REFRIGERATION DRYER

RDP 2600 ES - 13200 ES

(Energy saving refrigeration dryer)

DESCRIPTION RDP

RDP refrigeration dryers have been designed to efficiently separate water from the compressed air and lower pressure dew point all the way down to +3°C. Drying is achieved on the principle of cooling which takes place inside a highly efficient and ultra-compact 3 stage heat exchanger. In the first stage (air-air heat exchanger) hot and humid inlet air is being precooled by the cold outgoing air. In the second stage (air-refrigerant heat exchanger) intensive water condensation takes place due to cooling of the air. All condensed water is separated from the main compressed air stream in the third stage by the integrated demister. A proven and robust design enables efficient and reliable operation, fast installation and simple maintenance.

DRYER RATING ACCORDING TO ISO8573-1

Solid particles [1]	Water [1], [2]	Oil [1]
/	4	/

[1] Standard configuration of dryer does not include filters. Prefilter (3 µm) has to be installed upstream of the dryer.

[2] Pressure dew point also depends on specific operating conditions.

TECHNICAL SPECIFICATIONS

Max. operating pressure	14 bar_g
Max. inlet air temperature	55 °C (for temperature ≠ 35 °C apply correction factor)
Operating ambient temperature	1,5 °C to 45 °C (for temperature > 25 °C apply correction factor)
Max. storage temperature	52 °C
Pressure dew point	+ 3 °C
Filter requirement (inlet)	Prefilter 3 µm
Communication	MODBUS
Digital input	Remote ON/OFF
Type of cooling	Air cooled
Refrigerant	R407C
Compressor	1x Variable speed (RDP 2600 ES - RDP 8800 ES), 1x Variable speed + 1x Cycling (RDP 10800 ES - RDP 13200 ES)
Condensate drain	Automatic (Zero loss type)
Voltage, Frequency	3~400-50/440-60
Protection class	IP 20

MATERIALS

Casing	Carbon steel
Casing corrosion protection	Epoxy powder paint
Evaporator	Aluminium
Evaporator insulation	Flexible elastomeric foam
Condenser	Aluminium MCHE
Compressor	Carbon steel
Refrigerant piping	Copper
Controller enclosure	Plastic

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SIZES

Model	Compressed air			Electrical connection		Ambient air		Refrigerant		Dimensions & Mass	
	[3]Flow	Connection	[3]Pressure drop	Power supply	Power/ [3]Consumption	Cooling flow	[3]Heat rejec.	Type	Mass	W x L x H	Net
	m^3/h		bar	Ph~V-Hz	kW	m^3/h	kW		kg	mm	kg
RDP 2600 ES	2600	DN100	0,2	3~400-50/440-60	8,6 / 2,9	4000	16,1	R407C	11,0	1044 x 1477 x 1797	500
RDP 3400 ES	3400	DN100	0,2	3~400-50/440-60	12,5 / 4,4	4000	21	R407C	14,0	1044 x 1477 x 1797	550
RDP 4400 ES	4400	DN125	0,2	3~400-50/440-60	17,0 / 5,8	8000	27,2	R407C	15,0	1522 x 1357 x 1907	767
RDP 5400 ES	5400	DN125	0,2	3~400-50/440-60	18,2 / 6,8	8000	33,4	R407C	16,0	1628 x 1455 x 1907	787
RDP 6600 ES	6600	DN150	0,2	3~400-50/440-60	20,0 / 8,5	12000	40,8	R407C	17,0	1628 x 1367 x 1897	920
RDP 7200 ES	7200	DN150	0,2	3~400-50/440-60	23,0 / 9,0	12000	44,5	R407C	21,0	1603 x 1944 x 1864	1200
RDP 8800 ES	8800	DN200	0,2	3~400-50/440-60	26,3 / 13,2	16000	54,4	R407C	22,0	1579 x 1945 x 1872	1237
RDP 10800 ES	10800	DN200	0,2	3~400-50/440-60	30,6 / 16,2	16000	66,8	R407C	25,0	1579 x 1945 x 1872	1350
RDP 13200 ES	13200	DN200	0,2	3~400-50/440-60	32,5 / 21,3	24000	81,7	R407C	25,0	1808 x 2599 x 2000	1443

↓ Larger sizes available upon request ↓

[3] Nominal conditions: inlet flow 20 °C at 1 bar_a, ambient 25 °C, dryer inlet 35°C at 7 bar_g, 3 °C pressure dew point (-20,5 °C atmospheric).

PRESSURE DROP AT DIFFERENT LOADS

100% Air Flow	200 mbar
75% Air Flow	110 mbar
50% Air Flow	50 mbar
25% Air Flow	< 20 mbar

POWER CONSUMPTION AT DIFFERENT LOADS

100%	Air Flow	100 %	Consumption
75%	Air Flow	51 %	Consumption
50%	Air Flow	36 %	Consumption
25%	Air Flow	23 %	Consumption
0%	Air Flow	20 %	Consumption

CORRECTION FACTORS

To calculate the correct capacity of a given dryer based on actual operating conditions, multiply the nominal inlet flow by the appropriate correction factor(s). CORRECTED CAPACITY = NOMINAL FLOW CAPACITY x C_{OP} x C_{AT} x C_{IN} x C_{DP}

OPERATING PRESSURE

[bar]	4	5	6	7	8	10	12	14	16
[psi]	58	72	87	100	115	145	174	203	232
C_{OP}	0,77	0,86	0,93	1	1,05	1,14	1,21	1,27	1,32

DEW POINT

°C	3	5	7	10
°F	37,4	41	44,6	50
C_{DP}	1	1,099	1,209	1,385

INLET TEMPERATURE

°C	≤25	30	35	40	45	50	55
°F	77	86	95	104	113	122	131
C_{IN}	1,2	1,12	1	0,83	0,69	0,59	0,5

AMBIENT TEMPERATURE

°C	≤25	30	35	40	45
°F	77	86	95	104	113
C_{AT}	1	0,96	0,9	0,82	0,72

MAINTENANCE

For maintenance, please follow the operating manual. Check the dryer operation weekly.

INFORMATION IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE

BUREAU VERITAS 1828	Our quality management system is certified by BUREAU VERITAS in conformity with ISO 9001:2008 Reg. number: 200285	

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