ITT

SUBMITTAL

A-146

JOB:	**REPRESENTATIVE:**	
UNIT TAG:	**ORDER NO.**	**DATE:**
ENGINEER:	**SUBMITTED BY:**	**DATE:**
CONTRACTOR:	**APPROVED BY:**	**DATE:**

Lead Free, Energy Efficent e^3 ecocirc Circulators for Potable Water Application

Description

e^3 circulators are energy efficient circulators using permanent magnet, ECM (electronically commutated motor) technology. The e^3 circulators are designed specifically for potable water applications. These circulators are lead free* and come with a variety of options including a temperature sensor, various body styles, assembled with electrical cord and plug, timer and more.

Materials of Construction

Pump Body: Lead Free* Brass
O-Ring: EPDM or Viton
Bearing: Carbon/Alumina Ceramic
Impeller: Nylon/PPO
Motor: High Efficiency ECM
All Other Wetted Parts: Type 316 Stainless Steel
Shaft-less, seal-less construction

Operating Data

Pump

Maximum Working Pressure: 150 psi (10.3 Bar)

Maximum Working Temperature: 230°F (110°C)

Minimum Working temperature: 50°F (10°C)

Motor

ECM Spherical Motor
100-240V 50/60HZ
5-28 Watts Power Consumption
Automatic Overload Protection
Low in-rush current

Adjustable Speed Switch (Models Without Temp Sensor)

Infinitely variable-speed switch to manually adjust motor speed.

Adjustable Temperature Sensor (Fixed Speed Only)

Adjustable Set Point from 68 to 158 °F (20° to 70°C)
Turns circulator OFF when water temperature reaches set point

Turns circulator ON when water temperature is 10°F (6°C) below set point

Connections

1/2" UltraCirc
1/2" Sweat
1/2" FNPT Threaded

*As defined by CA AB1953

Standard Features

Motor

Designed with a shaftless spherical motor with permanent magnet technology for improved efficency.

Lead Free

All e^3 circulators are made from lead free* construction

Optional Features

Adjustable Speed Switch

This switch is only available on models without the internal temperature sensor. A stepless motor switch allows infinite motor speed variation.

Adjustable Temperature Sensor

This built-in temperature sensor is adjustable and will turn the circulators off when it reaches the set point and turn the circulators back on when the temperature is more than 10°F (6°C) below the set point. Only available on fixed-speed motors.

Body Types

UltraCirc: The UltraCirc comes with 1/2" union connections and has a built in air purger to remove unwanted air. The UltraCric also has a built in check and isolation valves for easy isolation and removal of motor housing.

Sweat: The e^3 circulators have the option of a 1/2" sweat connection.

Threaded: The e^3 circulators have the option of 1/2" female NPT.

Plug

e^3 circulators have the option to be pre-wired with a 6 ft. electrical plug. For fastest installation, install the circulators into the piping and simply plug the circulator into a standard outlet.

Timer

e^3 circulators can provide an even greater increase in energy savings when used in combination with the e^3-Timer. The timer is easily installed by removing the motor end cap, plugging in the timer and setting the timer schedule.

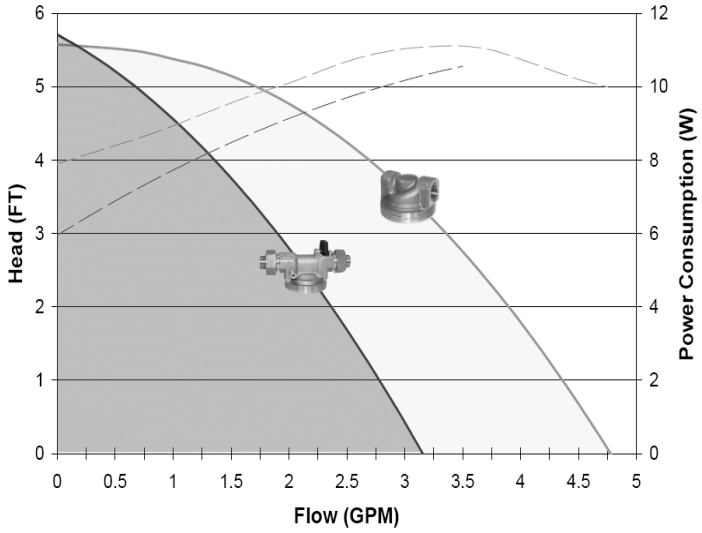
Bell & Gossett

Special Specifications

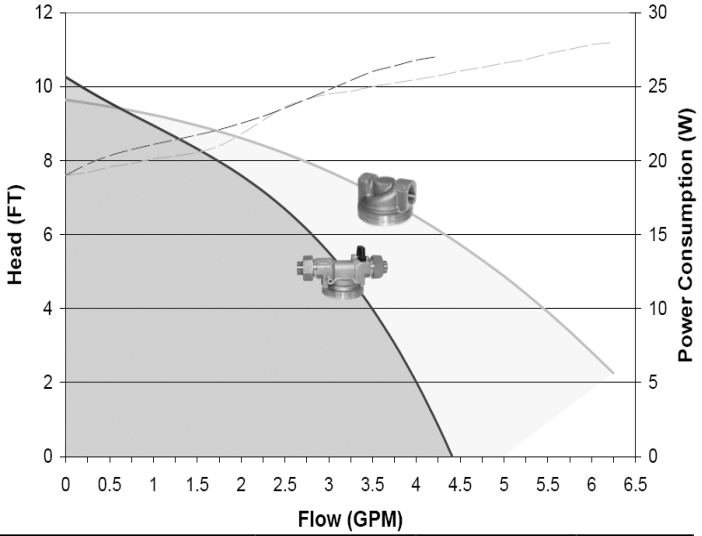
The contrator shall furnish and install in-line circulating pumps as illustrated on the plans and in accordance with the following specification:

1. The pumps shall be of the high efficiency type specifically designed for quiet operation
2. Pump to be suitable for 230^{o}F (110^{o}C) operation at 150 psig (10.3 Bar) working pressure
3. The pumps shall have a ceramic ball bearing lubricated by the system fluid.
4. Pump body shall be a lead-free (less than 0.25% Pb) brass
5. Pump to have (1) of following options:
   a) Pump to have built-in adjustable thermostat from 68^{o}F to 158^{o}F (20^{o}C to 70^{o}C)
   b) Pump to have built-in stepless speed switch
6. Motor shall be spherical permanent magnet electrically commutated motor (ECM)
7. Motor shall be non-overloading at any point on the pump curve and shall have built in overload prtection
8. Pumps to have a capacity of____GPM at _____foot of head
9. All pumps to be supplied by bell & Gossett Model_____

e^3-4 Pump Curves



e^3-6 Pump Curves



Part Number	Model	Material	Connection		Adjustable Speed	Adjustable Thermostat	Plug
			Size	Type			
LHB08100101	e^3-4V/BSPYZ	LEAD-FREE BRASS	1/2"	SWEAT	.		.
LHB08100102	e^3-4V/BSXRZ	LEAD-FREE BRASS	1/2"	SWEAT		.	
LHB08100104	e^3-4V/BTXYZ	LEAD-FREE BRASS	1/2"	FNPT	.		
LHB08100106	e^3-4V/BTPRZ	LEAD-FREE BRASS	1/2"	FNPT		.	.
LHB08100107	e^3-4V/BUPYZ	LEAD-FREE BRASS	1/2"	UNION	.		.
LHB08100108	e^3-4V/BUPRZ	LEAD-FREE BRASS	1/2"	UNION		.	.
LHB08100109	e^3-6V/BSPYZ	LEAD-FREE BRASS	1/2"	SWEAT	.		.
LHB08100112	e^3-6V/BTXYZ	LEAD-FREE BRASS	1/2"	FNPT	.		
LHB08100110	e^3-6V/BTPYZ	LEAD-FREE BRASS	1/2"	FNPT	.		.
LHB08100111	e^3-6V/BUPYZ	LEAD-FREE BRASS	1/2"	UNION	.		.
LHB08260002	e^3-TIMER						

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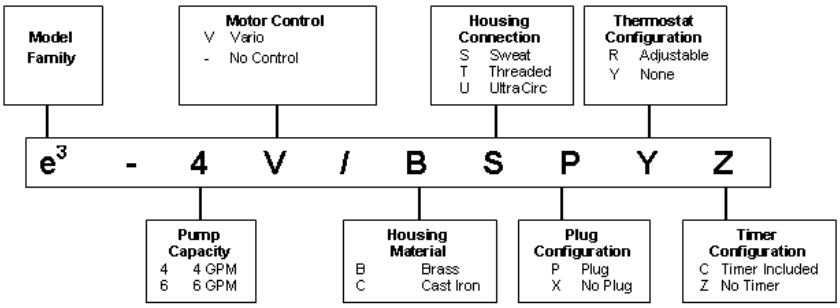
Model Nomenclature



Motor Control
(V) Vario - A built in stepless switch allows for the user to choose the speed at which the pump will operate
(-) There is no control and the circulator operates at full speed at all times


(V) **(-)**

Housing Connection
(S) 1/2" Sweat Connection
(T) 1/2" FNPT Connection
(U) 1/2" UltraCirc Union Connection


(S) **(T)** **(U)**

Plug Configuration
(P) e^3 Circulator have the option to be pre-wired with a 6ft. electric plug.
(X) e^3 circulators can also be permanently wired to the building electrical system.

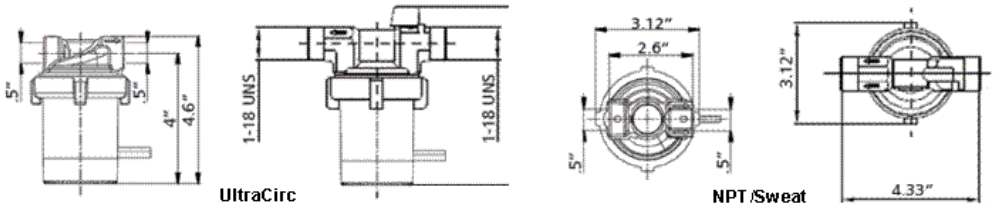

(P)

Thermostat Configuration
(R) comes with a built-in adjustable thermostat.
(Y) No thermostat.


(R) **(Y)**

Timer Configuration
(C) Comes with pre-assembled timer.
(Z) Timer sold seperately


(C) **(Z)**



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e^3- Timer

Description

To increase the overall efficency of a domestic hot water recirculating system and to reduce water wasted while waiting for hot water, the e^3 Timer can be installed on the e^3 circulator. the timer is easily installed by removing the motor end cap, pluging in the timer and setting the timer schedule without any wiring. The timer can be used in 3-different selections: ON, OFF and Timer. The On selection operates the pump continuously, the OFF selection turns the pump OFF and the TIMER selection (depicted by a clock on the timer) turns the pump on when programmed.

OPERATIONAL LIMITS

e^3Timer

Power Supply: Internally powered by the e^3 circulating pump

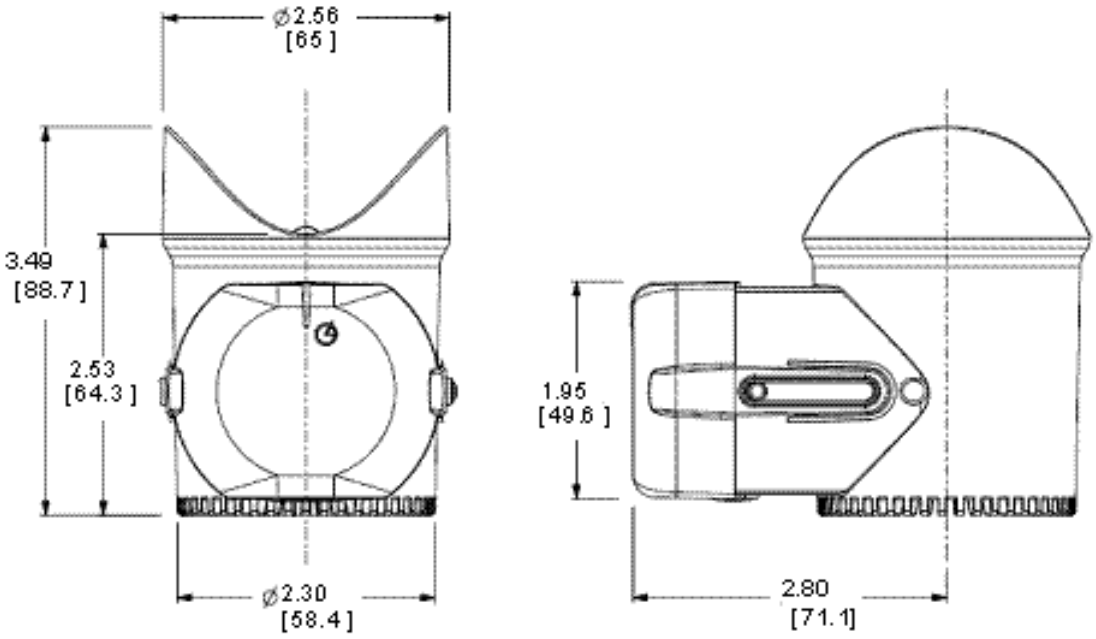
Minimum Switch Internal: 30 minutes.

Run Modes: ON(Continuous, OFF(off at all times) and TIMER (run at programmed intervals)

Part Number	Model	Tagging Information	Quantity
LHB08260002	e^3-TIMER		

e^3- TIMER Kit Dimensions

Timer Kit Dimensions in Inches (mm)



TYPICAL SPECIFICATON

Furnish and install as shown on plans and accordance with the following specification:

Timer Kit Dimensions in Inches (mm)

1. The timer kit to be installed on an e^3 circulator
2. The timer kit to receive internal power from e^3 circulator
3. The timer shall provide ON-OFF control at a minimum interval of 30 minutes. IT shall also have the option for continious ON or OFF operation.

All unit shall be Bell & Gossett Model No. e^3-Timer

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