

# SCRimmer Road Rack



## User Manual

**Introduction**

This User's Manual is supplied with your Scrimmer II. Copies of this manual may be obtained from Electronics Diversified, Inc., for a nominal charge. It is recommended that you copy those portions of this manual applicable to your present use in the installation, maintenance or repair and preserve the original in a safe place.

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No part of this Manual may be reproduced by any means, graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems, without the express written permission of Electronics Diversified, Inc., except in connection with installation, repair and maintenance of installed Scrimmer Road Racks.

Your SCRimmer Road Rack is designed for professional use in a touring market. This product was developed specifically to satisfy the demand for strong, reliable, user-friendly portable equipment.

However, as the end-user of this product, you may have an idea, or require a feature, which is not integrated into the product. If so, write or call Electronics Diversified. We would like to hear from you.

**Table of Contents**

Introduction ..... 2  
 Description ..... 2  
 Front Panel ..... 2  
 Multi-Link Module ..... 3  
 Back Panel Options ..... 4  
 Side Patch Panel ..... 4  
 Input Power Wiring ..... 5  
 Self Test Operation ..... 5  
 Input Control Connections ..... 5  
     Analog Control ..... 5  
     Multiplex Control ..... 5  
     Dimmer Starting Address ..... 6  
 Calibration ..... 6  
 Maintenance ..... 6  
 Troubleshooting Guide ..... 7  
 Service ..... 7  
 Registration ..... 8

**Description**

The SCRimmer Road Rack is a professional lighting control dimming system. A variety of plug-in solid-state dimmer modules with ratings from 2,400 to 12,000 watts are available. The Road Rack uses the Multi-Link decoder module, which supports a variety of control formats. For additional protection of the controller and decoder module, a DMX Isolator is incorporated into each road rack.

**Cooling:** Due to the heat generated by any dimming system, it is necessary to ensure that ventilation openings are not blocked. Cooling is achieved by drawing outside air in through filters in the left side vent, forcing the filtered air through, and finally, exhausting out the front of the dimming modules. The fans will run whenever one or more dimmer circuits are energized.

**Dimmer:** This dimmer is designed to dim quartz and incandescent lamps. Low-voltage lamps operated through a conventional transformer may also be dimmed.

**Power:** The SCRimmer Road Rack operates on 120/208 VAC, 60 Hz, 3-phase power. Power is supplied via Cam-Lok E1016 series input connectors.



**WARNING:**

Do not connect this Dimmer to other than the specified voltage, or to direct current.


**Road Rack Front Panel**

1. **Circuit Breaker, Main Power:**  
Disconnects power to the Road Rack. Hot pockets remain powered.
2. **Input Power Error Indicator:**  
Indicates a presence of line voltage between earth ground and the neutral conductor.

**IMPORTANT!**

If this indicator is on, disconnect power immediately and check for improper input power wiring. Refer to the TROUBLESHOOTING section.

3. **Control Power Switch:**  
Energizes the Multi-Link decoder module.
4. **Control Power Fuses:**  
Three 3AG 1A, 250V fuses protect the Multi-Link decoder module.



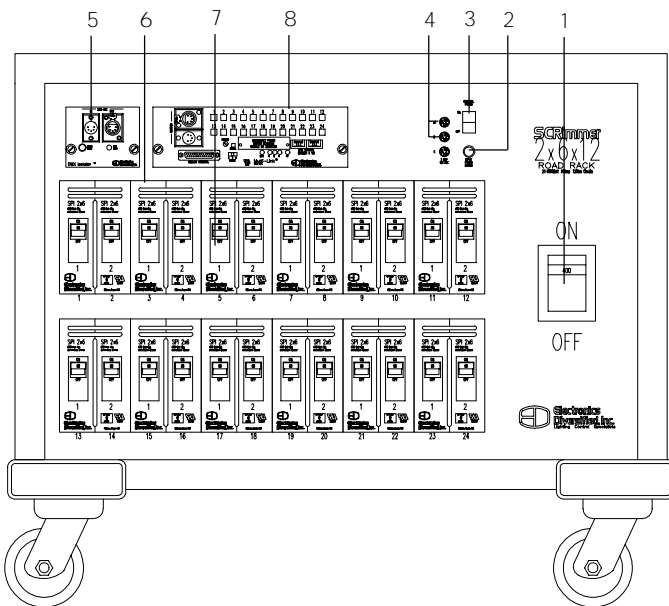
**WARNING:**

Maximum ambient operation and storage environment for this equipment is 104°F (40°C), with 90% humidity, non-condensing. Extreme caution is advised when having liquids, food and cigarettes around any equipment. During severe electrical storms, equipment should be disconnected. Failure to adhere to these requirements may result in malfunction or serious damage.

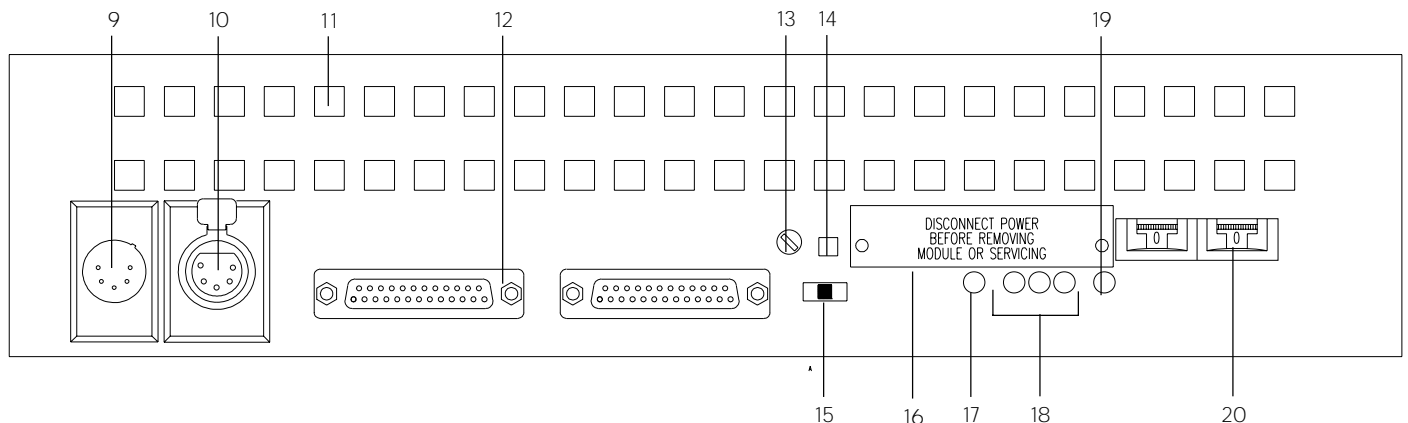
**Road Rack Front Panel (cont'd)**

- 5. DMX Isolator:  
Allows controller to be electrically isolated from dimmer pack when DMX or Colortran multiplex is used . Not for use with AMX or 0-+10 volt control.
- 6. Plug-in Dimmer Modules:  
Contain the power components of each individual dimming circuit.
- 7. Dimmer Circuit Breakers:  
One circuit breaker is provided for each dimming circuit. Turn off the corresponding circuit breaker when replacing lamps or connecting loads.
- 8. Multi-Link Decoder Module:  
Contains electronics to activate dimmer modules and supports a variety of control formats. (See detailed enlargement).

- 9. Multiplex Control Input:  
Accepts signal from control console.
- 10. Multiplex Control Output:  
Paralleled with Multiplex Control Input connector. Allows additional dimming systems to be "daisy-chained" to control.
- 11. Dimmer Output Test Buttons/Status Indicators  
Each yellow indicator will proportionally indicate the output of its respective dimmer. When switch is pressed in, the dimmer will output at 100%, fully illuminating the yellow lamp.
- 12. Analog Control Input:  
Accepts 0 to +10 volt analog control.
- 13. Preheat Level:  
This control is used to set preheat voltage to loads. Turn clockwise to increase preheat voltage.
- 14. Configure Button:  
This push button is used to enter self-test patterns, or different dimmer pack addresses.
- 15. Multiplex Signal Format Switch:  
Selects USITT DMX-512 (D), or AMX-192 (A) input formats.
- 16. Calibration Access Plate:  
Covers calibration adjustments and test points.
- 17. Multiplex Signal Presence Indicator:  
Indicates a valid multiplex signal is being received.
- 18. Power Indicators:  
Green lamps will indicate the presence of voltage on each of the three power input feeds.
- 19. Overtemp Indicator  
Illuminates when one or more dimming modules are in thermal shut-down mode. The dimmer pack will re-energize when it has cooled down to an acceptable temperature.
- 20. Dimmer Pack Number:  
Thumb-wheel switches select starting dimmer pack address.

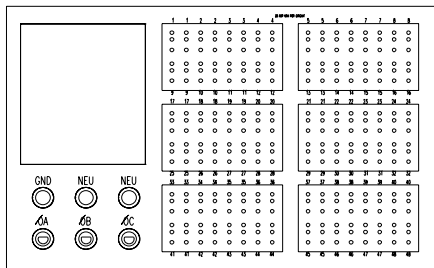


**Enlarged View of Multi-Link Module (#8)**

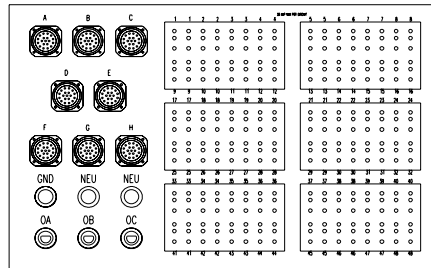


### Road Rack Back Panel Options

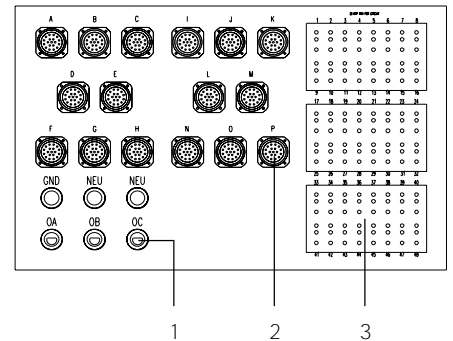
**2 x 2 x 12:**  
96-20A GSP output connectors



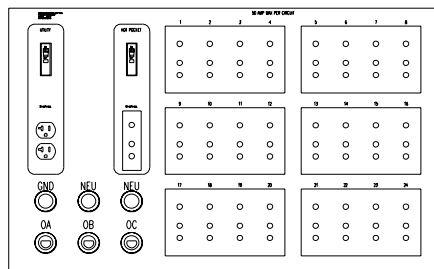
**2 x 2 x 12:**  
96-20A GSP output connectors  
1-Socopex output per circuit



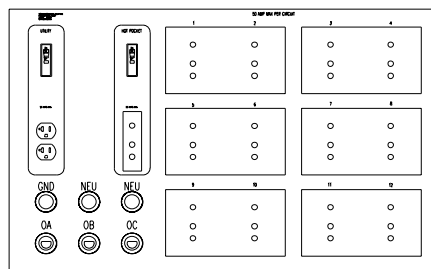
**2 x 2 x 12:**  
48-20A GSP output connectors  
2-Socopex outputs per circuit



**2 x 6 x 12:**  
24-20A GSP output connectors

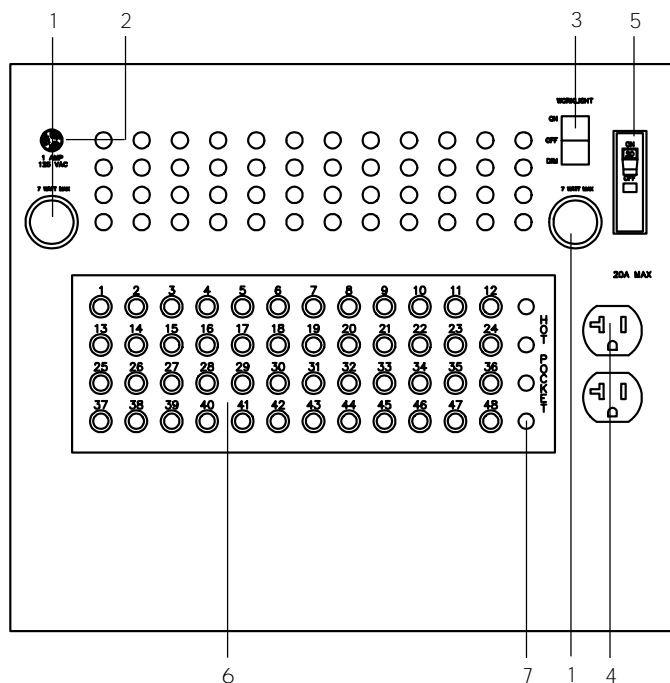


**1 x 12 x 12:**  
12-100A GSP output connectors



1. Power Input Connectors: Cam-Lok; female for A, B, C phases. Male for two neutral and one ground connection.
2. Socopex Output: (Available option for some Models) Connect to loads via male Socopex connectors.
3. Stage Pin (GSP) outputs: Connect to loads via male GSP connectors.

### Side Patch Panel



1. Work Lights: Provide illumination for patch panel.
2. Work Light Fuse: Protects work light circuitry.
3. Work Light Switch: Three-position switch allows work lights to be full on, off, or dimmed to half-intensity.
4. 20A Convenience Receptacles: 20Amp plug-ins for accessories.
5. Circuit Breaker: Protects 20A convenience outlets.
6. Patch Panel: Allows assignment of loads to dimming output circuits, as desired.
7. Hot Pockets: Allow loads to be checked with 120VAC constant circuit.



## Input Power Wiring

### IMPORTANT!

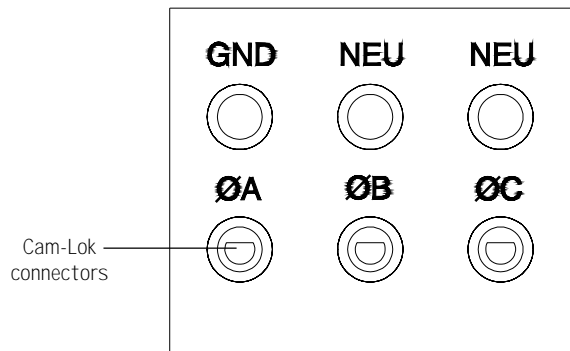
The SCRimmer Road Rack must never be connected to direct current (DC), Delta configuration three-phase power sources, or other than 120/208, 60Hz three-phase, four-wire power with Ground!

It is recommended that the input power wiring be installed by a qualified electrician.

This unit must be connected to a grounded power source. If a grounded power source is not available, contact a qualified electrician.

Before connecting to input power, make sure the power source is OFF. Set all SCRimmer road rack circuit breakers and the control power switch to the OFF position.

Connect the power feed cable via the Cam-Lok connectors by inserting each corresponding connector and twisting one-quarter turn clockwise.



Connect the loads to the GSP (or Socopex) receptacles.

Turn on the power source. Turn on the SCRimmer road rack main power circuit breaker. Verify the POWER ERROR indicator is not lit. If it is, turn off the power source immediately and refer to the TROUBLESHOOTING section.

Turn on the control power switch. The three green power indicator LEDs will be lit, indicating the presence of power.

## Self-Test Operation

Verify the dimmer output test switches are in the OUT position. Set the dimmer pack number thumb-wheel switches to "6 - 0", and press the configure switch. The status indicators (LEDs built into the dimmer output test switches) will display a chase sequence, as will the loads. The second thumb-wheel switch digit, presently at "0" controls the speed of the chase sequence, with "0" being the fastest and "9" being the slowest. After the thumb-wheel switch setting is changed, the configure switch must be again pressed to enter this information.

To disable the decoder module, set the dimmer pack thumb-wheel switches to "00" and press the configure switch.

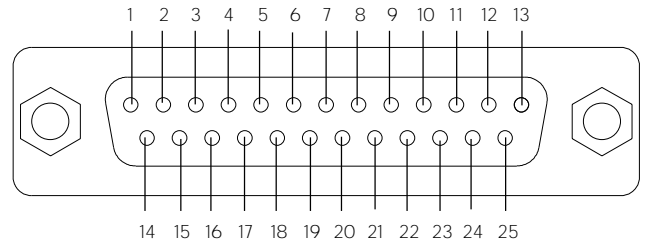
## Input Control Connections

### Analog Control

This dimmer is equipped with a male 25-pin "D" connector for operation from 0 to +10 Volt D.C. analog control voltages.

### Analog Connector 25-pin D type

Female mating connector: Cannon #DB-25S



The pin-out is as follows:

Pin Number	Dimmer Number
1	1 (25)
2	2 (26)
3	3 (27)
4	4 (28)
5	5 (29)
6	6 (30)
7	7 (31)
8	8 (32)
9	9 (33)
10	10 (34)
11	11 (35)
12	12 (36)

Pin Number	Dimmer Number
13	13 (37)
14	14 (38)
15	15 (39)
16	16 (40)
17	17 (41)
18	18 (42)
19	19 (43)
20	20 (44)
21	21 (45)
22	22 (46)
23	23 (47)
24	24 (48)
Control Ground	25

Pin 25 is control common (also called control ground, not to be confused with earth ground or power ground).

A 12-dimmer Road Rack uses pins 1 through 12 for control, and 25 for control common. Pins 13 through 24 are not used.

A 24-dimmer Road Rack uses pins 1 through 24 for control, and 25 for control common.

A 48-dimmer Road Rack uses two 25-pin 'D' connectors. Pins 25 of both connectors are control common. Pins 1 through 24 of the first (left) connector control dimmers 1 through 24. Pins 1 through 24 of the second (right) connector control dimmers 25 through 48. The dimmers shown in parenthesis (above graph) are those controlled by the second (right) 'D' connector.

**When the analog control input is used while a digital protocol is also being received, the highest signal level will take precedence.**

### Multiplex Control

The digital signal input can receive DMX-512, AMX-192, and RS-422. The multiplex control input is a male 5-pin XLR connector, and is the receptacle for all digital signals. If the protection offered by electrical isolation between the dimmer system and controller is desired, the signal from the controller is plugged into the DMX Isolator IN connection, with the OUT connected to the multi-link decoder module input.

*NOTE: The DMX Isolator is for use with DMX-512 multiplex only, and will not work with AMX-192 or 0 to +10 volts analog control.*



To configure the system for a protocol, set the multiplex signal format switch to "D" (DMX-512), or "A" (AMX-192). Press **configure** to enter the new format.

**DMX-512:** As the most popular digital protocol, DMX-512 is transmitted with three conductors: a twisted pair (two conductors), and a control common. The pin-out is as follows:

Pin #	Signal
1	Control common, labeled "GND"
2	- Data, labeled "MUX -"
3	+ Data, labeled, "MUX +"
4	Not used
5	Over-temp (if used) labeled "OT"

**AMX-192:** Also using a "+" and "-", AMX-192 has an analog multiplex signal. The pin-out is as follows:

Pin #	Signal
1	Control common, labeled "GND"
2	- Data, labeled "MUX -"
3	+ Data, labeled "MUX +"
4	Analog multiplex, labeled "AM"
5	Over-temp (if used), labeled "OT"

**RS-422:** Operates on DMX-512. Contact EDI for a set of DMX-512 specifications.

**Dimmer Starting Address**

The dimmer pack thumb-wheel switches select the starting dimmer address. Following dimmers increment in sequence. Starting dimmer addresses are in multiples of twelve, plus one. The following table will determine the starting dimmer address:

**Dimmer Pack Address Table**

Pack Address	Dimmer Number	Pack Address	Dimmer Number
00	NONE	22	253-264
01	1-12	23	265-276
02	13-24	24	277-288
03	25-36	25	289-300
04	37-48	26	301-312
05	49-60	27	313-324
06	61-72	28	325-336
07	73-84	29	337-348
08	85-96	30	349-360
09	97-108	31	361-372
10	109-120	32	373-384
11	121-132	33	385-396
12	133-144	34	397-408
13	145-156	35	409-420
14	157-168	36	421-432
15	169-180	37	433-444
16	181-192	38	445-456
17	193-204	39	457-468
18	205-216	40	469-480
19	217-228	41	481-492
20	229-240	42	493-504
21	241-252		

*EXAMPLES: A 48-dimmer Road Rack with "07" as a starting address would be controlled by channels 73 through 120.*

*A 24-dimmer Road Rack with "16" as a starting address would be controlled by channels 181 through 204.*

*A 12-dimmer Road Rack with "02" as a starting address would be controlled by channels 13 through 24.*

**Calibration**

All EDI products are calibrated and tested at the factory. No further calibration should be required under normal use. If re-calibration is necessary, contact EDI for instructions.

**Maintenance**

Regular maintenance ensures continued uninterrupted operation.

Every 6 months of operation:

Remove all dimmer modules.

- Check tension on each load termination block inside the rack. Re-install modules.
- Clean/Replace air filter.
- Run diagnostics on Multi-Link--confirm all indicators illuminate. Return Multi-Link to desired protocol.
- Check fit and tension on patch pins.
- Power rack and confirm all fans operate.
- Check for loose or chipped output panels. Tighten when necessary.

Remove Top.

- Check tension on each load and neutral wires on output panels. Note position of any loose fittings.
- Check tension on all feed terminals.
- Check tension on fan bolts.
- Visually inspect all wires and harness for strain and wear.
- Clean out any dust or trash.
- Inspect all low-voltage ribbon connections to insure proper termination.
- Re-install top.



**Troubleshooting Guide**

Symptom	Possible Cause	Remedy
System inoperative; green indicators 1, 2, and 3 are Off.	Control power switch is off. Input power source is off.	Turn on control power switch. Check input power source.
System inoperative; green indicator 1 is Off, 2 and 3 are On.	Phase A (Line 1) fuse blown. Phase A (Line 1) power source off.	Replace 3AG 1A fuse. Check input power source.
A dimmer channel is always On and the corresponding output status indicator is On.	Dimmer channel in test mode. Defective module. Defective solid-state relay.	Depress corresponding button to clear test. Swap Module--does problem follow module? Replace the solid-state relay.
A dimmer channel is always On and the corresponding output status indicator is Off.	Defective solid-state relay. Defective module.	Replace the solid-state relay. Swap Module--does problem follow module?
A dimmer channel is always Off and the corresponding output status indicator is Off.	Dimmer module is not plugged in all the way. The solid-state relay control connector is loose, unplugged, or plugged in backwards. Defective solid-state relay.	Make sure dimmer is firmly plugged in. Check control wiring connector to solid state relays. Replace the solid-state relay.
A dimmer channel is always Off, but the corresponding output status indicator operates properly.	Defective lamp fixture plugged into dimmer. Dimmer circuit breaker is off. Dimmer circuit breaker is tripped. Defective module. Defective solid-state relay.	Check the load with a known good fixture. Turn on the circuit breaker. Reset circuit breaker by turning off, then on. Swap module--does problem follow module? Replace the solid-state relay.
All of the lamps "ghost" (glow) when control is disconnected.	Lamp preheat set too high. Dimmer out of calibration.	Rotate the preheat control counter-clockwise. Contact manufacturer.
The multiplex signal indicator flashes, lamps flicker, or dimmers refuse to respond to multiplex signal.	Bad multiplex cable. Multiplex format set to wrong setting.	Check the dimmer pack with a known good cable. Set the format switch to the proper format.
Lamps flash, flicker, or sequence.	Dimmer address set to test mode. Bad multiplex cable. Multiplex format set to wrong setting.	Set the dimmer pack address to a valid number. Check the dimmer pack with a known good cable. Set the format switch to the proper format.
The overtemp lamp is always on, or comes on when a dimmer channel is brought up.	Dimmer module is not plugged in all the way.	Make sure dimmer is firmly plugged in.
The dimmer pack overheats.	The cooling vents are blocked. The dimmer pack is full of dust.  Dimmer is in a very warm location. Defective electronics fan.	Clear any obstructions to the cooling vents. Remove dust and dirt with compressed air or a vacuum cleaner. Relocate the dimmer to a cooler location. Check fan. Replace if required.
Input power error light on.	Faulty or incorrect input power wiring  neutral conductor.	Do not touch the dimmer pack or anything connected to it. Check for voltage between the ground and  power wiring.
Disconnect the power source and check all input		

**Service**

EDI offers a 24 hour Service / Support Network.

For technical questions about this product or operational assistance, ask for Customer Service at: . . . . . 1-800-547-2690

You may communicate by FAX: . . . . . 1-503-629-9877

After Hours Emergency contact: . . . . . 1-503-645-5533

Ask for Emergency Assistance.

Internet: . . . . . www.edionline.com

Internet E-Mail: . . . . . service@edi.com

If your SCR Road Rack needs repair, call 503-645-5533 for a Return Materials Authorization number, and a **shipping address** will be furnished



## Attention SCRimmer Road Rack owners!

Please return this registration card immediately.

Your prompt attention to this matter will ensure your receiving updated technical information for this product as it becomes available. Please complete all information. Look for acknowledgment of your registration within 6-8 weeks.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Facility and/or Company: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

Web site: \_\_\_\_\_

CUT ALONG DOTTED LINE



**Mail to:**  
**EDI User Manual Registration**  
**1675 NW Cornelius Pass Road**  
**Hillsboro, Oregon 97124**

**or FAX to: (503) 629-9877**

Revision 2, July 1998

