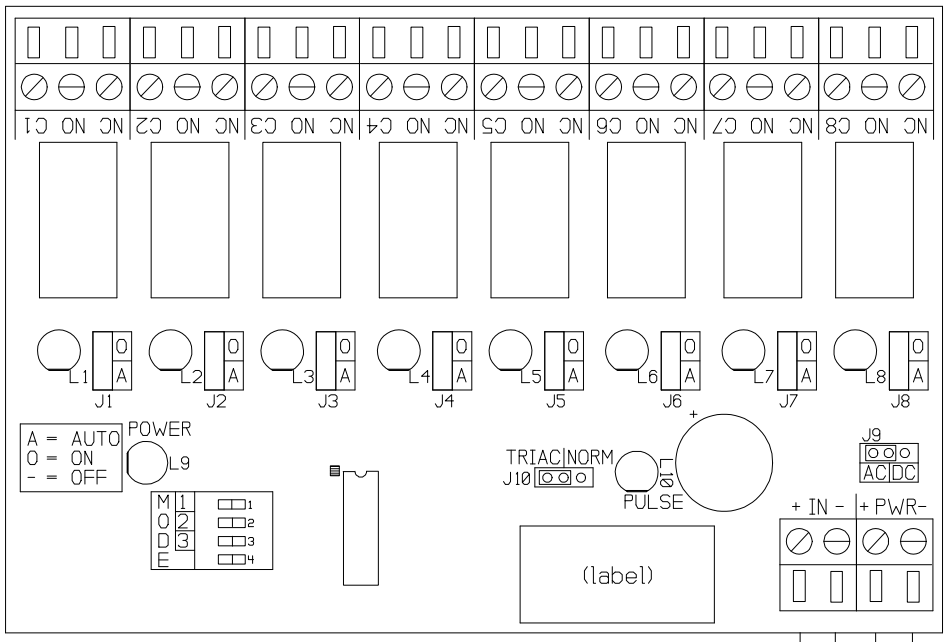
DMUX - 8

Solidyne ™ Fast Pulse Input to Eight Addressable Relay Outputs



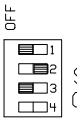
Mode Switch
See Figure A

(+)
PWM SIGNAL
(-)

24 Vac
Power
Supply

SEE
NOTE
#1

"MODE" SWITCH See text



Sequenced Relay
Control

Rooftop 8-Relay
Control

Rooftop 5-Relay
Control

LEGEND

Figure A

Switch (Optional) Positions

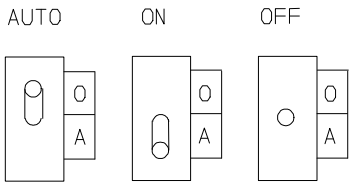


Figure D

Triac Input Selection Jumper
(above label space)

Solidyne Clipper Signal Input

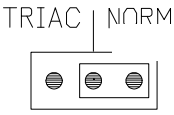
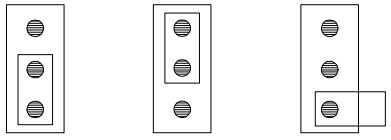


Figure B

Hand ON/OFF/AUTO Jumper Positions



AUTO POSITION
Relay controlled by
input signal

ON POSITION
Relay
Energized

OFF POSITION
Relay Off

Figure E

Power Type
Selection Jumper

AC Power

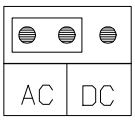
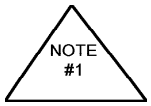


Figure C

Call for configuration 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. Use no 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 receiving 10 identical cycles of the same range. Any input range that is less than 4%, greater than 96%, 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 M978 is receiving the PWM signal. Further test the M978 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.

SEQUENTIAL RELAY CONTROL

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

NOTE <4%, >96%, or no pulse = ALL OFF

DIP SWITCH selections: OFF- 1,3,4 ON- 2 (only)

% RANGE	RELAY	PULSE TIMING (ms)
5-15	1	10-30
16-27	1-2	40-60
28-39	1-3	70-90
40-51	1-4	100-120
52-63	1-5	130-150
64-75	1-6	160-180
76-87	1-7	190-210
88-95	1-8	220-230

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ROOFTOP UNIT CONTROL

This mode of operation is useful for 5-relay control of rooftop units. Ten identical pulse cycles are needed to initiate an action, and a 50% deadband is included. Dip switch (1), when in the ON position at the 50% deadband range setting, provides a fan override ON for a time period of nine minutes, before going OFF. A change in pulsing from the deadband setting will activate relays accordingly.

NOTE <4%, >96%, or no pulse=ALL OFF

DIP SWITCH selections: OFF- 1,2,3,4

EXAMPLE:

Relay number	RTU Control Function
1	Cool 1 (C1)
2	Cool 2 (C2)
3	Heat 1 (H1)
4	Heat 2 (H2)
5	Fan (F)

% RANGE	RELAY ACTION	PULSE TIMING (ms)	CONTROLS STAGES
5-19	5,2,1	10-40	F,C1,C2
20-31	5,1	50-70	F,C1
32-43	5	80-100	F
44-55	ALL OFF	110-130	DEADBAND
56-67	5	140-160	F
68-79	5,3	170-190	F,H1
80-95	5,4,3	200-230	F,H1,H2

ROOFTOP UNIT CONTROL

This mode of operation is useful for 8-relay control of rooftop units. Ten identical pulse cycles are needed to initiate an action, and a 50% deadband is included. Dip switch (1), when in the ON position at the 50% deadband range setting, provides a fan override ON for a time period of nine minutes, before going OFF. A change in pulsing from the deadband setting will activate relays accordingly.

NOTE <4%, >96%, or no pulse = ALL OFF

DIP SWITCH selections: OFF- 1,2,4 ON- 3

EXAMPLE:

Relay number	RTU Control Function	
1	Reversing Valve	(RV)
2	Cool 1	(C1)
3	Cool 2	(C2)
4	Cool 3	(C3)
5	Fan	(F)
6	Heat 1	(H1)
7	Heat 2	(H2)
8	Heat 3	(H3)

%RANGE	RELAY ACTION	PULSE TIMING (ms)	CONTROLS STAGES
5-19	1,2,3,4,5	10-40	F,RV,C1,C2,C3
20-27	1,2,3,5	50-70	F,RV,C1,C2
28-35	1,2,5	80-90	F,RV,C1
36-43	1,5	100-110	F,RV
44-55	ALL OFF	120-140	DEADBAND
56-63	5	150-160	F
64-71	5,6	170-180	F,H1
72-79	5,6,7	190-200	F,H1,H2
80-95	5,6,7,8	210-230	F,H1,H2,H3