

## Instruction Manual

**HI 983319-0**  
**HI 983319-1**

## Panel-Mounted TDS Indicators & Controllers



### WARRANTY

These meters are warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. The probes are warranted for a period of one year. This warranty is limited to repair or replacement free of charge.

Damages due to accident, misuse, tampering or lack of prescribed maintenance are not covered.

If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the failure. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

To validate your warranty, fill out and return the enclosed warranty card within 14 days from the date of purchase.

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Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

Dear Customer,

Thank you for choosing a Hanna product. This manual will provide you with the necessary information for the correct operation of the meter. Please read it carefully before using the meter. If you need additional technical information, do not hesitate to e-mail us at [techserv@hannacan.com](mailto:techserv@hannacan.com).

These instruments are in compliance with the CE directives EN 50081-1 and EN 50082-1.

### PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your Dealer or the nearest Hanna Customer Service Center.

The meter is supplied with:

- HI 7634-00 EC/TDS probe;
- 12VDC adapter (HI983319-0 only);
- Mounting brackets.

**Note:** Conserve all packing material until the instrument has been observed to function correctly. Any defective item must be returned in its original packing.

### GENERAL DESCRIPTION

HI 983319-0 and HI 983319-1 are conductivity indicators and controllers with a relay output designed for simplicity of use in a wide range of applications.

The models are panel mounted with membrane keypads on the front panel and an easy-to-read LCD display.

All the meters compensates for the temperature variation automatically. The probe is easy to clean and requires little maintenance.

Measurements are highly accurate and the meters can be calibrated at one point.

Power supply, wiring and selection are made via the plug-in terminal blocks on the rear panel.

LED indicators on the front panel identify whether the controller is in set or measurement mode and if alarm is active.

### SPECIFICATIONS

HI 983319	
Range	0 to 1999 ppm
Resolution	1 ppm
Accuracy (@ 20°C)	±2% full scale
Setpoint	Adjustable from 0 to 1900 ppm
Alarm	LED on and alarm contact is closed when TDS value is lower than Setpoint
Probe	HI 7634-00 EC/TDS probe (included)
Temperature Compensation	Automatic from 5 to 50°C (41 to 122°F) with $\beta=2\%$
TDS/Conductivity Conversion Ratio	0.65
Calibration	Manual with one trimmer
Power supply:	
HI 983319-0	External 12/24 VDC
HI 983319-1	110/115V & 220/240V; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")

### CE DECLARATION OF CONFORMITY

**CE**  
DECLARATION OF CONFORMITY

We  
Hanna Instruments Italia S.r.l.  
via E. Fermi, 10  
35030 Sarmeola di Rubano - PD  
ITALY

herewith certify that the EC/TDS meters:  
HI983319-0 HI983319-1

have been tested and found to be in compliance with the following regulations:

IEC 801-2	Electrostatic Discharge
IEC 801-3	RF Radiated
IEC 801-4	Fast Transient
EN 55022	Radiated, Class B
EN 61010-1	User Safety Requirement

Date of Issue: 14-11-98

D. Volpato - Engineering Manager  
On behalf of  
Hanna Instruments Italia S.r.l.

### Recommendations for Users

Before using these products, make sure that they are entirely suitable for the environment in which they are used. Operation of these instruments in residential areas could cause unacceptable interferences to radio and TV equipment. The metal band at the end of the probe is sensitive to electrostatic discharges. Avoid touching this metal band at all times. During operation, ESD wrist straps should be worn to avoid possible damage to the probe by electrostatic discharges. Any variation introduced by the user to the supplied equipment may degrade the instrument's EMC performance.

To avoid electrical shock, do not use these instruments when voltage at the measurement surface exceeds 24 VAC or 60 VDC. Use plastic beakers to minimize any EMC interferences.

To avoid damage or burns, do not perform any measurement in microwave ovens.

<http://www.hannacan.com>

## FUNCTIONAL DESCRIPTION

### FRONT PANEL

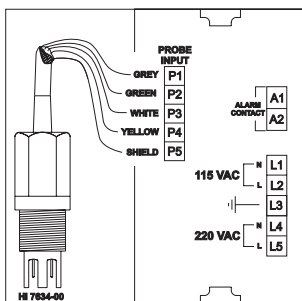
<b>Keypad</b>		
<b>SET</b>	To display setpoint	
<b>MEAS</b>	To display measurement	
<b>Trimmers</b>		
<b>CAL SET</b>	For calibration To adjust setpoint	
<b>LEDs</b>		
<b>SET</b>	ON when LCD displays the set value	
<b>MEAS</b>	ON when LCD displays the measured value	
<b>ALARM</b>	ON when alarm contact is activated	

### REAR PANEL

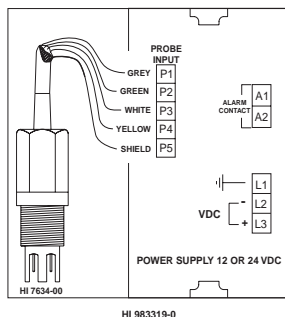
- Power Supply:**

HI 983319-0	HI 983319-1
12VDC	115/230 VAC

L1:	Not used	Neutral	} 115 VAC
L2:	Not used		
L3:	Not Connected	Earth	} 230 VAC
L4:	Negative	Neutral	
L5:	Positive	Line	
- Alarm Contact:** This contact acts only as a switch for the power. The contact has to be protected outside by the user.



HI983319-1



### 3. Probe Connection:

It is important to follow the probe diagram and connect the colored wires of probe cable accordingly. It is also recommended to connect the shield (P5) to avoid interference.

## OPERATIONAL GUIDE

### POWER CONNECTION

#### HI 983319-1

Connect a 3-wire power cable to the terminal strip paying attention to the correct earth, neutral and line contacts (115 VAC or 230 VAC ).

**Note:** It is recommended to cover the unused terminals with insulating tape.

#### HI 983319-0

Connect a 2-wire power cable to the terminal strip paying attention to the correct positive and negative (12/24VDC ).

### ALARM CONTACT

This contact (maximum 2A, 220 V) is used for connection to a dosing system or alarm. The unit acts as a switch for power to the controlling device.

**Note:** All external cables connected to the rear panel should end with wire lugs.

## OPERATING THE METER

All parameters are made via front panel keys and trimmers. When each key is pressed the appropriate LED lights up to indicate to that the function is in operation.

Make sure that the meter is calibrated and that the setpoint is properly selected before operating (see Setpoint and Calibration below).

Attach the probe to the meter. Install the probe in the fittings or immerse it in the solution to be monitored, making sure that metal pins are completely submerged. Press the "MEAS" key.

The LCD will show the TDS value. Any initial variation may be due to temperature compensation until the probe may take some time initially to readjust the temperature of the new sample.

When the alarm contact is closed, the "ALARM" LED will be lit.

## CALIBRATION

Make sure the meter is in the measurement mode (with the "MEAS" LED light on).

Immerse the probe in HI 7031, 919 ppm (1413 $\mu$ S/cm) calibration solution.

Shake briefly and wait for reading to stabilize before adjusting the calibration trimmer to display "919" on the LCD.

## SETPOINT

Press the "SET" key. The display will show the default or previously adjusted value for the alarm.

Using a small screwdriver, adjust the "SET" trimmer until the required set value is displayed.

## PROBE MAINTENANCE

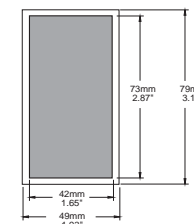
To improve performance and prolong the life of the probe, it is recommended to clean it regularly.

- Immerse the tip of the probe in HI 7061 Cleaning Solution for one hour.
- If a more thorough cleaning is required, brush the metal pins with very fine sandpaper.
- After cleaning, rinse the probe with tap water and recalibrate the meter.
- When not in use, clean the probe before putting it away.

## HI 993319 LAYOUT

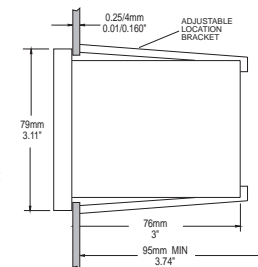
### Front view of the panel-mounted unit

Dimensions show the cutout size for installation and outside dimensions of the panel.

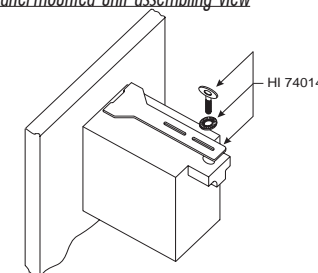


### Side view of the panel-mounted unit

Adjustable location brackets (supplied with the meter) allow the controller to slide into the cutout and will hold the unit securely in place. 95 mm (3.74") is the minimum amount of space required to install the controller with the cables connected.



### Panel-mounted unit assembling view



## ACCESSORIES

- HI 70031P 919 ppm (1413  $\mu$ S/cm) calibration solution, 20 mL sachet (25 pcs)
- HI 70031M 919 ppm (1413  $\mu$ S/cm) calibration solution, 230 mL bottle
- HI 7061M Electrode cleaning solution, 230 mL bottle
- HI 710005 12 VDC power adapter, US plug
- HI 710006 12 VDC power adapter, European plug
- HI 710012 12 VDC power adapter, Australian plug
- HI 710013 12 VDC power adapter, Southern Africa plug
- HI 710014 12 VDC power adapter, UK plug
- HI 7131326 Calibration Screwdriver (20 pcs)