

Dear Customer, thank you for choosing Hanna Instruments.

HI520 is a universal process controller intended for applications where simultaneous measurement and control of process variables is needed.

Package contents

- **HI520** controller
- Cable gland seals (1 set)
- Power cable, 3 m (9.84') long
- Instrument quality certificate and quick reference guide

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

Controller models



HI520-0320

3 relays & 2 analog outputs



HI520-0540

5 relays & 4 analog outputs

Main features

- Hanna Smart digital probes
- RS-485/Modbus serial communication protocol
- Independent/sequential channel control
- Flexible function assignment for control, cleaning, Hold relays
- Waterproof IP65 enclosure
- Wall, pipe, panel mounting kit (sold separately)

HI520-01 panel mount



HI520-02 wall mount



HI520-03 pipe mount



Safety precautions

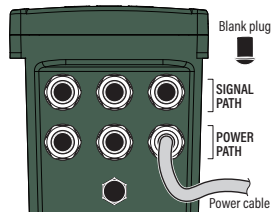
- Electrical connection must be carried out by specialized personnel only. Read safety manual instructions before connecting to power.
- Do not make electrical connections with device connected to power.
- Do not run other cables through the designated power cable gland.
- Have a disconnect switch installed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

Opening the enclosure

- 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.

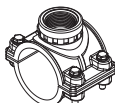
Connecting to power

- Remove the blank plug and thread the cable through the power cable gland.
- Remove the safety cover to access high voltage Terminal 1.
- Connect the probe leads to the terminal connector **POWER**. Follow $\ominus \oplus$ lead markings for correct wiring on the supply board. Each leads location is marked.
- Ensure the power connector is seated correctly in the power socket.
- Replace safety cover over Terminal 1.

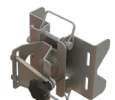


Probe accessories (sold separately)

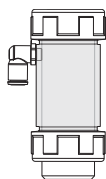
Saddle BL120-5XX



Rail mount holder HI605101



Flow cell BL120-4XX



Immersion electrode holders HI60501 HI60503



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

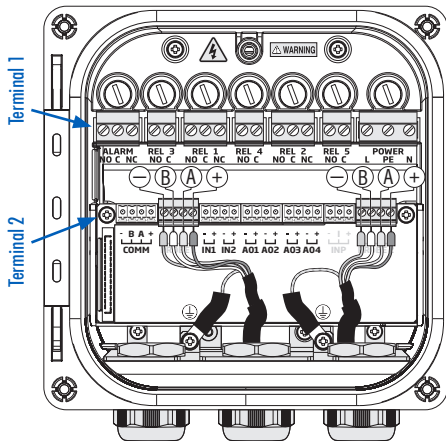


Scan the QR code or follow the link to download the user manual. <https://manuals.hannainst.com/HI520>



Controller wiring

- Terminal 1** (high voltage): **POWER, ALARM, REL 1 to REL 5** (relays)
- Terminal 2** (low voltage): **COMM (RS-485), PROBE1 and PROBE2, IN1 and IN2** (digital inputs), **A01 to A04** (analog outputs)
- Follow $\ominus \oplus$ lead markings to ensure output leads are wired to the correct position on the main board.



Probe wiring

- With controller disconnected from power run the probe cable through the correct conduit opening.
- Connect probe leads to the terminal connector **PROBE1** or **PROBE2**. Follow $\ominus \oplus$ lead markings for correct wiring of output leads.
- Carefully put the wired terminal connector into place on the board.
- Position excess cable through cable gland before tightening the nut.
- Remove the ground screw and hardware located below the probe connector. Attach the ground lead (\oplus).

Probe cabling color code

Marking	Attached Cable	Patch Cable	Functionality
—	GREEN	BLACK	0 V
B	WHITE	WHITE	RS-485 D—
A	YELLOW	BLUE	RS-485 D+
+	BROWN	RED	5 V
\oplus	GREEN-YELLOW	GREEN-YELLOW	PROTECTIVE GROUND

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 –					EC & Temperature	
			Y	8	Z	Z
Y	2	Two-electrode cell conductivity, SS AISI 316, cell constant $k \approx 0.1/\text{cm}$	EC 0.000 $\mu\text{S}/\text{cm}$ to 30.00 mS/cm			
			TDS 0.000 mg/L to 15.00 g/L (TDS factor 0.5)			
	4	Four-ring conductivity, platinum on glass, cell constant $k \approx 1.0/\text{cm}$	RES 34 $\Omega \cdot \text{cm}$ to 99.99 $\text{M}\Omega \cdot \text{cm}$			
			Temperature 0.0 to 50.0 $^{\circ}\text{C}$ (32.0 to 122.0 $^{\circ}\text{F}$)			

HI7640 –					Galvanic DO & Temperature	
		1	8	Z	Z	
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 –					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.
Scan the QR code to download the user manual:



Please retain for future use.
QR520 01/23