# JCP-300 Portable Gas Conditioning System



### APPLICATION

- Mobile extractive gas analysis
- · Emission and process monitoring
- Continuous sample gas conditioning of humid process gases
- Continuous drying of sample gas to a precise low and constant outlet dew point
- Minimizes water vapour cross sensitivities and volumetric errors

#### BENEFITS

- Very powerful compact and complete unit with condensate removal and monitoring
- High flow rates of up to 250 NI/hr per gas path
  Very low wash out ratios even at high water
- vapour concentrations in the sample gas
- High inlet dew points up to 80 °C possible
- Reliable condensate separation even at very high ambient temperatures up to 50 °C
- Extremlely precise long-term stable dew point even under varying loads
- · Maximum operational safety
- Low maintenance operation
- · Easy to maintain design

## FEATURES

- New powerful modular designed compact solution
- JHEX-4 heat exchanger
- Intelligent digital control electronic
- Digital temperature display
- Applicable up to an ambient temperature of 50 °C (JCP-310)
- Integrated condensate pump
- · Integrated sample gas pump
- Integrated acid dosing pump
- Integrated flow control
- Integrated fine dust filter
- Integrated condensate monitoring
- Temperature controller for heated sample line
- Visual alerting via LEDs and digital display
- Self monitoring with deactivation of the sample pump in case of alarm
- · Ready for operation within less than 15 minutes





Gas Sampling Probes

Heated Sample Lines

**Sample Gas Coolers** 

Condensate Treatment

**Accessories** 

Gas Conditioning System

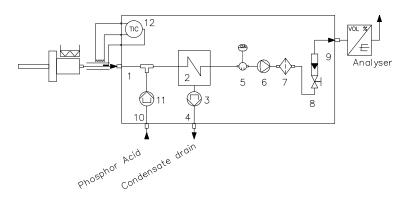
> Sample Gas Converters

# **TECHNICAL DATA**

Model	JCP-300	JCP-310							
Performance of sample gas cooler	standard	high-performance							
Cooling principle	Peltier	cooling							
	Operation								
Gas flow per gas path*	max. 2	50 NI/hr							
Gas inlet temperature*	max. 140 °C for PVDF and max	. 180 °C for SS heat exchangers							
Gas inlet dew point*	max.	80 °C							
Gas outlet dew point	+5 °C (factory default); adjus	stable from +0,5 °C to +7,5 °C							
Dew point stability (for constant inlet conditions)	±0	,1 K							
Ambient temperature	+5 °C <b>to +40 °C</b>	+5 °C <b>to +50 °C</b>							
Cooling capacity total	max. 30 W	max. 60 W							
Operating pressure with condensate pump	0,2 to 2	2,2 bara							
Max. operating pressure without condensate pump	4,0 bara; SS heat exc	changer: max. 19 bara							
Ready for operation	< 15	5 min							
Pressure drop at max. flow rate	3 n	nbar							
	Construction								
Dimensions over all (W x H x D)	561 x 457	7 x 262 mm							
Installation	port	able							
Housing / Colour	hard case with trolley fund	tion, polypropylene, yellow							
Operating position	open case, vertic	al heat exchanger							
Weight	approx. 18 kg, depending on configuration	approx. 22 kg, depending on configuration							
Gas wetted materials (depending on configuration)	aluminum coated, PVDF, SS316T	ï, FFKM, Duran glass, PTFE, FPE							
Dead volume per gas path	67 ml								
Connection sample gas inlet	stainless steel compression fitting 6 mm								
Connection sample gas outlet, condensate outlet	PVDF-hose	fitting DN 4/6							
Approvals / Signs	(	CE							
	Electrics								
Power supply	230 VAC 50/60 Hz +/-10 % or 115 VAC 50/60 Hz +/-10 %								
Power consumption (without sample line) (depending on load and ambient temperature)	60 VA up to 110 VA	120 VA up to 320 VA							
Connection power	plug CEE 7/7 to IEC	plug, with 2,0 m cable							
Protection class		ase: IP 67 (EN 60529) :ase: IP 20 (EN 60529)							
Fusing (rating depending on sample line)	built-in lead fuse	built-in lead fuse							
On time		0 %							
Diagnostic / Operation indicator		lour-LED							
Status threshold	< 0 / >	+10°C							
Status relay delay	0,5 s								
Status relay	volt free contact, 230 VAC / 2 A, min. 5 VADC / 5 mA								
Connection for heated sample line	7-pole plug, load of max. 2200 W or max. 10 A								
Threshold condensate detector (option)	factory setting 12 k $\Omega$ , adjustable 2 to 30 k $\Omega$								
Sensor type for heated sample line (option)	TC Type K (NiCrNi) o	r RTD PT100 (IEC751)							

\* Results from the effective cooling capacity at 20 °C ambient temperature and 5 °C outlet dew point and can be influenced by further operational parameters

## Gas flow diagram JCP-300 / JCP-310



- 1 Sample gas inlet
- 2 Gas heat exchanger
- 3 Condensate pump JSR-25
- 4 Condensate drain
- 5 Condensate sensor KW-1 (option)
- 6 Sample gas pump (option)

1	Fine dust filter (option)
8	Flow meter with needle valve (option)
9	Sample gas outlet
10	Acid port (option)
11	Acid dosing pump (option)
12	Temperature controller for heated sample line (option)

-l. . . t filt - ... / - ... t' -

# **ORDER CODE**

## JCP-300 standard performance including JSR-25 condensate pump

	JHEX-4 heat exchanger aluminium coated	1									
	JHEX-4 heat exchanger PVDF	2									
Heat exchanger	JHEX-4 heat exchanger Duran glass	3									
	Heat exchanger SS-GLY (helical style)	5									
<b>Filtretier</b>	without		0								
Filtration	fine dust filter JF-1		1								
Comple and pump	without			0							
Sample gas pump	sample gas pump JSP			1							
Flow motor with poodlo value	without				0						
Flow meter with needle valve	flow meter with needle valve				1						
Condensate detector	without					0					
Condensale delector	condensate detector					1					
Temperature display for	without						0				
heat exchanger	temperature display for heat exchanger						1				
Acid docing nump	without							0			
Acid dosing pump	acid dosing pump							1			
<b>-</b>	without								0		
Femperature display for heat exchanger Acid dosing pump Femperature controller for heated sample line Power supply Special version	temperature controller for heated sample line PT100								1		
neated sample line	temperature controller for heated sample line TC type K								2		
Power supply	230 VAC 50/60 Hz									А	
	115 VAC 50/60 Hz									В	
Special version											XY
		¥	¥	¥	¥	¥	¥	¥	¥	¥	¥
Order code	100 200										

Order code

## JCP-310 high-performance including JSR-25 condensate pump

HEX 4 heat exchanger luminum coated       1         JHEX 4 heat exchanger PVDF       2         JHEX 4 heat exchanger Duran glass       3         JHEX 4 heat exchanger Duran glass       4         JHEX 4 heat exchanger stainless stele       4         Filtration       1         Mithout       1         Sample gas pump       Without         Sample gas pump JSP       1         Not meter with needle valve       1         flow meter with needle valve       1         Mithout       1 <t< th=""><th>Order code</th><th>JCP-31</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	Order code	JCP-31										
Heat exchanger PVDF       2         JHEX 4 heat exchanger Duran glass       3         JHEX 4 heat exchanger stainless steel       4         Without       6         filtration       1         Sample gas pump       without         without       0         for wreter with needle valve       0         for data data exchanger       0         without       0         for data datosing pump<			¥	¥	¥	¥	¥	¥	¥	¥	¥	\
Heat exchanger       HEX-4 heat exchanger DVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger Duran glass       4         Filtration       4         mithout       0         fample gas pump JSP       0         mithout       0         for meter with needle valve       0         mithout       0         for meter with needle valve       0         mithout       0         mithout       0         mithout       0         for meter with needle valve       0         mithout       0         more detector       0         mithout       0         more display for heat exchanger       0         without       0 <td>Special version</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>T</td> <td></td> <td>XY</td>	Special version									T		XY
Heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger Duran glass       4         Filtration       0         fine dust filter JF-1       0         sample gas pump       without         formeter with needle valve       1         formeter with needle valve       1         formeter with needle valve       1         ondensate detector       1         Temperature display for heat exchanger       4         without       0         ididosing pump       without         memperature display for heat exchanger       1         without       1         ididosing pump       1         without       1         ididosing pump <td>Power supply</td> <td>115 VAC 50/60 Hz</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>В</td> <td></td>	Power supply	115 VAC 50/60 Hz									В	
Heat exchanger       JHEX-4 heat exchanger PUDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger Duran glass       4         Filtration       0         fine dust filter JF-1       0         sample gas pump       without       0         sample gas pump JSP       1         Flow meter with needle valve       0         fow meter with needle valve       0         fow meter with needle valve       0         foundensate detector       0         without       0         temperature display for heat exchanger       0         without       0         temperature display for heat exchanger       0         Acid dosing pump       without       0         without       0       0         acid dosing pump       0       0         without       0       0         acid dosing pump       0       0         without       0       0         acid dosing pump       0       0         without       0       0       0         acid dosing pump       0       0       0       0         without       0       0											А	
Heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger basinless steel       4         Filtration       0         Sample gas pump       without         Sample gas pump JSP       0         Without       0         flow meter with needle valve       0         Condensate detector       0         temperature display for heat exchanger       0         without       0         temperature display for heat exchanger       0         without       0         temperature display for heat exchanger       0         without       0       0         temperature display for heat exchanger       0         without       0       0         temperature controller for beated sample line PT100       0         temperature controller for beated sample line PT100       0       0         temperature controller for beated sample line PT100       0       0         temperature controller for beated sample line PT100       0       0       0         temperature controller for beated sample line PT100       0       0       0       0	neated sample line									2		
Heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger Duran glass       4         JHEX-4 heat exchanger Stainless steel       4         Filtration       0         fine dust filter JF-1       1         Sample gas pump       without         sample gas pump JSP       1         flow meter with needle valve       1         for ometer with needle valve       1         Without       1         for ometer with needle valve       1         fungerature display for heat exchanger       1         without       1         for ometer with needle valve       1         for ometer with needle valve       1         for ometer with needle valve       1         for ometer with needle		temperature controller for heated sample line PT100								1		
Heat exchanger       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger stainless steel       4         Filtration       4         Without       0         fine dust filter JF-1       0         sample gas pump       Without       0         Without       0       1         For meter with needle valve       0       1         fow meter with needle valve       0       1         Ordensate detector       0       1         Temperature display for heat exchanger       0       1         Mithout       0       1         Temperature display for heat exchanger       0       0         Without       0       0       0         Temperature display for heat exchanger       0       0       0         Mithout       0       0       0       0         Mithout       0       0       0       0         Temperature display for heat exchanger       0       0       0       0         Mithout       0       0       0       0       0       0         Mithout       0       0       0       0       0       0 <td< td=""><td></td><td>without</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Τ</td><td>0</td><td></td><td></td></td<>		without							Τ	0		
Heat exchanger       JHEX-4 heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger stainless steel       4         Filtration       0         without       0         fine dust filter JF-1       0         sample gas pump       indut         without       0         fow meter with needle valve       0         fow meter with needle valve       0         foundersate detector       0         Condensate detector       0         fuengerature display for heat exchanger       0         without       0         temperature display for heat exchanger       0         temperature display for heat exchanger       0         without       0         temperature display for heat exchanger       0         temperature display for heat exchanger       0         temperature display for heat exchanger       0         te	Acia dosing pump	acid dosing pump							1			
Heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger stainless steel       4         Filtration       0         fine dust filter JF-1       0         sample gas pump       without         without       0         fow meter with needle valve       0         fow meter with needle valve       0         without       0         fow meter with needle valve       0         without       0         foundensate detector       0         foundensate detector       0         temperature display for       without         without       0         four perature display for       without	A 11 1 1	without							0			
Heat exchanger       JHEX-4 heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger stainless steel       4         Filtration       0         fine dust filter JF-1       0         sample gas pump       without         sample gas pump JSP       1         flow meter with needle valve       1         flow meter with needle valve       1         without       1         flow meter with needle valve       1         flow meter with needle valve       1         flow meter with needle valve       1         flow flow flow		temperature display for heat exchanger						1				
Heat exchanger       JHEX-4 heat exchanger DVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger stainless steel       4         Filtration       0         fine dust filter JF-1       0         sample gas pump       1         without       0         fow meter with needle valve       1         fow meter with needle valve       0         without       0         fow meter with needle valve       0         fow meter with needle valve       0         fow meter with needle valve       0	Temperature display for	without						0				
Heat exchanger       JHEX-4 heat exchanger PVDF       2         JHEX-4 heat exchanger Duran glass       3         JHEX-4 heat exchanger stainless steel       4         Filtration       0         fine dust filter JF-1       1         Sample gas pump       vithout         sample gas pump JSP       0         vithout       0         fow meter with needle valve       0         without       0         flow meter with needle valve       0         flow meter with needle valve       0         without       0		condensate detector					1					
Heat exchangerJHEX-4 heat exchanger PVDF2JHEX-4 heat exchanger Duran glass3JHEX-4 heat exchanger stainless steel4Filtration0fine dust filter JF-10fine dust filter JF-10sample gas pump0sample gas pump JSP0without0funct0sample gas pump JSP0without0funct0 <td< td=""><td>Condensate detector</td><td>without</td><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td><td></td><td></td><td></td></td<>	Condensate detector	without					0					
Heat exchanger     JHEX-4 heat exchanger PVDF     2       JHEX-4 heat exchanger Duran glass     3       JHEX-4 heat exchanger stainless steel     4       Filtration     0       Fine dust filter JF-1     0       Sample gas pump     Vithout       sample gas pump JSP     0       vithout     0       sample gas pump JSP     0	now meter with needle valve	flow meter with needle valve				1						
Heat exchangerJHEX-4 heat exchanger PVDF2JHEX-4 heat exchanger Duran glass3JHEX-4 heat exchanger stainless steel4Filtration4Filtration1Sample gas pumpwithout1	Flow meter with needle value	without				0						
Heat exchanger     2       JHEX-4 heat exchanger PVDF     2       JHEX-4 heat exchanger Duran glass     3       JHEX-4 heat exchanger stainless steel     4       Filtration     0       fine dust filter JF-1     1       without     0       without     0	oumpio gao pump	sample gas pump JSP			1							
Heat exchanger     JHEX-4 heat exchanger PVDF     2       JHEX-4 heat exchanger Duran glass     3       JHEX-4 heat exchanger stainless steel     4       without     0	Sample das nump	without			0							
Heat exchanger     JHEX-4 heat exchanger PVDF     2       JHEX-4 heat exchanger Duran glass     3       JHEX-4 heat exchanger stainless steel     4       without     1     0		fine dust filter JF-1		1								
Heat exchanger     JHEX-4 heat exchanger PVDF     2       JHEX-4 heat exchanger Duran glass     3	Filtration	without		0								
Heat exchanger PVDF 2		JHEX-4 heat exchanger stainless steel	4									
JHEX-4 heat exchanger PVDF 2	Heat exchanger	JHEX-4 heat exchanger Duran glass	3									
JHEX-4 heat exchanger aluminum coated 1		JHEX-4 heat exchanger PVDF	2									
		JHEX-4 heat exchanger aluminum coated	1									

