

1 Introduction

1.1 Intended Use

The sample gas probe is intended for installation into gas analysis systems in commercial applications.

It may be operated in a Zone 2, explosion class IIC, explosive gas atmosphere which is rarely and only temporarily explosive. Zone 2 explosive gas atmospheres may be extracted with or transported with these probes. The probe has a temperature switch which may only be operated as simple electrical equipment on an intrinsically-safe circuit supplied by a type-tested switch amplifier.

The explosion protection markings on the probes are:

ATEX:  II 3G Ex ec ic mb¹ IIC T3/T4 Gc

IECEx: Ex ec ic mb¹ IIC T3/T4 Gc

¹ Only for versions with solenoid valve.

Sample gas probes are among the main components in a gas conditioning system.

- Therefore also note the related drawing in the data sheet in the appendix.
- Before installing the device, verify the listed technical data meet the application parameters.
- Further verify all contents are complete.

Please refer to the type plate to identify your model. In addition to the job number it also contains the item number and model designation.

Please note the specific values of the device when connecting, and the correct versions when ordering spare parts.

Passing through gases

Flammable gases above the UEL (upper explosion limit) may only be blown back with inert gases. Flammable gases from 25 % LEL (lower explosion limit) and up to the LEL may be blown back provided the operator ensures the blown back gas is not and cannot be explosive. For safety reasons we recommend only using inert gases in these cases as well.

Blowing back explosive atmospheres (range from LEL to UEL) with the probes is prohibited due to possible adiabatic compression (high blowback pressure against contaminated filter). The operator is responsible for compliance with these conditions taking into account his risk assessment.

1.2 Type Plate

Example:

Manufacturer and address	→	Bühler Technologies GmbH Harkortstr. 29 D-40880 Ratingen
Model designation	→	GAS 222.21 Ex2
Order no., item no.	→	000053273 462222110192331111111 001
Blast protection marking	→	 II 3G Ex ec ic IIC T4 Gc
Electrical supply	→	115/230V 50/60Hz; Valves: 24V UC
IECEx certificate number	→	IECEx IBE 17.0002X
Year of manufacture	→	Read manual! Year: 2017



1.3 Contents

- 1 x Sample gas probe
- 1 x Flange gasket and screws
- Product documentation
- Connection and mounting accessories (only optional)

1.4 Ordering instructions

The item number is a code for the configuration of your unit. Please use the following model key:

4622221	X	0	X	X	X	X	3	X	X	X	X	X	X	X	Product characteristics
Junction box															
0															No
1															Yes
Flange															
0	1														Flange DN65 PN6
0	2														Flange DN3"-150
Hazardous area Outside and Inside															
2	9														Ex-Zone 2 outside, none inside
2	2														Ex-Zone 2 outside and inside
Temperature class															
3															T3
4															T4
Power supply sample probe															
3															115/230 V
Low temperature alarm															
1															Opener (open at operating temperature) (marked with "ic")
2															Closer (closed at operating temperature) (marked with "ic")
Calibration gas port															
0															No
1															6 mm
2															6 mm with check valve
3															1/4"
4															1/4" with check valve
Capacitive vessel *															
0															No
1															Yes
Valve for pressurized air *															
0															Ball valve
1															Solenoid valve 110 V (marked with "mb")
2															Solenoid valve 230 V (marked with "mb")
3															Solenoid valve 24 V (marked with "mb")
9															none
Pneumatic actuator for internal ball valve															
0															No
1															Mono stable depressurized open
2															Mono stable depressurized closed
Limit switch for pneumatic actuator															
0															No
1															Yes
Solenoid valve for pneumatic actuator															
0															No
1															110 V (marked with "mb")
2															230 V (marked with "mb")
3															24 V (marked with "mb")

* Blowback of explosive atmosphere prohibited.

1.5 Product Description

The probe is equipped with self-regulating PTC heating cartridges and a temperature contact.

Probe	Description
GAS 222.21 Ex2	Probe with upstream and/or downstream filter, shut-off valve and blowback connection
GAS 222.21-JB Ex2	Probe with upstream and/or downstream filter, shut-off valve, blowback connection and terminal box
Accessories	Please refer to the data sheet at the end of this manual for accessories for this probe