

DESCRIPTION

OVERVIEW:

The ORION® Water Meter Monitor is a remote receiver and display that allows consumers to monitor the use of water during consumer-defined time intervals as well as displaying the current reading of the consumer's water meter. The Monitor receiver captures signals from the ORION transmitter installed by the water utility on that consumer's water meter. The ORION transmitter regularly communicates water meter information with the utility's meter reading system. There are two separate time intervals that a consumer can program and monitor; for example, one interval could be the current month or billing cycle, the other might be one day in which a lawn is being watered.

The unit includes a receiver, a 7-digit LCD display, 3 pushbutton switches, and a battery compartment for a 9-volt battery. The unit also contains an optional leak detection alert.

The ORION Water Meter Monitor can be located generally anywhere indoors, within several hundred feet of the water meter. The unit has a magnet built in the case that permits the Monitor to be conveniently located on a refrigerator door.

APPLICATION:

The ORION Water Meter Monitor can be utilized with any water meter connected to an ORION Automated Meter Reading (AMR) transmitter. Once the Monitor is programmed with the serial number of the appropriate ORION transmitter, it will receive the data from that transmitter.

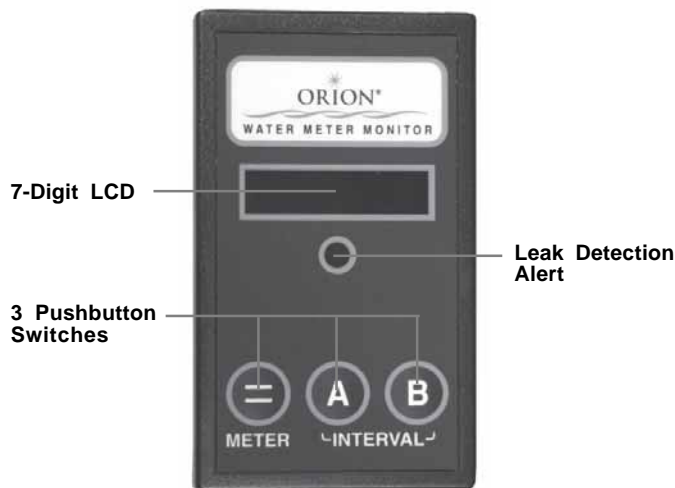
LOCATING THE UNIT:

The programmed receiver will capture the signal only from the consumer's water meter transmitter, which is typically located in a water meter pit outside the house or in the basement. The receiver should be located indoors within several hundred feet of the water meter. The receiver has a magnet built in the case to allow convenient location or storage of the unit on a refrigerator door. Generally this will allow adequate reception. However, obstructions between the receiver and the water meter may cause reception problems. A failure to receive is indicated on the display.

The ideal receiver location would be somewhere that has a clear "line-of-sight" with the water meter. However, this is rarely possible, with the line-of-sight hindered by obstructions such as trees and vegetation, buildings and other structures, vehicles, and uneven terrain. If the refrigerator door location doesn't work, try other locations with minimal dense obstructions between the receiver and the water meter.

OPERATION:

The unit has a 7-digit LCD display and three pushbutton switches. The display will inform the user when the receiver is reading the water meter transmitter and will also indicate if the reception fails. A problem with the water meter transmitter or the receiver itself will be



indicated on the display. When first powered up or after battery replacement, the Total, Interval A and Interval B readings will all be the same.

The pushbuttons are defined as follows:

TOTAL: This allows viewing the water meter reading in whatever units of measure are used by the utility (gallons, cubic feet, etc.), which represents total water consumption since the meter was installed, and serial number. When pressed momentarily and released, the unit will display the same reading as the water meter. If the pushbutton is pressed and held, the meter serial number is displayed.

INTERVAL A: This function allows the user to monitor water consumption for a user-defined period, such as the calendar month or billing cycle. The display reflects the water consumption since the reset was activated.

INTERVAL B: This function allows the user to monitor water consumption for a second user-defined period, such as a day in which the lawn is watered. The display reflects the consumption since the reset was activated.

DISPLAY: The unit has a 7-digit LCD display, and each digit is 8mm high. The display will present system information, meter readings, interval readings, or meter serial number, depending on the function being used at the moment. Meter reading and interval consumption data is displayed to the minimum electronic resolution of the meter's register. For example, for typical residential meter applications utilizing the RTR®, the displayed value is to the nearest gallon or to the nearest tenth of a cubic foot. When utilizing the ADE™ and six-dial electronic resolution, the displayed value is to the nearest ten gallons or to the nearest cubic foot.

LEAK DETECTION ALERT (Optional): This feature, if selected, utilizes an LED indicator on the front panel of the Monitor that will flash several times each time a reading is viewed by the consumer if a suspected water leak exists. The ORION transmitter will send a leak detection message to the Monitor if there are no one-hour periods over 24 hours when consumption is zero; that is, water has flowed at some point during each hour of the 24 hour period. If there is one hour of zero flow, the leak detection alert is cleared.

MOUNTING: The Monitor has a built-in magnet that allows it to be conveniently mounted to any metal surface, such as a refrigerator door.

CONSTRUCTION: The circuit, display and battery are all housed in a small ABS plastic box.

ENVIRONMENT: The Monitor is designed for use in an environmentally-controlled indoor setting. Operating temperature range is 32°F to 129°F.

MOISTURE: The Monitor is designed for use in an environmentally controlled indoor environment and is not suitable for submerged applications or in locations where the unit is subjected to condensation. Humidity range is 0% to 95% non-condensating.

ELECTRICAL: Uses a replaceable 9V alkaline battery. Battery life depends on usage; typical life approximately 3-6 months or up to 6250 readings. Battery compartment is accessed through a sliding cover on the back of the Monitor.

PROGRAMMING: The serial number of the ORION transmitter of the consumer's water meter must be programmed into the receiver circuit either during the original manufacturing process or at a later time by the utility staff. Field programming of the serial number can be accomplished using the ORION Remote Programming Accessory with either the ORION laptop computer and Optical Programmer, or with the Badger® Radix® handheld computer. The serial number in the Monitor memory can be changed at any time. The transmitter serial number is stored and will not be lost during battery replacement.

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SPECIFICATIONS

Power Source	9V alkaline replaceable battery
Construction	Monitor housed in an ABS plastic box
Dimensions	4.5" x 2.7" x 1.0"
Weight	5.5 oz
Environmental	Intended for indoor use only
Temperature	32°F to +129°F (0°C to +54°C)
Humidity	0% to 95% non-condensating
LCD Display	<ul style="list-style-type: none">7-digit display; each digit is 8mm highDisplays system information, programmed transmitter serial number, meter reading, or interval consumption reading, depending on function in operationMeter reading and interval consumption data displayed to the minimum electronic resolution of the meter's register
Pushbutton Switches	<ul style="list-style-type: none">Current water meter readingConsumption during time Interval AConsumption during time Interval B
Visual Indications	Good read, tamper, leak alert, failed reading
Mounting	Monitor has internal magnet for mounting device on any metal surface
Suspected Leak Detection Alert	LED indicator will flash several times during reading mode if ORION transmitter senses a Leak Indication (no one-hour period during last 24 hours with zero consumption)
Consumer Information	Instruction label on back of monitor case

REGULATORY

This device complies with Part 15 of FCC rules. Operation of this device is subject to the following conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

⚠ WARNING

Magnetic Fields - This unit utilizes a magnet on the inside of the housing for mounting the unit to a metal surface. User should exercise caution to avoid credit card exposure to the magnetic field.

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.



BadgerMeter, Inc.

P.O. Box 245036, Milwaukee, WI 53224-9536
(800) 876-3837 / Fax: (888) 371-5982
www.badgermeter.com