

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



## Lead Free\*, Energy Efficient e<sup>3</sup> ecocirc Circulators for Potable Water Application



### Description

e<sup>3</sup> circulators are energy efficient circulators using permanent magnet, ECM (electronically commutated motor) technology. The e<sup>3</sup> 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  
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: 203°F (95°C)  
Minimum Working temperature: 50°F (10°C)

#### Motor

ECM Spherical Motor  
100-140V 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 degrees F (6 degrees C) below set point

#### Connections

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

\* As defined by CA AB1953. Applies to sweat and threaded housing.

### Standard Features

#### Motor

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

#### Lead Free

All e<sup>3</sup> 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 UltraCirc also has a built in check and isolation valves for easy isolation and removal of motor housing.

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

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

#### Plug

e<sup>3</sup> 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 Accessory

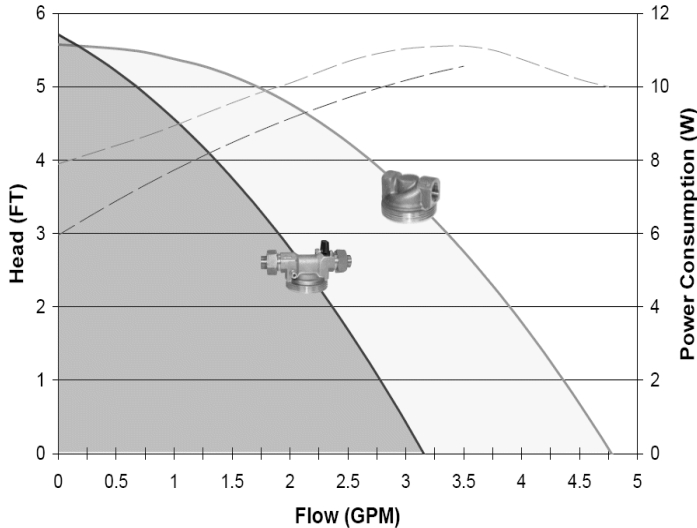
e<sup>3</sup> circulators can provide an even greater increase in energy savings when used in combination with the e<sup>3</sup>-Timer. The timer is easily installed by removing the motor end cap, plugging in the timer and setting the timer schedule.

## Special Specifications

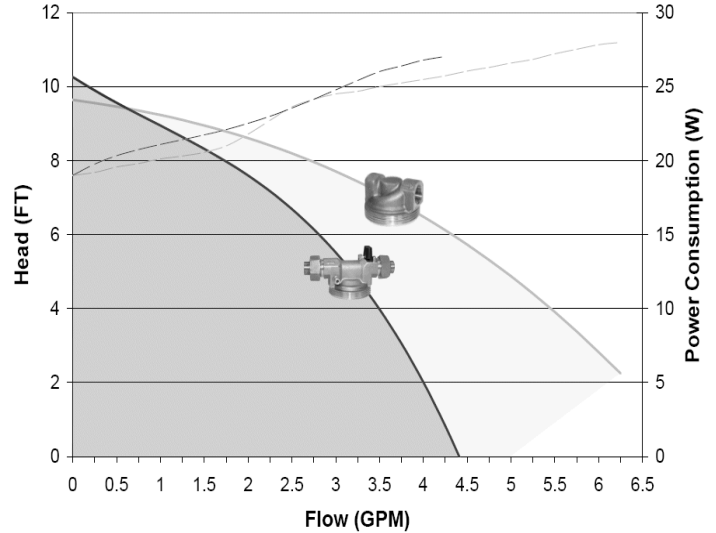
The contractor shall furnish and install in-line circulating pumps as illustrated on the plans and in accordance with the following specification:

1. The pumps shall be of the high efficiency type specifically designed for quiet operation
2. Pump to be suitable for 203°F (95°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 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°F to 158°F (20°C to 70°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 protection
8. Pumps to have a capacity of \_\_\_ GPM at \_\_\_ foot of head
9. All pumps to be supplied by Bell & Gossett Model \_\_\_\_\_

e<sup>3</sup>-4 Pump Curves



e<sup>3</sup>-6 Pump Curves



Part Number	Model	Material	Connection		Adjustable Speed	Adjustable Thermostat	Plug
			Size	Type			
LHB08100101	e <sup>3</sup> -4V/BSPYZ	LEAD-FREE BRASS*	1/2"	SWEAT	.		.
LHB08100102	e <sup>3</sup> -4_/BSXRZ	LEAD-FREE BRASS*	1/2"	SWEAT		.	
LHB08100104	e <sup>3</sup> -4V/BTXYZ	LEAD-FREE BRASS*	1/2"	FNPT	.		
LHB08100106	e <sup>3</sup> -4_/BTPRZ	LEAD-FREE BRASS*	1/2"	FNPT		.	.
LHB08100109	e <sup>3</sup> -6V/BSPYZ	LEAD-FREE BRASS*	1/2"	SWEAT	.		.
LHB08100112	e <sup>3</sup> -6V/BTXYZ	LEAD-FREE BRASS*	1/2"	FNPT	.		
LHB08100110	e <sup>3</sup> -6V/BTPYZ	LEAD-FREE BRASS*	1/2"	FNPT	.		.
LHB08260002	e <sup>3</sup> -TIMER						

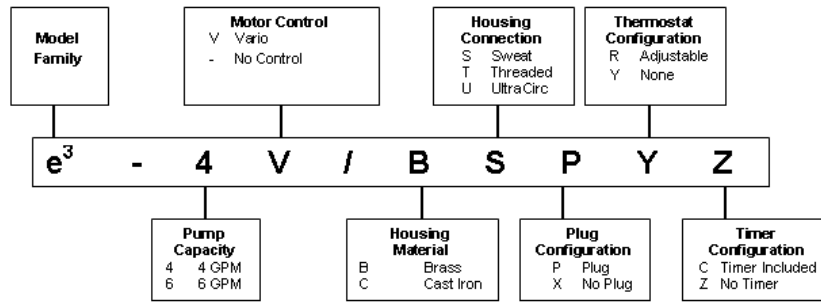
\*As defined by CA AB1953. Applies to sweat and threaded housing.

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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<sup>3</sup> Circulator have the option to be pre-wired with a 6ft. electric plug.

**(X)** e<sup>3</sup> circulators can also be permanently wired to the building electrical system.

**(P)**

### Thermostat Configuration

**(R)** comes with a built-in adjustable thermostat.

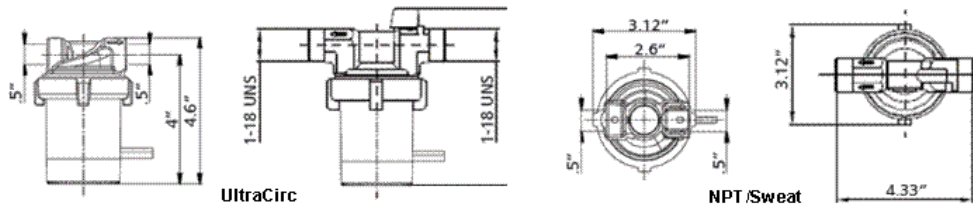
**(Y)** No thermostat.

**(R)****(Y)**

### Timer Configuration

**(C)** Comes with pre-assembled timer.

**(Z)** Timer sold separately

**(C)****(Z)**

UltraCirc

NPT/Sweat

## e<sup>3</sup>- Timer

### Description

To increase the overall efficiency of a domestic hot water recirculating system and to reduce water wasted while waiting for hot water, the e<sup>3</sup> Timer can be installed on the e<sup>3</sup> circulator. The timer is easily installed by removing the motor end cap, plugging 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<sup>3</sup>Timer

Power Supply: Internally powered by the e<sup>3</sup> circulating pump

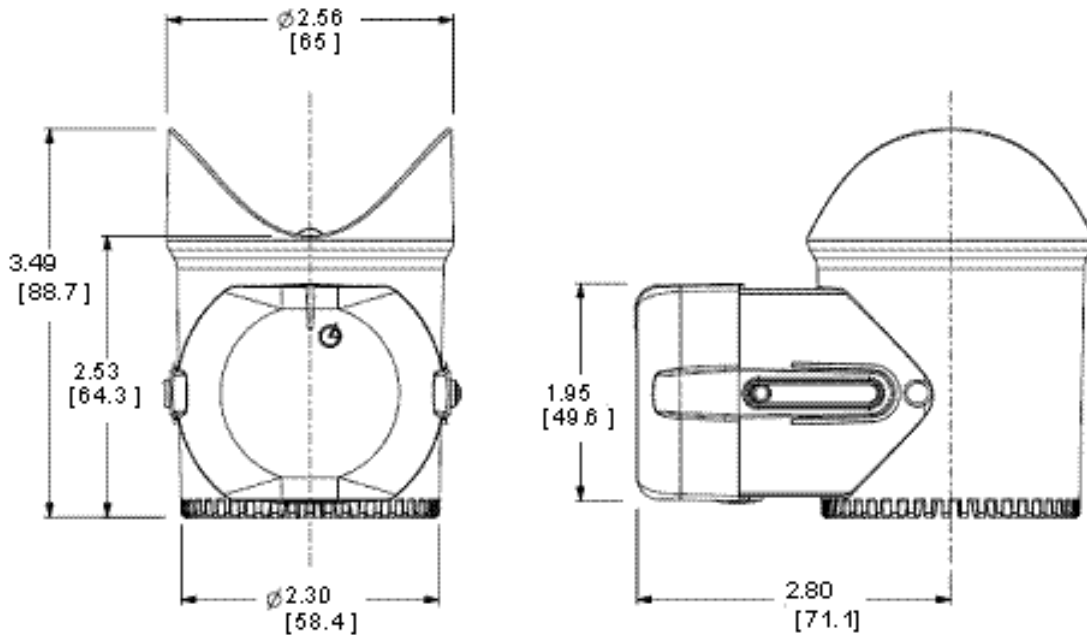
Minimum Switch Interval: 30 minutes.

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

Part Number	Model	Tagging Information	Quantity
LHB08260002	e <sup>3</sup> -TIMER		

## e<sup>3</sup>- TIMER Kit Dimensions

Timer Kit Dimensions in Inches (mm)



### TYPICAL SPECIFICATION

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<sup>3</sup> circulator
2. The timer kit to receive internal power from e<sup>3</sup> circulator
3. The timer shall provide ON-OFF control at a minimum interval of 30 minutes. IT shall also have the option for continuous ON or OFF operation.

All unit shall be Bell & Gossett Model No. e<sup>3</sup>-Timer

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