



F12-MA



F25-MA



FP35-MA

### TopTech Series

for working temperatures from -50 °C to 200 °C

Refrigerated/heating circulators of the TopTech Series are designed for more demanding applications. They feature increased functionality and additional warning and safety functions.

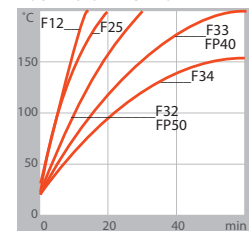
#### Model with MA circulator

- PID2 temperature control, stability  $\pm 0.02$  °C
- 3 point calibration
- RS232 interface
- Early warning system for low liquid level and high/low temperature
- Electronically adjustable pump capacity

The model FP35-MA is designed for external temperature control applications requiring fast temperature changes due to its small volume.

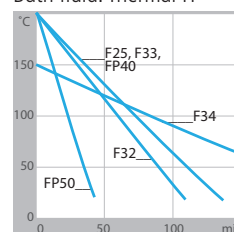
#### Heat-up times

Bath fluid: Thermal H



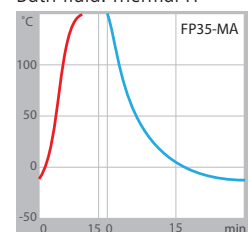
#### Cool-down times

Bath fluid: Thermal H



#### Heat-up/cool-down time

Bath fluid: Thermal H



JULABO Order No.	JULABO Model	Working temperature range °C	Temp. stab. °C	Heat. cap. kW	Cooling capacity kW (Bath fluid: Ethanol)					Pump capacity		Bath opening/ Bath depth W x L / D cm	Fill. vol. liters	Dimensions W x L x H cm
					20 °C	0 °C	-20 °C	-30 °C	-40 °C	l/min.	bar			
9 152 612	F12-MA	-20 ... 200	$\pm 0.02$	2	0.16	0.1	0.02	--	--	11-16	0.23-0.45	13 x 15 / 13	4.5	20 x 36 x 56
9 152 625	F25-MA	-28 ... 200	$\pm 0.02$	2	0.26	0.2	0.06	--	--	11-16	0.23-0.45	12 x 14 / 14	4.5	23 x 42 x 61
9 152 632	F32-MA	-35 ... 200	$\pm 0.02$	2	0.45	0.39	0.15	0.05	--	11-16	0.23-0.45	18 x 12 / 15	8	31 x 42 x 64
9 152 633	F33-MA	-30 ... 200	$\pm 0.02$	2	0.5	0.32	0.12	0.03	--	11-16	0.23-0.45	23 x 14 / 20	16	36 x 46 x 69
9 152 634	F34-MA	-30 ... 150	$\pm 0.02$	2	0.45	0.32	0.14	0.03	--	11-16	0.23-0.45	24 x 30 / 15	20	38 x 58 x 62
9 152 618	FP35-MA	-35 ... 150	$\pm 0.02$	2	0.45	0.39	0.15	0.05	--	11-16	0.23-0.45	18 x 12 / --	2.5	31 x 42 x 64
9 152 640	FP40-MA	-40 ... 200	$\pm 0.02$	2	0.68	0.5	0.32	0.17	0.04	11-16	0.23-0.45	23 x 14 / 20	16	37 x 46 x 69
9 152 650	FP50-MA	-50 ... 200	$\pm 0.02$	2	0.9	0.8	0.5	0.32	0.16	11-16	0.23-0.45	18 x 12 / 15	8	42 x 49 x 70

Included with each unit: 2 each barbed fittings for tubing 8 and 10 mm inner dia. (pump connections with M10x1 female)



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for working temperatures from -50 °C to 200 °C

Models with ME circulators and their additional features allow for a wide range of applications. The units have a connection for an external Pt100 sensor for direct measuring and control in an external application. The VFD display features easy operation and shows all temperature values on one display.

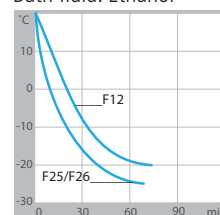
### Additional benefits of models with ME circulators

- PID3 temperature control, stability  $\pm 0.01$  °C
- VFD Comfort-Display with simultaneous indication of set-point and internal and external actual value (resolution 0.01 °C)
- Integrated programmer (1 x 10 steps) with real time clock
- Illuminated display for adjustable pump capacity

FP models: energy saving proportional cooling control

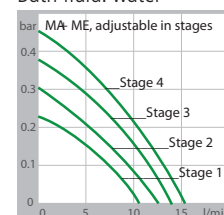
### Cool-down time

Bath fluid: Ethanol



### Pump capacity

Bath fluid: water



JULABO Order No.	JULABO Model	Working temperature range °C	Temp. stab. °C	Heat. cap. kW	Cooling capacity kW (Bath fluid: Ethanol)					Pump capacity Flow rate/Press.		Bath opening/ Bath depths W x L / D cm	Fill. vol. liters	Dimensions W x L x H cm
					20	0	-20	-30	-40°C	l/min.	bar			
9 162 625	F25-ME	-28 ... 200	$\pm 0.01$	2	0.26	0.2	0.06	--	--	11-16	0.23-0.45	12 x 14 / 14	4.5	23 x 42 x 61
9 162 626	F26-ME	-28 ... 200	$\pm 0.01$	2	0.26	0.2	0.06	--	--	11-16	0.23-0.45	12 x 14 / 14	4.5	42 x 42 x 42
9 162 632	F32-ME	-35 ... 200	$\pm 0.01$	2	0.45	0.39	0.15	0.05	--	11-16	0.23-0.45	18 x 12 / 15	8	31 x 42 x 64
9 162 633	F33-ME	-30 ... 200	$\pm 0.01$	2	0.5	0.32	0.12	0.03	--	11-16	0.23-0.45	23 x 14 / 20	16	36 x 46 x 69
9 162 634	F34-ME	-30 ... 150	$\pm 0.01$	2	0.45	0.32	0.14	0.03	--	11-16	0.23-0.45	24 x 30 / 15	20	38 x 58 x 62
9 162 640	FP40-ME	-40 ... 200	$\pm 0.01$	2	0.68	0.5	0.32	0.17	0.04	11-16	0.23-0.45	23 x 14 / 20	16	37 x 46 x 69
9 162 650	FP50-ME	-50 ... 200	$\pm 0.01$	2	0.9	0.8	0.5	0.32	0.16	11-16	0.23-0.45	18 x 12 / 15	8	42 x 49 x 70

Included with each unit: 2 each barbed fittings for tubing 8 and 10 mm inner dia. (pump connections with M10x1 female)