

High Speed Remote IO

EXF-RC15 Technical Specifications

The Unitronics EXF-RC15 is a stand-alone high-speed Remote I/O Module, no adapter required. It connects and functions as a node in a Vision UniCAN network.

Note that the module is programmed in VisiLogic and download is via USB port.

The EXF-RC15 offers:

- 9 digital inputs, including 3 high-speed counters
- 4 digital transistor outputs, may function as high-speed PWM/PTO outputs
- 2 relay outputs

You can find additional information, such as wiring diagrams, in the product's installation guide located in the Technical Library at www.unitronics.com.

Technical Specifications

Power Supply

| | |
|--------------------------|--|
| Input voltage | 24VDC |
| Permissible range | 20.4VDC to 28.8VDC with less than 10% ripple |
| Max. current consumption | |
| npn inputs | 125mA@24VDC |
| pnp inputs | 80mA@24VDC |

Digital Inputs

| | | |
|-----------------------|--|--|
| Number of inputs | 9. See Note 1 | |
| Galvanic isolation | None | |
| Nominal input voltage | 24VDC | |
| Input voltage | Normal digital input | High Speed Input. See Note 2 |
| pnp | 0-5VDC for Logic '0' 17-28.8VDC for Logic '1' | 0-3VDC for Logic '0' 20.4-28.8VDC for Logic '1' |
| npn | 17-28.8VDC for Logic '0' 0-5VDC for Logic '1' | 20.4-28.8VDC for Logic '0' 0-3VDC for Logic '1' |
| Input current | I0-I5 5.4mA@24VDC | I6-I8 3.7mA@24VDC |
| Input impedance | I0-I5 4.5KΩ | I6-I8 6.5KΩ |
| Response time | 10mS typical, when used as normal digital input | |
| Input cable length | | |
| Normal digital input | Up to 100 meters | |
| High Speed Input | Up to 50 meters, shielded, see Frequency table below | |

High speed inputs Specifications below apply when wired as HSC/Shaft-Encoder.
See Note 1

Frequency, HSC

| Driver type | npn/npn | Push-pull |
|---------------------|---------------|----------------|
| Cable length (max.) | | |
| 10m | 95kHz maximum | 200kHz maximum |
| 25m | 50kHz maximum | 200kHz maximum |
| 50m | 25kHz maximum | 200kHz maximum |

Frequency, Shaft-Encoder

| Driver type | npn/npn | Push-pull |
|---------------------|---------------|----------------|
| Cable length (max.) | | |
| 10m | 35kHz maximum | 100kHz maximum |
| 25m | 18kHz maximum | 100kHz maximum |
| 50m | 10kHz maximum | 100kHz maximum |

Duty cycle 40-60%

Resolution 32-bit

Notes:

- Input functionality can be adapted as follows:
9 inputs may be used as digital inputs. They may be wired, in one group, and set to either npn or pnp via wiring.
In addition, according to appropriate wiring:
 - Inputs 0, 2, and 4 can function as high-speed counters, as part of a Shaft-Encoder, or as normal digital inputs.
 - Inputs 1, 3, and 5 can function as either counter reset, as part of a Shaft-Encoder, or as normal digital inputs.
 - If inputs 0, 2, and 4 are set as high-speed counters (without reset), inputs 1, 3 and 5 can function as normal digital inputs.
- If you configure an input as high-speed, you can use an end-device that comprises push-pull drive type. In this case, the high-speed input voltage ratings for npn/pnp apply.

Relay Outputs

| | |
|---------------------------------|---|
| Number of outputs | 2 relay (in 1 group). See Note 3 |
| Output type | SPST-NO (Form A) |
| Galvanic isolation | By relay |
| Type of relay | Tyco PCN-124D3MHZ or compatible |
| Output current (resistive load) | 3A maximum per output 8A maximum total per 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 <i>Increasing Contact Life Span</i> in the product's Installation Guide) |

Notes:

- Outputs 4, 5 share a common signal.

Transistor Outputs

| | |
|---|--|
| Number of outputs | 4 npn (sink). See Note 4 |
| Output type | N-MOSFET, (open drain) |
| Galvanic Isolation | None |
| Maximum output current (resistive load) | 100mA per output |
| Rated voltage | 24VDC |
| Maximum delay OFF to ON | 1µs |
| Maximum delay ON to OFF | 10µs |
| HSO freq. range with resistive load | 5Hz-200kHz (at maximum load resistance of 1.5kΩ) |
| Maximum ON voltage drop | 1VDC |
| Short-circuit protection | None |
| Voltage range | 3.5V to 28.8VDC |

Notes:

- 4. Outputs 0, 1, 2 and 3 share a common 0V signal. The 0V signal of the output must be connected to the controller's 0V.

LED Indications

| | |
|-------------|---|
| Input LEDs | Green LED- Input state |
| Output LEDs | Red LED- Output state |
| PWR | Green LED – on when power is applied. |
| COM | Green LED - UniCAN communication (Linked to SB252). Controlled by user application. For details, please refer to the VisiLogic Help file. |

Communication Ports

USB device

| | |
|-----------------|------------------------------------|
| Number of ports | 1 |
| Port type | Mini-B |
| Specification | USB 2.0 compliant; full speed |
| Baud rate range | 300 to 115200 bps |
| Isolation | None |
| Cable | USB 2.0 compliant; < 3 m (9.84 ft) |

CANbus

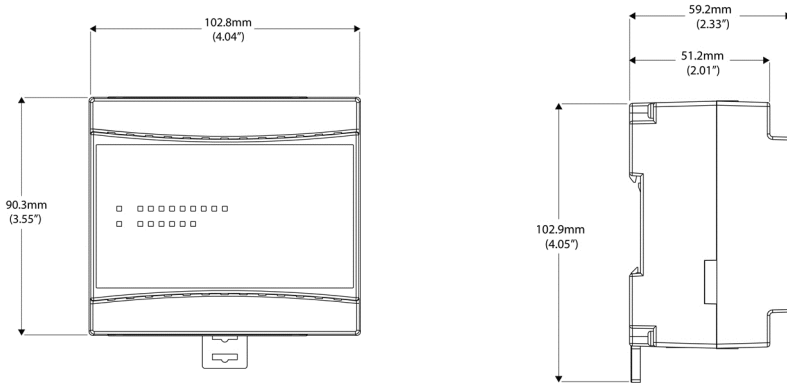
| | | |
|------------------------|---------|--|
| Number of ports | 1 | |
| Nodes | CANopen | Unitronics' CANbus protocols |
| | 127 | 60 |
| Cable length/baud rate | 25 m | 1 Mbit/s |
| See note 5 | 100 m | 500 Kbit/s |
| | 250 m | 250 Kbit/s |
| | 500 m | 125 Kbit/s |
| | 500 m | 100 Kbit/s |
| | 1000 m* | 50 Kbit/s |
| | 1000 m* | 20 Kbit/s |
| | | * If you require cable lengths over 500 meters, contact technical support. |
| Isolation | Yes | |

Notes:

- 5. Supports both 12 and 24VDC CANbus power supply, (±4%), 40mA maximum per unit. Note that if 12 VDC is used, the maximum cable length is 150 meters.

Dimensions

| | |
|--------|---------------------------|
| Weight | 290.5g (10.24oz) |
| Size | Refer to the images below |

**Environment**

| | |
|-------------------------|-------------------------------|
| Operational 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 | DIN-rail mounted (IP20/NEMA1) |

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