

REFRIGERATION DRYER

RDT 20 - 1900

(Non-cycling refrigeration dryer with timer drain)



DESCRIPTION RDT

RDT refrigeration dryers have been designed to efficiently separate water from compressed air and lower the 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 ⁽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	16 bar(g)
Max. inlet air temperature	55 °C (for temperature ≠ 35 °C apply correction factor)
Operating ambient temperature	1 °C to 45 °C (for temperature > 25 °C apply correction factor)
Storage conditions	1 °C to 65 °C, <90 % relative humidity
Pressure dew point	+ 3 °C
Filter requirement (inlet)	Prefilter 3 µm
Communication	MODBUS
Digital input	Remote ON/OFF
Digital output	Alarm
Type of cooling	Air cooled
Compressor operation	Non-cycling
Condensate drain	Timer controlled
Condensate drain time ON	1 s - 10 s (default 1 s)
Condensate drain time OFF	0 s - 600 s (default 200 s)
Max. noise level at 1m	< 65 dbA
Refrigerant	R513a
Protection class	IP 20
Handling option	Manual (RDT 20-100), Forklift (RDT 140-1900)

MATERIALS

Casing	Carbon steel
Casing corrosion protection	Epoxy powder paint
Evaporator	Aluminium, (RDT 20-480), Brazed plate stainless steel (RDT 600-1900)
Evaporator insulation	Flexible elastomeric foam
Condenser	Aluminium fin and copper tube (RDT 20-1900)
Compressor	Carbon steel

Refrigerant piping	Copper
Controller enclosure	Plastic

SIZES

Model	Compressed air			Electrical connection		Ambient air		Refrigerant		Dimensions & Mass	
	⁽³⁾ Flow	Connection	Pressure drop	Power supply	⁽⁴⁾ Power/Consumption	Cooling flow	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
RDT 20	20	G 3/4" BSP-F	<0,2	1~230-50*	0,160 / 0,135	350	0,2	R513a	0,190	352 x 485 x 592	25
RDT 35	35	G 3/4" BSP-F	<0,2	1~230-50*	0,170 / 0,135	350	0,3	R513a	0,230	352 x 485 x 592	25
RDT 50	50	G 1" BSP-F	<0,2	1~230-50/230-60	0,20 / 0,18	350	0,4	R513a	0,330	352 x 485 x 592	26
RDT 75	75	G 1" BSP-F	<0,2	1~230-50*	0,40 / 0,25	350	0,6	R513a	0,380	352 x 485 x 592	27
RDT 100	100	G 1" BSP-F	<0,2	1~230-50/230-60	0,45 / 0,32	350	0,8	R513a	0,585	355 x 550 x 592	32
RDT 140	140	G 1" BSP-F	<0,2	1~230-50/230-60	0,50 / 0,38	700	1,1	R513a	0,61	355 x 550 x 592	50
RDT 180	180	G 1 1/2" BSP-F	<0,2	1~230-50*	0,60 / 0,45	700	1,5	R513a	0,71	495 x 558 x 826	52
RDT 235	235	G 1 1/2" BSP-F	<0,2	1~230-50*	0,73 / 0,60	700	1,9	R513a	0,89	495 x 558 x 826	56
RDT 300	300	G 1 1/2" BSP-F	<0,2	1~230-50*	1,0 / 0,7	1100	2,4	R513a	1,07	495 x 558 x 826	84
RDT 380	380	G 1 1/2" BSP-F	<0,2	1~230-50/230-60	1,1 / 0,8	1100	3,1	R513a	1,20	495 x 558 x 826	90
RDT 480	480	G 1 1/2" BSP-F	<0,2	1~230-50/230-60	1,2 / 1,0	1100	3,9	R513a	1,31	495 x 558 x 826	99
RDT 600	600	G 2" BSP-F	<0,2	1~230-50/230-60	1,3 / 1,1	2200	4,9	R513a	1,59	491 x 708 x 973	110
RDT 750	750	G 2" BSP-F	<0,2	3~400-50/440-60	2,0 / 1,5	2200	6,1	R513a	2,19	491 x 708 x 973	120
RDT 950	950	G 2" BSP-F	<0,2	3~400-50/440-60	2,4 / 1,9	2200	7,7	R513a	2,55	491 x 708 x 973	150
RDT 1150	1150	G 2 1/2" BSP-F	<0,2	3~400-50/440-60	2,4 / 2,0	1900	9,4	R513a	3,49	662 x 856 x 1534	250
RDT 1300	1300	G 2 1/2" BSP-F	<0,2	3~400-50/440-60	2,6 / 2,3	1900	10,6	R513a	3,25	662 x 856 x 1534	280
RDT 1500	1500	G 2 1/2" BSP-F	<0,2	3~400-50/440-60	2,7 / 2,4	4600	12,2	R513a	5,00	662 x 856 x 1534	290
RDT 1900	1900	G 2 1/2" BSP-F	<0,2	3~400-50/440-60	3,8 / 3,4	3800	15,5	R513a	5,30	662 x 856 x 1534	310

⁽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).

⁽⁴⁾ For 60 Hz 20 % more than stated. Consumption at nominal conditions.

* Special 60 Hz version available.

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_{DP} x C_{IN} x C_{AT}

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 _{OP}	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 _{DP}	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 _{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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	Our quality management system is certified by BUREAU VERITAS in conformity with ISO 9001:2015	
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