

ANL383 Wave Radar Level Meter



Features

- Advanced microwave processing technology and unique echo discovery echo processing technology, contact measurement, high measurement accuracy and more accurate measurement
- Various process connection modes and types of detection components
- Pulse working mode, the product has extremely low emission power, and can be installed in various metal and non-metal containers

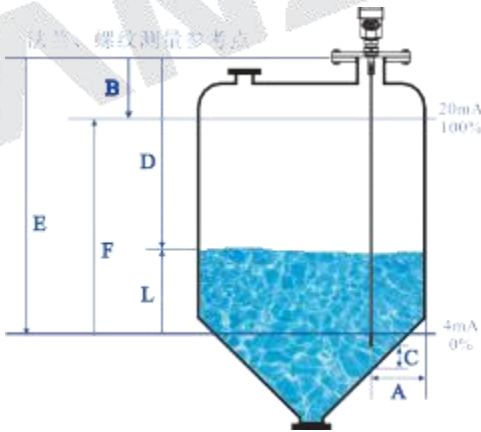
Application

- Power plant
- Oil field
- Chemistry
- Metallurgy

- Water conservancy
- Cement
- Food industry
- Medicine
- Water treatment
- Paper making
- Others: quarries, coal mines, environmental protection, shipbuilding and other industries.

Operating Principle

The high-frequency microwave pulse sent by the guided wave radar propagates along the detection component (steel cable or steel rod). When encountering the measured medium, it causes reflection due to sudden change of dielectric constant, and part of the pulse energy is reflected back. The time interval between the transmitted pulse and the reflected pulse is proportional to the distance from the measured medium.



Input

Guided wave radar is a measuring instrument based on the principle of time travel. The radar wave runs at the speed of light, and the running time can be converted into material level signal through electronic components. The high-frequency pulse from the probe is transmitted along the cable or rod probe. When the pulse meets the material surface, it is reflected back and accepted by the receiver in the instrument, and the distance signal is converted into a material level signal.

A: Minimum distance from probe to tank wall
 B: Blind Area
 C: Minimum distance from probe bottom to tank wall
 D: Distance from material surface
 E: Empty tank distance
 F: Full scale
 L: True level

Output

It is set by inputting empty tank height E (= zero point), full tank height F (= full scale) and some application parameters. The application parameters will automatically adapt the instrument to the measurement environment, corresponding to 4 ~ 20mA.

Specification

ANL383-701



Typical applications: liquid, powder, solid particles
Antenna material: flexible cable /304/PTFE (optional)

Measurement range: 30m measurement accuracy: ± 1 mm

Power supply: 24VDC (two-wire, four wire)

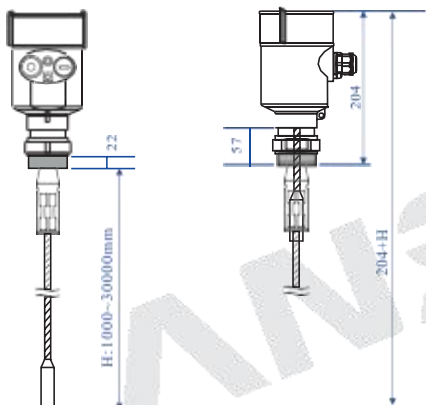
Medium temperature: $-40 \sim +130 \text{ }^\circ\text{C}$, $-40 \sim +250 \text{ }^\circ\text{C}$,

Process pressure: $-0.1 \sim 4.0\text{Mpa}$

Process connection: thread, flange (optional)

Protection grade: IP67

Signal output: 4 20mA/HART/RS485/Modbus



ANL383-702



Typical application: liquid and powder without mixing

Antenna material: pole /304/PTFE (optional)

Measuring range: 6M

Measurement accuracy: ± 1 mm

Power supply: 24VDC (two-wire, four wire)

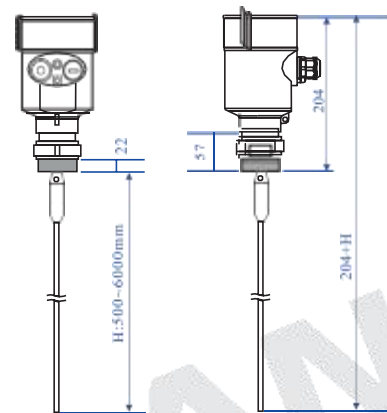
Medium temperature: $-40 \sim +130 \text{ }^\circ\text{C}$, $-40 \sim +250 \text{ }^\circ\text{C}$,

Process pressure: $-0.1 \sim 4.0\text{Mpa}$

Process connection: thread, flange (optional)

Protection grade: IP67

Signal output: 4 20mA/HART/RS485/Modbus



ANL383-704



Typical application: liquid, especially in complex occasions such as low dielectric constant and stirring. Antenna material: 304 (optional)

Measuring range: 6M

Measurement accuracy: $\pm 1\text{mm}$

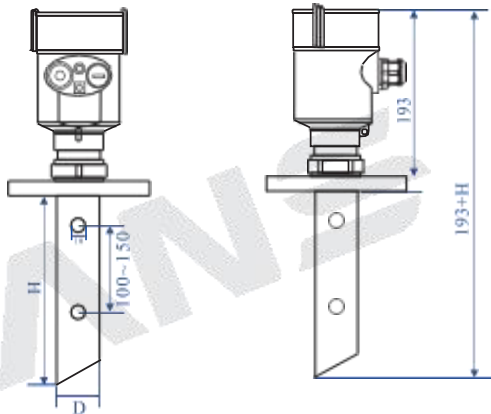
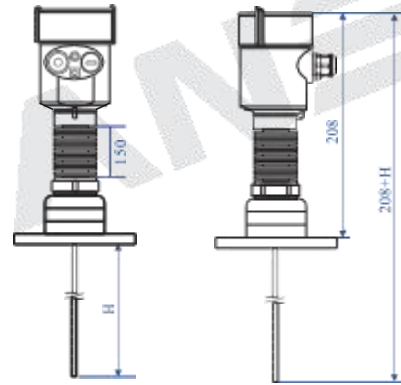
Power supply: 24VDC (two-wire, four wire)

Medium temperature: $-40 \sim +130\text{ }^{\circ}\text{C}$

Process pressure: $-0.1 \sim 0.3\text{MPa}$

Process connection: thread, flange (optional)

Protection grade: IP67



ANL383-705



Typical application: liquid, especially at high temperature and high pressure

Antenna material: 304 (optional)

Measuring range: 15m

Measurement accuracy: $\pm 1\text{mm}$

Power supply: 24VDC (two-wire, four wire)

Medium temperature: $-40 \sim +500\text{ }^{\circ}\text{C}$

Process pressure: $-0.1 \sim 4.0\text{Mpa}$

Process connection: thread, flange (optional)

Protection grade: IP67

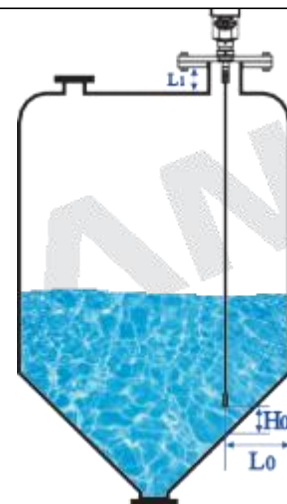
Explosion proof grade: Exia II CT6 (optional)

Signal output: 4 20mA/HART/RS485/Modbus...

Installation

Standard installation method

- It is recommended to install at 1/4 or 1/6 of the vessel diameter.
- Note: the minimum distance from the tank wall $l_0 \geq 300\text{mm}$, $H_0 \geq 50\text{mm}$.
- keep away from inlet and outlet.
- Keep away from obstacles such as limit switches, heating coils, agitators, etc. Note: the distance between the probe and the obstacle is $\geq 200\text{mm}$.
- When the container is a metal tank, the radar shall not touch the tank wall and bottom within the whole range.
- If the bottom of the container is conical, the radar can be installed in the center of the dome.
- The installation height of short pipe shall be $L_1 \geq 10\text{cm}$.



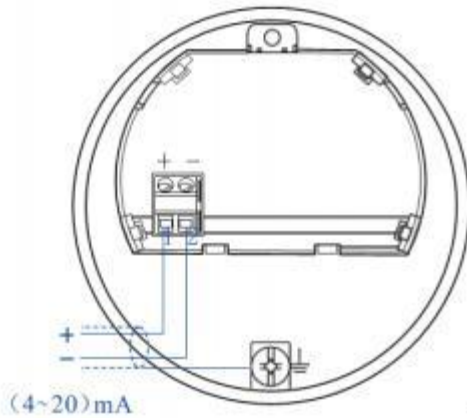
The power supply and current signal are separated, and each uses a two core shielded wire. Refer to technical data for specific power supply voltage range.

RS485/Modbus

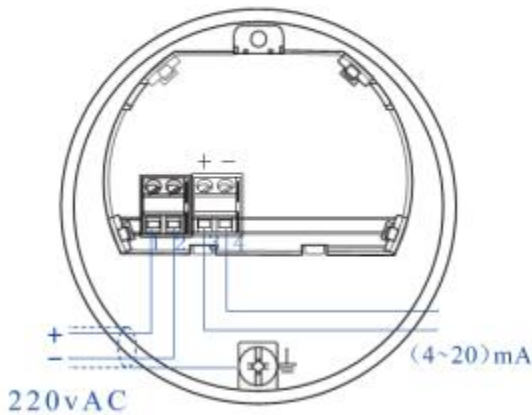
The power supply and MODBUS signal are separated, and each uses a two core shielded wire. Refer to technical data for specific power supply voltage range.

Connection:

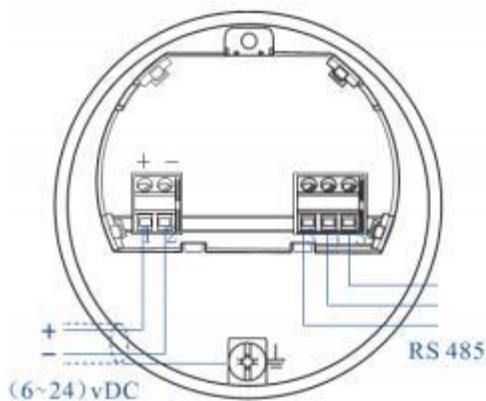
220VDC 2-wire:



220VAC 4-wire:



RS405/Modbus:



Product selection

Example: ANL383-701-AC233VAPMA1000

| |
|---------------------------------------|
| Manufacturer No. |
| ANL383 |
| Product model |
| 701 Range 30m |
| 702 Range 6m |
| 703 Range 30m |
| 704 Range 6m |
| Antenna Form / Size / Material |
| A Cable antenna /304 |
| B Cable antenna /PTFE |
| C Pole antenna /304 |
| D Pole antenna /PTFE |
| E Dual cable antenna /304 |
| F Double pole antenna /304 |
| G Waveguide antenna /304 |
| Y Special customized |
| Process Connection |
| A Threaded connection: G1½A |
| B Threaded connection: G1A |
| C Threaded connection: G¾A |
| D Threaded connection: 1½NPT |
| E Flange connection: DN50 |
| F Flange connection: DN80 |
| G Flange connection: DN100 |
| H Flange connection: DN150 |
| I Flange connection: DN200 |
| J Flange connection: DN250 |
| Y Special customized |
| Output / Power Supply |
| 2 4 ~ 20mA/24VDC 2-wire |
| 3 4 ~ 20mA/24VDC/Hart 2-wire |
| 4 4 ~ 20mA/220VAC/Hart 4-wire |
| 5 RS485/Modbus |

| | |
|--|--------------------------------|
| Process Temperature | |
| 1 | -40 ~ +130°C |
| 2 | -40 ~ +150°C |
| 3 | -40 ~ +250°C |
| 4 | -40 ~ +400°C |
| Y Special customized | |
| Process Pressure | |
| 1 | -0.1 ~ +0.3MPa |
| 2 | -0.1 ~ +2.0MPa |
| 1 | -0.1 ~ +4.0MPa |
| Y Special customized | |
| Seal | |
| V Viton | |
| K Kalrez | |
| Y Special customized | |
| Shell Material / Protection Grade | |
| A Aluminium /IP67 | |
| D | Aluminum (double chamber)/IP67 |
| S Stainless Steel 304/IP68 | |
| Y Special customized | |
| Product Grade | |
| P Standard type | |
| Y Special customized | |
| Cable Entry | |
| MM20X1.5 | |
| N 1/2NPT | |
| Y Special customized | |
| Field Display / Programming | |
| A with | |
| B without | |
| Range(Unit: cm) | |
| X... .. | |