

**Capacitive
Overfill
Leakage Control**



**RECHNER
SENSORS**





For all transactions, the newest version of the „General Conditions of Sale and Delivery for Products and Services of the Electrical Industry ZVEI“ shall apply, along with the supplementary conditions „extended reservation of proprietary rights“, together with the supplements listed on our order confirmations and/or invoices. All specifications are subject to change without notice. Reprint, even in part, only with our consent.
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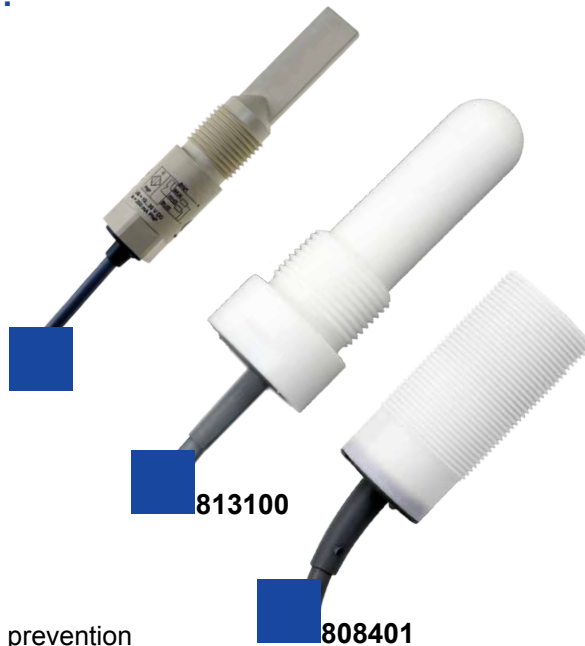
Edition January 2020

All specifications are subject to change without notice. (16.01.2020)

Capacitive Sensors - Overfill Prevention - WHG

For Containers that contain water-polluting liquids, the Water Resources Act (in Germany WHG) prescribes overfill protection.

The Water Resources Act has the important task to provide the legal basis for the protection of surface waters and ground waters. It serves to protect our environment and sustainability ensures the quality and availability of the important element of water for humans, flora and fauna. The application and compliance with the law is monitored by authorised bodies.



Your advantage:

- Reliable overfill prevention
- Precise level control
- Compliance with the Water Resource Act (WHG)
- Models available with both WHG and ATEX certificate

The capacitive overfill prevention from RECHNER Sensors controls the level. Just in time before the maximum permissible level in the container is reached they trigger an alarm. This means a double benefit for you as the capacitive overfill protection controls the level and offers operational safety. The sensors are certified by the DIBt (Deutsches Institut für Bautechnik). Different sensor designs are available: on the left you can see some examples.

*Protect the
important
Element
Water!*



Capacitive Leak - Sensors

Also the leak detection sensors, which are placed in the drip trays serve as a water protection device in accordance with the water protection Act (WHG).

If leaks occur on your plant, the leak sensor detects the liquid that comes into the active area of the sensor and immediately it triggers an alarm.

Your advantage:

- Reliable Leakage control
- Compliance with the Water Resource Act (WHG)
- Models available with both WHG and ATEX certificate



*Leakage
Control!*



**PROTECT
THE
WATER**



The Certificates

The certificates Z-65.13-572 and Z-65.40-573 are available as download files on our web-site under documents/certificates.

These certificates contain detailed information on how the sensors should be mounted and applied.

Z-65.13-572 = Overfill Prevention

Z-65.40-573 = Leakage Sensor



Allgemeine bauaufsichtliche Zulassung

Deutsches Institut für Bautechnik
Zulassungsstelle für Bauprodukte und Bauarten
Bautechnisches Präfix
Eine vom Bund und den Ländern gemeinsam getragene Anstalt des öffentlichen Rechts
Mitglied der EOTA, der UEAtc und der WFTAG

Zulassungsnummer:
Z-65.13-572

Antragsteller:
RECHNER Industrie-Elektronik GmbH
Gaußstraße 8-16
68623 Lampertheim

Zulassungsgegenstand:
Standsufnehmer (kapazitive Sonde) "KAS" mit integriertem Messumformer als Teile von Überfüllsicherungen

Geltungsdauer
vom: 22. Februar 2018
bis: 22. Februar 2023

Datum: 22.02.2018 **Geschäftszeichen:** II 23-1.65.13-35/17

Der oben genannte Zulassungsgegenstand wird hiermit allgemein bauaufsichtlich zugelassen.
Diese allgemeine bauaufsichtliche Zulassung umfasst sechs Seiten und eine Anlage mit zwei Seiten.

DIBt

Z-65.13-572 Level Control(Overfill prevention (capacitive sensor) „KAS“ with integrated measuring transmitter as part of an overfill prevention.

Allgemeine bauaufsichtliche Zulassung

Deutsches Institut für Bautechnik
Zulassungsstelle für Bauprodukte und Bauarten
Bautechnisches Präfix
Eine vom Bund und den Ländern gemeinsam getragene Anstalt des öffentlichen Rechts
Mitglied der EOTA, der UEAtc und der WFTAG

Zulassungsnummer:
Z-65.40-573

Antragsteller:
RECHNER Industrie-Elektronik GmbH
Gaußstraße 8-16
68623 Lampertheim

Zulassungsgegenstand:
Leckage-sonde (kapazitive Sonde) "KAS" mit integriertem Messumformer als Teile von Leckageerkennungssystemen

Geltungsdauer
vom: 22. Februar 2018
bis: 22. Februar 2023

Datum: 22.02.2018 **Geschäftszeichen:** II 23-1.65.40-36/17

Der oben genannte Zulassungsgegenstand wird hiermit allgemein bauaufsichtlich zugelassen.
Diese allgemeine bauaufsichtliche Zulassung umfasst sechs Seiten und eine Anlage mit zwei Seiten.

DIBt

Z-65.40-573 Leakage Sensor (capacitive sensor) „KAS“ with integrated measuring transmitter as part of leakage detection systems.

Certified Capacitive Sensors . Overfill Prevention and Leakage Sensors - Z-65.13-572

OVERFILL PREVENTION / LEAK SENSORS

Capacitive Sensors in Cylindrical bodies PNP Output - 10...35 V DC

Art.-No.	Type	
805620	KAS-80-A14-A-M30-PTFE-Z02-1-HP	8
808401	KAS-80-A24-A-M30-PTFE-Z02-1-HP	9
813100	KAS-80-26/113-A-G1-PTFE-Z02-1-HP	10
815830	KAS-80-30-A-M32-PTFE-Z02-1-HP	11

Capacitive Sensor - SmartPaddle

Art.-No.	Type	Page
KA1237	KAS-80-P50-A-G1/2-LCP-Z02-1-HP	12

Capacitive Sensor - 95 Series with Relay Output - 20...250 V AC/DC

Art.-No.	Type	Page
KA 0747	KAS-95-A24-1CO-M30-POM-Z02-1-HP	13

Capacitive Sensor - 42 Series with NAMUR Output

Art.-No.	Type	Page
KA1452	KAS-42-35-N-M32-PTFE-Z02-1	14



*Further Models
on request!*

Certified Leakage Sensors - Z-65.40-573

Capacitive Leakage Sensor PNP Output - 10...35 V DC

Art.-No.	Type	Page
KA 1484	KAS-80-39/23-Ö-D38-PTFE-Z02-1-Leak	15

LEAK SENSORS

Capacitive Leakage Sensor - 42 Series with NAMUR Output

Art.-No.	Type	Page
KA1485	KAS-42-39/23-Ö-D38-PTFE-Z02-1-Leak	16

Further models on request!



KA1484



**PROTECT
THE
WATER**





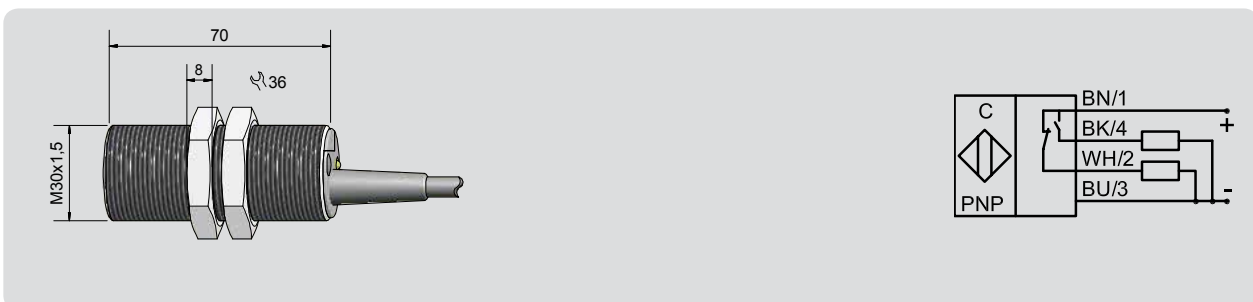
Capacitive Sensors Series 80 - PNP

Housing M 30 x 1,5

- Housing material: PTFE
- Ideal for detection of chemically aggressive media
- Suitable for food applications
- Sensing distance 0,5...25 mm adjustable
- Option: Total chemical resistance is given when ordering the sensor with PTFE cable and PTFE protection set Art.-No. 196302
- Leakage control
- Overfill prevention



Technical data	Flush mountable
Operating distance S_n	10 mm
Operating distance min. / max. adjustable	0,5...25 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	KAS-80-A14-A-M30-PTFE-Z02-1-HP
Art.-No.	805 620
Operating voltage (U_B)	10...35 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_o)	2 x 0...250 mA
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*
Norm	EN 60947-5-2
Connection cable	2 m, PVC, 4 x 0.5 mm ²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 30 x 1,5



* With sealed potentiometer screw

Made in Germany



Capacitive Sensors Series 80 - PNP

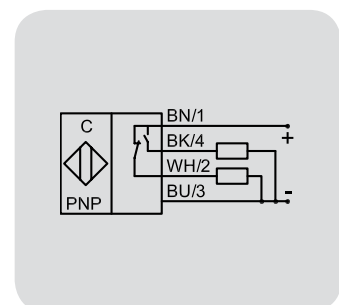
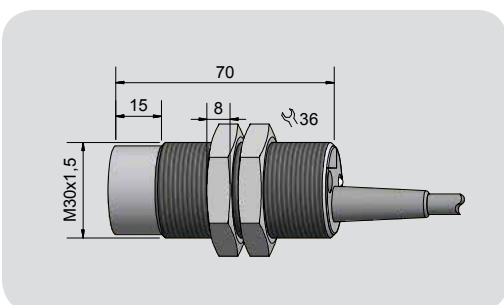
Housing M 30 x 1,5

- Housing material: PTFE
- Ideal for detection of chemically aggressive media
- Suitable for food applications
- Sensing distance 1...30 mm adjustable
- Option: Total chemical resistance is given when ordering the sensor with PTFE cable and PTFE-protection set Art.-No. 196302
- Leakage control
- Overfill prevention



Technical data	Non-flush mountable
Operating distance S_n	15 mm
Operating distance min. / max. adjustable	1...30 mm
Electrical version	4-wire DC
Output function	Antivalent (NO + NC)
Type PNP	KAS-80-A24-A-M30-PTFE-Z02-1-HP
Art.-No.	808 401
Operating voltage (U_B)	10...35 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...250 mA
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 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	2 m, PVC, 4 x 0.5 mm ²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 30 x 1,5

* With sealed potentiometer screw



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Capacitive Sensors - S26 Series 80 - PNP

- Type of construction G 1"
- Housing material: PTFE
 - Overfill prevention
 - Leakage control

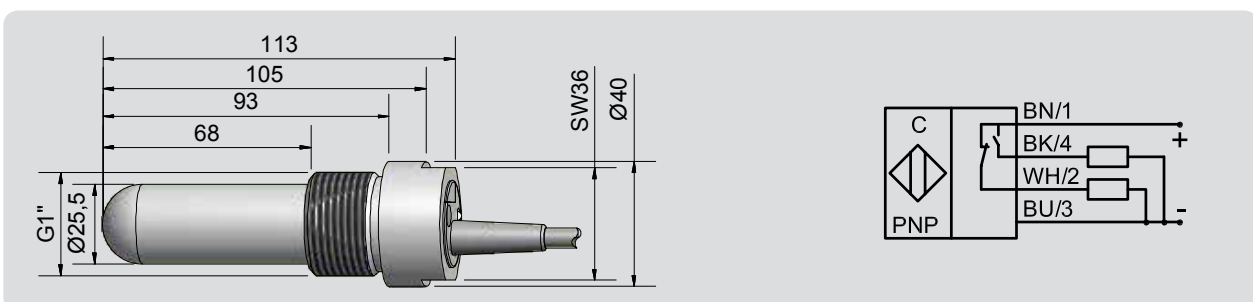


Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...20 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	KAS-80-26/113-A-G1-PTFE-Z02-1-HP
Art.-No.	813 100
Operating voltage (U_B)	10...35 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...250 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-25...+70 °C / CIP 121 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	2 m, PVC, 4 x 0.5 mm ²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA
Media optimized	Yes

Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter and welding socket please see our selection of accessories.

Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ϵ_r from 1, 1. Products can be:

- Bulk material, like plastic granules, powder, cereals, etc.
- Liquids, like water, juice, wine, oil, chemicals or pharmaceutical solutions and much more.
- Pastes in the food, pharmaceutical and cosmetics industry



* With sealed potentiometer screw

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Capacitive Sensors Series 80 - PNP

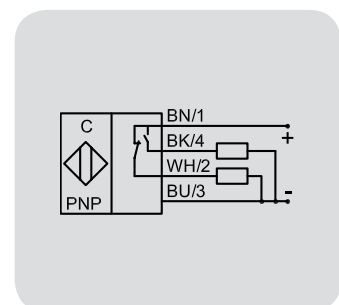
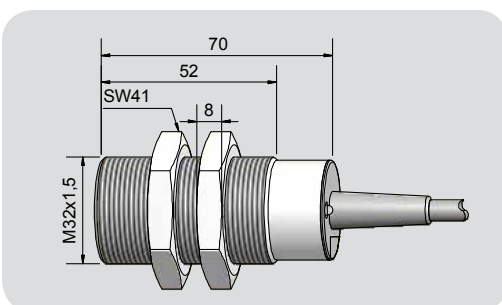
Housing M 32 x 1.5

- Housing material: PTFE
- Ideal for detection of chemically aggressive media
- Suitable for food applications
- Sensing distance 0.5...30 mm adjustable
- Option: Total chemical resistance is given when ordering the sensor with PTFE cable and PTFE-protection set Art.-No. 196301
- Leakage control
- Overfill prevention



Technical data	Flush mountable
Operating distance S_n	20 mm
Operating distance min. / max. adjustable	0.5...30 mm
Electrical version	4-wire DC
Output function	Antivalent (NO + NC)
Type PNP	KAS-80-30-A-M32-PTFE-Z02-1-HP
Art.-No.	815 830
Operating voltage (U_B)	10...35 V DC
Operating current (I_e)	2 x 0...250 mA
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*
Norm	EN 60947-5-2
Connection cable	2 m, PVC, 4 x 0.50 mm ²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 32 x 1,5

* With sealed potentiometer screw



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SMART PADDLE™

Capacitive Sensors
Series 70 - NPN - Series 80 - PNP

Housing G1/2"

- Housing material: LCP
- SIP / CIP 121° C
- Special version with flange. Sealing can be made with a gasket or PTFE-tape (not supplied with the sensor)
- Leakage control
- Overfill prevention



Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Sensitivity	Typ. ϵ_r 2...80
Electrical version	4-wire DC
Output function	Antivalent
Type NPN	KAS-70-P50-A-G1/2-LCP-Z02-1-HP
Art.-No.	KA 1322
Connection diagram No.	1
Type PNP	KAS-80-P50-A-G1/2-LCP-Z02-1-HP
Art.-No.	KA 1237
Connection diagram No.	2
Operating voltage (U_B)	10...35 V DC
Output current max.	2 x 0...200 mA
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.	2 Hz
Permitted ambient temperature	-25...+70 °C / CIP 121° C (zero-current)
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	2 m, PVC, 4 x 0.34 mm ²
Housing material	LCP (FDA 21 CFR 176.170(c))
Active surface	LCP (FDA 21 CFR 176.170(c))
Lid	PA
Media optimized	Yes
Accessory: Varivent Adapter, Welding Socket (Please see our range of accessories, not supplied with the sensor).	

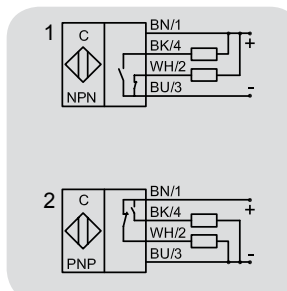
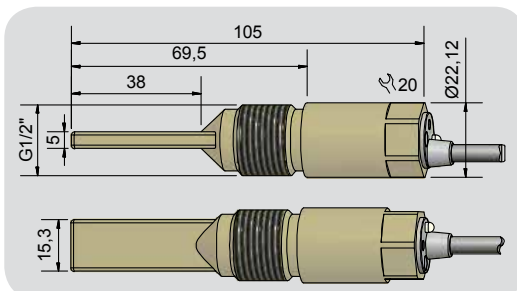
This capacitive level sensor is pre-adjusted for the detection of bulk materials or liquids with a dielectric constant ϵ_r of 2 to 80.

This fully electronic Paddle Sensor has no moving parts and is not subject to wear or tear and thus there is no down time due to false detections caused by material build-up.

Advantages SMART PADDLE:

- Sensitivity is pre-adjusted
- Measurement is independent of the mounting position
- Permitted pressure on the active area: 10 bar
- Process connection G 1/2"

* With sealed potentiometer screw



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Capacitive Sensors Series 95 - AC / DC

Housing M 30 x 1,5

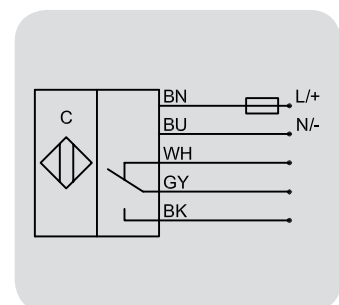
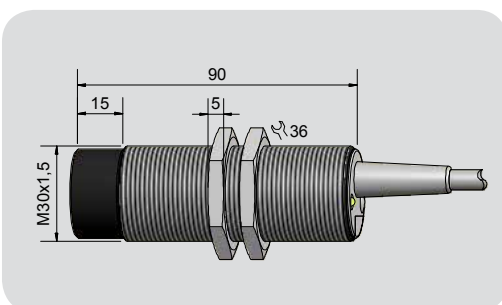
- Housing material: POM
- Sensing distance 2...20 mm adjustable
- Potential-free change-over contact
- Leakage control
- Overfill prevention



Technical data	Non-flush mountable
Operating distance S_n	15 mm
Operating distance min. / max. adjustable	2...20 mm
Electrical version	5-wire AC / DC
Output	Relay, 1 CO
Type	KAS-95-A24-1CO-K-POM
Art.-No.	KA 0747
Operating voltage (U_B)	20...250 AC / DC
Load max. AC (I, U)	1 A, 250 V
Load max. DC (I, U, P)	1 A, 220 V, 60 W
No-load current (I_o)	2,1 mA
Frequency of operating cycles max.	2 Hz
Permitted ambient temperature	-25...+70 °C
LED-display	Yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	2 m, PVC, 5 x 0,34 mm ²
Housing material	POM
Active surface	POM
Lid	PA
Accessories (delivered with the sensor)	2 nuts M 32 x 1,5

*With sealed potentiometer

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Capacitive Sensors Series 42 - NAMUR EN 60947-5-6

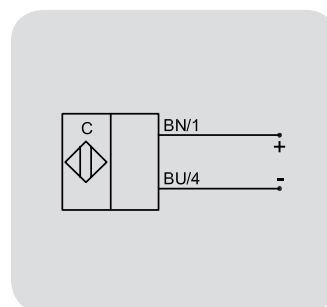
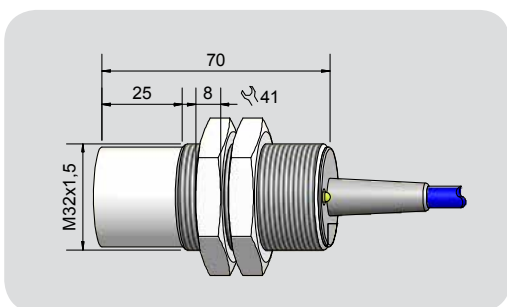
Housing M 32 x 1.5

- Housing material: PTFE
- Ideal for detection of chemically aggressive media
- Suitable for food applications
- Sensing distance 0...20 mm adjustable
- Option: Total chemical resistance is given when ordering the sensor with PTFE cable and PTFE-protection set Art.-No. 196301
- Overfill prevention
- Leakage control



Technical data	Non-flush mountable
Operating distance S_n	18 mm
Operating distance min. / max. adjustable	0...20 mm
Electrical version	2-wire DC
Output function	NAMUR DIN 60947-5-6
Type	KAS-42-35-N-M32-PTFE-Z02-1
Art. No.	KA 1452
Operating voltage (U_B)	5 - 15 V DC, $U_i = 15$ V DC
Output current active surface free	< typ. 1.5 mA
Output current active surface covered	> typ. 2.5 mA
Self-inductance (L)	0.2 mH
Self-capacitance (C)	250 nF
Permitted residual ripple max.	5 %
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-20...+70 °C
LED-display	Yellow
Degree of protection IEC 60529	IP 67*
Connection cable	2 m, PUR, 2 x 0.75 mm ²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Accessories (is delivered with the unit)	2 nuts M 32 x 1.5

* With sealed potentiometer screw



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Capacitive Sensors Series Leak

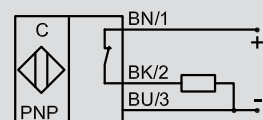
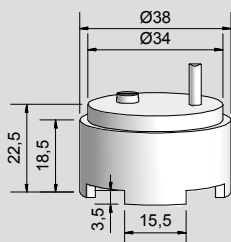
Housing Ø 38 mm

- Leakage control in clean room / Alarm for containers and pipelines
- Mounting in „drip trays“ of plastic, glass or metal
- Housing material: PTFE
- Semiconductor Industry, Chemical Industry



Technical data	Flush mountable
Operating distance S_n	2 mm
Electrical version	3-wire DC
Output function	Normally closed
Type PNP	KAS-80-39/23-Ö-D38-PTFE-Z02-1-Leak
Art.-No.	KA 1484
Operating voltage (U_B)	10...35 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Operating current (I_a)	0...250 mA
Permitted residual ripple max.	10 %
No-load current (I_o)	Typ. 15 mA
Permitted ambient temperature	Clean room conditions
LED-display	Green / red
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	2 m, FEP, screened, 3 x 0.14 mm
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PTFE (FDA 21 CFR 177.1550)

All specifications are subject to change without notice. (16.01.2020)



* With sealed potentiometer screw

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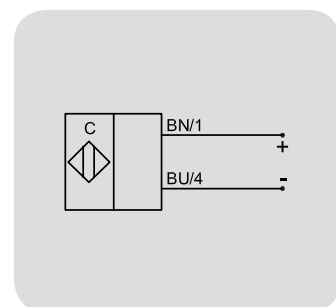
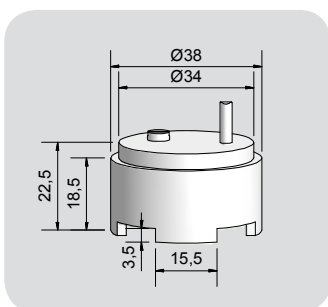
Capacitive Sensors Series Leak

Housing Ø 38 mm

- Leakage control in clean room / Alarm for containers and pipelines.
Mounting in „drip trays“ of plastic, glass or metal
- Housing material: PTFE
- Semiconductor Industry, Chemical Industry



Technical data	Flush mountable
Operating distance S_n	2 mm
Electrical version	2-wire DC
Output function	NAMUR DIN 60947-5-6
Type PNP	KAS-42-39/23-N-D38-PTFE-Z02-1-Leak
Art.-No.	KA 1485
Operating voltage (U_B)	5 - 15 V DC, $U_I = 15$ V DC
Output current active surface free	< typ. 1.5 mA
Output current active surface covered	> typ. 2.5 mA
Self-inductance (L)	0.2 mH
Self-capacitance (C)	250 nF
Permitted residual ripple max.	10 %
Permitted ambient temperature	Clean room conditions
LED-display	Red
Degree of protection IEC 529	IP 67
Connection cable	2 m, screened, 3 x 0.14 mm
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PTFE (FDA 21 CFR 177.1550)



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Customer proximity guaranteed!

Rechner Sensors has daughter and sister companies in China, Great Britain, Italy, Canada, South Korea and in the U.S..

Furthermore we have representative offices in over 50 countries. For the addresses of our sales partners please visit our website. You will find the addresses under the category contact.

CANADA

Rechner Automation Inc
348 Bronte St. South - Unit 11
Milton, ON L9T 5B6

Tel. 905 636 0866
Fax. 905 636 0867
contact@rechner.com
www.rechner.com

GREAT BRITAIN

Rechner (UK) Limited
Unit 6, The Old Mill
61 Reading Road
Pangbourne, Berks, RG8 7HY

Tel. +44 118 976 6450
Fax. +44 118 976 6451
info@rechner-sensors.co.uk
www.rechner-sensors.co.uk

ITALY

Rechner Italia SRL
Via Isarco 3
39100 Bolzano (BZ)
Office:
Via Dell'Arcoveggio 49/5
40129 Bologna
Tel. +39 051 0015498
Fax. +39 051 0015497
vendite@rechneritalia.it
www.rechneritalia.it

PEOPLE'S REPUBLIC OF CHINA

RECHNER SENSORS SIP CO.LTD.
Building H,
No. 58, Yang Dong Road
Suzhou Industrial Park
Jiangsu Province

Tel. +8651267242858
Fax. +8651267242868
assist@rechner-sensor.cn
www.rechner-sensor.cn

REPUBLIC OF KOREA (SOUTH)

Rechner-Korea Co. Ltd.
A-1408 Ho,
Keungang Penterium IT Tower,
Hakeuiro 282, Dongan-gu
Anyang City, Gyunggi-do, Seoul

Tel. +82 31 422 8331
Fax. +82 31 423 83371
sensor@rechner.co.kr
www.rechner.co.kr

UNITED STATES OF AMERICA

Rechner Electronics Ind. Inc.
6311 Inducon Corporate Drive,
Suite 5
Sanborn, NY. 14132

Tel. 800 544 4106
Fax. 905 636 0867
contact@rechner.com
www.rechner.com



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RECHNER

INDUSTRIE-ELEKTRONIK GMBH

Gaußstraße 6-10 • 68623 Lampertheim • Germany

T: +49 6206 5007-0 • F: +49 6206 5007-36 • F Intl. +49 6206 5007-20

www.rechner-sensors.com • E-mail: info@rechner-sensors.de