



ANKERSMID Compressor cooler ACC 4xx neo Series

Application

Ankersmid Compressor Coolers are used to lower the dew point of humid gas to avoid condensate entering into the gas analyser.

This unique micro-processor controlled compressor cooler has been designed with a powerful dew point stabiliser. The dew point is set at 4°C but can be changed at any value between 1 and 15°C.

A good and stable gas dew point avoids cross-interference if the analyser is sensitive to H₂O.

Description

The ACC cooler offers precision, safety and long-term stability for extractive analytics. The very low gas dissolution rate is attained owing to the new cooler technology (Patents applied). Both the permanent separation of the condensate from the gas phase, as well as the shorter contact time of the gas in the system, plays important roles in reducing gas dissolution rates.

The new cooler incorporates an advanced structural design with housing suitable for both wall-mounting and 19"-racks. The coolers can be integrated into the analysis cabinet without empty space requirements at the side for a cooling air outlet.

The new design enables up to 4 heat exchangers and peristaltic pumps to be incorporated either at the factory or at a later time, without any problem. The exchangers and pumps can be connected in series or parallel following customer requirements.

An electronic system not only monitors the dew point, but also the ambient temperature. The integrated fan is cooling air temperature dependent controlled.

A temperature alarm output is wired to the terminal block incorporated of the cooler housing for a safe connection without disassembling the cooler.

Available for 230VAC and 115VAC power supply.

The ACC cooler is designed especially for:

- Power Plants
- Waste Incinerators
- Cement Manufacturing
- Chemical Production Plants
- Gas Production Plants
- Glass manufacturing
- Timber Processing
- Food Processing



* Pictures may vary

- **Provide clean dry sample gases to extractive analysers in continuous emission monitoring, process control and engine testing applications**
- **Universal cooler housing for wall-mounting and 19"-rack version by multifunctional assembly brackets**
- **Optimise industrial burning processes**
- **Continuously dehumidify gas sample streams**
- **Rapidly separate condensable liquids with a very low dissolution rate**
- **Demountable heat exchanger PFA[®]-coated**
- **Various options like flow meter and front panel filter to be incorporated into the cooler housing**
- **Peristaltic pump for each heat exchanger incorporated as standard**



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Technical data

Model ACC	4x1 neo	4x2 neo	4x3 neo	4x4 neo
Number of heat exchanger	1	2	3	4
Housing version	Wall-mount / 19"-rack			
Housing color	RAL 7035			
Dimensions (HxLxD)	310 x 449 x 320mm			
Weight (approximately)	32 kg			
Data per heat exchanger				
Gas flow	Max. 200l/h*			
Material of exchanger body	PFA®-coated			
Material of exchanger head	PFA®-coated			
Sealing	Viton®			
Maximum pressure	10 bar a			
Pressure drop	2mbar at 200l/h			
Dead volume	35ml			
Sample gas inlet	1x 1/4" f NPT			
Sample gas outlet	1x 1/4" f NPT			
Condensate outlet (HE)	1x 3/8" f NPT			
Condensate outlet (pump)	PVDF DN4/6			
Operation data				
Gas inlet dew-point	Max. 65°C*			
Gas inlet temperature	Max. 190°C*			
Gas outlet temperature	+1°C +15°C, factory setting: +4°C			
Stability	0,1°C			
Ambient temperature	+5°C to 45°C			
General electrical data				
Mains connection	Plug			
Alarm contact	Free programmable contact 1NO / 1NC, rating: 250V, 16A AC			
Alarm set points	< +2°C / > +8°C			
Protection class	IP20 EN 60529 / EN 61010			
Power supply	230V/50Hz (standard), 115VAC/60Hz			
Electrical protection	Fuse F2,5At (230VAC), F6At (115VAC)			
Power consumption	Approx. 193W (steady-state)			
Total cooling capacity	Approx. 900BTU/h ≈ 955kJ/h			
Coolant	R134a			
Model ACC	401 neo	402 neo	403 neo	404 neo
Power supply	230V, 50 Hz			
Model ACC	411 neo	412 neo	413 neo	414 neo
Power supply	115V, 60 Hz			

Maximum values in technical data's must be rated in consideration of total cooling capacity at 25°C ambient temperature and 5°C outlet dew point

PTFE = Polytetrafluoroethylene (Teflon®)

PFA = Perfluoralkoxy-Polymere

PVDF = Polyvinylidenfluoride

FFPM = Perfluorelastomer (Kalrez®)

PPS = Polypropylenesulphide (Ryton®)



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Condensate removal

Each heat exchanger is, as a standard fitted with a peristaltic pump type ACP 001 (ASR25). The pump removes all condensate, while ensuring condensate flow- back is impossible.

The pump's 0.25 l/h capacity guarantees a complete condensate removal even at high dew points.

Driven by a synchronous motor, a system of pulleys presses the condensate through a special tube with very long runtime. These pulleys are pressed by 4 springs on the peristaltic tube.

With a speed of 5 rpm, the two PVDF hose pulleys and the Novoprene[®] hose guarantee a good mechanical and chemical resistance with a long life time. Changing the peristaltic tube is a simple procedure that takes only seconds.

Sample gas cleaning

The APF front panel mounting extra-fine filters reliably filter out solids, especially very fine particles, by using a very fine, deep-acting filter element. The large filter surface of this cylindrical filter element guarantees reliable extra-fine filtration and a long service life with low pressure drop.

Reliable filtration of particles down to 0.1 micron occurs in the Teflon-depth filter. A viewing window shows the need for filter changes. This filter, including piping, can be integrated into the front panel of the cooler as an option.

Flow rate control and adjustment

The AFM flow meter consists of a vertical, internally conical Acrylic tube widening towards the top in which a float can move freely upwards and downwards and of the head and bottom piece with an integrated Stainless Steel needle valve.

The sample gas flows upwards through the tube and lifts the float until a radial clearance occurs between the tube wall and the float so that forces affecting the body are in equilibrium. Every position of the float corresponds to a certain flow which can be read on a calibrated scale.

The measuring tube is sealed within the head and bottom part with FPM o-rings, as is the fine adjustment needle valve.

The flow meter is fitted with a fine adjustment valve in the inlet for precise flow value setting.

This flow meter, including piping, is available as option and will be built into the front panel of the cooler by Ankersmid, including all piping.

Equipment





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Performance

