

# MODELS P55 AND P56 DIRECTLY INSERTED PROBES FOR HIGH PRESSURE AND TEMPERATURE SERVICE

TS P55

## ADVANTAGES FOR LIQUIDS AND INTERFACES

- Working pressure service to 1500 PSIG (100 BAR) and temperatures up to 1000° F (535°C)
- All primary seals and insulators are ceramic
- Multiple sealing produces maximum reliability and safety as well as a long service life
- Triple sealing is basic on P55 probe
- P56 probe is high gain for low Dc
- Alumina probe jacket withstands abrasion from slurries and entrained solids
- Can be used for steam condensate and drainage up to 850° F (300°C)

## APPLICATION

The P55 and P56 probes allow the use of R.F. admittance technology to be used in extremely high pressure and temperature services. These recently developed probes can replace nuclear gamma ray sensors and solid mechanical displacers in many applications. Using probes avoids nuclear licensing and the safety concerns of employees. It also avoids difficulty due to large size, high purchase costs, high installation costs, and frequent maintenance.

These probes have been applied to high pressure/temperature fatty acid reactors, steam condensate knockouts, coal gassification, and similar difficult applications.

The ceramic materials used are very strong, however, they are brittle at ambient temperature. Delta Controls has developed protective packaging that protects the units from inadvertent damage while being transported or stored.

## SPECIFICATIONS

### Working Service:

Steam to 850°F (300°C)  
Others to 1000°F (535°C)

**Pressure:** To 2500 PSI (175 BAR)

**Insertion Length:** Up to 60 inches (1500 mm)

### Process Connection:

2" or larger ANSI, Greyloc hubs, DIN, JIS, etc.

**Temperature Extension:** May be required to achieve maximum rating; consult factory with application.

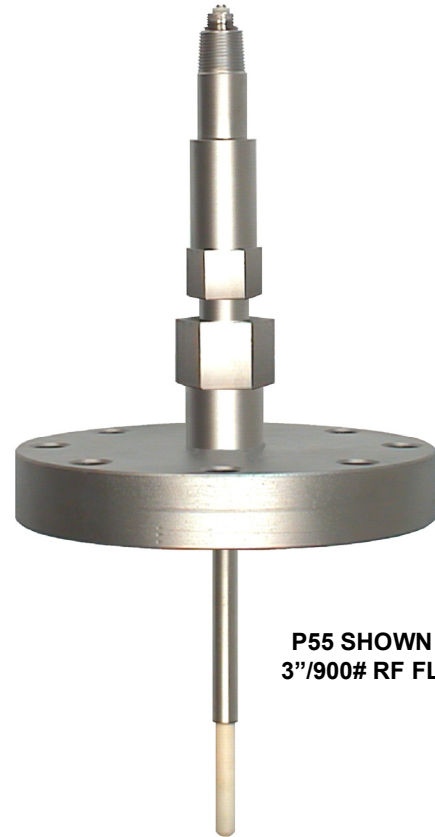
**Electronics Module:** Compatible with all models.

**Ceramics:** Recrystallized alumina and lava.

**Metals:** A105 carbon steel, 316 S.S., Monel, Hastelloy® "C", others optional.

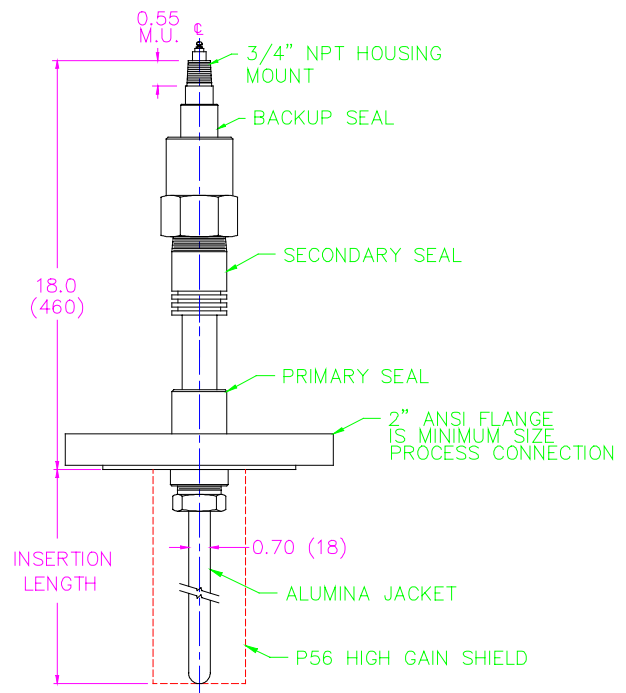
### Additional Seal and Flarestack Vent Connection:

Optional for lethal or toxic service.



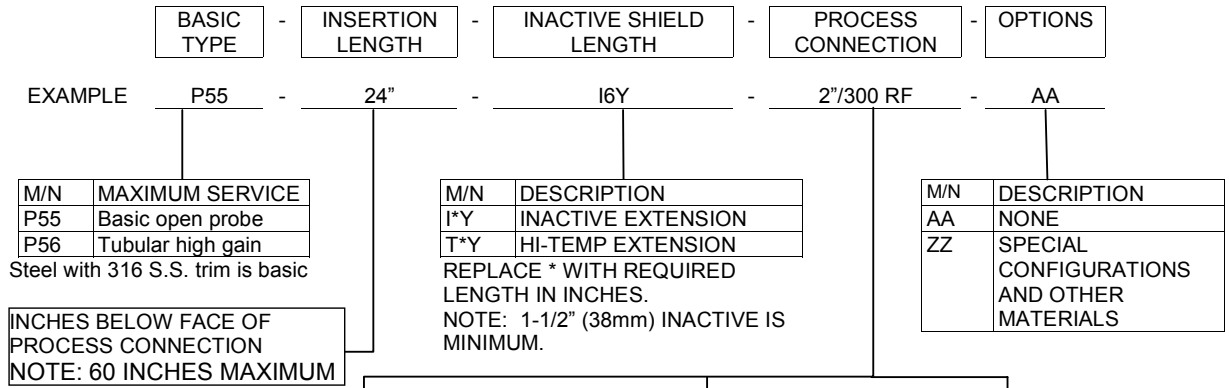
P55 SHOWN WITH 3" / 900# RF FLANGE

## OUTLINE DIMENSIONS



**DELTA CONTROLS** Corporation

## MODEL NUMBERING SYSTEM



DESIGNED AND BUILT  
IN THE USA BY  
DELTA CONTROLS

FLANGE SIZE	ANSI CLASS	PSIG @ °F (X6.89 = KILO PASCALS)					TYPE FACE	DESCRIPTION	
		-20/650	750	850*	950	1000			
2"	150#	120	100	80	55	40	RF	RAISED FACE, SPIRAL	
3"	300#	515	425	300	155	85	RTJ	RING TYPE JOINT	
4"	600#	1030	850	600	455	100	OTHER	CONTACT FACTORY	
6"	1500#	1500	1250	1000	700	400			
GREYLOC	CONSULT FACTORY								
OTHER	CONSULT FACTORY								

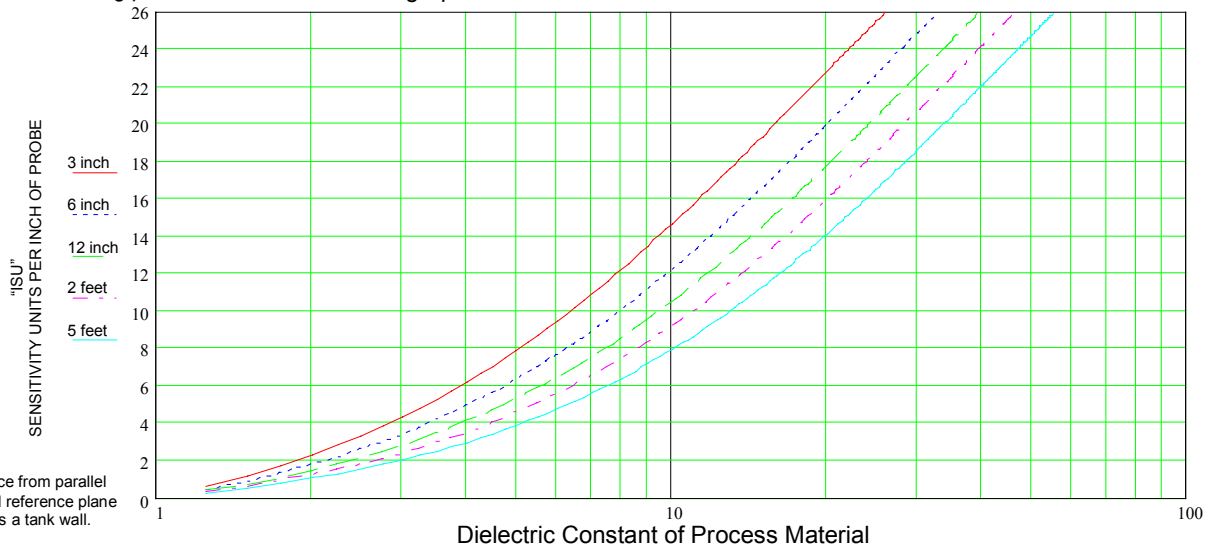
\* LIMITED TO 850°F ON STEAM SERVICE

## DETERMINING PROBE PERFORMANCE

**Step # 1**    Determine "BSU"; total sensing unit equivalents when no material is covering the sensing probe.  
(P55)

- |   |         |
|---|---------|
| A. Basic SU due to seal/body/temp extension | = 380   |
| B. Inches sensing probe insertion x 25.0    | = _____ |
| C. Inches inactive shield x 50.0            | = _____ |
| D. Inches cable for remoted module x 4.5    | = _____ |
| "BSU" TOTAL                                 | = _____ |

**Step # 2**    Determine "ISU"; quantity of sensing unit change due to a 1.0 inch change in the amount of process material covering the sensing probe. "ISU" = Read from graph below  
(P55)



**Step # 3**    Insert "BSU" and "ISU" (determined above) into the formulas shown in Application Note # PROB-198; "FORMULAS FOR MODELING AND PERFORMANCE TESTING". Verify that the selected probe and electronics module will meet the requirements of the application and provide the expected results.

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