

## designed for scientists



### **ICC** control

/// Data Sheet

Compact immersion circulator ICC control for tempering of liquids up to 150 °C. Suitable to use in open or covered bath vessels.

The integrated pressure/ suction pump allow ICC control to be used for internal and external applications. Just connect the optional pump set. ICC control also has an optional cooling coil that allows to work close to ambient temperatures. The program function can save and run up to 10 individual procedures with 10 steps.

The ICC control circulator is first in its class with an integrated carrying handle that allows for comfortable transport and safe storage thanks to its clever stand.

The large, colour TFT screen offers intuitive controls of all process parameters.









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- Temperature range: RT 150 °C - Temperature stability: ± 0.01 K
- Powerful, speed-controlled pressure/suction pump
- Holding clamp for attaching the circulator to a bath, convenient carrying handle und integrated brackets
- Large easy to read TFT display for temperature, pump speed, filling level and safety temperature
- Programming function with 10 individual programs, each with 10 steps
- Adjustable safety circuit
- Connection for external PT 100 temperature probe
- Visual and acoustic safety warnings
- USB / RS 232 interface for PC control and documentation using labworldsoft®, as well as for online firmware updates









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#### **Technical Data**

Appliance type         Compact immersion circulators           Class designation acc. DIN 12876         III           Heat output [W]         2000           Working temperature [°C]         room temp. +10K @1000rpm - 150           Operating temperature sensor         PT 100           Femperature sensor         PT 100           Working temperature sensor         PT 100           Working temperature display         TFT           Safety temperature display         TFT           Safety temperature display         TFT           Temperature stability DIN 12876 [K]         ±0.01           Connection for ext. temperature sensor         PT 100           Display resolution [K]         ±0.01           Display resolution [K]         ±0.01           Warning function optical         yes           Warning function optical         yes           Warning function acoustic         yes           Warning function excess temperature         yes           Warning function excess temperature         yes           Adjustable safety circuit [°C]         0 - 160           Sub-level protection         yes           Pump type         Pressure pump (suction side) (0 liter flow) [bar]         0.3           Pressure pump (suction side) (0 liter flow) [bar	
Identification according to DIN 12876	Compact immersion circulators
Heat output [W]	
Working temperature [°C]         room temp. +10K @1000rpm - 150           Operating temperature min. (with external cooling) [°C]         -20           Temperature display         yes           Temperature control         PT 100           Working temperature sensor         PT 100           Working temperature display         TFT           Safety temperature display         TFT           Safety temperature display         TFT           Temperature stability DIN 12876 [K]         ±0.01           Connection for ext. temperature sensor         PT 100           Display resolution [K]         0.01           Display resolution [K]         ±0.1           Warning function optical         yes           Warning function acoustic         yes           Warning function excess temperature         yes           Adjustable safety circuit [°C]         0 - 160           Sub-level protection         yes           Over-level protection         yes           Pump type         Pressure - / suction pump           Pump capacity adjustable         yes           Pump pressure max. (0 liters discharge flow) [bar]         0.3           Pressure pump (suction side) (0 liter flow) [bar]         150           Calibration option         yes	FL
Operating temperature min. (with external cooling) [°C]         -20           Temperature display         yes           Temperature control         PT 100           Working temperature sensor         PT 100           Safety temperature display         TFT           Working temperature display         TFT           Safety temperature stability DIN 12876 [K]         ±0.01           Connection for ext. temperature sensor         PT 100           Display resolution [K]         0.01           Display for operation with ext. sensor         yes           Set temperature resolution [K]         ±0.1           Warning function acoustic         yes           Warning function acoustic         yes           Warning function excess temperature         yes           Verelevel protection         yes           Over-level protection         yes           Pump type         Pressure-/ suction pump           Pump pressure max. (0 liters discharge flow) [bar]         0.3           Pressure-/ suction side) (0 liter flow) [bar]         0.2           Flow rate max. (0 bar back pressure)	2000
Temperature display	room temp. +10K @1000rpm - 150
PT 100   Working temperature sensor	ernal cooling) [°C] -20
Working temperature sensor         PT 100           Safety temperature display         TFT           Safety temperature display         TFT           Temperature stability DIN 12876 [K]         ±0.01           Connection for ext. temperature sensor         PT 100           Display resolution [K]         0.01           Display for operation with ext. sensor         yes           Set temperature resolution [K]         ±0.1           Warning function optical         yes           Warning function excess temperature         yes           Adjustable safety circuit [*C]         0 - 160           Sub-level protection         yes           Over-level protection         yes           Pump type         Pressure-/ suction pump           Pump pressure max. (0 liters discharge flow) [bar]         0.3           Pressure pump (suction side) (0 liter flow) [bar]         0.2           Flow rate max. (0 bar back pressure) [l/min]         18           Bath depth min. [mm]         150           Calibration option	yes
Safety temperature sensor   PT1000   TFT	PT 100
Working temperature display         TFT           Safety temperature display         TFT           Temperature stability DIN 12876 [K]         ±0.01           Connection for ext. temperature sensor         PT 100           Display resolution [K]         0.01           Display for operation with ext. sensor         yes           Set temperature resolution [K]         ±0.1           Warning function acoustic         yes           Warning function excess temperature         yes           Warning function excess temperature         yes           Adjustable safety circuit [°C]         0 - 160           Sub-level protection         yes           Over-level protection         yes           Pump type         Pressure-/ suction pump           Pump pressure max. (0 liters discharge flow) [bar]         0.3           Pressure pump (suction side) (0 liter flow) [bar]         0.2           Flow rate max. (0 bar back pressure) [l/min]         18           Bath depth min. [mm]         150           Calibration option         yes           Appliance fastener         clamp           Technical data complies with the standard         DIN 12876           Permissible ON time [%]         100           Dimensions (W x H x D) [mm]         145 x 340	PT 100
Safety temperature display         TFT           Temperature stability DIN 12876 [K]         ±0.01           Connection for ext. temperature sensor         PT 100           Display resolution [K]         0.01           Display for operation with ext. sensor         yes           Set temperature resolution [K]         ±0.1           Warning function optical         yes           Warning function acoustic         yes           Warning function excess temperature         yes           Adjustable safety circuit [°C]         0 - 160           Sub-level protection         yes           Over-level protection         yes           Pump type         Pressure - / suction pump           Pump pressure max. (0 liters discharge flow) [bar]         0.3           Pressure pump (suction side) (0 liter flow) [bar]         0.2           Flow rate max. (0 bar back pressure) [l/min]         18           Bath depth min. [mm]         150           Calibration option         yes           Appliance fastener         clamp           Technical data complies with the standard         DIN 12876           Permissible ON time [%]         100           Dimensions (W x H x D) [mm]         145 x 340 x 200           Weight [kg]         5 - 40	PT1000
Temperature stability DIN 12876 [K]	TFT
Connection for ext. temperature sensor Display resolution [K] Display for operation with ext. sensor Set temperature resolution [K] Warning function optical Warning function acoustic Warning function excess temperature Warning function excess temperature Adjustable safety circuit [°C] O- 160 Sub-level protection Ver-level protection Pump type Pump type Pump capacity adjustable Pump pressure max. (0 liter sloscharge flow) [bar] Pressure pump (suction side) (0 liter flow) [bar] Plow rate max. (0 bar back pressure) [l/min] Bath depth min. [mm] Calibration option Appliance fastener Clamp Permissible ON time [%] Dimensions (W x H x D) [mm] Weight [kg] Pressure lative humidity [%] Pressure lative humidity [%] Protection class according to DIN EN 60529 RS 232 interface	TFT
Display resolution [K] Display for operation with ext. sensor Set temperature resolution [K] Warning function optical Warning function acoustic Warning function excess temperature Warning function excess temperature Adjustable safety circuit [°C] Sub-level protection Over-level protection Pump type Pump capacity adjustable Pump pressure max. (0 liters discharge flow) [bar] Pressure pump (suction side) (0 liter flow) [bar] Bath depth min. [mm] Calibration option Appliance fastener Technical data complies with the standard Permissible ON time [%] Dimensions (W x H x D) [mm] Weight [kg] Permissible relative humidity [%] Protection class according to DIN EN 60529 RS 232 interface	±0.01
Display for operation with ext. sensor         yes           Set temperature resolution [K]         ±0.1           Warning function optical         yes           Warning function acoustic         yes           Warning function excess temperature         yes           Adjustable safety circuit [°C]         0 - 160           Sub-level protection         yes           Over-level protection         yes           Pump type         Pressure- / suction pump           Pump pressure max. (0 liters discharge flow) [bar]         0.3           Pressure pump (suction side) (0 liter flow) [bar]         0.2           Flow rate max. (0 bar back pressure) [l/min]         18           Bath depth min. [mm]         150           Calibration option         yes           Appliance fastener         clamp           Technical data complies with the standard         DIN 12876           Permissible ON time [%]         100           Dimensions (W x H x D) [mm]         145 x 340 x 200           Weight [kg]         3.75           Permissible ambient temperature [°C]         5 - 40           Permissible relative humidity [%]         80           Protection class according to DIN EN 60529         IP 21           RS 232 interface         yes     <	pr PT 100
Display for operation with ext. sensor  Set temperature resolution [K]  Warning function optical  Warning function acoustic  Warning function excess temperature  Adjustable safety circuit [°C]  Sub-level protection  Over-level protection  Pump type  Pressure- / suction pump  Pump capacity adjustable  Pump pressure max. (0 liters discharge flow) [bar]  Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  Protection class according to DIN EN 60529  RS 232 interface  yes	0.01
Warning function optical       yes         Warning function acoustic       yes         Warning function excess temperature       yes         Adjustable safety circuit [°C]       0 - 160         Sub-level protection       yes         Over-level protection       yes         Pump type       Pressure-/ suction pump         Pump capacity adjustable       yes         Pump pressure max. (0 liters discharge flow) [bar]       0.3         Pressure pump (suction side) (0 liter flow) [bar]       0.2         Flow rate max. (0 bar back pressure) [l/min]       18         Bath depth min. [mm]       150         Calibration option       yes         Appliance fastener       clamp         Technical data complies with the standard       DIN 12876         Permissible ON time [%]       100         Dimensions (W x H x D) [mm]       145 x 340 x 200         Weight [kg]       3.75         Permissible ambient temperature [°C]       5 - 40         Permissible relative humidity [%]       80         Protection class according to DIN EN 60529       IP 21         RS 232 interface       yes	yes
Warning function acoustic  Warning function excess temperature  Adjustable safety circuit [°C]  Sub-level protection  Over-level protection  Pump type  Pressure - / suction pump  Pump capacity adjustable  Pump pressure max. (0 liters discharge flow) [bar]  Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Meight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  RS 232 interface  O - 160  9es  0 - 160  0 - 160  9es  1 P 21  Protection class according to DIN EN 60529  RS 232 interface	±0.1
Warning function excess temperature  Adjustable safety circuit [°C]  Sub-level protection  Over-level protection  Yes  Overlevel protection  Yes  Pump type  Pressure- / suction pump  Pump capacity adjustable  Pump pressure max. (0 liters discharge flow) [bar]  Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Meight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  RS 232 interface  O - 160  O - 10  O - 2  Flow rate max. (a) bar persure / suction pump  In 18  In 1	yes
Warning function excess temperature  Adjustable safety circuit [°C]  Sub-level protection  Over-level protection  Yes  Over-level protection  Pump type  Pump capacity adjustable  Pump pressure max. (0 liters discharge flow) [bar]  Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Meight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  RS 232 interface  O - 160  Sus  Calma  D.2  Calibration option pump  yes  Clamp  Technical data complies with the standard  DIN 12876  Permissible ON time [%]  100  Dimensions (W x H x D) [mm]  445 x 340 x 200  Meight [kg]  85 - 40  Permissible relative humidity [%]  RS 232 interface  yes	yes
Sub-level protection Over-level protection  Pump type Pump capacity adjustable Pump pressure max. (0 liters discharge flow) [bar] Pressure pump (suction side) (0 liter flow) [bar] Pour return max. (0 bar back pressure) [l/min] Bath depth min. [mm] Calibration option Appliance fastener Technical data complies with the standard Permissible ON time [%] Dimensions (W x H x D) [mm] Dimensions (W x H x D) [mm] Permissible ambient temperature [°C] Permissible relative humidity [%] Protection class according to DIN EN 60529 RS 232 interface  Pressure - / suction pump Pressure - / suction pump 0.3  0.3  0.2  Elow at e max. (0 birter flow) [bar] 0.2  Elow at e max. (0 liters discharge flow) [bar] 0.3  18  18  19  100  100  145 x 340 x 200  3.75  Permissible ambient temperature [°C] 9-40  Protection class according to DIN EN 60529 RS 232 interface	
Over-level protectionyesPump typePressure- / suction pumpPump capacity adjustableyesPump pressure max. (0 liters discharge flow) [bar]0.3Pressure pump (suction side) (0 liter flow) [bar]0.2Flow rate max. (0 bar back pressure) [l/min]18Bath depth min. [mm]150Calibration optionyesAppliance fastenerclampTechnical data complies with the standardDIN 12876Permissible ON time [%]100Dimensions (W x H x D) [mm]145 x 340 x 200Weight [kg]3.75Permissible ambient temperature [°C]5 - 40Permissible relative humidity [%]80Protection class according to DIN EN 60529IP 21RS 232 interfaceyes	
Pump type Pump capacity adjustable Pump pressure max. (0 liters discharge flow) [bar] Pressure pump (suction side) (0 liter flow) [bar] Pressure pump (suction side) (0 liter flow) [bar] Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm] 150 Calibration option yes Appliance fastener Clamp Technical data complies with the standard DIN 12876 Permissible ON time [%] 100 Dimensions (W x H x D) [mm] 145 x 340 x 200 Weight [kg] 9.75 Permissible ambient temperature [°C] 5 - 40 Permissible relative humidity [%] Protection class according to DIN EN 60529 RS 232 interface  Permissible relative humidity [weight services of the pressure of	yes
Pump capacity adjustable Pump pressure max. (0 liters discharge flow) [bar] Pressure pump (suction side) (0 liter flow) [bar] Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Dimensions (W x H x D) [mm]  Weight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  Protection class according to DIN EN 60529  RS 232 interface  yes	yes
Pump pressure max. (0 liters discharge flow) [bar]  Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Weight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  RS 232 interface  0.3  0.2  0.2  0.2  0.2  0.2  0.2  0.2	Pressure- / suction pump
Pressure pump (suction side) (0 liter flow) [bar]  Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Weight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  Protection class according to DIN EN 60529  RS 232 interface  0.2  0.2  18  80  Possible relative flowing items and a complex of the complex of	yes
Flow rate max. (0 bar back pressure) [l/min]  Bath depth min. [mm]  Calibration option  Appliance fastener  Clamp  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Weight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  Protection class according to DIN EN 60529  RS 232 interface  150  150  100  DIN 12876  100  100  145 x 340 x 200  3.75  5 - 40  80  Protection class according to DIN EN 60529  IP 21  RS 232 interface	ge flow) [bar] 0.3
Bath depth min. [mm]       150         Calibration option       yes         Appliance fastener       clamp         Technical data complies with the standard       DIN 12876         Permissible ON time [%]       100         Dimensions (W x H x D) [mm]       145 x 340 x 200         Weight [kg]       3.75         Permissible ambient temperature [°C]       5 - 40         Permissible relative humidity [%]       80         Protection class according to DIN EN 60529       IP 21         RS 232 interface       yes	low) [bar] 0.2
Calibration option  Appliance fastener  Technical data complies with the standard  Permissible ON time [%]  Dimensions (W x H x D) [mm]  Weight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  Protection class according to DIN EN 60529  RS 232 interface  yes	[l/min] 18
Appliance fastener         clamp           Technical data complies with the standard         DIN 12876           Permissible ON time [%]         100           Dimensions (W x H x D) [mm]         145 x 340 x 200           Weight [kg]         3.75           Permissible ambient temperature [°C]         5 - 40           Permissible relative humidity [%]         80           Protection class according to DIN EN 60529         IP 21           RS 232 interface         yes	150
Technical data complies with the standard         DIN 12876           Permissible ON time [%]         100           Dimensions (W x H x D) [mm]         145 x 340 x 200           Weight [kg]         3.75           Permissible ambient temperature [°C]         5 - 40           Permissible relative humidity [%]         80           Protection class according to DIN EN 60529         IP 21           RS 232 interface         yes	yes
Permissible ON time [%]       100         Dimensions (W x H x D) [mm]       145 x 340 x 200         Weight [kg]       3.75         Permissible ambient temperature [°C]       5 - 40         Permissible relative humidity [%]       80         Protection class according to DIN EN 60529       IP 21         RS 232 interface       yes	clamp
Dimensions (W x H x D) [mm]  Weight [kg]  Permissible ambient temperature [°C]  Permissible relative humidity [%]  Protection class according to DIN EN 60529  RS 232 interface  145 x 340 x 200  3.75  5 - 40  80  Protection class according to DIN EN 60529  IP 21  yes	dard DIN 12876
Weight [kg]3.75Permissible ambient temperature [°C]5 - 40Permissible relative humidity [%]80Protection class according to DIN EN 60529IP 21RS 232 interfaceyes	100
Weight [kg]3.75Permissible ambient temperature [°C]5 - 40Permissible relative humidity [%]80Protection class according to DIN EN 60529IP 21RS 232 interfaceyes	145 x 340 x 200
Permissible ambient temperature [°C] 5 - 40  Permissible relative humidity [%] 80  Protection class according to DIN EN 60529 IP 21  RS 232 interface yes	3.75
Permissible relative humidity [%] 80 Protection class according to DIN EN 60529 IP 21 RS 232 interface yes	5 - 40
RS 232 interface yes	
RS 232 interface yes	60529 IP 21
	yes
Voltage [V] 230	
Frequency [Hz] 50/60	50/60
Power input [W] 2100	2100







