

Regenerative Desiccant Dryer

 = "Most Popular"

Features

- Point of use application bringing clean dry air just where you need it.
- Approved to International Standards designed in accordance with ASME VIII Div.1, approved to CSA/UL/CRN and fully CE Marked (PED, EMC, LVD) as standard.
- Simple to Install - flexible installation utilising the multiple in-line inlet & outlet connection ports.
- Compact and Lightweight - can be floor, bench or wall / canopy mounted.
- Very Quiet Operation - noise level less than 70dB(A).
- Can be Installed Almost Anywhere, IP66 / NEMA 4 protection as standard.
- Audible Alarm - indicating service interval for optimal performance.
- Simple & Easy to Maintain - due to the quick release top cap arrangement, which does NOT require the inlet / outlet ports to be disconnected as with traditional systems, maintenance can be achieved in under 15 minutes.

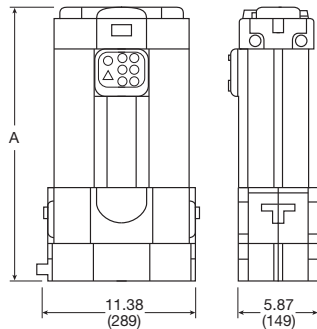
The WDAS is the reliable, cost effective and flexible way to provide clean dry air exactly where needed.



Specifications

Operating Temperature	35°F (1.5°C) Max
Inlet Temperature	122°F (50°C) Max
Operating Pressure	58 to 175 PSIG (4 to 21 bar)
Flow Range	3 SCFM to 20 SCFM @ 100 PSIG (85 L/min to 567 L/min @ 7 bar)
Noise Level (Average)	70dB(A)
Pressure Dewpoint –	Standard -40°F (-40°C) pdp
Standard Electrical Supply	115/1ph/60Hz (Tolerance +/- 10%)
Controls	Electronic Control Timer
Connections	3/8 NPT

Dimensions & Ordering Information



A	Weight (Kg)	SCFM	Part Number	Maintenance Kit
16.6 (422)	24.2 (11)	3	WDAS1	WDASMK1
19.7 (500)	28.7 (13)	5	WDAS2	WDASMK2
24.2 (616)	35.3 (16)	8	WDAS3	WDASMK3
27.2 (692)	39.7 (18)	10	WDAS4	WDASMK4
33.3 (847)	44.1 (20)	13	WDAS5	WDASMK5
35.7 (906)	50.7 (23)	15	WDAS6	WDASMK6
43.2 (1098)	61.7 (28)	20	WDAS7	WDASMK7



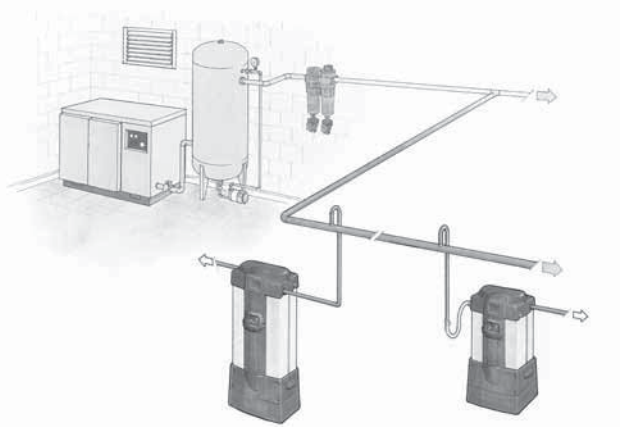
Service Kits

Description	Part Number
Mounting Bracket	
Fixed Wall	WDASMB1
45° Tilt Wall	WDASMB2

Sizing Chart (correction)

Minimum Inlet Pressure										
PSIG	58	73	87	100	116	135	145	160	175	
bar g	4	5	6	7	8	9	10	11	12	
Maximum Inlet Temperature										
95°F (35°C)	0.63	0.75	0.88	1.00	0.97	1.08	1.18	1.29	1.40	
104°F (40°C)	0.61	0.73	0.85	0.97	0.94	1.05	1.14	1.25	1.36	
113°F (45°C)	0.55	0.66	0.77	0.88	0.85	0.95	1.04	1.14	1.23	
122°F (50°C)	0.46	0.55	0.64	0.73	0.71	0.79	0.86	0.94	1.02	

Product Applications



Typical applications:

- Computer Numerical Control (CNC) Machines
- Coordinate Measuring Machines
- Laboratories
- Lasers
- Packaging Machines
- Instrumentation
- Processing Equipment
- Conveying Machines

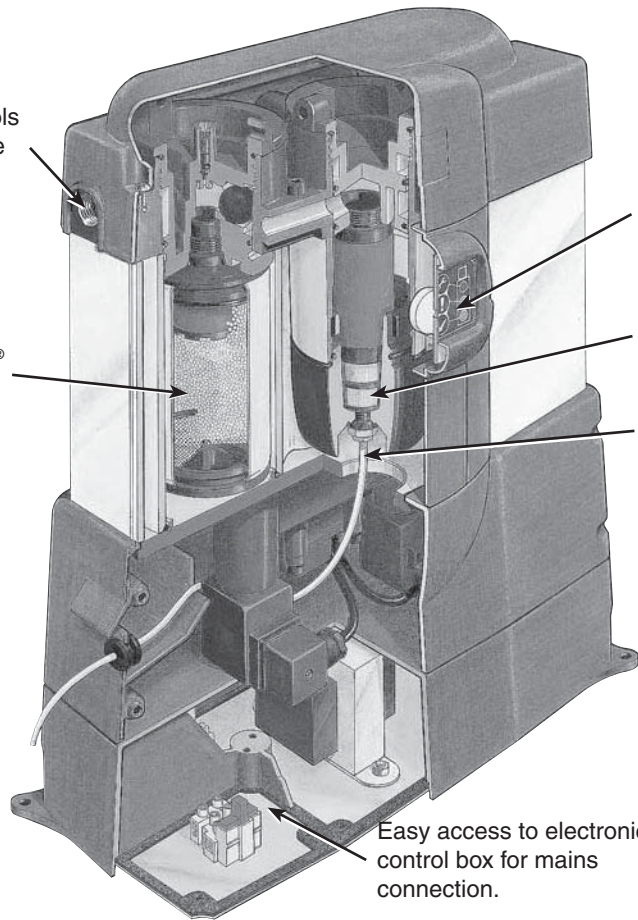
The Regenerative Desiccant Dryers will benefit users who have a specific need for Clean Dry Air (CDA) directly after a compressor, or for a particular application where the air is critical to the operating process or end product.

F

Dryers

ISO7000 inlet & outlet symbols cast into the top cover ensure correct piping installation.

One Combi-Cartridge per column containing DRYFIL® MS desiccant and a 1µm particulate filter.



Electronic display providing high visibility LED indication with an internal audible alarm.

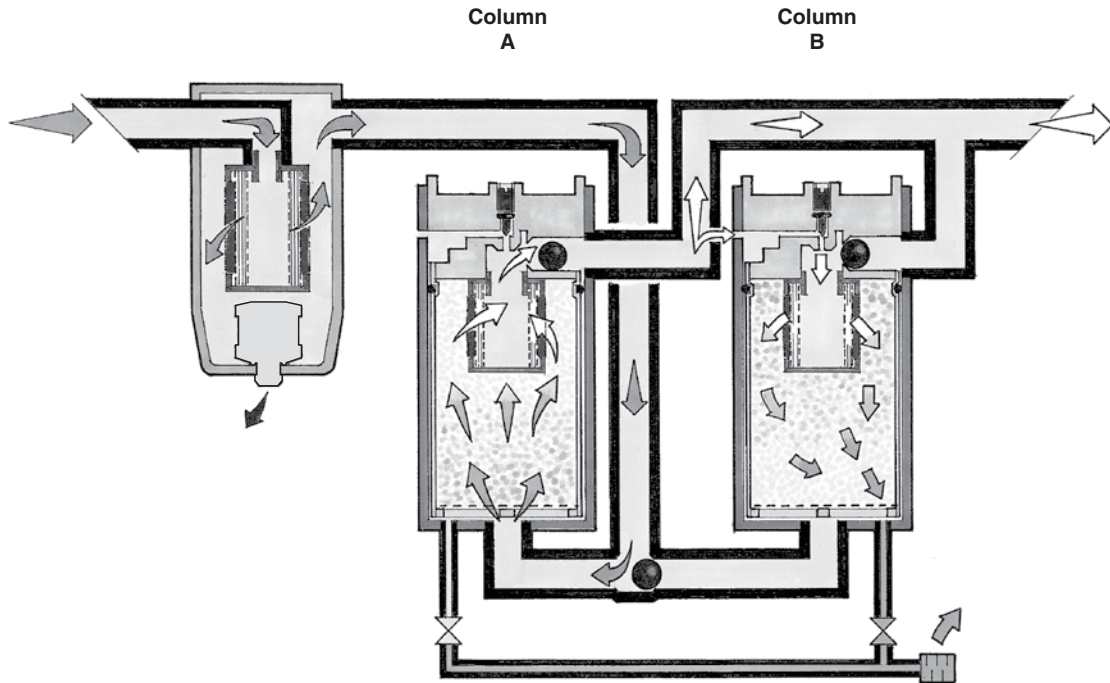
Integral 0.01µm high efficiency filter.

Positive removal of prefilter condensate by piping away for remote collection.

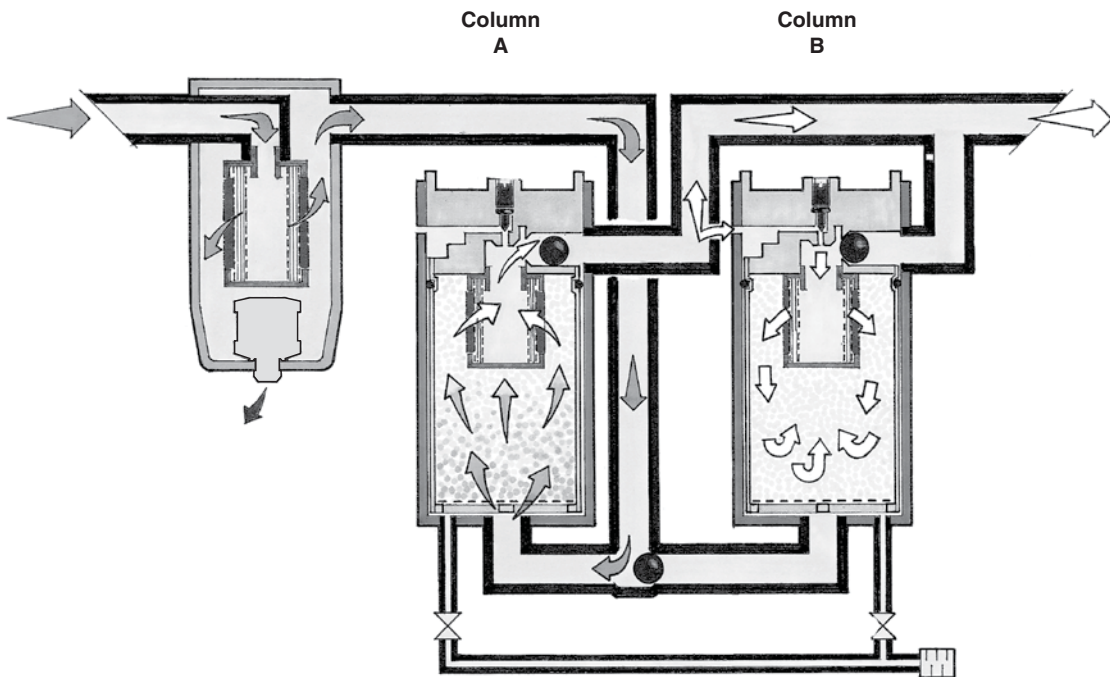
Easy access to electronic control box for mains connection.

- Compressed air enters the integral pre-filter and passes into the left hand chamber (Column A) where the air is dried before passing to the application.

A small amount of dry purge air is used to regenerate the right hand chamber (Column B) which is wet, using the PSA (Pressure Swing Adsorption) method of regeneration, venting the saturated air to atmosphere under pressure. The same regeneration air is also used to “back flush” the integral filter to prolong its working life.



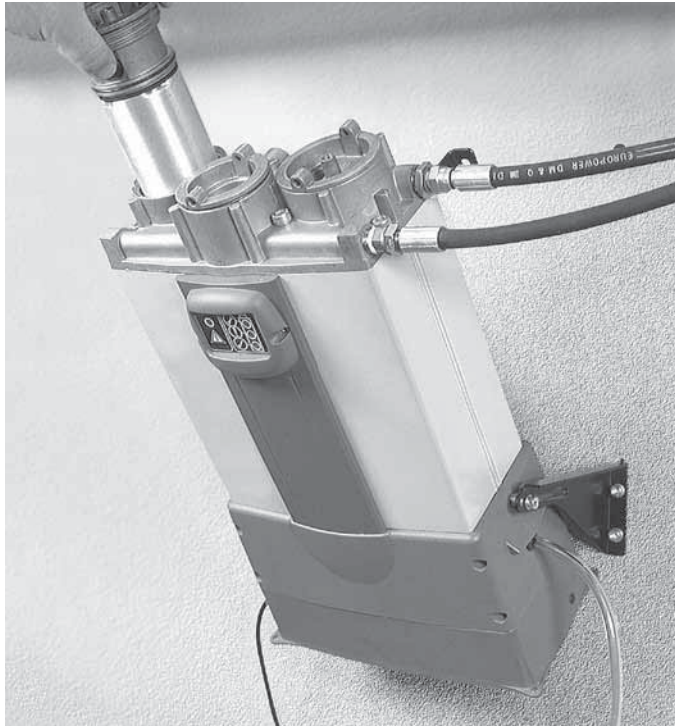
- Prior to changeover, the right hand chamber (Column B) enters repressurization where the exhaust valve is closed to allow pressure to increase. This process ensures a smooth uninterrupted changeover, preventing the loss of any system pressure, before the process repeats itself.



F
Dryers

Optional features

- For totally quiet operation, the regeneration exhaust air can be positively piped away.
- Remote indication provides a warning of the dryers need for servicing. (Audible alarm not included)
- Wall mounting kit for vertically securing the dryer to a wall or canopy.



A 45° tilt, wall mounting kit is also available for vertically securing the dryer to a wall, canopy or inside a customers product where access to the top of the dryer is restricted.

- In conditions of limited access, the electronic control box (base) can be detached and relocated remotely from the dryer.



Electronic control box can be remotely located

Service indication sequence & alarm

During operation, The Regenerative Desiccant Dryers Power On (yellow) LED and Check (Green) LED indicators will illuminate, remaining in this configuration for 11500 hours. At this time, the Warning (Yellow) LED will illuminate and cancel the Check (Green) LED. This signals the user to order service replacement components at the optimum time.

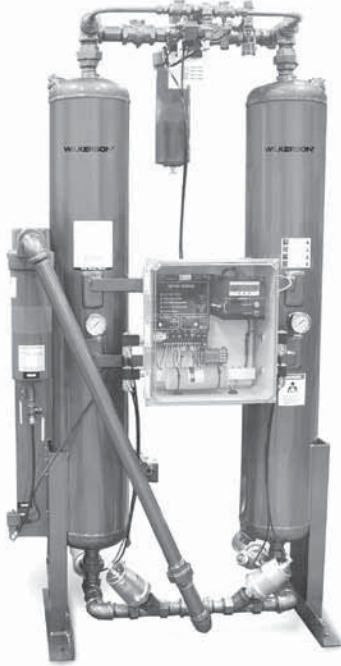
500 hours later (a total of 12000 hours from initial start up) the Service (Red) LED will illuminate and cancel the Warning (Yellow) LED, the Audible Alarm housed inside the display will sound intermittently (every 6 seconds) drawing attention to the need for a service.



Heatless Desiccant Air Dryers WTW Series

= "Most Popular"

Parker WTW Series Heatless Desiccant Air Dryers remove water vapor from compressed air through a process known as pressure swing adsorption. Pressure dewpoints ranging from -40°F (-40°C) standard to -100°F (-70°C) optional are attained by directing the flow of saturated compressed air over a bed of desiccant.



Features

- Pre-Filter and After Filters Included with Dryers
- Solid State Controller
- CycleLoc™ Demand Control
- Variable Cycle Control (Models WTW75 - WTW800 SCFM)
- Purge Flow Indicator
- Purge Flow Regulator (Models WTW75 - WTW800 SCFM)
- Repressurization Circuit (Models WTW75 - WTW800 SCFM)
- Control Air Filter (Models WTW75 - WTW800 SCFM)
- Safety Valves
- Pressure Equalization
- 150 PSIG Design Standard
- Moisture Indicator (Models WTW75 - WTW800 SCFM)

Specifications

Inlet Or Ambient Air Temperature	120°F (49°C) maximum
Operating Pressure	50 PSIG (3.5 bar) minimum
Working Pressure	150 PSIG (10.5 bar) maximum
Pressure Drop At Rated Flow	Less than 5 PSI (0.34 bar)

Options

- DDS Light / DDS (Dewpoint Dependent Switching)

Heatless Desiccant Air Dryers

Capacity CFM @ 100 PSIG (m³/min @ 6.9 bar)	Approximate Purge SCFM (Nm³/min)	Primary Voltage	Part Number	Port Size	Filtration Package Included With Dryer		
					Pre-filter (5µ)	Pre-filter (.01µ)	After-filter (0.5µ)
25 (.70)	4 (.11)	120V/1ph/60Hz	WTW25*	1/2	F18-04-SH00	M18-04-CG00	M18-04-BG00
42 (1.19)	6 (.19)	120V/1ph/60Hz	WTW40*	1/2	F28-04-SH00	M28-04-CG00	M28-04-BG00
60 (1.70)	9 (.25)	120V/1ph/60Hz	WTW55*	3/4	F28-06-SH00	M28-06-CH00	M28-06-BH00
75 (2.13)	11 (.31)	120V/1ph/60Hz	WTW75*	3/4	F39-06-SH00	M39-06-CH00	M39-06-BH00
107 (3.03)	16 (.45)	120V/1ph/60Hz	WTW100*	1	F39-08-SH00	M39-08-CH00	M39-08-BH00
135 (3.82)	20 (.56)	120V/1ph/60Hz	WTW130*	1	F39-08-SH00	M39-08-CH00	M39-08-BH00
200 (5.66)	30 (.84)	120V/1ph/60Hz	WTW200*	1-1/2	F35-0B-F00	M35-0B-F00	M35-0B-FS0
250 (7.07)	38 (1.07)	120V/1ph/60Hz	WTW250*	1-1/2	F35-0B-F00	M35-0B-F00	M35-0B-FS0
300 (8.49)	45 (1.27)	120V/1ph/60Hz	WTW300*	1-1/2	F35-0B-F00	M35-0B-F00	M35-0B-FS0
400 (11.32)	60 (1.69)	120V/1ph/60Hz	WTW400*	2	F35-0C-F00	M35-0C-F00	M35-0C-FS0
500 (14.44)	77 (2.18)	120V/1ph/60Hz	WTW500*	2	F35-0C-F00	M35-0C-F00	M35-0C-FS0
600 (18.40)	98 (2.77)	120V/1ph/60Hz	WTW600*	2	F35-0C-F00	M35-0C-F00	M35-0C-FS0
800 (22.65)	120 (3.39)	120V/1ph/60Hz	WTW800*	2	F35-0C-F00	M35-0C-F00	M35-0C-FS0

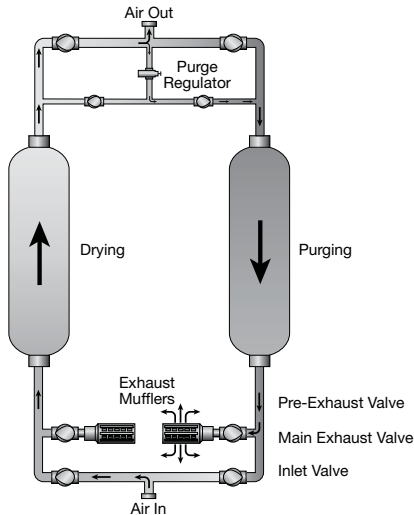
* Options: Dewpoint dependent switching (DDS).

DDS Light includes: energy saving purge cycle control with high humidity alarm and indicator light. When ordering use -DL as suffix.

DDS includes: energy saving purge cycle control with high humidity alarm and digital dewpoint display. When ordering use -DS as suffix.

Parker WTW Series Heatless Desiccant Air Dryers remove water vapor from compressed air through a process known as Pressure Swing Adsorption. Pressure dewpoints ranging from -40°F (-40°C) standard to -100°F (-70°C) optional are attained by directing the flow of saturated compressed air over a bed of desiccant.

This physically tough and chemically inert material is contained in two separate but identical pressure vessels commonly referred to as “dual” or “twin” towers.



As the saturated compressed air flows up through the “on line” tower, its moisture content adheres to the surface of the desiccant. The dry compressed air is then discharged from the chamber into the distribution system.

A solid state controller automatically cycles the flow of compressed air between the towers, while the “on line” tower is drying, the “off line” tower is regenerating. Regeneration, sometimes referred to as purging, is the process by which moisture accumulated during the “on line” cycle is stripped away during the “off line” cycle. As low pressure dry purge air flows gently through the regenerating bed, it attracts the moisture that had accumulated on the surface of the desiccant during the drying cycle and exhausts it to the atmosphere.

To protect the desiccant bed from excess liquid, all Wilkerson WTW Series Heatless Air Dryers are designed to work with the natural pull of gravity. By directing the saturated air into the bottom of the “on line” tower and flowing up through the bed, liquid condensate caused by system upset, is kept away from the desiccant and remains at the bottom of the tower where it can be easily exhausted during the regeneration cycle. Counter flow purging ensures optimum performance by keeping the driest desiccant at the discharge end of the dryer.

Moisture load, velocity, cycle time and contact time determine tower size and the amount of desiccant. To ensure design dewpoint, each tower is carefully sized to allow a minimum of 5.5 seconds of contact. To prevent desiccant dusting and bed fluidization, air flow velocities are kept below 50 feet per minute. The dryer can cycle for years without changing the desiccant.

Heatless dryers in general are the most reliable and least expensive of all desiccant type dryers. Wilkerson WTW Series Heatless Desiccant Air Dryers are the most energy efficient thanks to standard features like, “Variable Cycle control”, Dewpoint Dependent Switching (DDS) and purge flow regulator.

Standard equipment

- Electric 120V/1PH/60Hz
- Solid State Controller
- Centrifugal Compressor Surge Protection (Models WTW75 - WTW800 SCFM)
- System Sequence Annunciator
- CycleLoc™ Demand Control
- Variable Cycle Control (Models WTW75 - WTW800 SCFM)
- Purge Flow Indicator
- Purge Flow Regulator (Models WTW75 - WTW800 SCFM)
- Repressurization Circuit (Models WTW75 - WTW800 SCFM)
- ASME Coded Pressure Vessels (Models WTW100 - WTW800 SCFM)
- Separate Tower Pressure Gauges
- Separate Fill / Drain Ports
- NEMA 4 Controls
- Stainless Steel Diffuser Screen
- Pressure Equalization
- 150 PSIG Design Standard
- Structural Steel Base
- Moisture Indicator (WTW25 - WTW800 SCFM)
- Pre and Post Filtration

Optional equipment

- Dewpoint Dependent Switching (DDS)
- 4-20 mA Output
- All NEMA Classifications
- Pressure to 1,000 PSIG (69 bar)
- High Humidity Alarm
- Fail to Switch Alarm
- Electronic Drain Systems
- -80°F (-62 °C) to -100°F (-70 °C) Dewpoints
- Contacts for Remote Alarms

Variable Cycle Control

Additional energy savings can be achieved by adjusting the amount of purge to the actual moisture load. When demand is expected to be less than maximum, Wilkerson's Variable Cycle Control provides a means to adjust the purge cycle time to reduce the total amount of purge used for regeneration. As a result of less frequent cycling, the desiccant will last longer and the switching valves will require less maintenance. The Variable Cycle Control incorporates a short cycle position that can be employed to provide dewpoints as low as -80°F (-60°C).

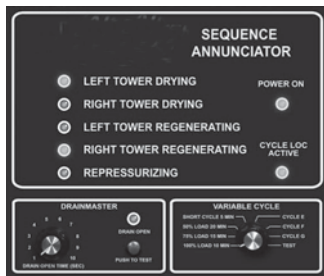
Surge Protection

To accommodate the unique requirements of centrifugal compressors, all Wilkerson desiccant dryers are now programmed with a special anti-surge control. A sequenced timing circuit eliminates potential compressor surge by preventing momentary flow restrictions from occurring at tower switch over.

Total dryer operation is managed by a NEMA 4 automatic control center. The solid state module controls all dryer functions including the Sequence Annunciator.

Sequence Annunciator

Wilkerson's Sequence Annunciator is a solid state visual display panel that shows exactly what is happening in the dryer. The panel lights signal which tower is "on line" drying, and whether the "off line" tower is purging, repressurizing or in Dewpoint Dependent Switching mode. It will also annunciate optional equipment operation and function alarms. The panel is integral with the NEMA 4 Master Control and is conveniently mounted for easy monitoring.



Dewpoint Dependent Switching (Optional)

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 in the cost of utilities.

Dewpoint Dependent Switching (DDS) provides a precision demand cycle control which terminates the adsorption (drying). 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 instruments are utilized to initiate tower changeover.

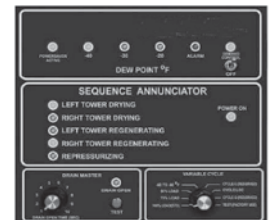
Dewpoint Dependent Switching (DDS)

An Overview

The adsorption capacity of the desiccant within the dryer is essentially constant whereas the moisture loading and the air flow through the dryer are continuously varying as ambient and plant conditions change. In order to maintain the specified air quality downstream of the dryer, it has to be sized for the worst case conditions, namely the lowest pressure, highest flow and highest inlet temperature. These conditions may only occur for a small part of the service life of the dryer, for example, the highest inlet temperatures may only be present during the summer months. This means that the moisture loading on the desiccant beds is below the dryer's capacity for much of its service life (ie quiet periods in between shifts usually have lower air supply requirements). To gain access to this dynamic adsorption capacity, a moisture sensor is fitted which continually monitors the downstream dewpoint. DDS interrupts the normal sequence of the controller, which is only permitted to change over when the desiccant has adsorbed moisture to its capacity, effectively elongating the drying cycle. However, as regeneration has been optimized for a fully laden desiccant bed, this remains of constant duration resulting in a period of zero energy consumption (i.e. purging is discontinued). In this way, energy savings are obtained while maintaining a constant supply of clean dry air to your plant.



DDS



DDS Light

= "Most Popular"

Flow correction factors

Capacities are based upon:

- Pressure Drop At Rated Flow Less Than 5 PSI (0.34 bar)
- Maximum Inlet Air Or Ambient Air Temperature 120°F (49°C)
- Maximum Working Pressure: 150 PSIG (10.5 bar) Standard Units For High Maximum Working Pressure Are Available
- Minimum Operating Pressure: 50 PSIG (3.5 bar)

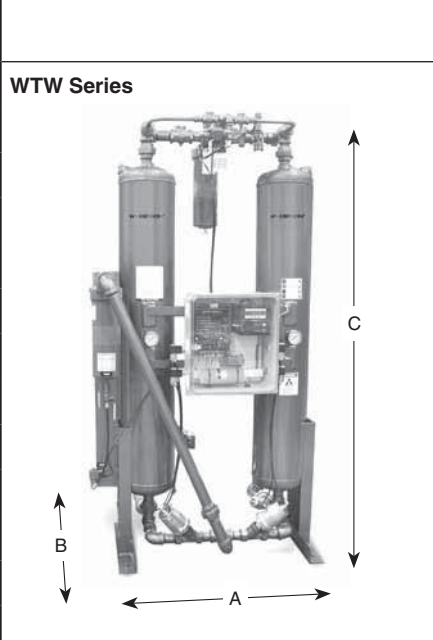
Inlet Air Pressure Correction

PSIG	50	60	70	80	90	100	110	120	130	140	150
bar	3.5	4.1	4.9	5.5	6.2	6.9	7.6	8.3	9.0	9.7	10.3
Factor	.56	.65	.74	.83	.91	1.00	1.09	1.18	1.27	1.37	1.43

Inlet Air Temperature Correction

°F	90	95	100	105	110	115	120
°C	32	35	38	41	43	46	49
Factor	1.35	1.16	1.00	.85	.74	.64	.56

Heatless Desiccant Air Dryers

	Part Number	A (length)	B (width)	C (height)	Weight lbs. (kg)
	WTW25	19 (483)	16 (406)	64 (1626)	156 (71)
	WTW40	21 (533)	17 (432)	48 (1219)	190 (86)
	WTW55	21 (533)	20 (508)	67 (1702)	230 (104)
	WTW75	35 (889)	27 (686)	80 (2032)	384 (174)
	WTW100	35 (889)	27 (686)	80 (2032)	468 (212)
	WTW130	35 (899)	21 (533)	70 (1778)	496 (225)
	WTW200	44 (1118)	28 (711)	78 (1981)	692 (314)
	WTW250	44 (1118)	30 (762)	78 (1981)	776 (352)
	WTW300	44 (1118)	30 (762)	78 (1981)	796 (361)
	WTW400	74 (1880)	41 (1041)	84 (2134)	1626 (738)
	WTW500	74 (1880)	41 (1041)	85 (2159)	1735 (787)
	WTW600	74 (1880)	41 (1041)	86 (2184)	1740 (789)
WTW800	74 (1880)	41 (1041)	91 (2311)	2120 (962)	

Inch (mm)

Service Kits

Element Kits			
Series	5µ	0.01µ	0.5µ
18	FRP-96-639	MTP-96-646	MSP-96-647
28	FRP-96-653	MTP-96-648	MSP-96-649
39	P3NKA00ESE	P3NKA00ESCB	P3KNA00ES9
35	FRP-95-505	MTP-95-502	MSP-95-502

F

Dryers