

M91-2-R1

12/24 VDC, 10 pnp/npn digital inputs, 1 analog input, 3 high-speed counter/shaft encoder inputs, 6 relay outputs, I/O expansion port, RS232/RS485 port

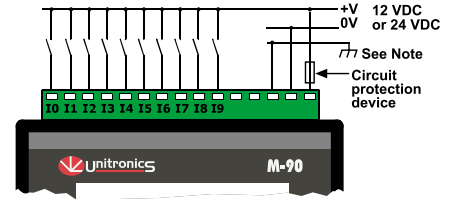
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|---|--|
| Power supply | 12VDC or 24VDC |
| Permissible range | 10.2VDC to 28.8VDC with less than 10% ripple |
| Maximum current consumption | 180mA@24VDC (pnp inputs) 260mA@24VDC (npn inputs) 220mA@12VDC (pnp inputs) 330mA@12VDC (npn inputs) |
| 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 | 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 | 16-bit |
| Input freq. | 10kHz max. |
| Minimum pulse | 40μs |

- Notes:
- All 10 inputs can be set to pnp (source) or npn (sink) via a single jumper and appropriate wiring.
 - All 10 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.

Warnings:

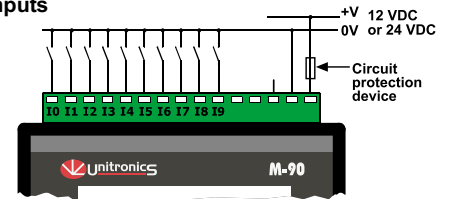
- Unused pins should not be connected. Ignoring this directive may damage the controller.
- Improper use of this product may severely damage the controller.
- Refer to the controller's User Guide regarding wiring considerations.
- Before using this product, it is the responsibility of the user to read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

Power supply, pnp (source) inputs

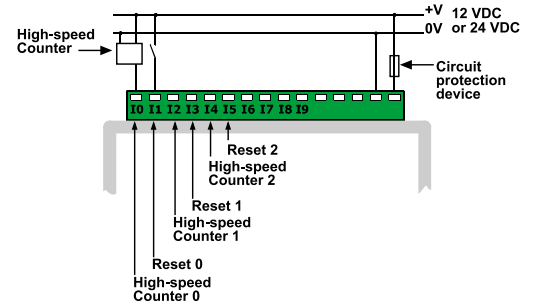


Note:
To avoid electromagnetic interference, mount the controller in a metal panel/cabinet and earth the power supply. Earth the power supply signal to the metal using a wire whose length does not exceed 10cm. If your conditions do not permit this, do not earth the power supply.

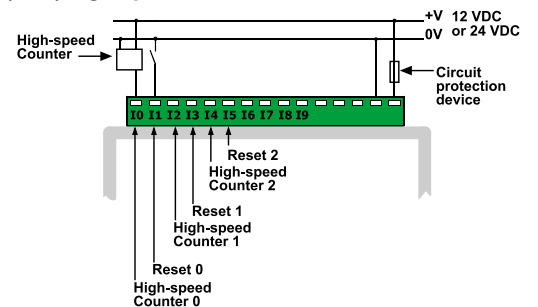
npn (sink) inputs



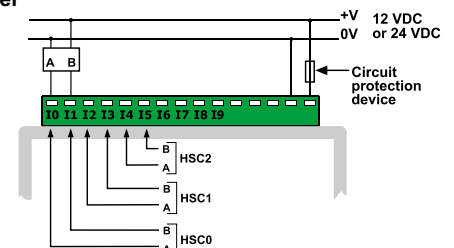
pnp (source) high-speed counter

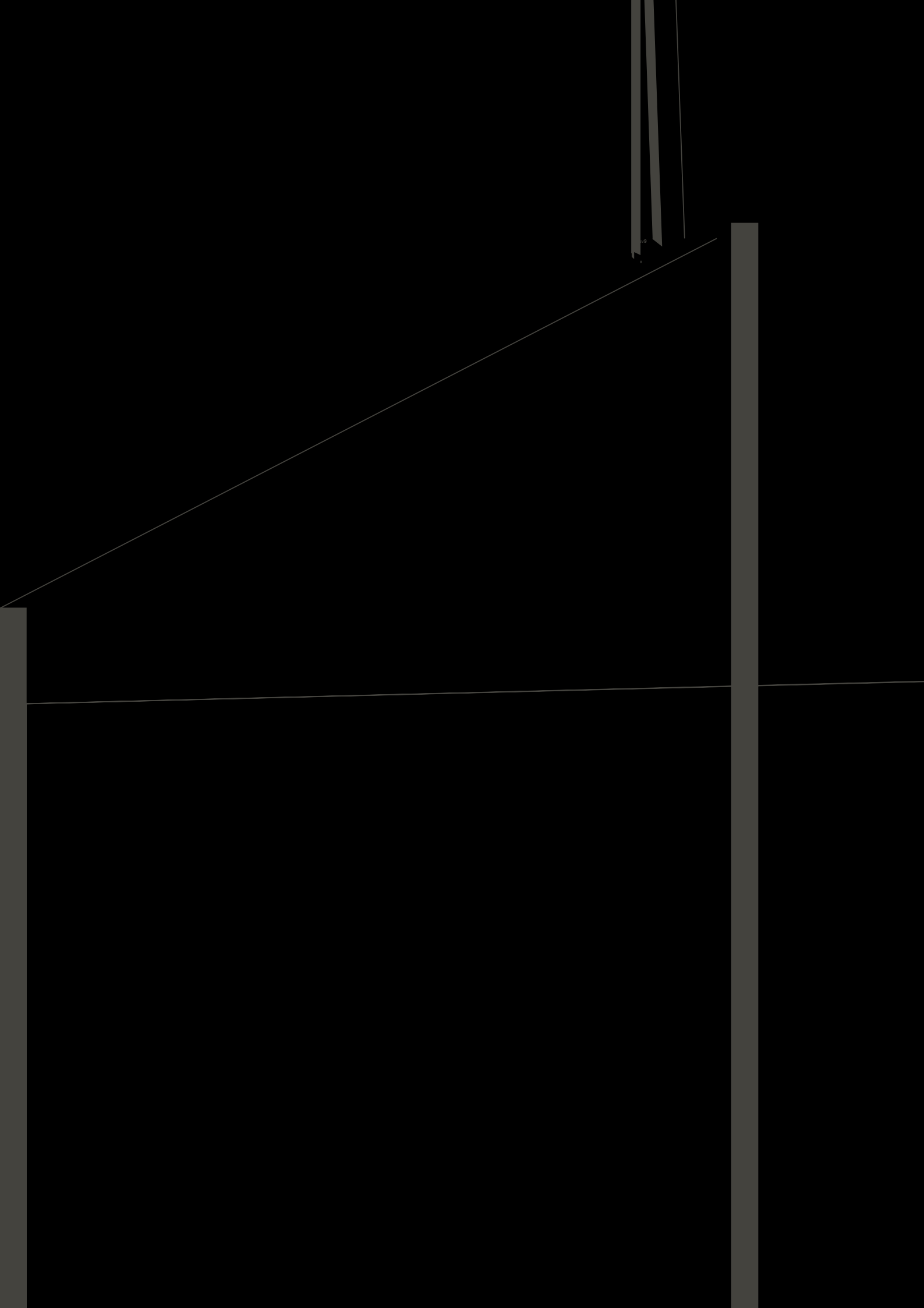


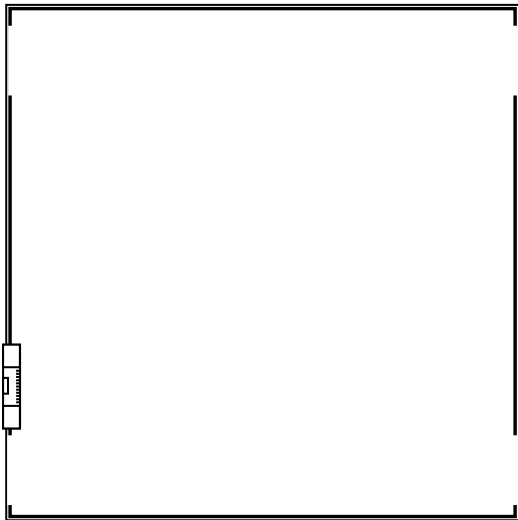
npn (sink) high-speed counter



Shaft encoder







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

Digital inputs: npn, 24VDC inputs

Analog input: Voltage input

Power supply: 24VDC