



**Capacitive Sensors**  
**Series 70 - NPN**  
**Series 80 - PNP**

**Housing Ø 30 mm**

- **Housing material: brass**
- **Flush mountable**
- **Sensing distance 0.5...30 mm adjustable**

Certificate:

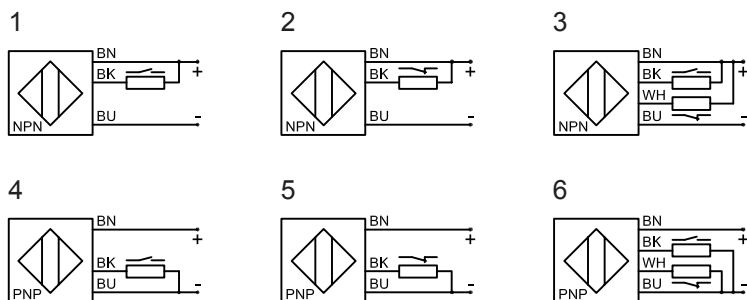
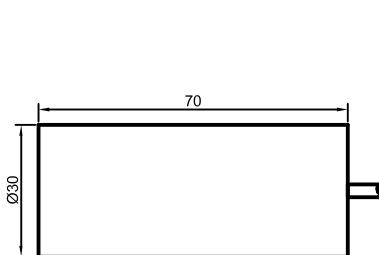


**Technical data**

Operating distance Sn [mm], flush mounting	20, yes	20, yes
Operating distance min./max. [mm] adjustable	0.5...30	0.5...30
Electrical version	3-wire DC	4-wire DC
Output	NO	antivalent
<b>Type NPN</b>	<b>KAS-70-30-S</b>	<b>KAS-70-30-A</b>
<b>Art.-No.</b>	<b>714 600</b>	<b>714 200</b>
<b>Connection diagram No.</b>	<b>1</b>	<b>3</b>

<b>Type PNP</b>	<b>KAS-80-30-S</b>	<b>KAS-80-30-A</b>
<b>Art.-No.</b>	<b>814 600</b>	<b>814 200</b>
<b>Connection diagram No.</b>	<b>4</b>	<b>6</b>

Operating voltage (U <sub>B</sub> )	10...35 V DC	10...35 V DC
Output current max. (I <sub>o</sub> )	400 mA	2 x 250 mA
Load current min.	-	-
Voltage drop max. (U <sub>d</sub> )	≤ 2.0 V	≤ 2.0 V
Permitted residual ripple max.	10 %	10 %
No-load current (I <sub>o</sub> )	typ. 15 mA	typ. 15 mA
Frequency of operating cycles max.	200 Hz	200 Hz
Permitted ambient temperature	-25...+70°C	-25...+70°C
LED-display	yellow	green/yellow
Protective circuit	built-in	built-in
Degree of protection IEC 529	IP 67	IP 67
Connection cable	2 m 3 x 0.75 mm <sup>2</sup>	2 m, 4 x 0.5 mm <sup>2</sup>
Housing material	brass	brass
Active surface	PTFE	PTFE
Lid	PA	PA



All specifications are subject to change without notice. (10/2004)



## Capacitive Sensors Series 70 - NPN Series 80 - PNP

Housing Ø 30 mm

- Housing material: brass
- Flush mountable
- Sensing distance 0.5...30 mm adjustable
- With metal flange connector M 12 x 1

Certificate:

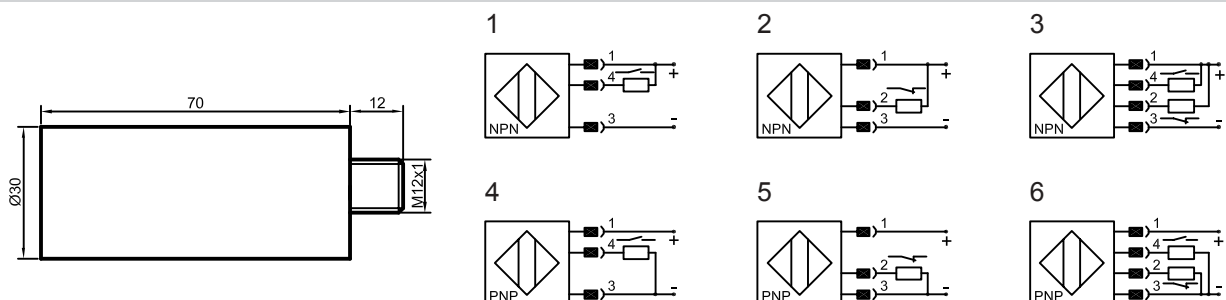


### Technical data

Operating distance $S_n$ [mm], flush mounting	20, yes
Operating distance min./max. [mm] adjustable	0.5...30
Electrical version	4-pin DC
Output	antivalent
<b>Type NPN</b>	<b>KAS-70-30-A-Y5</b>
<b>Art.-No.</b>	<b>714 400</b>
<b>Connection diagram No.</b>	<b>3</b>

<b>Type PNP</b>	<b>KAS-80-30-A-Y5</b>
<b>Art.-No.</b>	<b>814 400</b>
<b>Connection diagram No.</b>	<b>6</b>
Operating voltage ( $U_B$ )	10...35 V DC
Output current max. ( $I_o$ )	2 x 250 mA
Load current min.	-
Voltage drop max. ( $U_d$ )	≤ 2.0 V
Permitted residual ripple max.	10 %
No-load current ( $I_o$ )	typ. 15 mA
Frequency of operating cycles max.	200 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green/yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection	metal flange connector M12 x 1
Housing material	brass
Active surface	PTFE
Lid	PA

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## Capacitive Sensors

### Series 80 - IL - Analogue Output

Housing Ø 30 mm

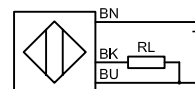
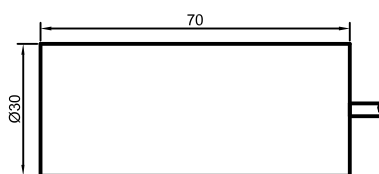
- Housing material: brass
- Flush mountable
- Operating range 0...30 mm

Certificate:



#### Technical data

Operating range [mm], flush mounting	0...30, yes
Linear range [mm]	0...20
Electrical version	3-wire DC
Output function	analogue
<b>Type Analog</b>	<b>KAS-80-30-IL</b>
<b>Art.-No.</b>	<b>815 000</b>
<b>Connection diagram No.</b>	<b>see below</b>
Operating voltage ( $U_B$ )	15...30 V DC
Output current max. ( $I_o$ )	$\geq 20\text{mA} \dots \leq 4\text{mA}$
Permitted residual ripple max.	5 %
No-load current ( $I_o$ )	$\leq 40 \text{ mA}$
Output current active surface free	$\geq 20 \text{ mA}$
Output current active surface covered	$\leq 20\text{mA} \dots \leq 4 \text{ mA}$
Load resistor	$R_L = 0 \dots 300 \text{ Ohm}$
Permitted ambient temperature	0...+60°C
LED-display	green/yellow/green
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection cable	2 m 3 x 0.75 mm <sup>2</sup>
Housing material	brass
Active surface	PTFE
Lid	PA



All specifications are subject to change without notice. (05/2004)



## Capacitive Sensors

### Series 80 - IL - Analogue Output

Housing Ø 30 mm

- Housing material: brass
- Flush mountable
- Operating range 0...30 mm
- With metal flange connector M12 x 1

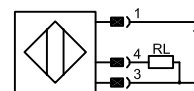
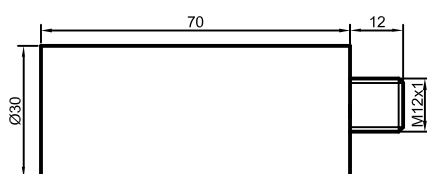
Certificate:



#### Technical data

Operating range [mm], flush mounting	0...30, yes
Linear range [mm]	0...20
Electrical version	3-pin DC
Output function	analogue
<b>Type Analog</b>	<b>KAS-80-30-IL-Y5</b>
<b>Art.-No.</b>	<b>815 100</b>
<b>Connection diagram No.</b>	<b>see below</b>
Operating voltage ( $U_B$ )	15...30 V DC
Output current max. ( $I_o$ )	$\geq 20\text{mA} \dots \leq 4\text{mA}$
Permitted residual ripple max.	5 %
No-load current ( $I_o$ )	$\leq 40\text{ mA}$
Output current active surface free	$\geq 20\text{ mA}$
Output current active surface covered	$\leq 20\text{mA} \dots \leq 4\text{ mA}$
Load resistor	$R_L = 0 \dots 300\text{ Ohm}$
Permitted ambient temperature	0...+60°C
LED-display	green/yellow/green
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection	metal flange connector M12 x 1
Housing material	brass
Active surface	PTFE
Lid	PA

All specifications are subject to change without notice. (05/2004)





## Capacitive Sensors Series 2000 - **quattro**<sup>3</sup>

Housing Ø 30 mm

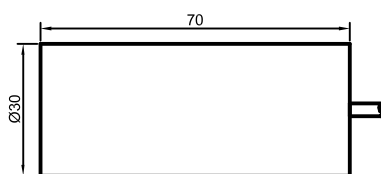
- Housing material: brass
- Flush mountable
- Sensing distance 2...25 mm adjustable
- Multifunction sensor: NPN / PNP;  
NO- / NC function switchable

Certificate:

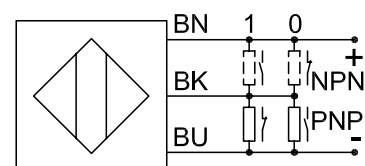
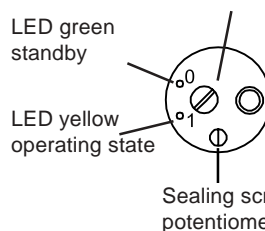


### Technical data

Operating distance $S_n$ [mm], flush mounting	20, yes
Operating distance min./max. [mm] adjustable	2...25
Electrical version	3-wire DC
Output	NO/NC switchable
<b>Type NPN/PNP switchable</b>	<b>KAS-2000-30</b>
<b>Art.-No.</b>	<b>770 500</b>
<b>Connection diagram No.</b>	<b>see below</b>
Operating voltage ( $U_B$ )	10...35 V DC
Output current max. ( $I_o$ )	400 mA
Load current min.	-
Voltage drop max. ( $U_d$ )	≤ 2.0 V
Permitted residual ripple max.	10 %
No-load current ( $I_o$ )	typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green and yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection cable	2 m 3 x 0.75 mm <sup>2</sup>
Housing material	brass
Active surface	PA
Lid	PA



Sealing screw, change-over switch



All specifications are subject to change without notice. (05/2004)



## Capacitive Sensors Series 90 AC/DC

Housing Ø 30 mm

- Housing material: PA
- Flush mountable
- Sensing distance 2...20 mm adjustable

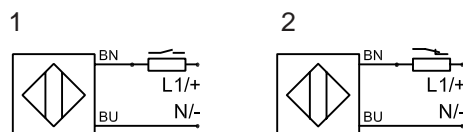
Certificate:



### Technical data

Operating distance $S_n$ [mm], flush mounting	15, yes	15, yes
Operating distance min./max. [mm] adjustable	2...20	2...20
Electrical version	2-wire AC/DC	2-wire AC/DC
Output	NO	NC
<b>Type</b>	<b>KAS-90-30-S</b>	<b>KAS-90-30-Ö</b>
<b>Art.-No.</b>	<b>901 500</b>	<b>901 600</b>
<b>Connection diagram No.</b>	<b>1</b>	<b>2</b>
Operating voltage ( $U_B$ )	20...250 V AC/DC	20...250 V AC/DC
Output current max. ( $I_e$ )	330 mA	330 mA
Load current min.	5 mA	5 mA
Voltage drop max. ( $U_d$ )	≤ 6 V	≤ 6 V
Permitted residual ripple max.	-	-
No-load current ( $I_0$ )	typ. 2.5 mA	typ. 2.5 mA
Frequency of operating cycles max.	25 Hz	25 Hz
Permitted ambient temperature	-25...+70°C	-25...+70°C
LED-display	yellow	yellow
Protective circuit	built-in	built-in
Degree of protection IEC 529	IP 67	IP 67
Connection cable	2 m 2 x 0.75 mm <sup>2</sup>	2 m 2 x 0.75 mm <sup>2</sup>
Housing material	PA	PA
Active surface	PA	PA
Lid	PA	PA

All specifications are subject to change without notice. (05/2004)





## Capacitive Sensors Series 1000 - AC/DC - duo<sup>2</sup>

Housing Ø 30 mm

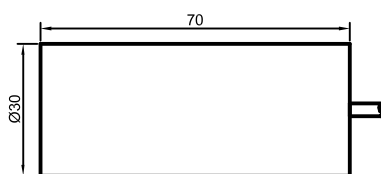
- Housing material: PA
- Flush mountable
- Sensing distance 2...20 mm adjustable
- NO- / NC function switchable

Certificate:

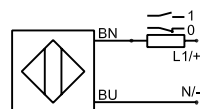
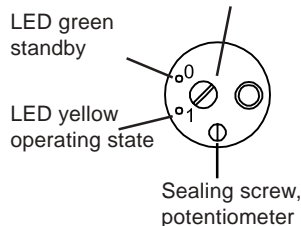


### Technical data

Operating distance $S_n$ [mm], flush mounting	15, yes
Operating distance min./max. [mm] adjustable	2...20
Electrical version	2-wire AC/DC
Output	NO/NC switchable
<b>Type</b>	<b>KAS-1000-30</b>
<b>Art.-No.</b>	<b>930 100</b>
<b>Connection diagram No.</b>	<b>see below</b>
Operating voltage ( $U_B$ )	20...250 V AC/DC
Output current max. ( $I_o$ )	330 mA
Load current min.	5 mA
Voltage drop max. ( $U_d$ )	≤ 6 V
Permitted residual ripple max.	-
No-load current ( $I_o$ )	typ. 2 mA
Frequency of operating cycles max.	25 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green and yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection cable	2 m 2 x 0.75 mm <sup>2</sup>
Housing material	PA
Active surface	PA
Lid	PA



Sealing screw, change-over switch



All specifications are subject to change without notice. (05/2004)



## Capacitive Sensors Series 70 - NPN Series 80 - PNP

Housing Ø 30 mm

- Housing material: PA
- Non-flush mountable
- Sensing distance 1...40 mm adjustable

Certificate:



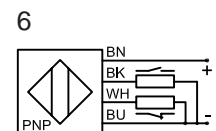
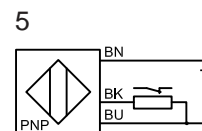
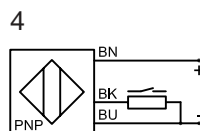
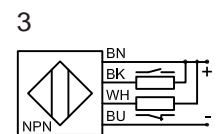
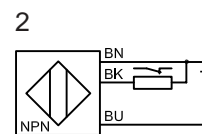
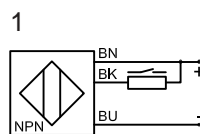
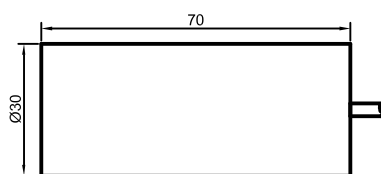
### Technical data

Operating distance $S_n$ [mm], flush mounting	25, no	25, no
Operating distance min./max. [mm] adjustable	1...40	1...40
Electrical version	3-wire DC	4-wire DC
Output	NO	antivalent
<b>Type NPN</b>	<b>KAS-70-35-S</b>	<b>KAS-70-35-A</b>
<b>Art.-No.</b>	<b>719 400</b>	<b>719 000</b>
<b>Connection diagram No.</b>	<b>1</b>	<b>3</b>

<b>Type PNP</b>	<b>KAS-80-35-S</b>	<b>KAS-80-35-A</b>
<b>Art.-No.</b>	<b>819 400</b>	<b>819 000</b>
<b>Connection diagram No.</b>	<b>4</b>	<b>6</b>

Operating voltage ( $U_B$ )	10...35 V DC	10...35 V DC
Output current max. ( $I_o$ )	400 mA	2 x 250 mA
Load current min.	-	-
Voltage drop max. ( $U_d$ )	$\leq 2.0$ V	$\leq 2.0$ V
Permitted residual ripple max.	10 %	10 %
No-load current ( $I_o$ )	typ. 15 mA	typ. 15 mA
Frequency of operating cycles max.	50 Hz	50 Hz
Permitted ambient temperature	-25...+70°C	-25...+70°C
LED-display	yellow	green/yellow
Protective circuit	built-in	built-in
Degree of protection IEC 529	IP 67	IP 67
Connection cable	2 m 3 x 0.75 mm <sup>2</sup>	2 m, 4 x 0.5 mm <sup>2</sup>
Housing material	PA	PA
Active surface	PA	PA
Lid	PA	PA

All specifications are subject to change without notice. (05/2004)







## Capacitive Sensors Series 70 - NPN Series 80 - PNP



Housing Ø 30 mm

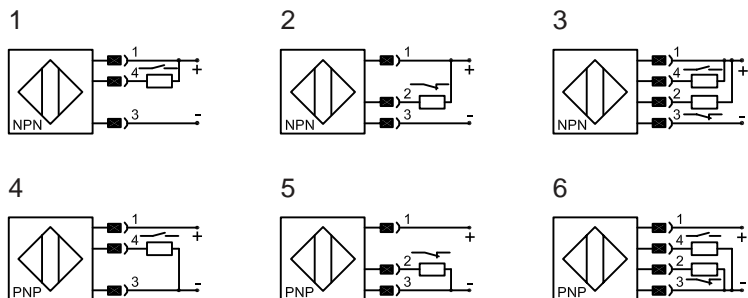
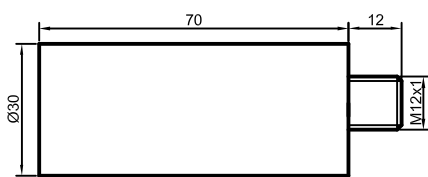
- Housing material: PA
- Non-flush mountable
- Sensing distance 1...40 mm adjustable
- With metal flange connector M12 x 1

Certificate:



### Technical data

Operating distance $S_n$ [mm], flush mounting	25, no
Operating distance min./max. [mm] adjustable	1...40
Electrical version	4-pin DC
Output	antivalent
<b>Type NPN</b>	<b>KAS-70-35-A-Y5</b>
<b>Art.-No.</b>	<b>719 200</b>
<b>Connection diagram No.</b>	<b>3</b>
<b>Type PNP</b>	<b>KAS-80-35-A-Y5</b>
<b>Art.-No.</b>	<b>819 200</b>
<b>Connection diagram No.</b>	<b>6</b>
Operating voltage ( $U_B$ )	10...35 V DC
Output current max. ( $I_o$ )	2 x 250 mA
Load current min.	-
Voltage drop max. ( $U_d$ )	≤ 2.0 V
Permitted residual ripple max.	10 %
No-load current ( $I_o$ )	typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green/yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection	metal flange connector M12 x 1
Housing material	PA
Active surface	PA
Lid	PA



All specifications are subject to change without notice. (05/2004)



**Capacitive Sensors  
Series 2000 - *quattro*<sup>3</sup>**

**Housing Ø 30 mm**

- **Housing material: PA**
- **Non-flush mountable**
- **Sensing distance 3...30 mm adjustable**
- **Multifunction sensor: NPN / PNP;  
NO- / NC function switchable**

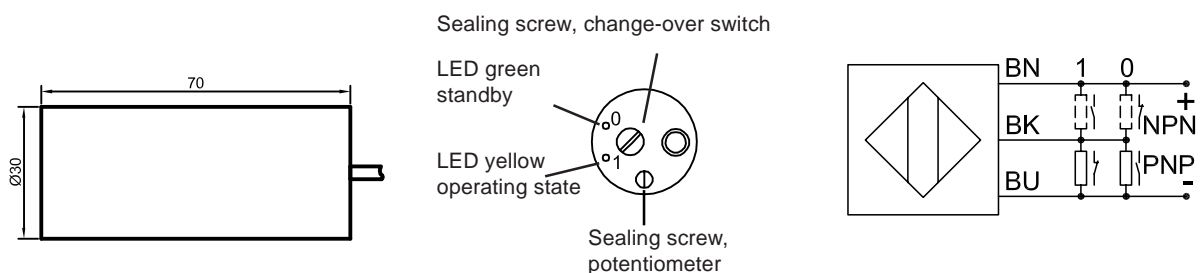
Certificate:



**Technical data**

Operating distance $S_n$ [mm], flush mounting	25, no
Operating distance min./max. [mm] adjustable	3...30
Electrical version	3-wire DC
Output	NO/NC switchable
<b>Type NPN/PNP switchable</b>	<b>KAS-2000-35</b>
<b>Art.-No.</b>	<b>770 700</b>
<b>Connection diagram No.</b>	<b>see below</b>
Operating voltage ( $U_B$ )	10...35 V DC
Output current max. ( $I_e$ )	400 mA
Load current min.	-
Voltage drop max. ( $U_d$ )	≤ 2.0 V
Permitted residual ripple max.	10 %
No-load current ( $I_o$ )	typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green and yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection cable	2 m 3 x 0.75 mm <sup>2</sup>
Housing material	PA
Active surface	PA
Lid	PA

All specifications are subject to change without notice. (05/2004)





## Capacitive Sensors Series 90 AC/DC

Housing Ø 30 mm

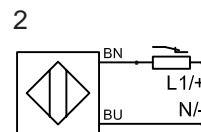
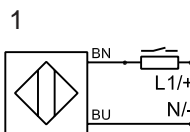
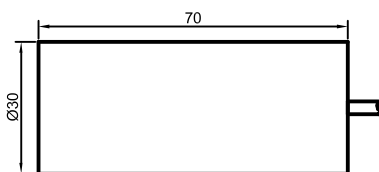
- Housing material: PA
- Non-flush mountable
- Sensing distance 3...25 mm adjustable

Certificate:



### Technical data

Operating distance $S_n$ [mm], flush mounting	20, no	20, no
Operating distance min./max. [mm] adjustable	3...25	3...25
Electrical version	2-wire AC/DC	2-wire AC/DC
Output	NO	NC
<b>Type</b>	<b>KAS-90-32-S</b>	<b>KAS-90-32-Ö</b>
<b>Art.-No.</b>	<b>902 100</b>	<b>902 200</b>
<b>Connection diagram No.</b>	<b>1</b>	<b>2</b>
Operating voltage ( $U_b$ )	20...250 V AC/DC	20...250 V AC/DC
Output current max. ( $I_o$ )	330 mA	330 mA
Load current min.	5 mA	5 mA
Voltage drop max. ( $U_d$ )	≤ 6 V	≤ 6 V
Permitted residual ripple max.	-	-
No-load current ( $I_o$ )	typ. 2.5 mA	typ. 2.5 mA
Frequency of operating cycles max.	25 Hz	25 Hz
Permitted ambient temperature	-25...+70°C	-25...+70°C
LED-display	yellow	yellow
Protective circuit	built-in	built-in
Degree of protection IEC 529	IP 67	IP 67
Connection cable	2 m 2 x 0.75 mm <sup>2</sup>	2 m 2 x 0.75 mm <sup>2</sup>
Housing material	PA	PA
Active surface	PA	PA
Lid	PA	PA





**Capactive Sensors**  
**Serie 1000 - AC/DC - duo<sup>2</sup>**

**Housing Ø 30 mm**

- **Housing material: PA**
- **Non-flush mountable**
- **Sensing distance 3...25 mm adjustable**
- **NO- / NC function switchable**

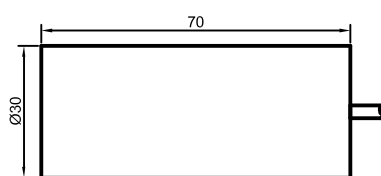
Certificate:



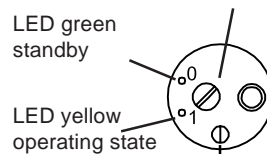
**Technical data**

Operating distance $S_n$ [mm], flush mounting	20, no
Operating distance min./max. [mm] adjustable	3...25
Electrical version	2-wire AC/DC
Output	NO/NC switchable
<b>Type</b>	<b>KAS-1000-32</b>
<b>Art.-No.</b>	<b>930 300</b>
<b>Connection diagram No.</b>	<b>see below</b>
Operating voltage ( $U_B$ )	20...250 V AC/DC
Output current max. ( $I_e$ )	330 mA
Load current min.	5 mA
Voltage drop max. ( $U_d$ )	≤ 6 V
Permitted residual ripple max.	-
No-load current ( $I_0$ )	typ. 2 mA
Frequency of operating cycles max.	25 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green and yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection cable	2 m 2 x 0.75 mm <sup>2</sup>
Housing material	PA
Active surface	PA
Lid	PA

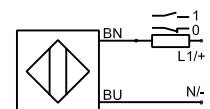
All specifications are subject to change without notice. (05/2004)



Sealing screw, change-over switch



Sealing screw, potentiometer





## Capacitive Sensors



### Series 80 - PNP

Housing Ø 30 mm

- Housing material: PTFE
- Ideal for detection of chemically aggressive media
- Also suitable for food applications
- Non-flush mountable
- Sensing distance 1...40 mm adjustable

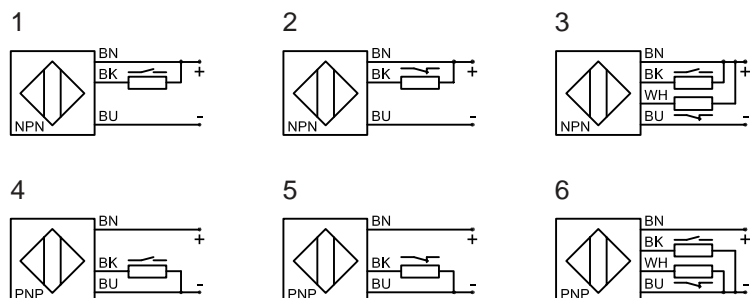
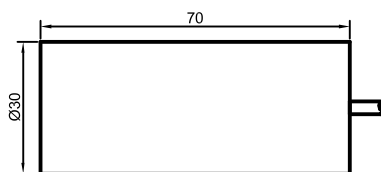
Certificate:



#### Technical data

Operating distance $S_n$ [mm], flush mounting	25, no
Operating distance min./max. [mm] adjustable	1...40
Electrical version	4-wire DC
Output	antivalent
<b>Type NPN</b>	
<b>Art.-No.</b>	
<b>Connection diagram No.</b>	

<b>Type PNP</b>	<b>KAS-80-35-A-PTFE</b>
<b>Art.-No.</b>	<b>819 010</b>
<b>Connection diagram No.</b>	<b>6</b>
Operating voltage ( $U_B$ )	10...35 V DC
Output current max. ( $I_o$ )	2 x 250 mA
Load current min.	-
Voltage drop max. ( $U_d$ )	≤ 2.0 V
Permitted residual ripple max.	10 %
No-load current ( $I_o$ )	typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-25...+70°C
LED-display	green/yellow
Protective circuit	built-in
Degree of protection IEC 529	IP 67
Connection cable	2 m 4 x 0.5 mm <sup>2</sup>
Housing material	PTFE
Active surface	PTFE
Lid	PA



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