PCRL01 Level Radar Transmitter

Features

- Range: M1-10m, M2-20m, M3-30M, M6-60m, MB-120m
- Range: M1-10m, M2-20m, M3-30M, M6-60m, MB-120m
- Abundant physical interfaces: 4~20mA (2 channels optional), HART,AUTBUS
- Fieldbus Foundation, ProfibusPA, NB-IoT, etc.
- Support Bluetooth debugging function
- Support low dielectric constant (less than 1.5) medium TBF tank bottom reflection measurement
- Support backlight display

Applications

- Chemical industry
- Solids level measurement
- Sewage treatment
- Mining industry
- Paper and Pulp Industry
- Boiler Engineering
- Liquid and solid powder measure
- Acids, bases or other corrosive media

Notes:

1 Do not touch the diaphragm with hard objects, which may cause damage to the diaphragm.

2 Please read the Instruction Manual of the product carefully before installation and check the relevant information of the product.

3 Strictly follow the wiring method for wiring, otherwise it may cause product damage or other potential faults.

4 Misuse of the product may cause danger or personal injury.

Product overview

The 76-81GHz series products refer to frequency modulated continuous wave (FMCW) radar products operating at 76-81GHz, supporting four-wire and two-wire applications. The product has multiple models, the range can reach 120m, and the blind zone can reach 8 cm. Because of its higher operating frequency and shorter wavelength, it is especially suitable for solid applications. The working method of transmitting and receiving electromagnetic waves through the lens has unique advantages in high dust and harsh temperature environments (+200℃). The instrument provides flange or thread connection, which makes installation convenient and easy.

Notes:

1 Do not misuse documentation.

2 The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.

3 Complete installation, operation, and maintenance information is provided in the instructions of the product.

4 Misuse of the product may cause danger or personal injury.

Principle

High-frequency microwave pulses issued by the guided wave radar propagate along detection components (steel cable or steel rod), met the media to be measured, since the dielectric constant of the mutation, cause reflections, a portion of the pulse energy is reflected back. Transmit pulse and the reflected pulse is proportional to the distance and the time interval measured media.

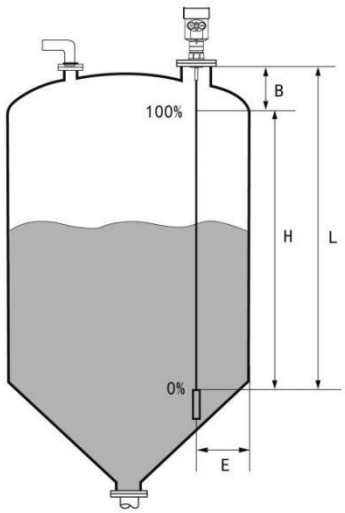
Explanation：

H--- Measuring range

L---Empty distance

B---The top of the blind

E---The minimum distance from the probe to the tank wall



--Blind spot is the minimum distance between the top of the highest material surface materials and measurement reference point.

--The bottom of the blind refers to a distance near the very bottom of the cable can not be accurately measured.

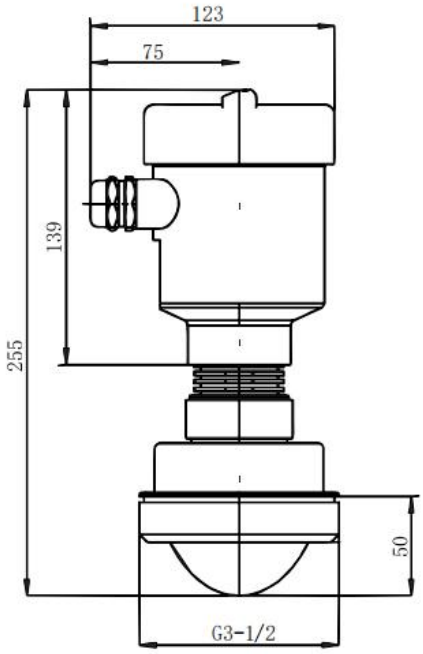
--Between the top and bottom of the blind is blind effective measure distances.

Note：

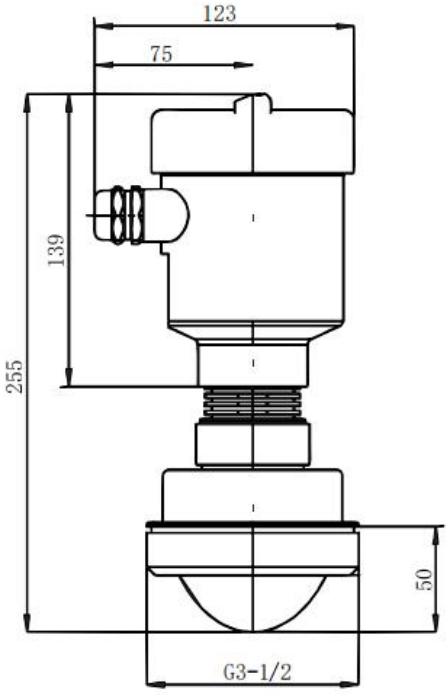
In order to ensure the accuracy of level measurement, the material should be located between the top and bottom of the blind the blind.

Performance parameters	
Transmit frequency	76GHz~81GHz
Range	0.08 m ~10m；0.08~20m；0.08 m ~30m；0.3 m~60m；0.6 m~120m
Accuracy	±1mm
Measurement interval	Fastest 100ms
Beam angle	3°/8°/20°
Dielectric constant range	≥2
Power supply	12~28VDC
Communication	MODBUS, HART
Signal output	4~20mA or RS-485
Fault output	3.8mA, 4mA, 20mA, 21mA, hold
On-site operation/programming	128×64 dot matrix display/4 buttons; configurable host computer setting software
Industrial temperature/humidity	T0:-40~85℃/humidity≤95%RH; T1:-40~200℃; T2:-40~500℃; T3:-40~1000℃
Shell material	Aluminum alloy, stainless steel
Process connection	Pipe thread/universal flange/anti-corrosion flange/sanitary chuck/quartz isolation flange
Process pressure	-0.1~2MPa
Dimension	φ 100*270mm
Connection	M20*1.5
Recommended wire	AWG18 or 0.75mm²
Ingress protection	IP67
Mounting method	Thread or flange

Normal temperature pipe threaded connection

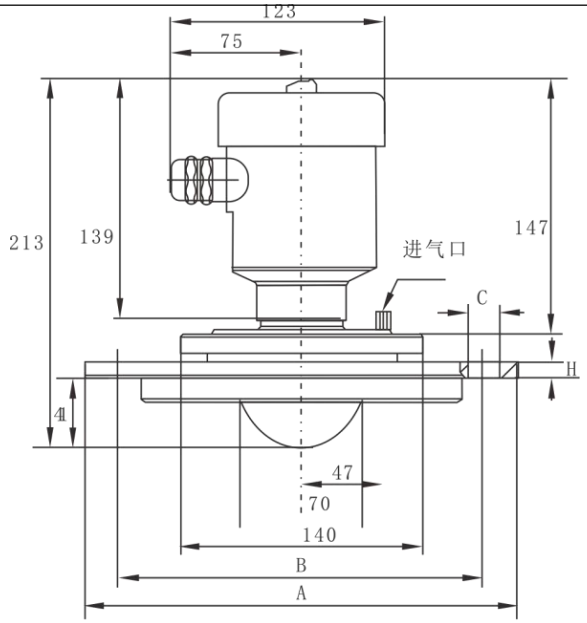


Normal temperature pipe threaded connection



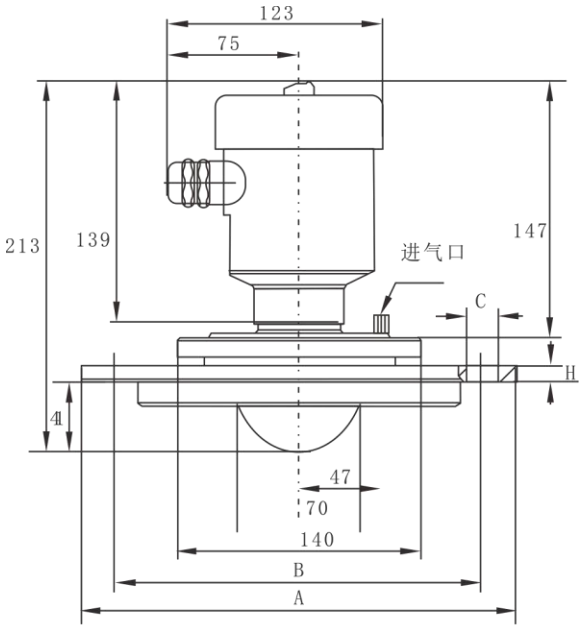
Note: This model needs to be equipped with a high temperature version of the electronic module

High temperature (-40...200°C) pipe thread connection



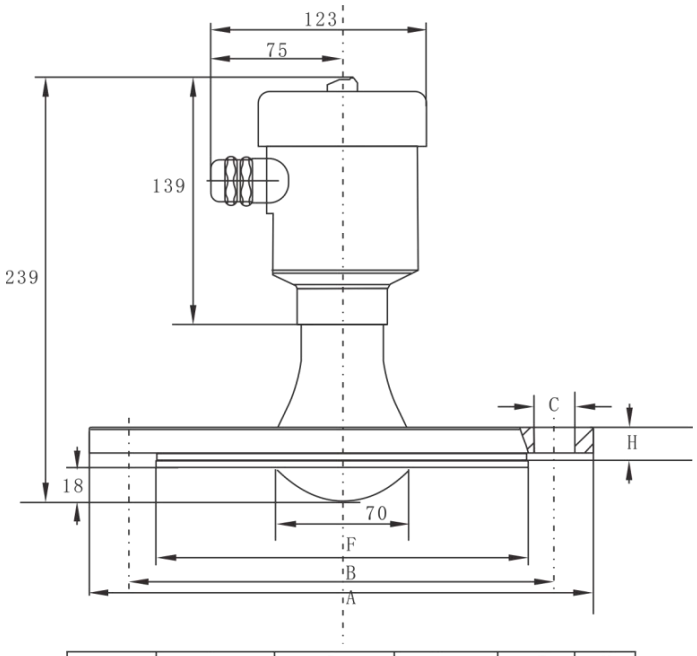
	A	B	C	H
DN80	Φ190	Φ150	4-Φ18	15
DN100	Φ210	Φ170	4-Φ18	15
DN125	Φ240	Φ200	8-Φ18	17
DN150	Φ265	Φ225	8-Φ18	17
DN200	Φ320	Φ280	8-Φ18	19

Normal temperature universal flange structure

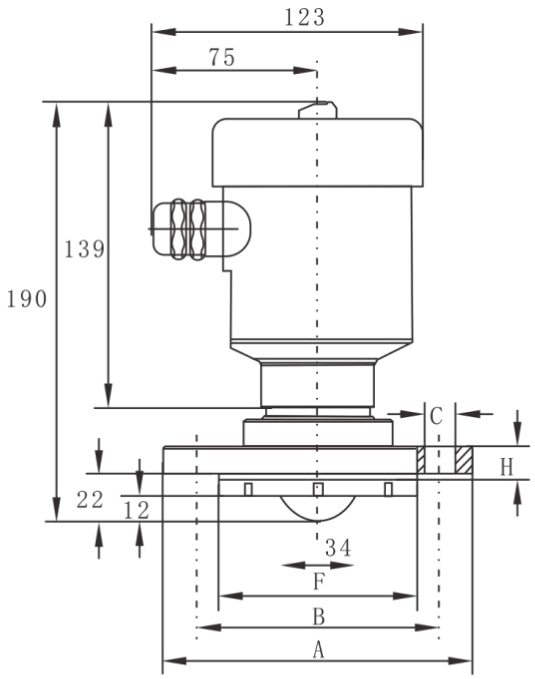


	A	B	C	H
DN80	Φ190	Φ150	4-Φ18	15
DN100	Φ210	Φ170	4-Φ18	15
DN125	Φ240	Φ200	8-Φ18	17
DN150	Φ265	Φ225	8-Φ18	17
DN200	Φ320	Φ280	8-Φ18	19

High temperature (-40...200℃) universal flange structure



	A	B	C	F	H
DN80	Φ190	Φ150	4-Φ18	Φ128	18
DN100	Φ210	Φ170	4-Φ18	Φ148	18
DN125	Φ240	Φ200	8-Φ18	Φ178	20
DN150	Φ265	Φ225	8-Φ18	Φ202	20
DN200	Φ320	Φ280	8-Φ18	Φ258	22



	A	B	C	F	H
DN50	Φ140	Φ110	4-Φ14	Φ90	16
DN100	Φ160	Φ130	4-Φ14	Φ110	16

Normal temperature anti-corrosion flange structure

How to order

PCRL01 - F1 - R1 - C1 - M1 - S1 - T1 - P1 - B1

Product model
PCRL01

Frequency
F1: 76~81GHz
FZ:Customized(0~5)mg/L

Range
R1: 0-10m
R2: 0-20m
R3: 0-30m
R4: 0-60m
R5: 0-120m
RZ: Customized

Connection
C1: G¾(DIN 3852-E)@14°
C2: ¾NPT(ASME B1.20.1)@14°
C3: G1½(DIN 3852-A）@7°
C4: 1½NPT@7°
C5: G2@5°
C6: G3½@3°
C7: DN50 PN16 @7°
C8: DN65 PN16 @7°
C9: DN80 PN16@5°
C10 : DN100 PN16@3°
C11: DN150 PN16@1°

Material
M1: Aluminum alloy
M2: 304
M3: 316
M4: 316L
MZ: Customized

Seal material
S1: Fluororubber
S2: EPDM
S3: Kalrez 4079
S4: Aegis Pf128
S5: Borosilicate
SZ: Customized

Temperature and pressure resistance
T1: 80℃@2Bar
T2: 130℃@20Bar
T3: 230℃@20Bar
TZ: Customized

Power supply and output
P1: 2-wire, Hart
P2: Four-wire system,
P3:Two-wire system,NB-iot
P4: Fieldbus Foundation
P5: Profibus PA
PZ: Customized

Bluetooth output
B1:With
B3: Without

Example: PCRL01 - F1 R1 C1 M1 S1 T1P1 B1

Product model:PCRL01. F1: Frequency 76~81GHz. R1:Range 0-10m. C1:Connection G¾(DIN 3852-E)@14°. M1:Material Aluminum alloy. S1: Seal material Fluororubber. T1:Temperature and pressure resistance 80℃@2Bar. P1:Power supply and output2-wire, Hart. B1:With Bluetooth output

Contact us

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