



Operator's Manual

System 10000
Power Supply
Model 10901G

MAN-10901G Rev B

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Disclaimer

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This manual describes the System 10000 Power Supply, model numbers:

Model Number	Description	Part Number
10901G-NA	Power Supply	1901-001-001
10901G-EU	Power Supply	1901-001-002
10901G-UK	Power Supply	1901-001-003
10901G-NAB	Power Supply, No Label	1901-002-001
10901G-EUB	Power Supply, No Label	1901-002-002
10901G-UKB	Power Supply, No Label	1901-002-003

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Emcore Corporation
Alhambra, California, 91803, USA

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WARNINGS, CAUTIONS, AND GENERAL NOTES

Safety Considerations

When installing or using this product, observe all safety precautions during handling and operation. Failure to comply with the following general safety precautions and with specific precautions described elsewhere in this manual violates the safety standards of the design, manufacture, and intended use of this product. Emcore Corporation assumes no liability for the customer's failure to comply with these precautions.

CAUTION

Calls attention to a procedure or practice, which if ignored, may result in damage to the system or system component. Do not perform any procedure preceded by a CAUTION until described conditions are fully understood and met.

Electrostatic Sensitivity

ESD = Electrostatic Sensitive Device

Observe electrostatic precautionary procedures.

Semiconductor laser transmitters and receivers provide highly reliable performance when operated in conformity with their intended design. However, a semiconductor laser may be damaged by an electrostatic charge inadvertently imposed by careless handling.

Static electricity can be conducted to the laser chip from the center pin of the RF input connector, and through the DC connector pins. When unpacking and otherwise handling the transmitter, follow ESD precautionary procedures including use of grounded wrist straps, grounded workbench surfaces, and grounded floor mats.

Exposure to electrostatic charge is greatly reduced after the transmitter has been installed in an operational circuit.

If You Need Help

If you need additional help in installing or using the system, need additional copies of this manual, or have questions about system options, please call Emcore Corporation's Sales Department.

Service

Do not attempt to modify or service any part of the system other than in accordance with procedures outlined in this Operator's Manual. If the system does not meet its warranted specifications, or if a problem is encountered that requires service, return the apparently faulty plug-in or assembly to Emcore Corporation for evaluation in accordance with Emcore Corporation's warranty policy.

When returning a plug-in or assembly for service, include the following information: Owner, Model Number, Serial Number, Return Authorization Number (obtained in advance from Emcore Corporation's Customer Service Department), service required and/or a description of the problem encountered.

Warranty and Repair Policy

The Emcore Corporation Quality Plan includes product test and inspection operations to verify the quality and reliability of our products.

Emcore Corporation uses every reasonable precaution to ensure that every device meets published electrical, optical, and mechanical specifications prior to shipment. Customers are asked to advise their incoming inspection, assembly, and test personnel as to the precautions required in handling and testing ESD sensitive opto-electronic components.

These products are covered by the following warranties:

1. General Warranty

Emcore Corporation warrants to the original purchaser all standard products sold by Emcore Corporation to be free of defects in material and workmanship for one (1) year from date of shipment from Emcore Corporation. During the warranty period, Emcore Corporation's obligation, at our option, is limited to repair or replacement of any product that Emcore Corporation proves to be defective. This warranty does not apply to any product, which has been subject to alteration, abuse, improper installation or application, accident, electrical or environmental over-stress, negligence in use, storage, transportation or handling.

2. Specific Product Warranty Instructions

All Emcore Corporation products are manufactured to high quality standards and are warranted against defects in workmanship, materials and construction, and to no further extent. Any claim for repair or replacement of a device found to be defective on incoming inspection by a customer must be made within 30 days of receipt of the shipment, or within 30 days of discovery of a defect within the warranty period.

This warranty is the only warranty made by Emcore Corporation and is in lieu of all other warranties, expressed or implied, except as to title, and can be amended only by a written instrument signed by an officer of Emcore Corporation. Emcore Corporation sales agents or representatives are not authorized to make commitments on warranty returns.

In the event that it is necessary to return any product against the above warranty, the following procedure shall be followed:

- a. Return authorization shall be received from the Emcore Corporation Sales Department prior to returning any device. Advise the Emcore Corporation Sales Department of the model, serial number, and the discrepancy. The device shall then be forwarded to Emcore Corporation, transportation prepaid. Devices returned freight collect or without authorization may not be accepted.
- b. Prior to repair, Emcore Corporation Sales will advise the customer of Emcore Corporation test results and will advise the customer of any charges for repair (usually for customer caused problems or out-of-warranty conditions).

If returned devices meet full specifications and do not require repair, or if non-warranty repairs are not authorized by the customer, the device may be subject to a standard evaluation charge. Customer approval for the repair and any associated costs will be the authority to begin the repair at Emcore Corporation. Customer approval is also necessary for any removal of certain parts, such as connectors, which may be necessary for Emcore Corporation testing or repair.

- c. Repaired products are warranted for the balance of the original warranty period, or at least 90 days from date of shipment.

3. Limitations of Liabilities

Emcore Corporation's liability on any claim of any kind, including negligence, for any loss or damage arising from, connected with, or resulting from the purchase order, contract, or quotation, or from the performance or breach thereof, or from the design, manufacture, sale, delivery, installation, inspection, operation or use of any equipment covered by or furnished under this contract, shall in no case exceed the purchase price of the device which gives rise to the claim.

EXCEPT AS EXPRESSLY PROVIDED HEREIN, EMCORE CORPORATION MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, WITH RESPECT TO ANY GOODS, PARTS AND SERVICES PROVIDED IN CONNECTION WITH THIS AGREEMENT INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. EMCORE CORPORATION SHALL NOT BE LIABLE FOR ANY OTHER DAMAGE INCLUDING, BUT NOT LIMITED TO, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH FURNISHING OF GOODS, PARTS AND SERVICE HEREUNDER, OR THE PERFORMANCE, USE OF, OR INABILITY TO USE THE GOODS, PARTS AND SERVICE.

Emcore Corporation will not be responsible for loss of output or reduced output of opto-electronic devices if the customer performs chip mounting, ribbon bonding, wire bonding, fiber coupling, fiber connectorization, or similar operations. These processes are critical and may damage the device or may affect the device's output or the fiber output.

Emcore Corporation test reports or data indicating mean-time-to-failure, mean-time-between-failure, or other reliability data are design guides and are not intended to imply that individual products or samples of products will achieve the same results. These numbers are to be used as management and engineering tools, and are not necessarily indicative of expected field operation. These numbers assume a mature design, good parts, and no degradation of reliability due to manufacturing procedures and processes.

Emcore Corporation is not liable for normal laser output degradation or fiber coupling efficiency degradation over the life of the device.

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Chapter 1 GENERAL DESCRIPTION

Introduction

This Operator's Manual is intended to aid in the configuration, installation, operation, and maintenance of the System 10000 10901G Power Supply. Included is a general description, theory of operation, information and procedures for performance verification, operation, troubleshooting and maintenance. The information applies to all 10901G models.

System Applications

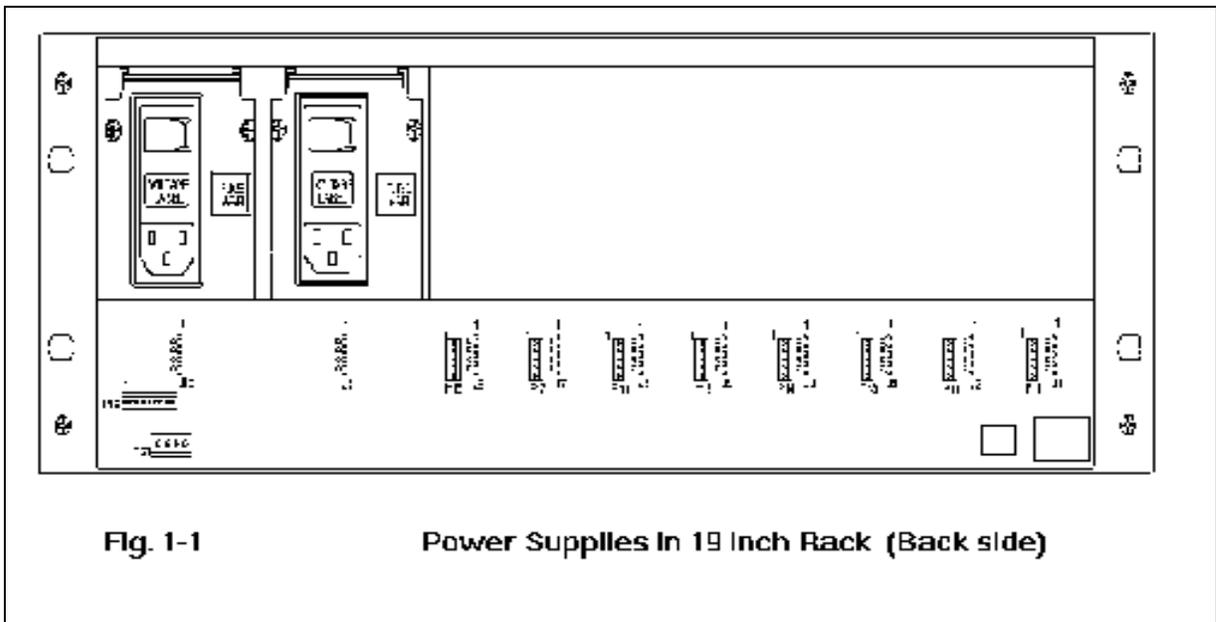
This plug-in power supply for the Emcore Corporation System 10000 supplies 60 Watts total power to drive up to eight 7.5 Watt Emcore Corporation plug-in units.

System Description

The Power Supply is part of a modular, rack-mounted assembly. The assembly fits a standard 19 inch rack. They plug-in at each end and accept standard AC power to produce all DC power required by all other system plug-ins.

The basic Assembly (see block diagram, Figure 1-1) is comprised of the following plug-ins:

- Plug-In Chassis Assembly, which supports and interconnects the various system components.
- Redundant Power Supplies, which provides system DC power automatically and instantaneously is switched into the system if a Power supply fails.



System Specifications

10901G Power supply

Output Voltage	Tol.	Load Max.	Ripple and Noise	Line Regulation	Load Regulation
+5.3V	+0.2V -0.1V	6 A	120 mV p-p	0.4%	2%
+15.2V	+0.2V -0.4V	2 A	150 mV p-p	0.4%	1%
-15.0 Vdc	N/A	0.5 A	150 mV p-p	0.4%	1%

Available Continuous Power	60 W @ 50°C (derates linearly to 70% at 60°C)
Input Voltage	85 to 264 Vac
Input Frequency	47 to 440 Hz
Inrush Current (Cold)	30 A at 100 Vac 60 A at 200 Vac
Operating Temperature	-10 to +60°C
Storage Temperature	-20 to +75°C
Overload Protection	Works over 105% of rated current and recovers automatically.

Mechanical Parameters

Dimensions	3 U x 14 HP x 220 mm (5.25 x 2.4 W x 8.66 D) (1 HP = one horizontal position = 0.2"; 1 U = 1 rack unit = 1.75")
Weight	2.25 ± 0.25 lbs.

Chapter 2 INSTALLATION AND SETUP PROCEDURES

Introduction

This section contains information and procedures for installing the Model 10901G Power Supply, and for preparing it for operation.

Unpacking and Inspecting the System

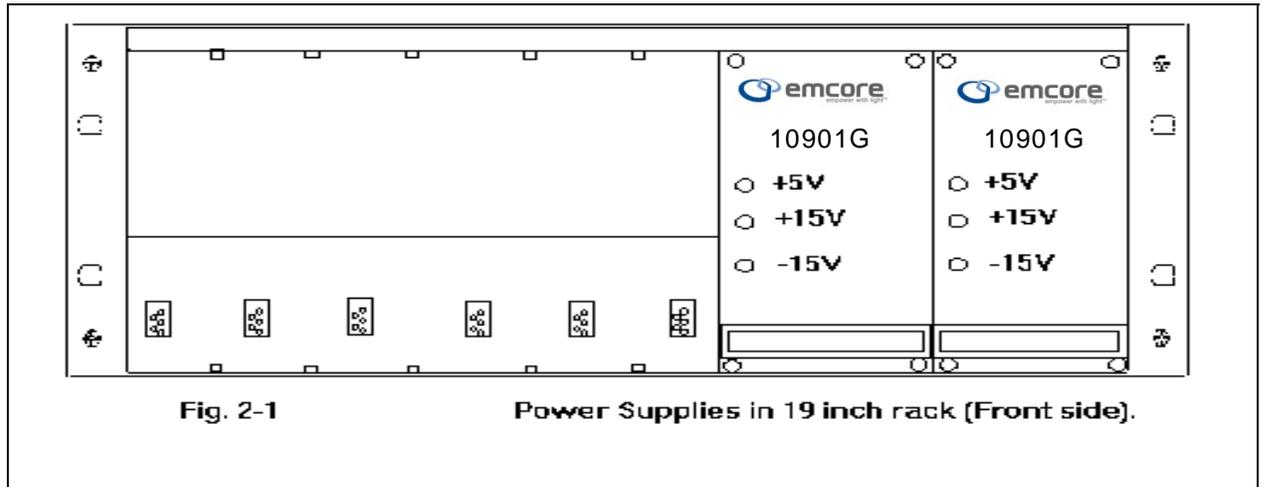
Unpack the system carefully; thoroughly inspecting the equipment to assure that no damage has occurred in shipment. If damage is found, notify the responsible carrier and Emcore Corporation immediately.

Carefully check the contents of the shipment against the shipping list. Notify Emcore Corporation if there is an apparent discrepancy.

Installing System Assemblies

Install each assembly in a standard NEMA 19-inch rack, with the 10901G Power Supplies in the last two slots, (see fig 2-1). Use an approved AC power cord UL listed (supplied with unit) to an AC outlet. Unit will accept both 110 and 230 VAC. Turn switch on and verify LED's to be ON.

This completes setup and installation procedures. The system is now ready for normal operation.



Chapter 3 OPERATION PROCEDURES

Introduction

The system normally operates without operator intervention. Periodic checking of LED voltage indicators will help keep the system running without interruption. During normal operation, it is recommended to check the system every six hours.

LED Indicators

Visually monitor the following LED indicators. All should be on (green) whenever the system is operating.

- +5V
- +15V
- -15V

If any indicator is off, the monitored item has either failed or operating parameters are outside specified limits. Refer to Maintenance and Troubleshooting for maintenance procedures.

CAUTION

If the Laser Temperature indicator is off, disconnect the Transmitter Plug-In immediately to reduce the possibility of further damage to the Transmitter.

Monitors and Alarms

It is the user's responsibility to utilize monitor and alarm outputs provided on the system. Monitoring these outputs, and logging readings periodically, will provide an early warning that maintenance is required to avoid system failure or degradation.

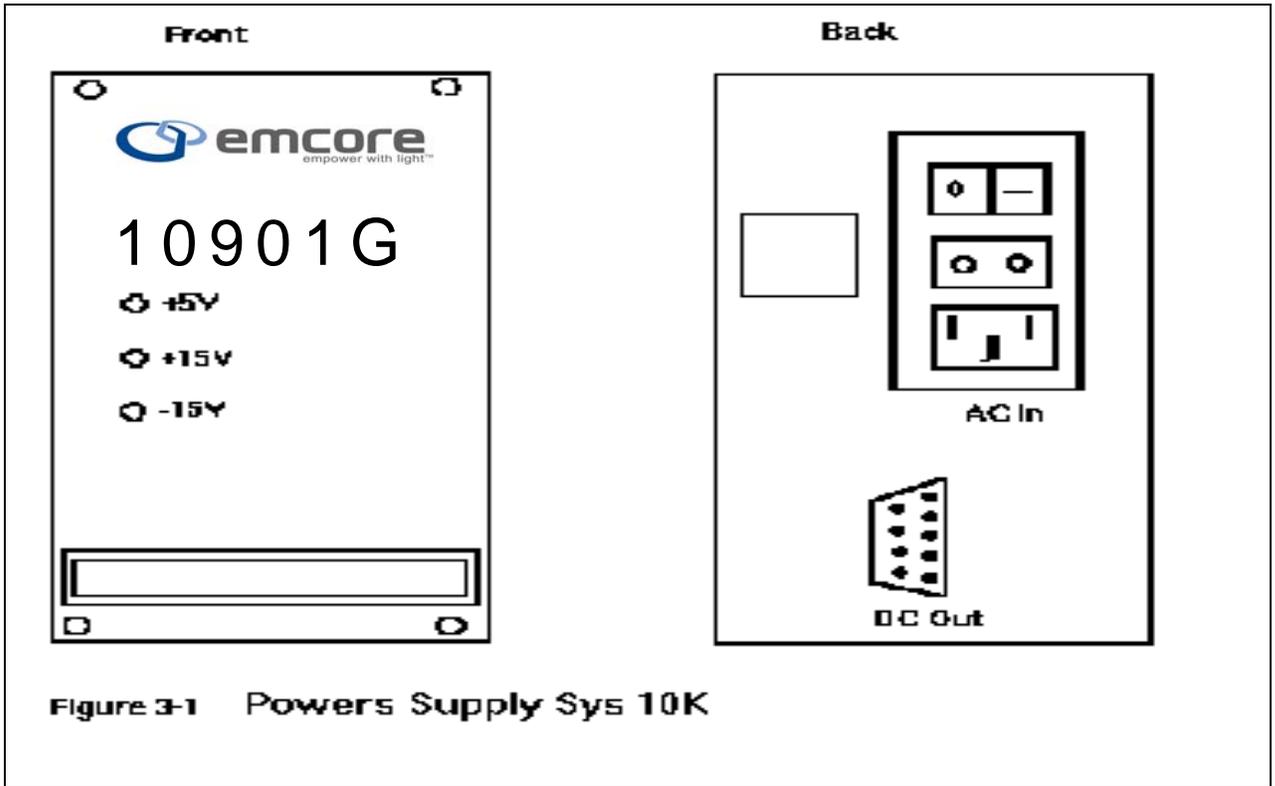


Figure 3-1 Powers Supply Sys 10K

Model 10990A Chassis, Main Power Supply Status Connector (P11 – P18)		
Pin - Chassis	Pin - Connector	Description
1	5	See individual unit manua
2	4	See individual unit manua
3	3	See individual unit manua
4	2	See individual unit manua
5	1	No Connection
Mating Connector		5148-025 (Supplied with 10990A Chassis)
Crimp Pins		5231-001(Not Supplied with 10990A Chassis)

Model 10990A Chassis Power Supply Status Connector (P19)						
Pin Chassis	Pin Connector	Description	PS 1 OFF	PS 1 ON	PS 2. OFF	PS 2. ON
1	8	No connection				
2	7	No connection				
3	6	PS 2. Status (NO)			closed	open
4	5	PS 2 Status (Common)				
5	4	PS 2 (NC)			open	closed
6	3	PS 1 Status (Common)				
7	2	PS 1 Status (NC)	closed	open		
8	1	PS 1 Status (NO)	open	closed		
Mating Connector			5148-004 (Supplied with 10990A Chassis)			
Crimp Pins			5231-001(Not Supplied with 10990A Chassis)			

The voltages from the main power supply may be monitored and used directly with connector P20.

Model 10990A Chassis, Main Power Supply Status Connector (P20)	
Pin	Description
1	+5 V DC
2	+15 V DC
3	-15 V DC
4	GND
Mating Connector	5148-026 (Supplied with 10990A Chassis)
Crimp Pins	5231-004(Not Supplied with 10990A Chassis)

Chapter 4 MAINTENANCE AND TROUBLESHOOTING

Introduction

This section contains information for maintaining and troubleshooting the system.

Routing Maintenance Procedures

The equipment requires no routine maintenance. However, vigilant monitoring of LED indicators, and monitor and alarm outputs, may detect an incipient problem and permit corrective maintenance before a failure occurs.

Troubleshooting Procedures

System failure or degradation is normally indicated by system indicators, monitors and alarms.

Note: Contact Emcore Corporation to return apparently failed plug-ins for repair. Plug-ins must be repaired only by qualified, factory-trained personnel.

Refer to Installation and Setup Procedures for information and procedures for measuring signal levels and performance.