

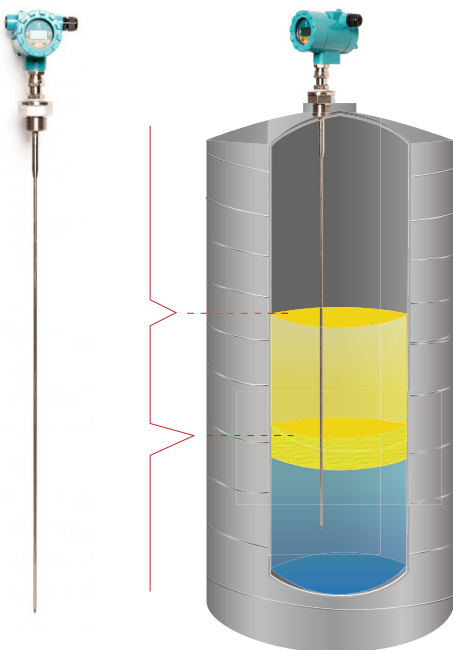
A Higher Level of Performance



Brochure

Centurion™ GWR Level Transmitter

Featuring Interface Level Measurement



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

Centurion™ Guided Wave Radar Level Transmitter



- » Interface level measurement
- » Auto-calibration
- » Overflow prevention
- » Precise and continuous measurement
- » No need to climb a tank to communicate with the Centurion™. Troubleshoot on the ground level with our smart interface software
- » Immune to pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe





Introduction

The Centurion™ Guided Wave Radar Level Transmitter (CGR) features a built-in digital display and a multi-phase interface level with RS485 Modbus output for easy to read, easy to integrate, real-time data in liquids, solids and slurry applications. The CGR is ideal for level measurement of liquids, solids, bulk materials, sludge, powders and granules. The CGR has a maximum measuring distance of 60ft. 8 in. (18.5m). The CGR technology is not affected by pressure, temperature, viscosity, vacuum, foam, dust, changes in dielectric constant or coating of the probe.

Principle of Operation

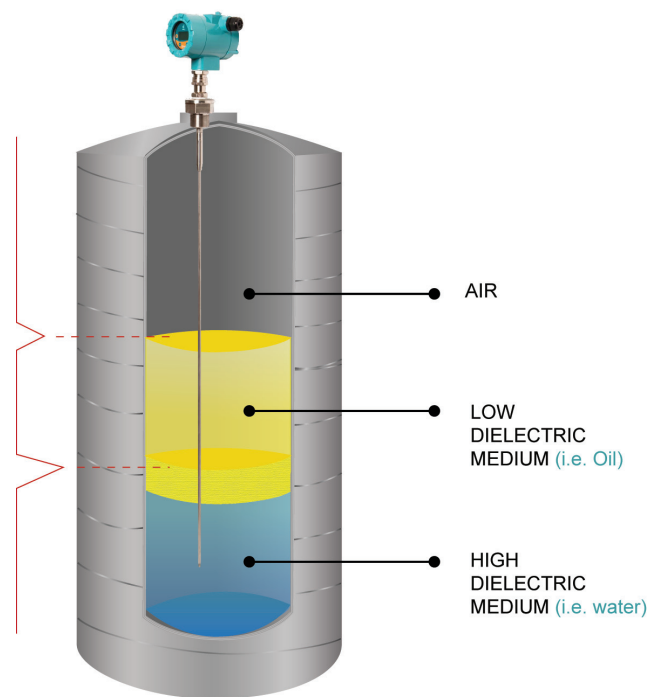
Guided-wave technology sends the radar pulse down a probe to measure either liquids, solids or a low dielectric to high dielectric Interface level.

The pulse hits the surface and / or Interface and is reflected back up the probe to the sensor, where the transit time is translated into a distance using time of flight and time expansion.

The amplitude of the reflection depends on the dielectric constant of the product.

What is interface level measurement?

An interface is a limit between two different types of liquids or media, due to its density difference (dielectric). The CGR has the ability to distinguish and accurately measure the different types of media in a tank. Regardless of process conditions such as foam, oil, emulsion, water and sand, the CGR has precise measurement capabilities.



Features & Benefits

- Hazardous rated for Gas & Dust with IECEx, FM Class 1 Div 1, CSA & ATEX Approvals
- Safety Rated to SIL2, SIL3 (multi channel)
- Interface Level measurement option
- Up to 60ft 8in (18.5m) range
- Very short minimum range ($\leq 150\text{mm}$, 6")
- Simple setup
- Auto-calibration to any dielectric ≥ 1.5
- Adjustable Sensitivity
- Precise & continuous measurement
- 2 wire loop
- Communications are Modbus, HART, and HawkLink Software
- Protection class IP66, NEMA 4x
- Measures extremely low dielectric (1.5)
- Programmable fail safe mode



Application Success Story

Hawk's Centurion Guided Radar (CGR) Has Success with Oil/Water Interface

Problem:

HAWK was recently invited to “put up and show” how our guided wave radar (GCR) could work in a real world environment for Oil & Water interface. An Oil & Gas Services company located in USA needed accurate measurement of oil level and accurate measurement of the salt water interface in a series of tanks to efficiently separate salt water from oil.

This customer has experienced quality problems and accuracy problems with other manufacturers of Guided Radar devices and they asked us to help. The problems experienced included inaccurate level readings, high level alarms, signal dropping out, slow response times and constant lack of support.

In addition, this customer was looking for MODBUS communication since this is how they setup their control scheme for the entire Horizontal Pumping Systems (HPS).

Solution

The challenge was for HAWK to prove our Centurion Guided Radar (GSR) system for level and interface measurement. In addition, HAWK had to develop a MODBUS version of the CGR since the only option was 2-Wire HART 7 version.

HAWK was able to install a CGR 2-Wire Hart device within 2 weeks to prove the ease of set-up and commissioning and a finished CGR MODBUS version within 6 weeks of the request. Oil level and Salt Water Level accuracy compared with hand dips done over a 3 day period with very good results and the customer's reaction was “WOW”.

These units have been installed with no special setup or adjustments needed...just the standard HAWK settings. The CGR installation had the same mounting as the competitors and the same conditions.

This customer has now ordered more than 40 CGR's and HAWK has become the standard level/interface device!





Specifications - HART Option

HART Type - 1.5" Threaded Units (mounting option TN15, TB15, Flanged)

Model

CGR2 Centurion Guided Radar 2 Wire

Communication

- H 4-20mA with HART
- I 4-20mA with HART and Interface Level
- L 4-20mA with HART and SIL2

Housing

- | | |
|--|---|
| 1 Aluminium, Dual Chamber, Epoxy Painted with viewing window | A Aluminium, Single Chamber, powder coated with viewing window ⁴ |
| 2 316L Stainless Steel, Dual Chamber with viewing window | B Aluminium, Single Chamber powder coated, no viewing window ⁴ |

Conduit / Cable Entry

- 1 1/2" NPT
- 3 M20 x 1.5

Probe Type

- | | |
|------------------------|---------------------------------|
| A08 8mm flexible cable | J08 Detached 8mm flexible cable |
| B08 8mm rigid probe | K08 Detached 8mm rigid probe |

Probe Variant / Materials

S 316L

Mounting

- TN15 1.5" NPT
- TB15 1.5" BSP
- FXXX¹ Flanged (no threaded connection) (replace XXX with 3 character Integrated Flange Code)

Process O-ring Seal / Process Temperature

- | | |
|--|---|
| V1 FKM (Viton) (-40°C to +80°C) (-40°F to +176°F) | VG As per V1 plus 90° Display Orientation |
| V3 FKM (Viton) (-40°C to +130°C) (-40°F to +266°F) | VI As per V3 plus 90° Display Orientation |
| B1 NBR (-40°C to +80°C) (-40°F to +176°F) | BG As per B1 plus 90° Display Orientation |
| E1 EPDM (-40°C to +80°C) (-40°F to +176°F) | EG As per E1 plus 90° Display Orientation |
| E3 EPDM (-40°C to +130°C) (-40°F to +266°F) | EI As per E3 plus 90° Display Orientation (Max. Process Pressure 6 bar) |
| S1 Silicone (-40°C to +80°C) (-40°F to +176°F) | SG As per S1 plus 90° Display Orientation |
| S3 Silicone (-40°C to +130°C) (-40°F to +266°F) | SI As per S3 plus 90° Display Orientation (Max. Process Pressure 6 bar) |

Process Pressure

- 1 6 bar (87 psig)
- 3 20 bar (290 psig)
- 4 40 bar (580 psig)

Approval Standard

- XX Not Required
- 1D IECEx Ex ia/db [ia Ga] IIC T6...T2 Ga/Gb
- 2D IECEx Ex ia tb [ia Da] IIIC T85°C...T250°C Da Db
- 1U FM XP Cl I, Div 1, Gp B-D with IS Probe Cl I, Div I, Gp A-D, T6...T2B, Ta = T* to 60°C; Cl. I Zone 0/1 AEx ia/db [ia Ga] IIC T6...T2 Ga/Gb
- 2U FM (USA) DIP-IS, Cl II, III, Div 1, Grp E, F and G, T6...T2B, Ta = T* to +60°C; Zone 20/21 AEx ia IIIC T85°C...T250°C Da; AEx tb IIIC T85°C Db, Ta = T* to +60°C
- GP FM/CSA General Purpose
- 1C CSA XP Cl I, Div 1, Gp B-D with IS Probe Cl I, Div I, Gp A-D, T6...T2B³
- 2C CSA Ex ia/db IIC T6...T2 Ga/Gb³
- 3C CSA DIP-IS, Class II, III, Division 1, Groups E, F and G, T6...T2B³
- 4C CSA Ex ia IIIC T85°C...T250°C Da; Ex tb IIIC T85°C Db³
- 1A ATEX II 1/2 G Ex ia/db IIC T6...T2 Ga/Gb
- 2A ATEX II 1/2 D Ex ia IIIC T85°C...T250°C Da / Ex tb IIIC T85°C Db
- 3A ATEX II 3G Ex ia/db IIC T6... T2 Gc Tamb -40°C to 60°C
- 6A ATEX II 3D Ex ia IIIC T85°C... T255°C Dc Tamb -40°C to 60°C, Ex tb IIIC T85°C Dc

Probe Length

Specify in cm

CGR2 H 1 3 B08 S TN15 B1 1 XX 200

Probe / Mounting Combination Table

Probe Code	Variant / Materials	Mounting	Flange Sizes ²		Max. Length
			Min. Size	Max size	
A08 / J08	S	TN15, TB15, FXXX	2", DN50, 50mm	4", DN100, 100mm	1850cm
B08 / K08	S	TN15, TB15, FXXX	2", DN50, 50mm	4", DN100, 100mm	400cm

¹See Integrated Flange selection in Flange Table.

²Hawk Supplied Flanges. End user can use any appropriate flange with suitable bore hole.

³NPT conduit / cable thread only

⁴Hazardous Approval 'XX, 6A' only

* Refer to Safety Instructions



Specifications - HART Option

Threaded Flanges

Model

FLA - Flange Size

- 1 1" or DN25 or 25mm
- H 1 1/2" or DN40 or 40mm
- 2 2" or DN50 or 50mm
- K 2 1/2" or DN65 or 65mm
- 3 3" or DN80 or 80mm
- L 3 1/2" (ANSI ONLY)
- 4 4" or DN100 or 100mm

Flange Type

- A1 ANSI B16.5 150LB FLANGE
- A3 ANSI B16.5 300LB FLANGE
- A6 ANSI B16.5 600LB FLANGE
- A9 ANSI B16.5 900LB FLANGE
- AA ANSI B16.5 1500LB FLANGE
- AB ANSI B16.5 2500LB FLANGE
- D6 DIN2527 PN6 FLANGE
- D0 DIN2527 PN10 FLANGE
- D1 DIN2527 PN16 FLANGE
- D2 DIN2527 PN25 FLANGE
- D4 DIN2527 PN40 FLANGE
- J5 JIS 5K FLANGE
- J0 JIS 10K FLANGE
- J1 JIS 16K FLANGE
- J2 JIS 20K FLANGE
- J4 JIS 40K FLANGE
- S1 AS 2129 Table D
- S2 AS 2129 Table E
- S3 AS 2129 Table F
- S4 AS 2129 Table H

-

Material

- SS SS316L

-

Thread Type

- TB07 3/4" BSP THDs
- TB10 1" BSP THDs
- TB15 1 1/2" BSP THDs
- TN07 3/4" NPT THDs
- TN10 1" NPT THDs
- TN15 1 1/2" NPT THDs

FLA - 2 A1 - SS - TB15

Integrated Flanges

Model

F Flange Size

- 1 1" or DN25 or 25mm
- H 1 1/2" or DN40 or 40mm
- 2 2" or DN50 or 50mm
- K 2 1/2" or DN65 or 65mm
- 3 3" or DN80 or 80mm
- L 3 1/2" (ANSI ONLY)
- 4 4" or DN100 or 100mm

Flange Type

- A1 ANSI B16.5 150LB FLANGE
- A3 ANSI B16.5 300LB FLANGE
- A6 ANSI B16.5 600LB FLANGE
- A9 ANSI B16.5 900LB FLANGE
- AA ANSI B16.5 1500LB FLANGE
- AB ANSI B16.5 2500LB FLANGE
- D6 DIN2527 PN6 FLANGE
- D0 DIN2527 PN10 FLANGE
- D1 DIN2527 PN16 FLANGE
- D2 DIN2527 PN25 FLANGE
- D4 DIN2527 PN40 FLANGE
- J5 JIS 5K FLANGE
- J0 JIS 10K FLANGE
- J1 JIS 16K FLANGE
- J2 JIS 20K FLANGE
- J4 JIS 40K FLANGE
- S1 AS 2129 Table D
- S2 AS 2129 Table E
- S3 AS 2129 Table F
- S4 AS 2129 Table H

F 2 D4



Part Number Configurator - HART option

HART Type - 3/4" & 1" Threaded Units (mounting option TN07, TB07, TN10, TB10, Flanged)

Model

CGR2 2 wire Centurion Guided Radar

Communication

- H 4-20mA with HART
- I 4-20mA with HART and Interface Level
- L 4-20mA with HART and SIL2

Housing

- | | |
|--|---|
| 1 Aluminium. Dual Chamber, epoxy painted with viewing window | A Aluminium, Single Chamber, powder coated with viewing window ⁴ |
| 2 316L stainless steel, Dual Chamber with viewing window | B Aluminium. Single Chamber, powder coated, no viewing window ⁴ |

Conduit / Cable Entry

- 1 1/2" NPT
- 3 M20 x 1.5

Probe Type

- A04 4mm flexible cable
- A06 6mm flexible cable
- B04 4mm rigid probe
- B06 6mm rigid probe
- J04 Detached 4mm flexible cable
- J06 Detached 6mm flexible cable
- K04 Detached 4mm rigid probe
- K06 Detached 6mm rigid probe

Probe Variant / Materials

- S 316L

Mounting

- TN07 3/4" NPT Thread (316L)
- TB07 3/4" BSP Thread (316L)
- TN10 1" NPT Thread (316L)
- TB10 1" BSP Thread (316L)
- FXXX¹ Integrated Flange (replace XXX with 3 character Integrated Flange Code)

Process O-ring Seal / Process Temperature

- | | | |
|------------------|--|-------------------|
| V1 FKM (Viton) | (-40°C to +80°C) | (-40°F to +176°F) |
| V4 FKM (Viton) | (-40°C to +150°C) | (-40°F to +302°F) |
| B1 NBR | (-40°C to +80°C) | (-40°F to +176°F) |
| E1 EPDM | (-40°C to +80°C) | (-40°F to +176°F) |
| E3 EPDM | (-40°C to +130°C) | (-40°F to +266°F) |
| M1 FFKM (Markez) | (-10°C to +80°C) | (+14°F to +176°F) |
| M4 FFKM (Markez) | (-10°C to +150°C) | (+14°F to +302°F) |
| M5 FFKM (Markez) | (-10°C to +200°C) | (+14°F to +392°F) |
| M6 FFKM (Markez) | (-5°C to +250°C) | (+23°F to +482°F) |
| S1 Silicone | (-40°C to +80°C) | (-40°F to +176°F) |
| VG | As per V1 plus 90° Display Orientation | |
| VJ | As per V4 plus 90° Display Orientation | |
| BG | As per B1 plus 90° Display Orientation | |
| EG | As per E1 plus 90° Display Orientation | |
| EI | As per E3 plus 90° Display Orientation | |
| MG | As per M1 plus 90° Display Orientation | |
| MJ | As per M4 plus 90° Display Orientation | |
| MK | As per M5 plus 90° Display Orientation | |
| ML | As per M6 plus 90° Display Orientation (Max Process Pressure 40 bar) | |
| SG | As per S1 plus 90° Display Orientation | |



Part Number Configurator - HART option

Process Pressure

- 1 6 bar
- 3 20 bar
- 4 40 bar
- 5 100 bar

Approval Standard

- XX Not Required
- 1D IECEx Ex ia/db [ia Ga] IIC T6...T2 Ga/Gb
- 2D IECEx Ex ia/tb [ia Da] IIIC T85°C...T250°C Da Db
- 1U FM XP CI I, Div 1, Gp B-D with IS Probe CI I, Div I, Gp A-D, T6...T2B, Ta = T* to 60°C;
CI. I Zone 0/1 AEx ia/db [ia Ga] IIC T6...T2 Ga/Gb
- 2U FM DIP-IS, CI II, III, Div 1, Grp E, F and G, T6...T2B, Ta = T* to +60°C;
Zone 20/21 AEx ia IIIC T85°C...T250°C Da; AEx tb IIIC T85°C Db, Ta = T* to +60°C
- GP FM/CSA General Purpose
- 1C CSA XP CI I, Div 1, Gp B-D with IS Probe CI I, Div I, Gp A-D, T6...T2B
- 2C CSA Ex ia/db IIC T6...T2 Ga/Gb³
- 3C CSA DIP-IS, Class II, III, Division 1, Groups E, F and G, T6...T2B
- 4C CSA Ex ia IIIC T85°C...T250°C Da; Ex tb IIIC T85°C Db
- 1A ATEX II 1/2 G Ex ia/db IIC T6...T2 Ga/Gb
- 2A ATEX II 1/2 D Ex ia IIIC T85°C...T250°C Da / Ex tb IIIC T85°C Db
- 3A ATEX II 3G Ex ia/db IIC T6...T2 Gc Tamb -40°C to 60°C
- 6A ATEX II 3D Ex ia IIIC T85°C...T250°C Dc Tamb -40°C to 60°C, Ex tb IIIC T85°C Dc

Probe Length

Specify in cm

H 1 3 B04 S TN10 B1 1 XX 200

Probe / Mounting Combination Table

Probe Code	Variant / Materials	Mounting	Flange Sizes ²		Max. Length
			Min. Size	Max size	
A04 / J04	S	TN07, TB07, FXXX	1", DN25, 25mm	4", DN100, 100mm	1850cm
A06 / J06	S	TN10, TB10	2", DN50, 50mm	4", DN100, 100mm	1850cm
B04 / K04	S	TN07, TB07, FXXX	1", DN25, 25mm	4", DN100, 100mm	400cm
B06 / K06	S	TN10, TB10	2", DN50, 50mm	4", DN100, 100mm	400cm

¹See Integrated selection in Flange Table.

²Hawk Supplied Flanges. End user can use any appropriate flange with suitable bore hole.

³NPT conduit / cable thread only

⁴Hazardous Approval 'XX, 6A' only

* Refer to Safety Instructions



Part Number Configurator - HART option

HART Type - 1.5" Threaded Units (mounting option TN15, TB15, Flanged)

Model

CGR2 Centurion Guided Radar 2 Wire

Communication

- H 4-20mA with HART
- I 4-20mA with HART and Interface Level
- L 4-20mA with HART and SIL2

Housing

- 1 Aluminium, Dual Chamber, Epoxy Painted with viewing window
- 2 316L Stainless Steel, Dual Chamber with viewing window
- A Aluminium, Single Chamber, powder coated with viewing window⁴
- B Aluminium, Single Chamber powder coated, no viewing window⁴

Conduit / Cable Entry

- 1 1/2" NPT
- 3 M20 x 1.5

Probe Type

- A08 8mm flexible cable
- B08 8mm rigid probe
- J08 Detached 8mm flexible cable
- K08 Detached 8mm rigid probe

Probe Variant / Materials

- S 316L

Mounting

- TN15 1.5" NPT
- TB15 1.5" BSP
- FXXX¹ Flanged (no threaded connection) (replace XXX with 3 character Integrated Flange Code)

Process O-ring Seal / Process Temperature

- V1 FKM (Viton) (-40°C to +80°C) (-40°F to +176°F) VG As per V1 plus 90° Display Orientation
- V3 FKM (Viton) (-40°C to +130°C) (-40°F to +266°F) VI As per V3 plus 90° Display Orientation
- B1 NBR (-40°C to +80°C) (-40°F to +176°F) BG As per B1 plus 90° Display Orientation
- E1 EPDM (-40°C to +80°C) (-40°F to +176°F) EG As per E1 plus 90° Display Orientation
- E3 EPDM (-40°C to +130°C) (-40°F to +266°F) EI As per E3 plus 90° Display Orientation (Max. Process Pressure 6 bar)
- S1 Silicone (-40°C to +80°C) (-40°F to +176°F) SG As per S1 plus 90° Display Orientation
- S3 Silicone (-40°C to +130°C) (-40°F to +266°F) SI As per S3 plus 90° Display Orientation (Max. Process Pressure 6 bar)

Process Pressure

- 1 6 bar (87 psig)
- 3 20 bar (290 psig)
- 4 40 bar (580 psig)

Approval Standard

- XX Not Required
- 1D IECEx Ex ia/db [ia Ga] IIC T6...T2 Ga/Gb
- 2D IECEx Ex ia tb [ia Da] IIIC T85°C...T250°C Da Db
- 1U FM XP CI I, Div 1, Gp B-D with IS Probe CI I, Div I, Gp A-D, T6...T2B, Ta = T* to 60°C; Cl. I Zone 0/1 AEx ia/db [ia Ga] IIC T6...T2 Ga/Gb
- 2U FM (USA) DIP-IS, CI II, III, Div 1, Grp E, F and G, T6...T2B, Ta = T* to +60°C; Zone 20/21 AEx ia IIIC T85°C...T250°C Da; AEx tb IIIC T85°C Db, Ta = T* to +60°C
- GP FM/CSA General Purpose
- 1C CSA XP CI I, Div 1, Gp B-D with IS Probe CI I, Div I, Gp A-D, T6...T2B³
- 2C CSA Ex ia/db IIC T6...T2 Ga/Gb3
- 3C CSA DIP-IS, Class II, III, Division 1, Groups E, F and G, T6...T2B³
- 4C CSA Ex ia IIIC T85°C...T250°C Da; Ex tb IIIC T85°C Db³
- 1A ATEX II 1/2 G Ex ia/db IIC T6...T2 Ga/Gb
- 2A ATEX II 1/2 D Ex ia IIIC T85°C...T250°C Da / Ex tb IIIC T85°C Db
- 3A ATEX II 3G Ex ia/db IIC T6... T2 Gc Tamb -40°C to 60°C
- 6A ATEX II 3D Ex ia IIIC T85°C... T255°C Dc Tamb -40°C to 60°C, Ex tb IIIC T85°C Dc

Probe Length

Specify in cm

CGR2 H 1 3 B08 S TN15 B1 1 XX 200

Probe / Mounting Combination Table

Probe Code	Variant / Materials	Mounting	Flange Sizes ²		Max. Length
			Min. Size	Max size	
A08 / J08	S	TN15, TB15, FXXX	2", DN50, 50mm	4", DN100, 100mm	1850cm
B08 / K08	S	TN15, TB15, FXXX	2", DN50, 50mm	4", DN100, 100mm	400cm

¹See Integrated Flange selection in Flange Table.

²Hawk Supplied Flanges. End user can use any appropriate flange with suitable bore hole.

³NPT conduit / cable thread only

⁴Hazardous Approval 'XX, 6A' only

* Refer to Safety Instructions



Specifications - Modbus Option

Electronics

Power

- 24VDC (14 to 28VDC)

Power Consumption

- <500mW @ 24VDC

Communications

- Modbus
- GoshawkII via Modbus

Maximum Range

- Flexible cable probe: 18.5m (60ft 8in)
- Rigid probe: 4m (13ft 1in)

Minimum Range (Blanking)

- 150mm

Dielectric Range

- ≥ 1.5

Frequency

- 2.2 GHz

Resolution

- Analog: 1uA
- Display: 1.0mm

Accuracy¹

- +/- 3mm

Measurements per second

- 3

Response Time

- <1 second (application dependant)

Sum of non linearity, non repeatability, hysteresis

- Analog +/- 0.02%

Repeatability

- +/- 3mm

Memory

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

Operating Temperature (Electronics)

- -40°C to +80°C (-40°F to +176°F)

Display

- 4 line graphic display (128 x 64 pixels)

Language

- English

Configuration

- 4 button (up down, Cal, Run), GoshawkII via HART

Electromagnetic Compatibility



CAN ICES-3(A)/NMB-3(A)

This device complies with Part 15, Subpart B Class A of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

*Specifications model dependent. Consult part number listing.

¹Accuracy dielectric & material dependent

**Process O-ring seal / Process Temperature dependent



Specifications - Modbus Option

Enclosure

Type

- Dual Compartment with Glass window

Material

- Die-cast Copper-Free Aluminium, Epoxy Painted
- 316L Stainless

Cable Entries

- 1/2" NPT
- 3/4" NPT
- M20 x 1.5
- M25 x 1.5

IP Rating

- NEMA 4X
- IP66

Probe

Probe Size

- 4mm SS316L rod
- 4mm DIN3055 (7x7 strand) SS316L flexible cable
- 6mm SS316L rod
- 6mm DIN3055 (7x7 strand) SS316L flexible cable
- 8mm SS316L rod
- 8mm DIN3055 (7x7 strand) SS316L flexible cable

Wetted Materials²

- TN07 / TB07 / TN10 / TB10 / Welded Flange¹ SS316L, PEEK
- TN15 / TB15 / Welded Flange¹ - SS316L, PTFE, GF25

¹ See Probe / Mounting Combination Table for flange types

Probe O-Ring Seals / Process Temperature*

- | | | |
|-----------------|-----------------|-------------------|
| • FKM (Viton) | -40°C to +150°C | (-40°F to +302°F) |
| • EPDM | -40°C to +130°C | (-40°F to +266°F) |
| • FFKM (Markez) | -10°C to +200°C | (+14°F to +392°F) |
| • FFKM (Markez) | -5°C to +250°C | (+23°F to +482°F) |
| • Silicone | -40°C to +80°C | (-40°F to +176°F) |
| • Silicone | -40°C to +130°C | (-40°F to +266°F) |
| • NBR | -40°C to +80°C | (-40°F to +176°F) |

Process Connections

- | | | |
|-------------------|----------|------------|
| • 3/4" NPT | • 1" NPT | • 1.5" NPT |
| • 3/4" BSP | • 1" BSP | • 1.5" BSP |
| • Threaded Flange | | |
| • Welded Flange | | |

Process Pressure*

- -1 to 100 BAR

Tensile Load (flexible cable probes)

- | | |
|-------------------------|---------|
| • Probe Type: A04 / J04 | 0.5 ton |
| • Probe Type: A06 / J06 | 1.0 ton |
| • Probe Type: A08 / J08 | 4.0 ton |

Lateral Load (rigid probes)

- | | |
|-------------------------|------|
| • Probe Type: B04 / K04 | 1 Nm |
| • Probe Type: B06 / K06 | 3 Nm |
| • Probe Type: B08 / K08 | 8 Nm |

Probe Length

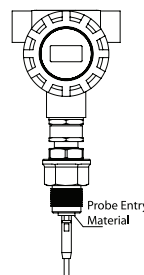
Max

Min

- | | | |
|-------------------------|--------|-------|
| • Probe Type: A04 / J04 | 1850cm | 100cm |
| • Probe Type: A06 / J06 | 1850cm | 100cm |
| • Probe Type: A08 / J08 | 1850cm | 100cm |
| • Probe Type: B04 / K04 | 400cm | 20cm |
| • Probe Type: B06 / K06 | 400cm | 20cm |
| • Probe Type: B08 / K08 | 400cm | 20cm |

*Specifications model dependent. Consult part number listing.

² PEEK or PTFE/GF25 probe entry





Part Number Configurator - Modbus option

3/4" & 1" Threaded Units (mounting option TN07, TB07, TN10, TB10)

Model

CGR2 2 wire Centurion Guided Radar

Communication

W Modbus with Interface Level Measurement

Housing

- 1 Aluminium, Epoxy Painted
- 2 316L Stainless Steel

Gland Entry

- 1 1/2" NPT Cable gland entry
- 2 3/4" NPT Cable gland entry
- 3 M20 x 1.5 Cable gland entry
- 4 M25 x 1.5 Cable gland entry

Probe Type

- A04 4mm flexible cable
- A06 6mm flexible cable
- B04 4mm rigid probe
- B06 6mm rigid probe
- J04 Detached 4mm flexible cable
- J06 Detached 6mm flexible cable
- K04 Detached 4mm rigid probe
- K06 Detached 6mm rigid probe

Probe variant / materials

S 316L

Mounting

- TN07 3/4" NPT Thread (316L)
- TB07 3/4" BSP Thread (316L)
- TN10 1" NPT Thread (316L)
- TB10 1" BSP Thread (316L)
- FXXX¹ Pre-Welded Flange (replace XXX with 3 character Welded Flange Code)

Process O-ring seal / Process Temperature

- | | | | |
|----|---------------|-------------------|---|
| V1 | FKM (Viton) | (-40°C to +80°C) | (-40°F to +176°F) |
| V4 | FKM (Viton) | (-40°C to +150°C) | (-40°F to +302°F) |
| B1 | NBR | (-40°C to +80°C) | (-40°F to +176°F) |
| E1 | EPDM | (-40°C to +80°C) | (-40°F to +176°F) |
| E3 | EPDM | (-40°C to +130°C) | (-40°F to +266°F) |
| M1 | FFKM (Markez) | (-10°C to +80°C) | (+14°F to +176°F) |
| M4 | FFKM (Markez) | (-10°C to +150°C) | (+14°F to +302°F) |
| M5 | FFKM (Markez) | (-10°C to +200°C) | (+14°F to +392°F) |
| M6 | FFKM (Markez) | (-5°C to +250°C) | (+23°F to +482°F) (Max Process Pressure 40 bar) |
| S1 | Silicone | (-40°C to +80°C) | (-40°F to +176°F) |

Process Pressure

- 1 6 bar
- 3 20 bar
- 4 40 bar
- 5 100 bar

Approval Standard

XX Not Required

Probe Length

Specify in cm

CGR2 H 1 3 B04 S TN10 B1 1 XX 200



Part Number Configurator - Modbus option

1.5" Threaded Units (mounting option TN15/TB15)

Model

CGR2 2 wire Centurion Guided Radar

Communication

W Modbus with Interface Level Measurement

Housing

- 1 Aluminium, Epoxy Painted
- 2 316L Stainless Steel

Gland Entry

- 1 1/2" NPT Cable gland entry
- 2 3/4" NPT Cable gland entry
- 3 M20 x 1.5 Cable gland entry
- 4 M25 x 1.5 Cable gland entry

Probe Type

- A08 8mm flexible cable
- B08 8mm rigid probe
- J08 Detached 8mm flexible cable
- K08 Detached 8mm rigid probe

Probe variant / materials

S 316L

Mounting

- TN15 1.5" NPT Thread (316L)
- TB15 1.5" BSP Thread (316L)
- FXXX¹ Pre-Welded Flange (replace XXX with 3 character Welded Flange Code)

Process O-ring seal / Process Temperature

- V1 FKM (Viton) (-40°C to +80°C) (-40°F to +176°F)
- V3 FKM (Viton) (-40°C to +130°C) (-40°F to +266°F)
- B1 NBR (-40°C to +80°C) (-40°F to +176°F)
- E1 EPDM (-40°C to +80°C) (-40°F to +176°F)
- E3 EPDM (-40°C to +130°C) (-40°F to +266°F) (Maximum Process Pressure 6 bar)
- S1 Silicone (-40°C to +80°C) (-40°F to +176°F)
- S3 Silicone (-40°C to +130°C) (-40°F to +266°F) (Maximum Process Pressure 6 bar)

Process Pressure

- 1 6 bar (87 psig)
- 3 20 bar (290 psig)
- 4 40 bar (580 psig)

Approval Standard

XX Not Required

Probe Length

Specify in cm

CGR2 H 1 3 B08 S TN15 B1 1 XX 200

Probe / Mounting Combination Table

Probe Code	Variant / Materials	Mounting	Flange Sizes		Max. Length
			Min. Size	Max size	
A08 / J08	S	TN15, TB15, FXXX	2", DN50, 50mm	4", DN100, 100mm	1850cm
B08 / K08	S	TN15, TB15, FXXX	2", DN50, 50mm	4", DN100, 100mm	400cm

¹See Weld Code selection in Flange Table.

²Hawk Supplied Flanges. End user can use any appropriate flange with suitable bore hole.



About HAWK

Hawk Measurement Systems (HAWK), a world leader in level, positioning, asset monitoring and flow measurement technology, provides cutting-edge equipment and complete solutions to the global industrial market.

Established in 1988, HAWK has won several prestigious awards for their breakthrough technologies. Some of these technologies include Acoustic Wave, Ultrasonic, Microwave, Radar, and Fiber Optic Sensing. HAWK designs and develops innovative measurement technology that is extremely reliable and accurate, simple to install, easy to operate and offers maximum efficiency.

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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

Hawk Measurement

90 Glenn Street, Suite 100B

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

Represented by:



Zimco Instrumentation Inc.

11141 15 Street NE, Calgary, AB, T3K 0Z5 Canada

Phone: 403-253-8320

Email: info@zimco.ca

Website: www.zimco.ca

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

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