



Drying | DRYPOINT® M eco control

A class of its own: The electronically controlled DRYPOINT® M eco control membrane dryer

The DRYPOINT® M eco control is the first drying system which has been developed that automatically responds to fluctuating operating conditions. Purge air, and energy, is only consumed when actual dryer performance is required. The compact DRYPOINT® M eco control combines low running costs with excellent operational safety and short response times. This is precisely why this product series also bears our eco seal.



There are two operating modes to determine the dryers behaviour under fluctuating operating conditions (pressure, temperature and air volume):

Constant Mode:

Setting a stable outlet pressure dew point.

Dynamic Mode:

Stable difference between compressed air temperature and pressure dew point reduction.



› **Unique**

- › Patented system made of proven components like membrane dryers, controls and sensors
- › Low maintenance
- › Constant high compressed air quality even under changing operating conditions
- › Individual adjustment of degree of drying

› **Safe**

- › "Fail-safe" function: even in the event of a power failure the compressed air is dried reliably
- › Simple operation
- › Potential free contact

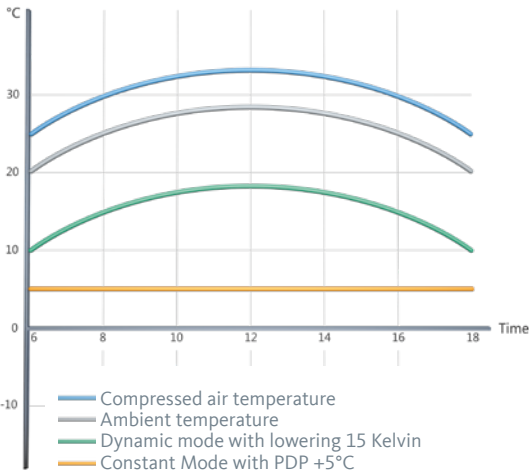
› **Energy-efficient**

- › Energy consumption only when dryer performance is to be provided
- › Ideal for intermittent compressed air demand
- › Can be utilised at point of use as well as for the partial flow preparation

› **Network ready**

- › Performance evaluation and display via analogue interface for data transfer (e.g. with METPOINT® UD01)

The right operating mode for every application



When it comes to fixed pressure dew points, the DRYPOINT® M eco control closes the gap between refrigeration and adsorption dryers. Depending on the requirements of your application, you can choose between two operating modes: "Constant Mode" when it comes to stable pressure dew points and "Dynamic Mode" when a safe difference to the compressed air temperature is crucial.

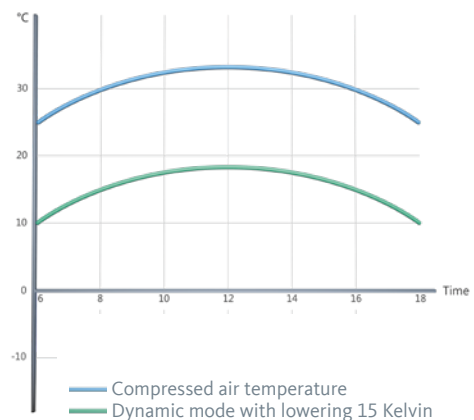
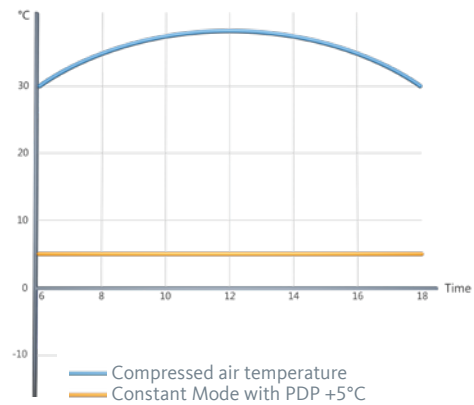
The operating mode or the application-specific degree of drying can be selected quickly and easily via the user-friendly interface. The set mode and state are clearly indicated by LEDs. The interface for data transfer enables user-friendly performance evaluation and visualisation, for example by means of a connection with the METPOINT® BDL Data Logger from BEKO TECHNOLOGIES.

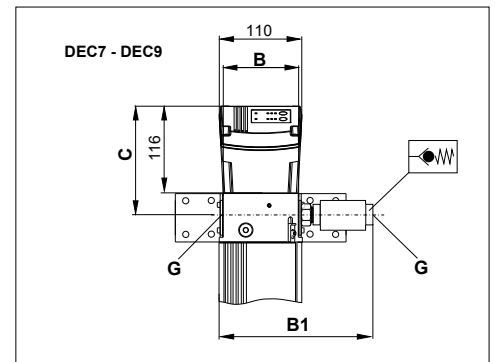
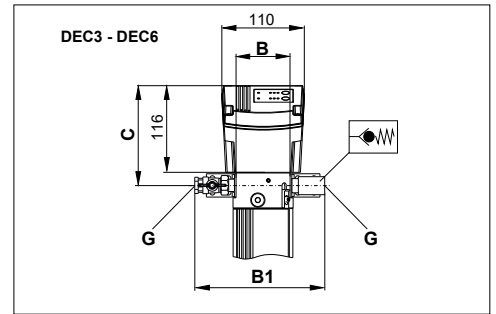
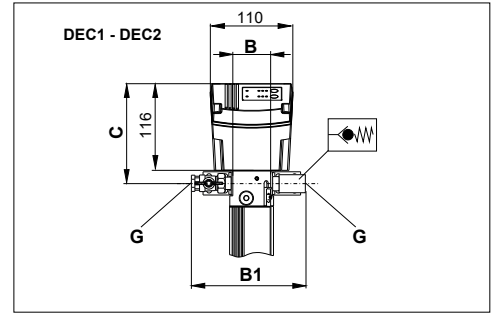
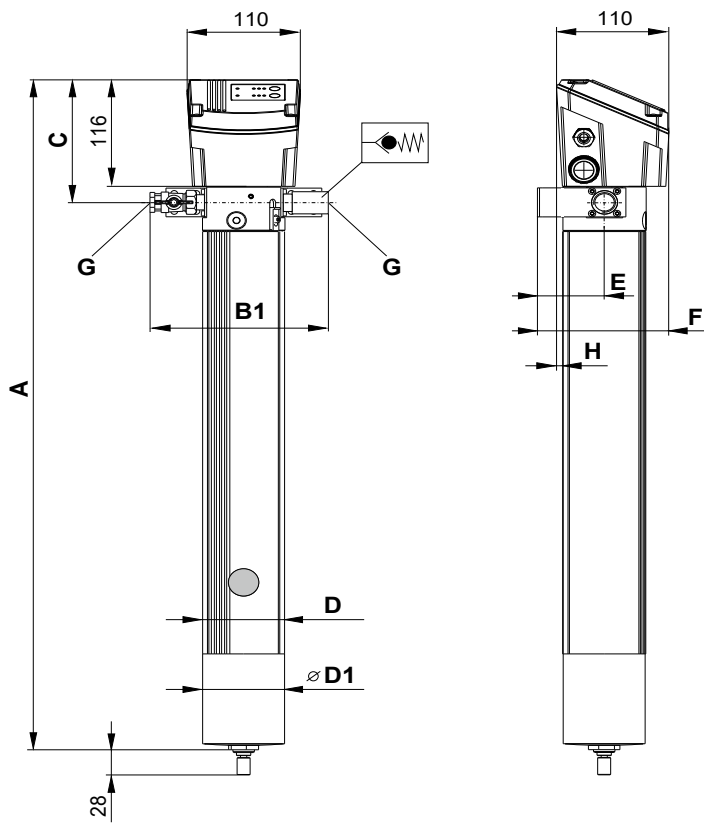
Operating mode „Constant Mode“

The DRYPOINT® M eco control retains the set outlet pressure dew point as stable between +10 and -26 °C, even with changing operating conditions. This means you can rely on the required drying values being provided at any time.

Operating mode “Dynamic Mode”

In this operating mode, the pressure dew point is reduced relative to the compressed air temperature by a specified difference between 10 and 55 Kelvin. If the inlet temperature changes, the pressure dew point will automatically follow suit. That provides complete safety so that, even with changing compressed air temperatures, the right degree of drying is always maintained.





Dimensions	DEC 1-30S	DEC 2-40S	DEC 3-60S	DEC 4-80S	DEC 5-115S	DEC 6-135S	DEC 7-165S	DEC 8-250S	DEC 9-330S
A (mm)	625	685	695	745	815	885	889	1029	1179
B (mm)	52	52	72	72	72	72	104	104	104
B1 (mm)	approx. 195	approx. 195	approx. 215	approx. 215	approx. 215	approx. 215	approx. 210	approx. 210	approx. 210
C (mm)	133	133	133	133	133	133	141	141	141
D/D1 (ø mm)	60/60	60/60	80/80	80/80	80/80	80/80	120/120	120/120	120/120
E (mm)	65	65	63	63	63	63	78	78	78
F (mm)	128	128	126	126	126	126	141	141	141
G (mm)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1"	1"	1"

Technical data	DEC 1-30S	DEC 2-40S	DEC 3-60S	DEC 4-80S	DEC 5-115S	DEC 6-135S	DEC 7-165S	DEC 8-250S	DEC 9-330S
Size of DRYPOINT® M plus	10-41	10-47	20-48	20-53	20-60	20-67	40-61	40-75	40-90
Min./max. Operating overpressure	4 ... 10 bar								
Overpressure protection	Pressure compensation plug								
Min./max. storage/transport temperature	+2 ... +50 °C								
Min./max. Ambient temperature	+2 ... +50 °C								
Min./max. media temperature	+2 ... +50 °C								
Medium	Fluid group 2: Compressed air/nitrogen								
Medium and quality at membrane dryer inlet	Only neutral medium in accordance with PED 2014/68/EU with Class [3: - :3] ISO 8573 - 1								
Noise level	<< 45 dB (A), no expansion pop								
Installation position	Vertical								
Weight	3.4 kg	3.6 kg	4.9 kg	5.2 kg	5.5 kg	5.8 kg	10.9 kg	12.0 kg	13.1 kg
Materials	Media-contacting parts as corrosion-proof Materials conforming to RoHS and REACH regulations Plastic components conforming to UL regulations								
Integrated nanofilter	0.01 µm / 0.005 mg/m³								
Pressure loss	0.1 - 0.3 bar, depending on compressed air volume flow								
PDP outlet settings	+10 / +7 / +5 / +3 / 0 / -5 / -10 / -15 / -20 / -26 °C								
PDP difference settings	10 / 15 / 20 / 25 / 30 / 35 / 40 / 45 / 50 / 55 K (Kelvin)								

Electrical data	
Operating voltage	95 ... 240 VAC ± 10 % (50 ... 60 Hz) / 100 ... 125 VDC ± 10 % or 24 ... 48 VAC ± 10 % (50 ... 60 Hz) / 18 ... 72 VDC ± 10 %
Power consumption	maximum 20 VA (W) with permanently closed solenoid valve
Recommended wire cross-section	min. 0.5 mm²
Recommended connection cable	2-wired, diameter 5 ... 10 mm
Protection class control unit	IP 54
Min. /Max. contact spring load (potential-free contact)	max. 48 VAC / 1 A or 30 VDC / 1 A; min. 5 VDC / 10 mA
Signal output	4...20 mA (PDP outlet)
Interfaces	2 x cable connection M16, cable diameter 5 ... 10 mm

PDP inlet			Volume flow inlet in l/minute at 7 bar [g]								
+35 °C	+20 °C	+5 °C	DEC 1-30S	DEC 2-40S	DEC 3-60S	DEC 4-80S	DEC 5-115S	DEC 6-135S	DEC 7-165S	DEC 8-250S	DEC 9-330S
	+10°C		390	520	780	1040	1440	1690	2000	3050	4050
	+5°C	-5°C	310	410	615	820	1140	1340	1600	2380	3180
+10°C	0°C	-10°C	244	325	495	655	910	1070	1280	1900	2540
+5°C	-5°C	-15°C	208	278	417	556	780	915	1090	1650	2190
0°C	-10°C		182	242	364	485	685	805	970	1480	1960
-5°C		-20°C	162	216	324	432	615	725	870	1330	1770
-10°C	-15°C		149	198	297	396	565	665	805	1230	1630
-15°C	-20°C	-26°C	136	182	273	364	520	610	745	1130	1500
-20°C	-26°C		127	169	253	338	484	570	690	1050	1390
-26°C			118	157	236	315	452	530	640	975	1300

PDP outlet	DEC 1-30S	DEC 2-40S	DEC 3-60S	DEC 4-80S	DEC 5-115S	DEC 6-135S	DEC 7-165S	DEC 8-250S	DEC 9-330S
Purge air in l/minute at 7 bar [g]*	30	40	60	80	115	135	165	250	330
Measuring gas (l/min) at 7 bar [g]	approx. 5	approx. 5	approx. 5	approx. 5	approx. 5	approx. 5	approx. 5	approx. 5	approx. 5

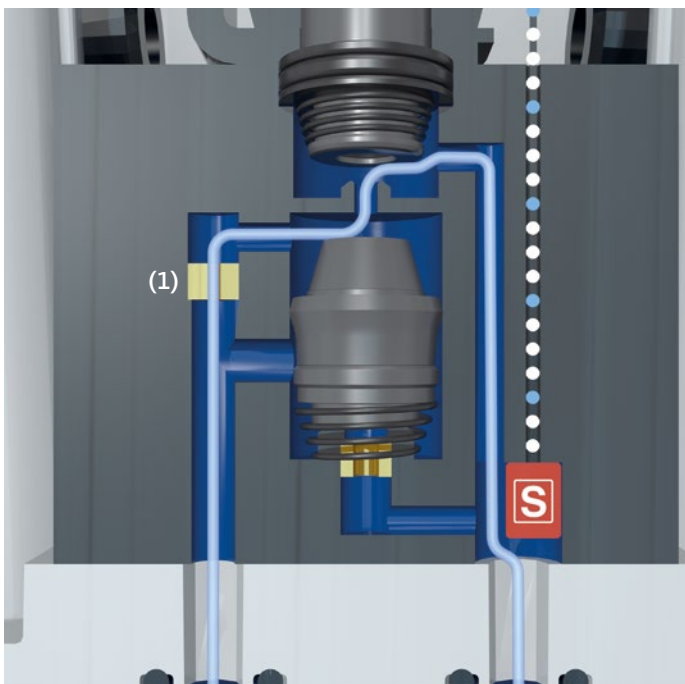
Operating pressure correction factors							
Operating pressure bar [gauge]	4	5	6	7	8	9	10
Correction factor, performance	0.39	0.56	0.77	1	1.19	1.4	1.61
Correction factor, purge air	0.63	0.75	0.87	1	1.12	1.25	1.37

* The intrinsic permeability is approx. <5 % relating to the max. purge air volume.

Operating principle for the DRYPOINT® M eco control

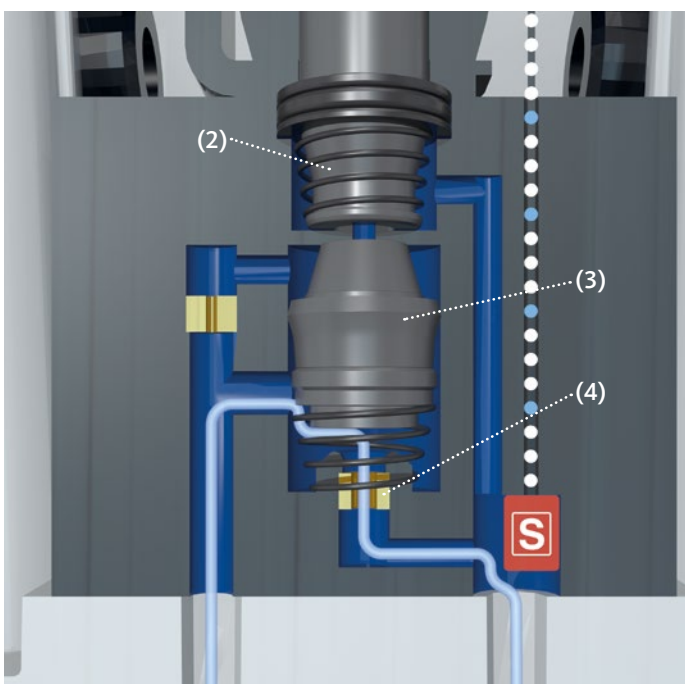
The control software decides in cycles if and for how long the complete purge air volume is to be supplied in order to achieve and stabilise the required degree of drying. This process is implemented via a targeted timed sequence of a solenoid valve.

The duration for both subsequent described process steps therefore varies in every cycle to retain the degree of drying within the specified tolerance range.



Function: Measuring gas flows

A very small partial flow of the dried compressed air (measuring gas) flows continuously through the internal channel to a temperature and humidity sensor (S) over to the measuring gas nozzle (1). This sensor continuously detects the degree of drying of the compressed air in the sample gas and reports the result to the control.



Function: Purge air flows

The control system continuously compares the measured degree of drying of the measuring gas with the individual specified set point value on the DRYPOINT® M eco control. The valve unit will be actuated with deviations: Magnetic core (2) and piston (3) close the valve seat and compressed air flows through the purge air nozzle (4) to the membrane dryer. The drying process commences immediately.

Versatile application capability

The electronically controlled drying system DRYPOINT® M eco control is versatile due to its special properties:

Universal: when the degree of dryness should be set individually

Efficient: Purge air and energy is only consumed when actual dryer performance is required, e.g. with fluctuating compressed air withdrawal

Constant: when safely retained pressure dew point is also important with changing operation conditions

Safe due to its "fail safe" function, it is protected against failure and always delivers dried compressed air

Frost proof: When areas prone to cold require that condensation and freezing should be reliably excluded

Compact: with reduced installation space, it delivers regulated dryer and filtration performance



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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