

- Sampling Conditioning Systems
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conditioning systems

Gas cooler / conditioning JCL 300



FEATURES

- ◆ Low and stable dew point
- ◆ Very low washout rate
- ◆ Compact housing from 1 up to 4 gas paths
- ◆ Complete gas conditioning optional
- ◆ Preventive monitoring
- ◆ Precise electronic power regulation
- ◆ Status display with event memory
- ◆ RS 485 Interface optional

APPLICATION

The JCL300 series of gas coolers are used to separate water vapour and provide a low stable dew point from the wet sample gas prior to measurement by moisture intolerant analysis equipment. The cooler has been developed to provide a highly efficient, low maintenance and flexible system that is available in industry standard housings and configurations. As such, it is available as a single stream gas cooler or it can be expanded to up to 4 separate gas streams; options can include the addition of sample pumps, filters, condensate monitors and flow monitoring and control, to become full gas conditioning units. Every consideration for the requirements and needs of system vendors and operators has been applied, thus providing time and cost effective procurement and assembly, coupled with extremely high reliability.

TECHNOLOGY

PVDF is a proven heat exchanger material for the use with aggressive sample gases, and has been used for over 2 decades. Chemical stability and self-cleaning qualities guarantee long-term stable dew points for many years. Permanent condensate separation and the short residence time of the sample gas within the system are a decisive role for very low washout rates,

i.e. SO₂. Sufficient cooling is constantly provided by an insulated cold block and performance changes due to load or temperature changes are negligible. Each heat exchanger has one, two, three or four channels, these separate channels operate independently and do not influence with the performance of each other.

MONITORING-SYSTEM JMS1

The JCL coolers are designed with a built-in monitoring system, the JMS1. The JMS1 provides fault diagnosis and a visual operator interface, clearly showing the operating status and any major causes of disturbance. With early operator response, a possible shutdown of the cooler can be prevented. The unique electronic control and regulation unit (JSM1) controls not only the periphery but it also regulates the refrigeration cycle and the speed of the cooling fan. This enhances the dew point stability during fast load changes and also the reliability at low or high cooling air temperatures (ambient air). The optional RS485 interface allows remote monitoring with continuous recording of all events and an optional PC visualization program with event monitoring can provide valuable information on all operations for local service.

TECHNICAL DATA

Model		JCL 301	JCL 304	JCL 319
Number of gas path		1—2	1—4	1—4
Flow rate per gas path	NI/h		120	
Gas outlet dew point	°C		+3° *	

Dew point-reference data

Gas temperature inlet	°C		+140	
Dew point inlet	°C		+65	
Ambient temperature	°C		+25	
Dew point stability	°K		±0,3	

Operation

Ready for operation	min		< 10 min	
Pressure drop at max. flow rate	mbar		5	

Operating data max.

Flow rate per gas path	NI/h		150	
Gas temperature inlet	°C		+140	
Dew point inlet	°C		+80	
Permissible ambient temperature	°C		+5°C ... +45	
Operation pressure max. with pump	bar		0,5...1,5	

Mechanical

Dimensions over all W x H x D	mm	320 x 310 x 328	440 x 300 x 408	483 x 310 x 408
Mounting position		Stand alone or wall mount		19" Rack mount
Weight	kg	ca. 22	ca. 27	ca. 27
Housing		Sheet steel 1,5mm; powder coated		
Housing colour		RAL 7035 GS / RAL 1016 S		
Heat exchanger Material		PVDF		
Dead volume per gas path	ml	48		
Connection sample gas / condensate	mm	PVDF DN 4/6		
Approval / sign		CE		

Electrical

Supply voltage	VAC	100-115 or 220-240; 50/60Hz		
Power consumption	VA	200—345 depending on configuration		
Fusing		External on installation site, Fuse characteristic C: 230VAC 6A; 115VAC 10A		
Status / sample pump relay		Two volt free changeover contacts		
Switching capacity relays		max. 250VAC/8(1,5)A; min. 5VADC/5mA		
Connection Power / status signal / sample gas pump		Connector EN175301-803 form A/B with PG9 - panduit 3/4 pole		
Alarm set points	°C	<0 / >+10		
Protection class		IP 20 (EN 60529)		

VARIANTS

Model		JCL 301	JCL 304	JCL 319
Gas paths	pcs	1 / 2	1 / 2 / 3 / 4	1 / 2 / 3 / 4
Condensate pumps JSR25	pcs	1 / 2	1 / 2 / 3 / 4	1 / 2 / 3 / 4
Sample gas filters JF1	pcs	0 / 1	0 / 1 / 2	0 / 1 / 2
Condensate detectors KW2	pcs	0 / 1	0 / 1 / 2	0 / 1 / 2
Flowmeter with needle valve / flow control	pcs	0 / 0 or 1 / 0 or 1 / 1	0 / 0 or 1..2 / 0 or 1..2 / 1..2	0 / 0 or 1..2 / 0 or 1..2 / 1..2
Sample gas pump	pcs	0	0 / 1	0 / 1

Subject to change without notice.

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