

M91-19-4T2C

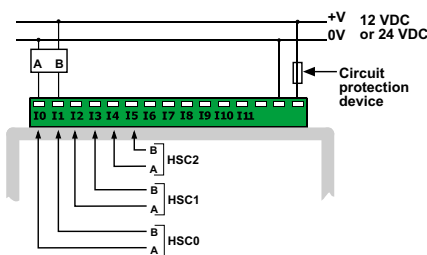
12/24 VDC, 12 pnp/npn digital inputs, 2 analog inputs, 3 high-speed counter/shaft encoder inputs, 12 transistor outputs, I/O expansion port, RS232/RS485 plus CANbus

Power supply	12VDC or 24VDC
Permissible range	10.2VDC to 28.8VDC with less than 10% ripple
Maximum current consumption	70mA@24VDC (pnp inputs) 130mA@12VDC (pnp inputs) 170mA (npn inputs)
Digital inputs	12 pnp (source) or npn (sink) inputs. See Notes 1 and 2.
Nominal input voltage	12VDC or 24VDC. See Notes 3 and 4.
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' 17-28.4VDC 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	17-28.4VDC/<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 5 and 6.
Resolution	16-bit
Input freq.	10kHz max.
Minimum pulse	40μs

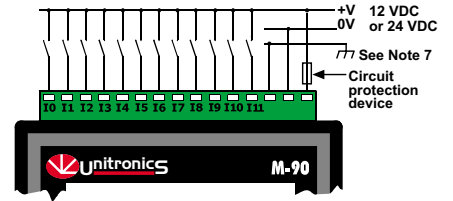
Notes:

- All 12 inputs can be set to pnp (source) or npn (sink) via a single jumper and appropriate wiring.
- Inputs #10 and #11 can function as either digital inputs or as analog inputs, 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.
- npn (sink) inputs use voltage supplied from the controller's power supply.
- 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.
- 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.

Shaft encoder



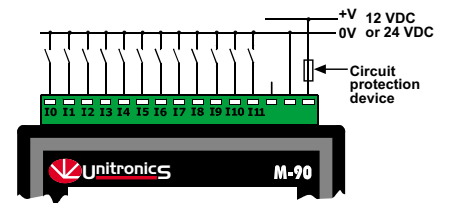
Power supply, pnp (source) inputs



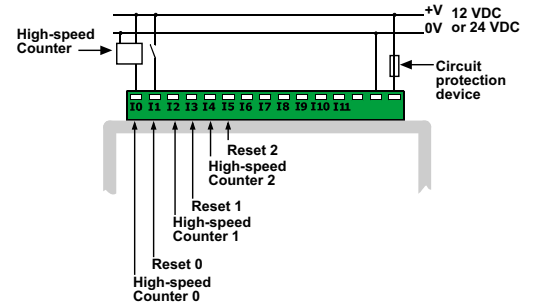
Note 7:

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.

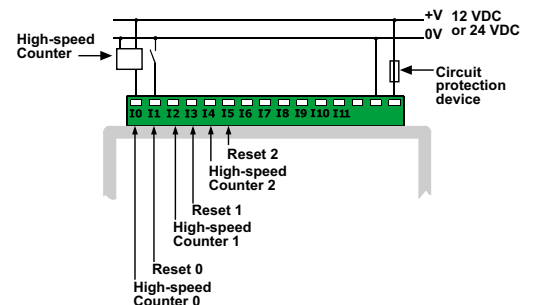
npn (sink) inputs



pnp (source) high-speed counter



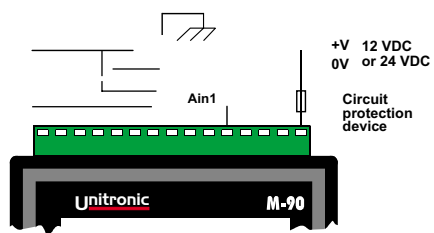
npn (sink) high-speed counter



Warnings:

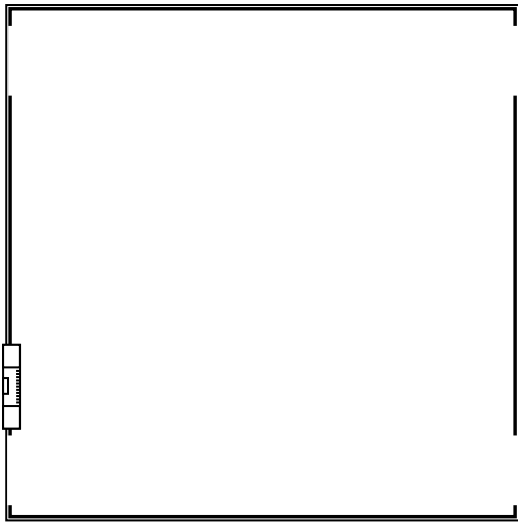
- Unused pins should not be connected. Ignoring this directive may damage the controller.
- Improper use of this product may severely damage the controller.
- Refer to the controller's User Guide regarding wiring considerations.
- Before using this product, it is the responsibility of the user to read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

Voltage / Current connection



Note 9:
Voltage current connection shields should be connected at the signals' source.
The 0V signal of the analog input must be connected to the controller's 0V.

Outputs connection



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