V120-22-R2C Graphic Operator Panel & Programmable Logic Controller

12/24VDC, 10 pnp/npn digital inputs, 2 analog inputs, 3 high-speed counter/shaft encoder inputs, 6 relay outputs, I/O expansion port, 2 RS232/RS485 ports, CANbus

Power supply	12VDC or 24VDC
Permissible range	10.2VDC to 28.8VDC with less than 10% ripple
Maximum current consumption	230mA@24VDC (pnp inputs) 310mA@24VDC (npn inputs) 330mA@12VDC (pnp inputs) 360mA@12VDC (npn inputs)
Digital inputs	10 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 For 24VDC	 0-3VDC for Logic '0' 8-15.6VDC for Logic '1' 0-5VDC for Logic '0' 17-28.8VDC for Logic '1'
Input voltages for npn (sink): For 12VDC For 24VDC	 8-15.6VDC/<1.2mA for Logic '0' 0-3VDC/>3mA for Logic '1' 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

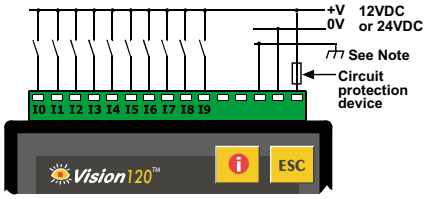
Notes:

1. All 10 inputs can be set to pnp (source) or npn (sink) via a single jumper and appropriate wiring.
2. All 10 inputs can function in 12 VDC or 24 VDC; set via a single jumper and appropriate wiring.
3. npn (sink) inputs use voltage supplied from the controller's power supply.
4. Inputs #0, #2 and #4 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.
5. Inputs #1, #3 and #5 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.

Warnings:

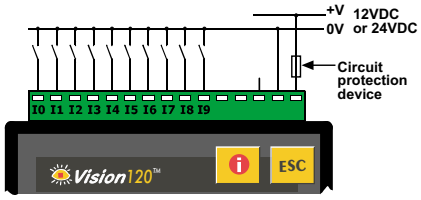
- Unused pins should not be connected. Ignoring this directive may damage the controller.
- Improper use of this product may severely damage the controller.
- Refer to the controller's User Guide regarding wiring considerations.
- Before using this product, it is the responsibility of the user to read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

Power supply, pnp (source) inputs

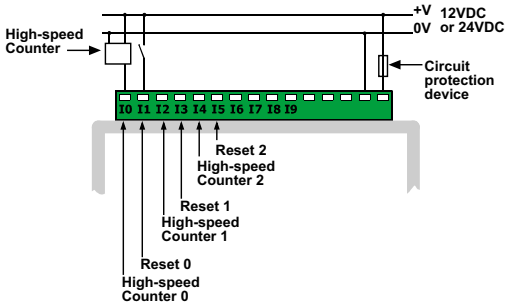


Note:
To avoid electromagnetic interference, mount the controller in a metal panel/cabinet and earth the power supply. Earth the power supply signal to the metal using a wire whose length does not exceed 10cm. If your conditions do not permit this, do not earth the power supply.

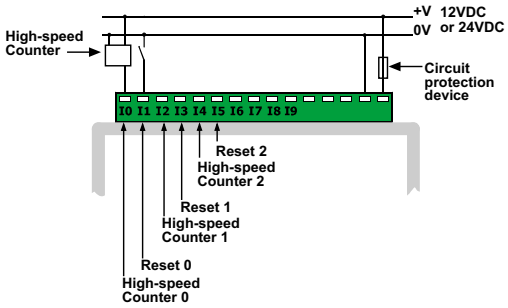
npn (sink) inputs



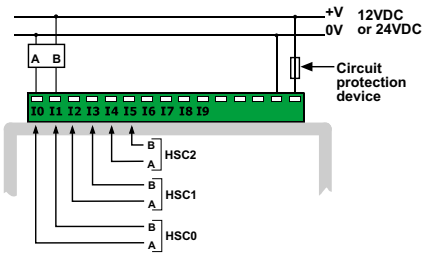
pnp (source) high-speed counter

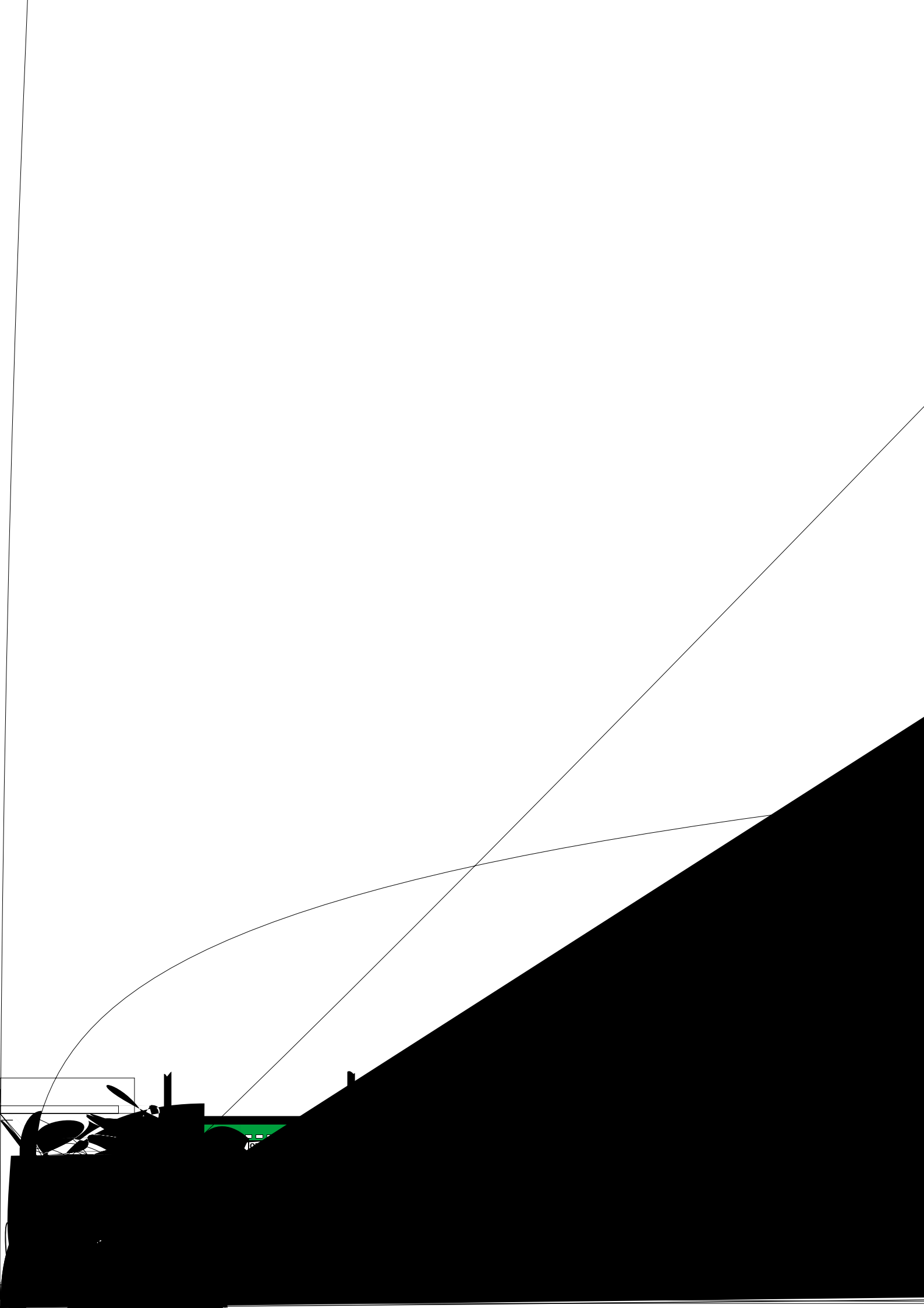


npn (sink) high-speed counter



Shaft encoder





JP5, JP6
Power supply voltage

JP3, JP4
Analog inputs type

In this figure, the jumper settings will cause the controller to function as follows:
Digital inputs: npn, 24VDC inputs
Analog input #0: Voltage input
Analog input #1: Current input
Power supply: 24VDC