



SP180-H

Gas Sample Probe Series SP®



Electrically heated, compact version with weather protection cover and test gas connection as standard
SP180-H, SP180-H-EX2 T2, SP180-H-EX2 T3, SP180-H-EX2 T4

Special Features

- **Sampling of dust loaded process gases**
- **Small volume, fast response time**
- **Easy mounting and maintenance**
- **Self-regulated electrical heating**
- **Three EX-Versions: SP180-H-EX T2 to T4 with Ex-certification according to ATEX, suitable for use in Ex zone 2**
- **Alarm contact for low temperature**
- **With new isolation cover for outdoor mounting**
- **Test gas connection according to EN14181 for test gas feeding via filter element available as standard**
- **Insitu probe tube optional**

Application

The M&C gas sample probe version SP180-H is applicable for continuous gas sampling. The compact design requires only limited space. The gas sample probe is equipped with a new protective cover and thus also suitable for outdoor mounting.

No temperature controller respectively temperature limitation is necessary. The separate thermo switch enables a low temperature monitoring (<160 °C [320 °F], NO). For electrical connection a junction box with terminals is mounted.

Description

The design of the M&C probe version SP180-H guarantees simple mounting, safe operation and problem-free maintenance.

The gas sample probe SP180-H has a calibration gas connection as standard according to EN14181 (regulation for calibration of emission monitoring systems) that enables calibration gas feeding via the filter element of the gas sample probe.

Changing the external filter element needs no tools and no disassembling of the sample line. For the change of the filter element the complete filter assembly is removed out of the probe head. Easy checkup of the filter element and the gaskets, cleaning the filter area of the probe head respectively the insitu probe tube without dismounting the sample probe are only a few advantages of the M&C probe.

The versions SP180-H-EX2 T2, SP180-H-EX2 T3 and SP180-H-EX2 T4 are suitable for usage in Ex zone 2. The alarm contact for low temperature corresponds to the temperature classes of the Ex-versions.

The stainless steel insitu probe tube SP210/SS (option) is screwed into the DN65 PN6 mounting flange. The maximum operating temperature of the tube out of stainless steel is 600 °C (1112 °F).

In the heated filter housing out of stainless steel the 2 micron ceramic filter element is located. More filter element materials are available as option. The compact design and the new all-round heat insulation and weather protection ensures an optimized heat distribution as well as safe operation without dew point lower deviation in the filter or flange area.

For long and cold connection pieces or for dew point lower deviations in the process the heated probe tubes SP30-H or SP35-H are used (see data sheet 2.15).

The heating of the gas sample probe to 180 °C (356 °F) happens with special self-regulated heating elements within a range of 110 V to 240 V without switching.

For solution of specific sampling problems you can find more filter elements, probe tubes and pre-filters in our wide range of M&C probe accessories (data sheets 2.14 and 2.17).

Technical Data

Series SP®	SP180-H	SP180-H-EX2 T2	SP180-H-EX2 T3	SP180-H-EX2 T4
Part No.	02 S 1800	02 S 1890	02 S 1885	02 S 1880
Protective cover	yes			
Outdoor mounting	yes			
Sample temperature	max. 600 °C (1112 °F)*			
Sample pressure	0.4 to 6 bar abs.			
Ambient temperature	(-40 °C) -25 °C to +80 °C** (-40 °C (~-40 °F)) ~-13 °F to +176 °F)**	-20 °C to +80 °C (~-4 °F to +176 °F)	-20 °C to +80 °C (~-4 °F to +176 °F)	-20 °C to +80 °C (~-4 °F to +176 °F)
Dust load	max. 1 g/m³			
Filter chamber volume	70 ml			
Filter element	type S-2K, filter porosity 2 µm, ceramic (others on request)			
Probe heating	+180 °C (356 °F) self-regulated	+160 °C to +180 °C (+320 °F to +356 °F) self-regulated	+130 °C to +160 °C (+248 °F to +320 °F) self-regulated	+90 °C to +120 °C (+194 °F to +248 °F) self-regulated
Ready for operation	after 2 hours			
Low temperature alarm contact, alarm point	< 160 °C (320 °F), NO	< 130 °C (266 °F), NO	< 130 °C (266 °F), NO	< 90 °C (194 °F), NO
Low temperature alarm contact, contact rating	250 V - 3 A AC, 30 V - 3 A DC	250 V - 1.5 A AC 0.5 A DC		
Connection sample outlet	1/4"-NPT inside with Swagelok tube connector ø6 x 1 mm (DN4/6)			
Connection calibration gas / back purge	Swagelok tube connector ø6 x 1 mm (DN4/6)			
Power supply	110 up to 240 V 50 / 60 Hz, rated current 3.5 A			
Power consumption	typically: 100 VA, (fuse 6 A)			
Electrical connection	terminals max. 2.5 mm², 1 x M20, 1 x M16 cable glands			
Mounting flange	DN65 PN6, B stainless steel 316Ti			
Material of sample contacting parts	stainless steel 316 / 316Ti, FPM, ceramic			
Degree of protection / Electrical equipment standard	IP54 EN60529 / EN 61010			
Ex Certification	None	II 3G Ex ec mc IIC T2 Gc	II 3G Ex ec mc IIC T3 Gc	II 3G Ex ec mc IIC T4 Gc
		EXAM BVS 16 ATEX E 039		
Dimensions	230 x 280 x 225 mm (9.06" x 11.02" x 8.86") , w x h x d			
Weight	approx. 7.5 kg (approx. 16.53 lbs)			
Flow	max. 500 NI/h			
Options				
02 S 9200	Insitu probe tube out of stainless steel 316Ti type SP210/SS, connection G3/4" o, ø 10/12, length 1 m (3.28")*, incl. flange gasket.			

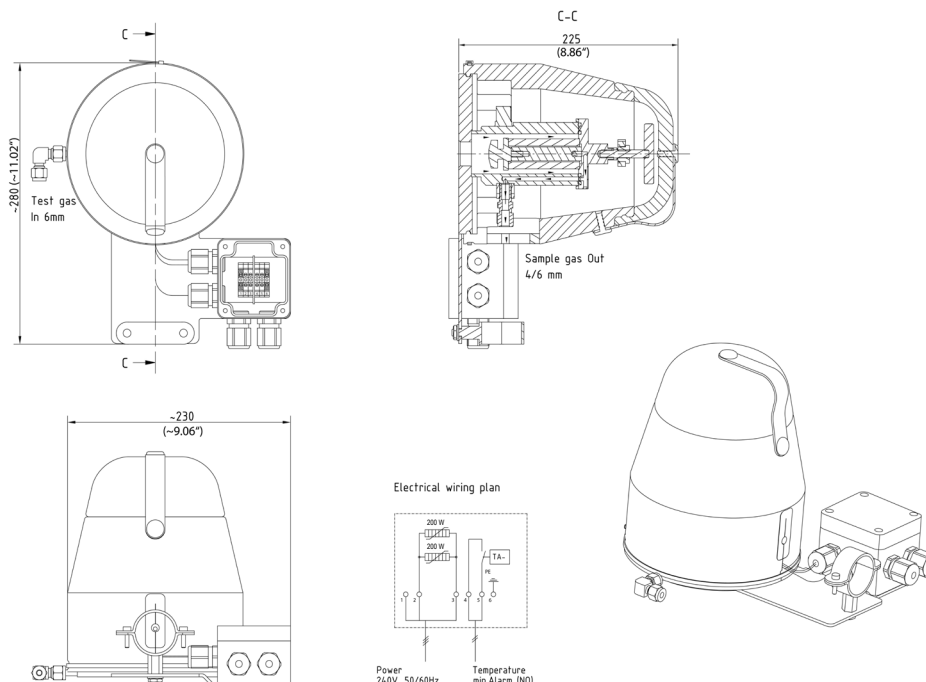
* Standard, other versions on request.

** The safe operation of the SP180-H heating elements at ambient temperatures of up to -40 °C (~-40 °F) needs to be guaranteed. Turning off the heating elements of the SP180-H at ambient temperatures under -25 °C (~-13 °F) can destroy the sealing materials of the gas sample probe.

ΔP and T90 at flow of:	100	200	500	NI/h
ΔP pressure loss with new filter element S-2K	4	7	15	mbar
T90 time with insitu probe tube SP210/SS	4.0	2.5	<1.0	sec.

Dimensions

SP180-H



Dimensions in mm
(Inches)