

The selection is detailed on page 19



# PDG70

## 26G High Frequency Radar Level Meter

### Working principle

The radar level meter antenna emits an extremely narrow microwave pulse, which travels in space at the speed of light, encounters the surface of the measured medium, and some of its energy is reflected back and received by the same antenna. The time interval between transmitting and receiving pulses is proportional to the distance of the antenna to the surface of the measured medium. Due to the extremely high propagation speed of electromagnetic waves, the time interval between the emitted pulse and the received pulse is very small (on the order of nanoseconds). Using a special correlation demodulation technique, the time interval between the transmitted pulse and the received pulse can be accurately identified, and the distance from the antenna to the surface of the measured medium can be further calculated.

### Product description

Microwave pulse measurement method, and can be used in the industrial frequency band range of normal measurement, beam energy is low, can be installed in a variety of metal, non-metal containers or pipelines, liquid, slurry and particle level non-contact continuous measurement. Suitable for dust, temperature, pressure changes, inert gas and steam presence of the occasion. No harm to human body and environment. Suitable for all kinds of complex process conditions of containers, tanks, warehouse materials, and other external measurement, and not affected by the physical characteristics of the measured medium changes, two-wire technology, suitable for explosion-proof occasions, non-contact and continuous measurement of pulse type level meter maximum measuring distance 70m. Radar level transmitter is a replacement for buoy transmitter and radio frequency admittance (capacitance) level transmitter. It is not affected by the specific gravity of the medium compared to the float transmitter, and is not affected by the change of dielectric constant compared to the radio frequency admittance (capacitance) level transmitter. There is no need for field calibration, and only need to input level data for configuration, which is an incomparable advantage of any existing level measuring instrument. Radar level meter is designed and produced for the most complex level conditions, and is not limited by pressure, temperature, density

### Product application

Storage tank  
Process tank  
Open channel discharge  
River level



### Functional characteristics

No blind area, high-precision two-wire technology, is the differential pressure instrument, magnetostriction, RF admittance, magnetic flap instrument excellent alternative products.



Not affected by pressure change, vacuum, temperature change, inert gas, smoke, steam and other environmental effects

Easy to install, robust, maintenance-free HART or PROFIBUS-PA communication protocols and Foundation fieldbus protocols

Simple calibration, easy to achieve on-site calibration operation through digital liquid crystal display, simple configuration setting and programming through software, sensitive measurement, fast refresh speed.

Suitable for high temperature conditions, up to 200°C process temperature, when using high temperature extension antenna up to 350°C

## Technical parameter

Model number	PDG70-A	PDG70-B	PDG70-C
Product drawing			
Apply	liquid Suitable for highly corrosive liquids	liquid Temperature, pressure resistant, slightly corrosive liquid	liquid Suitable for strong corrosive, hygienic liquid
Measuring range	10m; 30m (speaker 80mm)	30m (speaker 80mm)±3mm	20m
Measurement accuracy	±5mm	(-40~80)°C	±3mm
Process temperature	(-40~130)°C	(-40~130)°C	(-40~150)°C
	-	(-60~250)°C	-
	-	(-60~400)°C	-
Process pressure	(-0.1~0.3)MPa	(-0.1~4)MPa	(-0.1~0.3)MPa
	-	(-0.1~40)MPa	-
	-	26GHz	-
Frequency	26GHz	(4~20) mA/HART	26GHz
Signal output	(4~20) mA/HART	Two-wire system (DC24V)	(4~20) mA/HART
Power source	Two-wire system (DC24V)	Four-wire system (DC24V/AC220V)	Two-wire system (DC24V)
	Four-wire system (DC24V/AC220V)	selectable	Four-wire system (DC24V/AC220V)
Field display	selectable	A/B/C/D/G/H <sup>1</sup>	selectable
shell	A/B/C/D/G/H <sup>1</sup>	G/H/I/J/K <sup>2</sup>	A/B/C/D/G/H <sup>1</sup>
Process connection	F	L/M/N/P <sup>3</sup>	-
Flange selection	L	S/T/V <sup>3</sup>	U
Antenna	R		-

Note: 1, intrinsically safe instrument can not choose A, B  
 2, with the purging type can only choose antenna T, process connection can only choose I;  
 Only J/K is available for high-temperature process connections  
 3, according to the field pressure range selection

## Technical parameter

Model number	PDG70-D	PDG70-E
Product drawing		
Apply	solidity	solidity
	In storage containers, process containers or strong dust easy crystallization, condensation occasions	Normal temperature, atmospheric pressure container
Measuring range	70m	15m
Measurement accuracy	±15mm	±15mm
Process temperature	(-40~80)°C	(-40~80)°C
	(-40~120)°C	(-40~120)°C
	(-60~250)°C	(-60~250)°C
	(-60~400)°C	-
Process pressure	Atmospheric pressure	Atmospheric pressure
	(-0.1~4)MPa	(-0.1~4)MPa
	(-0.1~40)MPa	-
frequency	26GHz	26GHz
Signal output	(4~20) mA/HART	(4~20) mA/HART
Power source	Two-wire system (DC24V)	Two-wire system (DC24V)
	Four-wire system (DC24V/AC220V)	Four-wire system (DC24V/AC220V)
Field display	selectable	selectable
shell	A/B/C/D/G/H <sup>1</sup>	A/B/C/D <sup>1</sup>
Process connection	G/H/I/J/K <sup>2</sup>	G/H/I/J/K <sup>2</sup>
Flange selection	L/M/N/P <sup>3</sup>	L/M/N/P <sup>3</sup>
antenna	S/T/V/W <sup>3</sup>	S/T/V/W <sup>3</sup>

Note: 1, intrinsically safe instrument can not choose A, B

2, with the purging type can only choose antenna T, process connection can only choose I;

Only J/K is available for high-temperature process connections

3, according to the field pressure range selection




## Shell

Product drawing		
ID	A/B/C/G	D/H
Materials	Aluminum alloy/plastic/antistatic PP/ stainless steel (316L)	Aluminum alloy/stainless steel (316)
peculiarity	Single cavity	Two cavities

## Procedure linkage

Product chart							
ID	E	F	G	H	I	J	K
Materials	Stainless steel	Ly12	PP	Stainless steel	Stainless steel (with purge)	Stainless steel	Stainless steel
pressure	(-0.1~4)MPa	(-0.1~0.3)MPa	Atmospheric pressure	(-0.1~4)MPa	(-0.1~0.5)MPa	(-0.1~4)MPa	(-0.1~40)MPa
temperature	(-60~150)°C	(-40~130)°C	(-40~80)°C	(-40~80)°C	(-60~130)°C	(-60~250)°C	(-60~400)°C

## Shell

Product drawing			
ID	L	M	P
Materials	(PTEE/PP) Francois	Stainless steel flange	Stainless steel universal joint flange
peculiarity	Corrosion resistance	High temperature/pressure	High temperature/pressure

## Process connection

Product drawing					
ID	R	T	U	V	W
Materials	antistatic PP	Stainless steel	PFA430	Stainless steel (PFA430 cover)	Stainless steel
specification	Ø 43.2/long 86	Ø 48/ length 86	DN50	Ø 98/300	Ø 198
	Ø 75/long 190	Ø 78/ length 190	DN80	Ø 98L/480	Ø 246
	-	Ø 98/ length 288	DN100	Ø 123/625	-
	-	Ø 98L/ Length 474	-	-	-
	-	Ø123 / Length 620	-	-	-
peculiarity	Corrosion resistance	Corrosion resistance	Corrosion/pressure resistance	Room temperature/ atmospheric pressure	Temperature/ pressure resistant



## Installation requirements

When the antenna transmits microwave pulse, it has a certain emission Angle. There shall be no obstructions in the area radiated by the emitted microwave beam between the lower edge of the antenna and the surface of the measured medium. Therefore, the installation should be as far as possible to avoid the tank facilities, such as: ladder, limit switch, heating equipment, bracket, etc. If necessary, "false echo learning" must be carried out. It should also be noted that the microwave beam must not intersect with the feed stream. When installing the instrument, pay attention to: the highest material level

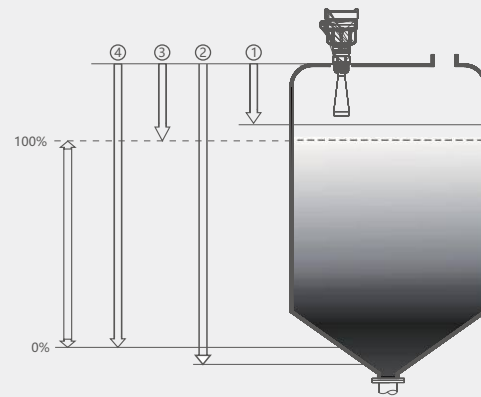
shall not enter the measurement blind area; Meter distance from tank wall must keep a distance; The instrument is installed so that the transmitting direction of the antenna is as perpendicular as possible to the surface of the measured medium. Instruments installed in explosion-proof areas must comply with the national explosion-proof danger zone installation regulations. The enclosure of explosion-proof instrument is made of die-cast aluminum. Explosion-proof instrument can be installed in the explosion-proof requirements of the occasion, the instrument must be grounded.

## Legend description

The datum of measurement is the sealing surface of the thread or flange.

- 1 Blind Zone Range (Menu 1.9)
- 2 Range Settings (Menu 1.8)
- 3 High Level Adjustment (Menu 1.2)
- 4 Low Level Adjustment (Menu 1.1)

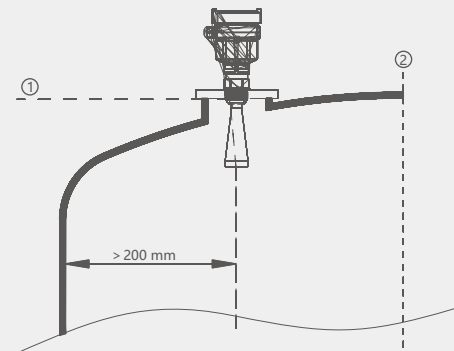
Note: When using radar level timing, make sure that the highest material level does not enter the measurement blind area (as shown in Figure 1).



## Installation position

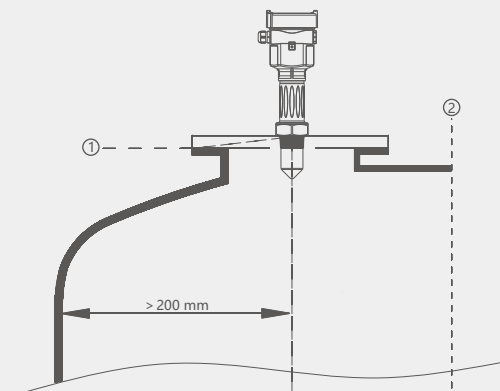
When installing, keep the distance between the meter and the container wall at least 200mm.

- 1 datum
- 2 Center of container or axis of symmetry



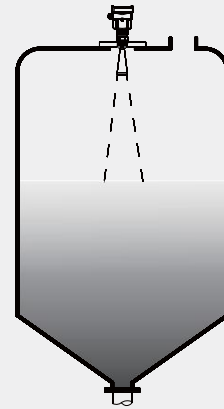
When installing, keep the distance between the meter and the container wall at least 200mm.

- 1 datum
- 2 Center of container or axis of symmetry

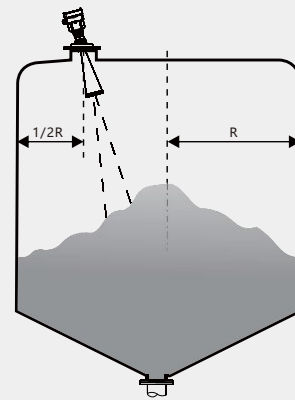


## Legend description

For conical containers with flat tops, the best place to install the meter is in the center of the top of the container, which ensures measurement to the bottom of the container.

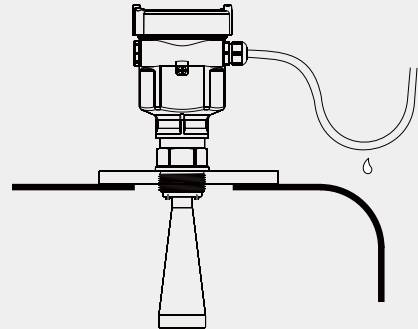


Install with universal joint



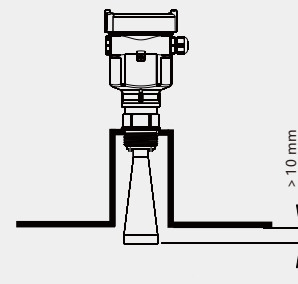
## Moisture-proof

For meters installed outdoors or in damp rooms and on cooling or heated tanks, the cable seal should be tightened to prevent moisture and the cable should be bent downward at the inlet. As shown below:



## Container nozzle

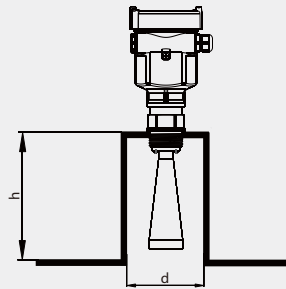
Length of container nozzle: Ensure that the probe extends out of the nozzle at least 10mm.



## Legend description

If the reflection characteristics of the measured medium are good, the container nozzle may be slightly longer than the antenna length. The standard length of the container nozzle is shown in the table on the right.

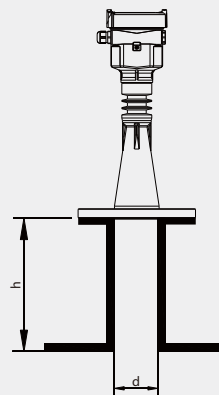
In this case, the end of the nozzle should be smoothed and there must be no burrs. Round if possible. In addition, false echo learning must be carried out



d	$h_{max}$
1 1/2"	250mm
50mm (2")	250mm
80mm (3")	300mm
100mm (4")	500mm
150mm (6")	800mm

If the reflection characteristics of the measured medium are good, the container nozzle may be slightly longer than the antenna length. The standard length of the container nozzle is shown in the table on the right.

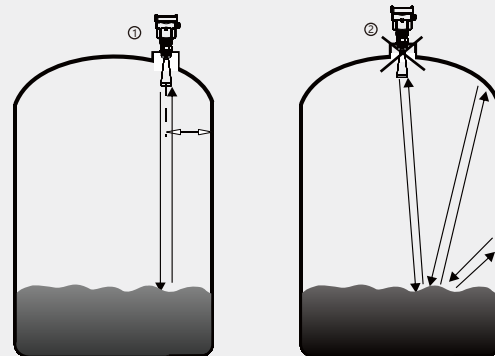
In this case, the end of the nozzle should be smoothed and there must be no burrs. Round if possible. In addition, false echo learning must be carried out



d	$h_{max}$
50mm (2")	100mm
80mm (3")	150mm
100mm (4")	250mm

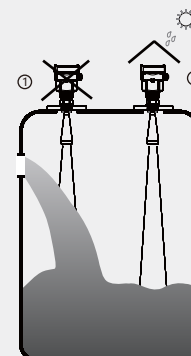
## Nozzle diagram

- 1 Get it right
2. Error: The instrument is installed on the arch or round tank top, which will cause multiple reflections and should be avoided as much as possible during installation.



## Nozzle diagram

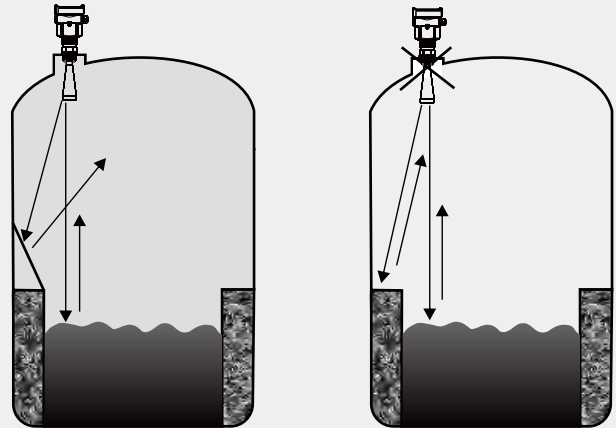
1. Error: Do not install the meter above the feed flow to ensure that the measurement is the surface of the medium and not the feed flow.
2. Correct (Note: outdoor installation should take shade and rain prevention measures).



## Legend description

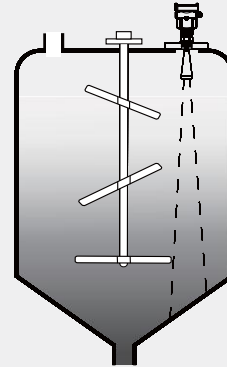
### Reflector mounting

When there are obstacles in the tank that affect the measurement, a reflector plate can be installed to reflect the reflected wave of the obstacle elsewhere, and "false echo learning" can be carried out if necessary.



### Stir

When there is stirring in the tank, keep the meter as far away from the mixer as possible if necessary. After installation, "false echo learning" should be carried out in stirring state to eliminate the influence of false echo caused by stirring blades. If foam is generated or waves are turned over due to agitation, the waveguide installation method should be used.



### Installation of waveguide

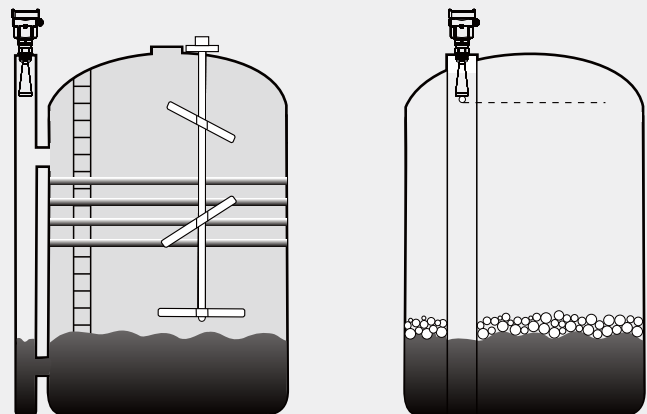
The use of waveguide installation (waveguide or bypass tube) can avoid the influence of obstacles and foam in the container on the measurement.

Due to feeding, stirring or other processes in the container, foam can form on the surface of some liquid media and attenuate the signal. If foam causes measurement errors, you should install the sensor in a waveguide tube or use a waveguide radar level meter.

If the GDRD5X is installed in a waveguide tube for measurement, the waveguide tube has a minimum diameter of 50mm.

Prevent large cracks and welds when connecting waveguides. In addition, "false echo learning" is carried out if necessary.

Note: When measuring adhesive media, do not use waveguide installation.





## Supply voltage

(4~20) mA/HART (Two-wire system)

The power supply and output current signal share a two-core cable. For details about the power supply voltage range, see technical data. For intrinsic safety, a safety grid must be added between the power supply and the instrument.

(4~20) mA/HART (Four-wire system)

Use a two-core cable for power supply and current signal respectively. For details about the power supply voltage range, see technical data. The current output of the standard instrument can be grounded. The current output of explosion-proof instrument must be floating output. The instrument and ground terminal should be guaranteed Good grounding, usually the grounding can be connected to the ground point of the tank, if the plastic tank should be connected to the adjacent ground. Up.

## Installation of connecting cables

General introduction

The power supply cable can be a common two-core cable, the outer diameter of the cable should be (5 to 9)mm, to ensure the sealing of the cable inlet. If electromagnetic interference exists, shielded cables are recommended.

(4~20) mA/ HART (two-wire system)

The power supply cable can be a common two-core cable.

(4~20) mA/ HART (four-wire system)

The power supply cable shall be a cable with a special ground cable.

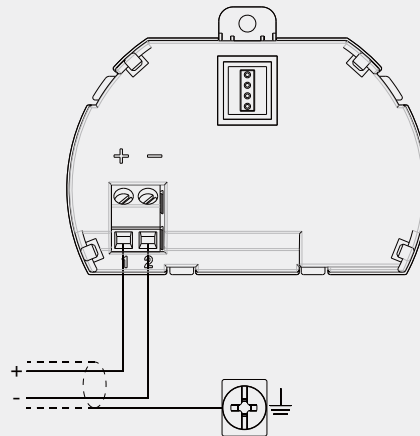
Shielding and wiring of cables

Both ends of the shielded cable should be grounded. Inside the sensor, the shield must be connected directly to the internal ground terminal. The external ground terminal on the housing must be connected to the ground. If there is a ground current, the shielded end of the shielded cable away from the meter side must be grounded by a ceramic capacitor (e.g., 1nF/1500V) to isolate and bypass high-frequency interference signals.

## Connection mode

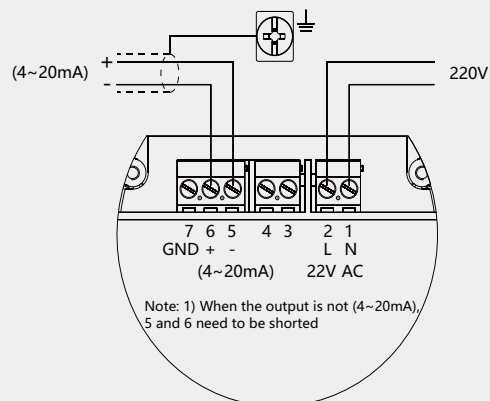
### Two-wire

HART two-wire system (Electronic unit selection B)1) Power supply and signal output



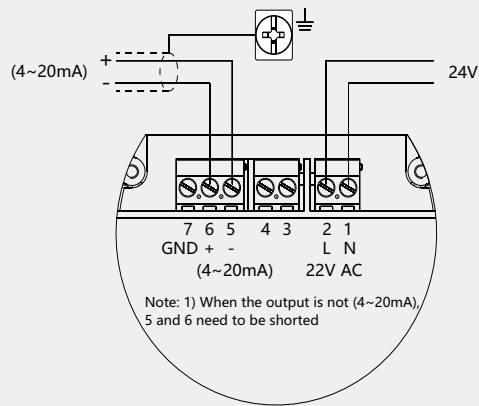
### Four lines, two rooms

220V AC/50Hz Power supply, (4~20) mA output(Electronic unit selection D)



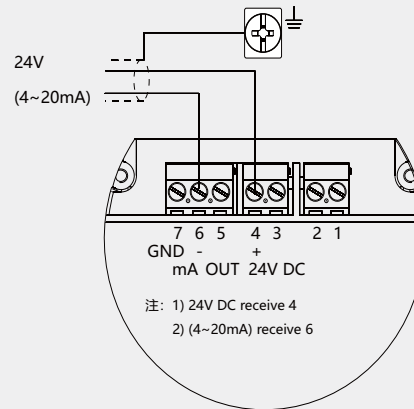
### Four lines, two rooms

24V DC power supply, (4~20) mA output(Electronic unit selection C)



### Four lines, two rooms

24V DC power supply, (4~ 20) mA output(Electronic unit selection E)



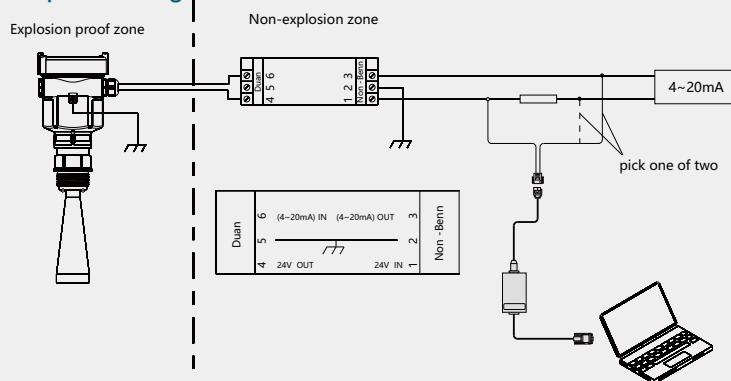
## Explosion-proof connection

The explosion-proof forms of this product are intrinsically safe and intrinsically safe+flameproof compound. Explosion-proof mark: Exia IIC T6 Ga/Exdia [ia Ga]IIC T6 Gb. The pulse radar level meter is made of stainless steel, antistatic PP and aluminum, and the electronic components are sealed with glue, so as to ensure that the sparks generated when the circuit fails will not be released. The product is suitable for continuous level measurement of combustible gas media with explosion-proof grade below Exia IIC T6 Ga/Exdia [iaGa] IIC T6 Gb.

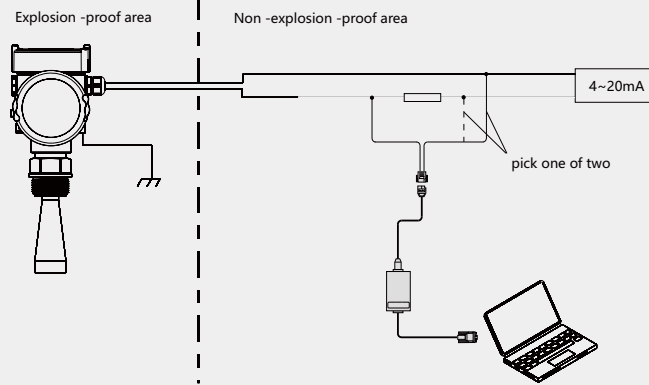
Intrinsically safe instruments must be powered by safety barriers when used. Safety barrier is the related equipment of this product, and the explosion-proof form is intrinsically safe. Explosion-proof mark: [Exia] IIC, power supply voltage 24VDC 5%, short-circuit current 135mA, and working current (4~20) mA.

All cables shall be shielded, and the maximum length from the instrument to the safety barrier is 500m. Distributed capacitance  $\leq 0.1\mu\text{F}/\text{Km}$ , and distributed inductance  $\leq 1\text{ mH}/\text{Km}$ . The instrument must be grounded when it is installed. Other associated equipment without explosion-proof inspection shall not be used.

### Intrinsically safe explosion-proof wiring



## Benan+explosion -proof explosion -proof wiring



## Meter debugging

### Debugging method

There are three ways to debug PDG70:

1. Display/debug module (View Point)
2. Upper machine debugging software ware
3. Hart handheld programmer

Viewpoint is a display debugging tool that can be plugged in, and debug the instrument through 4 keys on ViewPoint. The language of debugging menu is available.

After debugging, viewpoint is generally only used to display, and the measurement value can be read very clearly through the glass window.

### Key Description

[ OK ]key

- Enter the programming state;
- Coust the programming item;
- Coust the parameter modification.

[ ↻ ] key

- Select programming status;
- Cose the editing parameter bit;
- The parameter content display.

[ ↑ ] key

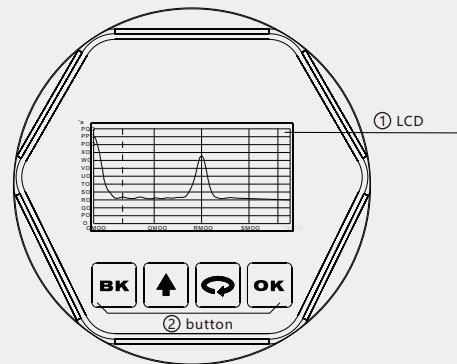
- Modify the parameter value

[ BK ] key

- Exit programming status;
- The retreat to the previous menu.

hot key

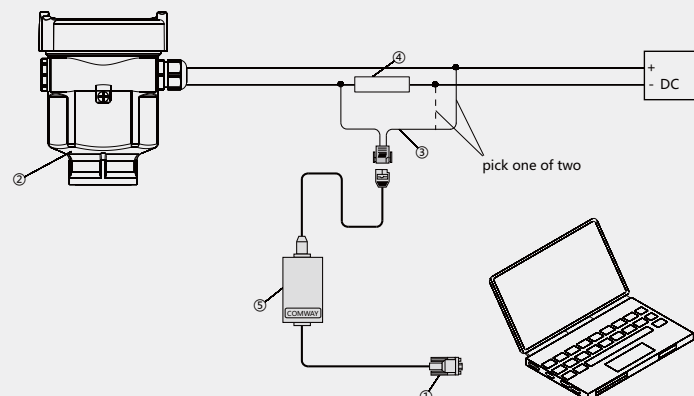
[ BK ] Bond display back wave curve



### Decentralization

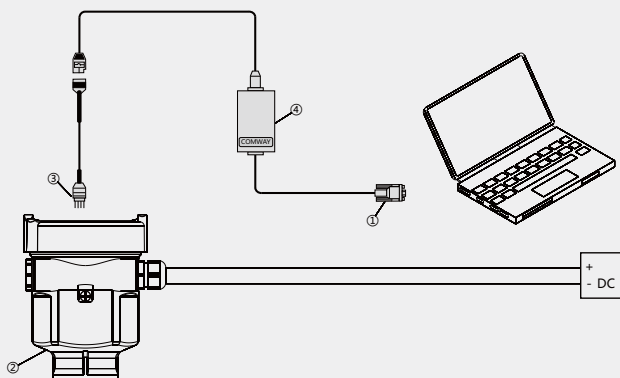
Connect with the upper machine through Hart

1. RS232 interface/or USB interface
2. PDG70
3. Hart adapter used for the Comway converter
4. 250 ohm resistance
5. Comway converter



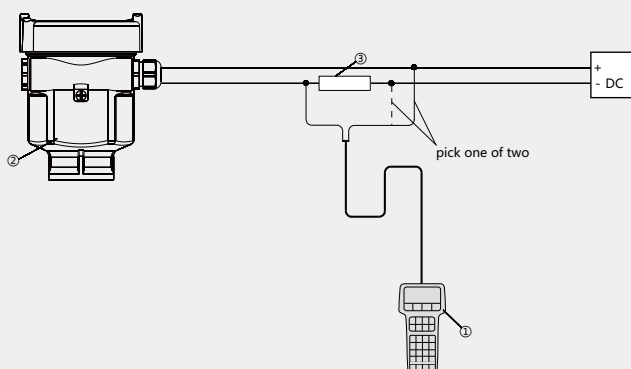
It is connected to the upper machine through I2C

1. RS232 interface/or USB interface
2. PDG70
3. I2C adapter used for the Comway converter
4. Comway converter



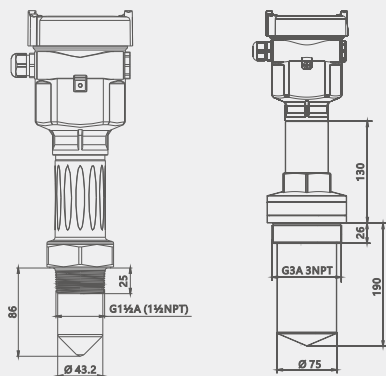
PDG70 can be programmed with HART handheld programmer programming

1. Hart handheld programmer
2. PDG70
3. 250 ohm resistance

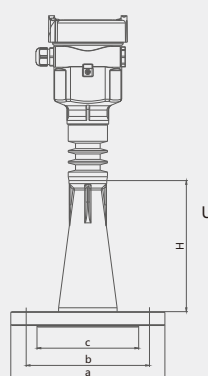


## Installation method and size mm

### Thread

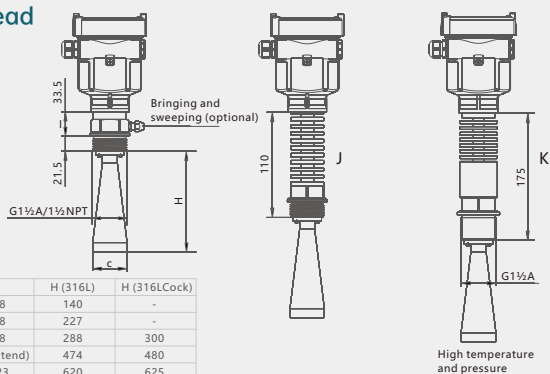


### Flang

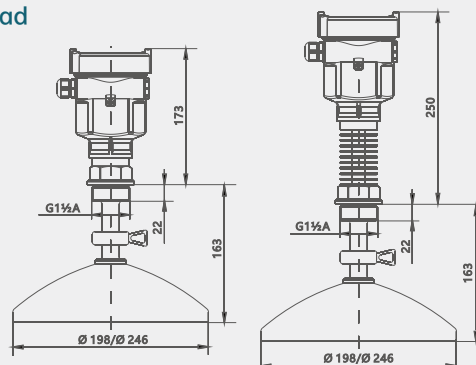


DN	a	b	c	H
DN50 PN1.6	Ø 165	Ø 125	Ø 99	120
DN80 PN1.6	Ø 200	Ø 160	Ø 132	174
DN100 PN1.6	Ø 220	Ø 180	Ø 156	260

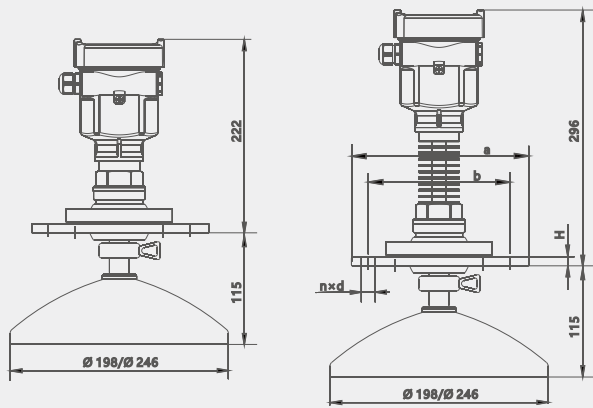
### Thread



### Thread

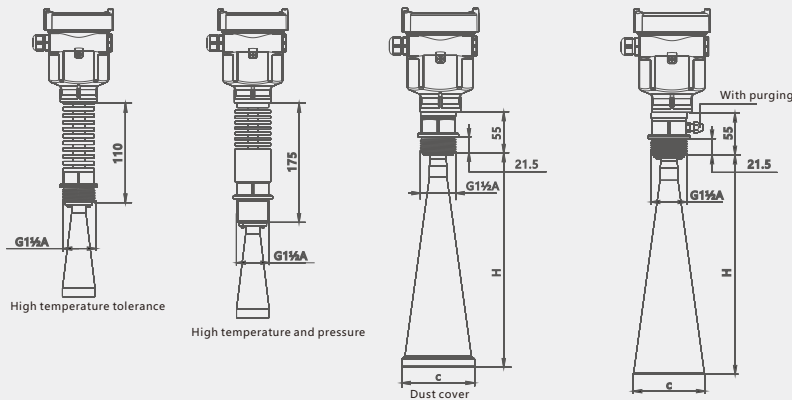


## Universal



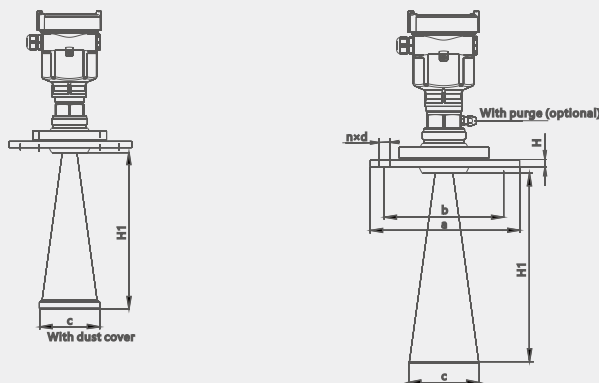
DN	a	b	H	d
DN100/4"	220	180	11.5	8×Ø 18
DN125/5"	250	210	11.5	8×Ø 18
DN150/6"	285	240	11.5	8×Ø 22
DN200/8"	340	295	11.5	12×Ø 22
DN250/10"	405	355	11.5	12×Ø 26

## Thread



c	H (316L)	H (316LCock)
Ø 48	140	-
Ø 78	227	-
Ø 98	288	300
Ø 98 (lengthen)	474	480
Ø 123	620	625

## Cardan joint



c	H1 (316L)	H1 (316L belt guard)
Ø 48	140	-
Ø 78	227	-
Ø 98	288	300
Ø 98 (lengthen)	474	480
Ø 123	620	625

DN	a	b	H	d
DN100/4"	220	180	11.5	8×Ø 18
DN125/5"	250	210	11.5	8×Ø 18



## Technical parameter

product model	PDG70-A	PDG70-B	PDG70-C	PDG70-D	PDG70-E
procedure linkage	Thread G1 1/2A/G3A	Thread G1 1/2A	flange316L	Thread G1 1/2A	Thread G1 1/2A
	Thread 1 1/2NPT	Thread 1 1/2NPT		Flange 316L	Flange 316L
	Threads 3NPT			Thread 1 1/2NPT	Thread 1 1/2NPT
Antenna material	Antistatic PP	Stainless steel 316L	PFA430	Stainless steel 316L	Stainless steel 316L
		PFA430		PFA430	PFA430

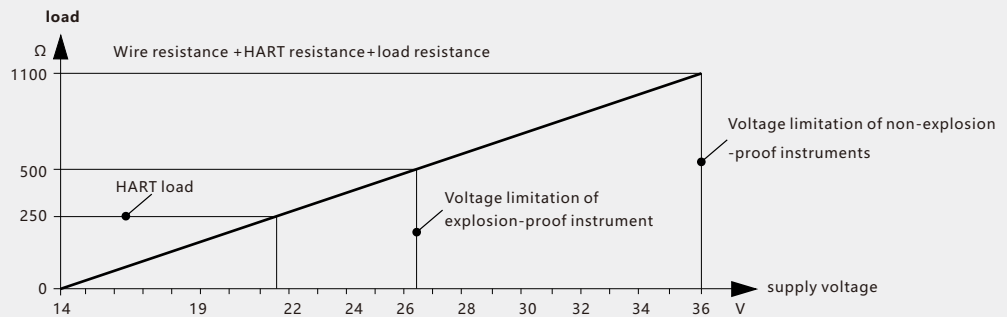
## 一般数据

exture of wood	
shell	Aluminum, plastic, stainless steel 316L
Seal between housing and housing cover	silicon rubber
Shell window	polycarbonate
ground terminal	stainless steel
weight	
PDG70-A	1kg (depending on process connection and enclosure)
PDG70-B	2kg (depending on process connection and enclosure)
PDG70-C	3kg (depending on process connection and enclosure)
PDG70-D	7kg (depending on process connection and enclosure)
PDG70-E	2kg (depending on process connection and enclosure)
supply voltage	
Two-wire system	Standard type: (20~28)V DC
	Intrinsically safe type: 24 (1 10%) V DC
	Power consumption: max.22.5mA
Allowable ripple	
■ < 100Hz	$U_{ss} < 1V$
■ (100~100K)Hz	$U_{ss} < 10mV$
Four-wire system, two rooms	
■ Intrinsically Safe+Flameproof	24 (1±10%) V DC, 220 (1±10%) V AC
■ Power consumption	max.1VA, 1W
Cable parameters	
Cable entry/plug	One M20×1.5 cable entrance (cable diameter 5...9mm) and one M20×1.5 blind plug.
Spring terminal	For wire cross-sectional area of 2.5mm <sup>2</sup>
Output parameter	
output signal	(4~20) mA/HART
resolution ratio	1.6μA
breakdown signal	Current output is unchanged; 20.5mA; 22mA; 3.9mA
Two-wire load resistance	See below
Four-wire load resistance	500 ohms max.
Integration time	(0~40)s adjustable



## Technical parameter

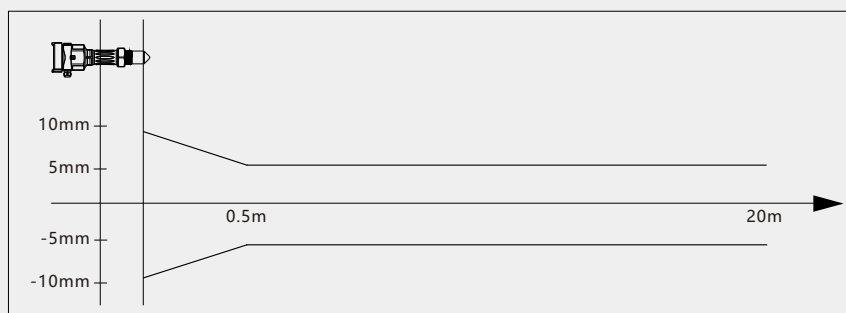
**Two-wire load resistance diagram**



<b>blind zone</b>	Antenna end
<b>Maximum measuring distance</b>	
■ PDG70-A	20 meters (liquid)
■ PDG70-B	30 meters (liquid)
■ PDG70-C	20 meters (liquid)
■ PDG70-D	70 meters (solid)
■ PDG70-E	15 m (solid)
<b>Microwave frequency</b>	26GHz
<b>Measuring interval</b>	About 1 second (depending on the parameter setting)
<b>Adjusting time<sup>1)</sup></b>	About 1 second (depending on the parameter setting)
<b>Display resolution</b>	1mm
<b>Precision</b>	See accuracy diagram.
<b>Working storage and transportation temperature</b>	(-40~100)°C
<b>Process temperature (temperature of antenna part)</b>	
■ PDG70-A	(-40~130)°C
■ PDG70-B	(-60~400)°C
■ PDG70-C	(-40~150)°C
■ PDG70-D	(-60~400)°C
■ PDG70-E	(-40~200)°C
<b>Relative humidity</b>	<95%
<b>Pressure</b>	Max.40MPa
<b>Vibration-proof</b>	Mechanical vibration 10m/s <sup>2</sup> , (10~ 150) Hz

1) After the drastic level mutation, the time required to give the correct level (maximum 10% error).

## PDG70-A



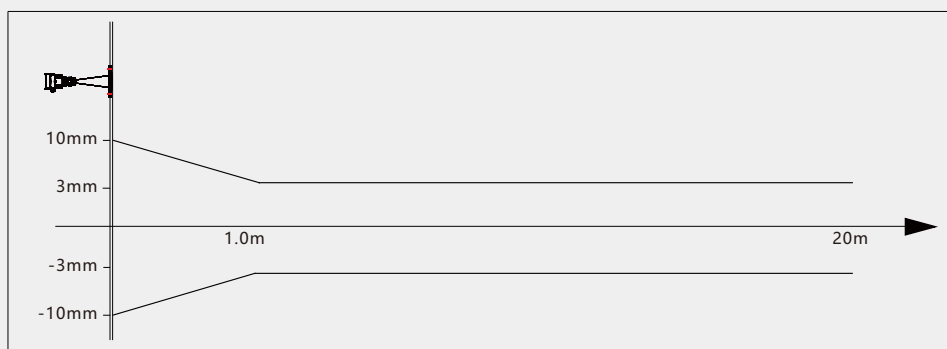
See the left figure for the accuracy of 3dB emission angle of 22°

## PDG70-B



<b>3dB emission angle</b>	Depending on the antenna size
Ø48mm	18°
Ø75mm	12°
Ø98mm	8°
Ø123mm	6°
Precision	See the picture above

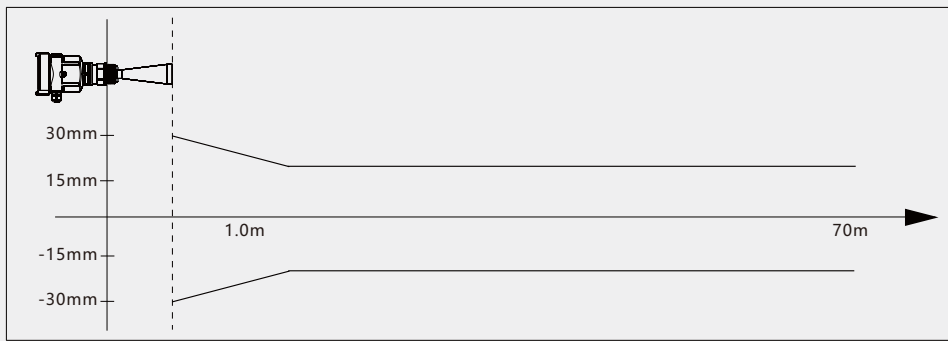
## PDG70-C



<b>3dB emission angle</b>	Depending on the antenna size, depending on the antenna size
<b>Flange DN50</b>	18°
<b>Flange DN80</b>	12°
<b>Flange DN100</b>	8°
<b>precision</b>	See the picture above

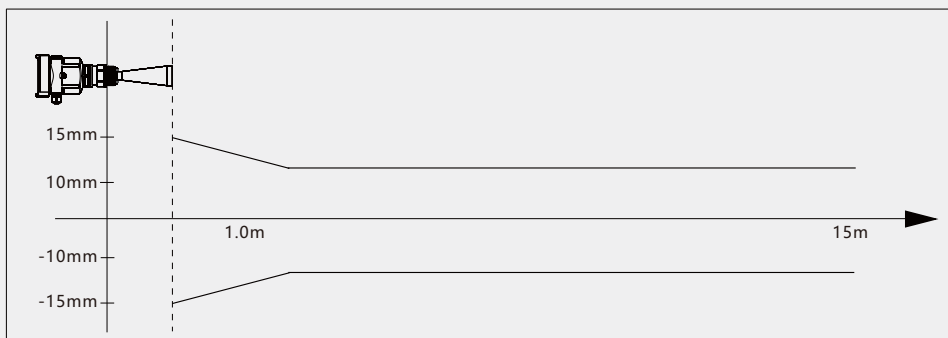


## PDG70-D



3dB Emission angle	Depending on the antenna size
Ø48mm	18°
Ø75mm	12°
Ø98mm	8°
Ø123mm	6°
Ø 198mm	5°
Ø 246mm	4°
Precision	See the picture above

## PDG70-E



3dB emission angle	Depending on the antenna size
Ø48mm	18°
Ø75mm	12°
Ø98mm	8°
Ø123mm	6°
Ø 198mm	5°
Ø 246mm	4°
precision	See the picture above

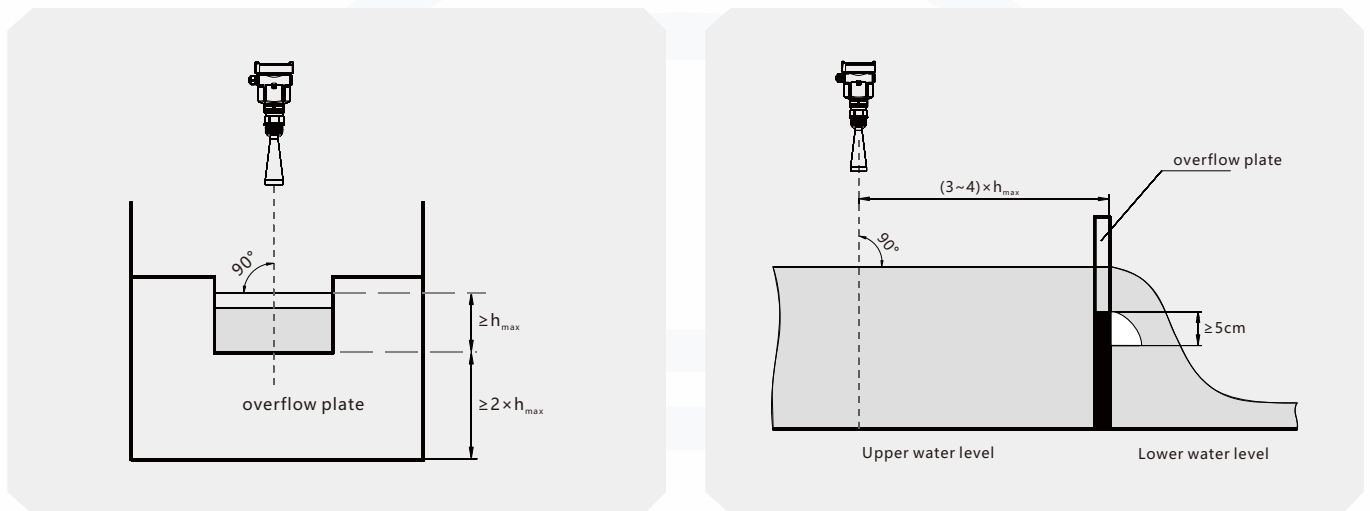
## Open channel flow

The level meter is used to measure the open channel flow.

According to the National Metrology Verification Regulation "Open Channel Weir and Trough Flowmeter (JJG-1990)" (hereinafter referred to as "the regulation"), all kinds of weirs and troughs specified in the regulation are placed in the open channel, and the liquid level in the weirs and troughs in the open channel is measured by the level gauge, so the liquid flow can be converted. (The diagram below shows the application of overflow plate.)

Radar level meter provides a nonlinear output mapping function. According to the corresponding relationship between liquid level and flow, users can use software to set up nonlinear output mapping, thus realizing the measurement of open channel flow.

The software gives the calculation of weir and trough specified in the regulations. After the user sets the corresponding parameters, the nonlinear mapping of the corresponding weir and trough can be calculated and transmitted to radar level meter for preservation.



## PDG70-A-Selection composition

 Selection examples **PDG70-A** **A** **G** **M** **E** **A** **G** **C** **Z**

1.Authentication	<b>A</b>	Standard type (non explosion-proof)
	<b>B</b>	Intrinsically safe type
	<b>C</b>	Flameproof type
2.Antenna type/ process temperature	<b>G</b>	(R-type) sealed horn 50/(-40~130) °C
	<b>H</b>	(R-type) sealed horn 80/(-40~130) °C
3.Flange connection	<b>L</b>	DN50
	<b>M</b>	DN65
	<b>N</b>	DN80
	<b>O</b>	DN100
	<b>P</b>	DN125
	<b>Q</b>	DN150
	<b>R</b>	DN200
	<b>T ( )</b>	特殊定制
3-1.Threaded connection	<b>M</b>	G1
	<b>P</b>	G1½
	<b>Q</b>	G2
	<b>R</b>	G3
	<b>S</b>	1NPT
	<b>Y</b>	1½NPT
	<b>A</b>	2NPT
	<b>V</b>	3NPT
	<b>T()</b>	Special customization
4.Materials	<b>E</b>	316L
	<b>F</b>	PTFE
5.output signal	<b>A</b>	(4~20) mA/HART two-wire system (single cavity)
	<b>B</b>	(4~20)mA/ (22.8~26.4)V DC /HART four-wire system (two cavities)
	<b>C</b>	(198~242)V AC/HART four-wire system (two cavities)
	<b>D</b>	(4~20)mA/(22.8~26.4)V DC /HART two-wire system (two cavities)
	<b>E</b>	(4~20)mA
	<b>F</b>	4~20mA+RS485
	<b>T ( )</b>	Other types
6.Enclosure/ protection level	<b>G</b>	Aluminum/IP67
	<b>H</b>	Plastic/IP66
	<b>I</b>	Antistatic PP/IP66
	<b>J</b>	Aluminum two cavities/IP67
	<b>K</b>	Stainless steel 316L/IP67
	<b>L</b>	Two-cavity stainless steel 316L/IP67
7.Electrical interface	<b>C</b>	M20*1.5
	<b>D</b>	1/2NPT
8.Field display/ programming	<b>Y</b>	Belt
	<b>Z</b>	Without

## Instructions:

Indicates that PDG70 high frequency radar level meter is standard type (non-explosion-proof type), antenna type/material process temperature (type R) sealed horn 50/ (-40~130)°C, flange connection DN65(3,3.1) binary choice, threaded connection G1, material 316L, Output signal (4~20) mA/HART two-wire system (single cavity), the housing material is aluminum, the protection grade is IP67, the electrical interface is M20\*1.5, without field display.



## PDG70-B-Selection composition

Selection example **PDG70-B**

1	A	2	G	3	A	4	F	5	S	6	A	7	G	8	X	9	B
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1.Authentication	<b>A</b>	Standard type (non -explosion -proof)	
	<b>B</b>	This type	
	<b>C</b>	Explosion -barrier	
2.Antenna type/material	<b>G</b>	(T-shaped) horn antenna φ 48mm/stainless steel 316L	
	<b>H</b>	(T-shaped) horn antenna φ 78mm/stainless steel 316L	
	<b>I</b>	(T-shaped) horn antenna φ 98m/stainless steel 316L	
	<b>J</b>	(T-shaped) horn antenna φ 98mm (extended)/stainless steel 316L	
	<b>K</b>	(T-shaped) horn antenna φ 123mm/stainless steel 316L	
	<b>L</b>	V-shaped horn antenna φ 98mm/stainless steel 316L/PFA430 cover	
	<b>M</b>	V-shaped horn antenna φ 98mm (extended)/stainless steel 316L/PFA430 cover	
	<b>N</b>	V-shaped horn antenna φ 123mm/stainless steel 316L/PFA430 cover	
	<b>T( )</b>	Other types	
3.Threaded connection (Flange connection is not selected)	<b>P</b>	G1	
	<b>Q</b>	G1½	
	<b>R</b>	G2	
	<b>S</b>	G3	
	<b>X</b>	1NPT	
	<b>U</b>	1½NPT	
	<b>V</b>	2NPT	
	<b>W</b>	3NPT	
	<b>T( )</b>	Other specifications	
3.1.Flange connection (Not selected for threaded connection)	<b>A</b>	DN50	
	<b>B</b>	DN65	
	<b>C</b>	DN80	
	<b>D</b>	DN100	
	<b>E</b>	DN125	
	<b>F</b>	DN150	
	<b>G</b>	DN200	
	<b>H</b>	DN250	
	<b>T( )</b>	Other specifications	
4.Material	<b>F</b>	316L	
	<b>V</b>	PP	
	<b>Z</b>	PTFE	

## PDG70-B-Selection composition

Selection example **PDG70-B**

1	A	2	G	3	A	4	F	5	S	6	A	7	G	8	X	9	B
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

5.Sealing/Process Temperature	<b>T</b>	Viton (-60~150)°C
	<b>U</b>	Kalrez (-60~250)°C
	<b>V</b>	Graphite (-60~400)°C
6.Output signal	<b>A</b>	(4-20) mA/HART two wire system (single cavity)
	<b>B</b>	(4-20) mA/(22.8~26.4) V DC/HART four wire system (two chamber)
	<b>C</b>	(198-242) V AC/HART four wire system (two chamber)
	<b>D</b>	(4-20) mA/(22.8-26.4) V DC/HART two wire system (two chamber)
	<b>T ( )</b>	Other types
7.Shell/protection level	<b>G</b>	Aluminum/IP67
	<b>H</b>	Plastic/IP66
	<b>I</b>	Anti static PP/IP66
	<b>J</b>	Aluminum two chamber/IP67
	<b>K</b>	Stainless steel 316L/IP67
	<b>L</b>	Two chamber stainless steel 316L/IP67
8.Electrical interface	<b>X</b>	M20×1.5
	<b>Y</b>	1/2NPT
9.On site display/programming	<b>A</b>	Belt
	<b>B</b>	Without

## Instructions:

Indicates that PDG70 high frequency radar level meter is standard type (non-explosion-proof type), antenna type/material (T type) horn antenna 48mm/ stainless steel 316L, flange connection DN50(3,3.1 choice), material PP, sealing/process temperature Viton (-60~150)°C, Output signal (4~20) mA/HART two-wire system (single cavity), the housing material is aluminum, the protection grade is IP67, the electrical interface is M20\*1.5, without field display.



## PDG70-C-Selection composition

Selection example **PDG70-C**

1	A	2	G	3	E	4	N	5	X	6	E	7	P
---	---	---	---	---	---	---	---	---	---	---	---	---	---

1.authentication	<b>A</b>	Standard type (non explosion-proof)
	<b>B</b>	Intrinsically safe type
	<b>C</b>	Flameproof type
2.Antenna type	<b>G</b>	(U) stainless steel composite PFA430
	<b>H</b>	(U) stainless steel composite PFA430
	<b>I</b>	(U) stainless steel composite PFA430
	<b>T ( )</b>	Other types
3.Flange connection	<b>E</b>	DN50
	<b>F</b>	DN80
	<b>R</b>	DN100
	<b>T ( )</b>	Other types
4.output signal	<b>N</b>	(4-20) mA/HART two wire system (single cavity)
	<b>O</b>	(4-20) mA/(22.8~26.4) V DC/HART four wire system (two chamber)
	<b>P</b>	(198-242) V AC/HART four wire system (two chamber)
	<b>Q</b>	(4-20) mA/(22.8-26.4) V DC/HART two wire system (two chamber)
	<b>T ( )</b>	Other types
5.Enclosure/ protection level	<b>X</b>	Aluminum/IP67
	<b>U</b>	Plastic/IP66
	<b>V</b>	Antistatic PP/IP66
	<b>W</b>	Aluminum two cavities/IP67
	<b>X</b>	Stainless steel 316L/IP67
	<b>Y</b>	Two-cavity stainless steel 316L/IP67
6.Electrical interface	<b>E</b>	M20×1.5
	<b>F</b>	1/2NPT
7.Field display/ programming	<b>O</b>	Belt
	<b>P</b>	Without

## Description:

Indicates that PDG70 high frequency radar level meter is standard type (non-explosion-proof type), antenna type/material is (U-type) stainless steel composite PFA430, flange connection DN50, output signal (4~20) mA/HART two-wire system (single cavity), housing material is aluminum, protection grade is IP67, electrical interface M20\*1.5, No live display.



## PDG70-D-Selection composition

Selection example **PDG70-D**

1	A	2	G	3	N	4	W	5	S	6	X	7	A	8	G	9	N	10	W
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	---

1.Authentication	<b>A</b>	Standard (non-explosion-proof)	
	<b>B</b>	Intrinsically safe type	
	<b>C</b>	Flameproof type	
2.Antenna type/ material	<b>G</b>	(T-shaped) horn antenna φ48mm/ stainless steel 316L	
	<b>H</b>	(T-shaped) horn antenna φ78mm/ stainless steel 316L	
	<b>I</b>	(T-shaped) horn antenna φ98mm/ stainless steel 316L	
	<b>J</b>	(T-shaped) horn antenna φ98mm (extended)/stainless steel 316L	
	<b>K</b>	(T) horn antenna φ123mm/ stainless steel 316L	
	<b>L</b>	(V type) Horn antenna φ98mm/ stainless steel 316L/PFA430 cover.	
	<b>M</b>	(V type) Horn antenna φ98mm (extended)/stainless steel 316L/PFA430 cover.	
	<b>N</b>	(V) Horn antenna φ123mm/ stainless steel 316L/PFA430 cover.	
	<b>O</b>	(W type) parabolic antenna φ198mm/ stainless steel 316L	
	<b>P</b>	(W type) Parabolic antenna φ246mm/ stainless steel 316L	
	<b>T ( )</b>	Other types	
3.Threaded connection (Flange connection is not selected)	<b>N</b>	G1	
	<b>O</b>	G1½	
	<b>P</b>	G2	
	<b>Q</b>	G3	
	<b>R</b>	1NPT	
	<b>S</b>	1½NPT	
	<b>T</b>	2NPT	
	<b>U</b>	3NPT	
	<b>T ( )</b>	Other specifications	
3.1.Flange connection/ (Threaded connection is not selected)	<b>X</b>	DN50	
	<b>Y</b>	DN65	
	<b>Z</b>	DN80	
	<b>A</b>	DN100	
	<b>B</b>	DN125	
	<b>C</b>	DN150	
	<b>D</b>	DN200	
	<b>E</b>	DN250	
<b>T ( )</b>	Other specifications		



## PDG70-D-Selection composition

Selection example PDG70-D

1	A	2	G	3	N	4	W	5	S	6	X	7	A	8	G	9	N	10	W
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	----	---

4.Material	X	304
	W	316L
	Y	PP
	Z	PTFE
5.Flange selection/ material	S	DN100/ Universal Joint-Stainless Steel
	T	DN125/ Universal Joint-Stainless Steel
	U	DN150/ Universal Joint-Stainless Steel
	V	DN200/ Universal Joint-Stainless Steel
	W	DN250/ Universal Joint-Stainless Steel
	T ( )	Other specifications
6.Sealing/process temperature	X	Viton (-60~150)°C
	Y	Kalrez (-60~250)°C
	Z	Graphite (-60~400)°C
7.Output signal	A	(4~20) mA/HART two-wire system (single cavity)
	B	(4~20)mA/ (22.8~26.4)V DC /HART four-wire system (two cavities)
	C	(198~242)V AC/HART four-wire system (two cavities)
	D	(4~20)mA/(22.8~26.4)V DC /HART two-wire system (two cavities)
	T ( )	Other types
8.Enclosure/ protection level	G	Aluminum/IP67
	H	Plastic/IP66
	I	Antistatic PP/IP66
	J	Aluminum two cavities/IP67
	K	Stainless steel 316L/IP67
	L	Two-cavity stainless steel 316L/IP67
9.Electrical interface	N	M20×1.5
	O	1/2NPT
10.Field display/ programming	V	Belt
	W	Without

## Instructions:

Indicates that PDG70 high frequency radar level meter is standard type (non-explosion-proof type), antenna type/material (T type) horn antenna 48mm/ stainless steel 316L, threaded connection is G1(3,3.1 binary option), material 316L, sealing/process temperature Viton (-60~150)°C, Output signal 4~20mA/HART two-wire system (single cavity), the housing material is aluminum, protection class is IP67, electrical interface M20\*1.5, without field display.



**PDG70-E-Selection composition**

Selection example **PDG70-E**



1.Authentication	<b>S</b>	Standard (non-explosion-proof)	
	<b>P</b>	Intrinsically safe type	
	<b>L</b>	Flameproof type	
2.Antenna type/ material	<b>A</b>	(T-shaped) horn antenna φ48mm/ stainless steel 316L	
	<b>B</b>	(T-shaped) horn antenna φ78mm/ stainless steel 316L	
	<b>C</b>	(T-shaped) horn antenna φ98mm/ stainless steel 316L	
	<b>D</b>	(T-shaped) horn antenna φ98mm (extended)/stainless steel 316L	
	<b>E</b>	(T) horn antenna φ123mm/ stainless steel 316L	
	<b>F</b>	(V type) Horn antenna φ98mm/ stainless steel 316L/PFA430 cover.	
	<b>G</b>	(V type) Horn antenna φ98mm (extended)/stainless steel 316L/PFA430 cover.	
	<b>H</b>	(V) Horn antenna φ123mm/ stainless steel 316L/PFA430 cover.	
	<b>I</b>	(W type) parabolic antenna φ198mm/ stainless steel 316L	
	<b>J</b>	(W type) Parabolic antenna φ246mm/ stainless steel 316L	
	<b>T ( )</b>	Other types	
3.Threaded connection (Flange connection is not selected)	<b>N</b>	G1	
	<b>O</b>	G1½	
	<b>P</b>	G2	
	<b>Q</b>	G3	
	<b>R</b>	1NPT	
	<b>S</b>	1½NPT	
	<b>V</b>	2NPT	
	<b>U</b>	3NPT	
	<b>T ( )</b>	Other specifications	
3.1.Flange connection (Threaded connection is not selected)	<b>A</b>	DN50	
	<b>B</b>	DN65	
	<b>C</b>	DN80	
	<b>D</b>	DN100	
	<b>E</b>	DN125	
	<b>F</b>	DN150	
	<b>G</b>	DN200	
	<b>H</b>	DN250	
<b>T ( )</b>	Other specifications		

## PDG70-E-Selection composition

Selection example **PDG70-E**

S	A	N	W	O	A	I	N	U	B
1	2	3	4	5	6	7	8	9	10

4.Material	X	304
	W	316L
	Y	PP
	Z	PTFE
5.Flange selection/ material	N	DN100/ Universal Joint-Stainless Steel
	O	DN125/ Universal Joint-Stainless Steel
	P	DN150/ Universal Joint-Stainless Steel
	Q	DN200/ Universal Joint-Stainless Steel
	R	DN250/ Universal Joint-Stainless Steel
	T ( )	Other specifications
6.Sealing/process temperature	A	Viton (-60~150)°C
	B	Kalrez (-60~250)°C
	C	Graphite (-60~400)°C
7.Output signal	H	4~20 mA
	I	4~20mA+HART
	J	4~20mA+Modbus
	K	4~20mA+RS485
	T ( )	Other types
8.Enclosure/ protection level	N	Aluminum/IP67
	O	Plastic/IP66
	P	Antistatic PP/IP66
	Q	Aluminum two cavities/IP67
	R	Stainless steel 316L/IP67
	S	Two-cavity stainless steel 316L/IP67
9.Electrical interface	U	M20×1.5
	Y	1/2NPT
	T ( )	Other
10.Field display/ programming	A	Belt
	B	Without

## Description:

Indicates that PDG70 high frequency radar level meter is standard type (non-explosion-proof type), antenna type/material (T type) horn antenna 48mm/ stainless steel 316L, threaded connection is G1, material 316L, flange selection/material DN100/ universal joint - stainless steel, sealed/process temperature Viton (-60~150)°C, Output signal 4~20mA/HART two-wire system (single cavity), the housing material is aluminum, protection class is IP67, electrical interface M20\*1.5, without field display.

## Product Certification

Compliance and approval; Rodwig flow meters meet key standards and certifications for process measurement technology; To ensure the highest reliability in such settings;

