JNIOR Series 3

A Network I/O Resource
Utilizing the JAVA™ Platform

4 Relay Output Expansion Module
Release 3.0

NOTE: JNIOR OS 3.1 or greater required

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1 Overview

The JNIOR 4 Relay Output Expansion Module (4ROUT) provides an easy way to add blocks of 4 relay outputs for integration with the JNIOR Model 310.

The module is connected to the JNIOR via the supplied cable that is connected to the Sensor Port on each device. Up to two expansion modules per JNIOR can be daisy-chained together. The module should be connected to the JNIOR while the power is off so that on boot-up, the JNIOR can properly recognize and address each module. The 4ROUT expansion module is automatically integrated into the various JNIOR communication methods (Web page, Modbus, OPC Server, and JNIOR Protocol) for use by the various JNIOR applications.

Please see Section 3 of this manual for the wiring details.

2 Viewing, Configuring and Controlling

2.1 Viewing

The 4ROUT Expansion Module is viewed via the main JNIOR web page. The JNIOR web page allows the user to monitor, control and configure the JNIOR internal and external I/O. The Expansion Modules are viewed, controlled and configured under the I/O Control/External devices tab.

The first time you click on the External tab, the web page will poll the JNIOR for a list of all external devices available. If new external devices are added while the External devices tab is being displayed, you can click on the text "Search Again" in the lower right corner of the External devices tab and the web page will poll the JNIOR again for a list of the current external devices.

The above screen shot shows the web page display with two of the 4 Relay Output Expansion Modules connected to the JNIOR. In the upper right hand corner is a long alphanumeric number. This unique number is how the JNIOR identifies each individual module. It may be important for you to know this number for use with your external application and/or for some of the standard INTEG applications. It is also important to know this address if you want to find the registry entries for each device or access the external devices via the JNIOR OPC Server or JNIOR Protocol (see the JNIOR Protocol documentation) for a custom application. The unique ID number is also located on a label attached to the side of each module.

If the 4 Relay Output Expansion Modules are connected to the JNIOR during boot-up (reboot or first power on), the JNIOR will assign an I/O "number" to each output on the modules. For the first 4 Relay Output Expansion module it will use outputs 9 through 12, and for the second 4 Relay Output Expansion module, it will use outputs 13 through 16.

NOTE: If you unplug one of the expansion modules from the JNIOR, the JNIOR will retain the numbering sequence for the other module whether that is 9 – 12 or 13 – 16. This allows you to replace one of the modules without having to modify your application's use of the channel numbers.

2.2 Configuring

The 4 Relay Output Expansion Module is configured via the main JNIOR web page.

The overall description for the 4 Relay Output Expansion Module is configured by right clicking on the module block and then clicking Edit Description.
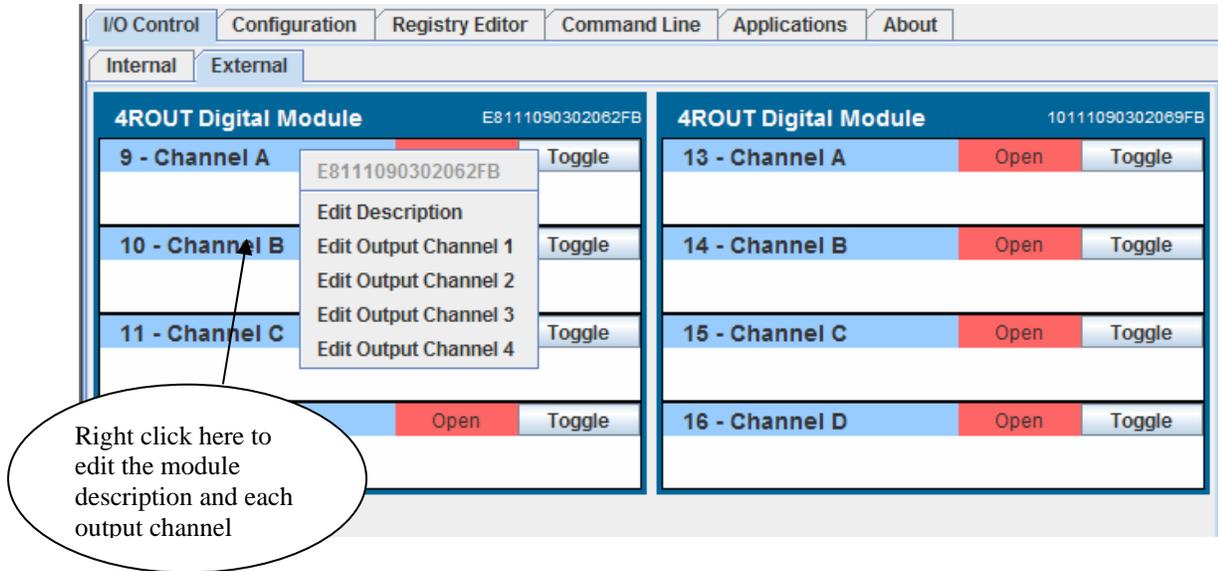

Each relay output channel can be configured separately by selecting the Edit Output Channel. You can configure the description and on/off text.
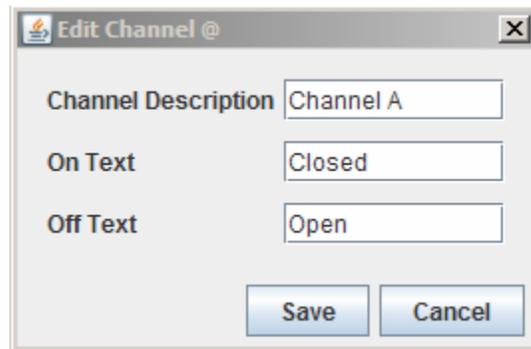
2.3 Controlling

The relay outputs can be controlled from the JNIOR web page. You can change the output status by clicking on the Toggle button. If you "right click" on the Toggle button a pop window will be displayed allowing you to Open, Close, Toggle or Pulse the relay output.
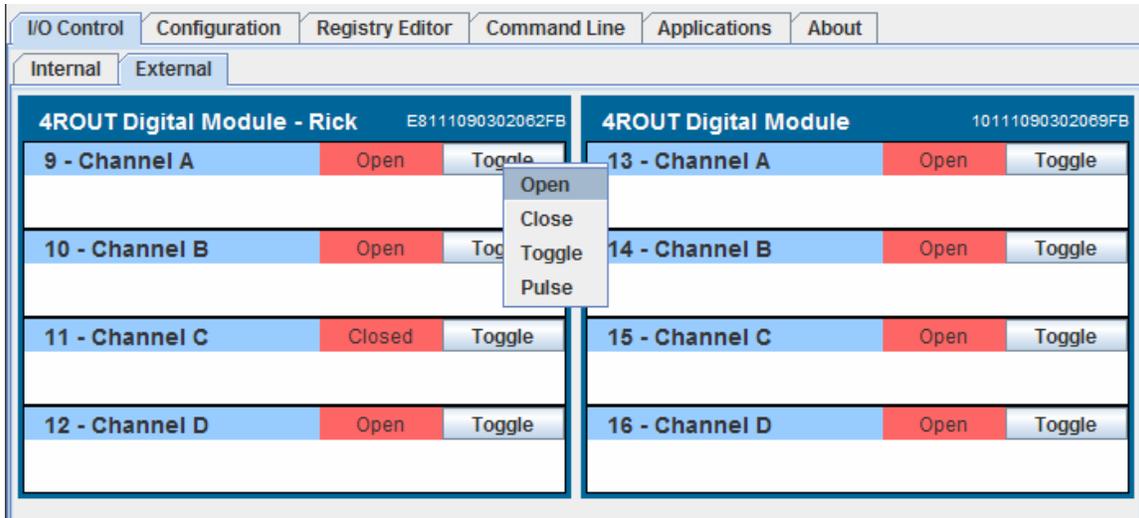
If select the Pulse function, another pop-up will ask for the duration of the pulse. You can only "pulse closed" the output (relay will be 'on').
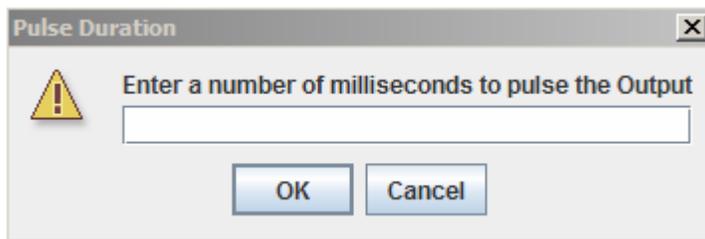
If you enter a 0 or incorrect number, the following window will be displayed.

---
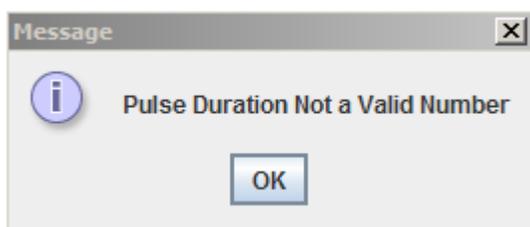
3 Specifications and Wiring

4 Relay Output Expansion Module Specifications:

General
- No power required – draws power from the JNIOR
- Dimensions: 4 x 2 x 1.2 in (102 x 51 x 31 mm)
- Weight: 4 ounces (115 grams)

Relay Outputs
- Quantity: 4
- Type: SPST, Form A – 1 Normally Open Contact
- Range: 0 – 30 volts DC
- Contact Ratings: 1 Amp @ 24 Volts AC/DC
- Pulse Resolution: 1 millisecond pulse increments

Sensor Port
- Up to 2 expansion modules can be daisy-chained
- Each module comes with a cable for connecting to the Sensor Port. However, the Expansion Modules can be located up to 50 ft. from the JNIOR. A wiring diagram for the connector cable follows in this manual.

Wiring

Care should be used when wiring signals to the 4 Relay Output Expansion Module. Industry standard power and grounding methods should be followed.

Relay Output   **ROUT +**   **Power Source**

                     ROUT -   **Output Device**
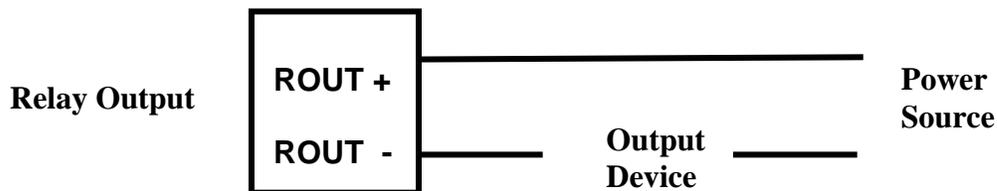
Sensor Port Cable

The Expansion Modules can be located up to 50 feet from the JNIOR. In these instances, the user must make a custom cable to connect the expansion module with the JNIOR. The pin out for the cable that connects the Sensor Port on the JNIOR with the Expansion Module is the same on both ends. The connector is a standard RJ-12 connector on both ends.

> *Note:*
>
> *An RJ12 connector is the same size as an RJ11 connector except all 6 pins have copper pads to connect all 6 wires to the port.*
>
> *Please make sure that you orient the pins properly for each side of the cable.* ***The cable will be twisted (or the one RJ12 connector will be upside down from the other) so that when you hold both ends of the cable side by side, the pin numbers will match.*** *Please contact INTEG Process Group with any questions.*
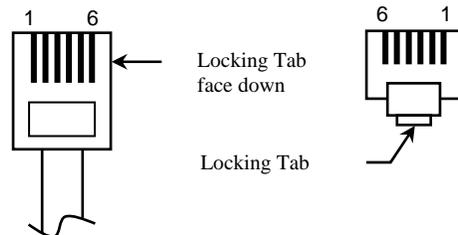
Sensor Port Pin-Outs – Use a 6 conductor wire and connect each colored wire to the same pin number on each connector.

Pin	Description
1	Voltage (5V Vcc)
2	GND
3	1-WIO (1-Wire Data)
4	GND (1-Wire Return)
5	NC (No Connection internally to the Expansion Module)
6	Unregulated DC

Reference the following diagrams to determine the proper pin numbers of the connectors:
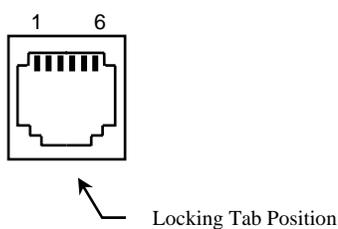
RJ12 Modular   RJ12 Modular

Summary

Thank you for purchasing the **JNIOR**. Hopefully this manual made the getting-to-know process of your new **JNIOR** very quick and easy. The **JNIOR** has many more wonderful tools and features available, and are explained in detail in the supplied documents.

Notice   Every effort was made to make this manual as accurate and useful as practical at the time of the writing of this manual. However, all information is subject to change.

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Please do not hesitate to contact our **JNIOR** team at **INTEG Process Group, Inc**. We can be reached via phone, fax or e-mail as follows:

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