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.
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.

P2-16AD-2 Analog Input

The P2-16AD-2 Voltage Analog Input Module provides sixteen channels for receiving 0-10 VDC signals for use with the Productivity2000 System.

Connector Specifications

Connector Type	24-Pin Molex Style 43025-2400
Number of Pins	24
Pin Spacing	3x3 mm (0.118 x 0.118 in)

Warranty: Thirty-day money-back guarantee. Two-year limited replacement. (See www.productivity2000.com for details).

General Specifications

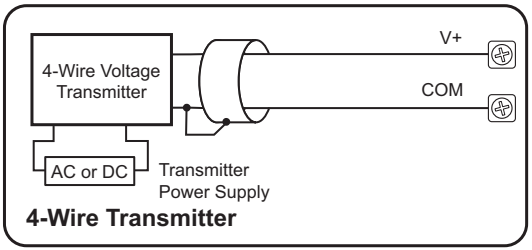
Operating Temperature	0º to 60ºC (32º to 140ºF)
Storage Temperature	-20º to 70ºC (-4º to 158ºF)
Humidity	5 to 95% (non-condensing)
Environmental Air	No corrosive gases permitted
Vibration	IEC60068-2-6 (Test Fc)
Shock	IEC60068-2-27 (Test Ea)
Field to Logic Side Isolation	1800VAC applied for 1 second
Insulation Resistance	> 10MΩ @ 500VDC
Heat Dissipation	59mW
Enclosure Type	Open Equipment
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)*
Module Keying to Backplane	Electronic
Module Location	Any I/O slot in a Productivity2000 System
Field Wiring	ZIPLink Wiring System ONLY. See “Wiring Options” on page 5. Must use copper conductors 75ºC or equivalent.
EU Directive	See the “EU Directive” topic in the Productivity2000 Help File. Information can also be obtained at: www.productivity2000.com
Connector Type	24-Pin Molex Style 43025-2400
Weight	90g (3.2 oz)

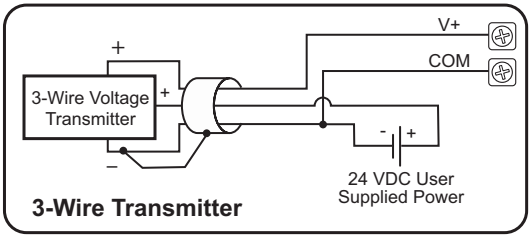
Input Specifications

Input Channels	16
Module Signal Input Range	0–10 VDC
Signal Resolution	16-bit
Resolution Value of LSB (least significant bit)	0–10 VDC = 152µV per count (1 LSB = 1 count)
Data Range	0 to 65535 counts
Input Type	Single-ended (1 common)
Maximum Continuous Overload	±100V
Input Impedance	250kΩ (typical)
Filter Characteristics	Low Pass, -3dB @ 100Hz
Sample Duration Time	4ms per channel (does not include ladder scan time)
All Channel Update Rate	112ms
Open Circuit Detection Time	Zero reading within 1s
Conversion Method	Successive approximation
Accuracy vs. Temperature	±25PPM / ºC maximum
Maximum Inaccuracy	0.1% of range (including temperature drift)
Linearity Error (end to end)	±10 LSB maximum (±0.015% of range) Monotonic with no missing codes
Input Stability and Repeatability	±10 LSB
Full Scale Calibration Error (not including offset)	±10 LSB maximum (±0.015% of range)
Offset Calibration Error	±10 LSB maximum
Max Crosstalk	-76dB, ±10 LSB
External DC Power Required	24VDC (-20% / +25%) 35mA

Wiring Diagram

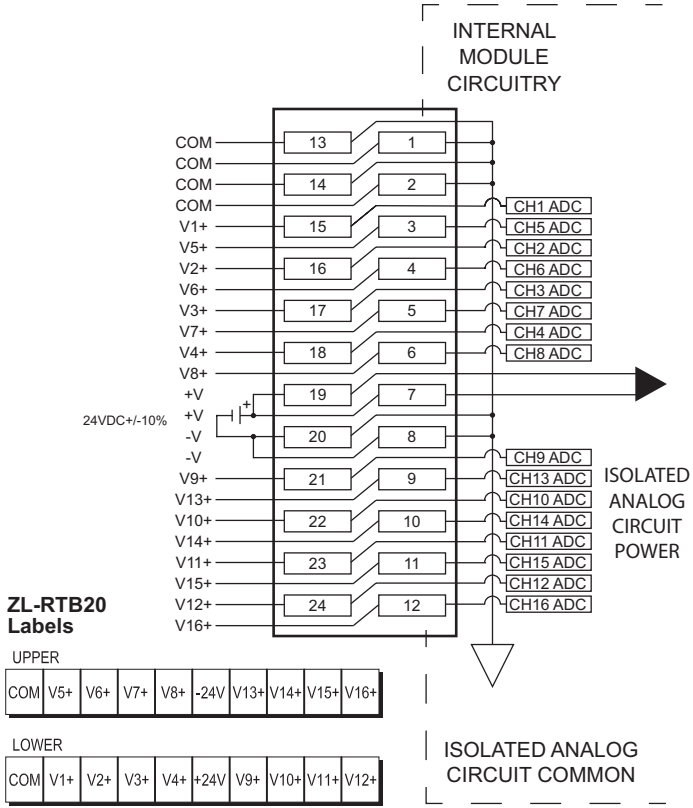
Voltage Input Circuits





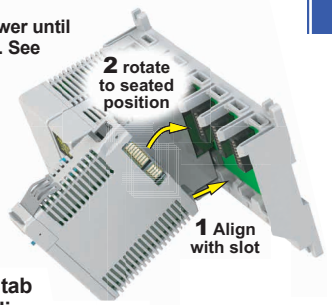
Notes for maximum accuracy:
1. Jumper unused inputs to common.

Schematic



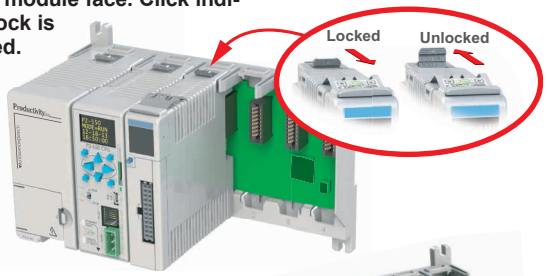
Module Installation

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 ZIPLink 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

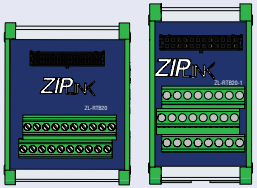
The Productivity2000 System supports hot-swap! Individual modules can be taken offline, removed, and replaced while the rest of the system continues controlling your process. Before attempting to use the hot-swap feature, be sure to read the hot-swap topic in the programming software's help file or our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

Wiring Options

1 *ZIP*Link Feed Through Modules and Cables[1]

ZIPLink pre-wired terminal block cables

0.5m (1.6FT) cable	ZL-P2-CBL24
1.0m (3.3FT) cable	ZL-P2-CBL24-1
2.0m (6.6FT) cable	ZL-P2-CBL24-2



ZIPLink Modules

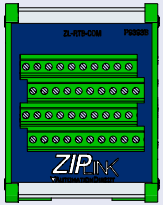
ZL-RTB20

ZL-RTB20-1

2 Terminal Block with pigtail cable

1.0m (3.3FT) cable	ZL-P2-CBL24-1P
2.0m (6.6FT) cable	ZL-P2-CBL24-2P

3 Accessories[2]



ZL-RTB-COM

TW-SD-SL-1

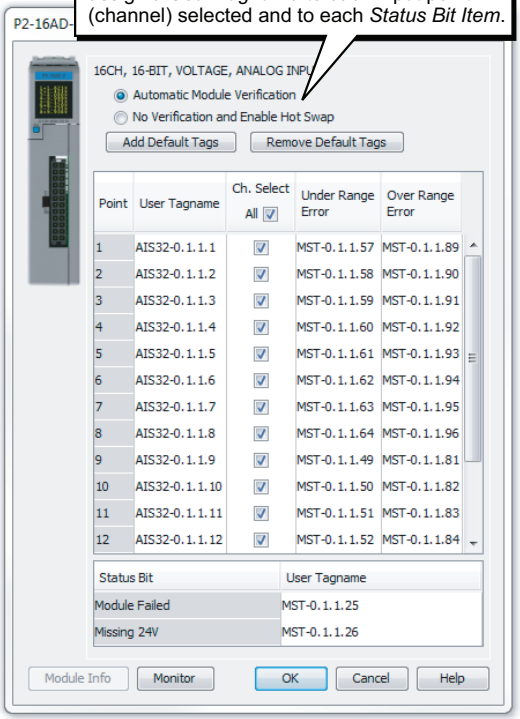
TW-SD-MSL-1

1. Cable + ***ZIP***Link Module = Complete System
2. 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 P2-16AD-2 module into the base configuration.

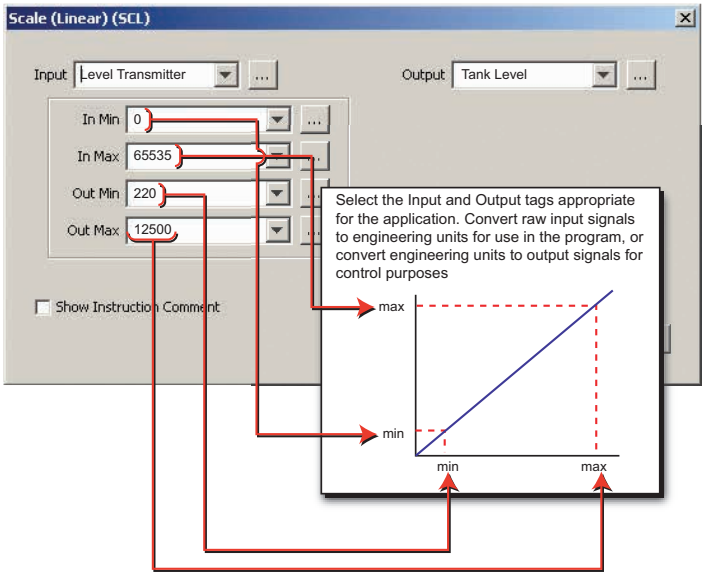
Select *Automatic Module Verification* or *No Verification and Enable Hot Swap*. If desired, assign a *User Tagname* to each input point (channel) selected and to each *Status Bit Item*.



Linear Scaling

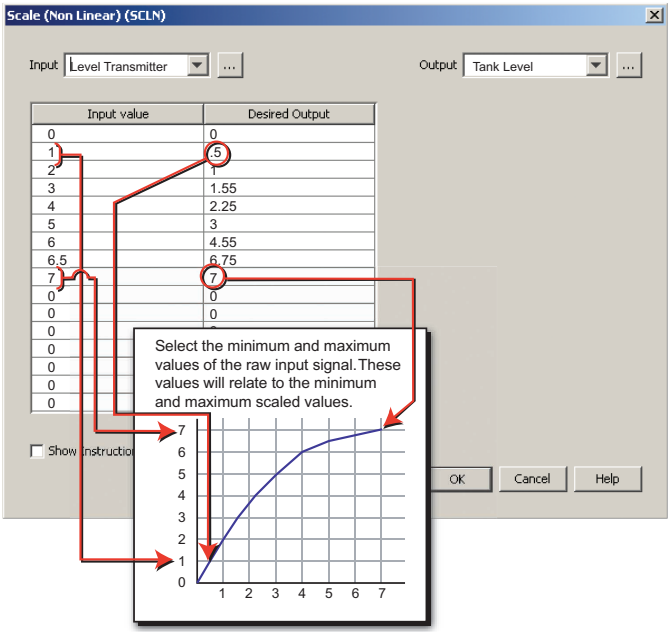
The Scale (Linear) function can be used to:

- **Convert analog field input signals from the range which is native to the analog input module to an application specific range.**
- **Make other linear conversions in ranges appropriate to the application.**

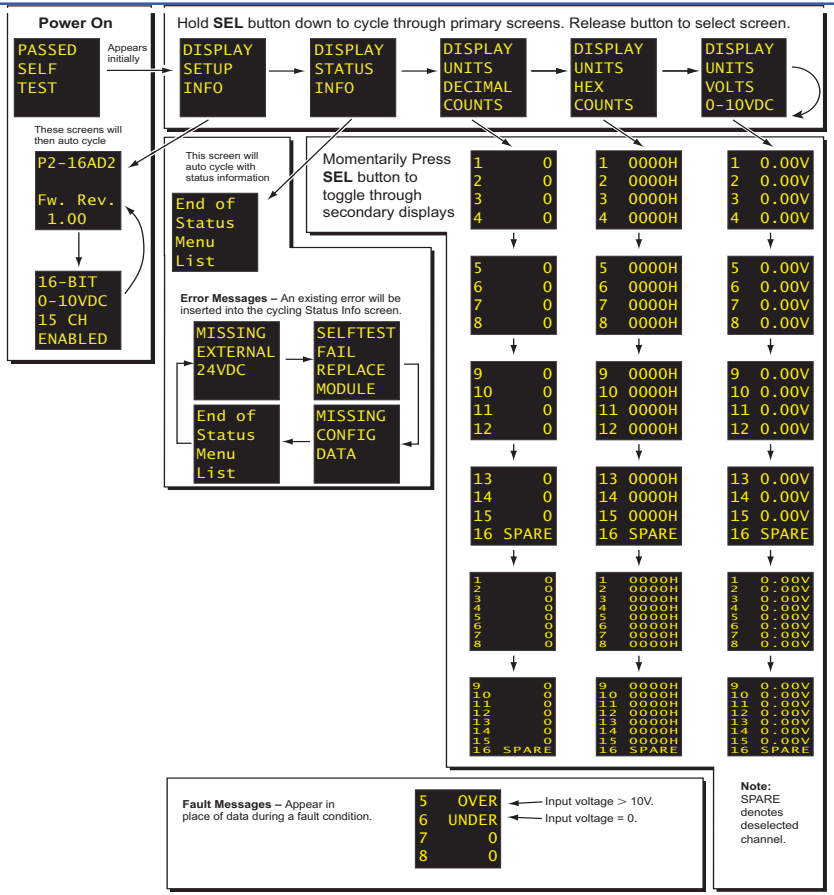


Non-Linear Scaling

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



OLED Panel Display



Document Name	Edition/Revision	Date
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