

VR1816 ECM High-Efficiency Circulator

The 00e[®] series — VR1816 circulator is an infinitely variable speed, high-efficiency wet rotor circulator with an ECM permanent magnet motor. Operating modes include infinitely variable fixed speed and self-adjusting constant pressure or proportional pressure variable speed.

- High-efficiency ECM motor uses up to 85% less electricity
- Infinitely variable speed settings to fine tune flow for any system
- **SureStart** automatic unblocking and air purging mode
- **BIO Barrier**[®] filter protects pump from system contaminants
- Dual electrical knock-outs and 6" stranded wire leads included for easy wiring



Features & Applications

Infinitely variable speed operation to fine tune flow for any system.

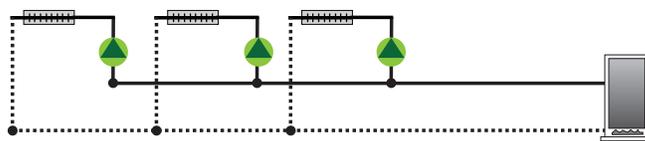


- 18' Shut-off head, 16 gpm max flow
- ECM High-efficiency motor
- Easy to use dial to set operating speed or pressure control
- Operates in 3 different modes:
 - Infinitely Variable Fixed Speed
 - Constant Pressure — Self-adjusting, Variable Speed
 - Proportional Pressure — Self-adjusting, Variable Speed
- 5 color LED displays:
 - Operating mode (Blue, Orange or Green)
 - Error code diagnostics (Red or White)
- Use with a Taco ZVC Zone Valve Control or SR Switching Relay for ON/OFF operation
- Integral Flow Check (IFC®) included
- Whisper quiet operation
- Optional 2-way flange reduces SKU's and provides universal fit-up to any flange position
- Double insulated, no ground required

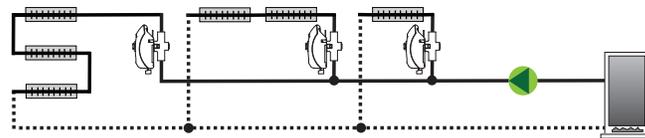


Typical Applications

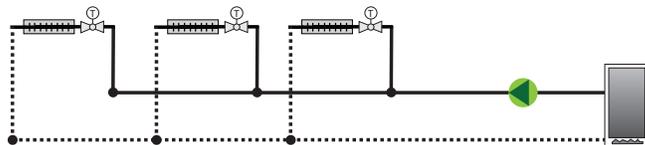
Fixed Speed Mode (Min/Max)
For zoning with circulators



Constant Pressure Mode
Across a series loop system using zone valves



Proportional Pressure Mode
Across multiple panel radiators with thermostatic radiator valves
T= thermostatic radiator valve (TRV)



Modes & Performance

FIXED SPEED MODE



CONSTANT PRESSURE MODE

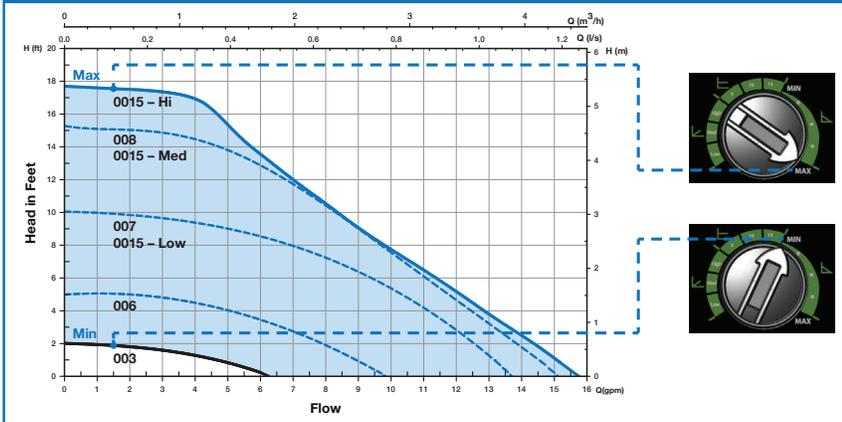


PROPORTIONAL PRESSURE MODE



The VR1816 is factory-programmed for **Max Speed Setting**. Simply turn the dial to change speed, operating mode or pressure setting.

Fixed Speed Mode (Min/Max)



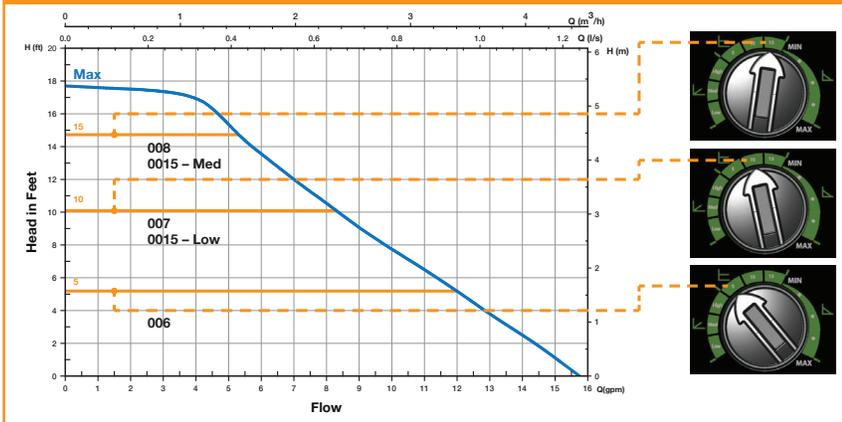
Fixed speed mode allows the installer to fine tune the circulator flow rate to precisely match design load conditions. It is infinitely variable between min/max settings.

Ideal for zoning with circulators.

See chart to the left for equivalent 00® model at each variable speed setting.



Constant Pressure Mode



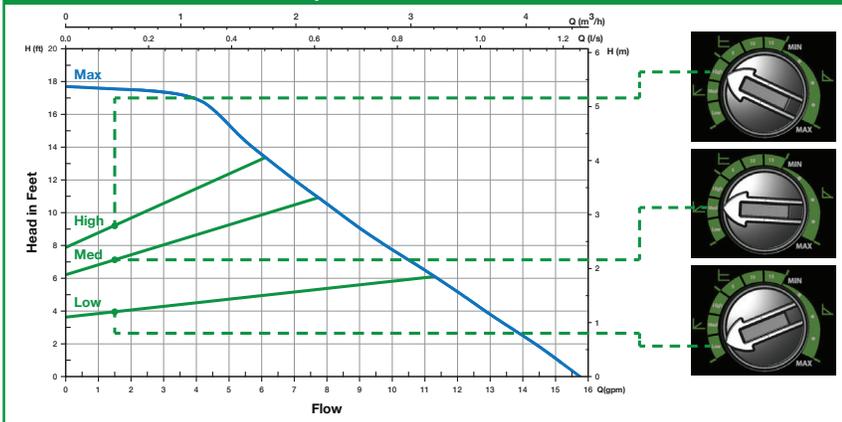
In constant pressure mode, the circulator maintains a constant pressure differential ($\Delta p-c$) in the system as heating load increases or decreases. Selection options are 5, 10, or 15 feet of head constant pressure.

Best option for zoning with zone valves.

See chart to the left for equivalent 00® model at each setting.



Proportional Pressure Mode



In proportional pressure mode, the circulator maintains a proportional pressure differential ($\Delta p-v$) in the system as heating load increases or decreases. Flow will change in relationship to the change in pressure differential.

Best option for panel radiators with thermostatic radiator valves (TRV).

Selection options are Low, Medium, or High. If unsure on proper setting, select Medium and adjust as needed.



Submittal Data Information Taco 00e™ series — VR1816

Submittal Data # 101-167
Supersedes: 05/19/21

Effective: 08/16/21

Specifications

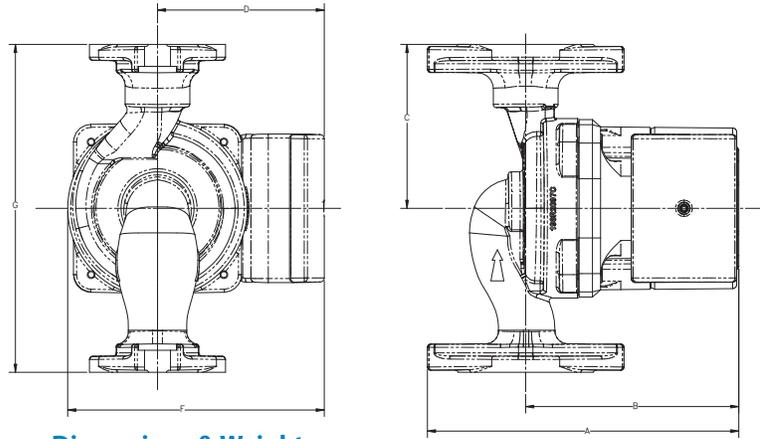
- Maximum Shut-off Head: 18 feet
- Maximum Flow: 16 gpm
- Maximum Operating Pressure: 125 psi (8.6 bar)
- Maximum Water Temp: 230°F (110°C)
- Minimum Water Temp: 36°F (2°C)
- Electrical specifications:
 - Voltage: 120V, 60 Hz
Single phase
 - Operating Power: 4W - 44W
 - Max. AMP Rating: 0.54
- Equipped with a cast iron casing and should be used for closed loop systems only
- Taco circulator pumps are for indoor use only
- Acceptable for use with water or maximum of 50% water/glycol solution

Materials of Construction:

Casing:Cast Iron
 Stator Housing:Composite
 Cartridge:Composite
 Impeller:Composite
 Shaft:Ceramic
 Bearings:Carbon
 Thrust Bearing:Ceramic
 O-Ring & Gaskets:EPDM
 Integral Flow Check (IFC):
 Body, PlungerAcetal
 O-ring SealEPDM
 SpringStainless Steel

Applications

The VR1816 circulator is a variable speed, high-efficiency wet rotor circulator with an ECM permanent magnet motor. Operating modes include infinitely variable fixed speed to fine tune any zone, self-adjusting constant pressure for zone valve applications and self-adjusting proportional pressure for panel radiators with thermostatic radiator valves. The VR1816 is not suitable for chilled water or open loop potable water applications.



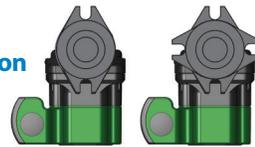
Pump Dimensions & Weights

Part Number	Flange Code	A		B		C		D		F		G		Ship Wt.	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	Kg
VR1816-HYI-FC2A00	S	6	152	4-1/8	104	3-3/16	80	3-1/4	82	5	126	6-3/8	161	5.8	2.6
VR1816-HYI-4C2A00	U	6	152	4-1/8	104	3-3/16	80	3-1/4	82	5-1/8	130	6-3/8	161	6	2.7

Mounting Positions



Flange Orientation



Standard (S) Universal (U)

HYDRAULIC ENERGY INSTITUTE RATING

Model #: VR1816
 WAIP: 0.071

CIRCULATOR PUMP CEI: 0.39 (ER 188)

ENERGY RATING



Note: The ER value is dependent on the selected control. Multiple options may be available on this pump, as follows:

- Full Speed
- Manual Speed Control
- Pressure (Rated)

Power savings (watts) over a baseline case can be estimated by multiplying the ER by WAIP and multiplying by 7.46. Multiplying power savings by operating hours and cost of energy will yield estimated cost savings.

59KMNB

er.pumps.org

Apr 2021

Electrical Data

Model	Volts	Hz	Ph	Max. Amps	Max. Watts	RPM
All Models	120	60	1	.54	44	1590 - 4830
Motor Type	ECM, Permanent Magnet, Thermally Protected					



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