

Air treatment Refrigeration dryers RKT+ 0035 – 0450

RENNER
Kompressoren 

OUTSTANDING FEATURES

- Refrigerated compressed air dryers with condensate drain and very low differential pressure ensure safe compliance with compressed air quality and low energy costs.
- Extremely compact and space-saving design in robust steel housing.
- Retrofitting to Renner compressors possible as pre-configured holes are available.
- Time-controlled solenoid valve for safe discharge of compressed air condensate at the heat exchanger.
- Electronic, level-controlled steam trap including function monitoring and alarm message for the discharge of compressed air condensate at the heat exchanger.
- Electronic control with dew point indicator, alarm display, service indicator and operating display for compressed air dryer and fan.
- 12 sizes for nominal flow rates from 35 to 850 m³ / h enable a precise selection of the appropriate refrigeration compressed air dryer for the respective operating volume flow.



RKT+ 0035 – 0450

INDUSTRIES



- Chemical and electrical industry



- Mechanical and plant engineering



- Automotive industry

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PRODUCT DESCRIPTION

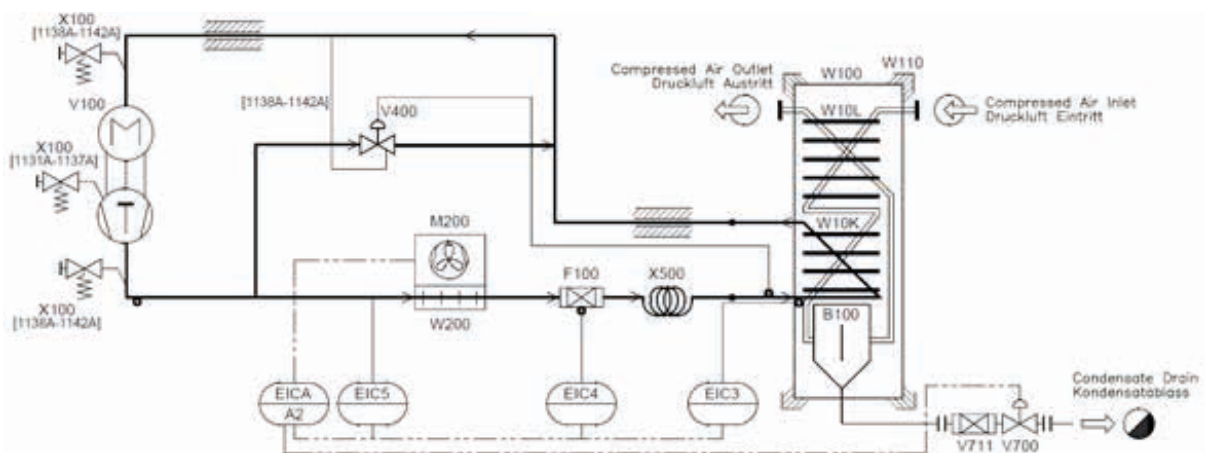
The compressed air is being fed into the dryer and being pre-cooled in the air-to-air heat exchanger by the outgoing cold compressed air. The pre-cooled air then passes through the refrigerant-to-air heat exchanger where it is being cooled further down to the required pressure dew point. The moisture in the compressed air condenses out and gathers and discharges automatically. Finally, the cold discharged air is being reheated by the incoming compressed air.

This saves energy and prevents any moisture forming beyond the dryer in the compressed air system. The cooling capacity of the refrigeration cycle is being controlled by a microprocessor based controller to realize energy savings of up to 90 % and to avoid freezing of the condensate in the heat exchanger.

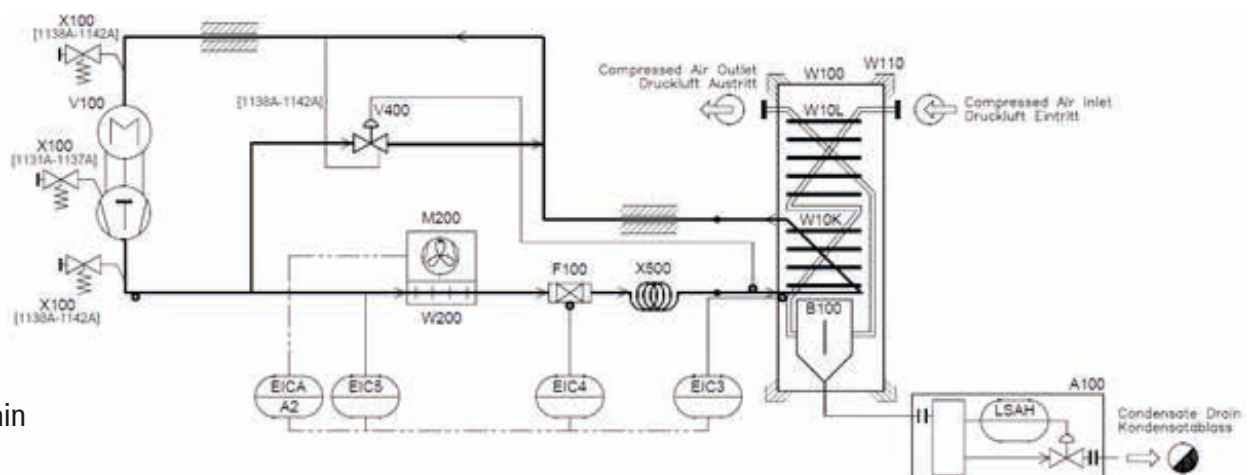
Typical Applications for refrigerant air dryer RKT+ 0035 – RKT+ 0450 are:

- **Central compressed air preparation:**
Generation of dry compressed air
- **Automotive industry:**
Preparation of compressed air for painting applications

R & I Diagram



Time drain



Electrical drain

PRODUCT SPECIFICATIONEN

Characteristics	Use
Intelligent overall concept	Series grading, integrated monitoring functions and automatic steam traps tuned for use in central compressed air applications
Compact and space saving construction in a robust steel housing	Low space requirement at the place of installation, low storage space requirement and low transport costs
All dryers are equipped with a sturdy, powder-coated metal housing	Optimum protection against damage, against corrosion and against dirt
Validated performance data by ISO 12500-1	Reliable achievement of compressed air quality according to ISO 8573-1
Timed solenoid valve	Safe condensate drainage
Option: Electronic-level-controlled Steam trap UFM-D with fault signal	No expensive compressed air losses, condensate drainage depending on the amount of condensate
Electronic control incl. Dew point indicator, alarm display, service indicator and operating display for compressed air dryer and fan; potential-free fault message	Reliable monitoring of the operating status and timely display of required maintenance work; Remote monitoring possible through potential-free fault message
High overload capacity up to a pressure dew point of + 20 ° C	In the event of overloading, the refrigeration compressed air dryer only shuts off at a pressure dew point of + 20 ° C
Aluminum heat exchangers	No corrosion within the heat exchanger due to contact with moist compressed air; good heat transfer properties with low weight

Technical data	
Working pressure	RKT+ 0035 – 0065: min. 2 bar (g) / max. 16 bar (g) RKT+ 0085 – 0450: min. 2 bar (g) / max. 14 bar (g)
Ambient temperature	min. +2°C / max. +45°C
Air inlet temperature	max. +55°C
Medium	Compressed air
Refrigerant	RKT+ 0035 – 0150: R134a RKT+ 0180 – 0450: R407C
Noiselevel	< 70 dB (A)
Power supply	RKT+ 0035 – 0105: 230V / 1~ / 50-60 Hz (±10%) RKT+ 0125 – 0450: 230V / 1~ / 50 Hz (±10%)
Protection class	IP 20
Declaration of Conformity	
Typen RKT+ 0035 – 0450	Acc. to directive 2006/42/EG attachment IIA

PRODUCT SPECIFICATIONEN

Type	Airflow* m³/h	Airflow* m³/min	Pressure drop* bar	Cooling air m³/h	Power consumption kW
RKT+ 0035	35	0,58	0,07	300	0,18
RKT+ 0050	50	0,83	0,09	300	0,25
RKT+ 0065	65	1,08	0,19	300	0,26
RKT+ 0085	85	1,42	0,28	300	0,29
RKT+ 0105	105	1,75	0,15	300	0,30
RKT+ 0125	125	2,08	0,09	340	0,47
RKT+ 0150	150	2,50	0,11	340	0,50
RKT+ 0180	180	3,00	0,13	350	0,69
RKT+ 0225	225	3,75	0,20	600	0,70
RKT+ 0300	300	5,00	0,23	700	0,74
RKT+ 0360	360	6,00	0,29	700	0,97
RKT+ 0450	450	7,50	0,39	700	1,18

*according ISO 7183

SIZING

Working pressure (bar)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor f_p	0,60	0,70	0,80	0,88	0,94	1,00	1,04	1,06	1,09	1,1	1,12	1,14	1,15	1,16	1,17

Dew point (°C)	3	5	7	10	Ambient temperature (°C)	25	30	35	40	45
Factor f_{tpd}	1,00	1,12	1,24	1,36	Factor f_{ta}	1,00	0,97	0,94	0,87	0,78

Inlet temperature (°C)	30	35	40	45	50	55
Factor f_{ti}	1,17	1,00	0,88	0,75	0,58	0,48

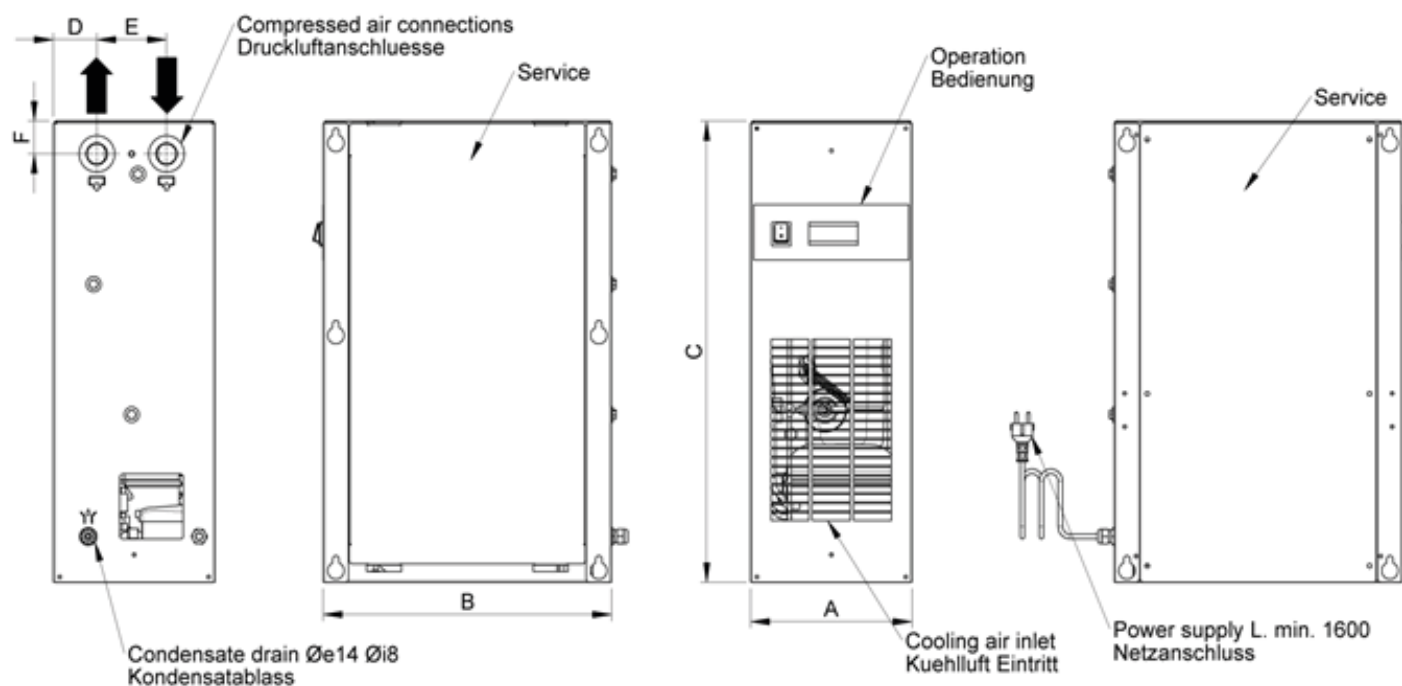
Example:

$V_{norm} = 100 \text{ m}^3/\text{h}$ (Air flow of compressor), compressed air inlet temperature = 40°C,
 ambient temperature = 35°C, pressure = 9 bar (ü), pressure dew point = +3°C

$$V_{kor} = \frac{V_{norm}}{f} = \frac{100 \text{ m}^3/\text{h}}{0,88 * 1,06 * 0,94 * 1,00} = 114 \text{ m}^3/\text{h}$$

Calculated model:
RKT+ 0125

DIMENSIONS



Type	A mm	B mm	C mm	D mm	E mm	F mm	Air connections BSP	Weight kg
RKT+ 0035	255	455	626	59	110	95	G½	31
RKT+ 0050	255	455	626	59	110	95	G½	32
RKT+ 0065	255	455	626	59	110	95	G½	33
RKT+ 0085	255	455	708	69	110	51	G1	35
RKT+ 0105	255	455	708	69	110	51	G1	36
RKT+ 0125	345	525	851	69	150	105	G1¼	45
RKT+ 0150	345	525	851	69	150	105	G1¼	46
RKT+ 0180	345	525	851	69	150	105	G1¼	56
RKT+ 0225	345	525	851	69	150	105	G1¼	57
RKT+ 0300	350	668	1061	89	150	109	G1½	74
RKT+ 0360	350	668	1061	89	150	109	G1½	75
RKT+ 0450	350	668	1061	89	150	109	G1½	78