

Technical Specifications

50mm (2") Commercial Water Meter With Pulse Sensor

- I. The water meter shall measure potable water in close conduit pipes.
- II. Meter Size: **50mm (2")** Nominal Diameter
- III. Only water meters which have been tested by MCWD for at least 1 year and found satisfactory shall be considered during the evaluation. The meters to be supplied shall be exactly the same as the samples tested, evaluated and found satisfactory by MCWD. Any deviation from the samples tested shall be a warrant for disqualification.
- IV. Maximum Rated Capacity Q_{max} : **$Q_{max} \geq 30 \text{ m}^3 / \text{hour}$** .
- V. Nominal Capacity for Continued Duty Q_n : **$Q_n \geq 15 \text{ m}^3 / \text{hour}$** .
- VI. Transitional Flow Q_t : **$Q_t \leq 1.5 \text{ m}^3 / \text{hour}$**
- VII. Minimum Flow Rate Q_{min} : **$Q_{min} \leq 150 \text{ liters} / \text{hour}$**
- VIII. General Description:
 - a. Vane wheel type
 - b. Dry Dial
 - c. Magnetic type
 - d. Flange ends
 - e. Sealed from tampering and re-sealable using # 22 magnetic wires
 - f. Leak Detector Star – The meter shall be provided with a leak detector “start” to indicate meter the smallest movement of water inside the meter.
 - g. Register Colors - Cubit meter numbers in the register’s readings shall be indicated with black color and fractions thereof shall be indicated by red color.
 - h. Straight Reading – The meter shall read in cubic meters and fractions thereof. The minimum smallest readable volume shall not be less than 1 liter.
 - i. Adjustment Device – The meter shall be provided with an adjustment device which is used to correct between the relationship between the volume indicated and the volume passing through the meter.
 - j. The reed switch or optical sensor shall be completely detachable from the register (detaching the sensor must stop the proper function of the meter and must not expose the register to the atmosphere or make the register prone to tampering) so that the sensor can be used in another meter of the same model and brand.

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IX. Metrological Classification:

Metrological classification must be on par or better than that which is given on the table below.

Q_{max} 30 m ³ /h Allowable Error	Q_n 15 m ³ /h Allowable Error	Q_t 1.5 m ³ /h Allowable Error	Q_{min} 0.15 m ³ /h Allowable Error
±2%	±2%	±2%	±5%

X. Meter Flange Ends: Meter ends must be flanges with the following specifications:

1. Number of Bolt Holes = 4 holes
2. Bolt Center Distance = 102.7 mm
3. Bolt Diameter = 5/8 inches

XI. Meter Overall Length:

1. The meter's overall length from flange end to flange end must be 260mm to 270mm

XII. Working Pressure \geq 200 psi

XIII. Maximum Admissible Temperature: **MAT \geq 50 °C**

XIV. Meter Accessories:

1. With Optical or Reed Switch Sensor with 5 meter length wire open ended.
2. Stainless Steel bolts 8 pieces for flange ends.
3. Meter flange gaskets.

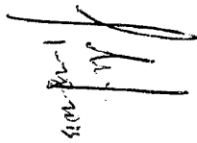
XV. Pulse Output Connectivity: The meter shall have pulse output connectivity for data logging or remote reading. The appropriate sensor shall also be provided for each meter as describe in item 3 above.

XVI. Markings on Meter:

1. Meter make and brand
2. Meter Serial number. This must be indelible and permanently attached to the meter's main body casing.
3. Flow direction. This must also be indelible and permanently attached to the meter's main body casing.
4. Meter nominal size.

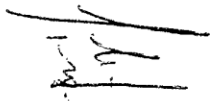
XVII. A Technical brochure of the meter shall be provided upon bidding. This shall include the following information.

- a. Metrological Classification including flow and accuracy at Q_{max} , Q_t , Q_{min} .
- b. Maximum admissible temperature
- c. Blow up drawing of the meter including parts identification



- d. Meter dimensions including bolt hole dimension.
- c. Instruction on installing the pulse sensor.

- XVIII. Manufacturer shall provide MCWD a written guarantee duly annotated and signed that spare parts for the meter shall be made available at a reasonable price for a period of at least 5 years from date of purchase.
- XIX. Manufacturer shall provide a blow up of the meter indicating meter parts with parts number and identification and an approximate price for each part.
- XX. MCWD shall inspect / test any or all of the meters for compliance to this specification. The manufacturer/ vendor shall replace any meter found with defects or that found with any non-conformity to this specification free of charge.
- XXI. Manufacturer shall be ISO 9001:2000 or 9001:2008 certified.


5/10/2018

TERMS OF REFERENCE

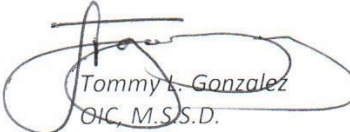
SUPPLY AND DELIVERY OF BRAND NEW FLOWMETER 2"Ø WITH PULSE SENSOR

1. The bidder/vendor/supplier must have at least a minimum of 5 years in existence in the business.
2. Only water meters which have been tested by MCWD for at least 1 year and found satisfactory shall be considered during the evaluation.
3. The bidder/vendor/supplier must be certified with an ISO certification on quality, environment, health or safety management standard on the source of origin of the equipment.
4. The bidder/vendor/supplier must submit an original complete set of brochures and shop drawings and indicate the offered items for proper evaluation.
5. The bidder/vendor/supplier must have supplied for the last 2 years in existence, the same equipment required on the purchase request.
6. The bidder/vendor/supplier shall deliver the flowmeter equipment to MCWD Warehouse located at Nasipit, Talamban, Cebu City.
7. The bidder/vendor/supplier shall conduct a free orientation for the operation, its preventive maintenance and basic troubleshooting of the flowmeter to MCWD personnel involved in the operation and maintenance.
8. The bidder/vendor/supplier should replace any flowmeter found to be defective during and after conducting the final accuracy testing.
9. The bidder/vendor/supplier is a bonafide and authorized to bid from the manufacturer.
10. The bidder/vendor/supplier must submit or issue the following certification:
 - i.) Certificate to provide technical support for the supplied equipment even after the transaction was consummated.
 - ii.) Certificate of spare parts availability in the next 5 years period.
 - iii.) Certificate of warranty for a period of two years after the issuance of the Certificate of Acceptance.
11. MCWD has the exclusive right to deny or disqualify any bidder/vendor/supplier/manufacturer that has been found to have pending or unresolved technical issues specifically on 2"Ø flowmeter on their previous deliveries.

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