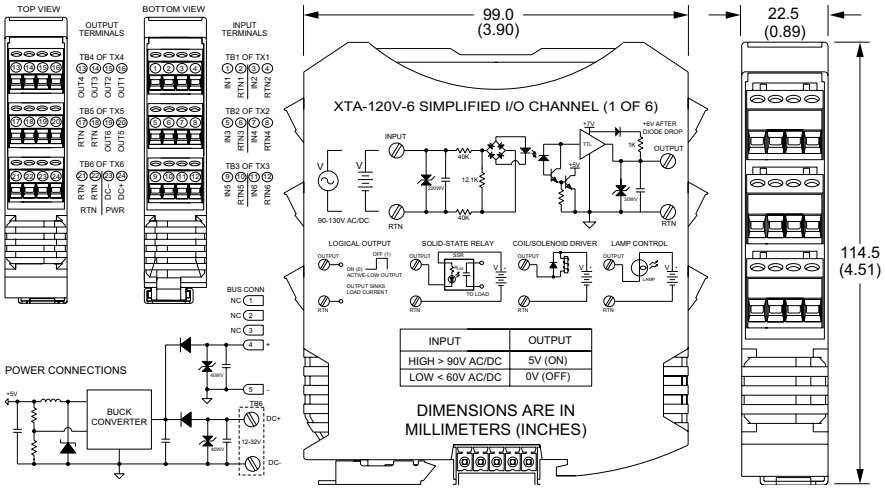
Ethernet I/O: BusWorks® XT Series

XTA-120V-6 Optocoupler Modules



6 discrete input/output channels ◆ Senses on/off status of AC/DC voltages ◆ Supports 5-32V logic output

Description

The XTA-120V-6 optocoupler module provides six individually isolated 120V AC/DC digital (discrete) inputs to sense on/off levels and drive open-drain outputs. It is intended for use with BusWorks XT Series discrete I/O and other digital input modules to monitor contact closures or mains power supply high/low voltage levels.

Each channel senses the presence or absence of high-level voltage to determine the status of proximity switches, limit switches, toggle switches, push buttons, contacts, and other devices. Opto-isolators control an open-drain output to safely interface the status of the monitored signal.

These modules are very easy to use. Removable front-facing terminal blocks on the module's top and bottom greatly simplify field wiring.

Rugged construction and high density design combine for a very effective I/O solution. These units are ideal for remote monitoring, distributed control, or SCADA applications.

Input Ranges

0-130VRMS, 130V DC

Output Ranges

Open-drain: 1KΩ pull-up to +5.3V DC, 0-32V DC maximum, 150mA sink

Power Requirement

12 to 32V DC (0.4W)

Key Features & Benefits

- Six high-level voltage input channels
- Six logic-level output channels (open-drain, low-side switches)
- Built-in hysteresis optimized for mains power at 120VRMS
- Outputs include 1KΩ pull-ups to +5.3V DC
- High-density 22.5mm wide package with pluggable, front-facing terminals
- 1500V AC isolation (between each input and power/output) and surge/transient protection
- Supports bussed/rail and redundant power
- -40°C to +70°C wide temperature operation
- Withstands 25g shock and 4g vibration
- CE and UL/cUL Class 1 Div 2 Zone 2 approvals

Acromag® THE LEADER IN INDUSTRIAL I/O

Tel 248-295-0880 ■ Fax 248-624-9234 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

Ethernet I/O: BusWorks® XT Series

XTA-120V-6 Optocoupler Modules

Performance Specifications

Input

Input Type
Six individually isolated voltage inputs interface voltage levels. Built-in hysteresis provides a sensing threshold for monitoring mains power.

Input Signal Voltage Range
0-130VRMS, 130V DC.

Input Signal Threshold
Low-to-High threshold: 90V AC or DC, typical.
High-to-Low threshold: 60V AC (55V DC), typical.

Input Hysteresis
30V DC, typical.

Input Impedance
46K ohms, typical.

Input Over-Voltage Protection
Metal Oxide Varistors (MOV) at every channel input.
Rated Continuous Voltage: 130VRMS, 130V DC.
Rated Maximum Clamping Voltage: 340V DC.
Input channels also include capacitive filtering, and series resistance.

Output

Output Type
Six open-drain, mosfet switches with a common source connection at output return. Low-side (sinking) switching between load and return for DC voltage and current-sinking applications only. Output channels are pulled up to +5.3V with 1KΩ resistors.

Output "OFF" Voltage Range
0-32V DC maximum.

Output "OFF" Leakage Current
1µA typical, 50µA maximum
(mosfet only, 25°C, 32V DC).

Output Pull-Ups
1KΩ pull-ups to 5.3V DC.

Output Activation

Input	Output
HIGH > 90V AC/DC	5.3V (OFF)
LOW < 60V AC/DC	0V (ON)

Output "ON" Current Range
0 to 150mA DC, continuous, each channel.

Output Rds On Resistance
2.5 ohms, maximum (150mA, 85°C).

Output Response Time
45ms, typical
(measured from input transition to output).

Output Pull-ups
Individual output channels include 1KΩ pull-ups to the internal +5.3V DC rail. If a stronger pull-up (lower resistance) is required, a resistor will have to be wired externally in parallel with the output channel.

Note: Do not exceed 150mA of drain current per output channel.

Environmental

Operating Temperature
-40 to 70°C (-40 to 158°F).

Storage Temperature
-40 to 85°C (-40 to 185°F).

Relative Humidity
5 to 95% non-condensing.

Power Requirement
12–32V DC SELV (Safety Extra Low Voltage). Current draw varies with power voltage as follows (current indicated is with all outputs ON).

Power Supply	Current Draw
12V DC	23mA typical, 25mA maximum
15V DC	19mA typical, 21mA maximum
24V DC	13mA typical, 15mA maximum
32V DC	11mA typical, 12mA maximum

Power Supply Effect
Less than ±0.001% of output span effect per volt DC of supply change.

Isolation
Inputs isolated from each other (channel-to-channel) and from output/power.
Peak: 1500V AC, ANSI/ISA-82.01-1988.
Continuous: 250V AC, 354V DC.

Shock and Vibration Immunity
Vibration: 4g, per IEC 60068-2-64.
Shock: 25g, per IEC 60068-2-27.

Electromagnetic Compatibility (EMC) Compliance
Radiated Emissions: BS EN 61000-6-4, CISPR 16.
RFI: BS EN 61000-6-2, IEC 61000-4-3.
Conducted RFI: BS EN 61000-6-2, IEC 61000-4-6.
ESD: BS EN 61000-6-2, IEC 61000-4-2.
EFT: BS EN 61000-6-2, IEC 61000-4-4.
Surge Immunity: BS EN 61000-6-2, IEC 61000-4-5.

Approvals
CE compliant. UL/cUL Class I; Div. 2 Zone 2..

Physical

General
General purpose plastic enclosure for mounting on 35mm "T-type" DIN rail.

Case Material
Self-extinguishing polyamide, UL94 V-0 rated, color light gray. General purpose NEMA Type 1 enclosure.

Circuit Board
Military grade fire-retardant epoxy glass per IPC-4101/98 with humi-seal conformal coating.

I/O Connectors
Removable plug-in type terminal blocks rated for 12A/250V; AWG #26-12, stranded/solid copper wire.

Dimensions
Width = 22.5mm (0.9 inches), Length = 114.5mm (4.51 inches), Depth = 99.0mm (3.90 inches).

Shipping Weight
0.5 pounds (0.22 Kg) packed.

Ordering Information

Models

XTA-120V-6
6-channel 120V AC/DC discrete input module with open-drain outputs.

Accessories

XTBUS-KIT
DIN rail bus power/excitation connector kit. Includes one DIN rail bus connector (1005-070), one left-side female connector terminal block (1005-220) and one right side male connector terminal block (1005-221).

ISO9001
AS9100
MADE IN USA

Acromag®
THE LEADER IN INDUSTRIAL I/O

Tel 248-295-0880 ■ Fax 248-624-9234 ■ sales@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA