



PSP-4000-H

## Portable Gas Sample Probe PSP4000-H /C /T

2.18 09.96/06.06

### Special Features

Light, easy to handle and compact construction

Electrically heated – adjustable from 100 to 180 °C

With integrated micro-filter

Variable probe tube- and connection technique

Integrated temperature measurement

Sample extraction also with heated sample probe tube

### M&C® Application

Previously, gas sample probes designed for stationary use had to be used for inspection measurements carried out at different locations. The weight and bulkiness of such units often caused problems for technicians engaged in mobile measurements.

Now the light, handy and heated gas-sample probe PSP4000-H has been developed as a logical complement to the portable M&C sample gas conditioning systems. Despite its compact design, the unit guarantees a full range of functions. To avoid cooling and condensation of sample gas in the extraction area, a heated sample probe tube SP34-H.. (see data sheet 2-2.2) is available.

The probe's electrical power is then fed to the probe via the feed line integrated within the sample line. An aluminium-composite case is optionally available for the safe transport of the probe and up to 5 meters of type PSP4M4/6 respectively 8 m of type PSP-W4M4/6 heated sample line.

### M&C® Description

The portable gas sample probe PSP4000-H... is electrically heated. Temperature controlling is achieved by an integrated capillary sensor-thermostat, adjustable from 100 to 180 °C. A signal lamp is extinguished on reaching the operating temperature and flashes in the cycle of temperature regulation. A carrying handle and a chain for in situ attachment are mounted on the heat-isolated housing. The integrated micro-filter element with a fineness degree of 2 µm reliably retains solid impurities and can be changed easily. For heavy-oil firing measurements, a stainless-steel filter cartridge /FW for filter-pads is optionally available.

The wide and versatile range of sampling probes with diameters from 6 to 12 mm ø, adapters and thread fittings allows adaptation to the most varied circumstances.

At the version PSP4000-H/C calibration gas injection into the probe is possible without dismantling the probe.

Simultaneously temperature measurement during sample extraction is also available for version PSP4000-H/C/T.

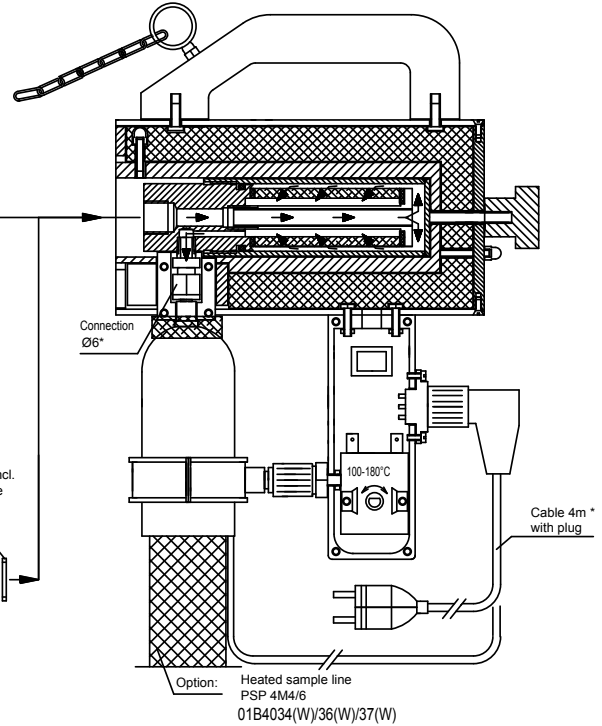
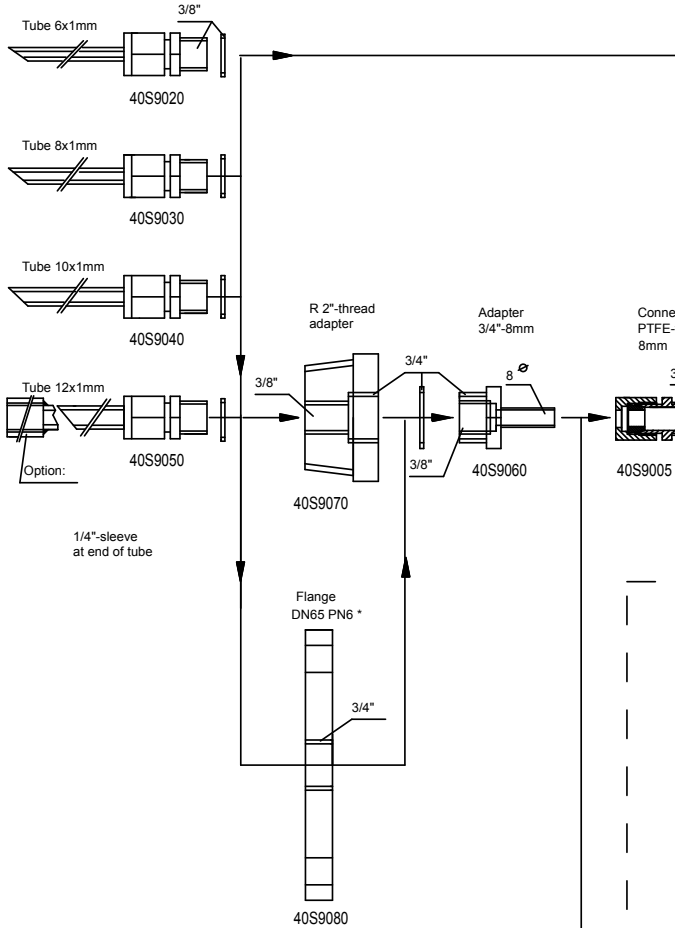
In conjunction with the gas sample probe PSP4000-H..., a specially designed heated sample line PSP4M4/6 with interchangeable PTFE hosing or PSP-W4M4/6 with a smaller outside diameter is supplied.

Sample facilities

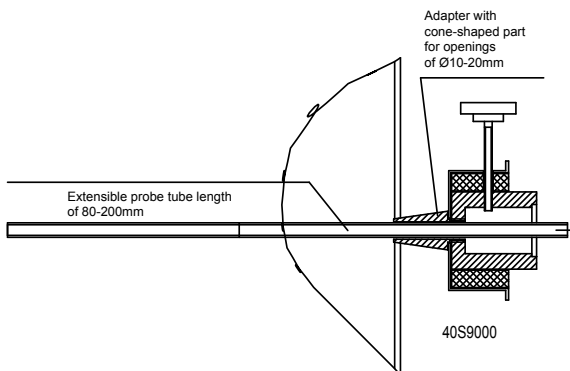
Basic version PSP4000-H

40S1000

Sample tubes incl. connector  
Length: 1 m \*  
Material: SS316



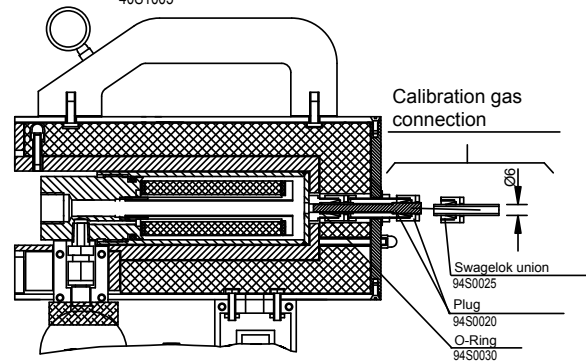
Adapter for extensible probe length  
Tube 8x1mm, Material: SS316



\* standard

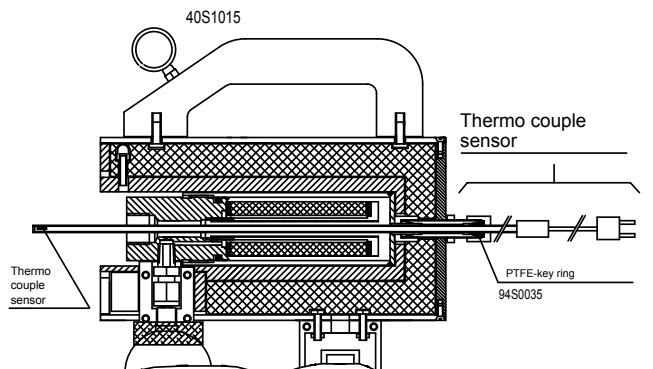
PSP4000-H/C

40S1005



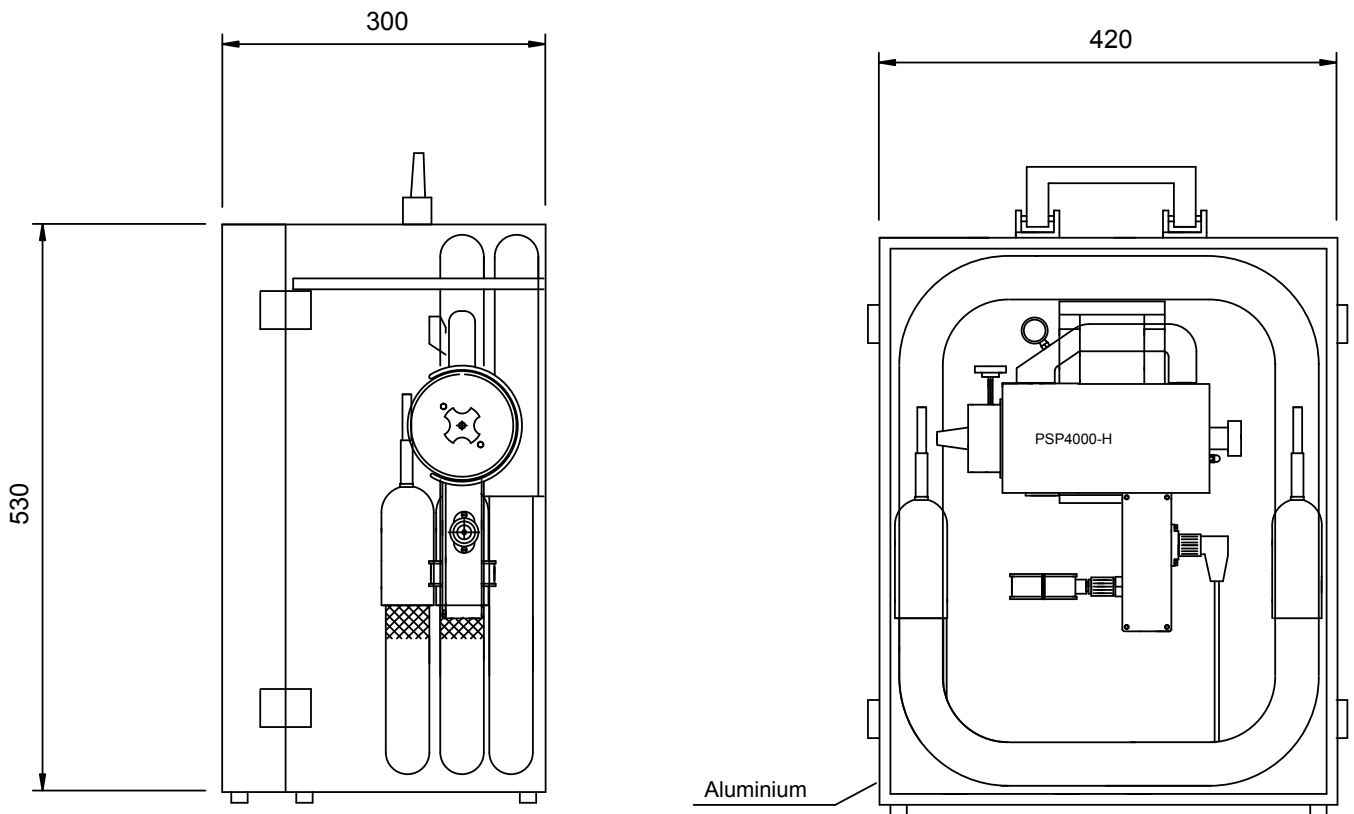
PSP4000-H/C/T

40S1015



Probe Series SP <sup>®</sup> Portable Version PSP4000	PSP4000-H	PSP4000-H /C	PSP4000-H /C /T
Part No. 230V	40S1000	40S1005	40S1015
Part No. 115V	40S1000a	40S1005a	40S1015a
Sample temperature	max. 600 °C *standard		
Sample pressure	max. 1 bar		
Ambient temperature	-20°C to +60°C		
Filtration chamber volume	40 cm <sup>3</sup>		
Filter element	S-2K ceramic, 2 µm		
Probe temperature	adjustable between 100 to 180°C, pre-set at works to 180°C		
Ready for operation	After approximately 30 minutes		
Gas inlet	Basic connection G 3/8", probe tube or adapters optional		
Gas outlet	1/8" NPT + tube connector 6 mm (8 mm optional) and pipe clamp for attachment of heated sample line		
Electrical power supply	220-240V 50/60Hz, 200 W or 115V 60Hz		
Electrical connection	Plug and socket connector 7 pin with 4 meter connection cable		
Electrical equipment standard	EN 61010, EN 60335-1		
System of protection	IP40 EN 60529		
Material	Stainless steel 316Ti, ceramic, FPM		
Weight	3 kg		
Calibration gas connection for SS-tube/Plastic hose ø 6 mm	no	yes	yes
Temperature measurement with Thermocouple sensor FeCuNi, length 600 mm with 4 m connection cable and standard plug.	no	no	yes

**M&C** | Dimensions



Dimensions in mm

Part.-No.	
40S9130	extra price for PSP4000-H.. with sample outlet $\varnothing$ 8 mm tube connector
40S9100	extra price for PSP4000-H /FW with special filter cartridge filled with special spun glass with M12-connection, material SS316Ti, FPM
<b>sample adapter with variable probe tube length:</b>	
40S9005	3/8" adapter fitting with gasket and 8 mm PTFE sealing ring
40S9000	adapter with cone-shaped part for openings of $\varnothing$ 10-20 mm and $\varnothing$ 8 mm probe tube out of stainless steel 316, extensible 80-200 mm.
40S9010	$\varnothing$ 8 mm probe tube out of stainless steel 316Ti with position indication, for extensible probe length of 190-300 mm.
<b>fixed probe tubes with male connector G 3/8", length 1 m:</b>	
40S9020	Material: stainless steel SS316Ti, $\varnothing$ 6 mm, max. 600 °C
40S9030	Material: stainless steel SS316Ti, $\varnothing$ 8 mm, max. 600 °C
40S9040	Material: stainless steel SS316Ti, $\varnothing$ 10 mm, max. 600 °C
40S9050	Material: stainless steel SS316Ti, $\varnothing$ 12 mm, max. 600 °C
40S9108	Material: Titane, $\varnothing$ 6mm, max. 400 °C
40S9109	Material: Hastelloy <sup>®</sup> C, $\varnothing$ 6/8 mm, max. 900 °C
40S9112	Material: Inconel <sup>®</sup> 625, $\varnothing$ 12 mm, max. 1200 °C
40S9106	Material: Kanthal <sup>®</sup> , $\varnothing$ 15 mm, max. 1300 °C
40S9113	Material: Silicon nitride-ceramic, shock-proof, $\varnothing$ 6,5/12,5 mm, max. 1400 °C
40S9110	Material: Ceramic-Aluminium-Oxyd <sup>1)</sup> , $\varnothing$ 12 mm, max. 1800 °C, for mounting tube adapter PSP4000H/AO Art. Nr. 40S9111 is necessary
40S9111	Tube adapter PSP4000H/AO, material: stainless steel SS316Ti
<b>heated sample probe tubes SP34-H...:</b>	
40S9115	heated sample probe tube SP34-H with incorporated thermostate
40S9120	heated sample probe tube SP34-H1.1 with thermocouple sensor FeCuNi
40S9125	heated sample probe tube SP34-H2 with PT100 sensor
<b>pre-filter SP1</b>	
04S5000	sintered metal pre-filter SP1, 3 $\mu$ m, material SS316/SS316Ti, connection 1/4" NPT o.
04S5010	sintered metal pre-filter SP1, 20 $\mu$ m, material SS316/SS316Ti, connection 1/4" NPT o.
40S9054	connection fitting for sample probe tube 12mm for mounting of a SP1. material: SS316, max. 600°C
<b>equipment, out of stainless steel SS316Ti for placing the probe stationary:</b>	
40S9060	intermediate connection adapter G3/4"o - G3/8"i / 8 $\varnothing$ with gasket 3/8".
40S9070	connection mounting nipple of R 2"o. DIN 2999/1 with G 3/4"i und G 3/8"i
40S9080	mounting flange DN65 PN6 B with thread connection 3/4"i ISO and gasket
90S2075	flange gasket set for DN65 PN6 B consisting of Klingerit gasket and screws M12
<b>heated sample line PSP4M4/6 spec. made for probe PSP4000H:</b>	
01B4034	beginning connection part I with pipe end, for interchangeable tube 4/6, incl. PT100 and 1,5 m extension cable axial at the back, with 7 pins plug
01B4037	end connection part K with spec. pipe end, for interchangeable tube 4/6, 0,5 m extension cable axial at the back, with 7 pins connector
01B4036	per meter heated sample line PSP4M4/6, operating temperatures max. 200 °C with exchangeable PTFE hose 4/6 mm to jut out 0,5 m (cold end), incl. 3 extra wire for the probe heater, PT100 position 0,6 m mounted from electrical inlet Silicone foam heat insulation with Nylon net, power 220-240V 50/60Hz, 110W/m Max. 12 meter length at 230V/50Hz and 6 meter length at 115V/60Hz for PSS-5...-conditioning system with internal temperature regulator
01B4034W	beginning connection part I for sample line PSP-W4M4/6 with pipe end, for interchangeable tube 4/6, incl. PT100 and 1,5 m extension cable axial at the back, with 7 pins plug
01B4037W	end connection part K for sample line PSP-W4M4/6 with spec. pipe end, for interchangeable tube 4/6, 0,5 m extension cable axial at the back, with 7 pins connector
01B4036W	per meter heated sample line PSP-W4M4/6, operating temperatures max. 200 °C with exchangeable PTFE hose 4/6 mm to jut out 0,5 m (cold end), incl. 3 extra wire for the probe heater, PT100 position 0,6 m mounted from electrical inlet. Silicone foam heat insulation with corrugated hose envelope out of PA, power 220-240V 50/60Hz, 110W/m. Max. 12 meter length at 230V/50Hz and 6 meter lenfth at 115V/60Hz for PSS-5...-conditioning system with internal temperature regulator
40S9090	aluminium-composite carrying case PSP to take portable gas sample probe PSP4000H... and max. 5 m heated sample line PSP4M4/6 or max. 8 m PSP-W4M4/6, dimension 530 x 420 x 300 mm

1) Please pay attention to the characteristic feature of ceramic in case of high and changing temperatures!  
 Temperature controller see data sheet 2-6.2, 2-5.1 and 2-5.1.2  
 Portable gas conditioning system see data sheet 4-2.1 und 4-2.1.2  
 Portable oxygen analyser see data sheet 9-1.1 und 9-1.1.1

**M&C** Pre-filter SP1

