

This guide provides specifications for Unitronics' Jazz™ Micro-OPLC™ JZ20-R31/JZ20-J-R31. You can find additional documentation on the Unitronics' Setup CD and in the Technical Library at [www.unitronics.com](http://www.unitronics.com).

## Technical Specifications

### Power supply

|                           |  |
|---------------------------|--|
| Input voltage             | 24VDC  |
| Permissible range         | 20.4VDC to 28.8VDC with less than 10% ripple |
| Current Consumption       | See Note 1                                   |
| Max. current consumption  | 160mA@24VDC                                  |
| Typical power consumption | 2.8W   |

### Notes:

1. To calculate the actual power consumption, subtract the current for each unused relay output and LCD backlight (if unused) from the maximum current consumption value.

|                          | Per relay output | LCD backlight |
|--------------------------|------------------|---------------|
| Max. current per element | 5.5mA@24VDC      | 35mA@24VDC    |

### Battery

|         |  |
|---------|--|
| Back-up | 7 years typical at 25°C, battery back-up for RTC and system data, including variable data. |
|---------|--|

### Digital Inputs

|                       |   |                |
|-----------------------|---|----------------|
| Number of inputs      | 18 (two groups) – see Notes 2 & 3                           |                |
| Input type            | pnp (source) or npn (sink)                                  |                |
| Galvanic isolation    | None  |                |
| Nominal input voltage | 24VDC   |                |
| Input voltage         |   |                |
| pnp (source)          | 0-5VDC for Logic '0'<br>17-28.8VDC for Logic '1'            |                |
| npn (sink)            | 17-28.8VDC for Logic '0'<br>0-5VDC for Logic '1'            |                |
|                       | I0-I15  | I16-I17        |
| Input current         | 3.7mA@24VDC   | 1.2mA@24VDC    |
| Response time         | 10mSec typical  | 20mSec typical |
| Input cable length    | Up to 100 meters, unshielded                                |                |
| High speed inputs     | Specifications below apply when wired as H.S.C. See Note 4. |                |
| Resolution            | 16-bit  |                |
| Frequency             | 10kHz maximum   |                |
| Minimum pulse width   | 40µs  |                |

### Notes:

2. Inputs I0-I15 are arranged in a single group. Via wiring, the entire group may be set to either pnp or npn.
3. I16 & I17 may be wired as either digital or analog inputs, as shown in the product's installation guide. I16 & I17 may be wired as npn, pnp, or 0-10V analog inputs. 1 input may be wired as pnp, while the other is wired as analog. If 1 input is wired as npn, the other may **not** be wired as analog.
4. I0 and I1 can each function as either a high-speed counter or as a normal digital input. When used as a normal digital input, normal input specifications apply.

**Digital Outputs**

|                    |  |
|--------------------|--|
| Number of outputs  | 11 relay (in two groups) – See Note 5  |
| Output type        | SPST-NO (Form A)   |
| Isolation          | By relay   |
| Type of relay      | Tyco PCN-124D3MHZ or compatible  |
| Output current     | 3A maximum per output (resistive load)<br>8A maximum total for common                                |
| Rated voltage      | 250VAC / 30VDC   |
| Minimum load       | 1mA@5VDC   |
| Life expectancy    | 100k operations at maximum load  |
| Response time      | 10mS (typical)   |
| Contact protection | External precautions required (see Increasing Contact Life Span in the product's Installation Guide) |

**Notes:**

5. Outputs O0-O5 share a common signal.  
Outputs O6-O10 share a common signal.

**Analog Inputs**

|                      |   |             |
|----------------------|---|-------------|
| Number of inputs     | 4, according to wiring as described above in Note 3   |             |
|                      | AN0 and AN1   | AN2 and AN3 |
| Input range          | 0-20mA, 4-20mA  | 0-10VDC     |
| Input impedance      | 154Ω  | 20KΩ        |
| Maximum input rating | 30mA  | 28.8V       |
| Galvanic isolation   | None  |             |
| Conversion method    | Successive approximation  |             |
| Resolution           | 10 or 12-bit (0 to 4095) (Via Software)   |             |
| Conversion time      | All analog inputs are updated every 8 PLC scans, regardless of how many inputs are actually configured. |             |
| Precision            | ± 2%  |             |
| Status indication    | Yes – if an analog input deviates above the permissible range, its value will be 4096.                  |             |
| Input cable length   | Up to 30 meters, shielded twisted pair  |             |

**Display**

|                        |   |
|------------------------|---|
| Type                   | STN LCD   |
| Illumination backlight | LED, yellow-green, software controlled<br>(LCD backlight; enables the display to be viewed in the dark) |
| Display size           | 2 lines, 16 characters long   |
| Character size         | 5x8 matrix, 2.95x5.55mm   |

**Keyboard**

|                |   |
|----------------|---|
| Number of keys | 16 keys, including 10 user-labeled keys   |
| Key type       | Metal dome, sealed membrane switch  |
| Slides         | Slides may be installed in the operating panel faceplate to custom-label the keys and logo picture. An extra logo slide is included. A complete set of blank slides is available by separate order. |

|  |  |
|--|--|
| <b><u>Program</u></b>                  | See Note 6   |
| Ladder code memory                     | 48K (virtual)  |
| Execution time                         | 1.5 µSec for bit operations (typical)  |
| Memory bits (coils)                    | 256  |
| Memory integers (registers),<br>16 bit | 256  |
| Timers                                 | 64   |
| HMI displays                           | 60 user-designed displays available  |
| HMI variables                          | 64 HMI variables are available to conditionally display text and data.<br>List variables add up to 1.5K's worth of HMI capacity. |
| <b><u>Communication</u></b>            | Via a built-in USB port or - Add-On module. See Note 6-9   |
| GSM-support                            | SMS messages to/from 6 phone GSM numbers, up to 1K of user-designed messages. Supports Remote Access.                            |
| MODBUS                                 | Supports MODBUS protocol, Master-Slave   |
| Baud rate                              | According to add-on port module  |
| USB                                    |  |
| Port type                              | Mini-B   |
| Galvanic isolation                     | No   |
| Specification                          | USB 2.0 compliant; full speed  |
| Baud rate range                        | 300 to 115200 bps  |
| Cable                                  | USB 2.0 compliant; up to 3m  |

**Notes:**

6. The JZ20 built-in USB port may be used for programming. Add-on Modules are available by separate order for communication and cloning. Note that the USB port and an Add-on module cannot be physically connected at the same time
7. Add-on module JZ-PRG, with 6-wires communication cable (supplied in PRG kit – see the JZ-PRG Installation Guide) can be used:
  - for programming
  - to connect a modem
8. Add-on module JZ-RS4 (RS232/485), with a standard 4-wire communication cable can be used:
  - for programming
  - to communicate with other devices (including modems/GSM)
  - for RS485 networking.
9. Add-on module MJ20-ET1 enables communication over 100 Mbit/s TCP/IP network:
  - Programming/data exchange with Unitronics software;
  - Data exchange via MODBUS TCP as Master or Slave.

**Miscellaneous**

Clock (RTC) Real-time clock functions (date and time).

**Environmental**

Operating temperature 0° to 50°C (32° to 122°F)  
Storage temperature -20° to 60° C (-4° to 140°F)  
Relative humidity (RH) 10% to 95% (non-condensing)  
Mounting method Panel mounted (IP65/NEMA4X)  
DIN-rail mounted (IP20/NEMA1)

**Dimensions**

Size 147.5X117X46.6mm (5.807" X 4.606" X 1.835"). See Note 10  
Weight 300 g (10.6 oz)

**Notes:**

10. For exact dimensions, refer to the product's Installation Guide.

**Mounting**

Panel mounting Insert into cut-out: 117 x 89mm (WxH) 4.606"x 3.504"  
DIN-rail mounting Snap unit onto the DIN rail



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