



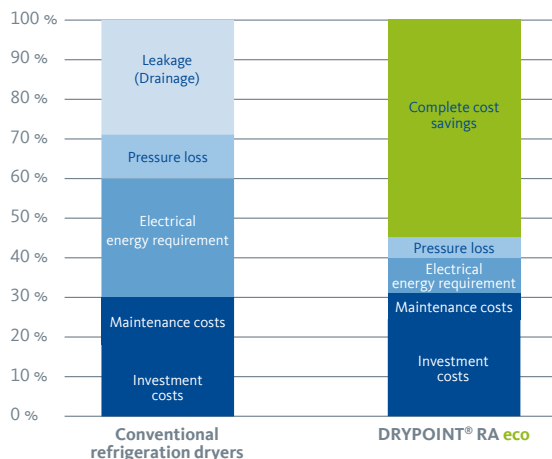
Drying | DRYPOINT® RA eco

Tried and tested system, intelligently controlled: DRYPOINT® RA eco

High energy saving potentials are created in compressed-air drying. Refrigeration dryers are always designed for the harshest conditions, that means that the benchmark is set for summer operation with high inlet and ambient temperatures.

Only in rare cases are refrigeration dryers applied with constant full load. This results in high energy-saving potential with a dryer with energy-saving control.

The DRYPOINT® RA eco refrigerated dryer series successfully implements and continues the DRYPOINT® RA concept with low pressure loss, optimal heat exchanger design and BEKOMAT®. Based on that, we have implemented two new control concepts for the different installation sizes, which directly adjust the drying performance to the demand and thereby considerably reduce the energy consumption.



Up to 55% cost savings compared to conventional refrigeration dryers in the first 5 years by utilising intelligent control systems

› Energy efficient and economical

- › Lowest pressure losses due to flow-optimised heat exchanger design
- › Lowest energy input through balanced refrigerant compressor technology
- › No compressed air loss due to effective condensate drainage with BEKOMAT®

› Safe and reliable

- › Efficient condensate separation through integrated demister
- › Optimum protection of the refrigeration cycle

› Easy to handle

- › Clear overview of all operating statuses
- › Continuous monitoring of condensate discharge
- › Unique alarm alerts
- › Timely maintenance and service information

› eco advantages

- › Adjustment of power consumption to amended drying requirements
- › Energy saving with fluctuating volume flow
- › Active contribution to sustainability



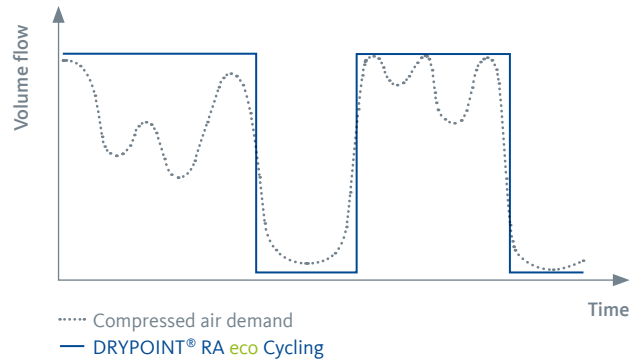
Better through Responsibility

The intelligent cycling system: DRYPOINT® RA 20-960 eco

- › For volume flow rates <math><1,000\text{ m}^3/\text{h}</math>
- › Save energy costs with demand-driven switching for the refrigerant compressor
- › Display of percentage energy savings
- › Potential-free contact for transmitting alarm messages

Energy efficiency by utilising intelligent cycling system

For volume flow rates of less than $1,000\text{ m}^3/\text{h}$, the DRYPOINT® RA eco operates as a cycling dryer in which the refrigerant compressor is switched off according to demand. The intelligent cycling system is executed dependent from the drying requirement and is regulated in such a way that the switching off times will be optimally extended.

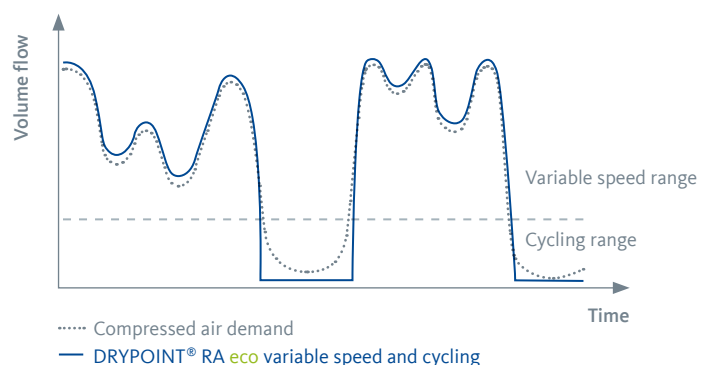


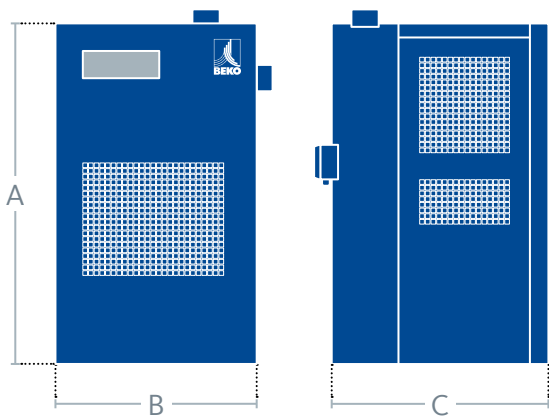
Unique technology combination of variable speed and intelligent cycling for optimal efficiency: DRYPOINT® RA 1300-10800eco

- › For volume flows > $1,000\text{ m}^3/\text{h}$
- › High energy savings with fluctuating drying requirements due to the unique combination of frequency and intermittent control systems
- › Use of low-vibration and energy-efficient scroll compressors
- › Intuitive 4.7" touch screen for easy and fast functional check - also for the integrated BEKOMAT®
- › Potential-free contact for transmitting alarm messages
- › RS485 interface provides the option of external control and monitoring
- › Recording of alarm situations/alarm messages

Optimal combination of energy saving and drying performance

For volume flows of more than $1,000\text{ m}^3/\text{h}$, the DRYPOINT® RA eco controls the variable speed of the refrigerant compressor with the cycling system. At these high output rates, the fan is also frequency-controlled, resulting in optimised dryer performance combined with lowest possible energy consumption.





All models are equipped with a BEKOMAT® condensate drain as standard.
 | Option: Oil-free
 For dryer protection we recommend installing a CLEARPOINT® coarse filter (C, 25 µm) or finer upstream of the dryer inlet.

Reference conditions according to DIN / ISO 7183

Medium	Compressed air
Volume flow (m³/h) at +20 °C	1 bar [g]
Operating pressure	7 bar [g]
Compressed air inlet temperature	+35 °C
Cooling-air temperature	+25 °C
Inlet humidity	saturated
Pressure dew point	+3 °C

Operating conditions

Maximum compressed air inlet temperature	+70 °C
Min. ... max. operating pressure RA 20 eco – RA 70 eco	4 ... 16 bar [g]
Min. ... max. operating pressure RA 110 eco – RA 10800 eco	4 ... 14 bar [g]
Min. ... max. ambient temperature	+1 ... +50 °C
Refrigerant RA 20 eco - RA 135 eco	R134.a
Refrigerant RA 190 eco - RA 13200 eco	R407C

Model:	Air-volume flow (m³/h) , +3 °C	Electrical connection*	Power consumption kW	Pressure loss bar	Air connection	A (mm)	B (mm)	C (mm)	Weight kg	Order ref.
RA 20 / AC eco	21	230 VAC 50 ... 60 Hz 1 Ph	0.16	0.02	G 1/2 BSP-F	740	345	420	28	4028305
RA 35 / AC eco	33		0.18	0.03	G 1/2 BSP-F	740	345	420	29	4028306
RA 50 / AC eco	51		0.22	0.08	G 1/2 BSP-F	740	345	420	31	4028307
RA 70 / AC eco	72		0.23	0.11	G 1/2 BSP-F	740	345	420	34	4028308
RA 110 / AC eco	108		0.31	0.13	G 1 BSP-F	740	345	420	36	4028309
RA 135 / AC eco	138		0.46	0.17	G 1 BSP-F	740	345	420	37	4028310
RA 190 / AC eco	186	230 VAC 50 Hz 1 Ph	0.69	0.15	G 1 1/4 BSP-F	825	485	455	46	4028311
RA 240 / AC eco	240		0.75	0.19	G 1 1/4 BSP-F	825	485	455	50	4028312
RA 330 / AC eco	330		0.70	0.15	G 1 1/2 BSP-F	885	555	580	55	4028313
RA 370 / AC eco	372		0.84	0.18	G 1 1/2 BSP-F	885	555	580	63	4028314
RA 490 / AC eco	486		0.98	0.09	G 2 BSP-F	975	555	625	92	4028315
RA 630 / AC eco	630		1.10	0.13	G 2 BSP-F	975	555	625	94	4028316
RA 750 / AC eco	750		1.45	0.07	G 2 1/2 BSP-F	1105	665	725	141	4028317
RA 870 / AC eco	870		1.52	0.13	G 2 1/2 BSP-F	1105	665	725	150	4028318
RA 960 / AC eco	960		1.73	0.15	G 2 1/2 BSP-F	1105	665	725	161	4028319
RA 1300 / AC eco	1260		400 VAC 50 Hz 3 Ph	2.75	0.21	DN80 - PN16	1465	790	1000	248
RA 1800 / AC eco	1800	3.30		0.19	DN80 - PN16	1465	790	1000	282	4028324
RA 2200 / AC eco	2208	3.80		0.26	DN80 - PN16	1465	790	1000	317	4028325
RA 2400 / AC eco	2400	4.60		0.21	DN100 - PN16	1750	1135	1205	470	4028326
RA 2900 / AC eco	2900	4.70		0.14	DN100 - PN16	1750	1135	1205	545	4028327
RA 3600 / AC eco	3600	6.10		0.20	DN100 - PN16	1750	1135	1205	549	4028328
RA 4400 / AC eco	4416	6.90		0.26	DN100 - PN16	1750	1135	1205	621	4028329
RA 5400 / AC eco	5400	8.74		0.2	DN150 - PN16	1810	1300	1750	830	4028330
RA 6600 / AC eco	6624	11.23		0.26	DN150 - PN16	1810	1300	1750	940	4028331
RA 7200 / AC eco	7200	11.75		0.2	DN200 - PN16	1870	1400	2200	1055	4028332
RA 8800 / AC eco	8832	17.47		0.26	DN200 - PN16	1870	1400	2200	1055	4028333
RA 10800 / AC eco	10800	17.10		0.22	DN200 - PN16	2440	1547	2166	1650	4036136

* other voltage ratings on request

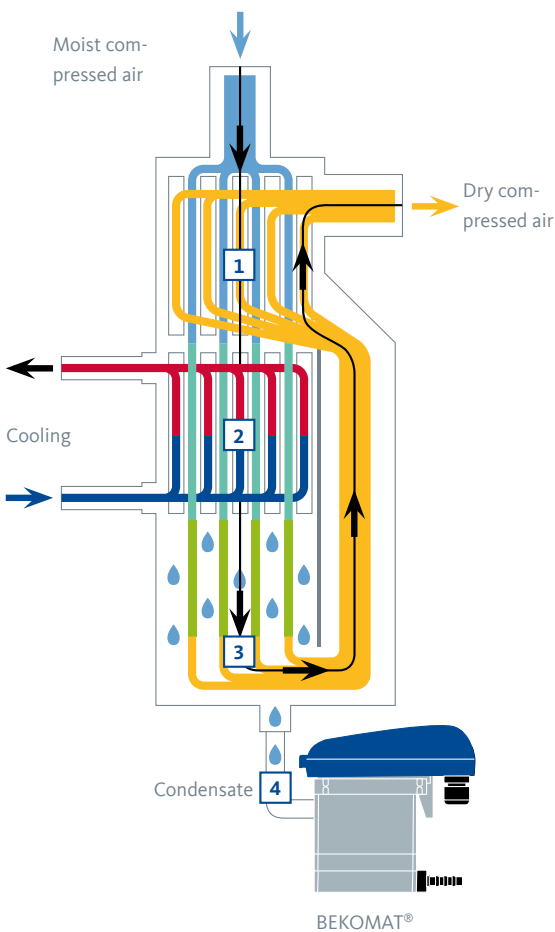
Correction factors

Operating pressure (bar)	4	5	6	7	8	10	12	14
Correction factor	0.77	0.86	0.93	1.00	1.05	1.14	1.21	1.27

Compressed air - Inlet temperature (°C)	25	30	35	40	45	50	55	60	65	70
RA 20 / AC eco – RA 960 / AC eco	1.27	1.21	1.00	0.84	0.70	0.57	0.48	0.42	On request	
RA 1300 / AC eco – RA 10800 / AC eco	1.26	1.20	1.00	0.81	0.68	0.57	0.46	0.38	On request	

Ambient temperature: (°C)	25	30	35	40	45	50
RA 20 / AC eco – RA 960 / AC eco	1.00	0.96	0.91	0.85	0.76	0.64
RA 1300 / AC eco – RA 10800 / AC eco	1.00	0.95	0.93	0.85	0.73	0.58

Operating principle of the DRYPOINT® RA eco - refrigeration dryer



In the DRYPOINT® RA eco refrigeration dryer, the air is dried via a counter-flow process with optimised heat exchange (Counter-Flow) along the entire process path, the air flows in a constant downwards aligned direction without diversions.

The generously dimensioned counter-flow heat exchanger unit, which consists of an air-air and an air-refrigerant heat exchanger, among others, cools the compressed air to a temperature of around 3°C. The size and design of the heat exchangers promote effective cooling while minimising flow resistance.

Warm compressed air saturated with moisture is pre-cooled in the air-air heat exchanger when it enters the refrigeration dryer (1). Consequently, the refrigerating capacity of the refrigerant needed in the downstream air-refrigerant heat exchanger (2) is reduced, making the system more energy-efficient. Gravity supports a very high droplet separation of nearly 99%. The flow velocity is greatly reduced in the very large condensate collection chamber with subsequent broad return. This reliably avoids any entrainment of droplets which have already been separated (3).

The condensate which is produced is drained from the DRYPOINT® RA eco through the level-controlled condensate drain BEKOMAT®. This prevents any pressurised air losses and can be treated reliably with processing systems such as the oil-water separation system ÖWAMAT® or the emulsion splitting plant BEKOSPLIT® (4). Before leaving the DRYPOINT® RA outlet, the dried, cold compressed air is re-heated in the air/air heat exchanger. This significantly lowers the relative humidity and recovers up to 60% of the refrigerating capacity used (1).

Do you have questions about the best way of processing your compressed air?

We have the answers! We offer efficient solutions for any type of processing chain. Please contact us with your queries. We would be delighted to tell you more about our condensate

treatment, filtration, drying, measuring and process technology, and our comprehensive services.

Visit us at



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