Technical Specifications

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

For: PR #

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 Qmax: $\mathbf{Qmax \geq 30\ m^3\ /\ hour.}$

V.   Nominal Capacity for Continued Duty Qn: $\mathbf{Qn \geq 15\ m^3\ /\ hour.}$

VI.   Transitional Flow Qt: $\mathbf{Qt \leq 1.5\ m^3\ /\ hour}$

VII.   Minimum Flow Rate Qmin: $\mathbf{Qmin \leq 150\ liters\ /\ hour}$

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.

IX.   Metrological Classification:

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

Q_{max} 30 m³/h Allowable Error	Q_n 15 m³/h Allowable Error	Q_t 1.5 m³/h Allowable Error	Q_{min} 0.15 m³/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 not be less 225mm or greater than 300mm.

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 3 meter 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 Qmax, Qt, Qmin.
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.