



# Energy Saving Refrigerated Air Dryers

HES SERIES 800 to 3000 scfm (1357 to 5097 nm<sup>3</sup>/h)





## Where Ideas Become Solutions

SPX is a place where innovation is valued, and the real needs of business are understood. We transform ideas into powerful solutions to help our customers meet their goals, overcome day-to-day challenges and thrive in a complex, always-changing marketplace.

Utilizing the latest technological advancements, HES Series refrigerated dryers offer a new way of thinking and an innovative approach to efficiently treat compressed air.

### **SAVING ENERGY IS A GLOBAL PRIORITY**

Compressed air users world-wide are integrating energy management best practices into their operations, with the goal of reducing power consumption and lowering their energy costs.

Demonstrating our commitment to continuous development of sustainable solutions, the HES Series significantly lowers total cost of operation by consuming electrical power (kWh) in direct proportion to real-time demand.

### **MEETING THE NEEDS OF TODAY AND TOMORROW**

We believe our customers are partners in the innovation process. Insight is continually gathered to understand the end-user experience of today and gain vision to the opportunities of tomorrow.

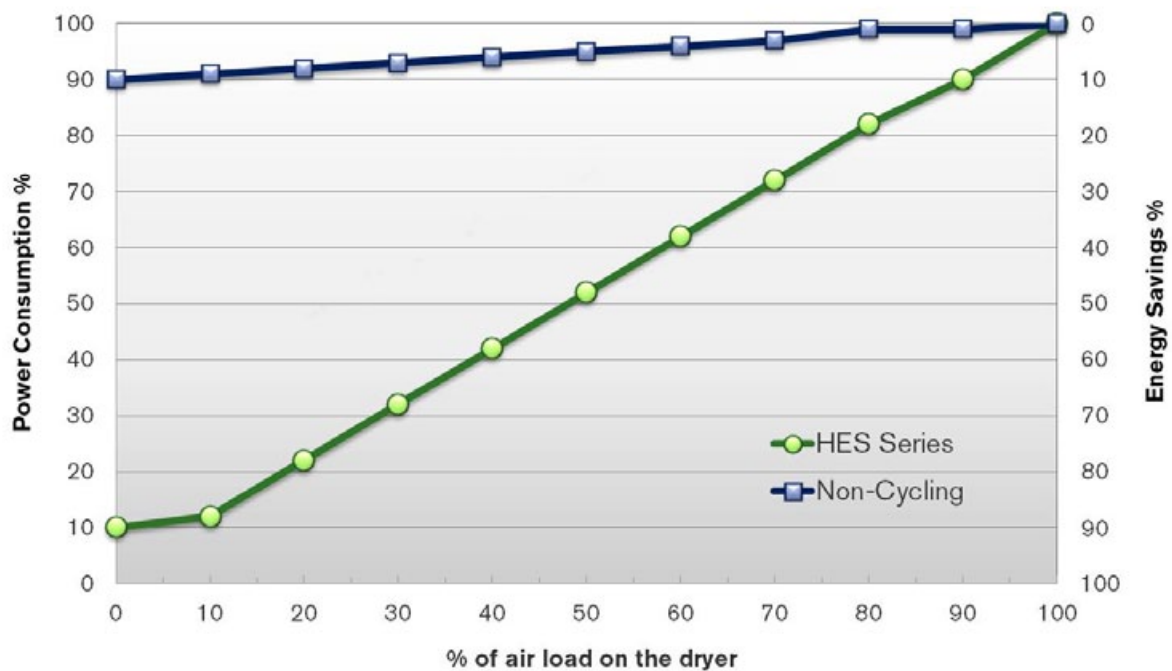
# Measurable Energy Savings

In a typical manufacturing facility, up to 30% of electricity consumed is for generating and treating compressed air. To reduce total cost of operation and qualify for utility company incentive programs, proper air treatment equipment selection and application is required.

## LOAD MATCHING PERFORMANCE

Compressed air load profiles in most manufacturing facilities fluctuate. The HES Series provides cost-effective energy savings by matching electrical power consumed in direct proportion to incoming air demand. Near linear load matching is achieved from 0 to 100%.

Digital scroll refrigerant compressors precisely match inlet heat load on the dryer with the required input power...No more...No less.



## “REBATE READY”

The table below projects annualized cost savings of HES Series refrigerated air dryers as compared to non-cycling designs.

Average Air Flow	Energy Consumption	HES Series Energy Savings per Year by Model							
		800	1000	1250	1500	1750	2000	2500	3000
100%	100%	-	-	-	-	-	-	-	-
75%	78%	\$1,275	\$1,604	\$1,210	\$261	\$1,073	\$804	\$1,065	\$1,408
50%	54%	\$1,907	\$2,280	\$2,189	\$1,690	\$2,729	\$2,704	\$3,330	\$4,373
25%	33%	\$2,426	\$2,835	\$3,002	\$2,893	\$4,112	\$4,298	\$5,226	\$6,855
0%	9%	\$3,058	\$3,512	\$3,981	\$4,323	\$5,768	\$6,200	\$7,490	\$9,820

Operating Conditions: 100°F (37°C) inlet and ambient temperature, 100 psig (6.9 barg) operating pressure, 8,760 working hours per year, \$ 0.10 / kWh energy cost.

# Innovation By Design

## SUSTAINABLE ENERGY SAVING SOLUTIONS

To maximize full energy savings potential, refrigeration systems are designed with digital scroll compressors that load and unload based on real-time air load demand.

- Less energy is consumed during periods of unloading, delivering proportional energy savings
- Rugged design is compliant to ingestion of liquid and solids, enables non-compressible substances to pass freely through the compressor
- All models utilize environmentally friendly R404A refrigerant, recognized globally as an efficient and safe HFC solution

## ENGINEERED FOR PREMIUM PERFORMANCE

Compressed air is chilled to the specified pressure dew point in stainless steel brazed plate heat exchangers, offering corrosion resistance for the life of the dryer.

- Each plate is press formed with chevron patterns, creating turbulent flow, providing a self cleaning effect
- Smooth, non-fouling stainless steel surfaces promote low resistance to flow, improving system efficiency
- Heat exchangers are fully encapsulated in non-degrading insulation to maintain thermal efficiency

## ADVANCED CABINET DESIGN

The unique cabinet construction enables 360-degree access to critical components.

- Cam lock panel removal provides trouble-free entry for routine maintenance
- Baked polyester, powder coated cabinets withstand harsh environments and maintain long-term visual appeal
- Inlet and outlet connections are located on top of the dryer, promoting ease of installation



## CLEAN, DRY, FILTERED AIR

HES series dryers are self-contained air treatment stations, furnished with integrated high performance filtration.

- Meets ISO 8573-1: 2010 Air Quality Class standards for particle removal, pressure dew point and remaining oil
- All dryers are equipped with two stage separation to remove solid particulate 3.0 micron and larger, with remaining oil content of 5.0 mg/m<sup>3</sup>
  - » Delivers ISO Quality Class 3- Solids; Class 4- Oil
- Optional cold coalescing filters capture solid particulate 0.01 micron and larger, with remaining oil content of < 0.01 mg/m<sup>3</sup>
  - » Delivers ISO Quality Class 1- Solids; Class 1- Oil

## SYSTEM PROTECTION ON DEMAND

No-air-loss, level actuated demand drains efficiently remove condensate from the system, without loss of compressed air.

- Condensate drain lines terminate at discharge connections conveniently located on the side of the dryer
- Drain assembly is equipped with an isolation valve and strainer to optimize service
- Push to test button located on the operator interface enhances system reliability

## BEST-IN-CLASS WARRANTY

As an extra measure of protection, Hankison offers an extended warranty beyond the standard 2 year coverage.

- Purchase an HES maintenance kit on an annual basis and receive 3 additional years of protection, parts and labor
- Register your dryer online and receive email reminders when it's time for annual maintenance at [www.spx.com/hankison](http://www.spx.com/hankison)



## Customer Driven Solutions

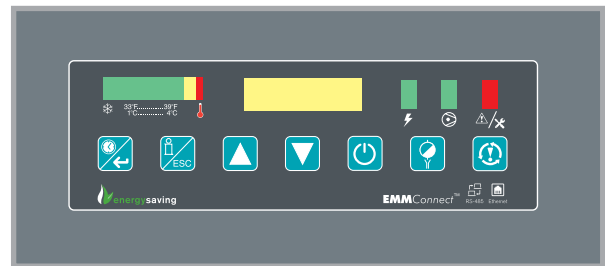
### ENERGY MANAGEMENT MONITOR (EMMCONNECT™)

HES Series dryers are equipped with EMMConnect™ controls to monitor system performance, manage operation of the digital scroll compressor and track energy savings.

The operator interface features a membrane touch panel, with diagnostics communicated in a user-friendly text display. A bank of light emitting diodes operate sequentially providing indication of dew point temperature in real-time.

#### Advanced, User Friendly Control

- Easy to read display provides continuous operating feedback
- Service reminders for ease of regularly scheduled maintenance
- Multiple alarms and safeties protect your investment
- Energy saving control for more efficient operation
- Event log stores critical data for the operating life of the machine
- Data logging continuously stores 60 days of operating parameters
- Ethernet communication capability for web-based remote monitoring
- RS485 industrial communication protocol for remote monitoring capability
- Master scheduler automatically controls preferred timing of dryer operation
- Multiple Language capability for global application





# Product Specifications

Maximum Working Pressure psig (barg)	Minimum Working Pressure psig (barg)	Maximum Inlet Air Temperature °F (°C)	Minimum Inlet Air Temperature °F (°C)	Maximum Ambient Air Temperature °F (°C)	Minimum Ambient Air Temperature °F (°C)
232 (16)	30 (2)	130 (54)	40 (4)	110 (43)	40 (4)

Model	Rated Flow <sup>1</sup>		Voltages <sup>2</sup> V/ph/Hz	Power <sup>3</sup> kW	Inlet/Outlet Connections <sup>4</sup>	Dimensions			Weight lbs
	scfm	nm <sup>3</sup> /h				H	W in	D	
<b>HES800</b>	800	1359	Standard: 380-420/3/50 460/3/60  Optional: 230/3/60 575/3/60	4.71	3" FLG	85	49	41	1124
<b>HES1000</b>	1000	1699		6.73	3" FLG	85	49	41	1146
<b>HES1250</b>	1250	2124		7.40	4" FLG	85	49	51	1521
<b>HES1500</b>	1500	2549		9.80	4" FLG	85	49	51	1563
<b>HES1750</b>	1750	2973		13.00	6" FLG	85	55	60	1940
<b>HES2000</b>	2000	3398		14.90	6" FLG	85	55	60	1997
<b>HES2500</b>	2500	4248		16.80	6" FLG	85	55	60	2315
<b>HES3000</b>	3000	5097		18.20	6" FLG	85	55	60	2646

Dryers meet agency approvals: CSA (CAN/CSA-C22.2 No.236-05) - Heating and Cooling Equipment and UL Standard No.1995. Canadian Registration Numbers- standard separator vessel and optional cold coalescing vessel.

1 Dryer flow ratings are in accordance with ISO 7183 (option A2) conditions: inlet air at 100 psig (7 barg) and 100°F (38°C) saturated, ambient air at 100°F (38°C), operating on 60 Hz power supply.

2 Optional Voltages: 575/3/60 models utilize mounted transformers to step-down incoming power to 460/3/60; 230/3/60 models utilize mounted transformers to step-up to 460/3/60.

3 Full flow kW value operating on 460/3/60 Hz power supply.

4 DIN Flanges available.

## Correction Factors for Inlet Air Pressure and Temperature

Inlet Air Pressure		Inlet Air Temperature				
psig	barg	90°F 32°C	100°F 38°C	110°F 43°C	120°F 49°C	130°F 54°C
<b>30</b>	<b>2.1</b>	0.92	0.71	0.56	0.44	0.35
<b>50</b>	<b>3.5</b>	1.07	0.83	0.66	0.54	0.44
<b>80</b>	<b>5.5</b>	1.19	0.95	0.77	0.63	0.52
<b>100</b>	<b>6.9</b>	1.25	1.00	0.82	0.68	0.56
<b>125</b>	<b>8.6</b>	1.30	1.05	0.86	0.72	0.61
<b>150</b>	<b>10.3</b>	1.34	1.08	0.90	0.75	0.64
<b>175</b>	<b>12.1</b>	1.37	1.11	0.92	0.78	0.66
<b>200</b>	<b>13.8</b>	1.39	1.14	0.95	0.80	0.68

## Correction Factors for Ambient Temperature\*

Ambient Temperature	80°F 27°C	90°F 32°C	100°F 38°C	110°F 43°C
<b>Multiplier</b>	1.12	1.06	1.00	0.94

\* Air-cooled models only. For water-cooled use a 1.15 multiplier if cooling water is less than 95°F (35°C).

## ISO 8573-1: 2010 Air Quality Classes

Air Quality Class	Solid Particles Maximum number of particles per m <sup>3</sup>			Water Vapor Pressure Dew Point		Oil Total Oil Concentration: Aerosol, Liquid & Vapor	
	0.10 - 0.5 micron	0.5 - 1.0 micron	1.0 - 5.0 micron	°C	°F	mg / m <sup>3</sup>	ppm <sub>w/w</sub>
	<b>0</b>	As specified by the equipment user or supplier and more stringent than class 1					
<b>1</b>	≤ 20,000	≤ 400	≤ 10	≤ -70	≤ -94	0.01	0.008
<b>2</b>	≤ 400,000	≤ 6,000	≤ 100	≤ -40	≤ -40	0.1	0.08
<b>3</b>	-	≤ 90,000	≤ 1,000	≤ -20	≤ -4	1	0.8
<b>4</b>	-	-	≤ 10,000	≤ +3	≤ +37	5	4
<b>5</b>	-	-	≤ 100,000	≤ +7	≤ +45	-	-

Standard filtration delivers  
**ISO Quality Class:**

- Solids-3
- Pressure Dew Point-4 to 5
- Oil-4

Optional filtration provides  
**ISO Quality Class:**

- Solids-1
- Pressure Dew Point-4 to 5
- Oil-1



## Global locations

### SPX USA

#### Hankison Headquarters

4647 SW 40th Avenue  
Ocala, Florida 34474-5788  
P: (724) 745-1555  
F: (724) 745-6040

#### Hankison Rental Northeast

100 Commerce Drive, Suite 40  
Washington, PA 15301  
P: (724) 225-1470  
F: (724) 222-1317

#### Hankison Rental Southwest

1486 Champion Drive  
Terrell, TX 75160 U.S.A.  
P: (800) 379-3711  
F: (972) 563-9991

### SPX Canada

#### Hankison Canada

1415 California Avenue  
Brockville, ON, Canada k6v 7h7  
P: (800) 267-3884  
F: (800) 318-0952

### SPX Mexico

#### Hankison Mexico

Avenida Constitución #2165 -B  
Colonia Julián Carrillo  
San Luis Potosí, S.L.P.  
C.P. 78250 México  
P: +52 (444) 815-7074  
F: +52 (444) 815-8295

### SPX South America

#### Hankison Brazil

Rua Joao Daprat, 231 b  
09600-010-SÃO Bernardo Do Campo, SP  
Brazil  
P: +55 (11) 2166-4050  
F: +55 (11) 2166-4070

### SPX Europe

#### Hankison Ireland

Killarney, Co Kerry  
Ireland  
P: (+353) 6466-33322  
F: (+353) 6466-33371

### Hankison Netherlands

Munnikenheiweg 41  
Postbus 570  
4870 NE Etten-Leur Netherlands  
P: (+31) 76-5085800  
F: (+31) 76-5085800

### Hankison Germany

Konrad-Zuse-Str. 25  
D-47445 Moers Germany  
P: (+49) 2841-8190  
F: (+49) 2841-87112

### SPX India

SPX India PVT, LTD  
Manufacturing G-72/73  
Riico Industrial Area  
Mansarovar, RAJASTHAN  
Jaipur 302 020  
India  
P: (+91) 141-2396759  
F: (+91) 141-2395048

### SPX Asia Pacific

#### SPX China

5th Floor, Park Center,  
No.1568 Huashan Road, Shanghai China  
P: +86 (021) 2208-5840  
F: +86 (021) 2208-5866

### SPX Korea

#940-1 Yerim-Ri  
Jeonggwan-Myeon  
Gijang-Gun, Busan, Rep. of Korea  
P: +82 (51) 728-5360  
F: +82 (51) 728-5359

Based in Charlotte, North Carolina, SPX Corporation (NYSE: SPW) is a global Fortune 500 multi-industry manufacturing leader.

For more information, please visit [www.spx.com](http://www.spx.com)

### SPX FLOW TECHNOLOGY

4647 SW 40th Avenue  
Ocala, Florida 34474-5788 U.S.A.  
P: (724) 745-1555  
F: (724) 745-6040  
E: [hankison.americas@spx.com](mailto:hankison.americas@spx.com)

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