



## DESIGNED

*for economical, trouble-free performance and long-life reliability*

## MANUFACTURED

*with high-quality components and innovative techniques*



## SUPPORTED

*by a world-wide distribution network of compressed air management consultants*

Featuring



and



# PE SERIES EXTERNAL HEAT REGENERATIVE AIR/GAS DRYERS

WORLD LEADERS IN COMPRESSED AIR & GAS SYSTEM ENGINEERING



# Pneumatech's

## Superior Performance and Energy Efficiency

### Advantages

- -40° F constant pressure dew point.
- Minimal pressure drop — less than 3 PSID at rated flow.
- Uninterrupted supply of dry air.
- Reduced operational downtime.
- Requires 50% less purge air than heatless dryers.

### Here's How It Works

The PE Series dryer functions are controlled by a Digital MicroProcessor (**DMP**) based sequence controller featuring Cycle Sight™. The standard cycle is eight hours — four hours of drying time and four hours of regeneration time. While one tower is drying, a portion of the dried air is expanded to near atmospheric pressure and heated. It then passes through the reactivating tower in the reverse direction of the drying flow and is purged into the atmosphere. With Cycle Sight™ maintenance personnel know at a glance exactly where the dryer is in its cycle. PE Series dryers are rated for full standard conditions: 100 PSIG minimum operating pressure and 100° F maximum inlet temperature. Maximum design pressure is 150 PSIG.

### Features

- **DMP** controller with Cycle Sight™ for trouble free operation.
- Cycle Sight™ allows user to view dryer regeneration status, temperatures and dryer sequence time in minutes.
- Two-way, nonlubricated, pneumatically-operated, commercially available, high-performance shifting valves for longer, reliable service.
- Thermostatically-controlled, low-watt density heating element delivers long performance life.
- High capacity heating chamber for maximum heat load.
- Cooling period at the end of the regeneration cycle eliminates dew point spikes.
- Automatically controlled repressurization avoids pressure surges and attrition of the desiccant.

PES-2100 with bypass piping and Cycle Sight™



- Low pressure shut down.
- Relief valve and pressure gauges on each tower.
- Purge adjustment pressure gauge and valve.
- Stainless steel, spring-return check valves on the purge line withstand high heat and eliminate chattering.
- Separate desiccant fill and drain ports on each tower.
- Removable stainless steel desiccant retainer and air diffuser screen for even distribution of air.
- NEMA-4 electrical enclosure — standard.
- Factory-insulated heater chamber and piping to conserve energy and protect personnel.
- Pressure vessels meet ASME and CRN requirements.

### Options

- Pulse Purge Regeneration (PPR) control.
- Dew Point Demand (DPD) control.
- Combination of PPR and DPD is available as one option at considerable cost savings.
- Pressure dew point to -90° F (not available with PPR).
- Failure-to-switch alarm.
- High humidity alarm.
- Moisture indicator.
- Heater failure alarm.
- Other electrical NEMA classes available upon request.
- Numerous filter-mounting and by-pass options available
- Drying and regenerating cycle indicator lamps.
- High-pressure design available on request.
- Alternate steam heater design available on request.
- Aluminum-jacketed insulation available on request.

Option packages are available which combine popular options at a discount.

# Regenerative Dryers

*Pulse Purge and Dew Point Demand for Energy Savings*

## **Introducing the Exclusive Pneumatech DMP Control featuring Cycle Sight™**

**A digital LCD is standard on all regenerative dryers and indicates the following:**

- R/L Tower Heating
- R/L Tower Temp
- Actual Sequence Time
- Failure to Switch Alert (Opt.)
- R/L Tower Cooling
- Low Pressure Alert
- Demand Cycle Indication (Opt.)

**A sequence annunciator uses LEDs to indicate the following:**

- R/L Tower Drying
- R/L Tower Regenerating
- Heater On
- Low Pressure Alarm
- Demand Cycle Indicator (Opt.)
- High Humidity Alarm (Opt.)
- Failure to Switch Alarm (Opt.)

### **DMP Control Benefits:**

- NEMA 4 on all PE dryers
- Timer and Setting Memory
- Time Cycle Advance button
- Open Thermocouple protection



**Pneumatech's newest operator interface for regenerative dryers.**

## **Pulse Purge Regeneration (PPR) - Optional**

Pneumatech's **patented** Pulse Purge Regeneration is a full load control that changes constant purge to pulse purge. Dew Point (-40°F) is maintained by a repeated sequence of short purge periods followed by repressurization and extended hold periods using heated dry air. This operating profile shortens the purge period, resulting in energy savings. Panel mounted hour meters prove performance.

### **Benefits:**

- Maintain -40° F dew point under normal operating conditions.
- Reduce energy costs by up to 50% under fully-loaded conditions.
- Pay-back in 5 to 30 months, depending on dryer size.

## **Dew Point Demand (DPD) - Optional**

Moisture load on the dryer is reduced during periods of low air use, low compressed air temperatures or higher operating pressure.

Pneumatech's Dew Point Demand System senses the actual dew point of the outlet air (not relative humidity of the regenerating tower as most competitors' models do) and delays tower shift-over until the drying bed is saturated to the pre-set dew point level.

### **Benefits:**

- Purge flow stops and external heater shuts off for extended periods under partial load conditions.
- Superior energy savings.
- Extended dryer life.
- Field adjustable.

## **Dual Control with Pulse Purge and Dew Point Demand - Maximize Energy Savings!**

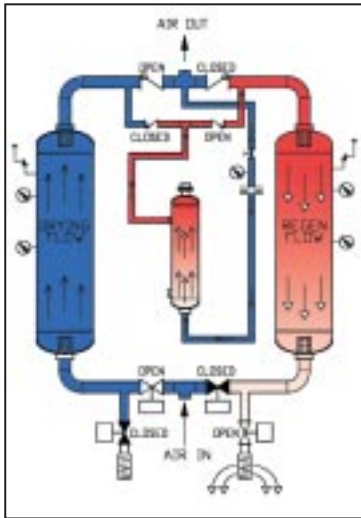
For the most energy efficient drying system on the market today, Pneumatech combines **Pulse Purge Regeneration** with its **Dew Point Demand System** in a packaged option price.

### **Benefits:**

- Constant -40° F pressure dew point under both full and partial load conditions.
- Operating costs nearly as low as a refrigerated dryer.

# SPECIFICATIONS

MODEL * (CMH <sup>3</sup> /HR)	HEATER KW	PURGE FLOW (CMH <sup>3</sup> /HR)	DESICCANT LBS./TOWER (KGS.)	CONN. IN & OUT	DIMENSIONS INCHES (MILLIMETERS) L" x W" x H"	APPROX. SHIP WT. (KGS.)
PE-35 (59.5)	0.75	2.5 (4.3)	24 (10.9)	.75" NPT	32.5 x 20 x 65 (826x508x1651)	240 (108.9)
PE-50 (85.0)	0.75	3.5 (6.0)	35 (15.9)	.75" NPT	33.5 x 20 x 60 (851x508x1524)	270 (122.5)
PE-75 (127.4)	1.25	5.3 (9.0)	54 (24.5)	1" NPT	35 x 24 x 60.5 (889x610x1537)	570 (258.6)
PE-100 (169.9)	1.25	7.0 (11.9)	70 (31.8)	1" NPT	35 x 24 x 74 (889x610x1880)	615 (279.0)
PE-150 (254.9)	2.00	10.5 (17.8)	105 (47.6)	1.5" NPT	46 x 28 x 76 (1168x711x1930)	650 (294.8)
PE-200 (339.8)	2.5	14.0 (23.8)	140 (63.5)	1.5" NPT	48 x 28 x 72 (1219x711x1829)	880 (399.2)
PE-250 (424.8)	3.00	18.0 (30.6)	175 (79.4)	1.5" NPT	48 x 28 x 84 (1219x711x2134)	980 (444.3)
PE-300 (509.8)	3.00	21.0 (35.7)	215 (97.5)	2" NPT	56 x 32 x 78.5 (1422x813x1994)	1260 (571.5)
PE-350 (594.7)	4.00	24.5 (41.6)	250 (113.4)	2" NPT	56 x 32 x 88.5 (1422x813x2248)	1410 (639.6)
PE-400 (679.7)	5.00	28.0 (47.6)	285 (129.3)	2" NPT	58 x 34 x 80.5 (1473x864x2045)	1530 (694.0)
PE-500 (849.6)	6.00	35.0 (59.5)	355 (161.0)	2" NPT	64 x 40 x 81 (1626x1016x2057)	1820 (825.6)
PE-650 (1104.5)	7.5	45.5 (77.3)	450 (204.1)	2" NPT	66 x 41 x 95.5 (1676x1041x2426)	2100 (952.6)
PE-750 (1274.4)	9.0	52.5 (89.2)	520 (235.9)	2.5" FLG	73 x 48 x 102.5 (1854x1219x2604)	3000 (1360.8)
PE-1000 (1699.2)	10.5	70.0 (118.9)	725 (328.9)	2.5" FLG	80 x 48 x 95.5 (2032x1219x2426)	3350 (1519.6)
PE-1250 (2124.0)	15.0	87.5 (148.7)	890 (403.7)	3" FLG	80 x 48 x 105.5 (2032x1219x2680)	3850 (1746.4)
PE-1500 (2548.8)	18.0	105.0 (178.4)	1050 (476.3)	3" FLG	92 x 62 x 89 (2337x1575x2261)	4450 (2018.5)
PE-1800 (3058.6)	24.00	126.0 (214.1)	1250 (567.0)	4" FLG	91 x 62 x 107 (2311x1575x2718)	4800 (2177.3)
PE-2100 (3568.3)	24.00	147.0 (249.8)	1500 (680.4)	4" FLG	97 x 65 x 97 (2464x1651x2464)	5800 (2630.9)
PE-2600 (4417.9)	30.00	182.0 (309.3)	1800 (816.5)	4" FLG	113 x 72 x 115 (2870x1829x2921)	7875 (3572.1)
PE-3100 (5267.5)	35.00	217.0 (368.7)	2200 (997.9)	6" FLG	120 x 74 x 138 (3048x1880x3505)	9230 (4186.7)



## Operating Specifications

**Operating Pressure:** 100 PSIG  
**Operating Temp.** 100° F  
**Maximum Inlet Temp.** 100° F  
**Design Pressure:** 150 PSIG at 450° F (Vessels)  
**Outlet Dew Point:** -40° F  
**Power Supply:** 115V - 1PH - 60Hz (PE-35 to PE-100)  
 460V - 3PH - 60Hz (PE-150 to PE-3100)  
**Electricals:** NEMA 4  
**NEMA Cycle:** 8 hours  
**Desiccant:** Activated Alumina

\* Model number indicates full flow capacity. Capacity ratings in accordance with Compressed Air & Gas Institute (CAGI) Standard No. ADF 200. Capacity ratings based on 100° F (38° C) inlet temp. and 100 PSIG (7.03 Kg/cm<sup>2</sup>) inlet pressure and 100° F (38° C) maximum ambient temp. Maximum design pressure 150 PSIG (10.55 Kg/cm<sup>2</sup>).

**NO SILICONES ARE USED IN DRYER VALVE SEALS OR FILTRATION COMPONENTS.**

## QUALITY ASSURANCE

Pneumatech dryers are fully automatic, self-contained units. Desiccant towers are designed and constructed to the latest ASME code with extra corrosion allowance. Every component is specially selected to meet Pneumatech's strict specifications. All dryers are pretested before shipment. Dryers are shipped integrally mounted on a skid, pre-piped and wired, ready to operate. Dryers 1800 SCFM and larger are shipped with desiccant loose for ease of handling.

Pneumatech's ongoing investment in research and development results in continuous product improvements. Changes in specifications or product designs in connection with any product feature do not entitle the purchaser to corresponding changes, improvements, additions or replacements for equipment previously sold or shipped.

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