



CSS-V2

## Gas Conditioning Unit Series CSS®

Version CSS-V1 for max. 1 x 250 NI/h gas flow rate,  
version CSS-V2 for max. 2 x 150 NI/h gas flow rate,  
for 19" rack or wall-mounting

### Special Features

- Compact, high-performance design with compressor cooler
- Individually configurable
- Completely pre-installed
- One or two gas paths
- 19" rack or wall-mount housing
- Minimum maintenance and self-monitoring
- Gas outlet dew point adjustable from +2 to +7 °C [35.6 to 44.6 °F]
- Dew point stability < ±0.1 °C [±0.18 °F]
- Ready for operation in 10 minutes
- Light weight
- Maximum operational reliability

### Application

The CSS-V1 and CSS-V2 units provide a completely pre-installed compact, high-performance sample gas conditioning system for continuous use. Due to a large number of additional options, the sample gas conditioning system can be excellently adapted to the various requirements of continuous gas analysis technology.

The compact design only requires a small amount of space. The sample gas conditioning units are ready for operation within a few minutes. The usual time-consuming acquisition of individual components and small parts and their assembly is therefore no longer necessary.

### Description

All components of the gas conditioning unit are mounted in a compact sheet steel housing.

Filter, flow meter and peristaltic pumps are built into the front panel for easy maintenance.

Depending on the version, the compressor gas cooler is equipped with one or two heat exchanger(s) made of glass, stainless steel or PVDF.

The fine filter FPF-2-0,3GF (0.3 µm filter porosity) installed downstream of the cooler provides the necessary separation of solids. The condition of the filter can be assessed from the outside.

The downstream sample gas pump is available in three different pump capacities N3/5/9 KPE.

The flow meter FM40 with the corresponding measuring range installed in the sample gas outlet can be equipped with a flow alarm sensor FA-20mo and corresponding electronic controller.

The device is equipped with a temperature alarm contact, which signals a temperature alarm in the event of a deviation of ±3 °C [±5.4 °F] from the factory-set setpoint (+5 °C [41 °F]) and switches off the sample gas pump, if present.

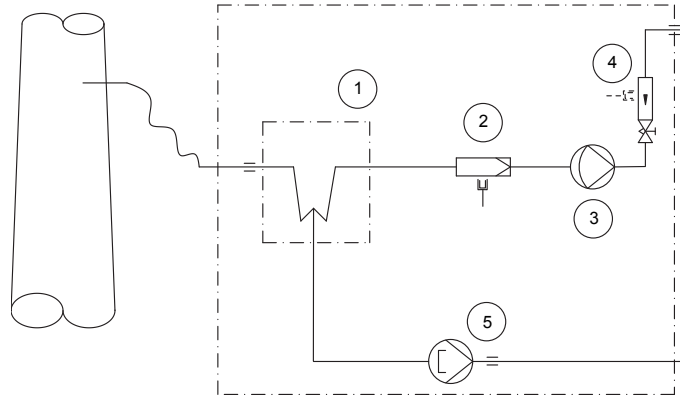
The resulting condensate is removed continuously via the peristaltic pump type SR25.2.

The ventilation grids in the sidewalls ensure that the equipment is sufficiently ventilated.

A liquid alarm sensor is integrated in the filter FPF-2-0,3GF to protect the downstream analyzers against liquid inrush and to increase the operating safety of the entire system. Via one or two potential-free contact(s) for the collective alarm (cooler temperature, gas flow, liquid in the filter), an alarm signal is triggered and the sample gas pump, if present, is switched off.

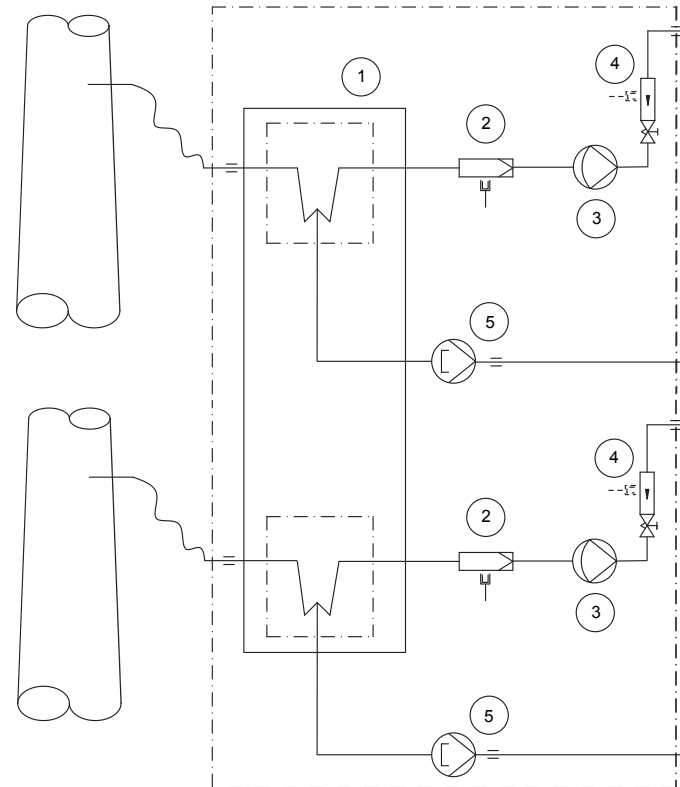
## Design CSS-V1

- 1 Gas cooler series ECM-1
- 2 Option front panel filter PPF-2-0,3GF, 0.3 µm filter unit with integrated liquid alarm sensor
- 3 Option sample gas pump N3/5/9KPE
- 4 Option flow meter FM40 with flow alarm
- 5 Option peristaltic pump SR25.2

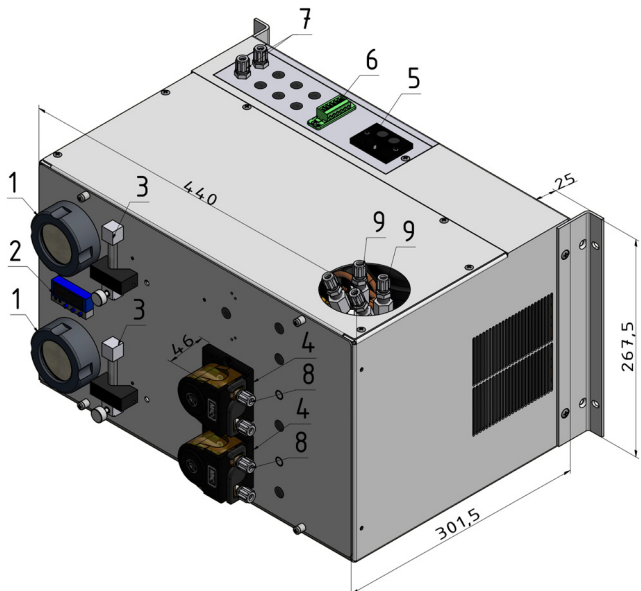


## Design CSS-V2

- 1 Gas cooler series ECM-2
- 2 Option front panel filter PPF-2-0,3GF, 0.3 µm filter unit with integrated liquid alarm sensor
- 3 Option sample gas pump N3/5/9KPE
- 4 Option flow meter FM40 with flow alarm
- 5 Option peristaltic pump SR25.2



## Dimensions CSS-V1/V2



- 1 Fine filter PPF-2-0,3GF
- 2 Electronic controller
- 3 Flow meter FM40 with flow alarm sensor FA-20mo
- 4 Peristaltic pump SR25.2
- 5 Power supply
- 6 Connection collective alarm
- 7 Sample gas outlets
- 8 Condensate outlet directly at the peristaltic pump
- 9 Sample gas inlets directly at the heat exchanger

Gas Conditioning Unit Series CSS*	Version CSS-V1	Version CSS-V2
Part No. for 230 V/50 Hz version	<b>01G6010</b>	<b>01G6020</b>
Part No. for 115 V/50-60 Hz version	<b>01G6010a</b>	<b>01G6020a</b>
Sample gas outlet dew point	Range of adjustment: +2 to +7 °C [35.6 to 44.6 °F], factory setting: +5 °C [41 °F]	
Dew point stability	At constant conditions < ±0.1 °C [±0.18 °F]	
Sample gas inlet temperature	**Max. 180 °C [356 °F]	
Sample gas inlet dew point	**Max. 80 °C [176 °F]	
Gas flow rate	**Max. 250 NI/h	**Max. 2 x 150 NI/h
Ambient temperature	**+10 to +40 °C [50 to 104 °F]	
Storage temperature	-25 to +65 °C [-13 to 149 °F]	
Pressure	0.7 bar up to 1.4 bar abs.	
Total cooling capacity **	Max. 144 kJ/h	
Number of gas inlets	1	2
Number of gas outlets	1	2
Condensate outlet	1	2
Medium connections	Tube connection DN 4/6	
Material of sample-contacting parts	PVDF, Novoprene, FKM, PVC, PPH, PTFE	
Ready for operation	Approx. 10 min.	
Power supply	230 V 50-60 Hz ±10 % or 115 V 50-60 Hz ±10 % (115 V/50 Hz not with option sample gas pump)	
Power consumption	Max. 220 VA + max. 300 VA for the sample gas pump	
Fuse protection	4 A t, 5 x 20 mm	
Electrical connection	Cold appliance plug with 2 m [≈ 6.6 ft] cable	
Case protection	IP20 EN 60529	
Sheet steel housing, design	Sheet steel case for 19" rack or wall-mounting, lacquered RAL 7032	
Equipment dimensions (H x W x D)	267.5 x 483 x 301.5 mm [≈ 10.5" x 19" x 11.9"]	
Electrical equipment standard	EN 61010	
Weight	Approx. 22 kg [≈ 49 lbs]	

PVDF = Polyvinylidenfluoride

PVC = Polyvinylchloride\*

FKM = Fluor caoutchouc = Viton\*

PPH = Polypropylene hard

PTFE = Polytetrafluorethylene

\*\* Maximum values in technical data must be rated in consideration of the total cooling power at 25 °C [77 °F] and an outlet dew point of +5 °C [41 °F].

Viton\* is a registered trademark for fluorelastomere produced by DuPont, USA.

Duran\* is a registered trademark for borosilicate glass by DWK Life Sciences GmbH, Germany.

Please note: NI/h and NI/min refer to the German standard DIN 1343 and are based on these standard conditions: 0 °C [32 °F], 1013 mbar.

## Options

Description	Part No.
Extra charge for jet-stream heat exchanger ECM-1 out of Duran® glass	<b>93K0140</b>
Extra charge for jet-stream heat exchanger ECM-1 out of stainless steel SS316Ti	<b>93K0160</b>
Extra charge for jet-stream heat exchanger ECM-1 out of PVDF	<b>93K0170</b>
Extra charge for jet-stream heat exchanger ECM-2 out of Duran® glass	<b>97K0100</b>
Extra charge for jet-stream heat exchanger ECM-2 out of stainless steel SS316Ti	<b>97K0115</b>
Extra charge for jet-stream heat exchanger ECM-2 out of PVDF	<b>97K0110</b>
Extra charge for mounting the sample gas pump N3KPE (electronic controller 01G6150 additionally necessary)	<b>01G6125</b>
Extra charge for mounting the sample gas pump N5KPE (electronic controller 01G6150 additionally necessary)	<b>01G6130</b>
Extra charge for mounting the sample gas pump N9KPE (electronic controller 01G6150 additionally necessary)	<b>01G6135</b>
Extra charge for mounting a sample gas filter FPF-2-0,3GF with integrated liquid alarm sensor	<b>01G6120</b>
Extra charge for mounting a flow meter FM40 7-70 NI/h	<b>09F4000</b>
Extra charge for mounting a flow meter FM40 15-150 NI/h	<b>09F4005</b>
Extra charge for mounting a flow meter FM40 25-250 NI/h	<b>09F4010</b>
Extra charge for mounting a flow alarm sensor FA-20mo	<b>02E3500</b>
Extra charge for mounting a peristaltic pump SR25.2 for condensate removal, completely tubed	<b>01G6140</b>
Extra charge for mounting an electronic controller for max. 2 liquid alarm sensors and max. 2 forked photoelectric sensors	<b>01G6150</b>

### Order example:

1 x 01G6010 + 1 x 93K0140 + 1 x 01G6125 + 1 x 01G6120 + 1 x 09F4010 + 1 x 02E3500 + 1 x 01G6140 + 1 x 01G6150 = CSS-V1, 230 V, with heat exchanger out of glass, built-in sample gas pump N3KPE, sample gas filter FPF-2-0,3GF with integrated liquid alarm sensor, flow meter FM40 25-250 NI/h and flow alarm sensor FA-20mo, peristaltic pump SR25.2 for condensate removal and electronic controller for liquid and flow alarm sensor.