

V120-22-UN2 Graphic Operator Panel & Programmable Logic Controller

12/24VDC, 12 pnp/npn digital inputs, 2 universal inputs*, 2 high-speed counter/shaft encoder inputs, 12 transistor outputs, 2 high-speed outputs, I/O expansion port, 2 RS232/RS485 ports

Power supply	12VDC or 24VDC
Permissible range	10.2VDC to 28.8VDC with less than 10% ripple
Maximum current consumption	130mA@24VDC (pnp inputs) 230mA@24VDC (npn inputs) 240mA@12VDC (pnp inputs) 280mA@12VDC (npn inputs)
Digital inputs	12 pnp (source) or npn (sink) inputs. See Note 1.
Nominal input voltage	12VDC or 24VDC. See Notes 2 and 3.
Input voltages for pnp (source):	
For 12VDC	0-3VDC for Logic '0' 8-15.6VDC for Logic '1'
For 24VDC	0-5VDC for Logic '0' 17-28.8VDC for Logic '1'
Input voltages for npn (sink):	
For 12VDC	8-15.6VDC/<1.2mA for Logic '0' 0-3VDC/>3mA for Logic '1'
For 24VDC	17-28.8VDC/<2mA for Logic '0' 0-5VDC/>6mA for Logic '1'
Input current	4mA@12VDC 8mA@24VDC
Input impedance	3KΩ
Response time (except high-speed inputs)	10mS typical
Galvanic isolation	None
Input cable length	Up to 100 meters, unshielded
High-speed counter	Specifications below apply when inputs are wired for use as a high-speed counter input/shaft encoder. See Notes 4 and 5.
Resolution	32-bit
Input frequency	10kHz max.
Minimum pulse	40μs

Notes:

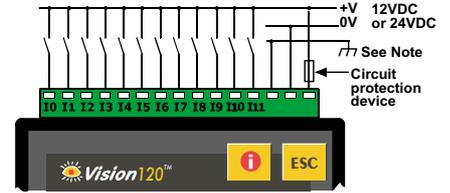
- All 12 inputs can be set to pnp (source) or npn (sink) via a single jumper and appropriate wiring.
- All 12 inputs can function in 12 VDC or 24 VDC; set via a single jumper and appropriate wiring.
- nnp (sink) inputs use voltage supplied from the controller's power supply.
- Inputs #0 and #2 can each function as either high-speed counter or as part of a shaft encoder. In each case, high-speed input specifications apply. When used as a normal digital input, normal input specifications apply.
- Inputs #1 and #3 can each function as either counter reset, or as a normal digital input; in either case, specifications are those of a normal digital input. These inputs may also be used as part of a shaft encoder. In this case, high-speed input specifications apply.

* Certain inputs can function as normal digital inputs, analog inputs, RTD inputs or thermocouple inputs, in accordance with jumper settings and wiring connections.

Warnings:

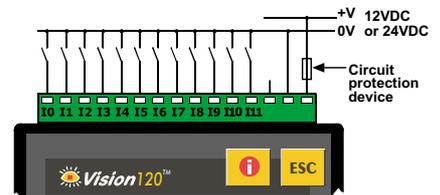
- Unused pins should not be connected. Ignoring this directive may damage the controller.
- Improper use of this product may severely damage the controller.
- Refer to the controller's User Guide regarding wiring considerations.
- Before using this product, it is the responsibility of the user to read the product's User Guide and all accompanying documentation.

Power supply, pnp (source) inputs

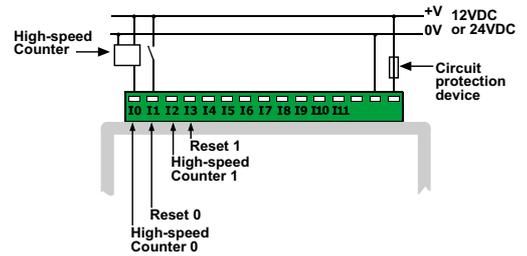


Note:
To avoid electromagnetic interference, mount the controller in a metal panel/cabinet and earth the power supply. Earth the power supply signal to the metal using a wire whose length does not exceed 10cm. If your conditions do not permit this, do not earth the power supply.

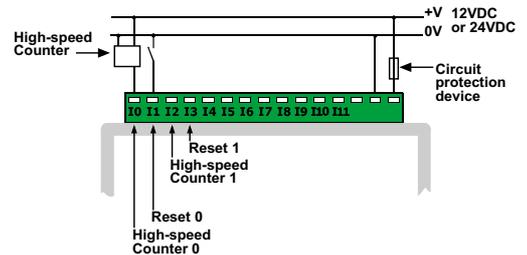
nnp (sink) inputs



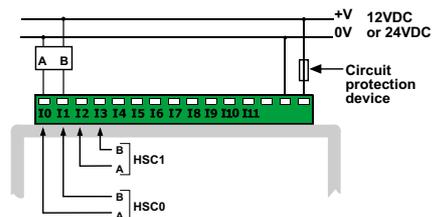
pnp (source) high-speed counter



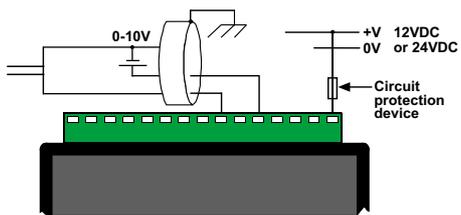
nnp (sink) high-speed counter



Shaft encoder



Voltage / Current connection



Notes:

- a. Shields should be connected at the signals' source.
- b. The 0V signal of the analog input must be connected to the controller's 0V.

Current connection

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- a. Shields should be connected at the signals' source.
- b. The 0V signal of the analog input must be connected to the controller's 0V.



3. When using

4. Analog in

V120-22-UN2 I/O Jumper Settings

JP8

Input type (for all digital inputs) - see Note 1

To use as	JP8
npn (sink)	A
pnnp (source)*	B

JP9

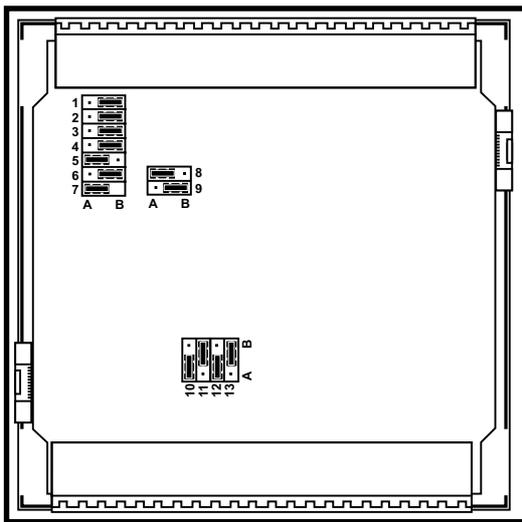
Input voltage (for all digital inputs) - see Note 1

To use as	JP9
12VDC	A
24VDC*	B

Note:

1. Inputs# 0-6, and #7-11 when these are set as normal digital inputs.

*Default factory setting



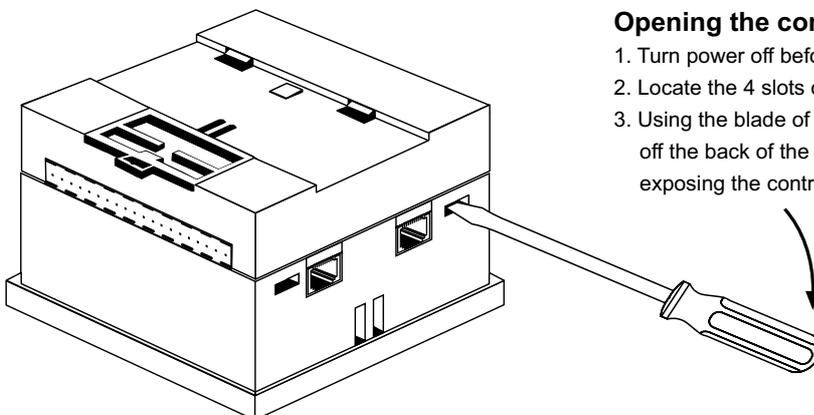
In this figure, the jumper settings will cause the inputs to function as follows:

Universal Input #0 (Input #10): Voltage input, related to 0V

Universal Input #1 (Input #7 and Input #8): PT100 input, related to the CM signal (Input#11)

Input#9: Normal npn, 24VDC digital input

Input#0 to Input #6: npn, 24VDC digital inputs. (Note that these inputs



Opening the controller's enclosure

1. Turn power off before opening the controller.
2. Locate the 4 slots on the sides of the enclosure.
3. Using the blade of a flat-bladed screwdriver, gently pry off the back of the controller as shown in the figure below, exposing the controller's board.

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