





SPECIAL FEATURES

The 80GHz Radar series is FMCW radar operating at 76-81 GHz, which has a maximum measuring range of 120m and nearly zero blind zone. It supports 4-wire and 2-wire applications. Higher operating frequency and shorter wavelength make it ideal for solid applications, including those with extreme dust and high temperature to $+ 200^{\circ}$. Built-in rich algorithm ensure stable output even in the application with fast agitator.

The main benefits

- Based on the self-developed CMOS millimeter wave RF chip, a more compact RF architecture, a higher signal-to-noise ratio, and nearly zero blind zone are realized.
- 5GHz working bandwidth means higher measurement resolution and accuracy.
- 3°antenna beam angle, so the interference in the environment has less impact on the instrument, and the installation is more convenient.
- Shorter wavelength yields good reflection properties on sloped solids, so aiming towards material angle of repose is usually not necessary.
- Remote debugging and remote upgrading is supported to reduce the cost of field personnel.

TECHNICAL SPECIFICATIONS

Frequency	· 76GHz v 81GHz 5GHz FMCW bandwidth		
Measuring range	$\sim 0.0 \text{ m}^2 \sim 0.0 \text{ m}^2$, 30 m^2 FWCW ballowidth		
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Measurement accuracy	: ±1mm		
Beam angle	: 3°/8°		
Minimum measured dielectric constant	:>=2		
Power	: 15~28VDC		
Communication	: 2x: MODBUS I 3x: HART/Series		
Signal Output	: 2x: 4 ~ 20mA or RS-485 I 3x: 4~20mA		
Fault Output	: 3.8mA, 4mA, 20mA, 21mA, hold		
Field operation programing	: 128 × 64 dot matrix display / 4 buttons PC software I Bluetoc	oth	
Humidity	: ≤95%RH		
Enclosure	: Aluminum alloy, stainless steel		
Antenna	: Lens antenna/anti-corrosive antenna		
type	flange isolated by quartz		
Process temperature	: T0:-40~85 ; T1:-40~200 ; T2:-40~500 ; T3:-40~1000		
Process pressure	:-0.1~2MPa		
Product size	:Ø100*270mm 5		
Cable entry	: M20*1.5		
Recommended cables	: AWG18 or 0.75mm ²		
Protection class	: IP67 5		
Explosion-proof grade	: ExdialICT6		
Installation method	: Thread or flange		
Weight	: 2.480Kg/2.995Kg		
Packing Box size	: 370*270*180mm ⁵		







IMAGE







DIMENSION

Based on different process connection and beamwidth, 80GHz Radar has 10 kinds of structure, as shown below.





Fig 3-1 Thread connection with 3°beamwidth

Fig 3-2 Thread connection with 3°beamwidth(200 resistance)



Fig 3-3 Universal Type



Fig 3-4 Universal Type(200 resistance)





DIMENSION

Based on different process connection and beamwidth, 80GHz Radar has 10 kinds of structure, as shown below.







Fig 3-7 Flange with encapsulated antenna system & 3°beamwidth (200 resistance)



Fig 3-6 Flange with encapsulated antenna system & 8°beamwidth



Fig 3-8 Flange with encapsulated antenna system & 8°beamwidth (200 resistance)





DIMENSION

Based on different process connection and beamwidth, 80GHz Radar has 10 kinds of structure, as shown below.

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Fig 3-9 Hygienic fitting with encapsulated antenna system & 8° beamwidth (200 resistance)







INSTALL

The main concern of installation is to aim to the material surface under test and on the other hand to avoid false echoes. Typical scenes are list below for correct installation.

Keep the antenna beam free of any interference such as ladders, pipes, steps, as shown in Fig 4-1



Fig 4-1 Example for avoiding false echo

Avoid the contact between antenna beam and feeding flow, as shown in Fig 4-2



Fig 4-2 Example for avoiding false echoes





At least 200mm away from the wall for avoiding false echo.



Fig 4-3 Example for avoiding false echo

Aiming the antenna beam to the bottom of tapered vessel for avoiding false echo when the level is at the bottom of the tapered vessel.



Fig 4-4 Example for avoiding false echo







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ORDERING CODES

1. RANGE			3. PARAMETERS	
L01	l 0-10m	L01		
L03	3 0-30m		XX For Future Use	
LOG	5 0-60m			
L12	2 0-120m			
<u>2. P</u>	ROBE	14/		
W	Without sealed end	vv		
S	With sealed end			
2 D	DOCESS CONNECTION			
J. F		– F1		
F1	50NB 150#ASME B16.5			
F2	50NB 300#ASME B16.5			
F3	80NB 150#ASME B16.5			
F4	80NB 300#ASME B16.5			
F5	100NB 150#ASME B16.5			
F6	100NB 300#ASME B16.5			
F7	150NB 150#ASME B16.5			

ORDERING EXAMPLE : NI-RLT-L01-W-F1-XX