

CATALOG

DHE Series Radar Level Meter



- Reliability: "ELL signal analysis technology" can reduce the impact of various false echoes to ensure high reliability of products.
- Safety: It is designed and produced based on IEC61508 standard to ensure high safety of products.
- Double Cavity Enclosure: It fully realizes the isolation of circuit cavity to ensure the safety of using electricity on-site.
- Lightning Protection: DHE G80 is equipped with built-in lightning surge protection to protect the instrument from lightning interference.
- High Precision: It adopts FMCW frequency modulation technology, and the product accuracy can reach ± 1 mm.
- Small Beam Angle: It adopts the beam angle of 3° technology, which greatly improves the anti-interference ability.
- Small Blind Zone: It adopts small blind zone technology which can reduce the blind zone to a minimum of 2 cm.
- Millimeter wavelength: It adopts millimeter wavelength technology, which has the ability to penetrate smoke, dust and fog, and is suitable for complex working conditions.
- Remote Debugging: G80 can be remotely debugged through the remote communication module.
- Super large range: The maximum measuring range of G80 is 120 m.
- High Temperature Resistance: G80 can measure the medium of which the temperature is less than or equal to 200°C .
- Multiple Output Modes: 4 to 20 mA, HART, Modbus.
- Super Small Antenna: G80 can be installed on the screw thread of which the size is greater than or equal to G1 1/2.
- Large Bandwidth: It adopts 5 GHz bandwidth technology to ensure product resolution to be 1mm and high signal-to-noise ratio.

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Product Overview

G80 FMCW Radar Level Meter

G80 is the latest product of the 5100 series, which is different from other radar level meters in the 5100 series. The G80 frequency can reach 80 GHz. The instrument emits a continuous radar signal through its lens antenna. The frequency of this signal will change like a sawtooth. The transmitted signal is reflected by the medium and received by the antenna as an echo signal. There is always a frequency difference between the received signal frequency and the current transmission frequency. The frequency difference is directly proportional to the material level in the container, and the accurate value of the level is calculated through a specific algorithm of the sensor. The G80 series operates with very low transmission power in the W-band range.



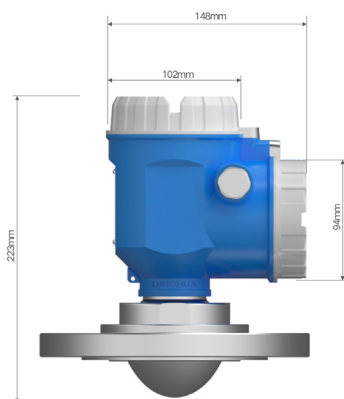
Main Parameters

- Antenna: Lens antenna
- Dielectric Constant: > 1.4
- Measurement Range: 0 to 120 m
- Process Connection: Thread/Flange
- Process Temperature: -40 to 200°C
- Process Pressure: -0.1 to 4.0 MPa
- Accuracy: ± 1 mm
- Output Signal: 4 to 20 mA, HART 7; Modbus RTU
- Display: LCD display
- Explosion-proof/Protection grade: Ex ia IIC T6 Ga/ IP66/IP68
- It has the ability to measure foam of certain thickness, and the thickness of foam is not more than 5 cm.
- Frequency: 80 GHz

Application

- Occasions with high measurement accuracy requirements.
- Improved measurement performance for complex systems with stirring inside the tank.
- Suitable for media with a low dielectric constant.

Outline Structure Drawings



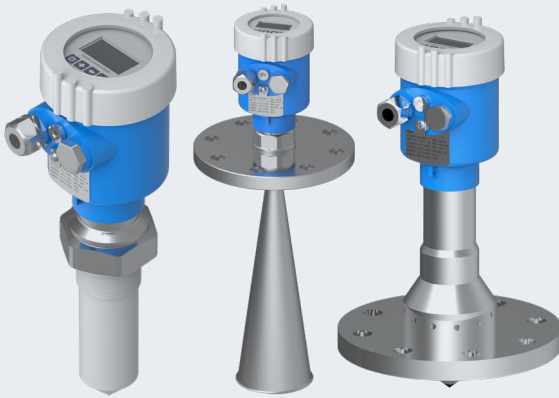
Model Code

G80 FMCW Radar Level Meter (Drip-off Antenna)

Model Type	Code	Description
Brand	DHE	A brand of DHE
Type	RD	Radar level meter
Series	5100	Non-contact radar level meter
Antenna type	8	80 GHz
Safety certification	S	SIL2
	N	None
Explosion-proof certification	E	Ex d ia IIC T6 Gb Ex tD A21 T80°C IP66/IP68
	I	Ex ia IIC T6 Ga Ex iaD 20 T80°C IP66/IP68
	N	Non explosion-proof
Sensor type	T	Lens antenna
	F	Anti-corrosion antenna
	C	Purge antenna
	Y	Special customization
Range	010	10 m
	020	20 m
	030	30 m
	060	60 m
	120	120 m
Process temperature	L	-40 to 85°C
	M	-40 to 150°C
	H	-40 to 200°C
	D	Customized (below -40°C or above 200°C)
Accuracy	1	±1 mm
	3	±3 mm
	5	±5 mm
Process connection	D	G1 1/2, stainless steel 316L
	J	G3 1/2, stainless steel 316L
	F	Flange connection (larger than DN50)
	Y	Special customization
Output method	I	4 to 20 mA
	H	4 to 20 mA, HART 7
	M	Modbus RTU communication protocol available
	X	Special customization
Power supply	D	DC24 V
	A	AC220 V
Lightning protection	I	Built-in
	E	External
	N	None
Wire system	T	Two-wire system
	F	Four-wire system
Display	X	None
	L	LCD
	F	LCD and split transmitter outfit display
Housing material	A	Cast aluminum alloy
	S	Stainless steel
Housing type	S	Single-compartment housing
	D	Dual-compartment housing
Electrical interface	M	M20 × 1.5
	G	G 1/2"
	N	NPT 1/2"
	Y	Special customization

Product Overview

Pulse Radar Level Meter (5100 Series)



The instrument emits extremely short microwave pulses through an antenna onto the measured medium, and the pulse signal is reflected off the surface of the medium and re received by the antenna. The running time from transmitting to receiving signals is proportional to the medium level inside the container. The DHE-RD-5100 series operates with very low transmission power in the K-band range.

Main Parameters

DHE-RD-5100-3

- Antenna: tetrafluoro rod antenna
- Dielectric constant: > 2.0
- Measurement range: 0 to 10 m
- Process connection: thread or flange
- Process temperature: -40 to 200°C
- Process pressure: -0.1 to 4.0 MPa
- Accuracy: ± 5 mm
- Output signal: 4 to 20 mA, HART 7; Modbus RTU
- Display: LCD display
- Explosion-proof/protection grade: Ex ia IIC T6 Ga/IP66/IP68
- It has the ability to measure foam of certain thickness, and the thickness of foam is not more than 5 cm.
- Frequency: 26 GHz

DHE-RD-5100-4

- Antenna: stainless steel horn antenna
- Dielectric constant: > 2.0
- Measurement range: 0 to 70 m
- Process connection: flange or universal flange
- Process temperature: -40 to 200°C
- Process pressure: -0.1 to 0.1 MPa or -0.1 to 4.0 MPa

DHE-RD-5100-5

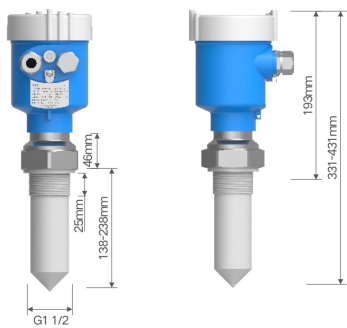
- Antenna: PTFE material panel antenna
- Dielectric constant: > 2.0
- Measurement range: 0 to 40 m
- Process connection: flange
- Process temperature: -40 to 200°C
- Process pressure: -0.1 to 4.0 MPa
- Accuracy: ± 5 mm
- Output signal: 4 to 20 mA, HART 7; Modbus RTU
- Display: LCD display
- Explosion-proof/protection grade: Ex ia IIC Ga/IP66/IP68
- It has the ability to measure foam of certain thickness, and the thickness of foam is not more than 5 cm.
- Frequency: 26 GHz

- Accuracy: ± 5 mm
- Output signal: 4 to 20 mA, HART 7; Modbus RTU
- Display: LCD display
- Explosion-proof/protection grade: Ex ia IIC Ga/IP66/IP68
- It has the ability to measure foam of certain thickness, and the thickness of foam is not more than 5 cm.
- Frequency: 26 GHz

Application

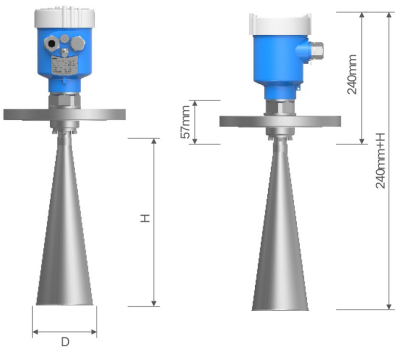
- Improved measurement performance for complex systems with internal tank stirring.
- Suitable for media with a low dielectric constant.
- Effective under harsh process conditions, such as high corrosiveness.
- Applicable in environments requiring hygienic or sterile conditions.

Outline Structure Drawings



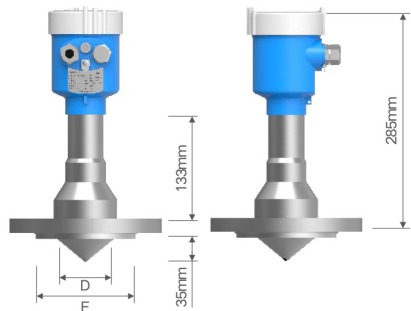
DHF-RD-5100-3

Thread Specifications	Antenna Diameter	Antenna Height
G1 1/2	Φ45	100
G1 1/2	Φ45	200



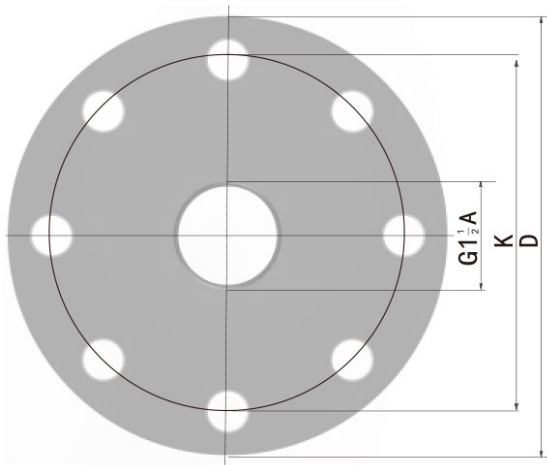
DHF-RD-5100-4

Thread Specifications	Antenna Diameter	Antenna Height
DN50	Φ46	140
DN80	Φ76	227
DN100	Φ96	288



DHF-RD-5100-5

Thread Specifications	Antenna Diameter	Sealing Surface Diameter F	Number of Holes and Aperture
DN50	Φ46	100	4×Φ18
DN65	Φ46	120	4×Φ18
DN80	Φ76	135	8×Φ18
DN100	Φ76	155	8×Φ18
DN125	Φ76	185	8×Φ18
DN150	Φ76	210	8×Φ18



Flange Specifications	Outer Diameter of Flange	Center Hole Distance K	Number of Holes N	Aperture L
DN50	Φ165	Φ125	4	18
DN80	Φ200	Φ160	8	18
DN100	Φ220	Φ180	8	18
DN125	Φ250	Φ210	8	18
DN150	Φ285	Φ240	8	22
DN200	Φ340	Φ295	12	22
DN250	Φ405	Φ355	12	26

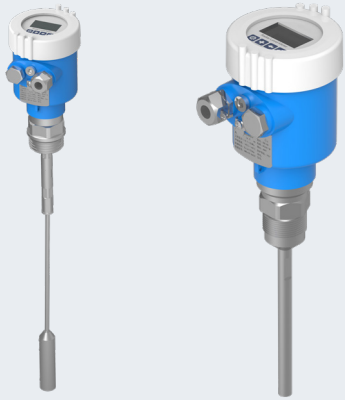
Model Code

Pulse Radar Level Meter (5100 Series Others)

Mode Type	Code	Description
Brand	DHE	A brand of DHE
Type	RD	Radar level meter
Series	5100	Non-contact radar level meter
Antenna type	3	Rod antenna
	4	horn antenna
	5	Panel antenna
Safety certification	S	SIL2
	N	None
Explosion-proof certification	E	Ex d ia IIC T6 Gb Ex tD A21 T80°C IP66/IP68
	I	Ex ia IIC T6 Ga Ex iaD 20 T80°C IP66/IP68
	N	No explosion proof
Sensor type	A1	Rod sensor/PTFE material
	A2	Rod sensor/PP material
	B1	Horn sensor Φ76
	B2	Horn sensor Φ96
	B3	Horn sensor Φ146
	C1	Panel sensor/PTFE material
	C2	Panel sensor/PP material
	D1	Parabolic sensor
	E1	Droplet sensor
Range	X	Specific value
Process temperature	M	-40 to 150°C
	H	-40 to 200°C
	Y	Special customization
Process connection	J	Thread connection
	F	Flange connection
	Y	Special customization
Output method	I	4 to 20 mA
	H	4 to 20 mA, HART 7
	M	Modbus RTU communication protocol available
	X	Special customization
Power supply	D	DC24 V
	A	AC220 V
Lightning protection	E	External
	N	None
Wire system	T	Two-wire system
	F	Four-wire system
Display	X	None
	L	LCD
	F	LCD and split transmitter outfit display
Housing material	A	Cast aluminum alloy
	S	Stainless steel
Housing type	S	Single-compartment housing
	D	Dual-compartment housing
Electrical interface	M	M20 × 1.5
	G	G 1/2"
	N	NPT 1/2"
	Y	Special customization

Product Overview

Guided Wave Radar Level Meter (4100 Series)



The instrument guides the microwave pulse downwards onto the measured medium through a waveguide rod, and some signals are re-lected back. The level is determined by measuring the time difference between signal transmission and reception.

Main Parameters

DHE-RD-4100-1

- Antenna: cable antenna
- Dielectric constant: > 1.2
- Measurement range: 0 to 30 m
- Process connection: thread/flange
- Process temperature: -40 to 500°C
- Process pressure: -0.1 to 20.0 MPa
- Accuracy: ± 3 mm
- Output signal: 4 to 20 mA, HART 7; Modbus RTU
- Display: LCD display
- Explosion-proof/protection grade: Ex ia IIC T6 Ga/IP66/IP68
- It has the ability to measure foam of certain thickness, and the thickness of foam is not more than 5 cm.
- Frequency: 1.8 GHz

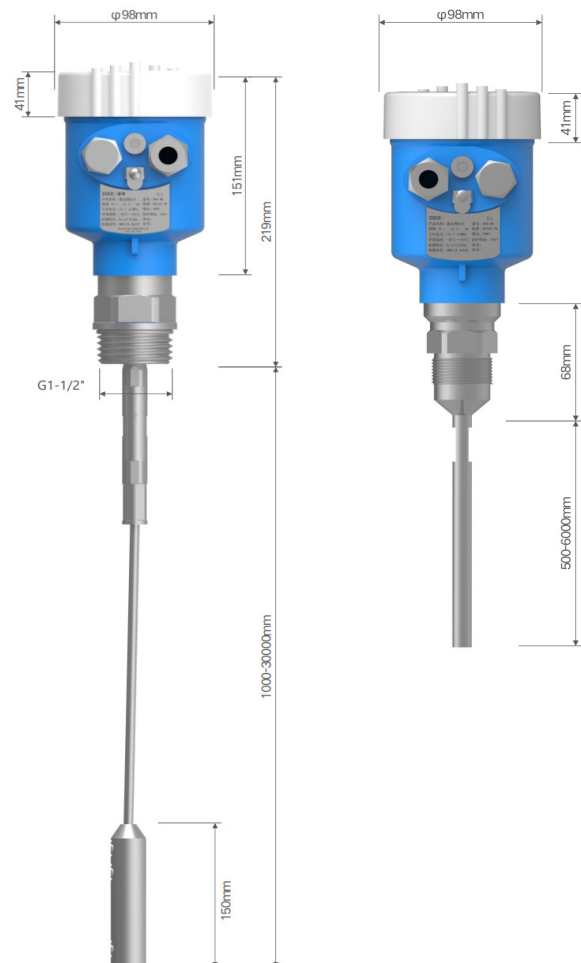
DHE-RD-4100-2

- Antenna: pole antenna
- Dielectric constant: > 1.2
- Measurement range: 0 to 6 m
- Process connection: thread/flange
- Process temperature: -40 to 500°C
- Process pressure: -0.1 to 20.0 MPa
- Accuracy: ± 3 mm
- Output signal: 4 to 20 mA, HART 7; Modbus RTU
- Display: LCD display
- Explosion-proof/protection grade: Ex ia IIC T6 Ga/IP66/IP68
- It has the ability to measure foam of certain thickness, and the thickness of foam is not more than 5 cm.
- Frequency: 1.8 GHz

Application

- Small range storage tanks.
- Applications involving steam, attachments, steam drums, and condensate water.
- Measurement of the water level in blast furnace drums.

Outline Structure Drawings



Model Code

Guided Wave Radar Level Meter (4100 Series)

Mode Type	Code	Description
Brand	DHE	A brand of DHE
Type	RD	Radar level meter
Series	4100	Contact radar level meter
Antenna type	1	Cable antenna
	2	Pole antenna
Safety certification	S	SIL2
	N	None
Explosion-proof certification	E	Ex d ia IIC T6 Gb Ex tD A21 T80°C IP66/IP68
	I	Ex ia IIC T6 Ga Ex iaD 20 T80°C IP66/IP68
	N	No explosion-proof
Sensor type	A1	Cable type sensor/stainless steel material
	A2	Cable type sensor/PTFE material
	B1	Pole type sensor/stainless steel material
	B2	Pole type sensor/tetrafluoro material
	C1	Coaxial-rod sensor/stainless steel material
	D1	Dual-cable sensor/stainless steel material
	D2	Dual-cable sensor/PTFE material
Range	X	Specific value
Process temperature	M	-40 to 150°C
	H	-40 to 200°C
	Y	Special customization
Process connection	J	Thread connection
	F	Flange connection
	Y	Special customization
Output method	I	4 to 20 mA
	H	4 to 20 mA, HART 7
	M	Modbus RTU communication protocol available
	X	Special customization
Power supply	D	DC24 V
	A	AC220 V
Lightning protection	I	Built-in
	E	External
	N	None
Wire system	T	Two-wire system
	F	Four-wire system
Display	X	None
	L	LCD
	F	LCD and split transmitter outfit display
Housing material	A	Cast aluminum alloy
	S	Stainless steel
Housing type	S	Single-compartment housing
	D	Dual-compartment housing
Electrical interface	M	M20 × 1.5
	G	G 1/2"
	N	NPT 1/2"
	Y	Special customization
Chamber	A	Need
	B	Unavailable

Certifications

Name	Description
NEPSI	NEPSI explosive-proof Ex db IIC T4...T6 Gb Application standard: GB/T 3836.1-2021, GB/T 3836.2-2021,GB/T 3836.31-2021
	NEPSI dust explosion prevention Ex tb IIIC T80°C...T130°C Db Application standard: GB/T 3836.1-2021, GB/T 3836.2-2021,GB/T 3836.31-2021
	NEPSI Intrinsically safe Ex ia IIC T4 Ga Application standard: GB/T 3836.1-2021, GB/T 3836.4-2021,GB/T 3836.20-2010
NACE	NACE Component & Brinell Hardness Application standard: NACE MR0175
	NACE Component & Vickers Hardness Application standard: NACE MR0175
	NACE Hydrogen-Induced Cracking (HIC) Application standard: NACE MR0175, NB/T 47010-2017
	NACE Sulfide Stress Corrosion Cracking (SSC) Application standard: NACE MR0175, NB/T 47010-2017
SIL	The measuring instrument can be used as a pressure monitoring system, up to SIL2
HART	Measurement system can meet HART7, equipment can be used with the certified equipment of other suppliers (interoperability)
Modbus	Modbus-RTU/RS485
CE	Certificate of Compliance, EN IEC 61326-1:2021, electromagnetic compatibility directive 2014/30/EU
ATEX	ATEX Exd, ATEX Exia
IEC Ex	IEC Exd, IEC Exia
PMI	PMI verification and certificate
EN	EN10204



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