

# Micro800 Non-isolated Thermocouple Plug-in Module

Catalog Number 2080-TC2

[http://literature.rockwellautomation.com/idc/groups/literature/documents/wd/2080-wd006\\_-mu-p.pdf](http://literature.rockwellautomation.com/idc/groups/literature/documents/wd/2080-wd006_-mu-p.pdf)

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### Environment and Enclosure

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**ATTENTION**

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating. This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

This equipment is supplied as open-type equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5V A, V2, V1, V0 (or equivalent) if non-metallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see:

- Industrial Automation Wiring and Grounding Guidelines, Rockwell Automation publication [1770-4.1](#), for additional installation requirements.
- NEMA Standard 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

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### Preventing Electrostatic Discharge

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**ATTENTION**

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
- Wear an approved grounding wriststrap.
- Do not touch connectors or pins on component boards.
- Do not touch circuit components inside the equipment.
- Use a static-safe workstation, if available.
- Store the equipment in appropriate static-safe packaging when not in use.

## North American Hazardous Location Approval

The following modules are North American Hazardous Location approved: 2080-TC2

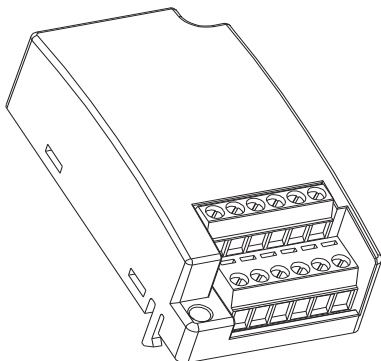
<b>The following information applies when operating this equipment in hazardous locations:</b>	<b>Informations sur l'utilisation de cet équipement en environnements dangereux:</b>
<p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p><b>WARNING</b></p>  </div> <div> <p><b>EXPLOSION HAZARD</b></p> <ul style="list-style-type: none"> <li>• Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.</li> <li>• Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.</li> <li>• Substitution of any component may impair suitability for Class I, Division 2.</li> <li>• If this product contains batteries, they must only be changed in an area known to be nonhazardous.</li> </ul> </div> </div>	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <p><b>AVERTISSEMENT</b></p>  </div> <div> <p><b>RISQUE D'EXPLOSION</b></p> <ul style="list-style-type: none"> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.</li> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.</li> <li>• La substitution de tout composant peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.</li> <li>• S'assurer que l'environnement est classé non dangereux avant de changer les piles.</li> </ul> </div> </div>

## 4 Micro800 Non-isolated Thermocouple Plug-in Module

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### Parts List

Your package contains one Micro800 Non-isolated Thermocouple Plug-in Module and these pinout guide wiring instructions.



45010

You can choose to wire the plug-in before inserting it onto the controller, or wire it once the module is secured in place.

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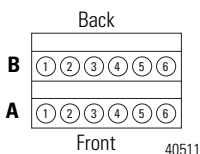
**ATTENTION**

- This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbance.
  - Be careful when stripping wires. Wire fragments that fall into the controller could cause damage. Once wiring is complete, make sure the controller is free of all metal fragments.
  - Do not wire more than 2 conductors on any single terminal.
  - If you insert or remove the plug-in module while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.
  - Cable length should be less than 10 meters.
  - Do not insert or remove the plug-in module while power is applied, otherwise, permanent damage to equipment may occur.
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## Wire the Module

Follow the pinout diagram to wire your plug-in module.

### 12-Pin Female Terminal Block



(View into terminal block)

Pin A1 CH0+

Pin A2 CH0-

■ Pin A3 CJ+

Pin A4 No connection

Pin A5 No connection

Pin A6 No connection

Pin B1 CH1+

Pin B2 CH1-

Pin B3 CJ-

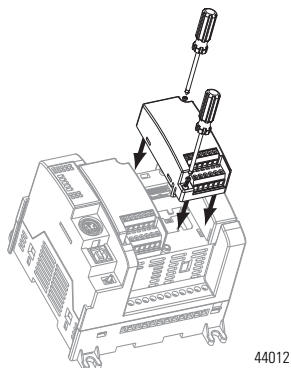
Pin B4 No connection

Pin B5 No connection

Pin B6 No connection

## Insert Module into Controller

Follow the instructions to insert and secure the plug-in module to the controller.



1. Position the plug-in module with the terminal block facing the front of the controller as shown.
2. Snap the module into the module bay.
3. Using a screwdriver, tighten the 10...12 mm (0.39...0.47 in.) M3 self tapping screw to torque specifications. ■

## Specifications

### General and Environmental Specifications

Attribute	Value
Mounting torque	0.2 Nm (1.48 lb-in)
Terminal screw torque	0.22...0.25 Nm (1.95...2.21 lb-in) (using a 2.5 mm (0.10 in.) flat-blade screwdriver)
Wire size	0.14...1.5 mm <sup>2</sup> (26...16 AWG) solid copper wire or 0.14...1.0 mm <sup>2</sup> (26...17 AWG) stranded copper wire rated @ 90 °C (194 °F) insulation max
Input impedance	>10 MΩ
Normal mode rejection ratio	70 dB @ 50 Hz / 60 Hz
Accuracy	± 1.0 °C (1.8 °F) for K-Type Thermocouple @ 25°C (77 °F) For information on other types of thermocouples, see the Micro830 Programmable Controllers User Manual, publication <a href="#">2080-UM002</a> .
Power consumption	<50 mA
Temperature, operating	IEC60068-2-1 (Test Ad, Operating Cold), IEC60068-2-2, (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -20...65 °C (-4...149 °F)
Temperature, surrounding air, max.	65 °C (149 °F)
Temperature, non-operating	IEC60068-2-1 (Test Ad, Operating Cold), IEC60068-2-2, (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): -40...85 °C (-40...185 °F)
North American temp code	T4

## Certifications

<b>Certification (when product is marked)<sup>(1)</sup></b>	<b>Value</b>
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E322657.  UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E334470.
CE	European Union 2004/108/EC EMC Directive, compliant with: EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)  European Union 2006/95/EC LVD, compliant with: EN 61131-2; Programmable Controllers (Clause 11)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

<sup>(1)</sup> See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

## Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States	1.440.646.3434 Monday – Friday, 8 a.m. – 5 p.m. EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

## New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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