HNL110-A

RADAR LEVEL GAUGE



HNL110-A
MAIN PARAMETERS

Liquid level type: Radar type

Range of measurement: 0-70m

Output signal: 4-20mA

Measurement medium: Solid particles, slurry, water, oil media

Application scenarios: Material level, liquid level

Authentication: CE

PRODUCT INTRODUCTION

The HNL110-A radar level gauge antenna emits extremely narrow electromagnetic microwave pulses, which propagate at the speed of light in the air. When they encounter the surface of the measured medium, some of their energy is reflected back and received by the same antenna.

The time interval between transmitting and receiving pulses is proportional to the distance from the antenna to the surface of the measured medium. Due to the extremely high propagation speed of electromagnetic waves, it is difficult to confirm the time interval between the transmitted pulse and the received pulse, which is very small (in the nanosecond range).

The radar level gauge uses a special correlation demodulation technique that can accurately identify the time interval between the transmitted pulse and the received pulse, thereby further calculating the distance between the antenna and the surface of the measured medium.

PRODUCT FEATURES

1. Small beam angle, concentrated energy, anti-interference ability, improved measurement accuracy and reliability; Higher measurement frequency (up to 80GHz), maximum measurement distance of 70 meters

2. Not affected by the characteristics of the measured medium, with small measurement blind spots, it can also achieve good results for small tank measurements

3. Shorter measuring wavelength is suitable for small particle materials, more suitable for level measurement of small particle materials, and suitable for foam steam and strong dust environment

4. Low transmission power, low energy consumption, no harm to human body using pulse working mode, low transmission power of radar level gauge, can be installed in various metal and non-metal containers, no harm to human body and environment

5. Suitable for measuring solid particles, slurries, water, oil media, mainly used in industries such as petroleum, chemical, metallurgical, food, cement, coal, etc

TECHNICAL PARAMETER

PERFORMANCE	
Range of measurement	100m
Repeatability accuracy	±3mm
Nonlinear BFSL (Consistency)	Maximum 0.25% full scale
Response time	<1s (0-60s adjustable)
Resolving power	0.03% full scale, maximum 1mm
Frequency range	26GHz, 80GHz optional
Zero point adjustment	Can be set through the menu
Allowable work pressure	-1... 40 bar (standard), -1... 200 bar (optional)
Burst pressure	Allowable pressure x 1.5 times

ELECTRICAL SPECIFICATIONS

Signal output (with short circuit protection)	4-20mA, 4-20mA with Hart
Supply voltage (U_B) (With polarity protection)	24±3Vdc
Overpressure protection	Maximum 36Vdc
Power consumption	max.22.5mA
Load (R_L)	R_L=250Ω

ENVIRONMENT CONDITION

Working temperature range	-40-85°C/-40-150°C (optional)/-40-250°C (optional)	
Transportation/storage temperature range	-20-85°C	
Vibration stability	Sine: 20 g, 25 Hz-2 kHz	IEC 68-2-6
	Sine: piston type 4.4g, 25-200	IEC 60068-2-27
Impact resistance	Impact resistance: 50 g/6ms	IEC 60068-2-27
	Free fall: 1 meter	IEC 60068-2-32
Protection level (With matching connectors, the achievable level of protection)	IP65 (IP68 optional) IEC 529	

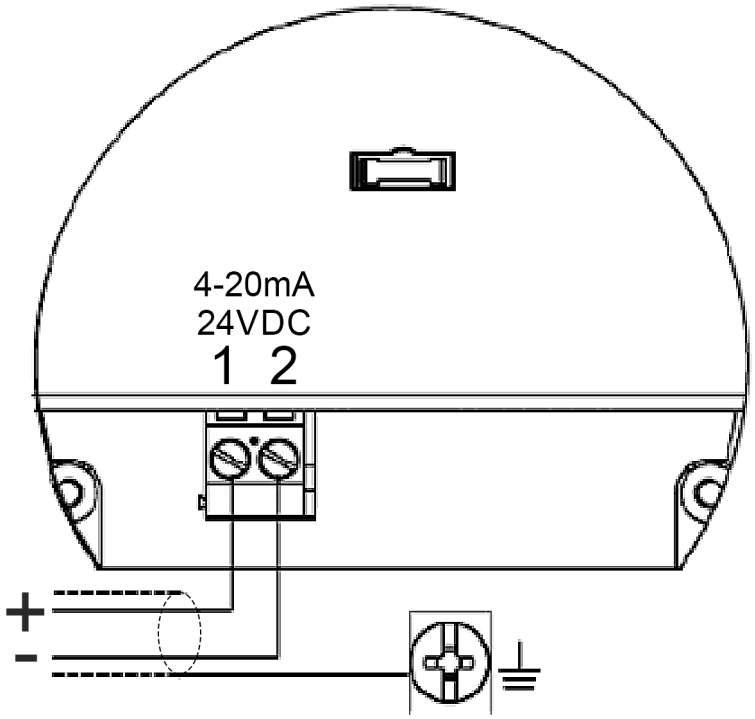
EXPLOSIVE HAZARDOUS ENVIRONMENT

Explosion proof grade	Exd IICT5

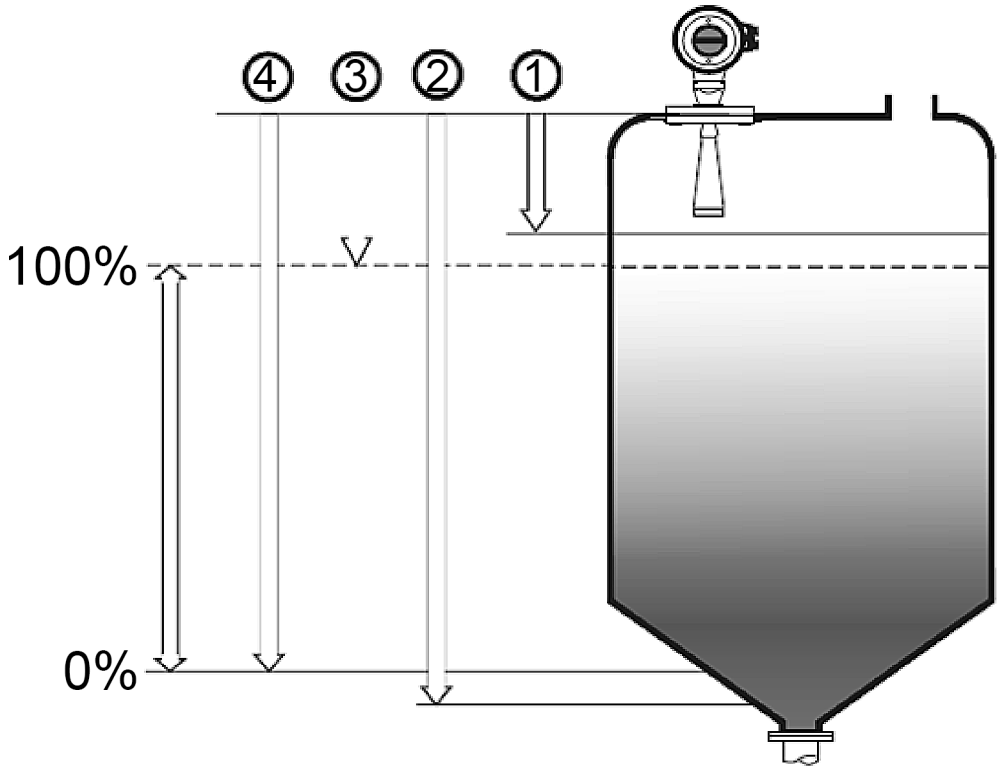
MECHANICAL PROPERTIES

Mechanical properties	Terminal wiring
Mechanical connection	Threaded connection or flange connection
Contact with liquid components, material	304/316/PTFE coated (anti-corrosion type)
Shell material	Aluminium
Weight	4.5kg

ELECTRICAL CONNECTION



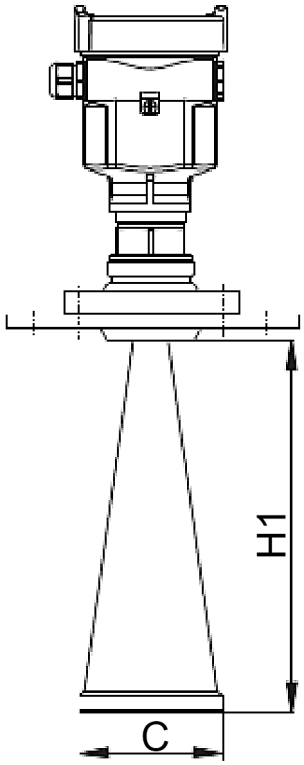
TESTING SCHEMATIC DIAGRAM



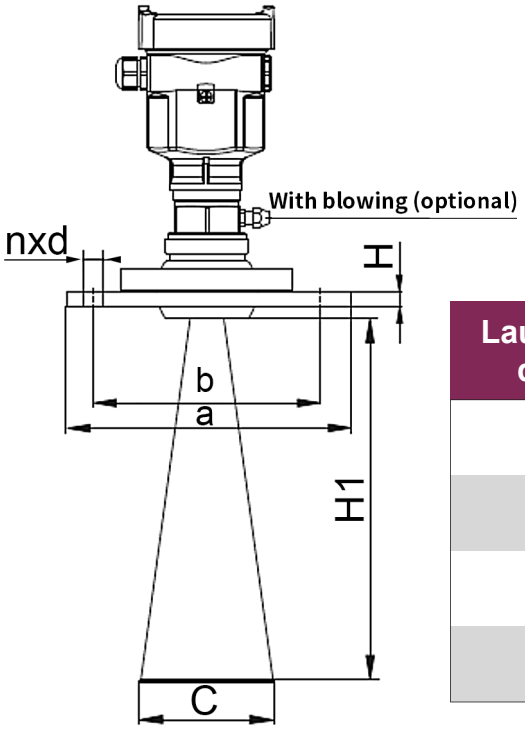
The reference surface for measurement is the sealing surface of the thread or flange

1. Blind spot range 2. Range setting 3. High level adjustment 4. Low level adjustment

PRODUCT SIZE (MM)



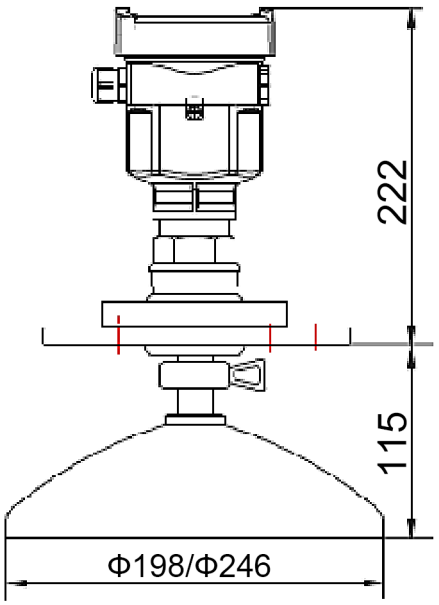
Standard horn antenna



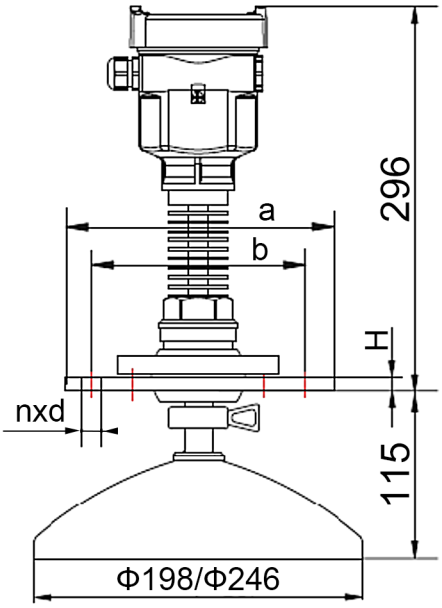
Equipped with a blowing horn antenna

Launch angle diameter	Antenna angle
Φ48	18°
Φ78	12°
Φ98	8°
Φ123	6°

Launch angle diameter	Antenna angle
Φ198	5°
Φ246	4°



Parabolic antenna



High temperature parabolic antenna

HNL110-A RADAR LEVEL GAUGE SELECTION TABLE

NAME	CODE	CODE DESCRIPTION
Product model	00	Standard horn antenna
	01	Standard swept horn antenna
	02	Other antennas
Voltage resistance selection	A	-1...40 bar
	B	-1...200 bar
Measuring range	01	0.....1m
	02	0.....2m
	03	0.....3m
	10	0.....10m
	15	0.....15m
	20	0.....20m
	30	0.....30m
	40	0.....40m
	50	0.....50m
	60	0.....60m
	70	0.....70m
	X	Specially customized range, write the range directly after x
Frequency	A	26GHZ
	B	80GHZ
Power supply	A	24VDC
Signal output	M	4-20 Ma
	HM	4-20 Ma with Hart
Process Connection	A01	DN50 flange
	A02	DN80 flange
	A03	DN100 flange
	A04	DN125 flange
	A05	DN200 flange
	A06	DN250 flange
	A07	DN50 universal joint flange
	A08	DN80 universal joint flange
	A09	DN100 universal joint flange
	A10	DN125 universal joint flange
	A11	DN200 universal joint flange
	A12	DN250 universal joint flange
	X	Special customization
Is it equipped with a dust cover	A	Without dust cover
	B	With dust cover
Explosion proof selection	1	Non explosion proof type
	2	Explosion proof type
Medium temperature	1	-40...85°C
	2	-40...150°C
	3	-40...250°C