

ecodry KA-MT 1-8

Efficient Compressed Air Adsorption Dryer with final activated carbon purifier



Short Description

KA-MT 1-8 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 $86\text{ m}^3/\text{h}$ (suction capacity of the compressor referring to a compression of 7 bar_a).

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 1-8 Adsorption dryer series operates a fixed, timed, change-over-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 Dependant Switching (DDS) as an option.

Product Specification

ecodry KA-MT 1-8 Air Treatment Package

Ordering – and Performance data

Model	Order No.	Volumetric flow ¹⁾ in m ³ /h	Nominal pipe size ²⁾	Pre-filter	After-filter	Nominal Pressure in bar _e	Nominal Temp. °C
KA-MT 1	K1/16DA2-G230M	8	1/4	GL2XL	GL2ZLH	16	50
KA-MT 2	K2/16DA2-G230M	15	1/4	GL2XL	GL2ZLH	16	50
KA-MT 3	K3/16DA2-G230M	25	1/4	GL2XL	GL2ZLH	16	50
KA-MT 4	K4/16DA2-G230M	35	1/4	GL2XL	GL2ZLH	16	50
KA-MT 6	K6/16DA2-G230M	56	1/2	GL5XLD	GL5ZLDH	16	50
KA-MT 7	K7/16DA2-G230M	72	1/2	GL5XLD	GL5ZLDH	16	50
KA-MT 8	K8/16DA2-G230M	86	3/4	GL7XLD	GL7ZLDH	16	50

¹⁾ m³/h, referring to 1 bar_a 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 dewpoints 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 dewpoint 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	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 range KA-MT3 to 8 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)



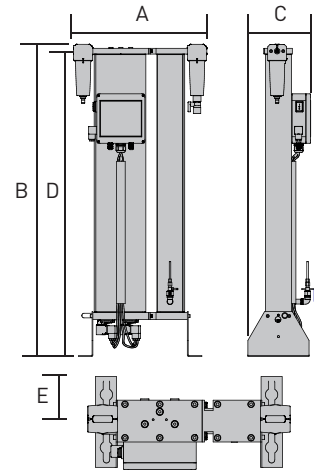
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Product Specification

ecodry KA-MT 1-8 Air Treatment Package

Dimensions in mm. Weight in 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
KA-MT 6	686	1203	300	1097	132	68
KA-MT 7	686	1428	300	1322	132	81
KA-MT 8	686	1628	300	1522	132	92



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					
	25	30	35	40	45	50
Minimum operating pressure in bar _e						
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:
 32 m³/h : 1.13 = 28.3 m³/h – Suitable Model KA-MT 4 for a pressure dew point of -25 °C or -40 °C;
 28.3 m³/h : 0.53 = 53.4 m³/h – Suitable Model KA-MT 6 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 dewpoint setting)
Total oil contamination	Class 1

Product Specification

ecodry KA-MT 1-8 Air Treatment Package

Product Key

Series	Range*	Nominal pressure	Version	Generation	Connections*	Mains voltage*	Controls	Options*
K	1 - 8	/16	DA	2	- G	230	M	T
K	1 - 8	/16	DA	2	- N	115	M	
K	1 - 8	/16	DA	2	- G	24D	M	
Examples								
K	3	/16	DA	2	- 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	2	- 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: Preventative Maintenance Kits

Order No.	Suitability	maintenance interval	Scope of supply
SKK1-K4/DA2/12	KA-MT 1 - KA-MT 4	12 and 36 month	Re-set module, Silencer and Filter elements
SKK1-K4/DA2/24	KA-MT 1 - KA-MT 4	24 month	Re-set module, Valve-membranes, Silencer and Filter elements
SKK1-K4/DA2/48	KA-MT 1 - KA-MT 4	48 month	Re-set module, Valve-membranes, Solenoid-coils, Non-return valves, Demister, Perforated screens, Silencer and Filter elements
SKK6-K7/DA2/12	KA-MT 6 - KA-MT 7	12 and 36 month	Re-set module, Silencer and Filter elements
SKK6-K7/DA2/24	KA-MT 6 - KA-MT 7	24 month	Re-set module, Valve-membranes, Silencer and Filter elements
SKK6-K7/DA2/48	KA-MT 6 - KA-MT 7	48 month	Re-set module, Valve-membranes, Solenoid-coils, Non-return valves, Demister, Perforated screens, Silencer and Filter elements
SKK8/DA2/12	KA-MT 8	12 and 36 month	Re-set module, Silencer and Filter elements
SKK8/DA2/24	KA-MT 8	24 month	Re-set module, Valve-membranes, Silencer and Filter elements
SKK8/DA2/48	KA-MT 8	48 month	Re-set module, Valve-membranes, Solenoid-coils, Non-return valves, Demister, Perforated screens, Silencer and Filter elements
P02/ZR	KA-MT 1 - KA-MT 8	when necessary	Indicator-tube for oil-indicator OP01/21AKM

Despacs: Amount of required dessicant 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	KA-MT 6	KA-MT 7	KA-MT 8
12 month	DESPAC3AK	1	1	1	1	2	2	
	DESPAC10AK							1
48 month	DESPAC1MS	1		1		1		
	DESPAC4MS		1	1	2	3	4	1
	DESPAC15MS							1

Accessories

Order No.	Description	Suitability	Order No.	Description	Suitability
VASRGR/K1-K8	Regeneration gas return	KA-MT 1 - KA-MT 8	VASVPB/K1-K4/08	Start-up device G1/4i	KA-MT 1 - KA-MT 4
VASDPDP/K1-K95	Dewpoint measurement	KA-MT 1 - KA-MT 8	VASVPB/K6-K7/15	Start-up device G1/2i	KA-MT 6 - KA-MT 7
VASMBS420	Signal duplicator 4-20 mA	KA-MT 1 - KA-MT 8	VASVPB/K8/20	Start-up device G3/4i	KA-MT 8
VASNOZ/K1-K95	Nozzle kit	KA-MT 1 - KA-MT 8	VASFS3/K1-K4	Fine filter muffler	KA-MT 1 - KA-MT 4
			VASFS5/K6-K8	Fine filter muffler	KA-MT 6 - KA-MT 8

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EMEA Product Information Centre

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US Product Information Centre

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ecodry KA-MT 10-95

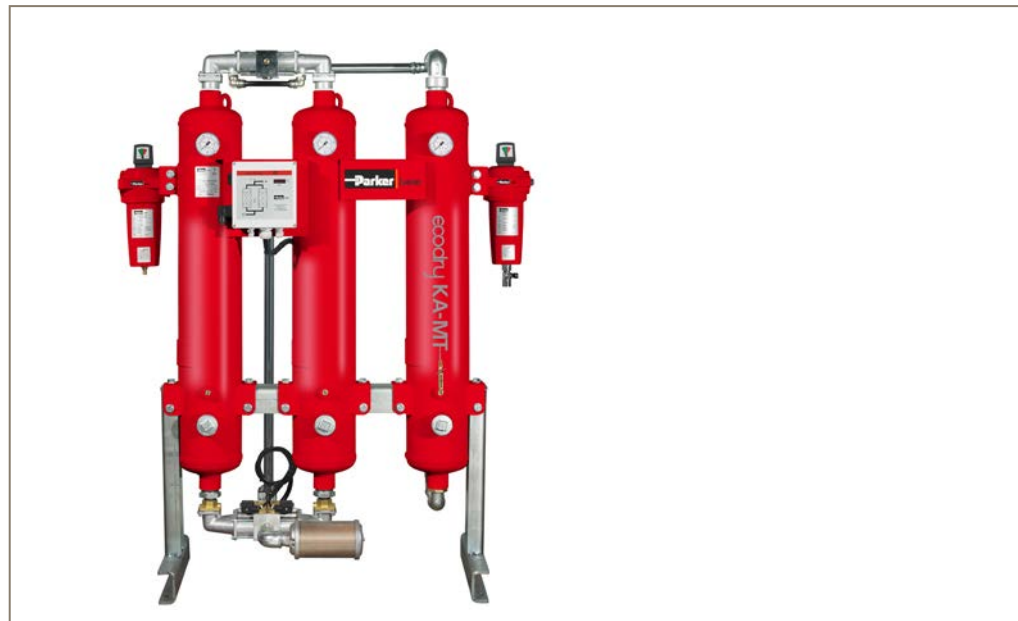
Efficient Compressed Air Adsorption Dryer with final activated carbon purifier



Short Description

KA-MT 10-95 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. They are equipped with built-on pre- and after filtration and are sized for volumetric flows of up to $940\text{ m}^3/\text{h}$ (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; both filled with molecular sieve - a renowned drying-agent, where the air is dried. During the drying process the second vessel undergoes regeneration: At the start of the drying-cycle, this vessel 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 vessel 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 the validated GL after-filter, into the downstream compressed air network.

The KA-MT 10-95 Adsorption dryer series operates a fixed, timed, changeover-cycle between the two dryer vessels. 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 vessels 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 and activated carbon purification stage - ready for installation, including GL pre- and after filters; available with Dew-point Dependant Switching (DDS) as an option.

Product Specification

ecodry KA-MT 10-95 Air Treatment Package

Ordering – and Performance data

Model	Order No.	Volumetric flow ¹⁾ in m ³ /h	Nominal pipe size ²⁾	Pre-filter	After-filter	Nominal Pressure in bar _e	Nominal Temp. °C
KA-MT 10	K10/16DA2-G230M	105	1	GL9XLD	GL9ZLDH	16	50
KA-MT 15	K15/16DA2-G230M	145	1	GL9XLD	GL9ZLDH	16	50
KA-MT 20	K20/16DA2-G230M	200	1	GL9XLD	GL9ZLDH	16	50
KA-MT 25	K25/16DA2-G230M	255	1 1/2	GL11XLD	GL11ZLDH	16	50
KA-MT 35	K35/16DA2-G230M	350	1 1/2	GL11XLD	GL11ZLDH	16	50
KA-MT 45	K45/16DA2-G230M	420	1 1/2	GL12XLD	GL12ZLDH	16	50
KA-MT 60	K60/16DA2-G230M	620	2	GL13XLD	GL13ZLDH	16	50
KA-MT 75	K75/16DA2-G230M	750	2	GL13XLD	GL13ZLDH	16	50
KA-MT 95	K95/16DA2-G230M	940	2 1/2	GL14XLD	GL14ZLDH	16	50

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

²⁾ In accordance with DIN ISO 228 (BSP-P)

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 dewpoint 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
Protection class	IP65

Materials of construction

Filters	See product-specification regarding GL filter ref: XL and GL filter ref: ZL
Pressure vessels	Normal steel, welded
Valve blocks	Aluminium
Piping	Steel, zinc-coated
Seals	NBR
Filling	100 % Molecular sieve (dryer), 100 % Activated Carbon (purifier)

Pressure vessel approvals

EU	Approval for fluid group 2 in accordance with the Pressure Equipment Directive 97/23/EC, Module B+D: Product range KA-MT10 to 35, in accordance with category II; Product range KA-MT45 to 95 in accordance with category III.
AUS	AS1210
GUS	TR (formerly GOST-R)

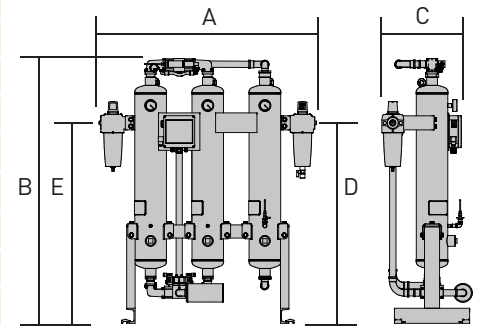


Product Specification

ecodry KA-MT 10-95 Air Treatment Package

Dimensions in mm. Weight in kg

Model	A	B	C	D	E	Weight
KA-MT 10	1170	1420	490	1070	1070	161
KA-MT 15	1170	1750	490	1320	1320	193
KA-MT 20	970	1530	490	1170	1170	193
KA-MT 25	970	1760	530	1320	1320	234
KA-MT 35	1260	1810	585	1320	1320	283
KA-MT 45	1290	1820	605	1320	1320	334
KA-MT 60	1350	1870	635	1320	1320	428
KA-MT 75	1500	2000	635	1515	1515	555
KA-MT 95	1550	2020	670	1515	1515	698



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					
	25	30	35	40	45	50
Minimum operating pressure in bar _e						
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 & with gas-tight piping)

0.53

Example: maximum inlet volumetric flow of 360 m³/h at a minimum pressure of 8.3 bar_e and 35 °C inlet temperature:
 360 m³/h : 1.13 = 318.6 m³/h – Suitable Model KA-MT 35 for a pressure dew point of -25 °C or -40 °C.
 318.6 m³/h : 0.53 = 601.1 m³/h – Suitable Model KA-MT 60 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 dewpoint setting)
Total oil contamination	Class 1

Product Specification

ecodry KA-MT 10-95 Air Treatment Package

Product key

Series	Range*	Nominal pressure	Version	Generation	Connections*	Mains voltage*	Controls	Options*
K	10 - 95	/16	DA	2	- G	230	M	T
Examples								
K	75	/16	DA	2	- G	230	M	T

KA-MT 35 standard version with G1 1/2i (BSP-P) connections, 230 V/50-60 Hz Multitronic -plus control

* variable information

Service-kits: Preventative Maintenance Kits

Order No.	Suitability	maintenance interval	Scope of supply
SKK10-K20/D2/12	KA-MT 10 to KA-MT 20	12 and 36 month	Re-set module, Silencer, Filter elements and Pilot valve
SKK25/D2/12	KA-MT 25	12 and 36 month	
SKK35/D2/12	KA-MT 35	12 and 36 month	
SKK45/D2/12	KA-MT 45	12 and 36 month	
SKK60-K75/D2/12	KA-MT 60 to KA-MT 75	12 and 36 month	
SKK95/D2/12	KA-MT 95	12 and 36 month	
SKK10-K20/D2/24	KA-MT 10 to KA-MT 20	24 and 48 month	Re-set module, Silencer, Filter elements, Inlet-, Outlet- and Non-return valves, Solenoid-coils
SKK25/D2/24	KA-MT 25	24 and 48 month	
SKK35/D2/24	KA-MT 35	24 and 48 month	
SKK45/D2/24	KA-MT 45	24 and 48 month	
SKK60-K75/D2/24	KA-MT 60 to KA-MT 75	24 and 48 month	
SKK95/D2/24	KA-MT 95	24 and 48 month	
P02/ZR	KA-MT 10 to KA-MT 95	When necessary	Indicator-tube for oil-indicator OP01/21AKN

Despacs: Required activated carbon packs per model for preventative maintenance after 12 months

Order No.	KA-MT 10	KA-MT 15	KA-MT 20	KA-MT 25	KA-MT 35	KA-MT 45	KA-MT 60	KA-MT 75	KA-MT 95
DESPAC3AK		1	2	1		1			
DESPAC10AK	1	1	1	2	3	3	5	7	9

Desmix: Required dessicant pack per model for preventative maintenance after 48 months

Order No.	Suitability	Order No.	Suitability
K-MT10DESMIX	KA-MT 10	K-MT35DESMIX	KA-MT 35
K-MT15DESMIX	KA-MT 15	K-MT60DESMIX	KA-MT 45 and KA-MT 60
K-MT20DESMIX	KA-MT 20	K-MT75DESMIX	KA-MT 75
K-MT25DESMIX	KA-MT 25	K-MT95DESMIX	KA-MT 95

Accessories

Order No.	Function	Suitability	Order No.	Function	Suitability
VASDP/K1-K95	Dewpoint measurement	KA-MT 10 to KA-MT 95	VASVPB/K10-K20/25	Start-up device G1i	KA-MT 10 to KA-MT 20
VASMB5420	Signal duplicator 4-20 mA	KA-MT 10 to KA-MT 95	VASVPB/K25-K45/40	Start-up device G1 1/2i	KA-MT 25 to KA-MT 45
VASF5/K10-K15	Fine filter muffler	KA-MT 10 to KA-MT 15	VASVPB/K60-K75/50	Start-up device G2i	KA-MT 60 to KA-MT 75
VASF5/K20-K25	Fine filter muffler	KA-MT 20 to KA-MT 25	VASVPB/K95/65	Start-up device G2 1/2i	KA-MT 95
VASF5/K35-K60	Fine filter muffler	KA-MT 35 to KA-MT 60	VASRGR/K10-K95	Regeneration gas return	KA-MT 10 to KA-MT 95
VASF5/K75-K95	Fine filter muffler	KA-MT 75 to KA-MT 95	VASNOZ/K1-K95	Nozzle kit	KA-MT 10 to KA-MT 95

EMEA Product Information Centre

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