Refrigerated Air Dryers
1,000-19,200 scfm
Ingersoll Rand’s line of TURBO-DRI™ refrigerated dryers provide dew-point-controlled compressed air with reliable consistency you can count on. They provide the confidence you demand, while guarding against system corrosion and protecting downstream tools, instruments, products and processes at a low cost of ownership.

**Clean, Dry Air in All Operating Conditions**
Non-cycling models dry air reliably and affordably, with a minimal capital investment. The cycling model design adds a thermal mass storage tank that permits the refrigeration unit to shut down during low heat loads. This feature enables the cycling model to deliver long-term operational savings.

Both the cycling and non-cycling models benefit from a patented stainless steel heat exchanger that enables peak throughput with low pressure drop, high-heat-transfer efficiency and trouble-free, non-fouling operation.

**Superior Heat Transfer at Work**
At the heart of the dryer is a stainless steel heat exchanger that provides highly effective heat transfer for pre-cooling, drying and reheating compressed air. This patented design reliably resists fouling and wrings moisture out of the airstream without inducing sweating on external components.

**Compact Innovation**
An innovative corrugated and folded stainless steel panel dramatically increases surface area for optimum heat transfer. Two stainless steel welded shells house the panel to form a resilient, reliable heat exchanger that eliminates common causes of leaks and failures due to dissimilar metals and tube-in-tube chaffing.
How Refrigerated Dryers Work

TURBO-DRI refrigerated dryers use centrifugal separation to remove moisture at the coldest point in the system. As the air stream is cooled in the stainless steel heat exchanger, moisture from the air stream condenses and is discharged through an electronic condensate removal drain. The result is highly efficient moisture removal and exceptionally dry, clean air.

In the cycling dryer design, a thermal mass storage reservoir is added to the refrigeration circuit. This enables the compressor to cycle off for energy savings during periods of reduced load. The dryer circuit continues using the stored coolant to remove moisture from the compressed air.

Designed to Maximize Efficiency

Intelligent Control

The easy-to-use TURBO-DRI controller automatically manages dryer operation for optimum air treatment and energy efficiency.
Performance-Driven Benefits

TURBO-DRI refrigerated dryers deliver the performance you need for greater reliability, quality and cost-efficiency from your compressed air system. The dependability of TURBO-DRI dryers is derived from the unique combination of components and features designed for a long and productive service life. These dryers satisfy both the quality and performance demands of your application and environment.

A Thermal Mass Storage Tank
(cycling dryers only) A thermal mass reservoir in all TURBO-DRI cycling refrigerated dryers sustains air cooling/drying with the refrigeration system cycled off during periods of low demand.

B Quiet Compressor
High-quality, fully hermetic compressor offers quiet, reliable operation.

C Superior Heat Exchanger
100% stainless steel heat exchanger delivers extreme reliability with superior heat transfer, and lowest pressure drop.

D Centrifugal Separator
Separator efficiently removes moisture, even in partial load conditions.

E Clog-Resistant Condensate Drain
Adjustable electric condensate drain with large port resists clogging (view obstructed in diagram).

F High-Quality Enclosure
Heavy gauge steel cabinet is powder-coated for added durability.

G Large Condensers
Generously sized condensers are precisely positioned to avoid accumulation of dust and/or debris.

H Efficient Pre-cooler/Re-heater
Reduces cooling costs through a dual-purpose design that conditions exiting air, while lowering the initial heat load of incoming air.

I Advanced Digital Controls
Easy-to-use digital controls provide real-time monitoring, trouble-free operation and remote connection.

J Easy Access Refrigeration Valves
Accessible refrigeration service valves simplify maintenance.

K Eco-Friendly Refrigerant
Environmentally friendly R404A refrigerant meets or exceeds most regional regulations and standards.

L Robust Packaging
Rugged design and construction limit the likelihood of shipping damage and provide a strong foundation for a long, productive service life.

The Energy Efficiency of Cycling Dryers

Unlike non-cycling or variable speed drive systems, TURBO-DRI cycling dryers provide dry, clean air while optimizing energy use across any operating load.
### Modular Design for Enhanced Productivity

Cycling and non-cycling refrigerated dryers for larger compressed air volumes—3,250 to 19,200 scfm—achieve drying by integrating multiple air treatment modules into one combined system (larger systems are also available upon request). The combined modules share common water headers (water-cooled dryers only), a single inlet header and a single outlet header, each with dual connection capability, permitting installation versatility.

Each module retains its own refrigeration system, heat exchanger, condensate drain and controls, so each can run independently. This provides the right balance of cooling proportional to overall compressed air volume. Cycling models share a common thermal mass storage tank for even greater efficiency.

Both the cycling and non-cycling models benefit from a patented stainless steel heat exchanger design that enables peak throughput with low pressure drop, high-heat-transfer efficiency and trouble-free, non-fouling operation.

### Redundancy for Added Reliability

Since each air treatment module works independently, the redundant, banked system enables complete continued operation even if a module is offline. Overall system function is coordinated through fully adjustable digital controls to meet application requirements.

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### Large Capacity Dryers

The TURBO-DRI refrigerated dryers provide large capacity drying, efficiency and trouble-free, non-fouling operation. The exchanger design enables peak throughput with low pressure drop, high-heat-transfer efficiency and trouble-free, non-fouling operation.

The TURBO-DRI refrigerated dryers are environmentally friendly R404A refrigerant to help reduce global warming potential.

- **TURBO-DRI Cycling Refrigerated Dryers**
- **TURBO-DRI Non-Cycling Refrigerated Dryers**

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### TURBO-DRI Refrigerated Dryer Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Air Capacity @ 38°F PDP</th>
<th>Pressure Drop psig</th>
<th>Absorbed Power (kW)</th>
<th>Max Pressure psig</th>
<th>In/Out Connections</th>
<th>Width in</th>
<th>Depth in</th>
<th>Height in</th>
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**Performance data obtained as per ISO 7183, Table 2, Option A.**

- **A/W** = Air/Water
- **N** = Non-Cycling
- **C/W** = Cycling/Water

For applications with flow requirements outside of the values listed in the table, please contact your local representative for additional information.
We Build Solutions

We do more than build products at Ingersoll Rand. We bring our customers unmatched experience in designing comprehensive compressed air systems that cover virtually any need.

Systems and Support to Keep You Productive

Who better to design, build and maintain today’s process air solutions at peak efficiency than the one of the companies that leads the world in building them? Ingersoll Rand solves process and business problems to help you succeed in today’s global economy through enhanced reliability, energy efficiency and productivity that lower your total cost of ownership. As your fourth utility, compressed air should be as dependable as your electric, water and gas services.

Efficient Solutions Save Energy and Our Environment

As part of Ingersoll Rand’s commitment to increase energy efficiency and reduce climate impact from its product portfolio, TURBO-DRI uses next-generation refrigerants that have a low global warming potential (GWP). These refrigerants can reduce the environmental impact by significantly lowering greenhouse gas (GHG) emissions as compared to traditional refrigerants without compromising performance or safety.

Your Trusted Partner in Compressed Air

Optimize your total Cost of ownership, while maximizing Availability, Reliability and Efficiency throughout the life of your compressed air system with our Lifecycle CARE services.

Efficiency

- System optimization
- Advanced system control
- Air distribution configurations
- Performance upgrades
- System leak assessments

Reliability

- Global technical support
- Comprehensive services
- 24/7 service availability
- Factory-certified technicians
- Rental solutions

Availability

- System health monitoring
- Genuine replacement parts
- System assessments
- Service technology tools
- System risk analysis

Design • Install • Commission • Operate • Maintain • Extend

PackageCARE™ ...eliminate the inconvenience

No matter where your facility is located, Ingersoll Rand is committed to serving you 24 hours a day, seven days a week, and is available to support you with innovative, cost-effective service solutions that will keep you running at peak performance. Let Ingersoll Rand handle the pressures and responsibilities of owning a compressed air system with our signature service contract.
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