DESICANT DRYING DEPENDABLE BY DESIGN SPDP SPDPR SPDH SPDHR SPDPHB SPDPRHB





Desiccant dryers are used to remove moisture from compressed air or gas systems, and there are several types with distinct operational principles and applications. The main types of desiccant dryers include:

Heatless Desiccant Dryers: Simplicity Meets Efficiency

Experience unmatched simplicity with our Heatless Desiccant Dryers. Ideal for small to medium-sized systems, these dryers provide a cost-effective solution without compromising on performance. With no need for external heat sources, you benefit from a straightforward design and low initial investment. Perfect for businesses looking to enhance their air quality with minimal complexity. **Energy Efficiency:** Uses 15-20% of dried compressed air for regeneration.

Heated Desiccant Dryers: Optimal Performance for Larger Systems

Upgrade our Heated Desiccant Dryers for enhanced efficiency in larger systems. Utilizing an external heat source, these dryers significantly reduce compressed air consumption, saving you money on operating costs. Achieve superior drying performance with a reliable system designed to manage higher capacities. **Energy Efficiency:** Uses only 7-8% of dried compressed air for regeneration, significantly more efficient than heatless dryers.

Blower Purge Desiccant Dryers: Maximum Efficiency, Minimum Waste

For those who demand the highest efficiency, our Blower Purge Desiccant Dryers are the perfect choice. These advanced systems use ambient air and an external heater, eliminating the need for compressed air in regeneration. Enjoy substantial energy savings and a lower total cost of ownership with a solution tailored for large-scale operations. **Energy Efficiency:** Uses no compressed air for regeneration, leading to maximum energy savings.

Incorporating a dewpoint demand switch in your desiccant dryer system is a smart investment that enhances energy efficiency, reduces operating costs, improves air quality consistency, and extends the life of your equipment. This small but powerful component ensures that your compressed air system operates at peak efficiency, providing reliable, high-quality air for your applications while supporting environmental sustainability.





Reliable Design

Designed and built using the highest quality components like galvanized pipe and stainless steel angle seat valves for longer service intervals than our competition.



Advanced Controller

SPDP Desiccant dryers include the intuitive, feature rich microprocessor controller with full-color, touchscreen display, data trends, high humidity alarm, and spare parts list.



Compact Design

Using innovative design thinking, the SPDP Desiccant dryer line is 30% shorter in height than traditional designs to save valuable plant space around the dryer.



Ease of Use

Built on an open frame with front mounted components makes SPDP Desiccant dryer the ultimate in ease of operation and maintenance.



Wide Standard Range

Desiccant bead

Vessel cutaway

With a wide range up to 2,800 scfm, high pressure models, plus our custom engineering capabilities, we have a perfect solution for every application.





- shown), warm water-saturated air enters the dryer through an open inlet valve and flows upward through the tower, where desiccant extracts and retains water vapor, lowering the dew point.
- 2. Dried air exits the top of the tower and passes through a check valve and particulate post-filter (not shown) before flowing to the air distribution system.
- **3**. A small amount of dry purge air is diverted from the outlet flow of the drying tower; this purge air is regulated by an adjustable bi-directional needle valve and flows into the offline (de-pressurized) regenerating tower. As the purge air

expands to near atmospheric pressure, the dew point is further lowered. The extremely dry purge air flows downward through the regenerating tower, extracting water from the desiccant.

4. Purge air exits the bottom of the regenerating tower and flows through an open purge exhaust valve and vents to the atmosphere through a muffler. After period of time the air flow path through the dryer will reverse, the fully regenerated tower becomes the drying tower and the former drying tower (now water-laden) is regenerated.

SPDP Pro Heatless Desiccant Dryers with basic controller and slanted seat valves

- Standard outlet pressure dew point: -40 °F .
- Electrical power supply: 120 VAC | 50 60Hz
- Required pre-filtration grade SX: .01 µm | Required post-filtration grade FX: 1 µm
- cULus listed controller with NEMA 4 indoor rating
- ASME / CRN coded vessels
- Min. / max. inlet air temperature: 40 °F / 120 °F
- Min. / max. operating pressure: 60 / 150 psig



SPDP Desiccant Dryers	SPDP 80	SPDP 100	SPDP 120	SPDP 160	SPDP 200	SPDP 250
Connection size (NPT)	3⁄4"	1"	1"	1¼"	1¼"	1½"
Flow Rate (scfm)	80	100	120	160	200	250
Dimensions and Weight						
H x W x D (inches)	54 x 37 x 22	64 x 38 x 23	64 x 38 x 23	68 x 40 x 26	68 x 40 x 26	69 x 45 x 30
Empty Weight (lbs)	232	295	296	320	320	413
Total Fill (lbs)	132	167	167	262	262	38/

SPDP Desiccant Dryers	SPDP 300	SPDP 400	SPDP 500	SPDP 650	SPDP 800
Connection size (NPT)	1½"	2"	2"	2½"	2½"
Flow Rate (scfm)	300	400	500	650	800
Dimensions and Weight					
H x W x D (inches)	69 x 45 x 30	71 x 49 x 35	73 x 53 x 36	74 x 57 x 40	71 x 61 x 43
Empty Weight (lbs)	412	594	717	871	925
Total Fill (lbs)	384	539	715	917	1,114

Correction Factors

Operating Pressure (psig)	60	70	80	90	100	110	נ	120	130	140	D	150
Correction Factor	.65	.74	.83	.91	1.00	1.17	2	1.16	1.2	1.2	5	1.29
Inlet Air Temperature °F	90	9	5	100	10	5		110	115			120
Correction Factor	1.07	1.0)4	1.00	.86	5		.73	.64			.55

The correction factors on this page provide an estimation of the performance that can be achieved with the model sizes shown. Sizing must be done by a product specialist, please consult your Sullivan-Palatek authorized distributor



SPDPR Premium Heatless Desiccant Dryer with standard humidity control

- Standard outlet pressure dew point: -40 °F .
- Optional outlet pressure dew point*: -100 °F
- Electrical power supply: 120 VAC | 50 60Hz
- Required pre-filtration grade SX: .01 µm | Required post-filtration grade FX: 1 µm
- cULus listed controller with NEMA 4 indoor rating
- ASME / CRN coded vessels
- Min. / max. inlet air temperature: 40 °F / 120 °F
- Min. / max. operating pressure: 60 / 150 psig



SPDPR Desiccant Dryers 80 - 800

SPDPR Desiccant Dryers 1000 - 2800



.55

SPDP Desiccant Dryers	SPDPR 80	SPDPR 100	SPDPR 120	SPDPR 160	SPDPR 200	SPDPR 250	SPDPR 300	SPDPR 400	SPDPR 500
Connection size (NPT)	3⁄4"	1"	1"	1¼"	1¼"	1½"	1½"	2"	2"
Flow Rate (scfm)	80	100	120	160	200	250	300	400	500
Dimensions and Weight									
H x W x D (inches)	54 x 37 x 22	64 x 38 x 23	64 x 38 x 23	68 x 40 x 26	68 x 40 x 26	69 x 45 x 30	69 x 45 x 30	71 x 49 x 35	73 x 53 x 36
Empty Weight (lbs)	251	314	315	339	339	433	432	613	736
Total Fill (lbs)	132	167	167	262	262	384	384	539	715

SPDP Desiccant Dryers	SPDPR 650	SPDPR 800	SPDPR 1000	SPDPR 1200	SPDPR 1500	SPDPR 1900	SPDPR 2300	SPDPR 2800
Connection size (NPT)	21⁄2"	2½"	2½" Flange	2½" Flange	3" Flange	3" Flange	4" Flange	4" Flange
Flow Rate (scfm)	650	800	1000	1200	1500	1900	2300	2800
Dimensions and Weight								
H x W x D (inches)	74 x 57 x 40	71 x 61 x 43	90 x 66 x 32	91 x 66 x 37	91 x 72 x 44	96 x 72 x 44	103 x 78 x 48	103 x 78 x 48
Empty Weight (lbs)	892	944	1,490	1,792	2,814	2,814	4,168	4,168
Total Fill (lbs)	917	1,114	1,120	1,355	1,840	2,110	3,125	3,125

Correction Factors

Correction Factor

1.07

1.04

Operating Pressure (psig)	60	70	80	90	100	110	120	130	140	150
Correction Factor	.65	.74	.83	.91	1.00	1.12	1.16	1.2	1.25	1.29
Inlet Air Temperature °F	90	9	5	100	10	5	110	115		120

The correction factors on this page provide an estimation of the performance that can be achieved with the model sizes shown. Sizing must be done by a product specialist, please consult your Sullivan-Palatek authorized distributor

.86

.73

.64

1.00







Customization

With a wide standard range up to 3,200 scfm, a variety of options plus our custom engineering capabilities, we have a perfect solution for every application.



Advanced Controller

The intuitive, feature rich controller is standard with full-color, 7" touchscreen display, data trends, spare parts list, and more.



Reliable Design

Designed and built in the U.S.A. with premium components like stainless steel check valves and high performance butterfly valves (flanged models).

Patent-Pending Intelligent Algorithm

Monitors operating conditions to optimize the amount of purge air used for regeneration, yielding maximum performance and greatest possible energy savings for a heated purge type dryer.



Adaptive Heating and Cooling

Electronic proportional-type purge flow control valve optimizes the heating and the cooling purge air used to regenerate the bed.

Moist air flows into the drying chamber and through the vessel. The desiccant adsorbs the moisture [1], delivering dry air downstream.

The saturated offline tower is regenerated using a set amount of purge air, controlled by a variable purge flow control valve, that flows across an electric heating unit [2].

This extremely dry heated air flows down the vessel [3], purging the moisture from the desiccant and exhausting the saturated air to the atmosphere [4].

Once dried, the heated vessel must be cooled before returning to the adsorption phase. The heating element [5] is turned off, and a portion of the dried air from the dryer outlet is diverted to the regenerated vessel to cool the desiccant [6].



cooling phase

SPDH Pro Heated Purge Desiccant Dryers

with external heater

- Standard outlet pressure dew point: -40 °F
- Electrical power supply: XHe 100 250: 120 VAC / 1Ph / 60 Hz
 XHe 300 3200: 460 VAC / 3 Ph / 60 Hz
- Required pre-filtration grade SX: .01 µm | Required post-filtration grade FX: 1 µm
- cUL certified controls with NEMA 4 indoor rating
- Min. / max. inlet air temperature: 40 °F / 120 °F
- Min. / max. ambient temperature: 40 °F / 120 °F
- Min. / max. operating pressure: 60 / 150 psig



SPDH 100 - 600

Threaded

SPDH 800 - 3200 Threaded

SPDH Desiccant Dryers	SPDH 100	SPDH 150	SPDH 200	SPDH 250	SPDH 300	SPDH 400	SPDH 500	SPDH 600
Connection size (NPT)	1"	1¼"	1½"	1½"	1½"	2"	2"	2½"
Flow Rate (scfm)	100	150	200	250	300	400	500	600
Dimensions and Weight								
H x W x D (inches)	67 x 39 x 27	71 x 46 x 29	73 x 52 x 30	73 x 52 x 30	75 x 54 x 30	78 x 61 x 36	79 x 64 x 39	78 x 74 x 42
Empty Weight (lbs)	568	571	581	669	804	994	1072	1331
Total Fill (lbs)	140	210	280	350	420	420	700	840

SPDH Desiccant Dryers	SPDH 800	SPDH 1000	SPDH 1200	SPDH 1500	SPDH 1800	SPDH 2100	SPDH 2500	SPDH 3200
Connection size (Flanged)	2½"	2½"	2½"	3"	3"	4"	4"	6"
Flow Rate (scfm)	800	1000	1200	1500	1800	2100	2500	3200
Dimensions and Weight								
H x W x D (inches)	109 x 69 x 39	111 x 73 x 41	114 x 76 x 42	99 x 88 x 47	116 x 98 x 45	110 x 98 x 47	125 x 97 x 47	119 x 119 x 53
Empty Weight (lbs)	1514	1837	2102	2214	2771	3330	3676	4349
Total Fill (lbs)	1120	1400	1680	2100	2520	2940	3500	4480



SPDHR Premium Heated Purge Desiccant Dryers

with external heater

- Standard outlet pressure dew point: -40 °F .
- Electrical power supply: SPDHR 100 - 250: 120 VAC / 1Ph / 60 Hz SPDHR 100 - 600 SPDHR 300 - 3200: 460 VAC / 3 Ph / 60 Hz
- Required pre-filtration grade SX: .01 µm | Required • post-filtration grade FX: 1 µm
- cUL certified controls with NEMA 4 indoor rating .
- Min. / max. inlet air temperature: 40 °F / 120 °F .
- Min. / max. ambient temperature: 40 °F / 120 °F
- Min. / max. operating pressure: 60 / 150 psig .



Threaded



SPDHR Desiccant Dryers	SPDHR 100	SPDHR 150	SPDHR 200	SPDHR 250	SPDHR 300	SPDHR 400	SPDHR 500	SPDHR 600
Connection size (NPT)	1"	1¼"	1½"	1½"	1½"	2"	2"	2½"
Flow Rate (scfm)	100	150	200	250	300	400	500	600
Dimensions and Weight								
H x W x D (inches)	67 x 39 x 27	71 x 46 x 29	73 x 52 x 30	73 x 52 x 30	75 x 54 x 30	78 x 61 x 36	79 x 64 x 39	78 x 74 x 42
Empty Weight (lbs)	574	576	670	673	808	999	1077	1336
Total Fill (lbs)	140	210	280	350	420	560	700	840

SPDHR Desiccant Dryers	SPDHR 800	SPDHR 1000	SPDHR 1200	SPDHR 1500	SPDHR 1800	SPDHR 2100	SPDHR 2500	SPDHR 3200
Connection size (Flanged)	2½"	2½"	2½"	3"	3"	4"	4"	6"
Flow Rate (scfm)	800	1000	1200	1500	1800	2100	2500	3200
Dimensions and Weight								
H x W x D (inches)	109 x 69 x 39	111 x 73 x 41	114 x 76 x 42	99 x 88 x 47	116 x 98 x 45	110 x 98 x 47	125 x 97 x 47	119 x 119 x 53
Empty Weight (lbs)	1552	1876	2160	2233	2801	3360	3624	4401
Total Fill (lbs)	1120	1400	1680	2100	2520	2940	3500	4480







Customization

With a wide standard range up to 6,000 scfm, a variety of options plus our custom engineering capabilities, we have a perfect solution for every application.



The Intelligent PLC is capable of adjusting all energy consumption autonomously, choosing the most energy efficient mode of operation regardless of where the dryer is located.



Advanced Controller

The intuitive, feature rich controller is standard with full-color, 7" touchscreen display, data trends, spare parts list, free firmware updates, and more.



Reliable Design

Designed and built in the U.S.A. with components like galvanized pipe and premium butterfly valves for longer service intervals than our competition.



Energy Savings

The desiccant line stands alone with its design synergy to yield energy savings of up to 90% compared to conventional regenerative dryers.



- Saturated compressed air enters the open inlet valve and flows upward through the tower where the desiccant adsorbs the water vapor. Dried air passes through the outlet check valve, exiting to the air distribution system.
- 2. The offline tower regenerates when the blower forces ambient air across an in-line heater and pushes it downward through the regenerating tower. This heated, dry air, extracts water from the moisture-laden desiccant, exiting the bottom of the tower through the exhaust valve and is vented to atmosphere.
- 3. The regenerated tower is cooled, initially by turning off the heater and running the blower. A small amount (3% average) of dry purge air is then used to reach required temperature. Premium models with Intelligent mode can reduce the purge consumption even further (0-3%).
- After meeting target cooling temperature, the exhaust valve closes and the vessel is re-pressurized. The air flow through the dryer will then reverse.

SPDPHB Pro Heated Blower Purge Desiccant Dryers with external heated blower and high performance valves

- Standard outlet pressure dew point: -40 °F
- Electrical power supply: 460 VAC / 3 Ph / 60 Hz .
- Required pre-filtration grade SX: .01 µm | Required post-filtration grade FX: 1 µm
- cUL certified controls with NEMA 4 indoor rating
- Min. / max. inlet air temperature: 40 °F / 120 °F
- Min. / max. ambient temperature: 40 °F / 120 °F
- Min. / max. operating pressure: 60 / 150 psig





SPDPHB 1200 SPDPHB 1500 SPDPHB 1800 SPDPHB Desiccant Dryers SPDPHB 800 SPDPHB 1000 Connection size (NPT) 2½" Flange 2½" Flange 3" Flange 3" Flange 4" Flange 1200 1500 1800 Flow Rate (scfm) 800 1000 Dimensions and Weight H x W x D (inches) 110 x 95 x 39 111 x 95 x 39 115 x 106 x 47 99 x 106 x 47 118 x 126 x 54 Empty Weight (lbs) 1,841 2,222 2,417 2,486 3,354 Total Fill (lbs) 2,840 1,260 1,570 1,890 2,370

SPDPHB Desiccant Dryers	SPDPHB 2300	SPDPHB 2800	SPDPHB 3300	SPDPHB 4000	SPDPHB 5000	SPDPHB 6000
Connection size (NPT)	4" Flange	4" Flange	6" Flange	6" Flange	6" Flange	6" Flange
Flow Rate (scfm)	2300	2800	3300	4000	5000	6000
Dimensions and Weight						
H x W x D (inches)	112 x 126 x 54	127 x 126 x 54	121 x 148 x 71	138 x 149 x 71	137 x 192 x 66	136 x 192 x 66
Empty Weight (lbs)	3,951	3,967	4,766	5,507	7,206	8,422
Total Fill (lbs)	3,640	4,390	5,180	6,260	7,820	9,380



SPDPRHB Premium Heated Blower Purge Desiccant Dryers

with environmentally aware and auto-adjusting ecoIntelligence software

- Standard outlet pressure dew point: -40 °F
- Electrical power supply: 460 VAC / 3 Ph / 60 Hz
- Required pre-filtration grade SX: .01 μm | Required post-filtration grade FX: 1 μm
- cUL certified controls with NEMA 4 indoor rating
- Min. / max. inlet air temperature: 40 °F / 120 °F
- Min. / max. ambient temperature: 40 °F / 120 °F
- Min. / max. operating pressure: 60 / 150 psig





SPDPRHB 1500 SPDPRHB Desiccant Dryers **SPDPRHB 800** SPDPRHB 1000 SPDPRHB 1200 SPDPRHB 1800 Connection size (NPT) 2½" Flange 2½" Flange 3" Flange 3" Flange 4" Flange 1000 1200 1500 1800 Flow Rate (scfm) 800 Dimensions and Weight H x W x D (inches) 110 x 95 x 39 111 x 95 x 39 115 x 106 x 47 99 x 106 x 47 118 x 126 x 54 Empty Weight (lbs) 2,357 3,057 1,815 2,104 2,526 Total Fill (lbs) 1,260 1,570 1,890 2,370 2,840

SPDPRHB Desiccant Dryers	SPDPRHB 2300	SPDPRHB 2800	SPDPRHB 3300	SPDPRHB 4000	SPDPRHB 5000	SPDPRHB 6000
Connection size (NPT)	4" Flange	4" Flange	6" Flange	6" Flange	6" Flange	6" Flange
Flow Rate (scfm)	2300	2800	3300	4000	5000	6000
Dimensions and Weight						
H x W x D (inches)	112 x 126 x 54	126 x 126 x 54	121 x 148 x 71	138 x 149 x 71	137 x 192 x 66	136 x 192 x 66
Empty Weight (lbs)	3,698	4,000	5,592	6,468	7,236	7,711
Total Fill (lbs)	3,640	4,390	5,180	6,260	7,820	9,380





Energy Savings

Maximum energy savings is achieved from the patented operation that guarantees true zero air loss.





An integrated sieve eliminates concerns about dirt, Y-strainers, and extra maintenance giving you the highest level of reliability.



Intelligence

The electronic control board and sensor ensure intelligent operation at all times with the ability to automatically clear clogs and debris.

Maintenance

Maintenance time and costs are kept to an absolute minimum with a quick and easy procedure consisting of just one part. You can rely on the global leader in condensate technology trusted by equipment manufacturers than any

Trustworthy You can rely on the global leader in condensate technology trusted by more equipment manufacturers than any other brand.



- **1**. The condensate trickles through the inlet opening and collects in the container.
- 2. Initially, the valve is closed as, via the pilot supply line and the solenoid valve, pressure differential above the membrane is affected. The larger surface area above the membrane results in a high closing force. The membrane seat remains closed and leak-proof.
- 3. When the container is filled with condensate, so that the capacitive level sensor gets a signal at the maximum point, the solenoid valve switches over and the area above the membrane is vented.
- **4.** As a result of the decreasing pressure above the membrane, the membrane lifts off the membrane seat and the overpressure in the housing forces the condensate into the discharge pipe.

SPZL Standard Condensate Drains

for standard pressure

- Automatic zero loss drain •
- Standard Viton® diaphragm •
- UL/CSA approved ٠
- Min. / max. operating temperature: 33 °F / 140 °F ٠
- Standard voltage: ٠
- SPZL Drain 31-33: 95-240 VAC 50/60 Hz /100-125 VDC •
- SPZL Drain 13-16: 115 VAC .
- > Optional voltages: ٠
- SPZL Drain 31-33: 18 72 VDC, 24 48 VAC •
- SPZL Drain 13-16: 24 VAC/DC, 230 VAC 50/60 Hz



Aluminum Housing without dry contact

Aluminum Housing

Depth: 2.9

	*without dry contact	Aluminum Housing	Aluminum Housing				
SPZL Drain	31	32	33	13	14		
Connection Size (NPT)	1 x ½"	1 x ½"	3 x ½"	2 x 1⁄2"	3 x ¾"		
Min. / Max Pressure (psig)	12 / 232	12 / 232	12 / 232	12 / 232	12 / 232		
Compressor Flow Rate (scfm)	100	225	500	1300	5400		
Dryer Flow Rate (scfm)	200	450	1000	2600	10800		
Filter Flow Rate (scfm)	1000	2250	5000	13000	54000		
Max Temperature	140 °F	140°F	140 °F	140 °F	140 °F		
Built in Sieve			✓				
Y Strainer				✓	✓		
List Price	\$241.00	\$327.00	\$577.00	\$856.00	\$1,159.00		
Do NOT use "31" on wet tank "33" is best for wet tank.							

Use poly tube if at all possible. Do not use hard pipe to drain.





- Compressed air line ----- Condensate line



N. 14	ProPure with manual drain with differential pressure indicator	Refrigerated Dryers refrigeration dryer with ZL drain
	ProPure coalescence filter F/A/C/S with ZL drain with differential pressure indicator or filter management	Refrigerated Dryers X desiccant dryer with inlet and dust filter
- IA	ProPure A activated carbon filter Option: oil check indicator	SPZL Drain intelligent zero air loss condensate drains
	ProPure A activated carbon cartridge with oil check indicator	
	ProPure A activated carbon absorber	
]	ProPure W water separator with ZL drain	
Ì	Oil-Water Separator oil-water separation system for dispersed and emulsified condensates	



SPremiere Pure

Air quality classes in accordance with ISO 8573-1:2010

Class	max.	Solid particles, number of particles p	Pressure dew point	Oil content (liquid, aerosol, oil vapor)						
	$0.1\mu m < d \leq 0.5\mu m$	$0.5~\mu m < d \leq 1.0~\mu m$	$1.0~\mu m < d \leq 5.0~\mu m$	°F	mg/m ³					
0										
0	in accordance with the unit operator's or supplier's specifications, stricter requirements than class 1									
1	≤20,000	≤400	≤10	≤-100	≤0.01					
2	≤400,000	≤6,000	≤100	≤-40	≤0.1					
3		≤90,000	≤1,000	≤-4	≤1					
4	-	-	≤10,000	≤37	≤5					
5	-	-	≤100,000	≤45	> 5					
6	-		-	≤50	+					

Measured in accordance with ISO 8573-4, ref. conditions 14.5 psi [a] absolute, 68 °F, 0% RH

Measured in accordance with ISO 8573-3

Measured in accordance with ISO 8573-2 and ISO 8573-5, ref. conditions 14.5 psi [a] absolute, 68 °F, 0% RH

DEPENDABLE BY DESIGN



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