User Manual

EDI-120

Control Retrofit for Electronics Diversified Inc. (EDI) Mark VII Dimmer Racks

JOHNSON SYSTEMS INC.

www.johnsonsystems.com

RETROFIT! REUSE RECYCLE

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Manufacturer Member ESTA Entertainment Services & Technology Association

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JOHNSON SYSTEMS INC.

"PROFESSIONAL LIGHT CONTROL PRODUCTS"

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Warranty

The EDI-120 retrofit control system comes with a standard two (2) year limited warranty against defects in parts and workmanship. Extended warranties of up to ten (10) years are available at the time of purchase.

For details visit http://www.johnsonsystems.com/warranties.htm

For Technical Assistance

1. Refer to your product user manual. The most current revision is available online: www.johnsonsystems.com/literature.htm
2. Contact the "point-of-sale" dealer or distributor from which this product was originally purchased, and ask for technical assistance.
3. If neither of the above can provide you with the necessary information, please contact our factory via email (info@johnsonsystems.com) or phone (403-287-8003) during business hours (Monday to Friday, 8:00AM to 5:00PM MST).

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EDI-120
(Installed)

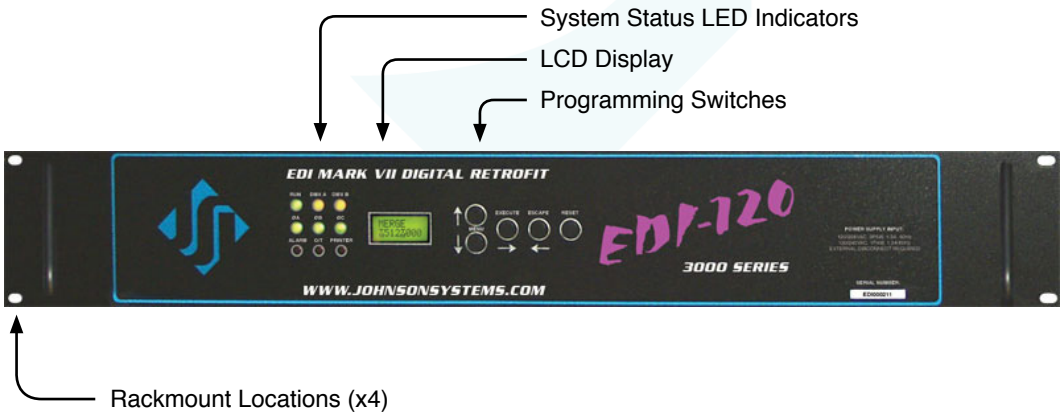
Introduction

The **EDI-120** is a next generation retrofit electronics package designed specifically for upgrading the EDI Mark VII performance dimmer racks making system replacement completely unnecessary. This full-featured, ETL approved, state-of-the-art unit provides a direct digital interface to most of today's modern lighting communication protocols.

Designed to install in minutes with only simple hand tools, this compact and elegant package has been designed for longevity and reliability with the end-user in mind. Intuitive LCD user interface combined with a single modular design makes the EDI-120 extremely user-friendly and easily serviceable. Advanced next generation hardware and software designs reduce stand-by power consumption to less than 1 Watt, allowing for compliance with the International Energy Agency's "One Watt Initiative" for standby power consumption.

GO GREEN

Full featured, hi-resolution dimming with ultra-fast response. Exclusive "lamp warming" techniques extends lamp life considerably. An environmentally and financially responsible solution that offers unsurpassed high performance in a matter in minutes!



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Packaging & Contents

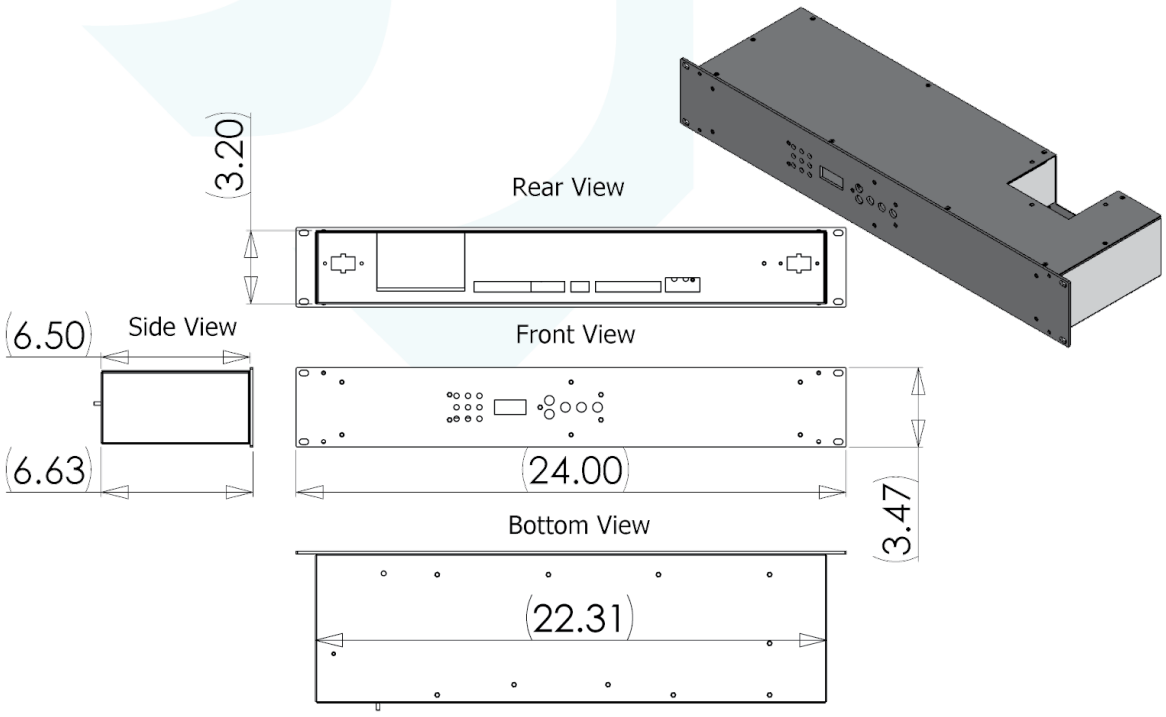
Each EDI-120 retrofit control system is shipped in a custom designed box and packaging for protection of the unit. It's recommended to keep the box and packaging stored in a safe place. In the unlikely event that the system needs to be returned to the JSI Factory, the packaging will help prevent shipping damage and maintain warranty.

Each EDI-120 retrofit control system includes all of the parts required to complete the retrofit.

Parts included with the EDI-120 retrofit control system:

- 10' (3m) Belden 9829 (or equivalent) length of cable used to extend existing DMX cable(s).
- Two (2) 3-position breakaway connectors used to splice the existing DMX cable(s) to the supplied DMX cable.
- Four (4) 1' (30.5cm) extension ribbon cables used to extend the OEM P3, P4, P5 and P6 ribbon cables.
- 8' (2.4m) #18 AWG green wire used to connect the EDI-120 retrofit control system chassis to earth ground.
- 5' (1.5m) #18AWG yellow and brown wires used to connect the fan control wiring from the OEM P1 connector to the fan SSR. Typical installations already contain the control wiring within the OEM P1 connector wiring, and these wires are not required.
- 10' (3m) yellow CAT 5e patch cable used to daisy-chain the DMX-A and DMX-B between multiple EDI-120 retrofit control systems. Only supplied when multiple EDI-120 retrofit control systems are purchased.
- Four (4) #10-32 x 3/8" mounting screws used to secure the EDI-120 retrofit control system in the EDI Mark VII dimmer rack.

Dimensional Drawings



NOTE: All measurements are in inches.

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Installation

- Disconnect (turn off) the power supply to the EDI Mark VII dimmer rack(s).

WARNING! Verify all power is disconnected (turned off) before proceeding.

Removal of the old EDI Control Module

- Remove the four (4) mounting screws securing the EDI Mark VII control module.
- Carefully pull the control module forward until all of the rear wiring connections are visible. Do not disconnect any wiring at this point.
- If you are not familiar with the EDI Mark VII control module electronics and wiring, it is strongly advised that you take a few minutes to inspect the OEM (Original Equipment Manufacturer) wiring (P1 through P6). If the cables aren't already labeled, label them using a permanent marker (Sharpie).

  P1 contains the AC power supply conductors (Neutral, Phase A, Phase B and Phase C) used to power the control module, as well as the low voltage fan control wiring (positive DC voltage control and common). Observe the location of the P1 connector and compare it to the location of the P1 connector on the EDI-120 retrofit. If the P1 connector is located on the opposite side, refer to the installation of the new EDI-120 retrofit system for details.

  On some earlier versions of EDI Mark VII dimmer racks, the fan control was sensed from the house control inputs, and the fan control wiring does not come through the P1 connector. If this is the case, the fan control will need to be rewired from the P1 connector to the fan SSR. More information regarding this modification is provided in the "Installation of the new EDI-120 retrofit system" section of this manual.

  P2 contains the field wiring connections for DMX and analog control.

NOTE: The P2 connection is obsolete when the EDI-120 retrofit control module is installed, and all the field wiring must be terminated on the back of the EDI-120 retrofit control module. Refer to the installation of the new EDI-120 retrofit system for more details.

  P3 contains the PWM output control signals for dimmers 1 through 36.

  P4 contains the PWM output control signals for dimmers 25 through 60.

  P5 contains the PWM output control signals for dimmers 61 through 96.

  P6 contains the PWM output control signals for dimmers 85 through 120.

- All of the internal OEM wiring must remain intact to complete the retrofit. Compare these connections to the ones on the back of the EDI-120 retrofit control module. Do not disconnect any wiring until you are completely satisfied with how easy this is going to be.

NOTE: Never pull directly on the wires to remove connectors.

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- Disconnect the P1 power connector/cable. Carefully squeeze the latches on each side of the connector together to release the connector and then pull the connector out. Inspect the connector and the termination of the wires in the connector. Be sure everything looks okay.
- Disconnect the P2 connector/cable. This cable will not be re-used on the EDI-120 retrofit, so once the old control module is removed, it should be coiled up, wire-tied and carefully set aside inside the dimmer rack, making sure it is isolated from any AC line voltage.
- Disconnect the P3, P4, P5 and P6 connectors/cables. Again, be sure not to pull directly on the ribbon cable to remove the connector as this may cause damage. Carefully pull the connectors straight out.
- The old control module should now be free and clear of all connections, and can now be completely pulled out of the dimmer rack and set aside.
- With the old control module removed, it is a great opportunity to do some preventative maintenance. The dimmer rack should be thoroughly cleaned, vacuumed and sprayed out using compressed air. All of the AC line and load connections should be inspected and tightened if necessary.
- Inspect the fan blower and be sure it spins freely. If required, replacement fans are available.

Installation of the new EDI-120 Retrofit Control System

- Remove your new EDI-120 retrofit control system from the box.
- Take a look at the field wiring connections on the back of the EDI-120 retrofit. There is a connector for DMX-A input, a connector for DMX-A thru, a connector for DMX-B input, a connector for DMX-B thru, a connector for four (4) 0-10VDC analog inputs, a connector for dry contact inputs and a connector for +12VDC to power peripheral devices. All of the field wiring terminates on these connectors.
- Refer to the “Control Input/Output Connections” section on page 11 and 12 for details.
- On the old EDI control module (Multi-Link), the DMX input came through the P2 connector. Since this connection/cable is now obsolete, locate the DMX input and thru (if applicable) cable(s) coming into the dimmer rack from the field. Once the cable(s) has been located, disconnect it. Inspect the cable(s) and ensure it will be long enough to reach the connectors on the EDI-120 retrofit, once it is installed. Two (2) 3-position breakaway connectors and a 10’ (3m) Belden 9829 (or equivalent) length of cable is supplied for extending the cable(s) if it isn’t long enough. The cable(s) can now be dressed out and terminated on the DMX-A input and DMX-A thru (if applicable) breakaway connectors provided. Be sure to isolate and protect all shield wires and comply with standard RS-485 termination practices.
- On the old EDI control module, the 0-10VDC analog inputs came through the P2 connector. Since this connection/cable is now obsolete, locate the analog input cable(s) coming into the dimmer rack from the field. Note the EDI-120 retrofit only has four (4) 0-10VDC analog inputs, versus ten (10) on the old control module. Once the analog input cable(s) have been located, disconnect them. If required, extend the cables. The cable(s) can now be dressed out and terminated on the analog input breakaway connector provided.

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If more than four (4) analog inputs are required, additional equipment may be necessary to facilitate them. Consult the factory for options and further information.

- Dress out and terminate any applicable connections for the input/output contacts on the breakaway connector provided.
- Dress out and terminate any applicable +12VDC power supply connections on the breakaway connector provided.
- The intention is for the DMX input receptacle (5-pin male XLR) on the front of the EDI dimmer rack to be connected to the DMX-B input on the EDI-120 retrofit. To do this, the existing wires connected to the XLR must be disconnected, and an applicable length of the supplied 10' (3m) Belden 9829 (or equivalent) cable must be reconnected to the XLR on one end, and terminated on the DMX-B input breakaway connector provided on the other end. Be sure to isolate and protect all shield wires and comply with standard RS-485 termination practices.

  Alternatively, the DMX-B input and thru connectors can be used for other purposes.
- Confirm all applicable field wiring is terminated on the breakaway connectors provided. For future reference, be sure all cables are labeled using a permanent marker (Sharpie).
- Inspect the OEM P3, P4, P5 and P6 ribbon cables and determine if they are long enough to easily connect to the EDI-120 retrofit. Four (4) 1' (30.5cm) extension ribbon cables have been provided to extend the OEM ribbon cables for ease of installation. When connecting, be sure the OEM ribbon cable connector is fully seated in the provided extension ribbon cable connector.
- An 8' (2.4m) #18 AWG green wire has been provided for connection of earth ground to the EDI-120 chassis. One end of the ground wire has a 0.250" female disconnect, and connects to the male on the back of the EDI-120 retrofit. Locate a place inside the dimmer rack chassis to connect the other end of the ground wire. Cut the wire to length, dress it out and connect (fasten) it to the dimmer rack chassis.

WARNING: Ensure chassis is connected to earth ground.

- On some earlier versions of EDI Mark VII dimmer racks, the fan control was sensed from the house control inputs, and the fan control wiring does not come through the P1 connector. If this is the case, the fan control will need to be rewired from the P1 connector to the fan SSR. 5' (1.5m) #18AWG yellow and brown wires have been provided to implement fan control from the EDI-120 retrofit via the P1 connector to the fan SSR. For the yellow (fan control V+) wire, the female pin on the one end inserts into pin 5 of the P1 connector and the other end terminates to V+ on the fan SSR. For the brown (fan control V- (common)) wire, the female pin on the one end inserts into pin 6 of the P1 connector and the other end terminates to V- (common) on the fan SSR. Refer to page 10 for the P1 power connector pinout information.
- There are two (2) locations on the back of the EDI-120 retrofit where the P1 power connector/cable can be installed - one (1) on the right-hand side and one (1) on the left-hand side. When looking at the EDI-120 from the rear view, the P1 connector is installed on the left-hand side location (more common) by the factory. Have a look at which side the power cable comes out in the dimmer rack and determine if the P1 connector needs to be moved to the right-hand side location.

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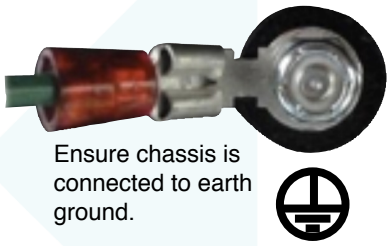
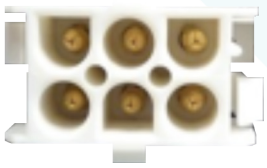
If the connector needs to be moved, follow the following procedure: First, remove the ten (10) #4-40 x 1/4" mounting screws that fasten the lid onto the EDI-120 chassis. Remove the lid and set it aside, along with the screws. Remove the metal cover plate on right-hand side P1 location by unscrewing the two (2) #4-40 x 1/4" mounting screws. Set the cover plate aside, along with the screws. Release the P1 power connector by carefully squeezing the tabs on each side of the connector together and pushing the connector back. Cut and remove the wire-tie securing the cable to the EDI-120 chassis via the bridge lance located on the front-side of the chassis. The P1 connector/cable can now be moved to the right-hand side location. Neatly route the cable and then clip the P1 connector into place. Be sure the P1 connector is fully seated and secure. Use a wire-tie to secure the cable to the chassis – there is a bridge lance located above the power supply on the front-side of the chassis. Reinstall the cover plate over the P1 connector opening on the left-hand side of the chassis. Reinstall the lid.



Ensure chassis is connected to earth ground.

POWER SUPPLY INPUT
120/208VAC, 3P4W, 1.3A, 60Hz
120/240VAC, 1P3W, 1.3A, 60Hz
EXTERNAL DISCONNECT REQUIRED
P1



- A 10' (3m) yellow CAT 5e patch cable is supplied to daisy-chain the DMX-A and DMX-B between multiple EDI-120 retrofit systems, in multi-rack installations and racks containing more than 120 dimmer circuits. If applicable, route the cable into place.
- Everything should now we prepared and ready for final installation of the EDI-120 retrofit.
- Put the EDI-120 retrofit into a position where all the field wiring and OEM wiring can be plugged in.
- Connect (plug in) in the green ground wire onto the EDI-120 chassis connector.
- If applicable, connect (plug in) in the yellow CAT 5e patch cable.
- Connect (plug in) the prepared DMX input and thru connectors.
- Connect (plug in) the prepared input/output contacts connector.
- Connect (plug in) the prepared analog input connector.
- Connect (plug in) the prepared +12VDC power supply connector.
- Connect (plug in) the OEM P1 power connector.
- Connect (plug in) the OEM P3, P4, P5 and P6 ribbon cable connectors.
- All of the field wiring and OEM cables should now be connected (plugged in).
- Be sure all connections are secure and fully seated.
- Slide the EDI-120 retrofit along the guide rails and into place. Be sure not to pinch any of the cables.

  On some earlier versions of EDI Mark VII dimmer racks, the guide rail opening for the EDI-120 retrofit may be much narrower. If this is the case, the guide rails will need to be removed. Once the guide rails are removed, the EDI-120 retrofit will need to held in place and secured using the mounting screws provided.
- Secure the EDI-120 retrofit using the four (4) #10-32 x 3/8" mounting screws provided.

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Turn on and test the new EDI-120 Retrofit System

- Connect (turn on) the power supply to the EDI Mark VII dimmer rack.
- Verify the operation of the system status LED indicators, LCD display and programming switches.
- Refer to the programming section of this manual for system configuration.
- Test the system thoroughly to ensure all wiring terminations are functioning.
- Verify all of the dimmer control outputs have the correct phase referencing. If a dimmer control output is patched to the incorrect phase reference, the dimmer will not dim correctly and will go to full output at around 1% DMX input. The factory configuration for EDI-120 retrofit systems is for 3-phase applications, with the dimmer phase reference patch set at AABBCCAABBCC... For true single-phase applications with the phases 180° out of phase from each other, set the default (DEFAULT) menu phase patch to phase patch 2 (ØPATCH2). The phase patch (Ø-PATCH) menu must be used to configure non-standard applications or for single-phase applications with the phases 120° out of phase from each other.
- Verify the fan blower is operating properly. The fan blower should turn on with between 6-7% DMX or analog control - when DMX or analog control drops below 6-7%, there is a 5 minute timeout on the fan blower blower to ensure the dimmers have been cooled sufficiently.

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OEM Connector Pinouts

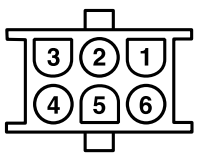
OEM P3, P4, P5 and P6 Dimmer (PWM) Control Cable Pinout

P3 Connector		P4 Connector		P5 Connector		P6 Connector	
PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION	PIN	FUNCTION
1	Dimmer (PWM) 1	1	Dimmer (PWM) 25	1	Dimmer (PWM) 61	1	Dimmer (PWM) 85
2	Dimmer (PWM) 2	2	Dimmer (PWM) 26	2	Dimmer (PWM) 62	2	Dimmer (PWM) 86
3	Dimmer (PWM) 3	3	Dimmer (PWM) 27	3	Dimmer (PWM) 63	3	Dimmer (PWM) 87
4	Dimmer (PWM) 4	4	Dimmer (PWM) 28	4	Dimmer (PWM) 64	4	Dimmer (PWM) 88
5	Dimmer (PWM) 5	5	Dimmer (PWM) 29	5	Dimmer (PWM) 65	5	Dimmer (PWM) 89
6	Dimmer (PWM) 6	6	Dimmer (PWM) 30	6	Dimmer (PWM) 66	6	Dimmer (PWM) 90
7	Dimmer (PWM) 7	7	Dimmer (PWM) 31	7	Dimmer (PWM) 67	7	Dimmer (PWM) 91
8	Dimmer (PWM) 8	8	Dimmer (PWM) 32	8	Dimmer (PWM) 68	8	Dimmer (PWM) 92
9	Dimmer (PWM) 9	9	Dimmer (PWM) 33	9	Dimmer (PWM) 69	9	Dimmer (PWM) 93
10	Dimmer (PWM) 10	10	Dimmer (PWM) 34	10	Dimmer (PWM) 70	10	Dimmer (PWM) 94
11	Dimmer (PWM) 11	11	Dimmer (PWM) 35	11	Dimmer (PWM) 71	11	Dimmer (PWM) 95
12	Dimmer (PWM) 12	12	Dimmer (PWM) 36	12	Dimmer (PWM) 72	12	Dimmer (PWM) 96
13	Dimmer SSR +12VDC	13	Dimmer SSR +12VDC	13	Dimmer SSR +12VDC	13	Dimmer SSR +12VDC
14	Dimmer Overtemp	14	Dimmer Overtemp	14	Dimmer Overtemp	14	Dimmer Overtemp
15	DC Common	15	DC Common	15	DC Common	15	DC Common
16	DC Common	16	DC Common	16	DC Common	16	DC Common
17	Dimmer (PWM) 13	17	Dimmer (PWM) 37	17	Dimmer (PWM) 73	17	Dimmer (PWM) 97
18	Dimmer (PWM) 14	18	Dimmer (PWM) 38	18	Dimmer (PWM) 74	18	Dimmer (PWM) 98
19	Dimmer (PWM) 15	19	Dimmer (PWM) 39	19	Dimmer (PWM) 75	19	Dimmer (PWM) 99
20	Dimmer (PWM) 16	20	Dimmer (PWM) 40	20	Dimmer (PWM) 76	20	Dimmer (PWM) 100
21	Dimmer (PWM) 17	21	Dimmer (PWM) 41	21	Dimmer (PWM) 77	21	Dimmer (PWM) 101
22	Dimmer (PWM) 18	22	Dimmer (PWM) 42	22	Dimmer (PWM) 78	22	Dimmer (PWM) 102
23	Dimmer (PWM) 19	23	Dimmer (PWM) 43	23	Dimmer (PWM) 79	23	Dimmer (PWM) 103
24	Dimmer (PWM) 20	24	Dimmer (PWM) 44	24	Dimmer (PWM) 80	24	Dimmer (PWM) 104
25	Dimmer (PWM) 21	25	Dimmer (PWM) 45	25	Dimmer (PWM) 81	25	Dimmer (PWM) 105
26	Dimmer (PWM) 22	26	Dimmer (PWM) 46	26	Dimmer (PWM) 82	26	Dimmer (PWM) 106
27	Dimmer (PWM) 23	27	Dimmer (PWM) 47	27	Dimmer (PWM) 83	27	Dimmer (PWM) 107
28	Dimmer (PWM) 24	28	Dimmer (PWM) 48	28	Dimmer (PWM) 84	28	Dimmer (PWM) 108
29	Dimmer SSR +12VDC	29	Dimmer SSR +12VDC	29	Dimmer SSR +12VDC	29	Dimmer SSR +12VDC
30	Dimmer Overtemp	30	Dimmer Overtemp	30	Dimmer Overtemp	30	Dimmer Overtemp
31	DC Common	31	DC Common	31	DC Common	31	DC Common
32	DC Common	32	DC Common	32	DC Common	32	DC Common
33	Dimmer (PWM) 25	33	Dimmer (PWM) 49	33	Dimmer (PWM) 85	33	Dimmer (PWM) 109
34	Dimmer (PWM) 26	34	Dimmer (PWM) 50	34	Dimmer (PWM) 86	34	Dimmer (PWM) 110
35	Dimmer (PWM) 27	35	Dimmer (PWM) 51	35	Dimmer (PWM) 87	35	Dimmer (PWM) 111
36	Dimmer (PWM) 28	36	Dimmer (PWM) 52	36	Dimmer (PWM) 88	36	Dimmer (PWM) 112
37	Dimmer (PWM) 29	37	Dimmer (PWM) 53	37	Dimmer (PWM) 89	37	Dimmer (PWM) 113
38	Dimmer (PWM) 30	38	Dimmer (PWM) 54	38	Dimmer (PWM) 90	38	Dimmer (PWM) 114
39	Dimmer (PWM) 31	39	Dimmer (PWM) 55	39	Dimmer (PWM) 91	39	Dimmer (PWM) 115
40	Dimmer (PWM) 32	40	Dimmer (PWM) 56	40	Dimmer (PWM) 92	40	Dimmer (PWM) 116
41	Dimmer (PWM) 33	41	Dimmer (PWM) 57	41	Dimmer (PWM) 93	41	Dimmer (PWM) 117
42	Dimmer (PWM) 34	42	Dimmer (PWM) 58	42	Dimmer (PWM) 94	42	Dimmer (PWM) 118
43	Dimmer (PWM) 35	43	Dimmer (PWM) 59	43	Dimmer (PWM) 95	43	Dimmer (PWM) 119
44	Dimmer (PWM) 36	44	Dimmer (PWM) 60	44	Dimmer (PWM) 96	44	Dimmer (PWM) 120
45	Dimmer SSR +12VDC	45	Dimmer SSR +12VDC	45	Dimmer SSR +12VDC	45	Dimmer SSR +12VDC
46	Dimmer Overtemp	46	Dimmer Overtemp	46	Dimmer Overtemp	46	Dimmer Overtemp
47	DC Common	47	DC Common	47	DC Common	47	DC Common
48	DC Common	48	DC Common	48	DC Common	48	DC Common
49	No Connection	49	No Connection	49	No Connection	49	No Connection
50	No Connection	50	No Connection	50	No Connection	50	No Connection

OEM P1 Power Connector Pinout

PIN	FUNCTION
1	Phase A
2	Phase B
3	Phase C
4	Neutral
5	Fan Control V+
6	Fan Control V- (Common)

P1 Chassis Connector with male pins



P1 Cable Connector with female pins

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Control Input/Output Connections

DMX-A AND DMX-B INPUT AND THRU DAISY-CHAIN MULTI-RACK INSTALLATIONS

All EDI-120 retrofit control systems come with a variety of control input and output (I/O) capabilities. All I/O connections are terminated on the connectors located at the rear of the EDI-120 chassis.

Breakaway type connectors are provided for all I/O connections.

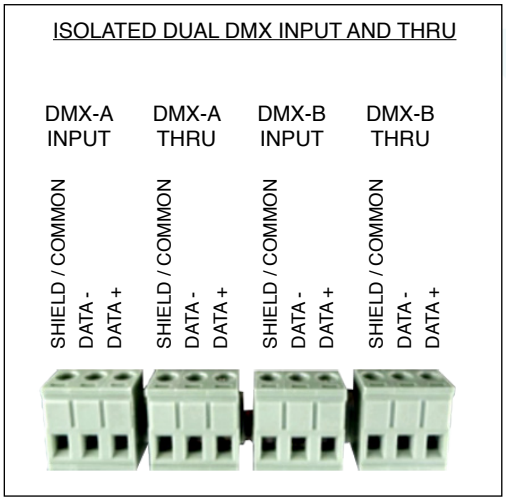
- Use wire size #28 to #12 AWG.
- Strip wire insulation length to 0.28" (7mm).
- Use a 1/8" (3.2mm) flat head screwdriver to tighten connections.
- Torque connections to 3.5 IN-LBS (0.4 NM).

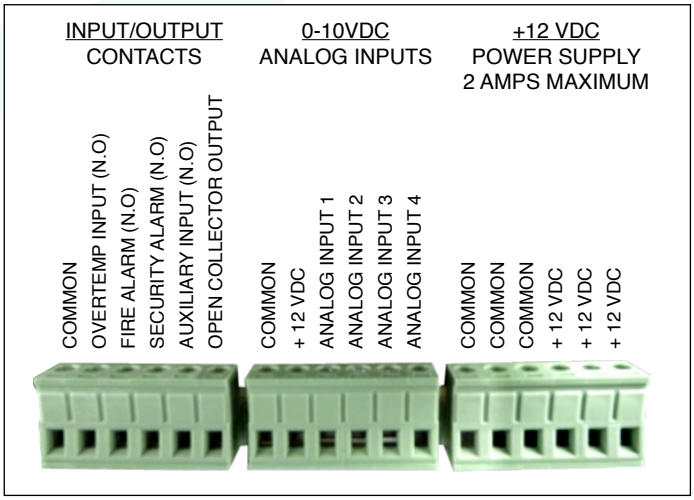
NOTE: For connection use copper wire only, rated for 167°F (75°C) minimum.

Isolated Dual DMX Input and Thru

- DMX-A (SHIELD/COMMON, DATA-, DATA+) input and thru is terminated on the two 3-position breakaway connectors provided.
- DMX-B (SHIELD/COMMON, DATA-, DATA+) input and thru is terminated on the two 3-position breakaway connectors provided.
- For multi-rack EDI-120 installations, a 10' (3m) CAT 5e patch cable is supplied. This cable is used to daisy-chain the DMX-A and DMX-B between systems. The CAT 5e patch cable plugs into the RJ45 connectors located at the rear of the EDI-120 chassis.
- Complies with USITT DMX512-A (ANSI E1.11 - 2008), standard protocol for digital data control.
- Recommended cable is Belden 9829, 9842, Cat 5 or equivalent (low-capacitance, twisted pair).
- Wiring must follow a daisy-chain topology.
- Maximum of 32 receiving devices on a single DMX line.
- Maximum cable length is 1,500 feet (455 meters).
- For more information, Google DMX, or visit: http://old.usitt.org/DMX512FAQ.aspx

NOTE: Ensure only the last (end-of-line) DMX receiving device is terminated! Refer to menu items "DMXA TRM" and "DMXB TRM" on page 21 for further details.





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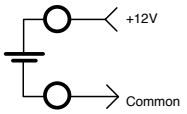
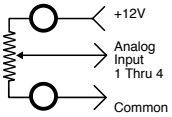
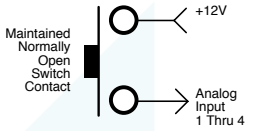


+12VDC Power Supply Output

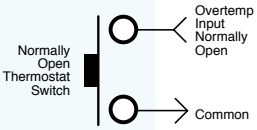
- A regulated +12VDC power supply is available for powering external devices.
- Terminate on +12VDC and COMMON on the 6-position breakaway connector provided.
- External devices should not exceed the maximum combined current draw of 2 Amps.





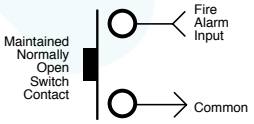
0-10VDC Analog Inputs or Load Shed Contact Inputs

- Four (4) analog inputs terminate on the 6-position breakaway connector provided.
- Inputs can be configured for normal or load shed mode of operation.
- Inputs can be patched to any combination of dimmer control outputs.
- Programmed in the "ANA MODE" and "ANA PAT" menus. See page 24 and 25 for details.



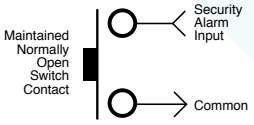
Over-Temperature Input (Normally Open)

- OVERTEMP INPUT (N.O.) is terminated on the 6-position breakaway connector provided.
- Disables all dimmer outputs when the thermostat contact/switch is closed.
- Controlled via a maintained contact/switch to low-voltage common (COMMON).



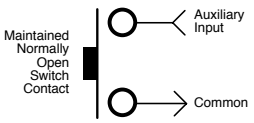
Fire Alarm Input (Normally Open)

- FIRE ALARM (N.O.) is terminated on the 6-position breakaway connector provided.
- Triggers selected channels to turn on when contact/switch is closed.
- Controlled via a maintained contact/switch to low-voltage common (COM).
- Programmed in the "F-ALARM" menu. See page 27 for details.



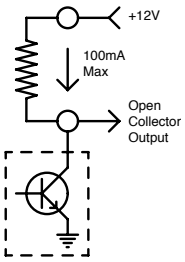
Security Alarm Input (Normally Open)

- SECURITY ALARM (N.O.) is terminated on the 6-position breakaway connector provided.
- Triggers selected channels to cycle on and off at a 1 Hertz rate when contact/switch is closed.
- Controlled via a maintained contact/switch to low-voltage common (COM).
- Programmed in the "S-ALARM" menu. See page 27 for details.



Auxiliary Input (Normally Open)

- AUXIALIARY INPUT (N.O.) is terminated on the 6-position breakaway connector provided.
- Triggers 1 of 12 presets when contact/switch is closed.
- Controlled via a maintained contact/switch to low-voltage common (COM).
- Programmed in the "AUX IN" menu. See page 26 for details.



Open Collector Output

- OPEN COLLECTOR OUTPUT is terminated on the 6-position breakaway connector provided.
- Sink up to 100mA.
- Trigger Solid State Relays (SSR) or other external devices.
- Controlled via DMX and/or Analog Input 4.
- Programmed in the "OC MODE" menu. See page 26 for details.

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EEPROM Memory Module

EEPROM Memory Module

All EDI-120 retrofit control systems come equipped with a removable EEPROM memory module located at the rear of the EDI-120 chassis. The EEPROM memory module inserts into the on-board connector located at the rear of the EDI-120 chassis. The EEPROM memory module is primarily used to backup important configuration settings, and may be removed for safe storage.

If a firmware update is required, Johnson Systems Inc. may supply an EEPROM memory module with the latest firmware version. The firmware EEPROM memory module can be inserted into connector, and the firmware can be loaded into the microcontroller.

Refer to menu items “EEPROM”, “FW-LOAD”, “RESTORE” and “BACKUP” on page 29 to 31 for further details.

NOTE: Be sure to “BACKUP” the EDI-120 when installation configuration is complete.

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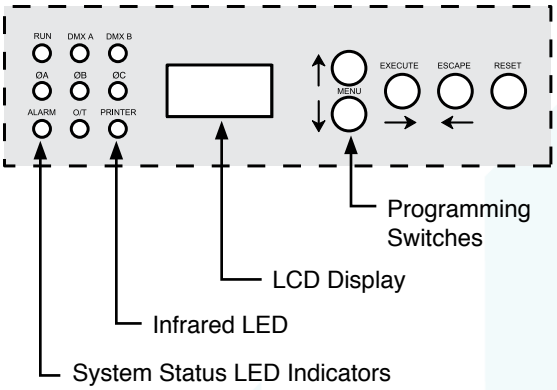

User Interface

EDI-120 retrofit control systems are equipped with a user interface. The user interface provides access to all programming and configuration settings. System status is easily visible on the LCD display and LED indicators. An infrared LED allows for printout of all system configuration settings when used with a hand held infrared printer (Johnson System Inc., Part Number: JS-IP).

All of the programming is accomplished using four (4) switches. Within a few minutes most users will find the menu structure very intuitive and easy to navigate. All configuration settings are automatically stored in the on-board EEPROM.

LCD Display

The LCD display is capable of displaying 2 lines of 8 Characters. A backlight automatically comes on when activity is sensed on the switches. The LCD contrast can be easily adjusted for optimum viewing. Refer to menu item “LCD VIEW” on page 32 for further details.

Programming Switches

The MENU UP/DOWN (▲▼) switches are used for navigating through the various system configuration menu items. They also allow for programming of other specific parameters within a selected menu. Pressing and holding either switch will speed up the scroll rate, which can be helpful to speed up the configuration time.

The EXECUTE (→) switch is normally used to select/enter a menu item, advance forward within a selected menu item, or toggle between parameters within a selected menu item.

The ESCAPE (←) switch is normally used to back up within a selected menu item one step at a time or exit the menu completely.

NOTE: The programming switches can be locked out to prevent inadvertent configuration changes. To toggle between “LOCKED!!” and “UNLOCKED” press and hold down the EXECUTE and then ESCAPE switches at the same time for 4-5 seconds.

The RESET switch has two purposes. First, it allows for quick exit from a menu item after a programming change and automatically puts the system into normal run mode. Second, it provides a soft reboot for the systems microcontroller.

NOTE: A detailed procedure for programming all system configuration menu items can be found on page 18 to 32.

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System Status • LED Indicators

RUN (Green)

Illuminates when the power is on and the microcontroller status is in normal run mode. The LED flashes once every 2 seconds when the system is in STANDBY mode.

ØA, ØB and ØC (Green)

Illuminates when the line voltage power is within the acceptable range of 100-130 VAC for each phase and the zero-cross reference circuitry is functioning properly. The LED will flash slowly (once per second) when an under-voltage state of less than 100 VAC is sensed and will flash quickly (twice per second) when an over-voltage of greater than 130 VAC is sensed.

DMX A and DMX B (Yellow)

Illuminates when valid DMX is received on each of the inputs. Flashes when invalid DMX is received.

ALARM

Illuminates and flashes twice per second when either a fire or security alarm is sensed on each of the inputs.

O/T

Illuminates and flashes twice per second when the microcontroller senses an internal over-temperature condition, or when an external over-temperature is sensed via the over-temperature input, or when an external dimmer over-temperature is sensed.

System Status • LCD Display

When DMX is being received, the top line of the LCD display shows the active DMX MODE ("PTY A", "PTY B", "MERGE", "DMX A+B", "2 ROOM" or "PATCH"). When DMX is not being received, the top line of the LCD display shows "EDI-120", unless the system is in standby mode, then "STANDBY!" is displayed.

The bottom line of the LCD Display shows the current status of the system unless the system configuration menu items are being accessed. Below are descriptions for each status indication.

NO RX!

Displayed when DMX is not being received on either input and the system is not in scene mode.

AXXXBXXX

Displayed when valid DMX is being received on one or both inputs and both inputs are not terminated. "A" and "B" represent the DMX A and DMX B inputs while "XXX" represents the number of channels being received in each packet of data. For example, if the system is receiving 512 channels on DMX B and DMX A is disconnected, the display will show "A000B512".

$\overset{T}{M}$XXX $\overset{T}{M}$XXX

Same as above except the "A" and "B" is replaced with "$\overset{T}{M}$" to indicate if one or both of the DMX inputs are terminated. For example, if the system is receiving 48 channels on DMX A and 512 channels on DMX B, with only DMX A terminated, the display will show "$\overset{T}{M}$048B512". Refer to menu items "DMXA TRM" and "DMXB TRM" on page 21 for further details.

SH XX:YY

Displayed when DMX is disconnected and the systems predetermined DMX status hold (SH) time is counting down. "XX" represents minutes while "YY" represents seconds. Refer to menu item "SH TIME" on page 23 for further details.

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INF HOLD

Displayed when DMX is disconnected and the systems predetermined DMX status hold (SH) time is set for infinite (INF) hold. Refer to menu item "SH TIME" on page 23 for further details.

SCENE:XX

Displays the scene (1 to 12) that is currently activated. The colon in front of the scene number flashed twice per second during fading. Refer to menu item "SCENEMOD" on page 26 for further details.

A-SCENE!

Displayed when the auxiliary input is triggered.
Refer to menu item "AUX IN" on page 26 for further details.

FIRE!!!

Displayed when the fire alarm input is triggered.
Refer to menu item "F-ALARM" on page 27 for further details.

SECURITY

Displayed when the security alarm input is triggered.
Refer to menu item "S-ALARM" on page 27 for further details.

DIM-TEMP

Displayed when an external dimmer over-temperature is sensed via a dimmer module. All dimmer outputs are disabled until the dimmer module temperature drops to within specification.

EXT-TEMP

Displayed when an external over-temperature is sensed via the over-temperature input.
All dimmer outputs are disabled and the fans are turned on to full until the external devices temperature drops to within specification. See "Over-Temperature Input" information on page 12 for further details.

CTL-TEMP

Displayed when the microcontroller senses an internal over-temperature condition of 185°F (85°C) or more. All dimmer outputs are disabled and the fans are turned on to full until the temperature cools down to 178°F (81°C) or less. See menu item "CTL TEMP" to view the current microcontroller temperature.

Ø ERROR!

Displayed when an error is sensed on any of the input power phases. A phase error can be caused from an under-voltage of less than 100VAC, an over-voltage of greater than 130VAC, or if a zero-cross phase reference is not detected.

RTC ERR!

Displayed when the system detects a runtime counter (RTC) error. This occurs when there is an invalid hard-key code and the runtime counter is greater than 2160 hours (90 days). Refer to menu item "HARD-KEY" on page 28 for further details.

LOCKED!!

Displayed when an attempt is made to access the system configuration menu items and the programming switches are locked out. To toggle between "LOCKED!!" and "UNLOCKED" press and hold down the "EXECUTE" and then "ESCAPE" switches at the same time for 4-5 seconds.

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Quick Programming Reference to System Configuration Menu Items

1. **SCENESET**	Enable and setup 12 different backup scenes.
2. **FADETIME**	Set the fade time for each of the 12 scenes from 0 to 99 seconds.
3. **SNAPSHOT**	Record DMX levels into the backup scenes.
4. **DIM TEST**	Test the dimmer outputs one at a time, or all at once.
5. **MONITOR**	View the control level to each dimmer output.
6. **ADDRESS**	Set the DMX start address.
7. **DMX MODE**	Configure the mode of the on-board DMX protocol manager.
8. **2 RM SET**	Set the two room assignment for each of the dimmer outputs.
9. **DMXA TRM**	Enable or disable termination on the DMX A input.
10. **DMXB TRM**	Enable or disable termination on the DMX B input.
11. **DMX O/P**	Configure the on-board DMX protocol manager for offset or patch mode.
12. **DMXA PAT**	Patch the 120 dimmer (PWM) outputs to any DMX A input channel.
13. **DMXB PAT**	Patch the 120 dimmer (PWM) outputs to any DMX B input channel.
14. **SH TIME**	Set the DMX status hold time from 0 to 99 minutes or infinite.
15. **DC PATCH**	Configure the dimmer to channel patch for the dimmer rack.
16. **DIM CURV**	Configure the dimmer curve for each output.
17. **VOUT LIM**	Set the maximum RMS output voltage for each dimmer.
18. **REGULATE**	Enable or disable the dimmer output voltage regulation.
19. **ANA MODE**	Configure the analog inputs for normal or load shed mode.
20. **ANA PAT**	Patch the analog inputs to any combination of control channels.
21. **ANA TEST**	View the control level for each of the analog inputs.
22. **ANA FLTR**	Apply a noise filter on the analog inputs of up to 1 Volt.
23. **ANA BLOC**	Enable or disable the analog inputs when DMX is being received.
24. **STANDBY**	Enable or disable the power savings standby mode.
25. **TEST INC**	Set the test increment units to percent or hexadecimal.
26. **OC MODE**	Configure the input trigger parameters for the open collector output.
27. **AUX IN**	Select which scene the auxiliary input will trigger/enable.
28. **SCENEMOD**	Enable or disable scene mode and the auxiliary input.
29. **S-ALARM**	Select the level and control channels triggered by the security alarm input.
30. **F-ALARM**	Select the level and control channels triggered by the fire alarm input.
31. **Ø-PATCH**	Set the zero-cross phase reference for each dimmer control output circuit.
32. **WARMING**	Turn the “lamp warming” feature on or off.
33. **LINE V**	View the RMS line voltage for each power phase.
34. **LINE F**	View the line frequency of phase A.
35. **CTL TEMP**	View the temperature of the microcontroller.
36. **RTIME**	View the total run time of the microcontroller.
37. **HARD-KEY**	View the microcontroller’s unique six-character hard-key code.
38. **SERIAL#**	View the microcontroller’s unique six-character silicone serial number.
39. **VERSION**	View the microcontroller’s firmware version.
40. **EEPROM**	View the type of EEPROM memory module plugged in.
41. **FW-LOAD**	Load new firmware into the EDI-120 via the EEPROM memory module.
42. **RESTORE**	Restore parameters saved in the EEPROM memory module.
43. **BACKUP**	Backup parameters and save them in the EEPROM memory module.
44. **PRINTOUT**	Print various system configuration settings using a hand held infrared printer.
45. **DEFAULTS**	Set various system configuration settings to the factory default.
46. **LCD VIEW**	Adjust the contrast of the LCD Display for optimum viewing.

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Detailed Programming of System Configuration Menu Items

NOTE: The programming switches can be locked out to prevent inadvertent configuration changes. To toggle between "LOCKED!!" and "UNLOCKED" press and hold down the EXECUTE and then ESCAPE switches at the same time for 4-5 seconds.

The sequence of the following system configuration menu items appear as the MENU DOWN (▼) switch is pressed. Pressing the MENU UP (▲) switch will sequence the system configuration menu items in the opposite order. Pressing and holding either of the MENU UP/ DOWN (▲▼) switches will speed up the scroll rate, which can be helpful to speed up the configuration time.

1. SCENESET *Enable and setup 12 different backup scenes.*

When scene mode is activated the selected scene will be held with no timeout until the menu is exited. The 120 control channel levels are configured within the menu and can be modified on the fly. Scene mode is useful when an external controller is not available and independent internal control is required.

Press EXECUTE to enter the menu and activate scene mode.

SCENE>01	Displays the scene (01) to be activated.
SCENE>12	Press MENU (▲▼) to select a different scene from 01 to12.
CTRL: ON	Control (CTRL) is ON via the selected scene.
CTRL:DMX	Control (CTRL) is via DMX and takes priority over scene mode.
CTRL:HLD	Control (CTRL) is via DMX status hold (HLD) and takes priority over scene mode.
SCENE>12	Press EXECUTE to activate the selected scene.
SCENE:12	The colon (:) flashes twice per second while fading to the selected scene.
SCENE:12	The colon (:) stops flashing when fade is complete and the selected scene is active.
SCENE>12	Press MENU (▲▼) to select a different scene from 01 to 12.
SCENE 12	Press EXECUTE to modify the selected scene.
C001 L00	The second line on the LCD indicates the control channel (C) and level (L).
C120 L00	Press MENU (▲▼) to select the control channel (C) to modify from 01 to 120.
C120 L00	Press EXECUTE to toggle from channel (C) to level (L) selection.
C120 L00	Press ESCAPE to toggle from level (L) to channel (C) selection.
C120 L00	The cursor (_) position indicates channel (C) or level (L) selection.
C120 LFL	Press MENU (▲▼) to select the level (L) for the channel from 00% to 100% (FL).
CLEAR???	Press EXECUTE to clear the selected preset, and set all channels to 00 level.
SURE ???	Press EXECUTE if you are sure to clear the selected preset.
DONE !!!	Indicates the selected preset has been cleared.
WAIT...	Press ESCAPE to exit and the menu and save programmed scene levels.

Press ESCAPE to back-up within the menu, or exit/deactivate scene mode.

Press RESET to exit scene mode without saving programmed scene levels.

NOTE: When scene mode is activated: DMX and DMX status hold (SH TIME) automatically takes precedence over scene mode. The analog input levels are merged (HTP) with the scene levels. If the analog inputs are configured for load shed mode the inputs will take precedence over the active scene. The security alarm (S-ALARM) input is merged (HTP) with the scene levels while the fire alarm (F-ALARM) input automatically takes precedence. Scene mode (SCENEMOD) and the auxiliary input (AUX IN) are temporarily enabled. Scene mode will only activate dimmers assigned to room "A".

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2. FADETIME *Set the fade time for each of the 12 scenes from 0 to 99 seconds.*

The factory default is 5 seconds for all 12 presets.
Press EXECUTE to enter the menu.

S>01T 05	Displays the scene (S>01) and assigned fade time (T 05).
S>12T 05	Press MENU (▲▼) to select a different scene from 01 to 12.
S 12T>05	Press EXECUTE to toggle between scene (S>) and fade time (T>) selection.
S 12T>99	Press MENU (▲▼) to select a different fade time from 00 to 99 seconds.

Press ESCAPE to exit the menu and save the selected fade time.
Press RESET to exit the menu without saving.
The menu will automatically timeout after 5 minutes of inactivity and save.

3. SNAPSHOT *Record DMX levels into the backup scenes.*

Provides a quick and easy way to save control channel levels into each of the 01 to 12 backup scenes using a DMX source.
Press EXECUTE to enter the menu and activate snapshot mode.

SAVE >01	Displays the scene to save from 01 to 12.
SAVE >12	Press MENU (▲▼) to select a scene from 01 to 12.
SAVE >12	Press EXECUTE to save the DMX levels in the selected scene.
SURE ???	Press EXECUTE if you are sure the DMX levels are set as intended.
DONE !!!	DMX levels have now been saved in the selected scene.
NO RX!	DMX is not being received on either input, so a snapshot is not possible.

Press ESCAPE to back-up within the menu, or exit/deactivate snapshot mode.
Press RESET to exit/deactivate snapshot mode.e menu, or exit/deactivate snapshot mode.
Press RESET to exit/deactivate snapshot mode.

4. DIM TEST *Test the dimmer outputs one at a time, or all at once.*

A technician's best friend! Used for troubleshooting the dimmer outputs and field wiring to the load.
Press EXECUTE to enter the menu and activate dimmer test mode.

D001 L00	Displays the active dimmer (D) and the test level (L).
D120 L00	Press MENU (▲▼) to select the dimmer (D) to test from 001 to 120.
DALL L00	Press MENU (▲▼) to select and test all (ALL) the dimmers at once.
D001 L00	Press EXECUTE to toggle between dimmer (D) and level (L) selection.
D001 L00	The cursor (_) position indicates dimmer (D) or level (L) selection.
D001 LFL	Press MENU (▲▼) to select the desired test level from 00% to 100% (FL).
D001 LFL	Press ESCAPE to toggle the test level between full-on (FL) and off (00).
D001 LFL	Press EXECUTE to toggle the cursor (_) and select another dimmer to test.

Press ESCAPE or RESET to exit the menu.
The menu will automatically timeout after 5 minutes of inactivity.

5. MONITOR *View the control level to each dimmer output.*

The dimmer control level is displayed as a 9-bit value from 000 to 512. This menu does not timeout automatically and will continue to monitor indefinitely.
Press EXECUTE to enter the menu and activate monitor mode.

D001L000	Press MENU (▲▼) to select the dimmer (D) output to monitor from 001 to 120.
D120L512	Display shows dimmer 120 has full-on (512) control.

Press ESCAPE or RESET to exit the menu.

NOTE: The control level value will not reach 512 when voltage output limiting is activated, or when regulation is enabled and the line voltage is greater than 118 VAC.

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6. ADDRESS *Set the DMX start address.*

The DMX start address can be assigned from 001 to 512 and is common to both DMX inputs.

When DMX MODE is set for DMX A+B operation, each of the DMX inputs can be assigned to a separate DMX start address. The DMX inputs are merged and DMX-B is offset by the number of DMX-A channels.

Press EXECUTE to enter the menu.

DMXA>001	Displays the current DMX start address for the DMX A input.
DMXA>512	Press MENU (▲▼) to modify and select the desired DMX start address.
DMXA>001	Press MENU (▼) and MENU (▲) at the same time to toggle back to 001.
DMXB>001	*Press EXECUTE to advance to select the DMX-B start address.
DMXB>512	*Press MENU (▲▼) to modify and select the desired DMX start address.
#CHA=001	*Press EXECUTE to advance to select the number of DMX-A channels.
#CHA=120	*Press MENU (▲▼) to modify the number of DMX-A channels from 01 to 120.

Press ESCAPE to exit the menu and save the selected DMX start address.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

NOTE: * DMX MODE must be set for DMX A+B operation to access this feature.

NOTE: DMX O/P must be set to OFFSET mode for this menu to function.

7. DMX MODE *Configure the mode of the on-board DMX protocol manager.*

There are five different mode settings for the DMX protocol manager.

Priority A (PTY A) and Priority B (PTY B) modes are intended for the implementation of a backup DMX source. Priority A (PTY A) sets the DMX A input as the priority, and ignores the DMX B input when the DMX A input is active. Priority B (PTY B) sets the DMX B input as the priority, and ignores the DMX A input when the DMX B input is active.

Merge (MERGE) mode combines both DMX inputs with highest-takes-precedence (HTP) operation. Merge mode allows for simultaneous DMX control of the dimmers from both inputs, and is the default for the system.

Dual Universe DMX (DMX A+B) mode provides a method to combine two universes of DMX within one system. It permits two independent DMX sources to be active on the DMX inputs, with each having a separate DMX start address. The DMX inputs are merged and DMX-B is offset by the number of DMX-A channels programmed via the ADDRESS menu (see ADDRESS - above for further details). This feature is typically used when a system is at the end of one DMX universe (DMX-A) and the beginning of another (DMX-B).

Two Room (2 ROOM) mode enables the room (A or B) assignment for each of the dimmer outputs via the 2 RM SET menu.

PTY A	Press EXECUTE to toggle into Priority A (PTY A) mode.
PTY B	Press EXECUTE to toggle into Priority B (PTY B) mode.
MERGE	Press EXECUTE to toggle into Merge (MERGE) mode.
DMX A+B	Press EXECUTE to toggle into Dual Universe DMX (DMX A+B) mode.
2 ROOM	Press EXECUTE to toggle into Two Room (2 ROOM) mode.

Press ESCAPE or RESET to exit the menu.

Any change in the configuration is automatically saved.

NOTE: DMX O/P must be set to OFFSET mode for this menu to function.

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8. 2 RM SET

Set the two room assignment for each of the dimmer outputs.

This menu is used to assign each of the 120 dimmer outputs to room "A" or room "B". Dimmer outputs assigned to room "A" are controlled via the DMX-A input. Dimmer outputs assigned to room "B" are controlled via the DMX-B input. This creates separation within the dimmer rack and makes a single dimmer rack function as though it is two independent dimmer racks. When used in conjunction with the DC PATCH menu, the dimmer rack can be configured for sequential DMX control of two rooms, even if the dimmer room assignments are not sequential.

DMX MODE must be set for 2 ROOM operation for this menu to function.

Press EXECUTE to enter the menu and activate 2 RM SET mode.

D 001 A — Displays the dimmer (DIM) output (01) and the room assignment (A).

D 120 A — Press MENU (▲▼) to select a different dimmer output from 01 to 120.

D 120 B — Press EXECUTE to toggle the room assignment from A to B.

Press ESCAPE or RESET to exit the menu.

Any change in the configuration is automatically saved.

NOTE: Scene mode (SCENESET) will only activate/control dimmers assigned to room "A".

NOTE: DMX O/P must be set to OFFSET mode for this menu to function.

9. DMXA TRM

Enable or disable termination on the DMX A input.

Activates and deactivates a 120Ω termination resistor. DMX termination is indicated on the LCD display when DMX is being received. When the DMX A input is not terminated (DISABLED) the LCD display will read AXXXBXXX. When the DMX A input is terminated (ENABLED) the LCD display will read $\frac{T}{M}$XXXBXXX.

ENABLED — Press EXECUTE to toggle termination from ENABLED to DISABLED.

DISABLED — Press EXECUTE to toggle termination from DISABLED to ENABLED.

Any change in the configuration is automatically saved.

NOTE: Ensure **only** the last (end-of-line) DMX receiving device is terminated!

10. DMXB TRM

Enable or disable termination on the DMX B input.

Activates and deactivates a 120Ω termination resistor. DMX termination is indicated on the LCD display when DMX is being received. When the DMX B input is not terminated (DISABLED) the LCD display will read AXXXBXXX. When the DMX B input is terminated (ENABLED) the LCD display will read AXXX$\frac{T}{M}$XXX.

ENABLED — Press EXECUTE to toggle termination from ENABLED to DISABLED.

DISABLED — Press EXECUTE to toggle termination from DISABLED to ENABLED.

Any change in the configuration is automatically saved.

NOTE: Ensure **only** the last (end-of-line) DMX receiving device is terminated!

11. DMX O/P

Configure the on-board DMX protocol manager for offset or patch mode..

OFFSET mode is typically used for the majority of systems, and is the factory default. OFFSET mode refers to the DMX start address, with each of the 120 dimmer (PWM) outputs addressed sequentially from the DMX start address.

PATCH mode provides full flexibility for addressing each of the 120 dimmer (PWM) outputs. Each of the 120 dimmer (PWM) outputs can be patched to (controlled from) any DMX input channel from 001 to 512, from either or both of the DMX A and DMX B inputs simultaneously.

With DMX patch mode activated, any configuration within the ADDRESS, DMX MODE, 2 RM SET and DC PATCH menus is ignored, and the DMX patch configured within the DMXA PAT and DMXB PAT menus takes precedence.

When using the system in DMX patch mode, it is strongly recommended to printout the patch using a hand held infrared printer (Johnson System Inc., Part Number: JS-IP).

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Press EXECUTE to enter the menu and configure the DMX mode.

DISABLED — This menu is disabled to help prevent inadvertent changes. Proceed to enable.

ENABLED — Press and hold MENU (▼) and MENU (▲) at the same time for 4-5 seconds.

OFFSET — Press EXECUTE to toggle the DMX mode from OFFSET to PATCH.

PATCH — Press EXECUTE to toggle the DMX mode from PATCH to OFFSET.

Press ESCAPE or RESET to exit the menu.

Any change in the configuration is automatically saved.

12. DMXA PAT *Patch the 120 dimmer (PWM) outputs to any DMX A input channel.*

There are two ways to configure the DMX patch. Each of the 120 dimmer (PWM) outputs can be manually (MANUAL) patched to a DMX input channel, or patched in blocks (BLOCK) of sequential dimmers and DMX channels.

For MANUAL patching, each of the dimmers are patched individually. First, the dimmer (DIM) output is selected, and then any DMX input channel from 001 to 512 is patched to the selected dimmer.

For BLOCK patching, a sequential range of dimmers are patched to a sequential range of DMX channels. First, the first dimmer number (DIM#) in the block is selected, then the DMX A start address (DMXA) for the block is selected, and then finally the number of dimmers (#DIM) in the block is selected. For example, if DIM# is 001, DMX is 001, and #DIM is 120, then all of the dimmer outputs, 001 thru 120 are addressed sequentially to DMX channels 001 thru 120. For a more complex example, if DIM# is 061, DMX is 321, and #DIM is 030, then dimmer outputs 061 thru 091 are addressed sequentially to DMX channels 321 thru 351.

Using a combination of MANUAL and BLOCK patching methods can speed up configuration. Typically, a BLOCK of dimmers is first patched and then edited using the MANUAL patch.

The DMX patch should be cleared (CLEAR) before configuring the patch. Clearing the patch ensures all previously configured patch data is cleared (erased).

When DMXA PAT is utilized in conjunction with DMXB PAT, each of the 120 dimmer (PWM) outputs can be patched to (controlled from) any DMX input channel from 001 to 512, from either or both of the DMX A and DMX B inputs simultaneously.

If a dimmer is patched to both DMX A and DMX B input channels, the DMX levels are merged and highest-takes-precedence (HTP).

Press EXECUTE to enter the menu and configure the DMX A patch.

Press MENU (▲▼) to scroll through and select the patching method.

MANUAL? — Press EXECUTE to patch each of the dimmers manually (MANUAL).

DIM DMXA — The top line shows the dimmer (DIM) and (DMXA) address headings.

001<999? — The second line shows the dimmer (DIM) and (DMXA) address values.

120<999? — Press MENU (▲▼) to select the dimmer (DIM) from 001 to 120 to patch.

001<999? — Press MENU (▼) and MENU (▲) at the same time to toggle back to 001.

001 999? — Press EXECUTE to advance and select the DMXA address for the dimmer.

001 999? — DMXA is initialized at 999 to indicate the dimmer is not patched.

001 999? — ? indicates the DMXA address (513 to 999) is invalid and is not patched.

001 999? — The cursor (_) position indicates the DMXA digit to be edited.

001 999? — Press EXECUTE to move the cursor to the right, under the digit to be edited.

001 999? — Press ESCAPE to move the cursor to the left or to exit the menu.

001 512 — Press MENU (▲▼) to select the DMXA address from 001 to 512.

001 999? — Press MENU (▼) and MENU (▲) at the same time to toggle back to 999.

Repeat until all required dimmers are manually patched.

BLOCK? — Press EXECUTE to patch the dimmers in a sequential block (BLOCK).

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DIM#:001	Press EXECUTE to select the first dimmer number (DIM#) in the block.
DIM#:120	Press MENU (▲▼) to edit the dimmer number (DIM#) from 001 to 120.
DIM#:001	Press MENU (▼) and MENU (▲) at the same time to toggle back to 001.
DMXA:001	Press EXECUTE to select the DMX A (DMXA) start address for the block.
DMXA:512	Press MENU (▲▼) to edit the DMX A (DMXA) start address from 001 to 512.
DMXA:001	Press MENU (▼) and MENU (▲) at the same time to toggle back to 001.
#DIM:001	Press EXECUTE to select the number of dimmers (#DIM) in the block.
#DIM:120	Press MENU (▲▼) to edit the number of dimmers (#DIM) from 001 to 120.
#DIM:001	Press MENU (▼) and MENU (▲) at the same time to toggle back to 001.
PROCEED?	Press EXECUTE to proceed.
SURE ???	Press EXECUTE if you are sure.
DONE !!!	Indicates the sequential block patch has been completed.
	Repeat until all required blocks of sequential dimmers have been patched.
CLEAR?	Press EXECUTE to clear the entire patch.
SURE ???	Press EXECUTE to proceed if you are sure.
DONE !!!	Indicates the entire patch has been cleared.
	Press ESCAPE to exit the menu and save the selected patch.

NOTE: Be sure to BACKUP any configuration changes!

NOTE: With DMX patch mode activated, any configuration within the ADDRESS, DMX MODE, 2 RM SET and DC PATCH menus is ignored, and the DMX patch configured within this menu takes precedence.

13. DMXB PAT

Patch the 120 dimmer (PWM) outputs to any DMX B input channel.

Refer to the DMXA PAT menu for further information.

The DMXA PAT menu is used to patch dimmers to DMX A input channels, while the DMXB PAT menu is used to patch dimmers to DMX B input channels.

14. SH TIME

Set the DMX status hold time from 0 to 99 minutes or infinite.

When DMX is disconnected the system will hold the status of the last received DMX levels for the selected amount of time. When activated, the LCD display shows a countdown of the status hold time or infinite hold.

Press EXECUTE to enter the menu.

HTIME 00	Displays the current DMX status hold time (HTIME) setting.
HTIME 99	Press MENU (▲▼) to set the desired hold time from 00 to 99 minutes.
HTIME XX	Press MENU (▲▼) to set the desired hold time to infinite (XX).
HTIME 00	Press MENU (▼) and MENU (▲) at the same time to toggle back to 00.
	Press ESCAPE to exit the menu and save the desired DMX status hold time.
	Press RESET to exit the menu without saving.
	The menu will automatically timeout after 5 minutes of inactivity and save.

15. DC PATCH

Configure the dimmer to channel patch for the dimmer rack.

Each of the 120 dimmer (PWM) outputs can be assigned and patched to any of the 120 control channels. Multiple dimmer outputs may be patched to a single control channel. The dimmer to channel patch is used by other menu features to provide transparent control of the dimmer output circuits. EDI-120 systems are typically patched for 1 to 1 operation but may be altered for custom applications.

D001C001	Displays the dimmer (D) output (001) and its current control channel (C) patch (001).
D120C120	Press MENU (▲▼) to select the desired dimmer output from 001 to 120.
D120C120	Press EXECUTE to toggle between dimmer (D) and channel (C) selection.
D120C120	The cursor (_) position indicates dimmer (D) or channel (C) selection.
D120C001	Press MENU (▲▼) to select the desired control channel from 001 to 120.
D120C001	Press EXECUTE to toggle the cursor (_) and select another dimmer output to patch.
	Press ESCAPE to exit the menu and save the desired dimmer channel patch.
	Press RESET to exit the menu without saving.
	The menu will automatically timeout after 5 minutes of inactivity and save.

NOTE: DMX O/P must be set to OFFSET mode for this menu to function.

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16. DIM CURV *Configure the dimmer curve for each output.*

There are four different dimmer curve profiles that can be assigned to each individual dimmer output circuit. Square Law (SQ) curve is the industry standard and the default for all dimmers. Linear (LN) curve modifies the dimmer output for a linear relationship to the control input level. Direct Drive (DD) curve is not modified - meaning the control input level is directly proportional to the control output level. Non-Dim (ND) curve assigns the dimmer circuit to operate in a full-on or off state only, with no dimming. Dimmers set for non-dim will be triggered full-on at 55% control input and will be triggered off again at 45% control input.

Press EXECUTE to enter the menu.

D 001 SQ — Displays the dimmer (D) output (001) and its current dimmer curve.

D 120 SQ — Press MENU (▲▼) to select the desired dimmer number from 001 to 120.

D 120 LN — Press EXECUTE to toggle to linear (LN) curve mode.

D 120 DD — Press EXECUTE to toggle to direct drive (DD) mode.

D 120 ND — Press EXECUTE to toggle to non-dim (ND) mode.

Press ESCAPE to exit the menu and save the desired dimmer curves.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

17. VOUT LIM *Set the maximum RMS output voltage for each dimmer.*

Limiting the maximum RMS voltage can greatly improve lamp life.

Press EXECUTE to enter the menu.

001<127.5 — Displays the dimmer (001) and its current maximum output voltage level (127.5).

120<127.5 — Press MENU (▲▼) to select the desired dimmer number from 001 to 120.

120>127.5 — Press EXECUTE to toggle the pointer (< >) to select the output voltage level.

120>100.0 — Press MENU (▲▼) to adjust the output voltage level in 0.5 Volt increments.

120<100.0 — Press EXECUTE to toggle the pointer (< >) to select another dimmer number.

Press ESCAPE to exit the menu and save the desired dimmer curves.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

18. REGULATE *Enable or disable the dimmer output voltage regulation.*

With the on-board output voltage regulation feature enabled, the maximum RMS output is limited to 118 Volts. Voltage regulation automatically adjusts the internal control level to compensate for any line voltage fluctuations.

ENABLED — Press EXECUTE to toggle regulation from ENABLED to DISABLED.

DISABLED — Press EXECUTE to toggle regulation from DISABLED to ENABLED.

Any change in the configuration is automatically saved.

19. ANA MODE *Configure the analog inputs for normal or load shed mode.*

Each of the four (4) analog inputs can be independently configured for normal (NORM) or load shed (SHED) mode of operation.

Normal (NORM) mode sets the analog input for 0-10VDC operation. The analog voltage level sensed sets the level for the selected dimmer outputs.

Load shed (SHED) mode is used as a power management interface to building management systems (BMS). Contact closure devices such as a photocell or maintained switch contact may be used to trigger the analog input. When a voltage of 5.5VDC to 12VDC is sensed on the analog input the selected dimmer outputs are disabled (set to zero output level). The selected dimmer outputs are enabled when the voltage sensed on the analog input drops to below 4.5VDC.

Press EXECUTE to enter the menu and set the mode for each analog input.

A01<NORM — Displays the active analog input (A01) and current mode setting (NORM).

A04<NORM — Press MENU (▲▼) to select the desired analog input to configure.

A04<SHED — Press EXECUTE to toggle from normal (NORM) to load shed (SHED) mode.

Press ESCAPE to exit the menu and save the desired analog input modes.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

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20. ANA PAT *Patch the analog inputs to any combination of control channels.*

Press EXECUTE to enter the menu and activate analog patch mode.

A01C001 Displays the active analog (A) input and control channel (C).

A04C001 Press MENU (▲▼) to select the desired analog input to patch from 01 to 04.

A04C001 Press EXECUTE to toggle from analog (A) to channel (C) selection.

A04C001 The cursor (_) position indicates analog (A) or channel (C) selection.

A04C120 Press MENU (▲▼) to select the desired control channel from 001 to 120.

A04C120* Press EXECUTE to patch and flag (*) the control channel to the analog input.

A04C120* Press ESCAPE to toggle the cursor (_) and select another analog input.

Press ESCAPE to exit the menu and save the desired analog patches.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

21. ANA TEST *View the control level for each of the analog inputs.*

The analog voltage level for the 4 analog inputs can be tested and viewed as a percentage or hexadecimal value. The level displayed is proportional to the 0-10VDC analog input where 5VDC is 50%.

Press EXECUTE to enter the menu and activate analog test mode.

AI>01=00 Displays the active analog input (AI>01) and the level (00).

AI>04=00 Press MENU (▲▼) to select the desired analog input to test from 01 to 04.

AI>04=FL Displays the analog input level from 00% to 100% (FL).

Press ESCAPE or RESET to exit the menu.

22. ANA FLTR *Apply a noise filter on the analog inputs of up to 1 Volt.*

High frequency noise can sometimes be induced into the analog input lines. The analog filter is set in 1% increments where each percent (%) represents 0.1 Volts for a maximum filter level of 1 Volt, or 10%. For example, when the analog filter level is set at 5% (LEV:05%) all analog input levels at or below 0.5 Volts is ignored or filtered out.

LEV:00% Displays the filter level (00%) in percent.

LEV:00%< Press EXECUTE to enter the menu and adjust the analog filter level.

LEV:10%< Press MENU (▲▼) to select the desired filter level.

Press ESCAPE to exit the menu and save the desired analog filter level.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

23. ANA BLOC *Enable or disable the analog inputs when DMX is being received.*

When analog blocking (ANA BLOC) is enabled the analog inputs will be ignored when DMX is online. When analog blocking is disabled the analog inputs will be merged/ combined with the DMX inputs and functions in a highest-takes-precedence (HTP) mode of operation.

ENABLED Press EXECUTE to toggle analog blocking from ENABLED to DISABLED.

DISABLED Press EXECUTE to toggle analog blocking from DISABLED to ENABLED.

Any change in the configuration is automatically saved.

24. STANDBY *Enable or disable the power savings standby mode.*

When standby mode is enabled the microcontroller goes to sleep within 5 seconds of inactivity on the control inputs. The microcontroller wakes up again when a programming switch is pressed or when control is sensed on the control inputs. Note that there is a delay of 150 milliseconds for the microcontroller to wake up and restart normal run mode.

ENABLED Press EXECUTE to toggle standby mode from ENABLED to DISABLED.

DISABLED Press EXECUTE to toggle standby mode from DISABLED to ENABLED.

Any change in the configuration is automatically saved.

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25. TEST INC *Set the test increment units to percent or hexadecimal.*

The levels for the dimmer test (DIM TEST) and analog test (ANA TEST) features can be displayed as a percentage or hexadecimal value.

PERCENT — Press EXECUTE to toggle test increments from PERCENT to HEX VAL.

HEX VAL — Press EXECUTE to toggle test increments from HEX VAL to PERCENT.

Any change in the configuration is automatically saved.

26. OC MODE *Configure the input trigger parameters for the open collector output.*

The on-board open collector output is used to sink up to 100mA of current. It can be configured to be triggered via a selected DMX channel, analog input 4, or both. The open collector is triggered on at 55% control input and triggered off again at 45% control input. When analog and DMX (A+D) is selected to trigger the open collector the inputs are combine for highest takes precedence (HTP).

Press EXECUTE to enter the menu and configure the open collector output.

A+D< 001 — Displays the active trigger mode as analog and DMX (A+D<) channel (001).

A+D> 001 — Press EXECUTE to toggle the pointer (>) and select the DMX channel.

A+D> 512 — Press MENU (▲▼) to change and select the DMX channel from 001 to 512.

A+D< 512 — Press EXECUTE to toggle the pointer (<) and select a different trigger mode.

DMX< 512 — Press MENU (▲▼) to select DMX input trigger mode.

ANA< — Press MENU (▲▼) to select analog (ANA) input trigger mode.

OFF< — Press MENU (▲▼) to deactivate (OFF) the open collector output.

Press ESCAPE to exit the menu and save the desired settings.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

27. AUX IN *Select which scene the auxiliary input will trigger/enable.*

When a contact is sensed on the auxiliary input the selected scene will be triggered and held until the contact is removed. The auxiliary input only functions when scene mode (SCENESET) is activated or when the systems scene mode (SCENEMOD) is enabled and active.

SCENE:01 — Displays the scene (01) that will be triggered by the auxiliary input.

SCENE>01 — Press EXECUTE to enter the menu and select a different scene.

SCENE>12 — Press MENU (▲▼) to change the selected scene from 01 to 12.

Press ESCAPE to exit the menu and save the desired scene to be triggered.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

28. SCENEMOD *Enable or disable scene mode and the auxiliary input.*

Enabling scene mode puts the system in scene mode. With scene mode enabled the selected scene will always be activated when DMX is not being received. The selected scene can be changed in the SCENESET menu. Scene mode enables the use of the auxiliary input. A contact closure sensed on the over-temperature, fire alarm or security alarm inputs automatically takes precedence over scene mode.

ENABLED — Press EXECUTE to toggle scene mode from ENABLED to DISABLED.

DISABLED — Press EXECUTE to toggle scene mode from DISABLED to ENABLED.

Any change in the configuration is automatically saved.

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29. S-ALARM *Select the level and control channels triggered by the security alarm input.*

When a contact is sensed on the security alarm input, the selected control channels will cycle on and off at a 1 hertz rate (one cycle per second). The level of the on cycle can be set from 0% to 100%. The security alarm input takes precedence over the DMX and analog inputs. The system will stay in security alarm mode until the contact is removed. The factory default is all control channels at full-on.

Press EXECUTE to enter the menu and configure the security alarm input.

LFLC001* Displays the output level (L) of 100% (FL) and control channel (001*).
L00C001* Press MENU (▲▼) to change the output level from 00% to 100% (FL).
LFLC001* Press MENU (▲▼) at the same time to toggle the level back to 100% (FL).
LFLC001* Press EXECUTE to toggle from level (L) to channel (C) selection.
LFLC001* The cursor (_) position indicates level (L) or channel (C) selection.
LFLC120* Press MENU (▲▼) to select the desired control channel from 001 to 120.
LFLC120 Press EXECUTE to toggle the patch flag (*) for each desired control channel.
LFLC120* The patch flag (*) indicates the channel will be triggered by the security alarm.
LFLC120* Press ESCAPE to toggle the cursor (_) back to level (L) selection.

Press ESCAPE to exit the menu and save the desired settings.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

30. F-ALARM *Select the level and control channels triggered by the fire alarm input.*

When a contact is sensed on the fire alarm input, the selected control channels are triggered on to the selected output level from 0% to 100%. The fire alarm input is merged with the DMX and analog inputs with highest takes precedence (HTP). The system will stay in fire alarm mode until the contact is removed. The factory default is all control channels at full-on.

Press EXECUTE to enter the menu and configure the fire alarm input.

LFLC001* Displays the output level (L) of 100% (FL) and control channel (001*).
L00C001* Press MENU (▲▼) to change the output level from 00% to 100% (FL).
LFLC001* Press MENU (▲▼) at the same time to toggle the level back to 100% (FL).
LFLC001* Press EXECUTE to toggle from level (L) to channel (C) selection.
LFLC001* The cursor (_) position indicates level (L) or channel (C) selection.
LFLC120* Press MENU (▲▼) to select the desired control channel from 001 to 120.
LFLC120 Press EXECUTE to toggle the patch flag (*) for each desired control channel.
LFLC120* The patch flag (*) indicates the channel will be triggered by the fire alarm.
LFLC120* Press ESCAPE to toggle the cursor (_) back to level (L) selection.

Press ESCAPE to exit the menu and save the desired settings.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

31. Ø-PATCH *Set the zero-cross phase reference for each dimmer control output circuit.*

EDI Mark VII dimmer racks are typically powered by 3-phase, with the dimmer phase reference configured for AABBCC (dimmers 1 and 2 are powered by phase A, dimmers 3 and 4 are powered by phase B, dimmers 5 and 6 are powered by phase C, etc). The defaults (DEFAULTS) menu is normally used to configure the phase patch for standard applications. This menu provides custom phase patching for non-standard applications.

If a dimmer control output is patched to the incorrect phase reference, the dimmer will not dim correctly and will go to full output at around 1% DMX input.

Press EXECUTE to enter the menu and configure the dimmer phase patch.

C 001 ØA Displays the dimmer channel (C) output (001) and the patched phase (ØA).
C 120 ØC Press MENU (▲▼) to change the dimmer channel to patch from 001 to 120.
C 120 ØA Press EXECUTE to toggle the patch to Phase A (ØA).

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C 120 ØB	Press EXECUTE to toggle the patch to Phase B (ØB).
C 120 ØC	Press EXECUTE to toggle the patch to Phase C (ØC).
	Press ESCAPE to exit the menu and save the desired settings.
	Press RESET to exit the menu without saving.
	The menu will automatically timeout after 5 minutes of inactivity and save.

32. WARMING *Turn the "lamp warming" feature on or off.*

The unique "lamp warming" feature is activated by a control level above 0% and lowers the in-rush current to the dimmer (cold lamp filament) by up to 70%. This results in significantly increased lamp filament life and lower long-term operating costs.

WARMING is set to ON by factory default, but may be turned OFF for some installation applications. With WARMING set to ON, a maximum delay of 245 milliseconds is introduced to "warm" the lamp when it is turned on. For fast chase effects the delay may be undesirable, in which case, the "lamp warming" feature can be turned off. Note that when standby mode is enabled the microcontroller goes to sleep within 5 seconds of inactivity on the control inputs, and there is delay of 150 milliseconds for the microcontroller to wake up and restart normal run mode. To ensure virtually instant dimmer control response, set STANDBY to DISABLED and WARMING to OFF.

Press EXECUTE to enter the menu and configure the lamp warming mode.

DISABLED	This menu is disabled to help prevent inadvertent changes. Proceed to enable.
ENABLED	Press and hold MENU (↓) and MENU (↑) at the same time for 4-5 seconds.
ON	Press EXECUTE to toggle the lamp warming mode from ON to OFF.
OFF	Press EXECUTE to toggle the lamp warming mode from OFF to ON.
	Press ESCAPE or RESET to exit the menu.
	Any change in the configuration is automatically saved.

33. LINE V *View the RMS line voltage for each power phase.*

Press EXECUTE to enter the menu and view the line voltage of each phase.

ØA=120.0	Shows the line voltage of Phase A.
ØB=120.0	Press MENU (↕) to view the line voltage of Phase B.
ØC=120.0	Press MENU (↕) to view the line voltage of Phase C.
	Press ESCAPE or RESET to exit the menu.

34. LINE F *View the line frequency of phase A.*

60.0 Hz	Shows the frequency.

35. CTL TEMP *View the temperature of the microcontroller.*

+91°F	Shows the temperature in degrees Fahrenheit.
+33°C	Press EXECUTE to toggle units to degrees Celsius.

36. RTIME *View the total run time of the microcontroller.*

The run time counter keeps track of the total time the microcontroller is powered up. The maximum time is 99999 hours, 59 minutes, 59 seconds, or about 11.4 years. System operation is not effected when the maximum run time is reached and can be reset to zero at the factory.

RTIME SS	Shows the number of seconds (SS) of run time.
HHHHH:MM	Shows the number of hours (HHHHH) and minutes (MM) of run time.

37. HARD-KEY *View the microcontroller's unique six-character hard-key code.*

EDI-120 retrofit control systems may be shipped with an invalid hard-key code of 000000. A valid hard-key must be entered before the run time (RTIME) counter reaches 2160 hours / 90 days. If the run time expires without a valid hard-key the LCD display will show a runtime counter error (RTC ERR!) and all dimmer control outputs will be disabled.

HARD-KEY	A dash (-) between hard and key represents a valid hard-key.
HARD KEY	A blank space between hard and key represents an invalid hard-key.

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K:XXXXXX	Shows the unique six-character hard-key code (XXXXXX).
K:XXXXXX	Follow the procedure below to enter the menu and modify the hard-key.
K:XXXXXX	Press and hold EXECUTE and then ESCAPE at the same time for 4-5 seconds.
K>XXXXXX	A pointer (>) appears to indicate hard-key modification is activated.
K>XXXXXX	Press MENU (▲▼) to modify the first hard-key character.
K:>XXXXX	Press EXECUTE to advance to the second hard-key character.
K:>XXXXX	Press MENU (▲▼) to modify the second hard-key character.
K:X>XXXX	Press EXECUTE to advance to the third hard-key character.
K:X>XXXX	Press MENU (▲▼) to modify the third hard-key character.
K:XX>XXX	Press EXECUTE to advance to the fourth hard-key character.
K:XX>XXX	Press MENU (▲▼) to modify the fourth hard-key character.
K:XXX>XX	Press EXECUTE to advance to the fifth hard-key character.
K:XXX>XX	Press MENU (▲▼) to modify the fifth hard-key character.
K:XXXX>X	Press EXECUTE to advance to the sixth hard-key character.
K:XXXX>X	Press MENU (▲▼) to modify the sixth hard-key character.
	Press ESCAPE to exit the menu and save the desired hard-key code.
	Press RESET to exit the menu without saving.
	The menu will automatically timeout after 5 minutes of inactivity and save.

NOTE: Be sure to record and file the hard-key code on page 33 for future reference.

38. SERIAL# *View the microcontroller's unique six-character silicone serial number.*

XXXXXX	Shows the unique six-character serial number.

39. VERSION *View the microcontroller's software version.*

VER X.X	Shows the microcontroller's software version.

40. EEPROM *View the type of EEPROM memory module plugged in.*

All EDI-120 retrofit control systems come equipped with a removable EEPROM memory module located at the rear of the EDI-120 chassis. The EEPROM memory module inserts into the on-board connector, and may be removed for safe storage.

The EEPROM type is programmed for parameter (P) or firmware (F) operation. A parameter EEPROM is used to backup all of the current configuration settings. A firmware EEPROM is used to update the current firmware version running on the EDI-120 microcontroller to the firmware version saved on the EEPROM.

The EEPROM memory module supplied with all EDI-120 retrofit control systems is a parameter type with all of the factory default configuration settings saved onto it before shipping.

EDI120-P	Indicates the EEPROM memory module is for an EDI-120 microcontroller.
EDI120-P	Indicates the EEPROM type is programmed for parameter (P) operation.
XXXXXX	Press EXECUTE to display the silicone serial number parameter.
DISABLED	Press EXECUTE and this menu feature is disabled for factory use only.
EDI120-F	Indicates the EEPROM type is programmed for firmware (F) operation.
VER X.X	Press EXECUTE to display the version (VER) of the firmware.
DISABLED	Press EXECUTE and this menu feature is disabled for factory use only.
NONE!	Indicates the EEPROM memory module is not installed.

41. FW-LOAD *Load new firmware into the EDI-120 via the EEPROM memory module.*

If a firmware update is required, Johnson Systems Inc. may supply an EEPROM memory module with the latest firmware version. The firmware EEPROM memory module can be inserted into the on-board connector located at the rear of the EDI-120 chassis, and the firmware can be loaded into the microcontroller.

Press EXECUTE to enter the menu.

DISABLED	This menu is disabled to help prevent inadvertent changes. Proceed to enable.
ENABLED	Press and hold MENU (▼) and MENU (▲) at the same time for 4-5 seconds.

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MEMCHECK	Automatically checks the EEPROM memory module for firmware type.
CRC-TEST	Automatically does a CRC test on the firmware code in the EEPROM.
>>>>>>>>	CRC test in progress.
VER X.X	Displays the firmware version on the EEPROM memory module.
UPDATE??	Press EXECUTE to proceed.
SURE ???	Press EXECUTE to proceed.
UPDATING	Firmware update in progress.
WILL	Firmware update in progress.
AUTO	Firmware update in progress.
RESTART	Firmware update in progress.
PLEASE	Firmware update in progress.
WAIT....	When firmware update is complete the RUN LED flashes and system restarts.
NO MEM!	Displayed if an EEPROM memory module is not detected.
WRONG	Displayed if the wrong type (parameter) of EEPROM memory module detected.
MEM TYPE	Displayed if the wrong type (parameter) of EEPROM memory module detected.
WRONG	Displayed if the wrong product type of EEPROM memory module detected.
PRODUCT	Displayed if the wrong product type of EEPROM memory module detected.
CRC ERR!	Displayed if the CRC test fails and the EEPROM memory module is defective

WARNING: Do not reset or turn the power off while the firmware is being updated. Doing so will cause unrecoverable loss of firmware data that is being loaded into the EDI-120 microcontroller.

42. RESTORE *Restore parameters saved in the EEPROM memory module.*

All of the configuration setting parameters can be restored from EEPROM memory module if they have been inadvertently changed or corrupted. This feature can also be used to load configuration setting parameters into a different or new control system. This reduces the configuration time for multi-system applications that require similar settings or when a replacement control system is required.

Press EXECUTE to enter the menu.

DISABLED	This menu is disabled to help prevent inadvertent changes. Proceed to enable.
ENABLED	Press and hold MENU (▼) and MENU (▲) at the same time for 4-5 seconds.
MEMCHECK	Automatically checks the EEPROM memory module for parameter type.
OKAY....	The EEPROM memory module has been verified for parameter type.
PROCEED?	Press EXECUTE to proceed.
SURE ???	Press EXECUTE to proceed.
CRC-TEST	Automatically does a CRC test on the parameter code in the EEPROM.
WAIT	CRC test in progress.
VERIFY	CRC test in progress.
DONE!!	CRC test is done and the parameter restore automatically begins.
WILL	Parameter restore in progress.
AUTO	Parameter restore in progress.
RESTART	When parameter restore is complete, the system restarts.
SERIAL #	Displayed when the silicone serial number on the EEPROM memory module is a mismatch with the silicone serial number on the EDI-120 microcontroller.
PROCEED?	Press EXECUTE to proceed.
NO MEM!	Displayed if an EEPROM memory module is not detected.
WRONG	Displayed if the wrong type (parameter) of EEPROM memory module detected.
MEM TYPE	Displayed if the wrong type (parameter) of EEPROM memory module detected.
WRONG	Displayed if the wrong product type of EEPROM memory module detected.
PRODUCT	Displayed if the wrong product type of EEPROM memory module detected.
ERROR	Displayed when an error occurs. Waits for key press to restart RESTORE.

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43. BACKUP *Backup parameters and save them in the EEPROM memory module.*

All of the configuration setting parameters can be saved in the EEPROM memory module for backup. The backup parameters can then be restored if they have been inadvertently changed or corrupted. Once backup is complete the EEPROM memory module may be removed for safe storage. All EDI-120 retrofit control systems are shipped with the factory default settings saved in the EEPROM memory module.

Press EXECUTE to enter the menu.

DISABLED	This menu is disabled to help prevent inadvertent changes. Proceed to enable.
ENABLED	Press and hold MENU (▼) and MENU (▲) at the same time for 4-5 seconds.
MEMCHECK	Automatically checks the EEPROM memory module for parameter type.
SURE ???	Press EXECUTE to proceed.
WAIT	Automatically begins parameter backup and generates CRC value.
VERIFY	Automatically verifies parameter backup data and CRC value.
DONE!!	Parameter backup is done and saved in the EEPROM memory module.
NO MEM!	Displayed if an EEPROM memory module is not detected.
WRONG	Displayed if the wrong type (parameter) of EEPROM memory module detected.
MEM TYPE	Displayed if the wrong type (parameter) of EEPROM memory module detected.
WRONG	Displayed if the wrong product type of EEPROM memory module detected.
PRODUCT	Displayed if the wrong product type of EEPROM memory module detected.
DATA ERR	Displayed when a data error occurs. Waits for key press to restart BACKUP..

NOTE: Be sure to BACKUP the EDI-120 when installation configuration is complete.

44. PRINTOUT *Print various system configuration settings using a hand held infrared printer.*

All EDI-120 retrofit control systems come equipped with an infrared (I/R) LED that provides the ability to printout all the system configuration settings, when used in conjunction with a hand held infrared printer (Johnson System Inc., Part Number: JS-IP). Point the hand held printer I/R LED directly at the EDI-120 retrofit control system PRINTER I/R LED within 3 ft (1m).

Press EXECUTE to enter the menu.

Press MENU (▲▼) to scroll through and select which item(s) to printout.

SYSTEM?	Prints general system information and configuration settings.
ANALOGS?	Prints the channel patch for all 4 analog inputs.
Ø-PATCH?	Prints the phase patch for all 120 dimmer outputs.
CURVES?	Prints the dimmer curves for all 120 dimmer outputs.
F-ALARM?	Prints the configuration settings for the fire alarm input.
S-ALARM?	Prints the configuration settings for the security alarm input.
SCENE?	Prints the level settings for each of the 120 dimmers within the 12 scenes.
SCENE>01	Press EXECUTE to toggle the pointer (>) and select which scene to print.
SCENE>FL	Press MENU (▲▼) to select the desired scene (01 to 12) or all scenes (FL).
V-LIMIT?	Prints the output voltage limit settings for each of the 120 dimmer outputs.
DCPATCH?	Prints the configuration settings for the dimmer to channel patch.
FD-TIME?	Prints the fade time settings for each of the 12 scenes.
2 ROOM?	Prints the two room assignment for each of the 120 dimmer outputs.
DMXAPAT?	Prints the DMX A patch for each of the 120 dimmer outputs.
DMXBPAT?	Prints the DMX B patch for each of the 120 dimmer outputs.
ALL?	Printout all items at once.
PRINTING	Press EXECUTE on any item to begin printing.
	Press ESCAPE or RESET to exit the menu.

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45. DEFAULTS *Set various system configuration settings to the factory default.*

Press EXECUTE to enter the menu.

Press MENU (▲▼) to scroll through and select which item(s) to default.

ØPATCH1?	Sets the dimmer phase patch to AABBCC. This is the default setting.
ØPATCH2?	Sets the dimmer phase patch to AAAAAA.
CURVES?	Sets all 120 dimmer curve profiles to Square Law curve.
ANA-OFF?	Clears the control channel patch for all 4 analog inputs.
V-LIMIT?	Sets the output voltage limit to full (127.5) on all 120 dimmer outputs.
DCPATCH?	Clears the dimmer to channel patch and configures it for 1:1 operation.
FD-TIME?	Sets the fade time at 5 seconds for all 12 scenes.
2 ROOM?	Sets the two room assignment to room "A" on all 120 dimmer outputs.
SURE???	Press EXECUTE to select the item to default. Are you sure?
DONE!!!	Press EXECUTE to set the selected default.

Press ESCAPE or RESET to exit the menu.

46. LCD VIEW *Adjust the contrast of the LCD Display for optimum viewing.*

Press EXECUTE to enter the menu.

ADJUST ▼▲ Press MENU (▲▼) to adjust the contrast.

Press ESCAPE to exit the menu and save the desired LCD view.

Press RESET to exit the menu without saving.

The menu will automatically timeout after 5 minutes of inactivity and save.

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Important Hard-key Information

EDI-120 retrofit control systems may be shipped with an invalid hard-key code of 000000. A valid hard-key must be entered before the run time (RTIME) counter reaches 2,160 hours / 90 days. If the run time expires without a valid hard-key, the LCD display will show a runtime counter error (RTC ERR!) and all dimmer control outputs will be disabled.

Refer to menu item "HARD-KEY" on page 28 of the user manual for detailed instructions on how to enter a valid hard-key code. Be sure to record and file the valid hard-key code for future reference.

JSI Serial Number: ____________________
Silicone Serial Number: ________________
Hard-Key Code: ______________________

JSI Serial Number: ____________________
Silicone Serial Number: ________________
Hard-Key Code: ______________________

JSI Serial Number: ____________________
Silicone Serial Number: ________________
Hard-Key Code: ______________________

JSI Serial Number: ____________________
Silicone Serial Number: ________________
Hard-Key Code: ______________________

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Silicone Serial Number: ________________
Hard-Key Code: ______________________

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Troubleshooting Reference

This manual is accurate at time of printing and subject
to revisions and technical updates as required without prior notice.

Please visit www.johnsonsystems.com for applicable updates.

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User Manual
EDI-120 Series
Control Retrofit for Electronics Diversified Inc. (EDI)
Mark VII Dimmer Racks
Rev. 2

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