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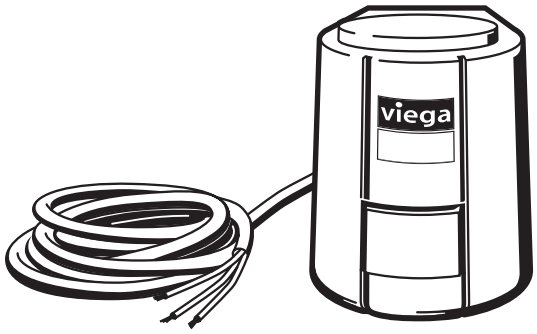
Viega® 0-10V Powerhead for 1¼" Stainless Manifold

The Viega 0-10V powerhead is a thermo-electric powerhead that mounts on the return valve of a Viega 1¼" stainless manifold. A 24-volt signal powers the unit open while controlled by a 0-10V DC signal, usually from either a thermostat or a central DDC building management system. This powerhead is compatible with 1¼" stainless manifolds of either shutoff/balancing or shutoff/balancing flow meter types.



Part Number 15068

Extending the connecting cable

The powerhead cable may be extended, the length is dependent on the number of powerheads and the gauge of the wire used. The chart below lists recommendations for extending the powerhead cable.

Length powerhead can be extended (ft)			
# of 0-10V Powerheads	20 AWG	18 AWG	16 AWG
1	134'	200'	269'
2	67'	100'	134'
3	44'	67'	89'
4	33'	50'	67'
5	26'	40'	53'
6	22'	33'	44'

NOTE: If your project requires something outside of what is suggested above please use the information below for your calculations.

L = C x A/N
L= Maximum cable run length
C= Constant (269)
A= Conductor cross section (from chart below)
N= Number of powerheads

Conductor Cross Section (MM)	Substitute this American Wire Gauge
0.5	20
0.75	18
1.0	16
1.5	14
2.5	12

Transformer

The table below shows how many 0-10V powerheads can be connected to each Viega transformer.

Transformer sizing

Part Number	Rating	Number of powerheads per transformer
18008	40 VA	6
18020	75 VA	12

NOTE: The table above is figured based on 6 W per powerhead.

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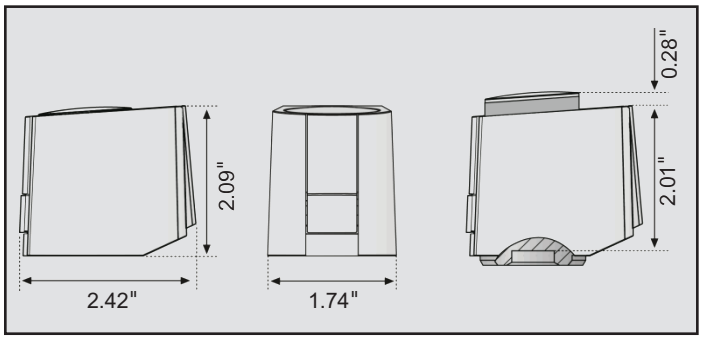
Dimensions



Specifications

Voltage:	24 VAC 50/60 Hz
Control voltage:	0-10 VDC
Max inrush current:	< 320 mA during max. 2 min.
Operating power	1 W
Actuating force:	21 lbs.
Stroke:	4 mm
Fluid temperature:	32°F - 212°F
Max pressure differential:	50 psi
Connecting cable length:	3'

Initially open function

The 0-10V powerhead is delivered in the open position. This allows for easier installation and allows the installer to pressure test and purge each circuit before connecting power. This function disengages automatically after 6 minutes of powered use and will return the powerhead to its normally closed position.

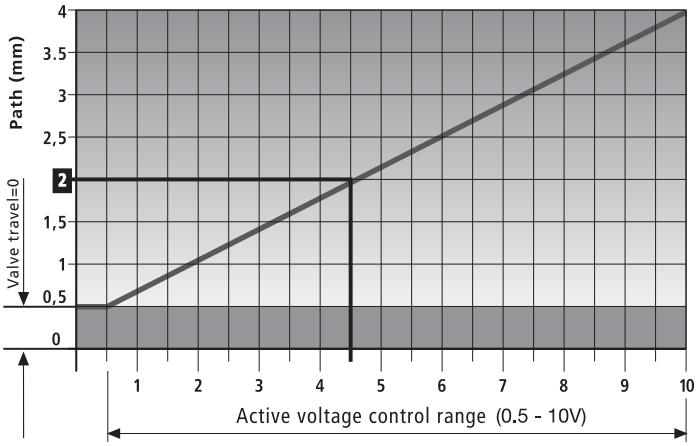
Normal operation

When a control voltage of 0.5 - 10V DC is applied, the powerhead opens the valve by retracting its piston, causing the valve stem to rise. An internal optical stroke measurement controls the temperature required for the maximum stroke and, consequently, the energy use of the wax element. No excess energy is stored inside the wax element. Once the control voltage is reduced, the powerhead adapts the heat input to the wax element, allowing the integral spring to drive the valve closed. In the range of 0 - 0.5V, the powerhead remains stationary in order to ignore ripple voltage occurring in long cables.

The closing force of the compression spring is matched to the closing force of the stainless manifold, allowing the valve to stay closed when de-energized (NC).

The chart below shows the valve position based on the DC voltage applied.

Example: 4.5 volts applied to the powerhead would result in a 2 mm valve stroke, causing the valve to open approximately 50%.



NOTE: The Viega 0-10V powerhead is capable of modulation. However, the 1¼" stainless manifold that it attaches to is suggested for simple two-position on/off activation.

Open/closed indicator

The 0-10V powerhead has a cylinder on top that will raise or lower depending on the powerhead's position. When flush, it indicates that the valve is closed, and when raised, that the valve is open.