



Type M4/6 with A and Y

Electrically Heated Sample Lines

Type 3/4/5-N/M/H

Type 3 with PTFE tube, non-replaceable

Type 4 with PTFE tube, replaceable

Type 5 with stainless steel tube, non-replaceable

Special Features

- Regulation via external temperature controller
- Completely assembled
- Type 3: PTFE tube, non-replaceable,
- Type 4: PTFE tube, replaceable
- Type 5: stainless steel tube, non-replaceable
- Tube Ø DN 4/6 or 6/8
- 3 temperature ranges:
N = 100 °C [212 °F],
M = 200 °C [392 °F],
H = 250 °C [482 °F]

Application

The electrically heated, plug-in M&C sample lines 3/4/5-N/M/H are used in gas analysis systems to prevent measuring errors and also as frost protection during the transport of sample gas from the sampling point to the gas conditioning system or directly to the heated analyzer (above the dew point).

Description

The electrically heated M&C sample lines 3/4/5-N/M/H are supplied completely assembled in fixed length according to customer requirements.

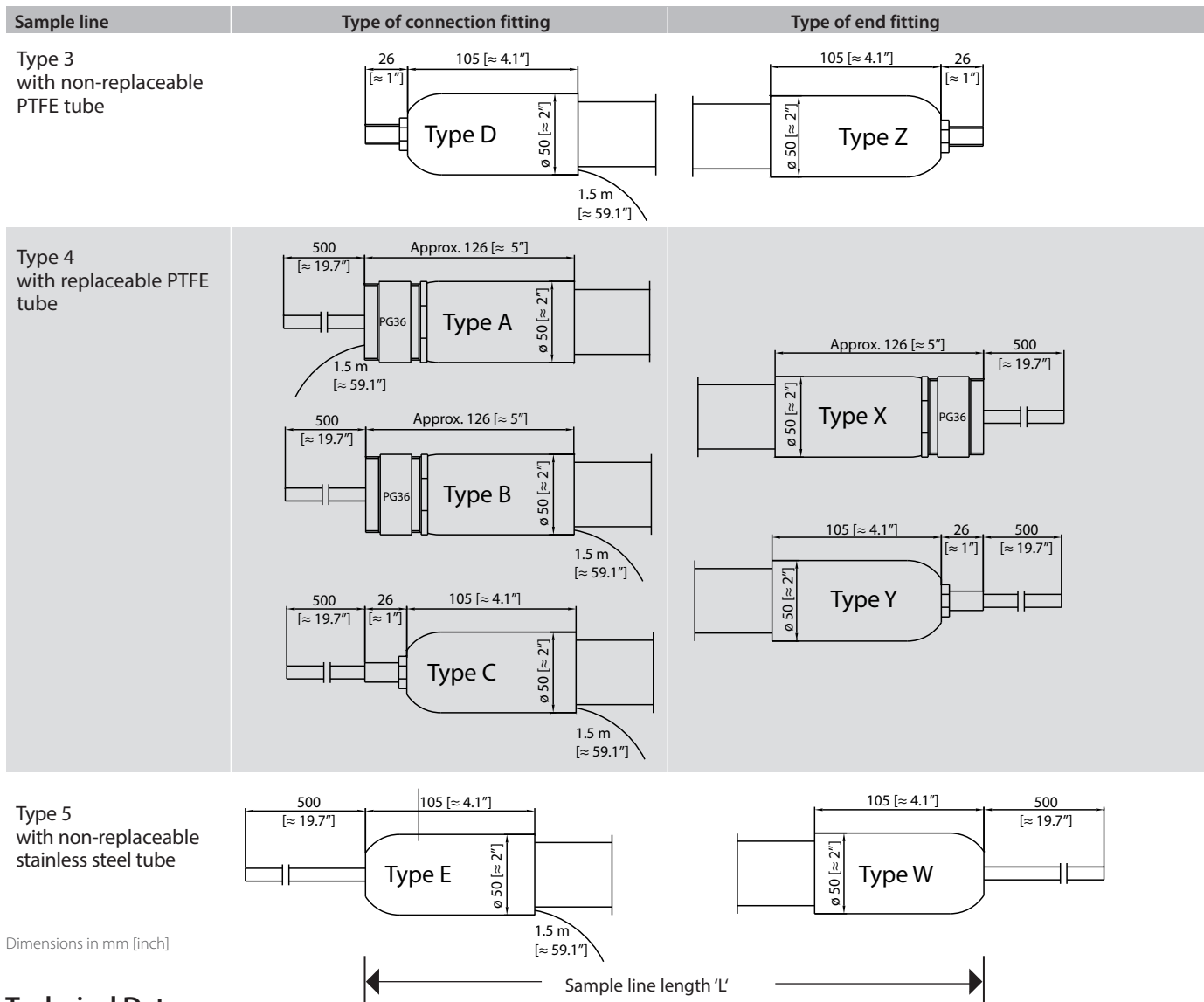
Several options that can be combined are available:

- three (3) different temperature versions (N = 100 °C [212 °F], M = 200 °C [392 °F], H = 250 °C [482 °F]),
- three (3) hose/tube versions (3, 4, 5) with either DN 4/6 or 6/8 as well as
- five (5) connection fittings (A, B, C, D, E) and
- four (4) end fittings (W, X, Y, Z).

The robust design of the sample lines consists of the inner medium tube, a thermally conducting and supporting body made of braided stainless steel tubing, the axially coiled high-performance heating conductor and a thermal insulation. The outer jacket is a corrugated polyamide hose.

The ends of the sample line are finished with heat-resistant silicone materials, and the entire construction ensures that the complete sample line is properly heated, including the ends.

The sample line is equipped with a PT100 for temperature detection.



Dimensions in mm [inch]

Technical Data

Sample lines Type 3/4/5-N/M/H	N	M	H
Operating temperature, max.	+100 °C [212 °F]	+200 °C [392 °F]	+250 °C [482 °F]
Power consumption using DN 4/6	85 W/m	110 W/m	120 W/m
Power consumption using DN 6/8	100 W/m	110 W/m	130 W/m
Pressure, max.	Type 3 = 5 bar g, type 4 = 3 bar g, type 5 = 100 bar g, *standard		
Ambient temperature, max.	-20 up to + 60 °C [-4 up to 140 °F]		
Tube DN	Optional DN 4/6 or 6/8		
Sample line connections and end fittings	See connection fittings and end fittings A, B, C, D, E and W, X, Y, Z		
Electrical connections*	1.5 m [≈ 4.9 ft] cable with 7 pin-plug for max. 10 A or 5 pin-plug for max. 20 A according to the necessary power consumption*, for power and PT100 sensor connection		
Power supply	230 V AC *standard, supplied via a temperature controller, see data sheet 4.1		
PT100 sensor position	0.25 m [≈ 9.8"] from the power inlet connection -* standard		
Weight	First meter = 2 kg [≈ 4.4 lbs]/each additional meter = 0.9 kg [≈ 2.0 lbs] standard version		
Sample line max. length	30 m [≈ 98.4 ft]		
7 pin-plug 10 A at connection fitting A, B, C, D, E up to max. length of	23 m [≈ 75.5 ft]		18 m [≈ 59.1 ft]
5 pin-plug 20 A at connection fitting A, B, C, D, E from to max. length of	23.1 to 30 m [≈ 75.8 to 98.4 ft]		18.1 to 30 m [≈ 59.4 to 98.4 ft]
Sample gas connection	Type 3 = SS 316Ti tube nipple ø 6 or 8 mm, on request, 26 mm [≈ 1.0"] long Type 4 = PTFE tube ø 6 or 8 mm on request, 0.5 m [≈ 1.6 ft] on both sides Type 5 = SS 316Ti tube ø 6 or 8 mm on request, 0.5 m [≈ 1.6 ft] on both sides		
Thermal insulating material	High-temperature polyester fleece		Glass fiber and thermal fleece materials
Outer jacket	Corrugated hose out of polyamide, black		
Application fields	Mobile and stationary, indoor and outdoor mounting		
Smallest bending radius	320 mm [≈ 12.6"]		

*The plugs are selected according to the required power and are assembled at the factory. On request, it is also possible to assemble the 5-pole plug with max. 20 A switching capacity at the factory, even with lower power consumption. When ordering, please indicate whether the cable should be assembled with the 5-pole plug regardless of the power consumption.

Description sample lines per meter	Type	DN in mm	Part number
Electrically heated sample line type 3 with PTFE tube, non-replaceable, max. 100 °C [212 °F]	3N	4/6	03B3000W
Electrically heated sample line type 3 with PTFE tube, non-replaceable, max. 200 °C [392 °F]	3M	4/6	03B3010W
Electrically heated sample line type 3 with PTFE tube, non-replaceable, max. 250 °C [482 °F]	3H	4/6	03B3020W
Electrically heated sample line type 3 with PTFE tube, non-replaceable, max. 100 °C [212 °F]	3N	6/8	03B3030W
Electrically heated sample line type 3 with PTFE tube, non-replaceable, max. 200 °C [392 °F]	3H	6/8	03B3040W
Electrically heated sample line type 3 with PTFE tube, non-replaceable, max. 250 °C [482 °F]	3H	6/8	03B3050W
Electrically heated sample line type 4 with PTFE tube, replaceable, max. 100 °C [212 °F]	4N	4/6	03B4000W
Electrically heated sample line type 4 with PTFE tube, replaceable, max. 200 °C [392 °F]	4M	4/6	03B4010W
Electrically heated sample line type 4 with PTFE tube, replaceable, max. 250 °C [482 °F]	4H	4/6	03B4020W
Electrically heated sample line type 4 with PTFE tube, replaceable, max. 100 °C [212 °F]	4N	6/8	03B4030W
Electrically heated sample line type 4 with PTFE tube, replaceable, max. 200 °C [392 °F]	4M	6/8	03B4040W
Electrically heated sample line type 4 with PTFE tube, replaceable, max. 250 °C [482 °F]	4H	6/8	03B4050W
Electrically heated sample line type 5 with SS 316Ti tube, non-replaceable, max. 100 °C [212 °F]	5N	4/6	03B5000W
Electrically heated sample line type 5 with SS 316Ti tube, non-replaceable, max. 200 °C [392 °F]	5M	4/6	03B5010W
Electrically heated sample line type 5 with SS 316Ti tube, non-replaceable, max. 250 °C [482 °F]	5H	4/6	03B5020W
Electrically heated sample line type 5 with SS 316Ti tube, non-replaceable, max. 100 °C [212 °F]	5N	6/8	03B5030W
Electrically heated sample line type 5 with SS 316Ti tube, non-replaceable, max. 200 °C [392 °F]	5M	6/8	03B5040W
Electrically heated sample line type 5 with SS 316Ti tube, non-replaceable, max. 250 °C [482 °F]	5H	6/8	03B5050W
Connection fittings type A, B, C, D, E for DN 4/6 or DN 6/8 incl. PT100 and 1.5 m [≈ 4.9 ft] cable with plug*:			
Connection fitting with PG36, for replaceable tube, extension cable axial at the front	A	4/6	03B1000
Connection fitting with PG36, for replaceable tube, extension cable axial to the rear	B	4/6	03B1010
Connection fitting with tube stub, for replaceable tube, extension cable axial to the rear	C	4/6	03B1020
Connection fitting with tube stub, for non-replaceable tube, extension cable axial to the rear	D	4/6	03B1030
Connection fitting for SS 316Ti tube, extension cable axial to the rear	E	4/6	03B1040
Connection fitting with PG36, for replaceable tube, extension cable axial at the front	A	6/8	03B1050
Connection fitting with PG36, for replaceable tube, extension cable axial to the rear	B	6/8	03B1060
Connection fitting with tube stub, for replaceable tube, extension cable axial to the rear	C	6/8	03B1070
Connection fitting with tube stub, for non-replaceable tube, extension cable axial to the rear	D	6/8	03B1080
Connection fitting for stainless steel tube, extension cable axial to the rear	E	6/8	03B1090
End fittings type W, X, Y, Z for DN 4/6 or DN 6/8 :			
End fitting with PG36, for replaceable tube	X	4/6	03B2000
End fitting with tube stub, for replaceable tube	Y	4/6	03B2010
End fitting with tube stub, for non-replaceable tube	Z	4/6	03B2020
End fitting for SS 316Ti tube	W	4/6	03B2030
End fitting with PG36, for replaceable tube	X	6/8	03B2040
End fitting with tube stub, for replaceable tube	Y	6/8	03B2050
End fitting with tube stub, for non-replaceable tube	Z	6/8	03B2060
End fitting for stainless steel tube	W	6/8	03B2070
Option			
Electrically heated sample line with power 115 V AC instead of 230 V AC			03B9999
Temperature controller TRD-H1 with 7 pin-socket, max. 10 A switching capacity, for electrically heated sample lines with max. 230 V, 10 A, 2300 W or 115 V, 10 A, 1150 W			03B7100
Temperature controller TRD-H3 with 5 pin-socket, max. 20 A switching capacity, for electrically heated sample lines with max. 230 V, 20 A, 4600 W or 115 V, 20 A, 2300 W			03B7110

*see previous page: Technical Data - electrical connection
Other versions on request

Please specify with order:

- Line type (3, 4, 5)
- Line length in meter
- 1 x connection fitting (A, B, C, D, E)
- Temperature range (N, M, H)
- Hose/tube dimension DN (4/6, 6/8)
- 1 x end fitting (W, X, Y, Z)
- 1 x temperature controller (TRD-H1, TRD-H3)

For example:

6 x 03B4010W: 6 m electrically heated sample line, 4M4/6, max. 200 °C [392 °F] with replaceable PTFE tube DN 4/6,
1 x 03B1020: connection fitting C,
1 x 03B2010: end fitting Y,
1 x 03B7100: Temperature controller TRD-H1 (for more information about temperature controllers see data sheet 4.1).