

TemplinTM
preserving life

Centrifuges



TIMH

Refrigerated

**(Tempin Multi Multi High Speed
Refrigerated)**

TIMH-Refrigerated (Tempin Multi Multi High Speed Refrigerated)

Catalogue No.	Description	Voltage	Phases	Hz
21 14 005	TIMH with Touchscreen D.	230 V	1	50/60 Hz
21 14 015	TIMH with Touchscreen D. refrigerated	230 V	1	50/60 Hz
21 14 006	TIMH with Touchscreen D.	110 V	1	60 Hz
21 14 016	TIMH with Touchscreen D. refrigerated	110 V	1	60 Hz

Now with Touchscreen Display with new functions

- microprocessor controlled
- especially for microliter tubes
- maximum capacity: 30 x 2.2 ml or 12x10 ml AOR tubes with screw cap
- 6 angle rotors, 1 swing-out rotor, 1 microhematocrit rotor
- speed: 300 – 16,000 rpm / 22,000 rpm, in steps of 100 rpm
- g-force (RCF): 20,464 x g / 37,878 x g, in steps equivalent to 100 rpm
- Audible signal at end of run and with failure message timer: up to 60 min, in 1 min increments, on request up to 999 min.
- HOLD for longer runs / PULSE for short runs
- 9 acceleration and deceleration ramps
- maintenance free, brushless induction drive
- stainless steel chamber with additional inner guard ring
- overspeed detection, imbalance detection and cut-off
- motorized lid lock, automatic lid opening, emergency lid lock release
- LCD display for both current and preset values of speed/g-force, time and temperature (temperature only at refrigerated model MicroCen MR)



Swing-out Rotor

Cat. - No.	Type	Max. Capacity		Max. Speed	Max. g-Force	Max. Speed	Max. g-Force
21 14 700	TS 24.2 ^H	24 x 2.2 ml	incl. windshield with hermetic sealing lid and 6 carriers for 4 tubes 2.2 ml	12,500 rpm	12,927 x g	14,000 rpm	16,215 x g

Angle Rotors (with hermetic sealing lid)

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Cat. - No.	Type	Max. Capacity	Angle		Max. Speed	Max. g-Force	Max. Speed	Max. g-Force
21 14 200	TF 12.8 ^H	12 PCR strips of 8 x 0.2 ml	45°	Reaction Vials	12,000 rpm	15,777 x g	14,000 rpm	21,475 x g
21 14 170	TF 12.2 ^H	12 x 1.5/2.2 ml	45°	Reaction Vials	16,000 rpm	20,035 x g	22,000 rpm	37,878 x g
21 14 180	TF 18.2 ^H	18 x 1.5/2.2 ml	45°	Reaction Vials	16,000 rpm	20,464 x g	20,000 rpm	31,975 x g
21 14 151	TF 24.2 ^H Biosafe	24 x 1.5/2.2 ml	45°	Reaction Vials	14,000 rpm	17,859 x g	17,000 rpm	26,333 x g
21 14 105	TF 30.2 ^H Biosafe	30 x 1.5/2.2 ml	45°	Reaction Vials	12,000 rpm	15,133 x g	15,000 rpm	23,646 x g
21 14 175	TF 12.5 ^H Biosafe**	Biosafe 12 x 5 ml	40°	Reaction Vials	14,000 rpm	18,406 x g	16,000 rpm	24,041 x g
21 14 251	TF 12.10 ^H	12 x 10 ml	35°		14,000 rpm	18,188 x g	16,000 rpm	23,755 x g



Cat. No. 21 14 175 or
Cat. No. 21 14 251



Cat. No. 21 14 170



Cat. No. 21 14 180

Cat. No. 21 14 151

Cat. No. 21 14 100

TIMH Series / Control Panel




Specifications	NEW Touchscreen Control Panel
Display	TFT monitor
User Interface	Touchscreen
Languages	German, English
Program Memory	50
Timer	h, m, 99:59
Real Run Time (RRT) display, Timer starts if set rotor speed is attained	✓ (selectable)
"HOLD" provision for longer runs	✓
"SHORT" for short runs	✓
RCF in x g	✓ (in steps of 10 x g)
Speed in rpm	✓ (in steps of 100 rpm)
RPM and RCF displayed	Both permanently shown
Rotor type, max. speed, Acceleration and Deceleration Rates	Permanently shown
Acceleration and Deceleration Rates, individually selectable	9 Ramps in steps of 15 sec. from 0 to 120 sec. in the range of 0 – 1.000 rpm
Dynamic electric brake system	✓
Fast Brake function with max. deceleration	✓
Temperature control range for instruments with refrigeration	-20°C to +40°C in steps of 1°C, Tmin at max. speed: <4°C
Cooling at standstill	✓
Fast cooling program	✓
Sample Protection	✓
Overheating Protecting	Yes, with MicroCen MR
Automatic speed reduction if liquid density is set higher than 1.2 g/cm ³	✓
Audible signal at end of run or failure message	✓ (selectable)
Lid opening after the run	Selectable
Password protection	✓ (selectable)

Accessories for Rotor TF 12.10

Tubes	10 ml AOR
Tubes Ø x Length (mm)	16 x 80
Material of Tubes + Tempin Cat. No	PC: 25 24 01 PPCO: 25 24 11 PE: 25 24 41 PF: 25 24 51
Necessary Adapter	---
Tempin Cat. No	---
Tubes per Adapter / Rotor	- / 12



Accessories for Rotor TF 12.2, TF 18.2, TF 24.2, TF 30.2 and TS 24.2:

Tubes	2.0-2.2 ml	1.5 ml	0.5-0.7 ml	0.25-0.4 ml	0.2 ml
Tubes Ø x Length (mm)	11/13 x 40 mm	11/13 x 40 mm	8/10 x 28-31 mm	Ø 6 mm	PCR® Tubes
Material + Tempin Cat. No	Tubes not available from Tempin	conical with lid PP: 25 20 50	Tubes not available from Tempin	Tubes not available from Tempin	Tubes not available from Tempin
Necessary Adapters	---	---			
Tempin Cat. No	---	---	25 50 06	25 50 05	25 50 07
Tubes per Adapter	-	-	1	1	1



Specifications

Catalog No. (230V, 50/60 Hz, 1 Phase)	21 14 005	21 14 015
Maximum Capacity	30 x 2.2 ml	30 x 2.2 ml
Maximum Speed	16,000 rpm	22,000 rpm
Max. g-Force/RCF (depending on rotor)	20,464 x g	37,878 x g
Minimum Speed	300 rpm	300 rpm
Rotor Detection	APRI™ System = Automatic positive rotor identification for Tempin rotors	
Program Memory	50 programs	
Display	TFT-Monitor	
User Interface	Touchscreen Panel	
Preset Time	Touchscreen: h, m, 99:59	
Preset Speed	From 300 rpm to max. speed / HOLD (continuous) + SHORT (short runs)	
Preset g-Force/RCF	Direct setting with Touchscreen Panel	
Drive System	Direct self-centering drive system with brushless induction motor	
Speed Accuracy	± 2 rpm at 1,000 rpm / ± 20 rpm at max. speed	
Acceleration Time (depending on rotor)	30 sec. – 1.5 min.	
Deceleration Time (depending on rotor)	40 sec. – 2.5 min.	
Acceleration/Deceleration Rates	9 Ramps in steps of 15 sec. from 0 to 120 sec. in the range of 0 – 1.000 rpm	
Braking System	Dynamic electric brake system – Acoustic Signal at the end of run	
Temperature Set Range	n.a.	-20°C to +40°C in steps of 1°C
Cooling at Standstill	n.a.	YES
Temperature Control Accuracy	n.a.	±1°C on calibrated rotor
Temperature Control System	n.a.	Bypass System
Overtemperature Protection	n.a.	YES
Refrigeration System	n.a.	CFC-free refrigerant
Safety Features	Overspeed detection and cut-off Imbalance detection and cut-off Four-point lid fixing Automatic motor driven lid lock with emergency lid lock release Stainless steel chamber with additional inner guard ring Overheating Protection for MicroCen MR	
Dimensions (W x D x H): in cm (in inches)	33.4 x 49.0 x 31.0 (13.1 x 19.3 x 12.2)	33.4 x 74.0 x 31.0 (13.1 x 29.1 x 12.2)
Shipping Dimensions in cm (in inches)	80.0 x 60.0 x 80.0 (31.5 x 23.6 x 31.5)	80.0 x 60.0 x 80.0 (31.5 x 23.6 x 31.5)
Net Weight	32.0 kg (70.5 lbs.)	49.5 kg (109.1 lbs.)
Gross Weight	46.0 kg (101.4 lbs.)	64.0 kg (140.1 lbs.)



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