Model MKF 720 | Dynamic climate chambers for rapid temperature changes with humidity control

BENEFITS

- Homogeneous climate conditions thanks to APT.line™ technology
- · Automatic water and wastewater management
- Pressure humidification with fast response times
- Comprehensive programming and data acquisition
- Large heated viewing window



Model 720

MAIN FEATURES

- Temperature range: -40 °C to 180 °C
- Humidity range: 10 % to 98 % RH
- Integrated water-storage tank, 20 liters
- 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
- Humidity regulation with capacitative humidity sensor and vapor humidification
- BINDER APT-COM™ 3 Basic Edition communication software
- Troubleshooting system with visual and audible alarms
- Controller with time-segment programming
- 2 access ports with silicone plugs: 80 mm, left and right
- 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



Model 720

- Display via color LCD monitor
- Adjustable ramp function
- Integrated chart recorder
- Real-time clock
- Door heating
- Alarm notification in the event of insufficient water in fresh water tank
- 1 stainless steel rack
- Complete safety connection kit for water supply and drainage, up to 1 m height
- 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

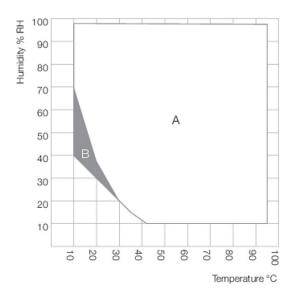
ORDERING INFORMATION

Interior volume [L]	Voltage	Option model	Version	ArtNo.
Model MKF 720				
734	400 V 3~ 50 Hz	Standard	MKF720-400V	9020-0287
	480 V 3~ 60 Hz	with voltage and frequency converter	MKF720-400V-C	9020-0299

TECHNICAL DATA

Abile Name opone objection performance but remperature Temperature realization depending on seption k 1 40-180 40-1	Description	MKF720-400V	MKF720-400V-C
Temperature range (**) 4018 4018 Temperature fuction depending on setpoint [x] 0.128 2.128 Average heating up rate according to IKC 60088 3 [K/min] 4.8 4.8 Cooling down time from 180°C to 40°C [min] 18 4.8 Max. heat compensation at 25°C Will 550 500 Max. heat compensation at 25°C Will 650 500 Max. heat compensation at 25°C Will 10.95 6.95 Max. heat compensation at 25°C Will Will 10.95 6.95 Proper actual range (**C) 10.98 6.95 Temperature anger (**C) 10.98 6.95 Temperature fluctuation depending on setpoint [x] K 10.98 6.95 Humidity fluctuation depending on setpoint [x] K 10.98 10.98 Bee point informatic Burst (**C) 10.98 10.98 Bee point (**Institution depending on setpoint [x] 40.94 40.94 Brown flow (**Institution depending on setpoint [x] 40.94 40.94 Brown flow (**Institution depending on setpoint [x] 40.94 40.94 Brown flow (**Institution depending on setpoint [x] <	Article Number	9020-0287	9020-0299
Temperature variation depending on setpoin [x] 0.16 0.15 Tempeare fluctuation depending on setpoint [x] 0.16 0.15 Average heating you ark according for Ecoologis 25 [x/mid] 4.8 4.8 Cooling down time from x80 °C to 4.0°C [mid] 1.88 4.8 Average coloning down time according for Ecoologis 25 [x/mid] 6.90 6.00 Max. heat compensation at 25 °C (m) 6.90 6.00 Max. heat compensation at 25 °C (m) 1.0	Performance Data Temperature		
Temperature fluctuation depending on setpoint [4 K] o.a.o.o. o.a.o.o. Average heating-up rate according to IEC 60068-ys [K/min] 48 48 Octobing down time on 50° 15-a of ye (fin) 48 48 Max. Incat compensation at 25° CR 100 (See 1000 (S	Temperature range [°C]	-40180	-40180
Average heating-up rate according to IEC 6006B-35 [K/min] 4.8 18 Cooling down time from 18° for 04-9° [min] 4.8 4.8 Max. heat compensation at 25° [M) 5000 5000 Max. heat compensation at 25° [M) 1000 1000 Max. heat compensation at 25° [M) 10-95 10-95 Ferry Forthance Obac Ulmate 10-95 10-95 Temperature range [M] 20-15 20-15 Temperature fluctuation depending on setpoint [A K] 20-21-5 20-25 Temperature range [M] 9-9 20-15 Temperature range [M] 60-0 20-15 Dev point temperature range [M] 40-0 40-0 Beated Voltage [M] 40-0 40-0 Dev point temperature range [M] 10-0 40-0 Beated Voltage [M] 40-0 40-0 Bracked Voltage [M] 10-0 10-0 Bracked Voltage [M] 10-0	Temperature variation depending on setpoint [± K]	0.11.8	0.11.8
Cooling down time from 160 °C to -qo °C [min] 188 48 Average cooling down time according to IEC 60063-75 [K/min] 4.8 4.8 Ass. heat compensation at 25 °C (190 °KPI [W]) 1000 1000 Nax. heat compensation at 25 °C at 90 °KPI [W] 10-95 10-95 Femperature account Climate 10-95 10-95 Femperature fluctuation depending on setpoint [k] 10-98 10-98 Humidity fluctuation depending on setpoint [k] 10-98 10-98 Dew point temperature range [°C] 20-40 5-94 Dew point temperature range [°C] 400 48 Dew point temperature range [°C] 400 48 Power frequency [th] 400 48 Power frequency [th] 50 60 Nominal power [kW] 11 11 Unit tyse [Al 52 32 32 Nesserse-Duter dimensions 158 180 180 Wilch net [comp) 50 50 50 Height net [comp) 200 50 50 Will th net [comp) 50	Temperature fluctuation depending on setpoint [± K]	0.10.5	0.10.5
Average cooling down time according to IEC 60083-5 [K/min] 4.8 4.9 Max. heat compensation at 3°C [N] 6500 6500 Max. heat compensation at 3°C R 190 % RH[N] 1000 1000 Performance Data Climate Very Compensation at 3°C R 190 % RH[N] 10.95 10.95 Temperature range [PC] 0.9.8 10.98 10.98 Humidity range (K RH] 0.9.94 20.5 KH 10.98 Humidity range (K RH] 0.9.94 20.5 KH 10.98 Humidity range (K RH] 0.9.94 20.95 10.98 Humidity range (K RH] 0.9.94 20.94 20.94 Humidity range (K RH] 0.90 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94 20.94	Average heating-up rate according to IEC 60068-3-5 [K/min]	4.8	4.8
Max. heat compensation at 25°C 190 % RH [W] 6500 600 Max. heat compensation at 25°C at 190 % RH [W] 1000 1000 Max. heat compensation at 25°C at 190 % RH [W] 1000 1000 Freperformance Data Climate 1000 1000 1000 Temperature range [°C] 1000 2000 1000 2000 Hundity fluctuation depending on setpoint [kt] 2000 25,4 % RH 2000 25,4 % RH Bemindity fluctuation depending on setpoint 2000 2000 25,4 % RH 2000 <t< td=""><td>Cooling down time from 180 °C to -40 °C [min]</td><td>118</td><td>118</td></t<>	Cooling down time from 180 °C to -40 °C [min]	118	118
Max. heat compensationals 2°C stop % RHIW] iolong decident Performerature range PG 1.95<	Average cooling down time according to IEC 60068-3-5 [K/min]	4.8	4.8
Performance Data Climate Image: PCI (a page 10 page) 10-95 (a page) 10-95 (a page) Temperature range (PCI) 50-98 (a page)	Max. heat compensation at 25 °C [W]	6500	6500
Temperature range PCI 0.095 0.20-1.5 Temperature fluctuation depending on setpoint [K] 0.20-1.5 0.20-1.5 Hundidity range PKRIP 0.098 0.20-1.5 Immidity fluctuation depending on setpoint 2.94 kRIP 2.95 kRIP Immidity fluctuation depending on setpoint 3.94 0.90 0.90 Immidity fluctuation depending on setpoint 4.90 3.90 0.90 Bettriat data Very Company 6.90 0.90 Power frequency [H2] 5.00 6.0 0.00 Nominal power [kW] 1.01 1.00 0.00 Phase (Rominal voltage) 2.02 2.02 0.00 Massures - Outer dimensions Very Company 1.00 1.00 0.00 <t< td=""><td>Max. heat compensation at 25 °C at 90 % RH [W]</td><td>1000</td><td>1000</td></t<>	Max. heat compensation at 25 °C at 90 % RH [W]	1000	1000
Temperature fluctuation depending on setpoint [st] o	Performance Data Climate		
Humidity range [% RH] 1098 1098 Humidity fluctuation depending on setpoint 23,5 % RH 25,5 % RH Dew point temperature range [°C] 5.94 3.94 Electrical data 480 480 Power frequency [Hz] 400 480 Nominal power [kW] 11 11 12 Phase (Nominal voltage) 32 2 Phase (Nominal voltage) 32 3 Wild the [rm] 1580 1580 3 Height net [mm] 1100 140 140 Wall clearance slock/sem 130 35 35 Wall clearance slock/sem 300 30 30 Wall clearance slock/sem 300 30 30 Wall clearance slock/sem 300 30 30 Well clearance slock/sem 300 30 <	Temperature range [°C]	1095	1095
Humidity fucution depending on setpoint 2,5 kRH 2,5 kRH Dew point temperature range [°C] 5-94 5-94 Electrical data Very Carlot (1902) 480 Roted Voltage [V] 400 480 Power frequency [Riz] 50 60 Nominal power [kW] 11 12 Unit fuse [A] 32 32 Phase (Nominal voltage) 32 32 Phase (Nominal voltage) 1580 32 Wessures - Outer dimensions Very Carlot (1902) 1580 Bright net [mm] 1580 1580 Bright net [mm] 160 140 Wall clearance back [mm] 30 30 Wall clearance back [mm] 30 30 <	Temperature fluctuation depending on setpoint [± K]	0.21.5	0.21.5
De point temperature range [**] 5.94 5.94 Electrical data 1.00 480 Rated Voltage [**] 6.00 480 Down frequency [**] 5.00 6.00 Nominal power [kW] 1.1 1.1 Unif fuse [A] 2.2 2.2 Phase (kominal voltage) 3.2 3.2 Phase (kominal voltage) 3.2 3.2 Wessures-Outer dimensions 3.50 3.50 Weight net [mn] 5.00 3.0 Height net [mn] 2.00 3.0 Wall clearance sleek [mn] 3.00 3.5 Wall clearance sleek [mn] 3.00 3.0 Wall clearance sleek [mn] 3.00 3.0 <	Humidity range [% RH]	1098	1098
Electrical data February (Marchaet) 400 480 Power fequency (Hz) 50 60 Nominal power (kW) 11 11 Unit fuse (A) 32 32 Phase (Nominal voltage) 3- 3- Measures - Outer dimensions 580 580 Height net [mm] 590 590 Height net [mm] 140 30 Wall clearance back [mm] 335 33 Wall clearance sidewise [mm] 30 30 Viewing window width [mm] 588 58 Viewing window height [mm] 30 30 Wassures - Doors 30 30 Wassures - Internal Dimensions 1 1 Widt [mm] 1200 120 Height [mm] 100 100	Humidity fluctuation depending on setpoint	≤2,5 ± % RH	≤2,5 ± % RH
Raded Voltage [V] 400 480 Power frequency [Hz] 50 60 Nominal power [Mz] 11 12 Unit fuse [A] 22 32 Dabase (Nomial voltage) 3- 3- Measures- Outer dimensions W 4- Weight net [mm] 158 58 3- Beight net [mm] 2005 2005 3- Depth net [mm] 140 3- 3- Wall clearance back [mm] 36 3- 3- Wall clearance sidewise [mm] 30 3- 3-	Dew point temperature range [°C]	594	594
Power frequency [Hz] 50 60 Nominal power [kW] 11 11 Unit fuse [A] 32 32 Phase (Nominal voltage) 32 32 Phase (Nominal voltage) 35 35 Measures- Outer dimensions 450 205 Weight net [mm] 2005 2005 Peth net [mm] 30 35 Wall clearance back [mm] 30 30 Wall clearance sidewise [mm] 30 30 Viewing window width [mm] 30 30 Viewing window height [mm] 30 30 Wassures- Doors 4 4 Will doors 1 2 2 Wassures- Internal Dimensions 2 200 Weight [mm] 200 20 Beight [mm] 200 20 Weight [mm] 200 20 Weight [mm] 200 20 Depth [mm] 200 20 Resight [mm] 200 20 Weigh	Electrical data		
Nominal power [kW] 11 12 Unit fuse [A] 32 32 Phase (Nominal voltage) 3- 3- Measures- Outer dimensions ************************************	Rated Voltage [V]	400	480
Unit fue [A] 32 32 Phase (Nominal voltage) 3- 3- Measures - Outer dimensions Unit fue [mm] 1580 1580 Height net [mm] 2005 2005 2005 Depth net [mm] 1140 335 36 36 36 Wall clearance back [mm] 300 30	Power frequency [Hz]	50	60
Phase (Nominal voltage) 3- 3- Measures - Outer dimensions 1580 1580 Width net [mm] 1580 2005 Depth net [mm] 2005 2005 Wall clearance back [mm] 335 335 Wall clearance sidewise [mm] 300 300 Viewing window width [mm] 300 300 Viewing window height [mm] 300 300 Measures - Doors Very Carrent Wide (Ling Man) 1 1 Measures - Internal Dimensions 1 2 1 1 Measures - Internal Dimensions 1 1 2 1 2 1 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 <td>Nominal power [kW]</td> <td>11</td> <td>11</td>	Nominal power [kW]	11	11
Measures - Outer dimensions Is80 1580 Width net [mm] 2005 2005 Beight net [mm] 1140 1140 Wall clearance back [mm] 335 335 Wall clearance idewise [mm] 300 300 Viewing window width [mm] 508 30 Viewing window height [mm] 30 30 Wessures - Doors Viewing window height [mm] 1 1 Measures - Internal Dimensions 1 20 1 Width [mm] 1200 1200 1 Height [mm] 1020 1020 1 Depth [mm] 60 60 60 Measures 1 734 734 Metweight of the unit (empty) [kg] 590 90 1 Metweight of the unit (empty) [kg] 60 40 1 Lead per rack [kg] 40 40 1 Loud-persaure level [db(A)] 65 67 4 Fixtures 1 65 7 4	Unit fuse [A]	32	32
Width net [mm] 1580 1580 Height net [mm] 2005 2005 Depth net [mm] 1140 140 Wall clearance back [mm] 335 335 Wall clearance sidewise [mm] 300 300 Vewing window width [mm] 508 508 Vewing window height [mm] 300 300 Measures - Doors ************************************	Phase (Nominal voltage)	3~	3~
Height net [mm] 2005 2005 Depth net [mm] 1140 1140 Wall clearance back [mm] 335 335 Wall clearance sidewise [mm] 300 300 Viewing window width [mm] 508 508 Viewing window height [mm] 300 300 Measures - Doors """"""""""""""""""""""""""""""""""""	Measures - Outer dimensions		
Depth net [mm] 1140 1440 Wall clearance back [mm] 335 335 Wall clearance sidewise [mm] 300 300 Viewing window width [mm] 508 508 Viewing window height [mm] 300 300 Measures - Doors	Width net [mm]	1580	1580
Wall clearance back [mm] 335 335 Wall clearance sidewise [mm] 300 300 Viewing window width [mm] 508 508 Viewing window height [mm] 300 300 Measures - Doors	Height net [mm]	2005	2005
Wall clearance sidewise [mm] 300 300 Viewing window width [mm] 508 508 Viewing window height [mm] 300 300 Weasures - Doors	Depth net [mm]	1140	1140
Viewing window width [mm] 508 508 Viewing window height [mm] 300 300 Measures - Doors Unit doors 1 2 Measures - Internal Dimensions Width [mm] 1200 1200 Height [mm] 1020 600 Depth [mm] 600 600 Measures Interior volume [L] 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 5 67 Fixtures	Wall clearance back [mm]	335	335
Viewing window height [mm] 300 300 Measures - Doors 1 1 Unit doors 1 200 Measures - Internal Dimensions 1200 1200 Height [mm] 1020 1020 Depth [mm] 600 600 Measures 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 50 67 Fixtures 50 67	Wall clearance sidewise [mm]	300	300
Measures - Doors Init doors 1 Measures - Internal Dimensions 1200 1200 Width [mm] 1200 1200 Height [mm] 600 600 Depth [mm] 600 600 Measures V V Interior volume [L] 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 59 65 67 Fixtures	Viewing window width [mm]	508	508
Unit doors 1 1 Measures - Internal Dimensions 1200 1200 Width [mm] 1020 1020 Beight [mm] 600 600 Depth [mm] 734 734 Interior volume [L] 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 59 67 Fixtures	Viewing window height [mm]	300	300
Measures - Internal Dimensions Width [mm] 1200 12	Measures - Doors		
Width [mm] 1200 1200 Height [mm] 1020 1020 Depth [mm] 600 600 Measures T 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 5 67 Fixtures	Unit doors	1	1
Height [mm] 1020 1020 Depth [mm] 600 600 Measures Interior volume [L] 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 590 67 Fixtures Fixtures 690	Measures - Internal Dimensions		
Depth [mm] 600 600 Measures Fixtures 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 590 67 Fixtures Fixtures 690	Width [mm]	1200	1200
Measures Interior volume [L] 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 50 67 Fixtures Fixtures 50	Height [mm]	1020	1020
Interior volume [L] 734 734 Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 5 67 Fixtures Fixtures 5	Depth [mm]	600	600
Net weight of the unit (empty) [kg] 590 590 permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 50 67 Fixtures Fixtures 67	Measures		
permitted load [kg] 160 160 Load per rack [kg] 40 40 Environment-specific data 5 67 Fixtures Fixtures 67	Interior volume [L]	734	734
Load per rack [kg] 40 40 Environment-specific data Sound-pressure level [dB(A)] 65 67 Fixtures	Net weight of the unit (empty) [kg]	590	590
Environment-specific data Sound-pressure level [dB(A)] 65 67 Fixtures	permitted load [kg]	160	160
Sound-pressure level [dB(A)] 65 67 Fixtures	Load per rack [kg]	40	40
Fixtures	Environment-specific data		
	Sound-pressure level [dB(A)]	65	67
Number of shelves (standard/maximum) 1/11 1/11	Fixtures		
	Number of shelves (standard/maximum)	1/11	1/11

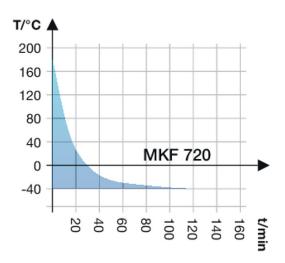
CHARTS



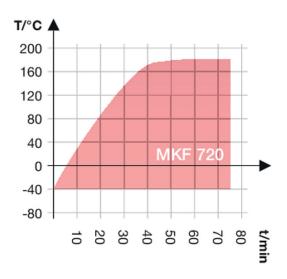


A: Standard Climate range B: Time-limited operation (max. 24 hours)

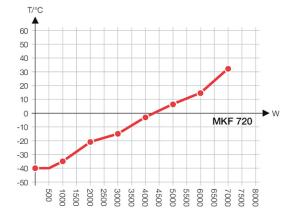
Climate chart



Cooling down rate



Heating up rate



Heat compensation chart

OPTIONS AND ACCESSORIES

Designation	Description	*	ArtNo.
Access port	notch-type access port in door, 100 x 35 mm	_	8012-0683
	30 mm, left	01	8012-0509
	30 mm, right	01	8012-0508
	50 mm, left	01	8012-0511
	50 mm, right	01	8012-0510
	8o mm, left	01	8012-0513
	80 mm, right	01	8012-0512
Access port with silicone olug	8o mm, top	01	8012-0834
3	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
Analog output, 4 – 20 mA	for temperature and humidity values (output not adjustable)	-	8012-0516
BINDER Pure Aqua Service	system for preparation or complete desalination of tap water, containing single-use cartridge, hoses and measuring device	-	8012-0759
BINDER Pure Aqua Service, accessories	Single-use, replacement cartridge for BINDER Pure Aqua System	-	6011-0165
Calibration certificate, expanded	for temperature and humidity, each additional measurement at additional points or sets of values	-	8012-0155
	temperature measurement incl. certificate and 27 measuring points at specified temperature	-	8012-092
Calibration certificate,	temperature measurement incl. certificate, 15- 18 measuring points at specified temperature	-	8012-0920
temperature	temperature measurement incl. certificate, 9 measuring points at specified temperature	-	8012-0917
Calibration certificate,	for temperature and humidity, measurement in center of chamber at 25 °C / 60 % RH or at specified values	-	8012-0154
temperature and humidity	temperature (according to DIN12880) and humidity measurement incl. certificate, 27 temperature measuring points and 1 humidity measuring point, at 25 $^{\circ}$ C / 60 $^{\circ}$ RH or at specified values	_	8012-092
Converter, voltage and frequency	to operate the device at a nominal voltage of 480 V 3 ph 60 Hz, 32 A	-	8009-080
	T 220: temperature logging from -90 °C to 220 °C	19	8012-0715
Data Logger Kit	TH 100/70: temperature and humidity logging from -40 °C to 100 °C and 0 % to 100 % RH and additional combination sensor for recording environmental conditions	19	8012-0719
	TH 100: temperature and humidity logging from -40 °C to 100 °C and 0 % to 100 % RH	19	8012-0718
Data Logger Kit, software	LOG ANALYZE software kit, configuration and evaluation software for all BINDER Data Logger Kits (incl. USB data cable)	19	8012-082
Door lock	lockable door handle	_	8012-060
Dry-air purge	regulated, incl. connection	_	8012-0751
Dry-air purge,	for the connection to an existing pressurized air network	-	8012-0936
	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
Interface converter	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	_	8012-040
	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)	_	8012-066
Lockable controller keyboard	Lockable controller keyboard with key-operated switch	-	8012-0530
Magnetic Pouch (A4)	insert pouch with magnetic strip	_	1007-006
Notes > See last page	more pouch must magnetic outp	_	100/2006

^{*} Notes > See last page

Designation	Description	*	ArtNo.
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	-	6004-0102
Rack, accessories	set of 4 fasteners for additional security	=	8012-0620
Rack, reinforced	stainless steel, with 1 set of 4 fasteners, max. load 70 kg	-	8012-0684
	in place of Ethernet, for communication software	-	8012-0788
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	-	8009-0511
	APT-COM™ communications software		
	version 2 to 3, GLP edition	19	9053-0016
	version 3, BASIC edition	19	9053-0014
Software	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
Temperature safety device	for over- and under-temperature, Class 2 - with visual alarm (DIN 12880)	-	8012-0310
Water circuit	allows water to be reused	-	8012-0785

^{*} Notes > See last page

SERVICES

Designation	Description	*	ArtNo.
Installation services			
Installation	and set up of unit at operating location, connect to existing connections	13, 18	DL100300
Instruction	unit function instructions for operation and programming of the controller	18	DL100700
Preventive maintenance			
Preventive maintenance	Executive of equipment inspection according to maintenance plan	14, 18	DL200500
Calibration services			
Calibration temperature and humidity	including certificate, one measuring point in center of chamber at 25 °C / 60 % RH or at specified values	14, 16, 17, 18	DL300301
Temperature and humidity measurement according to DIN12880	including certificate (27 temperature measuring points and 1 humidity measuring point, at 25 $^{\circ}$ C $/$ 60 $\%$ RH or at specified values)	14, 16, 17, 18	DL300427
Temperature measurement 18 temperature measuring points and 1 humidity measuring point	including certificate, 18 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 °C / 60 $\%$ RH or at specified values	14, 16, 17, 18	DL300318
Temperature measurement 27 temperature measuring points and 1 humidity measuring point	including certificate, 27 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 $^{\circ}$ C / 60 $^{\circ}$ RH or at specified values	14, 16, 17, 18	DL300327
Temperature measurement 9 temperature measuring points and 1 humidity measuring point	including certificate, 9 temperature measuring points and 1 humidity measuring point in center of chamber, at 25 $^{\circ}$ C / 60 $^{\circ}$ RH or at specified values	14, 16, 17, 18	DL300309
Validation services			
Execution of IQ/OQ	in accordance with qualification folder	15, 18, 20	DL420300
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	8012-086
* Notes - Coolest page			

^{*} Notes > See last page

Data Sheet Model MKF 720

Designation	Description	*	ArtNo.
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	8012-0953
Warranty service			
Extension of the warranty from 2 to 3 years	beginning with the date of delivery, wearing parts are not included	-	DL013041
Extension of the warranty from 2 to 5 years	beginning with the date of delivery, wearing parts are not included	-	DL013042

^{*} Notes > See last page

NOTES

- Condensation may occur in the area around the access port. Access ports may be placed in custom locations for an additional charge.
- UL mark is not granted when this option is used.
- Heat resistant only to max. 200 °C. 03
- Only available on units rated for 230 V. 04
- 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. 05
- Heating-up time may increase as a result of the lower heat conductivity.
- The additional heat input may affect the temperature behavior.
- 08
- The pump (packaged separately) is ready for connection.

 Not in conjunction with the optional access port, door with window and interior lighting. 09
- Not available on 23-liter units. 10
- Not available on 23- or 53-liter units. 11
- 12 Only available on units rated for 230 V or 400 V.
- Installation and connections take place at unit location; transport within the company only upon consultation.
- We recommend a BINDER service contract (see the chapter on BINDER Service) to cover unit inspections, calibrations and validations.
- OQ according to Yellow Paper = completed factory validation documentation of all OQ checklists. Sensor calibration is performed in an accredited calibration laboratory. 15
- 16
- Calibration is performed according to the BINDER factory standard. 17
- 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).
- For additional accessories, refer to the Process documentation chapter.
- 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.
- ATEX conformity: 21

Pumping chamber (pumped gases): Il 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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