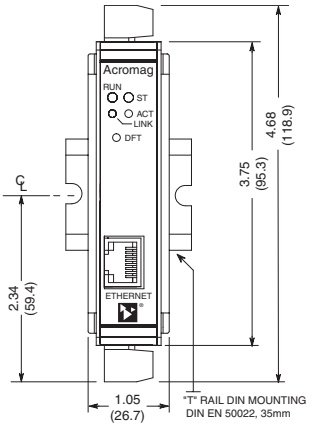
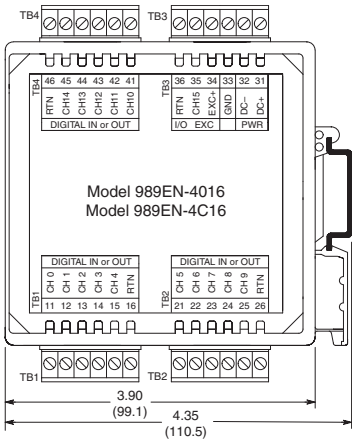
Ethernet I/O: BusWorks® Series

989EN Ethernet Discrete I/O Modules with Counter/Timers

RoHS Compliant · Ex · c UL us LISTED · CE · 24 HOUR STOCK ITEM · 2 YEAR WARRANTY





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

Modbus/TCP conformance tested

16-channel Discrete I/O ◆ 8 Counter/timers ◆ Modbus TCP/IP Communication

Description

Models

989EN-4016: Industrial-grade version
989EN-4C16: Commercial-grade (no counters

These modules provide an isolated Ethernet interface for any input/output mix of up to 16 discrete signals. Inputs sense the status of dry contacts, switches, power supplies, and DC logic. Industrial-grade units have eight 32-bit counters with timers, alarms, and non-volatile memory for metering, totalizing, and low-frequency periodic measurement. The outputs control solid-state switching of lamps, horns, and other devices.

Input/Output Ranges

Input: 0-28V DC, 31V DC maximum
Output: 0-28V DC, 0.5A/ch max, 2A total

Counter/Timers (Industrial-grade units)

8 up/down counters, 32-bit, 150Hz max
8 timers, 16-bit, 1mS resolution

Ethernet Communication

Modbus TCP/IP, 10/100Base-T(X)

Power Requirement

18 to 36V DC (1.33 W)

Approvals (industrial-grade only)

CE, UL/cUL
Zone 2, Class 1, Division 2, ABCD

Key Features & Benefits

- 16 solid-state discrete I/O channels (any mix of inputs/outputs)
- 3-way isolation and surge suppression
- Web browser configuration
- Automatic MDI/MDI-X negotiation
- Inputs accept 2- or 3-wire sensors and active logic switches (dry contacts, proximity, namur, 5-28V DC logic)
- Inputs detect level and change of state
- 8 configurable counter/timers
  -32-bit up/down pulse/event counters (with non-volatile memory)
  -16-bit periodic timers for "last pulse"
  -Momentary/latch alarms (each counter)
- Programmable debounce (0-65 seconds with 1mS resolution)
- Programmable power-up conditions
- Over-temperature, over-current, and over-voltage output protection
- Ability to "read-back" output states
- Watchdog timer output configurable for failsafe or hold-last-value operation
- Self-test and auto-copy functions

Performance Specifications

◆ Environmental

Operating Temperature Range
989EN-4016: -40 to 65°C (-40 to 149°F)
989EN-4C16: 0 to 55°C (32 to 131°F)

Storage Temperature Range
989EN-4016: -40 to 85°C (-40 to 185°F)
989EN-4C16: 0 to 70°C (32 to 158°F)

Relative Humidity
5 to 95%, non-condensing

Isolation
3-way isolation of I/O, power, network circuits.
Peak: 1500V AC, ANSI/ISA-82.01-1988
Continuous: 250V AC, 354V DC

Ordering Information

◆ I/O Modules

989EN-4016
16 I/O channels with pulse counter/timers

989EN-4C16
Commercial-grade, 16 I/O, no counter/timers

◆ Accessories

Industrial Ethernet Switches
Hardware Accessories and Power Supplies
Software Support

Acromag® THE LEADER IN INDUSTRIAL I/O