

Specification sheet

ROHEVEL-FRT5209

4 ... 20 mA/HART - 2wire

Radar sensor for continuous level measurement of solid



Application area

The ROHEVEL-FRT5209 is a radar sensor for continuous measurement of bulk solids under difficult process conditions. With swiveiling holder it is ideal for level measurement in large silos, large bunkers, stone crushers and large pile. The air purge design enables it to acquire accurate measurement under extremely dusty conditions.

Feature and benefit

■ IsoLens Technology

Isolated emitting and receiving signal enable full range measurement without dead zone.

■ EverCheck

Real time self-monitoring on voltage, current and chip. Output warning when abnormality present.

■ WavesMemo

Wave management concept. To help understand abnormal output, ROHEVEL-FRT stores wave automatically.

■ MultiTrack

Due to new MultiTrack wave tracking algorithm, ROHEVEL-FRT get highest reliability.

Function

The radar uses 80GHz Frequency Modulated Continuous Wave. The FMCW radar emits a high frequency signal whose frequency increases linearly during the measurement phase (called the frequency sweep). The signal is emitted, reflected from the measuring surface and received with a time delay, t . Delay time, $t=2d/c$, where d is the distance to the product surface and c is the speed of light in the gas above the product. For further signal processing the difference Δf is calculated from the actual transmit frequency and the receive frequency. The difference is directly proportional to the distance.

Technical data

Measuring range	0 ~ 120m
Response time	<2s
Resolution	1mm
Deviation	±3mm
Repeatability	±2mm
Frequency	80GHz
Beam angle	Min. 3°
Ambient temperature	-40°C ~ 70°C
Process temperature	-40°C ~ 200°C
Process pressure	-1.0 kgf/cm ² ~ 2kgf/cm ²

Material

The wetted parts of the instrument are made of 316L The process seal is made of PTFE or PEEK.

Housing versions

The housings are available as double chamber version in plastic, stainless steel or aluminium. They are available with protection ratings up to IP 67 (1 bar).

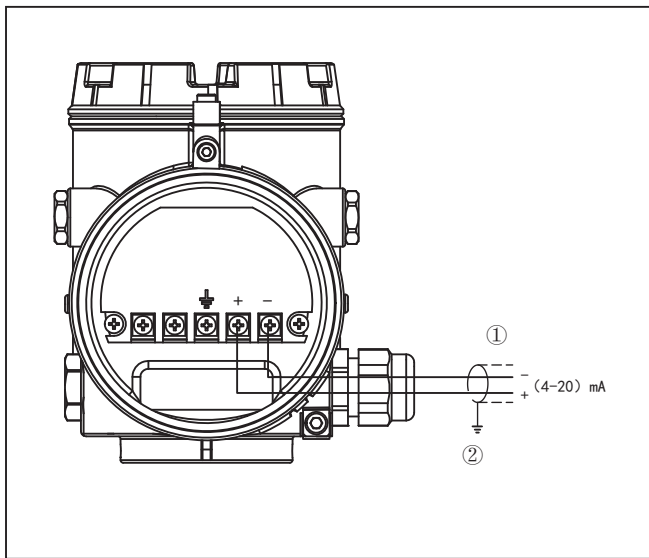
Electronic versions

The instruments are available in different electronics versions. 4 ... 20 mA/HART in two and four-wire version with 24VDC and four-wire with 220VAC.

Operation

The adjustment of the instrument is carried out via the Lcd display, Tank side display and Tank side hub.

Electrical connection

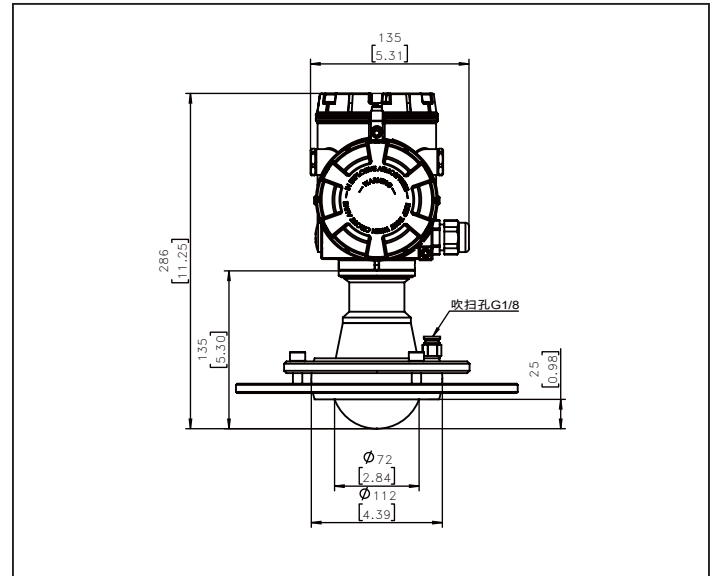


Electronics and terminal compartment, double chamber housing

1 Voltage supply/Signal output

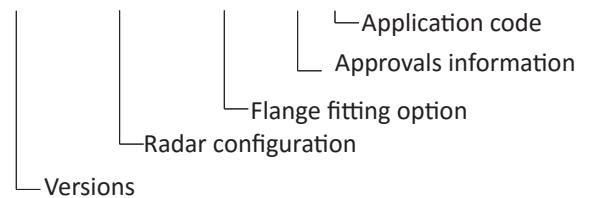
2 Ground terminal for connection of the cable screen

Dimensions



How to order

ROHEVEL-FRT5209-A2A03AAMF-3FB3AX-A-01B



Approval

- A None
- B Ex ia IIC T6 Ga
- C Ex d ia [ia Ga] IIC T6/T2 Gb
- D ATEX II 1/2G Ex ia IIC T6
- E ATEX II 1/2G Ex d (ia) IIC T6
- Z Special order

Radar configuration

A	2	A	03	A	A	M	F
Process fitting							
F Flange(Recommend PP flange according to application approval)							
C Special order							
Process pressure(kgf/cm²)							
L -1							
M 1							
A 3							
Z Special order							
Process temperature							
A FKM -40~80 C							
B FKM -40~130 C							
C FKM -40~200 C							
D EPDM -40~130 C							
E KALREZ 6375 -20~130 C							
F KALREZ 6375 -20~200 C							
Z Special order							
Air cleaning							
A Without							
B Without air cleaning							
Z Special order							
Antenna type							
03 Lens antenna with swiveling holder/316L+PTFE							
00 Special order							
Tank side display							
A None							
B Tank side display without power supply (RS485/50m)							
C Tank side display with 220V power supply (HART/1500m)							
Z Special order							
Supply/Communication							
2 24VDC-2wires/4-20mA HART							
3 24VDC-4wires/4-20mA HART							
4 220VAC-4wires/4-20mA HART							
0 Special order							
Housing material							
A Cast aluminium							
B Stainless steel							
Z Special order							

Flange fitting option

3	F	B	3	A	X
Counter flange					
X None					
A 304					
B 316L					
C Q235					
Z Special order					
Flange material					
A 304					
B 316L					
C Q235					
D PP					
E PTFE					
Z Special order					
Flange surface type					
2 Solid flange					
3 RF raised face flange					
4 FM male and female face flanges					
5 M male face flanges					
6 TG tongue and groove face flanges					
7 FF flat face flange					
8 RJ ring joint face flanges					
0 Special order					
Flange pressure level					
X Solid flange					
A PN2.5					
B PN10					
C PN16					
D PN25					
E PN40					
F Class150					
G Class300					
H Class600					
I Class900					
Z Special order					
Flange sizes					
A 2"(DN50)					
B 3"(DN80)					
C 4"(DN100)					
D 5"(DN125)					
E 6"(DN150)					
F 8"(DN200)					
G 10"(DN250)					
Z Special order					
Flange standard					
2 ANSI B16.5					
3 EN1092-1					
4 Solid special flange(8mm)					
5 GB/T9119-2010					
0 Special order					

Note: Flange is provided by local branches or distributors according to local flange standard.