



Type 4-N(M) 4/6 EX C, Y

## Controlled explosion proof electrically heated sample lines type 3/4/5-N/M Ex



Type 3 with PTFE tube non interchangeable

Type 4 with PTFE tube interchangeable

Type 5 with stainless steel tube

### Special Features

- Approval according to ATEX for mounting in explosion zone 1, 2, 21 and 22
- Regulation with external temperature controller
- Completely assembled
- PTFE-tube non interchangeable Type 3/
- PTFE-tube interchangeable Type 4/
- Stainless steel tube non interchangeable Type 5/
- Hose/tube  $\varnothing$  4/6, 6/8 or 8/10 mm DN..
- 2 temperature ranges N=100°C, M=200°C

### Application

The explosion proof electrically heated M&C-sample lines series 3/4/5-N/M EX may be used with advantage in gas analysis systems. Their application helps avoid errors and acts as frost protection during transport of the sample gas from the sample point to the gas conditioning system or directly to a heated analyser (above dew point).

### Description

The explosion proof electrically heated M&C-sample lines 3/4/5-N/M EX are supplied according to clients requirements completely fabricated in the factory with connections and ends to a fixed length.

Several options can be supplied:

2 different temperature versions (N-100 °C/ M-200 °C ), EX T3

3 tube/pipe versions (3/4/5) with either N 4/6, 6/8 or DN 8/10 mm each as well as

3 inlet connections (C/D/E) and

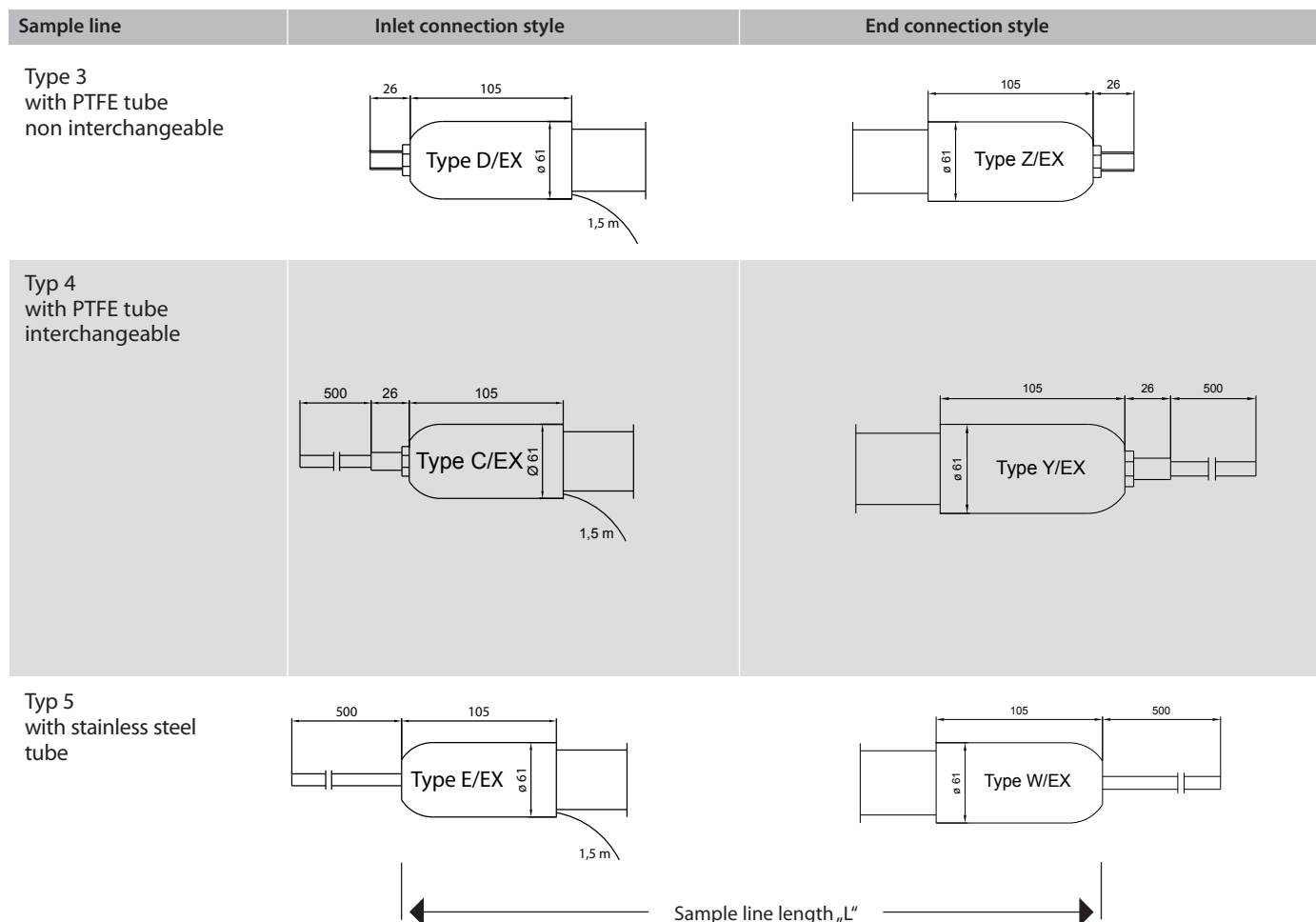
3 end connections (W/Y/Z).

The robust construction of the sample line consists of a medium tube/pipe inside a thermally conductive stainless steel mesh which acts also as protection and support. The heat conductor is also coiled around the stainless steel protective mesh followed by a further two (2) layers of thermal insulation. The outer cover is a corrugated tube out of polyamide.

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 explosion proof sample lines are equipped with two Ex-PT100 intrinsically safe 2GD according to ATEX for temperature detection.

## Possible Connections and Styles of the Heated Sample Lines



Dimensions in mm

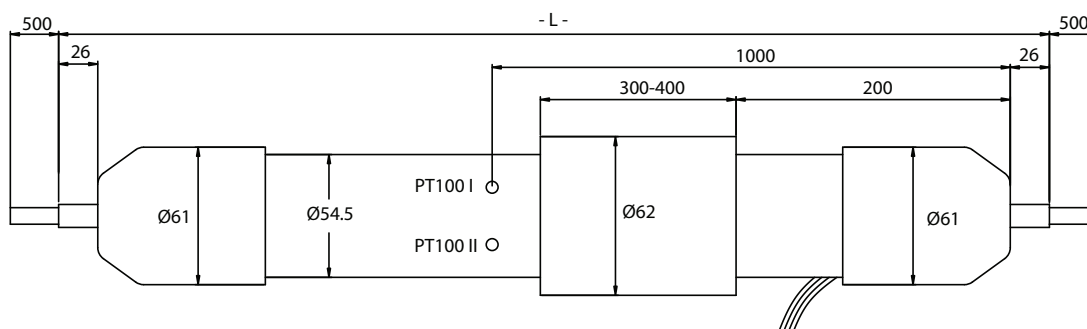
## Technical Data

Sample lines Type 3/4/5-N/M EX	N	M
Operating temperature, max.	+100 °C	+200 °C
Power consumption	100 W/m	
Pressure, max.	Type 3 = 5 bar g, Type 4 = 3 bar g, Type 5 = 100 bar g	
Ambient temperature, max.	-20 °C up to + 65 °C	
Tube DN	optional 4/6, 6/8 or 8/10 mm	
Sample line inlet and end connections	see inlet and end connections C-E and W-Z	
Electrical connections	1,5 m cable for power and 2 x PT100-sensor connection with cable gland M12 x 1,5 Ex	
Electrical standard	II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	
Power supply	230V AC standard, supplied via a temperature controller	
PT100-Sensor position	1 m from the power inlet connection	
Weight	max 1,5 kg/m	
Sample line max. length	230V : 30 m 115V : 13 m	
Sample line inlet and outlet seal connections	Type 3 = stainless steel 316Ti tube nipple $\varnothing$ 6, 8 or 10 mm, on request, 26 mm long Type 4 = PTFE tube $\varnothing$ 6, 8 or 10 mm on request, 0,5 m on both sides Type 5 = stainless steel 316Ti tube $\varnothing$ 6, 8 or 10 mm on request, 0,5 m on both sides	
Thermal insulation	glass fibre and bonded fabrics	
Outer cover	corrugated tube out of polyamide black	
Application fields / smallest bending radius	mobile and stationary, inside and outside mounting / 500 mm	

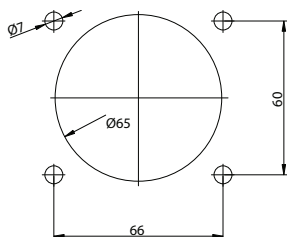
Description	Type	NW mm	Part No.
Controlled explosion proof electrically heated sample line type 3 with non interchangeable PTFE tube, max. 100 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	3N EX	4/6	03B3500W
Controlled explosion proof electrically heated sample line type 3 with non interchangeable PTFE tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	3M EX	4/6	03B3510W
Controlled explosion proof electrically heated sample line type 3 with non interchangeable PTFE tube, max. 100 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	3N EX	6/8	03B3530W
Controlled explosion proof electrically heated sample line type 3 with non interchangeable PTFE tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	3M EX	6/8	03B3540W
Controlled explosion proof electrically heated sample line type 3 with non interchangeable PTFE tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	3M EX	8/10	03B3570W
Controlled explosion proof electrically heated sample line type 4 with interchangeable PTFE tube, max. 100 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	4N EX	4/6	03B4500W
Controlled explosion proof electrically heated sample line type 4 with interchangeable PTFE tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	4M EX	4/6	03B4510W
Controlled explosion proof electrically heated sample line type 4 with interchangeable PTFE tube, max. 100 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	4N EX	6/8	03B4530W
Controlled explosion proof electrically heated sample line type 4 with interchangeable PTFE tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	4M EX	6/8	03B4540W
Controlled explosion proof electrically heated sample line type 4 with interchangeable PTFE tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	4M EX	8/10	03B4570W
Controlled explosion proof electrically heated sample line type 5 with non interchangeable stainless steel 316 tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	5M EX	4/6	03B5510W
Controlled explosion proof electrically heated sample line type 5 with non interchangeable stainless steel 316 tube, max. 200 °C, 230V/50Hz, II 2 G Ex e II T3, II 2 D Ex tD A21 IP65 TX	5M EX	6/8	03B5540W
<b>Inlet connections type C-E for DN 4/6, DN 6/8 and 8/10mm incl. 2 x PT100 and 1,5 m cable</b>			
Inlet connection part with pipe end type C/Ex, for heated sample line type 4, DN4/6mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	C/EX	4/6	03B1520
Inlet connection part with pipe end type D/Ex, for heated sample line type 3, DN4/6mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	D/EX	4/6	03B1530
Inlet connection part with pipe end type E/Ex, for heated sample line type 5, DN4/6mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	E/EX	4/6	03B1540
Inlet connection part with pipe end type C/Ex, for heated sample line type 4, DN6/8mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	C/EX	6/8	03B1570
Inlet connection part with pipe end type D/Ex, for heated sample line type 3, DN6/8mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	D/EX	6/8	03B1580
Inlet connection part with pipe end type E/Ex, for heated sample line type 5, DN6/8mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	E/EX	6/8	03B1590
Inlet connection part with pipe end type C/Ex, for heated sample line type 4, DN8/10mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	C/EX	8/10	03B1575
Inlet connection part with pipe end type D/Ex, for heated sample line type 3, DN8/10mm. Ex-version, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.	D/EX	8/10	03B1585
<b>End connections type W-Z for DN 4/6, 6/8 and 8/10mm</b>			
End connection part type W/Ex for heated sample line type 5, DN 4/6mm. Ex-version.	W/EX	4/6	03B2530
End connection part with pipe end type Y/Ex for heated sample line type 4, DN 4/6mm. Ex-version.	Y/EX	4/6	03B2510
End connection part with pipe end type Z/Ex for heated sample line type 3, DN 4/6mm. Ex-version.	Z/EX	4/6	03B2520
End connection part type W/Ex for heated sample line type 5, DN 6/8mm. Ex-version.	W/EX	6/8	03B2570
End connection part with pipe end type Y/Ex for heated sample line type 4, DN 6/8mm. Ex-version.	Y/EX	6/8	03B2550
End connection part with pipe end type Z/Ex for heated sample line type 3, DN 6/8mm. Ex-version.	Z/EX	6/8	03B2560
End connection part with pipe end type Y/Ex for heated sample line type 4, DN 8/10mm. Ex-version.	Y/EX	8/10	03B2555
End connection part with pipe end type Z/Ex for heated sample line type 3, DN 8/10mm. Ex-version.	Z/EX	8/10	03B2565
<b>Options</b>			
Electrically heated sample line with power 115VAC instead of 230VAC			03B9999
Extra charge for additional heating circuit for controlled explosion proof heated sample line, incl. 2 x PT100 intrinsically safe 2GD according to ATEX.			90B0019
<b>Explosion proof temperature controller</b>			
Temperature-controller and temperature-limiter with external control panel. Explosion-proof version for Ex-Zone 1 and 21 protection class according to ATEX: for controller and limiter II 2 G Ex emb(ib) IIC T4, II 2 D Ex tD A21 IP65 T100°C, for controller unit II 2 G Ex ib IIC T4, II 2 D Ex tD A21 IP65 T100°C, For heated Ex-sample line with 2x PT100-sensor. PT100 input intrinsically safe. Reset for limiter with the external control unit Measure- and control range: -40 up to 300°C capacity: 16A, Power: 230V/50Hz. Ambient temperature: -32 up to 65°C.			03B8000
Temperature-controller as spare for combination Item No. 03B8000 Explosion-proofed version for Ex-Zone 1 and 21 protection class according to ATEX: II 2 GD E Ex em IIC T4 IP65 T100, Measure- and control range: -40 up to 300°C capacity: 16A, Power: 230V/50Hz. Ambient temperature: -32 up to 65°C			03B8010
Temperature-limiter as spare for combination Item No. 03B8000 Explosion-proofed version for Ex-Zone 1 and 21 protection class according to ATEX: II 2 GD E Ex em IIC T4 IP65 T100, Measure- and control range: -40 up to 300°C capacity: 16A, Power: 230V/50Hz. Ambient temperature: -32 up to 65°C			03B8020
External control panel as spare for combination Item No. 03B8000 Explosion-proofed version for Ex-Zone 1 and 21 protection class according to ATEX: II 2 GD E Ex ib IIC T4 IP65 T100			03B8030

Other executions on request.

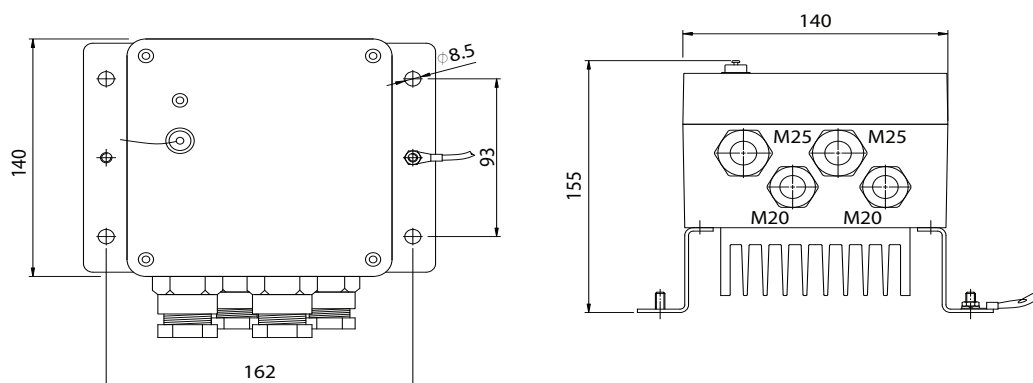
## Dimensions controlled explosion proof heated sample line



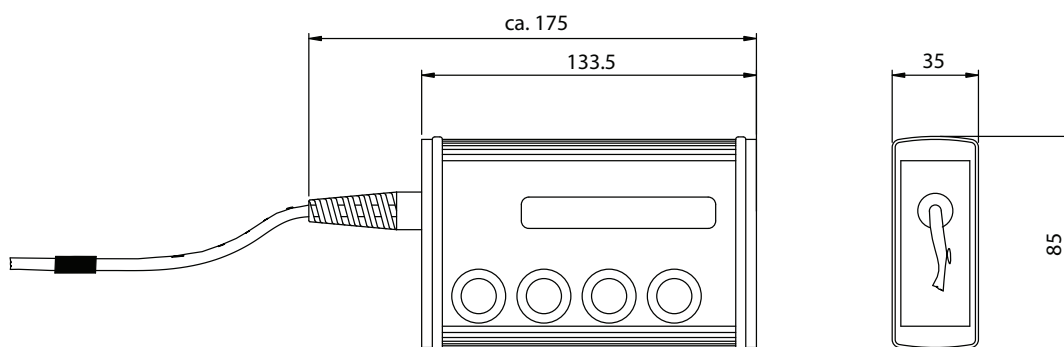
## Mounting holes for two-part cabinet-bushing for line diameter 62mm



## Dimensions temperature controller, limiter and control panel



Temperature controller and limiter are 2 external identical components.



## Please specify with order:

- line type (3/4/5)
- line length in meter
- 1x inlet connection part (C-E)
- temperature range (N/M)
- tube dimension DN (4/6, 6/8, 8/10)
- 1x end connection part (W-Z)
- 1x temperature controller

### For example:

6x 03B4510 6 m electrically heated sample line, 4M4/6 EX, max. 200 °C with interchangeable PTFE tube DN 4/6,  
 1x 03B1520 inlet connection part C/EX,  
 1x 03B2510 end connection part Y/EX.  
 – explosion proof temperature controller –