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	I6-I8
	5.4mA@24VDC	3.7mA@24VDC
Input impedance	I0-I5	I6-I8
	4.5KΩ	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	pnp/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	pnp/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:

1. 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.

2. 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 *Increasing Contact Life Span* in the product's Installation Guide)

Notes:

3. 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

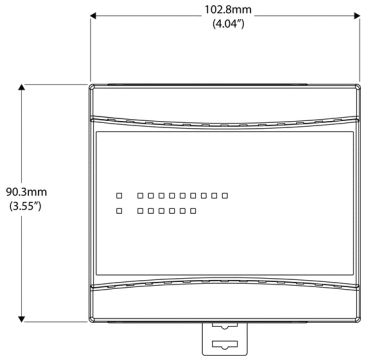
Number of ports	1		
Nodes	CANopen		Unitronics' CANbus protocols
	127		60
Cable length/baud rate	25 m	1 Mbit/s	
See note 5	100 m	500 Kbit/s	
	250 m	250 Kbit/s	
	500 m	125 Kbit/s	
	500 m	100 Kbit/s	
	1000 m*	50 Kbit/s	* If you require cable lengths over 500 meters, contact technical support.
	1000 m*	20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

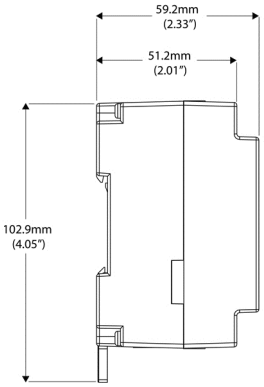
Notes:

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 50ºC (32 to 122ºF)
Storage temperature	-20 to 60ºC (-4 to 140ºF)
Relative Humidity (RH)	10% to 95% (non-condensing)
Mounting method	DIN-rail mounted (IP20/NEMA1)

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