

ecodry K-MT 1-4

Efficient compressed air adsorption dryers



K-MT 1-4 heatless adsorption dryers are designed to dry industrial compressed air reliably and efficiently down to a pressure dew point of $-70\text{ }^{\circ}\text{C}$. 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_g).

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 finally exits via a validated GL after-filter preventing the migration of particles into the downstream compressed air network. The K-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 K-MT 1-4 adsorption dryer series

Ordering – and performance data

Model	Order No.	Volumetric flow ¹⁾ in m³/h	Nominal pipe size ²⁾	Pre-filter	After-filter	Nominal pressure in bar _e	Nominal temp. °C
K-MT 1	K1/16D2-G230M	8	1/4	GL2XL	GL2ZLH	16	50
K-MT 2	K2/16D2-G230M	15	1/4	GL2XL	GL2ZLH	16	50
K-MT 3	K3/16D2-G230M	25	1/4	GL2XL	GL2ZLH	16	50
K-MT 4	K4/16D2-G230M	35	1/4	GL2XL	GL2ZLH	16	50

¹⁾ m³/h, referring to 1 bar_e and 20 °C at compressor suction capacity. Subsequently compressed to 7 bar_e and 35 °C inlet temperature to the dryer at 100 % relative humidity – for pressure dew points of -25 °C and -40 °C.

²⁾ 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 _e
Medium	Compressed air and gaseous nitrogen

Optional dew point sensor ZHM100

Pressure dew point at 7 bar _e	-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 GL filter ref: XL and GL filter ref: ZL
Pressure vessels	Aluminium
Valve blocks	Aluminium
Seals	NBR
Filling	100 % Molecular sieve

Pressure vessel approvals

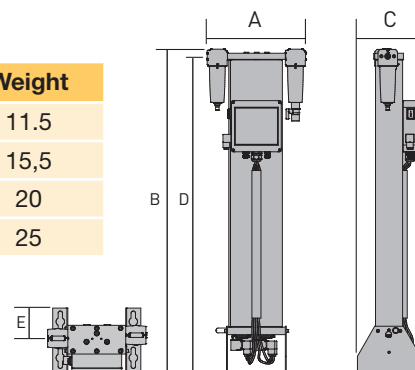
EU	Approval for fluid group 2 in accordance with the Pressure Equipment Directive 97/23/EC. Product range K-MT1 to 2, in accordance with article 3, paragraph 3; product range K-MT3 to 4 in accordance with category I (module A).
USA	Approval to ASME VIII Div. 1 not required
AUS	Approval to AS1210 not required
GUS	TR (formerly GOST-R)

Product Specification

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Dimensions (mm) and weight (kg)

Model	A	B	C	D	E	Weight
K-MT 1	326	400	216	376	101	11.5
K-MT 2	326	575	216	551	101	15,5
K-MT 3	326	825	216	801	101	20
K-MT 4	326	1075	216	1051	101	25



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_e

For a pressure dew point from -25 °C to -40 °C	Inlet temperature to the dryer in °C					
Minimum operating pressure in bar _e	25	30	35	40	45	50
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 m³/h, at a minimum pressure of 8.3 bar_e and 35 °C inlet temperature:

15 m³/h : 1.13 = 13.3 m³/h – suitable model K-MT 2 for a pressure dew point of -25 °C or -40 °C;

15 m³/h : 0.53 = 28.3 m³/h – suitable model K-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 2

Product Specification

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Product key

Series	Range*	Nominal pressure	Version	Generation	Connections*	Mains voltage*	Controls	Options*
K	1 - 4	/16	D	2	- G	230	M	T
K	1 - 4	/16	D	2	- G	24D	M	
K	1 - 4	/16	D	2	- N	115	M	

Examples

K	3	/16	D	2	- G	230	M	
K-MT 3 standard version with G1/4" (BSP-P) connections, 230V/50-60Hz Multitronic -plus control.								
K	3	/16	D	2	- N	115	M	T
K-MT 3 with NPT1/4" connections, 115V/50-60Hz Multitronic-plus control and dew point sensor ZHM100								

* variable information

Service-kits: Kits for preventive maintenance

Order No.	Suitability	interval	Scope of supply
SKK1-K4/D2/12	K-MT 1 - K-MT 4	12/36 month	Re-set module, silencer and filter elements
SKK1-K4/D2/24	K-MT 1 - K-MT 4	24 month	Re-set module, wear part set for in-/outlet valves, silencer and filter elements
SKK1-K4/D2/48	K-MT 1 - K-MT 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

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

Order No.	K-MT 1	K-MT 2	K-MT 3	K-MT 4
DESPAC1MS	1		1	
DESPAC4MS		1	1	2

Loose accessories

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