

ecodry K-MT 35-95

Efficient compressed air adsorption dryers



K-MT 35-95 heatless adsorption dryers are designed to dry industrial compressed air reliably and efficiently down to a pressure dew point of -70°C . 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_e).

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 finally exits via a validated GL after-filter preventing the migration of particles into the downstream compressed air network.



The K-MT 35-95 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°C up to -70°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 35-95 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 35 | K35/16D2-G230M | 350 | 1 1/2 | GL11XLD | GL11ZLDH | 16 | 50 |
| K-MT 45 | K45/16D2-G230M | 420 | 1 1/2 | GL12XLD | GL12ZLDH | 16 | 50 |
| K-MT 60 | K60/16D2-G230M | 620 | 2 | GL13XLD | GL13ZLDH | 16 | 50 |
| K-MT 75 | K75/16D2-G230M | 750 | 2 | GL13XLD | GL13ZLDH | 16 | 50 |
| K-MT 95 | K95/16D2-G230M | 940 | 2 1/2 | GL14XLD | GL14ZLDH | 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 dew points 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

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|---|--|
| 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

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|------------------|-----------------|
| Mains voltage | 230 V, 50-60 Hz |
| Protection class | IP65 |

Materials of construction

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|------------------|---|
| 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 |

Pressure vessel approvals

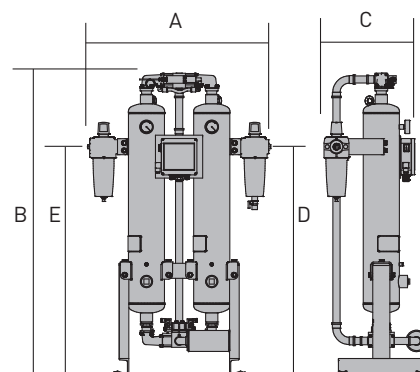
| | |
|-----|--|
| EU | Approval for fluid group 2 in accordance with the Pressure Equipment Directive 97/23/EC, module B+D: model K-MT35 in accordance with category II; product range K-MT45 to 95 in accordance with category III. |
| AUS | AS1210 |
| GUS | TR (formerly GOST-R) |

Product Specification

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Dimensions (mm) and weight (kg)

| Model | A | B | C | D | E | Weight |
|---------|------|------|-----|------|------|--------|
| K-MT 35 | 830 | 1810 | 585 | 1320 | 1320 | 210 |
| K-MT 45 | 860 | 1820 | 605 | 1320 | 1320 | 249 |
| K-MT 60 | 910 | 1870 | 635 | 1320 | 1320 | 277 |
| K-MT 75 | 1020 | 2000 | 640 | 1515 | 1515 | 408 |
| K-MT 95 | 1020 | 2020 | 670 | 1515 | 1515 | 510 |



Quality assurance

| | |
|-------------------------|-----------------------------------|
| Development/Manufacture | DIN EN ISO 9001, DIN EN ISO 14001 |
|-------------------------|-----------------------------------|

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 K-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 K-MT 60 for a pressure dew point of -70 °C.

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

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

Product Specification

ecodry K-MT 35-95 adsorption dryer series

Product key

| Series | Range* | Nominal pressure | Version | Generation | Connections* | Mains voltage* | Controls | Options* |
|---|---------|------------------|---------|------------|--------------|----------------|----------|----------|
| K | 35 - 95 | /16 | D | 2 | - G | 230 | M | T |
| Examples | | | | | | | | |
| K | 35 | /16 | D | 2 | - G | 230 | M | |
| K-MT 35 standard version with G1 1/2" (BSP-P) connections, 230V/50-60Hz Multitronic -plus control. | | | | | | | | |
| K | 75 | /16 | D | 2 | - G | 230 | M | T |
| K-MT 75 with G2" (BSP-P) connections, 230V/50-60Hz Multitronic -plus control and dew point sensor ZHM100. | | | | | | | | |

* variable information

Service-kits: Preventative Maintenance Kits

| Order No. | Suitability | Maintenance interval | Scope of supply |
|-----------------|--------------------|----------------------|--|
| SKK35/D2/12 | K-MT 35 | 12 and 36 month | Re-set module, Silencer, Filter elements and Pilot valves |
| SKK45/D2/12 | K-MT 45 | 12 and 36 month | |
| SKK60-K75/D2/12 | K-MT 60 to K-MT 75 | 12 and 36 month | |
| SKK95/D2/12 | K-MT 95 | 12 and 36 month | |
| SKK35/D2/24 | K-MT 35 | 24 and 48 month | Re-set module, Silencer, Filter elements, Solenoid-coils, Pilot valves, Inlet-, Outlet- and Non-return valves with corresponding O-rings |
| SKK45/D2/24 | K-MT 45 | 24 and 48 month | |
| SKK60-K75/D2/24 | K-MT 60 to K-MT 75 | 24 and 48 month | |
| SKK95/D2/24 | K-MT 95 | 24 and 48 month | |

DESMIX: Required desiccant pack for each model - for preventive maintenance after 48 months

| Order No. | Suitability |
|--------------|---------------------|
| K-MT35DESMIX | K-MT 35 |
| K-MT60DESMIX | K-MT 45 and K-MT 60 |
| K-MT75DESMIX | K-MT 75 |
| K-MT95DESMIX | K-MT 95 |

Loose accessories

| Order No. | Function | Suitability | Order No. | Function | Suitability |
|----------------|---------------------------|--------------------|-------------------|-------------------------|--------------------|
| VASDPD/K1-K95 | Dew point measurement | K-MT 35 to K-MT 95 | VASVPB/K25-K45/40 | Start-up device G1 1/2i | K-MT 35 to K-MT 45 |
| VASMBS420 | Signal duplicator 4-20 mA | K-MT 35 to K-MT 95 | VASVPB/K60-K75/50 | Start-up device G2i | K-MT 60 to K-MT 75 |
| VASFSS/K10-K15 | Fine filter muffler | K-MT 35 to K-MT 15 | VASVPB/K95/65 | Start-up device G2 1/2i | K-MT 95 |
| VASFSS/K35-K60 | Fine filter muffler | K-MT 35 to K-MT 60 | VASRGR/K10-K95 | Regeneration gas return | K-MT 35 to K-MT 95 |
| VASFSS/K75-K95 | Fine filter muffler | K-MT 75 to K-MT 95 | VASNOZ/K1-K95 | Nozzle kit | K-MT 35 to K-MT 95 |