Data Sheet

Centurion
Dual Pulse Guided Radar

Interface Measurement

For more information, please visit >
www.hawkmeasure.com
Overview

Centurion Guided Wave Radar

Principle of Operation

Microwave pulses are transmitted along a probe to the product being measured. At the point where the pulse meets the product surface it is reflected by the product. The unit automatically calculates the distance to the pulse reflection using time of flight & time expansion. The intensity of the reflection depends on the dielectric constant of the product. The instrument measures the time between emission and reception of the signal which is proportional to the distance.

The unique patented HAWK Dual probe solution uses specially developed signal mapping techniques. The combination of HAWK’s hardware and software give an accurate and consistent output for interfaces level measurement.

Function

The HAWK range of Guided Radar products are ideal for the measurement of liquids, sludge, powders and granules to a range of 1.5m for level and interface. This technology is not affected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe.

Primary Areas of Application

- Chemicals
- Petrochemicals
- Cement
- Building Aggregates
- Energy
- Food & Beverages
- Oil & Gas
- Pharmaceutical
- Pulp & Paper
- Wastewater

Features

- Multiple Interface Measurement
- IECEx Ex d [ia] ia IIC T6 Gb Ga
- Up to 1.5m range
- Simple setup
- Auto-Calibration to any dielectric
- Adjustable Sensitivity
- Precise & continuous accuracy
- 2 wire loop
- 4-20mA, 4-20mA with HART
- Protection class IP66 (Nema 4X)
- Measures extremely low dielectric (1.6)
- Programmable fail safe mode
### Senator Guided Radar System

#### Model
- CGR2 2 wire Guided Radar

#### Communication
- X 4-20mA analog
- H 4-20mA with HART

#### Housing
- 1 Aluminium Gland Entry
  1 1/2" NPT Cable gland entry
  3 M20 x 1.5 Cable gland entry

#### Probe Type
- C35 Senator Interface Probe C35
- S 316L / Teflon

#### Mounting
- TN15 1.5" NPT Thread (316L) or standard flange mount²
- TB15 1.5" BSP Thread (316L)
- FLXX¹ Pre-Welded Flange (replace XX with 2 character Welded Flange Code)

#### Process O-ring seal
- B NBR

#### Process Temperature for probe
- 1 80°C

#### Process Pressure
- 1 5 bar
- 2 10 bar
- 3 20 bar
- 4 40 bar

#### Approval Standard
- XX Not Required
- 1D IECEx Ex d [ia] ia IIC T6 Gb Ga

#### Probe Length
- Specify in cm to the nearest 5cm (max 150cm)

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<table>
<thead>
<tr>
<th>Model</th>
<th>4-20mA Analog Communication</th>
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<tbody>
<tr>
<td>CGR2</td>
<td>X</td>
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<table>
<thead>
<tr>
<th>Flange Table (subject to change)</th>
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<tbody>
<tr>
<td>Accessory Code</td>
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<td>----------------</td>
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<tr>
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<tr>
<td>FLA-FA3-SS</td>
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<td>FLA-FA4-SS</td>
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</tbody>
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¹See Weld Code selection table.
²Order flange as separate line item using Accessory Code.

Standard flange has 1.5" NPT bore hole to match TN15 unit.
Specifications
Centurion Dual Pulse Guided Radar

Operating Voltage
• 14 – 28VDC (residual ripple no greater than 100mV)
• HART 24V @ 250 Ohms

Power Consumption
• <0.6W @ 24VDC

Analog Output
• 14V @ 0 Ohm
• 19V @ 250 Ohms
• 24V @ 500 Ohms

Communications*
• 4-20mA, 4-20mA with HART, GosHawk

Minimum Range
• 0.250m

Maximum Range
• 1.5m

Dielectric Range
• ≥ 1.6

Resolution
• Distance: 0.65mm
• Analog: 0.5uA
• Display: 1.0mm

Accuracy¹
• +/- 3mm

Sum of non linearity, non repeatability, hysteresis
• Analog +/- 0.02%

Repeatability
• +/- 2mm

Memory
• Non-Volatile (No backup battery required)
• >10 years data retention

Operating Temperature (Electronics)
• -20°C to +80°C (-28 to +176°F)

Process Pressure*
• -1 to 40 BAR

Process Temperature*
• -30°C to +150°C (-35ºF to +302ºF)

Display
• 4 line graphic display (128 x 64)

Approvals*
• IECEx Ex d [ia] ia II2T6 Gb Ga

Probe Physical Load
• Max lateral force on C35 probe:
  • 4 kN

Accuracy dielectric & material dependant

Hawk Measurement Systems
(Head Office)
15 - 17 Maurice Court
Nunawading VIC 3131, AUSTRALIA
Phone: +61 3 9873 4750
Fax: +61 3 9873 4538
info@hawk.com.au

For more information and global representatives: www.hawkmeasure.com

Represented by:

Hawk Measurement
96 Glenn Street
Lawrence, MA 01843, USA
Phone: +1 888 HAWKLEVEL (1-888-429-5538)
Phone: +1 978 304 3000
Fax: +1 978 304 1462
info@hawkmeasure.com

For more information and global representatives: www.hawkmeasure.com

Additional product warranty and application guarantees upon request.
Technical data subject to change without notice.