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# HANNA BL Series Mini Controllers

## Accurate and Simple to Install

Traditionally, process monitoring has required considerable investment in system design, equipment, maintenance and training. With our mini controllers, we are able to offer a solution for industries that have to monitor a process economically. HANNA mini controllers are easy to use and allow accurate continuous monitoring and control of pH, ORP, TDS, EC, resistivity and level. These compact, in-line instruments are designed to consistently perform in most environments and conditions.

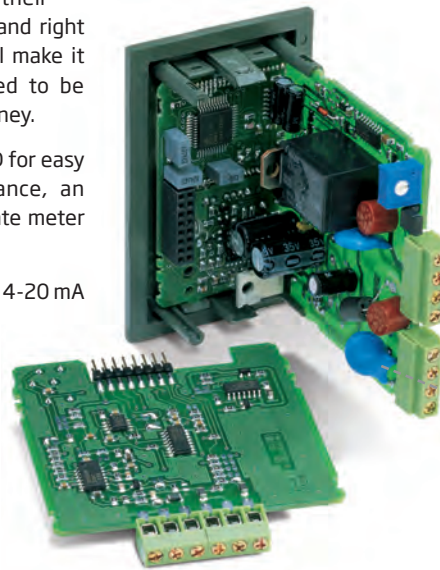
Our line of easy operation controllers have been specially designed for hydroponics, swimming pools or applications where space or cost are a major concern. Thanks to their compact size, they can be mounted in confined spaces and right next to tanks or vats. The low cost of these meters will make it possible for processes that were manually maintained to be controlled automatically, saving considerable time and money.

Our redesigned mini controller series features a larger LCD for easy reading, manual output control for simple maintenance, an overtime control system and a multicolored LED to indicate meter condition (measurement, dosing or alarm mode).

The BL 931700 and BL 932700 models are provided with a 4-20 mA analog output and input for remote control disabling.



- Fire retardant casing
- Large LCD
- Selectable overdose protection system
- External disable feature
- Selectable control override
- Matching pin connection
- 4-20 mA analog output (specific models)



- Removable modules for easy maintenance
- Quick-connect terminal blocks
- 2 amp built-in fuse

## Comparison Guide Mini Controllers

GUIDE	pH	ORP	EC	TDS	Resistivity	Level	ATC	0.1 Resolution	0.01 Resolution	Page
BL 981411	•							•		16.5
BL 931700	•								•	16.6
BL 982411		•								16.7
BL 932700		•								16.8
BL 983313			•				•			16.9
BL 983320			•				•	•		16.9
BL 983322			•				•		•	16.9
BL 983317			•				•		•	16.10
BL 983327			•				•		•	16.10
BL 983315				•			•	•		16.11
BL 983319				•			•			16.11
BL 983321				•			•		•	16.11
BL 983329				•			•			16.11
BL 983318				•			•		•	16.12
BL 983324				•			•	•		16.13
BL 983314					•		•	•		16.14
HI 7871						•				16.15
HI 7873						•				16.15

Any System Can  
be Cost Effectively  
Monitored 24/7



BlackStone mini controllers are the perfect solution for water analysis and control

### pH Mini Controllers

Monitoring and controlling pH in water conditioning and industrial applications is essential for water quality and maintaining infrastructure (piping and equipment). In the case of industrial effluent, neutralization of acidic waste is vital for environmental safety and public health. In industrial applications such as boiler feed water conditioning, a higher pH of 8.5 is necessary to prevent scaling and corrosion of critical components. Maintaining a pH of 7.4 is fundamental for proper and efficient sanitization in swimming pools and spas. The effectiveness of sanitizers such as chlorine is dependent on a controlled pH value.

### ORP Mini Controllers

ORP (Oxidation Reduction Potential) is the most dependable and consistent indicator of the sanitizing effectiveness of your pool, spa, or water treatment. As oxidizers such as chlorine, peroxide, and ozone are added to water for the purpose of sanitization, the ORP value increases, providing a clear indication of the cleansing power of the water. Typically, an ORP value of 650 to 700 mV at a pH of 7.2 indicates that your water is properly treated and all harmful bacteria are killed in less than 1 second. ORP is also essential in chemical processing where reducing agents are used and a negative ORP value is an indicator of proper neutralization.

### Conductivity Mini Controllers

In water, an increase in conductivity indicates an increase in water hardness and a decrease in purity. Conductivity monitoring and control is essential in reducing water hardness and maintaining water quality. For instance, water with a conductivity value in the range of 0-140  $\mu\text{S}$  is considered "very soft", where water with a range of 640-840  $\mu\text{S}$  is considered "hard" water. An increase in

conductivity indicates an increase in the amount of damaging dissolved solids (salts) present in water. Conductivity monitoring and control is essential in industrial applications such as feed water control, blow down activation in cooling towers and water management. In these applications, high conductivity will cause scaling and corrosion of piping and damage to critical components.

### TDS Mini Controllers

TDS measurement is an important indicator of water quality. An increase in the TDS reading indicates an increase in the amount of dissolved solids (salts) present in the water. TDS monitoring and control is imperative in industrial applications such as feed water control, blow down activation in cooling towers and water management, in these applications high TDS will cause scaling and corrosion of piping and damage to critical components.

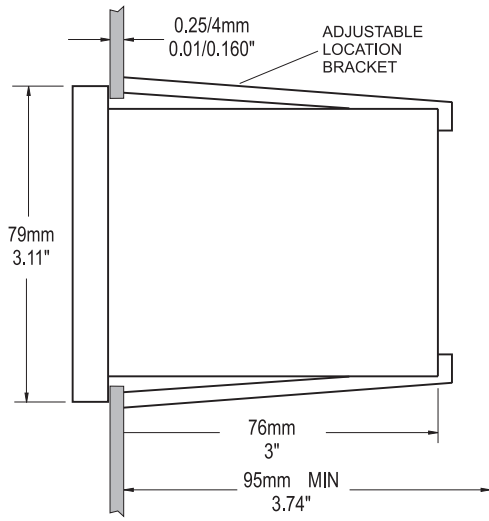
TDS measurement is also an important indicator of the effectiveness of water conditioning since an increase in TDS indicates an increase in water hardness and a decrease in purity. This will affect the quality of drinking water, feed water and rinse water. TDS monitoring and control is crucial in reducing water hardness and maintaining water quality and usability.

### Resistivity Mini Controller

Resistivity, measured in  $\text{M}\Omega$  (Ohm's), is the optimal way to measure the quality of water produced by high purity systems such as reverse osmosis systems and water conditioning equipment. As filter systems become less effective, the resistivity value will decrease indicating a need for maintenance and/or replacement of filters and critical components. Properly functioning RO and water conditioning systems will consistently produce water with resistivity readings in the range of 16 to 18  $\text{M}\Omega$ .

# HANNA Mini Controllers

## BL Series Mechanical Dimensions

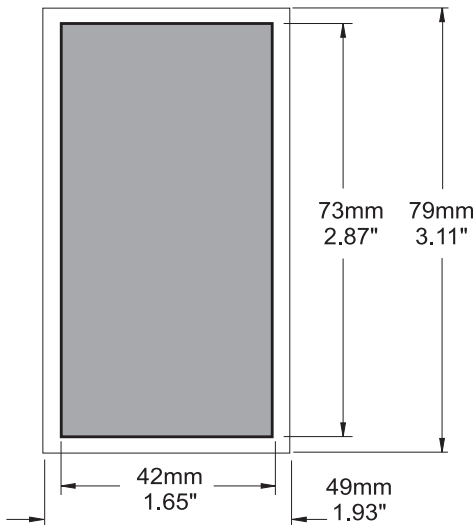


### Side View

Side view of panel-mounted controllers.

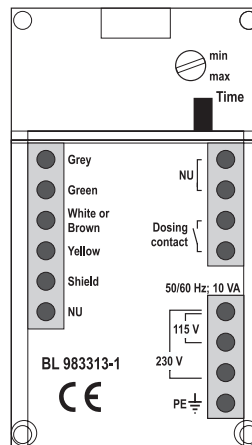
Adjustable location brackets allow the controller to slide into the cutout and will hold the unit securely in place.

130 or 87 mm (depending on model) is the minimum amount of room required to install the meter with all wiring.



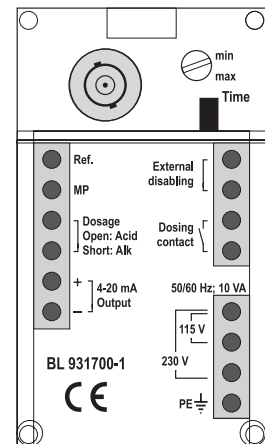
### Front View

Front view of the panel-mounted units. Dimensions show the cutout size for installation and also the outside dimensions of the panel.



### Rear View

Rear view of the BL 983313-1 with electrical connections.



### Rear View

Rear view of the BL 931700-1 with electrical connections.



- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 981411 pH controller has been designed for easy, affordable installation in tight spaces, ideal for simple and effective process control. The unit is provided with high impedance pH input and can be used with any pH electrode with standard BNC connector. Measurements are clearly displayed on the LCD, while the status LED indicates operating mode.

BL 981411 is also provided with a dosing relay. Selecting acid dosing, will cause the relay to activate when the measurement is higher than the set point. If the basic dosing is selected, the relay is activated when the reading falls below the set point.

Set point adjustment (from 0 to 14 pH) and calibration procedures are easily performed with trimmers on the front panel. Users can choose from automatic or manual dosing modes with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need. An overtime control system advises users when the relay is active too long, to help prevent overdosing.

SPECIFICATIONS	BL 981411-0	BL 981411-1
Range	0.0 to 14.0 pH	
Resolution	0.1 pH	
Accuracy (@20°C/68°F)	±0.2 pH	
Calibration	manual, through CAL (Offset) trimmer	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC	
Dosing Selection	acid or alkaline contact open=acid dosage=relay ON if measurement > set point contact close=alkaline dosage=relay ON if measurement < set point	
Set point	adjustable from 0.0 to 14.0 pH	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Input Impedance	10 <sup>12</sup> Ohm	
Power Supply	12 VDC adapter (included)	115/230 VAC ±10%; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)

#### ORDERING INFORMATION

BL 981411-0 (12 VDC) and BL 981411-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

#### PROBES

HI 1001 PVDF body pH electrode with 1/2" NPT thread, BNC connector and 3 m (9.8') cable for continuous flow-thru monitoring

#### SOLUTIONS

HI 7004L pH 4.01 buffer solution, 500 mL  
 HI 7007L pH 7.01 buffer solution, 500 mL  
 HI 7010L pH 10.01 buffer solution, 500 mL  
 HI 70300L Electrode storage solution, 500 mL  
 HI 7061L Electrode cleaning solution, 500 mL

#### ACCESSORIES

HI 710005 115 VAC/12 VDC power adapter  
 HI 710006 230 VAC/12 VDC power adapter  
 HI 740146 Mounting brackets

For a complete list of Solutions, see the end of pH Section 3.



BL 931700

## pH Mini Controller with 4-20 mA Recorder Output

- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 931700 mini pH controller has been designed for easy, affordable installation in tight spaces to perform simple yet effective process control. Thanks to its compact size, BL 931700 can be installed right next to tanks or vats.

This versatile controller is ideal for a wide variety of applications, such as textiles, papers, photographic solutions, plating baths, chemicals and water treatment.

BL 931700 is provided with a selectable set point for acid or basic dosage.

Measurements are directly taken from a pH electrode in the range from 0 to 14 with a 0.01 pH resolution. Accuracy is ensured by two point calibration, performed manually through trimmers on the front panel.

Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need. The overtime control system advises users when the relay is active for too long, helping to prevent overdosing.

In addition, this model features a 4-20 mA analog output for recorder connection.

### ORDERING INFORMATION

BL 931700-0 (12 VDC) and BL 931700-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

### PROBES

**HI 1001** PVDF body pH electrode with 1/2" NPT thread, BNC connector and 3 m (9.8') cable for continuous flow-thru monitoring

### SOLUTIONS

**HI 7004L** pH 4.01 buffer solution, 500 mL  
**HI 7007L** pH 7.01 buffer solution, 500 mL  
**HI 7010L** pH 10.01 buffer solution, 500 mL  
**HI 70300L** Electrode storage solution, 500 mL  
**HI 7061L** Electrode cleaning solution, 500 mL

### ACCESSORIES

**HI 710005** 115 VAC/12 VDC adapter  
**HI 710006** 230 VAC/12 VDC adapter  
**HI 740146** Mounting brackets



SPECIFICATIONS	BL 931700-0	BL 931700-1
Range	0.00 to 14.00 pH	
Resolution	0.01 pH	
Accuracy (@20°C/68°F)	±0.02 pH	
Calibration	manual, through offset and slope trimmers	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC	
Dosing Selection	acid or alkaline contact open=acid dosage=relay ON if measurement > set point contact close=alkaline dosage=relay ON if measurement < set point	
Set point	adjustable from 0.00 to 14.00 pH	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Recorder Output	4 to 20 mA, accuracy ±0.20 mA, 500 Ω maximum load	
Input Impedance	10 <sup>12</sup> Ohm	
Power Supply	12 VDC adapter (included)	115/230 VAC ±10%; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)

For a complete list of Solutions, see the end of pH Section 3.



- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 982411 is an ORP mini controller for panel mounting, specially designed for swimming pools and spas. Thanks to its compact size, BL 982411 can be installed in small spaces. BL 982411 is the ideal solution for those who have always checked ORP manually. With its automatic dosing, this mini controller will significantly reduce maintenance time.

BL 982411 can be used with any ORP electrode with standard BNC connector. The instrument measures ORP in the 0 to 1000 mV range and shows the readings on the display. The status LED continuously indicates if the controller is in measurement, dosing or alarm mode.

BL 982411 is also provided with a relay for selecting the dosing direction, oxidizing or reducing.

Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need. The overtime control system advises users when the relay is active for too long, helping to prevent over-dosage.

#### ORDERING INFORMATION

**BL 982411-0** (12 VDC) and **BL 982411-1** (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

#### PROBES

**HI 2001** PVDF body ORP electrode with 1/2" NPT thread, BNC connector and 3 m (9.8') cable for continuous flow-thru monitoring

#### SOLUTIONS

**HI 7020L** ORP test solution @200-275 mV, 500 mL  
**HI 7022L** ORP test solution @470 mV, 500 mL  
**HI 7091L** Reducing pretreatment ORP solution, 500 mL  
**HI 7092L** Oxidizing pretreatment ORP solution, 500 mL  
**HI 70300L** Electrode storage solution, 500 mL  
**HI 7061L** Electrode cleaning solution, 500 mL

#### ACCESSORIES

**HI 710005** 115 VAC/12 VDC power adapter  
**HI 710006** 230 VAC/12 VDC power adapter  
**HI 740146** Mounting brackets

SPECIFICATIONS	BL 982411-0	BL 982411-1
Range	0 to 1000 mV	
Resolution	1 mV	
Accuracy (@20°C/68°F)	±5 mV	
Calibration	manual, with CAL trimmer	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC	
Dosing Selection	reducing or oxidizing, selectable on the back panel contact open=reductant dosage=relay ON if measure > set point contact close=oxidant dosage=relay ON if measure < set point	
Set point	adjustable, from 0 to 1000 mV	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Input Impedance	10 <sup>12</sup> Ohm	
Power Supply	12 VDC adapter (included)	115/230 VAC ±10%; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)

For a complete list of Solutions, see the end of pH Section 3.

BL 932700

## ORP Mini Controller with 4-20 mA Recorder Output

- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 932700 is an ORP mini controller that has been designed for easy, affordable installation in tight spaces, ideal for simple yet effective process control. As a result of its compact size, BL 932700 can be installed right next to tanks or vats.

This versatile controller is ideal for many applications, such as ORP monitoring bleaching processes, waste water treatment and swimming pools. BL 932700 permits automatic control of installations previously checked manually.

The instrument can be set for reducing or oxidizing dosage. It measures in the  $\pm 1000$  mV range, with 1 mV resolution. Set point adjustment and calibration are simply performed through trimmers on the front panel. Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need.

The overtime control system advises users when the relay is active too long, helping to prevent over dosage. In addition, this model features a 4-20 mA analog output for recorder connection.

### ORDERING INFORMATION

**BL 932700-0** (12 VDC) and **BL 932700-1** (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

### PROBES

**HI 2001** PVDF body ORP electrode with 1/2" NPT thread, BNC connector and 3 m (9.8') cable for continuous flow-thru monitoring

### SOLUTIONS

**HI 7020L** ORP test solution @200-275 mV, 500 mL  
**HI 7022L** ORP test solution @470 mV, 500 mL  
**HI 7091L** Reducing pretreatment ORP solution, 500 mL  
**HI 7092L** Oxidizing pretreatment ORP solution, 500 mL  
**HI 70300L** Electrode storage solution, 500 mL  
**HI 7061L** Electrode cleaning solution, 500 mL

### ACCESSORIES

**HI 710005** 115 VAC/12 VDC power adapter  
**HI 710006** 230 VAC/12 VDC power adapter  
**HI 740146** Mounting brackets



SPECIFICATIONS	BL 932700-0	BL 932700-1
Range	$\pm 1000$ mV	
Resolution	1 mV	
Accuracy (@20°C/68°F)	$\pm 5$ mV	
Calibration	manual, with CAL trimmer	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC	
Dosing Selection	reducing or oxidizing, selectable on the back panel contact open=redundant dosage=relay ON if measure > set point contact close=oxidant dosage=relay ON if measure < set point	
Set point	adjustable from -1000 to 1000 mV	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Recorder Output	4 to 20 mA, accuracy $\pm 0.20$ mA, 500 $\Omega$ maximum load	
Input Impedance	$10^{12}$ Ohm	
Power Supply	12 VDC adapter (included)	115/230 VAC $\pm 10\%$ ; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)

For a complete list of Solutions, see the end of pH Section 3.



# Conductivity Mini Controllers Measuring in $\mu\text{S}/\text{cm}$



- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

These HANNA mini controllers have been specially designed for water conditioning and growing applications. Compact in size, they can be mounted in confined spaces or even right next to the vat or barrel containing the chemicals. These meters permit automatic control of installations previously checked manually.

EC measurements are shown on the display and the multicolored LED continuously indicates if the mini controller is in measurement, dosing or alarm mode. BL 983313 measures in the 0 to 1999  $\mu\text{S}/\text{cm}$  range, BL 983320 measures from 0.0 to 199.9  $\mu\text{S}/\text{cm}$  and BL 983322 from 0.00 to 19.99  $\mu\text{S}/\text{cm}$ .

Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need. The overtime control system advises users when the relay is active for too long, helping to prevent over dosage.

## ORDERING INFORMATION

BL 983313-0 (12 VDC), BL 983313-1 (115/230V), BL 983320-0 (12 VDC), BL 983320-1 (115/230V), BL 983322-0 (12 VDC) and BL 983322-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

## ELECTRODES

- HI 7634-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable
- HI 7634-00/4 EC/TDS probe with internal temperature sensor and 4 m (13.1') cable
- HI 7634-00/5 EC/TDS probe with internal temperature sensor and 5 m (16.4') cable

## SOLUTIONS

- HI 7031L 1413  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL
- HI 7033L 84  $\mu\text{S}/\text{cm}$  calibration solution, 500 mL
- HI 7061L Electrode cleaning solution, 500 mL

## ACCESSORIES

- HI 710005 115 VAC/12 VDC power adapter
- HI 710006 230 VAC/12 VDC power adapter
- HI 740146 Mounting brackets

SPECIFICATIONS	BL 983313	BL 983320	BL 983322
Range	0 to 1999 $\mu\text{S}/\text{cm}$	0.0 to 199.9 $\mu\text{S}/\text{cm}$	0.00 to 19.99 $\mu\text{S}/\text{cm}$
Resolution	1 $\mu\text{S}/\text{cm}$	0.1 $\mu\text{S}/\text{cm}$	0.01 $\mu\text{S}/\text{cm}$
Accuracy (@20°C/68°F)	±2% f.s.		
Probe	HI 7634-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable (not included)		
Temperature Compensation	automatic, 5 to 50°C (41 to 122°F) with $\beta=2\%/^{\circ}\text{C}$		
Calibration	manual, with CAL trimmer		
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC contact close when measure > set point		
Set point	adjustable from 0 to 1999 $\mu\text{S}/\text{cm}$	adjustable from 0 to 199.9 $\mu\text{S}/\text{cm}$	adjustable from 0 to 19.99 $\mu\text{S}/\text{cm}$
Overtime	adjustable, typically from 5 to approximately 30 minutes		
Power Supply	models "-0": 12 VDC adapter (included) models "-1": 115/230 VAC ±10%; 50/60Hz		
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")		
Weight	models "-0": 200 g (7.1 oz.) / models "-1": 300 g (10.6 oz.)		

For a complete list of Solutions, see the end of Conductivity Section 6.



BL 983317 • BL 983327

# Conductivity Mini Controllers Measuring in mS/cm

- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 983317 and BL 983327 are panel mounted mini controllers with an output relay that have been designed for easy, affordable installation in tight spaces—ideal for simple yet effective process control.

Both instruments are provided with automatic compensation for variations in temperature. The probe (not included) is easy to clean and requires very little maintenance. The calibration is performed at one point, through a trimmer.

All wiring and connections to external devices are done through the terminals on the rear panel. The multicolor LED continuously indicates if the controller is in measurement, dosing or alarm mode.

Users can choose automatic or manual dosing mode by a switch on the front panel. Manual control is particularly useful during maintenance operations because it permits operators to enable or disable the dosing relay according to need. To help prevent overdosing, the overtime control system advises users when the relay is active too long.

## ORDERING INFORMATION

BL 983317-0 (12 VDC), BL 983317-1 (115/230V), BL 983327-0 (12 VDC) and BL 983327-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

## PROBES

- HI 7632-00** EC/TDS probe with internal temperature sensor and 2 m (6.6') cable
- HI 7632-00/5** EC/TDS probe with internal temperature sensor and 5 m (16.4') cable
- HI 7632-00/6** EC/TDS probe with internal temperature sensor and 6 m (19.7') cable

## SOLUTIONS

- HI 7031L** 1.41 mS/cm calibration solution, 500 mL
- HI 7039L** 5.00 mS/cm calibration solution, 500 mL
- HI 7061L** Electrode cleaning solution, 500 mL

## ACCESSORIES

- HI 710005** 115 VAC/12 VDC power adapter
- HI 710006** 230 VAC/12 VDC power adapter
- HI 740146** Mounting brackets



SPECIFICATIONS	BL 983317	BL 983327
Range	0.00 to 10.00 mS/cm	
Resolution	0.01 mS/cm	
Accuracy (@20°C/68°F)	±2% f.s.	
Probe	HI 7632-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable (not included)	
Temperature Compensation	automatic, 5 to 50°C (41 to 122°F) with $\beta = 2\%/^{\circ}\text{C}$	
Calibration	manual, with CAL trimmer	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC contact close when measure < set point	contact close when measure > set point
Set point	adjustable from 0 to 10 mS/cm	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Power Supply	models "-0": 12 VDC adapter (included) models "-1": 115/230 VAC ±10%; 50/60Hz	
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	models "-0": 200 g (7.1 oz.) / models "-1": 300 g (10.6 oz.)	

For a complete list of Solutions, see the end of Conductivity Section 6.



- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

These instruments have been designed for TDS control in hydroponics, horticulture and water conditioning. Compact in size, they can be mounted in confined spaces or even right next to the vat or barrel containing the chemicals. These meters permit automatic control of installations previously checked manually.

Readings are shown on the display and the multicolored LED continuously indicates if the mini controller is in measurement, dosing or alarm mode.

Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to your need.

The overtime control system advises users when the relay is active too long, helping to prevent over dosage.

#### ORDERING INFORMATION

BL 983315-0 (12 VDC), BL 983315-1 (115/230V), BL 983319-0 (12 VDC), BL 983319-1 (115/230V), BL 983321-0 (12 VDC), BL 983321-1 (115/230V), BL 983329-0 (12 VDC) and BL 983329-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

#### PROBES

- HI 7634-00** EC/TDS probe with internal temperature sensor and 2 m (6.6') cable
- HI 7634-00/4** EC/TDS probe with internal temperature sensor and 4 m (13.1') cable
- HI 7634-00/5** EC/TDS probe with internal temperature sensor and 5 m (16.4') cable
- HI 7642/2** TDS probe for HI 983319, 2 m (6.6') cable, 10 BAR

#### SOLUTIONS

- HI 7033L** 84  $\mu$ S/cm (42ppm) calibration solution, 500 mL
- HI 7032L** 1382 mg/L (ppm) calibration solution, 500 mL
- HI 70442L** 1500 mg/L (ppm) calibration solution, 500 mL
- HI 7061L** Electrode cleaning solution, 500 mL

#### ACCESSORIES

- HI 710005** 115 VAC/12 VDC power adapter
- HI 710006** 230 VAC/12 VDC power adapter
- HI 740146** Mounting brackets

SPECIFICATIONS	BL 983315	BL 983319	BL 983321	BL 983329
<b>Range</b>	0.0 to 199.9 mg/L (ppm)	0 to 1999 mg/L (ppm)	0.00 to 19.99 mg/L (ppm)	0 to 999 mg/L (ppm)
<b>Resolution</b>	0.1 mg/L (ppm)	1 mg/L (ppm)	0.01 mg/L (ppm)	1 mg/L (ppm)
<b>Accuracy (@20°C/68°F)</b>	±2% f.s.			
<b>TDS Conversion Factor</b>	0.5	0.65	0.5	0.5
<b>Probe</b>	HI 7634-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable (not included)			
<b>Temperature Compensation</b>	automatic, 5 to 50°C (41 to 122°F) with $\beta=2\%/^{\circ}\text{C}$			
<b>Calibration</b>	manual, with CAL trimmer			
<b>Dosing Relay</b>	maximum 2A (fuse protected), 250 Vac, 30 VDC Contact close when measure:			
	> set point	< set point	> set point	> set point
<b>Set point</b>	adjustable from 0 to 199.9 mg/L (ppm)	adjustable from 0 to 1999 mg/L (ppm)	adjustable from 0 to 19.99 mg/L (ppm)	adjustable from 0 to 999 mg/L (ppm)
<b>Overtime</b>	adjustable, typically from 5 to approximately 30 minutes			
<b>Power Supply</b>	models "-0": 12 VDC adapter (included) models "-1": 115/230 VAC $\pm 10\%$ ; 50/60Hz			
<b>Dimensions</b>	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")			
<b>Weight</b>	models "-0": 200 g (7.1 oz.) / models "-1": 300 g (10.6 oz.)			

For a complete list of Solutions, see the end of Conductivity Section 6.

BL 983318

**0 to 10,000 ppm TDS Mini Controllers**

- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 983318 is a mini controller that has been designed for easy, affordable installation in tight spaces, ideal for simple yet effective process control.

BL 983318 features ATC (Automatic Temperature Compensation) and simple one point calibration performed through the trimmer.

The multicolored LED continuously indicates if the controller is in measurement, dosing or alarm mode.

Wiring and external device connections are extremely simple to perform through the terminals on the rear of the instrument.

Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations because it permits operators to enable or disable the dosing relay according to need.

The overtime control system advises users when the relay is active too long, helping to prevent over-dosage.

**ORDERING INFORMATION**

BL 983318-0 (12 VDC) and BL 983318-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

**PROBES**

HI 7632-00	EC/TDS probe with internal temperature sensor and 2 m (6.6') cable
HI 7632-00/5	EC/TDS probe with internal temperature sensor and 5 m (16.4') cable
HI 7632-00/6	EC/TDS probe with internal temperature sensor and 6 m (19.7') cable

**SOLUTIONS**

HI 70038P	6.44 ppt (g/L) calibration solution, 20 mL sachet (25)
HI 70038C	6.44 ppt (g/L) certified calibration solution, 20 mL sachet (25)
HI 7061L	Electrode cleaning solution, 500 mL

**ACCESSORIES**

HI 710005	115 VAC/12 VDC power adapter
HI 710006	230 VAC/12 VDC power adapter
HI 740146	Mounting brackets

SPECIFICATIONS	BL 983318-0	BL 983318-1
Range	0.00 to 10.00 ppt	
Resolution	0.01 ppt	
Accuracy (@20°C/68°F)	±2% f.s.	
TDS Conversion Factor	0.5	
Probe	HI 7632-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable (not included)	
Temperature Compensation	automatic, 5 to 50°C (41 to 122°F) with $\beta=2\%/^{\circ}\text{C}$	
Calibration	manual, with CAL trimmer	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC contact close when measure > set point	
Set point	adjustable from 0 to 10 ppt (g/L)	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Power Supply	12 VDC adapter (included)	115/230 VAC $\pm 10\%$ ; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)

For a complete list of Solutions, see the end of Conductivity Section 6.



- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 983324 is a panel mounted TDS controller, designed for easy installation, configuration and maintenance.

The meter is provided with a dosing relay, activated when the TDS reading exceeds the set point value.

Measurements are compensated for temperature variations and shown on the display automatically.

A multicolored LED on the front panel continuously indicates if the mini controller is in measurement, dosing or alarm mode.

Wiring and external device connections are extremely simple to perform through the terminals on the rear of the instrument.

Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need.

The overtime control system advises operators when the relay is active too long, helping to prevent over dosage.

#### ORDERING INFORMATION

BL 983324-0 (12 VDC) and BL 983324-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

#### PROBES

HI 7634-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable

HI 7634-00/4 EC/TDS probe with internal temperature sensor and 4 m (13.1') cable

HI 7634-00/5 EC/TDS probe with internal temperature sensor and 5 m (16.4') cable

#### SOLUTIONS

HI 7033L 84 µS/cm (42mg/L (ppm) calibration solution, 500 mL HI 7061L Electrode cleaning solution, 500 mL

#### ACCESSORIES

HI 710005 115 VAC/12 VDC power adapter  
 HI 710006 230 VAC/12 VDC power adapter  
 HI 740146 Mounting brackets

SPECIFICATIONS	BL 983324-0	BL 983324-1
Range	0.0 to 49.9 mg/L (ppm)	
Resolution	0.1 mg/L (ppm)	
Accuracy (@20°C/68°F)	±2% f.s.	
TDS Conversion Factor	0.5	
Probe (not included)	HI 7634-00 EC/TDS probe with internal temperature sensor and 2 m (6.6') cable(not included)	
Temperature Compensation	automatic, 5 to 50°C (41 to 122°F) with $\beta=2\%/^{\circ}\text{C}$	
Calibration	manual, with CAL trimmer	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 VDC contact close when measure > set point	
Set point	adjustable from 0 to 49.9 mg/L (ppm)	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Power Supply	12 VDC adapter (included)	115/230 VAC ±10%; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)

For a complete list of Solutions, see the end of Conductivity Section 6.

BL 983314

## Resistivity Mini Controllers

- Easy to handle
- Fire retardant casing
- Selectable overdose protection system
- Splash resistant cover

BL 983314 is a simple to operate resistivity controller designed for ultra pure water, reverse osmosis, and water conditioning applications. The BL 983314 resistivity controller is also ideal for continuous monitoring of process solutions. Set point and calibration are manually adjusted with a trimmer and the alarm relay allows for simple control.

Readings are automatically temperature compensated, with three different coefficients ( $\beta=2.4, 3.5$  or  $4.5 \text{ \%}/^{\circ}\text{C}$ ). The alarm contact can be used for connection to an alarm, pump, solenoid or dosing system.

The relay contact is open when readings are higher than the set point, while for measurements lower than set point, the relay contact is closed. The Hysteresis is typically  $0.20 \text{ M}\Omega/\text{cm}$  from the set point.

Measurements are displayed on the LCD and the multicolored LED continuously indicates if the controller is in measurement, dosing or alarm mode. Users can choose automatic or manual dosing mode with a switch on the front panel. Manual control is particularly useful during maintenance operations, because it permits operators to enable or disable the dosing relay according to need.

The overtime control system advises users when the relay is active for too long, helping to prevent over-dosage.

### ORDERING INFORMATION

BL 983314-0 (12 VDC) and BL 983314-1 (115/230V) are supplied with mounting brackets, transparent cover and instruction manual.

### PROBES

HI 3314 Resistivity probe with 2 m (6.6') cable

### ACCESSORIES

HI 710005 115 VAC/12 VDC power adapter  
 HI 710006 230 VAC/12 VDC power adapter  
 HI 740146 Mounting brackets



SPECIFICATIONS	BL 983314-0	BL 983314-1
Range	0.00 to 19.90 MΩ/cm	
Resolution	0.10 MΩ/cm	
Accuracy (@20°C/68°F)	±2% f.s.	
Probe	HI 3314 resistivity probe with 2 m (6.6') cable (included)	
Temperature Compensation	automatic and linear, 5 to 50°C (41 to 122°F)	
Temperature Coefficient	$\beta=2.4 ; 3.5 ; 4.5 \text{ \%}/^{\circ}\text{C}$ selectable through jumper on the rear panel	
Calibration	factory calibrated	
Dosing Relay	maximum 2A (fuse protected), 250 Vac, 30 Vdc contact close when measure < set point	
Set point	adjustable from 0 to 19.90 MΩ/cm	
Overtime	adjustable, typically from 5 to approximately 30 minutes	
Power Supply	12 VDC adapter (included)	115/230 VAC ±10%; 50/60Hz
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	200 g (7.1 oz.)	300 g (10.6 oz.)



HI 7871 and HI 7873 mini level controllers are ideal for liquid level control over distances of up to 100 m (330'). These instruments are highly compact and will fit in tight spaces.

These easy to use controllers are suited for nearly any liquid level application such as industrial and municipal water treatment, nutrient tank control in farming, hydroponics, aquaculture applications and plating rinse baths.

HI 7871 features high and low level control, while HI 7873 includes an overflow alarm. Both instruments are connected to a 2-wire transmitter (HI 7874), which is ideal for level monitoring in remote applications.

**A complete liquid level measuring system requires:**

- A controller (HI 7871 or HI 7873)
- A bar holder with amplifier circuitry (HI 7874)
- A package of measuring bars (HI 731324)
- An undecal connector (HI 7164)



**HI 7874**  
Level Transmitter with HI 731324 Stainless Steel Measuring Bars

SPECIFICATIONS	HI 7871	HI 7873
Transmission	max 100 m (330')	
Electrical Connection	HI 7164 undecal connector (not included)	
Level Adjustment	high and low	high, low and overflow
Level Indication	high and low	high, low and overflow
Sensor Bars	three (not included)	four (not included)
	(HI 731324 pack of five)	
Transmitter	HI 7874 (not included)	
Output Contact	1 relay (2A/250 VAC, 30 VDC)	2 relays (2A/250V, 30 VDC)
Power Supply	models "/115": 110/115 VAC ±10%; 50/60Hz models "/220": 220/240 VAC ±10%; 50/60Hz	
Environment	0 to 50°C (32 to 122°F); RH max 85% non condensing	
Dimensions	79 x 49 x 95 mm (3.1 x 1.9 x 3.7")	
Weight	250 g (8.8 oz)	

HI 7871 requires 3 bars, one each for low and high levels and the third as a consent sensor.  
HI 7873 requires 4 bars with the additional bar used for overflow measurement.

**ORDERING INFORMATION**

HI 7871/115 (115V) is supplied with mounting brackets and instructions.  
 HI 7871/220 (220V) is supplied with mounting brackets and instructions.  
 HI 7873/115 (115V) is supplied with mounting brackets and instructions.  
 HI 7873/220 (220V) is supplied with mounting brackets and instructions.

**ACCESSORIES**

- HI 7874 Level transmitter with internal amplifier
- HI 7164 Undecal connector
- HI 731324 Stainless steel threaded measuring bars (5)



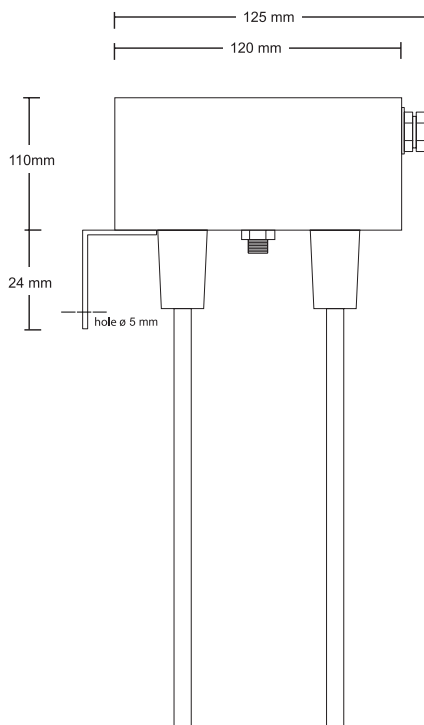
HI 7874

## Level Transmitter

Accurate level control is critical to many industrial applications, especially for process adjustments using aggressive chemicals. Our sensor bars are built with stainless steel for long life even in harsh conditions. They are easy to install and ideal for monitoring tanks and water conditioning plants.

The HI 7874 transmitter has been designed to be combined with the HI 7871 and HI 7873 level controllers. The transmitter is housed in a durable and waterproof ABS body, and allows the user to easily adjust the length of the sensor bars according to the specific need.

HI 7874 is supplied with a sturdy mounting bracket for quick and easy installation.

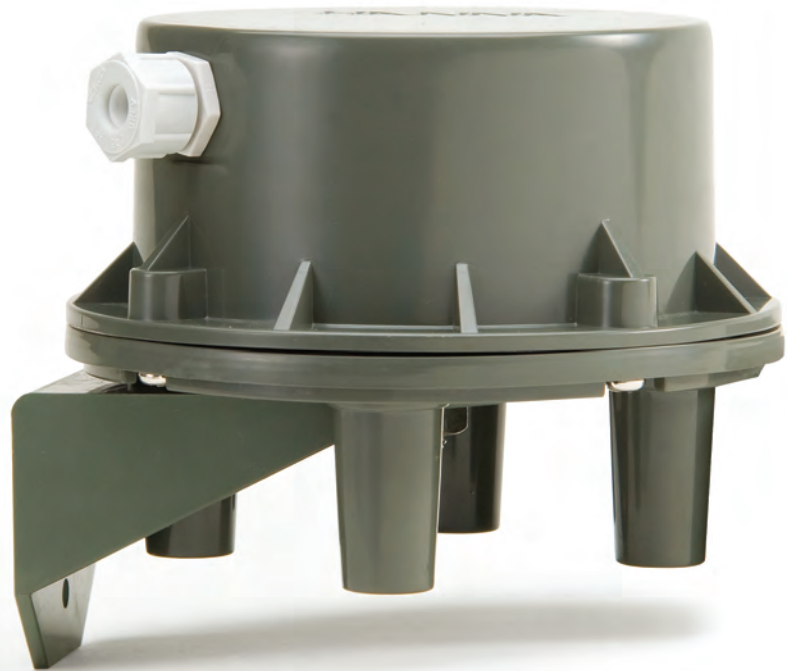


### ORDERING INFORMATION

HI 7874 is supplied with mounting bracket and instructions.

### ACCESSORIES

HI 731324 Stainless steel threaded measuring bars (5)



HI 7874 Level Transmitter with HI 731324 Stainless Steel Measuring Bars

SPECIFICATIONS	HI 7874
Transmission	max 100 m (330')
Electrical Connection	two-wire terminal
Level Adjustment	high, low and overflow
Sensor Bars	3 or 4 (not included) (HI 731324 pack of 5)
Power Supply	from level controller
Environment	0 to 50°C (32 to 122°F); RH max 100%
Weight	550 g (1.2 lbs.)