WARNING: To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-844-4200.

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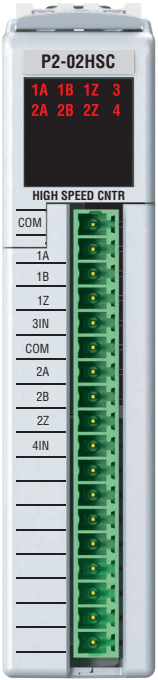
Removable Terminal Block Specifications

Part Number	P2-RTB	P2-RTB-1
Number of positions	18 Screw Terminals	18 Spring Clamp Terminals
Wire Range	30–16 AWG (0.051–1.31 mm²) Solid / Stranded Conductor 3/64 in. (1.2 mm) Insulation Maximum 1/4 in (6–7 mm) Strip Length	28–16 AWG (0.081–1.31 mm²) Solid / Stranded Conductor 3/64 in (1.2 mm) Insulation Maximum 19/64 in (7–8 mm) Strip Length
Conductors	"USE COPPER CONDUCTORS, 75ºC" or equivalent.	
Screw Driver Width	1/8 in (3.8 mm) Maximum	
Screw Size	M2	N/A
Screw Torque	2.5 lb·in (0.28 N·m)	N/A



P2-02HSC High-Speed Counter

The P2-02HSC High-Speed Counter Module provides two independent single ended 5–24 VDC inputs, sinking/sourcing, that accept up to 100kHz of pulse/direction and quadrature signals. Additionally, two 5–24 VDC general purpose high-speed inputs are included for use with the Productivity2000 system.

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Totem Pole Output Encoder Wiring. 6

Terminal Block sold separately, (see wiring options on page 5).

General Specifications

Operating Temperature	0º to 60ºC (32º to 140ºF)
I/O Points Used	None, mapped directly to tags in CPU
Storage Temperature	-20º to 70ºC (-4º to 158ºF)
Humidity	5 to 95% (non-condensing)
Altitude	2,000 meters max
Pollution Degree	II
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Overvoltage Category	II
Field to Logic Side Isolation	1800VAC applied for 1 second
Insulation Resistance	> 10MΩ @ 500VDC
Heat Dissipation	2400mW
Connector Type (not included)	18-position removable terminal block
Weight	93g (3.3 oz)
Agency Approvals	UL 61010-1 and UL 61010-2-201 File E139594, Canada and USA CE (EN 61131-2 EMC, EN 61010-1 and EN 61010-2-201 Safety)*

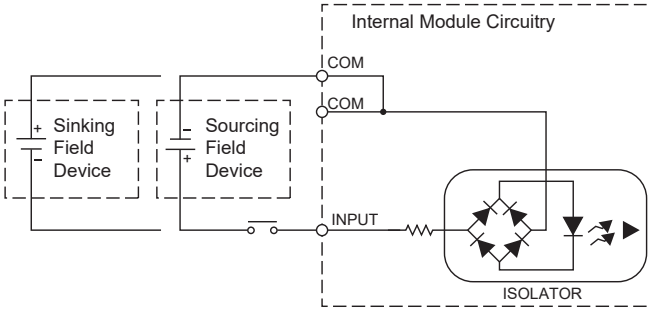
*Meets EMC and Safety requirements. See the D.O.C. for details.

Input Specifications

Inputs per Module	Single ended Counter Inputs (6pts: 1A, 1B, 1Z, 2A, 2B, 2Z) General Purpose Inputs (3IN, 4IN)
Rated Voltage	5–24 VDC
Operating Voltage Range	4.25–27.6 VDC
Input Current	1.5 mA typical @ 4.25VDC 11mA maximum @ 27.6 VDC
Input Impedance	2.5 KΩ
Minimum ON Current	1mA
Maximum OFF Current	0.4 mA
Minimum ON Voltage	4.5 VDC
Maximum OFF Voltage	2.2 VDC
OFF to ON, ON to OFF Response Time	2µs
Minimum Direction Setup Time	20µs
Maximum Input Frequency	100kHz
Module Range	Target position range ±2.147 billion (32-bit signed integer)
Status Indicators Logic Side	8 points
Commons	2 (4 points / common)

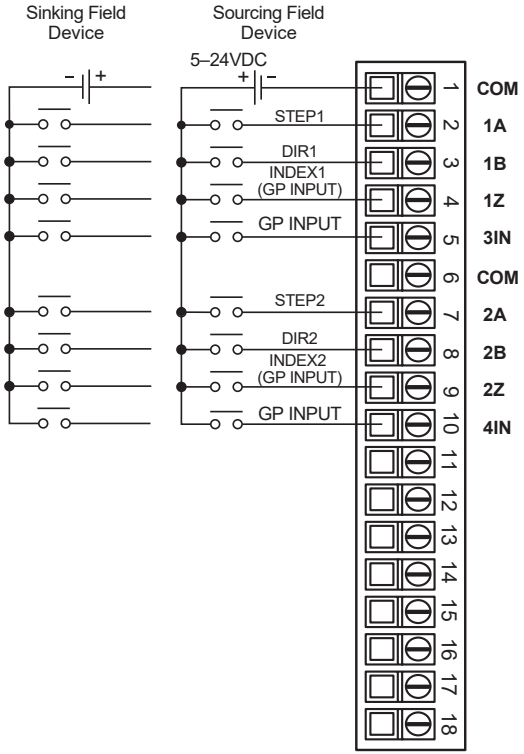
Wiring Diagram

Equivalent Input Circuit



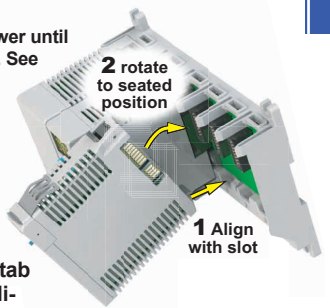
Schematic

High Speed General Purpose Inputs



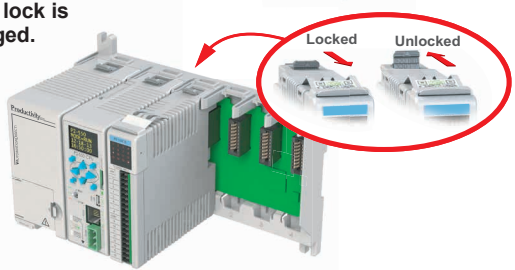
Module Installation

WARNING: Do not apply field power until the following steps are completed. See hot-swapping procedure for exceptions.

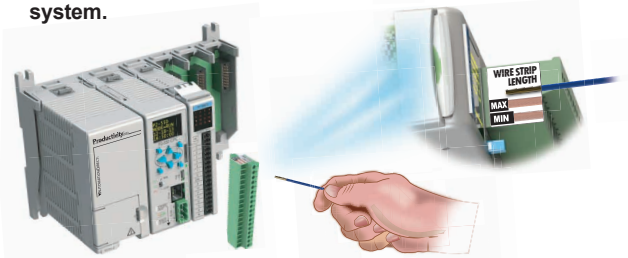


Step One: Align module catch with base slot and rotate module into connector.

Step Two: Pull top locking tab toward module face. Click indicates lock is engaged.



Step Three: Attach field wiring using the removable terminal block or *ZIP*Link wiring system.



QR Code

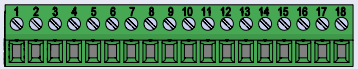
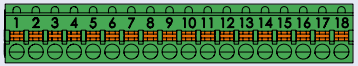
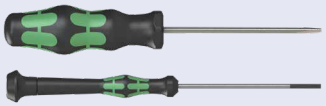
Use any QR Code reader application to display the module's product insert.

Caution: *If possible, remove field power prior to proceeding. If not, then **EXTREME** care **MUST** be taken to prevent damage to the module, or even personal injury due to a short circuit from the live terminal block.*

Important Hot-Swap Information

The Productivity2000 System supports hot-swap! Individual modules can be taken offline, removed, and replaced while the rest of the system continues controlling your process. Before attempting to use the hot-swap feature, be sure to read the hot-swap topic in the programming software's help file or our online documentation at AutomationDirect.com for details on how to plan your installation for use of this powerful feature.

Wiring Options

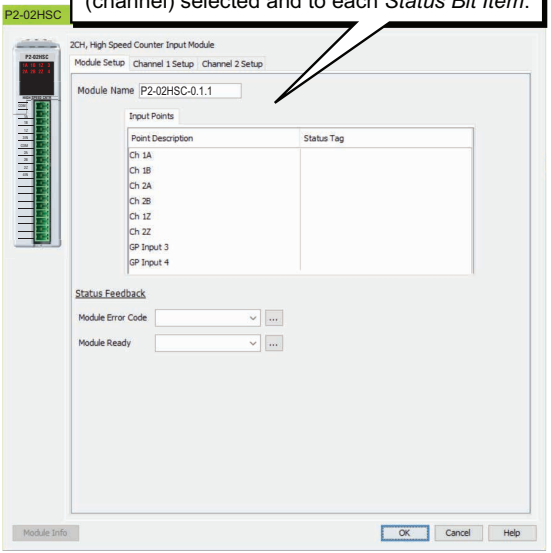
1	***Screw Terminal Block only*** 	P2-RTB (Quantity 1)
2	***Spring Clamp Terminal Block only*** 	P2-RTB-1 (Quantity 1)
3	***Accessories[1]*** 	ZL-RTB-COM TW-SD-SL-1 TW-SD-MSL-1

1. ZL-RTB-COM provides a common connection point for power or ground

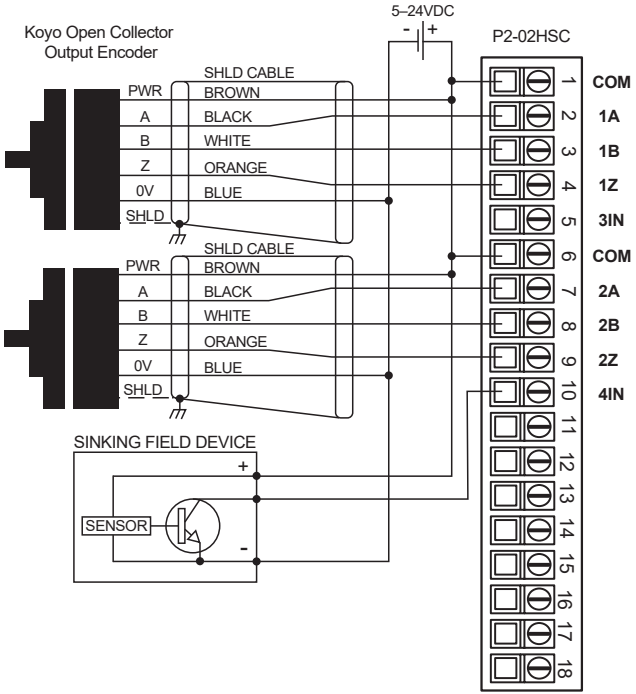
Module Configuration

Using the Hardware Configuration tool in the Productivity Suite programming software, drag and drop the P2-02HSC module into the base configuration.

Select *Automatic Module Verification* or *No Verification and Enable Hot Swap*. If desired, assign a *User Tagname* to each input point (channel) selected and to each *Status Bit Item*.

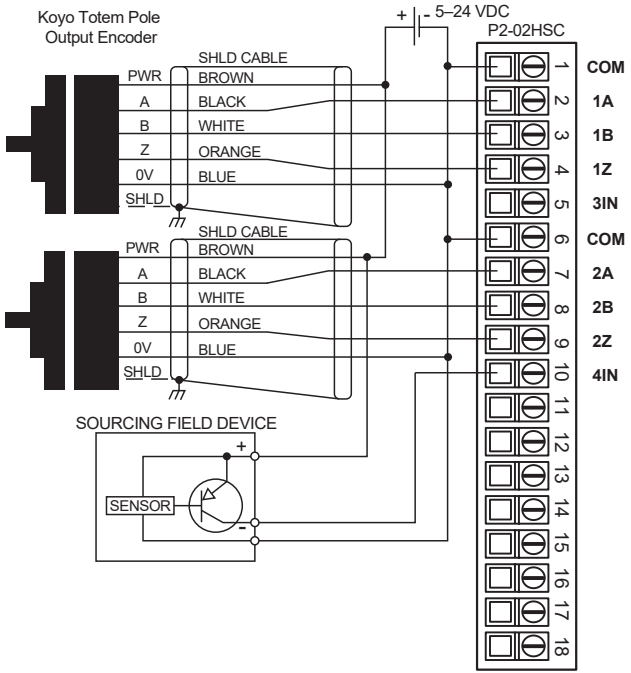


Open Collector Encoder Wiring



Line Driver Output Encoders Not Reccommended for P2-02HSC

Totem Pole Output Encoder Wiring



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