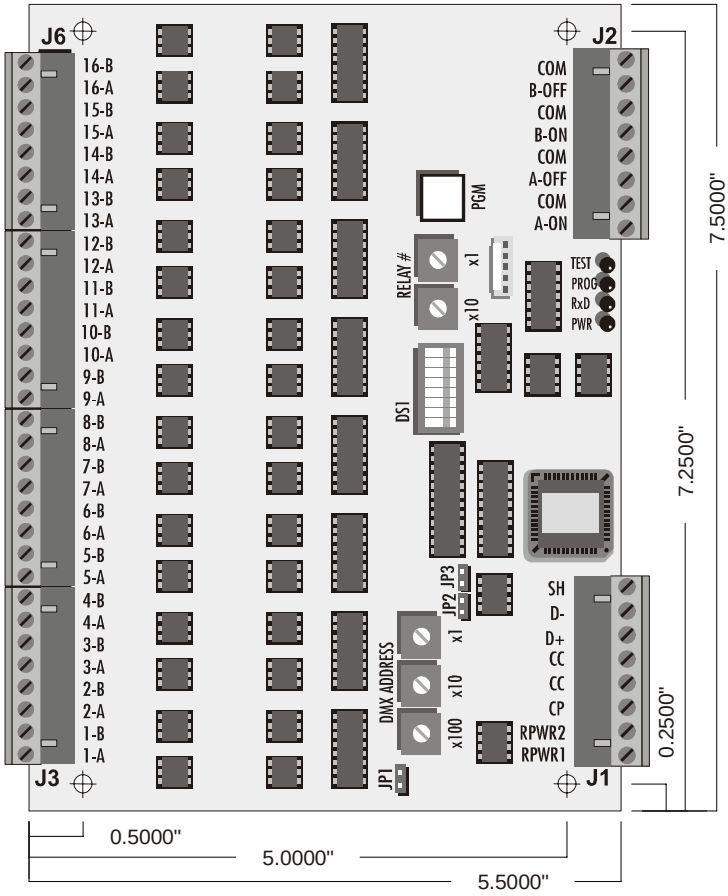
LCRD16 RELAY DRIVER

PROGRAMMABLE WITH MASTER SWITCH INPUTS

Configuration



CONNECTOR LEGEND

	CONNECTOR J1
RPWR1	Relay Coil Power Supply (Hot), 24VAC
RPRW2	Relay Coil Power Supply (Neut.), 24VAC
CP	Control Power Supply 12-24VAC or DC(+) 200mA
CC	Control power supply common
CC	Control power supply common
D+	DMX512 Data +
D-	DMX512 Data -
SH	DMX512 Shield
	CONNECTOR J2
A-ON	Master Switch “A“ input, momentary ON
A-OFF	Master Switch “A” input, momentary OFF
B-ON	Master Switch “B” input, momentary ON
B-OFF	Master Switch “B” input, momentary OFF
COM	Master Switch common (4 positions)
	CONNECTOR J3-J6
1A/B thru 16A/B	Relay coil drive outputs, one coil drive wire each for momentary polarized pulse-latching relays and AC maintained coil relays (“A” lead); one coil common wire per relay (“B” lead)

NOTE: Relay coil drive maximum rating 300mA continuous, 3A surge (inrush). Use a pilot relay for higher current requirements.

DIP Switch Settings

RELAY TYPE	**DS-1**
Momentary: *Outputs a 100ms polarized DC pulse for 2-wire latching relays*	ON
Maintained: *Outputs a constant AC voltage for maintained relays*	OFF
THRESHOLD SELECT	**DS-2**
25% Threshold (on at 30%, off at 20%)	ON
75% Threshold (on at 80%, off at 70%)	OFF
OUTPUT SCAN MODE	**DS-3**
Scan Mode Enabled: *Turns relays on or off in sequence, 10 per second*	ON
Scan Mode Disabled: *Turns relays on or off simultaneously*	OFF
CONTROL MODE	**DS-4**
Patch: Addressing determined by user programmed patch	ON
Offset: Addressing determined by address select switches	OFF

PROGRAM MASTER SWITCH	**DS-5**	**DS-6**
Program Master Switch “A”	ON	OFF
Program Master Switch “B”	OFF	ON

PROGRAM MODE	**DS-7**
Program Mode Enabled	ON
Program Mode Disabled	OFF
TEST MODE	**DS-8**
Test Mode enabled	ON
Normal (Run) Mode	OFF

TEST MODE

DS-7 must be OFF and DS-8 ON. The “TEST” LED will be on.

Relay Test Function: DS-4 must be off. The DMX address switches select the relay number to test. The selected relay can then be turned on by pressing the program pushbutton. If the number is out of the correct range (000 to 016 in momentary mode) the "TEST" LED will flash to indicate an error when the button is pressed.

DMX Test Function: The DMX receive LED (RxD) will be on and steady if a valid DMX signal is received. If no DMX signal is present the LED will be off. If the DMX signal is not valid the LED will flash continuously.

Patch Testing Mode: DS-4 must be on. The address switches select the DMX channel #. When the program pushbutton is pressed, relays assigned to that DMX channel # will turn ON. When the pushbutton is released those relays will turn OFF. The "TEST" LED will flash once if there is an error in the address range selection.

PROGRAMMING

The “PROG” LED is on when Program Mode is enabled.

Program Patch: *DS-5 OFF, DS-6 OFF, JP1 open*
The address switches set the equivalent DMX channel # (001 to 512) and the relay switches select the output number (01 to 16). Pressing the program store pushbutton (S6) to store the patch assignment will cause the program (PROG) LED to flash once unless an incorrect DMX # or relay # has been selected.
NOTE: Address 000 is used to clear the patch assignment for the selected relay. Each relay can be assigned to only one DMX channel. A new assignment for an relay overwrites the previous assignment for that relay.

Clear Patch: *DS-5 OFF, DS-6 OFF, JP1 shorted*
The entire patch will be cleared when the program pushbutton is pressed. The "PROG" LED will flash once to indicate a successful execution.

Program Master Sw.A: *DS-5 ON, DS-6 OFF, JP1 open*
The RELAY# switches select the device number to connect. The program (PGM) pushbutton is pressed to execute. The “PROG” LED will flash once unless an incorrect relay number has been selected. The “TEST” LED will illuminate to indicate that the selected relay has been assigned to the switch input. Repeat this procedure to add additional relays to this switch.

Program Master Sw.B: *DS-5 OFF, DS-6 ON, JP1 open*
Follow the same procedure as above for Master Switch A.
Verify: To check the connection between a master switch and an assigned relay, set the RELAY# switches to the desired relay and the connect status will be indicated by the "TEST" LED (ON if connected, OFF if not connected). To set or clear the connection, simply toggle the program button. Each master switch can be connected to any combination of valid relays. Master switches can only be tested while in the program mode.

Clear Master Sw.A: *DS-5 ON, DS-6 OFF, JP1 shorted*
Press the program pushbutton to clear all relay connections to master switch A. The "PGM" LED will flash once.

Clear Master Sw.B: *DS-5 OFF, DS-6 ON, JP1 shorted*
Press the program pushbutton to clear all relay connections to master switch B. The "PGM" LED will flash once.

SUPPORT

Technical support is available from Pathway Connectivity at +1 (403) 243-8110, Monday to Friday, from 9 a.m. to 5 p.m. Mountain time. Please have the unit model number and serial number ready when you call. If you need to return anything for any reason, contact the factory in advance for return instructions.

NOTES ON CONTROL MODE

Patch Mode Operation: Addressing is determined by the programmed DMX patch assignment for each relay. In this mode, any relay can be assigned to any DMX channel # in any order. Any number of relays can be assigned to the same DMX channel, but each relay can be assigned to only one DMX channel.
Offset Mode: The card's start address is determined by the DMX address select switches (S1-S3). These switches select the DMX address for the first relay and all other relays controlled by the card follow in sequence.

NOTES ON DMX OPERATION

When a DMX signal is used to control relays, on or off operation occurs as signal levels pass through the threshold set. If the DMX signal fails while relays are in the ON state, those relays will turn off after a two minute timeout unless they were previously turned on by a

NOTES ON MASTER SWITCHES

Master switch inputs function in a "highest level takes precedence" (HTP) mode of operation with the DMX signal. If the DMX level for a given relay is above the set threshold, the master switch will not turn that relay off. Similarly, lowering the DMX signal for a relay will not turn that relay off if a master switch has previously turned it on. This function allows the user to pre-set relays to the ON state prior to lowering or shutting off the DMX signal. In the absence of a DMX signal, the A and B master switches will operate in a "last action takes precedence" (LTP) mode, that is, either one will turn on or off a relay assigned to both switches.

DMX TERMINATION JUMPERS

DMX data lines must always be terminated with the proper resistance at the last receiving device on each line. Install the JP2 and JP3 shorting jumpers if the card is at the end of the DMX line, otherwise leave the jumpers in the default (open) position.

RUN (NORMAL) MODE CHECKLIST

- JP1 is removed
- DS-1 set for correct relay type
- DS-2 set for relay operating threshold
- DS-3 set for scan or simultaneous relay operation
- DS-4 set for patch or offset address mode
- DS-5 and DS-6 (program select) turned off
- DS-7 (program mode) and DS-8 (test mode) are off
- JP2 and JP3 (DMX Terminate) installed or removed as required

GRAY by Pathway
Pathway Connectivity Inc., 480C - 36 Avenue S.E., Calgary, AB, T2G 1W4 Canada
tel (403) 243-8110 fax (403) 287-1281
support@pathwayconnect.com
www.pathwayconnect.com
MEMBER ESTA