

JOB:
REPRESENTATIVE:

 UNIT TAG:
 ENGINEER:
 CONTRACTOR:

 ORDER NUMBER:
 SUBMITTED BY:
 APPROVED BY:

 DATE:
 DATE:
 DATE:


ecocirc® 20-18 | ecocirc+ 20-18

High Efficiency Wet Rotor Circulator with Electronically Commutated Motor (ECM)

DESCRIPTION

The ecocirc 20-18 circulators are designed with a highly efficient electronically commutated permanent magnet motor (ECM Technology). Cast iron flanged models are designed for closed loop hydronic heating and cooling systems, and stainless steel flanged and union body pumps for plumbing systems or open loop heating and cooling systems.

CONSTRUCTION MATERIALS

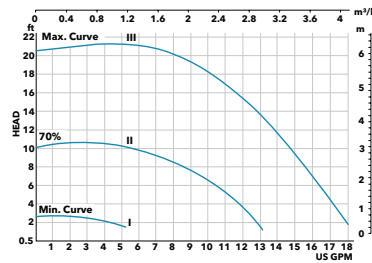
- Pump Body:** Cast Iron or Stainless Steel
- Impeller:** Impact Modified PPE
- Shaft:** Ceramic/Alumina
- Rotor Can:** 316 Stainless Steel
- Bearings:** Ceramic/Alumina
- O-Ring:** EPDM
- All Other Wetted Parts:** 304 or 316 Stainless Steel
- Motor Type:** Electronically Commutated Permanent Magnet Motor
- Insulation Class:** F
- Check Valve:** 1" Noryl Check Valve shipped loose for field installation

OPERATING DATA

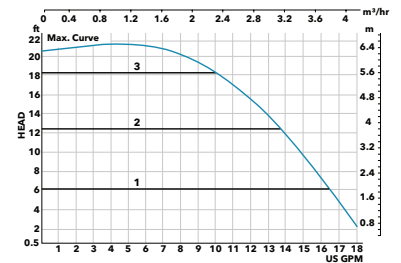
- Maximum Working Pressure:** 145 psi (10 Bar)
- Minimum Working Temperature:** 14°F (-10°C)
- Maximum Working Temperature:** 230°F (110°C)
- Ambient Temperature Range:** 32°F - 104°F (0°C - 40°C)

PERFORMANCE

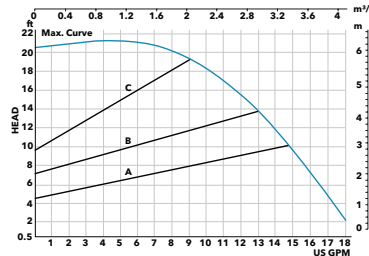
Fixed Speed Curve



Constant Pressure Curve



Proportional Pressure Curve


SCHEDULE ecocirc 20-18

CAST IRON BODY (Flanged)		STAINLESS STEEL BODY (Flanged and Union)		RATED MOTOR CHARACTERISTICS				
MODEL NUMBER	PART NUMBER	MODEL NUMBER	PART NUMBER	VOLTAGE	PHASE	Hz	WATTS RANGE	AMP RANGE
ecocirc 20-18 flanged	60B0B1000	ecocirc 20-18 stainless steel flanged	60B0B1001	115V	1	50/60	0-70	.06-1.02
		ecocirc 20-18 stainless steel union	60B0B1002	115V	1	50/60	0-70	.06-1.02

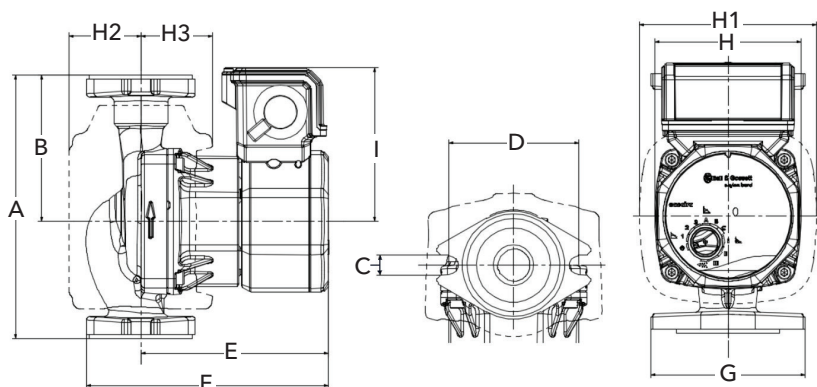
Note: Where potable water is pumped, use a stainless steel circulator. ecocirc 20-18 and ecocirc+ 20-18 circulators are recommended for indoor use only.

SCHEDULE ecocirc+ 20-18

CAST IRON BODY (Flanged)		STAINLESS STEEL BODY (Flanged and Union)		RATED MOTOR CHARACTERISTICS				
MODEL NUMBER	PART NUMBER	MODEL NUMBER	PART NUMBER	VOLTAGE	PHASE	Hz	WATTS RANGE	AMP RANGE
ecocirc+ 20-18 flanged	60B0B1003	ecocirc+ 20-18 stainless steel flanged	60B0B1004	115V	1	50/60	0-70	.06-1.02
		ecocirc+ 20-18 stainless steel union	60B0B1005	115V	1	50/60	0-70	.06-1.02

Note: Where potable water is pumped, use a stainless steel circulator. ecocirc 20-18 and ecocirc+ 20-18 circulators are recommended for indoor use only.

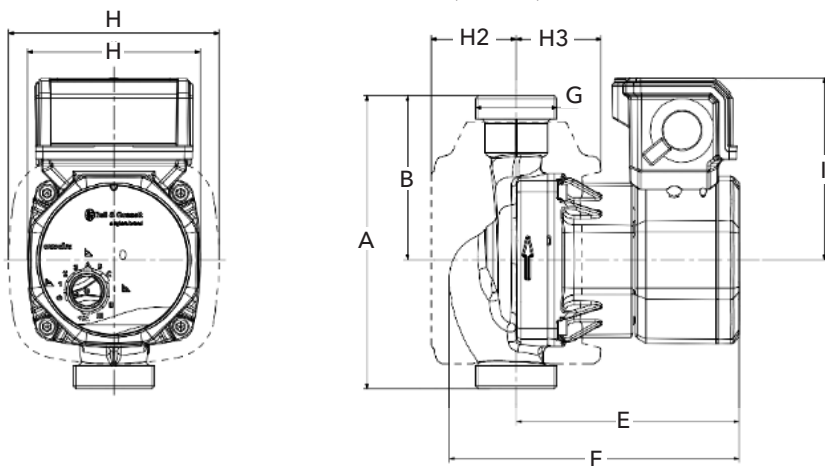
ecocirc/ecocirc+ 20-18 PUMP DIMENSIONS (FLANGED)



MODEL NUMBER	DIMENSIONS - INCHES (mm)										APPROX. SHIPPING WEIGHT LB. (KG)	
	A	B	E	F	H	H1	H2	H3	I	CAST IRON	STAINLESS STEEL	
ecocirc 20-18 flanged	6.38" (162)	3.54" (90)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	6.2 lb. (2.81)	5.86 lb. (2.66)	
ecocirc+ 20-18 flanged	6.38" (162)	3.54" (90)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	6.2 lb. (2.81)	5.86 lb. (2.66)	

MODEL NUMBER	FLANGED SIZE INCHES - NPT	# OF BOLTS	DIMENSIONS - INCHES (mm)			COMPANION FLANGE PART NUMBERS	
			C	D	G	CAST IRON PN	STAINLESS STEEL PN
ecocirc 20-18 flanged	¾", 1", 1-¼", 1-½"	2	.47" (12)	3.15" (80)	3.74" (95)	101201-101204	101501LF - 101504LF
ecocirc+ 20-18 flanged	¾", 1", 1-¼", 1-½"	2	.47" (12)	3.15" (80)	3.74" (95)	101201-101204	101501LF - 101504LF

ecocirc/ecocirc+ 20-18 PUMP DIMENSIONS (UNION)



MODEL NUMBER	DIMENSIONS - INCHES (mm)										APPROX. SHIPPING WEIGHT LB. (KG)	
	A	B	E	F	H	H1	H2	H3	I	CAST IRON	STAINLESS STEEL	
ecocirc 20-18 union	6" (152.4)	3.36" (85.4)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	N/A	4.61 lb. (2.09)	
ecocirc+ 20-18 union	6" (152)	3.36" (85.4)	4.57" (116)	5.9" (150)	3.54" (90)	4.29" (109)	1.73" (44)	1.73" (44)	3.74" (95)	N/A	4.61 lb. (2.09)	

MODEL NUMBER	UNION TAILPIECE SIZE INCHES - NPT	# OF BOLTS	DIMENSIONS - INCHES (mm)		UNION CONNECTOR KIT PART NUMBERS
			G	CAST IRON PN	BRONZE PN
ecocirc 20-18 union	½" Sweat, ¾" Sweat, ¾" NPT	0	1 ¼" NPSM	N/A	113203LF, 113201LF, 113202LF
ecocirc+ 20-18 union	½" Sweat, ¾" Sweat, ¾" NPT	0	1 ¼" NPSM	N/A	113203LF, 113201LF, 113202LF

SAFETY STANDARDS AND PROTECTION

Enclosure: Class 1, IP44 (equivalent to NEMA Type 2)

UL Listed to UL 778; UL 1004-1, 1004-7; and UL 60730-1

cUL Listed to C22.2 #108

Electronically Thermally Protected (Integrated Motor Protection)

Motor Insulation Class: F

Stainless steel models are NSF/ANSI-61 certified

STANDARD OPERATING MODES

CONSTANT SPEED



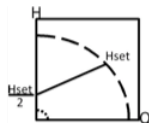
The pump maintains a constant speed at any flow rate. The desired speed is set on the interface panel of the pump.

CONSTANT PRESSURE ($\Delta p-c$)



The pump maintains a constant differential pressure at any flow demand until the maximum speed is reached. The desired head of the pump can be set via user interface. Recommended for use in systems with small or constant pressure losses.

PROPORTIONAL PRESSURE ($\Delta p-v$)



The differential pressure continuously increases or decreases based on the flow demand. The set point head can be set on the pump user interface. Use for systems with large pressure losses.

NIGHT MODE (ecocirc+ 20-18 only)

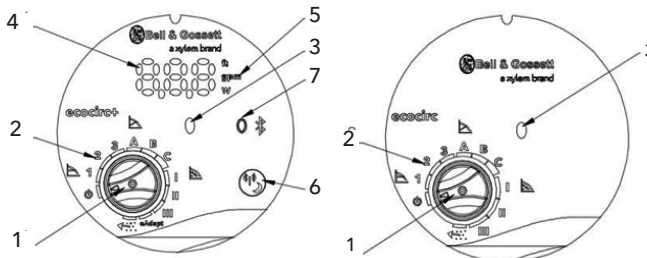
The pump will automatically reduce speed when there is an abrupt change in fluid temperature. The change in fluid temperature is from a boiler operating in night time setback mode. The external temperature sensor is used. (Fixed Speed, Constant Pressure, Proportional Pressure)

INPUT SIGNALS (ecocirc+ 20-18 only)

One 0-10V (Analog): Speed Control by external controller

One external temperature sensor input for temperature modes. **Sensor Type:** KYT38, P/N: 104502

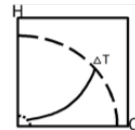
ONBOARD USER INTERFACE



1	Control mode knob
2	Control mode indicators
3	Status/Fault indicators
4	Numeric display
5	Parameter indicators
6	Control mode button
7	Remote control status indicator

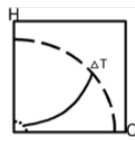
TEMPERATURE DEPENDENT OPERATING MODES (ecocirc+ 20-18 only)

SET POINT TEMPERATURE ($\Delta p-T$) (ecocirc+ 20-18 only)



The nominal differential pressure set point is modified based on the fluid temperature. Uses an external temperature sensor.

SET POINT TEMPERATURE (T) (ecocirc+ 20-18 only)



The pump maintains a constant temperature in a system, such as domestic hot water system or a single temperature heating system. Uses an external temperature sensor.

eAdapt (ecocirc+ 20-18 only)

The pump will optimize the energy consumption by identifying the ideal duty point.

Air Purge

Air purge will remove the dissolved gases from the pump.