



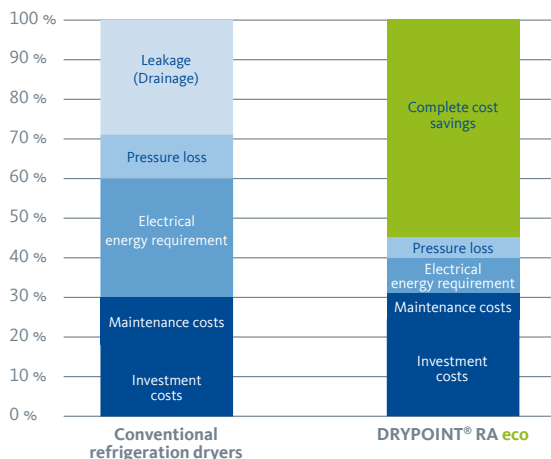
## Drying | DRYPOINT® RA eco

### 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



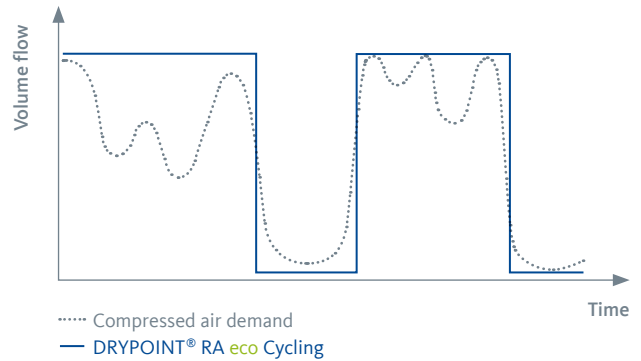
Better through Responsibility

# 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.

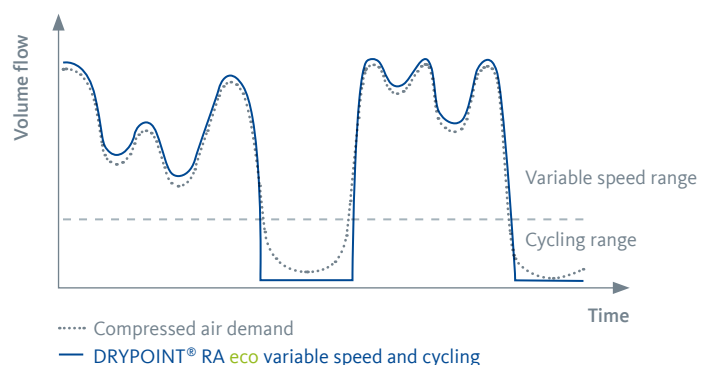


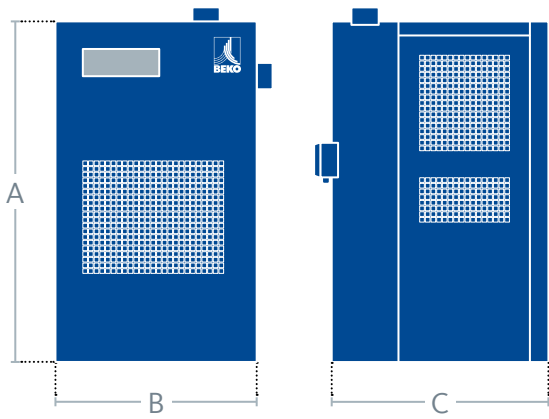
# Unique technology combination of variable speed and intelligent cycling for optimal efficiency: DRYPOINT® RA 1300-10800eco

- › 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 <b>eco</b> – RA 70 <b>eco</b>	4 ... 16 bar [g]
Min. ... max. operating pressure RA 110 <b>eco</b> – RA 10800 <b>eco</b>	4 ... 14 bar [g]
Min. ... max. ambient temperature	+1 ... +50 °C
Refrigerant RA 20 <b>eco</b> - RA 135 <b>eco</b>	R134.a
Refrigerant RA 190 <b>eco</b> - RA 13200 <b>eco</b>	R407C

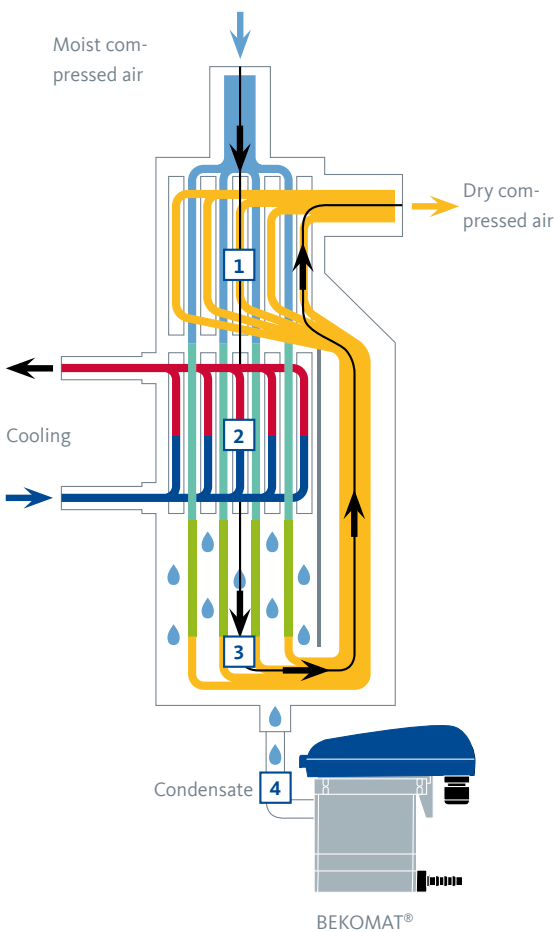
Model:	Air-volume flow (m³/h) , +3 °C	Electrical connection*	Power consumption kW	Pressure loss bar	Air connection	A (mm)	B (mm)	C (mm)	Weight kg	Order ref.
RA 20 / AC <b>eco</b>	21	230 VAC 50 ... 60 Hz 1 Ph	0.16	0.02	G 1/2 BSP-F	740	345	420	28	<b>4028305</b>
RA 35 / AC <b>eco</b>	33		0.18	0.03	G 1/2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

\* 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 <b>eco</b> – RA 960 / AC <b>eco</b>	1.27	1.21	1.00	0.84	0.70	0.57	0.48	0.42	On request	
RA 1300 / AC <b>eco</b> – RA 10800 / AC <b>eco</b>	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	55	60	65	70
RA 20 / AC <b>eco</b> – RA 960 / AC <b>eco</b>	1.00	0.96	0.91	0.85	0.76	0.64				
RA 1300 / AC <b>eco</b> – RA 10800 / AC <b>eco</b>	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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