

## Electrical Position Indicator ATEX

### Construction

The GEMÜ 1231 electrical position indicator is suitable for linear valves with actuator strokes up to 20 mm (actuating travel). It has a corrosion resistant plastic housing and one or two inductive proximity switches acc. to NAMUR EN 50227.

Switching rod and actuating spindle have a positive connection without axial play. The electrical connection is via cable gland.

### Features

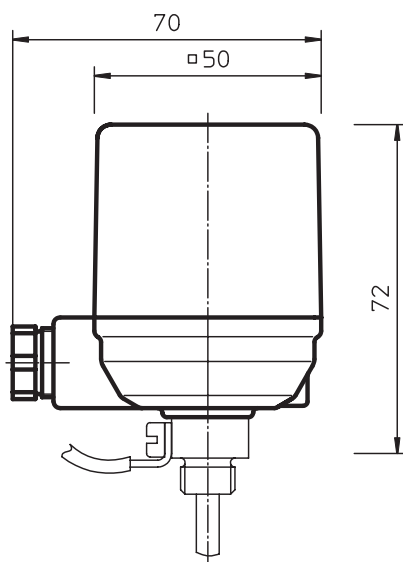
- ATEX-marking:
  - $\text{Ex}$  II 2G EEx ib IIC/IIB T6
  - $\text{Ex}$  II 2D T 80°C IP 65
  - $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$
- Both proximity switches can be continuously and precisely adjusted, independently of each other, via threaded spindles
- Device can be rotated through 360°
- Customer-specified connectors available as an option

### Advantages

- Simple mounting and retrofitting to GEMÜ linear actuators
- Mounting to other valve makes possible
- Compact design in a stable housing
- The switches are not subject to wear, contactless detection
- Protection class IP 65 to EN 60529



Dimensions - GEMÜ 1231 [mm]



## Technical data

### Operating conditions

Setting range of limit switch	2 - 20 mm continuous
Ambient temperature	-20° to +60°C
Protection class	IP 65 EN 60529

Intended for use with process valves whose opening/closing speed does not exceed 1 metre/second. Metallically isolated components have to be connected to the potential equalisation via charge eliminators by the user (see directive 1999/92/EC (ATEX 137) and national provisions).

### Electrical data

Rated voltage	8V Namur
Rated current, undamped	≥ 3 mA
Rated current, damped	< 1 mA
Max. switching frequency	1.0 kHz
Inductive proximity switch	P+F NJ 1,5-6, 5-15N or equivalent

### Materials

Housing cover, Polysulfone	PSU
Housing base, Polypropylene 30 %GF	PP
Guide piece	1.4305
Operating spindle	1.4104
Damping piece	1.4104

### Electrical connection

M 16 cable gland	1 x available
Cable diameter	4.5 ... 7 mm
Recommended cross section of wire	0.75 mm <sup>2</sup>
Potential equalisation	stranded wire, yellow/green H 07 V-K 4.0

### Explosion protection

#### Approval for designs 1231 000 ZA..2071101202

Explosion protection	Ex II 2G EEx ib IIC/IIB T6
Marking acc. to ATEX	Ex II 2D T 80°C IP 65 -20°C ≤ Ta ≤ +60°C

EC type examination certificate no. IBExU04ATEX1175

#### Marking for designs differing from 1231 000 Z..A2071101202

Explosion protection	Ex II 2G EEx ia IIC T6X
Marking acc. to ATEX	Ex II 2G c IIB T6

**Note on index X:** Operation in potentially explosive atmospheres only in conjunction with an ATEX complying isolator amplifier that is designed for the operation of NAMUR proximity switches, mechanical contacts or opto-couplers and for which separate operating instructions apply.

## Order data

Field bus	Code
Without	000

Switch	Code
2-wire Namur	207

Function	Code
OPEN/CLOSED	A00
OPEN	A01
CLOSED	A02

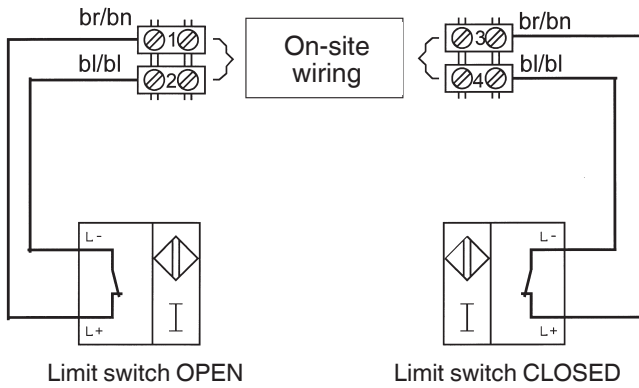
Electrical connection	Code
M 16 cable gland	1101

Connection diagram	Code
Terminal block (see page 3)	202

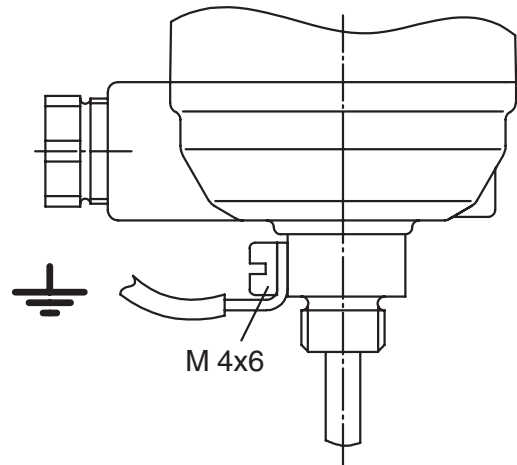
Order example	1231	000	Z	A00	207	1101	202
Type	1231						
Field bus (Code)		000					
Accessory			Z				
Function (Code)				A00			
Switch (Code)					207		
Electrical connection (Code)						1101	
Connection diagram (Code)							202

Please order mounting kit 1231 S01 Z...AT separately with reference to the particular valve type!

## Connection diagram (Code 202)



## Potential equalisation



## Approval only for designs 1231 000 ZA..2071101202

IBExU Institut für Sicherheitstechnik GmbH  
An-Institut der TU Bergakademie Freiberg

- [1] **EC-TYPE EXAMINATION CERTIFICATE**  
according to Directive 94/9/EC, Annex III  
- Translation -
- [2] Equipment or Protective Systems Intended for use  
in Potentially Explosive Atmospheres, **Directive 94/9/EC**
- [3] EC-Type Examination Certificate Number: **IBExU04ATEX1175**
- [4] Equipment: Position indicator: type GEMÜ 1231
- [5] Manufacturer: GEMÜ® Apparatebau GmbH und Co. KG
- [6] Address: Fritz-Müller-Str. 6-8  
D-74653 Ingelfingen
- [7] The design of this equipment mentioned in [4] and any acceptable variation thereto is specified in the schedule to this EC-Type Examination Certificate.
- [8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of the equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive. The test results are recorded in test report IB-04-3-183 of 7 July 2004.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: EN 50014:1997 +A1 +A2, EN 50020:2002 and EN 50281-1-1:1998.
- [10] If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified under [17] in the schedule to this EC-Type Examination Certificate.
- [11] This EC-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.
- [12] The marking of the equipment mentioned in [4] shall include the following:



II 2G EEx Ib IIC/IB T6  
II 2D T 80 °C IP 65  
-20 °C ≤ T<sub>a</sub> ≤ +60 °C

IBExU Institut für Sicherheitstechnik GmbH  
Fuchsmühlenweg 7 - D-09599 Freiberg  
Phone: 0049 3731 3805-0 - Fax: 0049 3731 23650

Authorized for certifications  
- Explosion protection -

By order  
*Lösch*  
(Dr. Lösch)

- Seal -  
(Identification No. 0637)



Freiberg, 13 July 2004  
Certificates without signature and seal are not valid.  
Certificates may only be duplicated completely and unchanged.  
In case of dispute, the German text shall prevail.

Schedule

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An-Institut der TU Bergakademie Freiberg

- [13] **Schedule**
- [14] **to EC-TYPE EXAMINATION CERTIFICATE IBExU04ATEX1175**
- [15] **Description of the equipment**  
The position indicator serve to lifting detection on fixed gear shift controls and valve spindles. Two intrinsically inductive sensors are assembled into a dust-tight plastic enclosure and press by the axial spindle. The terminals are placed in the enclosure, the cable junction is made with cable glands.  
Depending on type of sensor may be defined temperature class, allowable ambient temperature and electric design data.  
Degree of protection IP 65 in accordance to EN 60529:1991+A1  
Ambient temperature -20 °C up to + 60 °C  
**Electric data:** for connection with intrinsically circuits type of protection EEx Ib IIC/IB with the certificated maximum values  
exemplary use of the followings sensors (in accordance to directive 94/9/EC):  
Sensor type NJ 1,5-6,5-15N C<sub>i</sub> = 30 nF L<sub>i</sub> = 50 µH  
with the maximum values:: U<sub>i</sub> < 16 V, I<sub>i</sub> < 25 mA, P<sub>i</sub> < 64 mW  
**Safety note**  
Degree of protection is reached only at proper use of checked seals, cable glands and blind stopper (IP65 in accordance to EN 60529:1991+A1).
- [16] **Test Report**  
The proof of explosion protection is detailed recorded in test report IB-04-3-183. The test documents are part of the test report and they are listed there.  
**Summary of the test results:**  
The position indicator fulfill the requirements of the type of protection Intrinsic Safety and Protection by Enclosure to an explosion-proof electrical apparatus for equipment group II and the categorie 2 GD.
- [17] **Special Conditions**  
-none-
- [18] **Essential Health and Safety Requirements**  
Confirmed by maintenance of norms (see [9]).

By order

*Lösch*  
(Dr. Lösch)

Freiberg, 13 July 2004

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For designs differing from 1231 000 ZA..2071101202 a separate declaration of conformity according to directive 94/9/EC is included.

## Further electrical position indicators for valves with linear actuator e.g. diaphragm and globe valves

### GEMÜ 1215 - Position indicator with microswitch



The GEMÜ 1215 single position indicator is suitable for linear actuated valves where it shows 'open' position only, or on GEMÜ type 667 where it shows 'closed' position only. The unit also has optical indication.

### GEMÜ 1234 and 1235/1236 - Self-learning position indicators



The GEMÜ 1234 and 1235/1236 electrical position indicators have an automated programme for setting open/closed. In addition the working voltage and the end positions are indicated by light emitting diodes.

### GEMÜ 1205 - Position indicator with microswitch acc. to ATEX



The GEMÜ 1205 electrical position indicator has one or two microswitches for end position feedback which are mechanically adjustable. The device is suitable for installation in Ex-proof applications acc. to ATEX. GEMÜ 1205 is suitable for mounting to linear actuators with a max. stroke of 70 mm.

### GEMÜ 1211 - Position indicator with proximity switch acc. to ATEX



The GEMÜ 1211 electrical position indicator has one or two proximity switches for end position feedback which are mechanically adjustable. The device is suitable for installation in Ex-proof applications acc. to ATEX. GEMÜ 1211 is suitable for mounting to linear actuators with a max. stroke of 70 mm.

### GEMÜ 1201 and 1230- Position indicators with microswitch



The GEMÜ 1201 and 1230 electrical position indicators have one or two microswitches for end position feedback which are mechanically adjustable. GEMÜ 1201 is suitable for mounting to linear actuators with a max. stroke of 70 mm. GEMÜ 1230 is suitable for mounting to linear actuators with a max. stroke of 20 mm.

### GEMÜ 1214 and 1232 - Position indicators with proximity switch



The GEMÜ 1214 and 1232 electrical position indicators have one or two proximity switches for end position feedback which are mechanically adjustable. GEMÜ 1214 is suitable for mounting to linear actuators with a max. stroke of 70 mm. GEMÜ 1232 is suitable for mounting to linear actuators with a max. stroke of 20 mm.

## Further electrical position indicators for valves with quarter turn actuator, e.g. butterfly and balls valves

### GEMÜ 1225 - Position indicator with microswitch



The GEMÜ 1225 electrical position indicator is suitable for mounting to quarter turn actuators of GEMÜ butterfly valves DN 15-50 mm in PVC-U, brass and stainless steel. In addition to electrical indication of end positions via switches the device has an optical LED position indication as standard.

For further electrical position indicators, accessories and other products please see our Product Range catalogue and Price List. Contact GEMÜ.



**GEMÜ**® VALVES, MEASUREMENT  
AND CONTROL SYSTEMS