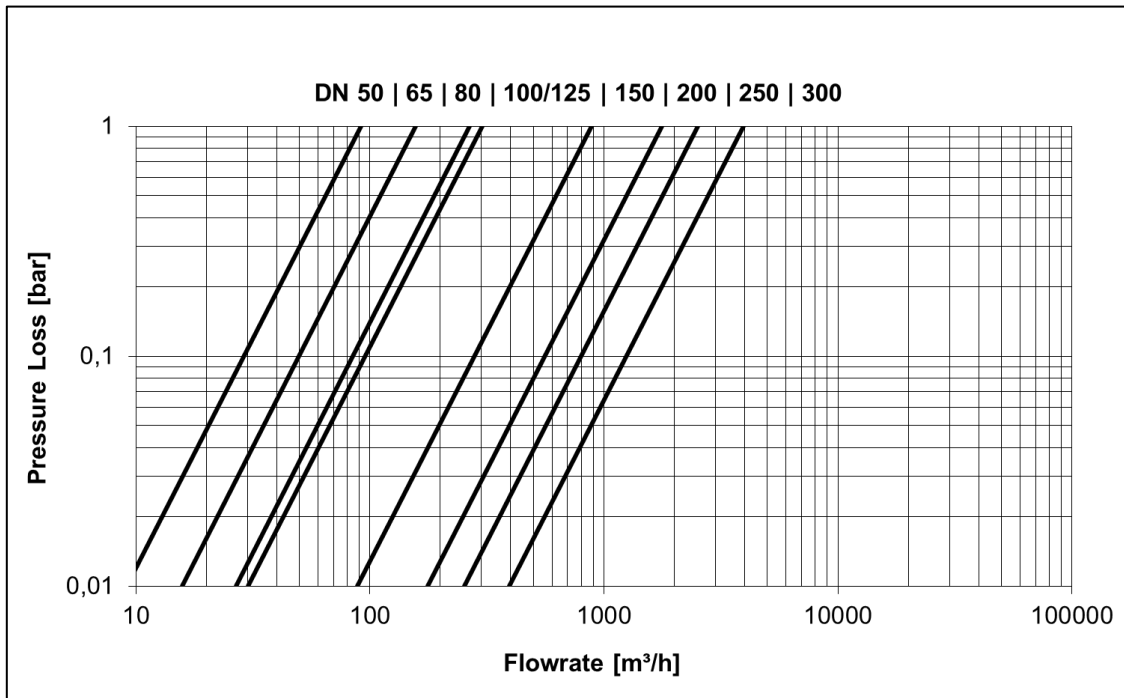


fig.2

### 1.3 TECHNICAL FEATURES

<b>Body</b>	Cast iron
<b>Ring</b>	Grey → cold water
<b>Register</b>	Glass-copper → better resistance to moisture in extreme environments (e.g. a manhole that is flooded on a regular basis). Waterproof → withstands prolonged immersion.
<b>Modularity</b>	Modular. As mentioned on the register, meters are pre-equipped to be fitted (even on-site) with clip-on modules of the IZAR range: <ul style="list-style-type: none"> <li>• Radio module - IZAR RC i</li> <li>• Pulse emitter - IZAR PULSE i</li> <li>• M-Bus emitter - IZAR MBUS COMPACT i</li> <li>• Electronic register with reset - IZAR DOSING</li> </ul>
<b>Temperatures</b>	Water temperature: DN50 to DN125: 0.1° ... +50°C (T50) DN150 to DN300: 0.1 ... +30°C (T30) Ambient operating temperature: +1 ... +55°C Storage temperature: +1 ... +55°C
<b>Frost protection</b>	Protect the meter from frost by completely draining all the water it contains. Draining is carried out by closing the valve before the meter and opening a drain on the outlet pipe. <b>Caution:</b> When the meter is not drained, the pressure plate can break.

<p><b>Filtration</b></p>	<p>WESAN WP G meter comes standard without filter.</p> <p>In case of doubt concerning the water quality, install a filter (5 x 5mm max mesh size) on the inlet pipe.</p> <p><b>Caution:</b> With a filter fitted in the inlet pipe, we recommend a straight length of 3x DN before and after the meter.</p>																				
<p><b>Clogging</b></p>	<p>Withstands occasional sanding (i.e. following work carried out on a pipe) without sustaining damage.</p> <p>However, in order to protect its metering properties, the maximum sand concentration must not exceed 0.1 gram/litre. Clean the filter periodically to prevent clogging.</p>																				
<p><b>Static pressure</b></p>	<p>Nominal pressure: 16 bars max.</p> <p>Higher nominal pressure versions – 25 or 40 bars for example - available on request.</p>																				
<p><b>Resistance to pressure changes</b></p>	<p>Withstands more than 100,000 rapid rises in pressure from 0 to 30 bars in 0.5 sec.</p>																				
<p><b>Sudden influx of water</b></p>	<p><b>Caution:</b> While working on the pipes, carefully purge the pipes in order to prevent the formation of air bubbles, which could damage the meter when the water is turned back on.</p>																				
<p><b>Overflow (max. 15 min./24hrs)</b></p>	<table border="1" data-bbox="544 1111 1426 1265"> <thead> <tr> <th>Size (DN)</th> <th>50</th> <th>65</th> <th>80</th> <th>100</th> <th>125</th> <th>150</th> <th>200</th> <th>250</th> <th>300</th> </tr> </thead> <tbody> <tr> <td>Q overload (m<sup>3</sup>/h)</td> <td>90</td> <td>120</td> <td>200</td> <td>300</td> <td>350</td> <td>500</td> <td>650</td> <td>2,000</td> <td>3,000</td> </tr> </tbody> </table>	Size (DN)	50	65	80	100	125	150	200	250	300	Q overload (m <sup>3</sup> /h)	90	120	200	300	350	500	650	2,000	3,000
Size (DN)	50	65	80	100	125	150	200	250	300												
Q overload (m <sup>3</sup> /h)	90	120	200	300	350	500	650	2,000	3,000												
<p><b>Endurance</b></p>	<p>Compliant with the MID regulatory tests.</p> <p>Resistance: 200 hours at Q<sub>4</sub>.</p>																				
<p><b>Non-return valve</b></p>	<p>Fitting of a non-return valve in the outlet nozzle is not possible.</p>																				
<p><b>Fraud resistance</b></p>	<p>Fraud attempt with a clamp:                  → the glass of the register will break before the meter is blocked by the clamp.</p> <p>Fraud attempt by opening the sealed ring:                  → deterioration of the sealing ring.</p>																				

## 1.4 DIMENSIONS

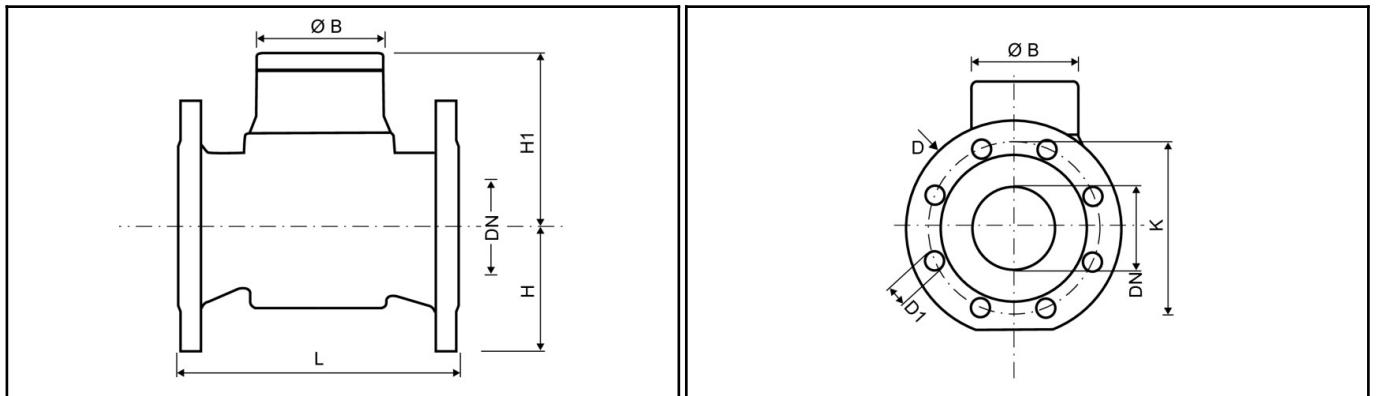


fig.3

Nominal diameter	DN	mm	50	65	80	100	125
Overall length	L	mm	200 / 300	200	200 <sup>4</sup> / 225 / 350 <sup>4</sup>	250 / 350 <sup>4</sup>	250
Flange diameter	D	mm	165	185	200	220	250
Hole circle diameter PN 10 / PN 16	K	mm	- / 125	- / 145	160 / 160	- / 180	- / 210
Number of screw holes PN 10 / PN 16		pcs	- / 4	- / 4	4 / 8	- / 8	- / 8
Screw hole diameter PN 10 / PN 16	D1	mm	- / 18	- / 18	18 / 18	- / 18	- / 18
Height	H	mm	75	83	89	105	115
Height	H1	mm	103	103	134	134	134
Height to remove measuring insert		mm	205	205	255	255	255
Meter width		mm	155	155	200	220	250
Diameter	Ø B	mm	110	110	110	110	110
Weight		kg	10.2	11.2	13	16	21.5

Nominal diameter	DN	mm	150	200	250 <sup>2</sup>	300 <sup>2</sup>
Overall length	L	mm	300	350	450	500
Flange diameter	D	mm	285	340	405	460
Hole circle diameter PN 10 / PN 16	K	mm	- / 240	295 / 295	350 / 355	400 / 410
Number of screw holes PN 10 / PN 16		pcs	- / 8	8 / 12	12 / 12	12 / 12
Screw hole diameter PN 10 / PN 16	D1	mm	- / 22	22 / 22	23 / 27	23 / 27
Height	H	mm	135	163	193	230
Height	H1	mm	225	225	222	270
Height to remove measuring insert		mm	255	455	452	500
Meter width		mm	285	340	405	460
Diameter	Ø B	mm	110	110	110	110
Weight		kg	39	47	75	165

<sup>2</sup> only available without approval

<sup>4</sup> special body lengths on request

## 2 INSTALLATION

### 2.1 INSTALLATION PRECAUTION

The meter is to be installed in accordance with EN ISO 4064-5:2017 and EN 14154-2:2005 + A2:2011 standards.

#### 2.1.1 CLEANING THE PIPE

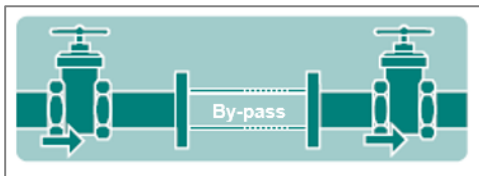


fig.4

WESAN WP G must be installed on a pipe that is clean on the inside and free of solid impurities.

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

#### 2.1.2 PIPE ALIGNMENT

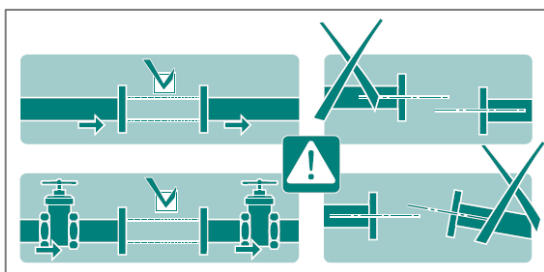


fig.5

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

### 2.2 INSTALLATION PRINCIPLE

#### 2.2.1 INSTALLATION POSITION

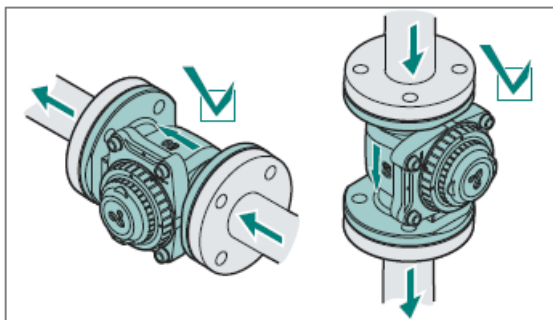


fig.6

Installation in horizontal and vertical position.

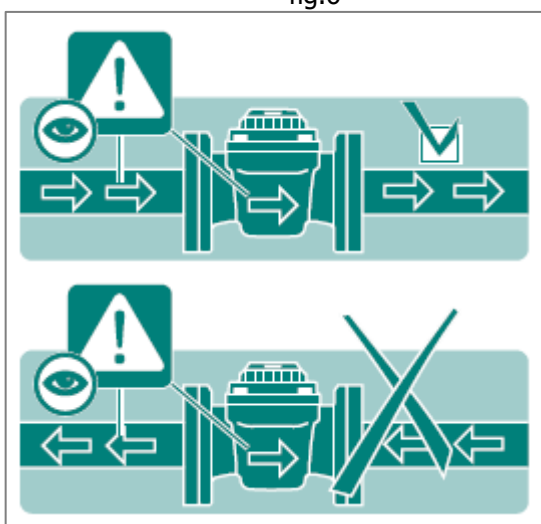
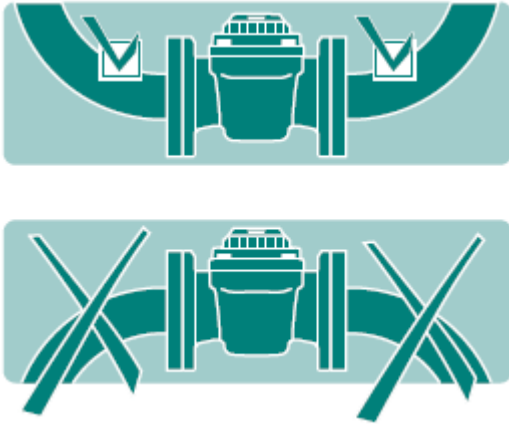


fig.7

**Caution:** 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



Place WESAN WP G at a low point of a pipe in order to avoid the formation of air pockets.

Straight lengths before and after the meter are not mandatory, nevertheless we recommend a straight length of 3 x DN before and after the meter.

**Caution:** The piping must be sufficiently strong, so that the weight of the meter does not lead to any oscillation, if it does, place a support underneath the meter.

fig.8

### 2.2.3 INSTALLATION RECOMMENDATIONS

The meter body incorporates 2 flanges.

Gaskets for the flanges are included in the packaging. Refer to the instructions supplied with the meter.

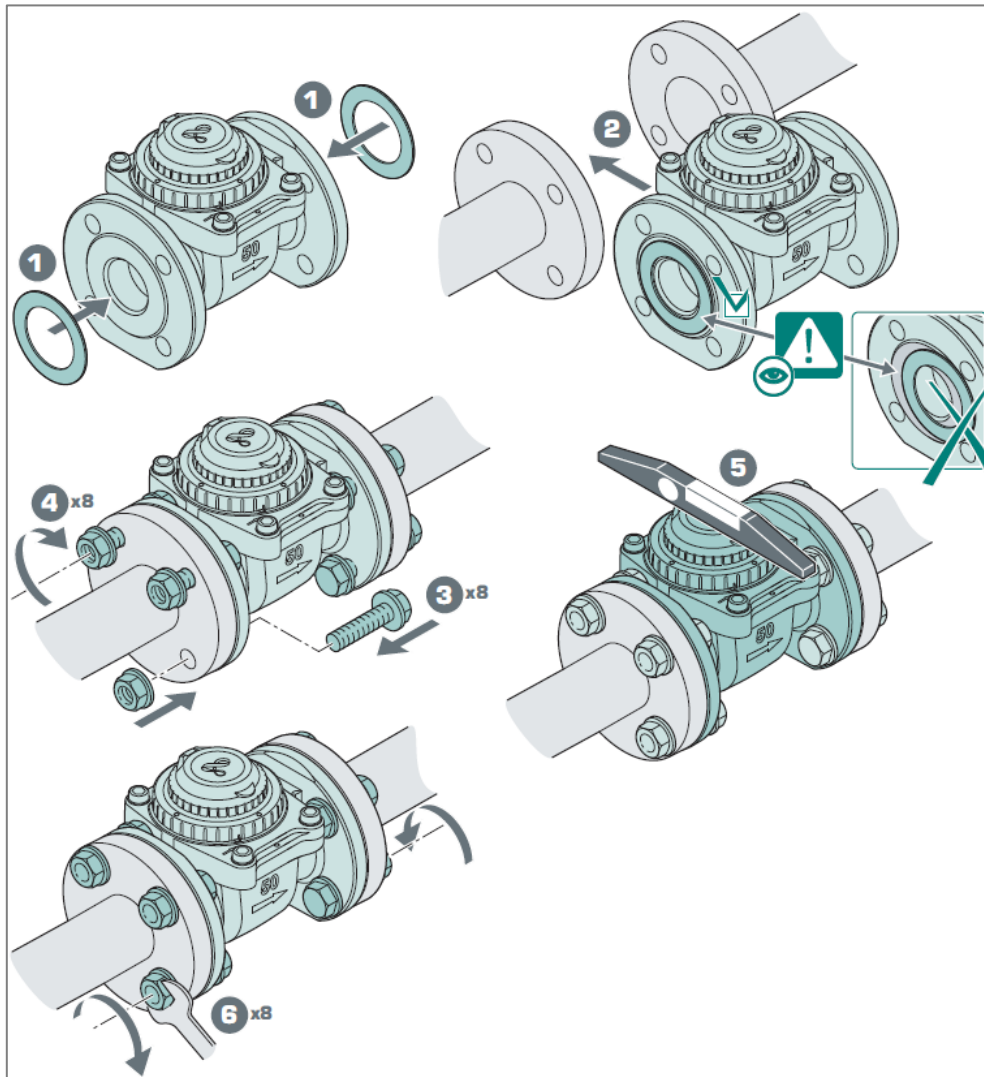


fig.9



### 2.2.4 EXCHANGE OF MEASURING INSERT

Remove the measuring insert by unscrewing the 4 fastening screws using a suitable hex-wrench.  
 Check that the nominal diameter of the new measuring insert matches the one of the body (see type plate).  
 Check that the seal between housing and insert is undamaged.  
 Clean the seal housing and interior of the body thoroughly, removing any particles.  
 Position the seal in its housing making sure that it perfectly fits.  
 Position the measuring insert on top of the seal.

**Caution:** the direction of the arrow on the body should match the one on the measuring insert.

Tighten the fastening screws evenly crosswise.

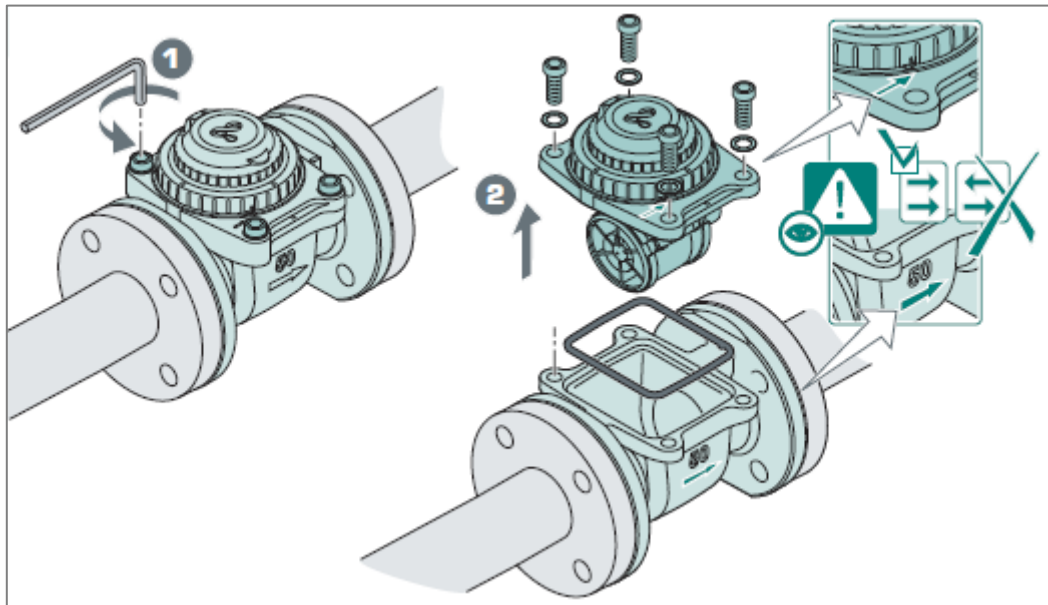


fig.10

### 2.2.5 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 will expire immediately.

**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.**

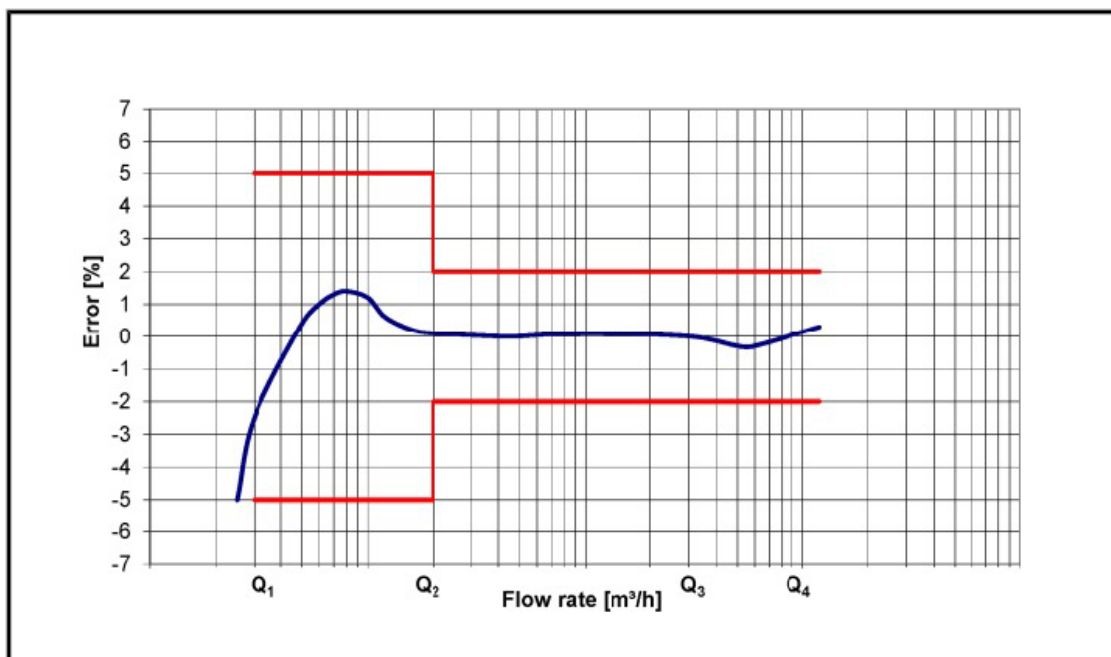
### 3 PRECAUTIONS OF USE

<b>Storage</b>	Do not stack the pallets. Do not place loads heavier than 100 kg on the meter
<b>Cleaning</b>	The body of the meter is made of cast iron with a special epoxy coating. → it can safely be cleaned with slightly acidic water (e.g. vinegar, de-scaling agent) in order to remove any scale deposit.  The register is made of glass. → the use of solvents is prohibited. Solvent vapor may diminish the mechanical resistance of the main parts made of composite. Only use soapy water to clean the meter.
<b>Stepping</b>	WESAN WP G must not be stepped upon. However, with its cover closed, it can withstand a load of 100 kg max.
<b>Drop test</b>	WESAN WP G is designed to withstand a fall from one meter onto solid ground provided it is protected by its packaging. If the meter is dropped from that height, it should be tested before installation.

### 4 REGULATIONS

WESAN WP G meter complies with the European directives as indicated on the EU declaration of conformity delivered with the product and available on the Diehl Metering website. WESAN WP G also meets the food-grade requirements pertaining to materials in contact with water. For more information, please contact your Diehl Metering agency.

### 5 METROLOGICAL CURVES



Typical error graph

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