

## NRF-1 Capacitance Level Probe

### Product Features

- Compact, high quality design
- Continuous loop powered 4-20 mA operation
- Accuracy 1% of span in metal tanks
- NPT threads
- Heavy duty industrial design dielectric of material

The KOBOLD series NRF-1 are highly reliable RF level sensors designed to measure levels of conductive and non-conductive liquids in metal tanks. The probe measures the change in capacitance that occurs as level changes in the tank. The microprocessor-based electronics converts this capacitance change into a linear, highly accurate 4-20 mA signal. The advanced signal conditioning circuitry greatly minimizes the adverse effects of coating media.

The NRF-1 includes a standard 4-20 mA loop powered transmitter housed in a rugged enclosure, a rigid probe and an NPT threaded fitting as standard item. Probe material is SS316, supplied bare or PFA jacketed. Optional, remote mounted DIN Rail transmitter is also available, which can be connected to the level sensor via a 3-conductor cable up to 1000 ft. long. This option provides ease of set-up when access to the probe electrical enclosure is limited. The calibration is accomplished via 4 push buttons, located on the transmitter. The series NRF-1 probe is designed with tough applications in mind.

Other versions of the NRF Series are available for applications. High sensitivity versions for fuels and solvents are also available. Consult the NRF product line overview for details on other models.

### Applications

- Waste treatment plants
- Refineries
- Food and beverage industry
- Fire protection systems
- Water storage tanks
- Chemical holding tanks

Subject to change without prior notice.



## KOBOLD NRF-1 Capacitance Level Probe

### Specifications

<b>Accuracy :</b>	± 1% of span (constant liquid dielectric)
<b>Repeatability :</b>	± 0.1 % of span
<b>Max. Length :</b>	20 feet

#### Electrical Specifications

<b>Input Power :</b>	12-36 VDC
<b>Output :</b>	4-20 mA, 2-wire
<b>Max. Loop Res.:</b>	700 Ohm @ 24 VDC

**Calibration :** Via 4 push button switches  
non-interactive settings

**Dampening Adjust :** 0-30 Seconds.

#### Temperature Range

<b>Process :</b>	-100 to 350 °F
<b>Ambient :</b>	-58 to 140 °F

#### Wetted Materials

<b>Fitting :</b>	316 Stainless Steel
<b>Probe:</b>	Fully PFA Teflon® clad * 316 Stainless Steel probe only for non-conductive liquids

<b>Enclosures :</b>	Nylon® NEMA 4, Stainless NEMA 4X or Aluminum NEMA 4X
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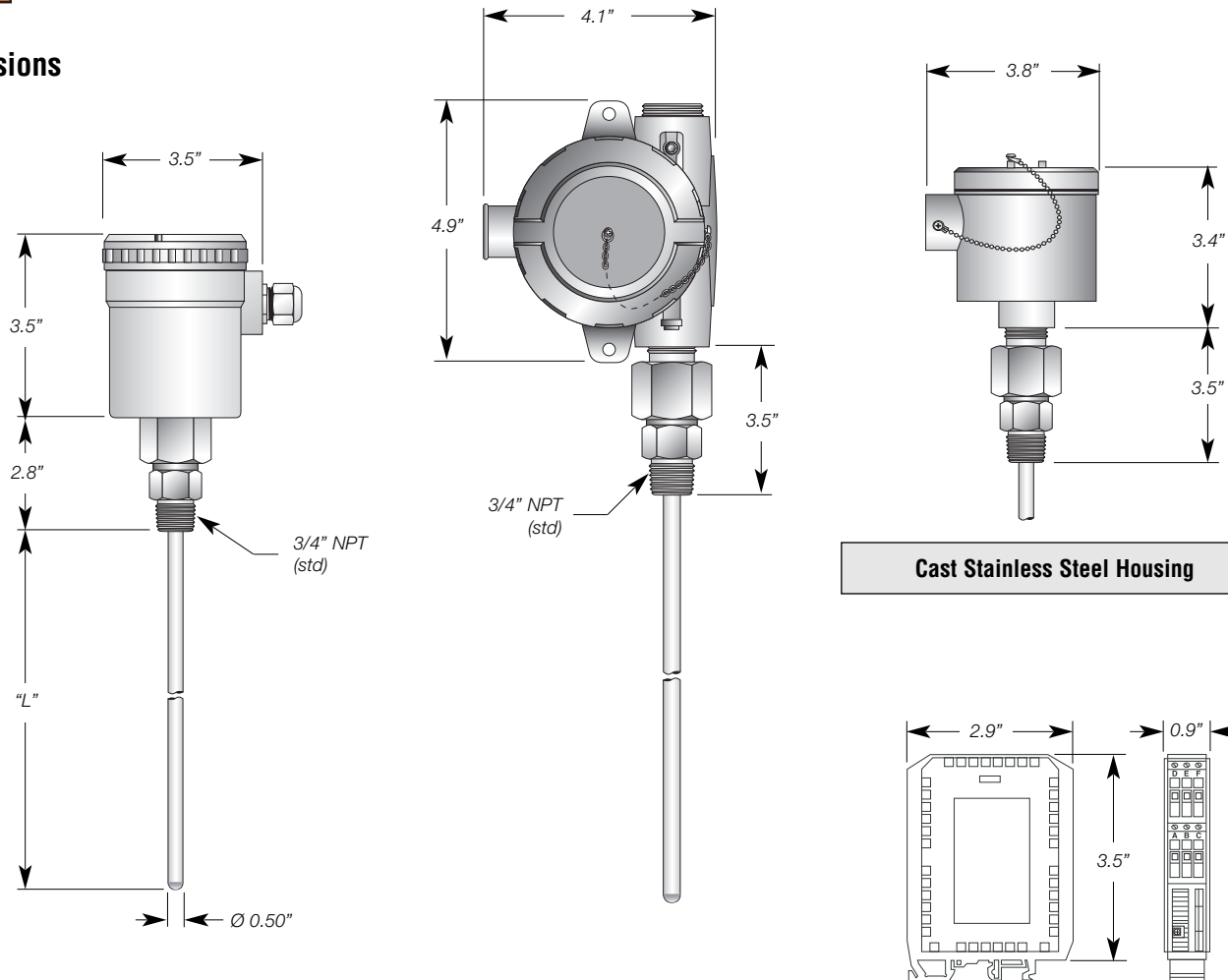
#### Maximum Pressure

<b>316SS fitting :</b>	500 PSIG @ 70°F 250 PSIG @ 300°F 100 PSIG @ 350°F
<b>Teflon® fitting :</b>	150 PSIG @ 70°F 0 PSIG @ 300°F



# NRF-1 Capacitance Level Probe

## Dimensions



Nylon Housing

Epoxy Coated Aluminum Housing

Din Rail Remote Transmitter

### NRF-1 Ordering Information

**NRF-1**  
**NRF-1R**

= Rigid Capacitance Level Probe  
= w/Remote DIN Rail Module

-1  
-2  
-3

= Nylon® (NEMA 4)  
= Cast Stainless Steel 316 (NEMA 4X)  
= Epoxy Coated Aluminum

**Housing**

-1  
-2

= 3/4" NPT Stainless Steel  
= 3/4" NPT Teflon

**Fitting**

-1  
-7

= Rigid Probe, PFA Teflon® Clad Standard  
= Rigid Probe, 316 Stainless Steel Un-Clad  
(non-conductive liquids only)

**Probe Style**

-L

= Probe Length (in inches)

NRF-1

-1

-2

-1

060

Sample NRF-1 Part Number