

SP2500-H/C/I/BB/V20/AB-SS

Gas Sample Probe Series SP®

Versions SP2500-H, SP2500-H/C/I/BB, SP2500-H/C/I/BB/F, electrically heated

Special Features

- Extractable sample tube or pre-filter, without dismantling the probe
- Integrated blowback possibility with shutting off the sample gas outlet
- High operational reliability
- Universal applicability
- Adaptation to nearly all process conditions due to its compact and modular design
- Easy installation
- Minimum maintenance
- Low dead volume

Application

The M&C gas sample probes type SP2500-H based on the version SP2000-H (for more information see SP2000-H data sheet) are used for continuous gas sampling in processes with high dust levels, high temperatures and/or high gas humidity. They offer the possibility of removing the pre-filter or the sample tube from the process, e.g. for cleaning purposes, without dismantling the complete gas sample probe.

The probes type SP2500-H/C/I/BB and SP2500-H/C/I/BB/F with special blowback possibility are used in case of very high dust levels. For this purpose, they are equipped with an additional blowback valve and a pneumatic isolation valve in the sample gas outlet.

The sample tube and the pre-filter can be cleaned by extracting the filter from the probe. The special design of the heating element of the probes type SP2500-H (with protective cover) permits controlled heating of the complete filter housing, including the mounting flange up to 180 °C [356 °F]. This ensures reliable functioning outside the process so that safe operation is ensured without the temperature falling below the dew point.

The temperature of the standard probe is controlled by an integrated compact-design capillary sensor thermostat with a high-temperature limiter and an alarm function for temperature failure. The probe SP2500-H provides the possibility to feed the calibration gas /C optionally via a check valve.

Additional functions of the probe SP2500-H/C/I/BB(/F):

- Calibration gas is injected into the probe through a check valve /C directly to the sample outlet. No calibration gas is lost into the stack.
- An isolation valve with pneumatic control /I shuts off the sample outlet from the heated filter chamber.
- With a high flow rate check valve /BB, which protrudes into the heated filter chamber, blowback of the filter chamber, the sample tube or the pre-filter is carried out.
- With a high flow rate check valve /BB/F, which is fixed to the heated filter chamber wall, blowback of the filter element including the filter chamber, the sample tube or the pre-filter is carried out.

Description

The M&C gas sample probes are designed for easy installation, reliable operation, trouble-free maintenance and universal applicability. Depending on the application, different sample tubes or pre-filters, not included in the scope of delivery of the probe, are screwed into the thread (G 3/4" i) of the filter housing. (See data sheets for sample tubes with G 3/4" connection thread and pre-filters with G 3/4" connection thread)

The large surface ceramic filter element (also glass-fiber elements or spun-glass fillings are available) is placed in a housing with low stagnant space outside the process.

The M&C gas sample probes are designed in such a way that changing a filter element does not involve the use of tools. In this operation, the sample line does not need to be removed, thus avoiding contamination of the clean gas path and also maintaining the integrity of the system.

Gas Sample Probe Version	SP2500-H	SP2500-H/C/I/BB	SP2500-H/C/I/BB/F
Part No.	20S3510	20S3520	20S3530
Integrated blowback	No	Via filter chamber	Via filter element
Protective cover	Yes		
Terminal box	IP54 EN 60529		
Filter housing material	Stainless steel 316L/316Ti*		
Sealing materials	FKM*		
Probe flange sealing material	Novapress®		
Sample tube/pre-filter	Optional		
Sample pressure max.	0.4 to 6 bar* abs.		
Ambient temperature	-20 to +60 °C*** [-4 to 140 °F]*** /PT100, /Fe-CuNi, /Ni-CrNi** = -20 to +80 °C [-4 to 176 °F]		
Filter chamber volume	280 cm ³		
Filter element, porosity	S-2K150 = ceramic*, 2 µm, /F-0, 1GF150 = glass fiber**, 0.1 µm, /FW = spun glass**		
Thermostat, temperature adjustment	0 to 180°C* [32 to 356 °F]* /PT100** /Fe-CuNi** /Ni-CrNi**		
Ready for operation	After 40 min		
Low-temperature alarm contact	Change-over contact contact rating: 250 V, 3 A~, 0.25 A = Alarm point: ΔT 30 °C		
Sample gas outlet connection	1 x 1/4" NPT i* tube connectors ø 6, 8 or 10 mm**		
Blowback/test gas connection	1/4" NPT i* /C**= tube ø 8 mm	Blowback: tube Ø 8 mm, span: tube Ø 6 mm	
Shut off valve connection /I		1/8" NPT i	
Pressure range control air /I	3 to 10 bar		
Power supply	230 V, 50/60 Hz, 800 W /115 V** = 115 V, 60 Hz, 800 W (fuse protection 10 A)		
Electrical connections	Terminals max. 4 mm ² , 2 x PG 13.5 cable gland		
Electrical equipment standard	EN 61010, EN 60519-1		
Mounting flange	DN 65 PN 6 Form B, SS 316Ti* >DN or ANSI possible**		
Weight	17 kg* [≈ 37.5 lbs*]		

* Standard

** Options

*** In case of higher ambient temperatures, use option PT100 (Part No. 20S9025) or thermocouple Fe-CuNi and Ni-CrNi, respectively (Part No. 20S9027 or 20S9028) instead of the thermostat controller. Then, an additional electronic temperature controller (see data sheet "Microprocessor-Controlled Temperature Controller Type 70304") is necessary.

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.

Differential pressure and T₉₀ Time

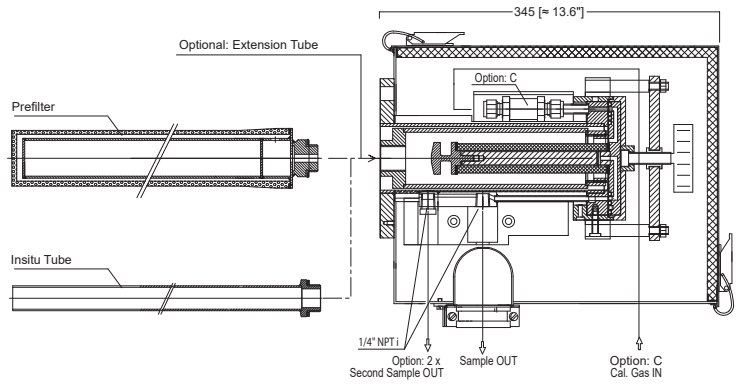
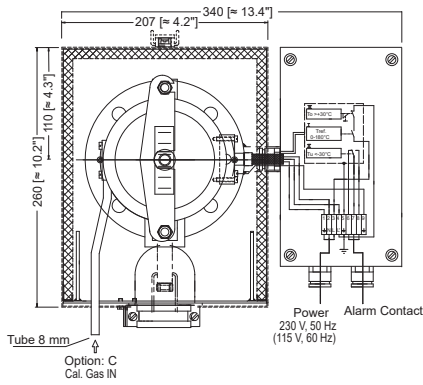
ΔP and T90 at a flow rate of:	100	200	500	1000	1500	NI/h
ΔP with new filter element S-2K150/GF150	0.007	0.011	0.02	0.035	0.040	bar
T90 time for SP2500-H... without tube	8	5.5	3	1	0.5	s

Versions and Options (Extract)

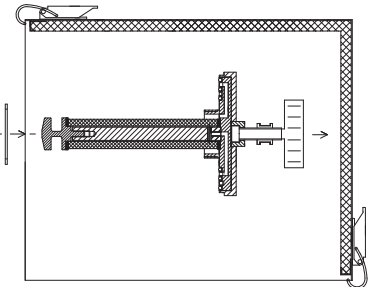
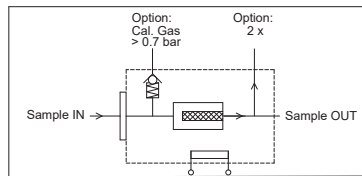
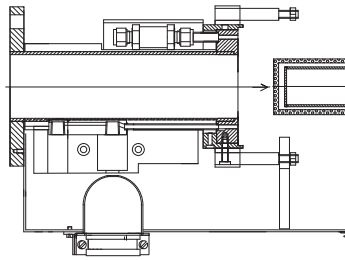
Versions	Version	Part No.
Basic version, heated from 0 to 180 °C [32 to 356 °F], with weather protective cover, material: SS 316Ti	SP2500-H	20S3510(a)
Basic version, heated from 0 to 180 °C [32 to 356 °F], with weather protective cover, material: SS 316Ti	SP2500-H/C/I/BB	20S3520
Basic version, heated from 0 to 180 °C [32 to 356 °F], with weather protective cover, material: SS 316Ti	SP2500-H/C/I/BB/F	20S3530(a)
Options (Extract)		
Version with power supply 115 V/60 Hz	/115V	20S9030
Version with second outlet for sample gas 1/4" NPT i*	/2x*	20S9015
Version with blowback/calibration gas valve, opening pressure 0.7 bar, tube 8 mm o.d.*	/C*	20S9435
Version with fiber-glass filter element 0,1GF150, filter porosity: 0.1 µm, sealing: PTFE	/GF150	20S9020
Version with with PT100 sensor instead of thermostat, without temperature controller	/PT100	20S9025
Version with thermocouple FE-CuNi (type J) instead of thermostat, without temperature controller	/Fe-CuNi	20S9027
Version with thermoelement Ni-CrNi (type K) instead of thermostat, without temperature controller	/Ni-CrNi	20S9028
Version with second PT100 sensor	/2-PT100	20S9026
Version with special adapter flange size DN ... PN 6 or ANSI...150 lbs	/DN	20S9004
Version with gas pre-heater GWW1, material: SS 304	/GWW1	20S9058
Version with connection of the gas pre-heater to "BB" valve and to gas inlet	/GWW	20S9062
Version with steam heating, without controller and valves instead of thermostat	/D	20S9033

Novapress® is a registered trademark for elastomer-bonded gasket material produced by Frenzelit GmbH.

* only SP2500-H

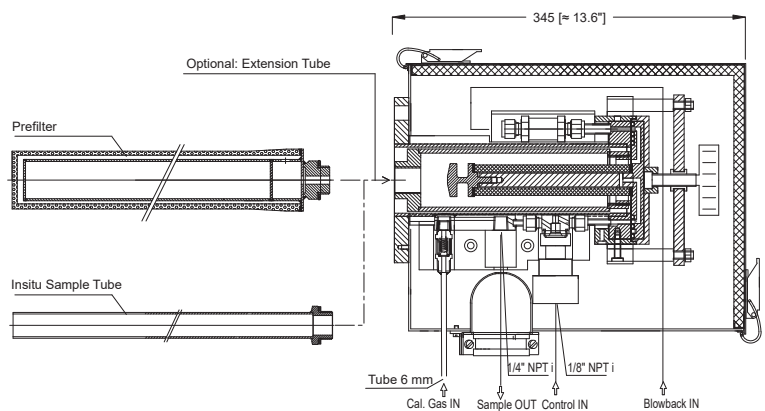
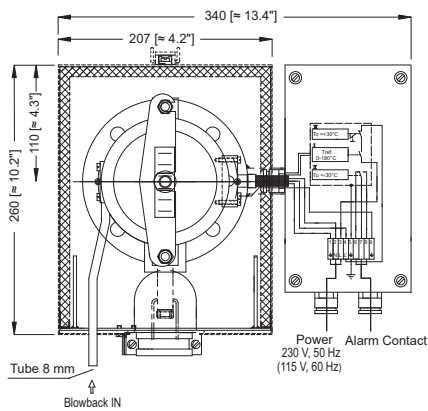


Dismounting

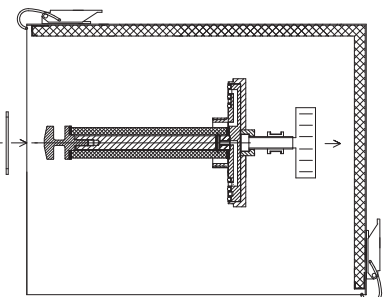
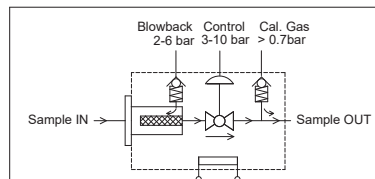
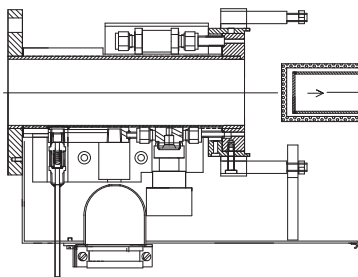


Dimensions in mm [Inches]

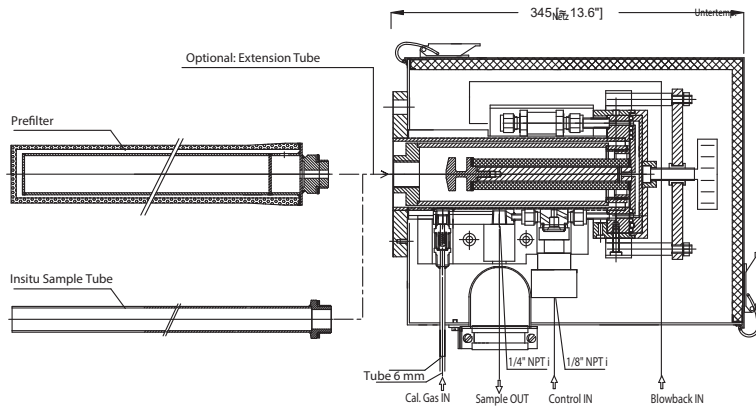
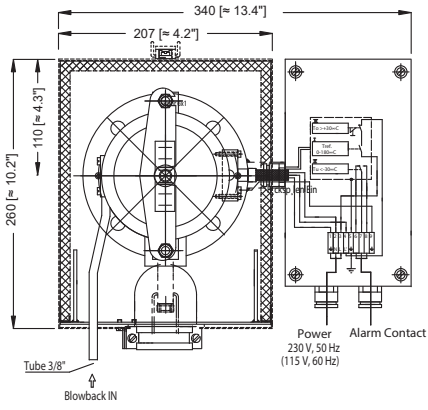
SP2500-H/C/I/BB



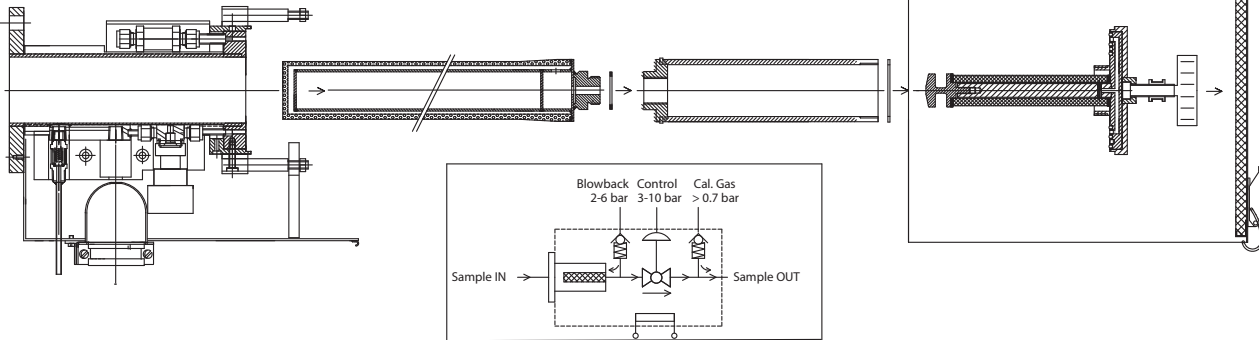
Dismounting



Dimensions in mm [Inches]



Dismounting



Dimensions in mm [Inches]