Activating and Reading MACH 10 Ultrasonic Meters

This chapter explains the operations of the MACH 10 ultrasonic meter.

Activating the LCD Meter Display

The light sensor is located in the center of the faceplate of the MACH 10, and it supplies the power for the LCD panel. See Figure 16.

Figure 16: MACH 10 Faceplate

Timeout Period

Typically, the display is OFF. The meter includes a light sensor used to activate the LCD when you open the meter. A timed out LCD can not be reactivated just by shining a light on the light sensor. In order to reset the meter, close and re-open the lid.

Meter Display

The Neptune MACH 10 ultrasonic meters use a nine-digit LCD to show consumption, flow rate, and alarm information.

LCD Panel

Figure 17 shows the LCD panel with the icons. The table below provides descriptions of each icon.

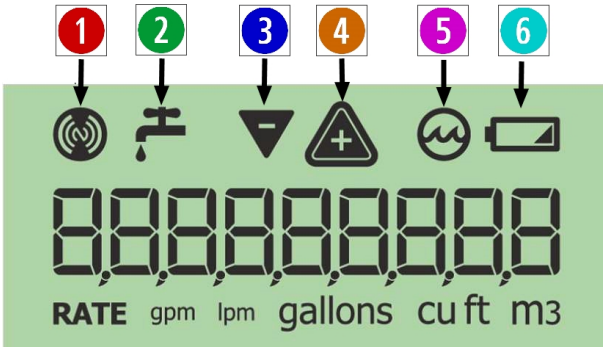

Figure 17: MACH 10 LCD Panel

1	Neptune logo
2	Leak
3	Reverse flow
4	Forward flow
5	Empty pipe
6	Low battery

How to read the numbers on the LCD Screen for 5/8" & 1" meters*

When the LCD displays the reading it will have seven numbers before the decimal point and two after. The numbers before the decimal point are whole numbers and after the decimal point are the fractions of a gallon. For example the reading below is Thirty-three thousand, Eighty -nine and a quarter of a gallon. We only read a to the hundred placeholder and above, so the reading would be 330.

0,033,089.25

How to Read

It is important to become familiar with the information available from the meter. The icons and displays provide helpful information. See Table 8.

Alarms

Indicators and alarms appear in the displays as symbols that illuminate when the condition is active, and disappear when the alarm condition is eliminated.

LCD Icons

Table 8 shows the LCD icons on the MACH 10, a description of each one, and describes how they are status indicators.

Table 8: MACH 10 Icons and Displays

Icon	Description	Status	Explanation
Leak 	Icon used to indicate a leak. Leak status is determined by keeping track of the number of 15-minute intervals where the volume consumption exceeds Vmin in the previous 24-hour period. Vmin is factory programmed depending on meter size. It is defined as a change of the ninth digit on the LCD	**OFF**	Number of 15-minute intervals <50.
		Flashing	50 ≤ Number of 15-minute intervals < 95.
		Continuous ON	Number of 15-minute intervals ≥ 95.
Forward and reverse flow 	Icons used to indicate the forward and reverse direction of flow	**OFF**	Rate of flow < 0.01 GPM.
		Continuous ON	Rate of flow > 0.01 GPM
High flow warning 	Icon used to indicate excessive flow which can be a burst pipe.	**OFF**	Rate of flow < 20 GPM.
		ON	Rate of flow exceeds 20 GPM for more than 30 minutes.
Empty pipe 	Icons used to indicate if the pipe is empty or there is excessive air in the line. If this occurs, there is no receive signal in the expected time window.	**OFF**	Typically OFF. If the icon has been ON, it is switched to OFF. If > 10 correct samples are received in a row.
		ON	Turned ON if no receive signal is seen for 1 minute.