

Techtrol Bar Screen Differential Level Control System - 'TBDS'

It is a reliable, non-contact type, microcontroller based system for continuous measurement of differential level with in upstream and downstream flow in an open channel flow to automate the rake movement of a bar screen for primary filtration in wastewater treatment plants.

Salient Features

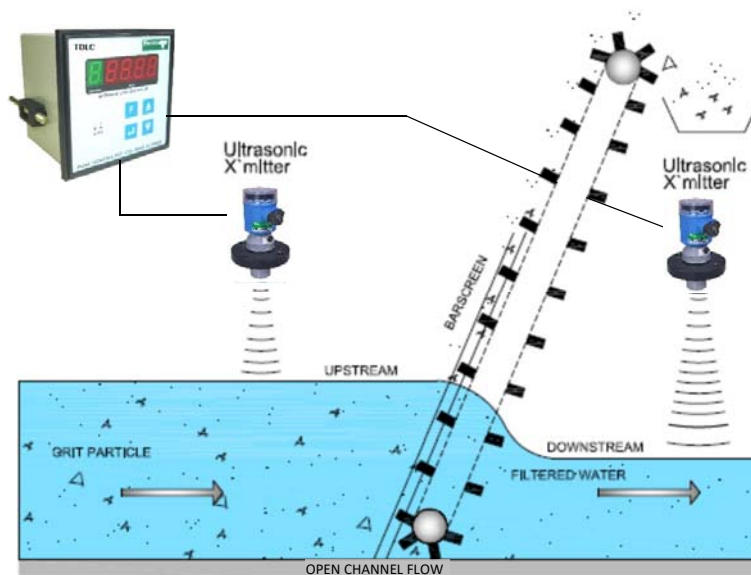
- Non-contact level measurement
- Easy to install through flange connection
- IP65 enclosure to suit outdoor installation
- No moving parts, minimal maintenance
- User friendly programming through keypad & display
- Option of re- transmission 4-20 mA and RS-485 Modbus RTU



Ultrasonic Transmitter

Differential Controller

System Configuration & Working (fig 1)



The system consists of a pair of ultrasonic transmitters, mounted on the upstream and downstream side of open channel flow to measure levels at these positions continuously and their signals are fed them to Techtrol Differential Level Controller, which calculates differential level through software and actuate relay contacts to control rake motion on bar screen.

The system is used alongwith bar screen at primary filtration stage to remove small & large suspended particles like debris, wood, rags & plastic, thus preventing clogging in pump and increase its life.

Specifications

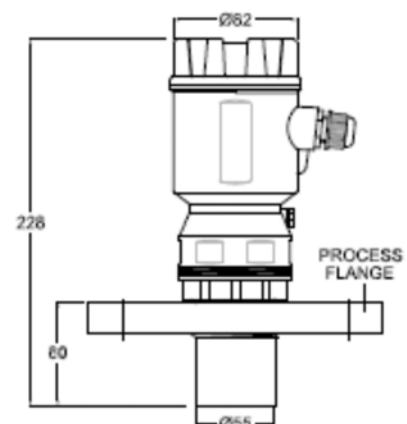
1. Differential Level Controller - TDLC

Circuitry	: Microcontroller based
Accuracy	: 0.25% FSD
Display	: 12.5 mm H, 7 segment Red LED display
Indication	: 1-digit Chanel/ parameter window 4-digit Level Value (I/P-1, I/P-2 & diff. level)
Alarm Indication	: 2 Red LEDs (Relay On status)
Programming	: Through 4 keys
Scan Time	: Individually adjustable from 0 to 99 seconds
Power Supply	: 110/ 230 VAC ($\pm 10\%$) or 24 VDC ($\pm 10\%$)
Supply for X'mitter	: 24 VDC, 30 mA
Inputs	: 2 nos. x 4-20mA from transmitters
Output	Standard : 2 x SPDT Relay, 5A @ 250 V AC Optional : Re-transmission 4 -20 mA proportional to differential level Optional : RS-485 Modbus RTU Communication
Power	: 6 VA
Enclosure	: MS powder coated, panel mounted, Size: 100 x 100 x 135 (D) mm
Ambient Temp	: 55 °C
Humidity	: 90 % Rh, Non-condensing

2. Pair of Ultrasonic Transmitters (upstream & downstream)

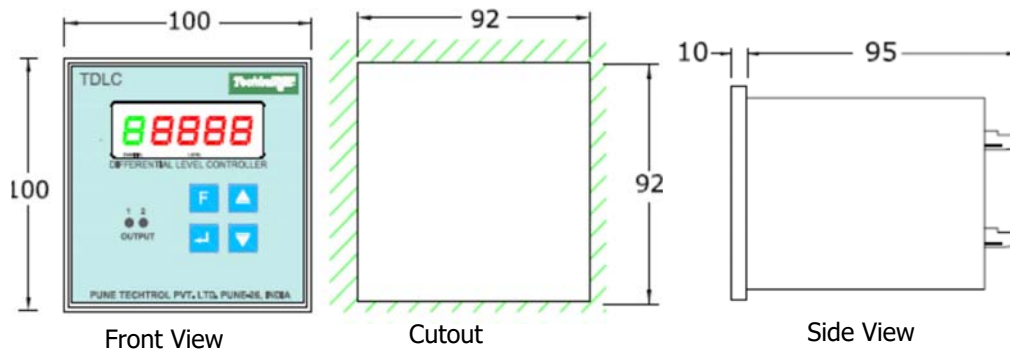
Model Number	: Ultratrol-1 or 2
Measuring Ranges	: 0.4 to 5 mtrs (Ultratrol-1), 0.5 to 10 mtrs (Ultratrol-2)
Blanking Distance	: 0.4 mtr (Ultratrol-1), 0.5 mtr (Ultratrol-2)
Accuracy	: 0.5% of FSD
Power Supply	: 24 VDC ($\pm 10\%$)
Output	: 4-20 mA (2 wire)
Display	: OLED, 4 digit indication (level value)
Transducer MOC	: ABS
Process Connection	: 3" NB ANSI 150 # Flange, PP
Enclosure	: ABS x IP65
Conduit Connection	: M20 x 1.5 Cable Gland
Operating Temp	: - 10 to 60°C
Process Pressure	: < 1 bar

Ultratrol 1 or 2



Mounting Details

TDLC



Model Identification

		1	2	3
		TBDS -		
1. Power Supply of Differential Controller				
110 V AC		1		
230 V AC		2		
24 V DC		3		
2. Output of Differential Controller				
2 SPDT relay o/p, 5A, 250 V AC		R		
2 SPDT relay o/p, 5A, 250 V AC + re-transmission 4-20 mA		T		
2 SPDT relay o/p, 5A, 250 V AC + RS-485 Modbus RTU Communication		S		
2 SPDT relay o/p, 5A, 250 V AC + re-transmission 4-20 mA + RS-485 Modbus RTU		C		
3. Transmitter Model x Range				
Ultratrol-1; 0.4 to 5 mtrs		1		
Ultratrol-2; 0.5 to 10 mtrs		2		
Others		0		