

## **Glass Reinforced Polymer Body Semi-Positive Rotary Piston Type Meter.**

### **Legal Requirements**

All 15mm, 20mm and 25mm Water meters supplied must be approved for trade use by the National Regulator for Compulsory Specifications (N.R.C.S.) in South Africa in accordance with the requirements of S.A.N.S 1529-1: 2019 and Section 22 of the Legal Metrology Act 2014 (Act 9 of 2014)

All water meters supplied must be tested and verified within the borders of South Africa in accordance with the requirements of section 7 of the Legal Metrology Act 2014 (Act 9 of 2014). All verification must be performed by a registered Verification Officer in an S.A.N.A.S. Accredited Verification Laboratory in terms of LM-P-045-09-19.

### **Performance Specification**

The water meter must be of the semi-positive rotary piston type with the following capabilities: -

<b>METER SIZE</b>	<b>15mm*</b>	<b>20mm*</b>	<b>25mm*</b>
Maximum Flowrate $q_s \pm 2\%$ (m <sup>3</sup> /h)	3	5	7
Nominal Flowrate $q_p \pm 2\%$ (m <sup>3</sup> /h)	1,5	2,5	3,5
Transitional Flowrate $q_t \pm 2\%$ (ℓ/h)	22,5	37,5	52,5
Minimum Flowrate $q_{min} \pm 5\%$ (ℓ/h)	15	25	35
Starting Flow (ℓ/h)			
Maximum Working Pressure (kPa)	1600	1600	1600
Maximum Test Pressure (kPa)	4800	4800	4800
Body Length (mm)	114	165	198
Pulse Output (ℓ)	0.5	0.5	5

#### **\* Class 'C' Accuracy Specification.**

In addition, the meters offered must comply with the following: -

- Counters to be the sealed liquid filled wet dial type to prevent formation of condensation under the lens and the ingress of dirt obscuring the reading.
- Meter counter to be direct mechanical drive type to prevent outside magnetic interference.
- Counter window to be minimum 7mm thick. An uncontrollable discharge of water must result should the window be penetrated with a hot needle or similar sharp instrument to stop the counter from operating.
- Counter capsule to be filled with a mixture of water and glycerine to prevent freezing and which acts as an algacide preventing algae from growing under the **lens**.

- Meters must be approved to Class C by the N.R.C.S. for both Vertical and Horizontal installation.
- Meter accuracy must not be affected by rhythmic or pulsating water flows.
- Meter performance must comply with SANS1529-1 Class 'C' Specification. This to reduce the volume of water escaping measurement at low flow rates and increase meter service life. Improves revenue generation.
- Meter bodies to be manufactured from specially blended glass reinforced polymer which is UV stabilised glass reinforced polymer for high strength - 4 800 kPa test pressure (48 Bar)
- Working temperature between 2° C and 40° C.
- Maximum working pressure of 1 600 kPa. (16 Bar)
- The 20mm meter piston must be of such a size that it rotates at 17 revolutions or less per litre measured to generate enough torque and assist with improved performance and reliability in the presence of suspended solids in the water.
- The 15mm meter piston must be of such a size that it rotates at 36 revolutions per litre measured to increase low flow measurement sensitivity and reduce the point at which the meter starts to turn and measure.
- Maximum rate of flow (Qs) must be achieved at a pressure drop not exceeding 100 kPa across the inlet/outlet of the meter.
- Shaped, vertical grooves must be incorporated in the piston to create a turbulence seal whilst in operation. This to improve meter performance and reliability in the presence of suspended solids.
- All internal plastic components to be constructed of virgin materials.
- Each meter must be backed with a 3-year guarantee against faulty workmanship and/or materials.
- Meters must be pulse prepared. (Optional reed switch)
- The reed switch probe hole to be sealed with a removable plug. This prevents the probe hole from becoming clogged with dirt preventing the fitment of a reed switch later.
- 15mm meter to have a built-in non-return valve to prevent generation of false pulses and meter reversal.
- 20mm and 25mm meter to be fitted with a stainless-steel spring-loaded non-return valve. The poppet to be made from rubber compound to ensure proper seal.
- 15mm meter to fitted with a fine mesh internal strainer to protect the working chamber from damage and wear caused by suspended solids in the water.

- 20mm meter to be fitted with a bowed fine mesh strainer which increases the total mesh area and guides suspended solids to collect around outer rim of the strainer before becoming blocked. The strainer is also bowed for increased strength.

### **General**

Spare parts and accessories for all water meters offered must be available locally in South Africa and available for ten years after purchase of the water meter.

**MC 2 (11.20)**