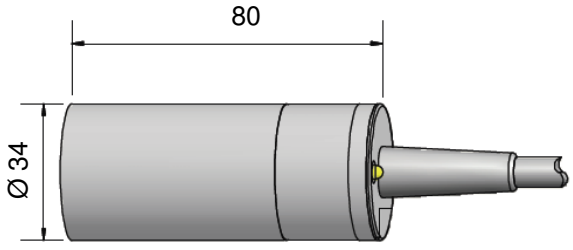
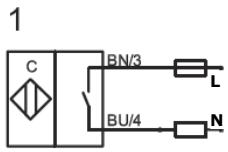
Capacitive Sensors

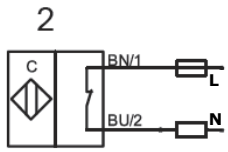
KG-201 – AC/DC

Housing Ø 34 mm
- Housing material: PA / PPO
- Sensing distance 3...30 mm adjustable

Technical data	Non-flush mountable	Non-flush mountable
Operating distance Sn [mm]	25, nein	25, nein
Operating distance min/.max. [mm] adjustable	1...40	1...40
Electrical version	2-wire DC	2-wire DC
Output function	Normally open (NO)	Normally closed (NC)
Typ PNP	**KG-201- S**	**KG-201- Ö**
Connection diagram No.	1	2
Operating Voltage (U_B)	20...250 V AC / DC	20...250 V AC / DC
Outputcurrent max. (I_e)	330 mA (ETL = 250 mA)	330 mA (ETL = 250 mA)
Load current min.	5 mA	5 mA
Voltage drop max. (U_d)	≤ 6 V	≤ 6 V
No-load current (I_o)	Typ. 2,5 mA	Typ. 2,5 mA
Frequency of operating cycles max.	25 Hz	25 Hz
Permitted ambient temperture	-25...+70 °C (ETL = +60 °C)	-25...+70 °C (ETL = +60 °C)
LED-Display	Gelb	Gelb
Protective circuit	Built-in	Built-in
Degree of protection IEC 60529	IP 67	IP 67
Norm	EN 60947-5-2	EN 60947-5-2
Connection cabel	2 m, PVC, 2 x 0,75 mm²	2 m, PVC, 2 x 0,75 mm²
Housing material	PA / PPO	PA / PPO
Active surface	PA / PPO	PA / PPO
Lid	PA / PPO	PA / PPO

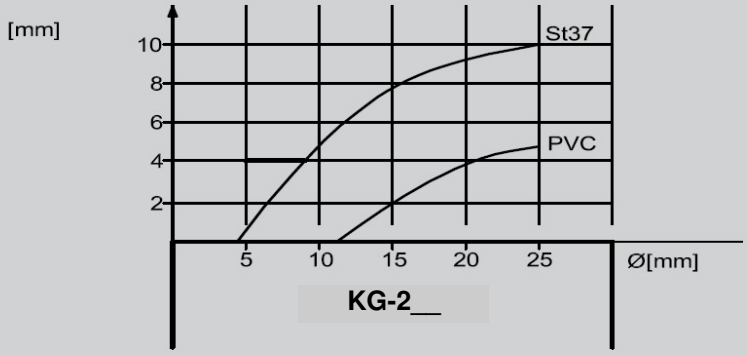






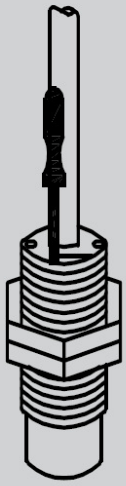
ADJUSTMENT

Analog capacitive sensors are equipped with a 20-turn spindle potentiometer. This allows adjustment of an application specific operating range between the **minimum distance "0 mm"** and the type-typical maximum value. Consequently, the full output current range (4…20 mA) is always present, regardless of the required measuring distance. The analog sensors are designed with a 2-colour LED which facilitates adjustment. Outside the operating range I_A < 4 mA and I_A > 20 mA green light is emitted to display operational readiness. Within the operating range of 4…20 mA the LED is yellow. In the undamped state the output current value is > 20 mA and moves with the reduction of the object distance toward 4 mA (value at total damping approx. 2.5 mA).
The data of the **nominal sensing distance** are based on the measuring method according to DIN VDE 0660, Part 208. The respective nominal sensing distance is indicated with a tolerance of ± 10 %. The **standard measurement plate** is square with a thickness of 1 mm and is made of carbon steel FE 360 (defined in ISO 630: 1980) with a smoothed surface and earthed. The side lengths are equal to the diameter of the active area of the KG or equal to 3 x Sn, depending on which value is greater. With a different material or a smaller surface of the actuating element, the sensing distance is smaller.



Typ. response-time characteristic

Adjustment of the sensing distance is made by means of a spindle potentiometer with the screwdriver provided. With pluggable sensors ≤ M 18x1 / Ø 22 the potentiometer is on the side.



For size M 30 x 1.5 / Ø 30:
First open plastic tab.
For size > M 30 x 1.5 / Ø 30:
First remove plastic sealing screw.

The possible sensing distance for a particular material is dependent on the dielectric permittivity ϵ_r and can be worked out by means of the typical reduction factors: Sensing distance = Sn x reduction factor.

Material:	FE 360	St 37	Water	Wheat	Wood	Glass	Oil	PVC	PE	Ceramic
Reduction factor approx.	1	1	1	0,8	0,7	0,6	0,4	0,4	0,37	0,3