

**Microwave barrier**  
Contactless limit level switch for  
bulk solids

**FBM51**

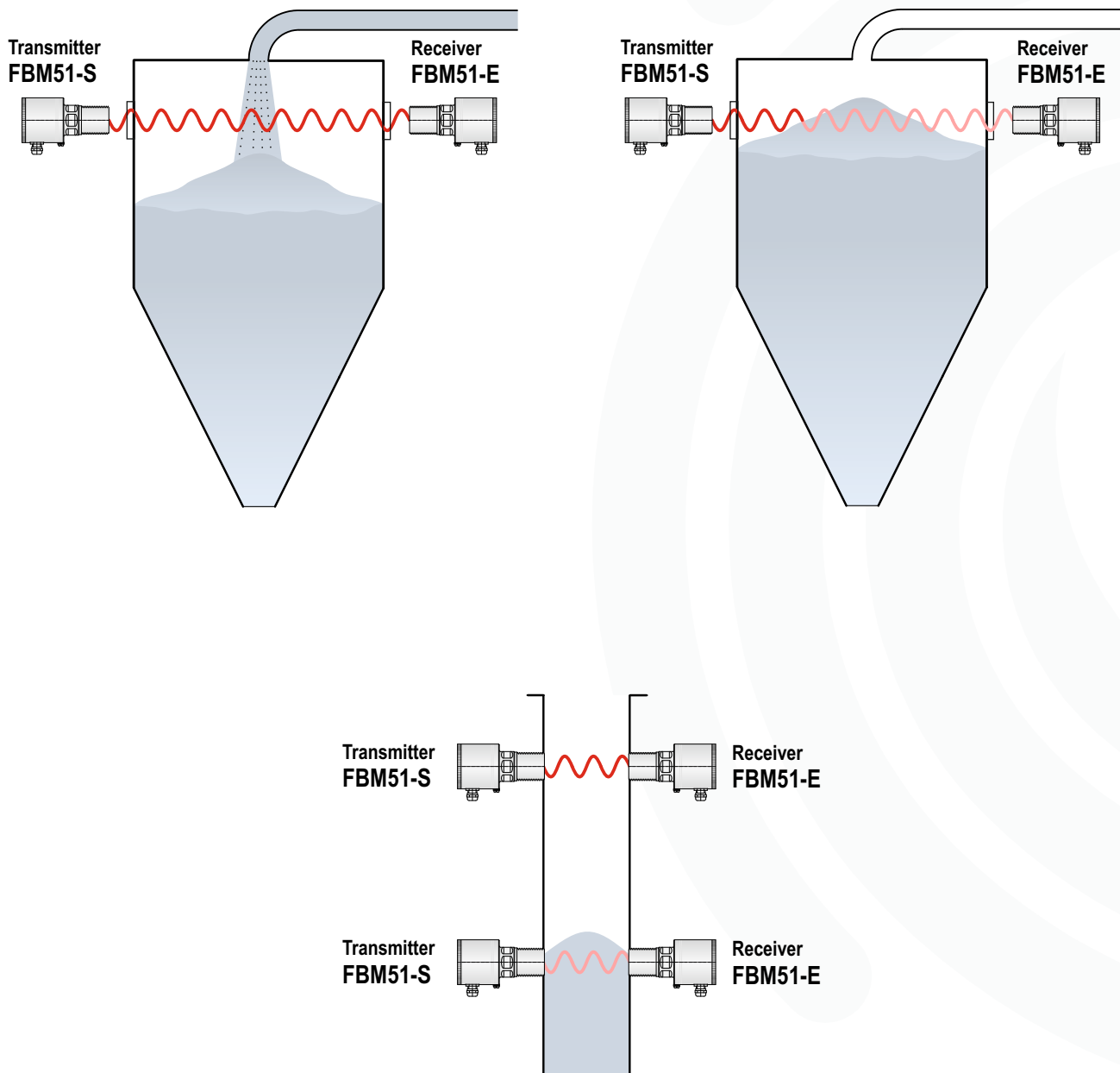
# Appliance information

Index	Page
Sample applications .....	02
Dimensions   Use   Function   Technical data .....	03
Electrical connection  Mounting accessories   Sealing ring .....	04

## Sample applications

Sending and receiving through a glass or plastic window.

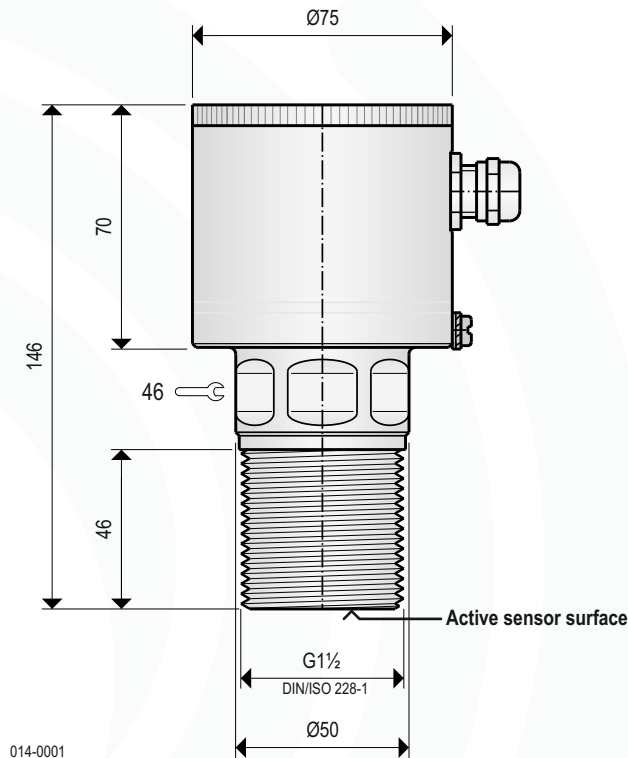
### Silos and bins



## Appliance information

### Dimensions

Transmitter FBM51-S and receiver FBM51-E  
Both devices with the same dimensions.



014-0001

001-0150

### Advantages

- Reliable microwave principle for limit level monitoring
- For all bulk solids
- Easy installation due to compact design
- Process connection with flange, thread, and others
- Adjustable: sensitivity, signal damping, hysteresis and filter settings

### Use

The microwave barrier consists of one transmitter and one receiver. It is used for limit level monitoring of bulk solids in silos, container, storage vessels, tube systems, etc.

The continuously adjustable and easy setting of sensitivity, signal damping and hysteresis enable a variable setting of the switching point.

### Function

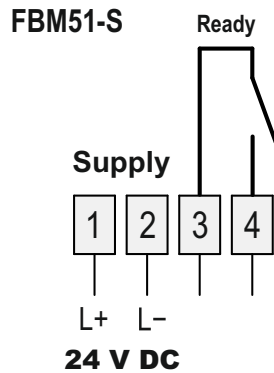
The contactless measurement of the barrier FBM51 is based on microwave technology. The transmitter transmits a microwave to the opposite receiver. If bulk solids are built up within the microwave, it will be damped. The receiver evaluates the microwave signals and trigger a switching operation.

### Technical data

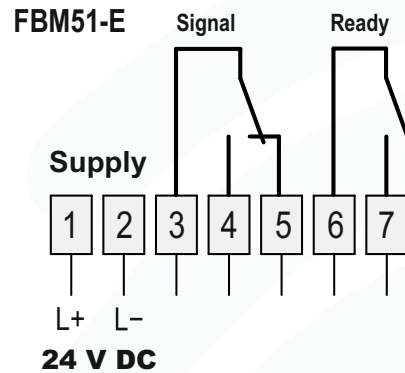
Material	housing	stainless steel 1.4301 / 304
	active sensor surface	PTFE (optional ceramic)
Process temperature	$T_{(Process)}$	-20 °C ... +85 °C
Ambient temperature	$T_a$	-20 °C ... +60 °C
Supply voltage	<b>Supply</b>	24 V DC (18 - 30 V DC)
Power consumption		2x approx. 80 mA at 24 VDC
Transmission power		10 dBm
Measuring range		0.15 m ... 25.00 m
Signal contact	<b>Contact</b>	1 potential free change-over contact 2 normally open contacts for Ready
Capacity of contact		10 $\mu$ A ... 1 A 30 V AC or 30 V DC
Connection terminals		maximum 1.5 mm <sup>2</sup> (pluggable)
Cable entry		gland 2x M16x1.5
Type of protection	<b>IP</b>	<b>IP65</b> according to DIN EN 60529
Protection class		I $\oplus$
Process pressure	$p_{(Process)}$	up to 6 bar (optional 30 bar)
Weight		2x 1.25 kg = 2.50 kg
Maintenance		none
Installation position		any
Adjustable parameters		sensitivity, signal damping, hysteresis and filter settings
Parameterization		at the device
Display	LED green LED yellow Bargraph	operation switch output signal power

## Appliance information

### Electrical connection transmitter

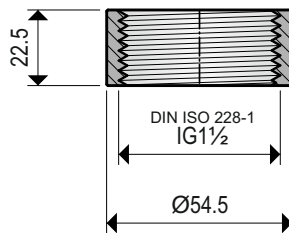


### Electrical connection receiver



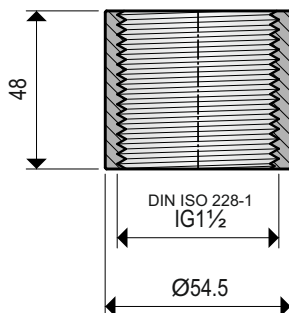
014-AP00

## Mounting accessories



### Welding socket short

Size	Order number	Material
IG1½	<b>MK3ST</b>	St 37
IG1½	<b>MK3V4</b>	1.4571 / 316 Ti



### Welding socket long

Size	Order number	Material
IG1½	<b>ML3ST</b>	St 37
IG1½	<b>ML3V4</b>	1.4571 / 316 Ti

014-0002

## Sealing ring

### DRG thread flat seal ring

PTFE (white)

Dimensions (mm)	Order number
60x47x3	<b>K-SZIG2 DRG-PT</b>