Jazz™PLC+HMI Micro-PLC+HMI Installation Guide

JZ20-R10/JZ20-J-R10
- **6 Digital Inputs including 2 HSC, 4 Relay Outputs**

JZ20-R16/JZ20-J-R16
- **6 Digital Inputs including 2 HSC, 2 Analog/Digital Inputs, 2 Analog Inputs, 6 Relay Outputs**

JZ20-J-R16HS
- **6 Digital Inputs including 3 HSC/Shaft-encoder, 2 Analog/Digital Inputs, 2 Analog Inputs, 6 Relay Outputs**

- Before using this product, the user must read and understand this document.
- For additional information regarding this product, refer to the user guide and technical specifications.
- All examples and diagrams are intended to aid understanding, and do not guarantee operation. Unitronics accepts no responsibility for actual use of this product based on these examples.
- Please dispose of this product according to local and national standards and regulations.
- Only qualified service personnel should open this device or carry out repairs.

Failure to comply with appropriate safety guidelines can cause severe injury or property damage.

- Do not attempt to use this device with parameters that exceed permissible levels.
- To avoid damaging the system, do not connect/disconnect the device when power is on.

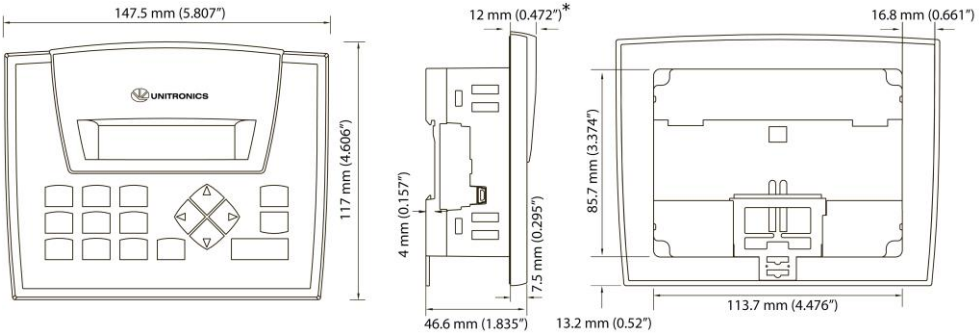
Environmental Considerations

- Do not install in areas with: excessive or conductive dust, corrosive or flammable gas, moisture or rain, excessive heat, regular impact shocks or excessive vibration.

- Ventilation: 10mm space required between the PLC+HMIs' top/bottom edges & enclosure walls.
- Do not place in water or let water leak onto the unit.
- Do not allow debris to fall inside the unit during installation.

Mounting

Dimensions



* Note that for JZ20-J modules those dimensions are 7.5 mm (0.295").

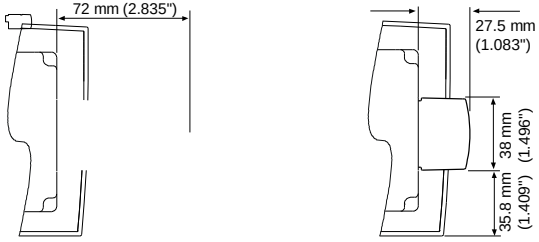
Add-on modules-
Available by separate order for communication and cloning.

Integral USB Port
This may be used for programming purposes.

Note: the USB port and an Add-on module cannot be physically connected at the same time.

Add-on: during installation **Add-on: after installation**

Installing an Add-on module requires sufficient clearance space



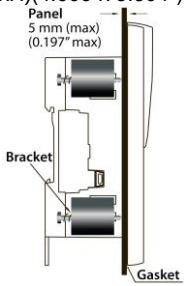
USB Port

DIN-rail mounting

Snap PLC onto the DIN rail

Panel mounting

Cut-out: 117 x 89mm (WxH)(4.606"x 3.504")



Notes: Removing the unit requires clearance space. Recommendation: approximately 40mm (1.58")
For UL listed module, in order to meet the UL508 standard, panel-mount this device on the flat surface of a Type 1 enclosure.

Wiring

- This equipment is designed to operate only in SELV/PELV/Class 2/Limited Power environments.
- All power supplies in the system must include double insulation. Power supply outputs must be rated as SELV/PELV/Class 2/Limited Power.
- Do not connect either the 'Neutral or 'Line' signal of the 110/220VAC to device's 0V pin.
- Do not touch live wires.

- All wiring activities should be performed while power is OFF.
- Install an external circuit breaker. Guard against short-circuiting in external wiring.
- Use appropriate circuit protection devices.
- Unused pins should not be connected. Ignoring this directive may damage the device.
- Double-check all wiring before turning on the power supply.

Caution

- To avoid damaging the wire, use a maximum torque of 0.5 N·m (5 kgf·cm).
- Do not use tin, solder, or any substance on stripped wire that might cause the wire strand to break.
- Install at maximum distance from high-voltage cables and power equipment.

Wiring Procedure

Use crimp terminals for wiring; use 3.31 mm ² –0.13 mm² wire (12-26 AWG):

1. Strip the wire to a length of 7±0.5mm (0.270–0.300").
2. Unscrew the terminal to its widest position before inserting a wire.
3. Insert the wire completely into the terminal to ensure a proper connection.
4. Tighten enough to keep the wire from pulling free.

Wiring Guidelines

- Use separate wiring ducts for each of the following groups:
  - Group 1: Low voltage I/O and supply lines, communication lines.
  - Group 2: High voltage Lines, Low voltage noisy lines like motor driver outputs.

  Separate these groups by at least 10cm (4"). If this is not possible, cross the ducts at a 90˚angle.
- For proper system operation, all 0V points in the system should be connected to the system 0V supply rail.

Allow for voltage drop and noise interference with input lines used over an extended distance.
Use wire that is properly sized for the load.

Earthing the product

To maximize system performance, avoid electromagnetic interference as follows:

- Use a metal cabinet.
- Connect the 0V terminal directly to the earth ground of the system.
- Use the shortest, less than 1m (3.3 ft.) and thickest, 2.08mm² (14AWG) min, wires possible.

Inputs

1. All the products comprise I0-I5; these digital inputs are arranged in a single group. Via wiring, the entire group may be set to either pnp or npn.
2. The following information concerns JZ20-R10/JZ20-J-R10 and JZ20-R16/JZ20-J-R16:
   I0 and I1 can function as high-speed counters or as normal digital inputs.
3. The following information concerns JZ20-J-R16HS:
   - I0, I1, and I4 can function as high-speed counters, as part of a shaft-encoder, or as normal digital inputs.
   - I2, I3, and I5 can function as either counter reset, as part of a shaft-encoder, or as normal digital inputs.
   - If I0, I1, I4 are set as high-speed counters (without reset), I2, I3, I5 can function as normal digital inputs.
4. The following information concerns JZ20-R16/JZ20-J-R16 and JZ20-J-R16HS in addition to I0-I5, these comprise the following:

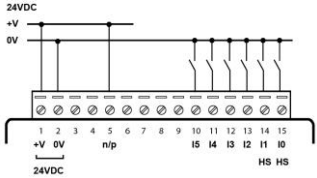
   I6 and I7 may be wired as either digital or analog inputs. These may be wired as either:
   - npn digital inputs
   - pnp digital inputs
   - analog (voltage) inputs

   In addition, one input may be wired as a pnp input, while the other is wired as an analog input. Note that if one input is wired as an npn input, the other may not be wired as an analog input.
5. The following information concerns JZ20-R16/JZ20-J-R16 and JZ20-J-R16HS:
   AN0 and AN1 are analog (current) inputs.

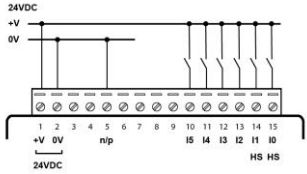
Digital Inputs, Controller's Power Supply

JZ20-R10/JZ20-J-R10

Input wiring (I0-I5), npn (sink)



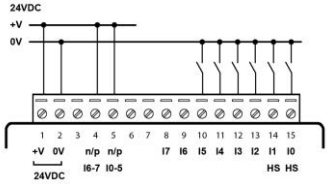
Input wiring (I0-I5), pnp (source)



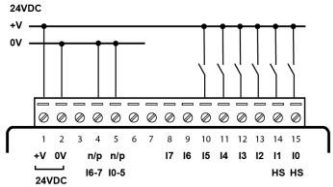
JZ20-R16/JZ20-J-R16

Note: The inputs are arranged in two groups. You can wire one group as npn and the other as pnp, or wire both groups as npn, or as pnp. In either case, the n/p pins **must be connected**.

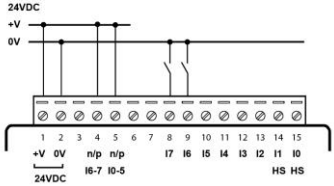
Input wiring (I0-I5), npn (sink)



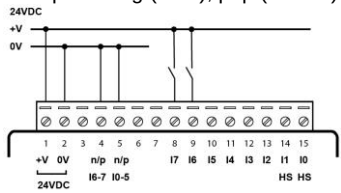
Input wiring (I0-I5), pnp (source)



Input wiring (I6-I7), npn (sink)



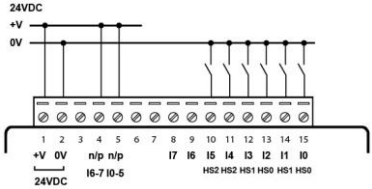
Input wiring (I6-I7), pnp (source)



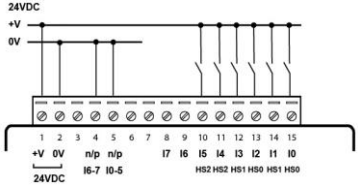
JZ20-J-R16HS

Note: The inputs are arranged in two groups. You can wire one group as npn and the other as pnp, or wire both groups as npn, or as pnp. In either case, the n/p pins **must be connected**.

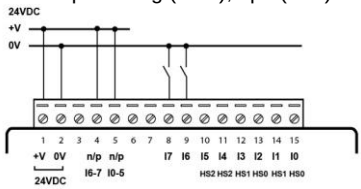
Input wiring (I0-I5), npn (sink)



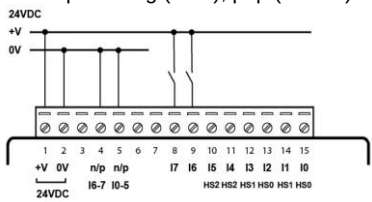
Input wiring (I0-I5), pnp (source)



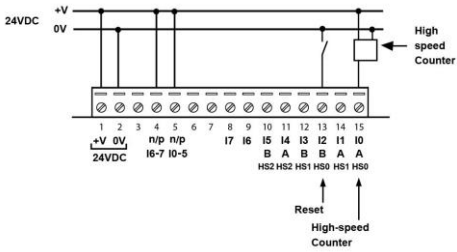
Input wiring (I6-I7), npn (sink)



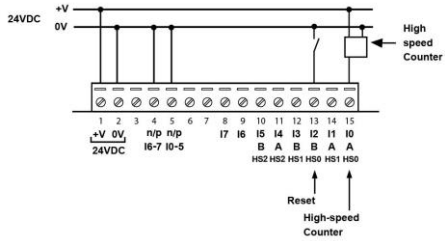
Input wiring (I6-I7), pnp (source)



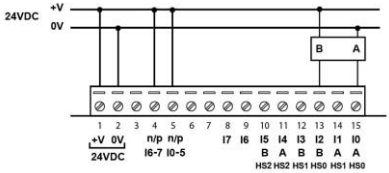
HSC input wiring, npn (sink)



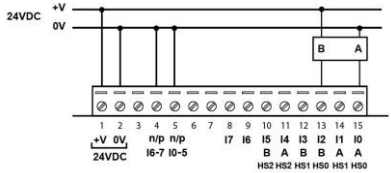
HSC input wiring, pnp (source)



Shaft-encoder wiring, npn (sink)



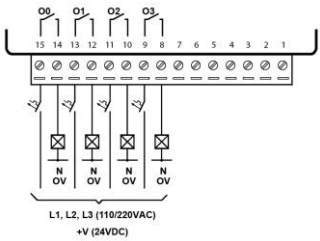
Shaft-encoder wiring, pnp (source)



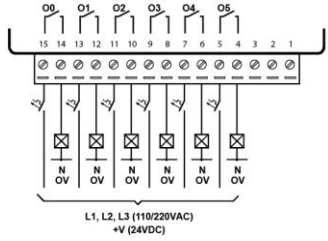
Digital Outputs

JZ20-R10/JZ20-J-R10

Output wiring



JZ20-R16/JZ20-J-R16/JZ20-J-R16HS

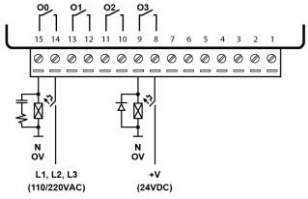


Increasing contact life span

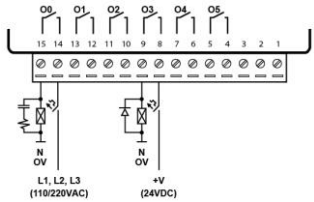
To increase the life span of your contacts and protect the unit from potential damage by reverse-EMF, connect:

- A clamping diode in parallel with each inductive DC load
- An RC snubber circuit in parallel with each inductive AC load

JZ20-R10/JZ20-J-R10



JZ20-R16/JZ20-J-R16/JZ20-J-R16HS

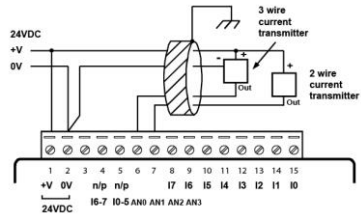


Analog inputs

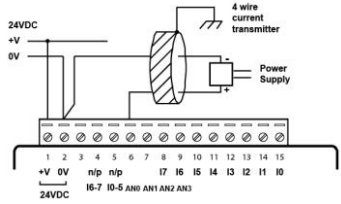
Note: Shields should be connected at the signal source.

Analog Input wiring, current (JZ20-R16/JZ20-J-R16 and JZ20-J-R16HS only)

2 or 3-wire (AN0-AN1)



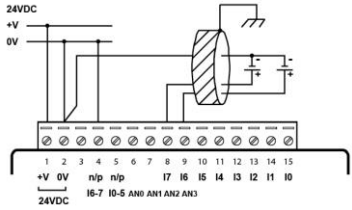
4-wire (AN0-AN1)



Analog Input wiring, voltage

Note: If either I6 or I7 is wired as an npn digital input, the remaining input may not be wired as an analog input.

JZ20-R16/JZ20-J-R16/JZ20-J-R16HS (AN2-AN3**)**



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