

Quick Start Manual



LevelPro® — ProScan®3 Series

Radar Level Sensor (80GHz)

Safety Information

- De-pressurize and vent system prior to installation or removal
- Confirm chemical compatibility before use
- **DO NOT** exceed maximum temperature or pressure specifications
- **ALWAYS** wear safety goggles or face-shield during installation and/or service
- **DO NOT** alter product construction



Warning | Caution | Danger

Indicates a potential hazard. Failure to follow all warnings may lead to equipment damage, or failure, injury, or death.



Hand Tighten Only

Over tightening may permanently damage product threads and lead to failure of the retaining nut.



Note | Technical Notes

Highlights additional information or detailed procedure.

Intended Use

- It is the operator's responsibility to verify the suitability of the device for the intended application. If there are any doubts, please contact our technical department to ensure proper usage and compatibility.
- LevelPro® is not liable for incorrect selections and their consequences.
- Permissible media are liquids (no solids or frozen media) as specified in the data sheet. Additionally, it is essential to confirm that the medium is compatible with all wetted parts of the level sensor.
- The technical data provided in the current data sheet is binding and must be followed. If the data sheet is unavailable, download it from our website (www.iconprocon.com).

Personnel for Installation, Commissioning, and Operation

All operations described in this manual must be performed only by trained or accredited personnel. The qualified personnel must have read and understood the operating instructions in this manual and follow them accordingly.

LevelPro® — ProScan®3 Series

Radar Level Sensor (80GHz)

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment™

Features

- ✓ Bluetooth Connectivity (30m | 100')
- ✓ Excellent Reliability and Accuracy
- ✓ Not Affected by Vapor or Outgassing
- ✓ RS-485 Communication | 4–20mA
- ✓ Measurement Under Vacuum | High Pressure
- ✓ Unaffected by Temperature Fluctuations
- ✓ NEMA 4X | Suitable for Outdoors

The Future of Non-Contact Level Measurement is Radar Technology!

The **ProScan® 3** 80 GHz high frequency technology permits a significantly more precise transmission signal focus. This makes it easier to distinguish between actual level signals and interference signals, making the measurement more reliable coupled with a higher degree of accuracy. The new **ProScan® 3** series of compact instruments are ideally suited for more complex level applications.

Specifications

Measuring Performance

Minimum Range	50mm (2in)
Maximum Range	34 ft (std), 68 ft (special order)
Bluetooth Range	30m
Resolution	1mm
Azimuth Beam Width (3 dB)	3°
Elevation Beam Width (3 dB)	3°
Measurement Accuracy	±2mm

Operating Conditions

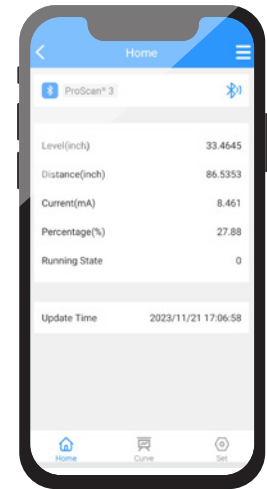
Operating Frequency Band	76 – 81 GHz
Mains Power Supply	18 – 24 VDC
Operating Average Current	20 mA
Effective Isotropic Radiated Power	13 dBm
Output	4-20mA RS485
Enclosure Protection	NEMA 4X IP67
Operating Temperature Range	-49°F – +185°F -45°C – +85°C

Materials

Housing Material	PP+PC	316 SS
Transducer	PP	



 **Bluetooth®**



**Monitor Your
ProScan® 3 with
the Free App**



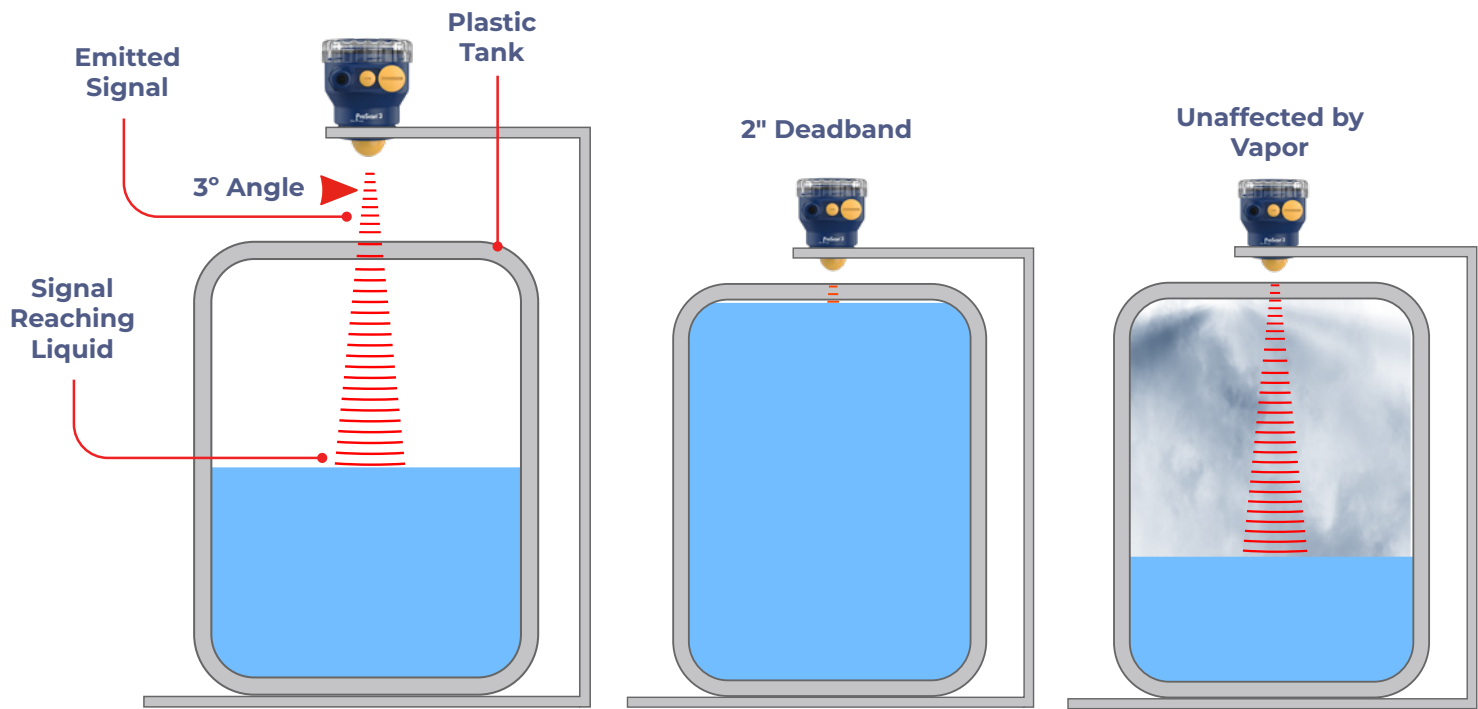
Scan the above QR codes
to download the app

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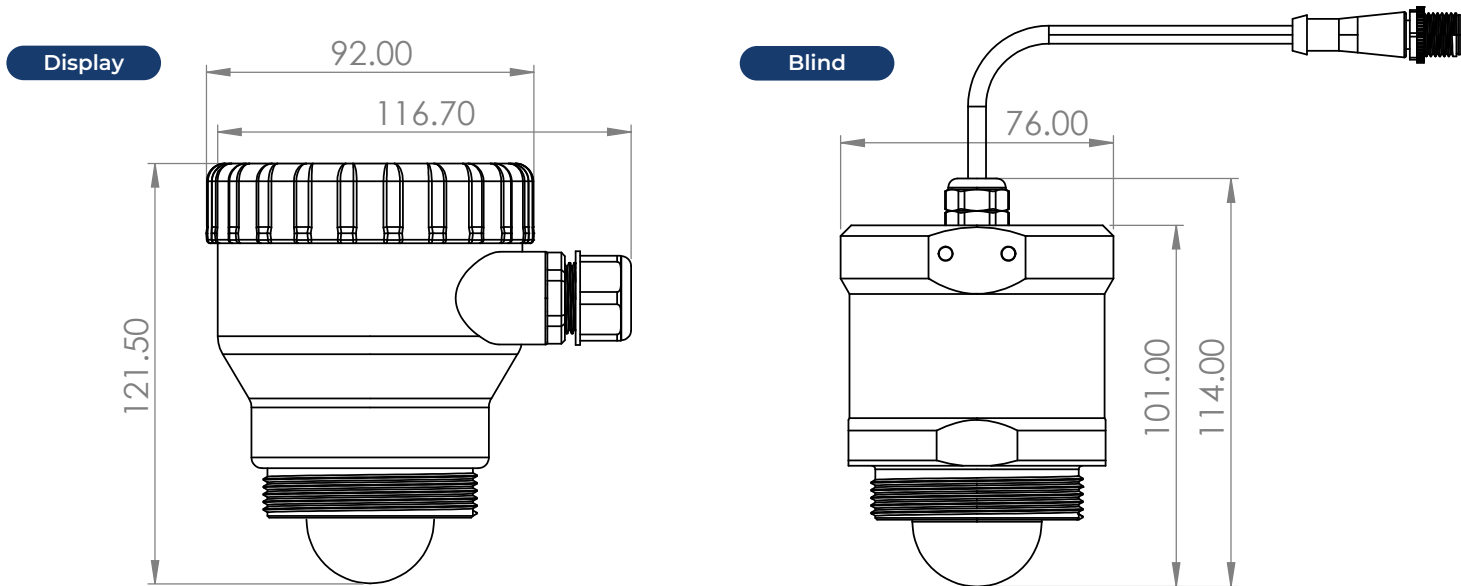
Radar Level Sensor (80GHz)

Operating Principle

The **ProScan® 3** (80GHz) radar is a transmitter for continuous level measurements using fast sweep Frequency Modulated Continuous Wave (FMCW) technology. The transducer of radar continuously emits signal sweeps with a constant frequency towards the liquid surface. The reflected signal is then captured by the transducer. The time to send and receive is known as the time of flight.



Dimensions



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Radar Level Sensor (80GHz)

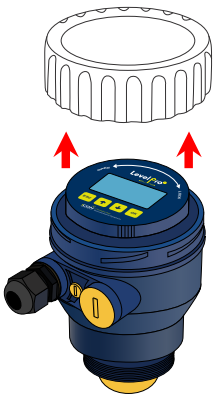
Wiring – PS38000 | PS38000P

01



Rotate the lid counterclockwise and lift it off.

02

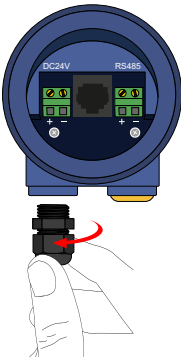


03



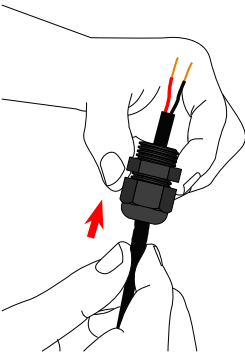
Turn the display counterclockwise and carefully remove it.

04



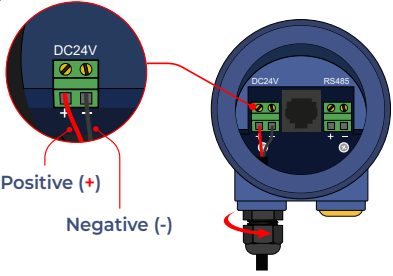
Unscrew and detach the cable grip from the sensor housing.

05



Feed the wire through the cable grip, ensuring a secure fit.

06



⚠ Loop Powered | 24VDC

DC24V RS485

Positive (+)

Negative (-)

Connect the positive and negative wires to their respective terminals. Tighten the cable grip to hold the wire firmly in place.

Wiring – PS38000S

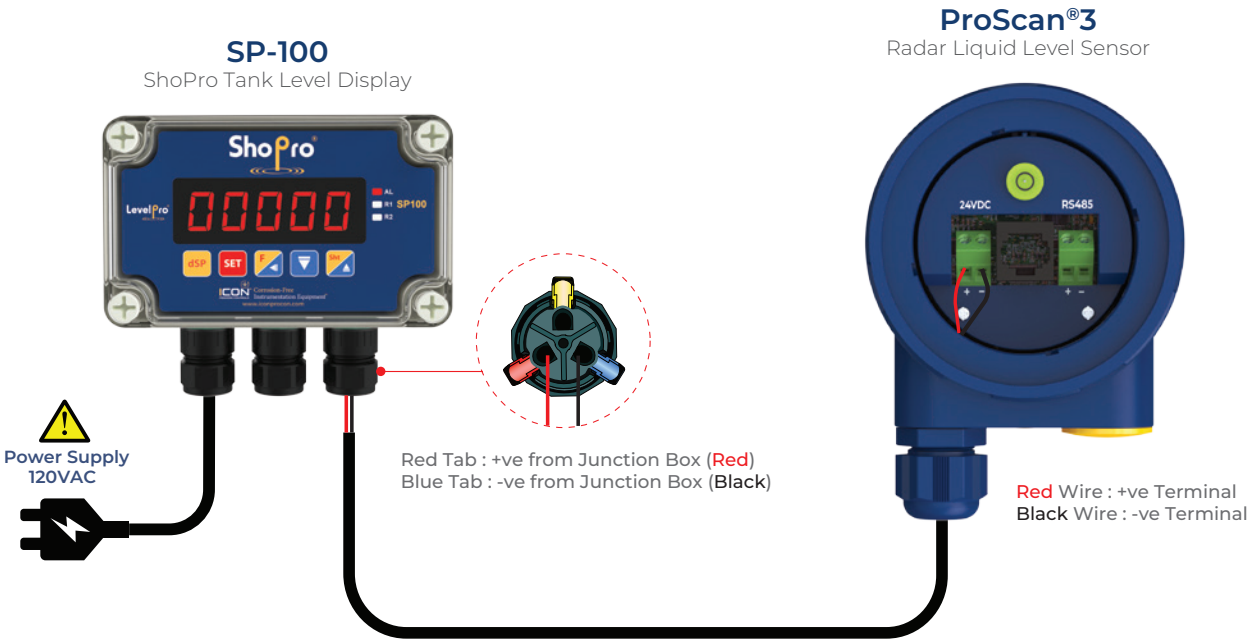
M12 Wiring (For SS Model)		
Pin	Color	Description
Pin 1	Brown	+VDC +mA
Pin 2		
Pin 3	Blue	-VDC -mA
Pin 4		



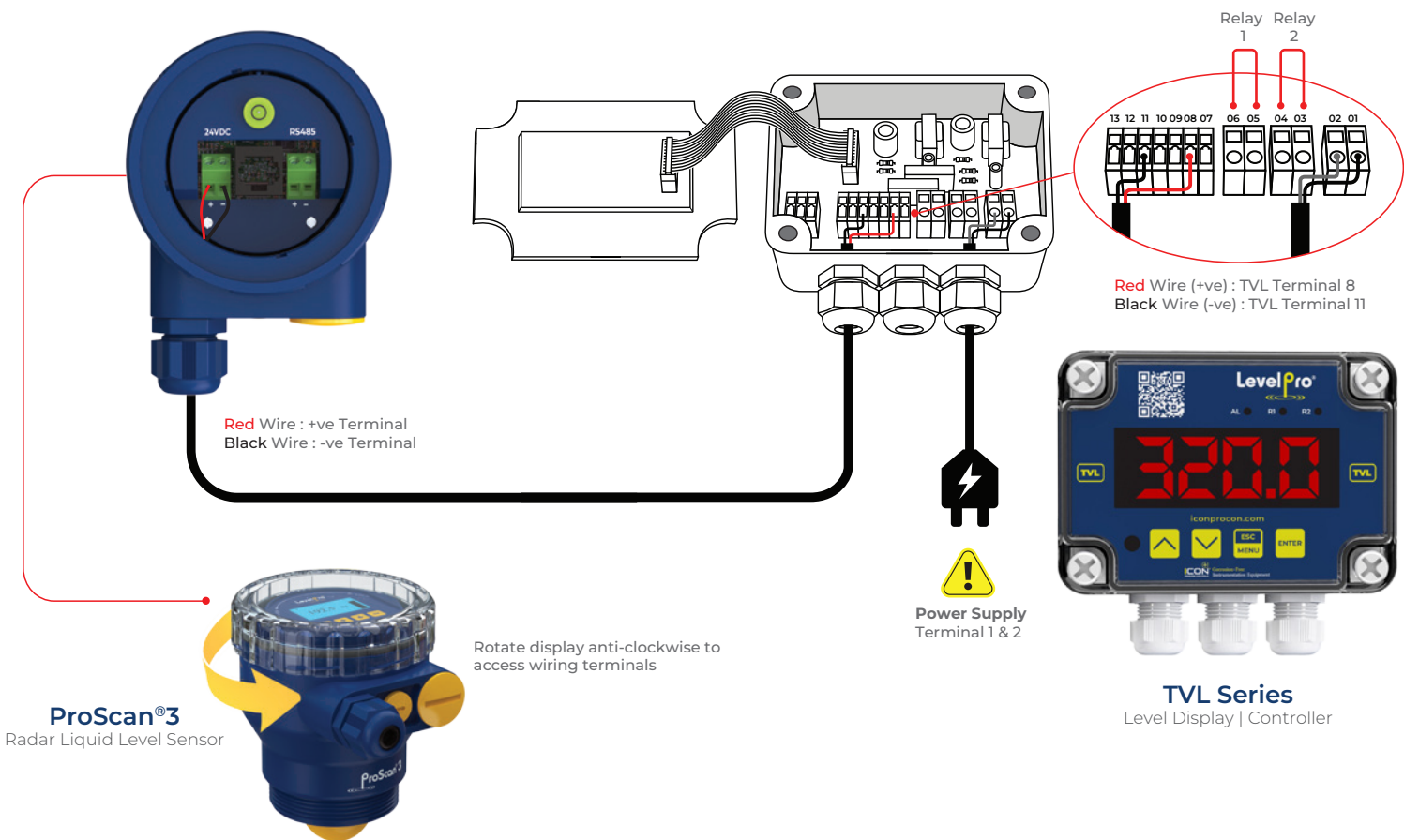
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Radar Level Sensor (80GHz)

Wiring – ProScan®3 | ShoPro® Liquid Level Display



Wiring – ProScan®3 | TVL Liquid Level Display

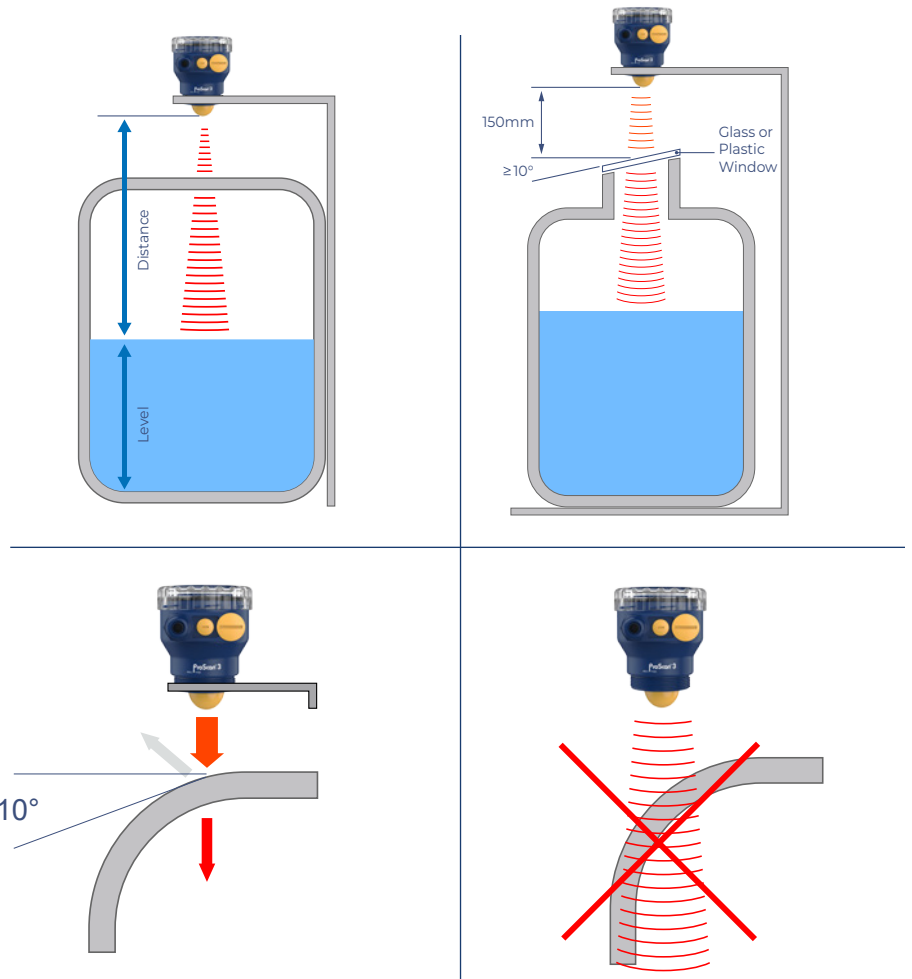


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Radar Level Sensor (80GHz)

Sensor Positioning

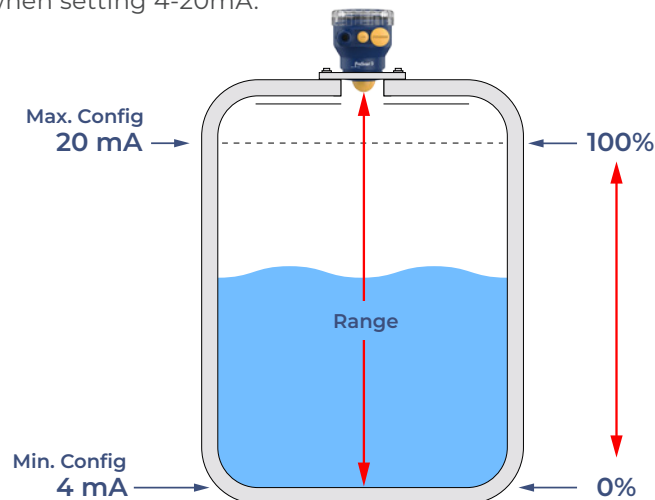
- For plastic or FRP tanks, ensure the sensor is positioned away from the sidewall.
- Avoid placing the sensor near metallic objects outside the tank that could interfere with detection.
- Ensure the radar signal strikes the liquid surface at a 90° angle.
- Use the inbuilt bubble level to confirm the sensor is vertical.
- Account for the dead band during installation.



Measurement

Accurate tank measurement is essential for configuring the sensor. When measuring, consider the sensor's position relative to fittings, risers, dome tops, and bottoms. Identify the reference point from which measurements are taken.

- **Range:** The total distance from the sensor tip to the lowest liquid level.
- **Minimum Configuration (4mA):** The distance from the sensor tip to the empty level.
- **Maximum Configuration (20mA):** The distance from the sensor tip to the highest liquid or full level.
- Always consider blind spot (2") when setting 4-20mA.



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Radar Level Sensor (80GHz)

Error Codes

Code	Description
00	No Error (Does not show error)
01	No Target Detected
02	Abrupt Level Shift
08	Communication Error

Keypad Functions



Key	Function
	- Exit Programming Mode - Return to Previous Screen - Display Echo Curve
	- Edit Digits - Select Display Mode
	- Edit Digits - Select Display Mode
	- Access Main Menu - Confirm Edit

Factory Reset Password : (Dynamic Code x 2) + 1
Eg: If Dynamic Code is 12. Password will be 25

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Programming 4-20mA

STEPS	DISPLAY	OPERATION
Home Screen OK	192.5 IN	Home Screen * Approx. 30 secs for the level reading to display
1 Main Menu OK	Main Menu ► User Para. Factory Para.	STEP 1 Select User Parameter ► Press
2 User Parameters OK	User Para. ► Basic Setup Measure Setup Backup Para.	STEP 2 Select Basic Setup ► Press
3 Range Settings OK	Basic Setup ► Range : 5000 mm Offset : 10 mm Pos 4ma: 0 mm	STEP 3 Set Range ► Press • Range : Distance from Sensor Tip to Bottom of Tank. Note: ■ Use to move cursor. ■ Use to change digits.
4 4-20mA Settings ESC x 3 to go back to Home Screen	Basic Setup Pos 4ma: 0 mm ► Pos 20ma: 3000 mm Blind: 100 mm	STEP 4 Set 4mA ► Press • 4mA : Low Level Default = 0 Set 20mA ► Press • 20mA : High Level Should be lower than Range Note: ■ Use to move cursor. ■ Use to change digits.

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Radar Level Sensor (80GHz)

Factory Reset

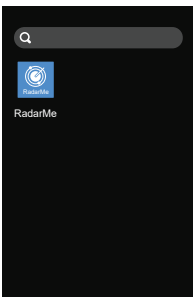
STEPS	DISPLAY	OPERATION
Home Screen	192.5 IN	Home Screen * Approx. 30 secs for the level reading to display
1 Main Menu	Main Menu User Para. ▶ Factory Para.	STEP 1 Select Factory Parameter ▶ Press
2 Password	Factory PWD Dynamic Code: 32 Password: 065	STEP 2 Enter Password ▶ Press Note: - Use to move cursor. - Use to change digits. 065 Cursor • Password : (Dynamic Code x 2) + 1
3 Factory Parameters	Factory Para System Setup Measure Setup ▶ Restore Factory	STEP 3 Select Restore Factory ▶ Press
4 Factory Reset ESC x 3 to go back to Home Screen	Factory Default OK ▶ Factory Default Warn: Factory Default?	STEP 4 Select Factory Default ▶ Press • Note : The display will show 'OK' after the reset is completed successfully.

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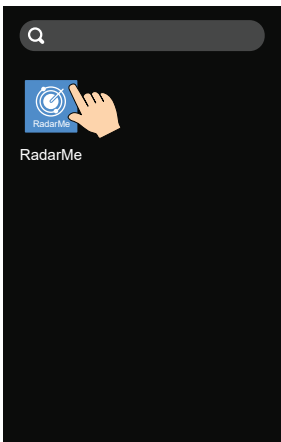
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Bluetooth Application Settings

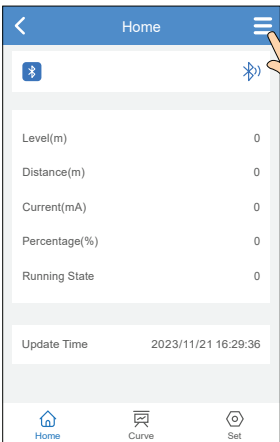
Install RadarMe App in your Device



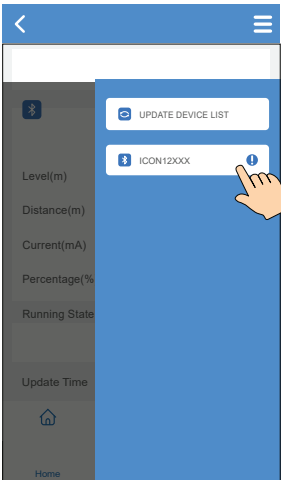
Make sure your Device Bluetooth is ON



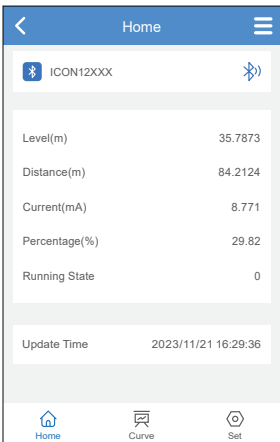
Open RadarMe App in the Device



Click Device List Menu

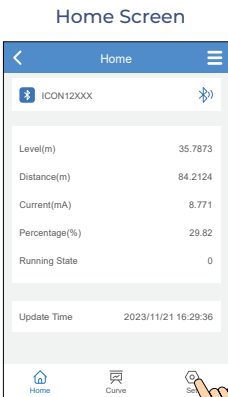


Select **ICON12XXX** from the List

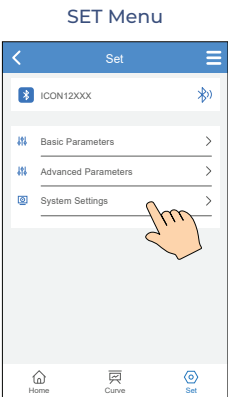


ProScan3 Connected

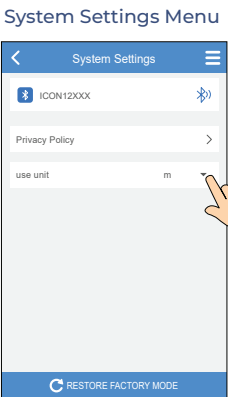
Setting Display Unit



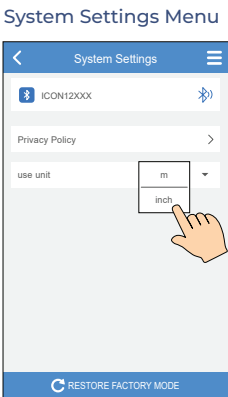
Click **Set** Button



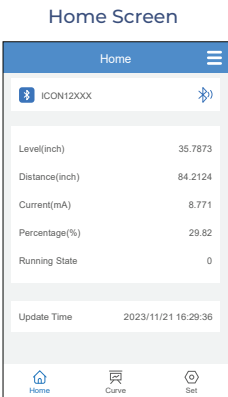
Select **System** Settings



Click **Unit** Drop Down Arrow



Select Unit (**m | inch**)

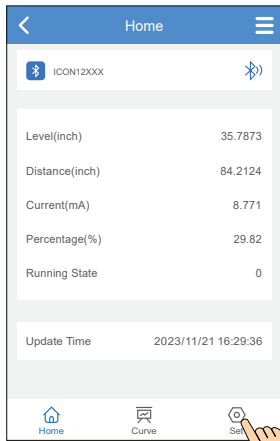


Unit Changed Successfully!

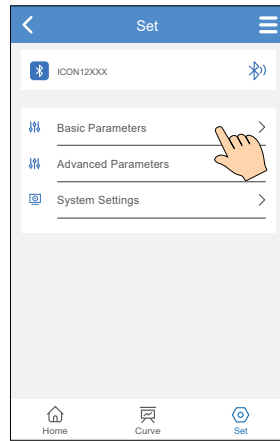
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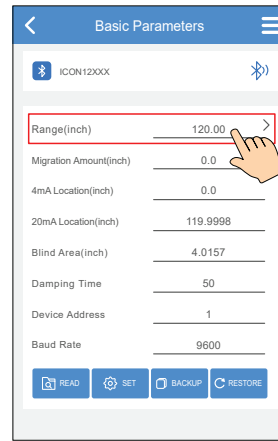
Setting Range



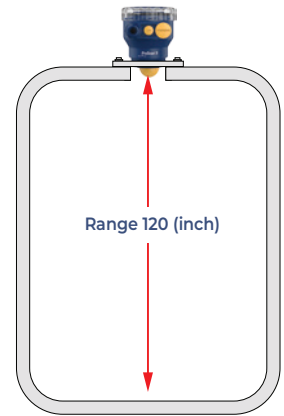
Click Set Button



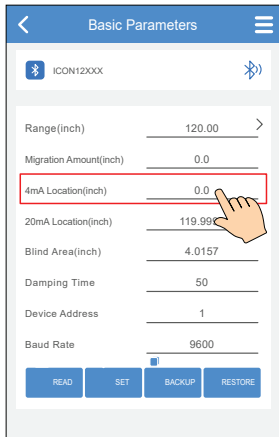
Select Basic Parameters



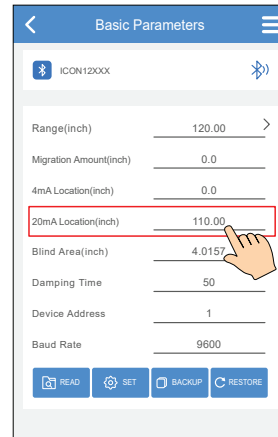
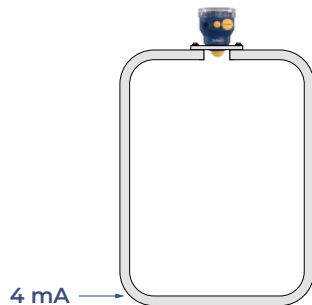
Set **Range** Value
E.g. Range Value = 120 (inch)



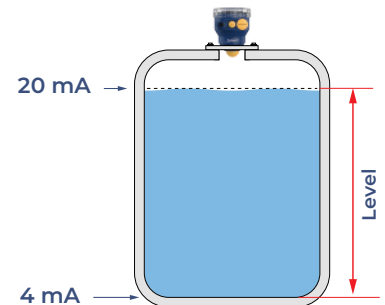
Setting Level



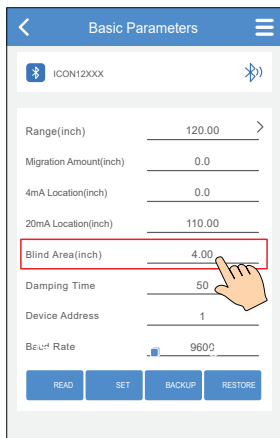
Set **4mA** Location
4mA (Low Level) = 0



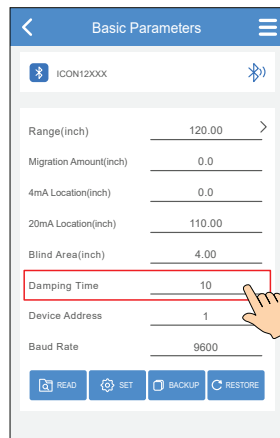
Set **20mA** Location
20mA (High Level) = 110(inch)



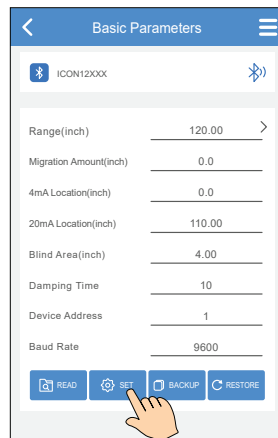
Setting Parameters



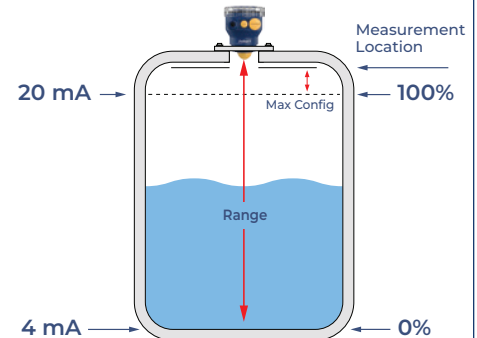
Set **Blind Area**
E.g. Blind Area = 4.00(Inch)



Set **Damping Time**
E.g. Damping Time = 10(sec)

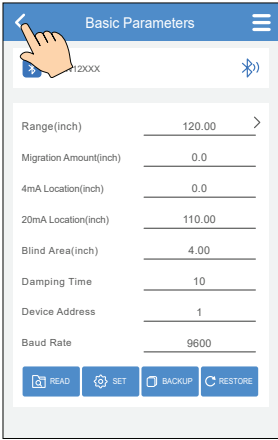


Click Set Button to
Save the Parameters



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Basic Parameters

Range(inch) 120.00

Migration Amount(inch) 0.0

4mA Location(inch) 0.0

20mA Location(inch) 110.00

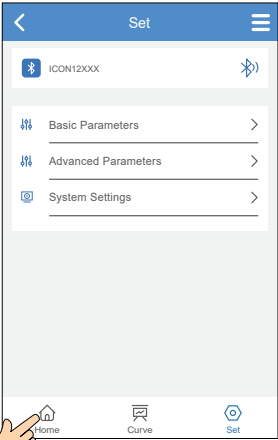
Blind Area(inch) 4.00

Damping Time 10

Device Address 1

Baud Rate 9600

Buttons: READ, SET, BACKUP, RESTORE



Set

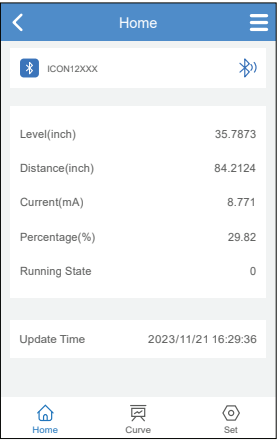
ICON12XXX

Basic Parameters

Advanced Parameters

System Settings

Buttons: Home, Curve, Set



Home

ICON12XXX

Level(inch) 35.7873

Distance(inch) 84.2124

Current(mA) 8.771

Percentage(%) 29.82

Running State 0

Update Time 2023/11/21 16:29:36

Buttons: Home, Curve, Set

Back to Setting Menu

Click Home Button to Show Home Screen



Bluetooth Settings
Video Tutorial

ProScan® 3 — Accessories		
Model	Description	Image
LB75	2" Tank Top Mounting Bracket	
LB50	2" Wall Mounting Bracket	
LB80S	SS Wall Mounting Bracket	

ProScan® 3 — Accessories		
Model	Description	Image
TVL	TVL Level Display Controller	
ShoPro®	ShoPro® Level Display Controller	
CablePro®	CablePro® M12 Instrumentation Cable	

Model Selection

ProScan® 3 — Radar Level Transmitter			
Connection	Part Number	Material	Display
2" NPT	PS38000	PP	LCD
2" NPT	PS38000P	PP	Blind
2" NPT	PS38000S	316 SS	Blind
2" NPT	LB75	PVC	-
2" NPT	LB50	GFPP	-
Clamp	LB80S	316 SS	-

Warranty, Returns and Limitations

Warranty

Icon Process Controls Ltd warrants to the original purchaser of its products that such products will be free from defects in material and workmanship under normal use and service in accordance with instructions furnished by **Icon Process Controls Ltd** for a period of one year from the date of sale of such products. **Icon Process Controls Ltd** obligation under this warranty is solely and exclusively limited to the repair or replacement, at Icon Process Controls Ltd option, of the products or components, which **Icon Process Controls Ltd** examination determines to its satisfaction to be defective in material or workmanship within the warranty period. **Icon Process Controls Ltd** must be notified pursuant to the instructions below of any claim under this warranty within thirty (30) days of any claimed lack of conformity of the product. Any product repaired under this warranty will be warranted only for the remainder of the original warranty period. Any product provided as a replacement under this warranty will be warranted for the one year from the date of replacement.

Returns

Products cannot be returned to **Icon Process Controls Ltd** without prior authorization. To return a product that is thought to be defective, go to www.iconprocon.com, and submit a customer return (MRA) request form and follow the instructions therein. All warranty and non-warranty product returns to **Icon Process Controls Ltd** must be shipped prepaid and insured. **Icon Process Controls Ltd** will not be responsible for any products lost or damaged in shipment.

Limitations

This warranty does not apply to products which: 1) are beyond the warranty period or are products for which the original purchaser does not follow the warranty procedures outlined above; 2) have been subjected to electrical, mechanical or chemical damage due to improper, accidental or negligent use; 3) have been modified or altered; 4) anyone other than service personnel authorized by **Icon Process Controls Ltd** have attempted to repair; 5) have been involved in accidents or natural disasters; or 6) are damaged during return shipment to **Icon Process Controls Ltd** reserves the right to unilaterally waive this warranty and dispose of any product returned to **Icon Process Controls Ltd** where: 1) there is evidence of a potentially hazardous material present with the product; or 2) the product has remained unclaimed at **Icon Process Controls Ltd** for more than 30 days after **Icon Process Controls Ltd** has dutifully requested disposition. This warranty contains the sole express warranty made by **Icon Process Controls Ltd** in connection with its products. **ALL IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY DISCLAIMED.** The remedies of repair or replacement as stated above are the exclusive remedies for the breach of this warranty. **IN NO EVENT SHALL Icon Process Controls Ltd BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND INCLUDING PERSONAL OR REAL PROPERTY OR FOR INJURY TO ANY PERSON. THIS WARRANTY CONSTITUTES THE FINAL, COMPLETE AND EXCLUSIVE STATEMENT OF WARRANTY TERMS AND NO PERSON IS AUTHORIZED TO MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS ON BEHALF OF Icon Process Controls Ltd.** This warranty will be interpreted pursuant to the laws of the province of Ontario, Canada.

If any portion of this warranty is held to be invalid or unenforceable for any reason, such finding will not invalidate any other provision of this warranty.

For additional product documentation and technical support visit:

www.iconprocon.com | e-mail: sales@iconprocon.com or support@iconprocon.com | Ph: 905.469.9283