

## ANKERSMID Compressor cooler ACC 4xx/5xx Series

Universal for wall-mounting and 19"-racks  
1-4 heat exchanger

### Application

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

### Description

The new ACC offers precision, safety and long-term stability for extractive analytics. The unique cooling and separating technology of the newly designed coolers attains low, constant dew points of +4°C and compensates for operating data fluctuations as well as high thermal loads.

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. Heat exchangers are available in various materials, to meet specific application requirements.

An electronic system not only monitors the dew point, but also the ambient temperature. The integrated fan is cooling air temperature dependent controlled. Peristaltic pumps for each heat exchanger are incorporated as standard for continuous condensate removal.

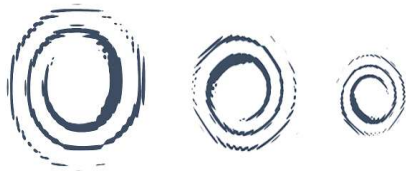
A temperature alarm output is wired to the terminal block incorporated of the cooler housing for a safe connection without disassembling the cooler.

Available for 230VAC and 115VAC power supply.



\* Picture 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**
- **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**



## Equipment

### 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<sup>®</sup> 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 10X 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.

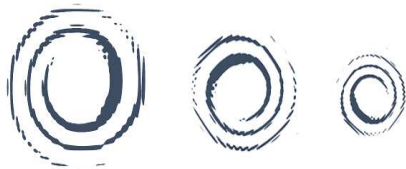
The sample gas flows upwards through the tube and lifts the float until a radial clearance occurs between the tube wall and the float so that forces affecting the body are in equilibrium. Every position of the float corresponds to a certain flow which can be read on a calibrated scale.

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.





## Technical Data ACC – Ankersmid Compressor Cooler

Model ACC	401	402	403	404	501	502	503	504
<b>Number of heat exchanger</b>	1	2	3	4	1	2	3	4
<b>Housing version</b>	Wall-mount / 19"-rack				Wall-mount / 19"-rack			
<b>Housing color</b>	RAL 5002 (Blue)							
<b>Dimensions (HxLxD)</b>	310 x 449 x 320mm							
<b>Weight (approximately)</b>	32 kg							
<b>Data per heat exchanger</b>								
<b>Gas flow</b>	Max. 200l/h*							
<b>Material of exchanger body</b>	Duran® Glass				SS316			
<b>Material of exchanger head</b>	PTFE				SS316			
<b>Sealing</b>	Viton®				Viton®			
<b>Maximum pressure</b>	3 bar a				10 bar a			
<b>Pressure drop</b>	2mbar at 200l/min							
<b>Dead volume</b>	35ml							
<b>Sample gas inlet</b>	1x G1/4"i				1x G1/4"i			
<b>Sample gas outlet</b>	1x G1/4"i				1x G1/4"i			
<b>Condensate outlet at exchanger</b>	1x GL25				1x G3/8"i			
<b>Condensate outlet at peristaltic pump</b>	PVDF DN4/6				PVDF DN4/6			
<b>Operation data</b>								
<b>Gas inlet dew-point</b>	Max. 65°C*							
<b>Gas inlet temperature</b>	Max. 190°C*							
<b>Gas outlet temperature</b>	+1°C ..... +15°C, factory setting: +4°C							
<b>Stability</b>	0,1°C							
<b>Ambient temperature</b>	+5°C to 45°C							
<b>General electrical data</b>								
<b>Mains connection</b>	Plug							
<b>Alarm contact</b>	Free programmable contact 1NO / 1NC, rating: 250V, 16A AC							
<b>Alarm set points</b>	< +2°C / > +10°C							
<b>Protection class</b>	IP20 EN 60529 / EN 61010							
<b>Power supply</b>	230V, 50/60Hz (standard)							
<b>Electrical protection</b>	Fuse F2,5A / H250V							
<b>Power consumption</b>	Approx. 350W							
<b>Model ACC</b>	<b>401</b>	<b>402</b>	<b>403</b>	<b>404</b>	<b>501</b>	<b>502</b>	<b>503</b>	<b>504</b>
<b>Power supply</b>	230VAC, 50/60 Hz							
<b>Model ACC</b>	<b>411</b>	<b>412</b>	<b>413</b>	<b>414</b>	<b>511</b>	<b>512</b>	<b>513</b>	<b>514</b>
<b>Power supply</b>	115VAC, 50/60 Hz							

Maximum values in technical data's must be rated in consideration of total cooling capacity at 25°C ambient temperature and 4°C outlet dew point

PTFE = Polytetrafluoroethylene (Teflon®)

PVDF = Polyvinylidenfluoride