

# Titan I/O Module for RCP

The **Titan I/O (Input/Output) Module for RCP (Relay Control Panels)** consists of a Titan I/O Board (**TTN-IO-1.21/B**) connected to a standard I/O Backplane (**TTN-IOBP-1.4**) and a mounting plate (**TTN-IOMOD/MP-3**) to support connected Output Relay Boards and for mounting into Argus panel enclosures. Titan I/O Modules are used to connect sensor instrumentation to the Argus control system and for producing the output control signals to operate controlled equipment.



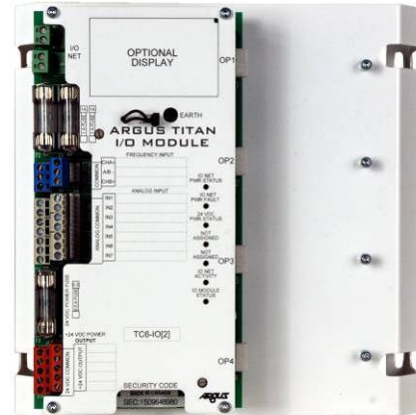
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## Applications

Titan I/O modules can be located remotely, close to the connected sensors and controlled equipment. They are connected to Titan controllers and powered via a 2-wire I/O Communications Network. With more than a million parts of resolution over a 0-5 volt span, Titan I/O modules can be directly interfaced to many sensors that produce signals of only a few millivolts. Nearly any industrial sensor can be connected, although a few special types may require external signal conditioning. This helps reduce instrumentation costs and wiring complexity.

Each output channel is addressable, and can be extensively configured for most types of output signals including digital (including on/off, pulse width modulation, pulse period modulation, frequency), analog, and tri-state floating control. Any combination of Titan Output Relay Boards can be connected to the supplied backplane to provide the appropriate output signals.

An optional on-board display unit with operator entry keys is available to monitor readings and change setting values at the control locations.



## Alternatives

I/O Modules are also available in a separate enclosure (**TC-IO-1.21/C**). A dual I/O Module enclosure is also available (**TC-IO-1.21/DUAL**).

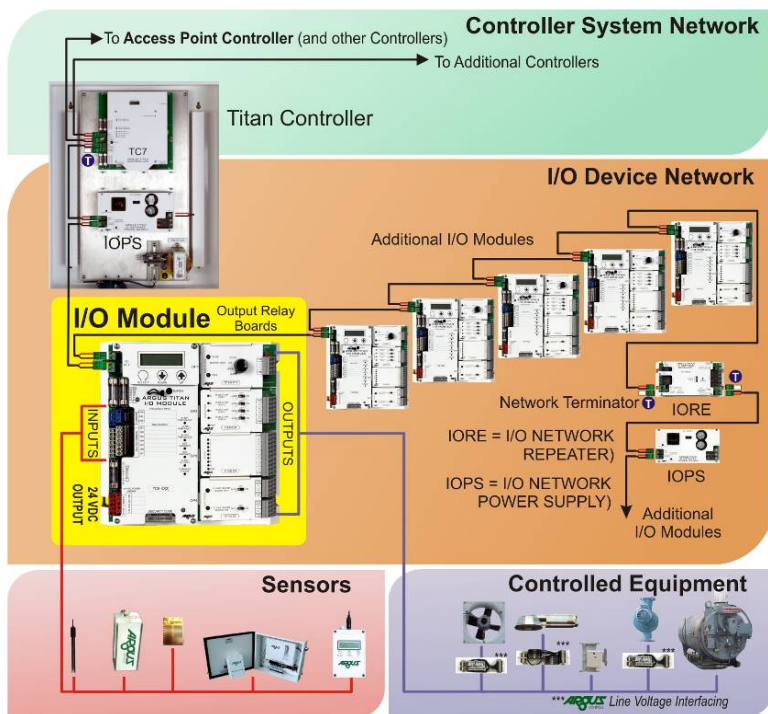
## Features

<b>'Plug and Run'</b>	No-wire module replacement courtesy of the included backplane that accommodates all external connections
<b>Input Switching</b>	Analog sensor channels can be switched in the software between AC Voltage, DC Voltage, or DC Resistance
<b>High Resolution</b>	Digital frequency measurements up to 50,000 Hz
<b>LED Status Indicators</b>	Indicate proper wiring and network operation
<b>Expansion Capacity</b>	Up to 32 I/O Modules can be operated from a single Titan Controller
<b>Flash Memory</b>	Firmware updates can be performed from any operator workstation
<b>Isolation</b>	Built-in cross-channel interference protection
<b>Consistent Performance</b>	Scan rate does not degrade as a function of system size or load
<b>Low installation and wiring costs</b>	Modules can be located hundreds of meters apart, close to the connected sensors and the equipment they control
<b>Error Detection</b>	Extensive self-diagnostics, error detection, and fault diagnosis for wiring and connected equipment
<b>EMI Choke</b>	Reduces interference generated by devices emitting high frequency 'noise'

## Technical Specifications

<b>Dimensions</b>	9" x 9" x 3" (length x width x depth)
<b>Power Consumption</b>	1.5 Watts @ 24VDC (via Titan IO Power Supply module)
<b>Sample Conversion</b>	24-bit A/D, 12 bit D/A
<b>Analog Input Raw Resolution</b>	One million parts over 0-5 volts in 5 microvolt steps.
<b>Output Channels</b>	<p>4 Output Relay Board connectors (OP1-OP4) provide:</p> <ul style="list-style-type: none"> <li>• up to 8 - 32 discreet digital outputs (depending on the choice of output relay boards to suit each application)</li> <li>• or up to 4 tri-state floating (open/close/stop) for reversing motor control</li> <li>• or up to 4 analog signal (voltage, frequency or current modes)</li> <li>• or combinations of the above</li> </ul>
<b>Analog Input Channels</b>	7 universal analog channels, each 0-5 volts. Software-configurable for direct connection of DC resistance, DC voltage, or AC signal devices.
<b>Digital Frequency Inputs</b>	2 channels at up to 50,000 Hz.
<b>I/O Device Network Cable</b>	Argus part number <b>CAB- 2C18G/TITAN</b> : West Penn Wire - Aquaseal AQ224, 2-conductor, 18 gauge cable, suitable for outdoor use (direct burial), indoor trays, moisture & UV resistant. <b>NO SUBSTITUTIONS – USE OF THIS EXACT WIRE IS CRITICAL FOR PROPER NETWORK COMMUNICATION</b>

## Connection Details



I/O Modules are used for Input and Output connections on the Titan system. The illustration shows an I/O module (yellow background) operating as part of a typical I/O Device Network for a Titan Controller.

For installation, please refer to the custom drawings and wiring diagrams provided with your system parts.

## Additional Information

For information on available Output Relay Boards please refer to the Argus Data Sheets for the following parts:

TTN-D1S; TTN-D2; TTN-D4; TTN-D8;  
 TTN-D8/MUX-3V; TTN-D8/MUX-4X2; TTN-D8/MUX-8X1;  
 TTN-P1A; TTN-P1T; TTN-P1T/IC



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