REFRIGERATION DRYER

RDP 20 - 13200

(Non-cycling 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 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 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. It is strongly recommended to install prefilter (3 µm) upstream 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)	
Pressure dew point	+ 3 °C	
Filter requirement (inlet)	Prefilter 3 µm	
Communication	RS-485, MODBUS	
Digital input	Remote ON/OFF	
Type of cooling	Air cooled	
Compressor operation	Non-cycling	
Condensate drain	Automatic (Zero loss type)	
Voltage, Frequency	230 V, 50 Hz (RDP 20-600)	400V, 50 Hz (RDP 750-13200)
Refrigerant	R134a (RDP 20-1300)	
Protection class (controller front)	IP 65	
Handling option	Manual (RDP 20-100), Forklift (RDP 140-300)	

MATERIALS

Casing	Carbon steel
Casing corrosion protection	Epoxy powder paint
Evaporator	Brazed plate stainless steel (RDP 20 - 1900)
Evaporator insulation	Polyurethane foam
Condenser	Copper tube, aluminium fins
Compressor	Carbon steel
Refrigerant piping	Copper
Controller enclosure	Plastic

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SIZES

	Compressed air			Electrical connection		Ambient air		Refrigerant		Dimensions			
Model	Flow	Connection [5]	Pressure drop	Power supply	Power	Cooling flow	Rejected heat	Type	Mass	W	L	H	Mass, net
	m³/h [3]		bar	ph/V/Hz	W	m³/h	kW		g	mm			kg
RDP 20	20	G 3/8" BSP-F	0,2	1/230/50	150	250	0,2	R134a	230	385	465	606	
RDP 35	35	G 3/8" BSP-F	0,2	1/230/50	150	250	0,3	R134a	280	385	465	606	
RDP 50	50	G 3/4" BSP-F	0,2	1/230/50	180	250	0,4	R134a	380	385	465	606	28
RDP 75	75	G 3/4" BSP-F	0,2	1/230/50	250	250	0,6	R134a	410	385	465	606	31
RDP 100	100	G 3/4" BSP-F	0,2	1/230/50	360	400	0,8	R134a	510	385	465	606	34
RDP 140	140	G 1" BSP-F	0,2	1/230/50	460	700	1,1	R134a	600	417	468	807	48
RDP 180	180	G 1" BSP-F	0,2	1/230/50	590	700	1,5	R134a	630	417	468	807	48
RDP 235	235	G 1" BSP-F	0,2	1/230/50	840	700	1,9	R134a	860	417	468	807	52
RDP 300	300	G 1 1/4" BSP-F	0,2	1/230/50	1200	1100	2,4	R134a	1030	548	590	916	89
RDP 380	380	G 1 1/4" BSP-F	0,2	1/230/50	1400	1100	3,1	R134a	1310	548	590	916	95
RDP 480	480	G 1 1/2" BSP-F	0,2	1/230/50	1900	1100	3,9	R134a	1410	548	590	916	106
RDP 600	600	G 2" BSP-F	0,2	1/230/50	1900	2200	4,9	R134a	1700	548	710	1058	123
RDP 750	750	G 2" BSP-F	0,2	3/400/50	2700	2200	6,1	R134a	2200	548	710	1058	
RDP 950	950	G 2" BSP-F	0,2	3/400/50	3800	2200	7,7	R134a		548	710	1058	
RDP 1150	1150	G 2 1/2" BSP-F	0,2	3/400/50	3700	1900	9,4	R134a		703	815	1438	
RDP 1300	1300	G 2 1/2" BSP-F	0,2	3/400/50	4700	1900	10,6	R134a		703	815	1438	
RDP 1500	1500	G 2 1/2" BSP-F		3/400/50				R134a					
RDP 1900	1900	G 2 1/2" BSP-F		3/400/50				R134a					
RDP 2600	2600	DN100		3/400/50				R134a					
RDP 3400	3400	DN100		3/400/50				R134a					
RDP 4400	4400	DN125		3/400/50				R134a					
RDP 5400	5400	DN125		3/400/50				R134a					
RDP 6600	6600	DN150		3/400/50				R134a					
RDP 7200	7200	DN150		3/400/50				R134a					
RDP 8800	8800	DN200		3/400/50				R134a					
RDP 10800	10800	DN200		3/400/50				R134a					
RDP 13200	13200	DN200		3/400/50				R134a					

↓ Larger sizes available upon request ↓

[3] Nominal condition: 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).
[5] Without filters.

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
[psi]	58	72	87	100	115	145	174	203
C_{OP}	0,77	0,86	0,93	1	1,05	1,14	1,21	1,27

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.

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