

# MASTER METER MMT TURBINES

2" TO 8"



4" MMT pictured

## MAKE A SOUND INVESTMENT. HIGH RATE OF FLOW, HIGH REVENUE RETURN.

Master Meter MMT Turbine Meters provide sustained accuracy where you need it most — your high-volume water transactions. Built armored car tough with a rugged bronze case, these meters deliver long-service life while churning at high RPM with the fine tuned, precision performance of a sports car. Engineering advancements yield streamlined flow patterns resulting in minimal head loss, reduced water delivery costs, and maximum possible flow to end-user.

## MIND OF A BANKER. BODY OF A BOUNCER.

Choose the optional DIALOG 3G® Integrated AMR Register and put our ConnectionFree™ AMR Technology to work for you and your biggest customers. 3G delivers powerful results with 4,000 read data logging capable of providing detailed usage profiles that, when shared with your customers, can help them make informed decisions on water use that can positively impact conservation initiatives, and reduce customer billing complaints. In turn, 3G looks out for your utility's bottom line with vigilant Revenue Impact Alerts™ monitoring for leaks, theft (*backflow*), tamper, and zero consumption. Our award-winning register design houses all vital components — encoder, RF transmitter, battery and antenna — safely within the register's sealed stainless steel and tempered glass enclosure. We eliminated external wires, components and connections — the #1 cause of maintenance related issues on competitive designs.

The MMT Turbine Meter is designed with the future in mind for use in mobile and fixed network AMR/AMI data management systems.

*Industrial | Agriculture | Utility | Custody Transfer*

## FEATURES & BENEFITS:

- \* Meets All Applicable AWWA Standards; Optional NSF-61 Certified Main Case
- \* Sustained Accuracy for Maximum Revenue Over Time
- \* Precision Engineered for Efficient Flow Patterns with Minimal Head Loss
- \* Turbine and Chamber Constructed from Non-Hydrolyzing, Wear Resistant Polymer
- \* Wide Range of Flow for Maximum Accountability of Usage
- \* AMR/Electronic Reading Compatible
- \* With Optional 3G Integrated Register:
  - + Provide Accurate Usage Detail for High Dollar, High-Volume Connections with Rich 4,000 Read Data Logging Capabilities (scalable / customer defined resolution)
  - + Protect Your Utility's Bottom Line:
    - Revenue Impact Alerts - Leak, Tamper, Theft (*Backflow*), and Zero Consumption (*Indicates Potentially Damaged Meter*)
    - Deploy District Metering Areas or Zones (DMA/DMZ) for Advanced Infrastructure Leak Management Programs

## REGISTER OPTIONS:

- \* AccuLinx™ 8-wheel Absolute Encoder (also available with integrated DIALOG 3G)
- \* DIALOG 3G Odometer Interpreter
- \* DIALOG 3G LCD Interpreter™
- \* DIALOG 2G® Pit
- \* DIALOG 2G Indoor
- \* Electrical Output Register
- \* Direct Read



OPTIONAL

## READ:

- \* Direct Read/Manual
- \* Proximity/Wand Read - 2G
- \* Mobile Drive-By AMR - 3G
- \* FixedLinx™ Meter Data Management solution - Utilizes the 3G technology backbone with simultaneous Mobile AMR and Fixed Network AMI data collection capabilities.

**SIZES AVAILABLE: 2" - 8"**



## TECHNICAL SPECIFICATIONS:

**AWWA Standard** - Meets or exceeds all sections of Standard ANSI/AWWA C701 Class II, most recent revision for cold water turbine meters with AWWA bronze main cases.

**NSF/ANSI Standard 61** - Optional EnviroBrass or equivalent unleaded main case available.

**Design/Operation** - Velocity-type flow measurement. Water that is conditioned by an integral flow conditioning section flows past a rotor in the measuring chamber creating an impeller velocity directly proportional to water flow rate. The meter's register integrates that velocity into totalized flow. An inherent advantage for this design is exceptionally low head loss for improved infrastructure efficiencies and unparalleled wear mitigation. The register assembly is removable under line pressure permitting seamless, simplified upgrades in reading technology.

**Main Case** - 1.5" - 8" constructed of choice of waterworks bronze main case of 81% copper composition, or, 86% copper, unleaded bronze, either material choice are available with flanged ends. Bronze register retainers and lid are standard. A downstream test plug is provided to allow field testing without removal of the assembly from the line.

**Measuring Chamber** - The measuring chamber assembly and turbine are built with an advanced synthetic polymer for long service life. This tough, non-hydrolyzing material ensures durable wear. The chamber design optimizes water flow, eliminating harsh turbulence for smooth, easy, operation that minimizes bearing wear. Measurement

surfaces are not wear surfaces, providing sustained accuracy despite the presence of entrained solids in the water. A long-life, carbide thrust bearing serves as a wear surface.

**Magnetic Drive** - A reliable, direct magnetic drive provides linkage between measurement element and register. No intermediate gearing is required; no gearing is exposed to water.

**Register** - Standard Direct Read, DIALOG 2G and DIALOG 3G AMR System registers are available. Six wheel odometers are standard. Together, an integrated and migratable technology environment is attained; direct, proximity (wand), mobile AMR, and Fixed Network AML.

**Register Sealing** - All Direct read and DIALOG® registers are IP-68 rated, permanently sealed with a scratch resistant glass lens, stainless steel base and wrap-around gasket to prevent intrusion of dirt or moisture.

**Register Units** - Registration available in either U.S. gallons, cubic feet or cubic meters.

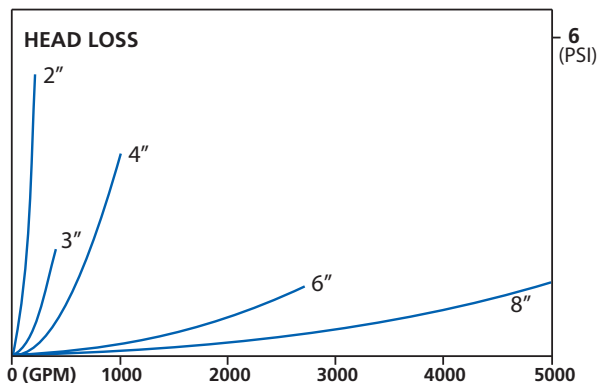
**Test Circle** - Large center sweep hand with one hundred (100) clearly marked gradations on the periphery of the dial face.

**Low Flow/Leak Indicator** - Center mounted indicator with high sensitivity resulting from direct one-to-one linkage to the measuring element.

## TURBINE METERS (2" TO 8")

METER OPERATING CHARACTERISTIC/DIMENSION	2"	3"	4"	6"	8"
Normal Operating Range [ $\pm 1-1/2\%$ ] (gpm)	4-350	5-530	9-1350	25-2700	35-3500
Continuous Operating Range (gpm)	4-200	5-400	9-1000	25-2300	35-2700
Low Flow [95%] (gpm)	3	4	8	20	27
Maximum Intermittent Flow (gpm)	350	530	1350	2700	3500
Maximum Working Pressure (psi)	175	175	175	175	175
Maximum Working Temperature (°F)	150	150	150	150	150
Length	10"	12"	14"	18"	20"
Height	6.8"	9.4"	10.0"	12.4"	13.0"
Height, bottom to center line	2.2"	3.7"	4.4"	5.5"	6.0"
Width	5.9"	7.5"	8.9"	11.1"	13.6"
Weight (lbs)	24	37	42	108	140
Packed to Carton	1	1	1	1	1
Carton Weight (lbs)	26	39	44		
Register Capacity [millions] (U.S. Gallons)	100	100	1000	1000	10000
Register Capacity [millions] (Cubic Feet)	10	10	100	100	1000
Maincase Material	Bronze	Bronze	Bronze	Bronze	Bronze
Flanges/End Connections	Elliptical	Round	Round	Round	Round

### HEAD LOSS CHART



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