

## Heated sample gas lines



### **3/2 Temperature-controlled, heated sample gas lines**

3/2 Non-replaceable Teflon core, max. 160 °C, can be shortened

3/3 Non-replaceable Teflon core, max. 200 °C

3/4 Non-replaceable Teflon core, max. 200 °C, for FIDAMAT total hydrocarbon analyzer

### **3/5 Temperature controller for sample gas lines**

3/5 Temperature controller



# Heated sample gas lines

## Temperature-controlled, heated sample gas lines

Non-replaceable Teflon core, max. 160 °C, can be shortened

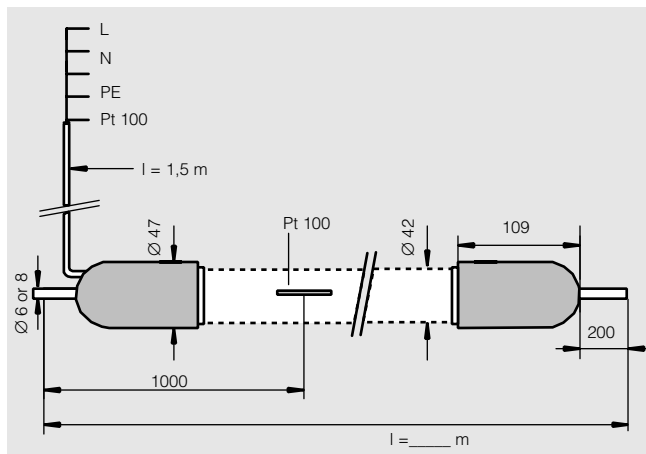


Fig. 3/1 Temperature-controlled, heated sample gas line for operating temperatures up to max. 160 °C, non-replaceable Teflon core; can be shortened

### Design

Internal hose	PTFE hose, 4/6 mm, 200 mm at both ends unheated
Hose connection and termination	Silicone end cap
Heater	Heating band, routed in parallel
Thermal insulation	Thermo-fleece (CFC-free, flame retardant)
Outer sheath	Polyamide corrugated hose, black, waterproof, flame retardant to UL94 HB, thermally stable from -30 to +80 °C, short-term +120 °C
Temperature sensor	Pt 100 in 2-wire system
Heat conductor / PE conductor	Copper braiding
Power supply connection	Power supply and sensor cables with common outlet, connector sleeves, L = 1500 mm
Tests complied with	VDE 0721 Part 1 <ul style="list-style-type: none"> <li>• High-voltage test</li> <li>• Insulation resistance test</li> </ul>

### Technical data

Max. permissible operating temperature	
• Switched on	160 °C
• Switched off	180 °C
Max. length of heating circuit	70 m
Max. production length	100 m
Distance between contacts	0.6 m
Protection class	I
Outer diameter	Approx. 40 mm
Smallest bending radius	300 mm
Max. permissible operating pressure	6 bar
Bursting pressure at 200 °C	39 bar
Power supply	230 V AC, 50 Hz
Weight (heating hose)	Approx. 0.3 kg/m

### Ordering data

Order No.

Note: The complete Ordering data for a heated sample gas line must include both items I and II

#### Item I

**Preassembled pack for temperature-controlled, heated sample gas line for operating temperatures up to 160 °C; can be shortened**

(delivery unit 1 line)

Both sides preassembled, with PTFE hose

Non-replaceable Teflon core, with 1 Pt 100 temperature sensor  
Type of fitting: ferrule, mat. No. 1.4571, both sides straight

#### Item II

**Length-dependent data**

(delivery unit 1 m)

#### Outer sheath

Polyamide corrugated hose

Hose

**PTFE hose 4/6 mm**

**PTFE hose 6/8 mm**

7MB1 943-2AB13

7MB1 943-2AB10

7MB1 943-2AB12

**Temperature-controlled, heated sample gas line for operating temperatures up to 160 °C; can be shortened**

Neither side preassembled, with PTFE hose, 1 Pt 100 temperature sensor

#### Outer sheath

Polyamide corrugated hose

Hose

**PTFE hose 4/6 mm**

**PTFE hose 6/8 mm**

7MB1 943-2AB14

7MB1 943-2AB16

**Assembly set for connection of a heated sample gas line**

(cabinet end) comprising

- 1 silicone end cap
- 1 connection set for heating band
- 1 Pt 100 temperature sensor

7MB1 943-2AB20

**Assembly set for connection of a heated sample gas line**

(sampling end) comprising

- 1 silicone end cap
- 1 connection set for heating band

7MB1 943-2AB22

**Heat-resistant adhesive tape**

(30 m)  
Note: 10 m are required to assemble a line

7MB1 943-2AB24

**Silicone adhesive** (1 tube)

Note: Half a tube is required to assemble a line

7MB1 943-2AB26

# Heated sample gas lines

## Temperature-controlled, heated sample gas lines

Non-replaceable Teflon core, max. 200 °C

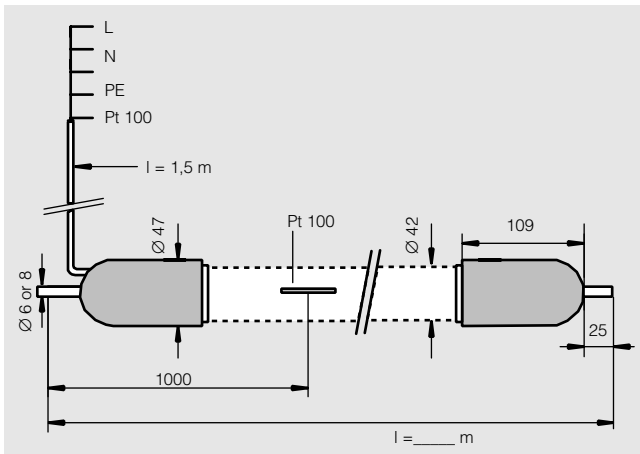


Fig. 3/2 Temperature-controlled, heated sample gas line for operating temperatures up to max. 200 °C, non-replaceable Teflon core

### Design

Internal hose (type)	Hose with Teflon (PTFE) core, stainless steel braiding
Connection fittings at inlet and outlet	Connecting sleeves RSL at both ends, mat. No. 1.4571 Ferrule
Hose connection and termination	Silicone end cap
Heat conductor	Moisture-proof, braided by PE conductor
Thermal insulation	Thermo-fleece (CFC-free, flame retardant)
Outer sheath	Polyamide corrugated hose, black, waterproof, flame retardant to UL94 HB, thermally stable from -40 to +80 °C, short-term +120 °C
Temperature sensor	Pt 100 in 2-wire system (Pt 100 resistance thermometer)
Power supply connection	Power supply and sensor cables with common outlet, connector sleeves, L = 1500 mm
Tests complied with	VDE 0721 Part 1 • High-voltage test • Insulation resistance test

### Technical data

Max. permissible operating temperature	200 °C
Max. length of heating circuit	50 m
Max. production length	100 m
Protection class	I
Smallest bending radius	
• Not crush-proof	200 mm
• Crush-proof	500 mm
Max. permissible operating pressure	30 bar
Power supply	230 V AC, 50 Hz
Rated power	100 VA/m
Weight (heating hose)	Approx. 0.5 kg/m

### Ordering data

Order No.

Note: The complete Ordering data for a heated sample gas line must include both items I and II

#### Item I

**Preassembled pack for temperature-controlled, heated sample gas line for operating temperatures up to 200 °C**  
(delivery unit 1 line)

Non-replaceable Teflon core, with 1 Pt 100 temperature sensor  
Type of fitting: ferrule, mat. No. 1.4571, both sides straight

**7MB1 943-2BA00**

#### Item II

**Length-dependent data**  
(delivery unit 1 m)

#### Outer sheath

Polyamide corrugated hose  
Hose

**PTFE hose 4/6 mm**  
**PTFE hose 6/8 mm**

**7MB1 943-2AA01**  
**7MB1 943-2AA02**

#### Temperature sensor mounting point

Measured from the electrical connection side (standard) or specified in plain text:

Sensor 1: 1 m

Sensor 1: ..... m

**2nd temperature sensor**  
**2nd heating circuit**

On request  
On request

**Temperature controller**

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### Example for ordering

The following is required:

Temperature-controlled, heated sample gas line for operating temperatures up to 200 °C, with straight connection fittings on both sides, outer sheath made of polyamide corrugated hose, PTFE hose 4/6 mm, 10 m long

Order as follows:

**7MB1 943-2BA00 + 10 x 7MB1 943-2AA01**

# Heated sample gas lines

## Temperature-controlled, heated sample gas lines

Non-replaceable Teflon core, max. 200 °C,  
for FIDAMAT total hydrocarbon analyzer

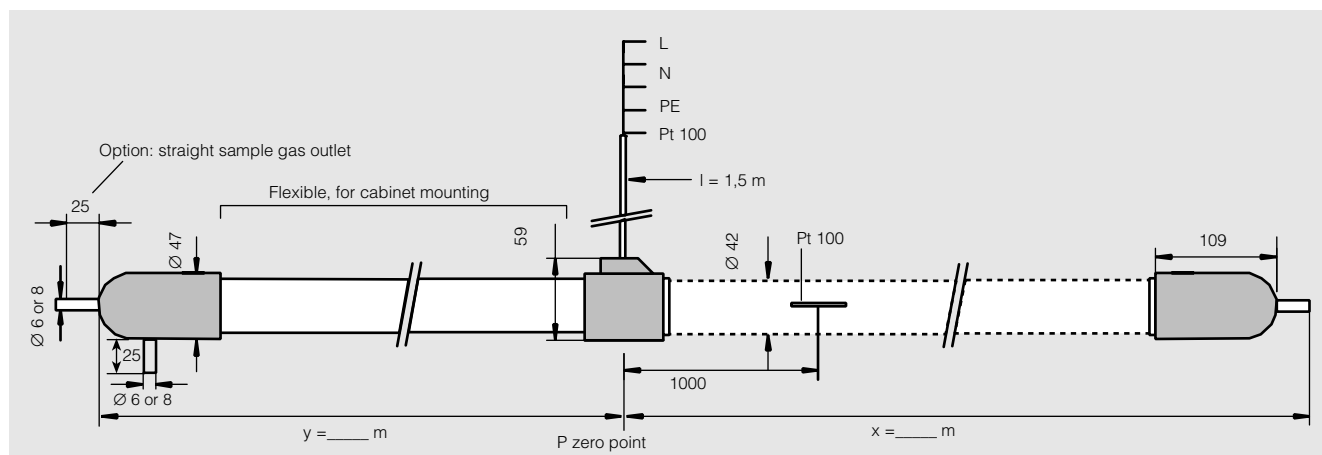


Fig. 3/3 Temperature-controlled, heated sample gas line for operating temperatures up to max. 200 °C, non-replaceable Teflon core (for FIDAMAT total hydrocarbon analyzer)

### Design

Internal hose	PTFE hose, single stainless steel braiding
Connection fittings at inlet and outlet	Connecting sleeves RSL at both ends, mat. No. 1.4571
Hose connection and termination	Silicone end cap
Heat conductor	PTFE-insulated with PE braiding, moisture-proof
Thermal insulation	
- Heating hose section 1	Glass fiber hollow hose/silicone foam hose, total insulation length Y after power connection outlet
- Heating hose section 2	Thermo-fleece (CFC-free, flame retardant), total insulation length X after power connection outlet
Outer sheath	Polyamide corrugated hose, black, waterproof, flame retardant to UL94 HB, thermally stable from -40 to +80 °C, short-term +120 °C
Temperature sensor	Pt 100 in 2-wire system
Power supply connection	Power supply and sensor cables with common outlet (P = zero point), L = 1500 mm, silicone protective hose, connector sleeves
Tests complied with	VDE 0721 Part 1 - High-voltage test - Insulation resistance test

### Technical data

Max. permissible operating temperature	200 °C
Protection class	I
Degree of protection to EN 60 529	IP54
Outer diameter	Approx. 40 mm
Smallest bending radius	350 mm
Max. permissible operating pressure	30 bar
Power supply	230 V AC, 50 Hz
Rated power	100 VA/m

### Ordering data

Order No.

Note: The complete Ordering data for a heated sample gas line must include both items I and II

#### Item I

**Preassembled pack for temperature-controlled, heated sample gas line for operating temperatures up to 200 °C**  
(delivery unit 1 line)

Non-replaceable Teflon core, with 1 Pt 100 temperature sensor  
Type of fitting: ferrule, mat. No. 1.4571, cabinet end with right-angled sample gas outlet

- Y part inside cabinet, Y=2 m
- Y part inside cabinet, Y=1.5 m
- Y part inside cabinet, Y=1 m
- Y part inside cabinet, Y=0.5 m

#### Option:

Additional sample gas outlet, straight

**7MB1 943-2AA70**

**7MB1 943-2AA71**

**7MB1 943-2AA72**

**7MB1 943-2AA73**

**7MB1 943-2AA05**

#### Item II

**Length-dependent data for X part** (delivery unit 1 m)

##### Model a

Y part, inside cabinet  
Outer sheath: silicone foam hose: PTFE hose 4/6 mm

X part, outside cabinet  
Outer sheath: Polyamide corrugated hose  
Hose: PTFE hose 4/6 mm

**7MB1 943-2AA06**

**7MB1 943-2AA08**

##### Model b

As "model a", except hose:  
PTFE hose 6/8 mm (X and Y)

**Temperature sensor mounting point**

(only in X part), measured from connection point P (zero point) or specified in plain text:

Standard:  
Sensor 1: 1 m or  
Sensor 1: ..... m

**2nd temperature sensor  
2nd heating circuit**

On request  
On request

**Temperature controller**

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# Heated sample gas lines Temperature controller for sample gas lines

## Temperature controller



Fig. 3/4 Temperature controller

### Technical data

Display of circuit state	Digital display for temperature and settings
Time response	Two-position controllers (2 x) Operating response and hysteresis
Temperature control range	-99 ... +800 °C
Switching output	Relay, changeover contact
Switching capacity	8 A at 250 V AC
Electrical connections	Screw terminals
Connected temperature sensor	Pt 100 resistance thermometer
Degree of protection to EN 60 529	
- Housing	IP30
- Terminals	IP20
Permissible ambient temperature	-20 ... +55 °C
Dimensions (H x W x D) in mm	82 x 42 x 121
Weight	Approx. 0.3 kg

### Application

Electronic two-position controller for heated sample gas lines. The temperature controller switches when the set limit is exceeded.

### Design

For connection of a Pt 100 temperature sensor. 2 limits can be set. Switching output via 2 relays. Three-wire connection. The line resistance is internally corrected up to 3 x 22 Ω.

The closed-circuit connection of the relays means that they drop out when the upper limit is exceeded and pull up when the lower limit is fallen below. A sensor breakage always leads to deactivation of the relays.

### Ordering data

Order No.

**Temperature controller**  
Power supply 230 V AC, 50/60 Hz

**7MB1 943-2AA00**

**Temperature controller**  
Power supply 115 V AC, 50/60 Hz

**7MB1 943-2AA12**

## Heated sample gas lines

