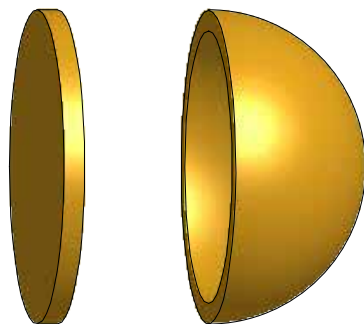




Capacitive Sensors with a body that is in excellent shape - **The 26 Series**



Capacitive proximity sensors with hemispherical active surface in different housing designs. Models from left to right:
KAS-80-26/F30-A-PTFE-100°C-Y5, KA0626
KAS-80-26-A-PTFE-Tri-100°C, KA0415
KAS-80-26-A-PTFE-1" #813100



Left example of classic electrode, right hemispherical.
A larger active surface increases the primary signal.

Initially developed, for optimization of the detection of viscous and adhesive products, 26 series capacitive proximity sensors have evolved to become an amazing problem solver with much potential.

Inspired by nature our development engineers designed the hemispherical active surface of the sensor body with the target of improving the draining of viscous and adhesive products in order to achieve a more precise level detection in this field. Practical experience confirmed that this is true.

As a second step the shape of the housing has been adapted for the assembling of the measuring electrodes. This led to a higher primary signal, because of the much larger active surface. Combined with Rechner's high performance technology electronics a capacitive proximity sensor has been created with extraordinary characteristics.



Based on the geometrical form, everybody can see and imagine that these are unique sensors. But much more surprising and compelling arguments are the electronic and technical measuring characteristics, that have exceeded by far the targets of the development engineers.

What body sizes are available?

The sensors are provided with different fitting length and threads, such as M22, M30, M32, and 1".



Examples of available versions

For perfect process compatibility, help for instance is on hand with triclamp variants and a series of adapters for the most common process connections which are available as accessory.



Stainless steel welding nipple DN 25 and Triclamp mounting clamp suitable for our capacitive sensors KAS-70-... or 80-26-A-PTFE-Tri-100°C

Available with up to 2 m in length. EasyTeach function with clear text display.



Different welded sockets
G 1/2 and 1"



Milk tube fittings
according to DIN
11851 G1".
From left to right:
cone nut, coupling
nut, Varivent



Plastic tube fitting system, suitable for type KAS-80-26-A-PTFE-PFS1-Y5.
Tube length max. 2 m. With this fitting the user can install the sensor from
the top and the sensor will reach up to 2 m deep into the tank.

*Adapters
and tube
fitting
systems
1/2" and
1"*



Plastic tube welding adapter system, suitable for type KAS-80-26-A-PTFE-PFS2.



No defined mounting position

Is a certain mounting position required?

The 26 series capacitive sensors operate independent of the mounting position. They can be mounted from the top, bottom, side, or diagonal. There is no predetermined mounting position that the user has to consider. The only thing one has to take care of is the same as for all classic non-flush mountable capacitive sensors, and that is that the sensor is mounted in such a way that the active surface of the sensor is completely immersed in the material to be detected.

It is self-evident, that the position where the measurement takes place is selected in a way, that the product flow is not constrained.

Non-flush mounting

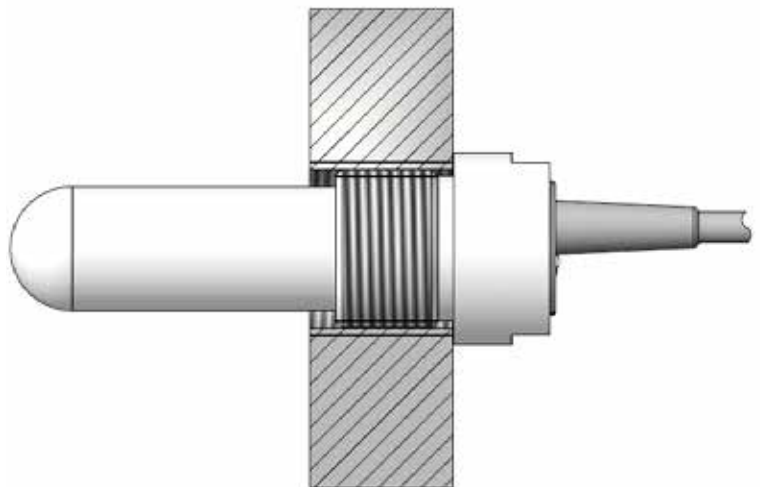
What is the meaning of „non-flush mountable or non flush mountable in metal“?

The definition non-flush mountable is related to the assembling of the measuring electrode and the kind of measurement. Sensors for non-flush mounting are designed in a way, that they are in contact with the material to be detected. The active surface is directed to the side and front. Therefore pushes the active area into the container. When mounting 2 or more non-flush mountable sensors side by side a space / free area needs to be allowed, which is minimum 3 x the diameter of the sensors.

Non-flush mountable sensors are ideal for applications, where the material to be detected is in contact with the sensing head, like for level control of pastes, liquids and bulk materials.

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Non flush mounting. Sensor head reaches into the container and will be in direct contact with the material to be detected





What has to be considered with regard to CIP / SIP?

In the Food, Chemical and Pharmaceutical Industry CIP and SIP is indispensable to meet the hygienic standards and to guarantee a smooth production flow.

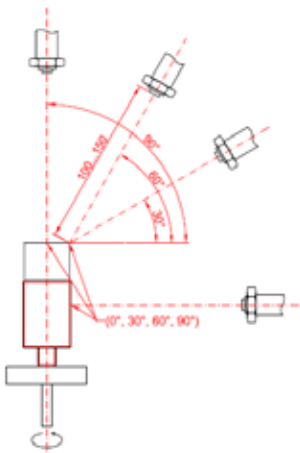
This has been considered in the design of the 26 series capacitive sensors. The area of the active zone of the sensor is created in a way, that SIP / CIP at 121°C is possible with a zero-current state of the sensor.

*CIP and SIP
no problem!*

Is IP 69K possible?

The variants with PEEK housings provide the IP rating IP 69K

*IP 69 K with
PEEK body*



Testing conditions for
IP 69K according to the
norm

What about the ambient temperature?

Same as for the classic capacitive sensors the permitted ambient temperature is -25...+70°C.

As variants there are models available that can be used in applications with maximum 100°C ambient or product temperature.

*Ambient
temperature
dependent on
model up to
+100°C*



Sensors are medium optimized

What do we mean by medium optimized = one adjustment for different products.

The electronic circuit of the 26 series sensors is medium optimized. This means it is designed in such a way, that with just one sensitivity adjustment different products can be detected. This is a real advantage in applications where the dielectric constant (=permittivity) of the product to be detected varies or for applications at which the products are changed, like at the dosing / packaging of different products.

Different housing materials available. PTFE and PEEK are standard

Which Housing material is the right choice for the application - PTFE or PEEK?

Both materials we use conform to FDA requirements and have excellent characteristics with regard to chemical resistance. The permitted ambient temperature is very similar. Differences are for instance in the mechanical strength.

Material	Chemical Resistance	Conform to FDA	Abrasion resistance	Pressure (front side)
PTFE	very good*	Yes	Low	Max. 3 bar
PEEK	very good*	Yes	Good	Max. 10 bar

* Details on request

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The application of the housing materials used is based on the technical specifications of the material and of the manufacturer. Even though RECHNER Engineers have far-reaching application experience concerning the use of different housing materials, the customer is responsible for checking in each case that the housing material is suitable for the application.

The sensors can be applied for level control in the food or pharmaceutical industry, because of the use of FDA conforming plastics PEEK or PTFE for the body materials



What are the application areas for the 26 series sensors?

The application areas for the capacitive 26 series sensors are varied. They can detect the level of products with a permittivity as of 1,1. Products can be:

- Bulk materials, like plastic granules, powder, cereals, etc.
- Liquids, like water, juice, wine, oil, chemical or pharmaceutical solutions and much more.
- Pastes in the food processing industry, liquid glue, resins or glue, etc.

The capacitive 26 series sensors are gladly used for applications where formerly vibrating forks were used and thus a well known problem is solved. The users of vibrating forks and rods know the problems with vibrating forks, where for instance the material to be detected sticks and jams the forks or that the fork or rod itself vibrates free and compacts the material in the surrounding area so that this in turn leads to malfunction. Similar difficulties occur with rotary switches or float switches.

The capacitive 26 series sensors operate without mechanical force. They are no subject to wear or tear and therefore life is independent of the number of operating circles.



The 26 series sensors are gladly used to replace vibrating forks, rotary switches or float switches

26 series sensors operate without mechanical force



Are there explosion protected models for use in ATEX or IECEx zone 0, 1 or 2 for Gas or 20, 21 or 22 for Dust?

The number of applications is growing continuously for sensors with ATEX certification. This is not only valid for the classic applications in the Petrol or Chemical Industry or in Mills. Many other industrial areas are in the meantime determined as areas with risk of explosion and the user need to apply therefore ATEX certified measuring instruments.



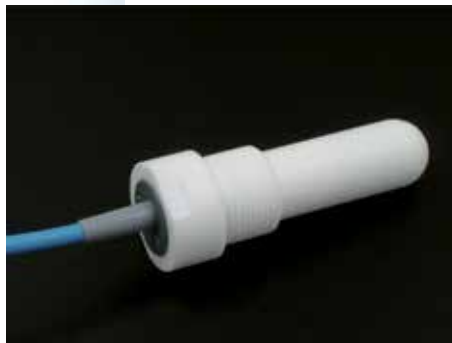
26 series sensors are available for both gas and dust explosion danger areas:

Gas Ex Zones 0, 1 and 2
Dust Ex Zones 20, 21 and 22

The 26 series consist of a range of ATEX certified sensors with integrated evaluation units, so called „all in one“ models but also NAMUR sensors which are operated with separate Ex Barriers.



= „All in one version“
Sensor with NPN or
PNP transistor output



↓ + ↓
ATEX Sensor and Ex Barrier
= Remote version