


FULLKON

Special characteristics

- 76~81GHz FMCW radar technology with 5GHz working bandwidth
- Non-contact measurement avoiding corrosion and wear from medium
- Compact design with lens antenna for high dust and harsh temperature environments
- Bluetooth wireless commissioning for safe and convenient field debugging

Features

- High accuracy: $\pm 3\text{mm}$ with minimum blocking distance 0.15m
- Wide measuring range: up to 35m
- Narrow beam angle: $3^\circ/8^\circ$ for minimal installation interference
- Multiple outputs: (4~20)mA, RS485, HART, Bluetooth
- Wide temperature range: $-40\sim 200^\circ\text{C}$ for medium, $-20\sim 65^\circ\text{C}$ for environment
- IP67 protection rating with flange or threaded installation

Measuring principle

The radar level transmitter operates based on FMCW principle, where the frequency difference between transmitted and received signals is proportional to the distance from radar to medium surface, enabling precise level calculation.



Recorder



Flow



Temp



Analyzer



Level



Pressure

The 76–81 GHz FMCW Radar Level Transmitter is a high-frequency radar instrument designed for accurate and reliable level measurement. With a maximum range of 35 m and a 15 cm blind zone, it is especially suitable for solid materials. Featuring lens-based transmission, it performs stably in high-dust and high-temperature environments up to $+200^\circ\text{C}$, with flexible flange or threaded installation options.

Preferred areas of use are



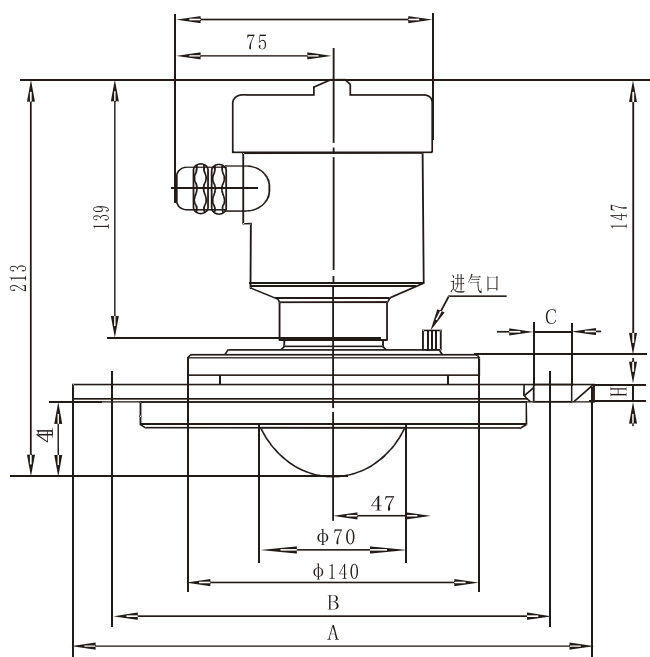
Widely used for accurate level measurement of solid materials in silos and storage vessels under high-dust and high-temperature industrial conditions.

Material and test



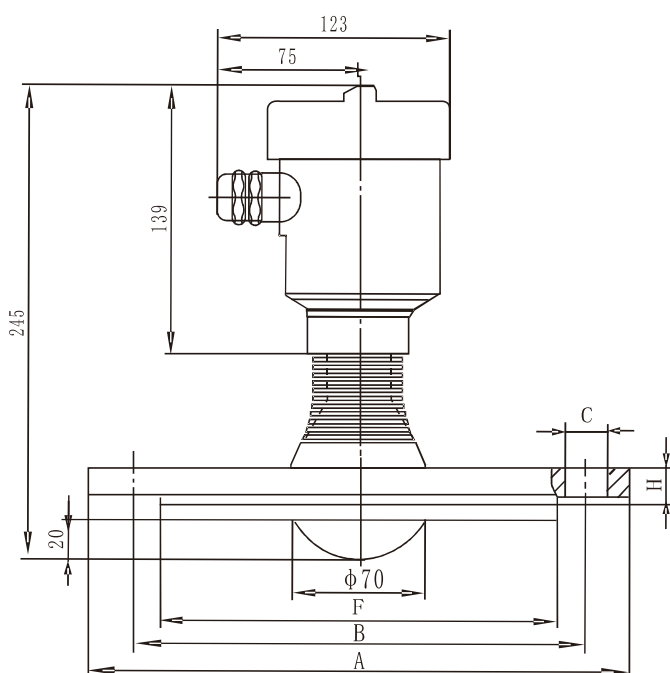
Parameters

Measured Variable	Level
Measuring Range	(0~35) m
Dead Band	0.15 m
Accuracy	±3 mm
Beam Angle	3°/8°
Transmission Frequency	76 GHz~81 GHz
Analog Output	(4~20) mA
Communication Output	RS485 interface, MODBUS protocol; HART
Wireless Communication	Bluetooth
Power Supply	Supply Voltage: (18-28) VDC Power Consumption: Max 1W (4-wire)
Electrical Connection	M20×1.5 cable gland
Recommended Cable	AWG18 or 0.75 mm ²
Dielectric Constant	>2
Process Pressure	(-0.1~2) MPa
Medium Temperature	(-40~200) °C
Operating Environment	Temperature: (-20~65) °C Humidity: ≤95%RH
Storage Environment	Temperature: (-40~60) °C Humidity: ≤90%
Ingress Protection	IP67



	A	B	C	H
DN80	φ190	φ150	4-φ18	18
DN100	φ210	φ170	4-φ18	18
DN125	φ240	φ200	8-φ18	20
DN150	φ265	φ225	8-φ18	20
DN200	φ320	φ280	8-φ18	22

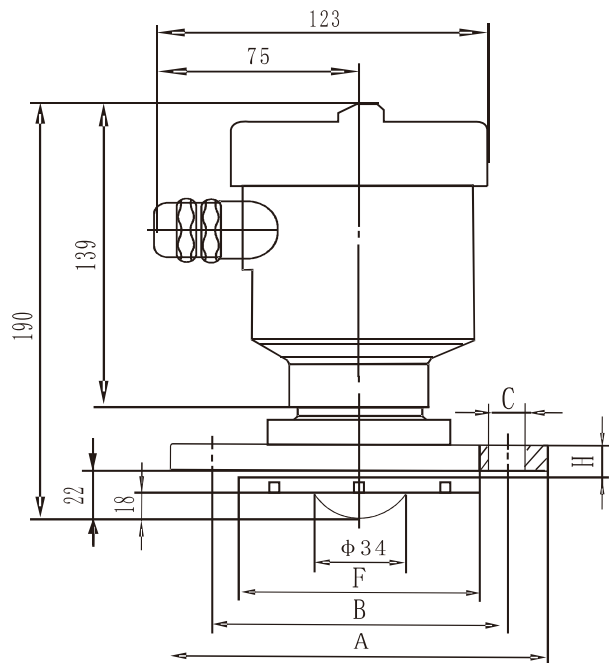
G3 1/2 pipe thread connection, ambient temperature type, outline dimensions (unit: mm)



	A	B	C	F	H
DN80	φ200	φ160	8-φ18	φ138	20
DN100	φ220	φ180	8-φ18	φ158	22
DN125	φ250	φ210	8-φ18	φ188	22
DN150	φ285	φ240	8-φ22	φ212	24
DN200	φ340	φ295	12-φ22	φ268	26

Flange standard: PN6

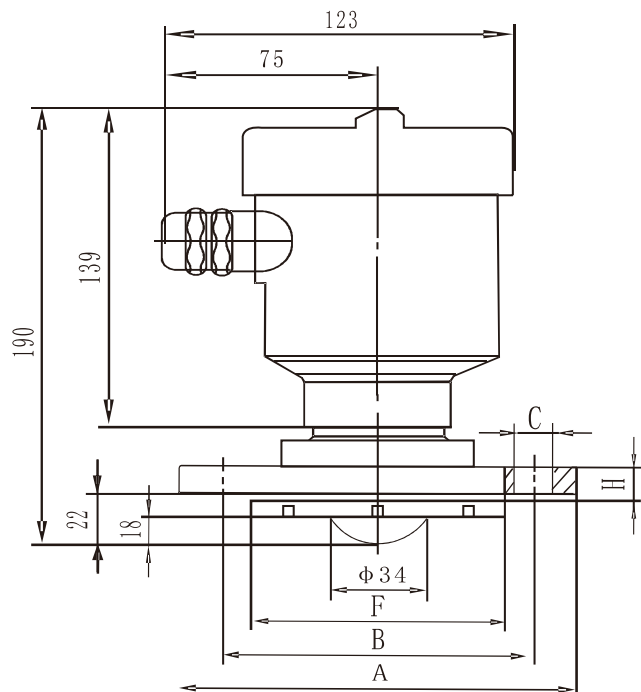
Dimensions of corrosion-resistant flange connection for high temperature and high pressure type (unit: mm)



	A	B	C	F	H
DN50	Φ 140	Φ 110	4- Φ 14	Φ 90	16
DN65	Φ 160	Φ 130	4- Φ 14	Φ 110	16

Flange standard: PN6

Dimensions of corrosion-resistant flange connection for high temperature and high pressure type (unit: mm)



	A	B	C	F	H
DN50	Φ 140	Φ 110	4- Φ 14	Φ 90	16
DN65	Φ 160	Φ 130	4- Φ 14	Φ 110	16

Flange standard: PN6

External dimensions of corrosion-resistant miniature lens (unit: mm)

■ Ordering Code

FK-WSR500-E														Description
WSR500-E	-	-	-	-	-	-	-	-	-	-	-	-	-	Radar level gauge
Measurement range/accuracy														Measuring range: 0~35m (0.15m blind zone)/±3mm
Power supply range														18~28VDC, four-wire (<1W)
Communication method														Bluetooth/HART/MODBUS bus
Signal output														4~20mA or RS-485
Industrial temperature/humidity														-20~65°C/≤95%RH
Product dimensions														Ø100*270mm
Cable entry														M20* 1.5
Protection rating														IP67
Installation method														Flange(Standard flange DN80-DN100)