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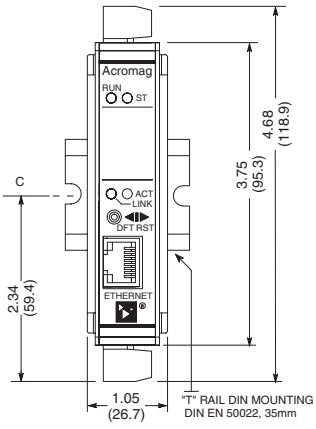
Find the *Acromag BusWorks 965EN-4004* at our website: *Click HERE*

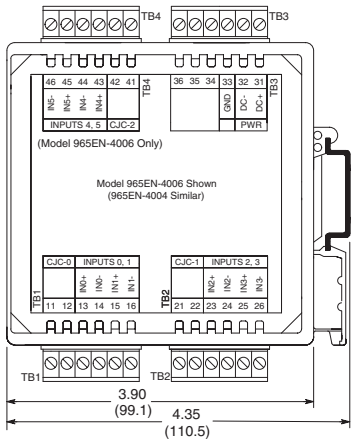
Ethernet I/O: BusWorks® Series

965EN Ethernet Temperature Input Modules

RoHS Compliant | Ex | cULus LISTED | CE | 24 HOUR STOCK ITEM | 2 YEAR WARRANTY







Standard model includes cage clamp terminal blocks. Optional terminals are available (see Page 26).

EtherNet/IP conformance tested

Modbus/TCP conformance tested

4 or 6-channel Thermocouple/milliVolt Input ◆ Ethernet/IP, Modbus TCP/IP, i2o® Peer-to-peer Messaging

Description

These modules provide an isolated Ethernet network interface for up to six input channels. Differential inputs eliminate ground noise and each terminal block includes a cold junction compensation (CJC) sensor for more precise temperature measurements. 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.

Thermocouple (user-selectable type)
Type J, K, T, R, S, E, B, or N

DC Millivolts (user-selectable range)
±100mV or ±1V DC

Network Communication

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

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
- Universal inputs support a variety of sensors
- Thermocouple break detection (upscale or downscale) identifies sensor wiring failures
- High-resolution 16-bit Σ-Δ A/D converters ensure precise, high accuracy measurements
- Wide operational temperature range

Performance Specifications

◆ Input

Accuracy

Input	Input Range	Accuracy (typical)
Type J	-210 to 760°C	±0.5°C
Type K	-200 to 1372°C	±0.5°C
Type T	-260 to 400°C	±0.5°C
Type R	-50 to 1768°C	±1.0°C
Type S	-50 to 1768°C	±1.0°C
Type E	-200 to 1000°C	±0.5°C
Type B	260 to 1820°C	±1.0°C
Type N	-230 to -170°C	±1.0°C
Type N	-170 to 1300°C	±0.5°C
Voltage	±100mV or ±1V DC	±0.1% of span

Cold Junction Compensation (CJC) Accuracy:
±0.5°C.

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.

◆ 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 available on 6-channel Modbus TCP/IP modules

◆ I/O Modules

965EN-4004
4-channel TC/mV input, Ethernet Modbus TCP/IP

965EN-6004
4-channel TC/mV input, EtherNet/IP

965EN-4006
6-channel TC/mV input, Ethernet Modbus TCP/IP, i2o

965EN-6006
6-channel TC/mV input, EtherNet/IP interface

◆ Accessories

Industrial Ethernet Switches
Hardware Accessories and Power Supplies
Software Support

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