

A Higher Level of Performance



Data Sheet

Ranger Plus™ LTRP

Ultrasonic Level Transmitter



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

Overview

Ranger Plus™ LTRP

Ultrasonic Level Transmitter



Principle of Operation

The Ranger Plus™ Ultrasonic Level Sensor provides accurate non-contacting level measurement up to 10 feet and features (3) Analog Outputs and (2) Switches. The analog output modes are 0-10 VDC, 4-20mA Sinking and 4-20mA Sourcing. The switches are configurable as either “PNP” or “NPN” type (sourcing or sinking). Each has an adjustable set point, hysteresis, window, initial conditions, ON delay, OFF delay and loss of target response to easily create controls and alarms. The sensor is housed in a chemically inert PVDF sealed housing for durability and long life. The sensor is well suited for a wide range of corrosive, sticky or dirty type media. The Ranger Plus™ applications include pump control, bulk inventory, batch processing, water management, high/low level alarms and much more. To configure, monitor and data log your application, download the free Ranger Plus™ software and purchase one RS-485 communication tool.

Application Photo



Features and Benefits

- Unaffected by optical factors like color and transparency
- Computer (PC) software allows remote adjustment
- Standard RS-485 Serial Interface
- Durable housing for long life
- Threaded at both ends
- Optional Threaded Jam Nut in applications where no threaded fitting is available
- Short & Overload protected I/O
- Adjustable filters compensate for tank mixers or turbulence
- Temperature compensation for improved accuracy
- Adjustable sensitivity
- 4.0” to 12.0” deadband

Specifications

Ranger Plus™ LTRP
Ultrasonic Level Transmitter



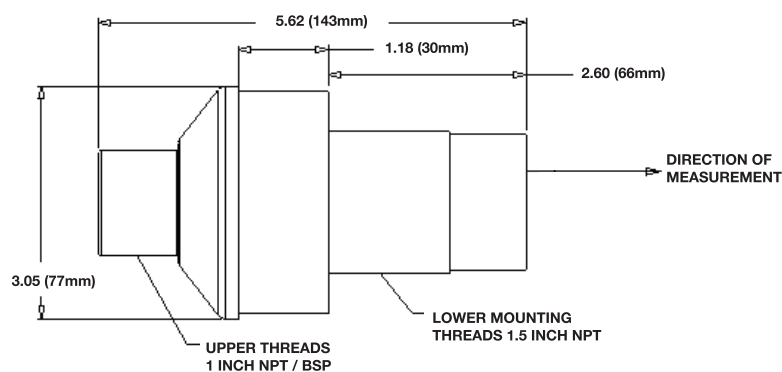
Specifications

Active Measuring Range	4" - 120"
Case Material	PVDF
Temperature	-40 to 158°F (-40 - 70°C)
Humidity	0 to 100% operating
Compensation	Temperature Compensated
Resolution	Digital: 0.0034" (0.086mm); Analog: 4099 steps (over full 0-10 VDC or 0-20 mA)
Repeatability	Greater of $\pm 0.03"$ (0.76mm) or 0.1% of target distance in stable environment
Update Rate	50 ms, software adjustable; affected by software filter selections
Input Power	10-30 VDC, 50 mA maximum (not including output currents)
Voltage Output	0-10, 0-5 VDC or PC customized; 10mA max. (*)
Current Loop #1	Current sourcing 4-20mA or PC customized, max. loop 500 Ω (*)
Current Loop #2	Current sinking 4-20mA or PC customized, max. loop 500 Ω (*)
Sinking Switch	150 mA max. @ 40 VDC max., teachable set point & polarity, fault indication
Sourcing Switch	150 mA max. @ input voltage, teachable set point & polarity, fault indication
Max. Range	10 feet
Process Mount	1.5 inches
Adjustment	Ranger Plus™ Software
Configuration	Stored in non-volatile memory
Transducer	Rugged piezoelectric
Protection	NEMA 4X, NEMA 6P, IP68

Specifications are subject to change without notice.

Dimensions (inches)

LTRP-10: (4" - 120" Range)



Notes:

Mounting: Lower 1.5 in. or upper 1 in. NPT threads

Attached Cable: PUR jacket, 6 ft (2m) long

Connections & CONNEX 3D

Ranger Plus™ LTRP
Ultrasonic Level Transmitter



Connections

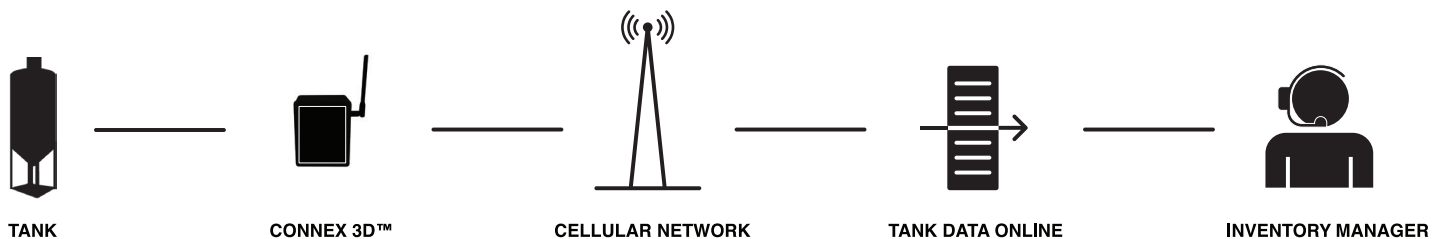
CABLE CONNECTION	WIRE	DESCRIPTION
Power	Brown	10 - 30 VDC, 50 mA max (sensitivity reduced below 15 VDC)
Ground	Blue	Power and interface common
Voltage Output*	Violet	0 - 10 VDC, 0-5 VDC or custom range values between 0 and 10 VDC
Current Loop Output*	Green	4-20 mA sourcing (adjustable range values between 0 and 20 mA)
Current Loop Output*	Orange	4-20 mA sinking (adjustable range values between 0 and 20 mA)
Switch #1 Output	Black	Sinking ("NPN") or Sourcing ("PNP"), user selected
Switch #2 Output	White	Sinking ("NPN") or Sourcing ("PNP"), user selected
RS-485 -	Gray	Serial data connection (depends on model - see model selection)
RS-485 +	Yellow	Serial data connection (depends on model - see model selection)

Wireless Monitoring Option

In order to wirelessly monitor your tank level application, add the CONNEX 3D™ cellular modem to the Ranger Plus™ Ultrasonic Level Sensor. The Ranger Plus communicates to the CONNEX 3D™ modem via digital RS485 communications providing reliable, accurate tank level monitoring with daily measurements both scheduled and event driven. Remote monitoring with the CONNEX 3D™ is simple and flexible, eliminating the hassles of third party web portals, expensive monthly monitoring fees and unreliable help desk support. Simply connect the CONNEX 3D into your server/network and view the cellular data in a simple .csv file that transfers via FTP from the cell tower to your server. Transmits alarms and inventory time date stamped data. All data is viewable from your computer, tablet or smartphone. Email and SMS text are sent using pre-programmed alarm set points in the CONNEX 3D modem.



How It Works



Ordering Information

Ranger Plus™ LTRP

Ultrasonic Level Transmitter



Ordering Information

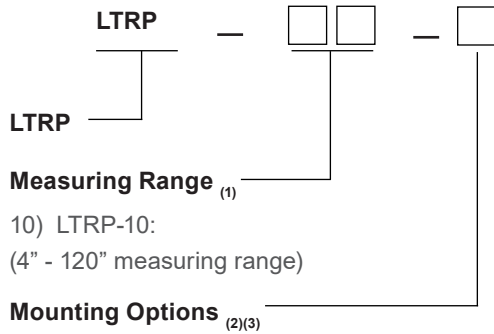
HAWK Model Number Builder

Use the diagram below, working from left to right to construct your HAWK Model Number.

Simply match the category number to the corresponding box number.

Example: **LTRP-10-N**

Ranger Plus™ Ultrasonic Level Transmitter (up to 120" measuring range) with no mounting options



To configure, monitor and data log your application, download the free Ranger Plus™ software and purchase one RS-485 communication tool. Add part number LTCT to purchase order.

Ordering Notes:

- (1) Select the best configuration based on your requirements. The LTRP-10 has a 1.5" NPT Process Connection.
- (2) Jam nuts are used on the lower threads of an LTRP sensor in applications where there is no threaded fitting available.
- (3) Consult factory for flange mounting option
- (4) For wireless monitoring option add CONNEX 3D™ when ordering

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Additional product warranty and application guarantees upon request.

Technical data subject to change without notice.

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