

Capacitance Level Probe Model WT-VO

Capacitance Level Probe
Transmitter for both Water
Height and Temperature.

The WT-VO transmits both water height and water temperature as voltage outputs.

Water height probes are available for:

¼ meter	250mm	WT-VO 250
½ meter	500mm	WT-VO 500
1 meter	1000mm	WT-VO 1000
1½ meter	1500mm	WT-VO 1500
2 meter	2000mm	WT-VO 2000

The WT-VO has the following basic features:

- Externally powered.
- Water height and Water temperature Voltage outputs.
- Voltage outputs can be scaled to give spans from 0~500mV to 0~2.0V.
- Water Height output is temperature compensated to reduce the temperature effect on the output.
- RS232 serial port for testing and setup.

Ordering Information:

WT-VO Capacitance Level Probe

WT-VO- -
L M

Ranging options for WT-VO			
Probe Length	L	Stainless Steel	
		Material	M
250mm	250	304 s/s	304
500mm	500	316 s/s	316
1000mm	1000		
1500mm	1500		
2000mm	2000		

Ordering Examples:

WT-VO-1000-304 WT-VO; Probe Length = 1000mm; 304 Stainless steel Material.

WT-VO-500-316 WT-VO; Probe Length = 500mm; 316 Stainless steel Material.

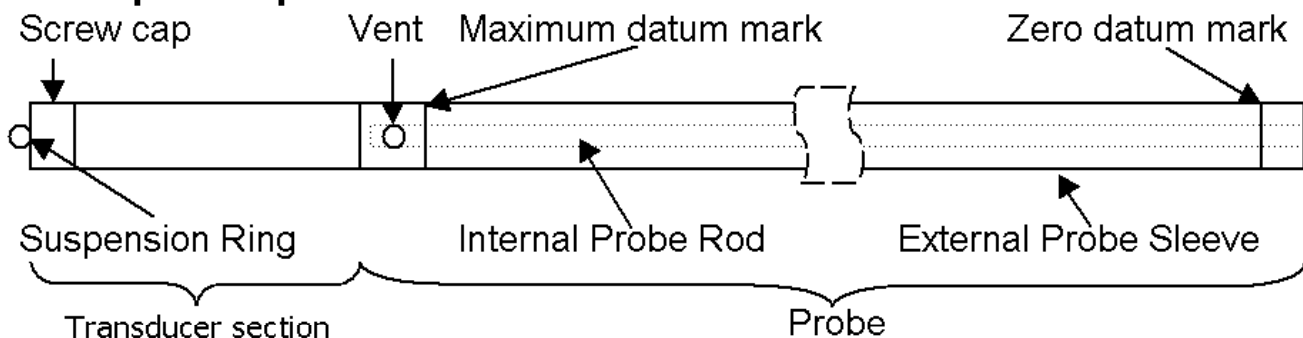
WT-VO Applications:

- Reservoir level,
- Lake level,
- Canal level,
- River level,
- Industrial level applications,
- Sea Water level (316 only).

WT-VO Mounting:

The Probe should be mounted vertically. If the probe is in a flowing river the flow causes water to rise up on the probe giving high readings so in a river with strong flow the probe should be mounted inside a plastic pipe with holes drilled in it - this way the probe reads the real height of the river. Make sure the probe is mounted in such a way that the bottom holes (water entry ports) do not get blocked by mud or stones.

Description of parts:



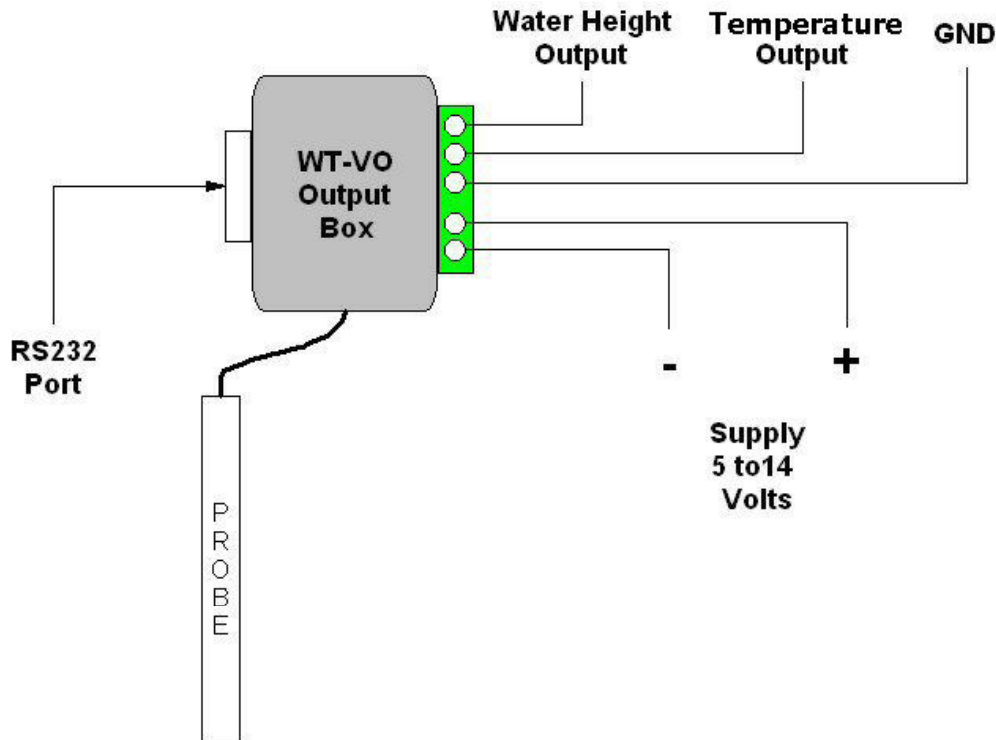
Please contact Intech Instruments for other options available with the WT-VO including isolated mA or Voltage outputs and isolated power supplies with various input power supply levels.



Specifications:

Water Height:	Sensor Type	Capacitive		
		304 Stainless Steel outer		
		316 Stainless Steel available for special orders (See note*)		
	Working Temperature	0°C to 50°C		
	Accuracy	±1% Full Scale		
Water Temperature:	Resolution	±1mV		
	Temperature Coefficient	±0.2mm/°C		
	Sensor Type	Thermister		
	Sensor Position	Bottom of water height probe		
	Working Temperature	0°C to 50°C		
	Linear accuracy over range	±0.3°C		
	Repeatability	±0.1°C		
Outputs:	Long term stability	±0.1°C		
	Connector	3 way screw terminal block		
		1 Water Height Voltage Output		
		2 Water Temperature Voltage Output		
		Scalable to give spans from 0~500mV to 0~2.0V		
		3 Common ground		
		see diagram below		
RS232 Interface:	Isolated output options including 4~20mA available - contact Intech Instruments			
	Connector	9pinD Female		
	Protocol	19200baud 8N1		
Power Supply:	Connector	2 way screw terminal block		
		1 Positive supply 5 to 14 volts		
		2 Negative supply common ground		
	Consumption	<1.2VA		
		see diagram below		
		Isolated Power Supply options from 10V to 264V available - contact Intech Instruments		
Probe Dimensions:	<i>Probe</i>	<i>Length</i>	<i>Diameter</i>	<i>Weight</i>
	WT-VO 500	820mm	20mm	588gm
	WT-VO 1000	1320mm	20mm	975gm
	WT-VO 1500	1820mm	20mm	1363gm
	WT-VO 2000	2320mm	20mm	1750gm

Note*: The standard version of Water Probe is constructed from 304 Stainless. If the probe is used in brackish water that is warm, it can pit and corrode the stainless. We recommend the use of the version made from 316 stainless.



Product Liability. This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.

Level Probe Description:

The Probe consists of an outer tube and an inner rod. The Inner Rod screws on to the 16mm long, 6mm diameter threaded rod protruding from the Transducer section. The temperature sensor with cable runs down the center of the inner tube so that the temperature sensor sits at the bottom of the inner tube. The Outer Tube screws directly onto the Transducer section.



Top Breather Hole and Maximum Datum Mark:

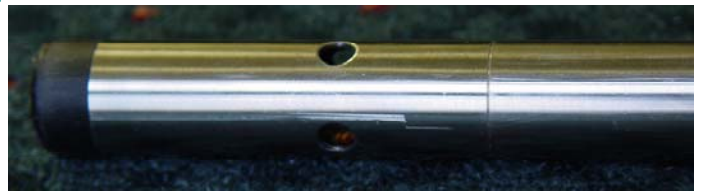
The distance from the top of the probe to the Maximum Datum Mark is as follows:
 WT-VO 250 and 500 is 70mm
 WT-VO 1000, 1500 and 2000 is 75mm

Maximum and Zero Datum Marks:

WT-VO 250 Zero to Maximum Datum is 250mm
 WT-VO 500 Zero to Maximum Datum is 500mm
 WT-VO 1000 Zero to Maximum Datum is 1000mm
 WT-VO 1500 Zero to Maximum Datum is 1500mm
 WT-VO 2000 Zero to Maximum Datum is 2000mm

Bottom Water Entry Port and Zero Datum Mark:

The distance from the Zero Datum Mark to the bottom of the probe:
 WT-VO 250 and 500 is 35mm
 WT-VO 1000, 1500 and 2000 is 75mm



RS232 Communications with the WT-VO:

The WT-VO can be read and setup using ASCII Commands sent to the RS232 Port. This can be done using any RS232 Communication software such as Windows HyperTerminal.

Protocol:	Baud Rate	19200
	Parity	None
	Data Bits	8
	Stop Bits	1

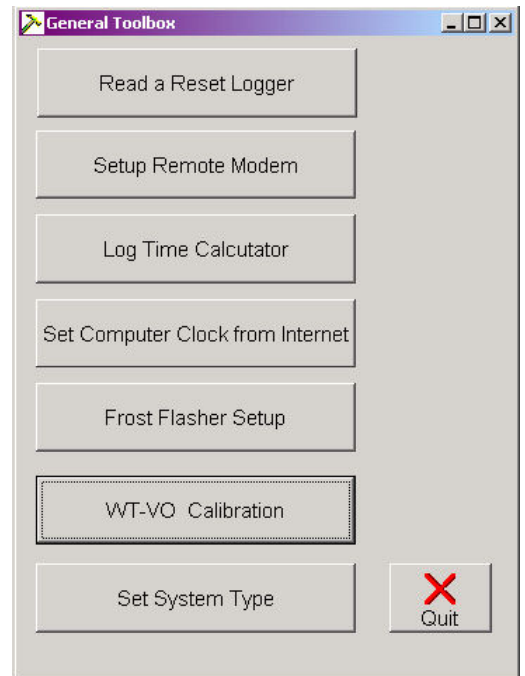
Command	Function	Expected Bytes of Response
R	Read Data	115
L	Set Zero Point (Low)	25
H	Set Top Point (High)	26
COK	Calibrate	114
O&&&&	Set Output Span	41
S00250	Set probe height to 250mm	28
S00500	Set probe height to 500mm	28
S01000	Set probe height to 1000mm	28
S01500	Set probe height to 1500mm	28
S02000	Set probe height to 2000mm	28
V	Read Version Number	23
F	Set DtoA to Full for 1 min	63
K####	Set Cal Ref to ####	28
Z	Diagnostic Read	300

Note1: #### is a 4 digit ASCII String representing the Cal Ref Voltage in millivolts. It is greater than or equal to 2300 and less than or equal to 2500.

Note2: &&&& is a 4 digit ASCII String representing the Output Span Voltage in millivolts. It is greater than or equal to 0500 and less than or equal to 2425.

Using Omnilog to Read and Setup a WT-VO:

The Omnilog software includes a user interface for the WT-VO voltage output water height probe. This is accessed via Tools...General Toolbox...WT-VO Calibration.



The following operations are available:

Select the Comm Port that the WT-VO is connected to.

To read data from the probe:

Click the "Read WT-VO" Button

Information from the Probe will be displayed in the output window

To change the output span:

The system outputs 0 volts at 0mm water height

The maximum voltage that is output at maximum water height can be set between 500mV and 2425mV (2.425Volts)

This is the probes span

To set the span, enter the required span in the box labeled "Out Span"

This should be entered in mV like 500, 1000, 2000, 2048

Click the "Set Output Span" button

The Output Span is now set

To calibrate the probe:

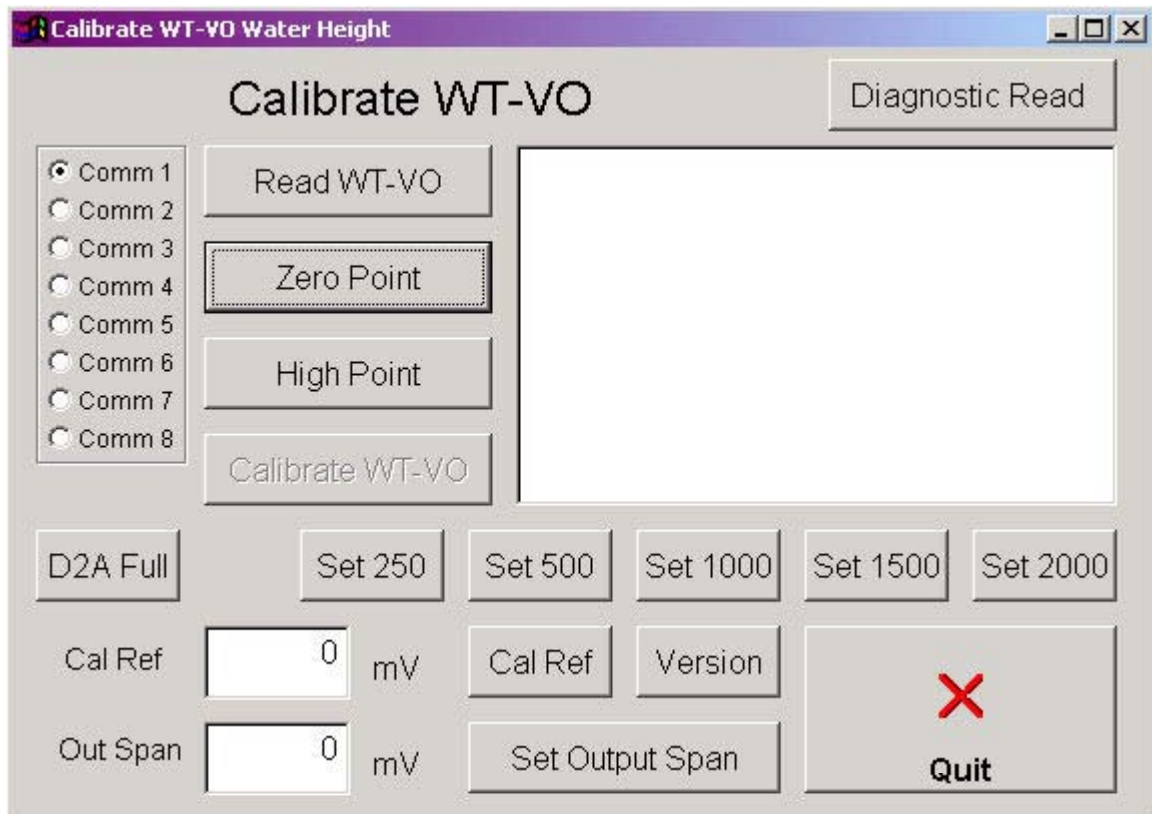
Click the Read WT-VO Button to check that communications is working

Put the probe in water up to the Zero mark and click the Zero Point Button

Put the probe in water up to the High mark and click the High Point Button

Click the Calibrate WT-VO Button

The probe is now calibrated.



For more information, please refer to the OmniLog Help.