

# *Refrigerated Air Dryers*

## *Smart*



# Our experience guarantees a perfect performance

**SPX Dehydration & Filtration** is one of the world leading manufacturers of equipment for the treatment of compressed air, atmospheric air and other gases. Our company has an experience of over 70 years and a unique know-how in this area. This know-how finds its expression in an extensive Deltech program for compressed air treatment: Refrigerated air dryers, adsorption dryers and filters.

## Refrigerated compressed air dryers

The experience accumulated over years is reflected in the particularly exhaustive range of refrigerated air dryers. This extremely reliable equipment offers a long high performance and is thus a profitable and technically interesting investment.

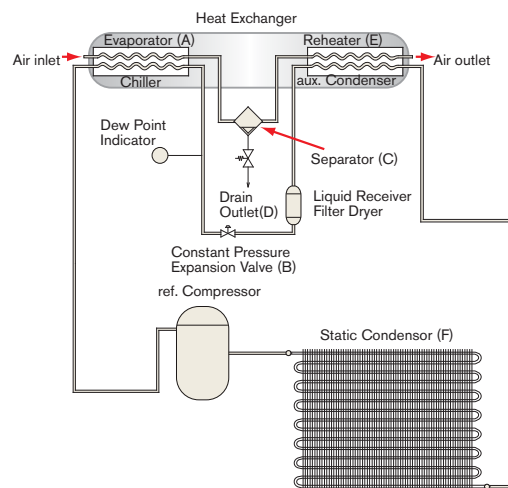
## Refrigerated air dryer Smard SC 5 models up to 100 m<sup>3</sup>/h

The Smard SC dryers series, where a cooling fan is no longer required, is a revolutionary development in the small dryer range.

## How it works ...

### Models Smard SC 5 through Smard SC 30

Warm saturated air enters the evaporator (A) where it is cooled by refrigerant being controlled by a constant pressure expansion valve (B). Water vapor condenses into a liquid for removal at the moisture separator (C) by an automatic drain (D). The cold, dry air is reheated as it passes through the reheater (E) to prevent pipeline sweating. The static condenser (F) eliminates the need for a cooling fan and simplifies the system.



### Models Smard 47 through Smard 273

Refrigeration Circuit:

A refrigerant compressor (1) and air cooled condenser (2) continuously circulate refrigerant through the system. The filter-dryer (3) removes contaminants from the refrigerant gas. An expansion valve (4) regulates the flow of refrigerant into the 3-in-1 heat exchanger.

Compressed Air Circuit:

Warm, saturated compressed air enters the air-to-air heat exchanger (5) and is cooled by the exiting air. The pre-cooled air (6) enters the air-to-refrigerant heat exchanger (6) and is further chilled causing water vapor to condense. Condensed moisture is collected from the air stream by an integral separator (7) with stainless steel demister. Liquid condensate is removed from the separator by an automatic-timed electric drain/ level-controlled automatic drain. Cold air is then reheated in the air-to-air heat exchanger to eliminate pipe line sweat. Clean, dry air exits (8) the dryer and is now conditioned for use.



# Smard SC and Smard Series

## High performance in compact form for up to 1,700 m<sup>3</sup>/h

### The Smard SC and Smard Series offer the following advantages:

- Time-saving package is easy to install.
- Compact structure requires little space
- Fully automatic operation adapts to your system needs without complicated controls.
- High-quality components secure a long service life
- Powder-coated steel construction
- Maximum moisture is removed to a steady 3°C pressure dew point
- Corrosion-free air circuit
- Timer operated drain/level-controlled automatic drain
- On/off switch illuminates with control light
- Coloured dew point indication verifies performance



### Smard SC Series Models through 100 m<sup>3</sup>/h

- No cooling fan required, provides for extremely quiet operation and reduced maintenance
- Integral moisture separator
- Timer operated drain with isolation valve/strainer
- Compressed air leaves the dryer in warm state

### Smard Series Models from 140 through 1,700 m<sup>3</sup>/h

- 3-in-1 stainless steel copper-brazed plate heat exchanger with integral separator ensures optimal dew point performance under all conditions
- Industrial design: compact structures
- Simple filter installation at inlet/outlet
- Dew point indication in main controls

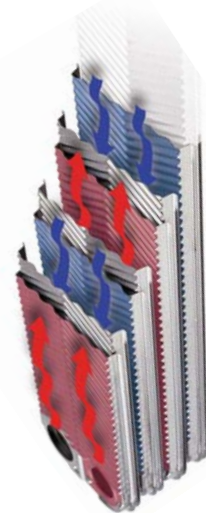


# Deltech Large Refrigerated (LRD) for capacities



## Most modern technology and high quality components

The consistent development of the heat exchanger technology today makes possible an economical use of refrigerated air dryers of high capacities. Due to the use of copper-brazed stainless steel plate heat exchangers, stainless steel moisture separators and copper tubing, a 100% corrosion protection can be guaranteed. Also the mechanical stability is much higher than in the case of aluminium heat exchangers. The compact design of the plate heat exchangers allows an also very compact dryer design.



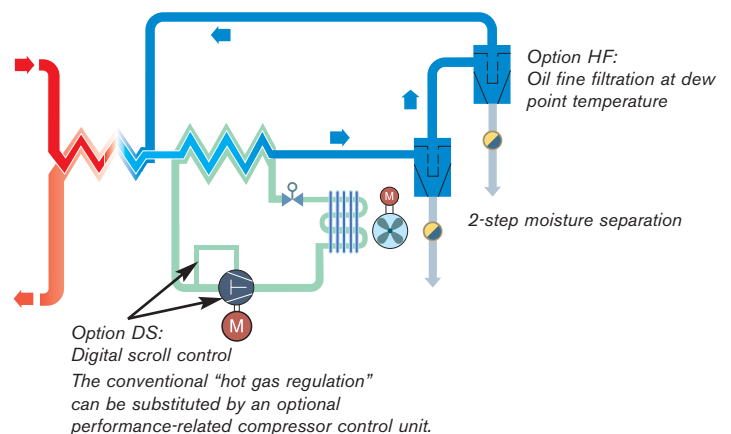
## No refrigerated air dryer is better than its moisture separator

The **Smard LRD** series combines the principles of centrifugal separation and those of demister technology in a stainless steel moisture separator housing. The condensate which is separated at two different stages is removed from the compressed air circuit through two electronic level-controlled moisture separators. The highly efficient demister-separation stage guarantees an optimal water separation even with very slow air flow. This is a very important condition for a constant pressure dew point in cases of fluctuating air demand.

The Smard 656-1635 offer an optional second demister unit, with which a 0,01 micron oil fine filtration by dew point temperature is made possible. By means of the oil filtration at 3°C, the compressed air retains almost the same rest oil as after adsorption with activated carbon.

## Smard 656 - Smard 1635 1,800m<sup>3</sup>/h - 5,400m<sup>3</sup>/h

Model Smard 656 - 1635



# Refrigerated Air Dryers from 1,800 to 12,000 m<sup>3</sup>/h

## User-friendly operation

Control panels show all important operating parameters and dryer functions, which can also be connected to a higher level system by means of an interface (Smard 656 - 1635). Potential-free alarm contacts are also available for further utilisation.

With the purpose of energy saving, all **LRD Smards** can be equipped with an energy-saving control system. For dryer capacities from 7,200 to 12,000 m<sup>3</sup>/h, a standard 50%-100% or 33%-66%-100% adjustment control is used. For dryer capacities from 1,800 to 5,400 m<sup>3</sup>/h, the revolutionary Digital Scroll system is offered. This digital control system regulates the performance of the scroll refrigerant compressor continuously between 10% and 100%.

This adjustment is constant and without delay and so it offers - as compared with on/off switching systems or with thermal mass systems - an absolutely constant pressure due point.



**Smard 2150 - Smard 3500**  
**7,200m<sup>3</sup>/h - 12,000m<sup>3</sup>/h**



## X-DRAIN

For a dependable treatment of the condensate, Deltech refrigerant dryers from 315 m<sup>3</sup>/h onwards have an electronic level-controlled X-Drain. You can find further information in our X-Drain data sheet.



## Deltech Marine Dryer Smard M Series

The ambient air in the engine room onboard a ship may contain up to 1 mg/m<sup>3</sup> of oil, and the air also contains water and particles. To avoid possible damage to the compressor and equipment using compressed air and make sure the air quality satisfies the quality standards required, proper drying and filtration of the compressed air is essential.

Deltech Marine dryers work on 60 Hz, have halogen-free cables and a potential-free contact alarm.



With the fast development of the plastic bottle (PET) as packaging for different liquids, the demand for high-quality refrigerant dryers for 40 - 45 bar working pressure has increased enormously. The heat exchangers of such dryers are subject to very high pressure and temperature differences, which require a high mechanical stability.

The Smard HP series of refrigerated air dryers have been developed for these operating conditions and match the highest standards required by this application. The air circuit is made exclusively out of stainless steel components, thus preventing corrosion. To the demister moisture separator (3 micron), a post filter (oil fine filter - 0.01 micron) can be installed directly in the cold air stream.

The Smard HP series is the perfect high pressure air dryer for a working pressure of up to 45 bar (g).

## Deltech High-Pressure Dryers Smard HP Series



**Smard HP 170- Smard HP 1850**  
**510m<sup>3</sup>/h - 5.500m<sup>3</sup>/h**

# Product Specifications

Model	Capacity m³/h	Connection " BSP	Height	Width mm	Depth	Weight kg	el. Connection V/ph/hz	Power Consumption kW
<b>Smard SC Series</b>								
Smard SC 5	20	3/8	382	320	320	19	230/1/50	0.24
Smard SC 10	30	3/8	382	320	320	19	230/1/50	0.24
Smard SC 18	60	3/4	568	368	394	28	230/1/50	0.34
Smard SC 24	80	3/4	568	368	394	30	230/1/50	0.42
Smard SC 30	100	3/4	568	500	500	41	230/1/50	0.58
<b>Smard MRD Series</b>								
Smard 47	140	1	601	363	861	50	230/1/50	0.55
Smard 53	160	1	601	363	861	53	230/1/50	0.60
Smard 80	240	1	601	363	921	58	230/1/50	1.04
Smard 105	315	2	761	443	971	72	230/1/50	1.33
Smard 120	360	2	761	443	971	78	230/1/50	1.59
Smard 157	470	2	761	443	971	85	230/1/50	1.81
Smard 194	580	2	811	493	1151	100	230/1/50	2.32
Smard 227	680	2	811	493	1151	112	230/1/50	2.80
Smard 273	820	2	811	493	1251	134	230/1/50	2.95
Smard 333	1.100	2 1/2	1510	1129	857	266	400/3/50	2.55
Smard 400	1.300	2 1/2	1510	1129	857	285	400/3/50	2.95
Smard 500	1.700	3	1510	1129	857	335	400/3/50	5.70
<b>Smard LRD Series</b>								
Smard 656	1.800	DN 80	2162	1232	1030	520	400/3/50	4.90
Smard 680	2.250	DN 100	2162	1243	1301	690	400/3/50	5.50
Smard 818	2.700	DN 100	2162	1243	1301	690	400/3/50	7.00
Smard 950	3.150	DN 150	2162	1400	1510	880	400/3/50	8.70
Smard 1090	3.600	DN 150	2162	1400	1510	880	400/3/50	9.20
Smard 1365	4.500	DN 150	2162	1400	1510	1050	400/3/50	10.80
Smard 1635	5.400	DN 150	2162	1400	1510	1200	400/3/50	13.40
Smard 2150	7.200	DN 150	2462	1590	3245	1850	400/3/50	11.50
Smard 2500	8.400	DN 200	2462	1590	3245	2000	400/3/50	13.80
Smard 2800	9.600	DN 200	2462	1590	3245	2200	400/3/50	15.30
Smard 3500	12.000	DN 200	2462	1590	3245	2600	400/3/50	17.70

All data acc. to DIN ISO 7183-1. Specifications may change without notice.

For detailed technical data and equipment information please request our technical data sheets.



## We care about the environment!

Smard dryers use environmental friendly refrigerant (R134a and R404A) and halogen-free isolating material. All materials used are recyclable.

**SPX**

DEHYDRATION & FILTRATION



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