



# EchoBeam® LR80 Series Radar Level Sensor

Part No. **LR80-0000**

## LR80-0000 Technical Specifications

|                                 |                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Model</b>                    | LR80-0000                                                                                                                                                                   |
| <b>Price</b>                    | \$795.00                                                                                                                                                                    |
| <b>Drawing Link</b>             | <a href="#">PDF</a>                                                                                                                                                         |
| <b>Weight (lb)</b>              | 3.1                                                                                                                                                                         |
| <b>Maximum Range</b>            | Liquid: 32.8' (10m) with media dielectric $\geq 1.6$ and no agitation<br>Solids: 16.4' (5m) with media dielectric $\geq 6$ and no dust                                      |
| <b>Frequency</b>                | 80 GHz., W-band, FMCW                                                                                                                                                       |
| <b>Accuracy</b>                 | 0.4m to 10m: $\pm 5$ mm<br>0.00m to 0.39m: $\pm 10$ mm                                                                                                                      |
| <b>Sensing Dead Band*</b>       | 0" (0mm)                                                                                                                                                                    |
| <b>Beam Angle</b>               | 8°                                                                                                                                                                          |
| <b>Minimum Dielectric</b>       | $\geq 1.6$                                                                                                                                                                  |
| <b>Bluetooth Version</b>        | Bluetooth 5.0                                                                                                                                                               |
| <b>Bluetooth Range</b>          | 26.2' (8m)                                                                                                                                                                  |
| <b>Configuration</b>            | LevelTap™ App (iOS & Android)                                                                                                                                               |
| <b>Memory</b>                   | Non-volatile                                                                                                                                                                |
| <b>Signal Output</b>            | 4-20 mA, two-wire                                                                                                                                                           |
| <b>Maximum Signal Distance</b>  | 1,000' (304m)                                                                                                                                                               |
| <b>Signal Fail-Safe</b>         | Selectable high, low or hold last value                                                                                                                                     |
| <b>Supply Voltage</b>           | 12-30 VDC                                                                                                                                                                   |
| <b>Maximum Consumption</b>      | 22.5 mA                                                                                                                                                                     |
| <b>Process Temperature</b>      | -40° to 140°F (-40° to 60°C)                                                                                                                                                |
| <b>Temperature Compensation</b> | Automatic                                                                                                                                                                   |
| <b>Storage Temperature</b>      | -40° to 176°F (-40° to 80°C)                                                                                                                                                |
| <b>Pressure</b>                 | -14.5 to 43.5 psi (-1 to 3 bar)                                                                                                                                             |
| <b>Enclosure Rating</b>         | Type 6P (IP68)                                                                                                                                                              |
| <b>Enclosure Material</b>       | PVDF (pigmented polyvinylidene fluoride)                                                                                                                                    |
| <b>Antenna Material</b>         | PVDF (natural polyvinylidene fluoride)                                                                                                                                      |
| <b>Cable Jacket Material</b>    | PVC (polyvinyl chloride)                                                                                                                                                    |
| <b>Cable Seal Material</b>      | Viton GLT (fluoroelastomer)                                                                                                                                                 |
| <b>Cable Orientation</b>        | Vertical                                                                                                                                                                    |
| <b>Shielded Cable</b>           | 2-conductor                                                                                                                                                                 |
| <b>Cable Length</b>             | 32.8' (10m)                                                                                                                                                                 |
| <b>Conduit Connection</b>       | 1" NPT                                                                                                                                                                      |
| <b>Process Mount</b>            | 1-1/2" NPT                                                                                                                                                                  |
| <b>Classification</b>           | General purpose (cCSAus)                                                                                                                                                    |
| <b>Approvals</b>                | C22.2 No. 61010-1-12                                                                                                                                                        |
| <b>Compliance</b>               | FCC: Part 15.256, 15.209, 15C<br>ISED IC: RSS-102, RSS-211, RSS-247<br>CE/RED 2014/53/EU: EN 302 372, EN 302 729, EN 301 489-1, -33, EN 300 328 SRRC: (No. [2002] 353), CRN |

\* Dead band is the minimum distance the sensor must be mounted above the max liquid level.

## Overview

The Flowline LR80 **EchoBeam®** general purpose 80GHz FMCW radar sensor provides continuous level measurement up to 32.8' (10m) for liquids or 16.4' (5m) for solids with a 4-20 mA signal output. The sensor is wirelessly configured over Bluetooth via the LevelTap™ App which enables you to see the level, verify the status, and manage the settings of connected sensors from the safety of the ground or nearby catwalk. The sensor measures liquid and solids media with a dielectric constant value  $\geq 1.6$ , such as water, chemical or petroleum-based liquids, and pellet, grain, powder or aggregate solids. Select this sensor for tank, sump, lift station, weir, canal, reservoir, bin, conveyor or transfer station applications.

## Features

- 80GHz technology provides reliable, maintenance-free operation
- Measures level height, air gap, tank volume or open channel flow
- Rugged PVDF antenna and enclosure for corrosive liquid or solids
- IP68 rated sensor for harsh outdoor or below grade installations
- Sealed 10m PVC jacketed cable for corrosive level environments
- Zero dead band maximizes the potential fill capacity of small tanks
- Optionally measures through top wall of plastic or fiberglass tanks
- Bluetooth wireless configuration via the LevelTap™ mobile App
- 2-year warranty

## Agency Approvals

- CSA, FCC

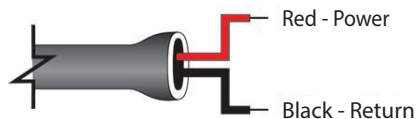


## Configuration

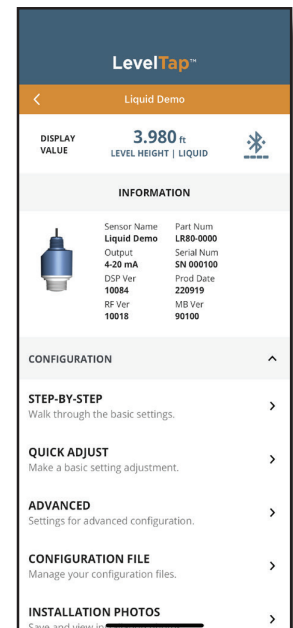
Download the free **LevelTap™** App at the Apple Store or Google Play Store, register and go to Demo Sensors. There you can view level status and step-by-step or advanced configuration examples prior to sensor purchase.



## Wiring



4-20 mA Wiring: The Red Wire or Positive (+) and Black Wire or Negative (-) terminals are for connection to a 12-30 VDC power supply or to a 4-20 mA loop power source. The wire to the terminals can be extended up to 1,000 feet using 16-22-gauge wire.





# EchoBeam® LR80 Series Radar Level Sensor Accessories

| EchoBeam Radar Level Sensor Accessories |                                                                                     |                                                                                                                                                                                     |          |             |                            |          |
|-----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------|----------------------------|----------|
| Part No.                                | Item Photo                                                                          | Description                                                                                                                                                                         | Quantity | Weight (lb) | Drawing Link               | Price    |
| <a href="#"><u>LM50-3S21</u></a>        |    | Flowline short mounting bracket, 316 stainless steel. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors. 1in NPT lock nut included.     | 1        | 1.1         | <a href="#"><u>PDF</u></a> | \$160.00 |
| <a href="#"><u>LM50-3S31</u></a>        |    | Flowline short mounting bracket, 316 stainless steel. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors. 1-1/2in NPT lock nut included. | 1        | 1.1         | <a href="#"><u>PDF</u></a> | \$160.00 |
| <a href="#"><u>LM50-3S22</u></a>        |    | Flowline long mounting bracket, 316 stainless steel. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors. 1in NPT lock nut included.      | 1        | 1.45        | <a href="#"><u>PDF</u></a> | \$220.00 |
| <a href="#"><u>LM50-3S32</u></a>        |    | Flowline long mounting bracket, 316 stainless steel. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors. 1-1/2in NPT lock nut included.  | 1        | 1.45        | <a href="#"><u>PDF</u></a> | \$220.00 |
| <a href="#"><u>LM53-2440</u></a>        |    | Flowline capped reducer, PTFE, 1-1/2in female to 2in male NPT. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors.                       | 1        | 0.25        | <a href="#"><u>PDF</u></a> | \$220.00 |
| <a href="#"><u>LM53-4855</u></a>        |   | Flowline adhesive mounting fitting, PVC, 1-1/2in female NPT. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors.                         | 1        | 0.60        | <a href="#"><u>PDF</u></a> | \$160.00 |
| <a href="#"><u>LM53-3850</u></a>        |  | Flowline mounting flange, CPVC, 3in ANSI x 1-1/2in female NPT. For use with Flowline EchoBeam frequency modulated continuous wave (FMCW) radar level sensors.                       | 1        | 1.65        | <a href="#"><u>PDF</u></a> | \$302.00 |

See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

## Mounting Examples



[LR80-0000](#) shown mounted to [LM50-3S21](#)  
short mounting bracket



[LR80-0000](#) shown mounted to [LM53-2440](#)  
capped reducer



[LR80-0000](#) shown mounted to [LM53-4855](#)  
mounting fitting