

BOGE DS-2 N Refrigerant Dryers

Outstanding efficiency meets top CO₂ balance!

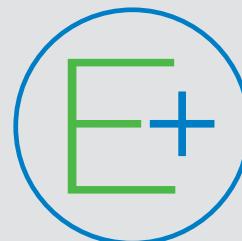
The new DS-2 N series from BOGE has now raised the bar for refrigerant dryers: Thanks to the fully integrated design of its highly efficient heat exchanger, the DS-2 N upstages all other refrigerant dryers in terms of energy efficiency – with significantly reduced refrigerant consumption. The overall operating costs are indeed unbeatable, and the CO₂ balance isn't to be sneezed at either. It is no coincidence that the new DS-2 N models are designed for both 50 and 60 Hz – there is no problem with using them anywhere in the world.

ENERGY-SAVING-OPTION



Efficient Drying

The new DS-2 N series features a high-efficiency aluminium heat exchanger, which minimizes performance losses in the refrigeration circuit while requiring less refrigerant than comparable products. In conjunction with economical power consumption this means that no other product can compete with the low running costs.



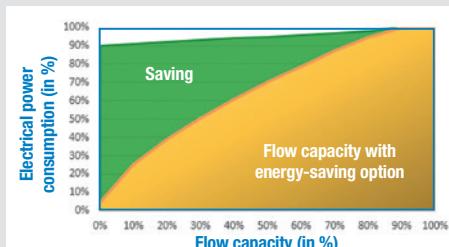
Maintenance friendly design

To facilitate inspection and maintenance, the side panels can be removed. Another benefit is, the dryer does not have to be opened to access the condensate drain. Besides that all models in the new series come with digital control, including functions that were previously subject to an extra charge in some cases. However, in everyday operation they soon pay for themselves – such as the status display, the potential-free alarm contact or the maintenance reminder.



Energy-saving option

Although all DS-2 models are extremely undemanding in terms of energy consumption under partial load, the models with capacities of 2.6 m³/min and above go one better: If required, they can reduce power consumption even further by cooling the compressed air entering the system by the mass of the heat exchanger in partial load mode.



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The operating principle

In the fully integrated high-performance aluminium heat exchanger the various parts spring into action one after the other: an air/air section, an air/refrigerant section, a high-efficiency demister condensate drain and a moisture collection container. If required, the condensate produced is discharged from the system in a final step via an electronically controlled level sensing condensate outlet.



An overview of the new BOGE DS-2 N refrigerant dryers

BOGE Type	Electrical (V/Ph/Hz)	Flow capacity		max. pressure		Electr. power consumption*		Weight		Dimensions	Compressed air connection
		cfm	m ³ /min	psi	bar	hp	kW	lbs	kg	W x D x H (inch)	NPT
DS 25-2 N	115/1/60	25	0.7	230	16	0.26	0.19	55	25	12 x 17 x 24	1/2"
DS 35-2 N	115/1/60	35	1.0	230	16	0.25	0.18	77	35	13 x 23 x 26	3/4"
DS 50-2 N	115/1/60	50	1.4	230	16	0.27	0.20	79	36	13 x 23 x 26	3/4"
DS 75-2 N	115/1/60	75	2.1	230	16	0.49	0.36	101	46	16 x 27 x 31	1"
DS 100-2 N	115/1/60	100	2.8	230	16	0.50	0.37	101	46	16 x 27 x 31	1"
DS 125-2 N	115/1/60	125	3.5	230	16	0.52	0.38	104	47	16 x 27 x 31	1"
DS 150-2 N	115/1/60	150	4.3	230	16	0.76	0.56	117	53	16 x 27 x 31	1 1/2"
DS 175-2 N	230/1/60	175	5.0	230	16	0.94	0.69	121	55	16 x 27 x 31	1 1/2"
DS 200-2 N	230/1/60	200	5.7	200	14	1.24	0.91	198	90	18 x 31 x 38	1 1/2"
DS 250-2 N	230/1/60	250	7.1	200	14	1.24	0.91	198	90	18 x 31 x 38	1 1/2"

* at 60 Hz, an ambient temperature of 100°F, inlet temperature of 100°F, 100 psi operating pressure

Conversion factors

According to DIN EN ISO, refrigerant dryers are designed for 100 psi operating pressure, an ambient temperature of 100°F and an inlet temperature of 100°F.

For different operating pressures and temperatures, the following conversion factors should be used.

Working pressure	psi	60	80	100	125	150	175	200*	230*
nominal airflow correction factors	60 Hz	f1	0.77	0.90	1	1.10	1.17	1.24	1.28
Ambient temperature	F°	60	70	80	90	100	110	120	
nominal airflow correction factors	60 Hz	f2	1.27	1.20	1.14	1.07	1	0.93	0.86
Air inlet temperature	F°	90	100	110	120	140	149		
nominal airflow correction factors	60 Hz	f3	1.29	1	0.78	0.61	0.37	0.30	
Pressure dew point	F°	38	41	45					
nominal airflow correction factors	60 Hz	f4	1	1.08	1.19				

* max press. 230 psig for models from DS 25-2 N to DS 175-2 N / max press. 200 psig for models DS 200-2 N and DS 250-2 N

Example for dew point 38°F [f₄]: Free air delivery [V]: 60 cfm
 Ambient temperature [f₁]: 90 °F = 1.07 = $\frac{V}{f_1 \times f_2 \times f_3 \times f_4}$ = $\frac{60}{1.07 \times 0.61 \times 1.24 \times 1} = 74 \rightarrow \text{DS 75-2 N}$
 Inlet temperature [f₂]: 120 °F = 0.61
 Pressure [f₃]: 175 psi = 1.24
 Pressure dew point [f₄]: 38 °F = 1.00