

MAGIO MS-601F Refrigerated / heating circulator

As with all circulators from the MAGIO range, the refrigerated circulators stand out thanks to their premium quality, high performance and intuitive operation. The devices offer extra strong pressure and suction pumps, thus fulfilling the highest demands for temperature control of external applications. Whether in basic research, material testing or technical systems – the MAGIO refrigerated circulators offer high-tech solutions for high customer requirements.

High resolution TFT touch display

The modern TFT touch display gives you all the important information at a glance. Three large, predefined main screens clearly display data and graphics with various application priorities. Menu navigation is self-explanatory, arranged by relevance to daily operations and easy to operate with the touch of a finger. The in-built help function provides detailed support in case of additional questions.



Product features

- · Ideal for demanding external applications
- · Simple control of complex applications
- · Continuously adjustable, extremely powerful pressure / suction pump
- Flow rate 16 ... 31 l / min, pressure 0.24 ... 0.92 bar, suction 0.03 ... 0.4 bar
- · Large, high-resolution TFT touch display with multilingual user interface
- Parts being in contact with the medium made of stainless steel
- · Integrated programmer
- Integrated external Pt100 connection
- · USB connection
- RS232 interface for online communication
- Ethernet
- analog interfaces (accessory)
- · Class III (FL) according to DIN 12876-1
- Modbus
- Profibus DP (Accessory)
- RS232/RS485 interface for online communication
- · Connections for solenoid valve

Technical data

Available voltage	versions	Bath							
Order No.	9 032 705	Bath tank	Stainless steel						
Available voltage vers	sions:	Bath cover	integrated						
9 032 705.01	100V/50-60Hz (Nema N5-15 Plug)	Usable bath opening in. (W x L / D)	8.7 x 5.9 / 7.9						
9 032 705.02	115V/60Hz (Nema N5-15 Plug)								
9 032 705.05	200-230V/50-60Hz (CH Plug Type SEV 1011)								
9 032 705.04	200-230V/50-60Hz (UK Plug Type BS1363A)								
9 032 705.33	200-230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F)								
9 032 705.33.chn	200-230V/50-60Hz (CN Plug)								
Cooling		Other							
Cooling of compresso	or 1-stage Air	Classification	Classification III (FL)						
		IP Code	IP 21						
		Pump function	Pressure Suction Pump						
		Pump type	Immersion Pump						



Electronics		Dimensions and volumes	
External pt100 sensor connection	integrated	Weight lbs	91.5
Integrated programmer	8x60 steps	Dimensions in. $(W \times L \times H)$	13 x 18.5
Temperature control	ICC	Filling volume I	8 10
Absolute temperature calibration	10 Point Calibration	Pump connections	M16x1 ma
Temperature displayTemperature display	7" TFT Touchscreen		
Temperature settingTemperature setting	Touchscreen		
Electronic Timer hr:min	00:00 99:59		
Temperature values			
Setting the resolution of the temperature display °C	0.01		
Working temperature range °C	-35 +200.0		
Temperature stability °C	+/-0.01		
Ambient temperature °C	+10.0 +40.0		
Temperature display resolution °C	0.01		

Performance values

100V/50-60Hz (Nema N5-15 Plug)

100V/50Hz									100V/60Hz						
Heati	ng cap	acity k	W				0.8	Heating capacity kW							0.8
Cooling capacity (Ethanol)									Cooling capacity (Ethanol)						
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	0.6	0.52	0.44	0.27	0.16	0.04		kW 0.6 0.52 0.44 0.27 0.16 0							
Viscosity max. cST 70							70	Viscosity max. cST							70
Refrigerant R452A							R452A	Refrigerant							R452A
Filling	yolum	ne g					150	Filling volume g							150
Globa	ıl Warn	ning Po	otentia	l for R4	452A		2140	Global Warming Potential for R452A							2140
Carbo	n diox	ide equ	uivalen	t t			0.321	Carbon dioxide equivalent t							0.321
Pump	capac	city flow	w rate	l/min			16 31	Pump capacity flow rate I/min 16 31							16 31
Pump capacity flow pressure psi 3.5 13.3								Pump capacity flow pressure psi 3.5 13.3							3.5 13.3
Maxir	num sı	uction	psi				-0.45.8	Maximum suction psi -0.4.							-0.45.8
Powe	r						15 A	Power 15 A							15 A

115V/60Hz (Nema N5-15 Plug)

115V	115V/60Hz													
Heatir	Heating capacity kW 1													
Cooling capacity (Ethanol)														
°C	20	10	0	-10	-20	-30								
kW	W 0.6 0.52 0.44 0.27 0.16 0.04													
Viscos	sity ma	x. cST					70							
Refrig	erant						R449A							
Filling	volum	e g					150							
Globa	l Warm	ning Po	tentia	for R4	149A		1397							



Carbon dioxide equivalent t	0.21
Pump capacity flow rate I/min	16 31
Pump capacity flow pressure psi	3.5 13.3
Maximum suction psi	-0.40.6
Power	12 A

200-230V/50-60Hz (CH Plug Type SEV 1011)

200V/50Hz	00V/50Hz	000///011-									
Cooling capacity (Ethanol) **C		200V/60Hz									
***C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04 Viscosity max. cST 70 Viscosity max. cST 70 Refrigerant Ref	eating capacity kW 1.6	Heating capacity kW 1.6									
kW 0.6 0.52 0.44 0.27 0.16 0.04 Viscosity max. cST 70 Viscosity max. cST 70 Refrigerant R449A Rilling volume g 150 Global Warming Potential for R449A 1397 Carbon dioxide equivalent t 0.21 Carbon dioxide equivalent t 0.21 Carbon dioxide equivalent t 0.21 Pump capacity flow rate l/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Maximum suction psi -0.45.8 Power 10 A 230V/60Hz Heating capacity (Ethanol) °C 20 10 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 0.04 <td colspan<="" td=""><td>ooling capacity (Ethanol)</td><td colspan="9">Cooling capacity (Ethanol)</td></td>	<td>ooling capacity (Ethanol)</td> <td colspan="9">Cooling capacity (Ethanol)</td>	ooling capacity (Ethanol)	Cooling capacity (Ethanol)								
Viscosity max. cST 70 Viscosity max. cST 70 Refrigerant R449A Refrigerant R449A Filling volume g 150 Global Warming Potential for R449A 1397 Carbon dioxide equivalent t 0.21 Carbon dioxide equivalent t 0.21 Pump capacity flow rate l/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Power 10 A 230V/60Hz Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 -0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	20 10 0 -10 -20 -30	°C 20 10 0 -10 -20 -30									
Refrigerant R449A Refrigerant R449A Filling volume g 150 Filling volume g 150 Global Warming Potential for R449A 1397 Global Warming Potential for R449A 1397 Carbon dioxide equivalent t 0.21 Carbon dioxide equivalent t 0.21 Pump capacity flow rate I/min 16 31 Pump capacity flow rate I/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Maximum suction psi -0.45.8 Power 10 A Power 10 A 230V/60Hz Heating capacity (Ethanol) 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	W 0.6 0.52 0.44 0.27 0.16 0.04	kW 0.6 0.52 0.44 0.27 0.16 0.04									
Filling volume g 150 Filling volume g 150 Global Warming Potential for R449A 1397 Global Warming Potential for R449A 1397 Global Warming Potential for R449A 1397 Carbon dioxide equivalent t 0.21 Carbon dioxide equivalent t 0.21 Pump capacity flow rate l/min 16 31 Pump capacity flow rate l/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Maximum suction psi -0.45.8 Power 10 A Power 10 A 230V/50Hz Heating capacity (Ethanol) °C 20 10 0 -10 -20 -30	iscosity max. cST 70	Viscosity max. cST 70									
Global Warming Potential for R449A 1397 Carbon dioxide equivalent t 0.21 Pump capacity flow rate I/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Power 10 A Power 10 A 230V/50Hz Heating capacity (Ethanol) *C 20 10 0 -10 -20 -30	efrigerant R449A	Refrigerant R449A									
Carbon dioxide equivalent t 0.21 Pump capacity flow rate I/min 16 31 Pump capacity flow rate I/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Maximum suction psi -0.45.8 Power 10 A 230V/50Hz Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	illing volume g 150	Filling volume g 150									
Pump capacity flow rate I/min 16 31 Pump capacity flow pressure psi 3.5 13.3 Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Power 10 A 230V/50Hz Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	lobal Warming Potential for R449A 1397	Global Warming Potential for R449A 1397									
Pump capacity flow pressure psi 3.5 13.3 Maximum suction psi -0.45.8 Maximum suction psi -0.45.8 Power 10 A 230V/50Hz Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	arbon dioxide equivalent t 0.21	Carbon dioxide equivalent t 0.21									
Maximum suction psi -0.45.8 Maximum suction psi -0.45.8 Power 10 A 230V/60Hz Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	ump capacity flow rate I/min 16 31	Pump capacity flow rate I/min 16 31									
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ump capacity flow pressure psi 3.5 13.3	Pump capacity flow pressure psi 3.5 13.3									
230V/50Hz Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	flaximum suction psi -0.45.8	Maximum suction psi -0.45.8									
Heating capacity kW 2 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	ower 10 A	Power 10 A									
Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04 Cooling capacity (Ethanol) °C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	30V/50Hz	230V/60Hz									
°C 20 10 0 -10 -20 -30 kW 0.6 0.52 0.44 0.27 0.16 0.04	eating capacity kW 2	Heating capacity kW 2									
kW 0.6 0.52 0.44 0.27 0.16 0.04 kW 0.6 0.52 0.44 0.27 0.16 0.04	ooling capacity (Ethanol)	Cooling capacity (Ethanol)									
	20 10 0 -10 -20 -30	°C 20 10 0 -10 -20 -30									
Viscosity max. cST 70 Viscosity max. cST 70	W 0.6 0.52 0.44 0.27 0.16 0.04	kW 0.6 0.52 0.44 0.27 0.16 0.04									
	iscosity max. cST 70	Viscosity max. cST 70									
Refrigerant R449A Refrigerant R449A	efrigerant R449A	Refrigerant R449A									
Filling volume g 150 Filling volume g 150	illing volume g 150	Filling volume g 150									
Global Warming Potential for R449A 1397 Global Warming Potential for R449A 1397	lobal Warming Potential for R449A 1397	Global Warming Potential for R449A 1397									
Carbon dioxide equivalent t 0.21 Carbon dioxide equivalent t 0.21	arbon dioxide equivalent t 0.21	Carbon dioxide equivalent t 0.21									
	ump capacity flow rate I/min 16 31	Pump capacity flow rate I/min 16 31									
Pump capacity flow rate I/min 16 31 Pump capacity flow rate I/min 16 31	ump capacity flow pressure psi 3.5 13.3	Pump capacity flow pressure psi 3.5 13.3									
	faximum suction psi -0.45.8	Maximum suction psi -0.45.8									
Pump capacity flow pressure psi 3.5 13.3 Pump capacity flow pressure psi 3.5 13.3	ower 10 A	Power 10 A									

200-230V/50-60Hz (UK Plug Type BS1363A)

200V/50Hz							200V/60Hz								
Heating capacity kW 1.6								Heating capacity kW							1.6
Cooling capacity								Cooling capacity (Ethanol)							
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30	
kW	0.6	0.52	0.44	0.27	0.16	0.04		kW	0.6	0.52	0.44	0.27	0.17	0.04	
Viscosity max. cST 70						70	Viscosity max. cST						70		
Refrigerant R449A							Refrigerant						ı	R449A	
Filling	yolum	ie g				1	150	Filling volume g						•	150



Global Warming Potential for R449A	1397	Global Warming Potential for R449A 1397						
Carbon dioxide equivalent t	0.21	Carbon dioxide equivalent t 0.21						
Pump capacity flow rate I/min	16 31	Pump capacity flow rate I/min 16 31						
Pump capacity flow pressure psi	3.5 13.3	Pump capacity flow pressure psi 3.5 13.3						
Maximum suction psi	-0.45.8	Maximum suction psi -0.45.8						
Power	12 A	Power 12 A						
230V/50Hz		230V/60Hz						
Heating capacity kW	2	Heating capacity kW 2						
Cooling capacity (Ethanol)		Cooling capacity (Ethanol)						
°C 20 10 0 -10 -20 -30	0	°C 20 10 0 -10 -20 -30						
kW 0.6 0.52 0.44 0.27 0.16 0.0	4	kW 0.6 0.52 0.44 0.27 0.16 0.04						
Viscosity max. cST	70	Viscosity max. cST 70						
Refrigerant	R449A	Refrigerant R449A						
Filling volume g	150	Filling volume g 150						
Global Warming Potential for R449A	1397	Global Warming Potential for R449A 1397						
Carbon dioxide equivalent t	0.21	Carbon dioxide equivalent t 0.21						
Pump capacity flow rate I/min	16 31	Pump capacity flow rate I/min 16 31						
Pump capacity flow pressure psi	3.5 13.3	Pump capacity flow pressure psi 3.5 13.3						
Maximum suction psi	-0.45.8	Maximum suction psi -0.45.8						
Power	13 A	Power 13 A						

200-230V/50-60Hz (Schuko Plug - CEE 7/4 Plug Type F)

200V	200V/50Hz						200V/60Hz									
Heatin	ıg cap	acity k	W				1.6	Heating capacity kW 1.6								
Coolin	g cap	acity (E	Ethano	l)				Cooling capacity (Ethanol)								
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30		
kW	0.6	0.52	0.44	0.27	0.16	0.04		kW	0.6	0.52	0.44	0.27	0.16	0.04		
Viscos	sity ma	ax. cST	-				70	Viscos	sity ma	ax. cST					70	
Refrigerant R449A						R449A	Refrige	erant		R449A						
Filling volume g 150						150	Filling	volum	ie g					150		
Global Warming Potential for R449A 1397						1397	Global	Warm	ning Po		1397					
Carbon dioxide equivalent t 0.21						0.21	Carbo	n dioxi	ide equ		0.21					
Pump	capac	ity flov	w rate	l/min			16 31	Pump	capac	ity flov	v rate l	l/min			16 31	
Pump capacity flow pressure psi 3.5						3.5 13.3	Pump capacity flow pressure psi							3.5 13.3		
Maximum suction psi -0.40.6						-0.40.6	Maxim	num sı	uction	psi				-0.45.8		
Power							12 A	Power			12 A					
230V	/50H	łz						230V/60Hz								
Heatir	ıg cap	acity k	W				2	Heating capacity kW						2		
Coolin	g capa	acity (E	thano	l)				Cooling capacity (Ethanol)								
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30		
kW	0.6	0.52	0.44	0.27	0.16	0.04		kW	0.6	0.52	0.44	0.27	0.16	0.04		
Viscos	sity ma	ax. cST	-				70	Viscos	sity ma	ax. cST					70	
Refrig	erant						R449A	Refrige	erant		R449A					
Filling volume g 150							150	Filling volume g							150	
Global	Warn	ning Po	otentia	I for R4	149A		1397	Global Warming Potential for R449A 1397								



Carbon dioxide equivalent t	0.21	Carbon dioxide equivalent t	0.21
Pump capacity flow rate I/min	16 31	Pump capacity flow rate I/min	16 31
Pump capacity flow pressure psi	3.5 13.3	Pump capacity flow pressure psi	3.5 13.3
Maximum suction psi	-0.45.8	Maximum suction psi	-0.45.8
Power	14 A	Power	14 A

200-230V/50-60Hz (CN Plug)

200V/50Hz							200V/60Hz									
Heatir	ng cap	acity k	W				1.6	Heating capacity kW 1.6								
Cooling capacity (Ethanol)									Cooling capacity (Ethanol)							
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30		
kW	0.6	0.52	0.44	0.27	0.16	0.04		kW	0.6	0.52	0.44	0.27	0.16	0.04		
Visco	sity ma	ax. cS7	Г				70	Viscosity max. cST 70								
Refrigerant R4						R449A	Refrige	erant						R449A		
Filling volume g							150	Filling	volum	ie g					150	
Global Warming Potential for R449A 13						1397	Global	Warn	ning Po	otentia	for R	149A		1397		
Carbon dioxide equivalent t 0.21							0.21	Carbo	n diox		0.21					
Pump capacity flow rate I/min 16 31							Pump	capac		16 31						
Pump capacity flow pressure psi 3.5 13.3							3.5 13.3	Pump	capac	ity flov	w press	sure ps	si		3.5 13.3	
Maximum suction psi -0.45.8						-0.45.8	Maxim	num sı	uction	psi				-0.45.8		
Power 13 A						13 A	Power							13 A		
230\	//50H	lz						230V	/60H	lz						
Heatir	ng cap	acity k	W				2	Heating capacity kW						2		
Coolir	ng cap	acity (I	Ethano	I)				Cooling capacity (Ethanol)								
°C	20	10	0	-10	-20	-30		°C	20	10	0	-10	-20	-30		
kW	0.6	0.52	0.44	0.27	0.16	0.04		kW	0.6	0.52	0.44	0.27	0.16	0.04		
Visco	sity ma	ax. cS	Г				70	Viscosity max. cST 70								
Refrig	erant						R449A	Refrigerant R449A								
Filling	volum	ne g					150	Filling	volum	150						
Globa	l Warn	ning Po	otentia	l for R4	149A		1397	Global Warming Potential for R449A 1397								
Carbo	n diox	ide eq	uivalen	t t			0.21	Carboi	n diox	0.21						
Pump	capac	ity flo	w rate	l/min			16 31	Pump	capac		16 31					
Pump	capac	ity flo	w pres	sure ps	si		3.5 13.3	Pump capacity flow pressure psi							3.5 13.3	
Maxin	num sı	uction	psi				-0.45.8	Maxim	num sı	uction	psi				-0.45.8	
Powe	r						14 A	Power 14 A							14 A	

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.





Intelligent temperature control.

Intelligent cascade control - automatic and self-optimizing adaptation of the PID control parameters with external stability of +/- 0.05 °C.



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.



Highest measuring accuracy

'Absolute Temperature Calibration' for manual compensation of a temperature difference, 10-point calibration



Touch display. Perfect operation.

With the touch display, the user always has an overview of all values and functions. The intuitive and multilingual menu structure enables perfect control.



Many interfaces.

Straight-forward remote control, data management, and integration into process structures. USB, Ethernet, RS232, SD card, and alarm off are permanently integrated. Further interfaces available as accessories.



Maximum safety.

Classification III according to DIN12876-1 enables safe operation, even with flammable fluids. Automatic switch-off in the event of high temperature or low liquid level.



Space saving. Free up space.

Place your JULABO Circulator right next to an application, another unit, or wall. That saves space. This is made possible by eliminating vents and connections on the sides.



Multi-lingual.

Operation in multiple languages.



Programmer. Integrated.

The integrated internal programmer makes it possible to automatically run temperature time profiles.



Temperature. Under control.

External Pt100 sensor connection for precise measurement and control directly in the external application.



Fill level. Monitored.

Fill level indicator on the display for heat-transfer liquid.



Process stability.

Early warning - visual and acoustic - of critical states increases process stability.



Process. Under control.

Full control of the dynamic, access to all important control parameters for individual process optimization.



Stable. Mobile.



Energy-saving.

The high-quality insulation of all relevant components saves energy.



Everything made of stainless steel.

Quality and material compatibility at the highest level. All parts in contact with the medium are entirely made of stainless steel.



Wide range.

Refrigerated and heating circulator in various combinations, circulator in various sizes.

Maximum flexibility through a large selection of accessories.





Connection. Easy.

Inclined pump connections (M16×1) facilitate the connection of applications. Each unit includes 2 barbed fittings of 8/12 mm diameter each.



Analog I/O.

Analog interfaces for integration into process control systems (optional).



Most powerful pump.

The integrated pressure/suction pump with performance values of 0.9 bar and -0.4 bar is the most powerful in its class and continuously adjustable.



Condensation protection.

Superb design solution. Integrated ventilation directs air over the bath lid and minimizes condensation.