QUICK REFERENCE GUIDE

HANNA instruments

HI520 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/HI520

Available Models

HI520-0320
3 relays & **2** analog outputs

HI520-0540
5 relays & **4** analog outputs

Package Contents

- HI520
- 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
- Independent / sequential channel control
- 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.

Terminal 1
Power path

L PE N

Blank plug

Power cable
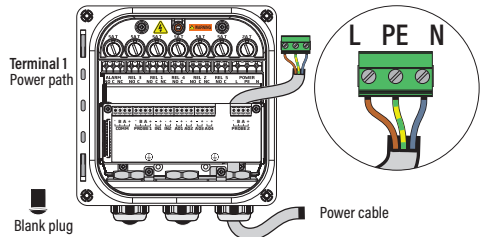
Controller Wiring

- High voltage connections: **POWER**, **ALARM**, **REL 1** to **REL 5** (relays) are made to the Terminal 1 block.
- Low voltage connections: **COMM** (RS-485), **PROBE1**, **IN1** and **IN2** (digital inputs), **A01** to **A04** (analog outputs), and **PROBE2** are made to the raised Terminal 2 block.
- Follow the positive/negative lead markings to ensure that output leads are wired to the correct position on the main board.
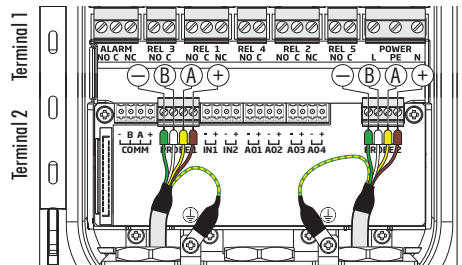
Hanna Instruments is committed to developing and deploying digital solutions with a positive impact on the environment and climate.

All Hanna instruments conform to the CE European Directives, and our production facilities are ISO 9001 certified. HI520 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.

Probe Wiring

1. Ensure the controller is not powered.
2. Run the probe cable through the conduit opening.
3. Connect probe leads to the removable terminal connector marked PROBE1 or PROBE2.
   Follow the lead markings (positive/negative) for correct wiring.
4. Carefully put the wired terminal connector into place on the board.
5. Position excess cable through the cable gland before tightening the nut.
6. Remove the ground screw and hardware located below the PROBE1 or PROBE2 connector. Attach the ground lead ($\bot$).

Probe cabling color code

Probe	Marking	Attached Cable	Patch Cable	Function
pH, ORP, EC, DO	−	GREEN	BLACK	0 V
	B	WHITE	WHITE	RS485 D −
	A	YELLOW	BLUE	RS485 D +
	+	BROWN	RED	5 V
	⏚	GREEN-YELLOW	GREEN-YELLOW	PROTECTIVE GROUND
Turbidity (TU)	−	GREEN		
	B	WHITE		
	A	YELLOW		
	+	BROWN		
	⏚	GREEN-YELLOW		

Note:
Ensure wiring regulations are correctly followed when controller unit is part of a larger industrial installation.

Accessories

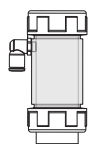Installation accessories can be ordered from your local sales office.
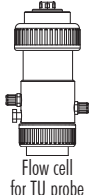

Saddle
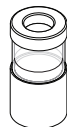BL120-5XX

Rail mount holder
HI605101

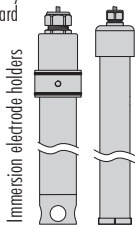Low range turbidity probe dry standard
HI7676604

Flow cell
BL120-4XX

Flow cell for TU probe
HI7676602

Low range turbidity probe calibration beaker HI7676603

Immersion electrode holders
HI60501 HI60503

HI510-01 Panel mount   HI510-02 Wall mount   HI510-03 Pipe mount

Scan the QR codes to download probes user manuals.

pH   ORP   EC   Galvanic DO   Optical DO   TU

Probe Series and Configurations

HI10 | X | X | − | Y | 8 | Z | Z | pH & Temperature

XX	06	PTFE junction			
	16	Ceramic junction			

		Glass sensor		pH range	Temperature range
Y	1	Low temperature	Titanium Matching Pin	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		

		Sensor type	mV range	Temperature range
Y	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 DO 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 DO 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)

HI7660 | − | 2 | 8 | Z | Z | Low Range Turbidity

	FNU range	Temperature range
Turbidity sensor	0.000 to 4.000 FNU 0.00 to 40.00 FNU 0.0 to 400.0 FNU	−5 to 50 °C (23 to 122 °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) 02, 05, 10 fixed cable length (in meters) › HI7660-28 TU probe only