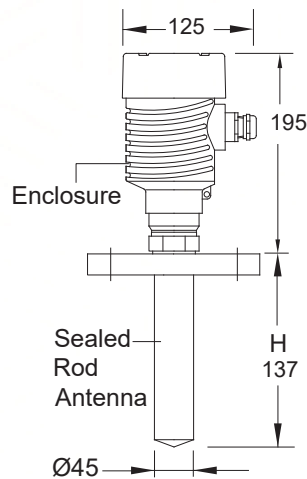
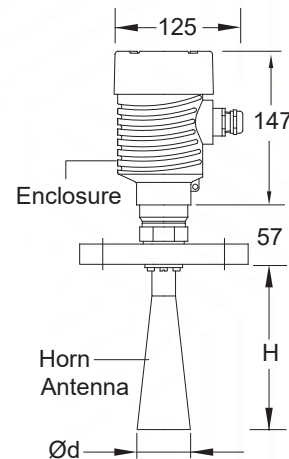


Techtrol Radar Transmitter "INTROL"

These are non-contact radar transmitters, used for level measurement of liquids, slurries, solids & powders. They are available in two configurations with sealed rod or horn type antenna.



Introl -91 with Sealed Rod Antenna



Introl - 93/ 95 with Horn Antenna

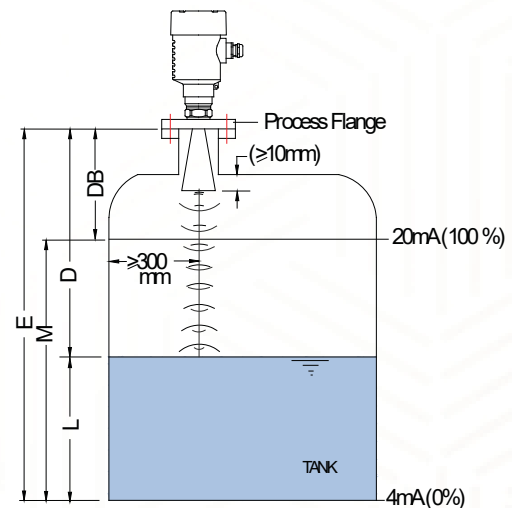
Salient Features:

- Choice of 20, 35 or 70 meters range
- Easy to install and retrofit with low maintenance
- Easy calibration through LCD display & keypad
- High speed signal analysis using advanced microprocessor
- Reliable performance due to high signal to noise ratio
- Choice of sealed rod PVDF antenna to suit corrosive liquids with fumes

Working:

The transmitter emits high frequency signal of 26 GHz via an antenna towards the service media and reflected from its surface and received by the antenna. The time difference between the emission & the reception of the signal is measured to provide 4-20 mA signal. This signal is connected to level indicator, PLC or DCS for indicating and control action.

Installation:



E = Tank Depth from Process Flange,
M = Measuring Range, L = Level,
D = Distance, DB = Deadband

Specifications:

Radar Type	91	93	95
Instrument Range (Max)	20 meters	35 meters	70 meters
Application	Liquids	Liquids, Slurries, Solids & Powders	
Antenna MOC x Type	PVDF x Sealed Rod	SS304/316L x Horn	
Antenna Size x Beam Angle	Refer Table 'Antenna Details'		
Display	4 digit LCD		
Frequency	26 GHz		
Supply	24 VDC \pm 10 %		
Output	4-20mA or 4-20 mA + HART (2 wire)		
Accuracy	\pm 3 mm	\pm 3 mm (Liquids), \pm 10 mm (Solids)	\pm 10 mm (Liquids), \pm 15 mm (Solids)
Repeatability	\pm 1 mm	\pm 1 mm	\pm 2 mm
Material Dielectric	> 2.5		
Power	22.5 mA max / 1W		
Max. Load	250 Ω at 24 VDC		
Process Connection MOC	PP	SS304 or SS316	
Process Flange	50 NB ASME	80, 100 or 125 NB ASME as per antenna size	
Enclosure	Aluminum x IP67 protection		
Cable Entry	M20 x1.5, Polyamide or ½" NPT Double Compression Cable Gland , Brass		
Humidity	< 95 %, Non condensing		
Process Temp	- 60 to 120 ^o C	-60 to 250 ^o C	-60 to 250 ^o C
Max Pressure	-1 to 3 bar	Atm	Atm

Antenna Details:

Radar Type	Antenna Dia (mm)	Nozzle NB	Antenna Length H (mm)	Beam Angle (°)
Introl 91	Sealed Rod x 45 Dia.	50	138	20
*Introl 93 & *Introl 95	Horn x 76 Dia.	80	227	12
	Horn x 96 Dia.	100	288	8
	Horn x 121 Dia.	125	620	6

*On request, horn antenna be provided with purging system for dusty solid applications at extra price

Applications:

1. INTROL 91 : Water, Waste Water, Effluent, Sewage, Acids, Alkalis, Chemicals, Vegetable Oils and Water based Paints.
2. INTROL 93 / 95 : Dam Water, Reservoir Water, Ash Slurry, Oleum, Acids, Alkalis, Vegetable Oils, Lime Powder, Coal, Coke and Ores.

Model Identification:

INTROL 91 or 93 or 95 -					
1. Antenna MOC x Type					
PVDF x Sealed Rod 45 Dia (only with Introl 91)	1				
SS304 x Horn 76 Dia	2				
SS316L x Horn 76 Dia	3				
SS304 x Horn 96 Dia	4				
SS316L x Horn 96 Dia	5				
SS304 x Horn 121 Dia	6				
SS316L x Horn 121 Dia	7				
2. Process Connection MOC x Size & Type					
PP x 50 NB ASME Flange 150# (only with Introl 91)	1				
SS304 x 80 NB ASME Flange 150#	2				
SS316 x 80 NB ASME Flange 150#	3				
SS304 x 100 NB ASME Flange 150#	4				
SS316 x 100 NB ASME Flange 150#	5				
SS304 x 125 NB ASME Flange 150#	6				
SS316 x 125 NB ASME Flange 150#	7				
Others	0				
3. Output					
4-20 mA		1			
4-20 mA + HART		2			
4. Cable Entry					
M20 Cable Gland			1		
½" NPT Double Compression Cable Gland			2		
5. Display Indicator					
Without					W
Techtrol Loop Powered Indicator – ‘LP-Cator’					L
Techtrol Level Indicator Controller – ‘TLIC’					C
Techtrol Universal Indicator Controller-‘TUIC’					U
Others					O

All dimensions in mm except specified

Model Identification:

Model No x Service Media and its Dielectric Constant x Operating Temperature & Pressure

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