



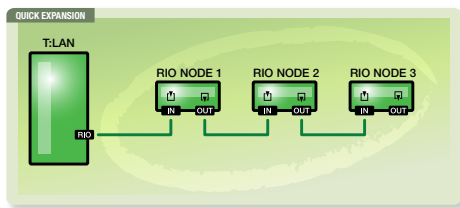
## Optima RIO Modules

Modular Remote I/O That Grows With Your Network



Optima's RIO are small, modular alarm handling nodes that can be deployed right next to your alarms or sensors. The RIO system keeps growing with your site requirements as they can be extended by daisy-chaining, expanding the I/O capabilities as you go. Total system capacity can go from just 32 to more than 220 contact inputs and from just 3 to more than 50 relay outputs.

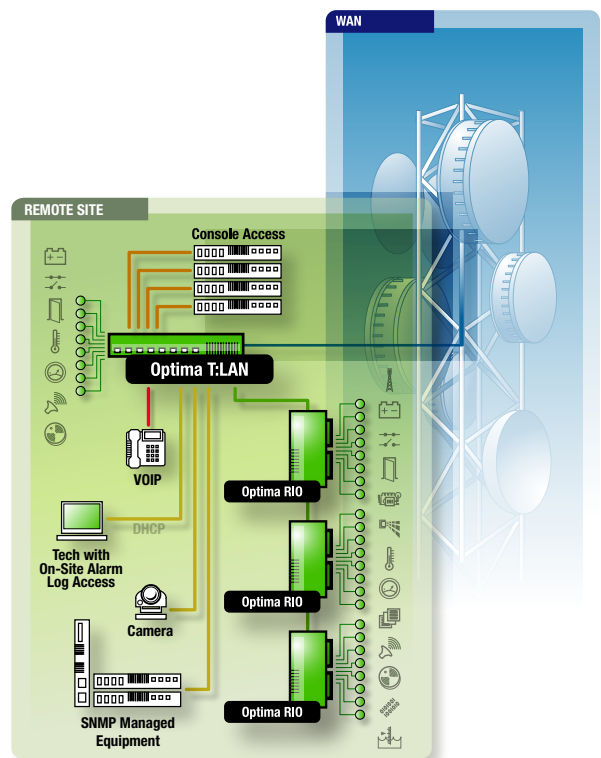
A node consists of a single base module or a base plus expansion module. Additional RIO nodes can be added at any time without requiring service disruptions or network downtime.



*Optima Tele.com's RIO Remote Input And Output Modules expand the capabilities of the Optima T:LAN units into a state of the art SNMP manageable network surveillance tool by providing modularized alarm collection, control outputs, and analog measurement reporting.*

### Designed For Enterprise And Service Provider Networks

RIO's ultra compact distributed architecture design allows the modules to be easily deployed close to the concentration point of site alarms such as a BIX or MDF panel. A single straight RJ45 to RJ45 cable connection between the site T:LAN unit and RIO module is all that is required to establish power and communications to the RIO modules. Through a simple daisy chain-ing process, up to three RIO nodes can be managed by a single T:LAN.



## Reports To Multiple SNMP Managers Simultaneously

The Optima RIO system is designed to work with one or more SNMP managers. Simultaneously forwarding of alarms from RIO nodes to multiple SNMP managers at multiple IP addresses provides unparalleled flexibility in adapting the RIO system to Surveillance Network architectures. The granularity of configuration even allows forwarding of individual alarms and control functions to specific SNMP stations.



## Stand-Alone Local Visibility

The status of a site can also be monitored directly through the Optima T:LAN. All of the RIO's monitoring and control functions can be accessed through the Optima Remote Commander Client application, via TELNET or the local Craft interface. The front panel status LEDs of the T:LAN and RIO nodes facilitate immediate on-site status readouts.

## Features

- 16 to 64 Discrete Alarm Inputs
- 8 or 16 Solid State Relay Outputs
- 8 Differential Analog Inputs
- 2 Current Loop Inputs
- 4 Serial Ports
- 2 OneWire Buses
- VT100, Telnet, SNMP Manageable
- Low Power, Compact Design

## RIO Node Configurations

Base Module	Expansion Module	Contact Inputs	Relay Outputs
1608R8S4	none	16	8
1608R8S4	4802E	64	8
1608R8S4	4002R8E	56	16

## Technical Specifications

### PHYSICAL

**Width**  
20.32cm (8.00")

**Height**  
2.54cm (1.00")

**Depth**  
6.99cm (2.75")

**Weight**  
~550g

**Mounting**  
Rack mounting: 1U. Using an optional bracket for standard 19" rack mount installations allows for either two base units to be installed side-by-side or one base+expander unit to be placed in a 1U rack space. Also supports tabletop, shelf and wall mounting.

### POWER

**Input**  
5VDC, max. 300mA

No separate power supply required as RIO modules are powered from Optima T:LAN unit.

**Power Consumption**  
Less than 1.5 Watts

**Connector**  
Power fed to module through the datacom RJ45 jack.

### ENVIRONMENTAL

**Temperature**  
0 to 50°C (32 to 122°F)

**Humidity**  
Up to 80% relative humidity (non-condensing)

### DATA

**Connector**  
Dual RJ45, shielded

**Type**  
Optima proprietary: communication with the first RIO Base module is through the T:LAN Expansion Port. Additional RIO Base modules are daisy chained from the first via their dual RJ45 interface jacks. RIO Expansion modules connect to RIO Base modules via an inter-module base expansion header.

**Distance**  
Up to 10m (30')

**Cabling**  
UTP, Category 5 (wired EIA568B standard straight-through)

### CONTACT INPUTS

**Inputs**  
16 (56 with 4002R8E or 64 with 4802E expansion module), ground referenced, triggered by switching to ground or applying a negative voltage.

**Voltage Tolerance**  
Up to -60VDC

**Wiring**  
One contact per pair

### ANALOG INPUTS

**Inputs**  
8 differential

**Sensing Range**  
-104VDC to +104VDC (ground referenced)

**Resolution**  
50µVDC

### RELAY OUTPUTS

**Outputs**  
8 (16 with 4002R8E expansion module)

**Type**  
Form A

**Voltage Tolerance**  
Up to 60VAC or 60VDC

**Switching**  
500mA max., 30W (Resistive Load only)

**Wiring**  
One relay output per pair

### SERIAL INTERFACES

**Ports**  
4

**Type**  
Software selectable  
RS232, RS422/RS485 (Half/Full Duplex)

**Settings**  
300 to 19.2kBaund, 7/8 data bits, 1/2 stop bits, no/odd/even parity, flow control (RTS/CTS in RS232 mode only)

**Applications**  
Telnet, SDCoIP, TBOS

### 1-WIRE INTERFACES

**Ports**  
2

**Type**  
1-Wire (Data + Power)

**Applications**  
Remote Temperature Sensors, Humidity Sensors

### TEMPERATURE SENSOR

**Range/Resolution**  
-55°C to +100°C, 0.0625°C

### INDICATORS / CONNECTORS

**LED**  
Power/Error/Activity

**Connectors**  
2 25-pair Telco Connectors (female)

**Cabling**  
UTP, Category 3 or better recommended

### MANAGEMENT

**Protocols**  
VT-100, TELNET and SNMP through Optima T:LAN unit

## Ordering Information

1004-A010005B Optima RIO1608R8S4 Base Module  
1004-A010004A Optima RIO4802E Expansion Module  
1004-A010001A Optima RIO4002R8E Expansion Module

2000-K010002B 19" Rackmount Kit  
2000-H040005A RIO Alarm Cable, 8m (25ft)\*

\*2 required per RIO Module

Consult Optima Sales for additional alarm cables, sensors and application accessories.



Optima Tele.com, Inc.  
4-20 Cachet Woods Court, Markham ON L6C 3G1, Canada  
Tel. 905 477 0987 Fax 905 477 5579  
Visit our website at: <http://www.OptimaTele.com>

© Copyright 2003-2014 by OPTIMA Tele.com, Inc. All rights reserved. Specifications subject to change without prior written notice. All referenced trade names are either trademarks or registered trademarks of their respective companies.

4000-B800003F

Printed in Canada