CompAir®

HR-Range Externally Heated Desiccant Dryers

Intelligent Air Technology

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Today's modern manufacturing and process industries require a reliable source of clean, dry compressed air. While refrigerated air dryers are capable of reducing the moisture content of compressed air to between 33-39°F, considerable amounts of water vapor remain. Desiccant type dryers are the preferred solution for dewpoints down to -40°F and below.

Types of Desiccant Air Dryers

There are three basic types of desiccant air dryers: heatless, externally heated and blower purge. Each type is a fully automatic, dual tower design that continuously adsorbs water vapor from compressed air. The benefit of the dual tower design is that one tower is drying the compressed air while the other tower is undergoing regeneration. The main difference in the design is how the towers are regenerated.

The HR-Range offers an attractive drying solution as it requires 50% less purge air than a heatless dryer. The lower purge consumption reduces operational costs and can save capital as the need to oversize air compressors is reduced.

Reliable PLC control with text display. Displays continuous status of dryer operation, heater outlet purge temperature, dryer outlet purge temperature and any alarm faults.

High performance non-proprietary switching valves ensure reliable operation. The valves were selected for their reliability under the hot, arduous conditions that heat reactive dryers operate.

- The non-lubricated, fully ported poppet and butterfly valves feature stainless steel internals and soft seats.
- The valves can be maintained without dismantling the piping.
- All switching valves are covered by a 5-year warranty.

External heater design utilizes low watt density incoloy sheath elements for optimum heater life. The external heating of purge air reduces purge loss down to 7% and ensures complete regeneration without heat or dewpoint spikes.

Heater is protected by a unique dual alarm/shutdown system which provides optimum reliability and operational safety.

- Pressure switch alarm prevents the heater from energizing in the event of low purge flow or switching failure alarm.
- Heater over-temperature alarm/shutdown.

Temperature controlled heating and cooling cycles. This standard feature saves energy by matching the heater run time and purge consumption to the actual site conditions.

Dewpoint Dependent Switching (Purge Saver)

Compressed air systems are rarely constant and the dryer regeneration cycle frequency is dependent upon the actual inlet flow, pressure and temperature. Operation under inlet conditions where there is lower than design flow and temperature and/or higher pressure, will result in less regeneration cycles and a maximum reduction in the cost of utilities.

The optional Dewpoint Dependent Switching (DDS) provides a precision demand cycle control which terminates the adsorption (drying) cycle on the basis of the dryer effluent dewpoint performance. This results in the full adsorptive capacity of the desiccant bed being utilized prior to switch over and regeneration.

DDS is built into the dryer control system, with a precision hygrometer producing a continuous display of the outlet dewpoint. The preset contacts of the instrument are utilized to initiate desiccant tower changeover based upon the maximum allowable dewpoint being achieved at the dryer outlet.

DDS Features:

- Digital Dewpoint Display
- Fail-safe operation. In the unlikely event of DDS failure, the dryer will revert back to fixed cycle mode.
- DDS/fixed cycle selector switch allows the dryer to be placed in fixed cycle mode while sensor is serviced.
- Rugged Ceramic Technology Sensor
- Adjustable High Humidity Alarm
- 4-20 mA Output

Standard Features:

- Fully Automatic, Interlocked Operation Controlled by PLC on an 8 Hour Time Cycle
- Electric Heater with Low Watt Density Incoloy Sheath Elements
- Energy Efficient Temperature Controlled Heating and Cooling Cycles
- Separate Low and High Voltage Control Panels (A0820HR and Larger)
- Heater and Hot Air Lines are Insulated to Minimize Heat Loss
- Dryer cycle and heater are totally interlocked with the controls to eliminate the possibility of system malfunction.
- NEMA 4 Electrical Class
- Designed in accordance with ASME VIII, Div. 1 and ASME B31.1. Other approvals upon request.
- Panel Mounted Chamber and Purge Pressure Gauges
- Panel Mounted On/Off Switch & Light
- Panel Mounted Alarm Light
- Text Display:
  - Manual Step Function
  - Digital Heater Air Temperature Indicator
  - Digital Regeneration Chamber Air Temperature Indicator (Heating/Cooling)
  - Heater Failure Alarm
  - Heater Sheath Over Temperature Alarm and Shutdown
  - Switching Failure Alarm
  - Alarm Reset
  - Left/Right Chamber Drying
  - Left/Right Chamber Regenerating
  - Left/Right Chamber Depressurization
  - Left/Right Chamber Repressurization
  - Alarm Contact (Dry)

5-Year Warranty on all Automatic Switching Valves

Technical Data - HR-Range Dryers

Flow Range @ 100 psi g (7 bar g):	up to 3,500 scfm (99 m^3/m)		**Maximum Operating Pressure:**	140 psi g	(9.6 bar g)
			Minimum Operating Pressure:	60 psi g	(4.1 bar g)
Pressure Dewpoint:	-40°F (-40°C) pdp Nominal		**Standard Inlet Temperature:**	100°F	(38°C)
Air Quality Class:	ISO 8573.1 Class 1.2.1 Nominal		**Maximum Inlet Temperature:**	120°F	(49°C)
			Minimum Inlet Temperature:	50°F	(10°C)

Options

- Dewpoint Dependent Switching (DDS)
- Filter and Bypass Piping
- Steam Heater
- Copper or Stainless Steel Tubing
- Specially Engineered Options

Performance and Specifications

Model	Capacity, scfm at 100 psi g and 100°F	Dimensions (inches)			Approx Weight (lbs.)	Inlet Filter	Outlet Filter	Inlet and Outlet Connections
		A	B	C				
A0400HR	400	83	33	64	1,300	CF0120C	CF0120E-HT	2" NPT
A0500HR	500	88	33	64	1,900	CF0198C	CF0198E-HT	2" NPT
A0650HR	650	100	33	64	2,500	CF0198C	CF0198E-HT	2" NPT
A0820HR	820	100	48	62	3,600	CF0258C	CF0258E-HT	3" FLG
A1000HR	1,000	112	48	62	4,800	CF0372C	CF0372E-HT	3" FLG
A1225HR	1,225	124	48	62	5,600	CF0372C	CF0372E-HT	3" FLG
A1500HR	1,500	113	51	71	6,500	CF0600CF	CF0600EF-HT	4" FLG
A1800HR	1,800	127	51	71	7,100	CF0600CF	CF0600EF-HT	4" FLG
A2100HR	2,100	128	51	71	7,900	CF0600CF	CF0600EF-HT	4" FLG
A2500HR	2,500	118	50	84	8,900	CF0780CF	CF0780EF-HT	4" FLG
A3500HR	3,500	139	62	81	10,600	CF1170CF	CF1170EF-HT	6" FLG

NOTES

Capacities given are for 100 psi g and 100°F inlet conditions.

Pressure Dewpoint -40°F.

Operating Pressure Range 60 to 140 psi g.

Air Quality Classification: ISO 8573.1 Class 1.2.1

Intelligent Air Technology

Compressed air solutions for every application

Compressors

Up to 2,750 cfm

1 - 604 hp

Up to 6,000 psi

Lubricated

Rotary Vane

Single-Stage Screw

Two-Stage Screw

Speed Regulated Screw

Piston

Portable

Oil-Free

Two-Stage Screw

Water-Sealed Screw

Piston

Portable

Complete Accessories Program

Filters and Dryers

Cooling Systems

Heat Recovery

Condensate Management

Air Receivers

Multi-Set Controllers

Lubricants

Value Added Services

Air Audit

Performance Reporting

Utility Air

Performance Contracting

Complete Service for Compressed Air Technology

Engineering of Complete Compressor Stations

Local Service Centers

Guaranteed Parts Availability

CompAir

CompAir
PO Box 927
211 East Russell Road
Sidney, Ohio 45365-0927
United States of America

Telephone: (937) 498-2500
Fax: (937) 492-3923

www.CompAirUSA.com
Email: sales@CompAirUSA.com

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