



## Ultrasonic level indicator SonarFox® UST 20



### Benefits

- Non-contact level measurement
- Easy adjustment even without medium
- Robust housing for rough ambient conditions
- Suppression of interference signals
- Optional Ex version

### Application

For continuous, non-contact level measurement in open or closed containers, tanks or silos. Suitable for liquid, mushy and pasty media. Ideal for sludge, adhesives, resins and waste water. The device can be easily adjusted even without a medium by means of the programming display with user-friendly menus. It also serves as a local display.

### Versions

	Part no.
Ultrasonic level indicator SonarFox® UST 20-01O01 measuring range 0.15/2 m, G1B	33545
Ultrasonic level indicator SonarFox® UST 20-11O01 measuring range 0.25/6 m, G1½B	33544
Ultrasonic level indicator SonarFox® UST 20-21O01 measuring range 0.4/10 m, G2¼B	33559
Ultrasonic level indicator SonarFox® UST 20-31O01 measuring range 0.5/20 m, flange DN 100	33560
Ultrasonic level indicator SonarFox® UST 20-01D01 measuring range 0.15/2 m, G1B, with display	33543
Ultrasonic level indicator SonarFox® UST 20-11D01 measuring range 0.25/6 m, G1½B, with display	33542
Ultrasonic level indicator SonarFox® UST 20-21D01 measuring range 0.4/10 m, G2¼B, with display	33557
Ultrasonic level indicator SonarFox® UST 20-31D01 measuring range 0.5/20 m, flange DN 100, with display	33558

Blue part no. = in-stock items

### Description

The SonarFox® UST 20 level indicator uses the physical properties of ultrasonic waves to determine the level. An ultrasonic wave is emitted which is reflected by objects in the sound cone. The time up to the reception of the reflected echo is a measure of the distance. Since the mounting position is defined, it is possible to calculate the filling level of the medium. Type, density and temperature of the medium have no effect on



the measurement – the only prerequisite is a reflecting surface. Acoustically diffuse surfaces such as foam or uneven surfaces of bulk solids are to be tested with regard to the application. An optional, additional alignment horn adapter can be used for such media. Installations or stirrers above the surface of the medium can be masked during empty setup.

## Technical specifications

### Display

5-digit, 9 mm high, yellow Matrix OLED  
Resolution 128 x 64 pixels

### Measuring range

UST 20-01:	0.15/2 m
UST 20-11:	0.25/6 m
UST 20-21:	0.4/10 m
UST 20-31:	0.5/20 m

### Resolution

UST 20-01:	< 1 mm
UST 20-11:	< 2 mm
UST 20-21:	< 1 mm
UST 20-31:	< 2.5 mm

### Measuring accuracy

± 0.15 % FS

### Temperature error

Max. 0.04 %/K

### Measuring frequency

UST 20-01:	120 kHz
UST 20-11:	75 kHz
UST 20-21:	50 kHz
UST 20-31:	30 kHz

### Measuring interval

0–4 s

### Operating temperature range

UST 20-01:	-30/+70 °C
UST 20-11:	-30/+70 °C
UST 20-21:	-30/+60 °C
UST 20-31:	-30/+60 °C

At process connection  
up to 90 °C (short-term up to 60 minutes)

### Process pressure

Max. 1 bar

### Process connection

UST 20-01:	PP, G1B, with lock nut
UST 20-11:	PP, G1½B, with lock nut
UST 20-21:	PP, G2¼B, with lock nut
UST 20-31:	Aluminium alloy, flange EN 1092-1 DN100 PN16

## Options

- Output RS-485 Modbus RTU
- Ex version

### Supply voltage

DC 18 – 36 V

### Output signal

4–20 mA/HART, 2-wire

### Load

$R_{Max} = 270 \Omega$  at  $U = 24 V$   
 $R_{Max} = 180 \Omega$  at  $U = 22 V$   
 $R_{Max} = 90 \Omega$  at  $U = 20 V$   
 $R_{Max} = 45 \Omega$  at  $U = 19 V$

### Current input

Max. 22 mA

### Signal damping

Adjustable from 0 to 99 s

### Housing

Aluminium die cast

### Ultrasonic transducer

PVDF

### Degree of protection

IP 67 (EN 60529)

### Electrical connection

Cable gland M16 x 1.5

### Weight

UST 20-01:	0.3 kg
UST 20-11:	0.4 kg
UST 20-21:	0.6 kg
UST 20-31:	3.1 kg

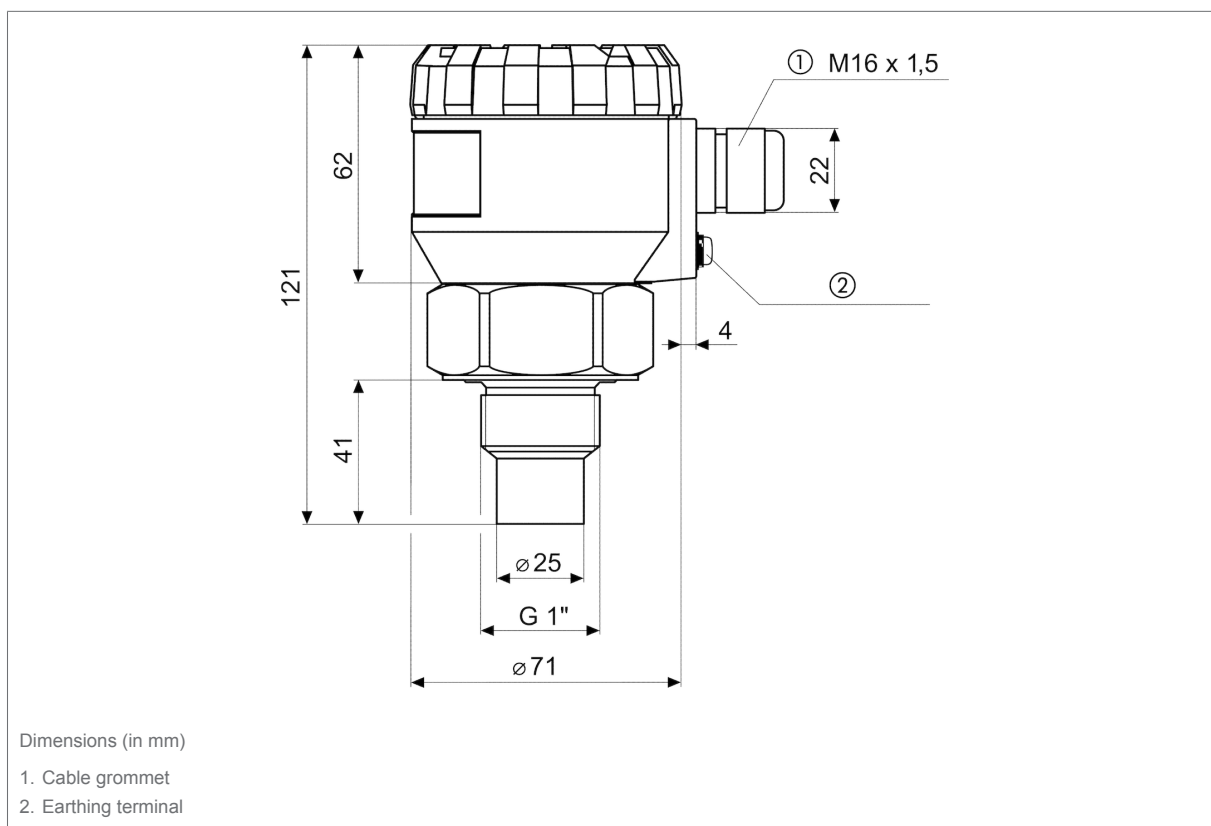
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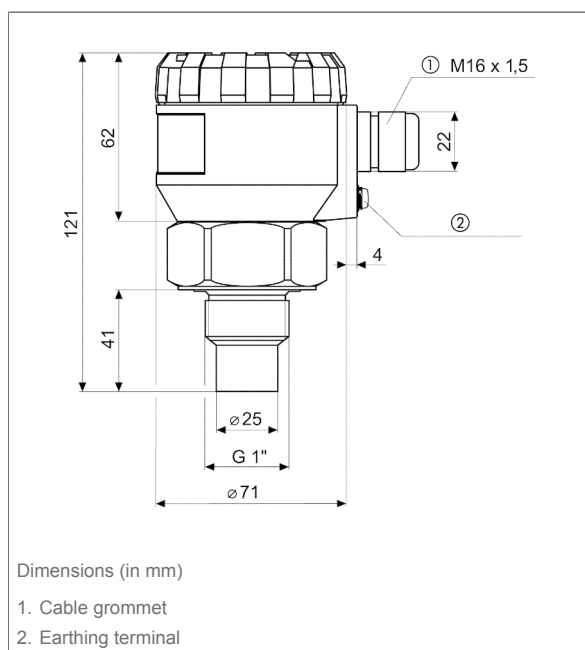
### Detail views

SonarFox® UST 20 01

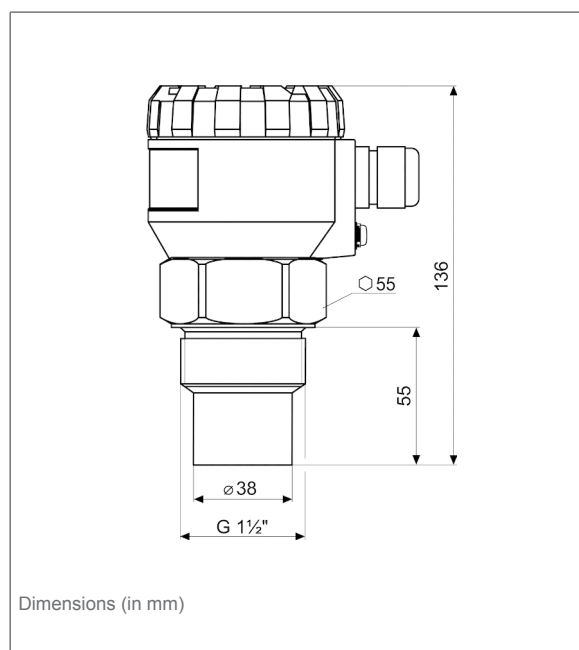


### Technical drawings

SonarFox® UST 20 01

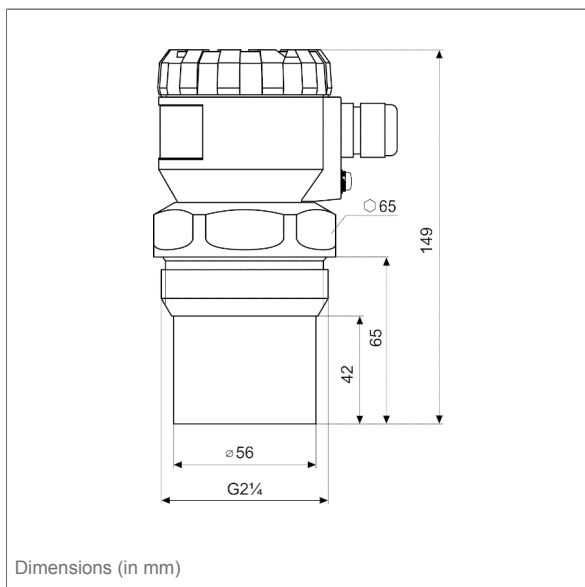


SonarFox® UST 20 11





**SonarFox® UST 20 21**



**SonarFox® UST 20 31**

