

June 23, 2023

## RS232 Option Module (12980) Install Sheet

This document covers the mounting and wiring of the RS232 option module (12980) for a JACE-8000 controller (12977) and a JACE-9000 (15885) controller.

### Model / Description

#### NPB-8000-232 (12980)

Single port, electrically isolated RS232 adapter with DB9 male connector. An onboard UART supports baud rates up to 115200. LEDs verify power from the controller and indicate RS232 message traffic.

### Module Combinations

A maximum of four RS232 modules are supported. The controller supports a maximum of four option modules across all option types. If two Dual RS485 modules are used, only one additional non-RS485 module may be added for a maximum of three modules.

### COM Port Assignments

The controller has two onboard RS485 ports that always operate as COM1 and COM2.

Installed serial option modules continue COM port numbering based on proximity to the controller, where the option module closest to the controller base operates as the next available serial COM port(s). For example, if attached directly to the controller, this RS232 option module operates as COM3.

For related details, see the “COM port usage” section. Other related topics such as the mounting and wiring of the controller or other option modules, installation of the Niagara 4 software, and usage of the various RS232-based drivers are covered in other documents. See the “Related documentation” section.

### Included in this package

Included in this package you should find the following items:

- One RS232 option module (12980)
- This *RS232 Option Module (12980) Install Sheet*

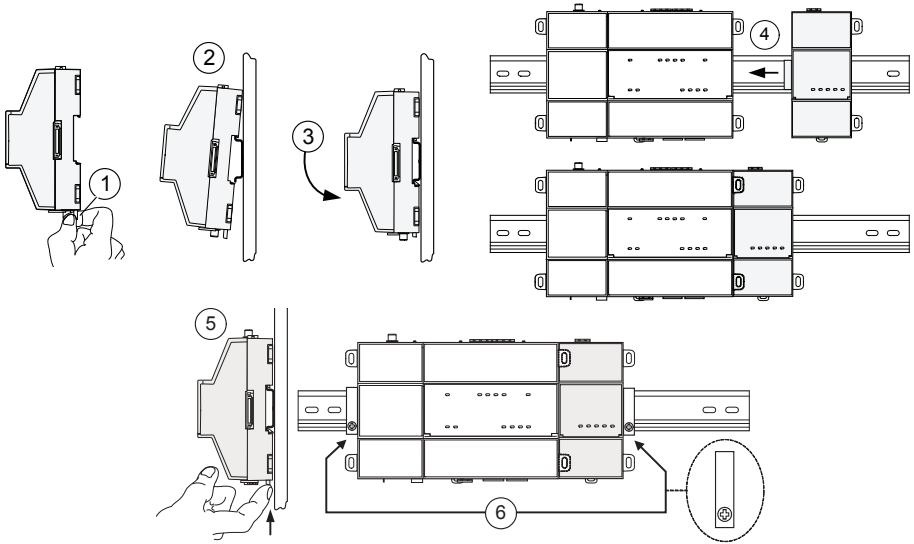
### Material and tools required

Suitable tools and fasteners for mounting the unit, attaching it to an already mounted controller. DIN-rail mounting of the controller and all its option modules is recommended.



12980-C

**Figure 2: DIN rail mounting**



## Precautions

The following are warnings relating to the installation of the controller option module.

### General precautions

- ⚠ Remove all power to controller before attaching (plug in) or detaching (unplug) any option module to prevent possible equipment damage.**
- ⚠ Removal of the cover is not required.**  
No configurable or user-serviceable items (such as jumpers) are inside the option module.

### Static Discharge Precautions

- ⚠ Static charges produce voltages high enough to damage electronic components. The microprocessors and associated circuitry within the devices are sensitive to static discharge.**
- ⚠ Work in a static-free area.**
- ⚠ Discharge any static electricity you may have accumulated. Discharge static electricity by touching a known, securely grounded object.**

## Mounting

Mounting the controller and all option modules on a 35mm wide DIN rail is recommended. Mounting on a DIN rail ensures accurate alignment of connectors between all modules.

Tabs on the controller or module can be used for panel mounting as an alternate to DIN rail mounting.

- ⚠ Remove all power to controller before installing or removing option modules. See “Precautions”.**

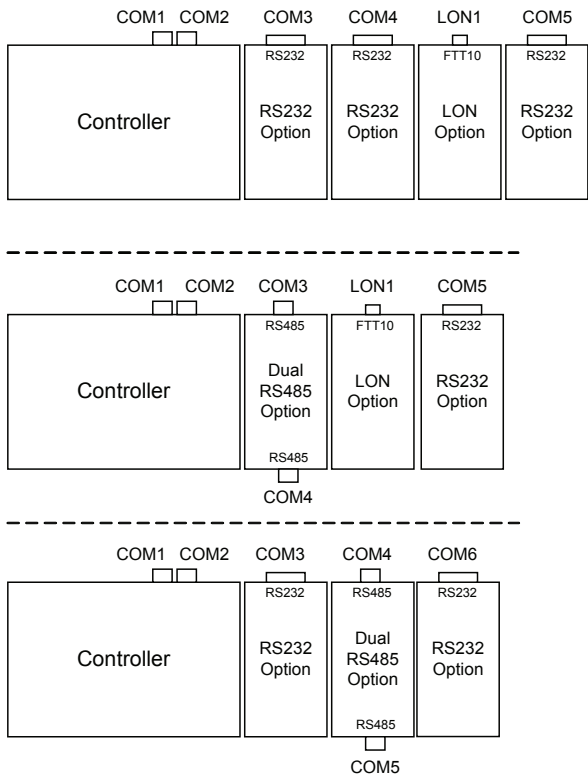
### Mounting on DIN rail

Prerequisite: The controller is securely mounted on a 35mm DIN rail, with adequate room left to mount the module.

- ① Pull the option module's locking clip down.
- ② Tilt the module to hook over the DIN rail.
- ③ Push down and in on the unit, fastening to the rail.
- ④ Slide the module firmly into the controller's connector (or existing option module) to seat. Repeat for other modules as needed (4 maximum).
- ⑤ Push up the locking clip on all modules.
- ⑥ Carefully secure both ends of the final assembly with DIN rail end-clips provided by the DIN rail vendor.

**NOTE:** To remove a unit from the DIN rail, pull down its locking clip. Slide the unit away from other devices, then swing the bottom out and lift away from the rail.

Figure 3: COM Port Numbering Examples



## COM port usage

The RS232 option adds one COM port on the installed controller. The controller has two integral RS485 ports. In a Niagara 4 station running on the controller, these two ports always operate as COM1 and COM2.

Installed serial option modules (RS232 or RS485) continue COM port numbering based on proximity to the controller, where the option module closest to the controller base operates as the next available serial COM port(s). For example, if attached directly to the controller, this RS232 option module operates as COM3. If another RS232 option module is chained to it, it operates as COM4. Figure 2 shows a few combinations with port assignments.

## Wiring

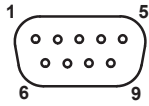
### Earth ground wiring

Other than the controller ground, no ground is required on the module.

### RS232 port pinouts

The RS232 option module has DB9 male (plug) connector, typical for a DTE device. Table 1 provides pinouts.

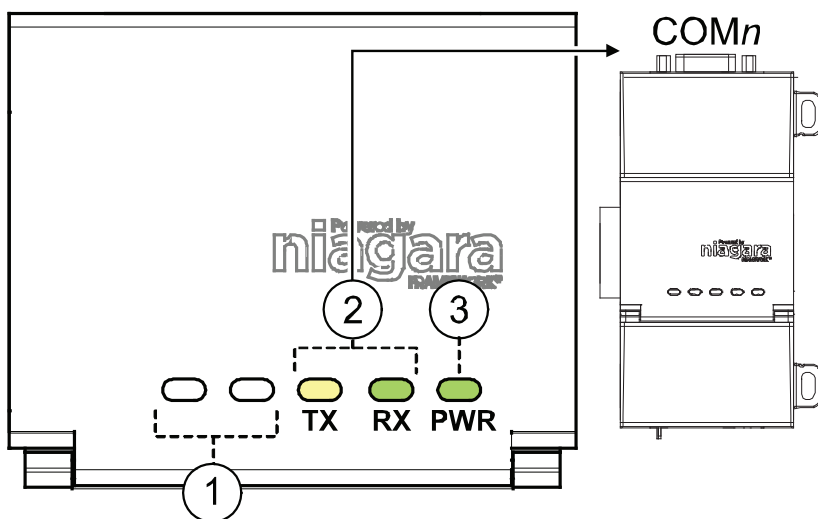
Table 1: RS232 option module port pinouts.

Pinout Reference	Signal	DB- Plug Pin
<b>DB9M (male or plug)</b> 	DCD	1
	RXD	2
	TXD	3
	DTR	4
	GND	5
	DSR	6
	RTS	7
	CTS	8
	not used	9

Standard DB9 serial cables may be used— for example, a “null modem” cable to communicate to another DTE device.

Shielded type cables are recommended, with a typical maximum length of 50 feet (15.2m).

**Figure 4: LEDs on RS232 option module**



## LEDs

Three LEDs are on the front of the RS232 option module. They are visible when the front access door is opened or closed.

- ① **Not used**
- ② **TX** (Transmit) and **RX** (Receive)
- ③ **PWR** - Green, remains lit while controller is powered.

The LED pair TX and RX operate as follows:

- TX (yellow) — Transmit, flashes when the controller is sending data to a device on the RS232 port.
- RX (green) — Receive, flashes when the controller is receiving data from a device on the RS232 port


## Related Documents

- *JACE-8000 Controller (12977) Mounting and Wiring Guide*
- *JACE-8000 Controller (12977) Quick Start Install Sheet*
- *JACE-8000 Niagara 4 Install and Startup Guide*
- *JACE-9000 Controller (15885) Mounting and Wiring Guide*
- *JACE-9000 Controller (15885) Quick Start Install Guide*

- *JACE-9000 Niagara 4 Install and Startup Guide*
- *Niagara 4 Drivers Guide*

## Compliance



 Complies with the requirements of the relevant ACMA Standards.

## Manufacturer Representative:

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China EEP Hazardous Substance Information

Restricted Materials Above Threshold

部件名称与型号 Assembly Name and Model		有害物质 Hazardous Substances					
型号 Model	部件名称 Assembly Name	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr6+)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
12980	PWB 组件 PWB Assemblies	X	O	O	O	O	O
本表格依据 SJ/T 11364 的规定编制。 This table is prepared in accordance with the provisions of SJ/T 11364.							
O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。 Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.							
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。 Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572							
“未列入表内的其他部件，皆不含任何超出限量要求的限制使用物质。” All other components, not listed in the table, do not contain restricted substances above the threshold level							
电子电气产品的环保使用期限依据SJ/T11388 标准的规定确定。 The EPUP value of EEP is defined according to SJ/T 11388 standard.							

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