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Technical alterations are reserved to us without prior announcement.

# Flow Sensors

## Technique & Application

### Ex area

#### Use in hazardous areas

The Ex measurement probes of the series 400 and the Ex-amplifiers SZAb... meet the basic health and safety requirements of Directive 2014/30/EC. Electrical boundary data, permissible temperature ranges as well as installation and connection instructions are specified in the operating instructions of Ex equipment. The permissible process pressure for the safe use of this devices in Ex atmospheres is 0.8...1.1 bar. The use of the measuring probes under different process pressures is the responsibility of the user. The specifications of the device must be observed. The permissible ambient temperature range is determined for each temperature class in the technical data. If there are additional regulations for the particular design regarding the installation, they must be observed as well.

#### Zone classification and categories

The frequency and duration of the occurrence of a hazardous atmosphere determines the zone classification.

#### Zone 0 / Category 1 (Gas)

Zone 0 is an area in which a potentially explosive atmosphere in the form of a mixture of air, combustible gases, vapours or fog continuously, for longer periods or frequently exists.

#### Zone 1 / Category 2 (Gas)

Zone 1 is an area in which a potentially explosive atmosphere as a mixture of air, combustible gases, vapours or fog can occasionally form in normal operation.

#### Zone 2 / Category 3 (Gas)

Zone 2 is an area in which a potentially explosive atmosphere as a mixture of air, combustible gases, vapours or fog can occur in normal operation.

#### Zone 20 / Category 1 (Dust)

Zone 20 is an area in which a potentially explosive atmosphere in the form of combustible particles suspended in air continuously, for longer periods or frequently exists.

#### Zone 21 / Category 2 (Dust)

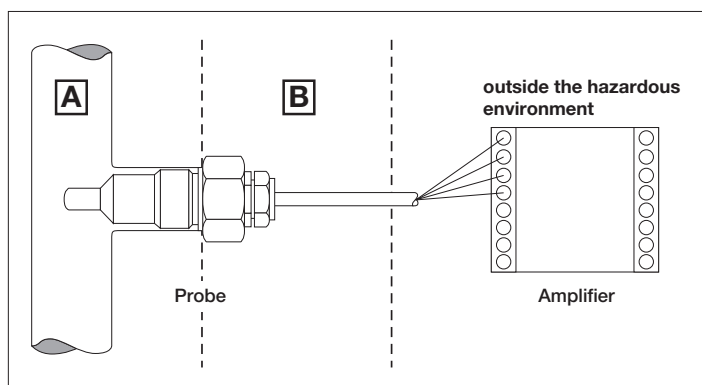
Zone 21 is an area in which a potentially explosive atmosphere in the form of combustible particles suspended in air can occasionally form in normal operation.

#### Zone 22 / Category 3 (Dust)

Zone 22 is an area in which a potentially explosive atmosphere in the form of combustible particles suspended in air normally does not exist or only exists for a short period in normal operation.

#### Ex marking

	A	B
II 1 G...	Zone 0	Zone 0
II 1/2 G...	Zone 0	Zone 1
II 2 G...	Zone 1	Zone 1
II 3 G...	Zone 2	Zone 2
II 1 D...	Zone 20	Zone 20
II 2 D...	Zone 21	Zone 21
II 3 D...	Zone 22	Zone 22



#### Specific conditions for use of flow sensor probes STS...

- Metallic process connection parts must be included in the local equipotential bonding.
- For equipment in the titanium housing, it must be ensured that there are no particles in the media flow that could cause an ignition hazard due to impact or friction.
- For EPL Ga/Gb applications and at risks by pendulum or vibration the respective parts of the flow sensor type STS... have to be secured effectively against these dangers.
- For EPL Ga/Gb applications the medium tangent materials of the flow sensor type STS have to be resistant to the media.

- For EPL Ga/Gb applications the whole device flow sensor type STS... shall be mounted in a way that allows an installation that results in a sufficient tight joint (IP 66 or IP 67) or a flameproof joint (IEC 60079-1) in the direction of the less endangered area.

A measurement probe may only be used in dust or gas protected hazardous areas, even when there are approvals for both areas. For use in hazardous areas for dusts the maximum surface temperature of the sensor is specified. For the hazardous area for gases the ambient temperatures of the temperature classes are given. On request, EGE delivers sensors with special dimensions and special materials as well as longer connection cables.



**Probes**  
**Compact models**  
**Amplifiers**





**Ex-Probe** | Device category 1G, 1G/2G und 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Design	G1/4	G1/2	G1/2	NPT1/2	G3/4
<b>Dimensions</b>					
Detection range [cm/s]	water 1...100 / oil 3...200				
Sensor length [mm]	25	31	48	40	48
Connection	plug	plug	plug	plug	plug
ID-No.	P11164	P11165	P11166	P11167	P11169
Type	STS 101 S	STS 102 S	STS 103 S	STS 104 S	STS 106 S
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20				
Certificate No.	TÜV 98 ATEX 1298 X				
Ex marking	Gas: $\text{Ex II 1 G Ex ia IIC T6...T3 Ga}$ $\text{Ex II 1/2 G Ex ia IIC T6...T3 Ga/Gb}$ Dust: $\text{Ex II 1 D Ex ia IIIC T125 °C Da}$				
Ambient temperature and medium temperature [°C]	Gas: T6: $-20 \leq T_a \leq +40$ T5: $-20 \leq T_a \leq +55$ T4: $-20 \leq T_a \leq +85$ T3: $-20 \leq T_a \leq +85$ Dust: $-20 \leq T_a \leq +85$				
Maximum values	$U_i = 13.65 \text{ V}$ / $I_i = 200 \text{ mA}$ / $P_i = 0.69 \text{ W}$ / $C_i = 0.27 \text{ nF}$ / $L_i = 1.30 \text{ }\mu\text{H}$				
Start-up time typ. [s]	8 (2...18)				
Reaction time typ. [s]	2 (1...13)				
Compressive strength [bar]	60				
Housing material	AISI 316 Ti • different materials on request				
Protection [EN 60529]	IP 67				
Connection	M12 connector				
Note:	Observe specific conditions for use in section "Technique and application" on page 1.13 for the connection to amplifier SZAb..., page 1.104-1.105				



**Ex-Probe** | Device category 1G, 1G/2G und 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Design	G1/4	G1/2	G1/2	NPT1/2	G3/4								
<b>Dimensions</b>													
Detection range [cm/s]	water 1...100 / oil 3...200												
Sensor length [mm]	25	31	48	40	48								
Connection	fixed cable	fixed cable	fixed cable	fixed cable	fixed cable								
ID-No.	P11140	P11141	P11142	P11143	P11168								
Type	STS 101 K	STS 102 K	STS 103 K	STS 104 K	STS 106 K								
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20												
Certificate No.	TÜV 98 ATEX 1298 X												
Ex marking	Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T125 °C Da												
Ambient temperature and medium temperature [°C]	Gas: T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85												
Maximum values	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH												
Start-up time typ. [s]	8 (2...18)												
Reaction time typ. [s]	2 (1...13)												
Compressive strength [bar]	60												
Housing material	AISI 316 Ti • different materials on request												
Protection [EN 60529]	IP 67												
Connection	2 m PUR-cable 4x0.25 mm <sup>2</sup>												
Note:	<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">                 Messfühler Probe             </div> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>3 BU</td><td>8</td></tr> <tr><td>1 BN</td><td>7</td></tr> <tr><td>2 WH</td><td>6</td></tr> <tr><td>4 BK</td><td>5</td></tr> </table> <div style="margin-left: 10px;">SZAb</div> </div> <p>Observe specific conditions for use in section "Technique and application" on page 1.13</p>					3 BU	8	1 BN	7	2 WH	6	4 BK	5
3 BU	8												
1 BN	7												
2 WH	6												
4 BK	5												



**Ex-Probe** | Device category 1G, 1G/2G und 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Extended temperature range  
up to 120 °C

Design	G1/4	G1/2	G1/2	NPT1/2	G3/4
<b>Dimensions</b>					
Detection range [cm/s]	water 1...100 / oil 3...200				
Sensor length [mm]	25	31	48	40	48
Connection	fixed cable	fixed cable	fixed cable	fixed cable	fixed cable
ID-No.	P11409	P11410	P11411	P11412	P11413
Type	STS 101 KH	STS 102 KH	STS 103 KH	STS 104 KH	STS 106 KH
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20				
Certificate No.	TÜV 98 ATEX 1298 X				
Ex marking	Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T125 °C Da				
Ambient temperature [°C] and medium temperature	Gas: T6: +10 ≤ Ta ≤ +40 T5: +10 ≤ Ta ≤ +55 T4: +10 ≤ Ta ≤ +90 T3: +10 ≤ Ta ≤ +120 Dust: -20 ≤ Ta ≤ +85				
Maximum values	Ui = 13.65 V / Ii = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH				
Start-up time typ. [s]	8 (2...18)				
Reaction time typ. [s]	2 (1...13)				
Compressive strength [bar]	60				
Housing material	AISI 316 Ti • different materials on request				
Protection [EN 60529]	IP 67				
Connection	2 m FEP-cable 4x0.25 mm <sup>2</sup>				



Observe specific conditions for use in section "Technique and application" on page 1.13

**Note:** for the connection to amplifier SZAb..., page 1.104-1.105



**Ex-Probe** | Device category 2G and 2D

**Ex-Device category 2G**  
Installation in Zone 1 (gas)

**Ex-Device category 2D**  
Installation in Zone 21 (dust)



Design	G1/4	G1/2	G1/2	NPT1/2	G3/4
<b>Dimensions</b>					
Detection range [cm/s]	water 1...100 / oil 3...200				
Sensor length [mm]	25	31	48	40	48
Connection	plug	plug	plug	plug	plug
ID-No.	P11170	P11171	P11172	P11173	P11175
Type	ST 101 S	ST 102 S	ST 103 S	ST 104 S	ST 106 S
Ex area of use	Gas: Zone 1 / Dust: Zone 21				
Certificate No.	TÜV 97 ATEX 1218				
Ex marking	Gas: <b>Ex</b> II 2 G Ex ib IIC T6 Gb Dust: <b>Ex</b> II 2 D Ex ib IIIC T125 °C Db				
Ambient temperature and medium temperature [°C]	Gas: T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85				
Maximum values	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH				
Start-up time typ. [s]	8 (2...18)				
Reaction time typ. [s]	2 (1...13)				
Compressive strength [bar]	60				
Housing material	AISI 316 Ti • different materials on request				
Protection [EN 60529]	IP 67				
Connection	M12 connector				
		Messfühler Probe			SZAb
Note:	(probes with cable length > 2 m are available on request) for the connection to amplifier SZAb..., page 1.104-1.105				





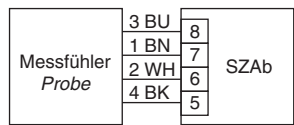
**Ex-Probe** | Device category 2G and 2D

**Ex**-Device category 2G  
Installation in Zone 1 (gas)

**Ex**-Device category 2D  
Installation in Zone 21 (dust)



Design	G1/4	G1/2	G1/2	NPT1/2	G3/4
<b>Dimensions</b>					
Detection range [cm/s]	water 1...100 / oil 3...200				
Sensor length [mm]	25	31	48	40	48
Connection	fixed cable	fixed cable	fixed cable	fixed cable	fixed cable
ID-No.	P11144	P11145	P11146	P11147	P11174
Type	ST 101 K	ST 102 K	ST 103 K	ST 104 K	ST 106 K
Ex area of use	Gas: Zone 1 / Dust: Zone 21				
Certificate No.	TÜV 97 ATEX 1218				
Ex marking	Gas: <b>Ex</b> II 2 G Ex ib IIC T6 Gb Dust: <b>Ex</b> II 2 D Ex ib IIIC T125 °C Db				
Ambient temperature and medium temperature [°C]	Gas: T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85				
Maximum values	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 μH				
Start-up time typ. [s]	8 (2...18)				
Reaction time typ. [s]	2 (1...13)				
Compressive strength [bar]	60				
Housing material	AISI 316 Ti • different materials on request				
Protection [EN 60529]	IP 67				
Connection	2 m PUR-cable 4x0.25 mm <sup>2</sup>				



(probes with cable length > 2 m are available on request)

**Note:** for the connection to amplifier SZAb..., page 1.104-1.105



**Ex-Probe** | Device category 2G and 2D

**Ex**-Device category 2G  
Installation in Zone 1 (gas)

**Ex**-Device category 2D  
Installation in Zone 21 (dust)

Extended temperature range  
up to 120 °C



Design	G1/4	G1/2	G1/2	NPT1/2	G3/4										
<b>Dimensions</b>															
Detection range [cm/s]	water 1...100 / oil 3...200														
Sensor length [mm]	25	31	48	40	48										
Connection	fixed cable	fixed cable	fixed cable	fixed cable	fixed cable										
ID-No.	P11176	P11178	P11180	P11182	P11184										
Type	ST 101 KH	ST 102 KH	ST 103 KH	ST 104 KH	ST 106 KH										
Ex area of use	Gas: Zone 1 / Dust: Zone 21														
Certificate No.	TÜV 97 ATEX 1218														
Ex marking	Gas: <b>Ex</b> II 2 G Ex ib IIC T6 Gb Dust: <b>Ex</b> II 2 D Ex ib IIIC T125 °C Db														
Ambient temperature and medium temperature [°C]	Gas: T6: +10 ≤ Ta ≤ +40 T5: +10 ≤ Ta ≤ +55 T4: +10 ≤ Ta ≤ +90 T3: +10 ≤ Ta ≤ +120 Dust: -20 ≤ Ta ≤ +85														
Maximum values	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH														
Start-up time typ. [s]	8 (2...18)														
Reaction time typ. [s]	2 (1...13)														
Compressive strength [bar]	60														
Housing material	AISI 316 Ti • different materials on request														
Protection [EN 60529]	IP 67														
Connection	2 m FEP-cable 4x0.25 mm <sup>2</sup>														
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="4" style="text-align: center;">Messfühler Probe</td> <td>3 BU</td> <td>8</td> <td rowspan="4" style="text-align: center;">SZAb</td> </tr> <tr> <td>1 BN</td> <td>7</td> </tr> <tr> <td>2 WH</td> <td>6</td> </tr> <tr> <td>4 BK</td> <td>5</td> </tr> </table>					Messfühler Probe	3 BU	8	SZAb	1 BN	7	2 WH	6	4 BK	5
Messfühler Probe	3 BU	8	SZAb												
	1 BN	7													
	2 WH	6													
	4 BK	5													
Note:	(probes with cable length > 2 m are available on request) for the connection to amplifier SZAb..., page 1.104-1.105														



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Design	G1/2				
<b>Dimensions</b>					
<b>Detection range</b>	[cm/s] water 1...100 / oil 3...200				
<b>Sensor length L</b>	48	48	80	110	140
<b>Connection</b>	fixed cable	plug	fixed cable	fixed cable	fixed cable
<b>ID-No.</b>	P11186	P11187	P11188	P11189	P11190
<b>Type</b>	STS 110 K	STS 110 S	STS 110 K-L80	STS 110 K-L110	STS 110 K-L140
<b>Ex area of use</b>	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20				
<b>Certificate No.</b>	TÜV 98 ATEX 1298 X				
<b>Ex marking</b>	Gas: $\text{Ex}$ II 1 G Ex ia IIC T6...T3 Ga $\text{Ex}$ II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: $\text{Ex}$ II 1 D Ex ia IIIC T125 °C Da				
<b>Ambient temperature and medium temperature</b>	Gas: T6: $-20 \leq T_a \leq +40$ T5: $-20 \leq T_a \leq +55$ T4: $-20 \leq T_a \leq +85$ T3: $-20 \leq T_a \leq +85$ Dust: $-20 \leq T_a \leq +85$				
<b>Maximum values</b>	$U_i = 13.65 \text{ V}$ / $I_i = 200 \text{ mA}$ / $P_i = 0.69 \text{ W}$ / $C_i = 0.27 \text{ nF}$ / $L_i = 1.30 \text{ }\mu\text{H}$				
<b>Start-up time typ.</b>	[s] 8 (2...18)				
<b>Reaction time typ.</b>	[s] 2 (1...13)				
<b>Compressive strength</b>	[bar] 60				
<b>Housing material</b>	AISI 316 Ti • different materials on request				
<b>Protection</b>	[EN 60529] IP 67				
<b>Connection</b>	...K: 2 m PUR-cable 4x0.25 mm <sup>2</sup> ...S: M12 connector				
<b>Note:</b>	  Observe specific conditions for use in section "Technique and application" on page 1.13				



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)

Extended temperature range up to 120 °C



Design	G1/2				
<b>Dimensions</b>					
Detection range	[cm/s]	water 1...100 / oil 3...200			
Sensor length L	[mm]	48	80	110	140
Connection		fixed cable	fixed cable	fixed cable	fixed cable
ID-No.		P11414	P11415	P11416	P11417
Type		STS 110 KH	STS 110 KH-L80	STS 110 KH-L110	STS 110 KH-L140
Ex area of use		Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20			
Certificate No.		TÜV 98 ATEX 1298 X			
Ex marking		Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T125 °C Da			
Ambient temperature and medium temperature	[°C]	Gas: T6: +10 ≤ Ta ≤ +40 T5: +10 ≤ Ta ≤ +55 T4: +10 ≤ Ta ≤ +90 T3: +10 ≤ Ta ≤ +120 Dust: -20 ≤ Ta ≤ +85			
Maximum values		Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH			
Start-up time typ.	[s]	8 (2...18)			
Reaction time typ.	[s]	2 (1...13)			
Compressive strength	[bar]	60			
Housing material		AISI 316 Ti • different materials on request			
Protection	[EN 60529]	IP 67			
Connection		2 m FEP-cable 4x0.25 mm <sup>2</sup>			
		Observe specific conditions for use in section "Technique and application" on page 1.13			
Note:		for the connection to amplifier SZAb..., page 1.104-1.105			



**Ex-Probe** | Device category 2G and 2D

**Ex**-Device category 2G  
Installation in Zone 1 (gas)

**Ex**-Device category 2D  
Installation in Zone 21 (dust)



Design	G1/2				
<b>Dimensions</b>					
<b>Detection range</b> [cm/s]	water 1...100 / oil 3...200				
<b>Sensor length L</b> [mm]	48	48	80	110	140
<b>Connection</b>	fixed cable	plug	fixed cable	fixed cable	fixed cable
<b>ID-No.</b>	P11192	P11193	P11194	P11195	P11196
<b>Type</b>	ST 110 K	ST 110 S	ST 110 K-L80	ST 110 K-L110	ST 110 K-L140
<b>Ex area of use</b>	Gas: Zone 1 / Dust: Zone 21				
<b>Certificate No.</b>	TÜV 97 ATEX 1218				
<b>Ex marking</b>	Gas: <b>Ex</b> II 2 G Ex ib IIC T6 Gb Dust: <b>Ex</b> II 2 D Ex ib IIIC T125 °C Db				
<b>Ambient temperature and medium temperature</b> [°C]	Gas: T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85				
<b>Maximum values</b>	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH				
<b>Start-up time typ.</b> [s]	8 (2...18)				
<b>Reaction time typ.</b> [s]	2 (1...13)				
<b>Compressive strength</b> [bar]	60				
<b>Housing material</b>	AISI 316 Ti • different materials on request				
<b>Protection</b> [EN 60529]	cable ...K: IP 67 / plug ...S: IP 67				
<b>Connection</b>	...K: 2 m PUR-cable 4x0.25 mm² / ...S: M12 connector				
<b>Note:</b>	(probes with cable length > 2 m are available on request) for the connection to amplifier SZAb..., page 1.104-1.105				



**Ex-Probe** | Device category 2G and 2D

**Ex**-Device category 2G  
Installation in Zone 1 (gas)

**Ex**-Device category 2D  
Installation in Zone 21 (dust)

Extended temperature range  
up to 120 °C



Design		G1/2													
<b>Dimensions</b>															
Detection range	[cm/s]	water 1...100 / oil 3...200													
Sensor length L	[mm]	48	80	110	140										
Connection		fixed cable	fixed cable	fixed cable	fixed cable										
ID-No.		P11198	P11200	P11201	P11202										
Type		ST 110 KH	ST 110 KH-L80	ST 110 KH-L110	ST 110 KH-L140										
Ex area of use		Gas: Zone 1 / Dust: Zone 21													
Certificate No.		TÜV 97 ATEX 1218													
Ex marking		Gas:	Ex II 2 G Ex ib IIC T6 Gb												
		Dust:	Ex II 2 D Ex ib IIIC T125 °C Db												
Ambient temperature and medium temperature	[°C]	Gas:	T6: +10 ≤ Ta ≤ +40 T5: +10 ≤ Ta ≤ +55 T4: +10 ≤ Ta ≤ +90 T3: +10 ≤ Ta ≤ +120												
		Dust:	-20 ≤ Ta ≤ +85												
Maximum values		Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH													
Start-up time typ.	[s]	8 (2...18)													
Reaction time typ.	[s]	2 (1...13)													
Compressive strength	[bar]	60													
Housing material		AISI 316 Ti • different materials on request													
Protection	[EN 60529]	IP 67													
Connection		2 m FEP-cable 4x0.25 mm²													
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="4" style="padding: 5px;">Messfühler Probe</td> <td style="padding: 2px;">3 BU</td> <td style="padding: 2px;">8</td> <td rowspan="4" style="padding: 5px;">SZAb</td> </tr> <tr> <td style="padding: 2px;">1 BN</td> <td style="padding: 2px;">7</td> </tr> <tr> <td style="padding: 2px;">2 WH</td> <td style="padding: 2px;">6</td> </tr> <tr> <td style="padding: 2px;">4 BK</td> <td style="padding: 2px;">5</td> </tr> </table>				Messfühler Probe	3 BU	8	SZAb	1 BN	7	2 WH	6	4 BK	5
Messfühler Probe	3 BU	8	SZAb												
	1 BN	7													
	2 WH	6													
	4 BK	5													
		(probes with cable length > 2 m are available on request)													
Note:		for the connection to amplifier SZAb..., page 1.104-1.105													



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

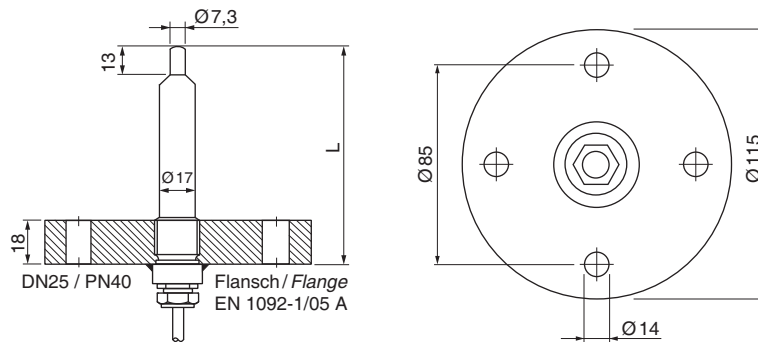
**Ex**-Device category 1D  
Installation in Zone 20 (dust)

With welded standard flange



**Design** **DN25 / PN40 (EN 1092-1/05 A)**

**Dimensions**



<b>Detection range</b> [cm/s]	water 1...100 / oil 3...200		
<b>Sensor length L</b> [mm]	80	110	140
<b>Connection</b>	fixed cable	fixed cable	fixed cable
<b>ID-No.</b>	P11191	P11148	P11149
<b>Type</b>	STS 111 K-L80	STS 111 K-L110	STS 111 K-L140
<b>Ex area of use</b>	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20		
<b>Certificate No.</b>	TÜV 98 ATEX 1298 X		
<b>Ex marking</b>	Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T125 °C Da		
<b>Ambient temperature and medium temperature</b> [°C]	Gas: T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85		
<b>Maximum values</b>	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH		
<b>Start-up time typ.</b> [s]	8 (2...18)		
<b>Reaction time typ.</b> [s]	2 (1...13)		
<b>Compressive strength</b> [bar]	probe: 60 / flange: PN40		
<b>Housing material</b>	AISI 316 Ti • different materials on request		
<b>Protection</b> [EN 60529]	IP 67		
<b>Connection</b>	2 m PUR-cable 4x0.25 mm <sup>2</sup>		



Observe specific conditions for use in section "Technique and application" on page 1.13

**Note:** for the connection to amplifier SZAb..., page 1.104-1.105



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

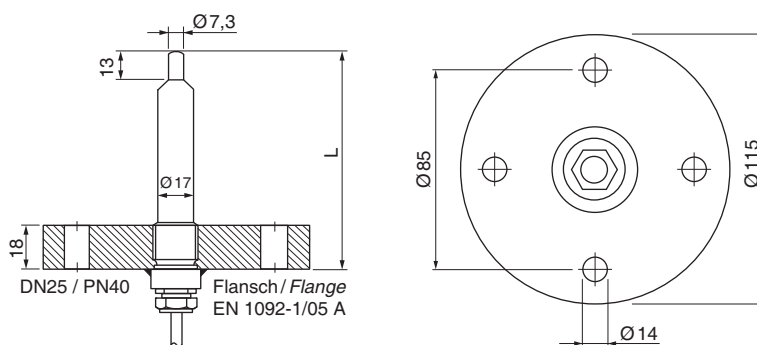
**Ex**-Device category 1D  
Installation in Zone 20 (dust)

With welded standard flange  
Extended temperature range up to 120 °C



**Design** **DN25 / PN40 (EN 1092-1/05 A)**

**Dimensions**



Detection range	[cm/s]	water 1...100 / oil 3...200		
Sensor length L	[mm]	80	110	140
Connection		fixed cable	fixed cable	fixed cable
ID-No.		P11418	P11419	P11420
Type		STS 111 KH-L80	STS 111 KH-L110	STS 111 KH-L140
Ex area of use		Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20		
Certificate No.		TÜV 98 ATEX 1298 X		
Ex marking		Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T125 °C Da		
Ambient temperature and medium temperature	[°C]	Gas: T6: +10 ≤ Ta ≤ +40 T5: +10 ≤ Ta ≤ +55 T4: +10 ≤ Ta ≤ +90 T3: +10 ≤ Ta ≤ +120 Dust: -20 ≤ Ta ≤ +85		
Maximum values		Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH		
Start-up time typ.	[s]	8 (2...18)		
Reaction time typ.	[s]	2 (1...13)		
Compressive strength	[bar]	probe: 60 / flange: PN40		
Housing material		AISI 316 Ti • different materials on request		
Protection	[EN 60529]	IP 67		
Connection		2 m FEP-cable 4x0.25 mm <sup>2</sup>		



Observe specific conditions for use in section "Technique and application" on page 1.13

**Note:** for the connection to amplifier SZAb..., page 1.104-1.105





**Ex-Probe** | Device category 2G and 2D

**Ex**-Device category 2G  
Installation in Zone 1 (gas)

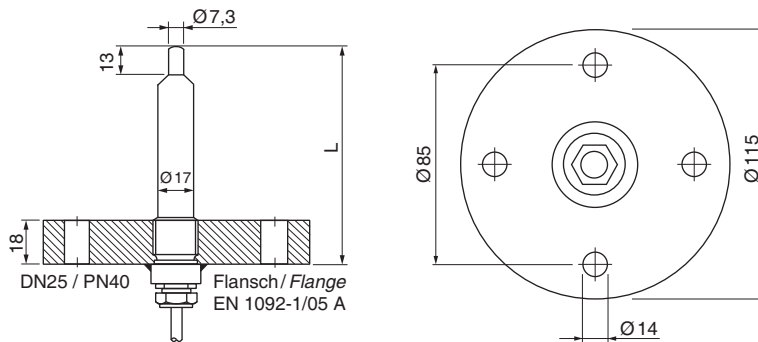
**Ex**-Device category 2D  
Installation in Zone 21 (dust)

With welded standard flange



**Design** **DN25 / PN40 (EN 1092-1/05 A)**

**Dimensions**



<b>Detection range</b>	[cm/s]	water 1...100 / oil 3...200		
<b>Sensor length L</b>	[mm]	80	110	140
<b>Connection</b>		fixed cable	fixed cable	fixed cable
<b>ID-No.</b>		P11197	P11150	P11151
<b>Type</b>		ST 111 K-L80	ST 111 K-L110	ST 111 K-L140
<b>Ex area of use</b>		Gas: Zone 1 / Dust: Zone 21		
<b>Certificate No.</b>		TÜV 97 ATEX 1218		
<b>Ex marking</b>		Gas:	Ex II 2 G Ex ib IIC T6 Gb	
		Dust:	Ex II 2 D Ex ib IIIC T125 °C Db	
<b>Ambient temperature and medium temperature</b>	[°C]	Gas:	T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85	
		Dust:	-20 ≤ Ta ≤ +85	
<b>Maximum values</b>		Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH		
<b>Start-up time typ.</b>	[s]	8 (2...18)		
<b>Reaction time typ.</b>	[s]	2 (1...13)		
<b>Compressive strength</b>	[bar]	60		
<b>Housing material</b>		AISI 316 Ti • different materials on request		
<b>Protection</b>	[EN 60529]	IP 67		
<b>Connection</b>		2 m PUR-cable 4x0.25 mm²		



(probes with cable length > 2 m and different flanges are available on request)

**Note:** for the connection to amplifier SZAb..., page 1.104-1.105



**Ex-Probe** | Device category 2G and 2D

**Ex-Device category 2G**  
Installation in Zone 1 (gas)

**Ex-Device category 2D**  
Installation in Zone 21 (dust)

With welded standard flange

Extended temperature range up to 120 °C



Design	DN25 / PN40 (EN 1092-1/05 A)															
<b>Dimensions</b>																
<b>Detection range</b> [cm/s]	water 1...100 / oil 3...200															
<b>Sensor length L</b> [mm]	80	110	140													
<b>Connection</b>	fixed cable	fixed cable	fixed cable													
<b>ID-No.</b>	P11203	P11204	P11205													
<b>Type</b>	ST 111 KH-L80	ST 111 KH-L110	ST 111 KH-L140													
<b>Ex area of use</b>	Gas: Zone 1 / Dust: Zone 21															
<b>Certificate No.</b>	TÜV 97 ATEX 1218															
<b>Ex marking</b>	Gas: <b>Ex</b> II 2 G Ex ib IIC T6 Gb Dust: <b>Ex</b> II 2 D Ex ib IIIC T125 °C Db															
<b>Ambient temperature and medium temperature</b> [°C]	Gas: T6: +10 ≤ Ta ≤ +40 T5: +10 ≤ Ta ≤ +55 T4: +10 ≤ Ta ≤ +90 T3: +10 ≤ Ta ≤ +120 Dust: -20 ≤ Ta ≤ +85															
<b>Maximum values</b>	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH															
<b>Start-up time typ.</b> [s]	8 (2...18)															
<b>Reaction time typ.</b> [s]	2 (1...13)															
<b>Compressive strength</b> [bar]	60															
<b>Housing material</b>	AISI 316 Ti • different materials on request															
<b>Protection</b> [EN 60529]	IP 67															
<b>Connection</b>	2 m FEP-cable 4x0.25 mm <sup>2</sup>															
	<table border="1" style="margin: auto;"> <tr> <td rowspan="5" style="padding: 5px;">Messfühler Probe</td> <td style="padding: 2px;">3 BU</td> <td style="padding: 2px;">8</td> <td rowspan="5" style="padding: 5px;">SZAb</td> </tr> <tr> <td style="padding: 2px;">1 BN</td> <td style="padding: 2px;">7</td> </tr> <tr> <td style="padding: 2px;">2 WH</td> <td style="padding: 2px;">6</td> </tr> <tr> <td style="padding: 2px;">4 BK</td> <td style="padding: 2px;">5</td> </tr> <tr> <td colspan="2"></td> <td></td> </tr> </table>			Messfühler Probe	3 BU	8	SZAb	1 BN	7	2 WH	6	4 BK	5			
Messfühler Probe	3 BU	8	SZAb													
	1 BN	7														
	2 WH	6														
	4 BK	5														
	(probes with cable length > 2 m and different flanges are available on request)															
<b>Note:</b>	for the connection to amplifier SZAb..., page 1.104-1.105															



**Ex-Probe** | Device category 1G, 1G/2G and 1D

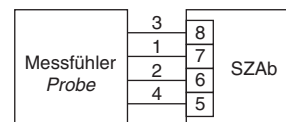
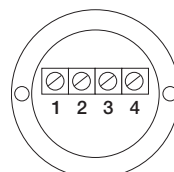
**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Design	G3/4	NPT3/4
<b>Dimensions</b>		
Detection range [cm/s]	water 1...100 / oil 3...200	water 1...100 / oil 3...200
Sensor length [mm]	68	68
Connection	terminal clamps	terminal clamps
ID-No.	P11268	P11269
Type	STSEX 01	STSEX 02
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20	
Certificate No.	TÜV 98 ATEX 1298 X	
Ex marking	Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T125 °C Da	
Umgebungstemperatur und Mediumtemperatur [°C]	Gas: T6: -20 ≤ Ta ≤ +40 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +85 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85	
Maximum values	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH	
Start-up time typ. [s]	8 (2...18)	
Reaction time typ. [s]	2 (1...13)	
Cable gland [mm]	clamping range 5.5...8.5	
Housing material	AISI 316 Ti • different materials on request	
Protection [EN 60529]	IP 67	
Connection cable	2 m PVC 4x0.75 mm <sup>2</sup> (number 1-4)	



Observe specific conditions for use in section "Technique and application" on page 1.13

**Note:** for the connection to amplifier SZAb..., page 1.104-1.105



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Design	G1/2	
<b>Dimensions</b>		
Detection range [m/s]	air 2...25	
Sensor length [mm]	65	
Connection	fixed cable	plug
ID-No.	P11152	P11206
Type	STS 212 K	
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20	
Certificate No.	TÜV 98 ATEX 1298 X	
Ex marking	Gas: <b>Ex</b> II 1 G Ex ia IIC T4...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T4...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T145 °C Da	
Ambient temperature and medium temperature [°C]	Gas: T4: -20 ≤ Ta ≤ +70 T3: -20 ≤ Ta ≤ +85 Dust: -20 ≤ Ta ≤ +85	
Maximum values	Ui = 13.65 V / li = 200 mA / Pi = 0.69 W / Ci = 0.27 nF / Li = 1.30 µH	
Start-up time typ. [s]	10...40	
Reaction time typ. [s]	5 (2...30)	
Compressive strength [bar]	10	
Housing material	AISI 316 Ti • different materials on request	
Protection [EN 60529]	IP 67	
Connection	2 m PUR-cable 4x0.25 mm <sup>2</sup>	M12 connector
<div style="display: flex; align-items: center;"> <div> <p>1: BN</p> <p>2: WH</p> <p>3: BU</p> <p>4: BK</p> </div> </div>		
<b>Note:</b>	Observe specific conditions for use in section "Technique and application" on page 1.13 for the connection to amplifier SZAb..., page 1.104-1.105	



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Design	G1/2	
<b>Dimensions</b>		
<b>Detection range</b> [m/s]	air 2...25	
<b>Sensor length</b> [mm]	48	
<b>Connection</b>	fixed cable	
<b>ID-No.</b>	P11153	
<b>Type</b>	STS 215 K	
<b>Ex area of use</b>	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20	
<b>Certificate No.</b>	TÜV 98 ATEX 1298 X	
<b>Ex marking</b>	Gas: $\text{Ex}$ II 1 G Ex ia IIC T6...T3 Ga $\text{Ex}$ II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: $\text{Ex}$ II 1 D Ex ia IIIC T130 °C Da	
<b>Ambient temperature and medium temperature</b> [°C]	Gas: T6: $-20 \leq T_a \leq +35$ T5: $-20 \leq T_a \leq +50$ T4: $-20 \leq T_a \leq +85$ T3: $-20 \leq T_a \leq +85$ Dust: $-20 \leq T_a \leq +85$	
<b>Maximum values</b>	$U_i = 13.65 \text{ V}$ / $I_i = 200 \text{ mA}$ / $P_i = 0.69 \text{ W}$ / $C_i = 0.27 \text{ nF}$ / $L_i = 1.30 \text{ }\mu\text{H}$	
<b>Start-up time typ.</b> [s]	5...20	
<b>Reaction time typ.</b> [s]	3 (2...30)	
<b>Compressive strength</b> [bar]	10	
<b>Housing material</b>	AISI 316 Ti • different materials on request	
<b>Protection</b> [EN 60529]	IP 67	
<b>Connection</b>	2 m PUR-cable 4x0.25 mm <sup>2</sup>	M12 connector
<b>Note:</b>	Observe specific conditions for use in section "Technique and application" on page 1.13 for the connection to amplifier SZAb..., page 1.104-1.105	



**Ex-Probe** | Device category 1G, 1G/2G and 1D

**Ex**-Device category 1G  
Installation in Zone 0 (gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (gas)

**Ex**-Device category 1D  
Installation in Zone 20 (dust)



Extended temperature range up to 120 °C

Design	G1/2	
<b>Dimensions</b>		
Detection range [m/s]	air 2...25	
Sensor length [mm]	48	
Connection	fixed cable	
ID-No.	P11212	
Type	STS 215 KH	
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1 / Dust: Zone 20	
Certificate No.	TÜV 98 ATEX 1298 X	
Ex marking	Gas: <b>Ex</b> II 1 G Ex ia IIC T6...T3 Ga <b>Ex</b> II 1/2 G Ex ia IIC T6...T3 Ga/Gb Dust: <b>Ex</b> II 1 D Ex ia IIIC T130 °C Da	
Ambient temperature and medium temperature [°C]	Gas: T6: - 20 ≤ Ta ≤ +35 T5: - 20 ≤ Ta ≤ +50 T4: - 20 ≤ Ta ≤ +85 T3: - 20 ≤ Ta ≤ +120 Dust: - 20 ≤ Ta ≤ +85	
Maximum values	U <sub>i</sub> = 13.65 V / I <sub>i</sub> = 200 mA / P <sub>i</sub> = 0.69 W / C <sub>i</sub> = 0.27 nF / L <sub>i</sub> = 1.30 μH	
Start-up time typ. [s]	5...20	
Reaction time typ. [s]	3 (2...30)	
Compressive strength [bar]	10	
Housing material	AISI 316 Ti • different materials on request	
Protection [EN 60529]	IP 67	
Connection	2 m FEP-cable 4x0.25 mm <sup>2</sup>	
Note:	Observe specific conditions for use in section "Technique and application" on page 1.13 for the connection to amplifier SZAb..., page 1.104-1.105	



**Ex**-Amplifiers AC/DC | Relay

Ex II (1) G [Ex ia Ga] IIC  
 Ex II (1) D [Ex ia Da] IIIC

AC 230 V • AC 115 V • DC 24 V

Relay output

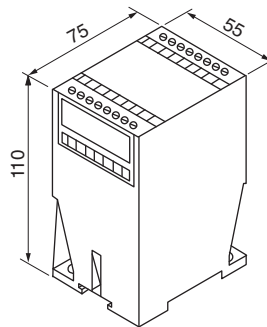
Cable break and short circuit monitoring

Turn off delay



**Design** **SZAb 400 EX...**

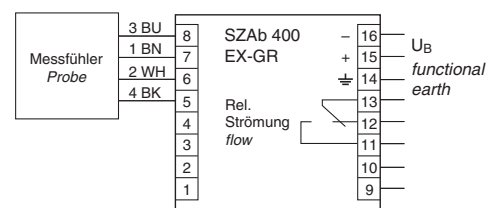
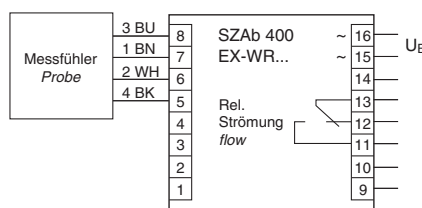
**Dimensions**



ID-No.	P11400	P11399	P11398
Type	SZAb 400 EX-WR230	SZAb 400 EX-WR115	SZAb 400 EX-GR
Output			
Supply voltage [V]	230 AC ±10%	115 AC ±10%	24 DC ±15%
Ex marking	Gas: Ex II (1) G [Ex ia Ga] IIC		Dust: Ex II (1) D [Ex ia Da] IIIC
Certificate No.	EPS 19 ATEX 1 009		IECEx EPS 19.0001
Maximum values	U <sub>o</sub> = 13.65 V I <sub>o</sub> = 200 mA P <sub>o</sub> = 683 mW IIC: C <sub>o</sub> = 0.35 µF; L <sub>o</sub> = 1.1 mH IIB: C <sub>o</sub> = 1.8 µF; L <sub>o</sub> = 6.2 mH IIA: C <sub>o</sub> = 5.7 µF; L <sub>o</sub> = 11.0 mH		
Turn off delay [s]	0...25		
Output	relay / change-over		
Switching voltage [V]	250 AC / 60 DC / 24 DC		
Switching current [A]	4 AC / 0.8 DC / 4 DC		
Switching power	cos φ >0,7 / L/R <200 ms		
Ambient temperature [°C]	-20 ≤ T <sub>a</sub> ≤ +60		
Protection [EN 60529]	IP 20		
Connection	terminal screws		

**Note:**

The Ex-amplifier must be mounted outside hazardous areas (gas or dust).





# Ex -Amplifier DC | Analog

Ex II (1) G [Ex ia Ga] IIC  
 Ex II (1) D [Ex ia Da] IIIC

DC 24 V

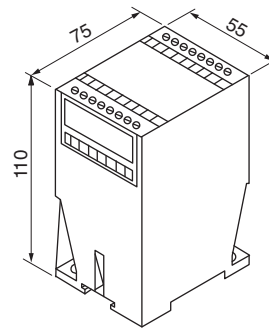
Analog output

Cable break and short circuit monitoring



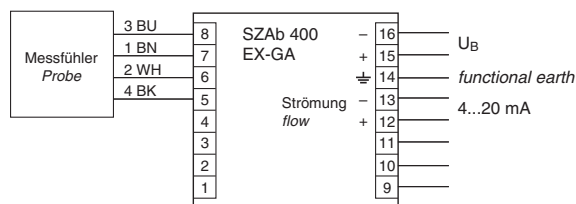
## Design SZAb 400 EX-GA

### Dimensions



ID-No.	P11401	
Type	SZAb 400 EX-GA	
Output	 4...20 mA	
Supply voltage [V]	24 DC ±15%	
Ex marking	Gas: Ex II (1) G [Ex ia Ga] IIC	Staub: Ex II (1) D [Ex ia Da] IIIC
Certificate No.	EPS 19 ATEX 1 009	IECEx EPS 19.0001
Maximum values	U <sub>o</sub> = 13.65 V I <sub>o</sub> = 200 mA P <sub>o</sub> = 683 mW IIC: C <sub>o</sub> = 0.35 µF; L <sub>o</sub> = 1.1 mH IIB: C <sub>o</sub> = 1.8 µF; L <sub>o</sub> = 6.2 mH IIA: C <sub>o</sub> = 5.7 µF; L <sub>o</sub> = 11.0 mH	
Output	analog, non linear	
Current output [mA]	4...20	
Load R <sub>L</sub> [Ω]	0...500	
Ambient temperature [°C]	-20 ≤ T <sub>a</sub> ≤ +60	
Protection [EN 60529]	IP 20	
Connection	terminal screws	

Note:  
 The Ex-amplifier must be mounted outside hazardous areas (gas or dust).







## Ex-Compact model | Device category 3G and 3D

Ex-Device category 3G  
Installation in Zone 2 (gas)

Ex-Device category 3D  
Installation in Zone 22 (dust)

DC 24 V

PNP output



Design	M18x1	
<b>Dimensions</b>		
Detection range	[m/s]	gaseous media 0.5...20
Sensor length L	[mm]	80
Output		 PNP
ID-No.		<b>P11404</b>
Type		LC 518 GSP-Ex22
Ex area of use		Gas: Zone 2 / Dust: Zone 22
Certificate of conformity		EGE 20.0010 X
Ex marking	Gas:	Ex II 3 G Ex ic mc IIC T4...T3 Gc
	Dust:	Ex II 3 D Ex ic mc IIIC T135 °C Dc
Ambient temperature and medium temperature	Gas:	T3, T4: -10 ≤ Ta ≤ +60
	Dust:	-10 ≤ Ta ≤ +60
Supply voltage	[V]	24 DC ±10%
Current consumption	[mA]	≤ 35
Switching current	[mA]	≤ 200
Start-up time typ.	[s]	20
Reaction time typ.	[s]	< 5
Compressive strength	[bar]	1
Housing material		AISI 316 Ti, PBT-GF30, PUR, ceramic Al <sub>2</sub> O <sub>3</sub>
Display flow		three-colour-illuminated dot red/yellow/green
Protection	[EN 60529]	IP 67
Connection		2 m PUR-cable 3x0.5 mm <sup>2</sup>



## Ex-Compact model | Device category 3G and 3D

Ex-Device category 3G  
Installation in Zone 2 (gas)

Ex-Device category 3D  
Installation in Zone 22 (dust)

DC 24 V

Analog output



Design	M18x1
<b>Dimensions</b>	
Detection range [m/s]	gaseous media 0.5...20
Sensor length L [mm]	80
Output	 4...20 mA
ID-No.	P11421
Type	LC 518 GA-Ex22
Ex area of use	Gas: Zone 2 / Dust: Zone 22
Certificate of conformity	EGE 20.0010 X
Ex marking	Gas: Ex II 3 G Ex ic mc IIC T4...T3 Gc Dust: Ex II 3 D Ex ic mc IIIC T135 °C Dc
Ambient temperature and medium temperature [°C]	Gas: T3, T4: -10 ≤ Ta ≤ +60 Dust: -10 ≤ Ta ≤ +60
Supply voltage [V]	24 DC ±10%
Current consumption [mA]	≤ 35
Current output [mA]	4...20
Start-up time typ. [s]	20
Reaction time typ. [s]	< 5
Compressive strength [bar]	1
Housing material	AISI 316 Ti, PBT-GF30, PUR, ceramic Al <sub>2</sub> O <sub>3</sub>
Display flow	two-colour-illuminated dot red/green
Protection [EN 60529]	IP 67
Connection	2 m PUR-cable 3x0.5 mm <sup>2</sup>



**Ex-Compact model** | Device category 3G and 3D

**Ex-Device category 3G**  
Installation in Zone 2 (gas)

**Ex-Device category 3D**  
Installation in Zone 22 (dust)

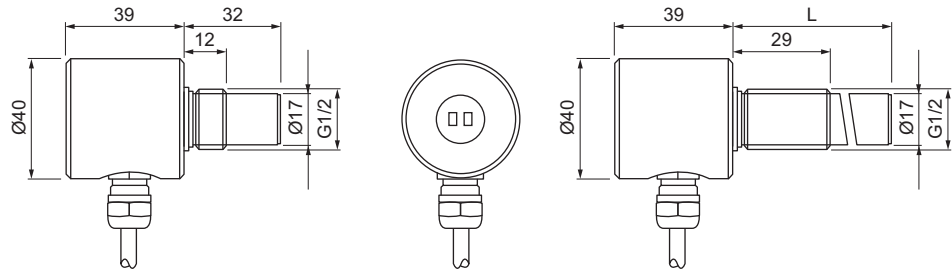
DC 24 V

PNP output

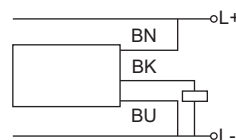


**Design** **G1/2**

*Dimensions*



Detection range	[m/s]	gaseous media 0.5...20			
Sensor length L	[mm]	32	49	101	151
Output		 PNP			
ID-No.		<b>P11405</b>	<b>P11406</b>	<b>P11407</b>	<b>P11408</b>
Type		LC 521 GSP-Ex22	LC 521/1 GSP-Ex22	LC 521/2 GSP-Ex22	LC 521/3 GSP-Ex22
Ex area of use		Gas: Zone 2 / Dust: Zone 22			
Certificate of conformity		EGE 20.0010 X			
Ex marking		Gas:	II 3 G Ex ic mc IIC T4...T3 Gc		
		Dust:	II 3 D Ex ic mc IIIC T135 °C Dc		
Ambient temperature and medium temperature	[°C]	Gas:	T3, T4: -10 ≤ Ta ≤ +60		
		Dust:	-10 ≤ Ta ≤ +60		
Supply voltage	[V]	24 DC ±10%			
Current consumption	[mA]	≤ 35			
Switching current	[mA]	≤ 200			
Start-up time typ.	[s]	20			
Reaction time typ.	[s]	< 5			
Compressive strength	[bar]	1			
Housing material		AISI 316 Ti, PBT-GF30, PUR, ceramic AL <sub>2</sub> O <sub>3</sub>			
Display flow		three-colour-illuminated dot red/yellow/green			
Protection	[EN 60529]	IP 67			
Connection		2 m PUR-cable 3x0.5 mm <sup>2</sup>			





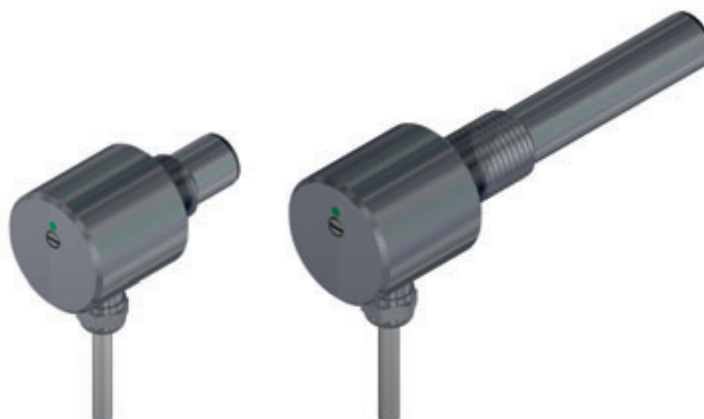
**Ex**-Compact model | Device category 3G and 3D

**Ex**-Device category 3G  
Installation in Zone 2 (gas)

**Ex**-Device category 3D  
Installation in Zone 22 (dust)

DC 24 V

Analog output



Design	G1/2			
<b>Dimensions</b>				
Detection range [m/s]	gaseous media 0.5...20			
Sensor length L [mm]	32	49	101	151
Output	 4...20 mA			
ID-No.	P11422	P11423	P11424	P11425
Type	LC 521 GA-Ex22	LC 521/1 GA-Ex22	LC 521/2 GA-Ex22	LC 521/3 GA-Ex22
Ex area of use	Gas: Zone 2 / Dust: Zone 22			
Certificate of conformity	EGE 20.0010 X			
Ex marking	Gas:	Ex II 3 G Ex ic mc IIC T4...T3 Gc		
	Dust:	Ex II 3 D Ex ic mc IIIC T135 °C Dc		
Ambient temperature and medium temperature [°C]	Gas:	T3, T4: -10 ≤ Ta ≤ +60		
	Dust:	-10 ≤ Ta ≤ +60		
Supply voltage [V]	24 DC ±10%			
Current consumption [mA]	≤ 35			
Current output [mA]	4...20			
Start-up time typ. [s]	20			
Reaction time typ. [s]	< 5			
Compressive strength [bar]	1			
Housing material	AISI 316 Ti, PBT-GF30, PUR, ceramic Al <sub>2</sub> O <sub>3</sub>			
Display flow	two-colour-illuminated dot red/green			
Protection [EN 60529]	IP 67			
Connection	2 m PUR-cable 3x0.5 mm <sup>2</sup>			



**Ex**-Junction box | Device category 2G and 2D

For the connection of supply and signal lines in explosion hazardous areas of zone 1 and zone 21

Clamp fastening



Design	GK E...		
Dimensions			
ID-No.	Z01222	Z01232	Z01246
Type	GK E 060 K M	GK E 080 K M	GK E 100 K M
Number of clamps	4	2 x 4	3 x 4
Dimensions (BxTxH) [mm]	58x64x36	98x64x36	150x64x36
Ignition protection type	Gas: increased safety		
Ex marking	Dust: protection through enclosure Gas: $\text{Ex II 2G Ex eb IIC T6 Gb}$ Dust: $\text{Ex II 2D Ex tb IIIC T80 °C Db}$		
Certificate No.	TÜV 16 ATEX 152979 X		
Ambient temperature [°C]	Gas: T3, T4, T5, T6: $-20 \leq T_a \leq +75$ Dust: $-20 \leq T_a \leq +75$		
Voltage [V]	Um $\leq 275$		
Current [A]	Im $\leq 2$		
Type of terminal	terminal with no screws		
Rated cross-section	„e+t“ single wire: 0.20...2.5 mm <sup>2</sup> / flexible: 0.20...2.5 mm <sup>2</sup> flexible: 0.20...2.5 mm <sup>2</sup> (with wire end ferrule)		
Clamping range of cable gland [mm]	5.0...10.0 2.0...6.0 (with reduction insert RDE 16)		
Material	housing: aluminium powder coated / cable gland: Br-Ni / PA / EPDM		
Protection [EN 60529]	IP 65		
Connection	terminal compartment		

Note:

The Ex-junction box type GK E... is designed for the connection of non-intrinsically safe circuits in explosion-hazardous areas of zone 1 and zone 21. Outside of the housing, the lines must be installed permanently; further provisions must be observed if required.

Additional housings, additional terminals and plastic cable glands are available on request.

Accessories	reduction insert RDE 16 (part of delivery)
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**Ex-Junction box** | Device category 2G and 2D

For the connection of supply and signal lines in explosion hazardous areas of zone 1 and zone 21

Clamp fastening



Design	GK I...		
<b>Dimensions</b>			
ID-No.	Z01224	Z01234	Z01248
Type	GK I 060 K M	GK I 080 K M	GK I 100 K M
Number of clamps	4	2 x 4	3 x 4
Dimensions (BxTxH) [mm]	58x64x36	98x64x36	150x64x36
Ignition protection type	Gas: intrinsic safety		
Ex marking	Dust: intrinsic safety		
	Gas: Ex II 2G Ex ib/ia IIC T6 Gb		
Certificate No.	Dust: Ex II 2D Ex ib/ia IIIC T80 °C Db		
	TÜV 16 ATEX 152979 X		
Ambient temperature [°C]	Gas: T3, T4, T5, T6: -20 ≤ Ta ≤ +75		
Voltage [V]	Dust: -20 ≤ Ta ≤ +75		
Current [A]	Ui = 90		
Type of terminal	li = 2.0		
Rated cross-section	terminal with no screws		
Clamping range of cable gland [mm]	„I“ single wire: 0.08...2.5 mm <sup>2</sup> / flexible: 0.08...2.5 mm <sup>2</sup>		
	flexible: 0.08...2.5 mm <sup>2</sup> (with wire end ferrule)		
Material	5.0...10.0		
Protection [EN 60529]	2.0...6.0 (with reduction insert RDE 16)		
Connection	housing: aluminium powder coated / cable gland: Br-Ni / PA / EPDM		
	IP 65		
	terminal compartment		

Note:

The Ex-junction box type GK I... is designed for the connection of intrinsically safe circuits in explosion-hazardous areas of zone 1 and zone 21. Outside of the housing, the lines must be installed permanently; further provisions must be observed if required.

Additional housings, additional terminals and plastic cable glands are available on request.

Accessories	reduction insert RDE 16 (part of delivery)
-------------	--------------------------------------------



**Ex**-Junction box | Device category 2G and 2D

For the connection of supply and signal lines in explosion hazardous areas of zone 1 and zone 21

Clamp fastening



Design	GK EI...	GK EEI...	GK EII...
Dimensions			
ID-No.	Z01236	Z01250	Z01252
Type	GK EI 080 K M	GK EEI 100 K M	GK EII 100 K M
Number of clamps	4 / 4	4 + 4 / 4	4 / 4 + 4
Dimensions (BxTxH) [mm]	98x64x36	150x64x36	150x64x36
Ignition protection type	Gas: increased safety / intrinsic safety Dust: protection through enclosure / intrinsic safety		
Ex marking	Gas: $\text{Ex}$ II 2G Ex eb ib/ia IIC T6 Gb Dust: $\text{Ex}$ II 2D Ex tb ib/ia IIIC T 80 °C Db		
Certificate No.	TÜV 16 ATEX 152979 X		
Ambient temperature [°C]	Gas: T3, T4, T5, T6: $-20 \leq T_a \leq +75$ Dust: $-20 \leq T_a \leq +75$		
Voltage [V]	$U_m \leq 275 / U_i = 90$		
Current [A]	$I_m \leq 2 / I_i = 2.0$		
Type of terminal	terminal with no screws		
Rated cross-section	„i“ single wire: 0.08...2.5 mm <sup>2</sup> / flexible: 0.08...2.5 mm <sup>2</sup> flexible: 0.08...2.5 mm <sup>2</sup> (with wire end ferrule) „e+t“ single wire: 0.20...2.5 mm <sup>2</sup> / flexible: 0.20...2.5 mm <sup>2</sup> flexible: 0.20...2.5 mm <sup>2</sup> (with wire end ferrule)		
Clamping range of cable gland [mm]	5.0...10.0 2.0...6.0 (with reduction insert RDE 16)		
Material	housing: aluminium powder coated / cable gland: Br-Ni / PA / EPDM		
Protection [EN 60529]	IP 65		
Connection	terminal compartment		

Note:

The Ex-junction box type GK... is designed for the connection of intrinsically safe and / or non-intrinsically safe circuits in explosion-hazardous areas of zone 1 and zone 21. Outside of the housing, the lines must be installed permanently; further provisions must be observed if required.

Additional housings, additional terminals and plastic cable glands are available on request.

Zubehör	Reduziereinsatz RDE 16 (im Lieferumfang enthalten)
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# Probes Amplifiers







Gas- | Intrinsically safe • Zone 0

Opto glass sensor

Gas-Ex Category 1  
Ex ia IIC T6 Ga

Resistant in kerosine • motor fuels

3-wire sensor, intrinsically safe



Design	G3/4				
Dimensions					
Switching point sp	[mm]	- 10			
ID-No.	P21239	P21240	P21241	P21242	
Type	UFGSa 075 Ex-L120	UFGSa 075 Ex-L200	UFGSa 075 Ex-L400	UFGSa 075 Ex-L1000	
Sensor length	[mm]	120	200	400	1000
Ex area of use	Gas: Zone 0				
Certificate No.	EPS 18 ATEX 1 097 X		IECEX EPS 18.0054X		
Ex marking	Gas:  II 1G Ex ia IIC T6 Ga		Ex ia IIC T6 Ga		
Ambient temperature	[°C]	Gas Zone 0: T6: -20 ≤ Ta ≤ +60 T5: -20 ≤ Ta ≤ +60 T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60		Gas Zone 1: T6: -25 ≤ Ta ≤ +70 T5: -25 ≤ Ta ≤ +75 T4: -25 ≤ Ta ≤ +75 T3: -25 ≤ Ta ≤ +75	
Maximum values	Ui = 12.6 V / li = 80 mA / Pi = 252 mW / Ci = 0.24 nF / Li = 1.3 µH				
Housing material	AISI 316 Ti / glass				
Sealing material	FFKM (Kalrez)				
Tightening torque	[Nm]	100			
Sensitivity	constant for all detectable media				
Protection	[EN 60529]	IP 67			
Compressive strength	[bar]	16			
Connection	M12 connector				
Sensors for the connection to amplifiers IKMb 123 Ex-...					
Zubehör	plug M12, SBG-DC (Z01060) or SBW-DC (Z00038)				



**Ex-Probe** | Device category 1G, 1G/2G

Capacitive sensors up to 180 °C

For the connection to KKa 030 Ex

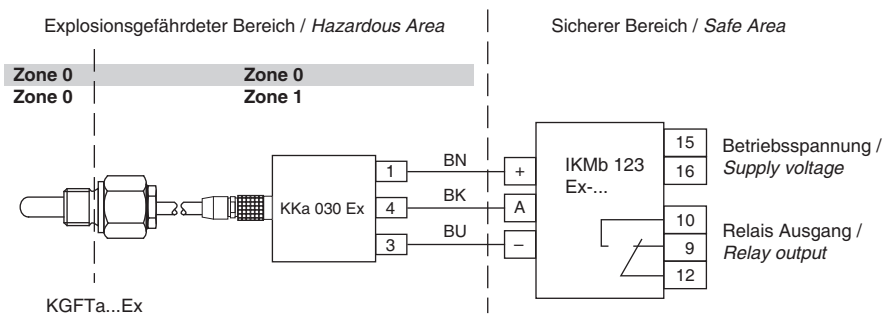
**Ex**-Device category 1G  
Installation in Zone 0 (Gas)

**Ex**-Device category 1G/2G  
Installation in partition wall  
Zone 0 / Zone 1 (Gas)



Design	G1/4	G1/2
<b>Dimensions</b>		
Switching point sp [mm]	-8	-8
ID-No.	P21243	P21244
Type	KGFTa 125 Ex	KGFTa 150 Ex
Ex area of use	Gas: Zone 0, Partition wall Zone 0 / Zone 1	
Certificate No.	EPS 19 ATEX 1 263 X	IECEX EPS 19.0116X
Ex marking	Gas: <b>Ex</b> II 1/2 G Ex ia/ib IIC T6...T3 Ga/Gb <b>Ex</b> II 1G Ex ia IIC T6...T3 Ga	Ex ia/ib IIC T6...T3 Ga/Gb Ex ia IIC T6...T3 Ga
Ambient temperature [°C]	Gas Zone 0: T6: -20 ≤ Ta ≤ +80 T5: -20 ≤ Ta ≤ +95 T4: -20 ≤ Ta ≤ +130 T3: -20 ≤ Ta ≤ +180	
Housing material	AISI 316 Ti / PEEK	
Sealing material	PTFE / FKM	
Protection [EN 60529]	Sensor: IP 68 (3 bar) / LEMO plug system: IP 54	
Compressive strength [bar]	medium: 7 / connection: 3	medium: 25 / connection: 3
Connection	2 m PTFE-cable plug system LEMO (series B)	

The Ex-sensors KGFTa...Ex has to be connected exclusively to the Ex-preamplifier KKa 030 Ex (see page 2.32).



Accessories Ex-preamplifier KKa 030 Ex, p. 2.32 / Ex-amplifier IKMb 123 Ex-..., p. 2.33



**Ex**-Preamplifier | Device category 1G

For capacitive sensors KGFTa...Ex

Supply by IKMb 123 Ex-...

**Ex**-Device category 1G  
Installation in Zone 0 (Gas)



Design	KKa 030 Ex	
<b>Dimensions</b>		
<b>Sensitivity adjustable</b>	•	
<b>ID-No.</b>	P21245	
<b>Type</b>	KKa 030 Ex	
<b>Ex area of use</b>	Gas: Zone 0	
<b>Certificate No.</b>	EPS 19 ATEX 1 263 X	IECEX EPS 19.0116X
<b>Ex marking</b>	Gas: <b>Ex</b> II 1 G Ex ia IIC T4...T3 Ga <b>Ex</b> II 2(1) G Ex ib [ia Ga] IIC T4...T3 Gb	Ex ia IIC T4...T3 Ga Ex ib [ia Ga] IIC T4...T3 Gb
<b>Ambient temperature</b> [°C]	Gas Zone 0: T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60	
<b>Maximum values</b>	Ui = 9.6 V / li = 50.5 mA / Pi = 121.3 mW / Ci u. Li = negligibly small	
<b>Housing material</b>	AISI 316 Ti	
<b>LED display</b>	•	
<b>Protection</b> [EN 60529]	IP 54	
<b>Connection</b>	LEMO (series B) / M12 connector	
<div style="display: flex; align-items: center;"> <div> <p>1: + (BN)</p> <p>2: - (BU)</p> <p>3: A (BK)</p> <p>4: A (BK)</p> </div> </div>		
<b>Accessories</b>	required sensors KGFTa... Ex, p. 2.31 and Ex-amplifiers IKMb 123 Ex..., p. 2.33	



**Ex-Amplifiers**

Gas [Ex ia Ga] IIC  
Dust [Ex ia Da] IIIC

Cable break and  
short circuit monitoring

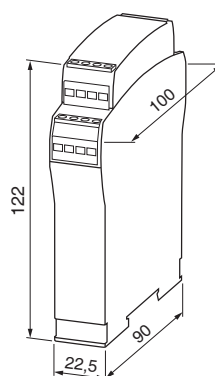
Connection to intrinsically safe  
3-lead sensors

Output function programmable

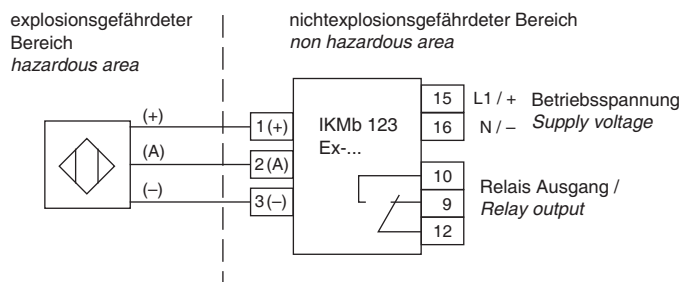


**Design** IKMb 123 Ex...

*Dimensions*



<b>ID-No.</b>	<b>P31451</b>	<b>P31453</b>	<b>P31452</b>
Type	IKMb 123 Ex-24	IKMb 123 Ex-115	IKMb 123 Ex-230
Output	 relay / change over		
Ex area of use	outside of the hazardous areas (gas or dust)		
Certificate No.	EPS 17 ATEX 1 091		IECEX EPS 17.0047
Ex marking	Gas: $\text{Ex II (1)G [Ex ia Ga] IIC}$ Dust: $\text{Ex II (1)D [Ex ia Da] IIIC}$	Gas: $\text{[Ex ia Ga] IIC}$ Dust: $\text{[Ex ia Da] IIIC}$	
Ambient temperature [°C]	$-20 \leq T_a \leq +60$		
Maximum values	$U_o = 9.6 \text{ V} / I_o = 50.5 \text{ mA} / P_o = 121.3 \text{ mW} / C_o = 0.68 \mu\text{F} / L_o = 5.00 \text{ mH}$		
Rated voltage [V]	30 DC	127 AC	253 AC
Supply voltage [V]	24 DC $\pm 10\%$	115 AC $\pm 10\%$	230 AC $\pm 10\%$
Switching voltage max. [V]	250 AC / 60 DC / 24 DC		
Switching current max. [A]	4 AC / 0,8 DC / 4 DC		
Switching power	$\cos \varphi > 0,7 / L/R \leq 200 \text{ ms} / L/R \leq 200 \text{ ms}$		
LED display	power: green / switching output: yellow / cable break: red		
Protection [EN 60529]	IP 20		
Connection	terminal screws		





## Ex-Junction box | Device category 2G and 2D

For the connection of supply and signal lines in explosion hazardous areas of zone 1 and zone 21

Clamp fastening



Design	GK E...		
Dimensions			
ID-No.	Z01219	Z01227	Z01239
Type	GKE 060 S K	GKE 080 S K	GKE 100 S K
Amount of terminals	4	2 x 4	3 x 4
Dimensions (BxTxH) [mm]	58x64x36	98x64x36	150x64x36
Type of protection	Gas: increased safety		
Ex marking	Dust: protection through enclosure		
	Gas: $\text{Ex II 2G Ex eb IIC T6 Gb}$		
Certificate No.	Dust: $\text{Ex II 2D Ex tb IIIC T 75 °C Db}$		
	TÜV 16 ATEX 152979 X		
Ambient temperature [°C]	Gas: T3, T4, T5, T6: $-20 \leq T_a \leq +70$		
Voltage [V]	Dust: $-20 \leq T_a \leq +70$		
Current [A]	$U_m \leq 275$		
Connection type	$I_m \leq 2$		
Rated cross-section	screw terminals		
Clamping range of cable gland [mm]	„e+t“ single wire: 0.50...2.5 mm <sup>2</sup> / flexible: 0.50...1.5 mm <sup>2</sup>		
Material	flexible: 0.50...1.5 mm <sup>2</sup> (with wire end ferrule)		
Protection [EN 60529]	housing: aluminium powder coated / cable gland: PA / CR		
Connection	IP 65		
	terminal compartment		

Notes:

The Ex-junction box type GK E... is designed for the connection of non-intrinsically safe circuits in explosion-hazardous areas of category 2. Outside of the housing, the lines must be installed permanently; further provisions must be observed if required.

Additional housings, additional clamps and metal cable glands are available on request.

Accessories	reduction insert RDE 16 for cable gland (2.0...6.0 mm)
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## Ex-Junction box | Device category 2G and 2D

For the connection of supply and signal lines in explosion hazardous areas of zone 1 and zone 21

Clamp fastening



Design	GK I...		
<b>Dimensions</b>			
ID-No.	Z01221	Z01229	Z01241
Type	GK I 060 S K	GK I 080 S K	GK I 100 S K
Amount of terminals	4	2 x 4	3 x 4
Dimensions (BxTxH) [mm]	58x64x36	98x64x36	150x64x36
Type of protection	Gas: intrinsic safety		
Ex marking	Dust: intrinsic safety		
	Gas: $\text{Ex II 2G Ex ib/ia IIC T6 Gb}$		
Certificate No.	Dust: $\text{Ex II 2D Ex ib/ia IIIC T75 °C Db}$		
Ambient temperature [°C]	TÜV 16 ATEX 152979 X		
Voltage [V]	Gas: T3, T4, T5, T6: $-20 \leq T_a \leq +70$		
	Dust: $-20 \leq T_a \leq +70$		
Current [A]	Ui 90		
Connection type	li 2.0		
Rated cross-section	screw terminals		
Clamping range of cable gland [mm]	„i“ single wire: 0.33...4.0 mm <sup>2</sup> / flexible: 0.33...2.5 mm <sup>2</sup>		
	flexible: 0.33...1.5 mm <sup>2</sup> (with wire end ferrule)		
Material	5.0...8.0		
Protection [EN 60529]	housing: aluminium powder coated / cable gland: PA / CR		
Connection	IP 65		
	terminal compartment		

Notes:

The Ex-junction box type GK I... is designed for the connection of intrinsically safe circuits in explosion-hazardous areas of category 2. Outside of the housing, the lines must be installed permanently; further provisions must be observed if required.

Additional housings, additional clamps and metal cable glands are available on request.

Accessories	reduction insert RDE 16 for cable gland (2.0...6.0 mm)
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## Ex-Junction box | Device category 2G and 2D

For the connection of supply and signal lines in explosion hazardous areas of zone 1 and zone 21

Clamp fastening



Design	GK EI...		
Dimensions			
ID-No.	Z01231	Z01243	Z01245
Type	GK EI 080 S K	GK EEI 100 S K	GK EII 100 S K
Amount of terminals	4 / 4	4 + 4 / 4	4 / 4 + 4
Dimensions (BxTxH) [mm]	98x64x36	150x64x36	150x64x36
Type of protection	Gas: increased safety / intrinsic safety		
Ex marking	Dust: protection through enclosure / intrinsic safety		
	Gas: $\text{Ex II 2G Ex eb ib/ia IIC T6 Gb}$		
Certificate No.	Dust: $\text{Ex II 2D Ex tb ib/ia IIIC T 75 °C Db}$		
	TÜV 16 ATEX 152979 X		
Ambient temperature [°C]	Gas: T3, T4, T5, T6: $-20 \leq T_a \leq +70$		
	Dust: $-20 \leq T_a \leq +70$		
Voltage [V]	$U_m \leq 275 / U_i 90$		
Current [A]	$I_m \leq 2 / I_i 2.0$		
Connection type	screw terminals		
Rated cross-section	„i“ single wire: 0.33...4.0 mm <sup>2</sup> / flexible: 0.33...2.5 mm <sup>2</sup>		
	flexible: 0.33...1.5 mm <sup>2</sup> (with wire end ferrule)		
Clamping range of cable gland [mm]	„e+t“ single wire: 0.50...2.5 mm <sup>2</sup> / flexible: 0.50...1.5 mm <sup>2</sup>		
	flexible: 0.50...1.5 mm <sup>2</sup> (with wire end ferrule)		
Material	housing: aluminium powder coated / cable gland: PA / CR		
Protection [EN 60529]	IP 65		
Connection	terminal compartment		

Notes:

The Ex-junction box type GK... is designed for the connection of intrinsically safe and / or non-intrinsically safe circuits in explosion-hazardous areas of category 2. Outside of the housing, the lines must be installed permanently; further provisions must be observed if required.

Additional housings, additional clamps and metal cable glands are available on request.

Accessories	reduction insert RDE 16 for cable gland (2.0...6.0 mm)
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**Sensors**  
**Compact models**  
**Amplifiers**







Dust / Gas- | Compact model | Zone 0/20

Proximity switches

Gas-Ex Category 1  
Ex ma IIC T6 Ga

Dust-Ex Category 1  
Ex ma IIIC T90°C Da



Design	DC PNP • M12x1		DC PNP • M18x1		DC PNP • M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)	LED		LED		LED	
Operating distance [mm]	2 f		5 f		10 f	
Switching output PNP	4 nf		8 nf		15 nf	
ID-No.	P31379		P31381		P31383	
Type	IGEX20a 02 GSP		IGEX20a 05 GSP		IGEX20a 10 GSP	
Ex area of use	Gas: Zone 0/1 / Dust: Zone 20/21					
Certificate No.	EPS 17 ATEX 1 117 X			IECEX EPS 17.0059X		
Ex marking	Gas:  II 1G Ex ma IIC T6 Ga			Ex ma IIC T6 Ga		
	Dust:  II 1D Ex ma IIIC T90°C Da			Ex ma IIIC T90°C Da		
Ambient temperature [°C]	Gas Zone 0:		Gas Zone 1:		Dust Zone 20:	
* +55 for type M12x1	T6: -20 ≤ Ta ≤ +60* T5: -20 ≤ Ta ≤ +60* T4: -20 ≤ Ta ≤ +60* T3: -20 ≤ Ta ≤ +60*		T6: -20 ≤ Ta ≤ +60* T5: -20 ≤ Ta ≤ +60* T4: -20 ≤ Ta ≤ +60* T3: -20 ≤ Ta ≤ +60*		-20 ≤ Ta ≤ +60*	
Supply voltage [V]	24 DC ±10%					
Switching current [mA]	50					
Rated voltage [V]	27 DC					
Rated current [mA]	50					
LED display	red		yellow		yellow	
Impact protection cap	•		•		•	
Housing material	AISI 316 Ti / PPSU / LCP / POM			Br-Ni / PA / POM		
Protection [EN 60529]	IP 67					
Connection	2 m PUR-cable 3x0.34 mm <sup>2</sup>					
Note	<div style="display: flex; align-items: center; justify-content: space-between;"> <div style="text-align: center;"> <p>explosionsgefährdeter Bereich (Gas oder Staub) hazardous area (gas or dust)</p> </div> <div style="text-align: center;"> </div> <div style="text-align: center;"> <p>nicht explosionsgefährdeter Bereich non hazardous area</p> </div> </div>					



Dust / Gas-Ex | Compact model | Zone 0/20

Proximity switches

Gas-Ex Category 1  
Ex ma IIC T6 Ga

Dust-Ex Category 1  
Ex ma IIIC T90°C Da

Ambient temperature up to -60 °C



Design	DC PNP • M12x1		DC PNP • M18x1		DC PNP • M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)	LED	LED	LED	LED	LED	LED
Operating distance [mm]	2 f	4 nf	5 f	8 nf	10 f	15 nf
Switching output PNP						
ID-No.	P31385	P31386	P31387	P31388	P31389	P31390
Type	IGEX20Pa 02 GSP	IGEX20Pa 04 GSP	IGEX20Pa 05 GSP	IGEX20Pa 08 GSP	IGEX20Pa 10 GSP	IGEX20Pa 15 GSP
Ex area of use	Gas: Zone 0/1 / Staub: Zone 20/21					
Certificate No.	EPS 17 ATEX 1 117 X			IECEx EPS 17.0059X		
Ex marking	Gas:  II 1G Ex ma IIC T6 Ga Dust:  II 1D Ex ma IIIC T90°C Da			Ex ma IIC T6 Ga Ex ma IIIC T90°C Da		
Ambient temperature [°C]	Gas Zone 0: T6: -20 ≤ Ta ≤ +60 * T5: -20 ≤ Ta ≤ +60 * T4: -20 ≤ Ta ≤ +60 * T3: -20 ≤ Ta ≤ +60 *		Gas Zone 1: T6: -60 ≤ Ta ≤ +60 * T5: -60 ≤ Ta ≤ +60 * T4: -60 ≤ Ta ≤ +60 * T3: -60 ≤ Ta ≤ +60 *		Dust Zone 20: -20 ≤ Ta ≤ +60 * Dust Zone 21: -60 ≤ Ta ≤ +60 *	
* +55 for type M12x1						
Supply voltage [V]	24 DC ±10%					
Switching current [mA]	50					
Rated voltage [V]	27 DC					
Rated current [mA]	50					
LED display	yellow	yellow	yellow	yellow	yellow	yellow
Impact protection cap		•		•		•
Housing material	AISI 316 Ti / PTFE / PVDF / POM					
Protection [EN 60529]	IP 68 (3 bar)					
Connection	2 m FEP-cable 3x0.34 mm <sup>2</sup>					
	explosionsgefährdeter Bereich (Gas oder Staub) hazardous area (gas or dust)				nicht explosionsgefährdeter Bereich non hazardous area	
Note	proximity switches with cable length > 2 m are available on request					



Dust / Gas- | Intrinsically safe | Zone 0/20

Proximity switches

Gas-Ex Category 1  
Ex ia IIC T6 Ga

Dust-Ex Category 1  
Ex ia IIIC T80°C Da



Design	M12x1		M18x1		M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)						
Operating distance [mm]	2 f	4 nf	5 f	8 nf	10 f	15 nf
ID-No.	P31412	P31413	P31414	P31415	P31416	P31417
Type	IGEXUa 02	IGEXUa 04	IGEXUa 05	IGEXUa 08	IGEXUa 10	IGEXUa 15
Ex area of use	Gas: Zone 0/1 / Dust: Zone 20/21					
Certification No.	EPS 17 ATEX 1 173 X			IECEx EPS 17.0087X		
Ex marking	Gas:  II 1G Ex ia IIC T6 Ga Dust:  II 1D Ex ia IIIC T80°C Da			Gas: Ex ia IIC T6 Ga Dust: Ex ia IIIC T80°C Da		
Ambient temperature [°C] and medium temperature	Gas Zone 0: T6: -20 ≤ Ta ≤ +60 T5: -20 ≤ Ta ≤ +60 T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60		Gas Zone 1: T6: -25 ≤ Ta ≤ +75 T5: -25 ≤ Ta ≤ +75 T4: -25 ≤ Ta ≤ +75 T3: -25 ≤ Ta ≤ +75		Dust Zone 20: -25 ≤ Ta ≤ +75	
Maximum values	Ui = 12.6 V / li = 15.9 mA / Pi = 50 mW / Ci = 66.2 nF / Li = 1.2 mH					
Housing material	Br-Ni / PA					
Protection [EN 60529]	IP 67					
Connection	M12 connector					
For the connection to amplifiers IKMb 122 Ex..., page 3.67						



Dust / Gas- | Intrinsically safe | Zone 0/20

Proximity switches

Gas-Ex Category 1  
Ex ia IIC T6 Ga

Dust-Ex Category 1  
Ex ia IIIC T80°C Da



Design	M12x1		M18x1		M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)						
Operating distance [mm]	2 f	4 nf	5 f	8 nf	10 f	15 nf
ID-No.	P31445	P31446	P31447	P31448	P31449	P31450
Type	IGEXa 02	IGEXa 04	IGEXa 05	IGEXa 08	IGEXa 10	IGEXa 15
Ex area of use	Gas: Zone 0/1 / Dust: Zone 20/21					
Certification No.	EPS 17 ATEX 1 173 X			IECEx EPS 17.0087X		
Ex marking	Gas:  II 1G Ex ia IIC T6 Ga Dust:  II 1D Ex ia IIIC T80°C Da			Gas: Ex ia IIC T6 Ga Dust: Ex ia IIIC T80°C Da		
Ambient temperature [°C] and medium temperature	Gas Zone 0: T6: -20 ≤ Ta ≤ +60 T5: -20 ≤ Ta ≤ +60 T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60		Gas Zone 1: T6: -25 ≤ Ta ≤ +75 T5: -25 ≤ Ta ≤ +75 T4: -25 ≤ Ta ≤ +75 T3: -25 ≤ Ta ≤ +75		Dust Zone 20: -25 ≤ Ta ≤ +75	
Maximum values	Ui = 12.6 V / li = 15.9 mA / Pi = 50 mW / Ci = 66.2 nF / Li = 1.2 mH					
Housing material	Br-Ni / PA					
Protection [EN 60529]	IP 67					
Connection	2 m PVC-cable 2x0.5 m <sup>2</sup>					
For the connection to amplifiers IKMb 122 Ex..., page 3.67						
Note	proximity switches with cable length > 2 m are available on request					



Dust / Gas- $\text{Ex}$  | Intrinsically safe | Zone 0/20

Proximity switches

Gas-Ex Category 1  
Ex ia IIC T6 Ga

Dust-Ex Category 1  
Ex ia IIIC T145°C Da

High temperature sensors +140 °C  
IP 69 Resistant to high pressure cleaning



Design	M12x1		M18x1		M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)	flush (f) non flush (nf)		flush (f) non flush (nf)		flush (f) non flush (nf)	
Operating distance [mm]	2 f	4 nf	5 f	8 nf	10 f	15 nf
ID-No.	P31400	P31401	P31402	P31403	P31404	P31405
Type	IGEXHa 02	IGEXHa 04	IGEXHa 05	IGEXHa 08	IGEXHa 10	IGEXHa 15
Ex area of use	Gas: Zone 0/1 / Dust: Zone 20/21					
Certificate No.	EPS 17 ATEX 1 173 X			IECEx EPS 17.0087X		
Ex marking	Gas: $\text{Ex}$ II 1G Ex ia IIC T6 Ga Dust: $\text{Ex}$ II 1D Ex ia IIIC T145°C Da			Gas: Ex ia IIC T6 Ga Dust: Ex ia IIIC T145°C Da		
Ambient temperature [°C] and medium temperature	Gas Zone 0: T6: $-20 \leq T_a \leq +60$ T5: $-20 \leq T_a \leq +60$ T4: $-20 \leq T_a \leq +60$ T3: $-20 \leq T_a \leq +60$		Gas Zone 1: T6: $-25 \leq T_a \leq +75$ T5: $-25 \leq T_a \leq +90$ T4: $-25 \leq T_a \leq +125$ T3: $-25 \leq T_a \leq +140$		Dust Zone 20: $-25 \leq T_a \leq +140$	
Maxium values	Ui = 12.6 V / li = 15.9 mA / Pi = 50 mW / Ci = 66.2 nF / Li = 1.2 mH					
Housing material	AISI 316 Ti / PEEK					
Protection [EN 60529]	IP 68 (3 bar), IP 69					
Connection	2 m FEP-cable 2x0.34 mm <sup>2</sup>					
Sensors for the connection to amplifiers IKMb 122 Ex..., page 3.67						
Note	proximity switches with cable length > 2 m are available on request					



Dust / Gas- $\text{Ex}$  | Intrinsically safe | Zone 0/20

Proximity switches

Gas-Ex Category 1  
Ex ia IIC T6 Ga

Dust-Ex Category 1  
Ex ia IIIC T65°C Da

POLAR-Sensors -60 °C  
IP 69 Resistant to high pressure cleaning



Design	M12x1		M18x1		M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)						
Operating distance [mm]	2 f	4 nf	5 f	8 nf	10 f	15 nf
ID-No.	P31406	P31407	P31408	P31409	P31410	P31411
Type	IGEXPa 02	IGEXPa 04	IGEXPa 05	IGEXPa 08	IGEXPa 10	IGEXPa 15
Ex area of use	Gas: Zone 0/1 / Dust: Zone 20/21					
Certificate No.	EPS 17 ATEX 1 173 X			IECEX EPS 17.0087X		
Ex marking	Gas: $\text{Ex}$ II 1G Ex ia IIC T6 Ga Dust: $\text{Ex}$ II 1D Ex ia IIIC T65°C Da			Gas: Ex ia IIC T6 Ga Dust: Ex ia IIIC T65°C Da		
Ambient temperature [°C] and medium temperature	Gas Zone 0: T6: $-20 \leq T_a \leq +60$ T5: $-20 \leq T_a \leq +60$ T4: $-20 \leq T_a \leq +60$ T3: $-20 \leq T_a \leq +60$		Gas Zone 1: T6: $-60 \leq T_a \leq +60$ T5: $-60 \leq T_a \leq +60$ T4: $-60 \leq T_a \leq +60$ T3: $-60 \leq T_a \leq +60$		Dust Zone 20: $-60 \leq T_a \leq +60$	
Maxium values	Ui = 12.6 V / li = 15.9 mA / Pi = 50 mW / Ci = 66.2 nF / Li = 1.2 mH					
Housing material	AISI 316 Ti / PTFE / PVDF					
Protection [EN 60529]	IP 68 (3 bar), IP 69					
Connection	2 m FEP-cable 2x0.34 mm <sup>2</sup>					
Sensors for the connection to amplifiers IKMb 122 Ex..., page 3.67						
Note	proximity switches with cable length > 2 m are available on request					



Dust / Gas- | Compact model | Zone 2/22

Proximity switches

Gas-Ex Category 3  
Ex ec IIC T6...T3 Gc

Dust-Ex Category 3  
Ex tc IIIC T70°C Dc



Design	DC PNP • M12x1		DC PNP • M18x1		DC PNP • M30x1.5	
Dimensions						
Installation flush (f) non flush (nf)						
Operating distance [mm]	2 f	4 nf	5 f	8 nf	10 f	15 nf
Switching output PNP						
ID-No.	P31391	P31392	P31393	P31394	P31395	P31396
Type	IGEX22c 02 GSP	IGEX22c 04 GSP	IGEX22c 05 GSP	IGEX22c 08 GSP	IGEX22c 10 GSP	IGEX22c 15 GSP
Ex area of use	Gas: Zone 2 / Dust: Zone 22					
Certificate No.	IECEx EPS 17.0042X					
Conformity No.	EGE 18.0020 X					
Ex marking	Gas:  II 3G Ex ec IIC T6...T3 Gc Dust:  II 3D Ex tc IIIC T70°C Dc		Gas: Ex ec IIC T6...T3 Gc Dust: Ex tc IIIC T70°C Dc			
Ambient temperature [°C] and medium temperature	Gas Zone 2:		T6: -20 ≤ Ta ≤ +60 T5: -20 ≤ Ta ≤ +60 T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60			
	Dust Zone 22:		-20 ≤ Ta ≤ +60			
Rated voltage [V]	30 DC					
Supply voltage [V]	24 DC ±10%					
Switching current [mA]	100					
Switching frequency [Hz]	300					
LED display	red	red	yellow	yellow	yellow	yellow
Impact protection cap		•		•		•
Housing material	AISI 316 Ti / PPSU / LCP / POM		Br-Ni / PA / POM			
Protection [EN 60529]	IP 67					
Connection	2 m PUR-cable 3x0.34 mm <sup>2</sup>					
Note	proximity switches with cable length > 2 m are available on request					



Dust / Gas-Ex | Compact model | Zone 2/22

Proximity switches

Gas-Ex Category 3  
Ex ec IIC T6...T3 Gc

Dust-Ex Category 3  
Ex tc IIIC T 70°C Dc

One piece stainless steel housing



Design	DC PNP • M12x1	DC PNP • M18x1	DC PNP • M30x1.5
Dimensions			
Operating distance [mm]	2	5	10
Switching output PNP			
ID-No.	P31397	P31398	P31399
Type	IGVEX22c 02 GSP	IGVEX22c 05 GSP	IGVEX22c 10 GSP
Ex area of use	Gas: Zone 2 / Dust: Zone 22		
Certificate No.	IECEx EPS 17.0042X		
Conformity No.	EGE 18.0020 X		
Ex marking	Gas:  II 3G Ex ec IIC T6...T3 Gc Dust:  II 3D Ex tc IIIC T 70°C Dc	Gas: Ex ec IIC T6...T3 Gc Dust: Ex tc IIIC T 70°C Dc	
Ambient temperature and medium temperature [°C]	Gas Zone 2: T6: -5 ≤ Ta ≤ +55 T5: -5 ≤ Ta ≤ +55 T4: -5 ≤ Ta ≤ +55 T3: -5 ≤ Ta ≤ +55 Dust Zone 22: -5 ≤ Ta ≤ +55	Gas Zone 2: T6: -10 ≤ Ta ≤ +55 T5: -10 ≤ Ta ≤ +55 T4: -10 ≤ Ta ≤ +55 T3: -10 ≤ Ta ≤ +55 Dust Zone 22: -10 ≤ Ta ≤ +55	Gas Zone 2: T6: -20 ≤ Ta ≤ +60 T5: -20 ≤ Ta ≤ +60 T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60 Dust Zone: -20 ≤ Ta ≤ +60
Rated voltage [V]	30 DC		
Supply voltage [V]	24 DC ±10%		
Switching current [mA]	100		
Switching frequency [Hz]	180		
LED display	red	yellow	yellow
Housing material	AISI 316 L / PPSU	AISI 316 L / PA	AISI 316 L / PA
Protection [EN 60529]	IP 67		
Connection	2 m PUR-cable 3x0.34 mm <sup>2</sup>		
Note	proximity switches with cable length > 2 m are available on request		





Dust / Gas-Ex | Compact model | Zone 2/22

Proximity switches

Gas-Ex Category 3  
Ex ec IIC T6...T3 Gc

Dust-Ex Category 3  
Ex tc IIIC T70°C Dc

One piece stainless steel housing  
Silicone cable



Design	DC PNP • M12x1	DC PNP • M18x1	DC PNP • M30x1.5
Dimensions			
Operating distance [mm]	2	5	10
Switching output PNP			
ID-No.	P31421	P31422	P31423
Type	IGVEX22c 02 GSP-K1	IGVEX22c 05 GSP-K1	IGVEX22c 10 GSP-K1
Ex area of use	Gas: Zone 2 / Dust: Zone 22		
Certificate No.	IECEx EPS 17.0042X		
Conformity No.	EGE 18.0020 X		
Ex marking	Gas:  II 3G Ex ec IIC T6...T3 Gc Dust:  II 3D Ex tc IIIC T70°C Dc	Gas: Ex ec IIC T6...T3 Gc Dust: Ex tc IIIC T70°C Dc	
Ambient temperature and medium temperature [°C]	Gas Zone 2: T6: -20 ≤ Ta ≤ +55 T5: -20 ≤ Ta ≤ +55 T4: -20 ≤ Ta ≤ +55 T3: -20 ≤ Ta ≤ +55 Dust Zone 22: -20 ≤ Ta ≤ +55		Gas Zone 2: T6: -20 ≤ Ta ≤ +60 T5: -20 ≤ Ta ≤ +60 T4: -20 ≤ Ta ≤ +60 T3: -20 ≤ Ta ≤ +60 Dust Zone: -20 ≤ Ta ≤ +60
Rated voltage [V]	30 DC		
Supply voltage [V]	24 DC ±10%		
Switching current [mA]	100		
Switching frequency [Hz]	180		
LED display	red	yellow	yellow
Housing material	AISI 316 L / PPSU	AISI 316 L / PA	AISI 316 L / PA
Protection [EN 60529]	IP 67		
Connection	2 m silicone-cable 3x0.34 mm <sup>2</sup>		
Note	proximity switches with cable length > 2 m are available on request		



**Ex-Amplifiers**

Gas [Ex ia Ga] IIC  
Dust [Ex ia Da] IIIC

Cable break and  
short circuit monitoring

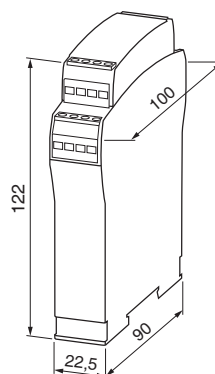
Connection to intrinsically safe  
2-lead sensors

Output function programmable

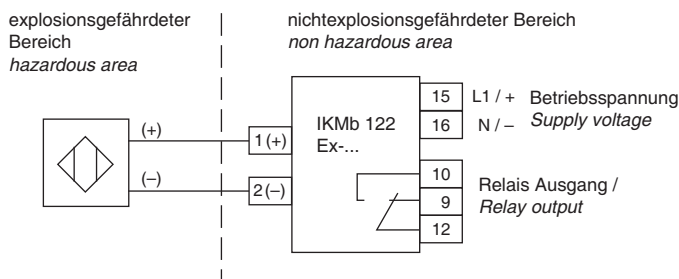


**Design** IKMb 122 Ex...

*Dimensions*



<b>ID-No.</b>	<b>P31418</b>	<b>P31420</b>	<b>P31419</b>
Type	IKMb 122 Ex-24	IKMb 122 Ex-115	IKMb 122 Ex-230
Output	 relay / change over		
Ex area of use	outside of the hazardous areas (gas or dust)		
Certificate No.	EPS 17 ATEX 1 091		IECEX EPS 17.0047
Ex marking	Gas: $\text{Ex II (1)G [Ex ia Ga] IIC}$ Dust: $\text{Ex II (1)D [Ex ia Da] IIIC}$	Gas: $\text{[Ex ia Ga] IIC}$ Dust: $\text{[Ex ia Da] IIIC}$	
Ambient temperature [°C]	$-20 \leq T_a \leq +60$		
Maximum values	$U_o = 9.6 \text{ V} / I_o = 10.1 \text{ mA} / P_o = 24.2 \text{ mW} / C_o = 0.84 \mu\text{F} / L_o = 5.00 \text{ mH}$		
Rated voltage [V]	30 DC	127 AC	253 AC
Supply voltage [V]	24 DC $\pm 10\%$	115 AC $\pm 10\%$	230 AC $\pm 10\%$
Switching voltage max. [V]	250 AC / 60 DC / 24 DC		
Switching current max. [A]	4 AC / 0,8 DC / 4 DC		
Switching power	$\cos \varphi > 0,7 / L/R \leq 200 \text{ ms} / L/R \leq 200 \text{ ms}$		
LED display	power: green / switching output: yellow / cable break: red		
Protection [EN 60529]	IP 20		
Connection	terminal screws		





**Ex-Amplifiers**

Gas [Ex ia Ga] IIC  
Dust [Ex ia Da] IIIC

Cable break and  
short circuit monitoring

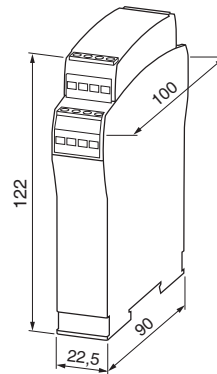
Connection to intrinsically safe  
3-lead sensors

Output function programmable

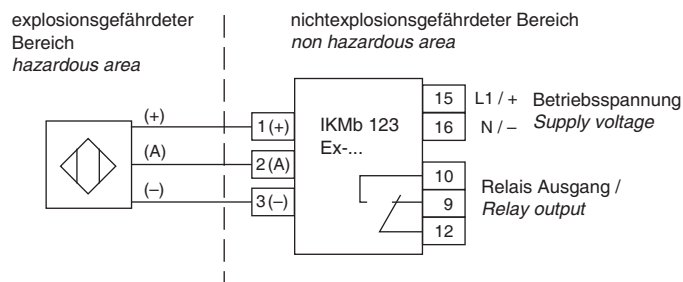


**Design** **IKMb 123 Ex...**

*Dimensions*



<b>ID-No.</b>	<b>P31451</b>	<b>P31453</b>	<b>P31452</b>
<b>Type</b>	IKMb 123 Ex-24	IKMb 123 Ex-115	IKMb 123 Ex-230
<b>Output</b>	 relay / change over		
<b>Ex area of use</b>	outside of the hazardous areas (gas or dust)		
<b>Certificate No.</b>	EPS 17 ATEX 1 091		IECEX EPS 17.0047
<b>Ex marking</b>	Gas:  II (1)G [Ex ia Ga] IIC Dust:  II (1)D [Ex ia Da] IIIC	Gas: [Ex ia Ga] IIC Dust: [Ex ia Da] IIIC	
<b>Ambient temperature</b> [°C]	-20 ≤ Ta ≤ +60		
<b>Maximum values</b>	Uo = 9.6 V / Io = 50.5 mA / Po = 121.3 mW / Co = 0.68 µF / Lo = 5.00 mH		
<b>Rated voltage</b> [V]	30 DC	127 AC	253 AC
<b>Supply voltage</b> [V]	24 DC ±10%	115 AC ±10%	230 AC ±10%
<b>Switching voltage max.</b> [V]	250 AC / 60 DC / 24 DC		
<b>Switching current max.</b> [A]	4 AC / 0,8 DC / 4 DC		
<b>Switching power</b>	cos φ >0,7 / L/R ≤ 200 ms / L/R ≤ 200 ms		
<b>LED display</b>	power: green / switching output: yellow / cable break: red		
<b>Protection</b> [EN 60529]	IP 20		
<b>Connection</b>	terminal screws		



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We look forward to your enquiry.  
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