

# ZANDER® breathing Star BS / BS-P



## Reliable high quality breathing air

For compressed air which is to be used as *breathing air*, high demands are called for from safety and air quality. ZANDER *breathing air* systems meet these stringent requirements. They reliably supply people with *breathing air*. The quality of which exceeds the international standards.

Suitable for all demands

There are situations when the compressed air is vital to life, when the compressed air is used as breathing air. The level of air quality required differs according to application and country. ZANDER therefore offers two ranges:

*breathing star* range BS  
- for general breathing air

*breathing star* range BS-P  
- for *breathing air* according to the Pharmacopée Européenne.

Both types utilise technology such, that even heavily contaminated compressed air can be purified so that high quality breathing air is produced.

The following table shows the specifications of the international breathing air standards. The air from the *breathing star* purification units which is also shown, lies well within the international breathing air standards. This gives the user the knowledge, that even when used in critical applications, the highest quality is available from *breathing star*.

### International breathing air standards

		EUROPE Pharmacopée Européenne	EUROPE EN 12021	EUROPE EN 737-3	GERMANY DIN 3188	UK BS4275	USA ANSI/CGA
Carbon monoxide	CO [ppm]	< 5	15	5	30	5	20
Carbon dioxide	CO <sub>2</sub> [ppm]	< 500	500	1000	800	500	1000
Water vapour/Press. dew-point		< 60 ppm	5°C below dew-point	5°C below dew-point		below dew-point	
Sulphur Dioxide	SO <sub>2</sub> [ppm]	< 1					
Nitrous fumes	NO <sub>x</sub> [ppm]	< 2					
Nitrogen dioxide	NO <sub>2</sub> [ppm]	< 2					
Oil vapour/Residual oil content	[mg/m <sup>3</sup> ]	< 0.1	0.5	0.5	0.3	0.5	5
Nitrogen	N <sub>2</sub> [%]	=					
Oxygen	O <sub>2</sub> [%]	= 21 (+/-1)	21 (+/-1)		21 (+/-2)		21 (+/-2)
FCKW	[ppm]	<					
Dirt particles				Class P3 in EN 143			
Odour and Taste		free	free		free	free	free
Nitrous oxide	NO <sub>2</sub> S [ppm]	<					

## The breathing air purification unit BS/BS-P functions as follows

Compressed air contains contaminants such as particles, condensate, oil, odours and taste substances as well as other harmful gases. With the ZANDER breathing air purification unit *breathing star*, these troublesome contaminants are removed from the compressed air. By means of the standard installed prefilter combination (with series BS only one pre-filter) of the ZANDER microfilter series ZX, the solid and liquid contaminants are removed, to a filtration efficiency of 0.01 µm and 0.01 mg/m<sup>3</sup>, from the compressed air.

The water vapour saturated air enters the dryer through the valve block, which feeds the air to the respective pressure vessel. The air travels from the bottom to the top of the vessel which is filled with a high efficient desiccant. The special desiccant mix removes the water vapour and reduces the portion of various gases, which in excessive quantities, are harmful to the human body. Clean and dry air exits the dryer. In parallel to the drying, regeneration takes place in the second vessel. A partial flow of the dried air is fed through a regeneration nozzle, integrated into the upper block and into the vessel. The expanded and dry regeneration air flows in the opposite direction, from top to bottom of the desiccant to be regenerated, thereby removing the contained moisture. The regenerated air is expelled by means of the lower valve block in which is integrated the blow off valve and silencer.

For continuous operation the unit is operated in a fixed cycle whereby the vessels are loaded alternately. Pressure build up during the cycle time guarantees a pulsation free switch over. The third vessel, containing activated carbon and a catalyst, removes odours, taste substances, oil vapour, carbon monoxide and various other gases. The fourth component is a universal after-filter, installed to filter out dust particle carry over from the desiccant.

## Advantages breathing star BS/BS-P

- 24 different model sizes
- 4000 hours operating life guarantee
- pressure dew-point -40°C
- flows of up to 10.000 m<sup>3</sup>/h
- six different pressure stages up to 350bar
- exceeds international standards DIN 3188, Pharmacopée Européenne, EN 12021 etc.
- lowest operating costs
- variable control
- compressor synchronised control available

## Applications

- hospitals
- paint industry and paintshops
- pharmaceutical industry
- fire brigades
- emergency services
- laboratories
- chemical and petrochemical industry
- tank cleaning and pit construction
- tunnel construction
- mines
- shipyards
- diving industry



## breathing star BSC

The BSC is a portable breathing air purifier, designed to provide high quality breathable air from a normal compressed air supply. The unit utilises two highly efficient purification stages combined together in a compact, weather proof, impact resistant housing to meet international breathing air standards.

- no electrical supply required
- tough impact and chemical resistant design
- filter change indicator
- integrated condensate collection container
- up to 4 man capacity

	CANADA Z 180 1-M851985	AUSTRALIA AS 2299-	NEW ZEALAND NZS 5813	ZANDER BS	ZANDER BSP
	5	10	10	5	5
	500	900 mg/m <sup>3</sup>	900 mg/m <sup>3</sup>	500	500
	5°C below dew-point	100 mg/m <sup>3</sup>	100 mg/m <sup>3</sup>	- 40°C	- 40°C
					1
					2
					2
	1	1	1	0.003	0.003
	79 (+/-2)			79 (+/-1)	79 (+/-1)
	21 (+/-2)		21 (+/-2)	21 (+/-1)	21 (+/-1)
	5				
	<1 mg/m <sup>3</sup>			0.01 µm	at 99.99999%
	free	free	free	free	free
	2.5				2.5