Hankison™

Heatless Modular Desiccant Air Dryers

PHDM Series

hankisonair.com

12 to 68 m^3/h (4 to 15 bar g)

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Optimal System Protection

Hankison's PHDM Series Modular Desiccant Air Dryers protect moisture sensitive applications requiring low pressure dew points. Delivers dew points of ISO 8573-1: 2010 Class 1 (-70°C) and Class 2 (-40°C) with flow rates of 12 to 68 nm^3/h. Critical applications include labs, hospitals, pharmaceutical manufacturing and other high-tech installations.

The PHDM Series incorporate a time proven design, with superior features and reliability, in a compact and easy to install package. Standard features include:

NGF Series Filter Packages Standard

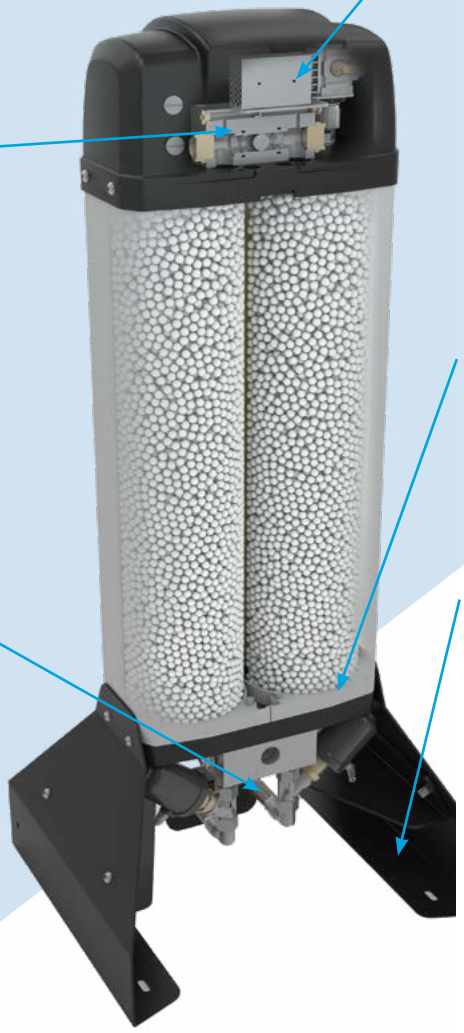
- Grade HF coalescing prefilter captures oil down to 0.008 mg/m^3
- Grade PF afterfilter removes solids 1.0 micron and larger

Technology at a Glance

- Consistent outlet pressure dew points
- Selectable pressure dew point performance for maximum application flexibility
- Minimum purge air usage saves energy
- Desiccant beds sized to prevent fluidization plus slow and complete regeneration prevents desiccant aging
- Non-lubricated, soft seated control valves promotes reliable operation
- Heavy duty purge exhaust muffler for quiet operation

Highly Accurate Solid State Timer

- Standard 4 minute cycle time delivers ISO Quality Class 2 pressure dew point
- Flow deration delivers ISO Quality Class 1 pressure dew point



Front Mounted Control Panel

- Electronic controls to monitor status & operation
- Power on light
- Tower indicator lights
- On-off switch

Supreme Craftsmanship

- Powder coasted cabinet for long term durability
- Fully assembled, piped and wired eases installation
- Extruded aluminum columns to house desiccant cartridges
- Supplied with 1.8 m power cord
- Flexible installation with multiple inlet/outlet options
- Floor mount support for secure installation

Extended Warranty

- One-year warranty standard
- Up to two-year warranty with purchase of annual maintenance kit

Product Specifications

MODEL	DIMENSIONS						IN/OUT CONNECTIONS	WEIGHT	
	H		W		D				
	in	mm	in	mm	in	mm	NPT	lbs	kg
PHDM 3	16.7	424.2	9.4	238.8	8.3	210.8	3/8"	21.8	9.9
PHDM 9	32.4	822.9	9.4	238.8	8.3	210.8	3/8"	35	15.9
PHDM 15	42.2	1071.9	9.4	238.8	8.3	210.8	3/8"	46	20.9
PHDM 24	38.1	967.7	18.7	474.9	14.3	363.2	1/2"	101.5	46.1
PHDM 32	44	1117.6	18.7	474.9	14.3	363.2	3/4"	121.2	54.9
PHDM 41	51.9	1318.3	18.7	474.9	14.3	363.2	3/4"	136.7	62
PHDM 59	65.9	1673.9	18.7	474.9	14.3	363.2	1"	180.8	82
PHDM 88	73.7	1871.9	18.7	474.9	14.3	363.2	1"	186.5	84.6
PHDM 118	67.1	1704.3	21.1	535.9	19.5	495.3	1-1/2"	352.7	160
PHDM 147	75	1905	21.1	535.9	19.5	495.3	1-1/2"	396.8	180
PHDM 177	75	1905	21.1	535.9	19.5	495.3	1-1/2"	396.8	180

Dryers are certified for quality and safety to CSA C22.2 No.0-10, C22.2 No.14-18 & UL 508.

Dew Point Performance

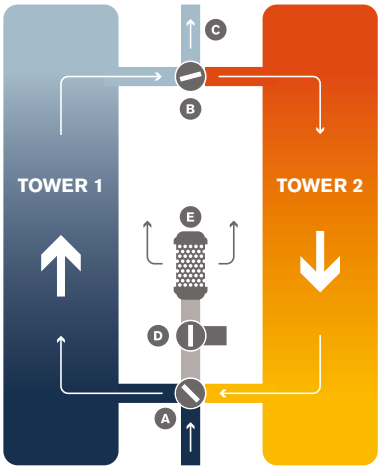
ISO CLASS 2		ISO CLASS 1	
Pressure Dew Point	Cycle Time	Pressure Dew Point	Cycle Time
-40°C	8 minutes: 4 minutes drying 4 minutes regenerating	-70°C	4 minutes: 2 minutes drying 2 minutes regenerating

- PHDM series dryers operate automatically in producing a dehydrated gas stream
- User selectable ISO 8573.1 : 2010 Compressed Air Quality Class 2 -40°C and -70°C Class 1 pressure dew point
- At ISO 7183 (A2) conditions: Remaining water content at Class 1 pressure dew point: 0.002%
- At ISO 7183 (A2) conditions: Remaining water content at Class 2 pressure dew point: 0.2%
- ISO Class 1 requires 30°C inlet air temperature

How It Works

Compressed air enters the dryer and is directed to Tower 1 by valve (A) to be dried, and then to the dryer outlet through shuttle valve (B). A portion of the dried air is throttled to near atmospheric pressure by means of orifice (C). This extremely dry, low pressure air flows through and regenerates the desiccant in Tower 2 and is exhausted through purge/repressurization valve (D) and exhaust muffler (E) to atmosphere. After a set time, the automatic solid state timer closes purge/repressurization valve (D) allowing Tower 2 to repressurize slowly. At the end of 2 minutes, valve (A) shifts and purge/repressurization valve (D) reopens.

The main air flow is now dried by Tower 2 while Tower 1 is being regenerated.



Inlet & Purge Flow Correction Factors

Inlet Pressure	7bar g	3.5	4.9	6.3	7	7.7	8.4	9.1	10.5
MULTIPLIER A		0.31	0.54	0.83	1.00	1.09	1.17	1.26	1.44
MULTIPLIER B		0.55	0.73	0.91	1.00	1.09	1.17	1.26	1.44

[1] *Inlet flows are established in accordance ISO 1217 Dual Stage Regenerative Desiccant Compressed Air Dryers - Methods for Testing and Rating. Conditions for rating dryers are: inlet pressure - 7bar; inlet temperature - saturated at 35°C.*

[2] *Average Purge Flow is the total amount of air used to purge and repressurize off-stream towers averaged over the cycle time. Maximum Purge Flow is the flow rate through the off-stream tower during that portion of the cycle the purge/repressurization valve is open.*

Capacity Correction Factors

- To determine maximum inlet flow at inlet pressures other than 7 kg/cm^2, multiply inlet flow from Table 1 by multiplier A from Table 2 that corresponds to system pressure at inlet of dryer.
- To determine purge flow at inlet pressures other than 7 kg/cm^2, multiply purge flow at 7 kg/cm^2, from Table 1 by multiplier B from Table 2 that corresponds to system pressure at inlet of dryer.
- To determine outlet flow capacity, subtract purge flow from inlet flow.
- kg/cm^2 = bar g

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Design features, materials of construction and dimensional data, as described in this bulletin, are provided for your information only and should not be relied upon unless confirmed in writing. Please contact your local sales representative for product availability in your region.

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