

26 System Overview

Digital Output Module

Model	Description	Points
3401	24 V DC, commoned	16

Pulse Input Module

Model	Description	Points
3381	0.5 Hz to 32 kHz, differential	6

Solid-State Relay Output Module

Model	Description	Points
3451	Non-triplicated, commoned in groups of 2	32

I/O Extender Modules

Model	Description
2281	I/O Extender Module Kit (without termination)
2291	I/O Extender Module Kit for I/O Baseplate (with termination)
2292	I/O Extender Module Kit for MP Baseplate (with termination)

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108 Input/Output Modules

Solid-State Relay Output Module

The following relay output components are available.

Model	Description	Voltage	Type
3451	Solid-State Relay Output Module	24 V DC	Commoned, in groups of 2
2451	Solid-State Relay Output Baseplate		Direct Termination

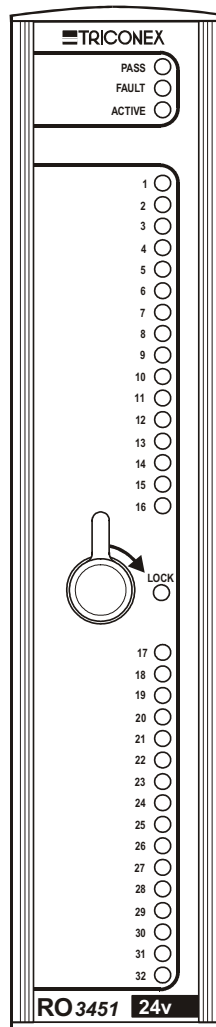
The Solid-State Relay Output (SRO) Module is a non-triplicated module for use on non-critical points which are not compatible with high-side, solid-state output switches; for example, interfacing with annunciator panels. The SRO Module receives output signals from the MPs on each of three channels. The three sets of signals are then voted, and the voted data is used to drive the 32 individual relays. Each output has an I/O loop-back circuit which verifies the operation of each relay switch independently of the presence of a load. Ongoing diagnostics test the operational status of the SRO Module.

The SRO Module supports hot sparing for online replacement of a faulty module or continuous back-up to an active module. The SRO Module is mechanically keyed to prevent improper installation in a configured baseplate.

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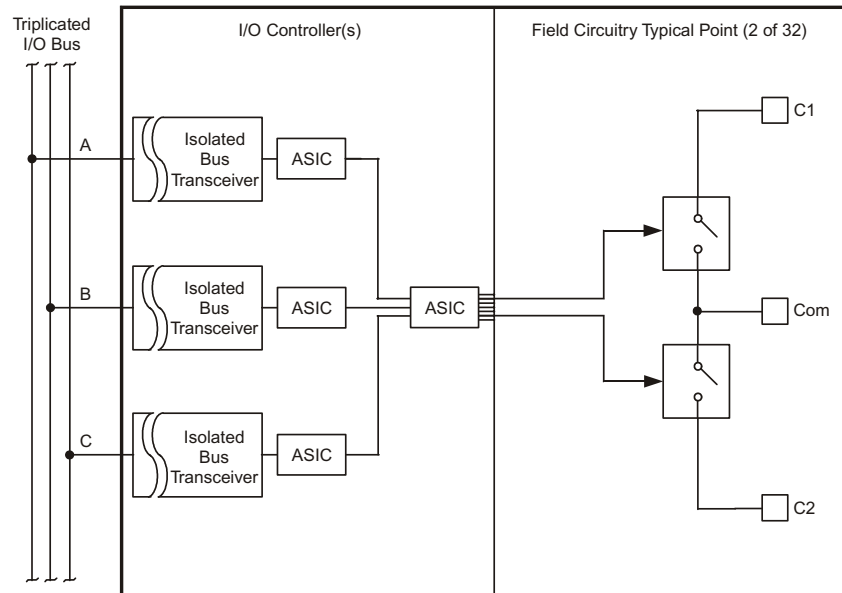
Model 3451 Solid-State Relay Output Module

**SRO Module
Front Panel**



110 Input/Output Modules

Model 3451 Solid-State Relay Output Module Simplified Schematic



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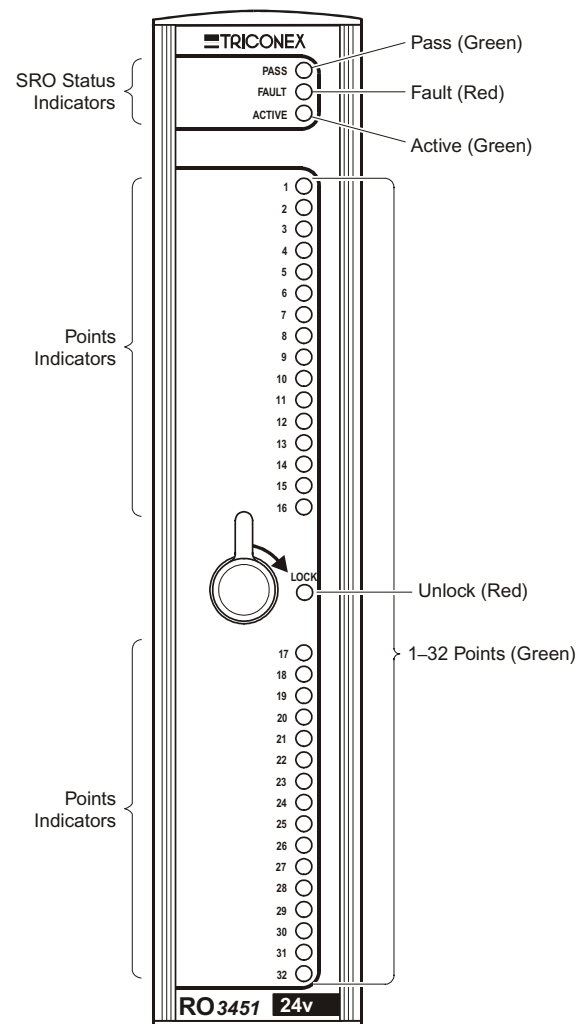
Model 3451 Solid-State Relay Output Module Specifications

Feature	Specification
Points	32, commoned in pairs
Nominal input voltage	± 24 V
Operational voltage range	± 30 V
Maximum switching voltage	± 33 V peak
Maximum switching power	15 W resistive
Maximum off-state leakage	$<100 \mu\text{A}$
Maximum nominal current	0.5 A per channel
Maximum over current	0.7 A per channel
Voltage drop at baseplate	<0.25 V @ 0.5 A
Fuses, mounted on baseplate	1 per output, 0.75 A, fast-acting
Functional-to-protective-earth isolation	500 V DC, minimum
Functional-to-functional-earth (logic) isolation	800 V DC, minimum

192 Solid-State Relay Output Module Indicators

Solid-State Relay Output Module Indicators

This section describes the SRO Module indicators and recommends actions for fault conditions.



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