

# ecodry KA-MT 1-4

Efficient compressed air adsorption dryer  
with final activated carbon purifier



KA-MT 1-4 heatless adsorption dryers with integral activated carbon purifiers are designed to dry industrial compressed air reliably and efficiently down to a pressure dew point of  $-70\text{ }^{\circ}\text{C}$ , whilst achieving a remaining oil content of  $0,003\text{ mg/m}^3$ . The units are constructed in a compact manner and designed to be free-standing or wall mounted. They are equipped with built-on pre- and after filtration and are sized for volumetric flows of up to  $35\text{ m}^3/\text{h}$  (suction capacity of the compressor referring to a compression of 7 bar).

Compressed air first enters the validated GL pre-filter. Continuing on, the air flows into one of two twin-vessels (twin-chamber aluminium profiles); both filled with molecular sieve - a renowned drying-agent, where the air is dried. During the drying process, the second chamber undergoes regeneration: At the start of the drying-cycle, this chamber is open to atmosphere and a small proportion of dried compressed air passes through the adsorption bed, transporting the humidity out. When this procedure is complete, the chamber is re-pressurised in readiness to repeat the drying procedure. Continuous, uninterrupted operation is maintained utilising so-called pressure-swing technology together with individually operated main- and exhaust valves.



Dry compressed air then enters the integral activated carbon purifier stage, where oil-vapour and odour is reliably removed. Finally the clean, dry air exits via a validated GL after-filter preventing the migration of particles into the downstream compressed air network.

The KA-MT 1-4 adsorption dryer series operates a fixed, timed, changeover-cycle between the two dryer chambers. Where the application calls for a unit able to cope with variations in operating pressure and load, the installation of a dew point sensor at the

outlet of the dryer is available as an option: In such an operating mode, the changeover-cycle between chambers only takes place when required, and is dependent on the required dew point being achieved: Only on reaching this adjustable set-point does changeover to the pre-dried vessel occur. This feature enables the drying phase to be lengthened and thus avoids the unnecessary use of purge air for regeneration.

Compressed air can be selectively dried to meet a dew point of  $-25\text{ }^{\circ}\text{C}$  up to  $-70\text{ }^{\circ}\text{C}$ .

## Scope of supply:

Adsorption dryer - ready for installation, including GL pre- and after filters; available with dew point dependent switching (DDS) as an option.

# Product Specification

## ecodry KA-MT 1-4 air treatment package

### Ordering – and performance data

Model	Order No.	Volumetric flow <sup>1)</sup> in m <sup>3</sup> /h	Nominal pipe size <sup>2)</sup>	Pre-filter	After-filter	Nominal Pressure in bar <sub>e</sub>	Nominal Temp. °C
KA-MT 1	K1/16DA%-G230M	8	1/4	AAP010AGFI	AOP010AGMI	16	50
KA-MT 2	K2/16DA%-G230M	15	1/4	AAP010AGFI	AOP010AGMI	16	50
KA-MT 3	K3/16DA%-G230M	25	1/4	AAP010AGFI	AOP010AGMI	16	50
KA-MT 4	K4/16DA%-G230M	35	1/4	AAP010AGFI	AOP010AGMI	16	50

<sup>1)</sup> m<sup>3</sup>/h, referring to 1 bar<sub>a</sub> and 20 °C at compressor suction capacity. Subsequently compressed to 7 bar<sub>e</sub> and 35 °C inlet temperature to the dryer at 100 % relative humidity – for pressure dew points of -25 °C and -40 °C.

<sup>2)</sup> In accordance with DIN ISO 228 (BSP-P); alternatively ANSI B 1.20.1 (NPT-F).

### Operating range

Site selection	frost-free indoor installation in a non-hazardous environment
Ambient temperature	1.5 to 50 °C
Compressed air inlet temperature	25 to 50 °C
Operating pressure	5 to 16 bar <sub>e</sub>
Medium	Compressed air and gaseous nitrogen

### Optional dew point sensor ZHM100

Pressure dew point at 7 bar <sub>e</sub>	-40 °C ex-factory setting; adjustable via the menu from -25 to -70 °C in 5 deg.C. steps
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### Electrical connections

Mains voltage	230 V, 50-60 Hz
Alternative voltage	115 V, 50-60 Hz and 24 V DC
Protection class	IP65

### Materials of construction

Filters	See product-specification regarding filter OIL-X, grade AA and grade AO
Pressure vessels	Normal steel, welded
Valve blocks	Aluminium
Seals	NBR
Dryer filling	100 % Molecular sieve
Purifier filling	100 % Activated carbon

### Pressure vessel approvals

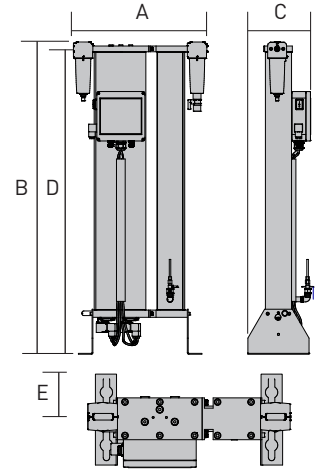
EU	Approval for fluid group 2 in accordance with the Pressure Equipment Directive 97/23/EC. Product range KA-MT1 to 2 in accordance with article 3, paragraph 3; product KA-MT3 in accordance with category I (module A).
USA	Approval to ASME VIII Div. 1 not required
AUS	Approval to AS1210 not required
GUS	TR (formerly GOST-R)

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### Dimensions (mm) and weight (kg)

Model	A	B	C	D	E	Weight
KA-MT 1	459	400	216	376	101	15
KA-MT 2	459	575	216	551	101	20
KA-MT 3	459	825	216	801	101	28
KA-MT 4	459	1075	216	1051	101	35



### Quality assurance

Development/Manufacture	DIN EN ISO 9001, DIN EN ISO 14001
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### Correction factors (f) in accordance with the actual minimum operating pressure in bar<sub>e</sub>

For a pressure dew point from -25 °C to -40 °C	Inlet temperature to the dryer in °C					
	25	30	35	40	45	50
Minimum operating pressure in bar <sub>e</sub>						
5	0.80	0.79	0.75	0.64	0.61	0.59
6	0.92	0.91	0.89	0.78	0.73	0.67
7	1.03	1.02	1.00	0.91	0.82	0.79
8	1.16	1.15	1.13	1.00	0.94	0.86
9	1.30	1.28	1.26	1.08	1.03	0.99
10	1.39	1.37	1.31	1.16	1.07	1.03
11	1.52	1.49	1.36	1.24	1.10	1.07
12	1.61	1.61	1.49	1.36	1.23	1.18
13	1.75	1.75	1.62	1.47	1.35	1.29
14	1.89	1.89	1.71	1.57	1.46	1.38
15	2.00	2.00	1.79	1.67	1.57	1.46

For a pressure dew point from -70 °C (at max. 35 °C inlet temperature, 100% relative humidity, continuous operation & with gas-tight piping)

0.53

Example: maximum inlet volumetric flow of 32 m<sup>3</sup>/h, at a minimum pressure of 8.3 bar<sub>e</sub> and 35 °C inlet temperature:  
 15 m<sup>3</sup>/h : 1.13 = 13.3 m<sup>3</sup>/h – suitable model KA-MT 2 for a pressure dew point of -25 °C or -40 °C;  
 15 m<sup>3</sup>/h : 0.53 = 28.3 m<sup>3</sup>/h – suitable model KA-MT 4 for a pressure dew point of -70 °C.

### Air quality classes, in accordance with ISO 8573-1:2010

Particulate	Class 2
Humidity / (gaseous)	Class 2 and Class 1 (depending upon sizing and dew point setting)
Total oil contamination	Class 1

# Product Specification

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### Product key

Series	Range*	Nominal pressure	Version	Generation	Connections*	Mains voltage*	Controls	Options*
K	1 - 4	/16	DA	3	- G	230	M	T
K	1 - 4	/16	DA	3	- N	115	M	
K	1 - 4	/16	DA	3	- G	24D	M	
Examples								
K	3	/16	DA	3	- G	230	M	
KA-MT 3 standard version with G1/4" (BSP-P) connections, 230 V/50-60 Hz Multitronic -plus control								
K	3	/16	DA	3	- N	115	M	T
KA-MT 3 with NPT1/4i connections, 115 V/50-60 Hz Multitronic-plus control and dew point sensor ZHM100								

\* variable information

### Service-kits: Kits for preventative maintenance

Order No.	Suitability	Interval	Scope of supply
SKK1-K4/DA3/12	KA-MT 1 - 4	12/36 month	Re-set module, silencer and filter elements
SKK1-K4/DA3/24	KA-MT 1 - 4	24 month	Re-set module, wear part set for in-/outlet valves, silencer and filter elements
SKK1-K4/DA3/48	KA-MT 1 - 4	48 month	Re-set module, wear part set for in-/outlet valves, solenoid-coils, non-return valves, Demister, perforated plate, perforated plate gaskets, silencer and filter elements
P02/ZR	KA-MT 1 - 4	when necessary	Indicator-tube for oil-indicator OP01/18AK

**DESPACs:** Amount of required desiccant packs for each model - for preventive maintenance after 12 and 48 months

Maintenance interval	Order No.	KA-MT 1	KA-MT 2	KA-MT 3	KA-MT 4
12 month	DESPAC3AK	1	1	1	1
	DESPAC10AK				
48 month	DESPAC1MS	1		1	
	DESPAC4MS		1	1	2

### Loose accessories

Order No.	Description	Suitability	Order No.	Description	Suitability
VASRGR/K1-K8	Regeneration gas return	KA-MT 1 - KA-MT 4	VASNOZ/K1-K95	Nozzle kit	KA-MT 1 - KA-MT 4
VASDPDP/K1-K95	Dew point measurement	KA-MT 1 - KA-MT 4	VASVPB/K1-K4/08	Start-up device G1/4i	KA-MT 1 - KA-MT 4
VASMBS420	Signal duplicator 4-20 mA	KA-MT 1 - KA-MT 4	VASFS3/K1-K4	Fine filter muffler	KA-MT 1 - KA-MT 4

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#### EMEA Product Information Centre

Free phone: 00 800 27 27 5374

(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

#### US Product Information Centre

Toll-free number: 1-400-27 27 537

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