

# Model 5110 Relay Logic Module



- **Plug-in module with four internal dry contact relays**
- **Coin-gold contacts to permit use in low current circuits and harsh environments without contamination**
- **Installer programmable to perform required complex logic functions**
- **Latching/non-latching operation and reset condition individually programmable for each relay**
- **DPDT contacts 2A @ 30 VDC, 1A @ 120 VAC (UL rating)**
- **Drive capability for external relays**

The SST Model 5110 Relay Logic Module can be used when dry relay contacts are required to perform various logic functions. The dry contacts may be used to communicate with and/or drive external equipment, such as annunciators, SCADA data acquisition systems, or host computers. The contacts can also be used to perform various logic functions within the NOVA-5000 Detection & Control System.

Each Relay Module is equipped with four two-pole relays. Three of the relays can be used for external signalling, i.e. their contacts are accessible through terminals on the backplane and may be individually programmed to be either normally open (NO) or normally closed (NC) via 'suitcase jumpers'. The fourth relay is programmable for internal logic.

Gold-plated labeled pin headers on the printed circuit board provide access to each of the eight backplane bus signals, the four external inputs (connected to terminals on the backplane), the relay control inputs (i.e. latching, non-latching or reset input) and the relay contacts. The module is prewired to the most common configuration. Patch cords with gold-plated connectors matching the pin headers are available for connecting other logic configurations. The backplane bus signals and the external inputs are diode isolated and can be freely connected to achieve "or" gate logic combinations. Various "OR", "AND" and more complex

gate logic functions can be achieved by freely combining relay contacts and inputs with the patch cords. Additionally, any combination of signals may be fed back into the NOVA-5000 backplane. Both fault and isolate loops may be controlled by the relay contacts, if necessary.

The relay contacts are formed from coin quality gold material, so that they are suitable for even the smallest "microamp" current. The gold also prevents any tarnishing of the contacts in corrosive environments.

Six Light Emitting Diode (LED) indicators are provided on the front of the module. During normal operation, the green Power LED will be the only visible indication on the module. This indicates that 24 volt DC power is being supplied to the module from the redundant system power supplies. Just below this green LED is a companion yellow LED which is normally invisible. Should either of the system power supplies fail, the yellow LED will be visible to indicate a power fault to this module. One green LED is provided for each of the relays as a status display. When any relay is activated the associated LED will be lit. Pressing the Reset switch on the front panel unconditionally causes all four relays to reset.

Each Model 5110 Relay Logic Module mounts in one plug-in space in the NOVA-5000 System Rack Assembly. Although not required for normal programming or operation of the module, a Module Test Extender Card can be helpful to troubleshoot logic problems during system design and start-up.



## ARCHITECT'S AND ENGINEER'S SPECIFICATIONS

System logic and external relay interface capability shall be provided where required in the system design by plug-in relay modules. Each module shall include four (4) relays with dry contact outputs which can be set to either normally open (NO) or normally closed (NC). Relay contact material shall be gold, platinum, or palladium suitable for use in dry circuits in corrosive atmospheres. The system designer shall be able to custom program these inputs in various combinations of "AND" and "OR" gates to activate the desired outputs. All module connections shall be via dedicated screw terminals on the associated module backplane. The Module shall obtain operating power from either of the dual redundant system power supplies. Failure of either supply shall be indicated on the module front panel, and shall generate a "System Fault" pulse signal. Safety Systems Technology Model 5110 Relay Logic Modules, or approved equivalent, shall be supplied.

## TECHNICAL SPECIFICATIONS

<b>Logic Inputs:</b>	4 external, 8 internal provided, 24 VDC nominal Pulled up to +24 VDC. Connect to 24 VDC common to activate, or drive from other NOVA-5000 modules.
<b>Relay Outputs:</b>	3 external, 1 internal provided, double pole, 2.0 amp @ 30 VDC, 1.0 amp @ 125 VAC resistive
<b>Front Panel Indicators:</b>	Power On, Power Fault, Relay A, B, C, D activation All indicators are light emitting diodes (LED's)
<b>Internal Adjustments:</b>	Logic Matrix with user installed plug-on jumpers Set to perform required system logic functions by installer. May be changed at any time.
<b>Power Requirement:</b>	24 VDC, 80 mA standby, 40 mA alarm per relay used
<b>Size:</b>	0.99 inch wide, 5.06 inches high, 7.4 inches deep Requires 1 mounting space in SST standard mounting rack.
<b>Weight:</b>	7 ounces

## ORDERING INFORMATION

PART NO.	DESCRIPTION
35110	Model 5110 Relay Logic Module
45110-3	Optional package of 10 jumper wires for programming module
35360	Optional Module Test Extender Card

MODEL 5110  
WIRING CONNECTIONS

