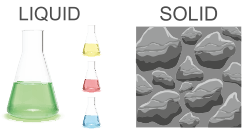
DYOT

Radar Level Meter



OVERVIEW

Operation

The Radar Level Meters of Bass Instruments 80 GHz series are excellent devices for no contact level measurement. The microwave impulses, emitted by the radar's antenna, travel at speed of light and a part of the energy, reflected by the surface of the medium to be measured, is received by the same antenna.

The flying time between the emission and the arrival of the impulses, is proportional to the existing distance.

Application

- Sediment, cement etc.
- Level measurement for evoporating liquids
- Dust adhesion
- Industrial processes
- Extreme conditions
- Strong smoke and dust environment

Features

- Compact design
- Air purge system option
- Cost effective
- More application in remote target detection
- Frequency modulation (FCMW radar)
- Higher resolution
- Long distance imaging and multi-spectral imaging

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OPERATING DATA

Frequency	W band, 80 GHz
Temperature Limit	-40...85°C (ABS) -40...150°C (Al) -40...250°C (SS)
Installation	Thread or ≥ DN50 Flange
Accuracy	±2mm (50m measuring range) ±3mm (70m measuring range) ±5mm (150m measuring range)
Beam angle	3°
Humidity	≤95%RH
Antenna Type	Encapsulated horn antenna(8mm) Lens antenna on request
Process pressure	-1...10MPa -10...20MPa on requestt
Display Language	English, Turkish

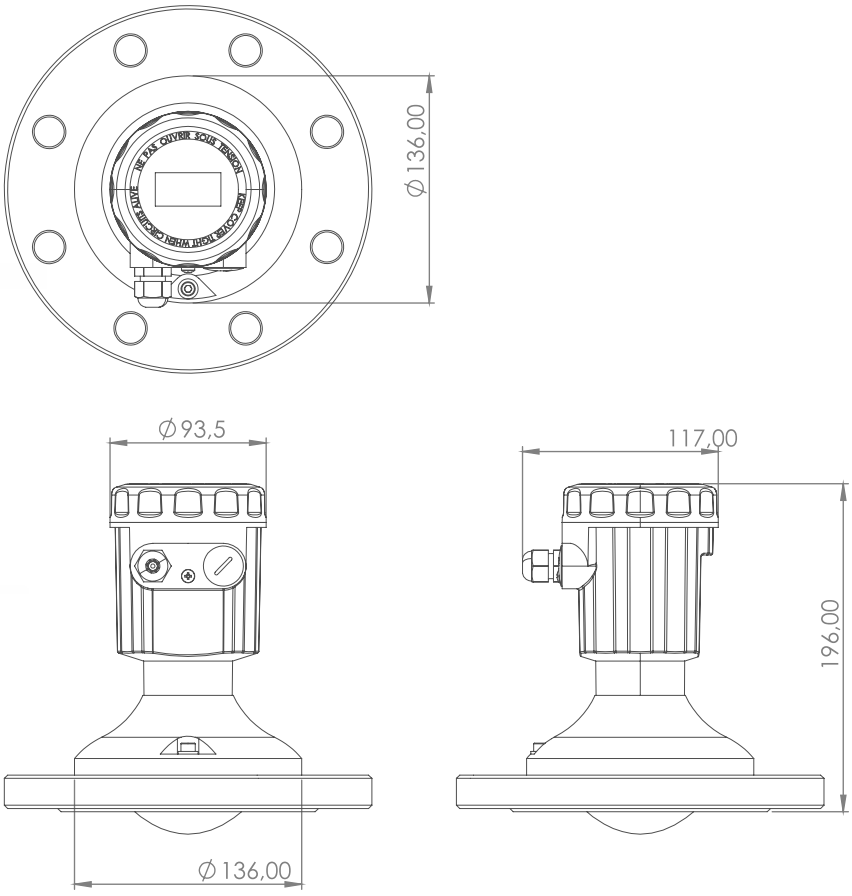
MEASURING RANGES

Range	0...150 m
DK Range	2.0...100, Adapt to medium viscosity <3000cp

MATERIALS

Housing	Aluminum Plastic, stainless steel on request
Flange	AISI304 PA, AISI 316/L, PTFE on request
Antenna	PTFE PEEK, Polyam de on request

TECHNICAL DRAWINGS AND DIMENSIONS



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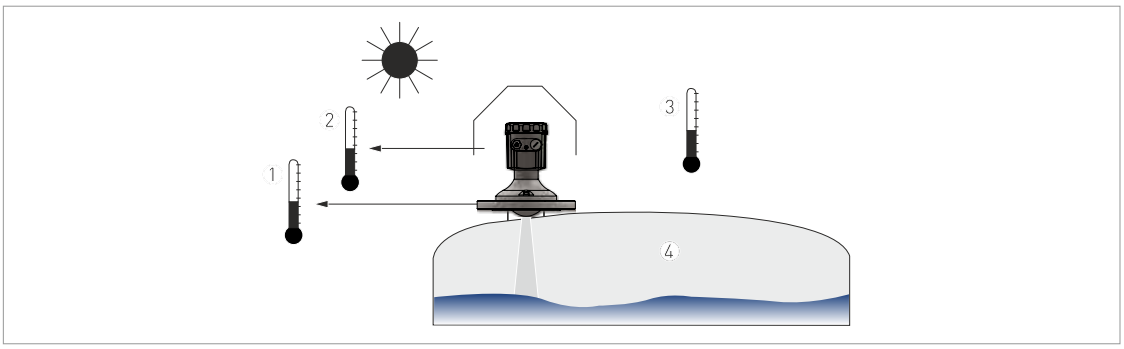
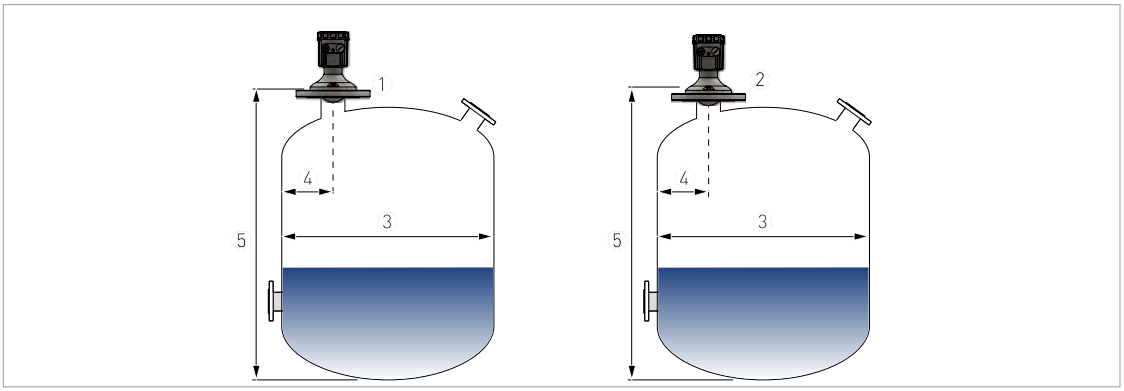
INSTALLATION



Pressure and temperature ranges

1. Temperature at the process connect on
2. Ambient temperature for operation of the display
3. Ambient temperature
4. Process pressure

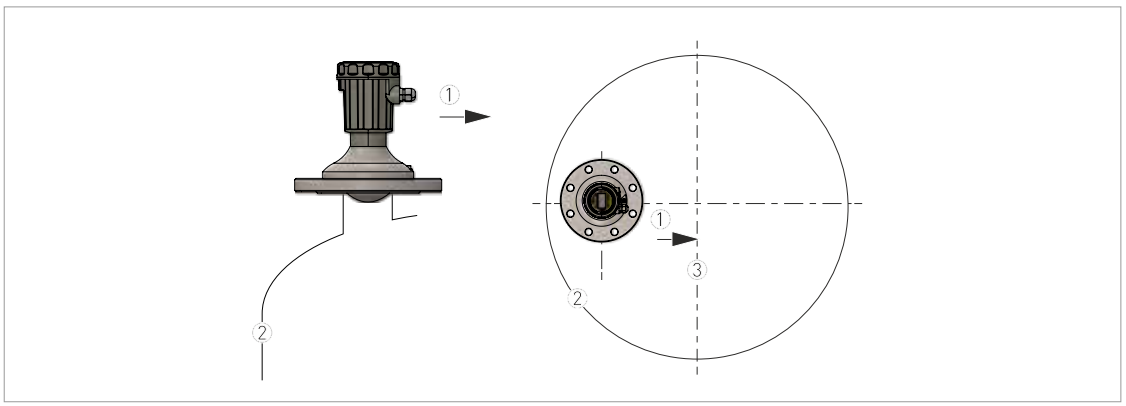
We recommend that you prepare the installation when the tank is empty



Recommended nozzle position for liquids, pastes and slurries

1. Socket for the DN25 Lens antenna
2. Socket for the DN40 Lens antenna
3. Tank diameter
4. Minimum distance of the nozzle or socket from the tank wall
    - DN25 Lens : 1/5 × tank height
    - DN40 Lens: 1/10 × tank height
    - Other Lens: 1/3 × tank diameter
5. Tank height

Note: If there is a nozzle on the tank before installation, the nozzle must be a minimum of 200mm/ 7.9" from the tank wall. The tank wall must be flat and there must not be obstacles adjacent to the nozzle or on the tank wall.



Point the device in the correct direction to get the best performance

1. Cable entry
2. Nearest tank wall
3. Tank centerline

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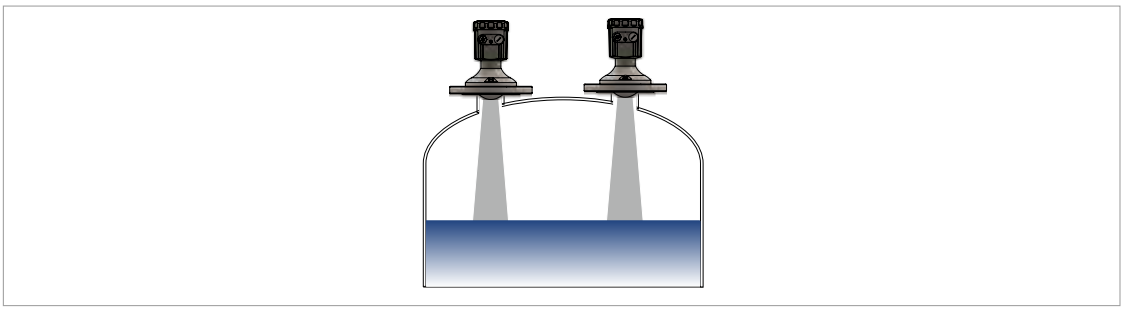
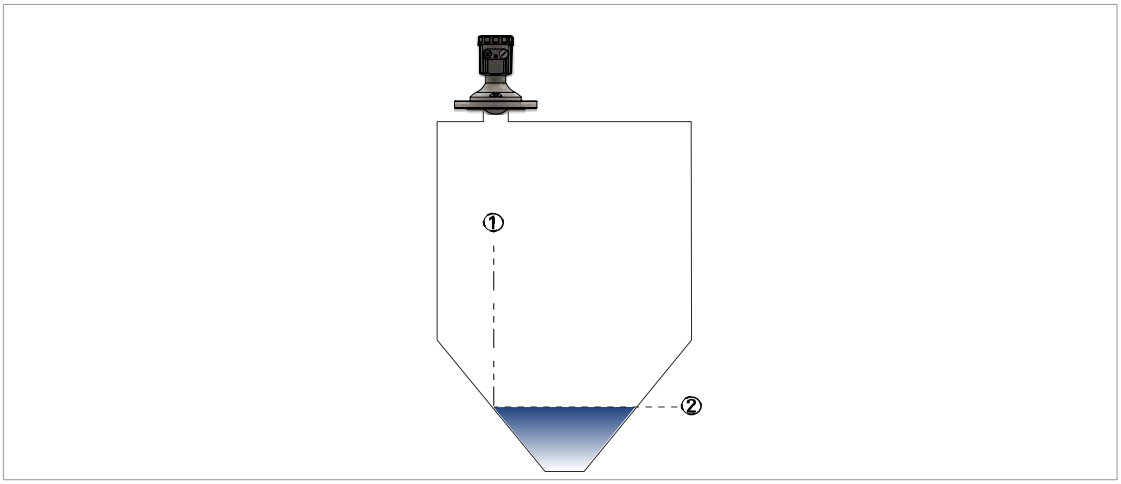


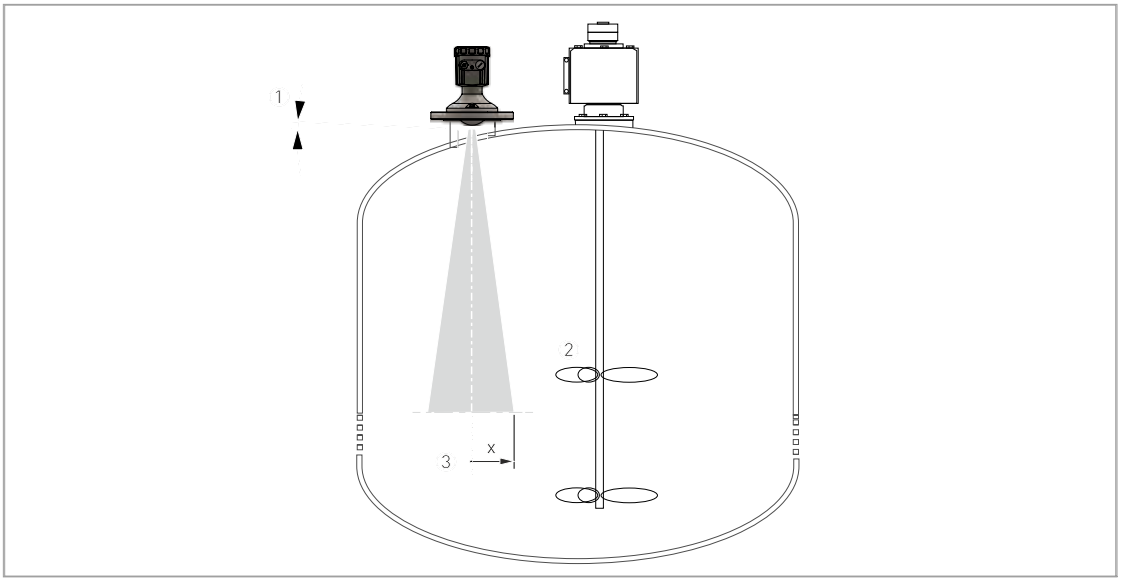
There is no maximum limit to the number of devices that can be operated in the same tank

There is no maximum limit to the number of devices that can be operated in the same tank. They can be installed adjacent to other radar level transmitters.

Dish-shaped or conical bottoms have an effect on the measuring range. The device cannot measure to the bottom of the tank. If possible, install the device as shown in the illustrat on that follows;



Tanks with dish-shaped or conical bottoms
1. Axis of radar beam
2. Minimum level reading



Equipment and obstacles: how to prevent measurement of interference signals
1. Do not tilt the dev ce more than °2
2. We recommend that you do an empty spectrum recording
3. Beam radius of the antenna The beam radius increases by increments of "x" mm for each metre of distance from the antenna.

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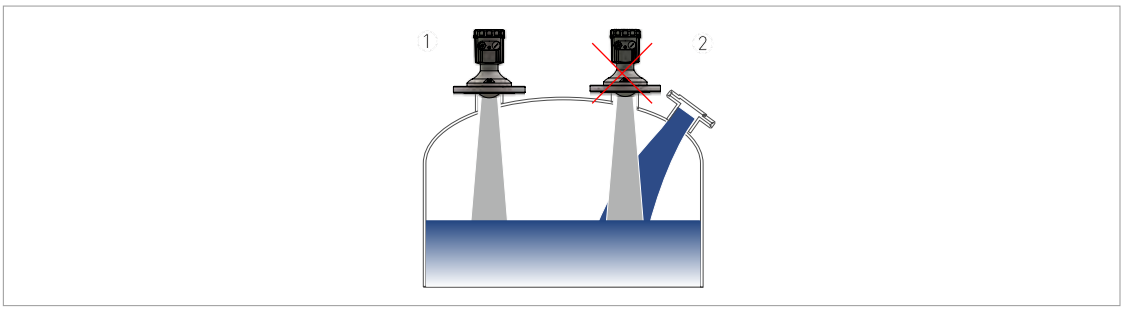

Product nlets
1. The device is in the correct position.
2. The device is too near to the product inlet.

CAUTION!
Do not put the device near to the product inlet. If the product that enters the tank touches the antenna, the device will measure incorrectly. If the product fills the tank directly below the antenna, the device will also measure ncorrectly.

ELECTRICAL DATA

Signal Output	2-wire 4-20 mA 2-wire 4-20 mA+ HART, The device agrees with SIL2 requirements for safety-related systems (as per IEC 61508). 2-wire MODBUS
Control Output	4-20 mA or MODBUS RS485 1 route 250VAC/24VDC, 5A relay output,configurable alarm range on request
Error Output	4 mA, 22 mA and 20.5 mA on request
Power Supply	2-wire 16-36 VDC (Max <45 VDC) 4-wire 9-36 VDC/100-250 VAC, 50HZ/60HZ (AC)
Display	128x64dotsLCD/ 4 key
Cable Entrance	M20x1.5 (ø5.9mm) axial cable outlet
Recommended Cable	AWG18 or 0.75mm²
Protect on Degree	IP67 or IP68

COMMUNICATION

On request	HART® HART® 7 MODBUS WIFI Connect on (Bluetooth, LoRa, IoT)

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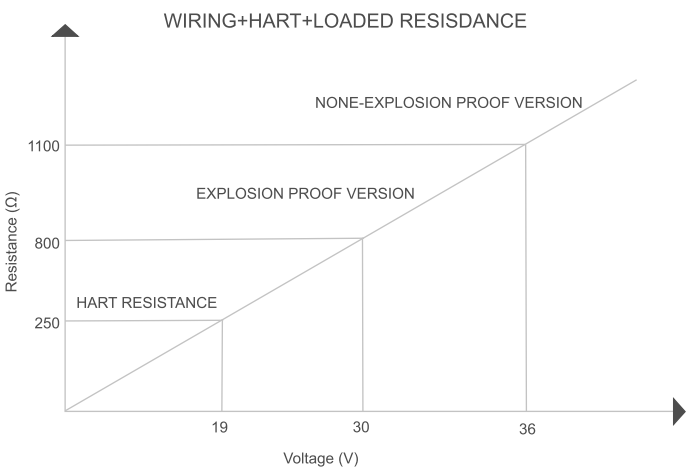
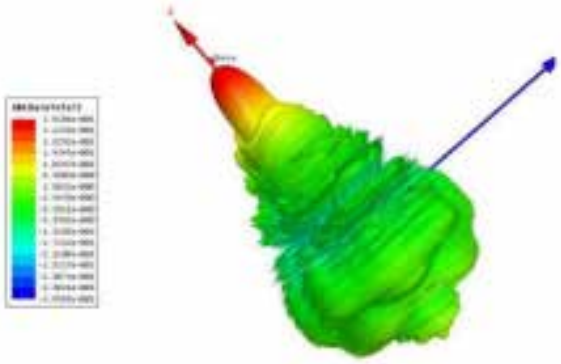
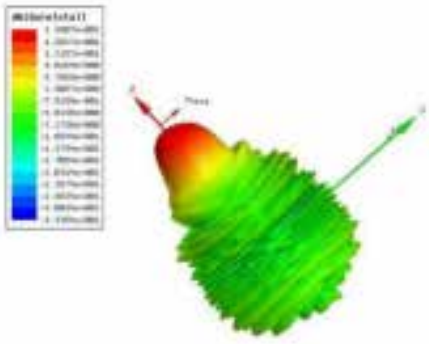
LOAD RESISTANCE CHART



ANALYSIS





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ORDERING

DYOT									Radar Level Meter
Output	S								4-20 mA
	H								4-20 mA + HART®
	H7								4-20 mA + HART® 7
	P								Profibus
	R								RS485-MODBUS
Power Supply		AC							110-250 VAC
		DC							2-wire 24 VDC (no wi-fi)
		D1							4-wire 24 VDC
Range			03						0-30 m
			07						0-70 m
			10						0-100 m
			15						0-150 m
Wifi Connection				N					None
				B					Bluetooth
				L					LoRa
				I					IoT
Process Connection					T				Thread
					F				Flange (specify in order)
Flange Material						P1			PA
						P2			PTFE
						S1			AISI 304
						S2			AISI 316
						S3			AISI 316L
Housing							AB		ABS (-40...85°C)
							AL		Aluminum (-40...150°C)
							SS		Stainless steel (-40...250°C)
Enclosure								67	IP67
								68	IP68
Hazardous Area									N None
									Xi II 1/2G Ex ia IIC T4 Gb(Ga)

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