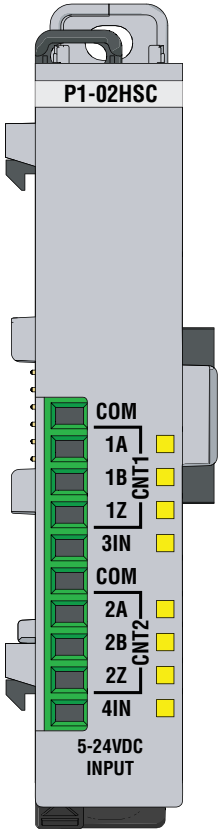
Input Specifications	
Inputs per Module	Single ended Counter Inputs (6pts: 1A, 1B, 1Z, 2A, 2B, 2Z) General Purpose Inputs (3IN, 4IN)
Rated Voltage	5–24 VDC
Operating Voltage Range	4.25–27.6 VDC
Input Current	1.5 mA typical @ 4.25VDC 11mA maximum @ 27.6 VDC
Input Impedance	2.5 KΩ
Minimum ON Current	1mA
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)



P1-02HSC High-Speed Counter

The P1-02HSC 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 Productivity1000 System.

Input Specifications 1
General Specifications 2
Connector Specifications. 2
Terminal Block Specifications 2
Schematic 3
Wiring Diagram 3
Module Installation Procedure. 4
QR Code 4
Wiring Options. 5
Module Configuration 5
Open Collector Output Encoder Wiring. 6
Totem Pole Output Encoder Wiring. 6
Warning 8

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	2
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	1300mW
Field Wiring	See "Wiring Options" on page 5.
Terminal Type (included)	10-position Removable Terminal Block
Weight	54g (2oz)
Agency Approvals	UL 61010-1 and UL 61010-2-201 file E139594, Canada & USA CE (EN 61131-2 EMC, EN 61010-1 and EN 61010-2-201 Safety)**

***Note:** For complete system limits, please refer to the "Hardware and Communication Limits" table in the Productivity Suite Help File, "Hardware Configuration" topic (P050).

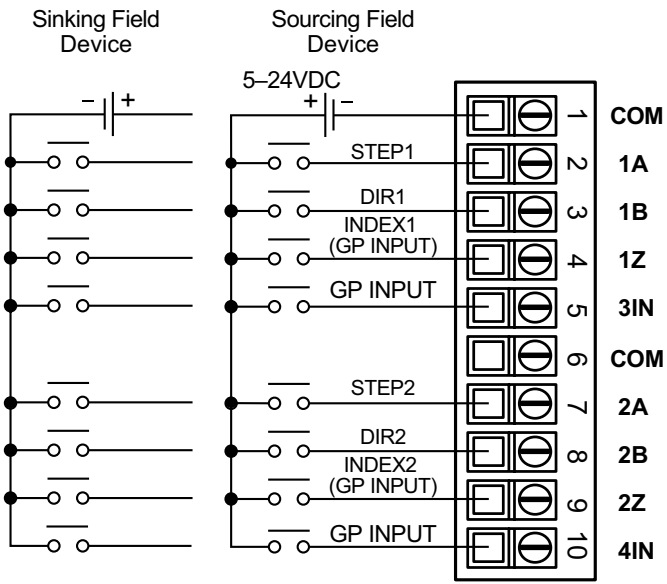
**Meets EMC and Safety Requirements. See the D.O.C. for details.

Terminal Block Specifications		
Part Number	***P1-10RTB***	***P1-10RTB-1***
Positions	10 Screw Terminals	10 Spring Clamp Terminals
Wire Range	30–16 AWG (0.051–1.31 mm²) Solid / Stranded Conductor 3/64 in (1.2 mm) Insulation Max. 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 Max. 19/64 in (7–8 mm) Strip Length
Conductors	"USE COPPER CONDUCTORS, 75ºC" or equivalent.	
Screw Driver	0.1 in (2.5 mm) Maximum*	
Screw Size	M2	N/A
Screw Torque	2.5 lb·in (0.28 N·m)	N/A

*Recommended Screw Driver TW-SD-MSL-1

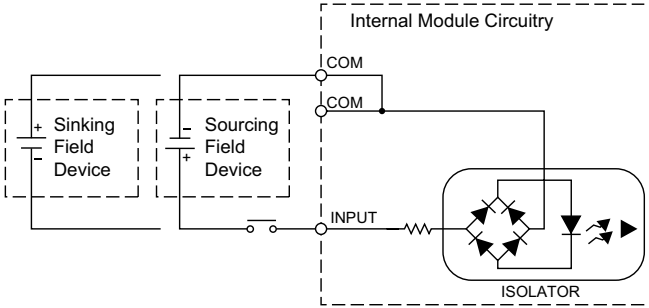
P1-02HSC Schematic

High Speed General Purpose Inputs



P1-02HSC Wiring Diagram

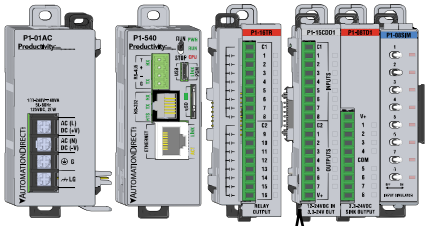
Equivalent Input Circuit



Module Installation

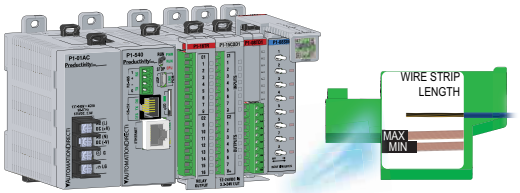
WARNING: Do not add or remove modules with field power applied.

Step One: With latch in "locked" position, align connectors on the side of each module and stack by pressing together. Click indicates lock is engaged.

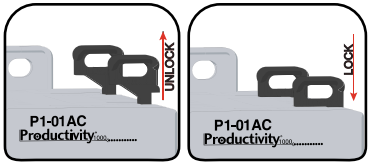


Ensure all latches are secure after modules are connected.

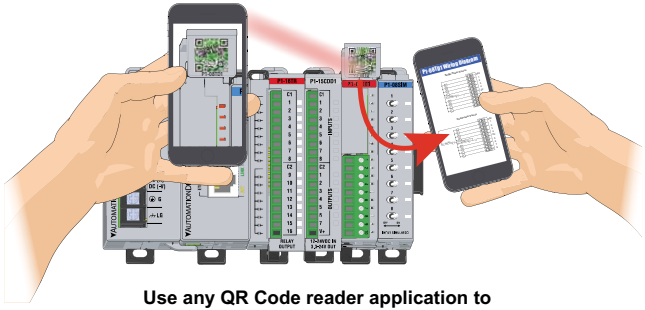
Step Two: Attach field wiring using the removable terminal block or ***ZIP***Link wiring system.



Step Three: To unstack modules, pull locking latch up into the unlocked position and then pull modules apart.

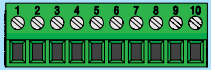
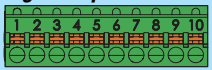


QR Code



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

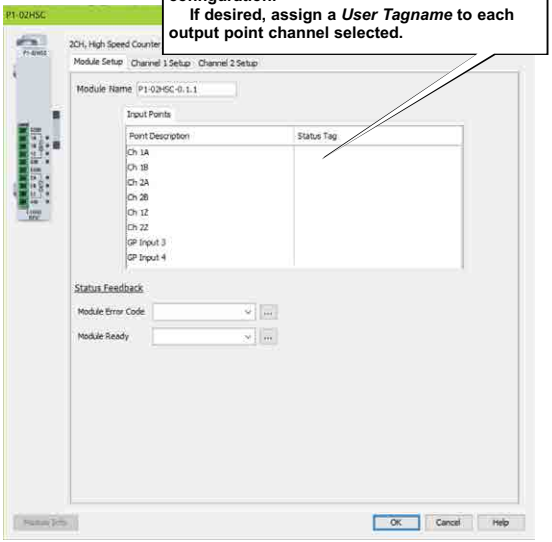
Module Configuration

Wiring Options	
1 ***Screw Terminal Block only*** 	P1-10RTB (Quantity 1)
2 ***Spring Clamp Terminal Block only*** 	P1-10RTB-1 (Quantity 1)
3 ***Accessories[1]***	ZL-RTB-COM TW-SD-SL-1 TW-SD-MSL-1

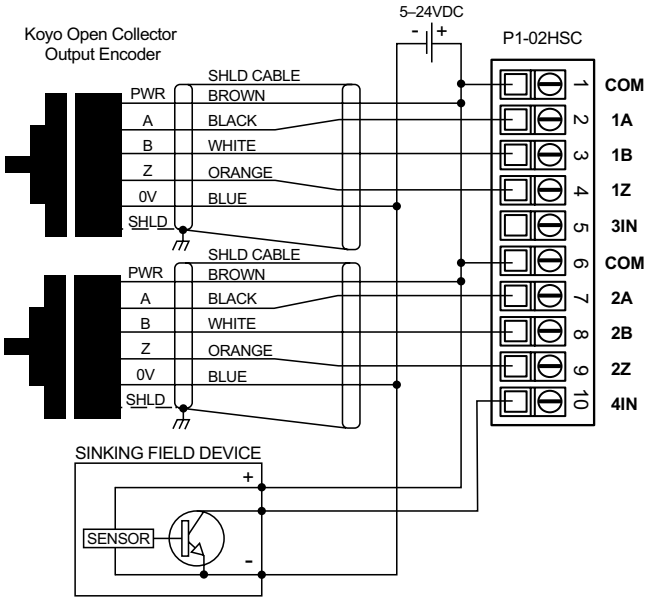
1. ZL-RTB-COM provides a common connection point for power or ground

Using the Hardware Configuration tool in the Productivity Suite programming software, drag and drop the P1-02HSC module into the base configuration.

If desired, assign a *User Tagname* to each output point channel selected.

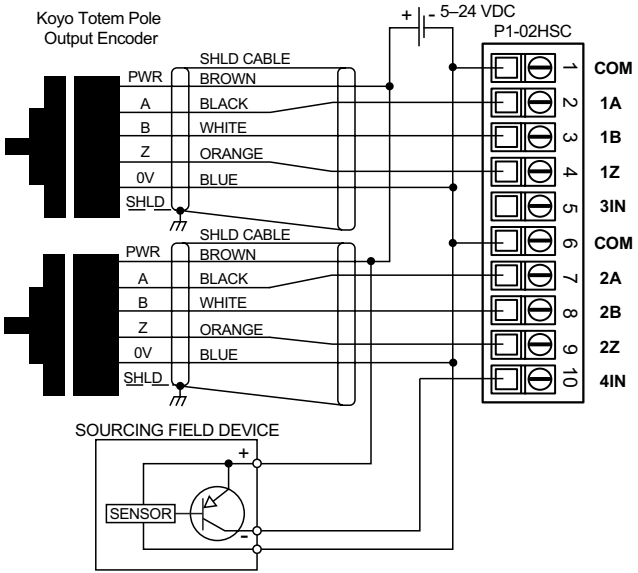


P1-02HSC Open Collector Encoder Wiring



Line Driver Output Encoders Not Reccommended for P1-02HSC

P1-02HSC Totem Pole Output Encoder Wiring



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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