

PoleStar Smart

Refrigeration dryers - 60Hz version
High Efficiency & Energy Saving



PoleStar Smart refrigeration dryers have been designed for the efficient removal of water from compressed air.

Equipped with the patented SmartSave energy-saving feature PoleStar Smart continually and precisely modulates its mode of operation to meet prevailing operating conditions, resulting in accurate dew-point monitoring with corresponding aligned power consumption.

Furthermore, indirect cost savings, reducing the “hidden costs” of pressure drop are maximised by the use of a patented “all-in-one” aluminium heat-exchanger-SmartPack. Here the provision of large open channels and no-interconnecting pipe-work enables the free, un-interrupted passage of air through the dryer, resulting in pressure drops second to none.



Product Features:

- Suitable for all compressed air applications
- Suitable for all compressor types, including variable flow
- The most energy efficient compressed air fridge dryer
- Low pressure drops for lower operational costs
- Cost of ownership reduced
- Significantly contributes to the indirect reduction of CO₂ into the environment

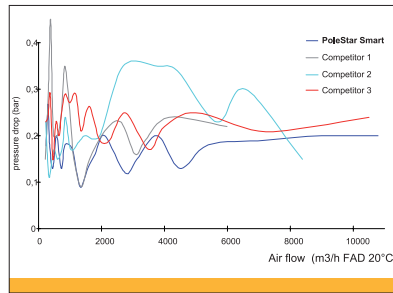
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The **SmartPack** exchanger (patent-pending) is an extremely robust, all-in-one aluminium module with no connecting pipe-work. It offers one of the lowest pressure drop performances in it's class and in terms of energy saving acts as an internal "thermal-mass cold-store," utilising un-used refrigeration energy during periods of variable load.



PoleStar Smart® features exclusively **compliant scroll compressors**, offering energy savings of up to 20% compared to other systems.

Resistant to liquid refrigerant returns and with 50% less moving parts than similar technologies, these compressors are extremely reliable and very robust. Low vibration levels also serve to prolong the refrigeration circuit life.



Maximum dew point performance is assured by:

- large air channels leading to low air flow velocity
- an oversized demister separator offering optimum condensate separation even at partial air flows



An additional standard feature on models from PST130 upwards is **SmartControl**.

This multi-functional display provides accurate digital dewpoint reading and visual indication of the coded alarm monitoring of the dryer.

SmartControl additionally manages the **SmartSave** feature (patent pending), informing the user when the dryer is operating in energy saving mode. A display indicates the average percentage savings on energy being achieved. Maintenance intervals are periodically displayed whilst the provision of a status report (indicating the last eight events) and hours-run meter simplify service.

Standard voltage-free contacts, MODBUS compatible supervisor (no gateway required) and an optional RS485 serial card connection allow remote monitoring of the dryer.

Low Pressure Drops

Every 140mbar of pressure drop adds approx. 1% to the cost of electrical power required by the compressor

- a dew point sensor positioned in the air flow to ensure optimum control.
- Thermal Shield Insulation (TSI) contributing to very low overall power consumption.

An integral zero-air loss drain **SmartDrainer** is fitted as standard to PST130 and upwards.

A large capacity condensate drainage chamber is an integral part of the heat exchanger. The zero-air-loss drain is synchronised to open automatically on sensing the level of condensate present in the drainage chamber. This valve closes again before any compressed air can escape. In the unlikely event of a fault during drain operation, self-diagnostic troubleshooting software signals an alarm and the drain continues to function thereafter in timed mode, returning to zero-air-loss operation when the fault has been rectified.



Technical data - 60Hz version

Model 60Hz	technical data				dimensions (mm)			weight (kg)	Pre filter	Post filter
	air flow		abs. power	air	width	height	depth			
	m ³ /h	m ³ /min	kW	conec.	A	B	C			
PST130	780	13	1,22	2"	706	1.064	1.046	145	HFN135Q	HFN135P
PST150	900	15	1,37	2"	706	1.064	1.046	145	HFN175Q	HFN175P
PST175	1.050	17,5	1,76	2"	706	1.064	1.046	155	HFN175Q	HFN175P
PST250	1500	25	2,39	2 1/2"	806	1.316	1.166	230	HFN300Q	HFN300P
PST280	1.680	28	2,63	2 1/2"	806	1.316	1.166	240	HFN300Q	HFN300P
PST340	2.040	34	2,9	2 1/2"	806	1.316	1.166	245	HFN370Q	HFN370P
PST390	2.340	39	3,68	2 1/2"	806	1.316	1.166	250	NFF610Q	NFF610P
PST490	2.940	49	3,77	4"	1.007	1.690	1.097	470	NFF610Q	NFF610P
PST560	3.360	56	4,25	4"	1.007	1.723	1.097	490	NFF610Q	NFF610P
PST700	4.200	70	5,56	6"	1.007	1.722	1.657	580	NFF750Q	NFF750P
PST840	5.040	84	6,87	6"	1.007	1.722	1.657	670	NFF1000Q	NFF1000P
PST1020	6.120	102	9,15	6"	1.007	1.722	1.657	690	NFF1510Q	NFF1510P
PST1320	7.920	132	10,71	6"	1.007	2.048	1.657	830	NFF1510Q	NFF1510P
PST1650	9.900	165	14,82	8"	1.007	2.208	2.257	1.100	NFF2000Q	NFF2000P
PST1980	11.880	198	19,15	8"	1.007	2.208	2.257	1.190	NFF2000Q	NFF2000P

Performances refer to air-cooled model with air at FAD 20°C / 1 bar A, and at the following working conditions: air suction 25°C / 60%RH, 7 barg working pressure, 25°C cooling air temperature, 35°C compressed air inlet temperature. All indicated data is according to DIN ISO 7183. All models supplied with refrigerant R407C; PST130-1980 are for operation up to 14 barg.

Power supply: as standard, 460V/3Ph/60Hz for PST130-1980. PST130-280 also with 230V/3Ph/60Hz). Contact Parker Sales Companies for further details, price as per standard voltage. Drain: PST130-1980 supplied with electronic zero loss integral drain, which can be configured to work in timed mode (see user manual).

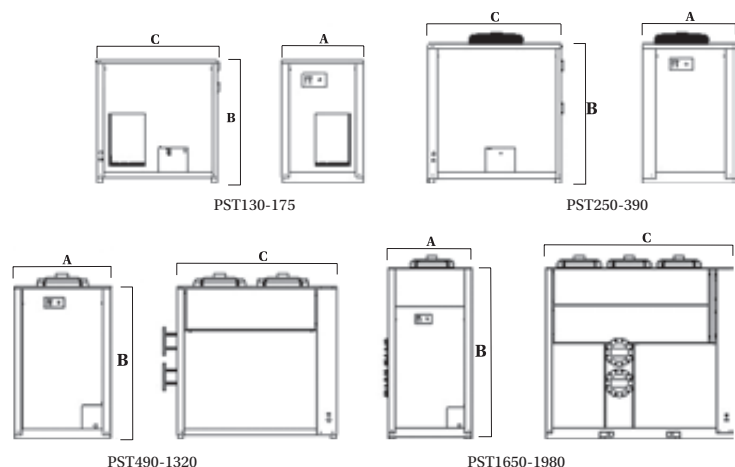
Water-cooled models available from PST250. Supplied with electronic zero loss integral drain, which can be configured to work in timed mode (see user manual); PST250-280 water cooled also available with 230V/ 3Ph / 60Hz.

Air flow correction factors for differing working conditions

A) Working pressure correction factors	barg	3	4	5	6	7	8	9	10	11	12	13	14
		0,74	0,83	0,9	0,96	1	1,04	1,07	1,08	1,11	1,12	1,14	1,15
B) Air inlet temperature correction factors	°C	30	35	40	45	50	55	60	65				
		1,23	1	0,84	0,7	0,59	0,5	0,45	0,4				
C) Ambient temperature* correction factors	°C	20	25	30	35	40	45	50					
		1,06	1	0,95	0,9	0,83	0,77	0,72					
D) Pressure dew point correction factors	°C	3	5	7	10								
		1	1,10	1,21	1,40								

To obtain the actual air flow multiply the nominal air flow by the above correction factors (ie. Air flow x A x B x C x D). PoleStar Smart® can operate up to an ambient temperature of 50°C and inlet temperature of 65°C. The above correction factors are approximate: for a precise selection always refer to the software selection program or contact your Parker Hiross partner.

*Only for air-cooled models.



Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BG – Bulgaria, Sofia
Tel: +359 2 980 1344
parker.bulgaria@parker.com

BY – Belarus, Minsk
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

CH – Switzerland, Etoy
Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budaörs
Tel: +36 23 885 470
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty
Tel: +7 7273 561 000
parker.easteurope@parker.com

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Asker
Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

US – USA, Cleveland
Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

CN – China, Shanghai
Tel: +86 21 2899 5000

HK – Hong Kong
Tel: +852 2428 8008

IN – India, Mumbai
Tel: +91 22 6513 7081-85

JP – Japan, Tokyo
Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

SG – Singapore
Tel: +65 6887 6300

TH – Thailand, Bangkok
Tel: +662 186 7000

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos
Tel: +55 800 727 5374

CL – Chile, Santiago
Tel: +56 2 623 1216

MX – Mexico, Toluca
Tel: +52 72 2275 4200