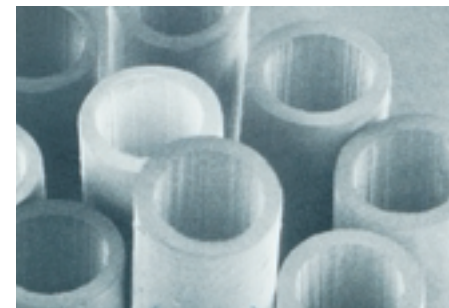


Membrane Dryer

The sunsep-w membrane dryer series is specially designed for drying compressed air and gases up to 800l/min. New methods of drying compressed air are being developed by using this system. Due to their compactness, simple operation and low installation costs, they are ideal for a range of applications as detailed below. The sunsep-w membrane dryer is outstanding in the final position and replaces more traditional systems where a high quality of compressed air is required. The membrane dryer is ideal for applications which until now could only be served by oversized equipment.

The heart of the membrane dryer is a polymer microfibre hollow membrane, which is constructed in such a way that only water vapour molecules can penetrate the membrane wall. Oxygen as



well as nitrogen are retained and therefore the sunsep-w is ideal for breathing air applications. The sunsep-w membrane dryer is a penetrative membrane and therefore less susceptible to pollution than traditional porous membranes.

The sunsep-w is equipped for various inlet conditions and can ensure a dewpoint of up to -40°C . The outlet dewpoint is related to the inlet dewpoint temperature.

When fitted with a ZANDER X grade Microfilter the membrane dryer is guaranteed for 3 years.

Small but efficient

Typical applications:

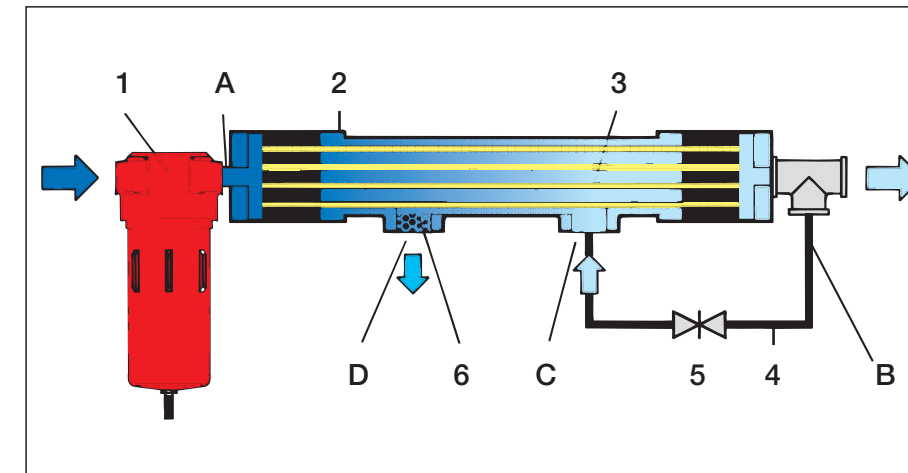
- Pneumatics
- Medicine
- Dentistry
- Electronics
- Robotics
- Breathing air systems
- Textile, paper, packaging and plastics industries
- Lasers
- Optical equipment
- Pressure precision machines
- Oxygen generators
- Gas chromatography
- Analysis equipment
- Spectrometers
- Precision instruments
- Laboratories

Advantages of the Sunsep-W model

- Compact
- No electricity required
- Constant dewpoint
- No CFC's
- Low installation costs
- No welded parts
- Low pressure drops
- Dewpoint established after short operating time
- No condensate drain
- No maintenance required
- Can be used in explosion protection
- No corrosion
- Only requires small installation space

How a membrane dryer works

In order to ensure that the membrane dryer produces the quality of compressed air expected, it is essential to fit a ZANDER Microfilter with automatic drain. This stops dust particles, oil and condensate from contaminating the membrane. The sketch below shows a typical installation with all the necessary components.



Saturated, oily and dirt laden compressed air enters the ZANDER Microfilter grade X (1).

The contamination is trapped by the Microfilter and the automatic drain expels the coalesced oil and water.

The clean compressed air now enters the dryer (A) and goes into the module (2) which consists of bundle of hollow fibre membranes. As the compressed air flows through the membranes the water molecules are forced through the walls of the membrane and the air leaves the module dry.

The water vapour molecules that have penetrated the membrane walls need to be eliminated. This is done by taking a portion of the dried air from the outlet of the module (B). This regeneration air is then expanded to atmospheric

pressure so that the saturated vapour can be removed.

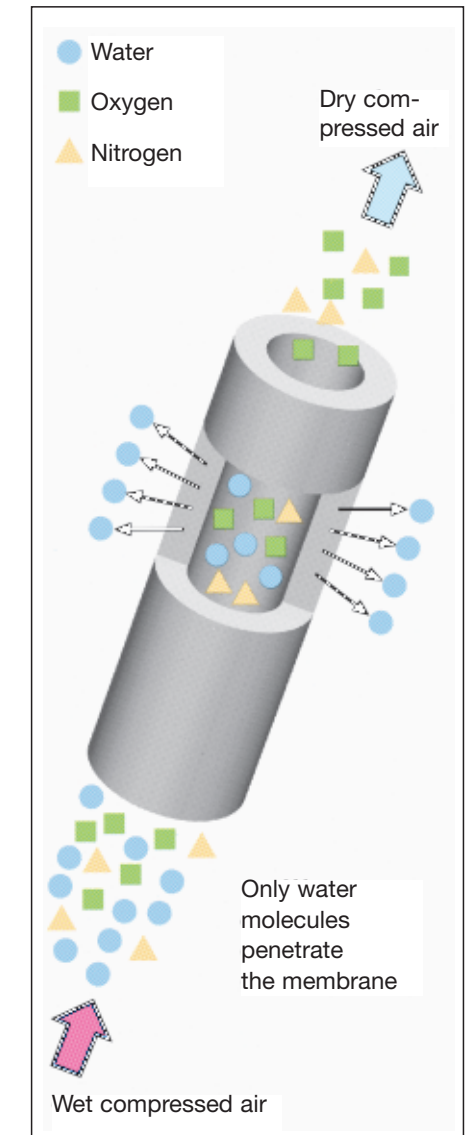
The regeneration air leaves the outlet (B) and flows into a bypass (4) which has a nozzle valve (5). This is now expanded to atmospheric pressure and flows into the regeneration air inlet (C). The air then flows over

the membranes in reverse flow and re-entrains the water molecules. The air then leaves the dryer by outlet (D) and silencer (6).

The dryer functions by a simple principle of physics. Saturated air has a higher partial pressure than dry air. As a result the water molecules flow from the damp air to the dry air through the membrane walls. „High pressure always flows to low pressure.“

The regeneration flow re-entrains the moisture and dispels it to atmosphere.

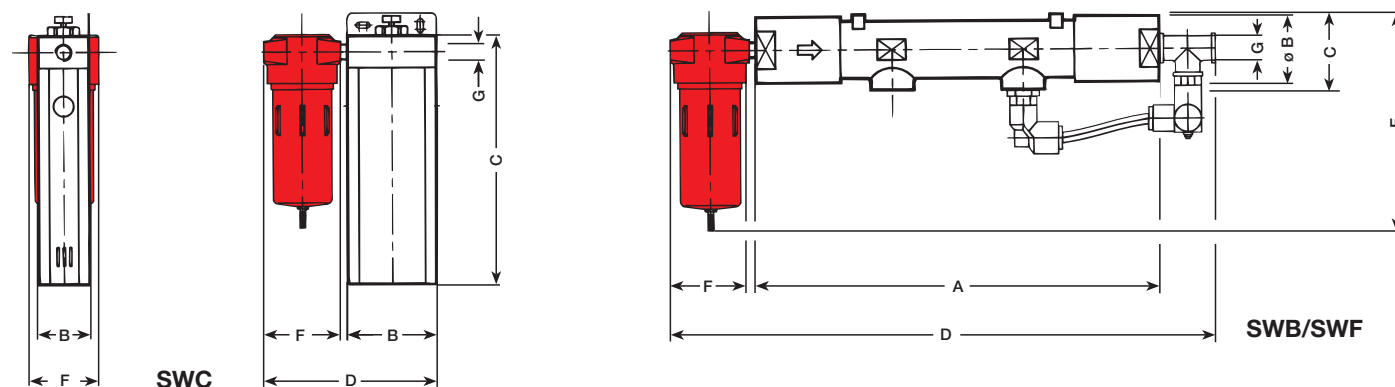
The following diagram shows clearly that only the water molecules penetrate the membrane walls. Oxygen and nitrogen remain in the air flow. This means that the ZANDER sunsep-w is entirely suitable for the production of breathing air. This type of polymer hollow fibre stacked together in a bundle gives optimum results.



Due to the optimum dwell time the dryers can be made very compact giving new possibilities for processing compressed air to a high quality in previously difficult applications.

Technical Data

Type	max. capacity At 8 bar a** (l/min)	Dimensions							Weight without prefilter (kg)	Microfilter
		A	B	C	D (mm)	E	F	G ³⁾		
SWC M04-70	30	36	15	75	-	-	-	M5	0,05	G 2 X
SWC M08-100	70	61	31	112	125	-	60	Rc 1/8"	0,26	G 2 X
SWC M15-100	120	61	15	112	125	-	60	Rc 1/8"	0,27	G 2 X
SWC 01-150	200	70	40	150	134	-	60	Rc 1/4"	0,39	G 2 X
SWC 02-250	300	100	50	200	164	-	60	Rc 3/8"	0,69	G 2 X
SWC 02-200	400	70	40	195	134	-	60	Rc 3/8"	0,45	G 2 X
SWC 03-250	450	100	50	200	164	-	60	Rc 3/8"	0,71	G 2 X
SWB 01-100	200	240	33	33	335	167	60	Rc 1/4"	0,22	G 2 X
SWB 01-200	200	340	33	33	435	167	60	Rc 1/4"	0,26	G 2 X
SWB 05-100	800	310	50	59	442	209	87	Rc 3/8"	0,66	G 3 X
SWF M06-400	25	515	25	25	580	167	60	Rc 1/4"	0,12	G 2 X



The regeneration air requirement at specific conditions is 15-18%. The flow rate as well as the regeneration air requirement are dependent on the operating pressure, inlet temperature and the dewpoint of the compressed air.

The maximum permissible operating pressure is 8.5 bar min/max compressed air and ambient temperature: -20°C/55°C. Higher operating pressures available on request.

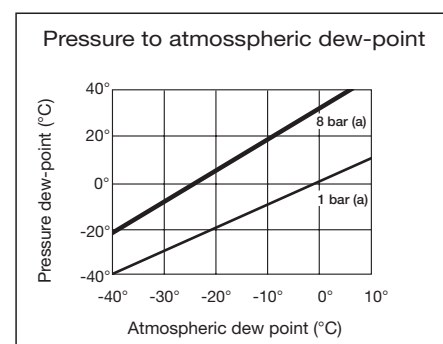
** At 20°C and 1 bar (a).

*1) SWF M06 - 400 and SWC M04-70 without regeneration bypass

*2) SWC with internal regeneration bypass

*3) Connection size only for membrane module

The maximum dewpoint difference is 40°C.



Membrane dryer guarantee

If fitted with a ZANDER X grade Microfilter and the element is changed every six months, there is a 3 year guarantee with the membrane dryer.

More detailed Information is available on request:

- For each type of Sunsep-W membrane dryer
- On deviation from standard conditions (technical data)
- For Microfilters

Membrane Dryer

For the purification of compressed air and gases

Typical Applications:

- Electronic Industry
- Medical Technology
- Dental Surgeries
- Laboratories
- Gas Analysers
- Industrial Robots
- Pneumatic Controls
- Breathing Air



Series **sunsep-W**



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