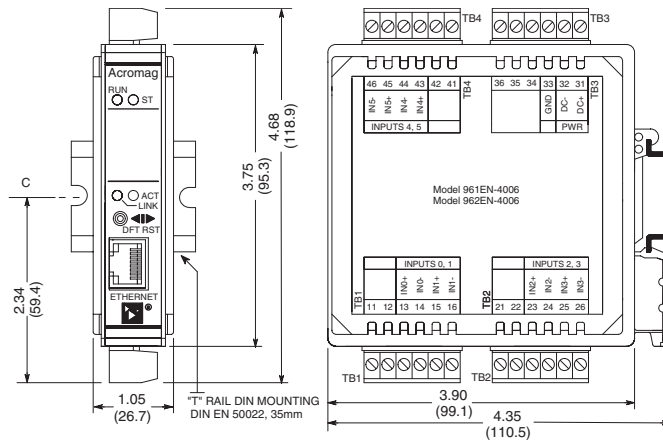# Ethernet I/O: BusWorks® Series

961EN, 962EN Ethernet Analog Input Modules

RoHS Compliant

Standard model includes cage clamp terminal blocks. Optional terminals are available.

Model 961EN-4006
Model 962EN-4006

EtherNet√IP™
conformance tested

Modbus/TCP
conformance tested

6-channel Differential Analog Current or Voltage Input ◆ Ethernet/IP, Modbus TCP/IP, i2o® Peer-to-peer

Description

Models
961EN: 6 DC current input channels
962EN: 6 DC voltage input channels

These modules provide an isolated Ethernet network interface for six analog input channels. Differential inputs eliminate ground loops and thus the need for isolators in many applications. Multi-range inputs accept signals from a variety of sensors and devices. High-resolution, low noise, A/D converters deliver high accuracy and reliability.

Input Ranges
Ranges are selectable for a 3-channel group.

DC Current:
0 to 1mA, 0 to 11mA, 0 to 20mA, 4 to 20mA
0 to 20 amps AC (with optional AC sensor)

DC Voltage:
±78mV to ±10V DC (eight range options)

Network Communication
EtherNet/IP or Modbus TCP/IP 10/100Mbps

Power Requirement
15 to 36V DC supply (2 Watts) required

Approvals
CE/ATEX marked.
UL, cUL listed, Class I; Div. 2; Groups A, B, C, D
EtherNet/IP, Modbus/TCP conformance tested.

Key Features & Benefits

Configurable from standard web browser

EtherNet/IP or Modbus TCP/IP communication with auto 10/100Mbps data rate negotiation

i2o technology for peer-to-peer communication without a network controller

6-input stand-alone module is very economical

Differential inputs eliminate ground loops

High-resolution 16-bit Σ-Δ A/D converters ensure precise, high accuracy measurements

Wide operational temperature range permits installation in extreme environments

Performance Specifications

◆ Input

Accuracy
Better than ±0.05% of span for nominal input ranges.

Analog to Digital Converter (A/D)
16-bit Σ-Δ converter. 0.005% (1/20000) resolution.

Noise Rejection
Normal Mode: Better than 40dB @ 60Hz
Common Mode: Better than 140dB @ 60Hz

Input Filter Bandwidth
-3dB at 3Hz, typical.

Input Conversion Rate
80mS per channel.

Input Impedance
DC current input: 25 ohms
DC voltage input: Greater than 110.5K ohms.

◆ Environmental

Ambient Temperature and Humidity
Operating: -25 to 70°C (-13 to 158°F)
Storage: -40 to 85°C (-40 to 185°F)
Relative Humidity: 5 to 95%, non-condensing.

Isolation
1500V AC for 60 seconds or 250V AC continuous.
3-way isolation between I/O, network, and power.

Ordering Information

NOTE: i2o function only on Modbus TCP/IP modules

◆ I/O Modules

961EN-4006
Current input, 6-channel, Ethernet Modbus TCP/IP, i2o communication

961EN-6006
Current input, 6-channel, EtherNet/IP

962EN-4006
Voltage input, 6-channel, Ethernet Modbus TCP/IP, i2o communication

962EN-6006
Voltage input, 6-channel, EtherNet/IP

◆ Accessories

Industrial Ethernet Switches

Hardware Accessories and Power Supplies

Software Support

Acromag
THE LEADER IN INDUSTRIAL I/O