

ECOTROC® Membrane Dryer MT

Solution-oriented Compressed Air Drying



Rev 02_0621



Reliable Compressed Air Drying without the need of Power or Service

Water and moisture in compressed air damages installations, machines and pneumatic controls. Corrosion and pockets of bacteria can form quickly. For that reason treatment of the compressed air is always required as a preventative measure, with minimum cost implications. **ECOTROC®** MT is the most compact KSI solution for drying compressed air to special demand requirements. Membrane dryers require no power and almost no service. Furthermore they only treat compressed air when it is needed, and at the required level of quality. The compact construction seems destined for mobile use but is also for stationary applications at the “point of use”. Whether in a dental laboratory, with an analyzer, or a printing machine in a factory building: **ECOTROC®** MT provides the best output, every time.

Applications:

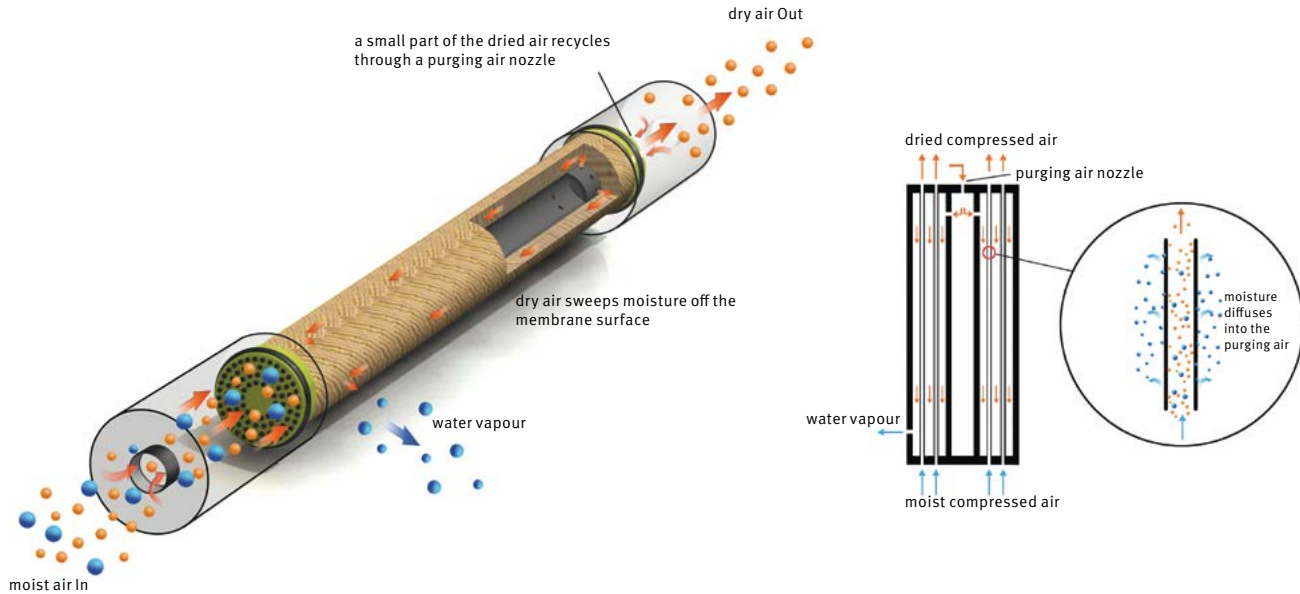
- instrument air
- pneumatic controls
- laboratory air
- analyzers
- ozone generators

The ECOTROC® MT Plus-Effects +++

- + quick & simple installation
- + no moving parts, no wear and tear
- + simple and cost effective service (only replacement of protective filter element required)
- + low purging requirement
- + highly cost-effective concept for smaller volume flows
- + robust construction ensuring long life
- + quick response time
- + no condensate drain required
- + no reduction in oxygen content
- + can also be used in explosion-protected areas
- + no power connection required
- + continuous operation possible
- + low noise levels
- + any installation orientation possible

- precision pneumatic instruments
- laser applications
- painting plant
- CNC installations
- and many more

The diffusion process



The path of the compressed air through the membrane dryer

The compressed air flows into the dryer and is directed into the membrane element. The still moist compressed air then flows through the selective hollow fibre membranes interior. Purging air is continuously diverted back along the outer walls of the membrane element for the purposes of drying, and using a specific nozzle opening it is released to atmospheric pressure. Due to this expansion the purging air is now significantly dryer, due to the moisture being distributed across a larger expanded volume. In the process the dried purging air flows across the outside of the membrane. Two air flows, separated only by the membrane wall and with different moisture content, move through the membrane element in a counter flow configuration. Due to the different moisture content the moisture in the compressed air diffuses into the purging air. The compressed air treated in this process is now dry when it leaves the membrane dryer.

ECOTROC® MT PLUS

Filtration at the 0.01 micron level prior to the membrane is strictly required

In the ECOTROC® MT PLUS version KSI supplies a system solution of the membrane dryer combined with matching KSI ECOCLEAN® SMA prefilter and wall mount. The combination can be mounted in this case in a vertical or horizontal arrangement.



Performance data

| Dew point reduction | 20°C | 32°C | 55°C | 75°C |
|-------------------------|---------------------|---------------------|---------------------|---------------------|
| Purging air consumption | 10 % | 14 % | 21 % | 29 % |
| Moisture reduction | 69,7 % | 88,7 % | 98 % | 99 % |
| Type | Max. inlet capacity | Max. inlet capacity | Max. inlet capacity | Max. inlet capacity |
| | l/min | l/min | l/min | l/min |
| MT 50 | 50 | 36 | 24 | 17 |
| MT 100 | 100 | 71 | 47 | 34 |
| MT 150 | 150 | 107 | 71 | 51 |
| MT 200 | 200 | 142 | 95 | 69 |
| MT 300 | 300 | 213 | 142 | 103 |
| MT 400 | 400 | 284 | 189 | 137 |
| MT 600 | 600 | 427 | 284 | 206 |
| MT 800 | 800 | 569 | 379 | 274 |
| MT 1050 | 1050 | 747 | 497 | 360 |
| MT 1500 | 1500 | 1120 | 730 | 518 |
| MT 2050 | 2050 | 1530 | 980 | 710 |
| MT 3000 | 3000 | 2135 | 1425 | 1025 |

All specifications in reference to 7 bar g and an inlet pressure dew point of +35°C
 Maximum inlet temperature +60°C
 Maximum inlet pressure 10 bar g

Dimensions and connections

| Type | Length | Diameter | Connection |
|---------|--------|----------|------------|
| | mm | mm | |
| MT 50 | 224 | 58,4 | 1/4" |
| MT 100 | 325 | 58,4 | 1/4" |
| MT 150 | 427 | 58,4 | 1/4" |
| MT 200 | 503 | 58,4 | 1/4" |
| MT 300 | 312 | 81,3 | 1/2" |
| MT 400 | 376 | 81,3 | 1/2" |
| MT 600 | 465 | 81,3 | 1/2" |
| MT 800 | 592 | 81,3 | 1/2" |
| MT 1050 | 411 | 109,2 | 1/2" |
| MT 1500 | 551 | 124 | 1/2" |
| MT 2050 | 627 | 124 | 1/2" |
| MT 3000 | 607 | 150 | 1" |

Technical data

- volume flow: 1 m³/h – 60 m³/h
- pressure dew point: - 40°C max.
- pressure: 10 bar max.
- differential pressure: ~0,2 bar
- operating temperature: +60°C max.

Korrekturfaktoren | Correction factors

| Arbeitsdruck Working pressure | bar ü g | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---------------------------------|-----------|-----|-----|-----|---|-----|-----|-----|-----|-----|
| Faktor factor | | 0,4 | 0,6 | 0,8 | 1 | 1,2 | 1,5 | 1,8 | 1,9 | 2,2 |

Multiplizieren Sie die Leistung des Membrantrockners mit dem Korrekturfaktor in der Tabelle.

Beispiel: Leistung am Eintritt MT300 bei 7 bar ü = Leistung nominal (300 l/m) x Faktor (1,8) = Leistung korrigiert (540 l/m).

Please multiply the capacity of the filter by the correction factor in the above table.

Example: Capacity at inlet MT 300 at 7 bar g = Capacity nominal (300 l/m) x Factor (1,8) = Capacity corrected (540 l/m).

Suitable for different dew point requirements

- The requested dew point at the outlet of the membrane dryer can be adapted to the operator's specific requirement.

Typical dew points at the outlet of an ECOTROC® MT

- Refrigerated dryers typically reach dew points of 0°C to +6°C. This application is commonly used in industrial operations.
- Dew points from -20°C are frequently required in medical compressed air or process air.
- A dew point from -40°C indicates high-quality instrument air.