Nagman Flow-Level Systems And Solutions LLP No. 168/7, Chennai-Bangalore National Highway, Chembarambakkam, Chennai-6000123, Tamilnadu, India
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Contact No : 044 66777052/53/54/55; 9791014273; 9841003788
Site : www.nagmanflow.com
Measuring Principle:

Antenna system to launch and microwave receiving energy is very low, very short pulse. Radar waves travel with the speed of light. The running time can be through the electronic components are converted into a signal. Measurement of this special time extension method can realize stable, accurate in a very short period of time.

Even if the condition is very complex, the presence of false echo, with the latest micro-processing technology and debugging software also can analyze the level echo accurately.

Microwave antenna to receive the reflected pulse and transmitted to the electronic circuit, a microprocessor to signal processing, to identify the micro pulse generated on the material surface echo. Echo recognition is completed by the pulse system, the accuracy can reach millimeter level. From the material surface distance between D and T pulse is proportional to the time travel:

\[ D = C \times \frac{T}{2} \]

Where C is the speed of light

Because of the air tank is a known distance E, L:

\[ L = E - D \]

By setting the empty tank height E (= zero), the full height of F (= full scale) and some application parameters, application parameters automatically makes the instrument to measure the environment. 4 - 20mA with a corresponding output.
Application:
6G radar level gauge is suitable for liquid, paste, granule and block material level and non-contact measurement, suitable for changes in temperature, pressure big; there is an inert gas and volatile.
The measurement method of microwave pulse, can work normally in the industrial frequency band range. The beam energy is low, can be installed on all kinds of metal, non-metallic container or pipe, no harm to human body and environment.

2. Product Introduction

● QTRD 801

Suitable for Medium: Liquid, slightly corrosive liquid
Explosion-proof Grade: Exia IIC T6 Ga/ Exd ia IIC T6 Ga
Measuring Range: 20m
Aerials: The Rod Antenna ( PP/PTFE )
Frequency: 6 GHz
Temperature: (-40 ~ 130) °C
Measurement Precision: ±10mm
Process Pressure: (-0.1 ~ 0.3) MPa
The signal Output: (4 ~ 20) mA/HART
The Scene Display: Four LCD
Power Source: Two-wire (DC24V)
Four-wire (DC24V/AC220V)
Repeatability: ±1mm
Shell: Aluminum
Connection: Flange (optional) / Thread

● QTRD 802

Suitable for Medium: Liquid, especially for corrosive liquid
Explosion-proof Grade: Exia IIC T6 Ga/ Exd ia IIC T6 Ga
Measuring Range: 20m
Aerials: The Rod Antenna (PTFE)
Frequency: 6 GHz
Temperature: (-40 ~ 180) °C
Measurement Precision: ±10mm
Process Pressure: (-0.1 ~ 4) MPa
The Signal Output: (4 ~ 20) mA/HART
The Scene Display: Four LCD
Power Source: Two-wire (DC24V)
Four-wire (DC24V/AC220V)
Repeatability: ±1mm
Shell: Aluminum
Connection: Flange (optional)
QTRD 803

Suitable for Medium: Liquid, especially with pressure and volatile liquid

Explosion-proof Grade: Exia IIIC T6 Ga/ Exd ia IIIC T6 Ga

Measuring range: 35m

Aerials: The Horn Antenna

Frequency: 6 GHz

Temperature: (-40 ~ 250) °C

Measurement Precision: ±10mm

QTRD 8

Measurement Precision: ±20mm

Process Pressure: (-0.1 ~ 0.1) MPa

The Signal Output: (4 ~ 20) mA/HART

The Scene Display: Four LCD

Power Source: Two-wire (DC24V)

Four-wire (DC24V/AC220V)

Repeatability: ±1mm

Shell: Aluminum

Connection: Cardan Flange (optional)
**QTRD 805**

Suitable for Medium: Liquid, especially suitable for low dielectric constant, sticky, with mixing liquid

Explosion-proof Grade: Exia IIC T6 Ga/ Exd ia IIC T6 Ga

Measuring Range: 30m

Aerials: The Horn Antenna

Frequency: 6GHz

Temperature: (-40 ~ 250) °C

Measurement Precision: ± 10mm

Process Pressure: (-0.1 ~ 4) MPa

The Signal Output: (4 ~ 20) mA/HART

The Scene Display: Four LCD

Power Source: Two-wire (DC24V)

Four-wire（DC24V/AC220V）

Repeatability: ± 1mm

Shell: Aluminum

Connection: Flange (optional)

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**QTRD 806**

Suitable for Medium: Solid, especially suitable for high temperature conditions

Explosion-proof Grade: Exia IIC T6 Ga/ Exd ia IIC T6 Ga

Measuring Range: 15m

Aerials: The Horn Antenna

Frequency: 6 GHz

Temperature: (-40 ~ 400) °C

Measurement Precision: ± 20mm

Process Pressure: (-0.1 ~ 0.1) MPa

The Signal Output: (4 ~ 20) mA/HART

The Scene Display: Four LCD

Power Source: Two-wire (DC24V)

Four-wire（DC24V/AC220V）

Repeatability: ± 1mm

Shell: Aluminum

Connection: Flange (optional)
Product Model Selection

- **QTRD801**

  **License**
  
  P  Standard (non-explosion-proof)
  I  Intrinsically safe (Exia IIC T6 Ga)
  G  Intrinsically safe type, flameproof [Exd (ia) IIC T6 Ga]

  **Antenna Type / Material / Temperature**
  
  SP Rod Antenna / PP / -40... 120 °C
  SF Rod Antenna / PTFE / -40... 120 °C

  **Process Connection**
  
  G  Thread G1½” A
  N  Thread 1½” NPT

  **Flange Matching / Material**
  
  DN80  FB (PTFE)  QB (Stainless Steel)
  DN100  FC (PTFE)  QC (Stainless Steel)
  F0  No Selected
  FX  Special Custom

  **Shielding Length**
  
  A  50mm B
  100mm C
  150mm D
  200mm
  E  250mm

  **Shell / Protection Grade**
  
  L  Aluminum/IP67
  Q  Stainless Steel 316L/IP67

  **Cable Line**
  
  M  M 20x1.5
  N  ½” NPT

  **Field Display**
  
  B  Belt
  X  Without

  **The Programmer**
  
  B  Belt
  X  Without
### QTRD802

#### License
- P Standard (non-explosion-proof)
- I Intrinsically safe (Exia IIC T6 Ga)
- G Intrinsically safe type, flameproof [Exd (ia) IIC T6 Ga]

#### Antenna Type / Material / Temperature
- SF rod antenna / PTEE /-40... 180 °C

#### Process Connection / Material
- FA DN50 PN16 C / PTFE flange & stainless steel 304
- FB DN80 PN16 C / PTFE flange & stainless steel 304
- FC DN100 PN16 C / PTFE flange & stainless steel 304
- FD DN150 PN16 C / PTFE flange & stainless steel 304

#### Shielding Length
- A 50mm
- B 100mm
- C 150mm
- D 200mm
- E 250mm

#### Process Temperature
1. Ordinary type (-40 ~ 120 °C)
2. High temperature (-40 ~ 180 °C)

#### Shell / Protection Class
- L Aluminum / IP67
- Q Stainless steel 316L/IP67

#### Cable Line
- M M 20x1.5
- N 1/2 "NPT

#### Field Display
- B Belt
- X Without

#### The programmer
- B Belt
- X Without

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QTRD803

**License**
- P Standard (non-explosion-proof)
- I Intrinsically safe (Ex ia IIC T6 Ga)
- G Intrinsically safe type, flameproof [Exd (ia) IIC T6 Ga]

**Process Connection/Material**
- G G1½” A Thread
- A DN50 PN16 C flange type / stainless steel 316L
- B DN80 PN16 C flange type / stainless steel 316L
- C DN100 PN16 C flange type / stainless steel 316L
- D DN150 PN16 C flange type / stainless steel 316L
- E DN200 PN16 C flange type / stainless steel 316L
- F DN250 PN16 C flange type / stainless steel 316L
- H Flange 2” 150LBS ANSI convex / stainless steel 316L
- I Flange 3” 150LBS ANSI convex / stainless steel 316L
- J Flange 4” 150LBS ANSI convex / stainless steel 316L
- K Flange 6” 150LBS ANSI convex / stainless steel 316L
- L Flange 8” 150LBS ANSI convex / stainless steel 316L
- M Flange 10” 150LBS ANSI convex / stainless steel 316L

**Antenna Type / Material**
- 1 No horn antenna, guided wave pipe installation / Stainless steel 316L
- 2 76mm horn antenna /316L stainless steel
- 3 96mm horn antenna /316L stainless steel
- 4 146mm horn antenna /316L stainless steel
- 5 196mm horn antenna /316L stainless steel
- 6 242mm horn antenna /316L stainless steel

**Seal / Process Temperature**
- 1 Ordinary type (-40 ~ 120) °C
- 2 High temperature (-40 ~ 250) °C

**Shell / Protection Class**
- L Aluminum /IP67
- Q Stainless steel 316L / IP67

**Cable Line**
- M M 20x1.5
- N ½” NPT

**Field Display**
- B Belt
- X Without

**The Programmer**
- B Belt
- X Without

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## QTRD804

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<td>G   Intrinsically safe type, flameproof [Exd (ia) IIC T6 Ga]</td>
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<table>
<thead>
<tr>
<th>Process Connection / Material</th>
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<tbody>
<tr>
<td>A   DN50 PN16 C flange type / stainless steel 316L</td>
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<tr>
<td>B   DN80 PN16 C flange type / stainless steel 316L</td>
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<tr>
<td>C   DN100 PN16 C flange type / stainless steel 316L</td>
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<tr>
<td>D   DN150 PN16 C flange type / stainless steel 316L</td>
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<tr>
<td>E   DN200 PN16 C flange type / stainless steel 316L</td>
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<tr>
<td>F   DN250 PN16 C flange type / stainless steel 316L</td>
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<tr>
<td>G   Flange 2&quot; 150LBS ANSI convex / stainless steel 316L</td>
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<tr>
<td>H   Flange 3&quot; 150LBS ANSI convex / stainless steel 316L</td>
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<tr>
<td>I   Flange 4&quot; 150LBS ANSI convex / stainless steel 316L</td>
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<td>J   Flange 6&quot; 150LBS ANSI convex / stainless steel 316L</td>
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<tr>
<td>5   196mm horn antenna /316L stainless steel</td>
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<td>6   242mm horn antenna /316L stainless steel</td>
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<th>Seal / Process Temperature</th>
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<tbody>
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<td>2   High temperature (-40 ~ 250) °C</td>
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<th>Shell / Protection Class</th>
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<tbody>
<tr>
<td>L   Aluminum /IP67</td>
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<tr>
<td>Q   Stainless steel 316L / IP67</td>
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<thead>
<tr>
<th>Cable Line</th>
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<tbody>
<tr>
<td>M   M 20x1.5</td>
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<td>N   ½” NPT</td>
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<th>Field Display</th>
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<tbody>
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<td>B   Belt</td>
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<td>X   Without</td>
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<tr>
<th>The Programmer</th>
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<tbody>
<tr>
<td>B   Belt</td>
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<tr>
<td>X   Without</td>
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## QTRD805

### License
- **P** Standard (non-explosion-proof)
- **I** Intrinsically safe (Exia IIC T6 Ga)
- **G** Intrinsically safe type, flameproof [Exd (ia) IIC T6 Ga]

### Process Connection / Material
- A DN50 PN16 C flange type / stainless steel 316L
- B DN80 PN16 C flange type / stainless steel 316L
- C DN100 PN16 C flange type / stainless steel 316L
- D DN150 PN16 C flange type / stainless steel 316L
- E DN200 PN16 C flange type / stainless steel 316L
- F DN250 PN16 C flange type / stainless steel 316L
- G Flange 2" 150LBS ANSI convex / stainless steel 316L
- H Flange 3" 150LBS ANSI convex / stainless steel 316L
- I Flange 4" 150LBS ANSI convex / stainless steel 316L
- J Flange 6" 150LBS ANSI convex / stainless steel 316L
- K Flange 8" 150LBS ANSI convex / stainless steel 316L
- L Flange 10" 150LBS ANSI convex / stainless steel 316L

### Antenna Type / Material
- 1 No horn antenna, guided wave pipe installation / Stainless steel 316L
- 2 76mm horn antenna /316L stainless steel
- 3 96mm horn antenna /316L stainless steel
- 4 146mm horn antenna /316L stainless steel
- 5 196mm horn antenna /316L stainless steel
- 6 242mm horn antenna /316L stainless steel

### Seal / Process Temperature
- 1 Ordinary type (-40 ~ 120) °C
- 2 High temperature (-40 ~ 250) °C

### Shell / Protection Class
- L Aluminum /IP67
- Q Stainless steel 316L / IP67

### Cable Line
- A M 20x1.5
- B ½" NPT

### Field Display
- B Belt
- X Without

### The Programmer
- B Belt
- X Without
### QTRD806

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<tr>
<td>M</td>
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<td>N</td>
<td>½&quot; NPT</td>
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<tr>
<td>X</td>
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