

Sample gas cooler EGK 4 S



Accurate measurements of gas components require gas samples with stable dew points even under harsh ambient conditions.

Basically a cooling system designed like a refrigerator type system is connected to a cooling block. This block has an even heat dissipation and thus supports the performance of the highly efficient heat exchangers. While the compressor is running constantly the temperature regulation is done by the Bühler-constant-regulating-system. This system allows very smooth regulation and eliminates all disadvantages of a traditional on-off operation mode.

The cooler's status can be monitored by a display of the cooling block's temperature and a LED which blinks until the cooler reaches the valid temperature range.

The cooling block takes up to four individual heat exchangers hence the cooler is suitable to serve up to four separate gas sample streams.

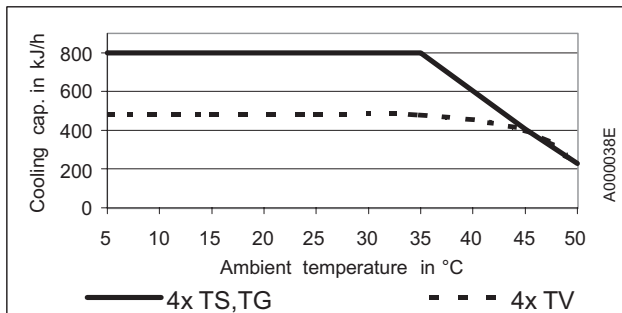
The cooler can be supplied with feet adjustable from about 1,5 to 6,6 cm and either mounting brackets or handles.

- **very compact design**
- **easy to install**
- **wall, rack or table mountable**
- **very reliable cooling system**
- **coolant Fluorocarbon free**
- **up to 4 gas streams**
- **heat exchangers in SS, Glass or PVDF**
- **nominal capacity 800 kJ/h**
- **dewpoint stability 0,2 K**
- **temperature display for cooling block**
- **variable feet, handles or brackets for rack mounting available**

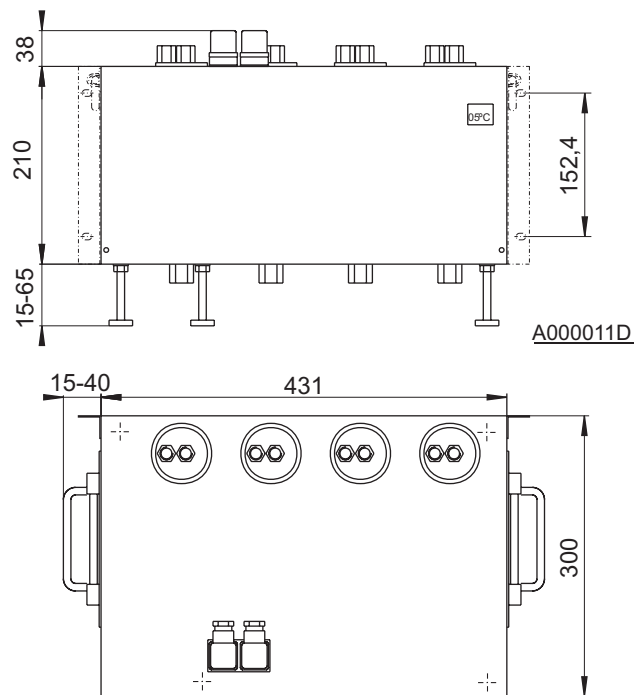
technical data

ready for operation	max. 15 minutes
cooling capacity (at 25°C)	800 kJ/h
ambient temperature	+5..50°C
dewpoint (set at factory)	approx. 5 °C
dewpoint variations static	0,2 K
over full operation range	± 2 °C
power supply	115 or 230V, 50/60 Hz
power consumption	170/ 500 VA
fuse	10 A
alarm output	230VAC/150VDC, 2 A, 30 VA
	change over contact
protection class	IP 20
housing	stainless steel
installation	wall, rack or table mounting
Dimensions of packaging	approx. 510 x 355 x 450 mm
weight incl. 4 heat exchangers	max. 32 kg

performance data's



dimensions



heat exchanger

The energy content of the sample gas and as a result the required cooling capacity is determined by 3 parameters: gas temperature ϑ_G , dewpoint τ_e (moisture content) and flow Q. The outlet dew point raises with increasing energy content of the gas due to physical rules. The acceptable cooling capacity is determined by a tolerated raise of the outlet dew point.

The following limits are set for $\tau_e=65^\circ\text{C}$ and $\vartheta_G=90^\circ\text{C}$. Indicated is the Q_{\max} in NI/h cooled air i.e. after the moisture has condensed.

If the real values stay below the parameters τ_e and ϑ_G , Q_{\max} can be increased. As an example instead of $\tau_e=65^\circ\text{C}$, $\vartheta_G=90^\circ\text{C}$ and $v=250$ l/h the values $\tau_e=50^\circ\text{C}$, $\vartheta_G=80^\circ\text{C}$ and $v=350$ l/h could be accepted.

Please let us know if you want assistance or use our cooler adaption programme.

heat exchanger

	TS	TG	TV
flow rate v_{\max}^1	400 l/h	250 l/h	150 l/h
inlet dewpoint $\tau_{e,\max}^1$	80 °C	80 °C	65 °C
gas inlet temperature $\vartheta_{G,\max}^1$	180 °C	140 °C	140 °C
max. cooling capacity Q_{\max}	340 kJ/h	200 kJ/h	120 kJ/h
gas pressure p_{\max}	160 bar	3 bar	3 bar
pressure drop Δp ($v=150$ l/h)	8 mbar	8 mbar	8 mbar
death volume V_{tot}	69 ml	48 ml	129 ml
sample gas connections	G 1/4" i ²⁾	GL 14	DN 4/6
condensate out connections	G 3/8" i ²⁾	GL 25	G 3/8" i

¹⁾ with maximum heat transfer of the heatexchanger and max. cooling capacity of the cooler

²⁾ NPT-threads upon request

Please indicate with order cooler

45 70 999	EGK 4 S, 230 V, 50/60 Hz, Display for wall mount
45 71 999	EGK 4 S, 230 V, 50/60 Hz, Display for rack mount
45 72 999	EGK 4 S, 115 V, 50/60 Hz, Display for wall mount
45 73 999	EGK 4 S, 115 V, 50/60 Hz, Display for rack mount

45 70 001	Rack mount brackets (mounted)
45 70 002	Handles (2 pcs, mounted)
45 70 003	Feet (4 pcs, added)

heat exchanger

45 10 023	TS, stainless steel 1.4571
45 10 013	TG, Duran glass
45 01 004	TV-SS, PVDF

we reserve the right to amend specification

accessories: see separate data sheets