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***cRIO-9805***

## SAFETY, ENVIRONMENTAL, AND REGULATORY INFORMATION

# cRIO-9805

## 4-Port 802.1AS Ethernet Switch Expansion Module for CompactRIO

Read this document and the documents listed in the *Additional Resources* section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

## Icons

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**Notice** Take precautions to avoid data loss, loss of signal integrity, degradation of performance, or damage to the model.



**Caution** Take precautions to avoid injury. Consult the model documentation for cautionary statements when you see this icon printed on the model. Cautionary statements are localized into French for compliance with Canadian requirements.



**ESD Sensitive** Take precautions to avoid damaging the model with electrostatic discharge.

## Safety

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**Caution** Observe all instructions and cautions in the user documentation. Using the model in a manner not specified can damage the model and compromise the built-in safety protection. Return damaged models to NI for repair.



**Attention** Suivez toutes les instructions et respectez toutes les mises en garde de la documentation utilisateur. L'utilisation d'un modèle de toute autre façon que celle spécifiée risque de l'endommager et de compromettre la protection de sécurité intégrée. Renvoyez les modèles endommagés à NI pour réparation.










## Safety Guidelines for Hazardous Locations

Follow these guidelines if you are installing the device in a potentially explosive environment. The device has been evaluated as compliant with the ATEX directive and is IECEx certified. Each device is marked Ⓔ II 3G and is suitable for use in Zone 2

hazardous locations, in ambient temperatures of  $-40^{\circ}\text{C} \leq T_a \leq 70^{\circ}\text{C}$ . The device is suitable for use in non-hazardous locations and the following hazardous locations.

|  |  |
|--|--|
| U.S. (UL)                                  | Class I, Division 2, Groups A, B, C, D, T4;<br>Class I, Zone 2, AEx nA IIC T4 Gc |
| Canada (C-UL)                              | Class I, Division 2, Groups A, B, C, D, T4;<br>Ex nA IIC T4 Gc                   |
| Europe (ATEX) and<br>International (IECEx) | Ex nA IIC T4 Gc; DEMKO 12<br>ATEX 1202658X; IECEx UL 14.0089X                    |

## Cautions for Hazardous Locations

-  **Caution** Do not disconnect the power supply wires, I/O-side wires, or connectors from the controller unless power has been switched off or the area is known to be nonhazardous.
-  **Attention** Ne déconnectez les fils d'alimentation, les fils côté E/S et les connecteurs du contrôleur que s'il est hors tension ou que vous savez que l'endroit n'est pas dangereux.
-  **Caution** Do not remove modules unless power has been switched off or the area is known to be nonhazardous.
-  **Attention** Ne retirez les modules que s'ils sont hors tension ou que vous savez que l'endroit n'est pas dangereux.
-  **Caution** Substitution of components may impair suitability for use in explosive atmospheres.
-  **Attention** Si des composants sont substitués, le système risque de ne plus être conforme pour une utilisation dans une atmosphère explosive.
-  **Caution** For use in explosive atmospheres, install the system in an enclosure rated to at least IP54 as defined by IEC/EN 60079-15.
-  **Attention** Pour une utilisation dans une atmosphère explosive, installez le système dans une enceinte certifiée au moins IP54 selon la définition de la norme IEC/EN 60079-15.
-  **Caution** The system shall only be used in an area of not more than Pollution Degree 2, as defined in IEC/EN 60664-1.



**Attention** Le système ne doit être utilisé que dans des endroits ne dépassant pas le degré de pollution 2 défini dans la norme IEC/EN 60664-1.



**Caution** Transient protection shall be provided that is set at a level not exceeding 140% of the peak rated voltage value at the supply terminals to the equipment.



**Attention** La protection contre les phénomènes transitoires doit être fournie à un niveau ne dépassant pas 140 % de la valeur de la tension nominale de crête aux bornes d'alimentation de l'équipement.

## Safety Compliance and Hazardous Locations Standards

This product is designed to meet the requirements of the following electrical equipment safety standards for measurement, control, and laboratory use:

- IEC 61010-1, EN 61010-1
- UL 61010-1, CSA C22.2 No. 61010-1
- EN 60079-0, EN 60079-15
- IEC 60079-0: Ed 6, IEC 60079-15; Ed 4
- UL 60079-0; Ed 6, UL 60079-15; Ed 4
- CSA C22.2 No. 60079-0, CSA C22.2 No. 60079-15



**Note** For UL and other safety certifications, refer to the product label or the [Product Certifications and Declarations](#) section.



## EMC Guidelines

This product was tested and complies with the regulatory requirements and limits for electromagnetic compatibility (EMC) stated in the product specifications. These requirements and limits provide reasonable protection against harmful interference when the product is operated in the intended operational electromagnetic environment.

This product is intended for use in industrial locations. However, harmful interference may occur in some installations, when the product is connected to a peripheral device or test object, or if the product is used in residential or commercial areas. To minimize interference with radio and television reception and prevent unacceptable performance degradation, install and use this product in strict accordance with the instructions in the product documentation.


Furthermore, any changes or modifications to the product not expressly approved by NI could void your authority to operate it under your local regulatory rules.

## EMC Notices

-  **Notice** Operate this product only with shielded cables and accessories. Do not use unshielded cables or accessories unless they are installed in a shielded enclosure with properly designed and shielded input/output ports and connected to the product using a shielded cable. If unshielded cables or accessories are not properly installed and shielded, the EMC specifications for the product are no longer guaranteed.
-  **Notice** The performance of this product can be disrupted if subjected to Electrostatic Discharge (ESD) during operation. To prevent damage, industry-standard ESD prevention measures must be employed during installation, maintenance, and operation.

## Special Conditions for Marine Applications


Some models are approved for marine (shipboard) applications. To verify marine approval certification for a model, visit [ni.com/product-certifications](https://ni.com/product-certifications), search by model number, and click the appropriate link.


-  **Notice** In order to meet the EMC requirements for marine applications, install the model in a shielded enclosure with shielded and/or filtered power and input/output ports. In addition, take precautions when designing, selecting, and installing measurement probes and cables to ensure that the desired EMC performance is attained.

## Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326-1 (IEC 61326-1): Class A emissions; Industrial immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions

 **Note** Group 1 equipment (per CISPR 11) is any industrial, scientific, or medical equipment that does not intentionally generate radio frequency energy for the treatment of material or inspection/analysis purposes.




 **Note** In Europe, Australia, and New Zealand (per CISPR 11) Class A equipment is intended for use only in non-residential locations.

 **Notice** For EMC declarations and certifications, and additional information, refer to the [Product Certifications and Declarations](#) section.

# Environmental Guidelines

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Follow these guidelines to meet the environmental specifications defined in this document.

-  **Notice** This model is intended for use in indoor applications only.
-  **Notice** Mount the system directly on a flat, rigid surface, as described in the user manual.
-  **Notice** All cabling should be strain-relieved near input connectors. Take care to not directionally bias cable connectors within input connectors when applying strain relief.

## Environmental Characteristics

### Temperature and Humidity

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#### Temperature

|           |                 |
|-----------|-----------------|
| Operating | -40 °C to 70 °C |
| Storage   | -40 °C to 85 °C |

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#### Humidity

|           |                                 |
|-----------|---------------------------------|
| Operating | 10% RH to 90% RH, noncondensing |
| Storage   | 5% RH to 95% RH, noncondensing  |

|                    |         |
|--------------------|---------|
| Ingress protection | IP40    |
| Pollution Degree   | 2       |
| Maximum altitude   | 5,000 m |

### Shock and Vibration

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#### Operating vibration

|            |                         |
|------------|-------------------------|
| Random     | 5 grms, 10 Hz to 500 Hz |
| Sinusoidal | 5 g, 10 Hz to 500 Hz    |

## Environmental Standards

This product meets the requirements of the following environmental standards for electrical equipment.

- IEC 60068-2-1 Cold
- IEC 60068-2-2 Dry heat
- IEC 60068-2-30 Damp heat cyclic (12 + 12h cycle)
- IEC 60068-2-64 Random operating vibration
- IEC 60068-2-6 Sinusoidal operating vibration
- IEC 60068-2-27 Operating shock



**Note** To verify marine approval certification for a product, refer to the product label or visit [ni.com/certification](https://ni.com/certification) and search for the certificate.

## Power Requirements

|                               |  |
|-------------------------------|--|
| Maximum power consumption     | 5 W  |
| Power supply voltage          | 9 V to 30 V  |
| Power wire gauge <sup>1</sup> | 0.20 mm <sup>2</sup> to 1.31 mm <sup>2</sup><br>(24 AWG to 16 AWG) |

## Physical Characteristics



**Tip** For two-dimensional drawings and three-dimensional models of the cRIO-9805, visit [ni.com/dimensions](https://ni.com/dimensions) and search by module number.

|            |  |
|------------|--|
| Weight     | 406 g (14.3 oz)  |
| Dimensions | 30.0 mm × 88.1 mm × 106.9 mm<br>(1.18 in. × 3.47 in. × 4.21 in.) |

<sup>1</sup> NI recommends using ferrules for stranded wires.

## Maintenance

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If you need to clean the cRIO-9805, wipe it with a dry towel.

## CE Compliance

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This product meets the essential requirements of applicable European Directives, as follows:

- 2014/30/EU; Electromagnetic Compatibility Directive (EMC)
- 2011/65/EU; Restriction of Hazardous Substances (RoHS)
- 2014/34/EU; Potentially Explosive Atmospheres (ATEX)

## Export Compliance

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This model is subject to control under the U.S. Export Administration Regulations (15 CFR Part 730 et. seq.) administered by the U.S. Department of Commerce's Bureau of Industry and Security (BIS) ([www.bis.doc.gov](http://www.bis.doc.gov)) and other applicable U.S. export control laws and sanctions regulations. This model may also be subject to additional license requirements of other countries' regulations.

Additionally, this model may also require export licensing before being returned to NI. The issuance of a Return Material Authorization (RMA) by NI does not constitute export authorization. The user must comply with all applicable export laws prior to exporting or re-exporting this model. See [ni.com/legal/export-compliance](http://ni.com/legal/export-compliance) for more information and to request relevant import classification codes (e.g. HTS), export classification codes (e.g. ECCN), and other import/export data.

## Product Certifications and Declarations

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Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for NI products, visit [ni.com/product-certifications](http://ni.com/product-certifications), search by model number, and click the appropriate link.

## Additional Resources

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Visit [ni.com/manuals](http://ni.com/manuals) for more information about your device, including specifications, pinouts, and instructions for connecting, installing, and configuring your system.



# Worldwide Support and Services

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The NI website is your complete resource for technical support. At [ni.com/support](https://ni.com/support), you have access to everything from troubleshooting and application development self-help resources to email and phone assistance from NI Application Engineers.

Visit [ni.com/services](https://ni.com/services) for information about the services NI offers.

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