MACH 10® Ultrasonic Meter

Why did Neptune® design the MACH 10® ultrasonic meter with a bronze maincase?

The corrosion-resistant, lead free, high-copper alloy maincase is built to withstand demanding service conditions; internal water pressure, rough handling, and in-line piping stress. With the MACH 10 there is no concern over the breakage of plastic meter spuds or cross-threading of plastic threads. Neptune believes that if a meter is capable of providing sustained accuracy over its life, the maincase must be designed to last the meter's life as well.

Does the MACH 10 utilize a battery?

Yes. All solid state meter technologies require a battery to operate. The battery powers the metrology and the LCD odometer.

Does MACH 10's LCD remain on when the lid is closed?

No. A photocell senses when the lid is closed and turns off the LCD for battery conservation.

What if the lid is broken off the MACH 10, will the LCD remain on?

No. After a few minutes the LCD will power down for battery conservation. The LCD can be reactivated by temporarily covering the photocell.

Can the MACH 10 be installed in flooded meter pit applications?

Yes. The MACH 10 electronics and battery are fully potted, suitable for submersion in a pit environment.

What happens if an empty pipe condition occurs?

The MACH 10 will display an empty pipe icon.

Can the MACH 10 register reverse flow?

Yes. The MACH 10 is capable of measuring reverse flow accurately. The LCD odometer will run in reverse when reverse flow occurs. A flag is set in the meter firmware to communicate this occurrence to the host software for notification when the meter is read. The MACH 10 communicates reverse flow exactly like the E-CODER®.

What meter protocol does the MACH 10 output?

MACH 10 outputs standard E-CoderPLUS protocol and is compatible with Neptune R900®, R450™, Pocket ProReader, and Advantage Reading System as well as competitive AMR/AMI endpoints.

Is the MACH 10 AMR/AMI capable?

Yes. The MACH 10 is compatible with Neptune and third-party AMR/AMI meter reading systems.

Does the MACH 10 have any internal moving parts?

No. The MACH 10 utilizes "transit time" ultrasonic technology featuring no moving parts.

What is the pressure rating of the MACH 10?

Maximum operating water pressure is 175 psi.

Does the MACH 10 have excessive pressure loss due to the flow conditioner and mirrors inside the maincase?

No. The pressure loss meets AWWA C715.

What sizes are offered in the MACH 10?

The MACH 10 is offered in all the same sizes that are available in our ⅝" – 2" T-10®, HP Turbine, and TRU/FLO® product lines.

Can the MACH 10 easily retrofit existing PD, turbine, and compound meter installations?

Yes. The MACH 10 meter lay lengths are the same as common PD, turbine, and compound meter lay lengths for drop-in replacements.

Can the register be replaced on the MACH 10?

No. The electronic register of the MACH 10 is permanently potted and sealed as part of the meter assembly for protection against moisture intrusion.

Can the MACH 10 battery be replaced?

No. The battery in the MACH 10 is permanently potted and sealed as part of the meter assembly for protection against moisture intrusion.

Does accuracy diminish over time with the MACH 10?

No. A benefit of solid state meter technologies is no moving parts, so no wear over time that can diminish meter accuracy.

Is the blue rubber seal a critical sealing point for eliminating moisture intrusion?

No. The meter electronics and battery inside the enclosure are fully potted. The blue rubber seal is primarily installed for aesthetic reasons.

Is a ground strap required for the MACH 10?

No. The maincase is continuous bronze for continuity. Check your local ordinances though to make sure ground straps are not required on (all) inside set meters in your state.

What is the significance of the serial number on the dial face?

This number will be used to identify the meter.

Is the MACH 10 bronze maincase "lead free"?

Yes. Just like all Neptune meters, the MACH 10 meter is lead free and NSF/ANSI 61-G approved.

Does the MACH 10 measure the speed of particles moving with the flow of water?

No. The MACH 10 measures fluid velocity by measuring transit times of upstream and downstream ultrasonic waves; the difference in these times is proportional to flow rate. Volume is determined by the multiplication of the velocity of water, area of the pipe, and elapsed time.

How will I know if a MACH 10 battery is low on power?

The MACH 10 features low battery detection and notification. A low battery icon will flash on the LCD panel. With enhanced R900, the low battery condition will also be reported to the host software for reporting.

How much lower will the ⅝" MACH 10 measure flow than a ⅝" T-10 with accuracy of 100%+/- 3.0%?

The ⅝" MACH 10 is capable of measuring down to 1/20 gpm for the life of the meter.

Does the MACH 10 provide data logging?

Yes, data logging is provided when connected to, or integrated with, an R900 or LoRaWAN® endpoint.

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