

Asia Pacific Version
Refrigerated Air Dryers
VARIABLE SPEED DRIVE*



ASCC00 - ASV28P TAN

Boreas Variopulse

Refrigeration Compressed Air dryer for medium and big volume flows

Operating mode

The compressed air is fed into the dryer and being pre-cooled in the air-to-air heat exchanger by the outgoing cold compressed air. The pre-cooled air then passes through the refrigerant-to-air heat exchanger where it is further cooled to the required pressure dew point. The moisture in the compressed air condenses out and is collected and discharged automatically. Finally, the cold discharged air is being reheated by the incoming compressed air. This saves energy and prevents any moisture forming beyond the dryer in the compressed air system.

Boreas Variopulse, two methods - one purpose: Energy saving

Suction pressure control (ASCC00 - ASCC03)

With partial load, the suction line of the refrigerant compressor is closed by a solenoid valve. Because of this, only a partial amount of refrigerant is sucked and compressed by the compressor. The result is reduced load and therefore power consumption. With lower partial load or zero load, the compressor is switched off completely by the Variopulse controller at times.

Frequency converter control (ASV06P - ASV28P Tandem)

The speed of one of the refrigerant compressors is controlled by the Variopulse controller via a frequency converter. The other compressors are switched on when required (partial load of full load). This leads to a reduction of up to 90% of the nominal power consumption.

Additional advantages of the new dryer generation:

- Variopulse-controlling for the whole range as standard
- CAN-bus interface
- Datatransfer optional
- Illuminated multi functional display
- Load controlled energy consumption, reduction
- Level controlled drain
- Display is changeable from °C to °F
- Max. operation parameter, inlet temp. 70°C
- ambient temp. 50°C
- working pressure 16 bar g for the entire range
- Generously sized air-to-air and refrigerant-to-air aluminium heat exchanger with a large power density and generously dimensioned flowchannels
- One-component refrigerant R134a, Ozone-depleting factor zero
- Compact and easy install cabinets

The Multi Functional Display shows the following parameters:

- Current pressure dew point
- Operation mode Normal/Summer/Autom.
- Power consumption related to the total hours of operation
- Alarm signal
- Alarm history
- Maintenance required
- Operation hours
- Fridge compressor on/off
- Current energy consumption

Technical data are subject to change (TJ/2015/06/08)

Boreas Variopulse ASCC00 - ASV28P TAN

Technical data										
Housing	Type	Volume flow	Volume flow	Pressure drop	Power supply	Power consumption kW			Cooling air	Cooling water
		m³/h	m³/min	bar	3~ / 50 Hz	100% Vollast	50% Teillast	0% Nullast	m³/h	m³/h
0	ASCC00	1800	30.00	0,12	415V	3,1	1,7	0,4	4800	1,0
	ASCC01	2000	33.33	0,14	415V	3,2	1,9	0,4	4800	1,1
	ASCC02	2300	38.33	0,19	415V	3,4	2,0	0,4	4800	1,3
	ASCC03	2800	46.67	0,24	415V	4,3	2,5	0,6	5200	1,6
1	ASV04P	3500	58.33	0,11	415V	6,9	4,0	0,8	9600	2,0
	ASV05P	4300	71.66	0,16	415V	7,1	4,1	0,9	9600	2,5
	ASV06P	5500	91.67	0,24	415V	10,8	6,2	1,4	10400	2,9
2	ASV07P	7000	116.67	0,19	415V	12,6	7,1	1,5	19200	4,0
	ASV09P	8750	145.83	0,17	415V	15,3	8,6	2,0	19200	5,2
	ASV11P	10500	175.00	0,22	415V	17,3	9,7	2,1	20800	6,4
3	ASV13P	12500	208.33	0,22	415V	21,9	12,1	2,7	23000	7,5
	ASV15P	14250	237.50	0,20	415V	23,9	13,3	3,0	23000	8,5
Tandem	ASV18P TAN	17500	291.67	0,17	415V	30,6	17,3	3,8	38400	10,4
	ASV21P TAN	21000	350.00	0,22	415V	34,6	19,6	4,4	41600	12,8
	ASV25P TAN	25000	416.67	0,22	415V	43,8	24,3	5,5	46000	15,0
	ASV 28P TAN	28500	475.00	0,20	415V	47,8	26,6	6,0	46000	17,0

Explanations

Volume flow (m³/h) in relation to intake state of air compressor +20°C, 1 bar, at compressed air inlet temperature of +40°C, ambient temperature / cooling water of +32°C and an operating pressure of 7 bar, +3°C pressure dew point.

Working compressed air:

max. 16 bar

Cooling Water pressure:

max. 10 bar

Ambient temperature:

min. +2°C max. +50°C

Inlet temperature:

max. +70°C

Cooling Water pressure different:

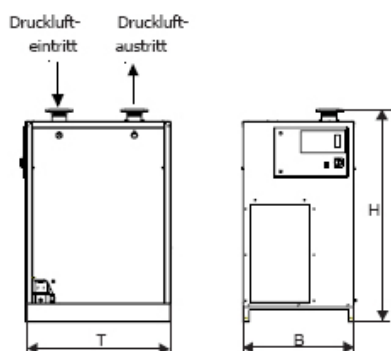
min. 2 bar

Noise pressure level:

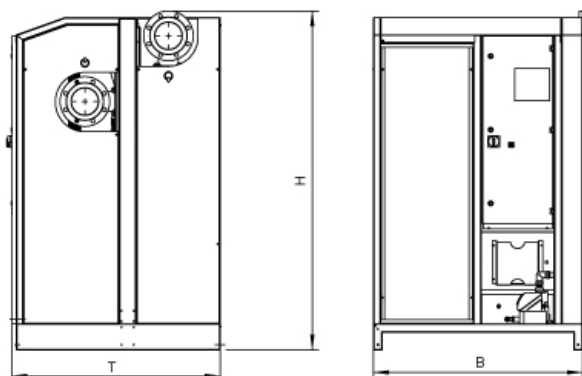
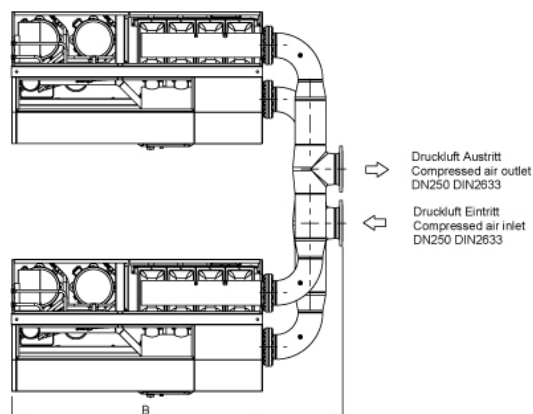
dB (A) < 80

Note : Machines are available in Aircooled (Example : ASCC00A) or Waterooled (Example : ASCC00W) Versions.

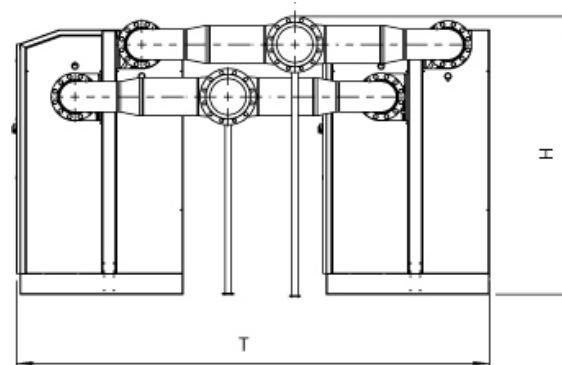
Energy consumptions



DASCC00 - ASCC03



ASV04P - ASV15P



ASV18P TAN - ASV28P TAN

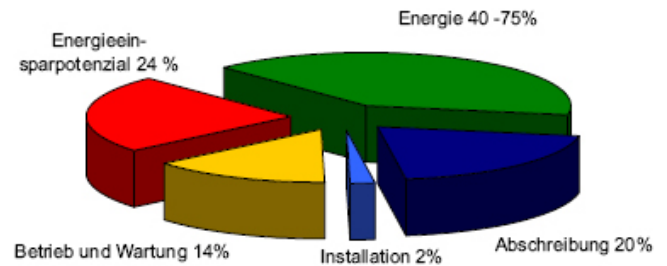
Abmessungen							
Housing	Model	Air connection	Condensa- te drain	Weight	Dimensions		
		DN	DN	kg	B	H	T
1	ASCC00	100	14	412	900	1725	1175
	ASCC01	100	14	420	900	1725	1175
	ASCC02	100	14	425	900	1725	1175
	ASCC03	100	14	435	900	1725	1175
2	ASV04P	150	14	681	1200	1940	1200
	ASV05P	150	14	690	1200	1940	1200
	ASV06P	150	14	700	1200	1940	1200
3	ASV07P	200	14	1150	2225	1970	1200
	ASV09P	200	14	1250	2225	1970	1200
	ASV11P	200	14	1260	2225	1970	1200
4	ASV13P	250	14	1810	3345	2030	1200
	ASV15P	250	14	2100	3345	2030	1200
Tandem	ASV18P TAN	250	14	2730	2885	1970	3400
	ASV21P TAN	300	14	2890	2885	1970	3400
	ASV25P TAN	350	14	3860	4145	2080	3400
	ASV 28P TAN	350	14	4320	4145	2080	3400

Technical data are subject to change (TJ/2015/06/08)

Variopulse : The intelligent dryer control

This microprocessor based controller is the heart of this dryer generation. Values like cooling temperature, pressure in the refrigeration cycle, ambient temperature as well as dryer specific parameters are processed and the current operation conditions are calculated so that a demand-oriented control of the refrigeration system is possible by using the suction pressure control or a frequency converter. This leads to considerable energy savings of up to 90% related to the nominal power consumption. The pulsating measuring (several times per second) and the aluminium heat exchanger's function as a cold storage enable the system to quickly respond to a load change.

Average cost distribution for compressed air treatment:



This diagram illustrates the very large share of energy costs related to the initial costs (depreciation). This means that the energy costs normally exceed the initial costs considerably during the life cycle of a product of a refrigeration compressed air dryer. Next to the cost reduction, this energy saving also stands for environment protection because with every additionally consumed kWh the environment is polluted with 0,56 kg CO₂ which in turn increases the global warming.

Novus Technik Pte. Ltd.

8 Eu Tong Sen Street
#17-83, Office 2 @ The Central
Singapore 059818
Tel No : +65 6225 3602
Fax No : +65 6491 6501
Email: comm@novus.com.sg

Formerly Sabroe Germany



Technical data are subject to change (TJ/2015/06/08)