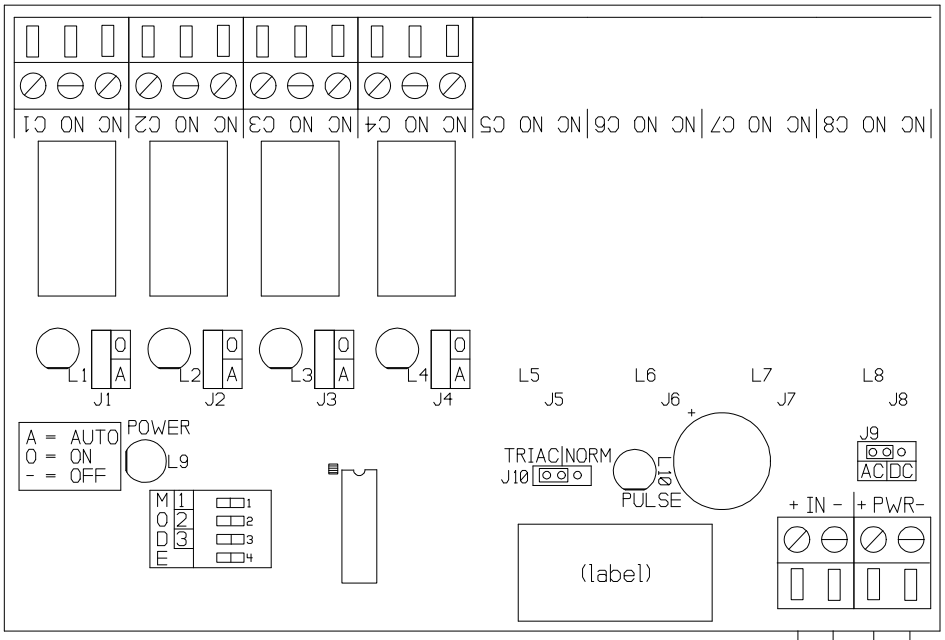
DMUX - 4

Solidyne ™ Fast Pulse Input to Four Addressable Relay Outputs

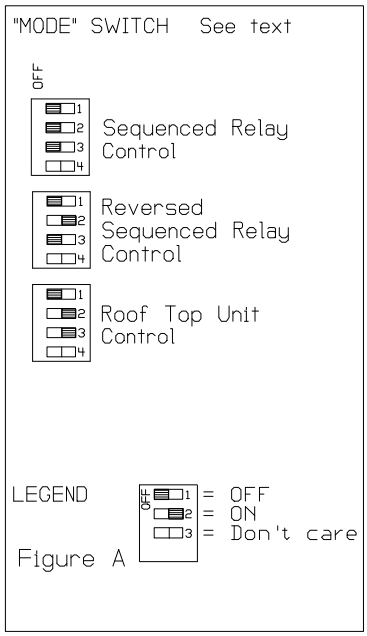


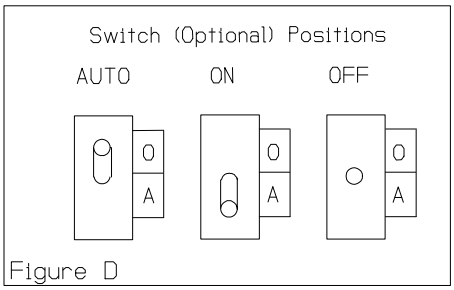
Mode Switch
See Figure A

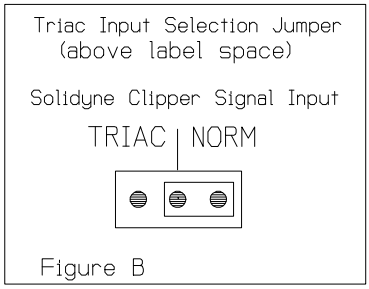
(+)
PWM SIGNAL
(-)

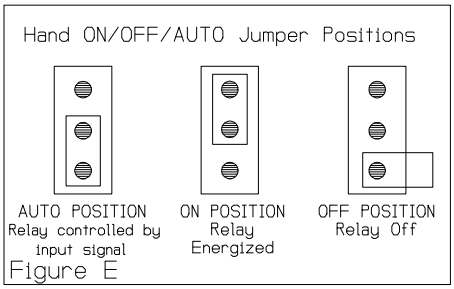
24 Vac
Power
Supply

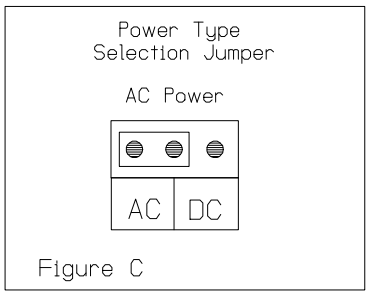
SEE NOTE #1







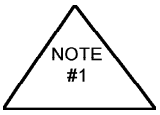




Call for configuration details if using with Izak Controller

INSTALLATION

Ground yourself to discharge static electricity before touching any electronic equipment, as some components are static sensitive. The interface device can be mounted in any position. If circuit board slides out of snap track, a non-conductive "stop" may be required. Use only fingers to remove board from snap track. Slide out of snap track or push up against side of snap track and lift that side of the circuit board to remove. Do not flex board or use tools.



POWER CONNECTIONS

Be sure to follow all local and electrical codes.

Refer to wiring diagram for connection information.

1) The secondary supply voltage to the interface should be between 22 and 28 volts AC and isolated from earth ground, chassis ground, and neutral leg of the primary winding. Any field device connected to this transformer must use the same common. If you are not sure of other field device configuration, use separate transformers.
2) If the 24 volt AC power is shared with other devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, Transorb, or other spike snubbing device across each of the shared coils. Without these snubbers, coils produce very large voltage spikes when de-energizing that can cause malfunction or destruction of electronic circuits.

CHECKOUT

This program offers different modes of operation using the Solidyne fast pulse input. Input ranges are given in percentages from 4-96% and also milliseconds from 10-230ms. Relay action does not occur until the M977 receives 10 identical pulse cycles of the same range. Any input range that is less than 4%, or after 5 seconds with NO input pulse, will command an ALL OFF relay action.

Apply power: the "POWER" LED should light. Close the pulse input relay contacts: the "PULSE" LED should light indicating that the M977 is receiving the timing signal. Further test the M977 operation by comparing the operation of output relays with respective input pulse. The LED for each relay will turn on when the respective relay is activated. No action on longer pulses.

SEQUENCED RELAY CONTROL

The program has to see 10 identical pulse cycles before a sequencing relay action can occur.

DIP SWITCH selections: OFF - 1, 2, 3

RANGE %	RELAYS
00-19%	ALL OFF
20-39%	1
40-59%	1,2
60-79%	1,2,3
80-96%	1,2,3,4

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REVERSE SEQUENCE RELAY CONTROL

The program has to see 10 identical pulse cycles before a sequencing relay action can occur. As the PWM value rises, relays will come ON in sequence until reaching the 50% deadband range, providing an ALL OFF condition. On a PWM increase to 96%, de-energizing of the relays will occur in the reverse sequence.

DIP SWITCH selections: ON - 2 OFF - 1,3

Rising %	Relays On
4-8%	ALL OFF
12-16%	1
20-24%	1,2
28-32%	1,2,3
36-40%	1,2,3,4
44-60%	ALL OFF
64-68%	4
72-76%	4,3
80-84%	4,3,2
88-96%	4,3,2,1

Falling %	Relays On
4%	ALL OFF
12-8%	1
20-16%	1,2
28-24%	1,2,3
40-32%	1,2,3,4
56-44%	ALL OFF
64-60%	4
72-68%	4,3
80-76%	4,3,2
96-84%	4,3,2,1

ROOFTOP UNIT CONTROL

The program has to see 10 identical pulse cycles before a sequencing relay action can occur. This mode of operation is for 4-relay control of Rooftop Units, and includes a 50% deadband. With dip switch one (1) in the ON position, a pulse to the 50% deadband range provides a fan override of eight minutes, and then OFF. A change in pulsing from the deadband setting will activate relays accordingly.

NOTE <4%, or no pulse=ALL OFF

DIP SWITCH selections: OFF- 1 ON -2,3

EXAMPLE:

Relay number	RTU Control Function
1	Cool 1 (C1)
2	Cool 2 (C2)
3	Heat 1 (H1)
4	Fan (F)

% RANGE	RELAY ACTION	PULSE TIMING (ms)	CONTROLS STAGES
4-19	4,2,1	10-40	F,C1,C2
20-31	4,1	50-70	F,C1
32-43	4	80-100	F
44-55	ALL OFF	110-130	DEADBAND
56-67	4	140-160	F
68-96	4,3	170-240	F,H1