

# Model MKT 240 | Dynamic climate chambers for rapid temperature changes with extended low temperature range

## BENEFITS

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



Model 240



Model 240

## MAIN FEATURES

- Temperature range: -70 °C to 180 °C
- 4 zero-voltage relay contacts that can be activated via MCS controller
- 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: 50 mm, left
- Class 2 independent adjustable temperature safety device (DIN 12880) with visual alarm
- 4 castors, two with brakes
- Computer interface: Ethernet
- 230 V power socket on the right-side control panel
- Display via color LCD monitor
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- 1 stainless steel rack
- BINDER test confirmation
- Inner chamber made of stainless steel
- Pt 100 temperature sensor
- Thermal insulation using PUR foam
- CFC-free refrigerants R-404A and R-23
- Cooling with cascade compressor cooling unit
- Fin evaporator

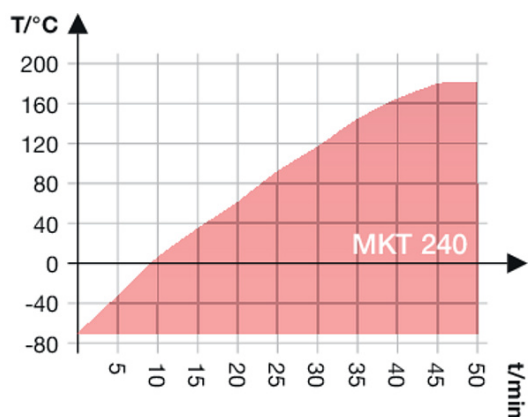
## ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	Art.-No.
Model MKT 240				
228	400 V 3~ 50 Hz	Standard	MKT240-400V	9020-0196
	480 V 3~ 60 Hz	with voltage and frequency converter	MKT240-400V-C	9020-0296

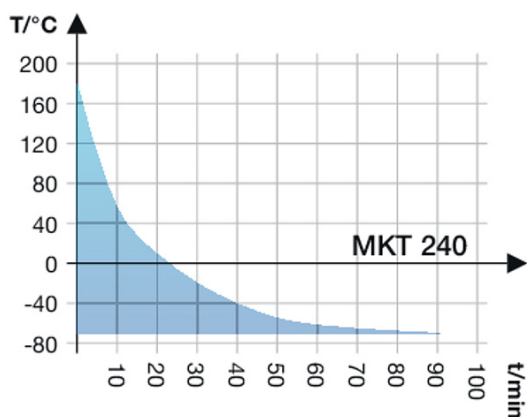
## TECHNICAL DATA

Description	MKT240-400V	MKT240-400V-C
<b>Article Number</b>	<b>9020-0196</b>	<b>9020-0296</b>
<b>Performance Data Temperature</b>		
Temperature range [°C]	-70...180	-70...180
Temperature uniformity depending on setpoint [± K]	0.1...1	0.1...1
Temperature fluctuation depending on setpoint [± K]	0.1...0.4	0.1...0.4
Average heating-up rate according to IEC 60068-3-5 [K/min]	5	5
Average cooling down time according to IEC 60068-3-5 [K/min]	4.2	4.2
Max. heat compensation at 25 °C [W]	3000	3000
<b>Electrical data</b>		
Rated Voltage [V]	400	480
Power frequency [Hz]	50	60
Nominal power [kW]	6.5	6.5
Unit fuse [A]	16	16
Phase (Nominal voltage)	3~	3~
<b>Measures - Outer dimensions</b>		
Width net [mm]	1115	1115
Height net [mm]	1935	1940
Depth net [mm]	925	925
Wall clearance back [mm]	230	230
Wall clearance sidewise [mm]	300	300
<b>Measures - Doors</b>		
Unit doors	1	1
<b>Measures - Internal Dimensions</b>		
Width [mm]	735	735
Height [mm]	700	700
Depth [mm]	443	443
<b>Measures</b>		
Interior volume [L]	228	228
Net weight of the unit (empty) [kg]	380	380
Load per rack [kg]	30	30
<b>Environment-specific data</b>		
Sound-pressure level [dB(A)]	64	67

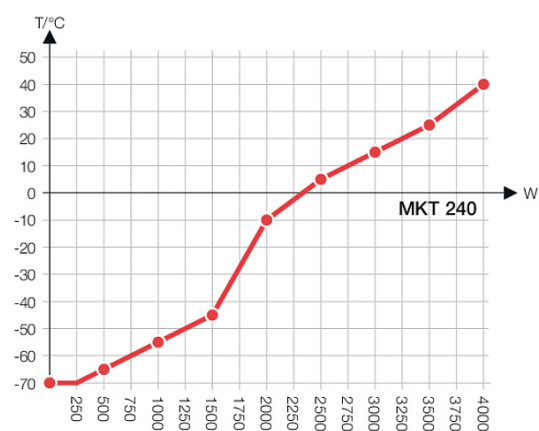
## CHARTS



Heating up rate



Cooling down rate



Heat compensation chart

## OPTIONS AND ACCESSORIES

Designation	Description	*	Art.-No.
<b>Access port</b>	notch-type access port in door, 100 x 35 mm	-	8012-0608
	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
<b>Access port with silicone plug</b>	80 mm, top	01	8012-0834
	100 mm, left	01, 11	8012-0836
	100 mm, right	01, 11	8012-0835
	100 mm, top	01, 11	8012-0832
	125 mm, left	01, 11	8012-0533
	125 mm, right	01, 11	8012-0532
	125 mm, top	01, 11	8012-0833
<b>Analog output, 4 – 20 mA</b>	for temperature values (output not adjustable)	-	8012-0517
<b>Calibration certificate, expanded</b>	each measurement at additional measuring point or testing temperature	-	8012-0022

\* Notes › See last page

**Data Sheet Model MKT 240**

Designation	Description	*	Art.-No.
<b>Calibration certificate, temperature</b>	for temperature, measurement in center of chamber at specified temperature	-	8012-0030
	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
<b>Converter, voltage and frequency</b>	to operate the device at a nominal voltage of 480 V 3 ph 60 Hz, 32 A	-	8009-0806
<b>Data Logger Kit</b>	T 220: temperature logging from -90 °C to 220 °C	19	8012-0715
<b>Data Logger Kit, software</b>	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-0821
<b>Door lock</b>	lockable door handle	-	8012-0606
<b>Dry-air purge</b>	unregulated, incl. connection	-	8012-0913
<b>Dry-air purge, connection</b>	for the connection to an existing pressurized air network	-	8012-0936
<b>Interface converter</b>	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		
120 V, 60 Hz option model	-	8012-0405	
230 V, 50/60 Hz option model	-	8012-0380	
<b>Interface converter, USB / RS422</b>	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
<b>Lockable controller keyboard</b>	Lockable controller keyboard with key-operated switch	-	8012-0530
<b>Magnetic Pouch (A4)</b>	insert pouch with magnetic strip	-	1007-0065
<b>Measuring channel for digital display of specimen temperature</b>	with flexible Pt 100 temperature sensor, measured data recorded via unit interface	-	8012-0447
<b>pH-neutral detergent</b>	concentrated, for gentle remove of residual contaminants; 1 kg	-	1002-0016
<b>Rack</b>	stainless steel	-	6004-0097
<b>Rack, accessories</b>	set of 4 fasteners for additional security	-	8012-0620
<b>Rack, reinforced</b>	stainless steel, with 1 set of 4 fasteners, max. load 70 kg	-	8012-0605
<b>RS 422 interface</b>	in place of Ethernet, for communication software	-	8012-0788
	modular plug distributor for 10 RS 422 interfaces	-	8012-0295
<b>RS 422 interface, cable (15 m)</b>	RS 422 connection cable (15 m) between plug distributor and RS 422 interface	-	5023-0036
<b>RS 422 interface, cable (50 m)</b>	RS 422 extension cable (50 m) between interface converter and unit or RS 232 / RS 422 plug distributor	-	5023-0117
<b>Shelf, perforated</b>	stainless steel	-	8009-0447
<b>Software</b>	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
<b>Temperature safety device</b>	for over- and under-temperature, Class 2 - with visual alarm (DIN 12880)	-	8012-0310

\* Notes › See last page

## SERVICES

Designation	Description	*	Art.-No.
<b>Installation services</b>			
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
<b>Preventive maintenance</b>			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200500
<b>Calibration services</b>			
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
<b>Validation services</b>			
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	8012-0864
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	8012-0952
<b>Warranty service</b>			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL012041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL012042

\* 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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