

Cool solution for humid gases with inlet gas temperatures over 40 °C

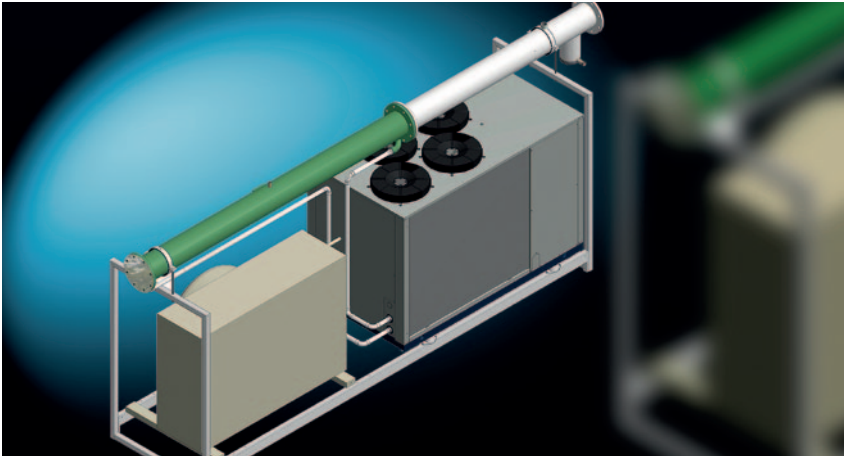
The SILOXA **PowerDryer ECO Line** reduces the energy needed for gas cooling by using freely available ambient air. The **ECO Line** is the new, advanced version of the SILOXA PowerDryer. Since its launch in 2012, the SILOXA **PowerDryer** has been successfully tried and tested hundreds of times both at home and abroad.

- **The difference between the ECO Line version and the PowerDryer is the addition of an extra functional element: the „air cooler.“ Both units come fully pre-mounted on a frame in the usual way and only need to be connected to the supply lines. And you're ready to go! You can start saving energy right away.**
- **Space-saving design, cost-efficient operation – and an even further reduction in energy costs. This system uses ambient air alone to ensure cooling for around 300 days of the year. On the other days, the water cooler provides supplementary cooling.**
- **The ideal solution for applications with high inlet gas temperatures.**

„Take out what doesn't belong.“

The SILOXA **PowerDryer** and the new, enhanced **PowerDryer ECO Line** version impressively demonstrate how SILOXA listens to and addresses the needs and wishes of its customers with innovative products. These products are the key to profit-oriented operation of your system.





Cool solution for humid gases:
SILOXA PowerDryer ECO Line 55-25
gas drying system. Premounted on
frame for outdoor installation.

Technical description

Features

- Use of ambient air to cool biogas
- Water cooler to supplement ambient air cooling
- Compact frame-mounted design, modular structure
- High availability, operational reliability, low maintenance
- Upgrades possible with further modules/options
- Defined interfaces with fermenters and gas utilisation system

Frame

- Made of galvanised square tubes
- Dimensioned according to structural requirements

Gas cooler

- Tube bundle heat exchanger
- Max. perm. operating pressure: tube side approx. 0.5 bar, shell side approx. 6 bar
- Lower specific pressure loss on gas side

Air cooler

- Supplements the water cooler
- Performs cooling on approx. 300 days of the year

Water cooler

- With air-cooled condenser for outdoor installation and all-year operation
- Compact, commercially produced standard unit

Liquid coolant circuit

- Pipe material: steel, incl. flanges, screws, seals
- Required manual and safety valves

Condensate separator

- Moulded piece, material No. 1.4571
- Demister, material No. 1.4571
- Condensate drain into condensate chamber provided by the customer

Factory assembly

- All components supplied ready for use with pipework and cabling
- External interfaces
- Filled with glycol
- Pre-prepared at the factory for commissioning

Technical documentation

- Operating instructions, installation drawing and shop drawing
- Piping and instrumentation diagram, circuit diagram, list of assemblies
- Spare parts lists and individual documentation for the installed components
- Inspection/test reports and certificates
- SILOXA products comply with the EC Declaration of Incorporation as defined by the EC Machinery Directive 2006/42/EC





SILOXA – a top name for efficient,
cost-effective gas drying solutions.
Made in Germany.

Available options

Water discharge

- Via a solenoid valve to a condensate discharge chamber provided on-site

Insulation against cold with trace heating

- Vapour-diffusion-proof insulation for gas drying system, condensate drain and liquid coolant circuit
- Aluminium-sheet sheathing
- Trace heating



Technical data: SILOXA PowerDryer ECO Line 55/25

Design parameters | ECO Line 500 | ECO Line 750 | ECO Line 1000 | ECO Line 1500 | ECO Line 2000

Gas medium	Biogas				
Gas flow rate	500 Nm ³ /h	750 Nm ³ /h	1000 Nm ³ /h	1500 Nm ³ /h	2000 Nm ³ /h
Gas inlet temperature	max. 55 °C				
Gas outlet temperature	max 25 °C				
Moisture saturation	approx. 55 °C				
Gas pressure at gas inlet	0 bis 500 mbar/gauge				
Pressure loss Δp	10 mbar	8 mbar	8 mbar	8 mbar	10 mbar
Quantity of condensate	approx. 52,0 l/h	approx. 77,0 l/h	approx. 103,0 l/h	approx. 155,0 l/h	approx. 206,0 l/h

Technical data for cooling device & air cooler

Power supply	400 V / 3Ph + PE / 50 Hz				
Coolant compressor	1 scroll compressor		2 scroll compressor		
Number of cooling circuits	1				
Condensers	air cooled				
Rated cooling capacity ^{1*}	29,7 kW	44,2 kW	59,9 kW	100,4 kW	129,3 kW
Rated power consumption ^{1*}	13,3 kW	19,7 kW	27,0 kW	47,0 kW	63,0 kW
Mean elec. power consumption with design parameters and 15°C ambient temperature ²	2,2 kW	4,2 kW	6,0 kW	7,4 kW	14,0 kW
Rated current	24,2 A	38,1 A	45,8 A	81,0 A	106,0 A
Starting current	132,0 A	163,0 A	154,0 A	266,0 A	249,0 A

Gas composition

Methan CH ₄	approx. 60 Vol. -%
Carbon dioxide CO ₂	approx. 40 Vol. -%
Hydrocarbons > C ₅	approx. 100 mg/m ³

Physical properties

Gas density	ca. 1,2 kg/Nm ³
Specific heat capacity C _p	ca. 1,6 kJ/Nm ³ K

Installation conditions

Installation site	outdoor				
Permitted temperature	- 15 °C bis + 35 °C				
Danger zone	outside Ex-zones				
Electrical connection	400 V / 3Ph + N +PE / 50 Hz				
Connected load	13,4 kW	20,6 kW	28,3 kW	48,3 kW	64,8 kW

^{1*} Rating according to Eurovent: Coolant 12 °C to 7 °C at 35 °C ambient temperature. The annual mean temperature at our latitudes is 11 °C.

² This value is to be used for calculating the energy requirement of the gas cooler.

Higher gas inlet pressures can also be implemented on request.



SILOXA
Take out what doesn't belong.