

# Intelligent Air Technology



Compressed air solutions for every application

BP-Range Blower Purge Desiccant Dryers

## 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



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# BP-Range Blower Purge Desiccant Dryers

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 BP-Range offers an attractive drying solution that requires 85% less purge air than heatless dryers and 70% less than externally heated dryers. The lower purge consumption reduces operational costs and can reduce the capital expenditure as the total compressed air system horsepower 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 hot, arduous conditions that heat reactive dryers operate.

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

**Centrifugal Blower**

The reliable and efficient centrifugal blower with TEFC motor eliminates the consumption of purge air during the heating cycle. The centrifugal blower provides quieter operation than positive displacement blowers and allows for compliance with OSHA noise regulations.

**External heater design utilizes low watt density (<20 watts/in2) incoloy sheath elements for optimum heater life.**

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

- Blower flow switch prevents heater from energizing in the event of blower failure.
- Heater Over-Temperature Alarm/Shutdown

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

**Low Pressure Drop**

Generously sized vessels and piping ensures a low 3-5 psi differential pressure. The low pressure drop design allows system pressure to be kept at a minimum.

## 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 Display Dewpoint
- 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
- Reliable, Efficient and Quiet Centrifugal Blower
- Energy Efficient Temperature Controlled Heating and Cooling Cycles
- Separate Low and High Voltage Control Panels
- 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 Enclosures
- Designed in accordance with ASME VIII, Div. 1 and ASME B31.1. Other approvals upon request.
- Panel Mounted Chamber and Blower Pressure Gauges
- Locally Mounted Re-press and Cooling Pressure Gauge
- Panel Mounted On/Off Switch and 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 Re-pressurization
  - Alarm Contact (Dry)

**5-Year Warranty on all Automatic Shifting Valves**

## Technical Data - BP-Range Dryers

<b>Flow Range @ 100 psi g (7 bar g):</b>	up to 12,000 scfm (340 m <sup>3</sup> /m)	<b>Maximum Operating Pressure:</b>	140 psi g (9.6 bar g)
<b>Pressure Dewpoint:</b>	-40°F (-40°C) pdp Nominal	<b>Minimum Operating Pressure:</b>	60 psi g (4.1 bar g)
<b>Air Quality Class:</b>	ISO 8573.1 Class 1.2.1 Nominal	<b>Standard Inlet Temperature:</b>	100°F (38°C)
		<b>Maximum Inlet Temperature:</b>	120°F (49°C)
		<b>Minimum Inlet Temperature:</b>	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				
A1200BP	1,200	113	60	102	5,800	CF0372C	CF0372E-HT	3" NPT
A1600BP	1,600	125	60	102	6,900	CF0600CF	CF0600EF-HT	3" FLG
A1900BP	1,900	119	61	120	7,800	CF0600CF	CF0600EF-HT	4" FLG
A2200BP	2,200	119	61	120	8,400	CF0600CF	CF0600EF-HT	4" FLG
A2700BP	2,700	130	62	120	9,500	CF0780CF	CF0780EF-HT	4" FLG
A3700BP	3,700	140	72	131	13,100	CF1170CF	CF1170EF-HT	6" FLG
A4300BP	4,300	153	72	131	16,300	CF1170CF	CF1170EF-HT	6" FLG
A5600BP	5,600	154	84	156	19,300	CF1950CF	CF1950EF-HT	6" FLG
A7000BP	7,000	160	95	188	25,800	CF1950CF	CF1950EF-HT	8" FLG
A8700BP	8,700	168	95	188	33,000	CF3120CF	CF3120EF-HT	8" FLG
A10500BP	10,500	CF	CF	CF	CF	CF3120CF	CF3120EF-HT	10" FLG
A12000BP	12,000	CF	CF	CF	CF	CF4680CF	CF4680EF-HT	12" 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

CF = Consult Factory