Refrigerated and heated bath circulators

Customizable solutions designed to meet your needs today and tomorrow

Thermo Fisher
SCIENTIFIC

Arctic and Sahara Series refrigerated and heated bath circulators

Your application is as individual as you are. Bath circulators provide temperature-controlled fluid circulation to support diverse workflows in laboratory and process applications. Bath circulators support water conservation by replacing tap water for cooling and heating, saving thousands of dollars per year.

Using over 50 years of expertise, we designed Thermo Scientific™ bath circulators to meet the demands of temperature-control applications in scientific, research, and industrial labs. Our reliable immersion circulators can be used alone or with one of the bath solutions for analytical instrumentation, jacketed reactors, and rotary evaporators.

Customizable solutions designed to meet your needs today and tomorrow

- Extensive choice of temperature ranges, pumping capacities, and bath volumes, with leading warranty coverage

- Selection of intuitive displays to support your application and budget

- A range of accessories and inserts for sample security and management

Robust reliability even in the most demanding applications

- Digital control technology for precise temperature control and stability

- Powerful pumping capacity for external fluid circulation

- Corrosion-resistant stainless steel work area

Support for you and the environment

- Technical expertise and support at your fingertips

- Service provided by dedicated local, depot, and technical support team

- Sustainability in mind with water conservation, energy-saving options, and zero-waste manufacturing

Flexibility to customize

All systems and immersion circulators come standard
with external circulation connections

Immersion circulators
Choice of 8 controllers that can be
paired to an existing tank, vessel, or
bath to heat the fluid

Bath circulators
Choice of heating and cooling
temperature control with a
large selection of stainless steel
baths as well as economical
polypropylene baths

Accessories
An extensive selection of accessories,
from work area covers to racks
and inserts to heat transfer fluids to
provide ultimate flexibility

Immersion circulators

Thermo Scientific™ Standard, Advanced, and Premium Series heated immersion circulators offer advanced, precise sample temperature control. Powerful, integrated pumps ensure uniform temperature distribution for external circulations usage or internal temperature control.

- Programmable with temperature set points and ramping
- The controller can be indexed 90° for optimal viewing
- Real temperature adjustment (RTA) for calibration
- Audio/visual alarms for temperature and levels
- Adjustable pump speeds for flow or bath agitation
- Auto-restart after power failure
- On/off timer with real-time clock
- USB/serial communication options

Standard (SC) Series—choose from 3 versions
Designed for ease of use with powerful pumping and heating capabilities for closed-loop applications, this economical choice offers solid performance for applications with temperatures ranging from +13°C above ambient to 150°C.

Advanced (AC) Series—choose from 2 versions
This series offers greater pumping performance, ramp programming, application alarms, and temperature ranges from +13°C above ambient to 200°C.

Premium (PC) Series—choose from 3 versions
This series is ideal for applications that require sophisticated control, multiple ramp programming, and extreme temperature performance, ranging from +13°C above ambient to 300°C.

Thermo Scientific™ SC100 Immersion Circulator

Thermo Scientific™ AC150 Immersion Circulator

Thermo Scientific™ PC200 Immersion Circulator

Model	Standard Series SC100	SC150	SC150L	Advanced Series AC150	AC200	Premium Series PC200	PC201	PC300
Maximum temperature (°C)	100	150	150	150	200	200	200	300
Temperature stability (°C)**	0.02			0.01		0.01		
Heater capacity (kW) 230 V/115 V	2/1.2			2/1.2		2/1.2	3†	3†
Maximum flow rate (L/min)	17			20		24		
Maximum pressure (mbar/psi)	300/4.35			475/6.89		560/8.12		
Maximum suction (mbar/psi)	–			330/4.78		380/5.51		
Tank depth requirement (mm)	150	150	200	150		200		
Programmable set point temperatures	5							
Ramp programs	–	–	–	–	1	10		
High temperature warning	–	–	–	Yes		Yes		
Low level warning	–	Yes	Yes	Yes		Yes		
Application threshold alarm	–	–	–	Yes		Yes		
Fluid selection with predefined temperature limits	–	Yes						
Remote sensor port				Y	Y	Y	Y	Y
USB port		Y	Y			Y	Y	Y
Multifunction port					Y	Y	Y	Y
Safety	–	Automatic shutdown for high temperature, low liquid level, or motor overload						
Pump	2 speed			3 speed		Incremental speed 40% to 100%		
Languages	English, German, French			English, German, French, Spanish, Italian		English, German, French, Spanish, Italian, Chinese, Japanese		

* In combination with a Thermo Scientific™ PT100 sensor probe (Cat. No. 3330818 and 3330429) connected to the external application.
** Temperature stability data measured according to DIN 12876.
† Available only in 230 V.

4

Thermo Scientific™ Arctic™ Series refrigerated bath circulators refrigerated bath circulators

Choose from multiple capacities with a variety of reservoir openings and depth dimensions for maximum application flexibility

Arctic Series refrigerated bath circulators

Controller/bath	A10	A25	A45HC
SC100	–10 to 100°C	–25 to 100°C	—
SC150	–10 to 100°C	–25 to 150°C	—
SC150L	—	–25 to 150°C	–28 to 150°C
AC150	–10 to 100°C	–25 to 150°C	—
AC200	–10 to 100°C	–25 to 200°C	–45 to 200°C
PC200	—	–25 to 200°C	–45 to 200°C
Cooling capacity at 20°C	240 W	500 W	900 W
Maximum bath volume (liters)*	6	12	12
Work area (D x W x L) mm (in.)	150 x 136.7 x 123.5 (5.9 x 5.4 x 4.9)	200 x 173 x 183.7 (7.9 x 6.8 x 7.2)	200 x 173 x 183.7 (7.9 x 6.8 x 7.2)
Net weight (kg/lb)	27.5/60.6	36.1/79.5	55.2/121.5
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE

* Fluid volume varies depending on the fluid used, temperature range, and items inserted in the reservoir.

Arctic Series refrigerated bath circulators, continued

Controller/bath	A10B	A25B
SC100	–10 to 100°C	–25 to 100°C
SC150	–10 to 100°C	–25 to 150°C
SC150L	—	—
AC150	–10 to 100°C	–25 to 150°C
AC200	–10 to 100°C	–25 to 200°C
PC200	—	—
Cooling capacity at 20°C 230 V and 115 V	240 W	500 W
Maximum bath volume (liters)*	30	21
Work area (D x W x L) mm (in.)	200 x 297.2 x 365 (7.9 x 11.7 x 13.4)	233 x 223.8 x 243.8 (9.2 x 8.8 x 9.6)
Net weight (kg/lb)	44.5/97.9	42.3/93.1
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE

* Fluid volume varies depending on the fluid used, temperature range, and items inserted in the reservoir.

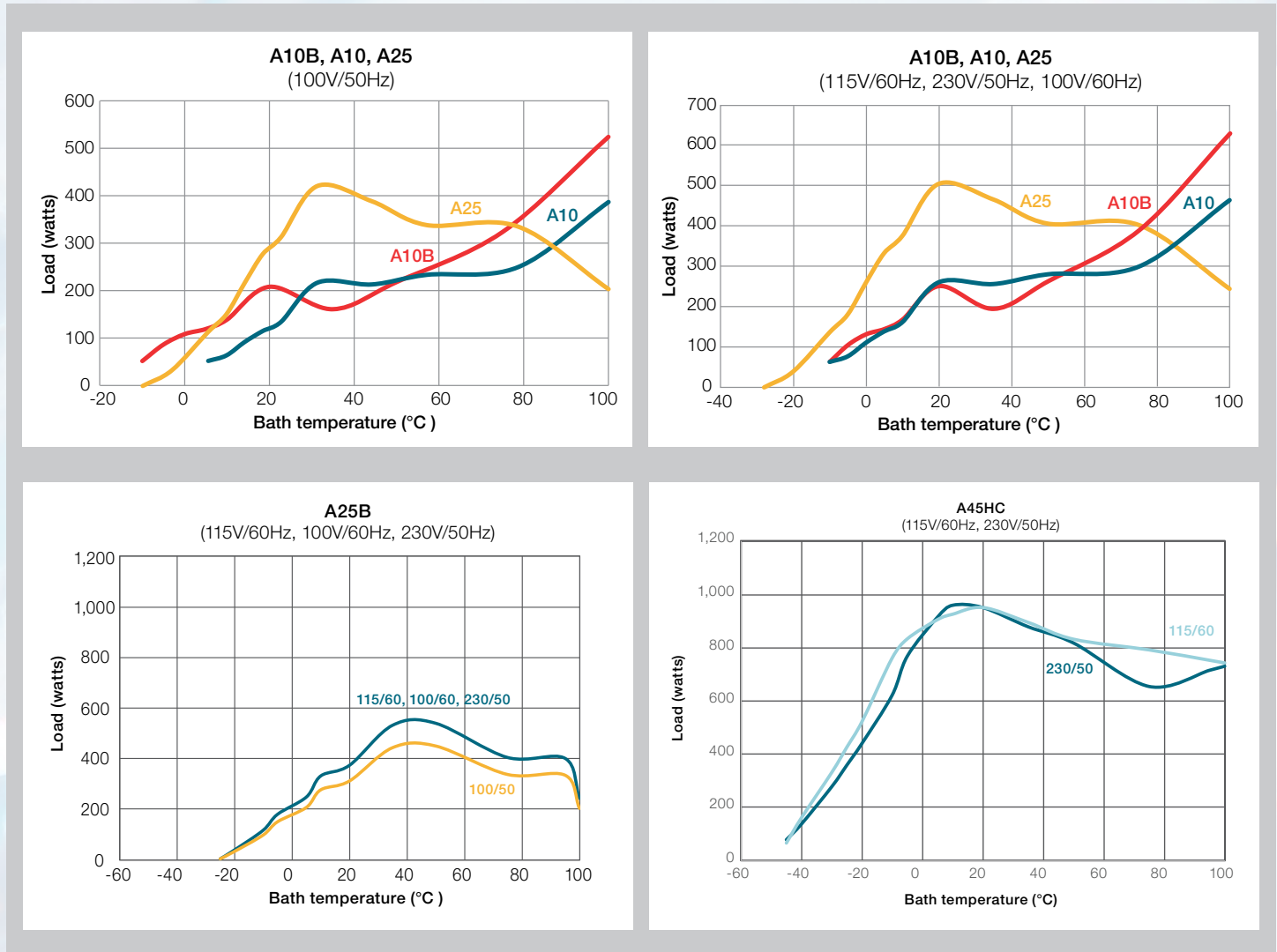# Performance curves for refrigerated bath circulators

Cooling capacity

A10B, A10, A25
(100V/50Hz)

A10B, A10, A25
(115V/60Hz, 230V/50Hz, 100V/60Hz)

A25B
(115V/60Hz, 100V/60Hz, 230V/50Hz)

A45HC
(115V/60Hz, 230V/50Hz)

Specifications obtained at sea level using water (above 5°C to 90°C) or a fluid with a specific heat of 2.3 kJ/kg-K or 0.55 Btu/lb-F (less than 5°C) as the recirculating fluid at a 20°C ambient condition, at nominal operating voltage. Other fluids, process temperatures, ambient temperatures, altitude, or operating voltage will affect performance. Specifications are for reference only and are subject to change.

Sahara Series heated bath circulators

13°C above ambient to 300°C

When your application requires a high temperature, rely on our durable, seamless, stainless steel baths
Thermo Scientific™ Sahara™ Series heated bath circulators are available in capacities from 7 to 53 L, with a variety of work area dimensions to meet your application needs.

- Up to 8 different controllers are available

- The controller can be indexed 90° left or right for easier viewing

- Rugged and corrosion-resistant for high-temperature applications up to 300°C

Typical applications
- Viscometers

- Spectrophotometers

- Metrology

- Thawing

- Reaction vessels

- General laboratory use

Sahara Series heated bath circulators

Controller/bath	S7	S13	S21	S45	S49
SC100	Ambient +13* to 100°C	Ambient +13* to 100°C	Ambient +13* to 100°C	Ambient +13* to 100°C	Ambient +13 to 100°C
SC150	Ambient +13* to 150°C	Ambient +13* to 150°C	Ambient +13* to 150°C	Ambient +13* to 150°C	Ambient +13 to 150°C
SC150L	Ambient +13* to 150°C	Ambient +13* to 150°C	—	Ambient +13* to 150°C	Ambient +13 to 150°C
AC150	Ambient +13* to 150°C	Ambient +13* to 150°C	Ambient +13* to 150°C	Ambient +13* to 150°C	Ambient +13 to 150°C
AC200	Ambient +13* to 200°C	Ambient +13* to 200°C	Ambient +13* to 200°C	Ambient +13* to 200°C	Ambient +13 to 200°C
PC200	Ambient +13* to 200°C	Ambient +13* to 200°C	—	Ambient +13* to 200°C	Ambient +13 to 200°C
PC201	Ambient +13* to 200°C	Ambient +13* to 200°C	—	Ambient +13* to 200°C	Ambient +13 to 200°C
PC300	Ambient +13* to 200°C	Ambient +13* to 200°C	—	—	—
Maximum bath volume (liters)**	8	12	19	41	53
Work area (D x W x L) mm (in.)	200 x 154.2 x 111.9 (7.9 x 6.1 x 4.4)	200 x 239.9 x 119.9 (7.9 x 9.4 x 4.4)	150 x 296.5 x 311.9 (5.9 x 11.7 x 12.3)	300 x 298.1 x 311.9 (11.8 x 11.7 x 12.3)	200 x 498 x 429.9 (7.9 x 19.6 x 16.9)
Net weight (kg/lb)	10.6/23.4	12.3/27	14.2/31.2	20.3/44.7	24.3/53.4
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE

* The lowest usable temperature may be 13°C (23°F) warmer than room temperature.

** Fluid volume varies depending on the fluid used, temperature range, and items inserted into the reservoir.

Polypropylene Series heated bath circulators

13°C above ambient to 100°C

Cost-effective polypropylene (PP)

An economical alternative to stainless steel, Thermo Scientific™ polypropylene baths are thermally resistant up to 100°C and deliver exceptional temperature performance with operational savings. Temperatures are maintained from ambient plus 13°C to 100°C.

Polypropylene Series heated bath circulators

Controller/bath	S5P	S14P	S21P
SC100	Ambient +13* to 100°C	Ambient +13* to 100°C	Ambient +13* to 100°C
SC150	Ambient +13* to 100°C	Ambient +13* to 100°C	Ambient +13* to 100°C
AC150	—	Ambient +13* to 100°C	Ambient +13* to 100°C
AC200	—	Ambient +13* to 100°C	Ambient +13* to 100°C
Bath volume (liters)**	6	12	19
Work area (D x W x L) mm (in.)	150 x 138 x 223 (5.9 x 5.4 x 8.8)	150 x 302 x 148.9 (5.9 x 11.9 x 5.9)	150 x 302 x 326.9 (5.9 x 11.9 x 12.9)
Net weight (kg/lb)	6.3/13.9	7.3/16.1	8.7/19.1
Compliance	CE/ROHS/WEEE	CE/ROHS/WEEE	CE/ROHS/WEEE

* The lowest usable temperature may be 13°C (23°F) warmer than room temperature.
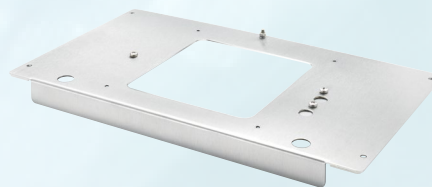
** For use with water only.

Accessories

Ordering information

Accessory	Cat. No.
Racks and inserts for Arctic and Sahara Series units	
Stainless steel rack for bath types A10B, S49, S14P, and S21P. Choose a rack insert below:	**1600002**
Rack insert–includes top and bottom panels that will hold up to 100 test tubes that are 10 mm	1600003
Rack insert–includes top and bottom panels that will hold up to 60 test tubes that are 16 mm	1600004
Rack insert–includes top and bottom panels that will hold up to 25 test tubes that are 25 mm	1600005
Rack insert–includes top and bottom panels with no holes	1600006
Stainless steel rack for bath types A25B, A45HC, S21. Choose a rack insert below:	**1600079**
Rack insert–includes top and bottom panels that will hold up to 55 test tubes that are 10 mm	1600072
Rack insert–includes top and bottom panels that will hold up to 32 test tubes that are 16 mm	1600081
Rack insert–includes top and bottom panels that will hold up to 13 test tubes that are 25 mm	1600082
Rack insert–includes top and bottom panel with no holes	1600083
Bridges	
Bath bridge–for immersion cooler; fits S21 and S45 heated baths	1600077
Bath bridge–for tap water cooling coil and auto-refill; fits S21 and S45 heated baths	1600123
Bath bridge–for cooling coil and auto-refill; fits S7 (for SC controller only)	1600131
Bath bridge–for cooling coil and auto-refill; fits S5P	1600135
Bath bridge–for cooling coil and auto-refill; fits S49	1600140
Bath bridge–for auto-refill; fits A25 and A45HC	1600125
Bath bridge–for auto-refill; fits A10B	1600141
Bath bridge–for auto-refill; fits A25B	1600124
Bath bridge–for auto-refill; fits A10	1600126
Bath bridge–for auto-refill; fits S7	1600133
Adjustable bath bridge–400 to 800 mm, for SC, AC, and PC immersion circulators	1600018

Stainless steel rack   Bath bridge

Accessories

Ordering information

Adding a **lifting platform** to your bath allows you to adjust the submerged depth of your vessels or other objects.

Improve time to temperature by lowering the amount of fluid that needs to be heated or cooled. **Fluid displacement blocks** are used for external circulation only.

Operate heated baths closer to ambient temperature by removing pump heat.

Various **adapter boxes and communication cables** are available to allow for serial and analog communication.

Accessory	Cat. No.
Lifting platform	
Lifting platform, stainless steel for S21, S21P, S45	1600011
Bath bridge–for lifting platform in S21, S45	1600007
Bath bridge–for lifting platform in S21P and S14P	1600098
Bath bridge–for tap water cooling coil, auto-refill and lifting platform in S21P and S14P	1600136
Lifting platform, stainless steel for S14P	1600012
Lifting platform, stainless steel for A10B	1600142
Bath bridge–for lifting platform in A10B	1600036
Bath bridge–for lifting platform and auto-refill in A10B	1600128
Lifting platform, stainless steel for S49	1600013
Bath bridge–for lifting platform in S49	1600009
Bath bridge–for tap water cooling coil, auto-refill and lifting platform in S49	1600130
Performance accessories	
Fluid displacement block for A25, A45 bath	1600105
Fluid displacement block for A10 bath	1600045
Tap water cooling coils	
Tap water cooling coil for SC100 or SC150 immersion circulator with a clamp	1600015
Tap water cooling coil for SC150 L immersion circulator with a clamp	1600017
Tap water cooling coil for all controllers with S13, S21, S45, S49, S14P	1600014
Tap water cooling coil for SC150 L controller with S13, S45, S49	1600016
Tap water cooling coil for SC100 or SC150 controller with S5P	1600090
Tap water cooling coil for SC100 or SC150 controller with S7	1600092
Tap water cooling coil for SC150 L controller with S7	1600093
Tap water cooling coil for AC150 or AC200 controller with S7	1600094
Solenoid valve (100-230V/50-60Hz) for tap water cooling coil (AC200 and up)	1601000
Connectivity	
RS232 serial communication adapter	1600027
RS485 serial communication adapter	1600075
Communication extension board for Ethernet/LAN	1600076
Interface cable, USB ,1.8 m long	1600033
Interface cable, RS232 and RS485, 1.5 m long	1600034
Interface cable, LAN, 5 m long	1600035
Analog I/O adapter	1600149

Tap water cooling coil

Ordering information

Accessory	Cat. No.
Work area covers	
Stainless steel work area cover for S5P	1600020
Stainless steel work area cover for S14P	1600021
Stainless steel work area cover for S21P	1600022
Stainless steel work area cover for S21 S45	1600038
Stainless steel work area cover for S49	1600040
Stainless steel work area cover for A10B	1600042
Work area cover with leveling device for A10	1600100
Work area cover with leveling device for S7	1600102
Work area cover with leveling device for S13	1600103
Tubing and accessories	
Adapter M16x1 female/1/4 in. NPTF male	1600028
Adapter M16x1 male/1/4 in. NPTF male	1600029
Plumbing package – includes (4) clamps and (2) 5' Viton tubing (uninsulated), temperature range of -30°C to +200°C, 12mm ø	1600146
Plumbing package – includes (4) clamps and (2) 5' Viton tubing (insulated), temperature range of -30°C to +200°C, 12 mm ø	1600147
Remote temperature sensors	
PT100 probe, teflon coated, flexible, 300 mm long, 3 mm Ø, cable length 3 m	3330818
PT100 probe, 18/8 stainless steel tubing, 150 mm long, 3 mm Ø, 3 m cable length, up to 600°C	3330429
Heat transfer fluids	
Sil 100 Silicone oil bath liquid, temperature range –75 to 75°C, 5 L	9990201
Sil 100 Silicone oil bath liquid, temperature range –75 to 75°C, 10 L	9990202
Algaecide/corrosion inhibitor, Nalco Kit	610000000005
Thermo200 Treated Water Solution w/Nalco, Temp Range +5°C to +95°C, 5 gal	610000000007
Sil 180 Silicone oil bath liquid, temperature range –40 to 200°C, 5 L	9990203
Sil 180 Silicone oil bath liquid, temperature range –40 to 200°C, 10 L	9990204
Sil 300 Silicone oil bath liquid, temperature range 80 to 300°C, 5 L	9990205
Sil 300 Silicone oil bath liquid, temperature range 80 to 300°C, 10 L	9990206
Synth 260 bath liquid, temperature range 40 to 250°C, 5 L	9990213
Synth 260 bath liquid, temperature range 40 to 250°C, 10 L	9990214
Ethyl glycol, 5 gallons (approx. 19 liters) for low-temperature applications to –30°C	610000000001
Software	
NEScom control/monitoring PC software	422000000004
Miscellaneous accessories	
Cage for SC100/SC150 immersion circulator	1600088
Cage for SC150L immersion circulator	1600089
Auto-refill (100-230 V/50-60 Hz) (AC200 and up)	1603000

Directly control temperature of an external batch or application by placing the temperature sensor into the external application.

Stainless steel work area cover

Arctic Series circulator ordering information

Model	A10			A25			A45HC		
Voltages (V/Hz)	115/60	230/50	100/50-60	115/60	230/50	100/50-60	115/60	230/50	100/50-60
SC100 plus bath	1525108	1525101	1525106	1525258	1525251	1525256	-	-	-
SC150 plus bath	1535108	1535101	1535106	1535258	1535251	1535256	-	-	-
SC150L plus bath	-	-	-	1545258	1545251	1545256	1545408HC	1545401HC	1545406HC
AC150 plus bath	1555108	15555101	1555106	1555258	15555251	1555256	-	-	-
AC200 plus bath	1655108	1565101	1565106	1565258	1565251	1565256	1565408HC	1565401HC	1565406HC
PC200 plus bath	-	-	-	1575258	1575251	1575256	1575408HC	1575401HC	1575406HC

Arctic Series circulator ordering information

Model	A10B			A25B		
Voltages (V/Hz)	115/60	230/50	100/50-60	115/60	230/50	100/50-60
SC100 plus bath	1524108	1524101	1524106	1524258	1524151	1524256
SC150 plus bath	1534108	1534101	1534106	1534258	1534251	1534256
SC150L plus bath	-	-	-	-	-	-
AC150 plus bath	1554108	1554101	1554106	1554258	1554251	1554256
AC200 plus bath	1564108	1564101	1564106	1564258	1564251	1564256
PC200 plus bath	-	-	-	-	-	-

Immersion circulator ordering information

Voltages (V/Hz)	115/60	230/50	100V/ 50-60
SC100	1520008	152-0001	1520006
SC100 w/clamp	1520018	152-0011	1520016
SC150	1530008	153-0001	1530006
SC150 w/clamp	1530018	153-0011	1530016
SC150L	1540008	154-0001	1540006
SC150L w/clamp	1540018	154-0011	1540016
AC150	1550008	155-0001	1550006
AC150 w/bridge	1550028	155-0021	1550026
AC200	1560008	156-0001	1560006
AC200 w/bridge	1560028	156-0021	1560026
PC200	1570002	157-0005	1570002
PC200 w/bridge	1570022	157-0025	1570022

Sahara Series circulator ordering information

Model	S7			S13		
Voltages (V/Hz)	115/60	230/50	100/50-60	115/60	230/50	100/50-60
SC100 plus bath	1521078	1521071	1521076	1521138	1521131	1521136
SC150 plus bath	1531078	1531071	1531076	1531138	1531131	1531136
SC150L plus bath	1541078	1541071	1541076	1541138	1541131	1541136
AC150 plus bath	1551078	1551071	1551076	1551138	1551131	1551136
AC200 plus bath	1561078	1561071	1561076	1561138	1561131	1561136
PC200 plus bath	1571072	1571075	-	1571132	1571135	-
PC201 plus bath	-	1581075	-	-	1581135	-
PC300 plus bath	-	1591075	-	-	1591135	-

Sahara Series circulator ordering information

Model	S21			S45			S49		
Voltages (V/Hz)	115/60	230/50	100/50-60	115/60	230/50	100/50-60	115/60	230/50	100/50-60
SC100 plus bath	1521218	1521211	1521216	1521458	1521451	1521456	1521498	1521491	1521496
SC150 plus bath	1531218	1531211	1531216	1531458	1531451	1531456	1531498	1531491	1531496
SC150L plus bath	–	–	–	1541458	1541451	1541456	1541498	1541491	1541496
AC150 plus bath	1551218	1551211	1551216	1551458	1551451	1551456	1551498	1551491	1551496
AC200 plus bath	1561218	1561211	1561216	1561458	1561451	1561456	1561498	1561494	1561496
PC200 plus bath	-	-	-	1571452	1571455	-	1571492	1571495	-

Polypropylene Series circulator ordering information:

Model	S5P			S14P			S21P		
Voltages (V/Hz)	115/60	230/50	100/50-60	115/60	230/50	100/50-60	115/60	230/50	100/50-60
SC100 plus bath	1523058	1523051	1523056	1523148	1523141	1523146	1523218	1523211	1523216
SC150 plus bath	1533058	1533051	1533056	1533148	1533141	1533218	1533218	1533211	1533216
AC150 plus bath	-	-	-	1553148	1553141	1553146	1553218	1553211	1553216
AC200 plus bath	-	-	-	1563148	1563141	1563146	1563218	1563211	1563216

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