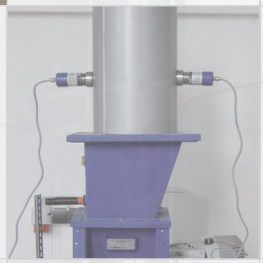
EN

envea™
SWR engineering GmbH

ProGap S

with filling-signal-suppression

Microwave barrier



Product information

Using / Function

The microwave barrier ProGap S is a universally and flexibly usable sensor, consisting of a transmitter and a receiver based on the latest microwave technology. It is brought into action for level detection or for positioning of items.

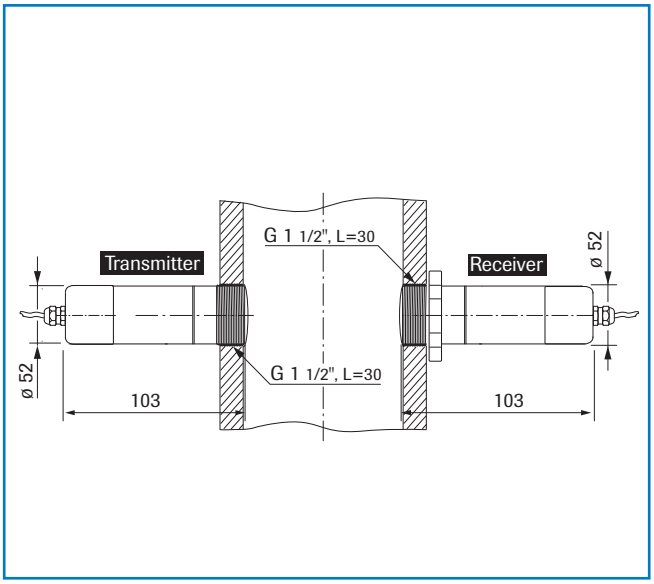
The microwave barrier is a contactless measuring method. It can be installed in bunkers, ducts, shafts or at free-falling stretches. Depending of the model the range is either 0 . . . 4 m or 0 . . . 18 m. Higher ranges are as well possible but have to be discussed. In case that container sides, housings or ducts are not of metal, it is possible to measure from the outside.

By means of appropriate windows of non-metallic material, the metering thus can be completely decoupled from the process. That's particularly interesting for the measurement of aggressive, abrasive or bulky material or at extreme pressures and temperatures.
The ProGap S can also be applied in difficult circumstances like high temperatures and pressures and Ex-zone (ProGap S Ex-sensor) by means of a process-adapter (see page 4).
By using microwaves there is a high insensitivity to built-up on the sensor window.

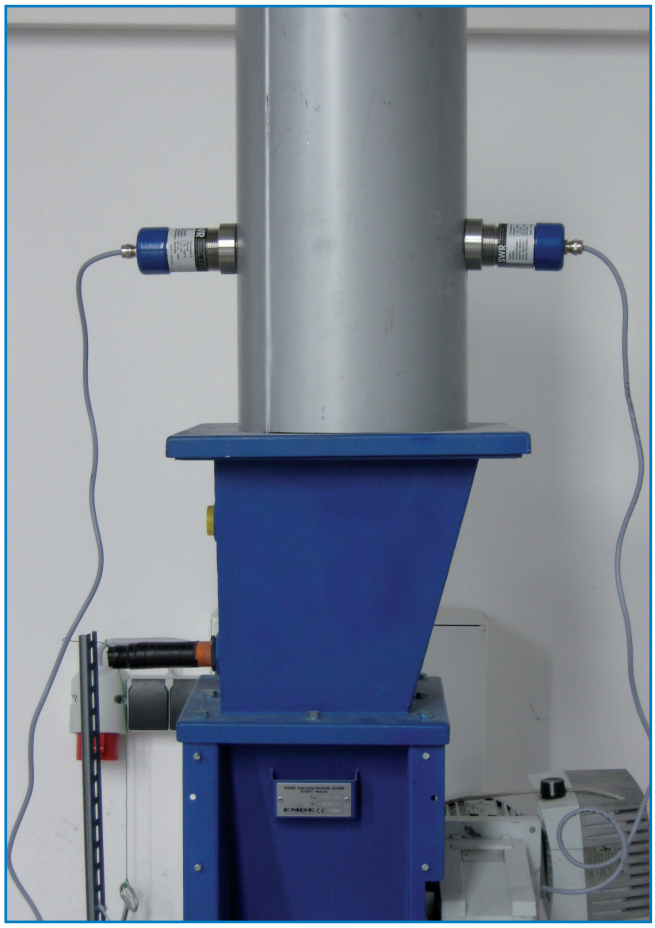
Applications – practical example

- **Recognition of salt**

The ProGap S activates an alarm before there is a salt blockage that would cause a decrease in flow.
The ProGap S is installed in such a manner that it views the salt through a non metallic pipe and will detect a blockage quickly that could prevent damage to the conveying system.



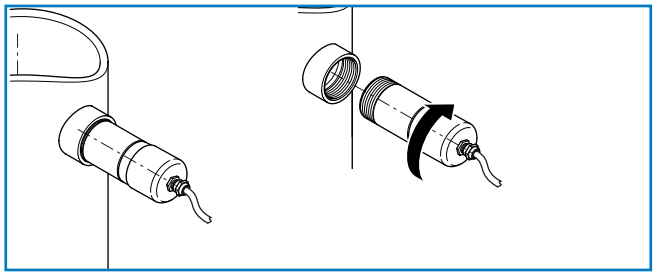
Dimensions transmitter and receiver + installation



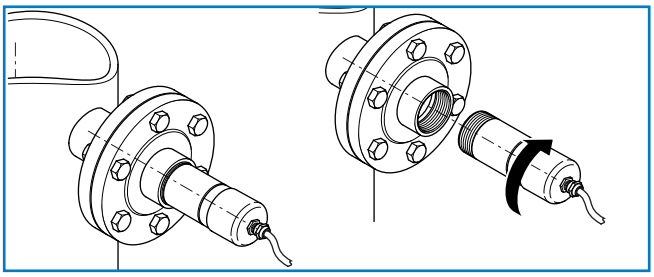
Installation

The installation of the ProGap S is easily made by the following ways:

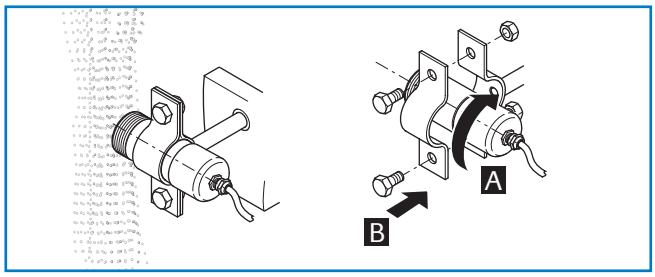
- screwing it into a G 1½-inch-screw neck
- by means of a DN 40 flange
- by means of a pipe clip or an other mounting



Thread mounting



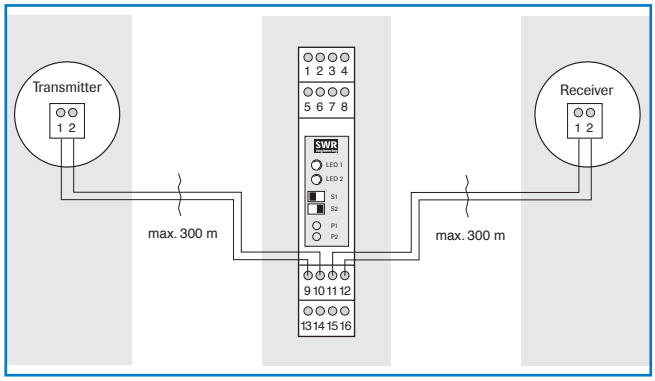
Mounting with separating flange



Mounting with pipe clamp

Commissioning

Operating elements for the commissioning are located in the accessible evaluation unit. It's possible to adjust both the switch sensibility and the response delay.



Technical data

Sensor	
Material	Housing: Stainless steel 1.4571 Sensor-Isolation: POM
Protective system	IP 65
Using in Ex-Zones	As ProGap S Ex-sensor in DustEx-zone 20/22 and GasEx-zone 0/2 only with process-adapter
Process temperature	-20 … + 80 °C -20 …+220 °C (with process-adapter) max. 1000 °C (with ceramic-flange)
Ambient temperature	-20 … + 60 °C
Working pressure	max. 1 bar max. 20 bar (with process-adapter)
Detektion range	0 … 4 m 0 … 18 m > 18 m (on demand)
Power supply	24 V DC powered by DIN Rail electronic
Power consumption	approx. 1.8 VA
Current consumption	max. 100 mA
Measuring frequency	K-Band 24.125 GHz (± 100 MHz)
Transmitting power	max. 5 mW
Weight	Transmitter: ca. 560 g Receiver: ca. 560 g

DIN Rail electronic	
Power supply	24 V DC ± 10 %
Power consumption	3,5 W
Current consumption	120 mA at 24 V
Relay (max.) ▪ Voltage ▪ Current ▪ Capacity	 max. 250 V AC max. 1 A 60 W
Fall-delay time	0.25 … 5 s (continuously adjustable)
Weight	approx. 172 g
Protective system	IP 40

certificated according to ATEX

Use as pressure- / Temperature-adapter

The ProGap S sensor itself can be used at pressures of up to 1 bar and temperatures of up to 80 °C.

A pressure adapter from POM, for higher temperatures a temperature adapter from Tecapeek (to 220 °C) is available to you for higher pressure (to 20 bar).

Mounting of pressure-adapter / Temperature-adapter

The mounting of the pressure / temperature adapter is identical. He is screwed into a welded G 1½ inch thread neck, provided by the customer.

The housing of the ProGap S is screwed into the G 1½ inch female thread of the adapter.

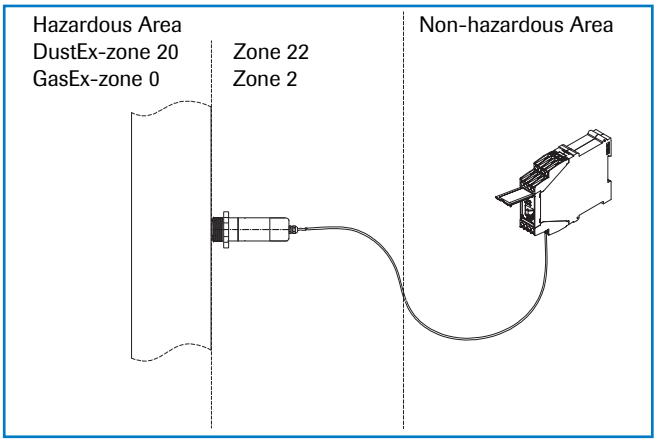
Technical data

Material	Stainless steel 1.4571, POM diaphragm	Stainless steel 1.4571, Tecapeek diaphragm
Temperature	-20…+80 °C	Max. +220 °C
Pressure	Max. 20 bar	Max. 20 bar
Thread	G 1½ inch on both sides	G 1½ inch on both sides
Wrench Width	55 mm	55 mm

Use for separation of explosion-areas

Both types of adapters can be used for the separation of explosion areas (dust).

According the European DIN EN 13463-1 devices of class II D have to be constructed that way, that under application conditions, it is impossible to create an ignition.



This can be achieved by a limited surface of the non-conductive part of the process-adapter (diaphragm made out of POM or tecapeek).
The maximum allowed surface area of the non-conductive part according DIN EN 13463-1 is:

- Cat. 1: DustEx-zone 20 (250 cm^2)
- Cat. 2: DustEx-zone 21 (500 cm^2)
- Cat. 3: DustEx-zone 22 (no limit)

With a non-conductive surface of the process-adapter of 10.75 cm^2 the allowed limits are not being crossed. Therefore with use of the process-adapter in combination with ProGap S Ex-sensor it can be measured from outside into all explosion areas, if there is at most a DustEx-zone 22 or GasEx-zone 2 outside of the conveying pipe or hopper.

SWR engineering Messtechnik GmbH
Gutedelstraße 31 · 79418 Schliengen (Germany)
Fon +49 7635 827248-0 · Fax +49 7635 827248-48 · www.swr-engineering.com