

"Edge Technology —
Giving You the Edge
Over Others."

Instrumentation | Flow meters, Level, Temp & Pressure Sensors

Medge Controls by Mega Switchgears

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Wireless Radar Level Transmitter Datasheet



Product description

The MDGR80G 76–81 GHz FMCW radar level meters (also known as millimeter-wave radar) operate in a millimeter-wave frequency band, which is significantly higher than the Ku-band used in conventional radar systems. This higher frequency enables:

- **Long-distance imaging** for accurate level detection in large tanks and silos.
- **Multi-spectral imaging** for enhanced remote target detection.
- Superior performance in **challenging environments with strong smoke, dust, or vapor**.
- The ability to **detect smaller targets** than traditional microwave radar.
- **More precise positioning**, offering higher resolution and stronger reliability.

The device delivers a **maximum measuring range of 120 meters** with accuracy up to ± 1 mm, and it supports **both 2-wire and 4-wire configurations**, ensuring flexible integration into industrial applications across India and globally with full interface support.

Key Features

1. 76–81GHz FM wave radar

2. 5GHz ultra-large FM scanning frequency width, broad application
3. Supports standard HART, RS485/MODBUS protocols
4. Compatible with PC configuration software, tank-side meter, etc. operation modes
5. Powered by 24 VDC, with options for battery or solar panel supply.
6. Simple installation design

Applications

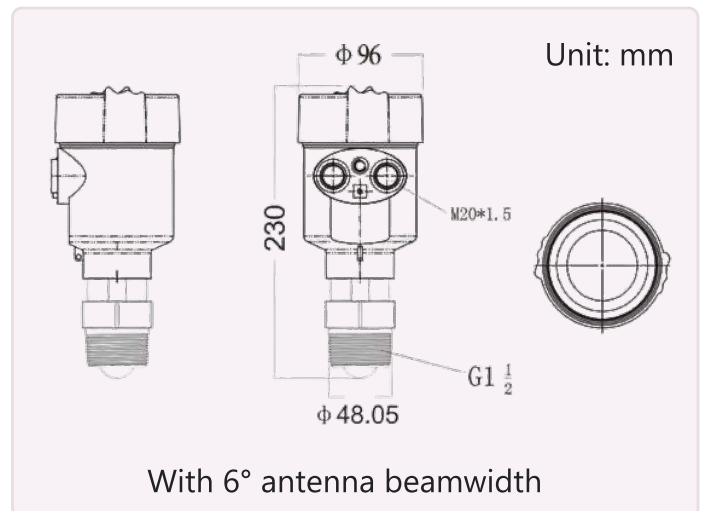
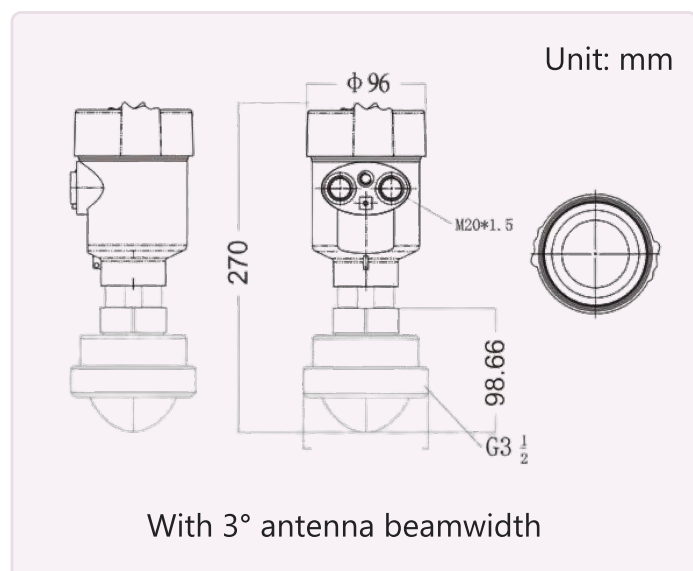
1. Electromagnetic wave emission angle $< 3^\circ$, suitable for narrow spaces or guided-wave pipeline measurements.
2. Long-range capability up to 120 m, ideal for large storage tanks.
3. Blind zone as low as 7–8 cm, suitable for small tanks.
4. Measurement accuracy up to ± 1 mm, ideal for precision monitoring.
5. It is equipped with advanced echo processing algorithms and extensive data for different working conditions, giving it distinct advantages in storage tank applications where other products struggle — including environments with heavy dust, steam, or special process tanks containing stirring mechanisms and heating rods.

Technical Specifications

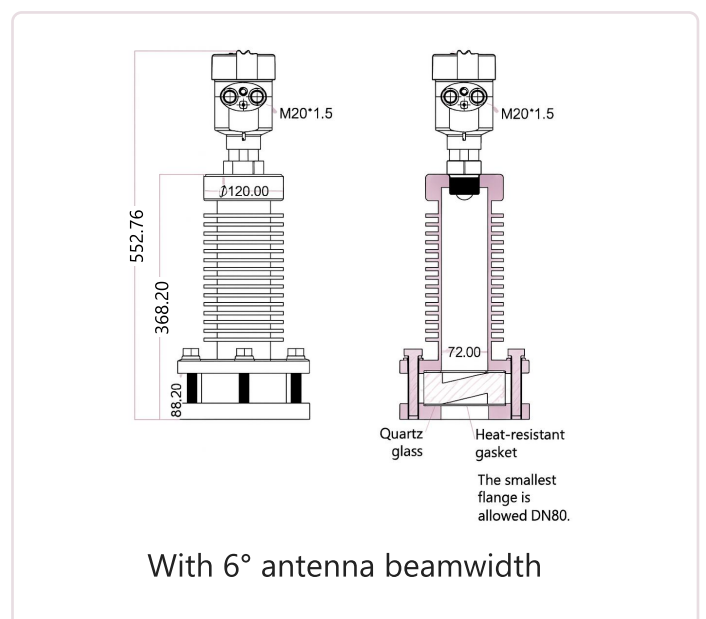
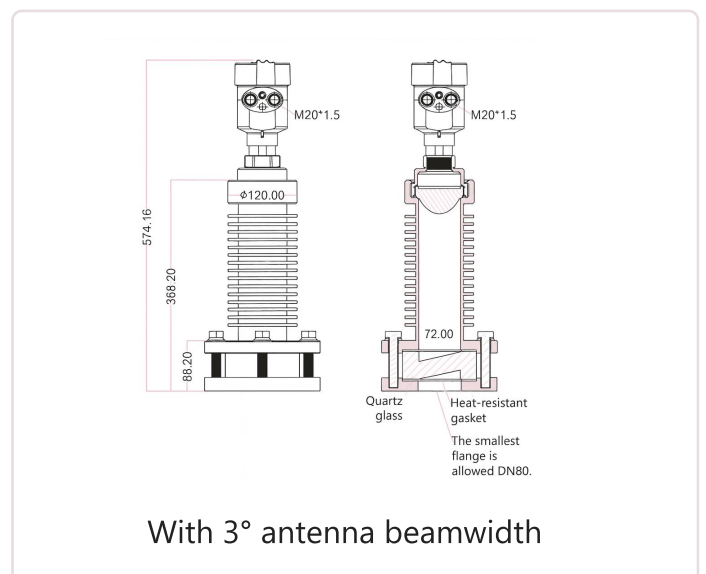
Frequency:	76–81 GHz (5 GHz FMCW bandwidth)
Measuring range:	0.3-60m(For solids) 0.08-30m(For liquids) 0.6m-120m (For solids & liquids)

Accuracy:	±1mm
Beam angle:	Beam angle 3°;6°
Dielectric constant range:	≥2
Power:	18-28Vdc; 220VAC; Battery; Solar panels
Communication:	MODBUS / Others
Signal output:	4G/ LoRa/ Others
Field operation/ programming:	128 × 64 dot matrix display / 4 buttons; PC software
Enclosure:	Aluminum alloy, stainless steel
Antenna type:	Lens antenna/anti-corrosive antenna / flange isolated by quartz
Process temperature/ Humidity:	-40~85 °C / ≤95% RH
Process pressure:	-0.1~2MPa
Product Size:	Ø100 * 270mm
Cable entry:	M20*1.5
Recommended cables:	AWG18 or 0.75mm ²
Protection class:	IP67
Installation method:	Thread or flange
Weight:	2.480Kg / 2.995Kg

Dimensions and Drawing



Dimensions of version with a high temperature flange:



Model Variants & Ordering Information

MDGR80G-A

Frequency:	76–81 GHz
Application:	Slightly corrosive liquids, stirring, vapor condensation
Range:	60 m
Signal Output:	4G / LoRa / Others
Process Connection:	Flange, Thread
Temperature:	-40°C to 120°C
Pressure:	-0.1 ~ 0.3 MPa
Accuracy:	±1 mm
IP Rating:	IP67
Explosion Proof:	Exib IIC T6 Gb
Shell:	Aluminum casting / Stainless Steel

MDGR80G-B

Frequency:	76–81 GHz
Application:	Strong dust, solids, blocks, powders
Range:	120 m
Signal Output:	4G / LoRa / Others
Process Connection:	Flange, Thread
Temperature:	-40°C to 120°C
Pressure:	-0.1 ~ 0.6 MPa
Accuracy:	±1 mm
IP Rating:	IP67
Explosion Proof:	Exib IIC T6 Gb
Shell:	Aluminum casting / Stainless Steel

MDGR80G-C

Frequency:	76–81 GHz
Application:	Slightly corrosive liquids with stirring/condensation
Range:	30 m
Signal Output:	4G / LoRa / Others
Process Connection:	Flange, Thread
Temperature:	-40°C to 120°C
Pressure:	-0.1 ~ 0.3 MPa
Accuracy:	±1 mm
IP Rating:	IP67
Explosion Proof:	Exib IIC T6 Gb
Shell:	Aluminum casting / Stainless Steel

MDGR80G-D

Frequency:	76–81 GHz
Application:	Strongly corrosive liquids, stirring, vapor condensation
Range:	60 m
Signal Output:	4G / LoRa / Others
Process Connection:	Flange, Thread
Temperature:	-40°C to 120°C
Pressure:	-0.1 ~ 0.5 MPa
Accuracy:	±1 mm
IP Rating:	IP67
Explosion Proof:	Exib IIC T6 Gb
Shell:	Aluminum casting / Stainless Steel

MDGR80G-E

Frequency:	76–81 GHz
Application:	High temperature environment, strong corrosive liquid, stirring, water vapor, condensation
Range:	30 m
Signal Output:	4~20mA/HART (two-wire/four- wire) RS485/Modbus
Process Connection:	Flange, Thread
Temperature:	-40°C to 220°C
Pressure:	-0.3 ~ 1.6 MPa
Accuracy:	±1 mm
IP Rating:	IP67
Explosion Proof:	Exib IIC T6 Gb
Shell:	Aluminum casting / Stainless Steel

MDGR80G-E

Frequency:	76–81 GHz
Application:	strong corrosive liquid, stirring, water vapor, condensation
Range:	30 m
Signal Output:	4–20 mA / HART (2-wire/4-wire), RS485 / Modbus
Process Connection:	Flange, Thread
Temperature:	-40 to 120°C
Pressure:	-0.1 ~ 1.6 MPa
Accuracy:	±1 mm
IP Rating:	IP67
Explosion Proof:	Exib IIC T6 Gb
Shell:	Aluminum casting / Stainless Steel