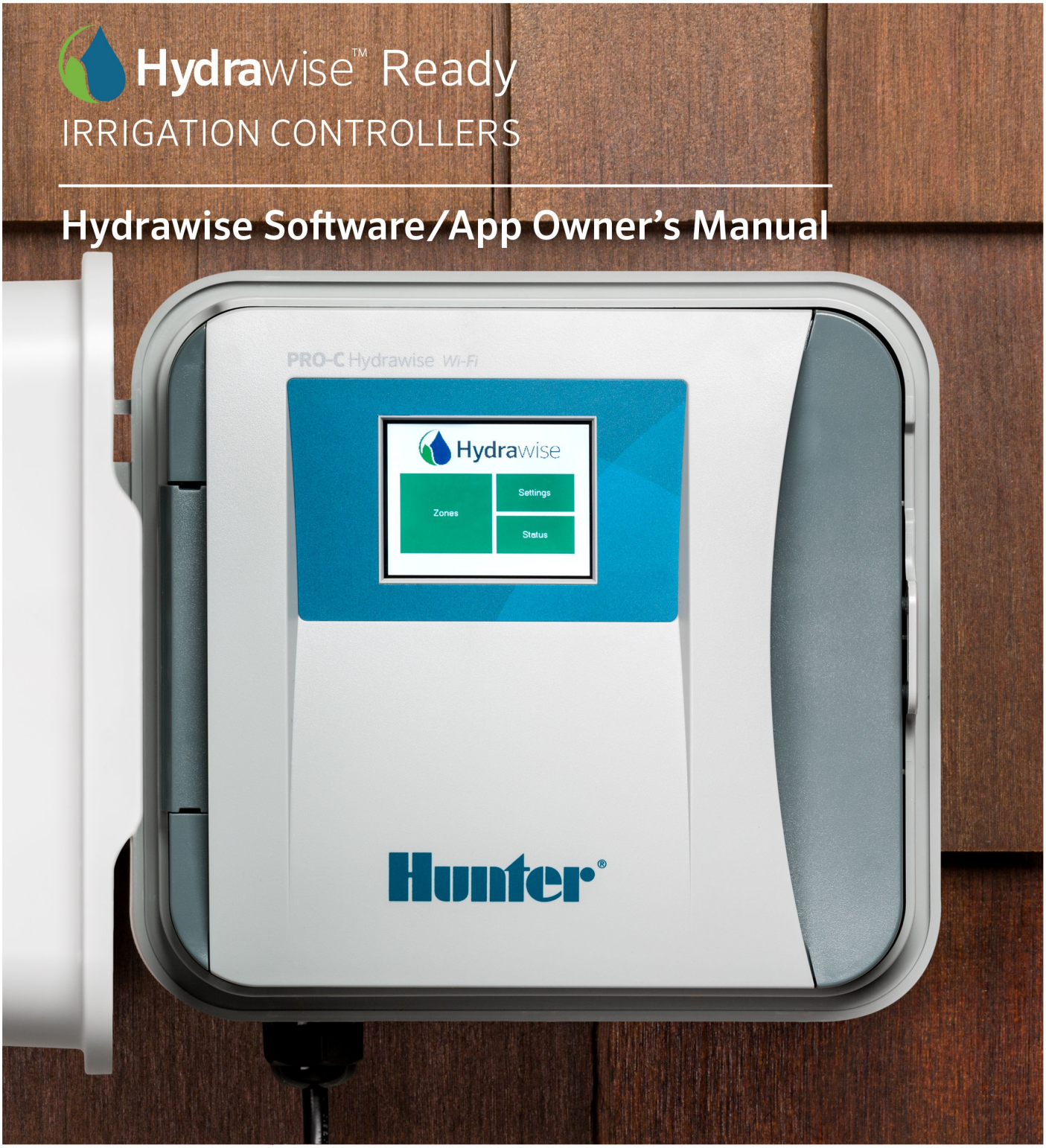
Hydrawise™ Ready

IRRIGATION CONTROLLERS

Hydrawise Software/App Owner's Manual

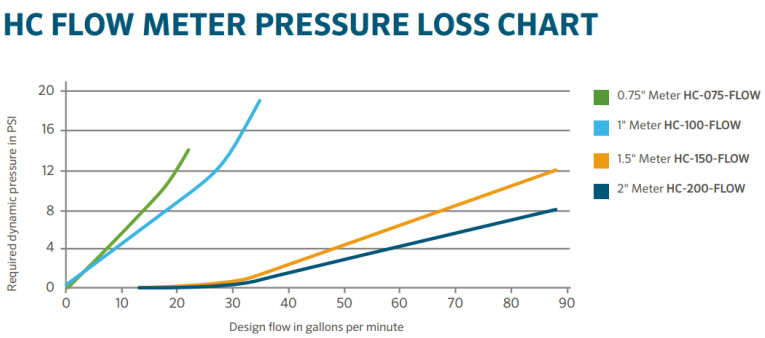


hydrawise.com

Table of Contents

Table of Contents 2
Flow Meter Pressure Loss Chart 3
How to Configure Your Flow Meter 3
Flow Meter Installation Quick Start Guide 6
The flow meter consists of two parts: 6
The following instructions assume you have already installed your Hydrawise controller 7
Use your Hydrawise account to complete your flow meter configuration. 8
Flow Meter Installation Tips 9
HC Flow Meter Specifications 12
Reading Meter 13
How to Configure a Custom Flow Meter 15
Using One Flow Meter for Two Controllers 16
Winterization - Bypassing a Flow Meter 17

Flow Meter Pressure Loss Chart



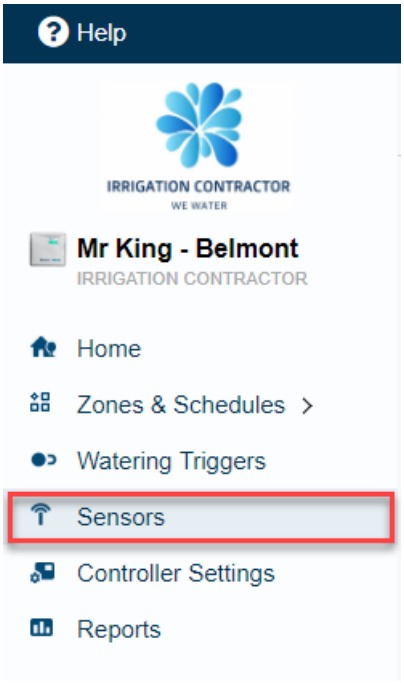
How to Configure Your Flow Meter

Assigning the Meter

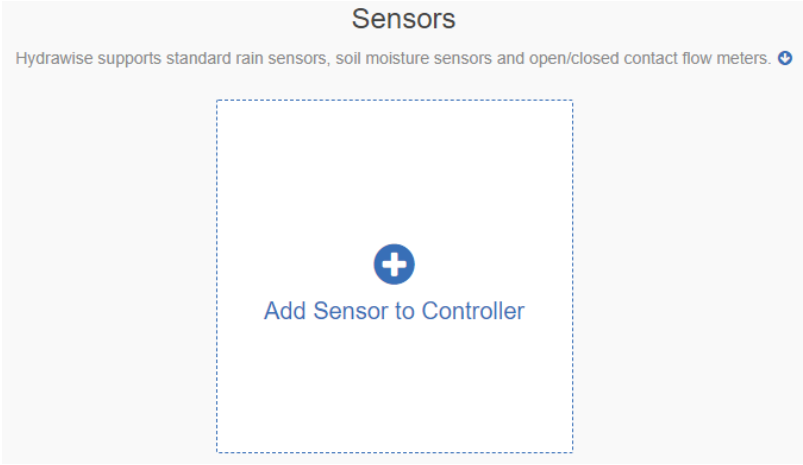
Please view the steps and screenshots to access this feature:

1. Click on **SENSORS** from the home dashboard.
2. Click on **ADD SENSOR TO CONTROLLER**.
3. Choose a **NAME**, **SENSOR TYPE**, and **INPUT** (flow-related only).
4. Choose which **ZONES** should be linked to the sensor.
5. Click **OK** when finished.

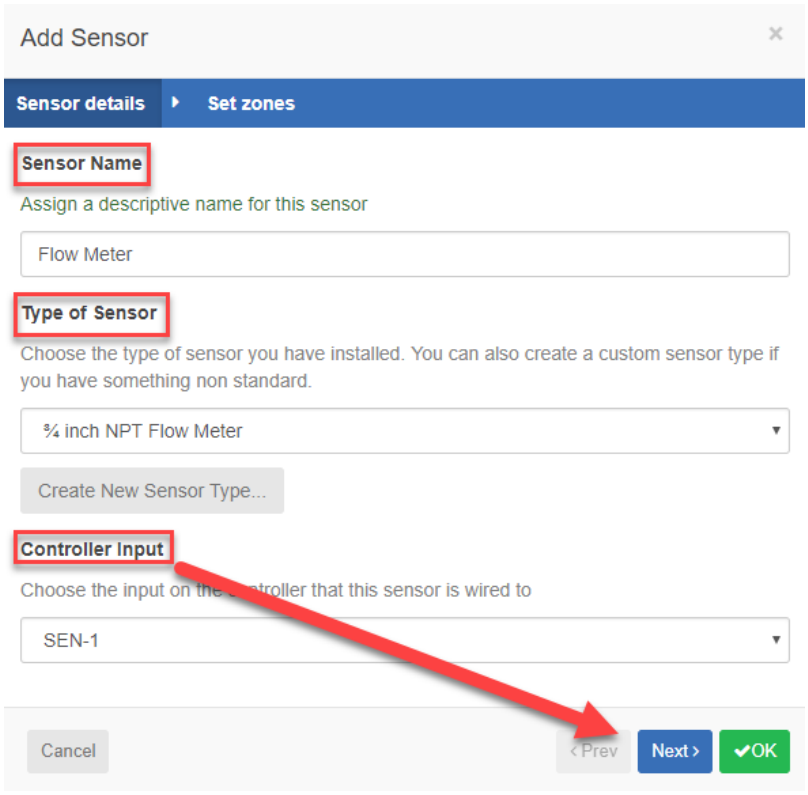
Step 1



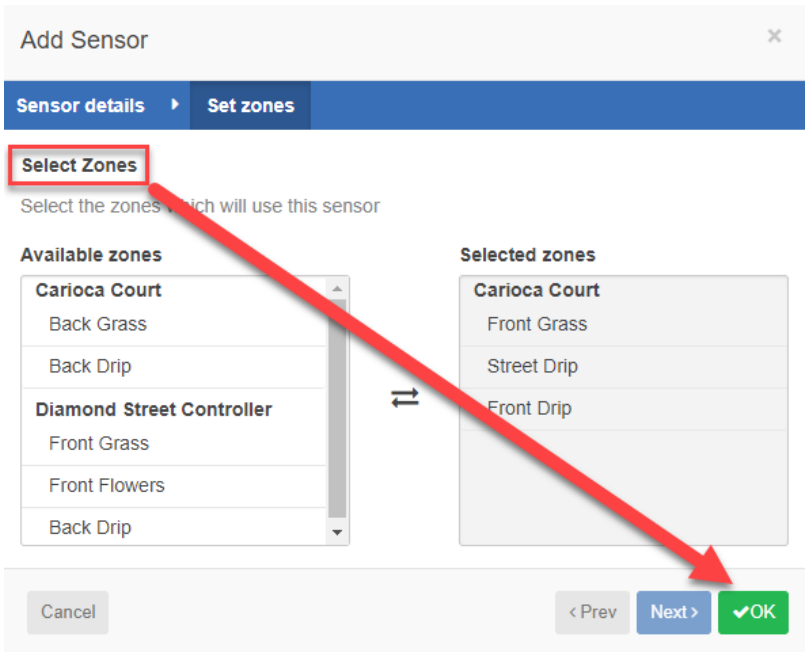
Step 2



Step 3



Step 4



Flow Meter Installation Quick Start Guide

In this Quick Start Guide, you will learn how to install and configure your flow meter. For support of Hydrawise™ cloud software or help with your Hydrawise account, visit the support section here [1]. For specification information, refer to the section here [2].

The flow meter consists of two parts:

1. Flowmeter body: The flowmeter body contains an analog dial for manual readings as follows. Your flow meter will have 3 wires protruding from the body. The wires need to be connected to the sensor inputs on the controller for readings in the software application. In all models, only 2 wires (blue and white) are used.

2. Adapter: Each flow meter has an adapter to allow connection to your irrigation system.

DIAL MARKING	MEASUREMENT UNIT
X0.01	0.1 gallon
X1	1 gallon
X10	10 gallons
X100	100 gallons

3. Flowmeter location: Flow meters are installed between the master valve and zone valves. To avoid false alerts, there should be no water taps or other uncontrolled water use on the downstream side of the flow meter. If all solenoids connected to the controller are not grouped together, it may be necessary to install more than one flow meter. For proper installation and optimal water flow, use the chart below when determining pipe length. The pipe bringing water into the flow meter needs to be 10 times longer than the width of the pipe. The pipe carrying water away from the meter needs to be 5 times the width of the pipe.

PIPE	10X-BEFORE	5X-AFTER
¾"	7½"	3¾"
1"	10"	5"
1½"	15"	7½"
2"	20"	10"

4. Cable (shielded direct-burial cable must be used): Two-wire cable is required. The cable gauge is determined by the total length of cable between the controller and the flow meter. The cable should consist of 2 dedicated wires and must not be in the same conduit or cable bunch as the solenoid wires. Do not share the common wire of the solenoids with the common of the sensors. If desired, the flex cable can be used to run inside the conduit. That flex cable measures ¼" BSP, which also fits ¼" NPT.

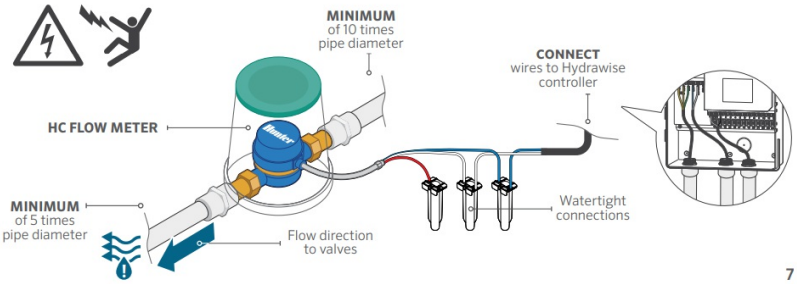
Flow Meter Cable Length Chart

WIRE SIZE	MAX LENGTH
Gauge	Feet
20	240
18	1,000

IMPORTANT: Shielded direct-burial cable is commonly available. Manufacturers include Paige Electric and Regency Wire.

The following instructions assume you have already installed your Hydrawise controller

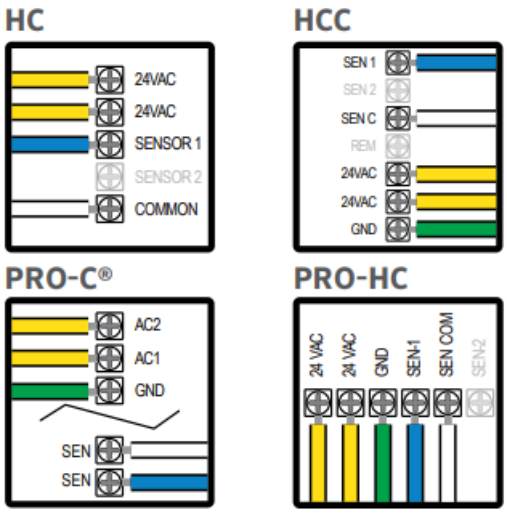
1. Flowmeter body: The flow meter has a marking on the body indicating the direction of water flow. Installation of the flow meter must be in the correct orientation with water flowing in the direction of the arrow on the flow meter body. All HC Flow Meters must be installed horizontally with the dial facing upward.



2. Connect flowmeter wire: Two-wire cable is required. The cable required to connect your flow meter must be dedicated to the flow meter and not shared with the common wire of the valves or other sensors. The cable gauge is determined by the total length of cable between the controller and the flow meter. The general rule is that 0.5 mm (20GA) wire is good for a run of up to 240'. Connect the wires to your Hydrawise controller.

WIRE COLOR	SENSOR TERMINAL BLOCK
White	Common
Blue	Sen 1 or Sen 2
Red	**Not used:** Wires should be capped with waterproof splice

* Shield and bare wire should be connected to the controller ground terminal if available.



IMPORTANT: All wire connections should be done using waterproof connectors, such as 3M 316IR or 3M DBY.

Use your Hydrawise account to complete your flow

meter configuration.

1. Log in to your account: Enter your login information.
2. Create a flow sensor: It is important that you select the correct flow meter when configuring your Hydrawise
app. Choosing the wrong model may cause the Hydrawise controller to create false alerts in the software.

HC FLOW METER SELECTION CHART		
METER SIZE	DESCRIPTION	U.S. GALLON PULSE RATE
¾"	¾" flow meter	1 pulse per 0.1 gallon
1	1" flow meter	1 pulse per 1 gallon
1½"	1½" flow meter	1 pulse per 1 gallon
2"	2" flow meter	1 pulse per 1 gallon

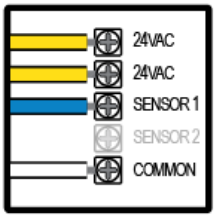
3. Assign zones to the flow sensor: Refer to this support article [3] for setup information.

Flow Meter Installation Tips

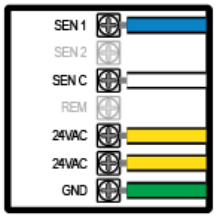
Flow meters are supplied with detailed installation instructions [4].

The flow meter wires need to be cabled back to the controller and connected to the **Sensor** inputs on the controller. Check out the illustrations below for wiring standard Hydrawise flow meters to each of the model controllers (Sizes include 3/4", 1", 1.5", and 2")

HC

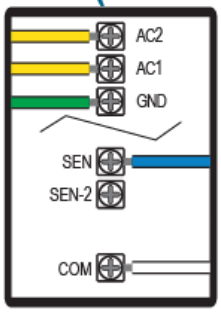


HCC

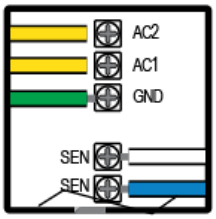


PRO-HC

HPC (Jan 2023 Newer)



HPC



The tips below include all the necessary key points of the installation to avoid any false alerts or readings.

Installation Steps	Description
Flow Meter Body	Flow meters are designed to be installed **horizontally only**, with the dial facing up. Not vertically. Analog dial for manual readings in U.S. are shown in US gallons (Int. customers the dial reads in Cubic Meters). Units can be changed in App to gallons or liters.
Adapter	Brass unions included to fit your irrigation system.
Entry Location	Install between the **master valve** and zone valves. Meter should be installed 10 times pipe diameter before and 5 times after with straight pipe and no fittings. See example:

Pipe	10x-Before	5x-After
3/4"	7.5"	3.75"
1"	10"	5"
1.5"	15"	7.5"
2"	20"	10"

Cable used **(shielded cable only)**	18 gauge - 1000 foot max Length. **Shielded direct burial cable must be used.** Cable should consist of two dedicated wires and must not be in the same conduit, cable bundle or trench as the solenoid wires. DO NOT share common wire. Shielded cable is commonly available, here are some manufacturers (Paige [5] & Regency [6]For additional information on avoiding electrical interference, see below:
Flow meter body	Arrow indicates direction of flow.
Wire Connection	Blue/White wire only, **red not used**. See sensor configuration [7] for more info based on model controller.
Log in to your account	Enter your login [8] information.
Create your flow sensor	App will show options for all HC meters.
Creating Alerts	See link here [9]
Reading Meter	See link here [10]
Testing Meter	See link here [11]

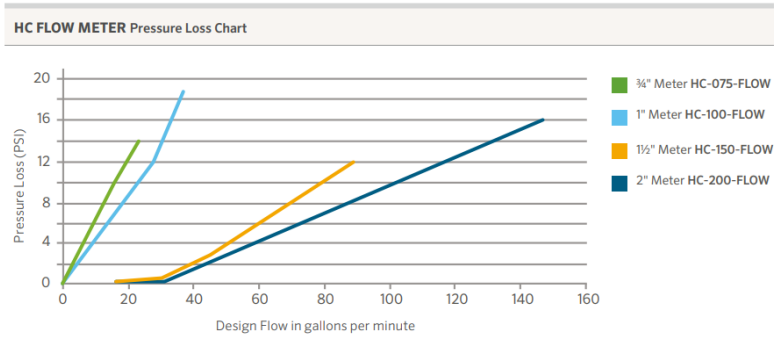
Avoid Electrical Interference

- Always use shielded cable, between the controller and the HC Flow Meter.
- At the controller end, using the shield (foil wrap) and the bare wire connect them to the controller GND terminal (not required for HC controllers).
- Do not connect the other end of the Shield or the bare wire to the Earth or a grounding stake
- Use Waterproof wire connectors at the flow meter, such as the 3M-DBOB [12].
- Shielded cable is commonly available, here are some manufacturers. Paige [5] & Regency [6]

HC Flow Meter Specifications

HC FLOW METER SPECIFICATIONS

HC Flow Model	HC-075-FLOW (¾")	HC-100-FLOW (1")	HC-150-FLOW (1½")	HC-200-FLOW (2")
Inlet/outlet connection size	¾" NPT body, male thread	1" NPT body, male thread	1½" NPT body, male thread	2" NPT body, male thread
Meter internal diameter	3/4"	1"	1.5"	2"
Minimum flow (GPM)	0.22	0.3	0.88	1.98
Maximum recommended flow (GPM)	15	30	66	105
Maximum flow rate (GPM)	21	34	88	132
Dial reading (US gal)	1 pulse per 0.1 U.S. gal	1 pulse per 1 U.S. gal	1 pulse per 1 U.S. gal	1 pulse per 1 U.S. gal
Maximum working pressure (PSI)	230	230	230	230
Included Wire Length	29" total wire length with first 8" having flex conduit.			
Flex Conduit Thread Spec	Threading measures ¼" BSP, which would also fit ¼" NPT for all models. The exact thread size of the stainless steel fitting is 1/4-28.			



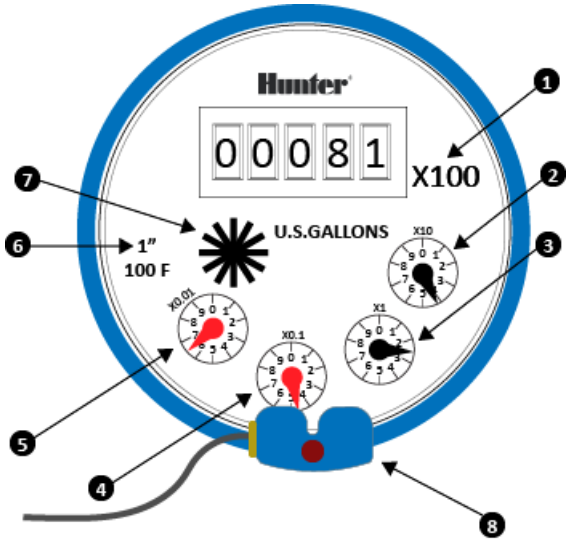
Reading Meter

The Hydrawise flow meters come in a US Gallon reading for domestic and metric reading called M³ (Meters Cubed 1000 Liters) for international. The conversion rate for metric meters is 3.78 Liters to 1 US Gallon if required.

See an example of meter reading below in US gallons:

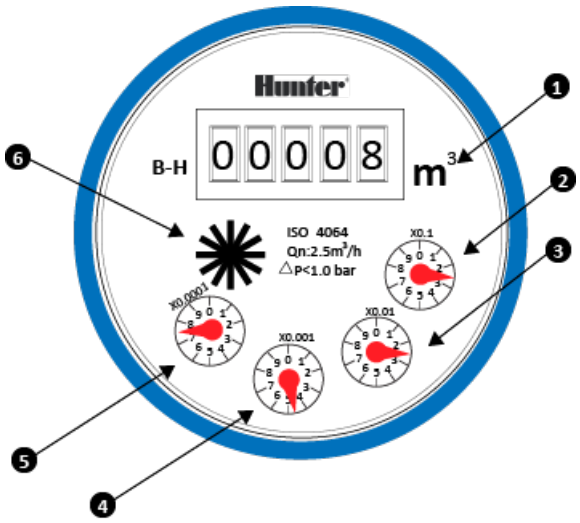
Fig. 1	X100	8100 Gallons
Fig. 2	X10	814X.XX Gallons
Fig. 3	X1	8142.XX Gallons
Fig. 4	X0.1	8142.4X Gallons
Fig. 5	X0.01	8142.46 Gallons Total
Fig. 6	Size meter	1"
Fig. 7	Flow Indicator	Wheel spins when water is flowing.
Fig. 8	Pulse Transmitter	1-1/2” (40mm) & 2”(50mm) flow meter models

We have a flow that has gone through the meter of 8,142.46 gallons.



See an example of meter reading below in Litres:

Fig. 1	8,000 Litres
Fig. 2	8,200 Litres
Fig. 3	8,220 Litres
Fig. 4	8,224 Litres
Fig. 5	8,224.7 Litres Total
Fig. 6	The wheel spins when water is flowing.

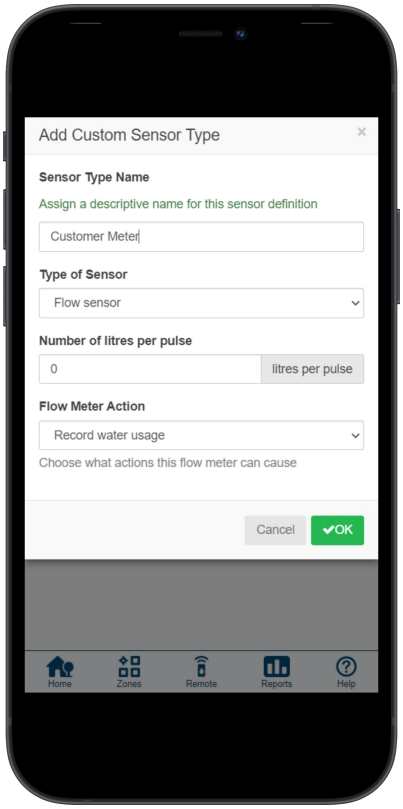


So we have a flow that has gone through the meter of 8,224.7 Litres. To calculate this into Gallons is easy 8,224.7 / 3.78 = 2175.84 gallons.

How to Configure a Custom Flow Meter

If you choose to use a flow meter from another manufacturer with a reed switch output, please make sure the configuration is set up under **CUSTOM SENSOR TYPE**.

1. Log in to the Hydrawise app [8].
2. Click the **MENU** icon on the upper left-hand side.
3. Select the **SENSORS** option.
4. Select **CUSTOM SENSOR TYPE**.
5. Select **ADD CUSTOM SENSOR TYPE.**
6. A dialogue box will appear for you to enter your custom flow meter details. Make sure you enter the calibration details for your custom, pulse-based flow meter. Please refer to the manufacturer specifications to determine the calibration. Otherwise, you will not receive accurate readings to display on your flow data.



NOTE: For our system to detect the correct flow data and reflect it on your **Dashboard** reports, any third-party

flow meter used must be a true pulse flow meter or have a reed switch. We aim for a minimum of 10 pulses per min and a maximum of 120 pulses per min. That means if the flow rate was 10 gal per min, 1 pulse per gallon needs to be set.

When using a third-party flow meter, please ensure it meets the specs above and is calibrated correctly. Otherwise, data will not reflect accurately in reports. Also, note that the wiring is not polarity sensitive. As long as you have one wire in a **Sensor Port** and a **Sensor Common**, the device will work correctly. For flow meters that use three wires and meet the specs above, configure the wiring until you find the two correct wires to use.

Using One Flow Meter for Two Controllers

For this installation, we suggest a few tips to make sure you do not receive any unnecessary alerts.

When using two controllers on the same flow meter, there are two alerts we do not recommend using.

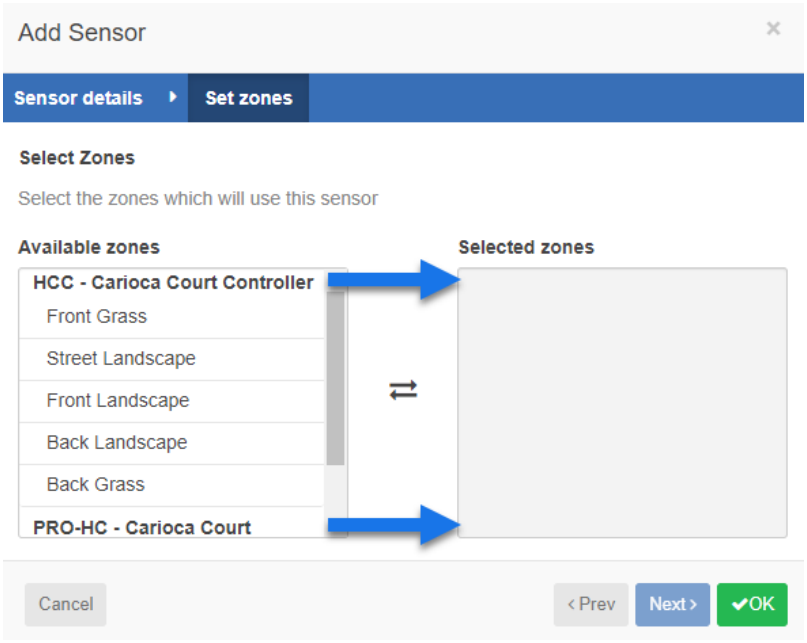
1. **HIGH FLOW LEAK** - High water usage with no zones running.
2. **SLOW LEAK** - Water usage over last hour with no zones running.

These alerts are controller specific so when the controller with the flow meter is not in operation, it does know about the other controller operation.

Tips:

1. The inter station delay [13] should be set for 10-30 seconds. We do not recommend any higher.
2. Change the gallons in the alert to be **HIGHER** (e.g. alert from 5 gallons to 20 gallons).
3. Wire to only **ONE** of the two controllers.
4. Configure the sensor to the controller that has the wire connection.
5. Move **AVAILABLE** zones from both controllers into **SELECTED ZONES**.

For more information on configuring and wiring, visit support section here [14].



Following these parameters should allow the system to run normal when using one flow meter with multiple controllers.

Winterization - Bypassing a Flow Meter

Overview:

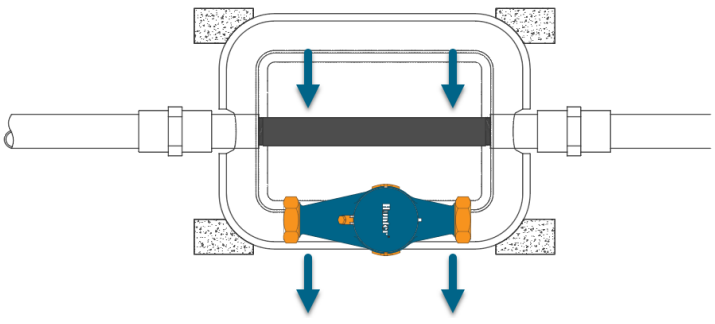
We recommend that a qualified licensed contractor perform this type of winterization method. The blowout method utilizes an air compressor with a cubic foot per minute (CFM) rating of 80-100 for any 2" or less mainline. The compressor is attached to the mainline via a quick coupler, hose bib, or other connections located beyond the backflow device. For additional winterization procedures, we highly recommend contacting the local dealer for the most common local practices.

IMPORTANT: Compressed air should not be blown through any backflow or flow meter device.

If you need to blow upstream from where the flow meter is located, we recommend bypassing the meter temporarily by using one of two options.

Bypass HC Flow Meter Using Nipple

See the size chart below for specific lengths to install an SCH 80 or galvanized nipple.



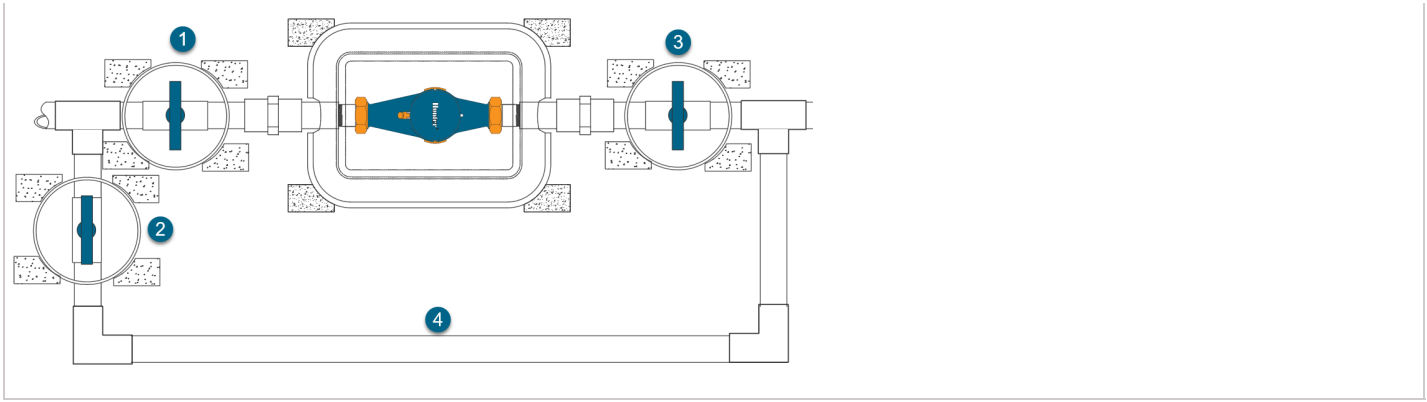
Model	Description	Male-Thread NPT	Nipple Length
HC-075-FLOW	¾" NPT body, male thread with 1" NPT male adapter	1" NPT	5"
HC-100-FLOW	1" NPT body, male thread with 1.5" NPT male adapter	1 ¼"NPT	5"
HC-150-FLOW	1½" NPT body, male thread with 2" NPT male adapter	2"NPT	11 3/4"
HC-200-FLOW	2" NPT body, male thread with 3" NPT male adapter	2 1/2" BSP	11 3/4"

Bypass HC Flow Meter Using Shutoff Valves

A second option would be to install PVC tee-ball valves on each side of the meter. This is the recommended option during NEW installation. The meter will have to be removed manually after the blowout to make sure any residual water is not sitting inside through the winter months.

IMPORTANT: The pipe flowing water into the flow meter needs to be a **MINIMUM** of 10 times longer than the width of the pipe. The pipe flowing water away from the meter needs to be a **MINIMUM** of 5 times the width of the pipe.

1. Ball Valve 1
2. Ball Valve 2
3. Ball Valve 3 (Not necessary for winterizing but helpful for maintenance on the meter)
4. Bypass PVC pipe



Find a Hunter Distributor closest to you using our interactive lookup - Get Hunter [15]