

KAESER
COMPRESSORS®

Built for a lifetime.



Refrigerated Air Dryers

Demand Manager™ Series

600 - 3000 scfm

www.kaeser.com

Demand Manager™ Series

Superior Moisture Removal

Refrigerant dryers are the foundation for high air quality in most industrial compressed air systems and are vital for consistent product quality as well as long life of process and production equipment. The Demand Manager maintains a stable dewpoint, even with variable flows. The integral cold coalescing filter option extends the dryer's capability to removing hydrocarbon and particulate contaminants.

Innovation you can trust

With a cutting edge research and development team committed to building industry-leading products, Kaeser continues to deliver better solutions to meet our customers' compressed air needs. Kaeser's expertise and world-wide reputation for superior reliability and efficiency offer great performance and peace of mind.

Dependable design

Demand Manager models employ a non-cycling, direct expansion refrigeration system with a rapid response bypass, ensuring tight temperature control. The Demand Manager's controller has a scheduling feature to match production air flow demands with no-load periods.

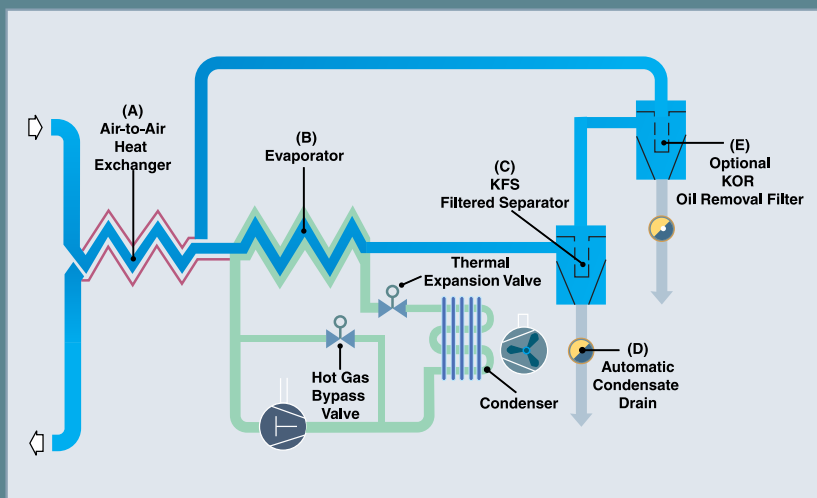
Environmentally friendly

Demand Manager dryers are equipped with fully hermetic refrigeration compressors. They maintain a nominal 38°F pressure dew point and use environmentally friendly refrigerant. R-134A is used in the 600 and 750 scfm models, while R-404A is used in all other models.

Energy efficiency

All dryer components are designed for maximum efficiency and performance. They feature a low pressure drop heat exchanger, low pressure drop filtered separators, and no air loss drains.

Basic Operation



Compressed air, saturated with water vapor, is pre-cooled by the outgoing chilled air in the air-to-air heat exchanger (A) and is further cooled in the evaporator (B). As the air cools, water vapor condenses into droplets. These are removed by the Filtered Separator (C) and are discharged from the dryer at the drain (D). Air then flows through an optional KOR Oil Removal Filter (E). As it exits the dryer, the air is reheated by incoming air in the air-to-air heat exchanger (A).

Dryer Features



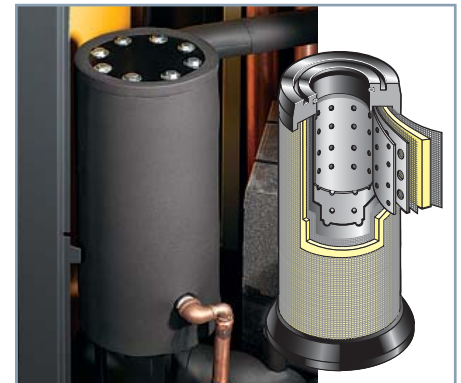
Controller

The controller for the Demand Manager control panel includes programmable start and stop timers to save energy during downtime. It monitors the dryer for overload or fault conditions and features programmable maintenance intervals as well as remote operator alert capabilities. The panel also includes an RS-232 communication port for remote monitoring and problem alerts.



Non-fouling heat exchangers

Demand Manager dryers feature non-fouling 316 stainless steel, copper brazed, plate heat exchangers. The heat exchanger surface is stamped with a chevron pattern for extremely efficient heat transfer and durability. It also creates a smooth flow and has a self-cleaning effect, eliminating the need for pre-filtration in most applications. This advanced design offers superior performance and reliability.



Integrated coalescing filtered separator

Once compressed air is cooled, the condensed moisture must be removed from the air stream. To save space and reduce your installation costs, the Kaeser Filtered Separator (KFS) is standard. The KFS has two stages to remove bulk liquid and solid particles. The first stage uses two perforated stainless steel tubes for mechanical separation. The second stage uses in-depth fiber media to capture solid particles and liquid droplets. Unlike many other separators, the KFS is effective over a wide range of velocities/air flows.



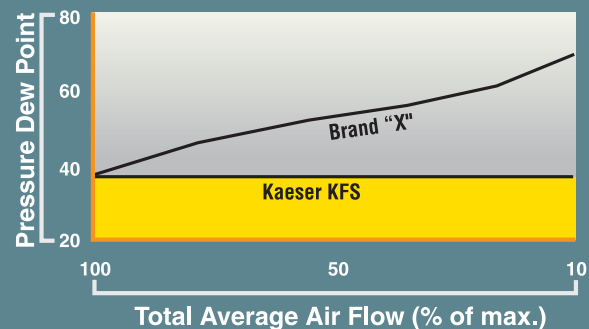
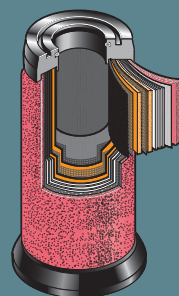
Automatic condensate drain

The dryer is equipped with a “no loss” Eco-Drain that is uniquely designed for the dryer to remove condensed moisture from the KFS. This electronic drain only activates when liquid is present, eliminating compressed air consumption. The condensate discharge circuit includes a 3-way valve to allow easy by-passing of the drain to perform routine maintenance.

Option

Integrated cold coalescing oil removal filter

For even cleaner compressed air, we offer the integrated coalescing Kaeser Oil Removal (KOR) filter as an option. This highly effective filter uses in-depth fiber media in two stages to capture oil aerosols and solid particles meeting ISO Class 2 for both. The KOR filter is located at the coldest point in the system to take maximum advantage of condensed oil vapors and oil aerosols. This option is incorporated inside the dryer cabinet and further reduces your space requirements and installation costs.



Technical Specifications

| Model | Air-cooled Rated Capacity* (scfm) | Power Supply (V / Ph / Hz) | Inlet/Outlet Connections (in.) | Dimensions W x D x H (in.) | Weight (lb.) | |
|---------|-----------------------------------|--|--------------------------------|--|--------------|--------------|
| | | | | | Air-cooled | Water-cooled |
| TF 171E | 600 | 208-230 / 3 / 60 460 / 3 / 60 380-420 / 3 / 50 575 / 3 / 60 | 2½ NPT(M) | 32 x 42 x 58 | 691 | 631 |
| TF 210E | 750 | | | | 734 | 674 |
| TG 301E | 1000 | | 3 Flg | 50 x 41 x 85 ¹ / ₈ | 1146 | 1068 |
| TH 371E | 1300 | | 4 Flg | 50 x 51 x 85 ¹ / ₈ | 1521 | 1406 |
| TH 451E | 1500 | | | | 1547 | 1446 |
| TI 521E | 1750 | | 6 Flg | 57 x 60 x 85 ¹ / ₈ | 1940 | 1755 |
| TI 601E | 2000 | | | | 1986 | 1801 |
| TI 751E | 2500 | | | | 2315 | 2091 |
| TI 901E | 3000 | | | | 2646 | 2370 |

***Air-cooled rated capacity:** Based on compressed air saturated at 100°F and 100 psig and operation in a 100°F ambient.

- Maximum inlet temperature: 130°F
- Maximum/minimum ambient air temperature:

Air-cooled dryers: 110/40°F
Water-cooled dryers: 130/40°F

- Maximum allowable working pressure: 230 psig

Specifications are subject to change without notice.

Selecting the Proper Dryer

To correct rated capacity for actual operating conditions, refer to “Capacity Correction Factors for Operating Conditions” and “Capacity Correction Factors for Ambient Temperature”. Find the capacity correction factors corresponding to the inlet and ambient conditions. Multiply these factors to find the “overall” capacity correction factor, then multiply any dryer’s rated capacity by the overall correction factor to determine its capacity at your operating conditions. Capacity correction factors for conditions not shown may be interpolated. Contact the factory if assistance is needed.

Capacity Correction Factors for Operating Conditions

| Inlet Pressure (psig) | Inlet Temperature (°F) | | | | | | | | |
|-----------------------|------------------------|------|------|------|------|------|------|------|------|
| | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 |
| 80 | 1.50 | 1.34 | 1.17 | 1.06 | 0.95 | 0.87 | 0.79 | 0.73 | 0.66 |
| 100 | 1.55 | 1.39 | 1.23 | 1.12 | 1.00 | 0.91 | 0.82 | 0.76 | 0.70 |
| 110 | 1.58 | 1.42 | 1.26 | 1.15 | 1.03 | 0.94 | 0.86 | 0.79 | 0.72 |
| 115 | 1.60 | 1.44 | 1.28 | 1.16 | 1.04 | 0.96 | 0.88 | 0.80 | 0.73 |
| 125 | 1.63 | 1.47 | 1.31 | 1.19 | 1.07 | 0.99 | 0.91 | 0.83 | 0.74 |
| 145 | 1.69 | 1.52 | 1.36 | 1.24 | 1.12 | 1.03 | 0.94 | 0.87 | 0.79 |
| 175 | 1.75 | 1.59 | 1.42 | 1.30 | 1.18 | 1.09 | 0.99 | 0.92 | 0.84 |
| 200 | 1.80 | 1.64 | 1.47 | 1.35 | 1.22 | 1.13 | 1.03 | 0.96 | 0.89 |
| 230 | 1.82 | 1.66 | 1.49 | 1.37 | 1.24 | 1.15 | 1.05 | 0.98 | 0.91 |

For water-cooled capacity (with cooling water temperatures less than or equal to 95°F) multiply the air-cooled capacity by 1.15.

Capacity Correction Factors for Ambient Temperature

| Air-Cooled | Ambient Air Temperature (°F) | | | | |
|------------|------------------------------|------|------|------|------|
| | 75 | 80 | 85 | 90 | 95 |
| | 1.15 | 1.12 | 1.09 | 1.06 | 1.03 |

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