



**FLOW  
LEVEL  
PRESSURE  
ANALYTICAL  
TEMPERATURE  
INSTRUMENTATION  
PASTEURIZATION CONTROLS**

## **TRL Non-Contact RADAR Level Transmitter**

- *Sanitary process seal provides non-contact, non-intrusive measurement*
- *"FMCW" technology solves tough problems like:*
  - *Changing specific gravities*
  - *Insertion probe coating by viscous products*
  - *Agitators, steam, and/or vacuum conditions*
  - *All stainless steel construction for long-term reliability*

The TRL is designed to address a large number of tough measuring applications in a variety of sanitary processing plants. This revolutionary transmitter is based on the latest innovation in proven RADAR technology for level measurement: Frequency Modulated, Continuous Wave – FMCW. This technology allows the sensors' output to remain accurate and reliable even in demanding applications where the presence of viscous product, changing specific gravity, agitators, steam, and vacuum, all contribute to poor performance for other types of sensors. The "TRL" RADAR Level Sensor is the answer to

those problems in critical control applications where you've tried ultra-sonic, capacitance, or magnetostrictive probes, or where pressure-based sensors can't compensate for varying specific gravities. Tanks from 2-1/2 feet to 25 feet can be accommodated by the standard unit, so the only options are process connections.

Available in 3" or 4" Tri-clamp®, as well as 3" ANSI flange, the TRL can be easily adapted to existing vessels. Its 4-wire, 4-20mA signal is compatible with most control systems. And with factory programming for many applications, you can be up and running in no time.

Each sensor comes with its own sanitary Teflon® process seal which isolates the vessel from the external "horn" antenna. No other gaskets are required. The entire sensor and horn are continuously welded, and require no external electronics to operate.

Detailed specifications and ordering information can be found on the reverse. Or visit our website at [www.andinst.com](http://www.andinst.com) and download a brief worksheet that simplifies specification.



# TRL Radar Specifications

## Electrical Specifications

Power: 24 VDC  $\pm$  25% (18 to 30 VDC)  
less than 3.6 VA (i.e. 150 mA at 24 VDC)

Current Output: 4 to 20 mA DC, isolated into 700 W load  
powered externally with 24 VDC  
(12-40 VDC separate from power  
connections)

Required I/O: 2 connections for device power  
2 connections for 4-20 mA loop power  
5 connections for RS-232 serial port  
(connected only during calibration change)

## Mechanical Specifications

Material: Stainless Steel 304 Housing/Horn  
Virgin Teflon® (PTFE) Seal - patented design

Dimensions: Housing with cap and horn  
(5.0" max O.D., 18.5" max length)

Options: A lifting eyebolt is available as an option to  
facilitate sensor removal during cleaning.

Weight: Approx. 14 lbs. for 3" or 4" Tri-Clamp®;  
26 lbs for ANSI w/ flange

Housing Rating: NEMA 4X per ANSI/NEMA 250  
IP-66

## Environmental Specifications

Process Temperature Limits: 0° to 325° F  
(without pressure applied)  
0° to 260° F  
(with 20PSIG saturated steam  
applied)

Ambient Temperature Limits: 15° to 120° F

## Process Specification

Process Pressure Limits: Vacuum to 200 PSIG at 70°F for  
4" Tri-Clamp®  
Vacuum to 350 PSIG at 70°F for  
3" Tri-Clamp® and 3" ANSI

Process Dielectric: 1.6 and above  
(water = 78.5 at 25°C)

## Performance Specifications

Range: 0 to 300 inches

Repeatability: .125" (4" Tri-Clamp®)  
.500" (all others)

Ambient Temperature Effect:  $\pm$ .025" per 10° F change in  
ambient

Design Accuracy: 0.5% of URL (4" Tri-Clamp®)  
1.0% of URL (all others)

Agency Approvals: CE compliant  
Designed and manufactured to  
sound engineering practices in  
accordance with Article 3.3 of the  
PED 97/23/EC

Sanitary Standards: Complies with the 3A standard,  
T-74-01 Sensor and Sensor  
Fittings and Connections Used on  
Milk and Milk Product Equipment

FCC: Complies with Title 47  
(Telecommunications) of the  
Code of Federal Regulations  
as follows:  
  
Part 15 (Radio Frequency Devices)  
Certification

## HOW TO ORDER

