RECHNER

High-Lights 2020

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.

Edition January 2020

RECHNER Industrie-Elektronik GmbH • Gaußstraße 6-10 • D-68623 Lampertheim • Tel. +49 6206 5007-0 • Fax +49 6206 5007-36 • e-mail: info@rechner-sensors.de • www.rechner-sensors.com

Dear Business Partner!

Thank you for your interest.

Rechner sensors have been leading the development of capacitive sensor technology for 50 years – it is our core expertise.

Capacitive sensors can detect the levels of all types media or they can be used for position control plus they are an important feedback device for many automation system set-ups.
Capacitive sensors are vital for the highest quality control of critical processes, optimising production and helping to ensure your competitive edge.

Industrial development is fast moving and exciting and it is through our customer's that Rechner have a wide experience and insight into the most diverse industrial sectors. This diversity drives creativity from our design and application engineers to innovate, find and realise successful and reliable sensor solutions for all applications.

This brochure offers a brief overview of some of our latest product Highlights 2020. It is just a small snapshot of Rechner's world of sensors.

Please do get in contact with us to obtain further details on Rechner high performance sensors and to discuss your own sensor applications as well as how best we can support you.

Your RECHNER Team

Corporate social responsibility

CLIMATE NEUTRAL MANUFACTURING IN GERMANY

For many years it has been one of Rechner Sensors' goals to continuously reduce our climate footprint and to keep our CO2 emissions as low as possible.

Targeted and tracked consumption for energy savings and energy efficiency are a clear part of company policy and Rechner's philosophy.

The energy generation by our extensive roof mounted photovoltaic units across the factory makes a major contribution. In addition, high efficiency, state-of-the-art machines and work process equipment, plus energy-saving lamps and workplace energy monitors are examples of the company's planned commitment to saving energy.

Each individual member of the Rechner team is responsible for ensuring that all resources are used as sparingly as possible. As a result, the sensors and level systems manufactured in our German production facility are climate-neutral.

We take our social responsibility for sustainability seriously and everyone, including the company management and the entire Rechner team, work together to ensure that our environmental and climate targets are met and wherever possible exceeded.

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Editorial team's note

THIS BROCHURE IS A COLLECTION OF NEW PRODUCT DATA SHEETS

As a result, some included supporting information within the data sheets has been duplicated. Currently this is the simplest organisation format.

The new products currently presented are diverse and not every product will be of interest to the reader. For this reason, we have designed the brochure with perforations on each page edge, so that you can take out and store the pages on just the products which you are interested in.

A key strength of RECHNER Sensors is that we can offer a wide range of sensors with both Switched and Analogue outputs. In order to highlight this benefit, and to make it visually easier for readers to identify the sensor type, we have colour coded the pages:

Yellow = Switched Output
Purple = Analogue Output

We hope you enjoy reading about our new products plus we look forward to receiving your feedback and to discussing your sensor applications.

Capacitive Sensors and Level Probes are the perfect signal indicators for level control

CLASSIC CAPACITIVE SENSORS

The capacitive sensors generate a capacitive field in the area of the active surface. Every medium, i.e. liquid or bulk material with a dielectric constant of ≥ 1,1 is detected. Depending on the model used, the value is output as a switching signal or as an analog signal. This allows the level to be controlled via the connected control system.

Classic Sensors offer the following options;

- **Binary measurement**
  Normally open, Normally closed, Antivalent
- **Analogue measurement**
  4...20 mA or 0....10 V

CAPACITIVE SENSORS AND LEVEL PROBES ARE THE PERFECT DETECTION DEVICES FOR LEVEL CONTROL

- **LIQUIDS**
- **BULK MATERIAL**
- **PASTE**

Good to know!

DEPENDENT ON THE APPLICATION THERE ARE TWO MOUNTING VARIANTS:

1. NON-FLUSH MOUNTABLE

= CONTACT WITH PRODUCTS

For the level control of liquids or bulk materials the best sensors to deploy are Non-Flush format with the active surface of the sensor in direct contact with the media to be detected

Dependent on the material to be detected specific requirements to the housing designs have to be considered. Especially for that part which is in direct contact with the product.

2. FLUSH MOUNTABLE

= AT DISTANCE OR THROUGH THE CONTAINER WALL

Flush format sensors have the option to control product levels through a non-metal container wall. The wall thickness should not exceed 4mm at the sensing location

Furthermore the flush mountable sensors are often used for the position control of objects. With these kind of applications the sensor is not normally in direct contact with the material to be detected and therefore the demands on the housing designs are lower. Nevertheless demanding housing designs are possible as well, when required.

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Capacitive Sensors – Rechner's extensive sensor experience plus focus on developing solutions for our customer's means that our capacitive sensor range is broad and rich in options

OUR STANDARD PRODUCT RANGE OFFERS SENSORS AND PROBES FOR:

- **ATEX DUST EX ZONE 20, 21 AND 22**
- **ATEX GAS EX ZONE 0, 1 AND 2**
- **FOOD CONTACT**
- **HYGIENIC DESIGN**
- **CONTACT WITH CHEMICAL PRODUCTS**
- **HIGH-TEMPERATURE APPLICATIONS**
- **CONTAINERS WITH PRESSURE OR VACUUM**

ATEX CERTIFIED SENSORS SUITABLE FOR FOOD APPLICATIONS

are normal business for Rechner. We wish to especially emphasize our unique 'All-In-One' certified sensors which do not require an ATEX barrier to interface them.

EasyTeach

EASY TEACH - A RECHNER BRAND ADVANTAGE

For many years the successful EasyTeach function has been proven and integrated into various sensor series:

EasyTeach by button (ETB)

EasyTeach by Magnet (ETM)

EasyTeach by Wire (ETW)

EasyTeach by Membrane Foil (ETF)

All of these formats are based on the same fast acting micro-controller analysis of the media to be detected which then immediately adjusts the sensor to the optimum setting for each customer installation.

With EasyTeach by magnet (ETM) the adjustment is made by means of a teach magnet that is supplied with the sensor.
This can be of additional advantage, when the device should be protected against unintended adjustments.

With EasyTeach by Wire (ETW) sensors they can be adjusted directly from the control panel which delivers the most secure adjustment set-up. Where there is poor access, or even no access at all to set-up an installed sensor, Rechner's ETW facility is a big advantage for the remote setting of such sensors

MICRO - CONTROLLER AIDED ADJUSTMENT REPLACES THE MECHANICAL POTENTIOMETER

Capacitive Sensors with EasyTeach Function

Capacitive sensors in the EasyMount series need very little space.

There are different compact versions with 5mm (KA8993), 8mm (KA1451) and 15mm (KA1147) thicknesses

Excellent for the level control of liquids through non-metal container walls.

Sensitivity adjustment type dependent with:

- EasyTeach by Magnet (ETM)
- EasyTeach by Wire (ETW)

EasyTeach

The smallest capacitive sensor with EasyTeach by Wire.

Non-flush mountable:
Safe level control of liquids or powders in small containers.

Flush mountable:
Position detection of objects for counting tasks.

- Type of construction M8 x 1
- EasyTeach by Wire (ETW)

New

EasyMount

KA1147 KA1451

KA8993

M 8 x 1

KA1509 KA1542 KA1543

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Binary

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Capacitive Sensors with EasyTeach Function and analogue output

RECHNER Sensors has a wide range of capacitive sensors with analogue output.

- Current output 4...20 mA
- Current output 20...4 mA
- Voltage output 0...10 V
- Voltage output 10... 0 V

Analogue sensors are available from a very small M12 X 1 body size

New sensor variants with the EasyTeach function now enhance the analogue product range

- EasyTeach by Button (ETB)

- EasyTeach by Wire (ETW)

Learn more about your production processes and take smarter control with Rechner analogue output sensors

This not only allows you to reliably detect fill levels or positions, but also to detect changes in the dielectric constant. For example, for quality assurance or to detect possible deposits on the sensor surface and then start an automatic cleaning process.

KA1570

Ø 30 mm

KA1563

G 1“

Analogue

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Capacitive Sensors with ATEX certificate

Capacitive sensors for level control in areas with risk of explosion.

ATEX Zone 20 (Dust) and Zone 1 (Gas).

Both variants are available with a metal housing for flush and non-flush mounting.

- All-in-One - with PNP transistor output
- No additional Ex-Barrier required.

Housing material PEEK with FDA certification

Also available are models that are constructed according to the EHEDG guidelines.

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All-in-One

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Capacitive Sensors with ATEX Certificate

Capacitive sensors with NAMUR output for level control in areas with risk of explosion.

ATEX Zone 0 (Gas) and 20 (Dust).

Both variants are available with a metal housing for flush and non-flush mounting.

Binary

KA1514

KA1440

KA1442

G 1/2“

M 12 x 1

Capacitive sensors with 4...20 mA or 20...4 mA output signal.

For level control or position control in areas with risk of explosion.

ATEX Zone 0 (Gas) and 20 (Dust).

Analogue

KA1394

M 30 x 1,5

NAMUR EN 60947-5-6

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Capacitive leak detection Sensors with or without ATEX certificate

Capacitive Sensors - Leak detection sensors

- Compact design
- With NAMUR output for ATEX Zone 0

For applications in NON-ATEX areas variants are available without ATEX certificate and with PNP switching output.

- Chemically resistant PTFE body

- Mounting device

Autoadjustment Function

Mount and Go

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Capacitive Sensors - Overfill Prevention - WHG

Overfill prevention according to the water protection directive 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 authorized bodies.

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.

Also the leak detection sensors, which are placed in the drip trays serve as a water protection device according to 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 advantages:

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

KA1237

KA0800

813100

KA1484

Protect the important element water!

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Capacitive Sensors for Food and Pharma

The S26 series include a large number of sensors with housing materials that can be in contact with food or pharmaceutical products.

In addition, there are variants that are equipped with IO-Link, such as KA1533 and KA1591.

Capacitive sensors housing materials according to EG 1935/2004

- Traceability of the materials guaranteed.
- CIP / SIP

+100°C

IO-Link

KA1533

KA1591

G 1“

KA1487

KA1627

Tri-Clamp

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Food and Pharma

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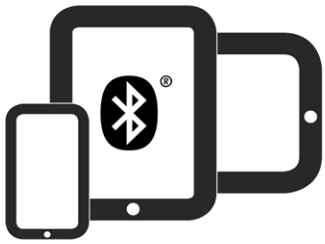
Capacitive Sensors with BlueSense
More than just the measurement!

BlueSense - Capacitive Level Sensor with Bluetooth function. BlueSense is the ultimate auxiliary set-up tool for users who want current status and control of their level measurement.

With the BlueSense application you know the sensor is within the optimum measuring range and if there are changes in the dielectric constant of the product to be measured. Deposits or product adhesion on the sensor can also be determined.



KA1403

G 1“

BlueSense

Page 65 - 66

Capacitive sensors with 2 switching points - one is sometimes not enough!

With the additional function P3, the capacitive sensor from the S26 series offers the user the following output functions:

- Antivalent (standard setting)
- 2 x Normally open
- 2 x Normally closed

With the normally closed and normally open versions, two switching points can be set independently of each other.

KA1624

EasyTeach

P3 - demand-oriented output functions

When detecting filling levels with changing products and different DK bandwidths, the 2 switching points offer the possibility of reliably detecting products with low and high DK without resetting the sensor.

MORE FREEDOM

CUSTOMER-FOCUSED

EASY TO PROGRAM

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Capacitive Sensors for High Temperatures
KXS-*eXtreme*

250°C

eXtreme Range

Thanks to the separate evaluation unit the KXS-Extreme Series sensors can be used for applications with an ambient temperature of up to max. 250 °C. The technology of these sensors is based on RECHNERS patented 3-Electrode-Measuring principle.

They are used for instance in the melting containers of hot-melt gluing systems, drying ovens or autoclaves.

This series consists of sensors with cylindrical body size from M 5 x 1 up M 32 x 1,5 and rectangular versions. The housing materials used for the sensor bodies are PTFE/stainless steel, PEEK/Stainless steel or total PEEK like the types below.

Evaluation unit with EasyTeach by Wire (ETW) & EasyTeach by Magnet (ETM)

KX0104

KX0081

XA0064
XA0065

EXTREME LARGE MEASURING AREA

A definitive advantage for hot and normal ambient temperatures.

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Capacitive Sensor LevelMaster

This capacitive sensor is used for level control of bulk materials, liquids and pastes with a dielectric constant (DK) εr of 1,1.

- Reliably detects all materials, except materials with very high conductivity and adhesion.
- EHEDG conform
- Housing materials (stainless steel, POM and PEEK) suitable for food and beverages pharmaceutical sector
- Type of construction G 1/2“
- EasyTeach by Wire (ETW)

Capacitive sensor for level control of adhesive and / or conductive products like Mayonnaise, Ketchup, Oil, Honey and much more.

- Sensitivity adjustment with EasyTeach by Wire (ETW)
- No additional teach-tool required
- Optical menu guide by means of the 2-colour LED
- Types with binary output (N.O. or N.C.)
- Types with analogue output 4...20 mA or 0...10 V

KA1599 **KA1598**

Binary: KA1471 KA1530 KA1437
Analogue: KA1474 KA1473

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Binary or Analogue

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Capacitive Sensor LevelMaster

These LevelMaster variants are designed for applications with high ambient temperatures. They have the same characteristic features as the LevelMasters we described before on the left side, with the addition that the electronic components are adapted for higher ambient temperatures.

- Without temperature buffer max. 120°C
- With temperature buffer max. 160°C

120 °C
or 160 °C
Ambient Temperature!

KA1562

KA1556

Your Choice!

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Capacitive Level Measuring Systems
Best things come in 3

The technology of the capacitive level probes and level measuring systems is based on RECHNERS patented 3-Electrode-Measuring principle.

TRUE LEVEL®

PER LEVEL®

i-LEVEL

PEEK-body from now on available up to 2000 mm in length.

- Probe suitable up to +250°C
- High chemical resistance
- Robust

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Capacitive Level Measuring Systems

Capacitive level measurement of liquids and bulk materials with a dielectric constant ε_r > 1,2

TRUE LEVEL®

TrueLevel – Analogue level measurement with automatic compensation of the dielectric constant ε_r

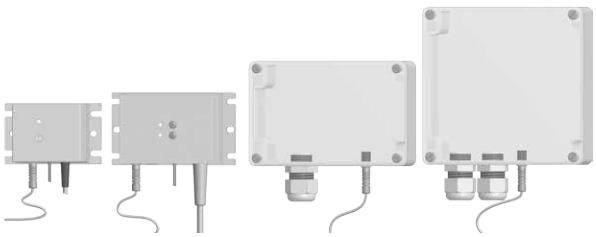
- Analogue Measurement 4…20 mA or 0…10 V
- Probe length from 250 mm up to 2000 mm

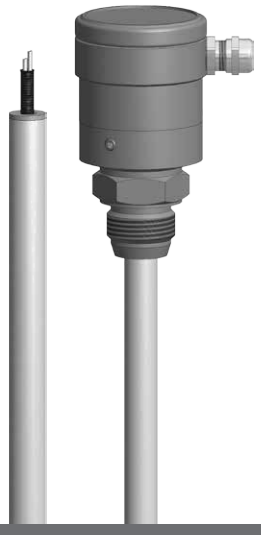
Analogue

PER LEVEL®

PerLevel – Binary level measurement of 1, 2, 3 or 4 limit values

- Type dependent up to 4 measuring points with only one probe
- Probe length from 60 mm up to 2000 mm





Binary

Your advantage for both level control systems:

- Reliable level control
- Probe length defined specifically for the application
- Suitable for high ambient temperature, thanks to separate evaluation electronics
- Dependent on housing materials up to +250°C
- Different process connections available, like G1“, G1 1/2“, G1” NPT, Triclamp, Varivent and others.

Capacitive Level Probe

TRUE LEVEL®

Ideal for use with all media types including adhesive products
Perfect for applications with regularly changing products

KF0638
KF0639
KF0642
KF0643
KF0644

Capacitive Level Measuring probe with EasyTeach Function and compensation of the Dielectric constant (DC).

With Rechner's new TrueLevel probe the evaluation unit is completely integrated into the connection head. The probe includes a reference section for the evaluation and compensation of any changes in the dielectric constant (DC). TThanks to the functionality of the probe it can be installed and set-up with an empty container. The probe reliably detects the level of liquids or bulk media with a dielectric from Ɛr ≥ 1.2 and above. After one single setting, with an empty container, the probe will automatically adjust itself to the material measured. This completely simple auto-adjusting probe saves a lot of set-up time which is a big advantage for applications with changing products.

These new analogue probes are available in either current or voltage output formats plus each has a PNP switched output for use as an alarm function.

- EasyTeach by Membrane Foil (ETF)
- EasyTeach by Wire (ETW)
- Sensitivity adjustment with empty container
- Easy and quick commissioning
- Compensation of the dielectric constant (DC)
- Max. probe length 2000 mm
- Material of the probe body PTFE, PEEK or GFK
- Process connection stainless steel G1“

Analogue

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Capacitive Level Probe

i-LEVEL

Evaluation Electronics integrated!

Capacitive level probes for level control of liquids or bulk material with a dielectric constant (DC) ε_r between 2 and 80.

The i-Level Probe with integrated evaluation electronics for analogue measurement with 2 additional switching points is well known and accepted.

Now with robust metal rod

An additional new product of the i-Level Series has been designed with a stainless steel measuring electrode.

Now with steel rope electrode and weigth

The advantages for you are:

- Analogue current output of 4...20 mA
- Sensitivity adjustment is made by EasyTeach function (ET = EasyTeach by Wire and EasyTeach by Magnet)
- Teach-Magnet supplied with the probe
- Reliable level control
- Probe length can be defined when ordering
- Metal rod up to 2000 mm / steel rope up to 20 m
- Process connection G1“
- High permitted ambient temperature (TP20 = 160°C and TP50 = 200°C)

Analogue

160°C
200°C

New:
Rope probe

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Inductive Sensors with ATEX Certificate

Inductive sensors for use in areas with risk of explosion:

ATEX Zone 20 (Dust) and 1 (Gas).

Both variants are available with a metal housing for flush and non-flush mounting.

• All-in-One - with PNP switching output

• No additional Ex-Barrier required.

IA0331

IA0269

IA0309

IA0110

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All-in-One

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Inductive Sensors with ATEX Certificate

Inductive Sensors according to NAMUR EN 60947-5-6 for use in areas with risk of explosion:

ATEX Zone 20 (Dust) and 0 (Gas).

Both variants are available with a metal housing for flush and non-flush mounting.

- Different body sizes available from 6.5 mm in diameter up to M 32 x 1,5

Matching Ex barriers can be offered on request.

IA0217

IA0344

NAMUR EN 60947-5-6

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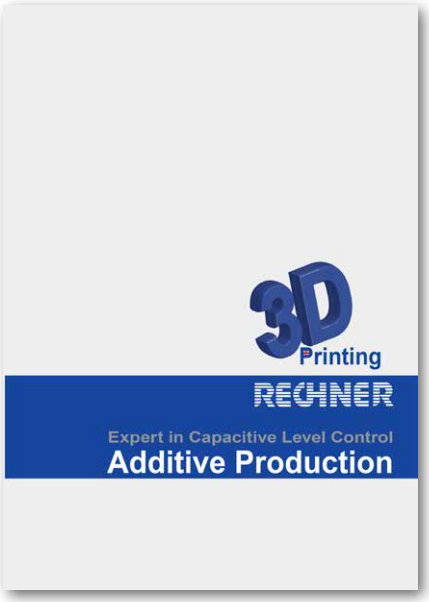
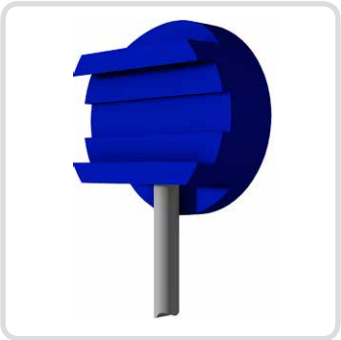
Further Highlights

Our catalogues on the topics 3D printing and printing machine industry.





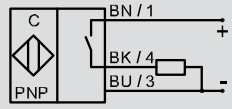
Capacitive Sensors

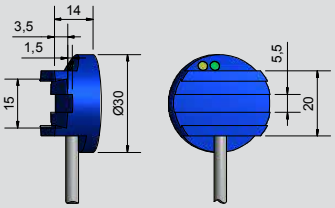
Series 80 - PNP EasyMount

Housing Ø 30 mm
Capacitive sensor for level control of liquids, very suitable for a measurement through non-metallic container walls. Special adaptation for bypass applications.

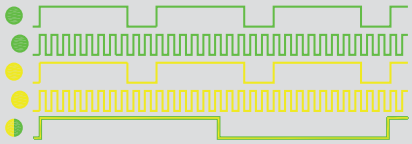
- Sensitivity adjustment with EasyTeach by magnet (ETM)
  Magnet delivered with the sensor
- Housing material: PA
- Various mounting possibilities (see accessories)
- Watertight

Technical data	Flush mountable
Operating distance S_n	5 mm
Operating distance min. / max. adjustable	0...10 mm
Electrical version	3 wire DC
Output function	Normally open
Type PNP	**KAS-80-30EM/15-S-D30-PA-Z02-ETM-HP**
Art.-No.	**KA 1147**
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)	0...200 mA
No-load current (I_o)	Typ 15 mA
Frequency of operating cycles max.	2 Hz
Permitted ambient temperature	-25...+70°C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP68
Norm	EN 60947-5-2
Connection cable	2 m PVC, 3 x 0.14 mm²
Housing material	PA
Accessory (delivered with the sensor)	Teach magnet





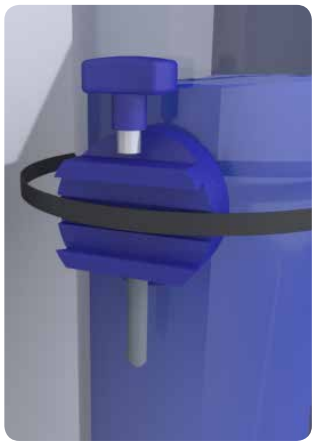
EasyTeach chart:
LED / Output function
Yellow = A1
Green = A1



Adjustment "empty"
Initializing "empty"
Adjustment "full"
Initializing "full"
Test

Made in Germany

Capacitive Sensors EasyMount

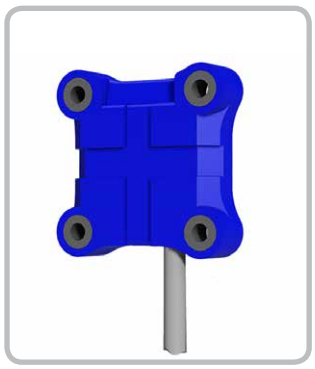


- ✓ for level control of liquids
- ✓ for leakage detection

These small sensors have all that makes the handling and application easy for the user.

The mounting is really simple. The sensor itself is featured with excellent technical characteristics and is very small in size. It can be mounted in various ways. It can be glued in the desired position, fixed with a cable tie or it can be mounted with one of the holders from the range accessories.

The sensitivity- or sensing distance adjustment is almost made by itself, thanks to the **EasyTeach function.**
In the course of which it does not matter if the magnet is used or the version with EasyTeach by wire is the model of choice. The steps one has to pass through are easy and quick to complete, so the user does not lose time from looking after his core business.



Measurement through non-metallic container walls

With the use of the newest production technologies the components of the sensors are embedded in the plastic body. They are watertight and operate wear-free. All sensors produced from RECHNER Sensors Germany are 100 % tested. The product marking is made with modern laser technology for everlasting identification and traceability.

For further information about Rechner Sensors feel free to contact us or visit our web site under www.rechner-sensors.com.

EasyTeach + EasyMount = Simply perfect

IP68

100 % tested

Laser product marking

Made in Germany

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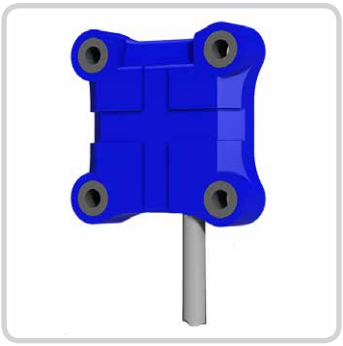


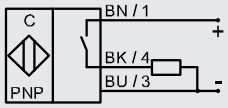
Capacitive Sensors

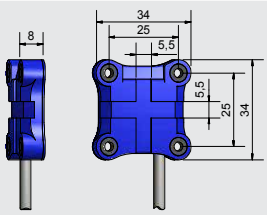
Series 80 - PNP EasyMount

Housing 34 x 34 mm
Capacitive sensor for level control of liquids, very suitable for a measurement through non-metallic container walls. Special adaptation for bypass applications.

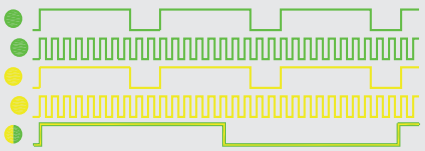
- Sensitivity adjustment with EasyTeach by magnet (ETM)
  Magnet delivered with the sensor
- Housing material: PA / PBT
- Easy to mount, by screwing ,gluing or cable ties
- Watertight
- Flat housing - 8 mm

Technical data	Flush mountable
Operating distance S_n	5 mm
Operating distance min. / max. programmable	0...10 mm
Electrical version	3 wire DC
Output function	Normally open
Type PNP	**KAS-80-C30EM/8-S-34x34x8-PA-Z02-ETM-HP**
Art.-No.	**KA 1451**
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)	0...200 mA
No-load current (I_o)	Typ 15 mA
Frequency of operating cycles max.	2 Hz
Permitted ambient temperature	-25...+70°C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP68
Norm	EN 60947-5-2
Connection cable	2 m PVC, 3 x 0.14 mm²
Housing material	PA / PBT
Accessories (delivered with the sensor)	Teach magnet





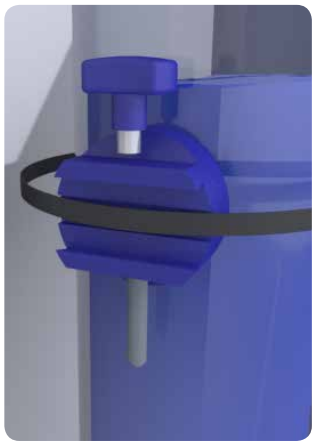
EasyTeach **chart:**
LED / Output function
Yellow = A1
Green = A1



Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Test

Made in Germany

Capacitive Sensors EasyMount

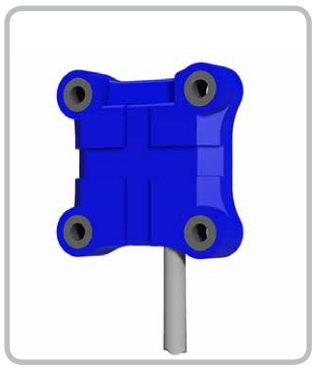


- ✓ for level control of liquids
- ✓ for leakage detection

These small sensors have all that makes the handling and application easy for the user.

The mounting is really simple. The sensor itself is featured with excellent technical characteristics and is very small in size. It can be mounted in various ways. It can be glued in the desired position, fixed with a cable tie or it can be mounted with one of the holders from the range accessories.

The sensitivity- or sensing distance adjustment is almost made by itself, thanks to the **EasyTeach function.**
In the course of which it does not matter if the magnet is used or the version with EasyTeach by wire is the model of choice. The steps one has to pass through are easy and quick to complete, so the user does not lose time from looking after his core business.



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Laser product marking

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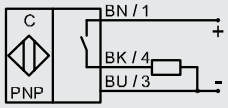
Capacitive Sensors

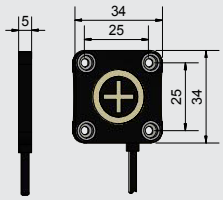
Series 80 - PNP EasyMount

Housing 34 x 34 mm x 5 mm
Capacitive sensor for level control of liquids, very suitable for a measurement through non-metallic container walls. Special adaptation for bypass applications.

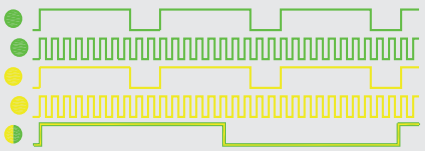
- Sensitivity adjustment with EasyTeach by wire (ETW)
- Housing material: PA / PBT
- Easy to mount, by screwing or gluing
- Watertight
- Flat housing - 5 mm

Technical data	Flush mountable
Operating distance S_n	5 mm
Operating distance min. / max. programmable	0...10 mm
Electrical version	3 wire DC
Output function	Normally open
Type PNP	**KAS-80-C30EM/5-S-34x34x5-PA-Z02-ETW-HP**
Art.-No.	**KA 8993**
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)	0...200 mA
No-load current (I_o)	Typ 15 mA
Frequency of operating cycles max.	2 Hz
Permitted ambient temperature	-25...+70°C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP68
Norm	EN 60947-5-2
Connection cable	2 m PVC, 3 x 0.14 mm²
Housing material	PA / PBT
Media optimized	Yes



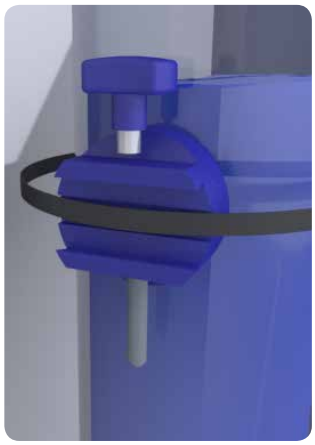


EasyTeach chart:
LED / Output function
Yellow = A1
Green = A1



Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Test

Capacitive Sensors EasyMount



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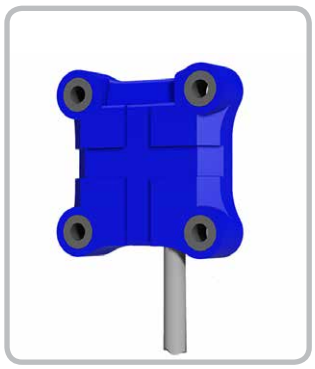

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Laser product marking

Made in Germany

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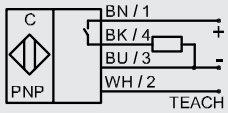
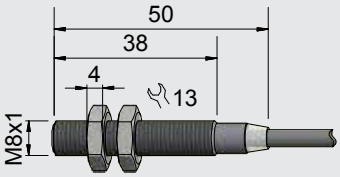
Capacitive Sensors
Series 80 - PNP

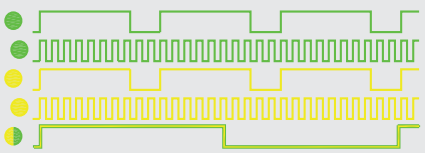
Housing M 8 x1
- Capacitive sensor for level and position control
- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

Technical data	Flush mountable
Operating distance S_n	1,5 mm
Operating distance min. / max. adjustable	0,1...2,5 mm
Electrical version	3 wire DC
Output function	Normally open
Type PNP	**KAS-80-A11-S-M8-PTFE/VAb-Z02-ETW-HP**
Art.-No.	**KA 1509**
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)	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 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 8 x 1





EasyTeach chart:
LED / Output function
Yellow = A1
Green = A1



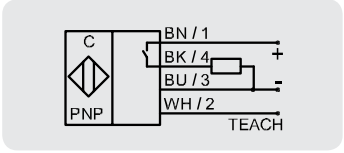
Adjustment "empty"
Initializing "empty"
Adjustment "full"
Initializing "full"
Test

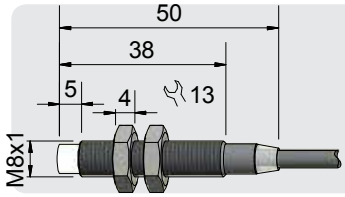
Made in Germany

Capacitive Sensors
Series 80 - PNP

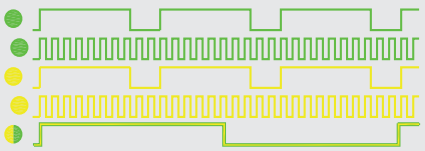
Housing M 8 x1
- Capacitive sensor for level and position control
- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

Technical data	Non-flush mountable
Operating distance S_n	2 mm
Operating distance min. / max. adjustable	0,1...4 mm
Electrical version	3 wire DC
Output function	Normally open
Type PNP	**KAS-80-A21-S-M8-PTFE/VAb-Z02-ETW-HP**
Art.-No.	**KA 1542**
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)	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 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 8 x 1





EasyTeach chart:
LED / Output function
Yellow = A1
Green = A1



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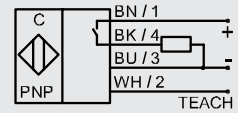
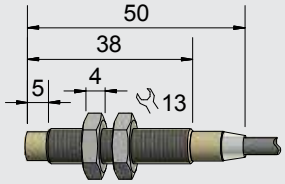
Capacitive Sensors
Series 80 - PNP

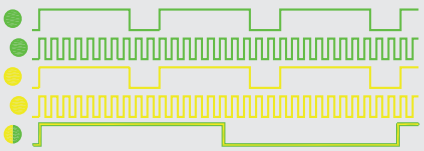
Housing M 8 x1
- Capacitive sensor for level and position control
- Housing material: PEEK
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

Technical data	Non-flush mountable
Operating distance S_n	2 mm
Operating distance min. / max. adjustable	0,1...5 mm
Electrical version	3 wire DC
Output function	Normally open
Type PNP	**KAS-80-A21-S-M8-PEEK-Z02-ETW-HP**
Art.-No.	**KA 1543**
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)	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 0.14 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 8 x 1





EasyTeach chart:
LED / Output function
Yellow = A1
Green = A1



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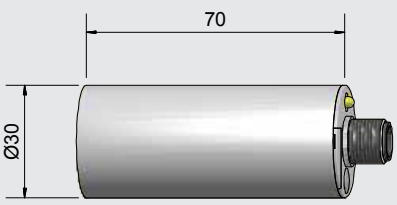
Capacitive Sensors with Analogue Output
Series 80 - PNP

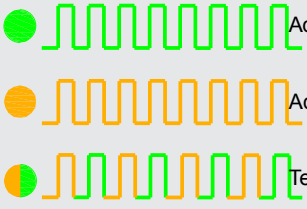
Current output **20...4 mA**
Voltage output **10...0 V**

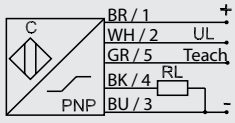
Housing Ø 30 mm
- Housing material: PTFE
- Operating range 0...30 mm
- Current and voltage output in the same sensor
- Adjustable with EasyTeach push button (ETB) / EasyTeach by Wire (ETW)
- Optical guidance during the teach process with the aid of a 2-colour LED

Technical data	Flush mountable
Operating range	0...30 mm
Linear range	0...20 mm
Electrical version	4-wire DC
Output function	Analogue
Type Analogue	**KAS-80-30-IL20/UL10-D30-PTFE-Y10-ET-HP**
Art. No.	**KA 1570**
Operating voltage (U_B)	15...30 V DC
Output signal	20...4 mA, 10...0 V
Permitted residual ripple max.	5 %
No-load current (I_o)	≤ 40 mA
Operating current active surface free	≥ 20 mA
Operating current active surface covered	≤ 4 mA
Load resistor (R_L)	0...600 Ω
Permitted ambient temperature	0...+70 °C
LED-display	Yellow / green
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2, EN 60947-5-7**
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO



EasyTeach chart:





* With sealed potentiometer screw ** Where applicable

Made in Germany

All specifications are subject to change without notice. (22.01.2020)

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Capacitive Sensors with Analogue Output
Series 80 - PNP

Operating current **4...20 mA**
Voltage output **0...10 V**

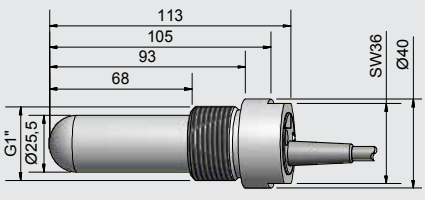
Housing G 1"
- Housing material: PTFE
- Operating range 0...30 mm
- Current and voltage output in the same sensor
- Adjustable with EasyTeach push button (ETB) / EasyTeach by Wire (ETW)
- Optical guidance during the teach process with the aid of a 2-colour LED

Technical data	Flush mountable
Operating range	0...30 mm
Linear range	0...20 mm
Electrical version	4-wire DC
Output function	Analogue
Type Analogue	**KAS-80-26/113-IL4/UL0-G1-PTFE-Z02-ET-HP**
Art. No.	**KA 1563**
Operating voltage (U_B)	15...30 V DC
Output signal	4...20 mA, 0...10 V
Permitted residual ripple max.	5 %
No-load current (I_o)	≤ 40 mA
Operating current active surface free	≤ 4 mA
Operating current active surface covered	≥ 20 mA
Load resistor (R_L)	0...600 Ω
Permitted ambient temperature	0...+70 °C
LED-display	Yellow / green
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2, EN 60947-5-7**
Connection cable	2 m, PVC, 5 x 0.34 mm²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO

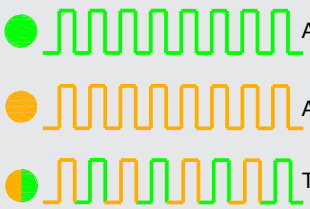
Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter and welding socket please see our selection of accessories.

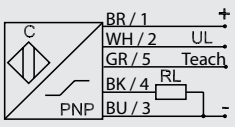
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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



EasyTeach **chart:**





* With sealed potentiometer screw ** Where applicable

Made in Germany

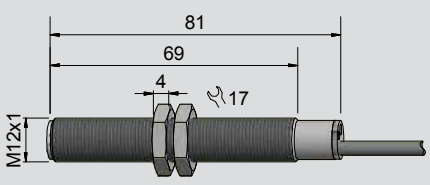
Capacitive Sensors
Series 80 - PNP - StEx - ATEX

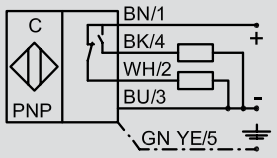
Housing M 12 x 1

- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Housing material: Stainless steel VA No. 1.4305 / AISI 303
- Sensing distance 0...6 mm adjustable

DMT 01 ATEX E 157	IECEx BVS 07.0015
II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Flush mountable
Operating distance S_n	2 mm
Operating distance min. / max. adjustable	0...6 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-A12-A-M12-PTFE/VAb-Z02-1-2G-1/2D**
Type PNP	**KAS-80-A12-A-StEx**
Art.-No.	**KA 1564**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-20...+70 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	3 m, PVC, 5 x 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 12 x 1





* With sealed potentiometer screw

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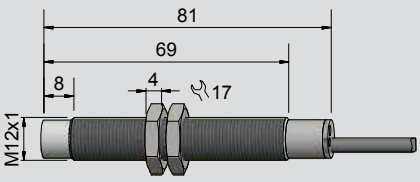
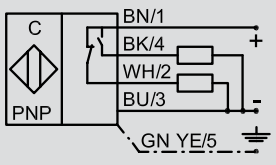
Capacitive Sensors
Series 80 - PNP - StEx - ATEX

Housing M 12 x 1
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Housing material: Stainless steel VA No. 1.4305 / AISI 303
- Sensing distance 0,5...10 mm adjustable

DMT 01 ATEX E 157	IECEx BVS 07.0015
II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Non-flush mountable
Operating distance S_n	4 mm
Operating distance min. / max. adjustable	0.5...10 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-A22-A-M12-PTFE/VAb-Z02-1-2G-1/2D**
Type PNP	**KAS-80-A22-A-StEx**
Art.-No.	**KA 1565**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-20...+70 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	3 m, PVC, 5 x 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 12 x 1





* With sealed potentiometer screw

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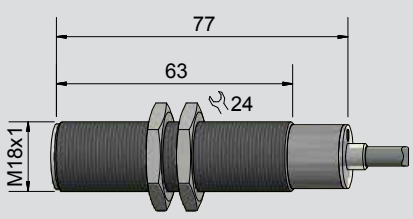
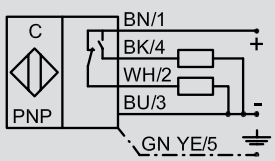
Capacitive Sensors
Series 80 - PNP - StEx - ATEX

Housing M 18 x 1
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Housing material: Stainless steel VA No. 1.4305 / AISI 303
- Sensing distance 0.5…10 mm adjustable

DMT 01 ATEX E 157	IECEx BVS 07.0015
II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Flush mountable
Operating distance S_n	5 mm
Operating distance min. / max. adjustable	0.5...10 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-A13-A-M18-PTFE/VAb-Z02-1-HP-2G-1/2D**
Type PNP	**KAS-80-A13-A-StEx**
Art.-No.	**KA 1502**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 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	3 m, PVC, 5 x 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 18 x 1





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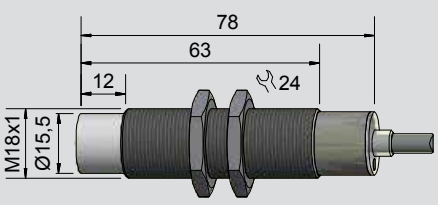
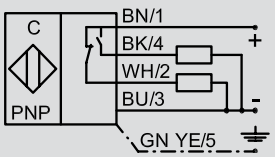
Capacitive Sensors
Series 80 - PNP - StEx - ATEX

Housing M 18 x 1
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Housing material: Stainless steel VA No. 1.4305 / AISI 303
- Sensing distance 0,5…15 mm adjustable

DMT 01 ATEX E 157	IECEx BVS 07.0015
Ex II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
Ex II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Non-flush mountable
Operating distance S_n	8 mm
Operating distance min. / max. adjustable	0.5...15 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-A23-A-M18-PTFE/VAb-Z02-1-HP-2G-1/2D**
Type PNP	**KAS-80-A23-A-StEx**
Art.-No.	**KA 1503**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	25 Hz
Permitted ambient temperature	-20...+70 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection cable	3 m, PVC, 5 x 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (delivered with the sensor)	2 nuts M 18 x 1





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Capacitive Sensors - S26
Series 80 - PNP

Process connection: G 1/2“
- Housing material: PEEK
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Special version with flange. Sealing can be made with a gasket or PTFE-tape (not delivered with the sensor)

DMT 01 ATEX E 157	IECEx BVS 07.0015
Ex II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
Ex II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

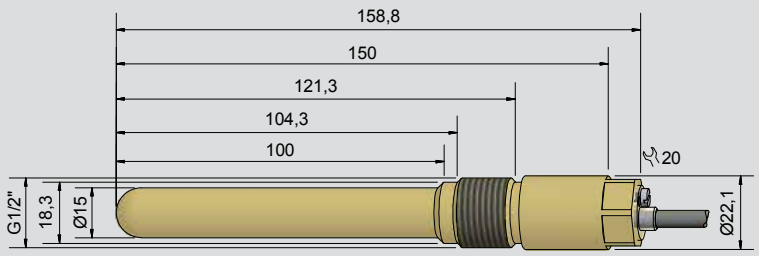
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...10 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-26/159-A-G1/2-PEEK-Z02-1-HP-2G-1/2D**
Type PNP	**KAS-80-26-A-K-160-G1/2”-PEEK-StEx**
Art.-No.	**KA 1409**
Operating voltage (U_B)	10...30 V DC
Operating current (I_e)	2 x 0...150 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
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 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (not delivered with the sensor): Varivent Adapter, Welding Socket please see our selection of accessories.	

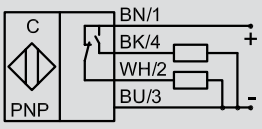
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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

Advantages:

- EHEDG conform
- 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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LevelMaster - Capacitive Sensors- StEx - ATEX

Model G 1/2“
For level control of liquids, bulk material or pastes Ideal for level control in the Food Industry or Pharmaceutical Industry

- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Welding sockets and Varivent adapter available for EHEDG conform mounting.

DMT 01 ATEX E 157	IECEx BVS 07.0015
Ex II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
Ex II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0.5...15 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-A23-A-G1/2-PEEK/VAb-Z03-1-2G-1/2D**
Type PNP	**KAS-80-A23-A-StEx**
Art.-No.	**KA 2000**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	0...150 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	3 m, PVC, 5 x 0.14 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized)	Yes

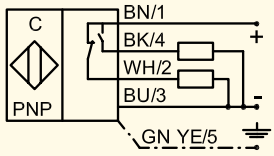
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.

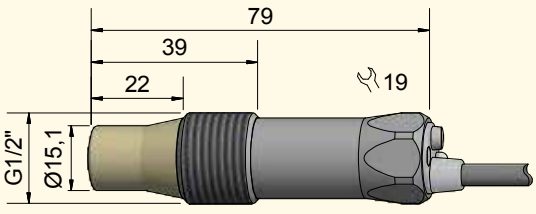
Capacitive Sensors for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- Bulk materials, such as grain, sugar, granulates.
- Liquids, oil, chemicals or pharmaceutical solutions and much more.

Highlights:

- EHEDG conform
- Measurement is independent of the mounting position





* With sealed potentiometer screw

Made in Germany

LevelMaster

EXtra Smart

This capacitive sensor is designed for the level control of bulk materials, liquids and pastes dielectric constant (DC) ε_r of 1,1. This sensor is a classic capacitive sensor that reliably detects all kind of materials. Capacitive sensors help to control the level in dosing systems, storage container or prevent the pump for dry running. For product that are high conductive and adhesive we recommend the models of the KS-801-... series.

The material to detect could be bulk material, such as, metal powder, plastic powder, granules, spices, dryed herbs, coffee, sugar, cocoa, tabled powder liquids could be for instance, oil, milk products or juice.

ETW EasyTeach

Not for ATEX yet

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a LED:
• standby • teach process • switching state

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Art.-Nr. 196394
Welding socket

Art.-Nr. 190754
Tri-Clamp

Art.-Nr. 196395
Varivent N DN 50

Directive (EC) 1935/2004

The traceability of the used sensor body material according to the directive (EC) 1935/2004 is confirmed by RECHNER with a conformity declaration, that is provided on the website as download document under certificates.

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Capacitive Sensors - S26
Series 80 - PNP

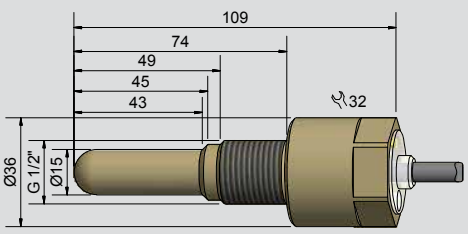
Process connection: G 1/2“
- Housing material: PEEK
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- SIP / CIP 121 °C
- Special version with flange. Sealing can be made with a gasket or PTFE-tape (not delivered with the sensor)

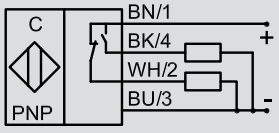
DMT 01 ATEX E 157	IECEx BVS 07.0015
Ex II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
Ex II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...10 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**KAS-80-26/109-A-G1/2-PEEK-Z02-1-HP-2G-1/2D**
Type PNP	**KAS-80-26-A-K-G1/2“-PEEK-StEx**
Art.-No.	**KA 1426**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	2 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 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter, welding socket and matching connectors 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

Made in Germany

Capacitive Sensors - S26
Series 40 - NAMUR EN 60947-5-6 - StEx - ATEX

Process connection: G 1/2“
- For use in areas with the risk of gas explosion, zone 0
- For use in areas with the risk of dust explosion, zone 20
- Housing material: PEEK

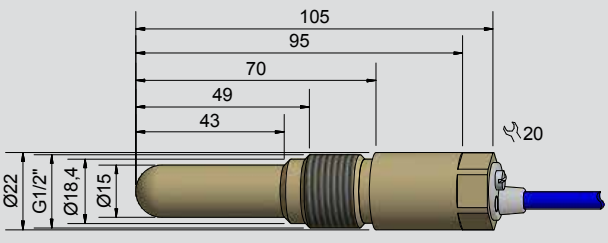
DMT 03 ATEX E 048	IECEx BVS 07.0031
Ex II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga
Ex II 1D Ex ia IIIC T101°C Da	Ex ia IIIC T101°C Da

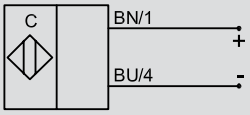
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...10 mm
Electrical version	2-wire DC
Output function	NAMUR EN 60947-5-6
Type current	**KAS-40-26/104-N-G1/2-PEEK-Z02-1-HP-1G-1D**
Type	**KAS-40-26-N-K-G1/2”-PEEK-StEx**
Art.-No.	**KA 1514**
Operating voltage (U_B)	5 - 15 V DC, Ui = 15 V DC
Operating current active surface free	< typ 1.5 mA
Operating 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, PVC, 2 x 0.14 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes

Accessory: Varivent Adapter, Welding Socket (Please see our range of accessories, not delivered with the sensor).

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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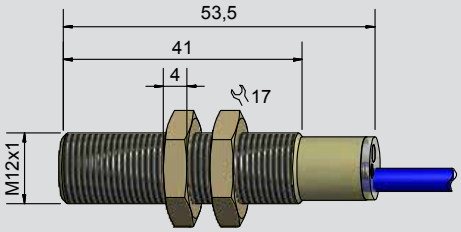
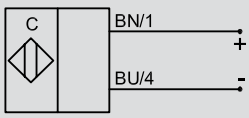
Capacitive Sensors
Series 40 - NAMUR EN 60947-5-6 - StEx - ATEX

Housing M 12 x 1
- For use in areas with the risk of gas explosion, zone 0
- For use in areas with the risk of dust explosion, zone 20
- Housing material: PEEK
- Sensing distance 1...4 mm adjustable

DMT 03 ATEX E 048	IECEx BVS 07.0031
II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga
II 1D Ex ia IIIC T101°C Da	Ex ia IIIC T101°C Da

Technical data	Flush mountable
Operating distance S_n	2 mm
Operating distance min. / max. adjustable	1...4 mm
Electrical version	2-wire DC
Output function	NAMUR EN 60947-5-6
Type current	**KAS-40-A12-N-M12-PEEK-Z02-1-HP-1G-1D**
Type	**KAS-40-A12-N-K-PEEK-StEx**
Art. No.	**KA 1440**
Operating voltage (U_B)	5 - 15 V DC, Ui = 15 V DC
Operating current active surface free	< typ 1.5 mA
Operating 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, PVC, 2 x 0.14 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 12 x 1

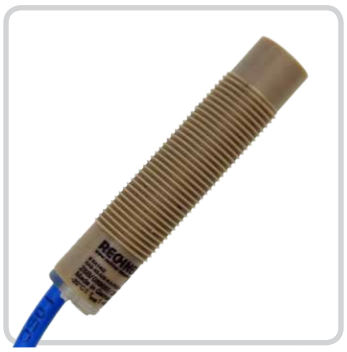




Matching Ex barriers can be offered on request.

* With sealed potentiometer screw

Made in Germany

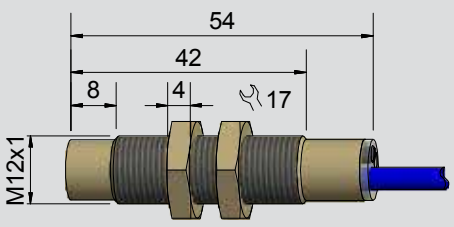


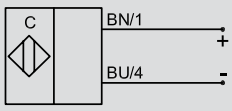
Capacitive Sensors
Serie 40 - NAMUR EN 60947-5-6 - StEx - ATEX

Housing M 12 x 1
- For use in areas with the risk of gas explosion, zone 0
- For use in areas with the risk of dust explosion, zone 20
- Housing material: PEEK
- Sensing distance 1...6 mm adjustable

DMT 03 ATEX E 048	IECEx BVS 07.0031
Ex II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga
Ex II 1D Ex ia IIIC T101°C Da	Ex ia IIIC T101°C Da

Technical data	Non-flush mountable
Operating distance S_n	4 mm
Operating distance min. / max. adjustable	1...6 mm
Electrical version	2-wire DC
Output function	NAMUR EN 60947-5-6
Type current	**KAS-40-A22-N-M12-PEEK-Z02-1-HP-1G-1D**
Type	**KAS-40-A22-N-K-PEEK-StEx**
Art. No.	**KA 1442**
Operating voltage (U_B)	5 - 15 V DC, U_i = 15 V DC
Operating current active surface free	< typ 1.5 mA
Operating 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 0.14 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 12 x 1





Matching Ex barriers can be offered on request.

*With sealed potentiometer screw

Made in Germany

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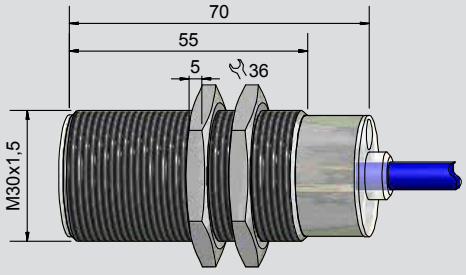
Capacitive Sensors with analogue output
Series 40 - NAMUR EN 60947-5-6 - StEx - ATEX

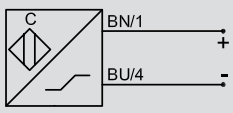
Current output **20...4 mA**

Housing M 30 x 1.5
- For use in areas with the risk of gas explosion, zone 0
- For use in areas with the risk of dust explosion, zone 20
- Housing material: Brass
- Operating range 0...24 mm

DMT 03 ATEX E 048	IECEx BVS 07.0031
Ex II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga
Ex II 1D Ex ia IIIC T101°C Da	Ex ia IIIC T101°C Da

Technical data	Flush mountable
Operating range	0...24 mm
Linear range	2....20 mm
Electrical version	2-wire DC
Output function	Analogue
Type Analogue current	**KAS-40-A14-IL20-M30-PTFE/MS-Z02-1-HP-1G-1D**
Type Analogue	**KAS-40-A14-IL20-StEx**
Art. No.	**KA 1394**
Operating voltage (U_B)	15...35 V DC, U_i = 27 V DC
Power consumption active surface free	≥ 20 mA
Power consumption active surface covered	≤ 4 mA
Load resistor (R_L)	0...500 Ω
Self-inductance (L)	0.2 mH
Self-capacitance (C)	89 nF
Permitted residual ripple max.	5 %
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	0...+70 °C
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-6
Connection cable	2 m, PUR, 2 x 0.75 mm²
Housing material	Brass
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 30 x 1,5





* With sealed potentiometer screw

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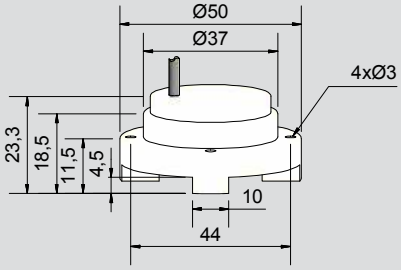
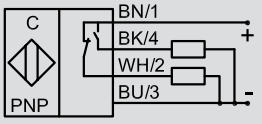
Capacitive Sensors
Series Leak

Housing Ø 50 mm
- Leakage control of liquids in clean room / Alarm for containers and pipelines
- Mounting in „drip trays“ of plastic, glass or metal
- Housing material: PTFE
- Semiconductor Industry, Chemical Industry
- Mount and Go
- Autoadjustment Function

Technical data	Flush mountable
Switching point	4.5 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	**KAS-80-39/23-A-D50-PTFE-Z02-MaG-LEAK**
Art.-No.	**KA 9030**
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)	0...250 mA
No-load current (I_o)	Typ. 15 mA
Permitted ambient temperature	-25...+70°C
LED-display	Green / red
Protective circuit	Built-in
Degree of protection IEC 529	IP 67
Norm	EN 60947-5-2
Connection cable	2 m, FEP, screened, 4 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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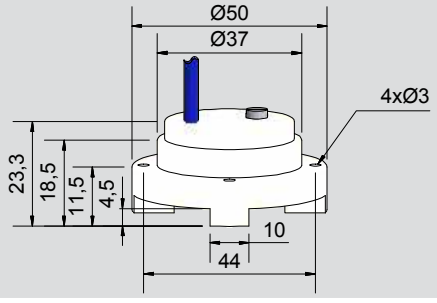
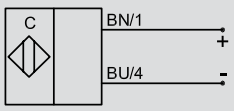
Capacitive Sensors
Series Leak - ATEX

Housing Ø 50 mm
- For use in areas with the risk of gas explosion, zone 0
- 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

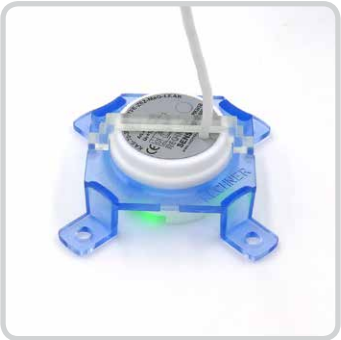
DMT 03 ATEX E 048	IECEx BVS 07.0031
Ex II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga

Technical data	Flush mountable
Operating distance S_n	4.5 mm
Electrical version	2-wire DC
Output function	NAMUR DIN 60947-5-6
Type current	**KAS-40-39/23-N-D50-PTFE-Z02-1-Leak-1G**
Type	**KAS-40-LEAK-D50-PTFE-N**
Art.-No.	**KA 9037**
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, FEP, screened, 2 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)





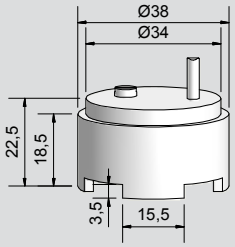
* With sealed potentiometer screw

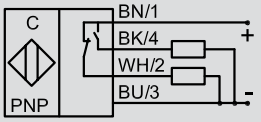


Capacitive Sensors
Series Leak

Housing Ø 38 mm
- Leakage control of liquids in clean room / Alarm for containers and pipelines
  Mounting in „drip trays“ of plastic, glass or metal
- Housing material: PTFE
- Semiconductor Industry, Chemical Industry
- Mount and Go
- Autoadjustment Function

Technical data	Flush mountable
Switching point	3.5 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	**KAS-80-39/23-A-D38-PTFE-Z02-MaG-Leak**
Art.-No.	**KA 9952**
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)	0...250 mA
No-load current (I_o)	Typ. 15 mA
Permitted ambient temperature	-25...+70°C
LED-display	Green / red
Protective circuit	Built-in
Degree of protection IEC 529	IP 67
Norm	EN 60947-5-2
Connection cable	2 m, FEP, screened, 4 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)
Accessories (delivered with the sensor)	PVC-holder





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SMART PADDLE™

Capacitive Sensors
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 delivered 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 PNP	**KAS-80-P50-A-G1/2-LCP-Z02-1-HP**
Art.-No.	**KA 1237**
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...200 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	2 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 0.34 mm²
Housing material	LCP (FDA 21 CFR 176.170(c))
Active surface	LCP (FDA 21 CFR 176.170(c))
Lid	PA
Media optimized	Yes

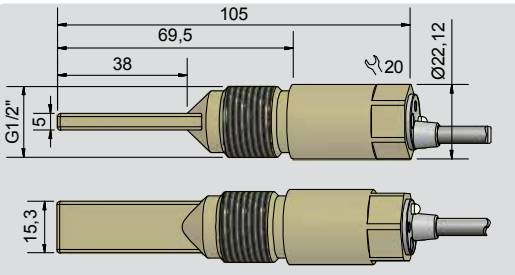
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 please see our selection of accessories.

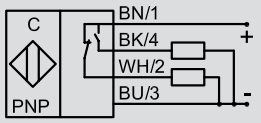
This capacitive level sensor is pre-adjusted for the detection of bulk materials with a dielectric constant ε_r from 2 to 80.

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 SMARTPADDLE:

- 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

Made in Germany

Level Measurement in a New Dimension:

SMART PADDLE™

The fully electronic paddle sensor.
This capacitive level sensor is designed for the level control of bulk materials and liquids with a dielectric constant (DC) of ε_r 2 to 80. It is media optimised and pre-adjusted, so that it can cover this large DC spectrum. An adjustment for the product to be detected simply is not necessary.

Mount and Go™

It cannot be easier.

The user mounts the sensor, makes the electrical connection and the sensor is ready for use.

The **SMART**PADDLE has no moving parts and is therefore not subject to wear or tear. It is ideal for applications where traditionally Rotary Switches, Vibrating Forks or Mechanical Switches are being used.

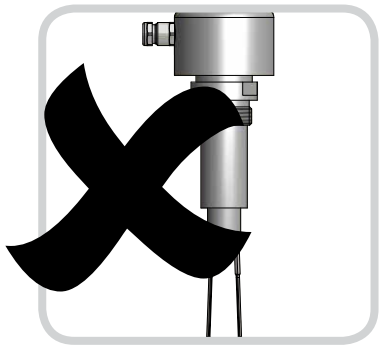
The advantages are obvious: easy installation, reliable level control and at the same time solving the well-known issues of mechanical systems being used today. No more down time due to false detections caused by material build-up, getting stuck between vibrating forks or around rotary switches, etc.

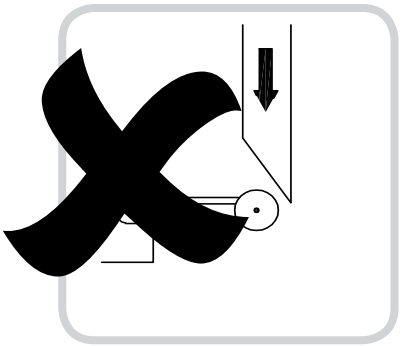
A variant with Easy Teach by Wire is an option for products where the dielectric constant is outside of the preset range.

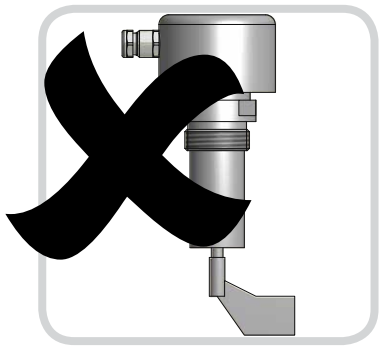
The sensor‘s housing material, LCP, is very robust and also suitable for contact with food products.

The sensor has a G 1/2 inch process connection which can be used with a large range of accessories like welding brackets or „Varivent N DN 50“ flanges that are offered by Rechner.

RECHNER SENSORS is your specialist for level control!







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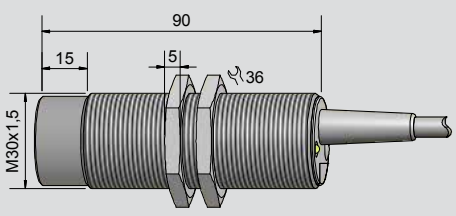
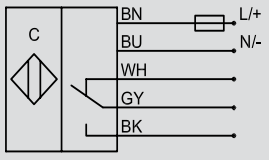
Capacitive Sensors
Series 95 - AC / DC - Relay output

Housing M 30 x 1.5
- Housing material: PBT
- Sensing distance 2...20 mm adjustable
- Potential-free change-over contact
- Leakage control
- Overfill prevention

Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	2...20 mm
Electrical version	5-wire AC / DC
Output	Relay, 1 CO
Type	**KAS-95-A24-1CO-M30-PBT-Z02-1-HP**
Art.-No.	**KA 0800**
Operating voltage (U_B)	20...250 V AC / DC
Load max. AC (I, U, P)	2 A, 250 V, 60 VA
Load max. DC (I, U, P)	2 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 mm²
Housing material	PBT
Active surface	PBT
Lid	PA / PPO
Accessories (supplied with the sensor):	2 nuts M 30 x 1.5
Accessories (not supplied with the sensor): Control tube and sensor holder please see our selection of accessories.	





* With sealed potentiometer screw

Made in Germany

Capacitive Sensors - S26
Series 80 - PNP

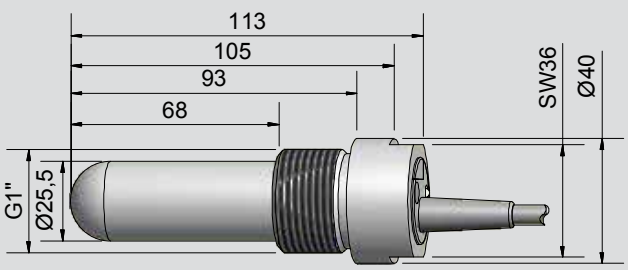
Type of construction G 1“
- Housing material: PTFE
- Overfill prevention
- Leakage control

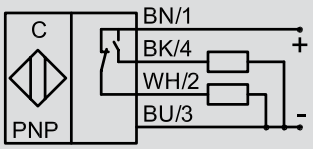
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...20 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	**KAS-80-26/113-A-G1-PTFE-Z02-1-HP**
Art.-No.	**813 100**
Operating voltage (U_B)	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 mm²
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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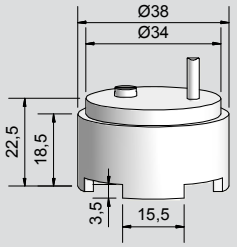
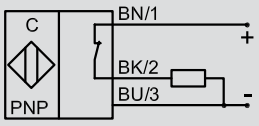
Capacitive Sensors
Series Leak

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_e)	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)





* With sealed potentiometer screw

Made in Germany

Capacitive Sensors - S26

Series 80 - PNP - IO-Link

Type of construction G 1”
- Housing material: PEEK
- With flange connector M 12 x 1
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

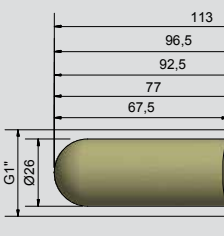
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...20 mm
Electrical version	4 - pin DC
Output function	Antivalent
Type PNP	**KAS-80-26/113-A-G1-PEEK-IOL-Y10-ETW-HP**
Art.-No.	**KA 1533**
Operating voltage (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, standard	7 Hz
Frequency of operating cycles, adjustable with IO-Link	2...40 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	Flange connector M 12 x 1 (A-coded)
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PA / PPO
Media optimized	Yes
Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter, welding socket and matching connectors please see our selection of accessories.	

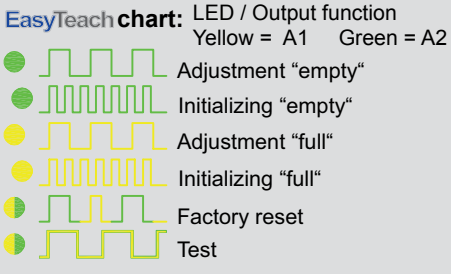
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

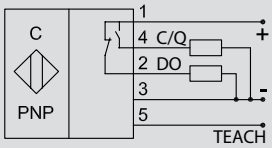
- Bulk material, like plastic granules, powder, cereals, etc.
- Liquids, like water, juice, wine, oil, chemicals or pharmaceutical solutions and much more.
- Pastes in the food, pharmaceutical and cosmetics industry

IO-LINK - INTERFACE

Device ID: 1d/000001h
Vendor ID: 1129d/0469h
Baudrate: COM 3 (230.4 kbaud)
Revision: 1.1
Profiles: Smart Sensor
SIO mode: yes
Port Class: A







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Capacitive Sensors - S26

Series 80 - PNP - IO-Link

Type of construction G 1”
- Housing material: PTFE
- With flange connector M 12 x 1
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

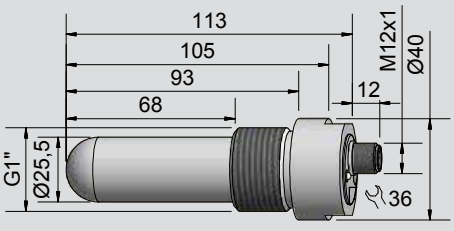
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...20 mm
Electrical version	4 - pin DC
Output function	Antivalent
Type PNP	**KAS-80-26/113-A-G1-PTFE-100C-IOL-Y10-ETW-HP**
Art.-No.	**KA 1591**
Operating 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, standard	7 Hz
Frequency of operating cycles, adjustable with IO-Link	2...40 Hz
Permitted ambient temperature	-25...+100 °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	Flange connector M 12 x 1 (A-coded)
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes

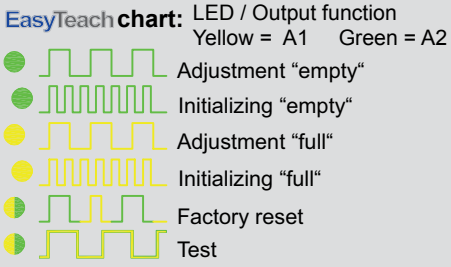
Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter, welding socket and matching connectors please see our selection of accessories.

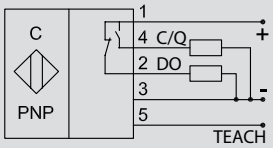
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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

IO-LINK - INTERFACE
Device ID: 1d/000001h
Vendor ID: 1129d/0469h
Baudrate: COM 3 (230.4 kbaud)
Revision: 1.1
Profiles: Smart Sensor
SIO mode: yes
Port Class: A







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Capacitive Sensors - S26

Series 80 - PNP - IO-Link

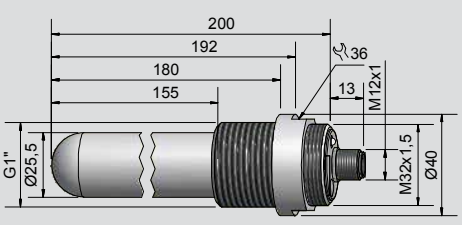
Type of construction G 1”
- Housing material: PTFE
- With flange connector M 12 x 1
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

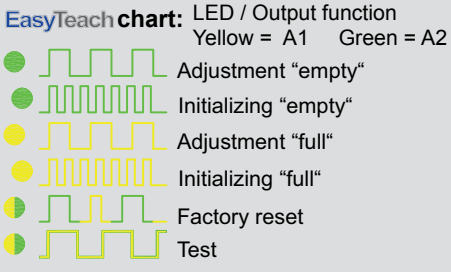
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...20 mm
Electrical version	4 - pin DC
Output function	Antivalent
Type PNP	**KAS-80-26/200-A-G1-PTFE-100C-IOL-Y10-ETW-HP**
Art.-No.	**KA 1589**
Operating 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, standard	7 Hz
Frequency of operating cycles, adjustable with IO-Link	2...40 Hz
Permitted ambient temperature	-25...+100 °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	Flange connector M 12 x 1 (A-coded)
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes
Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter, welding socket and matching connectors please see our selection of accessories.	

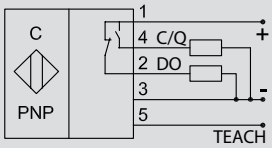
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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

IO-LINK - INTERFACE
Device ID: 1d/000001h
Vendor ID: 1129d/0469h
Baudrate: COM 3 (230.4 kbaud)
Revision: 1.1
Profiles: Smart Sensor
SIO mode: yes
Port Class: A







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Capacitive Sensors - S26

Series 80 - PNP - IO-Link

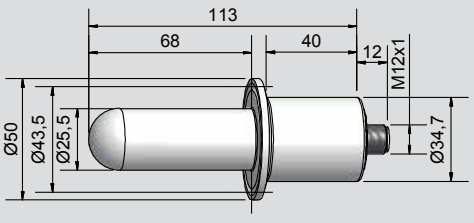
Type of construction Triclamp DN 25
- Housing material: PTFE
- With flange connector M 12 x 1
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

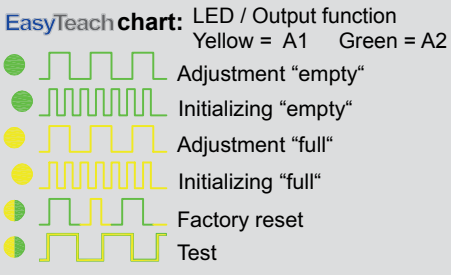
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	0...20 mm
Electrical version	4 - pin DC
Output function	Antivalent
Type PNP	**KAS-80-26/113-A-TRI-PTFE-100C-IOL-Y10-ETW-HP**
Art.-No.	**KA 1590**
Operating 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, standard	7 Hz
Frequency of operating cycles, adjustable with IO-Link	2...40 Hz
Permitted ambient temperature	-25...+100 °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	Flange connector M 12 x 1 (A-coded)
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes
Accessories (not delivered with the sensor): For varivent adapter, triclamp adapter, welding socket and matching connectors please see our selection of accessories.	

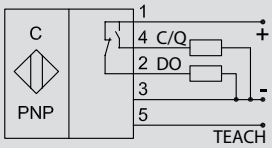
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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

IO-LINK - INTERFACE
Device ID: 1d/000001h
Vendor ID: 1129d/0469h
Baudrate: COM 3 (230.4 kbaud)
Revision: 1.1
Profiles: Smart Sensor
SIO mode: yes
Port Class: A







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Capacitive Sensors - S26
Series 80 - PNP - StEx - ATEX

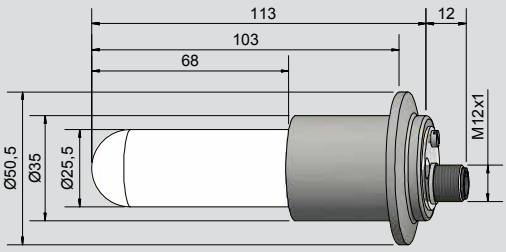
Type of construction Triclamp DN 40
- For use in areas with the risk of dust explosion, zone 20
- Housing material: Stainless steel VA, No.1.4404 (AISI 316L) / PTFE
- With flange connector M 12 x 1

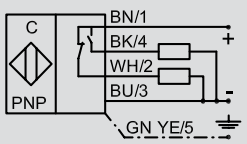
DMT 01 ATEX E 157	IECEx BVS 07.0015
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

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-pin DC
Output function	Antivalent
Type PNP current	**KAS-80-26/113-A-Tri-PTFE/VAc-Y10-1-HP-1/2D**
Type PNP	**KAS-80-26-A-Tri-PTFE/VA-Y10-StEx**
Art.-No.	**KA 1487**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-20...+90 °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	Flange connector M 12 x 1 (A-coded)
Housing material	Stainless steel VA No.1.4404 / AISI 316L (FDA conforming)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC
Media optimized	Yes
Accessories (not delivered with the sensor): For matching connectors 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

Made in Germany

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Capacitive Sensors - S26
Series 80 - PNP - StEx - ATEX

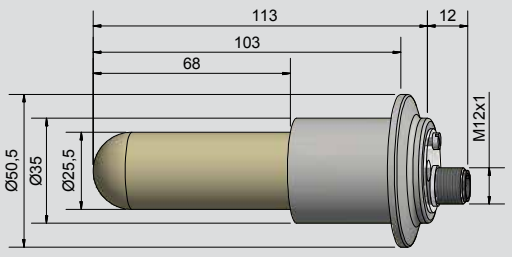
Type of construction Triclamp DN 40
- For use in areas with the risk of dust explosion, zone 20
- Housing material: Stainless steel VA, No.1.4404 (AISI 316L) / PEEK
- With flange connector M 12 x 1

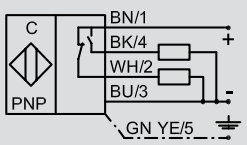
DMT 01 ATEX E 157	IECEx BVS 07.0015
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

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-pin DC
Output function	Antivalent
Type PNP current	**KAS-80-26/113-A-Tri-PEEK/VAc-Y10-1-HP-1/2D**
Type PNP	**KAS-80-26-A-Tri-PEEK/VA-Y10-StEx**
Art.-No.	**KA 1581**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	50 Hz
Permitted ambient temperature	-20...+90 °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	Flange connector M 12 x 1 (A-coded)
Housing material	Stainless steel VA No.1.4404 / AISI 316L (FDA conforming)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC
Media optimized	Yes
Accessories (not delivered with the sensor): For matching connectors 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

Made in Germany

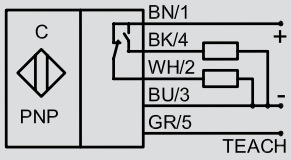
Capacitive Sensors S26
Series 80 - PNP

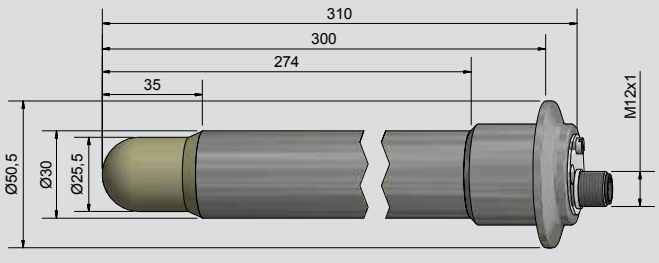
Type of construction Triclamp DN40 to standard DIN 32676, row A
- Housing material: VA no. 1.4404 / AISI 316L
- Bodylength 300 mm
- Other body lengths on request
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED
- With flange connector M 12 x 1

Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. programmable	0...15 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	**KAS-80-26/310-A-TRI-PP/VAc-Y10-ETW-HP**
Art.-No.	**KA 1627**
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.	15 Hz
Permitted ambient temperature	0...+70 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67*
Norm	EN 60947-5-2
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	VA, No.1.4404 / AISI 316L (FDA conforming)
Active surface	Polypropylene (PP) (FDA 21 CFR 177.1520)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes
Accessories (not delivered with the sensor): For matching connectors please see our selection of accessories.	

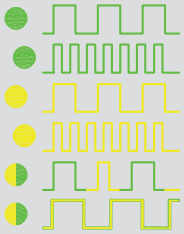
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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
- EHEDG conform





EasyTeach chart: LED / Output function
Yellow = A1 Green = A2



Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Factory reset
Test

* With sealed potentiometer screw

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Capacitive Sensors - S26
Series 80 - PNP

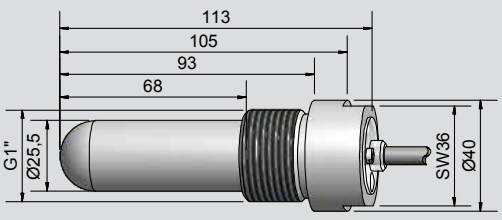
Type of construction G 1“
- Housing material: PTFE
- Special version with flange. Sealing can be made with a gasket or PTFE-tape (not delivered with the sensor)
- With Bluetooth function

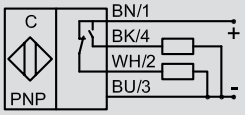
Bluetooth

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	Antivalent (NO + NC)
Type PNP	**KAS-80-26/113-A-G1-PTFE-Z02-1-BS-HP**
Art.-No.	**KA 1403**
Connection diagram No.	see below
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.	2 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 mm²
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Media optimized	Yes

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 Bluetooth control function for:
  – Sensor sensitivity
  – Optimal sensor adjustment
  – Deposits on the sensor surface.





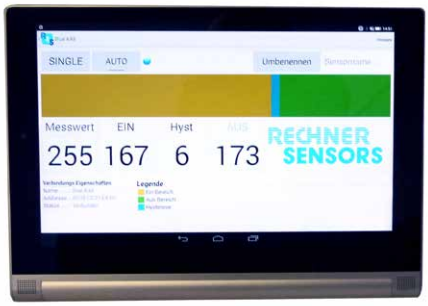
Made in Germany

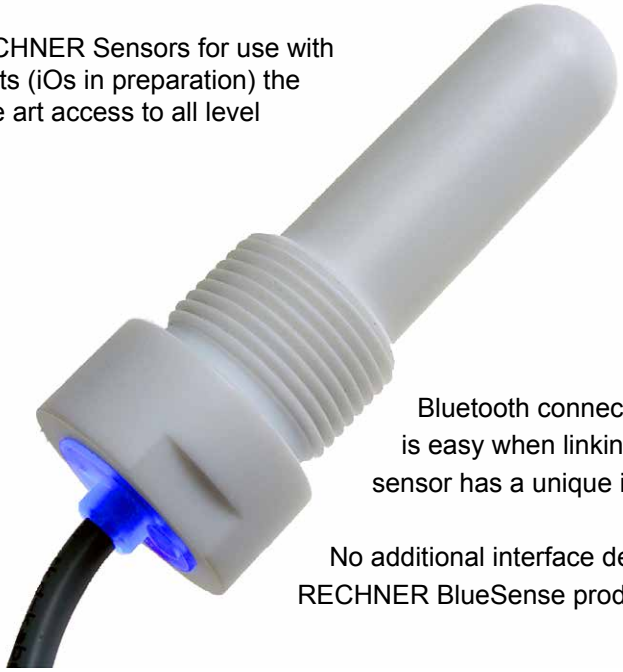
Industry 4.0

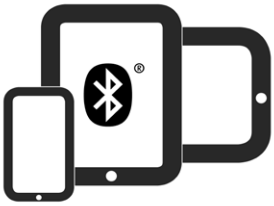
World's first: BlueSense Capacitive sensor with Bluetooth

Rechner capacitive proximity sensors with a hemispherical active sensing area already have big application benefits for the user but now they are available with Bluetooth.

With the App provided by RECHNER Sensors for use with Android smartphones or tablets (iOs in preparation) the customer now has state of the art access to all level measurement parameters.







Bluetooth connection with RECHNER BlueSense devices is easy when linking to smartphones or tablets as each sensor has a unique identification address.

No additional interface device is required to receive data from RECHNER BlueSense products.

BlueSense lets the user know vital details such as:

- Is the sensor correctly adjusted for the application?
- Has it been adjusted to the ideal measuring range?
- Is the dielectric constant of the detected product changing e.g. due to humidity or changes in the mixture?
- How much product is deposited on the sensor surface?

BlueSense is the ultimate auxiliary set-up tool for users who want current status and control of their level measurement.

Made in Germany

All specifications

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Capacitive Sensors - S26
Series 80 - PNP

Type of construction G 1”
- Housing material: PTFE
- With flange connector M 12 x 1
- Output function (Antivalent / 2 x normally open / 2 x normally closed) selectable with EasyTeach by Wire
- Operating distance adjustable with EasyTeach by Wire
- Optical guidance during the teach process with the aid of a 2-colour LED

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 - pin DC
Output function*	Antivalent
Type PNP	**KAS-80-26/113-P3-G1-PTFE-Y10-ETW-HP**
Art.-No.	**KA 1624**
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	25 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	Flange connector M 12 x 1 (A-coded)
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PA / PPO
Media optimized	Yes

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

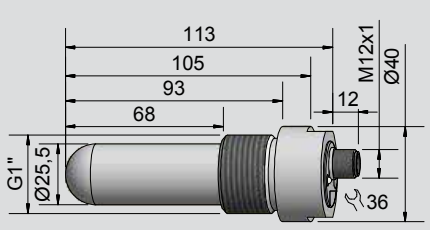
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- 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

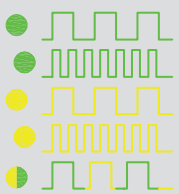
Highlights:

The sensor has three different output modes:
- Antivalent (factory setting)
- 2 x Normally open
- 2 x Normally closed

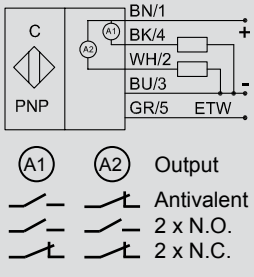
With the normally closed and normally open versions, two switching points can be set independently of each other.



EasyTeach chart*: LED LED / Output function
Yellow = A1 Green = A2



Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Test



A1 A2 Output
Antivalent
2 x N.O.
2 x N.C.

*Factory setting: Antivalent. Further EasyTeach settings can be found in the operating instructions.

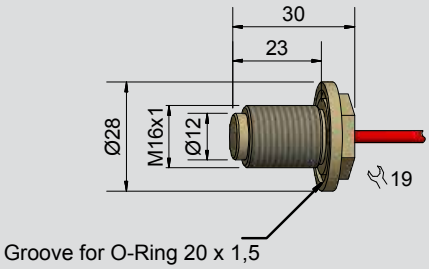
Made in Germany

Y95

Capacitive sensors
Series KXS-eXtreme

Housing M 16 x 1
- Housing material: PEEK
- For connection to capacitive evaluation units KXA-...-MINI-...-...
- Extreme large sensing distance
- Up to 250° C ambient temperature

Technical data	Flush mountable
Operating distance S_n	15 mm
Operating distance min / max adjustable	1...25 mm
Type	**KXS-250-M16/30-X-M16-PEEK-250C-X02/Y95**
Art.-No.	**KX 0104**
Permitted ambient temperature	-50...+250 °C
Enclosure rating IEC 60529*	IP 67
Norm	EN 60947-5-2
Connection cable for connection to capacitive evaluation units KXA-... with plug-in connector	2 m FEP, Triax
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)



Groove for O-Ring 20 x 1,5

*Enclosure rating IEC 60529 for connector on request.

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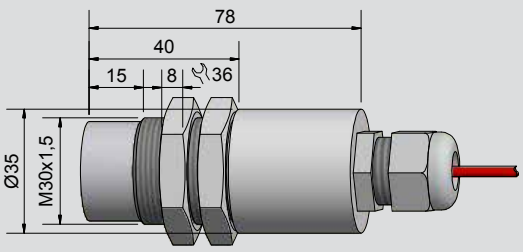
Y95

Capacitive sensors
Series KXS-eXtreme

Housing M 30 x 1.5
- Housing material: PTFE
- For connection to capacitive evaluation units KXA-...
- Extreme large sensing distance
- Up to 160° C ambient temperature

Technical data	Non-flush mountable
Operating distance S_n	60 mm
Operating distance min / max adjustable	5...100 mm
Type	**KXS-250-M30/70-X-M30-PTFE-160C-X02/Y95**
Art.-No.	**KX 0081**
Permitted ambient temperature	-50...+160 °C
Enclosure rating IEC 60529*	IP 67
Norm	EN 60947-5-2
Connection cable for connection to capacitive evaluation units KXA-... with plug-in connector	2 m FEP, Triax
Housing material	PTFE (FDA 21 CFR 177.1550)
Active surface	PTFE (FDA 21 CFR 177.1550)
Accessories (delivered with the sensor)	2 nuts M 30 x 1,5



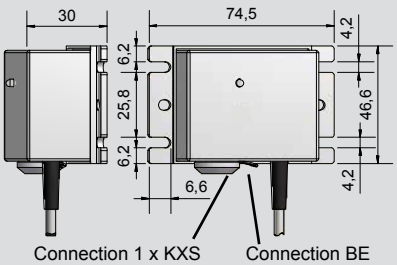
*Enclosure rating IEC 60529 for connector on request.

Made in Germany

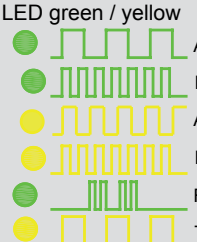
Capacitive evaluation units
Series KXA-eXtreme

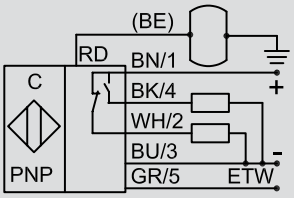
Housing 46,6 x 74,5 x 30 mm
- KXA-...-MINI for connection to capacitive sensors KXS-...-M5/... to -M16/...
- Adjustable with EasyTeach by Wire / EasyTeach by Magnet (ETM)

Technical data	
Electrical version	4-wire DC
Output function	Antivalent
Type PNP	**KXA-5-1MINI-B-P-A-ET-Z02-Y90**
Art.-No.	**XA 0065**
Operating voltage (U_B)	18...36 V DC
Voltage drop max. (U_d)	< 2.5 V
Permitted residual ripple max.	25 %
Operating current (I_e)	2 x 0...200 mA
No-load current (I_o)	Typ. 50 mA
Frequency of operating cycles max.	50 Hz
Switching hysteresis	≤ 20%
Repeat accuracy	≤ 1%
Permitted ambient temperature	-25...+55 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 65
Norm	EN 60947-5-2
Connection cable	2 m, PUR, 5 x 0.14 mm²
Housing material	PA
Accessories (delivered with the unit)	Teach magnet



EasyTeach chart:
LED green / yellow





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LevelMaster - Capacitive Sensors

Model G 1/2“
For level control of liquids, bulk material or pastes Ideal for level control in the Food Industry or Pharmaceutical Industry

- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Adjustment of the sensitivity with ETW- Function (EasyTeach by wire)
- With flange connector M 12 x 1
- Welding sockets and Varivent adapter available for EHEDG conform mounting.

CE · RoHS Compliant · ETL Intertek · NL NormLine · ETW EasyTeach · PEEK EC 1935/2004 conform · Stainless Steel · For Food · High chemical resistance · CIP SIP · EHEDG conform

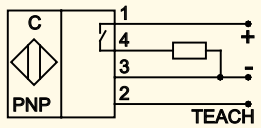
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	1...10 mm
Electrical version	3-pin DC
Output function	Normally open
Type PNP	**KAS-80-A23-S-G1/2-PEEK/VAb-Y3-ETW-NL**
Art.-No.	**KA 1599**
Operating voltage (U_B)	12...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	5 %
Operating current (I_e)	0...200 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	Yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60947-5-2
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	Stainless steel VA No. 1.4305 (AISI 303)
Active surface	PEEK (FDA 21 CFR 177.2415)
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.	

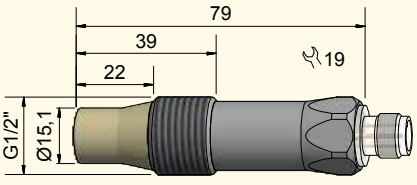
Capacitive Sensors for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- Bulk materials, such as grain, sugar, granulates.
- Liquids, oil, chemicals or pharmaceutical solutions and much more.

Highlights:

- EHEDG conform
- Measurement is independent of the mounting position





EasyTeach chart:

Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Test

Made in Germany

LevelMaster

EXtra Smart

This capacitive sensor is designed for the level control of bulk materials, liquids and pastes dielectric constant (DC) ε_r of 1,1. This sensor is a classic capacitive sensor that reliably detects all kind of materials. Capacitive sensors help to control the level in dosing systems, storage container or prevent the pump for dry running. For product that are high conductive and adhesive we recommend the models of the KS-801-... series.

The material to detect could be bulk material, such as, metal powder, plastic powder, granules, spices, dryed herbs, coffee, sugar, cocoa, tabled powder liquids could be for instance, oil, milk products or juice.

ETW EasyTeach

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a LED:
• standby • teach process • switching state

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Art.-Nr. 196394
Welding socket

Art.-Nr. 190754
Tri-Clamp

Art.-Nr. 196395
Varivent N DN 50

Art.-Nr. 193391
Connector
4 x 0,34, 5 m

Art.-Nr. 193392
Connector
4 x 0,34, 5 m

Directive (EC) 1935/2004

The traceability of the used sensor body material according to the directive (EC) 1935/2004 is confirmed by RECHNER with a conformity declaration, that is provided on the website as download document under certificates.

Made in Germany

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LevelMaster - Capacitive Sensors

Model G 1/2“
For level control of liquids, bulk material or pastes Ideal for level control in the Food Industry or Pharmaceutical Industry

- Housing material: POM
- Adjustment of the sensitivity with ETW- Function (EasyTeach by wire)
- With flange connector M 12 x 1
- Welding sockets and Varivent adapter available for EHEDG conform mounting.

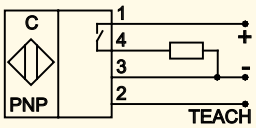
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	1...10 mm
Electrical version	3-pin DC
Output function	Normally open
Type PNP	**KAS-80-A23-S-G1/2-POM-Y3-ETW-NL**
Art.-No.	**KA 1598**
Operating voltage (U_B)	12...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	5 %
Operating current (I_e)	0...200 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	Yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60947-5-2
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	POM (FDA 21 CFR 177.2470)
Active surface	POM (FDA 21 CFR 177.2470)
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.	

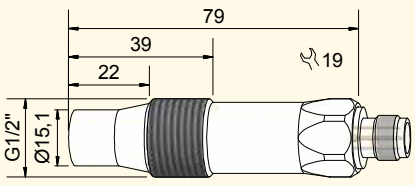
Capacitive Sensors for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- Bulk materials, such as grain, sugar, granulates.
- Liquids, oil, chemicals or pharmaceutical solutions and much more.

Highlights:

- EHEDG conform
- Measurement is independent of the mounting position





EasyTeach chart:

Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Test

Made in Germany

LevelMaster

EXtra Smart

This capacitive sensor is designed for the level control of bulk materials, liquids and pastes dielectric constant (DC) ε_r of 1,1. This sensor is a classic capacitive sensor that reliably detects all kind of materials. Capacitive sensors help to control the level in dosing systems, storage container or prevent the pump for dry running. For product that are high conductive and adhesive we recommend the models of the KS-801-... series.

The material to detect could be bulk material, such as, metal powder, plastic powder, granules, spices, dryed herbs, coffee, sugar, cocoa, tabled powder liquids could be for instance, oil, milk products or juice.

ETW EasyTeach

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a LED:
• standby • teach process • switching state

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Art.-Nr. 196394
Welding socket

Art.-Nr. 190754
Tri-Clamp

Art.-Nr. 196395
Varivent N DN 50

Art.-Nr. 193391
Connector
4 x 0,34, 5 m

Art.-Nr. 193392
Connector
4 x 0,34, 5 m

Directive (EC) 1935/2004

The traceability of the used sensor body material according to the directive (EC) 1935/2004 is confirmed by RECHNER with a conformity declaration, that is provided on the website as download document under certificates.

Made in Germany

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LevelMaster - Capacitive Sensors

Model G 1/2“
For level control of liquids, bulk material or pastes Ideal for level control in the Food Industry or Pharmaceutical Industry

- Housing material: PEEK
- Adjustment of the sensitivity with ETW- Function (EasyTeach by wire)
- With flange connector M 12 x 1
- Welding sockets and Varivent adapter available for EHEDG conform mounting.

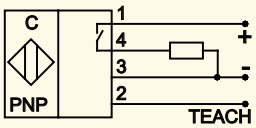
Technical data	Non-flush mountable
Level sensor, in contact with the product	Medium dependent adjustable
Operating distance min. / max. adjustable	1...10 mm
Electrical version	3-pin DC
Output function	Normally open
Type PNP	**KAS-80-A23-S-G1/2-PEEK-Y10-ETW-NL**
Art.-No.	**KA 1597**
Operating voltage (U_B)	12...30 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Permitted residual ripple max.	5 %
Operating current (I_e)	0...200 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	Yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60947-5-2
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.	

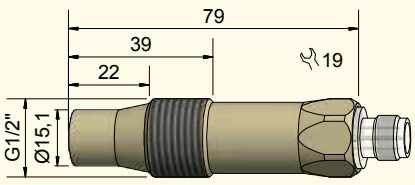
Capacitive Sensors for level control of products with a dielectric constant ε_r from 1,1. Products can be:

- Bulk materials, such as grain, sugar, granulates.
- Liquids, oil, chemicals or pharmaceutical solutions and much more.

Highlights:

- EHEDG conform
- Measurement is independent of the mounting position





EasyTeach chart:

Adjustment “empty“
Initializing “empty“
Adjustment “full“
Initializing “full“
Test

Made in Germany

LevelMaster

EXtra Smart

This capacitive sensor is designed for the level control of bulk materials, liquids and pastes dielectric constant (DC) ε_r of 1,1. This sensor is a classic capacitive sensor that reliably detects all kind of materials. Capacitive sensors help to control the level in dosing systems, storage container or prevent the pump for dry running. For product that are high conductive and adhesive we recommend the models of the KS-801-... series.

The material to detect could be bulk material, such as, metal powder, plastic powder, granules, spices, dryed herbs, coffee, sugar, cocoa, tabled powder liquids could be for instance, oil, milk products or juice.

ETW EasyTeach

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a LED:
• standby • teach process • switching state

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Art.-Nr. 196394
Welding socket

Art.-Nr. 190754
Tri-Clamp

Art.-Nr. 196395
Varivent N DN 50

Art.-Nr. 193391
Connector
4 x 0,34, 5 m

Art.-Nr. 193392
Connector
4 x 0,34, 5 m

Directive (EC) 1935/2004

The traceability of the used sensor body material according to the directive (EC) 1935/2004 is confirmed by RECHNER with a conformity declaration, that is provided on the website as download document under certificates.

Made in Germany

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LevelMaster - Capacitive Sensors - S26

Model G 1/2“
For level control of conductive and/or viscous liquids or pastes, for instance oil, water, ketchup or honey. Ideal for level control in the Food Industry or Pharmaceutical Industry

- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Adjustment of the sensitivity with ETW- Function (EasyTeach by wire)
- With flange connector M 12 x 1
- Welding sockets and Varivent adapter available for EHEDG conform mounting

Technical data	Non-flush mountable
Sensitivity	Dielectric constant ε_r > 1.25
Electrical version	3-pin DC
Output function	Normally open
Factory setting	Water
Typ PNP	**KS-801-26/136-S-G1/2-PEEK/VAb-120C-Y3-ETW-HP**
Art. No.	**KA 1562**
Operating voltage (U_B)	12.5...35 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Operating current (I_e)	0...250 mA
No-load current (I_o)	Typ. < 30 mA
Frequency of operating cycles max.	1 Hz
Permitted ambient temperature	0...+70 °C / CIP 121 °C
Permitted product temperature	-10...+120 °C
LED-display	Green / orange
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67, IP 69K
Norm	EN 60947-5-2*
Connection	Connector M 12 x 1
Operating pressure	Max. 10 bar
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Material active surface	PEEK (FDA 21 CFR 177.2415)

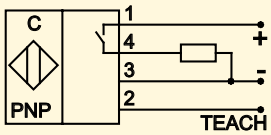
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.

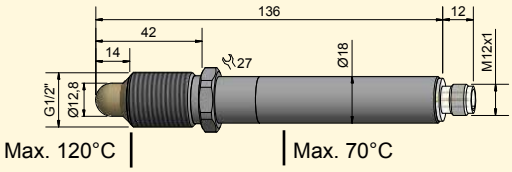
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,25. Products can be:

- Liquids, like water, juice, wine, oil, chemicals or pharmaceutical solutions and much more.

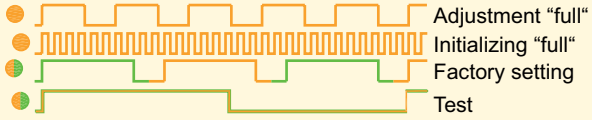
Highlights:

- EHEDG conform
- Measurement is independent of the mounting position
- Permitted pressure on the active area: 10 bar





EasyTeach chart: LED / Output function
Orange = A1 Green = A1



*Where applicable

Made in Germany

LevelMaster

EXtra Smart

This capacitive sensor is designed for the level control of liquid or viscous products, which can be conductive and/or viscous and sticky.

Materials like ketchup, mayonnaise, yoghurt, syrups, pastes, or liquids with salt or acids will be reliably detected with the LevelMaster.

ETW EasyTeach

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a 2-colour LED:
• standby • teach process • switching state

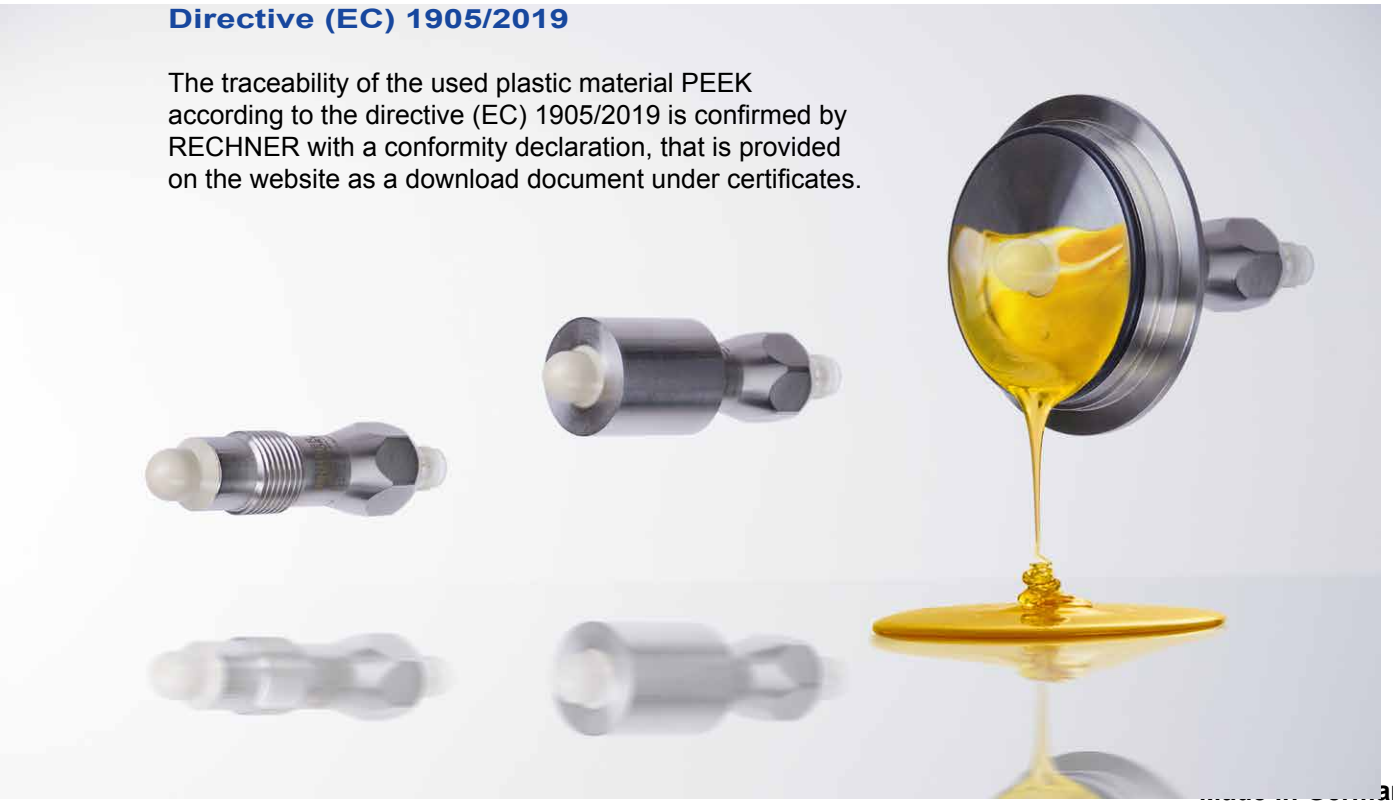
The modern micro controller controlled temperature compensation provides for reliable level control with applications where there are variations in the ambient temperatures.

The sensor body is made of stainless steel material No. 1.4305 (AISI 303).

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Directive (EC) 1905/2019

The traceability of the used plastic material PEEK according to the directive (EC) 1905/2019 is confirmed by RECHNER with a conformity declaration, that is provided on the website as a download document under certificates.



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LevelMaster - Capacitive Sensors

Model G 1/2“

- For level control of conductive and/or viscous liquids or pastes, for instance oil, water, ketchup or honey.
- Ideal for level control in the Food Industry or Pharmaceutical Industry

- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Adjustment of the sensitivity with ETW- Function (EasyTeach by wire)
- With flange connector M 12 x 1
- Welding sockets and Varivent adapter available for EHEDG conform mounting.

Technical data	Non-flush mountable
Sensitivity	Dielectric constant ε_r > 1.25
Electrical version	3-pin DC
Output function	Normally open
Factory setting	Water
Typ PNP	**KS-801-26/136-S-G1/2TP21-PEEK/VAb-160C-Y3-ETW-HP**
Art. No.	**KA1556**
Operating voltage (U_B)	12.5...35 V DC
Voltage drop max. (U_d)	≤ 2.0 V
Operating current (I_e)	0...250 mA
No-load current (I_o)	Typ. < 30 mA
Frequency of operating cycles max.	1 Hz
Permitted ambient temperature	0...+70 °C / CIP 121 °C
Permitted product temperature	-10...+160 °C
LED-display	Green / orange
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67, IP 69K
Norm	EN 60947-5-2*
Connection	Connector M 12 x 1
Operating pressure	Max. 10 bar
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Material active surface	PEEK (FDA 21 CFR 177.2415)

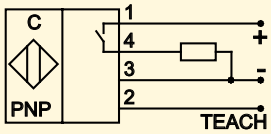
Accessories (not delivered with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.

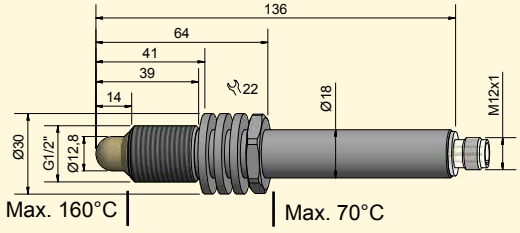
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,25. Products can be:

- Liquids, like water, juice, wine, oil, chemicals or pharmaceutical solutions and much more.

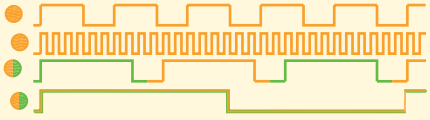
Highlights:

- EHEDG conform
- Measurement is independent of the mounting position
- Permitted pressure on the active area: 10 bar





EasyTeach chart:



LED / Output function
Orange = A1 Green = A1

Adjustment “full“
Initializing “full“
Factory setting
Test

*Where applicable

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LevelMaster

EXtra Smart

This capacitive sensor is designed for the level control of liquid or viscous products, which can be conductive and/or viscous and sticky.

Materials like ketchup, mayonnaise, yoghurt, syrups, pastes, or liquids with salt or acids will be reliably detected with the LevelMaster.

ETW EasyTeach

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a 2-colour LED:
• standby • teach process • switching state

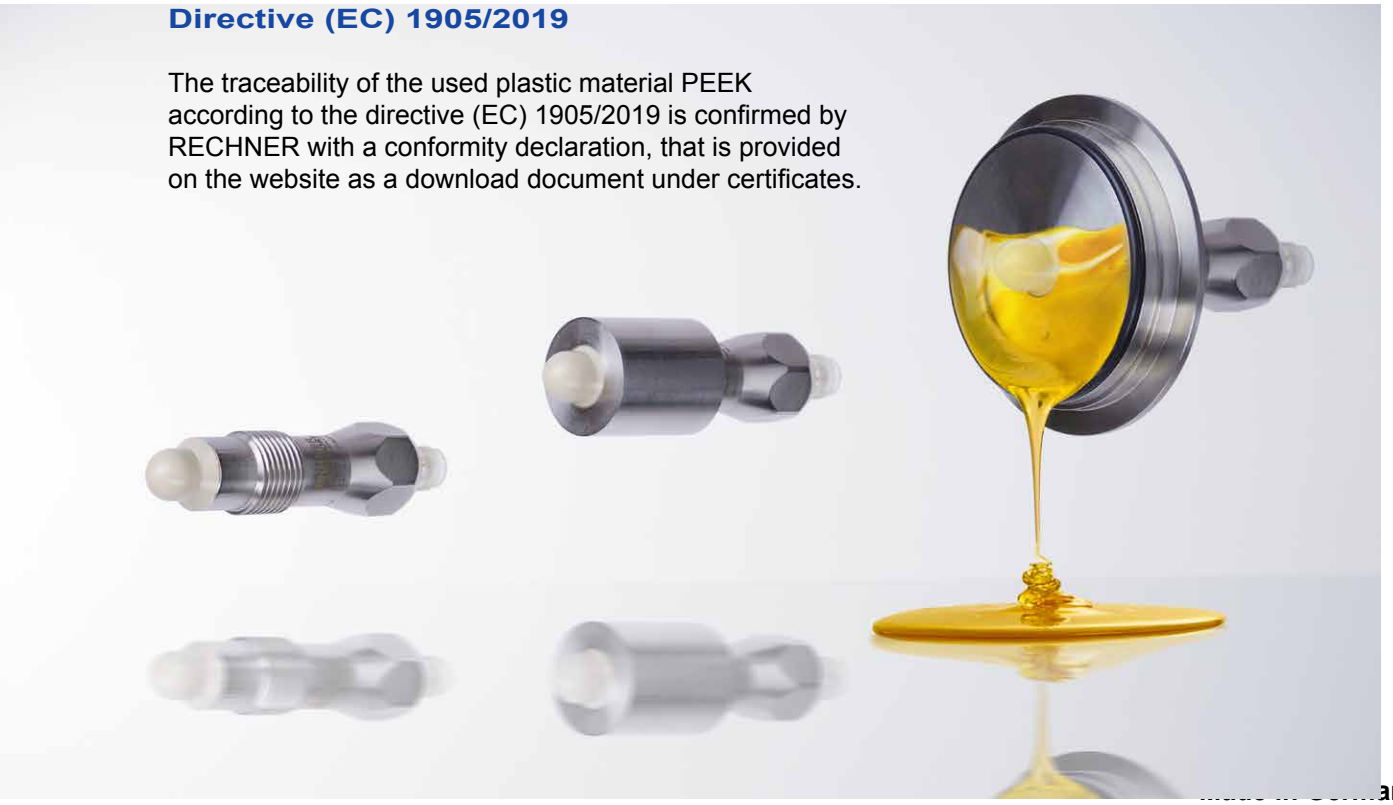
The modern micro controller controlled temperature compensation provides for reliable level control with applications where there are variations in the ambient temperatures.

The sensor body is made of stainless steel material No. 1.4305 (AISI 303).

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Directive (EC) 1905/2019

The traceability of the used plastic material PEEK according to the directive (EC) 1905/2019 is confirmed by RECHNER with a conformity declaration, that is provided on the website as a download document under certificates.



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LevelMaster - Capacitive Sensors

Model G 1/2“

- For level control of conductive and/or viscous liquids or pastes, for instance oil, water, ketchup or honey.
- Ideal for level control in the Food Industry or Pharmaceutical Industry

- Housing material: Stainless steel VA No. 1.4305 (AISI 303)
- Adjustment of the sensitivity with ETW- Function (EasyTeach by wire)
- With flange connector M 12 x 1
- Welding sockets and Varivent adapter available for EHEDG conform mounting.

Technical data	Non-flush mountable
Sensitivity	Dielectric constant ε_r > 1.25
Electrical version	3-pin DC
Output function	Analogue
Typ Analogue	**KS-801-26/203-IL4-G1/2-PEEK/VAb-Y3-ETW-HP**
Art. No.	**KA 1633**
Operating voltage (U_B)	12.5...35 V DC
Output signal	4...20 mA
Output current active surface free	≤ 4 mA
Output current active surface covered	≥ 20 mA
Load resistor (R_L)	0...600 Ohm
No-load current (I_o)	Typ. < 30 mA
Permitted ambient temperature	0...+70 °C / CIP 121 °C
Permitted product temperature	0...+100 °C
LED-display	Green / orange
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67, IP 69K
Norm	EN 60947-5-2, EN 60947-5-7*
Connection	Connector M 12 x 1
Operating pressure	Max. 10 bar
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Material active surface	PEEK (FDA 21 CFR 177.2415)

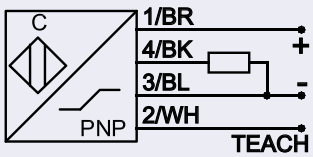
Accessories (not supplied with the sensor): Varivent Adapter art.No. 196395, Welding Socket art.No. 196394 and matching connectors please see our selection of accessories.

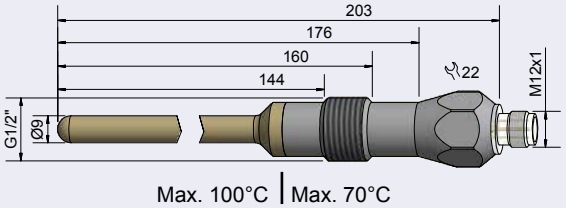
Capacitive Sensors S26 with hemispherical active surface for level control of products with a dielectric constant ε_r from 1,25. Products can be:

- Liquids, like water, juice, wine, oil, chemicals or pharmaceutical solutions and much more.

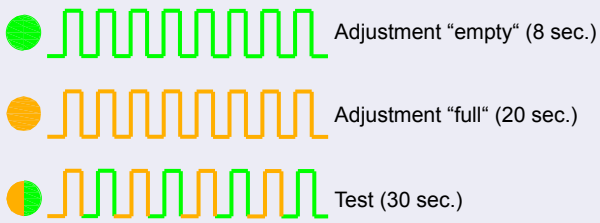
Highlights:

- EHEDG conform
- Measurement is independent of the mounting position
- Analogue measuring range max. 120 mm
- Permitted pressure on the active area: 10 bar





EasyTeach chart:



*Where applicable

Made in Germany

LevelMaster

EXtra Smart

This capacitive sensor is designed for the analogue level control of liquid or viscous products, which can be conductive and/or viscous and sticky.

Materials like ketchup, mayonnaise, yoghurt, syrups, pastes, or liquids with salt or acids will be reliably detected with the LevelMaster.

ETW EasyTeach

It could not be easier.
The user mounts the sensor, makes the electrical connection and the adjustment by means of the teach wire and the sensor is ready for use.

No additional teach equipment necessary.

Optical guidance during the teach process with the aid of a 2-colour LED:
• standby • teach process • switching state

The modern micro controller controlled temperature compensation provides for reliable level control with applications where there are variations in the ambient temperatures.

The sensor body is made of stainless steel material No. 1.4305 (AISI 303).

When the sensor is mounted with our adapters: welding socket or the process adapter Varivent N DN 50 a hygienic, EHEDG conforming process connection will be achieved.

Directive (EC) 1935/2004

The traceability of the used plastic material PEEK according to the directive (EC) 1935/2004 is confirmed by RECHNER with a conformity declaration, that is provided on the website as download document under certificates.

Applications

Depending on the selected type, the analogue LevelMaster can be used to carry out an analogue fill level measurement across a defined range.

At the same time, it is also possible to detect any signs of pollution so that a cleaning process can be triggered. Another application option is a display of the change in the dielectric constant (DC) of the product to be monitored for quality control. For quality control purposes, the empirically determined starting values can be controlled and analysed using for example a PLC.

In the case of applications with changing media, the empirically determined output can be programmed by the following control system: product A = analogue value X, product B = analogue value Y, product C = analogue value Z, etc.
If the product is changed, simply select the corresponding program in the PLC.

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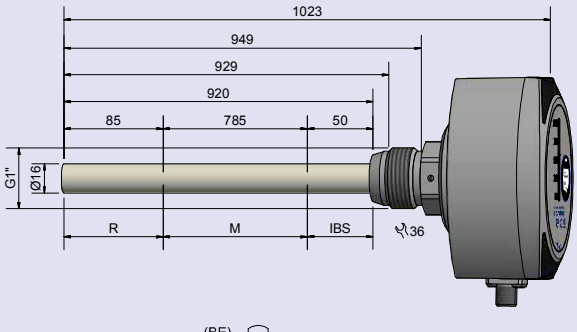
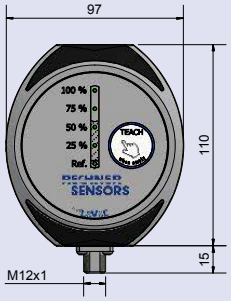
TRUE LEVEL Capacitive filling level probe

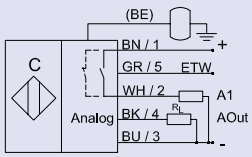
Analogue current output 4...20 mA / 20...4 mA

- Integrated evaluation electronics
- Adjustable with EasyTeach by Membrane foil (ETF) / EasyTeach by wire (ETW)
- Housing material: PTFE, Ø 16 mm
- Connection head / process connection: Aluminium / Stainless steel VA no. 1.4305 (AISI 303)
- Process connection G1”
- Additional output in the reference range (normally open / normally closed switchable)

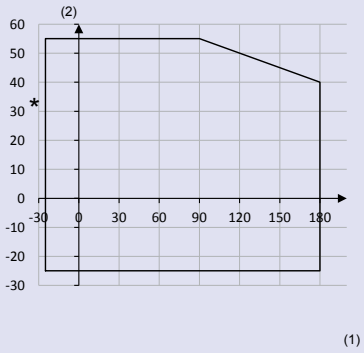
Technical data	
Active zone [M]	785 mm
Output function	Analogue
Type	**KFX-1-85-920-785-PTFE/VAb/AL-D16-PHG1-IL-ET-Y10**
Art.-No.	**KF 0643**
Operating voltage (U_B)	18...36 V DC
Operating current (I_e)	0...250 mA
Permitted residual ripple max.	25 %
Load resistance (R_L)	≤ 600 Ω
Power consumption (outputs no-load)	3 W
Analogue output	4...20 mA / 20...4 mA
Permitted ambient temperature	-25...+55 °C
Permitted product temperature	-25...+180 °C*
LED-Display	Green / blue
Protective circuit	Built-in
Degree of protection IEC 60529	IP 65
Norm	EN 60947-5-2*
Connection	Flange connector M 12 x 1 (A-coded) (5-pin)
Connection head / process connection	Aluminium / Stainless steel VA no. 1.4305 (AISI 303)
Housing material (active zone)	PTFE (FDA 21 CFR 177.1550)
Lid	Aluminium
For matching connectors please see our selection of accessories.	







Other housing materials for the active zone (probe), like GFK or PEEK on request.



(1) Product temperature in °C
(2) Ambient temperature in °C

**Where applicable

Made in Germany

CAPACITIVE LEVEL PROBE

EasyTeach ETW and ETF

CAPACITIVE LEVEL MEASURING PROBE WITH EASYTEACH FUNCTION COMPENSATION OF THE DIELECTRIC CONSTANT

The probe has a reference area for the compensation of the dielectric constant (DC). Thanks to this function the probe will be adjusted with empty container and it detects reliable the level of liquids or bulk material with a dielectric constant (DC) from ε_r > 1,2.

It could not be easier:

After the single setting on the empty container, the probe automatically adjusts itself to the material to be measured.

This saves the user a lot of time during the initial operation and is also particularly advantageous for applications with changing products.

- **EASYTEACH BY MEMBRANE FOIL (ETF) AND EASYTEACH BY WIRE (ETW)**
- **SENSITIVITY ADJUSTMENT WITH EMPTY CONTAINER.**
- **EASY AND QUICK COMMISSIONING**
- **COMPENSATION OF THE DIELECTRIC CONSTANT (DC)**

Evaluation Electronics integrated!

Made in Germany

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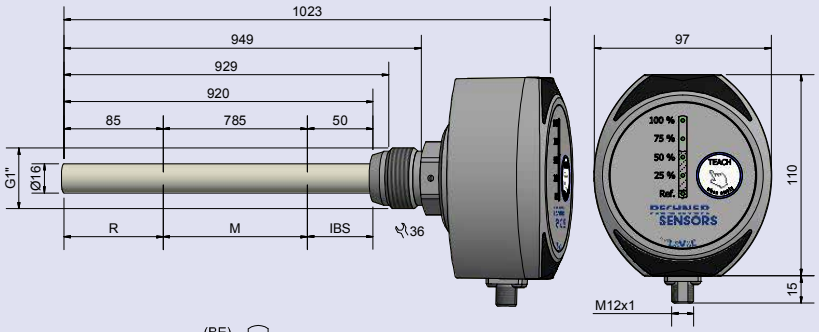
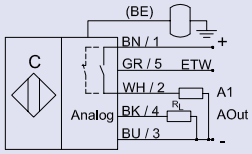
TRUE LEVEL Capacitive filling level probe

Analogue voltage output 0...10 V / 10...0 V

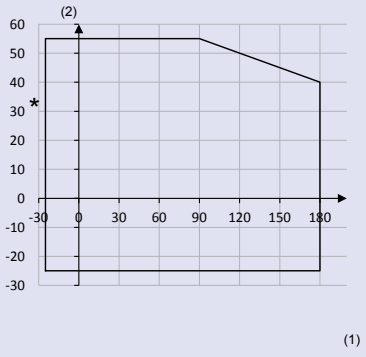
- Integrated evaluation electronics
- Adjustable with Easy Teach by Membrane foil (ETF) / Easy Teach by wire (ETW)
- Housing material: PTFE, Ø 16 mm
- Connection head / process connection: Aluminium / Stainless steel VA no. 1.4305 (AISI 303)
- Process connection G1”
- Additional output in the reference range (normally open / normally closed switchable)

Technical data	
Active zone [M]	865 mm
Output function	Analogue
Type	**KFX-1-85-1000-865-PTFE/VAb/AL-D16-PHG1-UL-ET-Y10**
Art.-No.	**KF 0644**
Operating voltage (U_B)	18...36 V DC
Operating current (I_e)	0...250 mA
Permitted residual ripple max.	25 %
Load resistance (R_L)	≤ 600 Ω
Power consumption (outputs no-load)	3 W
Analogue output	0...10 V / 10...0 V
Permitted ambient temperature	-25...+55 °C
Permitted product temperature	-25...+180 °C*
LED-Display	Green / blue
Protective circuit	Built-in
Degree of protection IEC 60529	IP 65
Norm	EN 60947-5-2**
Connection	Flange connector M 12 x 1 (A-coded) (5-pin)
Connection head / process connection	Aluminium / Stainless steel VA no. 1.4305 (AISI 303)
Housing material (active zone)	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
For matching connectors please see our selection of accessories.	





Other housing materials for the active zone (probe), like GFK or PEEK on request.



(1) Product temperature in °C
(2) Ambient temperature in °C

**Where applicable

Made in Germany

CAPACITIVE LEVEL PROBE

EasyTeach ETW and ETF

CAPACITIVE LEVEL MEASURING PROBE WITH EASYTEACH FUNCTION COMPENSATION OF THE DIELECTRIC CONSTANT

The probe has a reference area for the compensation of the dielectric constant (DC). Thanks to this function the probe will be adjusted with empty container and it detects reliable the level of liquids or bulk material with a dielectric constant (DC) from ε_r > 1,2.

It could not be easier:

After the single setting on the empty container, the probe automatically adjusts itself to the material to be measured.

This saves the user a lot of time during the initial operation and is also particularly advantageous for applications with changing products.

- **EASYTEACH BY MEMBRANE FOIL (ETF) AND EASYTEACH BY WIRE (ETW)**
- **SENSITIVITY ADJUSTMENT WITH EMPTY CONTAINER.**
- **EASY AND QUICK COMMISSIONING**
- **COMPENSATION OF THE DIELECTRIC CONSTANT (DC)**

Evaluation Electronics integrated!

Made in Germany

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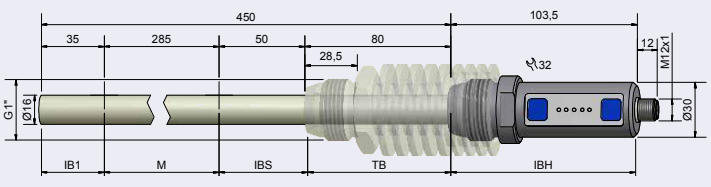
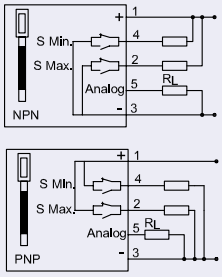
i-LεVεL Capacitive Filling Level Probe - KFI

Analogue current output 4...20 mA
2 programmable limit value switching points

- Integrated evaluation electronics
- Housing material: PEEK, 16 mm Ø
- Connection head and process connection stainless steel VA no. 1.4305
- Process connection G1”
- Multifunction probe: Automatic identification of NPN / PNP function
- Normally open / normally closed function switchable
- Electronic lock

Technical data	
Active zone [mm]	285 mm
Electrical version	5 - pin DC
Output function	Analogue, 2 limit value switching points, Normally open / normally closed switchable
Type	**KFI-12-450-285-PEEK/VAb-D16-TB80-G1-IL-4-ETF-Y10**
Art.-No.	**KI 0018**
Operating voltage (U_B)	18...30 V DC
Permitted residual max.	5 %
Load resistance (R_L)	≤ 400 Ω
Operating current (I_e)	100 mA
Power consumption (outputs no-load)	0,8 W
Analogue output	4...20 mA
Switching frequency max.	1 Hz
Permitted ambient temperature	-25...+55 °C
Permitted ambient temperature (for active zone)	-25...+200 °C**
Pressure	10 bar
LED-Display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60947-5-2*
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	VA No. 1.4305 / polyester
Active zone	PEEK (FDA 21 CFR 177.2415)
Accessories (are not delivered with the probe)	Temperature buffer TP80 #194020





Other housing materials for the active zone (probe), like PE, GFK, PVDF or PTFE on request.

*Where applicable ** The information is based on the use of the specified temperature buffer (See Accessories)

Made in Germany

i-LEVEL Capacitive Filling Level Probe

Analogue current output 4...20 mA

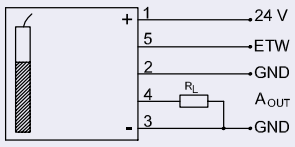
For dry bulk materials and non-conductive liquids with low dielectric constant (e.g. oil)

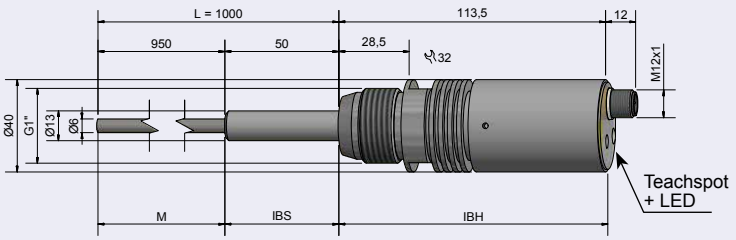
- Integrated evaluation electronics
- Adjustable with EasyTeach by Wire, EasyTeach by Magnet
- Connection head and process connection stainless steel VA no. 1.4404 / AISI 316L
- Process connection G1”
- With flange connector M 12 x 1 (5-pin incl. EasyTeach function)

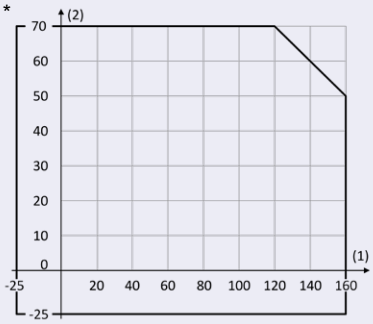
Technical data	
Active zones [M]	950 mm
Electrical version	3 - pin DC
Output function	Analogue
Type	**KFI-1-1000-950-VAa/PTFE-D13-TP20-G1-IL4-ET-Y10**
Art.-No.	**KI 0144**
Operating voltage (U_B)	15...30 V DC
Permitted residual ripple max.	5 %
Load resistance (R_L)	≤ 200 Ω
Power consumption (outputs no-load)	1,5 W
Analogue output	4...20 mA
Permitted ambient temperature	-25...+70 °C
Product temperature	-25...+160 °C*
Pressure	0...10 bar
LED-Display	Green
Protective circuit	Built-in
Degree of protection IEC 60529	IP 66 / IP67
Norm	EN 60947-5-2**
Connection	Flange connector M 12 x 1 (A-coded)
Housing material	VA No. 1.4404 / AISI 316L / PTFE (FDA 21 CFR 177.1550)
Active zone	VA No. 1.4404 / AISI 316L
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the probe)	Teach magnet
Accessories (not delivered with the probe)	#193330, female connector M12

EasyTeach chart:
LED green / Adjustment function

- Adjustment Min.
- Adjustment Max.
- Factory set
- Test







(1) Product temperature in °C
(2) Ambient temperature in °C

**Where applicable

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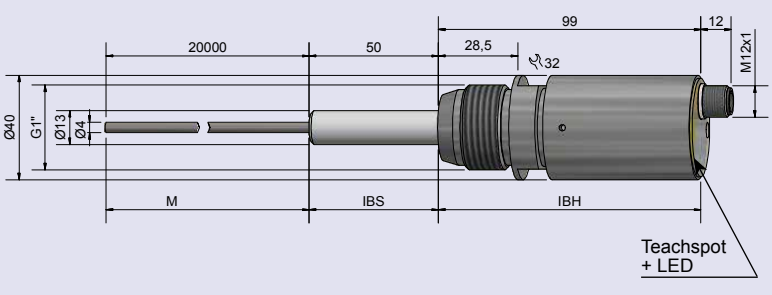
i-LEVEL Capacitive Filling Level Probe

Analogue current output 4...20 mA

For dry bulk materials and non-conductive liquids with low dielectric constant (e.g. oil)

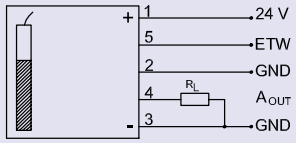
- Adjustable with EasyTeach by Wire, EasyTeach by Magnet
- With flange connector M 12 x 1 (5-pin incl. EasyTeach function)
- Level measurement over the entire active zone (M) up to a maximum of 20 m
- Shortenable measuring probe incl. accessories for isolating fixation of the cable electrode
- Optional: housing with temperature barrier for higher product temperatures
- Optional: Process connection in various versions

Technical data		
Active zones [M]		20000 mm
Electrical version		3 - pin DC
Output function		Analogue
Type		**KFI-1-R-20000-VAc/PTFE/VAc-D13-PHG1-IL4-ET-Y10**
Art.-No.		**KI 0161**
Operating voltage (U_B)		15...30 V DC
Permitted residual ripple max.		5 %
Load resistance (R_L)		≤ 200 Ω
Power consumption (outputs no-load)		1,5 W
Analogue output		4...20 mA
Permitted ambient temperature		-25...+70 °C
Permitted product temperature		-25...+70 °C
Pressure		0...10 bar
Tensile load cable electrode max.		8,7 kN
LED-Display		Green
Protective circuit		Built-in
Degree of protection IEC 60529 (process connection / connection head)		IP 66 / IP67
Norm		EN 60947-5-2
Connection		Flange connector M 12 x 1 (A-coded)
Material	Cable electrode Ø 4 mm Gravity weight, eyelet M12, hexagon head screw Partly isolated area IBS Housing Lid Isolating piece	Stainless steel VA no. 1.4401 / AISI 316 Stainless steel VA no. 1.4404 / AISI 316L (FDA conform) PTFE (FDA 21 CFR 177.1550) Stainless steel VA no. 1.4404 / AISI 316L (FDA conform) PC (FDA 21 CFR 177.1580) PEEK (FDA 21 CFR 177.2415)
Accessories (delivered with the probe)		Gravity weight, eyelet M12, hexagon head screw, isolating piece, Teach magnet
Accessories (not delivered with the probe)		#193330, female connector M12



EasyTeach chart:
LED green / Adjustment function

Adjustment Min.
Adjustment Max.
Factory set
Test



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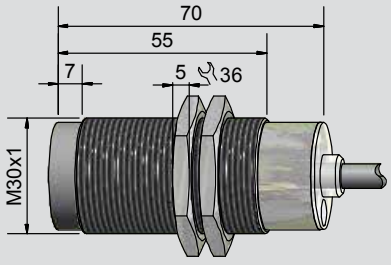
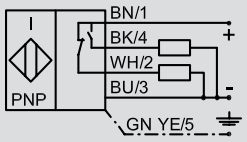
Inductive Sensors
Series 10 - PNP - StEx - ATEX

Housing M 30 x 1.5
- Housing material: Brass
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Sensing distance Sn 15 mm

DMT 01 ATEX E 157	IECEx BVS 07.0015
II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Non-flush mountable
Operating distance S_n	15 mm
Electrical version	4-wire DC
Output	Antivalent
Type PNP current	**IAS-10-A24-A-M30-PTFE/MS-Z02-0-2G-1/2D**
Type PNP	**IAS-10-A24-A-StEx**
Art.-No.	**IA 0331**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.5 V
Permitted residual ripple max.	10 %
Output current max. (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	1 kHz
Permitted ambient temperature	-20...+90 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60 947-5-2
Connection cable	2 m, PVC, 5 x 0.34 mm²
Housing material	Brass
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 30 x 1.5





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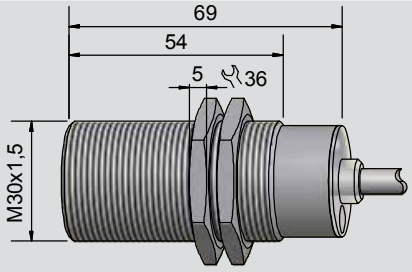
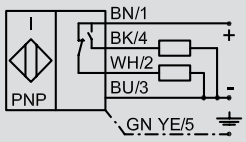
Inductive Sensors
Series 10 - PNP-StEx-ATEX

Housing M 30 x 1.5
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Sensing distance Sn 10 mm

DMT 01 ATEX E 157	IECEx BVS 07.0015
II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Flush mountable
Operating distance S_n	10 mm
Electrical version	4-wire DC
Output	Antivalent
Type PNP current	**IAS-10-A24-A-M30-PTFE/VAb-Z10-0-2G-1/2D**
Type PNP	**IAS-10-A14-A-PTFE/VA-StEx**
Art.-No.	**IA 0269**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.5 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	1 kHz
Permitted ambient temperature	-20...+90 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60 947-5-2
Connection cable	10 m, PVC, 5 x 0.34 mm²
Housing material	Stainless steel VA No. 1.4305 / AISI 303
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 30 x 1.5





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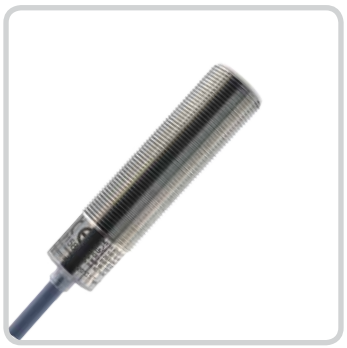
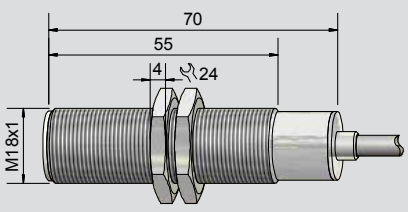


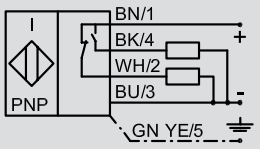
Inductive Sensors
Series 10 - PNP - StEx - ATEX

Housing M 18 x 1
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Housing material: Stainless steel VA, No.1.4404 (AISI 316L)
- Sensing distance Sn 5 mm

DMT 01 ATEX E 157	IECEx BVS 07.0015
Ex II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
Ex II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Flush mountable
Operating distance S_n	5 mm
Electrical version	4-wire DC
Output function	Antivalent
Type PNP current	**IAS-10-A13-A-M18-PTFE/VAc-Z02-0-2G-1/2D**
Type PNP	**IAS-10-A13-A-PTFE/VA-StEx**
Art.-No.	**IA 0309**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.5 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	2 kHz
Permitted ambient temperature	-20...+90 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60 947-5-2
Connection cable	5 m, PVC, 5 x 0.14 mm²
Housing material	Stainless steel VA No.1.4404 / AISI 316L (FDA conforming)
Active surface	PTFE (FDA 21 CFR 155.1550)
Lid	PC (FDA 21 CFR 155.1580)
Accessories (delivered with the sensor)	2 nuts M 18 x 1





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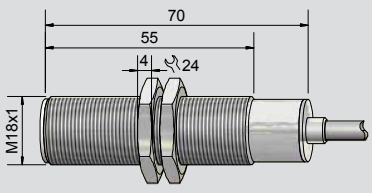
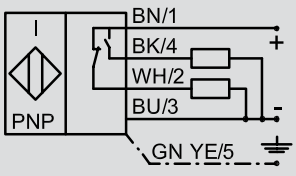
Inductive Sensors
Series 10 - PNP - StEx - ATEX
Series 20 - NPN - StEx- ATEX

Housing M 18 x 1
- Housing material: Brass
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 1
- Sensing distance Sn 5 mm

DMT 01 ATEX E 157	IECEx BVS 07.0015
II 2 G Ex mb IIC T4 Gb	Ex mb IIC T4 Gb
II 1/2 D Ex ta/tb IIIC T101°C Da/Db	Ex ta/tb IIIC T101°C Da/Db

Technical data	Flush mountable
Operating distance S_n	5 mm
Electrical version	4-wire DC
Output	Antivalent
Type PNP current	**IAS-10-A13-A-M18-PTFE/MS-Z02-0-2G-1/2D**
Type PNP	**IAS-10-A13-A-StEx**
Art.-No.	**IA 0110**
Operating voltage (U_B)	10...30 V DC
Voltage drop max. (U_d)	≤ 2.5 V
Permitted residual ripple max.	10 %
Operating current (I_e)	2 x 0...150 mA
No-load current (I_o)	Typ. 15 mA
Frequency of operating cycles max.	2 kHz
Permitted ambient temperature	-20...+90 °C
LED-display	Green / yellow
Protective circuit	Built-in
Degree of protection IEC 60529	IP 67
Norm	EN 60 947-5-2
Connection cable	2 m, PVC, 5 x 0.14 mm²
Housing material	Brass
Active surface	PTFE (FDA 21 CFR 177.1550)
Lid	PC (FDA 21 CFR 177.1580)
Accessories (delivered with the sensor)	2 nuts M 18 x 1





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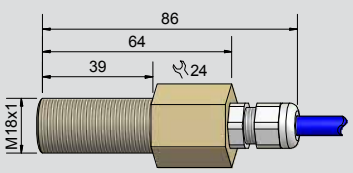
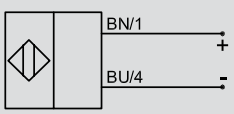
Inductive Sensors
Series 30 NAMUR EN 60947-5-6 - StEx -ATEX

Housing M18 x 1
- For use in areas with the risk of dust explosion, zone 20
- For use in areas with the risk of gas explosion, zone 0
- Housing material: PEEK
- With sealing cover and screwing (IP 68)
- With 10 m cable (Outer jacket PUR flame retardant and halogenfree Core insulation is PVC, flame retardant)

DMT 03 ATEX E 048	IECEx BVS 07.0031
II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga
II 1D Ex ia IIIC T101°C Da	Ex ia IIIC T101°C Da

Technical data	Non-flush mountable
Operating distance S_n	8 mm
Electrical version	2-pin DC
Output	NAMUR EN 60947-5-6
Type current	**IAS-30-A23-N-M18-PEEK-Z02-0-1G-1D**
Type	**IAS-30-A23-N-K-PEEK-IP68**
Art.-No.	**IA 0217**
Operating voltage (U_B)	5 - 15 V DC, U_i = 15 V DC
Operating current active surface free	> typ. 2 mA
Operating current active surface covered	< typ. 1.5 mA
Self-inductance (L)	2 mH
Self-capacitance (C)	250 nF
Permitted residual ripple max.	5 %
Frequency of operating cycles max.	500 Hz
Permitted ambient temperature	-25...+70 °C
Degree of protection IEC 60529	IP 68 / 10 bar
Connection cable	10 m, PUR, blue 2 x 0,75 mm² (6.4 mm ± 0.2)
Housing material	PEEK (FDA 21 CFR 177. 2415)
Active surface	PEEK (FDA 21 CFR 177. 2415)
Lid	PEEK (FDA 21 CFR 177. 2415)
Accessories (delivered with the sensor)	2 nuts M 18 x 1





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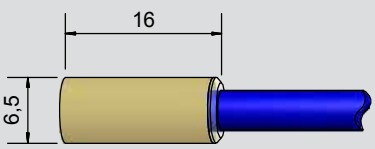
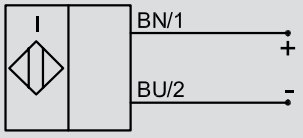
Inductive Sensors
Serie 30 - NAMUR EN 60947-5-6

Housing Ø 6.5 mm
- For use in areas with the risk of gas explosion, zone 0
- For use in areas with the risk of dust explosion, zone 20
- Housing material: PEEK
- Sensing distance Sn = 1.5 mm

DMT 03 ATEX E 048	IECEx BVS 07.0031
II 1G Ex ia IIC T1-T6 Ga	Ex ia IIC T1-T6 Ga
II 1D Ex ia IIIC T101°C Da	Ex ia IIIC T101°C Da

Technical data	Flush mountable
Operating distance S_n	1.5 mm
Electrical version	2-wire DC
Output	NAMUR EN 60947-5-6
Type current	**IAS-30-6.5/16-N-D6.5-PEEK-Z02-0-1G-1D**
Type	**IAS-30-6.5-N-K-PEEK-StEx**
Art.-No.	**IA 0344**
Operating voltage (U_B)	5 - 15 V DC, U_i = 15 V DC
Operating current active surface free	> typ. 2 mA
Operating current active surface covered	< typ. 1.5 mA
Self-inductance (L)	2 mH
Self-capacitance (C)	250 nF
Permitted residual ripple max.	5 %
Frequency of operating cycles max.	500 Hz
Permitted ambient temperature	-20...+70 °C
Degree of protection IEC 60529	IP 67
Connection cable	2 m PVC, 2 x 0.14 mm²
Housing material	PEEK (FDA 21 CFR 177.2415)
Active surface	PEEK (FDA 21 CFR 177.2415)
Lid	PC (FDA 21 CFR 177.1580)





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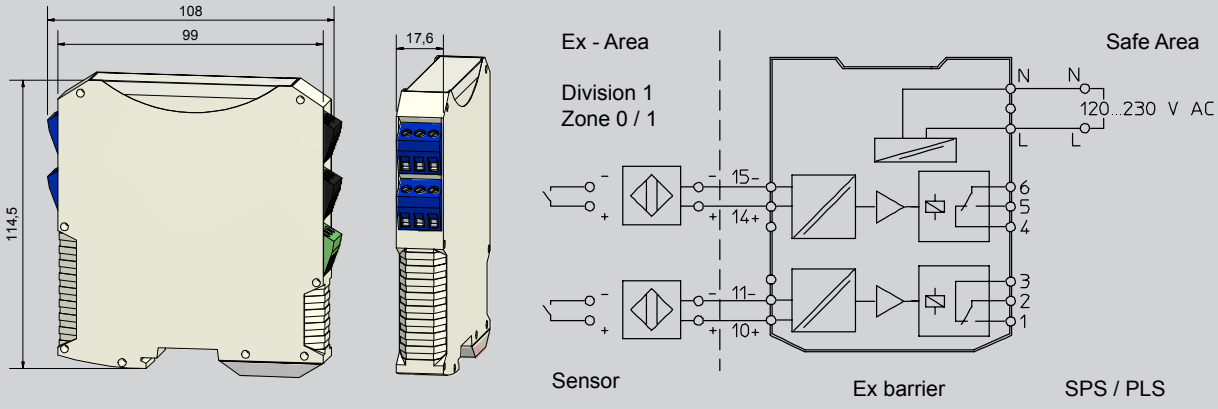
Isolating Switching Amplifier - ATEX
N-132/2-01 120...230 V AC

- To connect **two NAMUR-Sensors** or potential-free mechanical contacts, which are mounted in the zones 0, 1, 2 (Gas) or 20, 21, 22 (dust)
- Compact design - only 17.6 mm width
- Removable screw terminals
- Indication sensor wire-break or shortcircuit via LED display

BVS 09 ATEX E 087X	IECEx BVS 10.0088X
Ex II (1)G [Ex ia Ga] IIC	[Ex ia Ga] IIC
Ex II (1)D [Ex iaDa] IIIC	[Ex ia Da] IIIC

Technical data	
Operating voltage (U_B)	120...230 V AC
Output function	2 x change-over contact potential-free
Contact rating each relay AC max.	250 V AC / 4 A
Contact rating each relay DC max.	250 V DC / 2 A
Type	**N-132/2-01**
Art.-No.	**N 00015**
Output voltage max. (U_o)	9.6 V DC
Output current max. (I_o)	20 mA
Outer inductance max. (L_o)	[Ex ia] IIC 90 mH / IIB 340 mH
Outer capacitance max. (C_o)	[Ex ia] IIC 3.6 µF / IIB 26 µF
Actuating signal	NAMUR EN 60547-5-6
Permitted ambient temperature	-20...+70 °C
Display	Red / yellow and green
Degree of protection IC 60529	Housing: IP 30 Terminals: IP 20
Norm	EN 60947-5-6
Connection	Screw terminals



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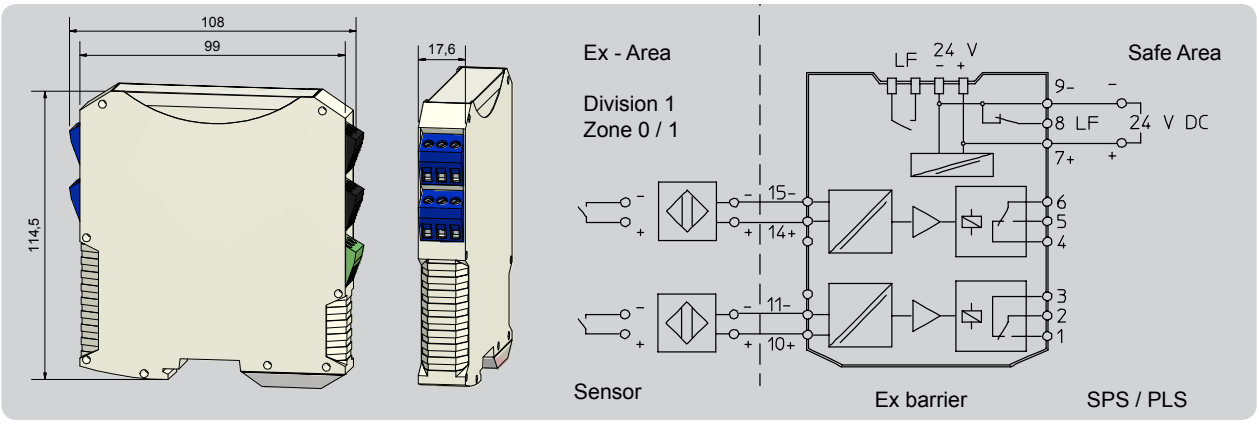
Isolating Switching Amplifier - ATEX
N-132/2-10 24 V DC

- To connect **two NAMUR-Sensors** or potential-free mechanical contacts which are mounted in the zones 0, 1, 2 (Gas) or 20, 21, 22 (dust)
- Compact design - only 17.6 mm width
- Removable screw terminals
- Indication sensor wire-break or shortcircuit via relay contact

BVS 09 ATEX E 087X	IECEx BVS 10.0088X
Ex II (1)G [Ex ia Ga] IIC	[Ex ia Ga] IIC
Ex II (1)D [Ex iaDa] IIIC	[Ex ia Da] IIIC

Technical data	
Operating voltage (U_B)	18...31.2 V DC
Output function	2 x change-over contact potential-free
Contact rating each relay AC max.	250 V AC / 4 A
Contact rating each relay DC max.	250 V DC / 2 A
Type	**N-132/2-10**
Art.-No.	**N 00017**
Output voltage max. (U_o)	9.6 V DC
Output current max. (I_o)	20 mA
Outer inductance max. (L_o)	[Ex ia] IIC 90 mH / IIB 340 mH
Outer capacitance max. (C_o)	[Ex ia] IIC 3.6 µF / IIB 26 µF
Actuating signal	NAMUR EN 60547-5-6
Permitted ambient temperature	-20...+70 °C
Display	Red / yellow and green
Degree of protection IC 60529	Housing: IP 30 Terminals: IP 20
Norm	EN 60947-5-6
Connection	Screw terminals



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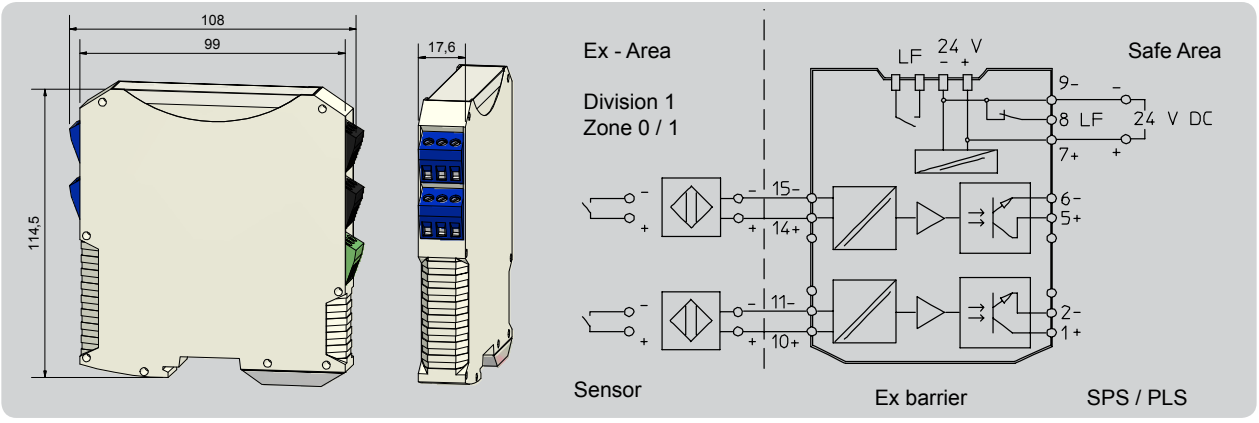
Isolating Switching Amplifier - ATEX
N-132/2-E-10 24 V DC

- To connect **two NAMUR-Sensors** or potential-free mechanical contacts which are mounted in the zones 0, 1, 2 (Gas) or 20, 21, 22 (dust)
- Amplifier for use in areas with the risk of gas explosion, zone 2
- Compact design - only 17.6 mm width
- Removable screw terminals
- Indication sensor wire-break or short-circuit via relay contact

BVS 09 ATEX E 087X	IECEx BVS 10.0088X
Ex II 3(1)G Ex nAc nCc [ia Ga] IIC T4 Gc	Ex nA nC [ia Ga] IIC T4 Gc
Ex II (1)D [Ex iaDa] IIIC	[Ex ia Da] IIIC

Technical data	
Operating voltage (U_B)	18...31.2 V DC
Output function	2 x transistor output / open collector
Contact rating each DC output max.	35 V DC / 50 mA
Type	**N-132/2-E-10**
Art.-No.	**N 00018**
Output voltage max. (U_o)	9.6 V DC
Output current max. (I_o)	20 mA
Outer inductance max. (L_o)	[Ex ia] IIC 90 mH / IIB 340 mH
Outer capacitance max. (C_o)	[Ex ia] IIC 3.6 µF / IIB 26 µF
Actuating signal	NAMUR EN 60547-5-6
Permitted ambient temperature	-20...+70 °C
Display	Red / yellow and green
Degree of protection IC 60529	Housing: IP 30 Terminals: IP 20
Norm	EN 60947-5-6
Connection	Screw terminals



Made in Germany

RECHNER Industrie-Elektronik GmbH • Gaußstraße 6-10 • D-68623 Lampertheim • Tel. +49 6206 5007-0 • Fax +49 6206 5007-36 • e-mail: info@rechner-sensors.de • www.rechner-sensors.com

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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,
Keumgang 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

Made in Germany

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