

Model MK 53 | Dynamic climate chambers for rapid temperature changes

BENEFITS

- Homogeneous climate conditions thanks to APT.line™ technology
- Comprehensive programming and data acquisition
- Large heated viewing window



Model 53

MAIN FEATURES

- Temperature range: -40 °C to 180 °C
- APT.line™ preheating chamber technology
- Programmable condensation protection for test material
- Heated viewing window with LED interior lighting
- BINDER APT-COM™ 3 Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Controller with time-segment programming
- Access port with silicone plug, 80 mm, top
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- Computer interface: RS 422
- Display via color LCD monitor
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- 1 stainless steel rack
- BINDER test confirmation
- Inner chamber made of stainless steel
- Pt 100 temperature sensor
- Thermal insulation using PUR foam
- CFC-free refrigerant R-404A
- Cooling with compressor cooling unit
- Fin evaporator

ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
Model MK 53				
53	230 V 1~ 50 Hz	Standard	MK053-230V	9020-0006

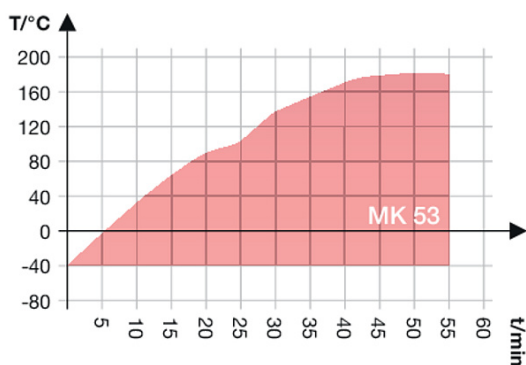
TECHNICAL DATA

Description	MK053-230V
Article Number	9020-0006
Performance Data Temperature	
Temperature range [°C]	-40...180
Temperature uniformity depending on setpoint [± K]	0.4...2
Temperature fluctuation depending on setpoint [± K]	0.1...0.5

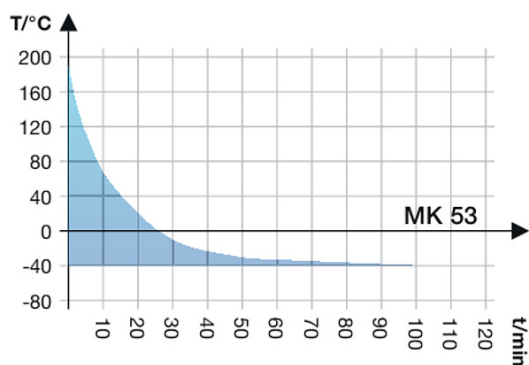
Data Sheet Model MK 53

Description	MK053-230V
Article Number	9020-0006
Average heating-up rate according to factory standard [K/min]	4.6
Cooling down time from 180 °C to -40 °C [min]	93
Average cooling down time according to factory standard [K/min]	4.1
Max. heat compensation at 25 °C [W]	500
Electrical data	
Rated Voltage [V]	230
Power frequency [Hz]	50
Nominal power [kW]	2.6
Unit fuse [A]	16
Phase (Nominal voltage)	1~
Measures - Outer dimensions	
Width net [mm]	740
Height net [mm]	1225
Depth net [mm]	740
Wall clearance back [mm]	160
Wall clearance sidewise [mm]	100
Viewing window width [mm]	280
Viewing window height [mm]	280
Measures - Doors	
Unit doors	1
Measures - Internal Dimensions	
Width [mm]	402
Height [mm]	402
Depth [mm]	330
Measures	
Interior volume [L]	53
Net weight of the unit (empty) [kg]	150
permitted load [kg]	40
Load per rack [kg]	15
Environment-specific data	
Sound-pressure level [dB(A)]	59
Fixtures	
Number of shelves (standard/maximum)	1/5

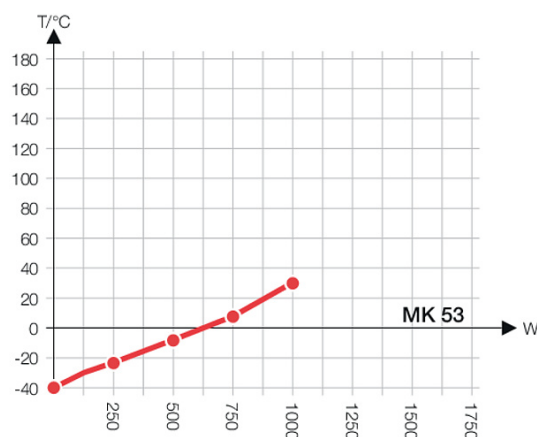
CHARTS



Heating up rate



Cooling down rate



Heat compensation chart

OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
Access port with silicone plug	30 mm, left	01	8012-0509
	30 mm, right	01	8012-0508
	50 mm, left	01	8012-0511
	50 mm, right	01	8012-0510
	80 mm, left	01	8012-0513
	80 mm, right	01	8012-0512
	80 mm, top	01	8012-0834
Analog output, 4 – 20 mA	for temperature values (output not adjustable)	-	8012-0517
Calibration certificate, expanded	each measurement at additional measuring point or testing temperature	-	8012-0022
	for temperature, measurement in center of chamber at specified temperature	-	8012-0030
Calibration certificate, temperature	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-0921
	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-0918
	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-0915
Data Logger Kit	T 220: temperature logging from -90 °C to 220 °C	19	8012-0715
Data Logger Kit, software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
Door lock	lockable door handle	-	8012-0321
Dry-air purge	unregulated, incl. connection	-	8012-0854

* Notes › See last page

Data Sheet Model MK 53

Designation	Description	*	Art.-No.
Dry-air purge, connection	for the connection to an existing pressurized air network	-	8012-0939
Interface converter	RS 422 cable set and RS 232 / RS 422 interface converter for connection to 10-way plug distributor or for connection to a unit		
	120 V, 60 Hz option model	-	8012-0557
	230 V, 50/60 Hz option model	-	8012-0556
	RS 422 cable set and RS 422 / Ethernet interface converter for connection to 10-way plug distributor or for connection to a unit		
Interface converter, USB / RS422	120 V, 60 Hz option model	-	8012-0405
	230 V, 50/60 Hz option model	-	8012-0380
Interface converter, USB / RS422	RS 422 cable set and RS 422 / USB interface converter for connection to 10-way plug distributor or for connection to a unit (USB-powered converter)	-	8012-0665
Lockable controller keyboard	Lockable controller keyboard with key-operated switch	-	8012-0530
Magnetic Pouch (A4)	insert pouch with magnetic strip	-	1007-0065
Measuring channel for digital display of specimen temperature	with flexible Pt 100 temperature sensor, measured data recorded via unit interface	-	8012-0447
pH-neutral detergent	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
Rack	stainless steel	-	6004-0007
Rack, accessories	set of 4 fasteners for additional security	-	8012-0531
RS 422 interface	modular plug distributor for 10 RS 422 interfaces	-	8012-0295
RS 422 interface, cable (15 m)	RS 422 connection cable (15 m) between plug distributor and RS 422 interface	-	5023-0036
RS 422 interface, cable (50 m)	RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor	-	5023-0117
Shelf, perforated	stainless steel	-	6004-0029
Software	APT-COM™ communications software		
	version 2 to 3, GLP edition	19	9053-0016
	version 3, BASIC edition	19	9053-0014
	version 3, GLP edition	19	9053-0015
	version 3, STANDARD edition	19	9053-0013
	APT-COM™ communications software, price: for free		
	version 3, GLP DEMO Edition	19	9053-0008

* Notes › See last page

SERVICES

Designation	Description	*	Art.-No.
Installation services			
Installation	and set up of unit at operating location, connect to existing connections	13, 18	DL100100
Instruction	unit function instructions for operation and programming of the controller	18	DL100600
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200300
Calibration services			
Calibration temperature	including certificate, one measuring point in center of chamber at specified temperature	14, 16, 17, 18	DL300101
Temperature measurement 18 measuring points	including certificate, 18 measuring points at specified temperature	14, 16, 17, 18	DL300118
Temperature measurement 27 measuring points	including certificate, 27 measuring points at specified temperature	14, 16, 17, 18	DL300127
Temperature measurement 9 measuring points	including certificate, 9 measuring points at specified temperature	14, 16, 17, 18	DL300109

* Notes › See last page

Designation	Description	*	Art.-No.
Validation services			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL410200
Execution of IQ/OQ/PQ	in accordance with customer's requirement, price: on request	15, 18	DL440500
Qualification folder IQ/OQ	supporting documents for validation performed by customer, consisting of: IQ/OQ checklists, unit schematics, QM certificate in accordance with ISO 9001	15, 18, 20	8012-0863
Qualification folder IQ/OQ/PQ	supporting documents for validation performed by customer, in accordance with customer's requirement, extension of Qualification folder IQ/OQ by chapter PQ	15, 18	8012-0951
Warranty service			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL011041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL011042

* Notes › See last page

NOTES

- 01 Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- 02 UL mark is not granted when this option is used.
- 03 Heat resistant only to max. 200 °C.
- 04 Only available on units rated for 230 V.
- 05 Attention: The pump is delivered separately. The electric connection for the pump (230 V/1~/50 Hz) must be carried out by an authorized electrician.
- 06 Heating-up time may increase as a result of the lower heat conductivity.
- 07 The additional heat input may affect the temperature behavior.
- 08 The pump (packaged separately) is ready for connection.
- 09 Not in conjunction with the optional access port, door with window and interior lighting.
- 10 Not available on 23-liter units.
- 11 Not available on 23- or 53-liter units.
- 12 Only available on units rated for 230 V or 400 V.
- 13 Installation and connections take place at unit location; transport within the company only upon consultation.
- 14 We recommend a BINDER service contract (see the chapter on BINDER Service) to cover unit inspections, calibrations and validations.
- 15 OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists.
- 16 Sensor calibration is performed in an accredited calibration laboratory.
- 17 Calibration is performed according to the BINDER factory standard.
- 18 Quoted prices do not include travel costs. Please refer to the chapter on BINDER Service for travel costs for your region. Quoted prices for services performed in Switzerland do not include a country-specific added fee (available on request).
- 19 For additional accessories, refer to the Process documentation chapter.
- 20 When ordering IQ/OQ qualification folders and associated IQ/OQ execution on one order, we offer a 15 % discount for both items.
When ordering IQ/OQ/PQ qualification folders and associated IQ/OQ/PQ execution on one order, we offer a 15 % discount for the item of the IQ/OQ/PQ folder.
- 21 ATEX conformity:
Pumping chamber (pumped gases): II 2G IIC T3 X
Environment with inert purge gas: II 2G IIB T4 X
Environment without inert purge gas: II 3G IIB T4 X
Motor: II 2G Ex d IIB T4 Gb

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