

ED4100/50

Electronic steam traps for compressed air up to 50 bar



The Parker Zander ED4100 range of steam traps are designed for loss-free condensate removal from compressed air and gaseous nitrogen in the medium-pressure range up to 50 bar.

The secure and reliable removal of large amounts of condensate, in particular at critical installation points, such as compressor aftercoolers, accumulation tanks, and separators, where approx. 70 to 80% of the condensate arises, really makes the Parker Zander ED4100 range of steam traps stand out: An integrated dirt filter, a large valve cross-section, the direct control of the 2/2-way solenoid valve and the robust capacitive fill level measurement form the concept for the safe, reliable, and economical removal of condensate in normal operations, while simultaneously preventing the loss of compressed air.

The floating alarm contact (normally closed, NC) enables the operating state (normal and alarm state) to be monitored, again via a superordinate control: The intelligent control comprises permanent self-monitoring and cleaning. After more than 100 short opening cycles, the electronics switch to cleaning mode, the valve opens three times for 5 seconds in 1-minute intervals. This means that both briefly high levels of condensation and any sediment can be securely



discharged and disposed of. After the end of the cleaning cycle, the control automatically switches back to normal operations.

The simple and secure installation using the wall bracket provided, as well as an upper or side connection, allows for the vibration-free installation – even in enclosed spaces. At low ambient temperatures, a heater can be retrofitted.

A single service kit that includes all of the required wearing parts is sufficient for quick and easy maintenance.

Scope of delivery:

Electronic steam trap for compressed air and gaseous nitrogen up to 50 bar, ready for use, with alarm contact, including wall bracket. Available ex-works in three versions: 230VAC with BSP-P G1/2, 115VAC connection with NPT 1/2" threaded connection, as well as 24VDC with BSP-P G1/2 connection. A heater up to 30 bar is available in two versions as an optional accessory: 230VAC with BSP-P G1/2, 115VAC connection with NPT 1/2" threaded connection.



ENGINEERING YOUR SUCCESS.

Product specifications

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Order information and performance specifications

Stock No.	Output ¹ Aftercooler ²	Output ¹ Refrigeration dryers ³	Output ¹ Filter ⁴	Nominal diameter ⁵ Inlet	Nominal diameter ⁵ Outlet	Supply voltage
ED4100/50-G230	6000 m ³ /h	12,000 m ³ /h	60,000 m ³ /h	G1/2	G1/4	230 V, 50-60 Hz
ED4100/50-N115	6000 m ³ /h	12,000 m ³ /h	60,000 m ³ /h	NPT 1/2"	NPT 1/4"	115 V, 50-60 Hz
ED4100/50-G24D	6000 m ³ /h	12,000 m ³ /h	60,000 m ³ /h	G1/2	G1/4	24 VDC

¹ Maximum throughput in m³/h based on 1 bar_g and 20 °C, subsequently compressed to 50 bar_g.

² Based on 25 °C and 60 % relative humidity of the intake air of the compressor and 35 °C compressed air outlet temperature on the aftercooler.

In the case of a different minimum operating pressure or different suction and aftercooling conditions, the actual throughput is to be multiplied by the corresponding correction factor (see below) to rule out the possibility of exceeding the output.

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⁵ Nominal diameter in accordance with DIN ISO 228 (BSP-P) or ANSI B 1.20.1 (NPT-F).

Climate correction factor CFC for the intake air conditions

CFC	Intake air temperature							
	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C	45 °C
Relative humidity								
30 %	0.20	0.28	0.38	0.5	0.66	0.86	1.11	1.42
40%	0.27	0.37	0.50	0.67	0.88	1.15	1.48	1.89
50%	0.34	0.46	0.63	0.83	1.10	1.43	1.85	2.37
60%	0.41	0.56	0.75	1	1.32	1.72	2.22	2.84
70%	0.48	0.65	0.88	1.17	1.54	2.01	2.59	3.31
80 %	0.55	0.74	1.00	1.33	1.76	2.29	2.96	3.79
90 %	0.61	0.84	1.13	1.50	1.98	2.58	3.33	4.26

Temperature correction factor CFT for the outlet temperature on the aftercooler

Outlet temperature	20 °C	25 °C	30 °C	35 °C	40 °C	45 °C	50 °C	55 °C
CFT	0.44	0.58	0.77	1	1.29	1.65	2.09	2.63

Example of the installation of the steam trap on the aftercooler of the compressor according to the formula $V \times (CFC-CFT) \times CFP \leq 6000 \text{ m}^3/\text{h}$:

For a maximum throughput of 5900 m³/h during intake air conditions of 40 °C and 70 % relative humidity and a compressed air outlet temperature of 50 °C on the aftercooler of the compressor, at a minimum operating pressure of 25 bar_g this would be:

5900 m³/h x (2.59 – 2.08) x 1.96 = 5897.6 m³/h as a converted throughput under normal operating conditions. Model ED4100/50 is sufficient.

Correction factor CFP according to the actual minimum operating pressure

Minimum operating pressure	15 bar _g	20 bar _g	25 bar _g	30 bar _g	35 bar _g	40 bar _g	45 bar _g	50 bar _g
CFP	3.19	2.43	1.96	1.65	1.42	1.24	1.11	1

Example of the installation of the steam trap on the heat exchanger of a refrigeration dryer using the formula $V \times CFP \leq 12000 \text{ m}^3/\text{h}$:

For a maximum throughput of 9000 m³/h at a minimum operating pressure of 40 bar_g this would be:
9000 m³/h x 1.24 = 11160 m³/h as a converted throughput under normal operating conditions. Model ED4100/50 is sufficient.

Example of the installation of the steam trap on the pre-filter of an adsorption dryer using the formula $V \times CFP \leq 60000 \text{ m}^3/\text{h}$:

For a maximum throughput of 15000 m³/h at a minimum operating pressure of 20 bar_g this would be:
15000 m³/h x 2.43 = 36450 m³/h as a converted throughput under normal operating conditions. Model ED4100/50 is sufficient.

Product codes

Series	Size	/pressure stage	— Connection	Supply voltage
ED	4100	/50	— G	230

Example: ED4100, nominal pressure PN50, BSP-P thread, supply voltage 230 VAC.

Product specifications

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Application range

Flow medium	Compressed air and gaseous nitrogen		
Condensate	Oil/water condensate, pH 4-8.5 and free from aggressive substances		
Operating pressure, min./max.	0 to 50 bar _e	Optionally with heater (accessory)	0 to 30 bar _e
Medium inlet temperature	1 to 50 °C		
Ambient temperature	1 to 50 °C	Optionally with heater (accessory)	-25 °C to 5 °C

Electrical connection

Supply voltage	230 V, 50-60 Hz	115 V, 50-60 Hz	24 VDC
Connection power	11 VA	11 VA	20 VA
Alarm contact	Potential-free contact, normally closed (NC), 230V AC, 5-200 VDC, 100 mA – 4 A		
Contact load, max.	4 A at 230 VAC	4 A at 115 VAC	0.5 A at 200 VDC
Connector/alarm plug	in accordance with DIN 43650-B		
Protection class	IP65		

Approvals

EU	Pressure-equipment directive 97/23/EC for fluid group 2
EU	Electromagnetic compatibility directive 2004/108/EU
EU	Low-voltage directive 2006/95/EU

Quality and environmental management system

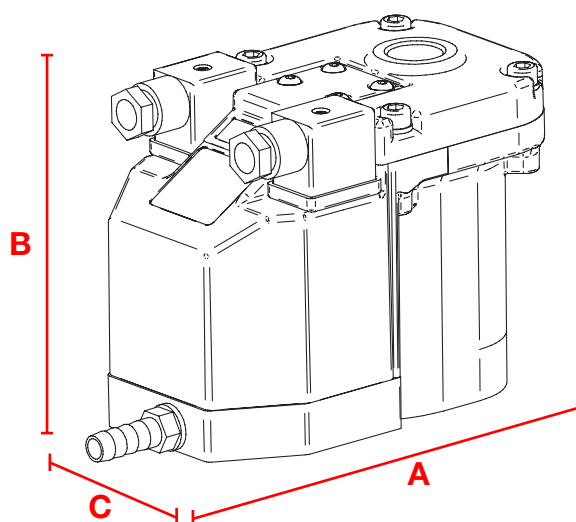
Development / manufacture	DIN EN ISO 9001, DIN EN ISO 14001
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Dimensions [mm] and weight [kg]

Model	A Width	B Height	C Depth	Weight
ED4100/50	178	115	87	1.9 kg

Materials (wetted parts)

Condensate housing	Aluminum, anodized
Housing lid with sensor	PBT
Housing seals	NBR
2/2 way valve	Stainless steel, bronze
Valve seal	FPM
Dirt filter	Stainless steel
Locking screws, outlet spout	Plated brass



Accessories, supplied separately

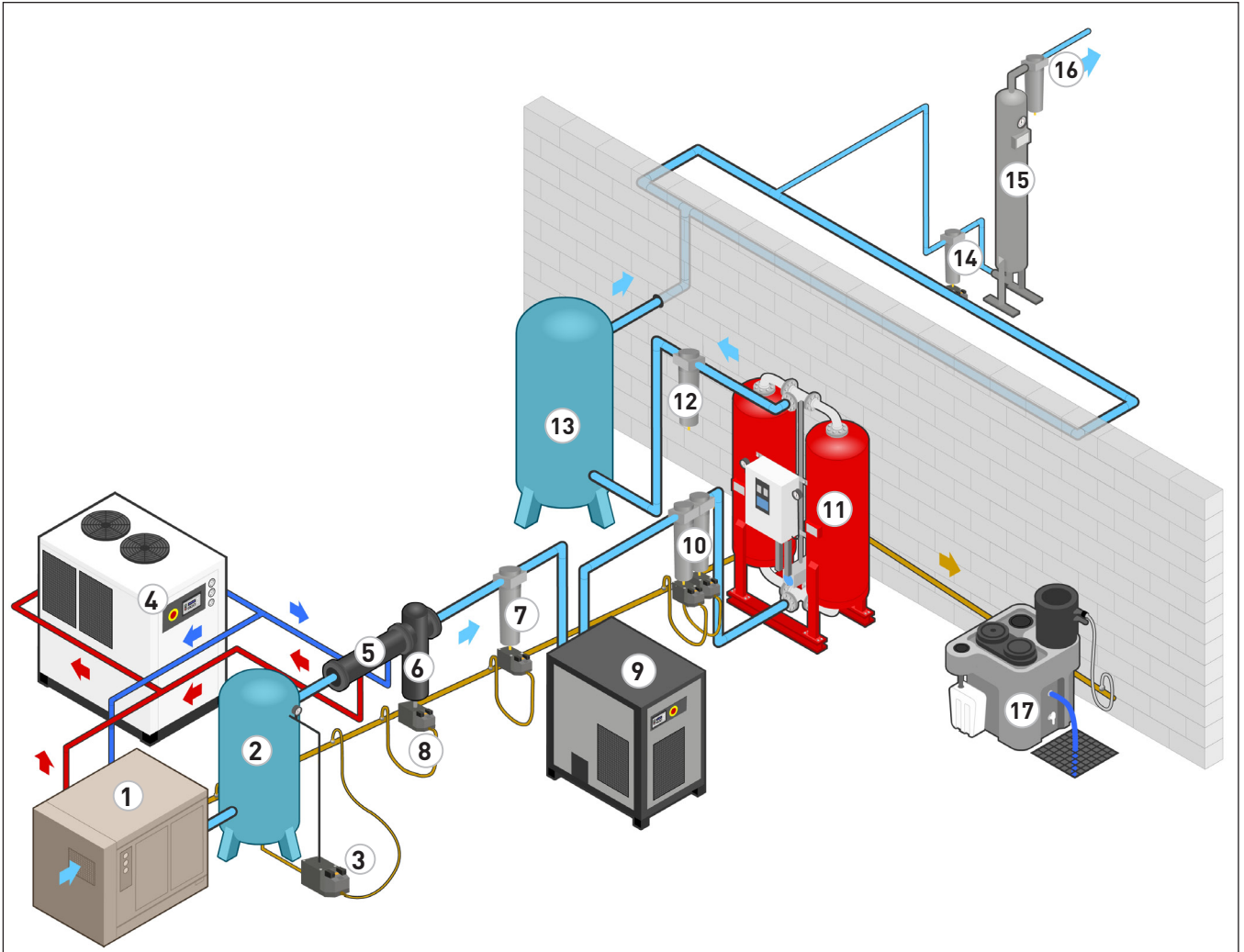
Heater		
Stock No.	Description	Suitable for model
EHT-ED4100-G230	Heater PN30, G1/2, 230 VAC	ED4100/50-G230
EHT-ED4100-N115	Heater PN30, NPT 1/2", 115 VAC	ED4100/50-N115

Service kit: Replacement parts package

for Model	Stock No.	Scope of delivery
all	RKED4100/50	Solenoid valve, seals for the housing and electronic module
	SKED4100/50	Dirt filter, seals for the housing and electronic module

Product specifications

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| 1 Compressor | 10 Microfilter – oil/water aerosol and fine particle removal |
| 2 Air vessel (wet side) | 11 Vacuum-regenerating adsorption dryer |
| 3 Condensate drain ED4100 | 12 Dust filters |
| 4 Water chiller | 13 Air vessel (dry side) |
| 5 Water-cooled aftercooler | 14 Microfilter – oil/water aerosol and fine particle removal |
| 6 Water Separator | 15 Oil vapor adsorber – oil vapor / oil odor removal |
| 7 Pre-filter to remove oil, water, and particles | 16 Dust filter |
| 8 Condensate drain ED4100 | 17 Oil/water separator |
| 9 Refrigeration dryer | |

EMEA Product Information Centre
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 (from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL,
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