

HI8510

pH Analog Indicator

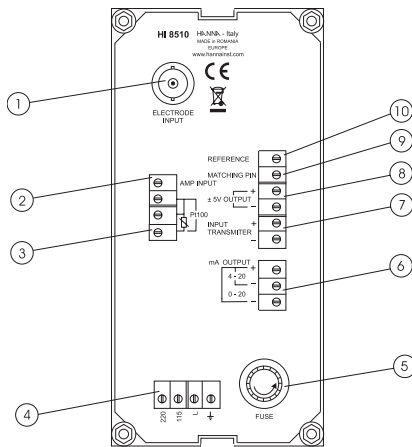
with Self Diagnostic Test

- ATC
 - Automatic temperature compensation Backlight
- Backlit, LCD display

HI8510 is ideal for monitoring pH in process control. It can provide highly accurate pH measurements and display values on the easy to read LCD. BNC input, amplified probe input and input from transmitter are supported.

Designed for easy and fast installation, the HI 8510 is provided with membrane keypads on the front panel, large display, and auto-diagnostic functions to check pH electrode and instrument status. These instruments also provide $\pm 5V$ power output and input terminals for amplified electrodes.

A removable, transparent splash-proof cover protects the front panel.



1. BNC socket for pH electrode
2. Input from amplified electrode
3. Connections for Pt100 temperature sensor
4. Power supply terminals
5. Fuse holder
6. Recorder output terminals
7. Connection to the transmitter
8. Power for amplified electrode
9. Connection for matching pin
10. Connection for reference electrode

Specifications HI8510

Range	0.00 to 14.00 pH
Resolution	0.01 pH
Accuracy (@25°C/77°F)	± 0.02 pH (0 to 100 °C); ± 0.05 pH (-20 to 0 °C); $\pm 0.5\%$ (input transmitter)
Input	high impedance 10^{12} Ohm; reference and matching pin inputs are available; 4-20 mA
Power Output	± 5 Vcc; 150 mA max load for amplified electrodes
Calibration	offset: ± 2 pH with OFFSET trimmer; slope: 80 to 110% with SLOPE trimmer
Temperature Compensation	fixed or automatic with Pt100, from -20 to 100°C (-4 to 212°F)
Recorder Output	0-20 mA or 4-20 mA (isolated)
Backlight	continuous on
Power Supply	115 VAC $\pm 10\%$ or 230 VAC $\pm 10\%$; 50/60 Hz
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Panel Cutout	141 x 69 mm (5.6 x 2.7")
Weight	1 kg (2.2 lb.)

Ordering Information

The **HI8510** is supplied complete with mounting brackets and instructions.

Accessories

HI8427	pH / ORP electrode simulator
HI931001	pH / ORP electrode simulator with display
HI8614N	pH transmitter
HI8614LN	pH transmitter with display



HI8710

pH Analog Controller

with Self-Diagnostic Test

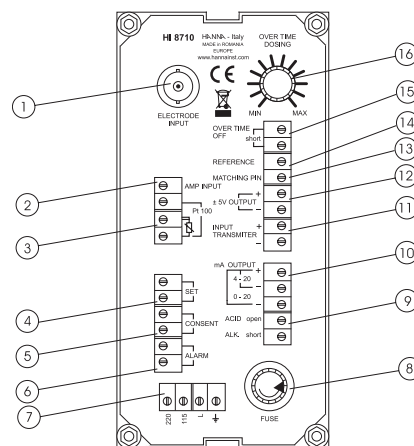
- 0.2 to 3.00 pH alarm tolerance range
- Automatic temperature compensation
- Backlit, LCD display
- Removable, transparent splash-proof cover protects the front panel.

HI8710 is a panel mounted pH controller with self-diagnostic test capabilities. Users can set: the setpoint for acid or alkaline dosage, the tolerance of the setpoint before an alarm is activated, the dosage mode: automatic, continuous on or OFF and the over dosage control by setting the overtime dosage knob.

When used in conjunction with the HI8720 ORP controller, the ODCD* function will ensure that the ORP dosage will start only when the pH level is correct.

“Overtime dosage” function with selection knob and jumper for disable on the rear panel. If the dosing relay remains continuously activated for more than selected dosing time the alarm relay is activated, the alarm LED is blinking and the dosing relay is deactivated.

* ORP dosing consent device



1. BNC socket for pH electrode
2. Input from amplified electrode
3. Connections for Pt100 temperature sensor
4. Connections for dosing pump
5. Reduc/Oxid dosage consent terminals
6. Alarm contacts
7. Power supply terminals
8. Fuse holder
9. Acid/Alkaline dosage selection terminals
10. Recorder output contacts
11. Connection to the transmitter
12. Power for amplified electrode
13. Connection for matching pin
14. Connection for reference electrode
15. Disable overtime connection
16. Overtime set knob (about 5 to 60 min)

Specifications

HI8710

Range	0.00 to 14.00 pH
Resolution	0.01 pH
Accuracy (@25°C/77°F)	±0.02 pH (0 to 100 °C); ±0.05 pH (-20 to 0 °C); ±0.5% (input from transmitter)
Input	high impedance 10 ¹² Ohm; reference and matching pin inputs are available 4-20 mA
Power Output	±5 Vcc; 150 mA max load for amplified electrodes
Calibration	offset: ±2 pH with OFFSET trimmer; slope: 80 to 110% with SLOPE trimmer
Temperature Compensation	fixed or automatic with Pt100, from -20 to 100°C (-4 to 212°F)
Recorder Output	0-20 mA or 4-20 mA (isolated)
Set Point Relay	1, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Set Point Range	0.00 to 14.00 pH
Alarm Relay	1, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Alarm Range	0.2 to 3.00 pH
Consent Relay	1, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Dosing Control	OFF/AUTO/ON with selection switch
Over Dosing Control	adjustable, from 5 min to 60 min with knob or disable by wire strap - on rear panel
Backlight	continuous on
Power Supply	115 VAC ±10% or 230 VAC ±10%; 50/60 Hz
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Panel Cutout	141 x 69 mm (5.6 x 2.7")
Weight	1 kg (2.2 lb.)
Ordering Information	The HI8710 is supplied complete with mounting brackets and instructions.
Accessories	HI8427 pH / ORP electrode simulator
	HI931001 pH / ORP electrode simulator with display
	HI8614N pH transmitter
	HI8614LN pH transmitter with display

HI8711

pH Analog Controller

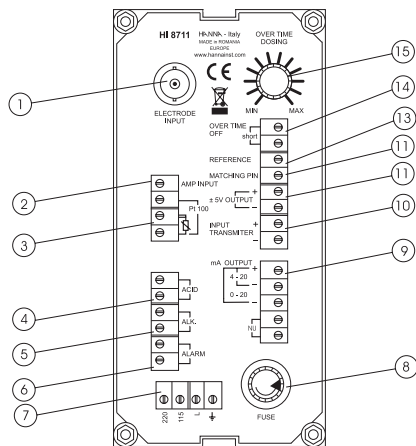
with Dual Output and Self-Diagnostic Test

- 0.2 to 3.00 pH alarm tolerance range
- Automatic temperature compensation
- Backlit, LCD display
- A removable, transparent splash-proof cover protects the front panel.

HI8711 allows the selection of two set points with two independent outputs for acid and alkaline dosages.

HI8711 accepts either a direct input from a pH or ORP electrode or from a transmitter through 4-20 mA input. The instrument also provides $\pm 5V$ power output and input terminals for amplified electrodes. In addition, you can choose the output configuration for connecting a recorder or a PLC, between 0-20 or 4-20 mA.

The HI8711 incorporates adjustable overtime dosing protection from 5 to 60 minutes. If dosing exceeds selected time, the alarm will be triggered and the dosing contact will deactivate. This feature can be activated or deactivated.



1. BNC socket for pH electrode
2. Input from amplified electrode
3. Connections for Pt100 temperature sensor
4. Connections for dosing pump for acid
5. Connections for dosing pump for base
6. Alarm contacts
7. Power supply terminals
8. Fuse holder
9. Recorder output contacts
10. Connections to the transmitter
11. Power for amplified electrode
12. Connection for matching pin
13. Connection for reference electrode
14. Disable overtime connection
15. Overtime set knob (about 5 to 60 min)



Specifications HI8711

Range	0.00 to 14.00 pH
Resolution	0.01 pH
Accuracy (@25°C/77°F)	± 0.02 pH (0 to 100 °C); ± 0.05 pH (-20 to 0 °C); $\pm 0.5\%$ (input from transmitter)
Input	high impedance 10^{12} Ohm; reference and matching pin inputs are available; 4-20 mA
Power Output	± 5 Vcc; 150 mA max load for amplified electrodes
Calibration	offset: ± 2 pH with OFFSET trimmer; slope: 80 to 110% with SLOPE trimmer
Temperature Compensation	fixed or automatic with Pt100, from -20 to 100°C (-4 to 212°F)
Recorder Output	0-20 mA or 4-20 mA (isolated)
Set Point Relay	2, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Set Point Range	alk. set: from 0.00 to 14.00 pH; acid set: from 0.00 to 14.00 pH
Alarm Relay	1, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Alarm Range	0.2 to 3.00 pH
Dosing Control	OFF/AUTO/ON with selection switch
Over Dosing Control	adjustable, from 5 min to 60 min with knob or disable by wire strap - on rear panel
Backlight	continuous on
Power Supply	115 VAC $\pm 10\%$ or 230 VAC $\pm 10\%$; 50/60 Hz
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Panel Cutout	141 x 69 mm (5.6 x 2.7")
Weight	1 kg (2.2 lb.)
Ordering Information	The HI8711 is supplied complete with mounting brackets and instructions.
Accessories	HI8427 pH / ORP electrode simulator
	HI931001 pH / ORP electrode simulator with display
	HI8614N pH transmitter
	HI8614LN pH transmitter with display



HI8720

ORP Analog Controller

with Self-Diagnostic Test

- 10 to 300 mV alarm tolerance range
- Backlit, LCD display
- Removable, transparent splash-proof cover protects the front panel.

This instrument allows the selection of a set point for oxidizing or reducing dosage.

When used in conjunction with the HI8710 pH controller, the ODCD (ORP dosing consent device) function (featured by the HI8710) will ensure that the ORP dosage will start only when the pH level is correct.

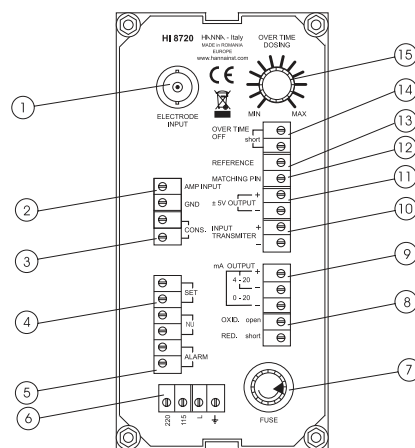
Each model accepts either a direct input from an ORP electrode or from a transmitter through 4-20 mA input. The instrument also provides $\pm 5V$ power output and input terminals for amplified electrodes.

Moreover, you can choose the output configuration for connecting a recorder or a PLC, between 0-20 or 4-20 mA.

Specifications

HI8720

Range	± 1999 mV
Resolution	1 mV
Accuracy (@25°C/77°F)	± 5 mV; $\pm 0.5\%$ (input from transmitter)
Input	high impedance 10^{12} Ohm; reference and matching pin inputs are available; 4-20 mA
Power Output	± 5 Vcc; 150 mA max load for amplified electrodes
Calibration	offset: ± 200 mV with CAL trimmer;
Recorder Output	0-20 mA or 4-20 mA (isolated)
Set Point Relay	1, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Set Point Range	± 1999 mV
Alarm Relay	1, isolated, 2 A, max 240 V, resistive load, 1000000 strokes (not fuse protected)
Alarm Range	10 to 300 mV
Dosing Control	OFF/AUTO/ON with selection switch
Over Dosing Control	adjustable, from 5 min to 60 min with knob or disable by wire strap - on rear panel
Backlight	continuous on
Power Supply	115 VAC $\pm 10\%$ or 230 VAC $\pm 10\%$; 50/60 Hz
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Panel Cutout	141 x 69 mm (5.6 x 2.7")
Weight	1 kg (2.2 lb.)
Ordering Information	The HI8720 is supplied complete with mounting brackets and instructions.
Accessories	HI8427 pH / ORP electrode simulator
	HI8615N ORP transmitter
	HI8615LN ORP transmitter with display



1. BNC socket for ORP electrode
2. Input from amplified electrode
3. Oxid/Reduc dosage consent terminals
4. Connections for dosing pump
5. Alarm contacts
6. Power supply terminals
7. Fuse holder
8. OXID/RED. dosage selection terminals
9. Recorder output contacts
10. Connections to the transmitter
11. Power for amplified electrode
12. Connection for matching pin
13. Connection for reference electrode
14. Disable overtime connection
15. Overtime set knob (about 5 to 60 min)

HI8512

ORP Analog Indicator

with Self-Diagnostic Test

- Auto-diagnostic tests for electrode and instrument status
- Backlit, LCD display
- A removable, transparent splash-proof cover protects the front panel.

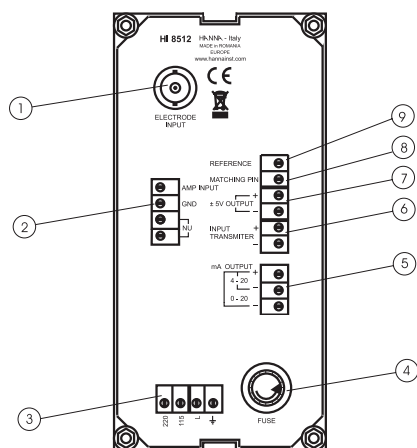
Built-in autodiagnostic functions to enable the user to check and troubleshoot any malfunctions. The functions are made via front panel keys to isolate the cause of malfunction whether it is due to pH electrode contamination, internal offset circuit or the amplifier circuit.

To enhance troubleshooting and the ability to record data while monitoring, simply attach a recording device to the instrument's 4 to 20 mA output contacts, conveniently located on the front panel, to obtain a copy of the results on demand.

HI8512 is provided with membrane keypads on the front panel, large display, and auto-diagnostic functions to check pH electrode and instrument status.

HI8412 allows for quick and easy connection to any ORP meter or transmitter.

LED indicators identify the controller mode.



1. BNC socket for ORP electrode
2. Input from amplified electrode
3. Power supply terminals
4. Fuse holder
5. Recorder output terminals
6. Connection to the transmitter
7. Power for amplified electrode
8. Connection for matching pin
9. Connection for reference electrode

Specifications

HI8512

Range	±1000 mV
Resolution	1 mV
Accuracy (@25°C/77°F)	±5 mV; ±0.5% (input from transmitter)
Input	high impedance 10 ¹² Ohm; reference and matching pin inputs are available; 4-20 mA
Power Output	±5 Vcc; 150 mA max load for amplified electrodes
Calibration	Offset: ±200 mV with CAL trimmer
Recorder Output	0-20 mA or 4-20 mA (isolated)
Backlight	continuous on
Power Supply	115 or 230 Vac; 60/50 Hz
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing
Panel Cutout	141 x 69 mm (5.6 x 2.7")
Weight	1 kg (2.2 lb.)
Ordering Information	The HI8512 is supplied complete with mounting brackets and instructions.
Accessories	HI8427 pH / ORP electrode simulator
	HI8615N ORP transmitter
	HI8615LN ORP transmitter with display



HI8931AN · HI8931BN
HI8931CN · HI8931DN

EC Analog Controller

with Input from Probe or Transmitter

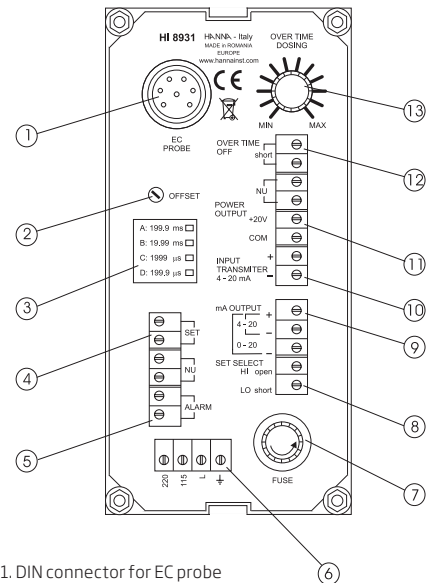
- Automatic temperature compensation
- Backlit, LCD display
- Removable, transparent splash-proof cover protects the front panel.

HI8931 is a panel mounted conductivity controller designed for simplicity of use. For in-line applications, use the HI7635 probe, while for tanks the HI7638 with external threads is recommended. These probes are provided with a built-in NTC sensor for temperature compensated conductivity measurements.

HI8931 also features a direct connection up to 20 m (67'), without needing to amplify the signal to the conductivity probe.

Using the HI8931 in conjunction with a 4-20 mA output transmitter (HI8936 or HI8936L series) will assure a strong, interference free signal at distances up to 300 meters (1000').

Specifications	HI8931AN	HI8931BN	HI8931CN	HI8931DN
Range	0.0 to 199.9 mS/cm	0.00 to 19.99 mS/cm	0 to 1999 µS/cm	0.0 to 199.9 µS/cm
Resolution	0.1 mS/cm	0.01 mS/cm	1 µS/cm	0.1 µS/cm
Accuracy (@25°C/77°F)	±2% F.S. (excluding probe error)	±2% F.S. (excluding probe error)	±2% F.S. (excluding probe error)	±2% F.S. (excluding probe error)
Input from Transmitter	HI8936A / AL	HI8936B / BL	HI8936C / CL	HI8936D / DL
Set Point Range	0.0 to 199.9 mS/cm	0.00 to 19.99 mS/cm	0 to 1999 µS/cm	0.0 to 199.9 µS/cm
Alarm Range	0.0 mS and 100.0 mS	0.00 mS and 10.00 mS	0 µS and 1000 µS	0.0 µS and 100.0 µS
Temp. Compensation	automatic, 0 to 60°C with β=2%/°C; see also transmitter HI8936			
Inputs	DIN (probe) or 4-20 mA (transmitter)			
Conductivity Probe	HI7635 for in-line applications or HI7638 for tanks (not included)			
Calibration	manual, two point, through of offset and slope trimmers			
Recorder Output	0 to 20 mA or 4 to 20 mA (isolated)			
Set Point and Alarm Relay	1, Isolated, 2A, max. 240V, resistive load, 1,000,000 strokes			
Dosing Control	OFF/AUTO/ON with selection switch			
Over Dosing Control	adjustable, from 5 min to 60 min with knob or disable by wire strap - on rear panel			
Backlight	continuous on			
Power Supply	115 VAC ±10% or 230 VAC ±10%; 50/60 Hz			
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover			
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing			
Panel Cutout	141 x 69 mm (5.6 x 2.7")			
Weight	1 kg (2.2 lbs.)			
Ordering Information	The HI8931 series is supplied with mounting brackets and instructions.			



1. DIN connector for EC probe
2. Trimmer for offset calibration
3. Label with marked A, B, C or D instrument type
4. SET terminals for connection to a dosing pump
5. ALARM terminals for connection to an external alarm device
6. Power supply terminals
7. Fuse holder
8. SET SELECT terminals for reverse control operation
9. mA OUTPUT terminals for connection to a recorder
10. mA INPUT from a conductivity transmitter
11. POWER OUTPUT terminals (+20 V and COM) for connection to a conductivity transmitter (HI 8936)
12. Disable overtime dosing connection
13. Overtime dosing set knob (about 5 to 60 min)

EC Analog Controller

with Direct Input from Potentiometric Probe

- Automatic temperature compensation
- Backlit, LCD display

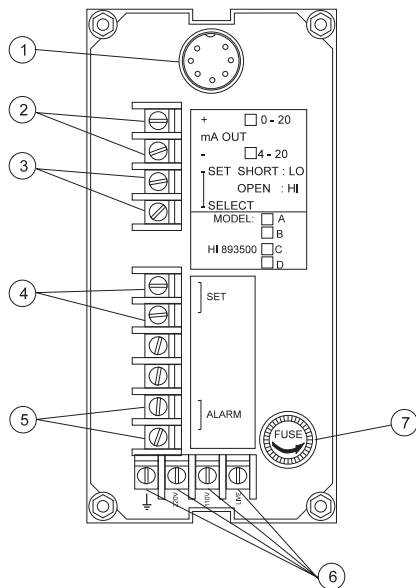
These controllers allow direct connection of a potentiometric conductivity probe (HI7638) with a cable up to 20 m long, without needing a transmitter to amplify the signal.

The output configuration for connecting a recorder or a PLC can be chosen between 0-20 or 4-20 mA.

The LED on the front panel indicates the operating status of the controller.

The Automatic Temperature Compensation (ATC) is performed directly by the HI7638 probe with built-in temperature sensor.

A removable, transparent splash-proof cover protects the front panel.



1. DIN connector for conductivity probe
2. mA OUTPUT terminals for connection to a recorder
3. SET SELECT terminals for reverse control operation
4. SET terminals for connection to a dosing pump
5. ALARM terminals for connection to an external alarm device
6. Power supply terminals
7. Fuse holder

Specifications	HI943500A	HI943500B	HI943500C	HI943500D
Range	0.0 to 199.9 mS/cm	0.00 to 19.99 mS/cm	0 to 1999 µS/cm	0.0 to 199.9 µS/cm
Resolution	0.1 mS/cm	0.01 mS/cm	1 µS/cm	0.1 µS/cm
Accuracy (@25°C/77°F)	±2% F.S.			
Calibration	manual, two point, through offset and slope trimmers			
Temperature Compensation	automatic, 0 to 60°C (32 to 140°F), with β=2%/°C			
Recorder Output	4-20 mA (isolated)			
Set Point Relay	1, isolated, 2A, max. 240 V, resistive load, 1,000,000 strokes			
Alarm Relay	1, isolated, 2A, max. 240 V, resistive load, 1,000,000 strokes			
Power Supply	115 or 230 VAC ±10% (user selectable); 50/60 Hz			
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover			
Environment	-10 to 50°C (14 to 122°F); RH max 95%			
Panel Cutout	141 x 69 mm (5.6 x 2.7")			
Weight	1 kg (2.2 lb.)			
Ordering Information	The HI943500 series is supplied complete with mounting brackets and instructions.			
Probes	HI7638	PEI/glass body, 75 mm conductivity probe with internal temperature sensor and 3/8" NPT thread (immersion)		



HI8410

Dissolved Oxygen Controller

with Extended Range and Analog Output

- 0.5 to 5.0 mg/L (ppm) O₂ alarm range
- Automatic temperature compensation

The HI8410 is a panel mounted dissolved oxygen controller that is used to maintain and monitor the concentration of DO in a wide range of industrial process applications. The HI8410 uses a Galvanic probe that typically requires less maintenance than a Polarographic style making it ideal for long term monitoring.

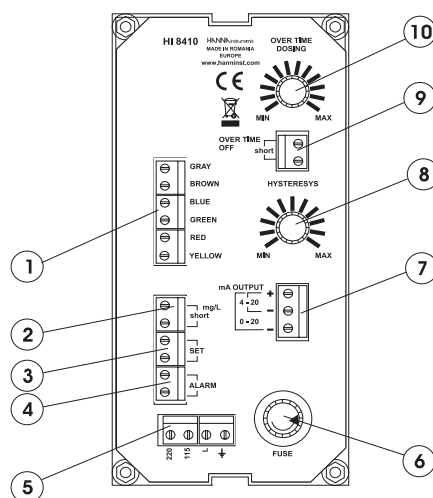
The set point for controlling the activation of a relay is adjusted manually by the user. An alarm relay is also manually adjustable and is based upon a tolerance from the programmed setpoint. This controller features single set point calibration in zero oxygen solution.

The D.O. probe is provided with a membrane covering the galvanic sensor and a built-in thermistor for temperature measurement and compensation.

Specifications

HI8410

Range	0.0 to 50.0 mg/L (ppm) O ₂ ; 0 to 600 % O ₂ ; -5.0 to 50.0°C						
Resolution	0.1 mg/L (ppm) or 1% (O ₂) / 0.1°C						
Accuracy (@25°C/77°F)	±1% of reading (O ₂) / ±0.2°C						
Calibration	manual, one point, in saturated air						
Temp. Compensation	automatic, from -5 to 50°C (23 to 122 °F)						
Salinity Compensation	0 to 51 g/L (resolution 1 g/L)						
Probe (not included)	HI76410/4 with 4 m (13.1') cable or HI76410/10 with 10 m (32.8') cable						
Recorder Output	0 to 20 mA or 4 to 20 mA (isolated)						
Set point and Alarm Relay	1, isolated, 2A, max. 240V, resistive load, 1,000,000 strokes						
Set point Range	5 to 600 % O ₂ ; 0.5 to 50.0 mg/L (ppm) O ₂						
Alarm Range	0.5 to 5.0 mg/L (ppm) O ₂						
Hysteresis Range	0.5 to 2.4 mg/L (ppm) O ₂						
Dosing Control	OFF/AUTO/ON with selection switch						
Over Dosing Control	adjustable, from 5 min to 60 min with knob or disable by wire strap - on rear panel						
Backlight	continuous on						
Power Supply	115 VAC ±10% or 230 VAC ±10%; 50/60 Hz						
Enclosure	flame retardant ABS body and front panel; transparent splash-proof front cover						
Environment	-10 to 50°C (14 to 122°F); RH max 95% non-condensing						
Panel Cutout	141 x 69 mm (5.6 x 2.7")						
Weight	1 kg (2.2 lb.)						
Ordering Information	The HI8410 is supplied complete with mounting brackets and instructions.						
Probes and Accessories	<table border="1"> <tbody> <tr> <td>HI76410/4</td> <td>Galvanic DO probe (fixed) with internal temperature sensor, DIN connector and 4 m (13.1') cable</td> </tr> <tr> <td>HI76410/10</td> <td>Galvanic DO probe (fixed) with internal temperature sensor, DINconnector and 10 m (32.8') cable</td> </tr> <tr> <td>HI76410A</td> <td>Spare membranes for HI76410</td> </tr> </tbody> </table>	HI76410/4	Galvanic DO probe (fixed) with internal temperature sensor, DIN connector and 4 m (13.1') cable	HI76410/10	Galvanic DO probe (fixed) with internal temperature sensor, DINconnector and 10 m (32.8') cable	HI76410A	Spare membranes for HI76410
HI76410/4	Galvanic DO probe (fixed) with internal temperature sensor, DIN connector and 4 m (13.1') cable						
HI76410/10	Galvanic DO probe (fixed) with internal temperature sensor, DINconnector and 10 m (32.8') cable						
HI76410A	Spare membranes for HI76410						



1. DO probe connection terminals
2. Range selection: mg/L or % DO
3. SET terminals for connection to a dosing pump
4. ALARM terminals for connection to an external alarm device
5. Power supply terminals
6. Fuse holder
7. mA OUTPUT terminals for connection to a recorder
8. Hysteresis set knob (0.5 to 2.4 mg/L)
9. Disable overtime dosing connection
10. Overtime dosing set knob (about 5 to 60 min)