A Higher Level of Performance

Data Sheet

Senator

H80I Radar Series

Level Measurement



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

Overview

Offering a unique blend of compact design and efficiency, the Senator H80I is a 80GHz FMCW radar level transmitter ideal for continuous level measurement of liquids, slurries and solids. It guarantees value without compromising quality and ease of operation. With its flexible mounting options, high chemical compatibility, and a 120m (393.7ft) measuring range, the Senator H80I is versatile enough to meet the demands of diverse industrial applications. Simple commissioning available by multiple convenient methods including keypad, HawkBTConnect bluetooth App, Goshawk PC software & the HRC HART Remote Configurator.

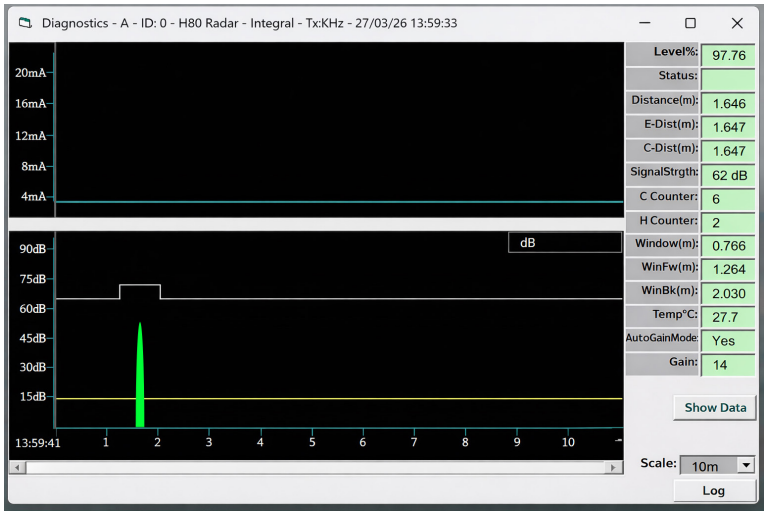
Principle of Operation

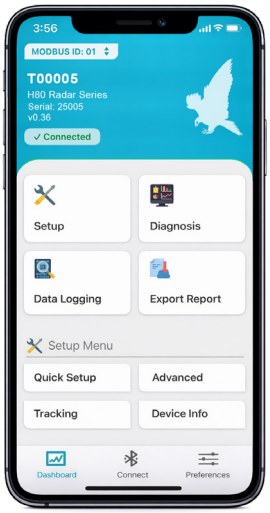
The Senator H80I transmits a radar pulse at the speed of light, bouncing off the surface of the measured material. Proprietary software then analyzes the returned signal, enhancing the accurate reflection while eliminating any false ones.

Primary Areas of Application

- Chemicals
- Petrochemicals
- Cement
- Building Aggregates
- Mining / Minerals
- Food & Beverages
- Oil & Gas
- Pharmaceutical
- Pulp & Paper
- Wastewater

Simple Commissioning via Keypad, HawkBTConnect Bluetooth App & Goshawk Software & HRC HAWK HART Configurator



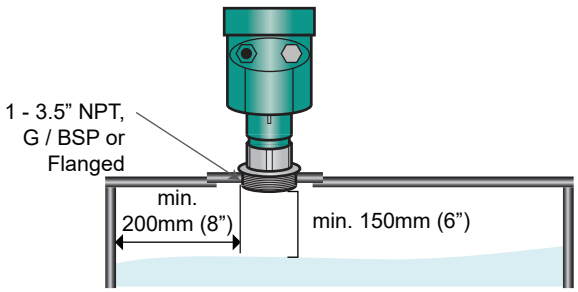




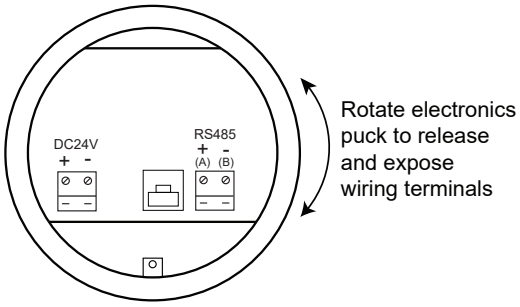
Features

- 80GHz FMCW Radar
- 4-20mA HART, Modbus output options
- Full commissioning via Keypad & Display, HawkBTConnect Bluetooth App, Goshawk PC software & HRC HART Remote Configurator
- Maximum range to 120m (393.7ft)
- Non-contact measurement
- Low cost per measuring point
- Ingress protection class IP67
- Variety of mounting options

Mounting

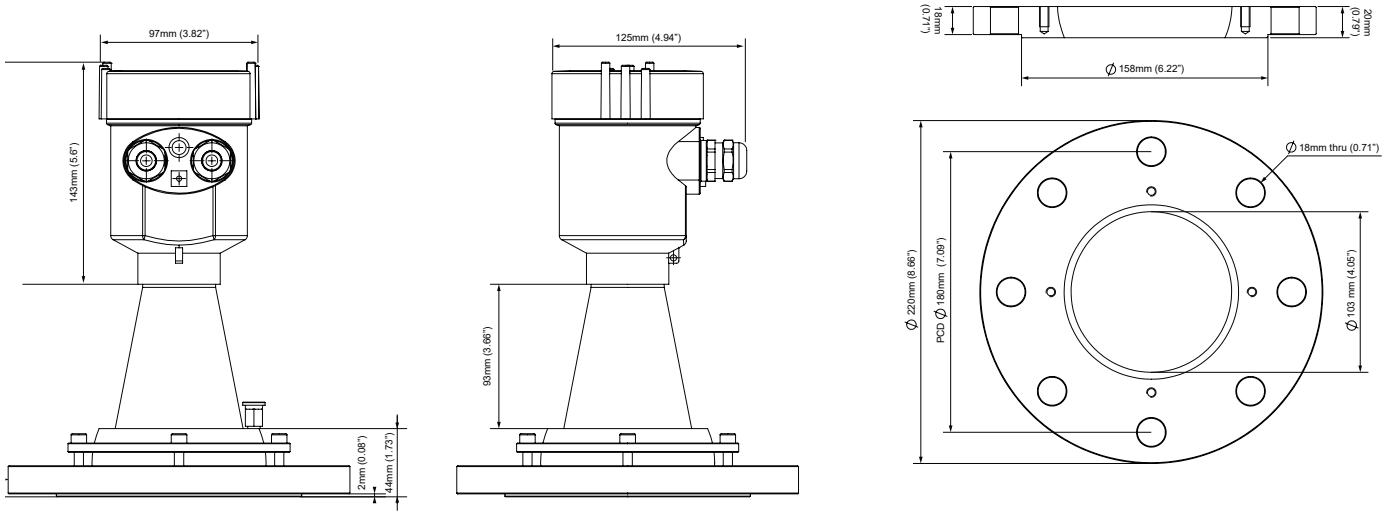


Wiring



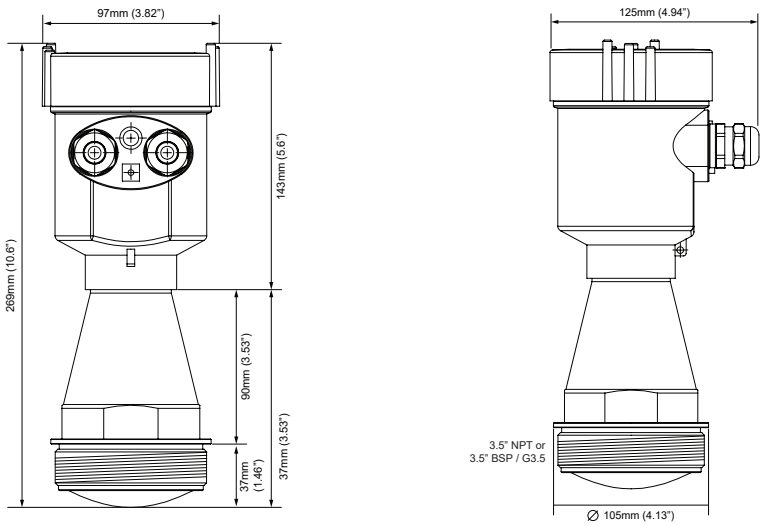
Dimensions

Integral - 3.5” / Aiming Flange version

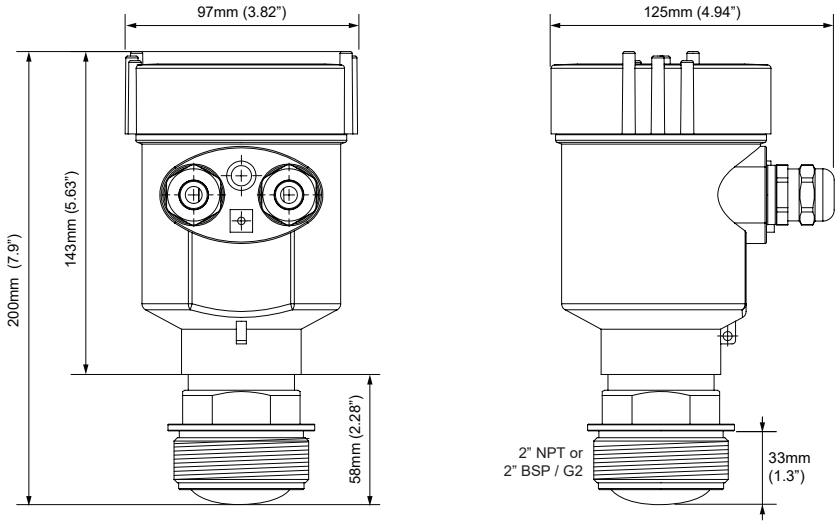


The adjustable flanged requires a 3/16” Allen key
Air purge fitting: PC6-M5 push to connect. 6mm tubing.

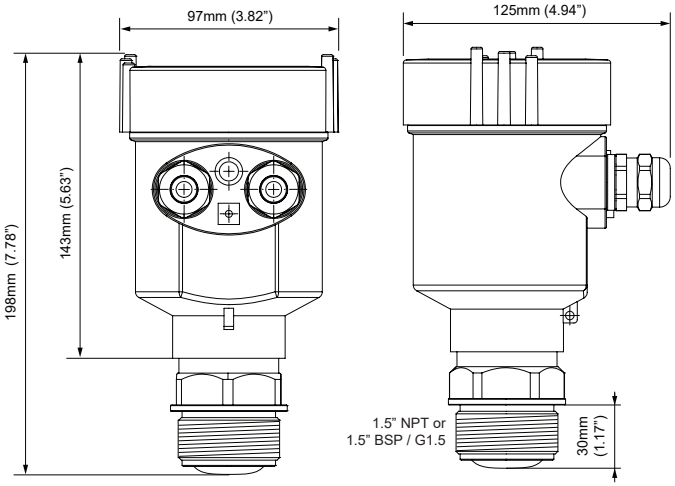
Integral - 3.5” Threaded version



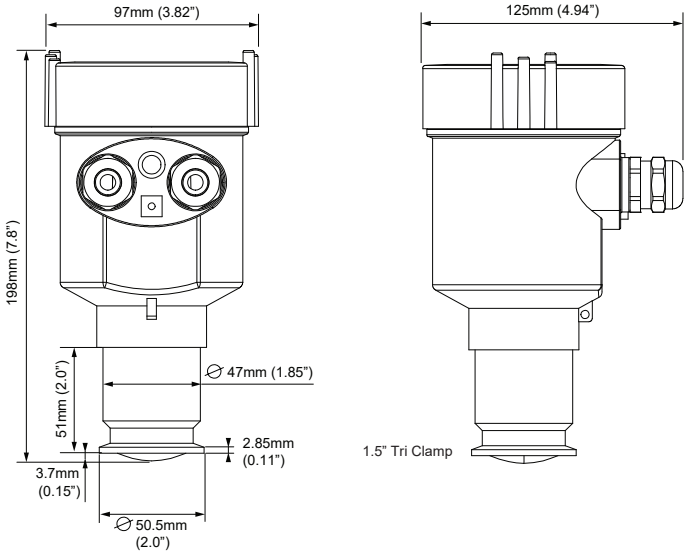
Integral - 2” Threaded version



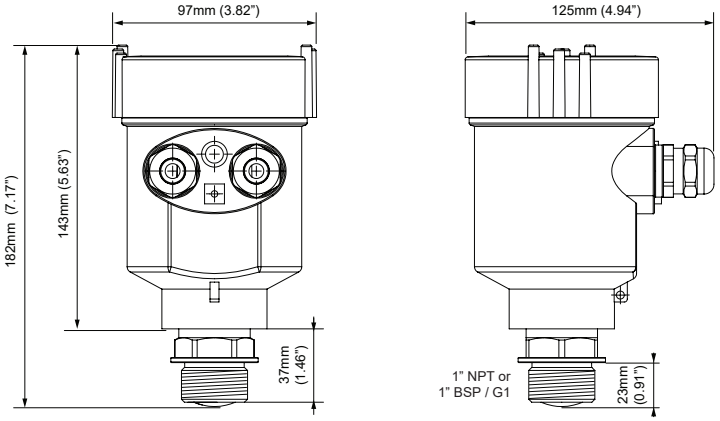
Integral - 1.5” Threaded version



Integral - 1.5” Tri-Clamp Version



Integral - 1” Threaded version



Part Numbering

3.5” / Aiming Flange Version for Liquids Applications

Note: Unit should be purchased with Flange (3.5” fittings are uncommon)

Model

H80I Hawk Radar 80GHz Integral Version, Bluetooth

Application
L Liquids

Maximum Range
65 65m (213.2ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
AF35 DN100 PN16 Aiming Flange with Air Purge
FFFF Flange[1]
TB35 3.5” BSP / G3
TN35 3.5” NPT

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	L	65	H	A	M	AF35	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

3.5” / Aiming Flange Version for Solids Applications

Note: Unit should be purchased with Flange (3.5” fittings are uncommon)

Model

H80I Hawk Radar 80GHz Integral Version, Bluetooth

Application
S Solids

Maximum Range
30 30m (98.4ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
AF35 DN100 PN16 Aiming Flange with Air Purge
FFFF Flange[1]
TB35 3.5” BSP / G3
TN35 3.5” NPT

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	S	30	H	A	M	AF35	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

2" Threaded Version for Liquids Applications

Model

H80I Hawk Radar 80GHz Integral Version, Bluetooth

Application
L Liquids

Maximum Range
10 10m (32.8ft)
20 20m (65.6ft)
30 30m (98.4ft)
65 65m (213.2ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
TB20 2" BSP / G2
TN20 2" NPT
FFFF Flange[1]

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)
2 -29 to +150°C (-20 to +302°F)
3 0 to +260°C (+32 to 500°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	L	20	H	A	M	TN20	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

2" Threaded Version for Solids Applications

Model

H80I Hawk Radar 80GHz Integral Version, Bluetooth

Application
S Solids

Maximum Range
10 10m (32.8ft)
20 20m (65.6ft)
30 30m (98.4ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
TB20 2" BSP / G2
TN20 2" NPT
FFFF Flange[1]

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)
2 -29 to +150°C (-20 to +302°F)
3 0 to +260°C (+32 to 500°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	S	20	H	A	M	TN20	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

1.5” Threaded Version for Liquids Applications

Model

H80I Hawk Radar 80GHz Integral Version, Bluetooth

Application
L Liquids

Maximum Range
10 10m (32.8ft)
20 20m (65.6ft)
30 30m (98.4ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
TB15 1.5” BSP / G1.5
TN15 1.5” NPT
FFFF Flange[1]

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	L	20	H	A	M	TB15	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

1.5” Threaded Version for Solids Applications

Model

H80I Hawk Radar 80GHz Integral Version, Bluetooth

Application
S Solids

Maximum Range
10 10m (32.8ft)
20 20m (65.6ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
TB15 1.5” BSP / G1.5
TN15 1.5” NPT
FFFF Flange[1]

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	S	10	H	A	M	TB15	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

1" Threaded Version for Liquids Applications

Model

H80I 80GHz Integral, Bluetooth

Application
L Liquids

Maximum Range
10 10m (32.8ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
TB10 1" BSP / G1
TN10 1" NPT
FFFF Flange[1]

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	L	10	H	A	M	TB10	C	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Part Numbering

1" Threaded Version for Solids Applications
(1" version not recommended for solids unless necessary / simple application)

Model

H80I 80GHz Integral, Bluetooth

Application
S Solids

Maximum Range
10 10m (32.8ft)

Output
H 4-20mA HART, Modbus

Housing
A Powder Coated Aluminium

Cable Entries
M 2 x M20

Mounting
TB10 1" BSP / G1
TN10 1" NPT
FFFF Flange[1]

Antenna / Mounting Material
C 316
P 316 Antenna & Flange with PTFE Seal[1]
T 316 Antenna & 304 Flange with PTFE Seal[1]

Temperature
1 -40 to +80°C (-40 to +176°F)

Pressure
1 3 Bar (43 psig)
2 16 Bar (232 psig)[2]

Approval
XX Not required

H80I	S	10	H	A	M	TB10	S	1	1	XX

[1] See Flange Part Selection
[2] Antenna / Mounting option P, T only

Mounting Flanges

Flange Selection (replaces FFFF 4 Digit Mounting Option)

Thread Type

1	1” G/BSP
A	1.5” G/BSP
2	2” G/BSP
B	3.5” G/BSP
5	1” NPT
C	1.5” NPT
7	2” NPT
8	3.5” NPT

Flange Size (must be suitable to fit thread size)

1	1” or DN25 or 25mm
2	2” or DN50 or 50mm
3	3” or DN80 or 80mm
4	4” or DN100 or 100mm
5	5” or DN125 or 125mm
6	6” or DN150 or 150mm

Flange Type

A1	ANSI B16.5 150LB
A3	ANSI B16.5 300LB
D1	EN 1092-1 PN16
D2	EN 1092-1 PN25
C1	HG/T 20592 PN16
C2	HG/T 20592 PN25

7	**4**	**A1**

Specifications

Senator H80I Radar Series

Frequency

• 80GHz FMCW

Operating Voltage

• 17 - 36VDC

Communications

• Modbus
• HART 7
• PC Software (Goshawk)
• iOS & Android HawkBTConnect App (via bluetooth)

Keypad / Display

• 4 button, 128 x 64 backlit LCD

Blanking Distance

• 150 mm (6”)

Maximum Range

• Integral: Up to 120m (393.7ft), model dependant
• Compact: Up to 30m (98ft)

Resolution

• 1mm (0.04”)

Accuracy

• +/- 2mm (0.08”)

LCD Response Time

• 1 second

Sample Rate

• 3 seconds

Startup Time

• Approx. 50 seconds

Memory

• Non-volatile

Operating Temperature

• -40°C to +80°C (-40°F to +176°F)
• -29°C to +150°C (-20°F to +302°F)
• 0°C to +260°C (+32°F to 500°F)

Operating Pressure

• 3 Bar (43 psig)
• 16 Bar (232 psig)

Beam Angle

• 1” Antenna: 8°
• 1.5” Antenna: 7°
• 2” Antenna: 5.8°
• 3.5” Antenna: 3.8°

Enclosure Material

• Powder Coated Aluminium

Antenna / Mounting Material

• 316 SS Antenna
• 304 / 316 / PTFE Sealed Flange

Sensor Face Material

• PTFE
• PFA (high temperature version)

Enclosure Sealing

• IP67

Cable Entries

• 2 x M20

Mounting

• 1”, 1.5”, 2”, 3.5” Threaded (NPT, G/BSP)
• Flanged

Air Purge

• PC6-M5 Push-to-Connect Fitting
• Intermittent Mode: Max. 6 bar
• Continuous Mode: Max. 1 bar

Typical Weight

• 2kg (4.4lb)

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Represented by:

For more information and global representatives: **www.hawkmeasurement.com**

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

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