

## FC1600S Chiller

Recirculating coolers of the FC series with an increased pump capacity are available for applications with large volumes. Thanks to their integrated heating, they have an increased working temperature range and operate very precisely with a temperature stability of  $\pm 0.2$  °C.



### Product features

- Adjustable ratio for feed/return temperatures
- Easy filling system located at the front
- Activation of pump for filling
- Bright MULTI-DISPLAY (LED)
- Upper and lower temperature warning functions with interval tone
- Integrated freezing protection and dry-running protection
- Rapid and easy operation via seamless, splash-proof keypad
- Liquid level indication on the front
- Self-test, reciprocal sensor monitoring, pump motor and compressor overload protection
- Complete shut-down with audible signal in case of an alarm
- removable venting grid for simplified removal of dust
- RS232 interface for PC connection
- High temperature stability
- Integrated heater with 1.2 kW capacity

### Performance values

230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F)

Heating capacity kW	1.2
Pump capacity flow rate l/min	22
Pump capacity flow pressure bar	1.2
Power consumption A	8

Order No. 9600163.03

Cooling capacity (Ethanol)

°C	20	10	5	0	-10
kW <sup>1</sup>	1.55	1.15	0.9	0.76	0.36

Refrigerant stage 1

Refrigerant	R134a
Filling weight g	750
Global Warming Potential for R134a	1430
Carbon dioxide equivalent t	1.0725

<sup>1</sup> Performance specifications measured in accordance with DIN 12876. Cooling capacities up to 20 °C measured with ethanol; over 20 °C with thermal oil unless otherwise specified. Performance specifications apply at an ambient temperature of 20 °C. Performance values may differ with other bath fluids.

## Technical data

Available voltage versions		Cooling	
Order No.	9 600 163	Cooling of compressor	1-stage Air
Available voltage versions:			
9600163.13	230V/60Hz (Schuko Plug - CEE 7/4 Plug Type F) (R134a)		
9600163.03	230V/50Hz (Schuko Plug - CEE 7/4 Plug Type F) (R134a)		
9600163.04	230V/50Hz (UK Plug Type BS1363A) (R134a)		
9600163.05	230V/50Hz (CH Plug Type SEV 1011) (R134a)		
Bath		Other	
Bath tank	Stainless steel	Sound pressure level dbA	57
		Classification	Classification III (FL)
		IP Code	IP 21
		Pump type	Immersion Pump
Electronics		Dimensions and volumes	
Interfaces	Alarm output, Profibus optional, RS232, Stakei, Standby-Input	Weight kg	66
External pt100 sensor connection	not available	Barbed fittings inner diameter mm	8/12 mm
Temperature control	PID1	Dimensions cm (W × L × H)	46 x 61 x 49
Temperature display	2x LED	Filling volume l	8 ... 11
Temperature setting	Keypad	Pump connections	M16x1 male
Temperature values		Included in delivery	
Working temperature range °C	-15 ... +80	2 Barbed fittings for tubing 8 and 12 mm ID. (Pump connections M16x1 male)	
Temperature stability °C	±0.2		
Ambient temperature °C	+5 ... +40		
Setting the resolution of the temperature display °C	0.1		

## All Benefits



**100% Checked.**  
100% testing. 100% quality. Each JULABO Circulator undergoes thorough quality testing before leaving the factory.



**Green technology.**  
Development consistently applied environmentally friendly materials and technologies.



**100 % Cooling capacity**  
'Active Cooling Control' for cooling available throughout the entire working temperature range, fast cool-down even at higher temperatures



**For flammable bath fluid**  
Classification III (FL) according to DIN 12876-1



**JULABO. Quality.**  
Highest standards of quality for a long product life.



**Quick start.**  
Individual JULABO consultation and comprehensive manuals at your disposal.



**Satisfied customers.**  
11 subsidiaries and more than 100 partners worldwide guarantee fast and qualified JULABO support.



**Services 24/7.**  
Around the clock availability. You can find suitable accessories, data sheets, manuals, case studies, and more at [www.julabo.com](http://www.julabo.com).



**Precise**  
PID Temperature control with set control parameters, temperature stability  $\pm 0.02 \dots \pm 0.2 \text{ } ^\circ\text{C}$



**Early warning system for high/low temperature limits**  
Maximum safety for applications, optical and audible alarm, convertible to automated cut-off function



**Connection of additional equipment**  
Stakei connections for solenoid valve