TechTALK

NETAFIM™
GROW MORE WITH LESS

This month's edition of Netafim TechTALK focuses on Water Meters.

Like fitting a square peg into a round hole, pairing a water meter with a controller can be hectic, but unlike the peg we can usually make it work without a hammer. We use the word controller but the information also applies if you are connecting the meter to a remote display, a telemetry system or a proportional injection pump. That's why Netafim water meters come with a variety of output options. Before you pick the meter's output, make sure you understand the controller's requirements. Some controllers require the water meter to provide an output of discrete pulses, while others need an analog signal (i.e. 4 to 20mA), some can use either. The controller will use that signal to calculate the meter's flow rate, for this article the referenced flow rate is in gallons per minute (GPM).

Reed Switch
Register

The controllers that require an analog signal typically need to know one thing - the flow rate at the high end of the signal. Most controllers accept that the low end of the analog signal represents a flow rate of 0 GPM. For example, a Netafim 2" Octave water meter with a 4 to 20mA analog signal, 4mA would signify 0 GPM and 20mA would signify 250 GPM (the maximum flow rate of the meter). Please note that the 4 to 20mA output module for an Octave water meter requires an external power source.

For those controllers that require pulses, we also need to know if a high resolution (pulses per second) or low resolution (pulses per minute) is needed, as well as the pulse width. You also have to tell the controller what each pulse means by providing it a 'K-factor' or ratio. With the K-factor and pulse frequency (i.e. pulses per second), you can calculate the meter's flow rate. Sadly though, the definition of K-factor has been blurred throughout the industry so a K-factor for one controller may not mean the same thing on another. A K-factor could be:

Octave Ultrasonic
Water Meter

1. Unit of volume per pulses (gallons per pulse)
2. Pulses per unit of volume (pulses per gallon)
3. A dimensionless constant K, accompanied with a correction offset (K & Offset)

Simply put, if your controller asks you for a K factor but doesn't ask you for an offset, then chances are it just wants to know how many pulses per gallon the meter produces.

Listed in the table below are two of the possible configurations for the Netafim 3" WST meter, both provide discrete pulses. The reed switch provides a low resolution pulse while the photo diode provides a high resolution pulse. Most landscape irrigation controllers that we've worked with (including our own NLC-100 series) require a high pulse resolution and use the values in the K Factor and Offset column. Most agricultural irrigation controllers are happy with a low pulse resolution (i.e. a reed switch) and would use the values in either the gallons per pulse, or pulses per gallon column. Netafim provides these values for each meter we offer in their respective brochure. If these values do not work for your controller, contact your controller's manufacturer for assistance.

Photo Diode
Register

METER CONFIGURATION	GALLONS PER PULSE	PULSES PER GALLON	K FACTOR & OFFSET
3" WST REED SWITCH USG	10	0.1	600 - 0
3" WST PHOTO DIODE USG	0.1097	9.116	6.582 - 0

All Netafim Water Meters have an offset of 0.

For additional questions, contact your Netafim representative or visit our website at www.netafimusa.com. Thank you.