QUICK REFERENCE GUIDE

HI510 Universal Process Controller
Multiparameter Platform

Dear Customer,

Thank you for choosing Hanna Instruments.

For more information about Hanna Instruments and our products, visit www.hannainst.com or e-mail us at sales@hannainst.com. For technical support, contact your local Hanna Instruments office or e-mail us at tech@hannainst.com.

Please scan the **QR code** or use the link below to download the user manual.

https://manuals.hannainst.com/HI510

Available Models

HI510-0320
3 relays & **2** analog outputs

HI510-0540
5 relays & **4** analog outputs

Package Contents

- HI510
- Cable gland seals (1 set)
- Power cable, 3 m (9.84') long
- Quick reference guide
- Instrument quality certificate

Note: *Save all packing material. Any damaged or defective item must be returned in its original packing material with the supplied accessories.*

Main Features

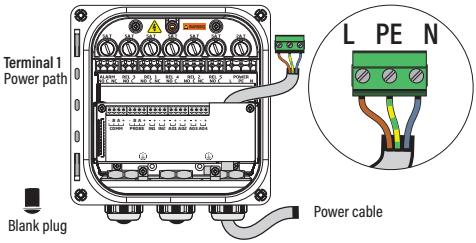
- Hanna Instruments smart digital probes
- Modbus RS-485 serial communication protocol
- Flexible function assignment for control, cleaning, Hold relays
- Waterproof IP65 enclosure

Safety Precautions

- Electrical connection must be carried out by specialized personnel only. Read safety manual instructions before connecting to power.
- Do not make electrical connections with device connected to power.
- Do not run other cables through the designated power cable gland.
- Have a disconnect switch installed in the vicinity of the instrument to ensure electrical circuit is de-energized for installation.

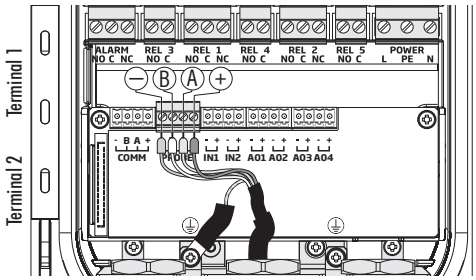
Connecting to Power

- Loosen the four screws, enough for the springs to push them out.
- Grasp the front bezel and swing open to access the two-terminal power supply board.
- Remove the safety cover to access Terminal 1 block (power path).
- Remove the blank plug and thread the cable through the power cable gland.
- Connect the power cable leads to the removable terminal connector marked **POWER**.
- Follow **L** (live), **PE** (ground), **N** (neutral) lead markings for correct wiring of output leads.
- Carefully put wired terminal connector into place on the board.
- Replace safety cover over Terminal 1.



Controller Wiring

- High voltage connections: **POWER**, **ALARM**, **REL 1** to **REL 5** (relays) are made to the Terminal 1 block.
- Low voltage connections: **COMM** (RS-485), **PROBE**, **IN1** and **IN2** (digital inputs), **A01** to **A04** (analog outputs) are made to the raised Terminal 2 block.
- Follow the ⊖ ⊕ lead markings to ensure that output leads are wired to the correct position on the main board.



Hanna Instruments is committed to developing and deploying digital solutions with a positive impact on the environment and climate.

All Hanna instruments conform to the CE European Directives and UK standards, and our production facilities are ISO 9001 certified. HI510 is warranted for a period of two years against defects in workmanship and materials when used for its intended purpose and maintained according to instructions.

Please retain for future use.

QR510 05/23

Hanna Instruments Inc., 584 Park East Drive, Woonsocket, RI 02895 USA
www.hannainst.com

Probe Wiring

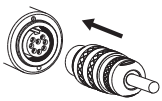
1. Ensure the controller is not powered. Run the probe cable through the conduit opening.
2. Connect probe leads to the removable terminal connector marked **PROBE**.
   Follow ⊖ ⊕ lead markings for correct wiring of output leads.
3. Carefully put wired terminal connector into place on the board.
4. Position excess cable through the cable gland before tightening the nut.
5. Remove the ground screw and hardware located below the **PROBE** connector. Attach the ground lead (⏚).

Probe cabling color code

Marking	Attached Cable	Patch Cable	Function
–	GREEN	BLACK	0 V
B	WHITE	WHITE	RS485 D –
A	YELLOW	BLUE	RS485 D +
+	BROWN	RED	5 V
⏚	GREEN-YELLOW	GREEN-YELLOW	PROTECTIVE GROUND

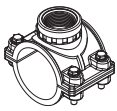
Probe Connection

Align pins and key then push the plug into the socket. Rotate collar to lock in place.



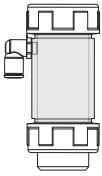
Probe Accessories

Visit www.hannainst.com for full details.

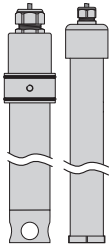


Saddle
BL120-5XX

Rail mount holder
HI605101



Flow cell
BL120-4XX



Immersion electrode holders
HI60501 HI60503

HI510-01 Panel mount

HI510-02 Wall mount

HI510-03 Pipe mount

Supported Probe Series and Configurations

HI10 X X – Y 8 Z Z — pH & Temperature

XX	06	PTFE junction			
	16	Ceramic junction			
Y		Glass sensor	Titanium Matching Pin	pH range	Temperature range
	1	Low temperature		0.00 to 12.00 pH	–5.0 to 80.0 °C (23.0 to 176.0 °F)
	3	High temperature		0.00 to 14.00 pH	0.0 to 100.0 °C (32.0 to 212.0 °F)
	4	Fluoride resistant		0.00 to 10.00 pH	–5.0 to 60.0 °C (23.0 to 140.0 °F)

HI20 X X – Y 8 Z Z — ORP & Temperature

XX	04	PTFE junction		
	14	Ceramic junction		
Y		Sensor type	mV range	Temperature range
	1	Platinum	± 2000 mV	–5.0 to 100.0 °C (23.0 to 212.0 °F)
	2	Gold		

HI7630 – Y 8 Z Z — EC & Temperature

Y	2	**Two-electrode** cell conductivity, SS AISI 316, cell constant k ≈ 0.1/cm	EC 0.000 µS/cm to 30.00 mS/cm TDS 0.000 mg/L to 15.00 g/L (TDS factor 0.5) RES 34 Ω • cm to 99.99 MΩ • cm Temperature 0.0 to 50.0 °C (32.0 to 122.0 °F)
	4	**Four-ring** conductivity, platinum on glass, cell constant k ≈ 1.0/cm	EC 0.0 µS/cm to 999.9 mS/cm TDS 0.0 mg/L to 400.0 g/L (TDS factor 0.5) RES 1.00 Ω • cm to 9.99 MΩ • cm Seawater Salinity 400.0 %NaCl, 42 psu, 80 ppt Temperature 0.0 to 100.0 °C (32.0 to 212.0 °F)

HI7640 – 1 8 Z Z — Galvanic DO & Temperature

Galvanic sensor	Concentration 0.00 to 50.00 mg/L (ppm) Saturation 0.0 to 500.0 % Temperature –5.0 to 50.0 °C (23.0 to 122.0 °F)

HI7640 – 5 8 Z Z — Optical DO & Temperature

Optical sensor	Concentration 0.00 to 50.00 mg/L (ppm) Saturation 0.0 to 500.0 % Temperature –5.0 to 50.0 °C (23.0 to 122.0 °F)

8	**Smart probe**, with RS-485 connection
ZZ	00 supplied with DIN connector (without cable) 05, 10, 15, 25, 50 fixed cable length (in meters)

Probes are sold separately. Refer to probe manuals for details on series specifications, suggested installations, and application fields.