

VR3452 ECM High-Efficiency Circulator

Taco 00e[™] series — VR3452 circulator is a self-adjusting, high-efficiency wet rotor circulator for chilled and hot water applications. All settings can be accomplished on the user-friendly interface. The ECM permanent magnet motor saves up to 85% of the electrical energy compared to conventional pumps.



Operating Modes:

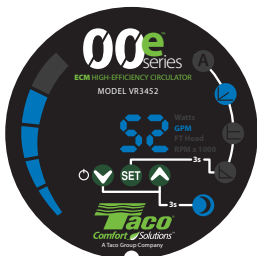
- Auto mode (default)
- Proportional pressure control
- Constant pressure control
- Constant speed
- Night setback turndown

Features & Applications

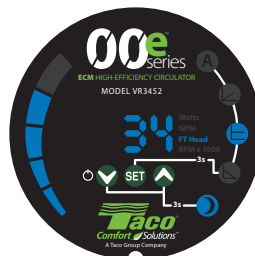
ECM wet rotor circulation pump with integrated electronic regulation.



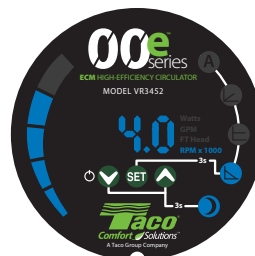
- High-efficiency ECM motor uses up to 85% less electricity
- LED displays watts, flow & RPM
- Compact size for easy handling and installation
- Plug & play simplicity
- Robust construction for long life
- Industry standard flange configuration and lay length
- Low noise operation
- Cataphoresis coated volute
- Communication module (Standard on -FC1A01 models):
 - Ethernet communication
 - Modbus RTU communication
 - Analog Control input 0 - 10V
 - 3 analog inputs/outputs
 - 1 relay output
 - Main, Standby, Parallel Pump Operation



Proportional Pressure



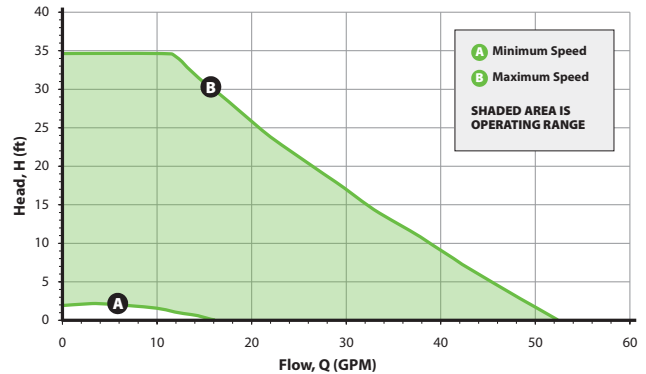
Constant Pressure



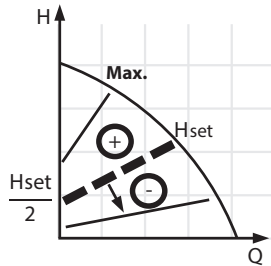
Fixed Speed

NOTE:
Every mode has the ability to function with or without Night Setback Turndown feature.

VR3452 Performance Data

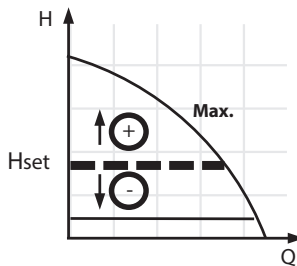


A AUTOMATIC MODE (factory setting)
In automatic mode the pump automatically sets the operating pressure, depending on the hydraulic system. By doing so, the pump finds the optimal operating position. *This mode is recommended in most systems.*



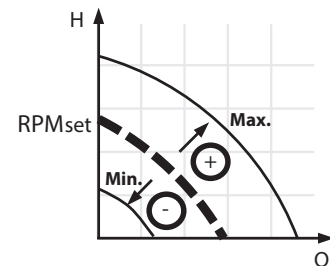
PROPORTIONAL PRESSURE

The pump operates on a pre-programmed inclining performance curve where the differential pressure increases with flow. Hset on the user interface relates to the differential pressure at maximum speed with a corresponding differential pressure at zero flow of half of the Hset value. Hset range from 4.5' to 35' in 0.5' increments. Factory default is 17.5'.



CONSTANT PRESSURE

The pump operates at a constant differential set pressure (Hset on the user interface) from zero flow to maximum speed. Once maximum speed is reached the differential pressure drops as flow increases in a similar manor to a constant speed pump. Hset range from 4.5' to 35' in 0.5' increments. Factory default is 17.5'.



FIXED SPEED

The pump operates at its programmed speed between 1100 & 4400 RPM as set by the operator (RPMset on the user interface). Factory default is max speed (4400 RPM).



NIGHT SETBACK TURNDOWN

When the pump operates in night mode, it automatically switches between the selected operating curve in the mode and night curve. The transition to the night mode depends on the media temperature in the system. When the night mode is prepared for operating, its icon illuminates and the pump operates in the selected operating curve of the mode. When the pump identifies the media temperature fall by 59-68°F (approximately during 2 hours), the icon starts to blink and the pump switches to the night curve. When the media temperature rises again, the icon stops blinking and the pump passes over to the operating curve in the selected operating mode. The night mode operates only in combination with the above indicated modes. It is not an independent operating mode.

Submittal Data Information

00e™ series — VR3452

Submittal Data # 101-173
Supersedes: 08/04/15

Effective: 04/27/16

Specifications

- Maximum Shutoff Head: 34 feet
- Maximum Flow: 52 gpm
- Maximum Operating Pressure: 145 psi (10 bar)
- Maximum Water Temp: 230°F (110°C)
- Minimum Water Temp: 14°F (-10°C)
- Ambient Temp Range: 32°F (0°C) to 104°F (40°C)
- Minimum Inlet Pressure: 112°F (50°C) 0.73 psi / 0.05 bar
176°F (80°C) 5.8 psi / 0.4 bar
230°F (110°C) 15.95 psi / 1.1 bar
- Electrical specifications:
 - 1 phase, 110-120V, 47-63Hz (VR3452-HY1)
 - 1 phase, 200-240V, 47-63Hz (VR3452-HB1)
- Operating Power: 1/4HP, 10-180W
- Rated Current:
 - (1 phase, 115V) 0.1A to 2.5A
 - (1 phase, 230V) 0.1A to 1.5A
- Continuous Duty
- Built in start-up circuit
- 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
- Degree of protection: IP 44, Class 2

Materials of Construction:

Casing:Cast Iron
Impeller:Non-Metallic
Shaft:Stainless Steel
Bearings:Graphite
Rotor Can:Stainless Steel

Certifications & Listings:

Conforms to UL Standard 778
Certified to CSA Standard 22.2 No 108

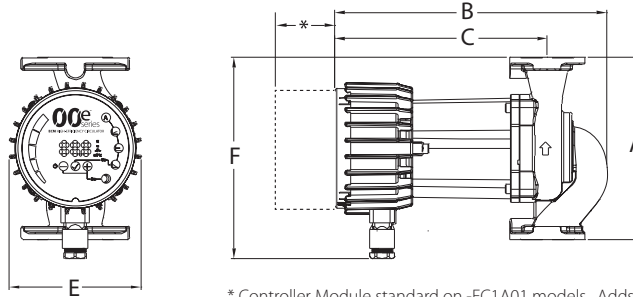


Intertek
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FOR INDOOR USE ONLY

Applications

The VR3452 circulator is used for circulation of water or a mixture of water/glycol in hot water heating systems, air conditioning systems and closed loop circulation systems. Operating modes include self-adjusting auto, proportional pressure, constant pressure, constant speed and night setback.



* Controller Module standard on -FC1A01 models. Adds 1-5/16" to dimensions B and C.

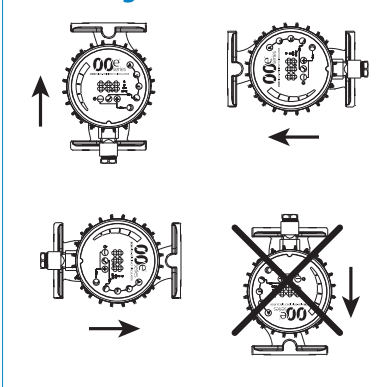
Pump Dimensions & Weights

Model	A		B		C		E		F		Weight	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	Kg
VR3452-FC1A00	6-3/8	162	9-1/2	241	7-7/16	189	4-5/8	117	7-7/16	179	7.8	3.5
VR3452-FC1A01	6-3/8	162	10-3/4	273	8-3/4	222	4-5/8	117	7-7/16	179	7.8	3.5

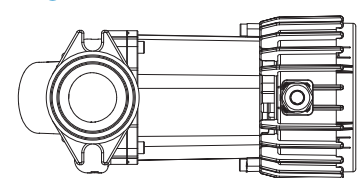
Additional Data

Model	Volts	Class	Flange Size	HP	Hz	Ph	Max. Amps	Max. Watts	RPM
VR3452-HY1	115	Class H	3/4 to 1-1/2	1/100 to 1/4	50/60	1	2.5	180	1100-4400
VR3452-HB1	230	Class F	3/4 to 1-1/2	1/100 to 1/4	50/60	1	1.5	180	1100-4400
Motor Type	ECM, Permanent Magnet, Impedance Protected								

Mounting Positions



Flange Orientation



Companion flanges are .75" to 1.5"
(same as used on Taco 00® series).
See catalog 100-7.3 and 100-56

