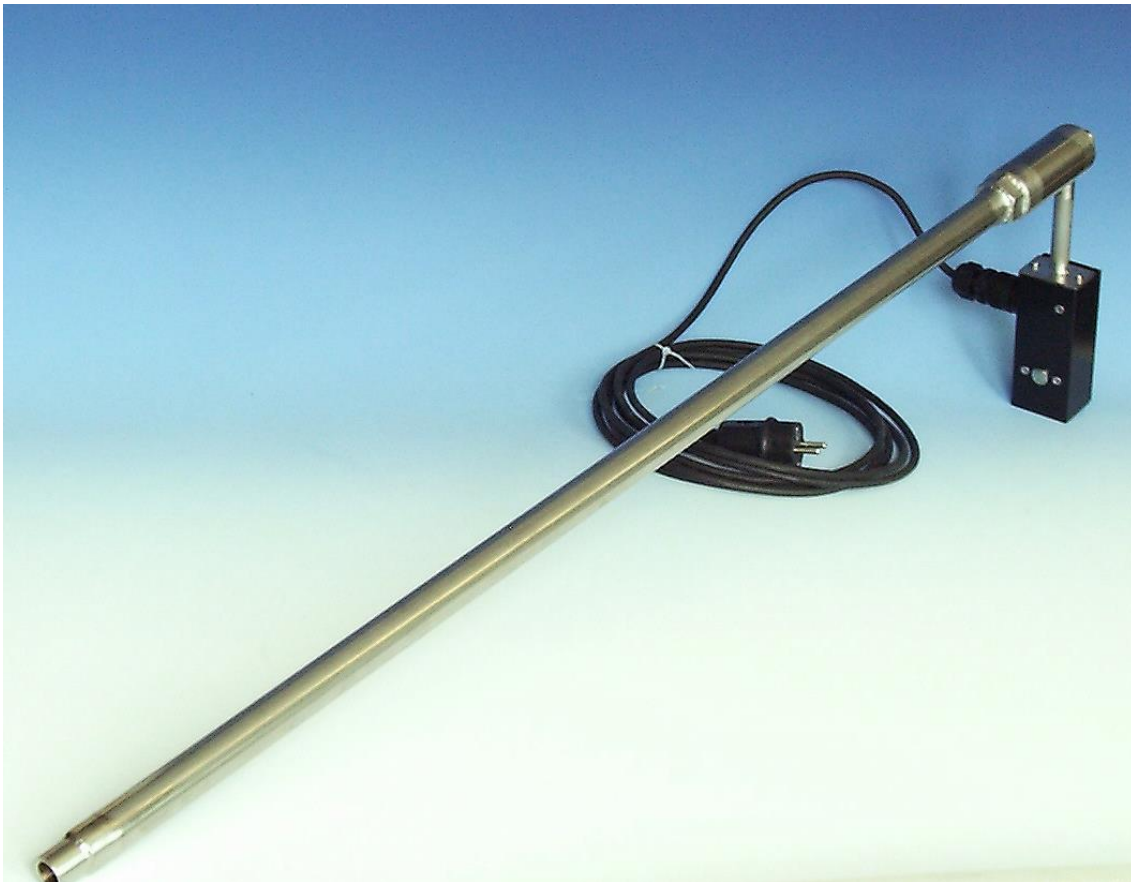


# Electrically Heated Sample Probe Tube Series SP<sup>®</sup>

## SP 34-H, SP34-H1.1 and SP34-H2

Instruction Manual  
Version 1.00.01



**Dear customer,**

we have made up this operating manual in such a way that all necessary information about the product can be found and understood quickly and easily.

Should you still have any question, please do not hesitate to contact **M&C** directly or go through your appointed dealer. Respective contact addresses are to be found in the annexe to this operating manual. Please also contact our homepage [www.mc-techgroup.com](http://www.mc-techgroup.com) for further information about our products. There, you can read or download the data sheets and operating manuals of all **M&C** products as well as further information in German, English and French.

This Operating Manual does not claim completeness and may be subject to technical modifications.

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Version: 1.00.01

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## 1 GENERAL INFORMATION

The product described in this operating manual has been examined before delivery and left our works in perfect condition related to safety regulations. In order to keep this condition and to guarantee a safe operation, it is important to heed the notes and prescriptions made in this operating manual. Furthermore, attention must be paid to appropriate transportation, correct storage, as well as professional installation and maintenance work.

All necessary information a skilled staff will need for appropriate use of this product are given in this operating manual.

## 2 DECLARATION OF CONFORMITY



The product described in this operating manual complies with the following EU directives:

### EMV-Instruction

The requirements of the EU directive 2014/30/EU "Electromagnetic compatibility" are met.

### Low Voltage Directive

The requirement of the EU directive 2014/35/EU "Low Voltage Directive" are met.  
The compliance with this EU directive has been examined according to DIN EN 61010.

### Declaration of conformity

The EU Declaration of conformity can be downloaded from the **M&C** homepage or directly requested from **M&C**.

### 3 SAFETY INSTRUCTIONS

**Please note the following basic safety procedures when using this equipment:**

Read these operating instructions carefully before start-up and use of the equipment! The information and warnings given in these operating instructions must be heeded.

Work on electrical equipment is only to be carried out by trained specialists as per the regulations currently in force.

Attention must be paid to the requirements of **VDE 0100** when setting high-power electrical units with nominal voltages of up to 1000V, together with the associated standards and stipulations.

Check the details on the type plate to ensure that the equipment is connected up to the correct mains voltage.

Protection against touching dangerously high electrical voltages. Before opening the equipment, it must be switched and hold no voltages. This also applies to any external control circuits that are connected.

The equipment is only to be set within the permitted range of temperatures and pressures.

The device must not be used in hazardous areas.

Check that the location is weather-protected. It should not be subjected to either direct rain or moisture.

Installation, maintenance, monitoring and any repairs may only be done by authorised personnel with respect to the relevant stipulations.

### 4 WARRANTY

If the equipment fails, please contact **M&C** directly or else go through your **M&C** authorised dealer. We offer a one year warranty as of the day of delivery as per our normal terms and conditions of sale, and assuming technically correct operation of the unit. Consumables are hereby excluded. The terms of the warranty cover repair at the factory at no cost or the replacement at no cost of the equipment free ex user location. Reshipments must be send in a sufficient and proper protective packaging.

## 5 USED TERMS AND SIGNAL INDICATIONS



**DANGER!**

This means that death, severe physical injuries and/or important material damages **will occur** in case the respective safety measures are not fulfilled.



**WARNING!**

This means that death, severe physical injuries and/or important material damages **may occur** in case the respective safety measures are not fulfilled.



**CARE!**

This means that minor physical injuries **may occur** in case the respective safety measures are not fulfilled.

**CARE!**

Without the warning triangle means that a material damage may occur in case the respective safety measures are not met.

**ATTENTION!**

This means that an unintentional situation or an unintentional status may occur in case the respective note is not respected.



**NOTE!**

These are important information about the product or parts of the operating manual which require user's attention.

**SKILLED STAFF**

These are persons with necessary qualification who are familiar with installation, use and maintenance of the product.

## 6 APPLICATION

The electrically heated **M&C** sample probe tube **SP34-H** is used in extracting portable sampling systems to avoid cooling and condensation of sample in the insitu tube from the sample point to the heated sample probe **PSP4000-H**.

## 7 DESCRIPTION

The standard length of electrically heated **M&C** sample tube **SP34-H** is 1000 mm (other length on request).

The sample tube has G3/8" threads on both ends. With the outside thread it will be screwed into the inlet of the sample probe **PSP4000-H**. Into the inside thread at the other end, a non heated sample tube or prefilter can be fixed. The electrical heater is inside of a double tube system, completely separated from the process.

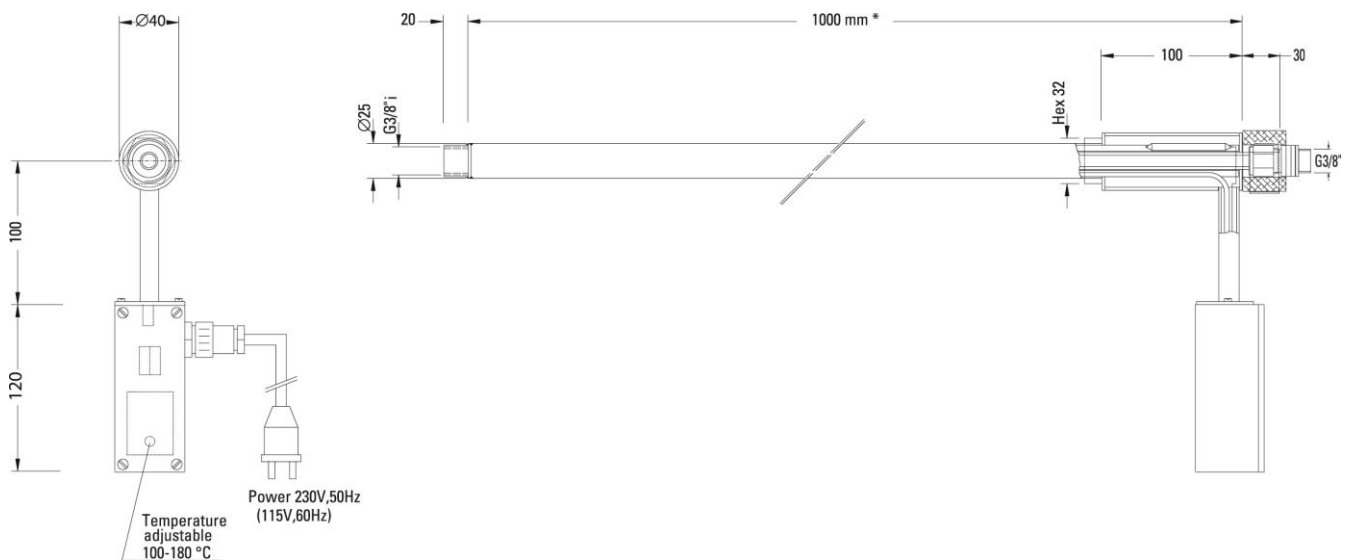


Figure 1 Dimensions SP34-H

## 8 TEMPERATURE CONTROLLER

For the standard version **SP34-H** the temperature is controlled by an integrated capillary thermostat, built in the terminal box. The temperature is adjustable in the range of 100-180 °C. An external temperature controller is not necessary. For the version **SP34-H1.1** with thermocouple or **SP34-H2** with PT100 in contrast an external temperature controller is necessary.

## 9 TECHNICAL DATA

	SP 34-H	SP 34-H1.1	SP 34-H2
Part No.	40S9115	40S9120	40S9125
Temperature sensor	Capillary sensor	Fe-CuNi	PT100
Temperature controller	Thermostate	optional, external	
Tube length	1 m standard		
Connections	INLET G3/8" inside thread, OUTLET G3/8" outside thread, DIN ISO 228/T		
Material	Stainless steel SS316Ti		
Operating temperature	max. 180 °C		
Sample temperature	max. 400 °C		
Ambient temperature (controller)	-20°C bis +60 °C		
Power supply	230V 50Hz 400W, with 4 m of cable / 115V 60Hz		
Degree of protection / Electrical equipment standard	IP54 EN60529 / EN 61010, EN60519-1		
<b>Option:</b>			
Part No. 02S9036	Additional price for SP34-H with power supply 115V 60Hz		

## 10 MOUNTING

Screw in the heated sample tube with 3/8" sealing into the sample gas inlet of the portable gas sample probe **PSP4000-H**.

## 11 ELECTRICAL CONNECTIONS



**WARNING!**

When connecting the equipment, please ensure that the supply voltage is identical with the information provided on the model type plate.

The electrical connection for the heated sample tube is done by the provided power cable with 4m length. This will be connected with the 7-pole plug at the connection box of the heated sample tube and connected to the mains with the IEC-plug.

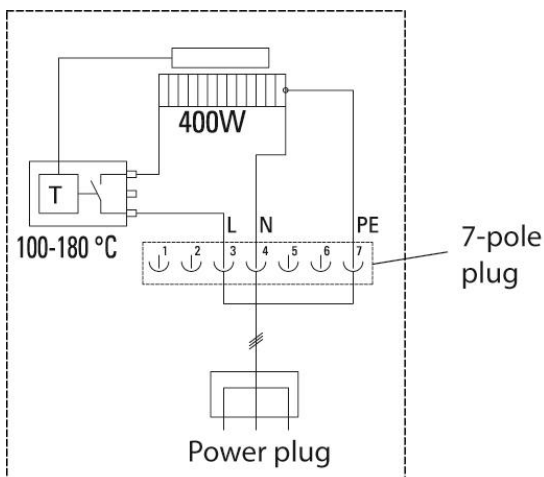




Figure 2 Electrical connection SP34-H

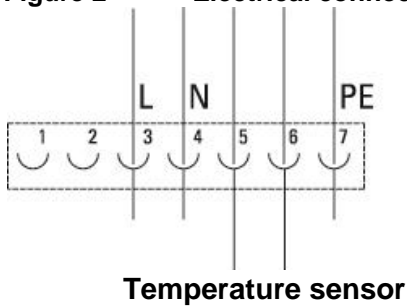


Figure 3 Pin assignment for electrical connection of SP34-H2 and SP34-H1.1

## 12 STARTING

Prior to starting the device, the system and process-specific safety measures must be observed. For the media to be supplied, the relevant safety requirements and measures must be taken into account.



**WARNING!**

**Before starting up check whether the mains power supply voltage corresponds with the information stated on the nameplate.**



**WARNING!**

**Start up only the built-in heated probe tube because otherwise there is a risk of burning !**



The following step-by-step procedure is recommended :

- Check temperature set value at external controller. Thereto remove lid of the connection box.
- Switch on mains power supply.
- The heated sample tubes are ready for operation after 2 hours heat-up time.

## 13 MAINTENANCE

Maintenance of the heated sample tube is limited to the cleaning of the surfaces.



**WARNING!**

**The safety instructions specific to the plant and process are to be consulted prior to any maintenance work!**



**WARNING!**

**When working during operation:  
High surface temperatures!**

**Touching the surfaces can result in burns. Wear protective gloves  
and protect against unauthorized access !**



## 14 SWITCHING OFF

For switching off no specific measures need to be taken.

## 15 APPENDIX



**More product documentation is available on our Internet catalogue:  
[www.mc-techgroup.com](http://www.mc-techgroup.com)**