



# REFRIGERATION DRYER

## RDP 2600 W - 13200 W

(Non-cycling refrigeration dryer; water cooled)



### 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 pre-cooled 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 ISO 8573-1

Solid particles <sup>(1)</sup>	Water <sup>(1), (2)</sup>	Oil <sup>(1)</sup>
/	4	/

<sup>(1)</sup> Standard configuration of dryer does not include filters. Prefilter (3 µm) has to be installed upstream of the dryer.

<sup>(2)</sup> Pressure dew point also depends on specific operating conditions.

### TECHNICAL SPECIFICATIONS

Max. operating pressure	14 barg
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	Water cooled
Refrigerant	R513A
Compressor	1x Variable speed (RDP 2600 WES - RDP 8800 WES), 1x Variable speed + 1x Cycling (RDP 10800 WES - RDP 13200 WES)
Condensate drain	Automatic (Zero loss type)
Voltage, Frequency	3~400-50/440-60
Protection class (controller front)	IP 65

### MATERIALS

Casing	Carbon steel
Casing corrosion protection	Epoxy powder paint
Evaporator	Aluminum
Evaporator insulation	Flexible elastomeric foam
Condenser	Stainless steel plates, copper brazing
Compressor	Carbon steel
Refrigerant piping	Copper
Controller enclosure	Plastic



## SIZES

Model	Compressed air			Electrical connection		Cooling water		Refrigerant		Dimensions & Mass	
	<sup>(3)</sup> Flow	Connection IN & OUT <sup>(4)</sup>	Pressure drop	Power supply	Installed power/ Power consumption	Cooling water flow at 35°C <sup>(5)</sup>	Heat rejection	Type	Mass	W x L x H	Net
	m <sup>3</sup> /h		bar	Ph~V-Hz	kW	m <sup>3</sup> /h	kW		kg	mm	kg
<b>RDP 2600 W</b>	2600	DN100	<0,2	3~400-50*	8,0 / 3,6	2,1	16,1	R513A	11,0	870 x 1502 x 1888	500
<b>RDP 3400 W</b>	3400	DN100	<0,2	3~400-50*	9,0 / 4,4	2,7	21	R513A	10,0	870 x 1502 x 1888	550
<b>RDP 4400 W</b>	4400	DN125	<0,2	3~400-50*	12,0 / 5,6	3,6	27,2	R513A	15,0	1522 x 1307 x 1995	767
<b>RDP 5400 W</b>	5400	DN125	<0,2	3~400-50*	18,0 / 7,6	4,4	33,4	R513A	16,0	1522 x 1307 x 1995	787
<b>RDP 6600 W</b>	6600	DN150	<0,2	3~400-50*	20,0 / 8,5	5,3	40,8	R513A	17,0	1628 x 1367 x 1897	920
<b>RDP 7200 W</b>	7200	DN150	<0,2	3~400-50*	23,0 / 9,4	5,8	44,5	R513A	21,0	1603 x 1944 x 1864	1200
<b>RDP 8800 W</b>	8800	DN200	<0,2	3~400-50*	26,3 / 13,2	7,1	54,4	R513A	22,0	1659 x 2070 x 1968	1237
<b>RDP 10800 W</b>	10800	DN200	<0,2	3~400-50*	30,6 / 16,2	8,7	66,8	R513A	25,0	1579 x 1945 x 1872	1350
<b>RDP 13200 W</b>	13200	DN200	<0,2	3~400-50*	32,5 / 21,3	10,7	81,7	R513A	25,0	1808 x 2599 x 2000	1443

↓ Larger sizes available upon request ↓

- (0) Nominal condition: inlet flow 20 °C at 1 bar<sub>a</sub>, cooling water 25 °C, dryer inlet 35°C at 7 bar<sub>g</sub>, 3 °C pressure dew point (-20,5 °C atmospheric);  
 (1) Without filters.  
 (2) Water inlet/outlet differential temperature of 5°C.

### (3) PRESSURE DROP AT DIFFERENT LOADS

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

## 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<sub>OP</sub> x C<sub>WT</sub> x C<sub>IN</sub> x C<sub>DP</sub>

## OPERATING PRESSURE

[bar]	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
[psi]	29	44	58	72	87	100	115	130	145	160	174	189	203	218	232
C <sub>OP</sub>	0,39	0,60	0,77	0,86	0,93	1,00	1,05	1,10	1,14	1,18	1,21	1,24	1,27	1,30	1,32

## DEW POINT

°C	3	5	7	10
°F	37,4	41	44,6	50
C <sub>DP</sub>	1	1,10	1,21	1,39

## INLET TEMPERATURE

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

## COOLING WATER TEMPERATURE

°C	≤25	30	35	40	45
°F	77	86	95	104	113
C <sub>AT</sub>	1	0,96	0,9	0,82	0,72

## MAINTENANCE

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