

Compressed air treatment

Compressed air quality made to measure



Sketch made with RENNER Planner Software
– available to RENNER distributors on request

Cyclone separators / Air filters / Refrigeration dryers / Condensate drains / Oil-water separators



Compressed air treatment and accessories

Compressed air is used in almost all industrial sectors. The demands on their quality and purity vary depending on the application. RENNER offers the right products and solutions for all requirements.

Cyclone separators



Condensate is separated at the compressed air outlet of the compressor

Air filters / three-stages-filter



In different filtration classes according to ISO 8573:1 for clean compressed air

Refrigeration dryers



Protection against condensation

Adsorption dryers



Clean and dry compressed air with low pressure dew point according to ISO 8573:1

Activated carbon adsorbers



For reliable removal of oil vapours, hydrocarbons and odours.

Pressure maintaining systems



Flawless compressed air treatment guaranteed

Electric ball valves



Slow opening hours for a safe compressed air treatment

Condensate drains



Discharge of condensate without unnecessary compressed air losses

Oil-water separators



Separation of oil and condensate

Cyclone separators RF-C 0050 – 1500

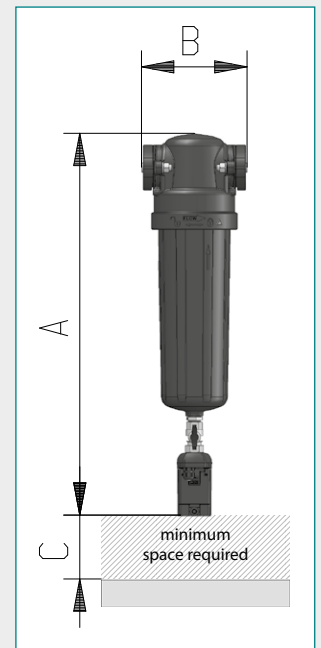
For separating larger amounts of condensate and coarse dirt particles
With level-controlled condensate drain

Through centrifugal separation of liquids from compressed air of up to 99%, Cyclone separators extract water and coarse dirt particles from compressed air by means of the centrifugal effect and are installed directly behind the compressor. The incorporated deflector plate creates a spinning movement resulting in a cyclone-like, upward stream of compressed air inside the enclosure. The special design of the lower section of the filter enclosure, and the use of a mushroom-like shield over the condensate collecting chamber, ensures that separated aerosols cannot be carried away. This optimal design ensures low differential pressures at high flow rates. Efficiency is at 99%. Temperature limits at the installation site of a maximum of 80°C and a minimum of 2°C must be observed. The design, manufacture and conformity assessment is in accordance with Pressure Equipment Directive 2014/68/EU0 for Group 2 fluids.



RF-C 0050 – 1500									
Model	Connection inch	Capacity at 7 bar			Dimensions mm			Weight kg	Part no.
		m ³ /min / cfm	max. pressure	A	B	C			
RF-C 0050 ⁽¹⁾	G ³ / ₈	0.83	29	16	375	76	70	1.2	14616
RF-C 0120 ⁽¹⁾	G ¹ / ₂	2.00	71	16	418	103	70	1.6	14617
RF-C 0210 ⁽¹⁾	G1	3.50	124	16	503	139	70	2.7	14618
RF-C 0320 ⁽¹⁾	G1	5.33	188	16	503	139	70	2.7	14619
RF-C 0450 ⁽²⁾	G ^{1 1} / ₂	7.50	265	16	739	190	70	2.9	14620
RF-C 0750 ⁽²⁾	G2	12.50	441	16	739	190	70	2.9	14621
RF-C 1100 ⁽²⁾	G2	18.33	647	16	739	190	70	2.9	14622
RF-C 1500 ⁽²⁾	G ^{2 1} / ₂	25.00	883	16	848	248	70	6.6	18232

⁽¹⁾ incl. UFM-D 05 ⁽²⁾ incl. UFM-D 10



Advantages: Very low maintenance cost, easy to install, high-performance automatic deflector, robust aluminum enclosure.

Conversion factor f at different operating pressures																
Operating pressure (bar)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor f	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

Sizing example

V_{nom} = 5.83 m³/min, operating pressure 9 bar

$$V_{corr} = \frac{V_{nom}}{f} = \frac{5.83}{1.25} = 4.66 \text{ m}^3/\text{min}$$

Calculated size: 5.33 m³/min → Model RF-C 0320

Air filters RF 0035 – 1500

Product range RF = with thread
With automatic condensate drain
Max. operating pressure 16 bar



RENNER compressed air filters are suitable for separating oil and water aerosols as well for the removal of solid contaminants from compressed air. Even dust is securely kept on the surface and in the filter material. A filtration efficiency of almost 100 percent is reached through the use of various filtration mechanisms, such as separation by direct trapping, inertial impact and Brownian motion.

The standard filter is fitted with a mechanically controlled steam trap. The robust aluminium enclosure is coated with a polyester resin and is therefore particularly resistant to aggressive condensates.

The turbulence-free area in the lower section of the filter enclosure ensures that the already separated condensate is not carried away out of the wet area with the clean air stream. Pleated compressed air filter elements consume extremely little energy due to the very low differential pressures. The initial low differential pressure therefore remains at a low level for its entire service life. Temperature limits at the installation site of a maximum of 60°C and a minimum of 2°C must be observed. The high quality requirements of DIN ISO 8573 are fulfilled with ease. These filters are LLOYD'S-certified under KLR0403771 with the CE symbol and the CE declaration of conformity. The design, manufacture and conformity assessment is in accordance with Pressure Equipment Directive 2014/68/EU EC for Group 2 fluids.

RF 0035 – 1500						
Model	Connection inch	Capacity at 7 bar		Max. operating pressure bar	Weight Standard filter kg	Weight Superplus filter ⁽¹⁾ kg
		m ³ /min	cfm			
RF 0035	G¾	0.58	20	16	0.5	1.6
RF 0070	G½	1.16	41	16	0.9	2.0
RF 0120	G½	2.00	71	16	1.0	2.1
RF 0210	G1	3.50	124	16	2.0	3.1
RF 0320	G1	5.33	188	16	2.2	3.3
RF 0450	G1¼	7.50	265	16	5.2	6.7
RF 0600	G1½	10.00	353	16	5.2	6.7
RF 0750	G2	12.50	441	16	5.2	6.7
RF 1100	G2	18.33	647	16	7.2	6.9
RF 1500	G2½	25.00	883	16	–	7.3

⁽¹⁾ Superplus: incl. economizer and level-controlled condensate drain UFM-D

Conversion factor f at different operating pressures

Operating pressure (bar)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor f	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13





Sizing example

V_{nom} = 5.83 m³/min, operating pressure 9 bar

$$V_{\text{corr}} = \frac{V_{\text{nom}}}{f} = \frac{5.83}{1.25} = 4.66 \text{ m}^3/\text{min}$$

Calculated size: 5.33 m³/min → Model RF 0320

Filter classifications and part numbers

Available filter classifications					
Product range		Filter type	Description	Max. residual dust content, particle size	Max. oil content
	RF-V	Fine filter	The depth filter removes water and oil aerosols as well as solid particles from compressed air and gases, with validated separating rate according to ISO 12500-1 and ISO separation 12500-3.	1 micron	< 0.2 mg/m ³
	RF-M	Micro filter	The depth filter removes water and oil aerosols as well as solid particles from compressed air and gases, with validated separating rate according to ISO 12500-1 and ISO separation 12500-3.	< 0.1 micron	< 0.02 mg/m ³
	RF-S	Sub micro filter	The depth filter removes water and oil aerosols as well as solid particles from compressed air and gases, with validated separating rate according to ISO 12500-1 and ISO separation 12500-3.	< 0.01 micron	< 0.01 mg/m ³
	RF-A	Activated carbon filter	Adsorption filter removes oil vapors and hydrocarbons as well as odours.	–	< 0.003 mg/m ³

Part numbers air filters RF											
Model	Serie RF-V			Serie RF-M			Serie RF-S			Serie RF-A	
	Filter complete Standard	Filter complete Superplus	Filter element	Filter complete Standard	Filter complete Superplus	Filter element	Filter complete Standard	Filter complete Superplus	Filter element	Filter complete Standard	Filter element
RF 0035	14738	14745	14707	14630	14746	14714	14739	14747	14721	14741	14728
RF 0070	14624	14680	14708	14631	14687	14715	14638	14694	14722	14645	14729
RF 0120	14625	14681	14709	14632	14688	14716	14639	14695	14723	14646	14730
RF 0210	14626	14682	14710	14633	14689	14717	14640	14696	14724	14647	14731
RF 0320	14686	14672	14644	14701	14693	14651	14704	14702	14658	14706	14665
RF 0450	14627	14683	14711	14634	14690	14718	14641	14697	14725	14648	14732
RF 0600	14628	14684	14712	14635	14691	14719	14642	14698	14726	14649	14733
RF 0750	14629	14685	14713	14636	14692	14720	14643	14699	14727	14650	14734
RF 1100	14744	14301	14751	14756	14302	14752	14737	14303	14753	14299	14754
RF 1500	–	24020	01783	–	24021	01784	–	24022	18229	24023	20324

Wall mount for air filters		
Filter	Size	Part no.
RF	0035 – 0050	02060
RF	0070 – 0120	14889
RF	0210 – 0320	06133
RF	0450 – 1500	00985

Connecting adapters for filter combinations	
Model	Part no.
Connector for model 0035 – 0050	02059
Connector for model 0070 – 0120	19890
Connector for model 0210 – 0320	01750
Connector for model 0450 – 1500	00986

Wall mount for three-stages-filters		
Filter	Size	Part no.
DF-T / RF-T	0050	14889
DF-T / RF-T	0080	06133
DF-T / RF-T	0110	06133

Three-stages-filter RF-T 0050 – 0110 / DF-T 0050 – 0110 creating oil-free compressed air

Composed of a sub-micro coalescent filter stage, an active carbon filter stage and a high efficient particle filter (air quality class 1 according to ISO 8573-1:2010)

All with thread, economizer and automatic condensate drain KA 1/2", max. operating pressure 16 bar



The Economizer (differential pressure indicator)

If you replace a used filter element at the right time, you save money!

The economizer determines the most economical time to do this as it continuously measures the differential pressure. The integrated micro-processor interprets the data by comparing higher energy costs, resulting from increased pressure loss with the cost of a new filter element. The most cost effective replacement time for the filter element is calculated and LEDs indicate the recommendation to replace the filter.

RF-T / DF-T, 3-in1, with thread						
Model	Connection inch	Capacity at 7 bar		Max. operating pressure bar	Part no. filter element	Part no. filter complete
		m ³ /min	cfm			
RF-T 0050	G1/2	0.83	29.3	16	14740	14652
RF-T 0080	G3/4	1.33	46.9	16	14742	14653
RF-T 0110	G1	1.83	64.6	16	14743	14654
DF-T 0050*	G1/2	0.83	29.3	16	13679	13676
DF-T 0080*	G3/4	1.33	46.9	16	13680	13677
DF-T 0110*	G1	1.83	64.6	16	13681	13678

* filter elements and housings free from both silicone and release agents

Three-stages-filter element being composed of a sub-micro coalescent filter stage, an active carbon filter stage and a high efficient particle filter (air quality class 1 according to ISO8573-1:2010) with differential pressure manometer, economizer incl. condensate float drain.

Filter performance data at nominal flow rate, defined by the following operation conditions				Cross-sectional filter element
Inlet	Operating overpressure	7 bar		
	Operating temperature ⁽¹⁾	20°C		
	Content of oil aerosol at inlet	3 mg/m ³		
	Moisture content	50% relative humidity, corresponds to a pressure dew-point of approx. +10°C at 20°C operating temperature		
Outlet	Compressed air quality class acc. to ISO 8573-1:2010 for oil	< 0.003 mg/m ³ , Class 1		
	Compressed air quality class acc. to ISO 8573-1:2010 for solid particles	Class 1		
	Differential pressure in new condition, dry	330 mbar		
	Service lifetime of activated carbon stage	2000 operating hours		

⁽¹⁾The recommended maximum operating temperature is 30°C, because with rising temperature the service lifetime of the filter will be reduced (at 30°C the service lifetime for a mineral oil ISO 46 amounts to approx. 1000 operation hours)

Conversion factor f at different operating pressures																
Operating pressure (bar)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor f	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

<p>Sizing example</p> <p>V_{nom} = 1.66 m³/min, operating pressure 9 bar</p> $V_{corr} = \frac{V_{nom}}{f} = \frac{1.66 \text{ m}^3/\text{min}}{1.25} = 1.33 \text{ m}^3/\text{min}$ <p>Calculated size: 1.33 m³/min -> Model RF-T 0080</p>	<p>Model RF-T 0080</p>
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Refrigeration dryers RKT-CQ 0020 – 0850 AB

Stand-alone unit, can not be mounted to RENNER compressors
With electronic control and time controlled or level-controlled condensate drain

The electronic control of the refrigeration dryer

The electronic DDS3 control is a micro-control specially developed for compressed air dryers with the following functions:

- Pressure dew point indicator
- Control of condensate solenoid valve
- Automatic fan control



RKT-CQ 0020 – 0850 AB										
Model	Capacity		Power consumption		Pressure loss bar	Connection inch	Dimensions L x W x H mm	Weight kg	Part no. (time controlled)	Part no. (level-controlled)
	m ³ /min	cfm	kW	HP						
RKT-CQ 0020 AB	0.33	11.6	0.16	0.21	0.15	G $\frac{3}{8}$	360 x 410 x 645	24	07269	07442
RKT-CQ 0035 AB	0.58	20.5	0.18	0.24	0.06	G $\frac{1}{2}$	360 x 410 x 645	26	07270	07444
RKT-CQ 0050 AB	0.83	29.3	0.19	0.25	0.09	G $\frac{1}{2}$	360 x 410 x 645	27	07273	07448
RKT-CQ 0065 AB	1.08	38.1	0.22	0.29	0.11	G $\frac{1}{2}$	360 x 410 x 645	29	07274	07452
RKT-CQ 0085 AB	1.42	50.1	0.29	0.39	0.15	G $\frac{1}{2}$	360 x 410 x 645	31	07278	07454
RKT-CQ 0105 AB	1.75	61.8	0.31	0.42	0.40	G $\frac{1}{2}$	360 x 410 x 645	31	07279	07456
RKT-CQ 0125 AB	2.08	73.4	0.39	0.52	0.22	G1	360 x 410 x 645	33	07282	07458
RKT-CQ 0150 AB	2.50	88.3	0.40	0.54	0.28	G1	360 x 410 x 645	33	07283	07470
RKT-CQ 0180 AB	3.00	105.9	0.53	0.71	0.22	G1 $\frac{1}{4}$	480 x 660 x 870	55	07286	07472
RKT-CQ 0225 AB	3.75	132.4	0.71	0.95	0.23	G1 $\frac{1}{4}$	480 x 660 x 870	56	07287	07474
RKT-CQ 0300 AB	5.00	176.5	0.80	1.07	0.42	G1 $\frac{1}{4}$	480 x 660 x 870	57	07290	07476
RKT-CQ 0360 AB	6.00	211.8	0.81	1.09	0.26	G1 $\frac{1}{2}$	480 x 660 x 870	61	07291	07477
RKT-CQ 0450 AB	7.50	264.8	0.76	1.02	0.35	G1 $\frac{1}{2}$	480 x 660 x 870	68	07294	07478
RKT-CQ 0550 AB	9.17	323.7	0.79	1.06	0.16	G2	645 x 920 x 1055	116	07295	07480
RKT-CQ 0650 AB	10.83	382.3	0.88	1.18	0.23	G2	645 x 920 x 1055	118	07298	07481
RKT-CQ 0750 AB	12.50	441.3	1.35	1.81	0.26	G2	645 x 920 x 1055	121	07299	07482
RKT-CQ 0850 AB	14.17	500.2	1.38	1.85	0.14	G2	645 x 920 x 1055	155	07386	07484

Electric supply: 230 V / 50 Hz / single phase. According to ISO 7183 (with 1 bar absolute and 20°C, dew point 5°C at inlet temperature of 35°C, 25°C ambient temperature and 7 bar). In refrigeration dryers with level-controlled condensate drain, a potential free contact for dryer failures is integrated.
Max. operating pressure 16 bar (RKT-CQ 0020 – 0105 AB) or 14 bar (RKT-CQ 0125 – 0850 AB).

Options RKT-CQ see page 9

Conversion tables for corrected dryer performance

Operating 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	1.10	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}	0.90	1.00	1.11	1.25	Factor f_{ta}						1.00	0.97	0.94	0.87	0.78
Inlet temperature (°C)	30	35	40	45	50	55	Corrected dryer performance:								Volume flow at entry
Factor f_{ti}	1.17	1.00	0.88	0.75	0.58	0.48									$(f_p \times f_{ti} \times f_{ta} \times f_{tpd})$

Refrigeration dryers RKT+ 0035 – 0450

For mounting at RENNER compressors

With electronic control and time controlled or level-controlled condensate drain

The dryer has a cooling system that cools down the compressed air. In this process, the water vapour saturation limit is lowered resulting in condensate that is removed by the condensate drain. The greater the cooling temperature differential of the compressed air, the higher the condensed water volume. The lower the cooling temperature of the compressed air, the lower the moisture content. The lower limit of the compressed air cooling arises from the working principle of the dryer, i.e. that moisture separation in liquid form can only occur at temperatures above the freezing point of water. The RENNER refrigeration dryer can be mounted on the console or the wall by means of flexible suspension.

The electronic control of the refrigeration dryer

The electronic DDS4 control is a micro-control specially developed for compressed air dryers with the following functions:

- Pressure dew point indicator
- Control of condensate solenoid valve
- Automatic fan control
- Maintenance indicator



RKT+ 0035 – 0450										
Model	Capacity		Power consumption		Pressure loss bar	Connection inch	Dimensions L x W x H mm	Weight kg	Part no. (time controlled)	Part no. (level-controlled)
	m ³ /min	cfm	kW	HP						
RKT+ 0035	0.58	21	0.18	0.24	0.07	G½	255 x 455 x 626	31	20587	20599
RKT+ 0050	0.83	29	0.25	0.34	0.09	G½	255 x 455 x 626	32	20588	20600
RKT+ 0065	1.08	38	0.26	0.35	0.19	G½	255 x 455 x 626	33	20589	20601
RKT+ 0085	1.42	50	0.29	0.39	0.28	G1	255 x 455 x 708	35	20590	20602
RKT+ 0105	1.75	62	0.30	0.40	0.15	G1	255 x 455 x 708	36	20591	20603
RKT+ 0125	2.08	73	0.47	0.63	0.09	G1¼	345 x 525 x 851	45	20592	20604
RKT+ 0150	2.50	88	0.50	0.67	0.11	G1¼	345 x 525 x 851	46	20593	20605
RKT+ 0180	3.00	106	0.69	0.93	0.13	G1¼	345 x 525 x 851	56	20594	20606
RKT+ 0225	3.75	132	0.70	0.94	0.20	G1¼	345 x 525 x 851	57	20595	20607
RKT+ 0300	5.00	177	0.74	1.00	0.23	G1½	350 x 668 x 1061	74	20596	20608
RKT+ 0360	6.00	212	0.97	1.30	0.29	G1½	350 x 668 x 1061	75	20597	20609
RKT+ 0450	7.50	265	1.18	1.60	0.39	G1½	350 x 668 x 1061	78	20598	20610

Electric supply: 230 V / 50 Hz / single phase. According to ISO 7183 (with 1 bar absolute and 20°C, dew point 3°C at inlet temperature of 35°C, 25°C ambient temperature and 7 bar). In refrigeration dryers with level-controlled condensate drain, a potential-free contact for dryer failures is integrated. Max. operating pressure 16 bar (RKT+ 0035 – 0065) or 14 bar (RKT+ 0085 – 0450).

Options for RKT+ and RKT-CQ	Part no.
Bypass RKT-CQ 0020 AB	02888
Bypass RKT+ 0035 – 0065 / RKT-CQ 0035 – 0105 AB	02889
Bypass RKT+ 0085 – 0105 / RKT-CQ 0125 – 0150 AB	23027
Bypass RKT+ 0125 – 0225 / RKT-CQ 0180 – 0300 AB	02891
Bypass RKT+ 0300 – 0450 / RKT-CQ 0360 – 0450 AB	02892
Bypass RKT-CQ 0550 – 0750 AB	02893
Bypass RKT-CQ 0850 AB	02894

Conversion tables for corrected dryer performance

Operating 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	1.10	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	Corrected dryer performance: $\frac{\text{Volume flow at entry}}{(f_p \times f_{ti} \times f_{ta} \times f_{tpd})}$								
Factor f_{ti}	1.17	1.00	0.88	0.75	0.58	0.48									



Refrigeration dryer DC 1000 + 1175 AES / DV 1260 – 2000 AB / DV 1260 – 2000 AVS

DC 1000 + 1175 AES with energy saving control unit

DV 1260 – 2000 AB with hot gas bypass control

DV 1260 – 2000 AVS with variable speed control

Stand-alone unit

All with micro processor control and level-controlled condensate drain

DC 1000 + 1175 AES									
Model	Capacity		Power consumption		Pressure loss bar	Compressed air outlet inch	Dimensions L x W x H mm	Weight kg	Part no.
	m ³ /min	cfm	kW	HP					
DC 1000 AES	16.67	588.5	2.40	3.25	0.13	G2½	645 x 920 x 1055	177	20713
DC 1175 AES	19.58	691.0	2.56	3.50	0.18	G2½	645 x 920 x 1055	180	20714

Electric supply: 230 V / 50 Hz / 1 phase (DC 1000 AES) or 400 V / 50 Hz / 3 phases (DC 1175 AES). According to ISO 7183 (with 1 bar absolute and 20°C, dew point 3°C at inlet temperature of 35°C, 25°C ambient temperature and 7 bar). A potential-free contact for dryer failures is integrated.

DV 1260 – 2000 AB (hot gas bypass control*)									
Model	Capacity		Power consumption		Pressure loss bar	Compressed air outlet inch	Dimensions L x W x H mm	Weight kg	Part no.
	m ³ /min	cfm	kW	HP					
DV 1260 AB	21.00	741	2.60	3.5	0.21	DN 80	790 x 1000 x 1590	229	20715
DV 1650 AB	27.50	971	3.10	4.0	0.16	DN 80	790 x 1000 x 1590	262	20716
DV 1800 AB	30.00	1.060	3.50	4.75	0.18	DN 80	790 x 1000 x 1590	263	20717
DV 2000 AB	33.30	1.175	3.50	4.75	0.21	DN 80	790 x 1000 x 1590	298	20718

Electric supply: 400 V / 50 Hz / 3 phases. According to ISO 7183 (with 1 bar absolute and 20°C, dew point 3°C at inlet temperature of 35°C, 25°C ambient temperature and 7 bar). A potential-free contact for dryer failures is integrated. Larger flow rates on request.
* without energy saving control

DV 1260 – 2000 AVS (variable speed control)									
Model	Capacity		Power consumption		Pressure loss bar	Compressed air outlet inch	Dimensions L x W x H mm	Weight kg	Part no.
	m ³ /min	cfm	kW	HP					
DV 1260 AVS	21.00	741	2.75	3.75	0.21	DN 80	790 x 1000 x 1590	248	20719
DV 1650 AVS	27.50	971	3.30	4.5	0.16	DN 80	790 x 1000 x 1590	282	20720
DV 1800 AVS	30.00	1.060	3.80	5.0	0.18	DN 80	790 x 1000 x 1590	317	20721
DV 2000 AVS	33.30	1.175	3.80	5.0	0.21	DN 80	790 x 1000 x 1590	317	20722

Electric supply: 400 V / 50 Hz / 3 phases. According to ISO 7183 (with 1 bar absolute and 20°C, dew point 3°C at inlet temperature of 35°C, 25°C ambient temperature and 7 bar). A potential-free contact for dryer failures is integrated. Larger flow rates on request.
* Speed optimally adapts to the flow rate in order to reduce energy consumption.

Conversion tables for corrected dryer performance

Operating pressure (bar)	2	3	4	5	6	7	8	9	10	12	14		
Factor f_p	0.49	0.66	0.77	0.86	0.93	1.00	1.05	1.06	1.14	1.21	1.27		
Dew point (°C)	3	5	7	10	Ambient temperature (°C)			25	30	35	40	45	50
Factor f_{tpd}	1.00	1.09	1.19	1.37	Factor f_{ta}			1.00	0.96	0.90	0.82	0.72	0.60
Inlet temperature (°C)	30	35	40	45	50	55	60	65	70	Corrected dryer performance: $\frac{\text{Volume flow at entry}}{(f_p \times f_{ti} \times f_{ta} \times f_{tpd})}$			
Factor f_{ti}	1.12	1.00	0.83	0.69	0.59	0.50	0.44	0.39	0.37				

Adsorption dryers RAT-S 0005 – 0100

Compressed air treatment system with heatless regenerating adsorption dryer
 With integrated pre- and afterfilter, dew point -40°C, noise level 60 dB(A)
 According to ISO 8573-1:2010

Smart

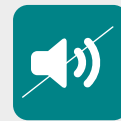
- The RAT-S adsorption dryer is your smart solution – just plug & play and it will take care of your compressed air
- The RAT-S communicates with you – operating your dryer the smart way
- Extremely quiet – noise reduction down to 60 dB(A)
- No space? No Problem! The RAT-S will fit exactly where you need it

Reliable

- The RAT-S stands for a reliable compressed air quality achievement according to ISO 8573-1
- The RAT-S stands out through its low maintenance and the extremely long life-time
- The RAT-S stands up to the daily challenges with validated performance according to ISO 7183

Efficient

- Highest efficiency with lowest consumption of regeneration air
- The RAT-S is conserving your resources while in operation
- The new RAT-S adapts its operation to your needs and switches to energy saving mode whenever beneficial



RAT-S 0005 – 0100								
Model	Capacity at 7 bar nominal ⁽¹⁾		Connection inch	Weight kg	Standard		Superplus ⁽²⁾	
	m ³ /min	cfm			Dimensions L x W x H mm	Part no.	Dimensions L x W x H mm	Part no.
RAT-S 0005	0.08	2.83	G½	10	314 x 137 x 490	21660	314 x 114 x 497	21661
RAT-S 0010	0.17	6.00	G½	15	314 x 137 x 757	21662	314 x 114 x 764	21663
RAT-S 0015	0.25	8.83	G½	21	314 x 137 x 1024	21664	314 x 114 x 1031	21665
RAT-S 0020	0.33	11.65	G½	26	314 x 137 x 1291	21666	314 x 114 x 1298	21667
RAT-S 0025	0.42	14.83	G½	31	314 x 137 x 1558	21668	314 x 114 x 1565	21669
RAT-S 0035	0.58	20.48	G1	34	464 x 191 x 849	21670	464 x 168 x 866	21671
RAT-S 0050	0.83	29.31	G1	45	464 x 191 x 1113	21672	464 x 168 x 1130	21673
RAT-S 0065	1.08	38.14	G1	57	464 x 191 x 1377	21674	464 x 168 x 1394	21675
RAT-S 0080	1.33	46.97	G1	68	464 x 191 x 1641	21676	464 x 168 x 1658	21677
RAT-S 0100	1.67	58.98	G1	79	464 x 191 x 1905	21678	464 x 168 x 1922	21679

⁽¹⁾ according to ISO 7183 (with 1 bar absolute and 20°C, at inlet temperature 35°C)
⁽²⁾ Superplus models incl. dew point transmitter and dew point dependent capacity control, touch display
 Electric supply: 230 V / 50 Hz / 1 phase. Operating pressure 4-16 bar (RAT-S 0005 – 0025) or 4-12 bar (RAT-S 0035 – 0100).

Conversion table for corrected dryer performance													
Factor = f	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar	11 bar	12 bar	13 bar	14 bar	15 bar	16 bar
35°C	0.63	0.75	0.88	1.00	1.12	1.25	1.33	1.39	1.45	1.50	1.55	1.60	1.65
40°C	0.48	0.57	0.67	0.76	0.86	0.95	1.05	1.14	1.24	1.33	1.43	1.52	1.62
45°C	0.37	0.44	0.51	0.58	0.66	0.73	0.81	0.88	0.95	1.03	1.10	1.17	1.25
50°C	0.28	0.34	0.40	0.46	0.51	0.57	0.63	0.68	0.74	0.79	0.85	0.91	0.97
55°C	0.22	0.27	0.31	0.36	0.40	0.44	0.49	0.53	0.58	0.62	0.67	0.71	0.76

Sizing example

V_{nom} = 0.91 m³/min, inlet temperature 25°C, operating pressure 7 bar

$$V_{corr} = \frac{V_{nom}}{f} = \frac{0.91}{1.15} = 0.79 \text{ m}^3/\text{min}$$

Calculated dryer size: 0.79 m³/min -> Model RAT-S 0050

Adsorption dryers RAT-40 0100 – 1650

Compressed air treatment system with heatless regenerating adsorption dryer
With integrated pre- and afterfilter
Dew point -40°C (RAT-70 with dew point -70°C on request)
According to ISO 8573-1:2010



Adsorption drying is a physical process in which water vapour is bound to a desiccant. Adsorption dryers are typically built with two drying vessels to regularly regenerate the desiccant so it regains its drying capacity. The first vessel dries the incoming compressed air while the second vessel is being regenerated. Each vessel switches tasks when the other vessel is completely regenerated. The two vessels are connected by interconnecting hoses in such a way that dry air is available for regeneration. Before and after the adsorption dryer, a pre- or after-filter filters the compressed air from dust, dirt, oil and water droplets. RENNER filters thus ensure an optimum operating condition of the dryer and long maintenance intervals.

RAT-40 0100 – 1650								
Model	Capacity at 7 bar nominal ⁽¹⁾		Pressure loss bar	Connection inch / DIN-flange	Dimensions L x W x H mm	Weight kg	Standard Part no.	Superplus ⁽²⁾ Part no.
	m ³ /min	cfm						
RAT-40 0100	1.67	59	0.09	G1	700 x 450 x 1600	155	13734	13738
RAT-40 0150	2.50	88	0.14	G1	700 x 450 x 2025	185	13715	13739
RAT-40 0175	2.92	103	0.08	G1	850 x 600 x 1905	245	13716	13740
RAT-40 0225	3.75	132	0.09	G1½	870 x 600 x 1905	245	13717	13741
RAT-40 0300	5.00	177	0.13	G1½	920 x 650 x 1890	290	00929	13742
RAT-40 0375	6.25	221	0.15	G1½	920 x 650 x 2220	370	13718	13743
RAT-40 0550	9.17	324	0.15	G2	1190 x 750 x 2180	400	13719	13744
RAT-40 0650	10.83	382	0.19	G2	1190 x 750 x 2180	475	13720	23072
RAT-40 0850	14.17	500	0.22	G2	1320 x 850 x 2315	565	00928	13746
RAT-40 1000	16.67	589	0.19	G2	1320 x 850 x 2330	646	13721	13747
RAT-40 1350	22.50	795	0.19	DN 80	1500 x 950 x 2555	1230	24024	24117
RAT-40 1650	27.50	971	0.23	DN 80	1700 x 1050 x 2365	1400	24025	24118

⁽¹⁾ according to ISO 7183 (with 1 bar absolute and 20°C, at inlet temperature 35°C)

⁽²⁾ Superplus models incl. dew point dependent capacity control and text display

Electric supply: 230 V / 50 Hz / 1 phase. Operating pressure 4-16 bar (RAT-40 0100 – 1000) or 4-10 bar (RAT-40 1350 – 1650).

Conversion table for corrected dryer performance													
Factor f	4 bar	5 bar	6 bar	7 bar	8 bar	9 bar	10 bar	11 bar	12 bar	13 bar	14 bar	15 bar	16 bar
25°C	0.75	0.90	1.05	1.20	1.35	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55
30°C	0.69	0.83	0.96	1.10	1.24	1.38	1.51	1.65	1.79	1.93	2.06	2.20	2.34
35°C	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13

Sizing example

V_{nom} = 3.34 m³/min, inlet temperature 30°C, operating pressure 10 bar

$$V_{corr} = \frac{V_{nom}}{f} = \frac{3.34}{1.51} = 2.2 \text{ m}^3/\text{min}$$

Calculated dryer size: 2.2 m³/min → Model RAT-40 0150

Activated carbon adsorbers RAK 0035 – 1500

Activated carbon adsorbers for the removal of oil vapours and hydrocarbons
RAK 0110 – 1500 incl. oil indicator

RAK activated carbon adsorbers bind oil vapour to activated carbon and thus reduce the oil vapour content in the compressed air to very low residual values. Oil vapour activated carbon adsorbers remove a variety of other hydrocarbons, odours and flavours. Pre-dried compressed air is a prerequisite for a good and long-lasting function of the RAK. Before and after the activated carbon adsorber, a pre-filter or after-filter should clean the compressed air from dust, dirt, oil and water droplets. RENNER filters thus also serve to extend the operating time.



RAK 0035 – 1500						
Model	Capacity at 7 bar nominal ⁽¹⁾		Connection inch / DIN-flange	Dimensions L x W x H mm	Weight kg	Part no.
	m ³ /min	cfm				
RAK 0035	0.58	20	G ³ / ₈	164 x 130 x 1466	11.1	24085
RAK 0060	1.00	35	G ¹ / ₂	212 x 160 x 1082	17.4	24086
RAK 0075	1.25	44	G ¹ / ₂	212 x 160 x 1277	20.3	24087
RAK 0105	1.75	62	G ¹ / ₂	212 x 160 x 1677	26	24088
RAK 0110 ⁽²⁾	1.83	65	G1	350 x 287 x 1545	45	24089
RAK 0150 ⁽²⁾	2.50	88	G1	350 x 287 x 1795	52	24090
RAK 0200 ⁽²⁾	3.33	118	G1	400 x 318 x 1550	71	24091
RAK 0250 ⁽²⁾	4.17	147	G1	400 x 318 x 1800	83	24092
RAK 0300 ⁽²⁾	5.00	177	G ¹ / ₂	450 x 373 x 1565	97	24093
RAK 0400 ⁽²⁾	6.67	236	G ¹ / ₂	450 x 373 x 1815	114	24094
RAK 0580 ⁽²⁾	9.67	341	G ¹ / ₂	450 x 425 x 1880	160	24095
RAK 0770 ⁽²⁾	12.83	453	G2	650 x 452 x 1930	201	24096
RAK 1000 ⁽²⁾	16.67	589	G2	600 x 503 x 1985	242	24097
RAK 1200 ⁽²⁾	20.00	706	DN 50	550 x 590 x 2100	280	24098
RAK 1500 ⁽²⁾	25.00	883	DN 65	620 x 650 x 2110	355	24099

⁽¹⁾ with 1 bar absolute and 20°C, at inlet temperature 20°C and 7 bar
Operating pressure 4-16 bar, pressure loss ≤ 0.1 bar

⁽²⁾ incl. oil indicator

Conversion tables for corrected adsorber performance

Operating pressure (bar)	4	5	6	7	8	9	10	11	12	13	14	15	16
Factor f_p	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00	2.13
Inlet temperature (°C)	20	25	30	35	40	45	50						
Factor f_t	1.00	0.98	0.97	0.92	0.86	0.75	0.60						

Sizing example

$V_{nom} = 5.83 \text{ m}^3/\text{min}$, inlet temperature 30°C, operating pressure 10 bar

$$V_{corr} = \frac{V_{nom}}{f_p \times f_t} = \frac{5.83}{1.38 \times 0.97} = 4.35 \text{ m}^3/\text{min}$$

Calculated adsorber size: 4.35 m³/min → Model RAK 0300

Pressure maintaining system RDHS ½ – 3

Control assuring reliable compressed air quality⁽¹⁾, 2/2-way brass fitting with female thread, digital pressure switch, manual override, single acting actuator „closed by spring“, min. control pressure 6.0 bar, control air: plug connection for 6 mm hose diameter



RDHS ½ – 3				
Model	Connection inch	Voltage supply ⁽³⁾	Max. pressure bar	Part no.
RDHS ½	G½	230 V AC	10	07083
RDHS ¾	G¾	230 V AC	10	07084
RDHS 1	G1	230 V AC	10	05138
RDHS 1¼	G1¼	230 V AC	10	05139
RDHS 1½	G1½	230 V AC	10	05140
RDHS 2	G2	230 V AC	10	05141
RDHS 2½	G2½	230 V AC	10	05142
RDHS 3	G3	230 V AC	10	05143
⁽¹⁾ Reliable compressed air quality: valve is closed when power is off (manual override available). ⁽²⁾ Reliable compressed air supply: valve is open when the power is off. ⁽³⁾ with cable and plug for AC 230 V / 50 Hz / 1 phase				
Options				Part no.
Stainless steel fitting with female thread / flange / welded ends				on request
16 bar max. pressure				on request
Variant „reliable compressed air supply“ ⁽²⁾				on request
Min. control pressure 4.0 bar for network pressures (cut-in pressure) < 6.0 bar				on request
Bigger sizes in connection with butterfly valves				on request

Electric ball valve RKE ½ – 2

16 bar maximum differential pressure, opening and closing time of 140 seconds
 Power supply: 85-240 V AC/DC
 2/2-way brass fitting with female thread, switch box heater, manual override



RKE ½ – 2				
Model	Connection inch	Max. pressure bar	Length mm	Part no.
RKE ½	G½	65	75	05144
RKE ¾	G¾	40	80	05145
RKE 1	G1	40	90	05146
RKE 1¼	G1¼	30	110	05147
RKE 1½	G1½	30	120	05152
RKE 2	G2	30	140	05153
Options				Part no.
Stainless steel fitting with female thread / flange / welded ends up to 1¼ inches				on request
Alternative power supply: 24 V AC/DC with opening and closing time of 120 seconds				on request

Condensate drains UFM-D03 – 130 / UFM-P

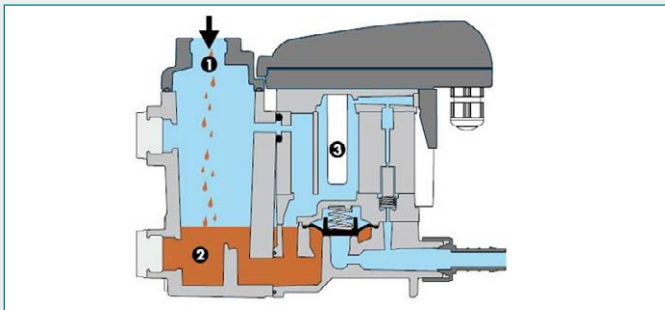
Level-controlled condensate drain without pressure loss
Pneumatic level-controlled condensate drain

All condensers and refrigeration dryers produce condensate that must be drained off safely. A reliable condensate drain is therefore an important part of compressed air treatment.

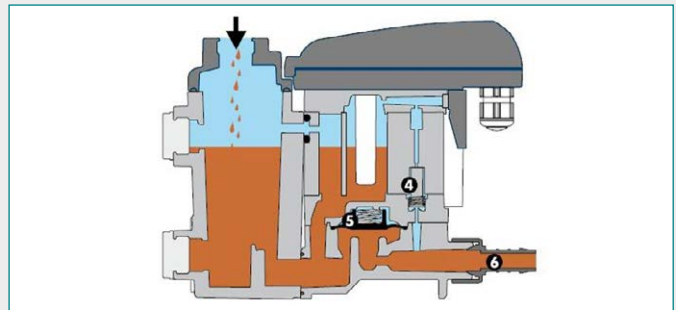


UFM-D03 – 130 / UFM-P							
Model	Capacity		Connection inch	Pressure range		Weight kg	Part no.
	m ³ /min	cfm		min. bar	max. bar		
UFM-D03 ⁽¹⁾	2.5	88	1x G½	0.8	16	0.80	14880
UFM-D05 ⁽²⁾	5.0	176	1x G½	0.8	16	1.00	14881
UFM-D10 ⁽²⁾	10.0	353	3x G½	0.8	16	1.65	14882
UFM-D30 ⁽²⁾	30.0	1059	2x G½	0.8	16	2.00	14268
UFM-D130 ⁽²⁾	130.0	4591	3x G¾	0.8	16	2.90	14883
UFM-P (pneumatic)	450.0	15891	G1	0.8	16	1.60	01021

⁽¹⁾ with cable and plug for AC 230 V / 50 Hz / 1 phase ⁽²⁾ with potential-free contact
Housing made of aluminium and fiber glass enforced plastic.



The condensate flows into the steam trap via the intake line (1) and collects in the enclosure (2). A capacitive sensor (3) continuously records the fill level and signals the electronic controller as soon as the tank is full.



The pilot valve (4) is activated and the membrane (5) opens the discharge line (6) to discharge the condensate. When the steam trap has been emptied, the discharge line is closed again quickly in order to avoid loss of compressed air.

Oil-water separators ROS 3.5 – 60

For mineral oil and synthetic oil
 Achievable residual oil content < 10 ppm
 With DIBt certification

The oil-water separator ROS achieves a high separation capacity of oil from condensate through different separation stages. As the condensate flows through the ROS, the oil is filtered through various filter elements. The oil-adsorbing elements combine different types of adsorption technologies.



ROS 3.5 – 60								
Model	Capacity		Connection inch	Outlet inch	Max. oil absorption ltr	Weight kg	Dimensions L x W x H mm	Part no.
	m ³ /min	cfm						
ROS 3.5	3.5	124	1x G½	G½	4	5	396 x 240 x 385	23254
ROS 5	5	176	2x G½	G1	5	10	580 x 190 x 610	21583
ROS 10	10	353	2x G½	G1	10	17	650 x 240 x 750	21584
ROS 20	20	706	2x G½	G1	15	30	780 x 305 x 900	21585
ROS 30	30	1059	2x G½	G1	25	43	970 x 380 x 900	21586
ROS 60	60	2118	2x G½	G1	50	74	1160 x 480 x 1040	21587
Options								Part no.
Multi inlet adapter for up to 3 condensate inlets (3x G½ inch)								21596
Condensate test kit								21594
Condensate distributor on up to 3 ROS models (3x G½ inch)								21595
Wall mount for ROS 3,5								24398

COMPRESSED AIR FOR ALL APPLICATIONS



RENNER GmbH Kompressoren, a family run business established in 1994, develops and assembles economical and energy-efficient compressors. A broad range of compressed air accessories are also part of the product portfolio. The structure and size of the company ensure flexible decisions and short lead times, thus providing optimal focus on the requirements of the customers.

THE RENNER MANUFACTURING AND SUPPLY PROGRAMME:

We can supply you with the right compressor for any application – guaranteed.

SCREW COMPRESSORS:

- From 2.2 to 355 kW
- Up to 40 bar, e.g. for manufacture of PET bottles
- Compact systems with air receiver, refrigeration dryer, and variable speed control
- Heat exchanger integrated or as an external box
- Special applications: gas compression, operation of drilling devices, rail, and special-purpose vehicles
- Customized models designed to customer specifications

OIL-FREE COMPRESSORS:

- SCROLL compressors for oil-free compressed air from 1.5 to 30.0 kW
- Water-injected screw compressors for oil-free compressed air in breathing air quality from 18.5 to 120 kW



PISTON COMPRESSORS:

- From 1.5 to 11.0 kW
- Stationary or mobile, with or without sound insulation

CONTROL SYSTEMS:

- Compressor control systems
- Superordinate control systems
- State-of-the-art web server monitoring



COMPRESSED AIR ACCESSORIES:

- Air filters, air receivers, refrigeration dryers, adsorption dryers, condensate drains, and oil-water-separators

Your RENNER distributor:

RENNER GmbH · Kompressoren

Emil-Weber-Strasse 32
D-74363 Gueglingen

Phone +49 (0) 7135 93193-0
Fax +49 (0) 7135 93193-50

E-Mail: info@renner-kompressoren.de
www.renner-kompressoren.de



DIN EN ISO 9001
REG.-NR. Q1 0205013

