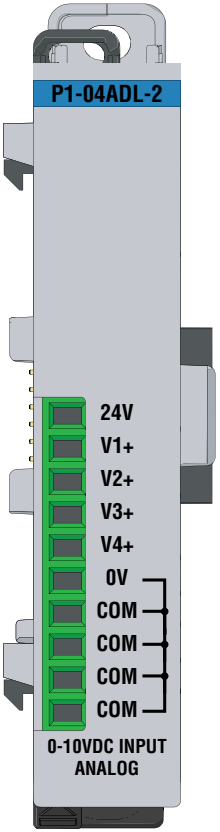
Input Specifications	
Input Channels	4
Input Range	0–10 VDC
Signal Resolution	13-bit
Resolution Value of LSB (least significant bit)	0–10 VDC = 1.22 mV per count (1LSB = 1 count)
Data Range	0–8191 counts
Input Type	Single-ended (1 common)
Maximum Continuous Overload	±100VDC
Input Impedance	150kΩ
Hardware Filter Characteristics	Low Pass, -3dB @ 300Hz
Sample Duration Time	2.5 ms per channel (does not include ladder scan time)
All Channel Update Rate	10ms
Open Circuit Detection Time	Zero reading within 100ms
Conversion Method	Successive approximation
Accuracy vs. Temperature	±75PPM / °C maximum
Maximum Inaccuracy	0.5% of range (including temperature drift)
Linearity Error	±0.036% of range Monotonic with no missing codes
Input Stability and Repeatability	±0.024% of range
Full Scale Calibration Error (including offset)	±0.097% of range
Offset Calibration Error	±0.097% of range
Max Crosstalk at DC, 50Hz and 60Hz	±0.049% of range
External Power Supply Required	24VDC (-20% / + 25%), 30mA



P1-04ADL-2 Analog Input

The P1-04ADL-2 Low Resolution Voltage Analog Input Module provides four channels for converting 0–10 VDC analog signals to digital values of 0–8191 (13-bit) for use with the Productivity1000 system.

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

Warranty: Thirty-day money-back guarantee. Two-year limited replacement (See www.productivity1000.com for details).

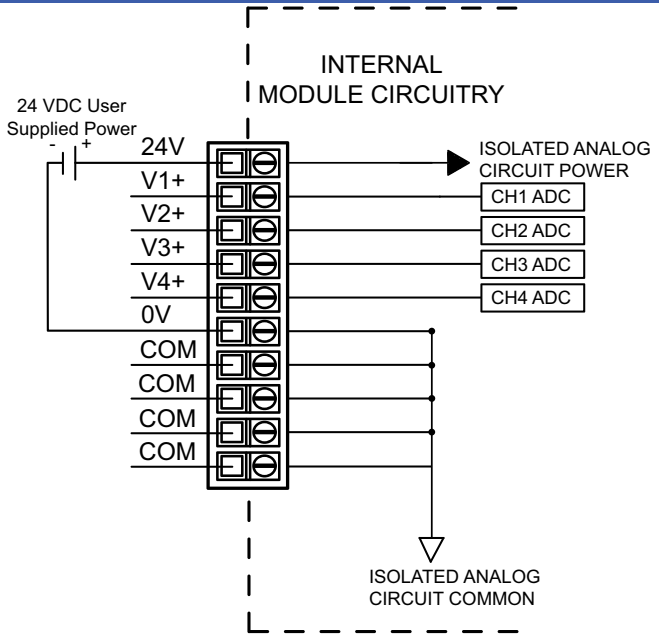
General Specifications	
Operating Temperature	0º to 60ºC (32º to 140ºF)
Storage Temperature	-20º to 70ºC (-4º to 158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1800VAC applied for 1 second
Insulation Resistance	> 10MΩ @ 500VDC
Heat Dissipation	1200mW
Enclosure Type	Open Equipment
Module Location	Any I/O position in a Productivity1000 System
Field Wiring	Use ***ZIP***Link Wiring System or removable terminal block (sold separately). See "Wiring Options" on page 5.
EU Directive	See the "EU Directive" topic in the Productivity Suite Help File. Information can also be obtained at: www.productivity1000.com
Connector Type (sold separately)	10-position Removable Terminal Block
Weight	62g (2.2 oz)
Agency Approvals	UL 61010-2-201 file E139594, Canada & USA CE (EN61131-2 EMC and EN61010-2-201 Safety)*

*See CE Declaration of Conformance 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

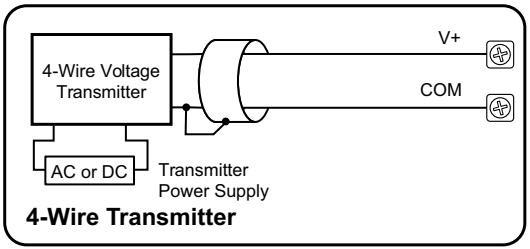
*Recommended Screw Driver TW-SD-MSL-1

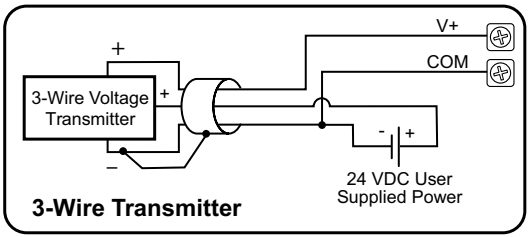
P1-04ADL-2 Schematic



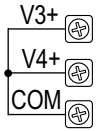
P1-04ADL-2 Wiring Diagram

Voltage Input Circuits





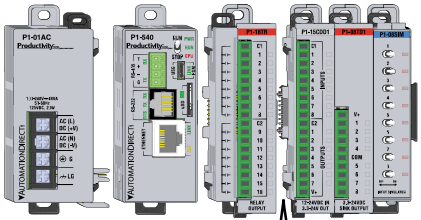
Notes for maximum accuracy:
1. Jumper unused inputs to common.



Module Installation

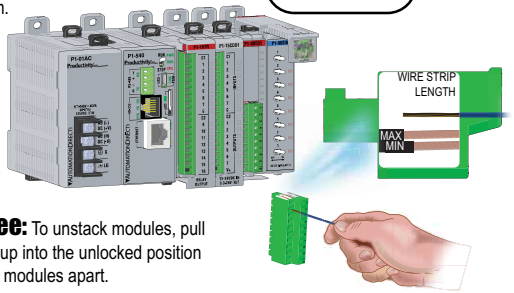
WARNING: Do not add or remove modules with field power applied.

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.

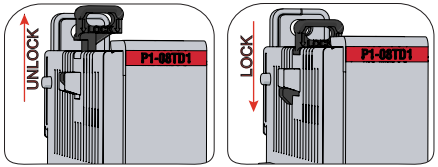


Check all latches are secure after modules are connected.

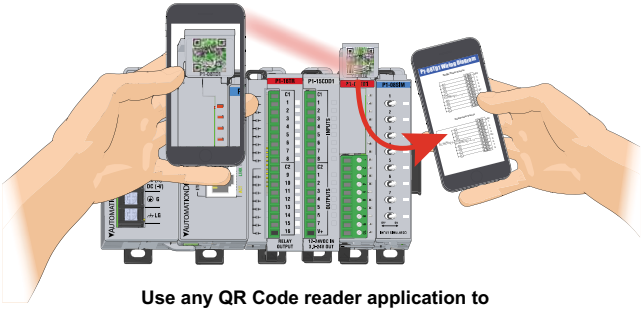
Step Two: Attach field wiring using the removable terminal block or ***ZIP***Link wiring system.



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



QR Code



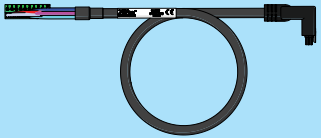
Use any QR Code reader application to display the module's product insert.

Module Configuration

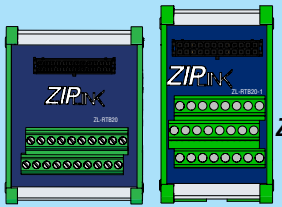
Wiring Options

1 ***ZIP*Link *Connection System***
Cable + ZIP*Link *Module = Complete System

ZIP*Link *pre-wired terminal block cables

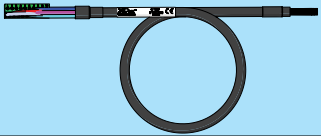


0.5 m (1.6 ft) cable	ZL-P1-CBL10
1.0 m (3.3 ft) cable	ZL-P1-CBL10-1
2.0 m (6.6 ft) cable	ZL-P1-CBL10-2



ZIP*Link *Modules Feed through	ZL-RTB20 ZL-RTB20-1

2 ***Terminal Block with pigtail cable***



1.0 m (3.3 ft) cable	ZL-P1-CBL10-1P
2.0 m (6.6 ft) cable	ZL-P1-CBL10-2P

3 ***Screw Terminal Block only***

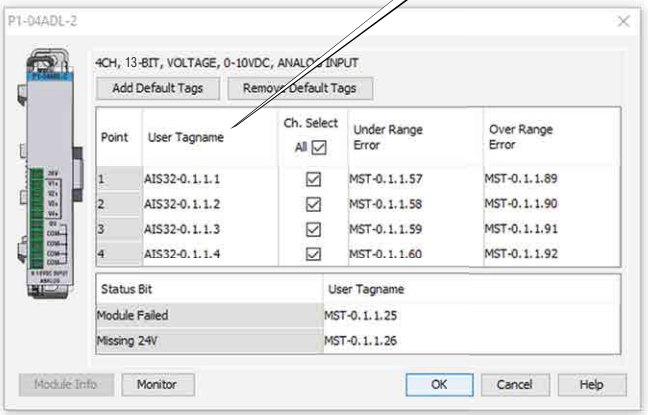
P1-10RTB (Quantity 1)

4 ***Spring Clamp Terminal Block only***

P1-10RTB-1 (Quantity 1)

Using the Hardware Configuration tool in the Productivity Suite programming software, drag and drop the P1-04ADL-2 module into the configuration.

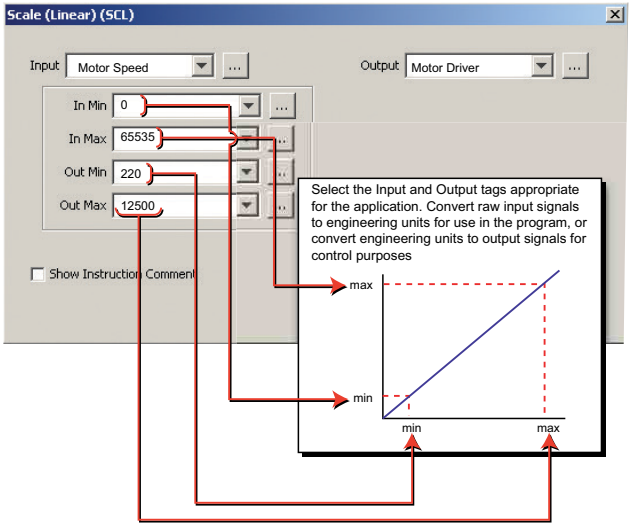
If desired, assign a *User Tagname* to each input point (channel) selected and to each *Status Bit Item*.



Linear Scaling

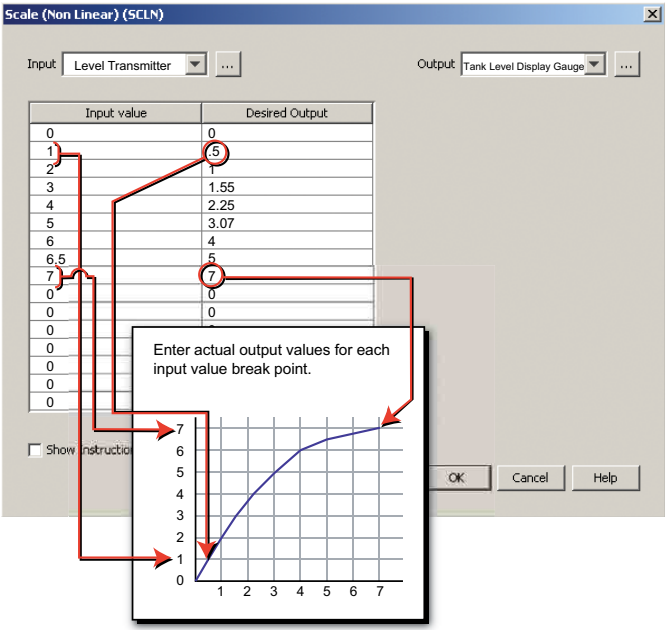
The Scale (Linear) function can be used to:

- Convert an application specific range to range which is native to the analog output module.
- Make other linear conversions in ranges appropriate to the application.



Non-Linear Scaling

The Scale (Non-Linear) function can be used for Non-Linear applications.



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 .

This publication is based on information that was available at the time it was printed. At AutomationDirect.com® we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

Document Name	Edition/Revision	Date
P1-04ADL-2-DS	1st Edition	9/7/2017