Solid State Relay I/O Modules
35 or 32mm DIN Rail

Solid State I/O Modules are used to switch both AC and DC loads as well as sensing AC or DC control voltages for controlling the input to a PLC. The input is isolated from the output via an optically coupled circuit in the device itself. Since there are no moving parts, the device will have a virtually unlimited life.

Altech I/O Module assemblies can be supplied in either an isolated or bussed configuration as shown on page 28.

Features:

- Wide range of Solid State I/O Modules to choose from
- LED Indicators, Fuse Protection
- Input or Output Modules can be mixed & Matched on the same board
- Custom installed I/O modules available upon request
- Most plug-in modules are UL Recognized, CE mark.
- Bussed or isolated
- up to 16 channels on single module

Custom designs can be accommodated!

SSR I/O Series

AC Output Solid State Relays

A

Part No.	Nominal Input Voltage	Control Voltage Range	Input Current Typical	Output Voltage Range	Off-state Leakage Current	Max. Turn On Time	Max Turn Off Time	Output Current
OA05	5 VDC	2.5-6.0 VDC	10 mA	24-240 VAC	5 mA	8.3 ms (60 Hz)	8.3 ms (60 Hz)	3A
OA15	15 VDC	8.5-18.5 VDC	10 mA	24-240 VAC	5 mA	8.3 ms (60 Hz)	8.3 ms (60 Hz)	3A
OA24	24 VDC	16.5-29.0 VDC	10 mA	24-240 VAC	5 mA	8.3 ms (60 Hz)	8.3 ms (60 Hz)	3A

DC Output Modules Solid State Relays

B

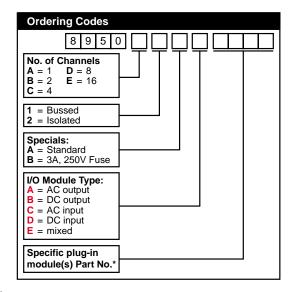| Part No.	Nominal Input Voltage	Control Voltage Range	Input Current Typical	Output Voltage Range	Off-state Leakage Current	Max. Turn On Time	Max Turn Off Time	Output Current
OD05	5 VDC	2.5-6.0 VDC	10 mA	3 - 60 VDC	1.0 mA	50 µSec	100 µSec	3A
OD15	15 VDC	8.5-18.5 VDC	10 mA	3 - 60 VDC	1.0 mA	50 µSec	100 µSec	3A
OD24	24 VDC	16.5-29.0 VDC	10 mA	3 - 60 VDC	1.0 mA	50 µSec	100 µSec	3A

AC Input Modules Solid State Relays

C

Part No.	Logic Supply Voltage	Min. Turn-Off Voltage	Operating Frequency	Control Voltage Range	Off-Stat Leakage Current	Max. Turn On Time	Max. Turn Off Time
IA05	5 VDC	40 VAC	47 - 63 Hz	90 - 280 VAC	10 µA	20 ms	20 ms
IA15	15 VDC	40 VAC	47 - 63 Hz	90 - 280 VAC	10 µA	20 ms	20 ms
IA24	24 VDC	40 VAC	47 - 63 Hz	90 - 280 VAC	10 µA	20 ms	20 ms

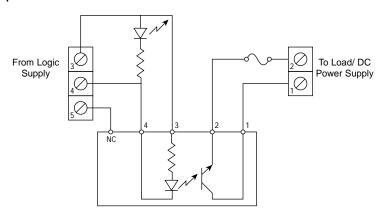### DC Input Modules Solid State Relays

D

Part No.	Logic Supply Voltage	Min. Turn Off Voltage	Input Resistance	Control Voltage Range	Off-Stat Leakage Current	Max. Turn On Time	Max. Turn Off Time
ID05	5 VDC	2 VDC	2.2 K Ohm	3-32 VDC	10 µA	1.0 ms	1.0 ms
ID15	15 VDC	2 VDC	2.2 K Ohm	3-32 VDC	10 µA	1.0 ms	1.0 ms
ID24	24 VDC	2 VDC	2.2 K Ohm	3-32 VDC	10 µA	1.0 ms	1.0 ms

Individual I/O Modules

- UL recognized
- Optically isolated
- Industry standard package and pin-out
- 3.5 kV isolation

Altech offers a complete line of individual I/O modules. For complete specifications, refer to the listed module part numbers shown above.

Ordering Codes

8 9 5 0 ☐ ☐ ☐ ☐ ☐ ☐ ☐

No. of Channels
A = 1   D = 8
B = 2   E = 16
C = 4

1 = Bussed
2 = Isolated

Specials:
A = Standard
B = 3A, 250V Fuse

I/O Module Type:
A = AC output
B = DC output
C = AC input
D = DC input
E = mixed

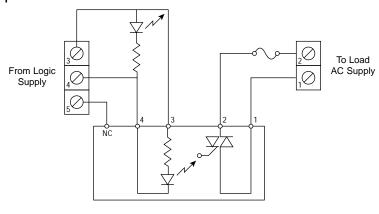**Specific plug-in module(s) Part No.***

* If all plug-in modules are of the same type, then enter the 4 digits of the specific module(s). For example, the part number of a 4 channel, bussed, standard board with the OD05 type module would be: **8950-C-1-A-OD05**.
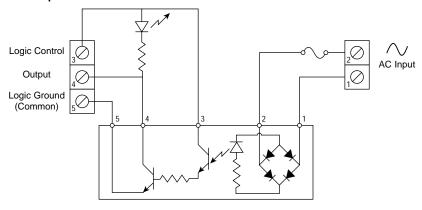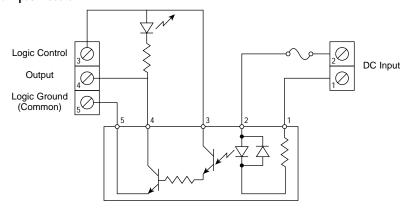
In the case of mixed modules, please contact Altech for ordering information.

DC Output Module

From Logic Supply — 3, 4, 5

To Load/ DC Power Supply — 2, 1

NC — 4 3 2 1

AC Output Module

From Logic Supply — 3, 4, 5

To Load AC Supply — 2, 1

NC — 4 3 2 1

AC/DC Iutput Module

Logic Control — 3
Output — 4
Logic Ground (Common) — 5

AC Input — 2, 1

5 4 3 2 1

DC Input Module

Logic Control — 3
Output — 4
Logic Ground (Common) — 5

DC Input — 2, 1

5 4 3 2 1

Schematic Explanations

Shown on the left are typical configurations for the I/O Solid State Relay Modules. Each plug-in module may vary somewhat , but the equivalent circuit is shown. Output Modules have only 4 connections, while the input modules have 5, with the addition of an added control voltage on pin 3.

DC Output Module

DC Output Solid State Modules usually only differ in their output rating, although some output modules respond to a different input threshold voltage. Altech offers a 3A@60 VDC output version.

AC Output Module

In choosing the appropriate AC Output Module, there are timing issues to consider as well as output voltage and current capabilities. Moreover, there is a wide variation of input resistance and voltages to consider. AC Output modules are available in either random or zero cross types. In a zero cross AC output module, the output will not switch after the application of an input voltage until the next zero crossing of the AC output waveform. This prevents a large voltage transition at the output that may generate EMI problems in other nearby sensitive circuitry. Depending on the load, the lifetime may also be dramatically increased. In the random output type, the output switches as soon as an input voltage is applied.

AC/DC Input Module

An AC Input Module will supply a logic voltage at its output with the application of an AC voltage at the input. However, it also requires a separate control voltage. The control voltage may be used to inhibit the device, hence both the control voltage and the input voltage must both be present at the same time (similar to a logical "and") in order that the module send a control signal out. Some AC input modules have a bridge rectifier at the input converting the input voltage to a DC voltage. This makes it possible to use it with DC input voltage as well. The output configuration is usually a NPN type.

DC Input Module

DC Input modules are designed to sense the presence or the absence of a DC voltage. Examples include the contact closures from sources such as push buttons, limit switches, proximity switches, etc. Like the AC Input Module, a separate control voltage can be used to inhibit the device.