



Pro Dry

Heatless Desiccant Compressed Air Dryers

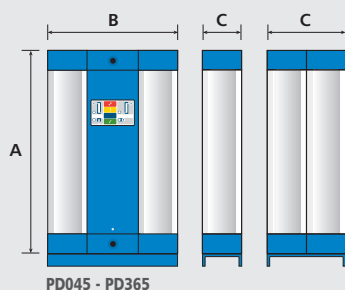
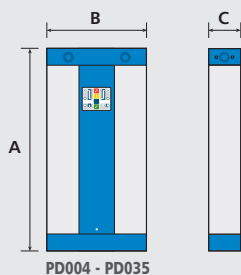
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Technical Specification

dryer model	pipe size"	inlet flow rate			dryer configuration	required filtration	supplied as standard	dimension mm			weight		dimension inch		
		Nm ³ /h	scfm	l/sec				A	B	C	Kg	lb	A	B	C
PD004	3/8"	7	4	1.9	Simplex	A30	✓	445	281	92	13	29	17.5	11	3.6
PD006	3/8"	10	6	2.8	Simplex	A30	✓	504	281	92	14	31	20	11	3.6
PD008	3/8"	14	8	3.8	Simplex	A30	✓	565	281	92	15	33	22	11	3.6
PD010	3/8"	17	10	4.7	Simplex	A30	✓	635	281	92	16.5	36	25	11	3.6
PD015	3/8"	25	15	7.1	Simplex	A30	✓	815	281	92	19.5	43	32	11	3.6
PD025	3/8"	42	25	11.8	Simplex	A30	✓	1065	281	92	24	53	42	11	3.6
PD035	3/8"	59	35	16.5	Simplex	A30	✓	1460	281	92	31	68	57.5	11	3.6
PD045	3/4"	76	45	21.2	Simplex	A55	✗	652	520	164	53	117	28.0	20.5	7
PD055	3/4"	93	55	26.0	Simplex	A55	✗	752	520	164	59	130	31.8	20.5	7
PD065	3/4"	110	65	30.7	Simplex	A55	✗	852	520	164	64	141	36.0	20.5	7
PD085	1"	144	85	40.0	Simplex	A76	✗	1052	520	164	75	165	43.5	20.5	7
PD105	1"	178	105	49.6	Simplex	A76	✗	1362	520	164	91	200	55.8	20.5	7
PD135	1 1/4"	229	135	63.7	Simplex	A105	✗	1562	520	164	102	224	63.5	20.5	7
PD175	1 1/4"	297	175	82.6	Simplex	A106	✗	1962	520	164	123	271	79.5	20.5	7
PD215	1 1/2"	365	215	101.5	Duplex	A153	✗	1362	520	328	172	378	55.8	20.5	13.5
PD275	1 1/2"	467	275	129.8	Duplex	A153	✗	1562	520	328	192	422	63.5	20.5	13.5
PD365	1 1/2"	620	365	172.3	Duplex	A153	✗	1962	520	328	232	510	79.5	20.5	13.5



1. For NPT connections add suffix N e.g. PD008N
2. Betasolutions recommends pre-filtration of X1 and XA grade for models over PD045 to PD365
3. For models PD045 to PD365 the dryer will include a drain adaptor kit to allow assembly of the filter to the dryer. This comprises of 1/4" x 4mm swivel adaptor and tubing.

Specification

Standard pressure dewpoint	-40°C (-40°F)
Optional pressure dewpoint	-70°C (-100°F)
Minimum working pressure	4 barg (58 psig)
Maximum working pressure	16 barg (232 psig)
Power supply	12VDC to 24VDC or 100VAC to 240VAC
Minimum inlet temperature	1.5°C (35°F)
Maximum inlet temperature	50°C (122°F)
Minimum ambient temperature	5°C (41°F)

Dryer correction factors

Operating pressure barg (psig)	4 (58)	5 (72)	6 (87)	7 (100)	8 (116)	9 (130)	10 (145)	11 (160)	12 (174)	13 (189)	14 (203)	15 (218)	16 (232)
Pressure correction factor (PCF)*	0.62	0.75	0.87	1	1.12	1.25	1.37	1.5	1.62	1.75	1.87	2.0	2.12
Temperature °C (°F)	20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)						
Temp. correction factor (TCF)	1.07	1.06	1.04	1.00	0.88	0.78	0.55						
Dewpoint °C (°F)	-40 (-40)	-70 (-100)											
Dewpoint correction factor (DCF)	1	0.7											

*Always use the pressure correction factor (PCF) closest to the actual inlet pressure condition

Selection

Selection and ordering information

To select the Pro Dry suitable for your application, the following information is required: -

Minimum inlet pressure	Maximum inlet flow
Maximum inlet temperature	Required dewpoint

With the above information, follow the selection example below: -

Compressor outlet pressure @ 7 barg (100 psig) and dryer inlet flow rate @ 41 scfm (70 Nm ³ /h - 19 l/s)	
Dryer inlet pressure, after pipework, valves, receiver and filtration @ 6.3 barg (91 psig)	
Dryer inlet temperature	25°C (77°F)
Outlet dewpoint	-70°C (-100°F)
Pressure correction factor (PCF)	0.9
Temperature correction factor (TCF)	1.06
Dew point correction factor (DCF)	0.7

$$\text{Corrected dryer flow rate} = \frac{\text{Compressor flow rate}}{\text{PCF} \times \text{TCF} \times \text{DCF}} = \frac{41}{0.9 \times 1.06 \times 0.7} = 61 \text{ scfm (104 Nm}^3\text{/h - 29 l/s)}$$

As the above dryer sizing table, the correct dryer for this application, with a corrected flow rate of 61 scfm (104 Nm³/h - 29 l/s) is a PD065.



Pro Dry service kit 12,000 hours (or 2 years)

Dryer	Description	Kit Number
PD004	Pro Dry desiccant cartridge x 2	PDC004 - 12,000
PD006	Pro Dry desiccant cartridge x 2	PDC006 - 12,000
PD008	Pro Dry desiccant cartridge x 2	PDC008 - 12,000
PD010	Pro Dry desiccant cartridge x 2	PDC010 - 12,000
PD015	Pro Dry desiccant cartridge x 2	PDC015 - 12,000
PD025	Pro Dry desiccant cartridge x 2	PDC025 - 12,000
PD035	Pro Dry desiccant cartridge x 2	PDC035 - 12,000
PD045	Pro Dry desiccant cartridge x 2	PDC045 - 12,000
PD055	Pro Dry desiccant cartridge x 2	PDC055 - 12,000
PD065	Pro Dry desiccant cartridge x 2	PDC065 - 12,000
PD085	Pro Dry desiccant cartridge x 2	PDC085 - 12,000
PD105	Pro Dry desiccant cartridge x 4	PDC105 - 12,000
PD135	Pro Dry desiccant cartridge x 4	PDC135 - 12,000
PD175	Pro Dry desiccant cartridge x 4	PDC175 - 12,000
PD215	Pro Dry desiccant cartridge x 8	PDC215 - 12,000
PD275	Pro Dry desiccant cartridge x 8	PDC275 - 12,000
PD365	Pro Dry desiccant cartridge x 8	PDC365 - 12,000

12,000 hour service kit includes Desiccant cartridges, spare pre-filter element, pack of sealing 'O' rings and washers, instruction leaflet

Pro Dry VALVE service kit

Dryer	Kit Number
PD004	VSKS01
PD006	VSKS01
PD008	VSKS01
PD010	VSKS01
PD015	VSKS01
PD025	VSKS01
PD035	VSKS01
PD045	PDVSKS01
PD055	PDVSKS01
PD065	PDVSKS01
PD085	PDVSKS01
PD105	PDVSKS01
PD135	PDVSKS01
PD175	PDVSKS01
PD215	PDVSKD01
PD275	PDVSKD01
PD365	PDVSKD01

Valve service kit includes exhaust valve diaphragm, exhaust valve solenoids, shuttle valve and 'O' rings, extrusion / valve block 'O' rings

Technical notes - Pro Dry

- All flow rates are based on 7.0 barg (100 psig), at the dryer inlet and not at the compressor. It is important to apply correction factors to ensure the specified dryer performance.
- Betasolutions recommends that an R1 dust filter should be used in addition to the integral 1 micron dust filter located within the desiccant cartridge.
- Betasolutions highly recommend that a WS Centrifugal Water Separator be used in conjunction with the standard Pro Dry package.
- Betasolutions supply a full range of additional filters and accessories to suit other applications
- Models PD045 - PD365 have mounting holes provided on skid base.

Dryer accessories and options

Dryer	Description	Part Number
PD004-PD035	Foot mounting bracket	WKN01805
	Wall mounting bracket	WKN01804
All models	Energy Management, monitoring & diagnostics	PDFS01