

REFRIGERATION DRYER

RDT 20 - 300

(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 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	Timer controlled
Condensate drain time ON	1 s - 10 s (default 1 s)
Condensate drain time OFF	0 s - 600 s (default 200 s)
Voltage, Frequency	230 V, 50 Hz
Refrigerant	R134a
Protection class (controller front)	IP 65
Handling option	Manual (RDT 20-100), Forklift (RDT 140-300)

MATERIALS

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

SIZES

Model	Compressed air			Electrical connection		Ambient air		Refrigerant		Dimensions			Mass, net kg
	Flow	Connection ⁽⁵⁾	Pressure drop	Power supply	Power	Cooling flow	Rejected heat	Type	Mass	W	L	H	
	m ³ /h ⁽³⁾		bar	ph/V/Hz	W	m ³ /h	kW		g	mm			
RDT 20	20	G 3/8" BSP-F	0,2	1/230/50	135	250	0,2	R134a	230	352	485	499	25
RDT 35	35	G 3/8" BSP-F	0,2	1/230/50	135	250	0,3	R134a	250	352	485	499	25
RDT 50	50	G 3/4" BSP-F	0,2	1/230/50	180	250	0,4	R134a	340	352	485	499	26
RDT 75	75	G 3/4" BSP-F	0,2	1/230/50	250	250	0,6	R134a	380	352	485	499	27
RDT 100	100	G 3/4" BSP-F	0,2	1/230/50	320	400	0,8	R134a	520	352	485	499	32
RDT 140	140	G 1" BSP-F	0,2	1/230/50	480	700	1,1	R134a	600	357	552	684	50
RDT 180	180	G 1" BSP-F	0,2	1/230/50	500	700	1,5	R134a	700	357	552	684	52
RDT 235	235	G 1" BSP-F	0,2	1/230/50	700	700	1,9	R134a	960	357	552	684	56
RDT 300	300	G 1 1/4" BSP-F	0,2	1/230/50	950	1100	2,4	R134a	1120	496	589	827	84

⁽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_{CAT} x C_{CIN} 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 _{CIN}	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 _{CAT}	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 9001:2008 Reg. number: 200285
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