



INTRODUCTION

Thank you for purchasing a Norman Power Supply. Welcome to the Norman family of interchangeable high-quality flash equipment. The utilization of larger high-duty-cycle flash capacitors and related components enables this Power Supply to be utilized for demanding commercial and portrait silver halide and digital applications.

FEATURES

- **D12: 1200 watt-second capacity and D24: 2400 watt-second capacity.** The D12 and D24 is an honest 1200/2400 watt-seconds respectively.
- **1/20-stop repeatability at full power.** Holds this tolerance with line voltages from 105 to 125 volts.
- **2 Independently controlled channels, symmetric or asymmetric operation.**
- **4-lamp head connectors (2 per channel) with individual on/off switches.**
- **Misfire alarm for each lamphead.**
- **Fan Cooled**
- **Digital controls with LED display.** Adjustable in 1/10-stop increments.
- **Audio and visual ready indication (switchable).**
- **Built in photo-eye (switchable).**
- **Modeling light full/ratio/trim modes.**
- **Error condition diagnostic readouts** via internal software, as displayed in the LED arrays.
- **Automatic thermal protection.**
- **Slow recharge selection.**
- **Interchangeable with the entire Series 900 line.** Over 80 lamphead and accessory items support the D12 and D24 digital power supply.
- **Full two year limited warranty,** including parts and labor.
- **Optional built in Pocket Wizard.** D12R and D24R.



Instruction Manual For Models:

**D12 and D24 Digital Power Supply
D12R and D24R Digital Power Supply**

IMPORTANT SAFEGUARDS

In accordance with UL122 specifications for photographic equipment.

When using your photographic equipment, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions.
2. Care must be taken as burns could occur from touching the flashtube or modeling lamp.
3. Do not operate the appliance with a damaged cord or if the appliance has been dropped or damaged, until it has been examined by a qualified service technician.
4. If an extension cord is necessary, a cord with a suitable rating should be used. Cords rated for less amperage than the appliance may overheat. Care should be taken to arrange the cord so it will not be tripped over or pulled.
5. When practical, unplug the appliance from the electric outlet when not in use. Never yank the cord to pull it from the outlet. Grasp the plug and pull to disconnect.
6. To avoid electrical shock hazard, do not disassemble this appliance, but take it to a qualified service technician when service or repair work is required. Incorrect reassembly could cause an electric shock hazard when the appliance is subsequently used.
7. CAUTION – Designed for indoor use only. Do not operate outside in the rain or in inclement weather or in the presence of standing water.
8. The use of an accessory attachment not recommended by the manufacturer may cause a risk of fire, electric shock, or injury to persons.
9. Always connect this appliance to a grounded outlet.
10. Disconnect the unit from its source of supply before replacing the flashtube or modeling lamp.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

UNPACKING

Carefully unpack and remove all parts from the shipping carton(s). Do not discard or destroy any packing materials until all parts of the equipment have been inspected, assembled, and working properly.

Inspect all parts for damage due to shipping. If any damage is found, contact the delivery carrier immediately. Claims should be made to the delivery carrier before destroying shipping carton(s).

Flash Rate

This unit is designed to quickly recharge to full power in about 2.6 seconds. However, continuous rapid flashing of the unit, without resting, may overheat and damage the lampheads and internal components. At maximum power, the recommended continuous cycle rate is 12 seconds between flashes. In addition, up to 4 minutes of rapid firing at a 4 second flash rate is possible. By lowering the power and/or increasing the time between flashes you can extend the duration of rapid flashing. Alternatively, the cycle rate may be increased by lowering the power and/or decreasing the duration of rapid flashing.



CONTROL PANEL / OUTLETS / BASIC OPERATION

1. AC Power Inlet

Connects to the AC power cable. The AC input is 115 volts, 60 Hz. The unit is voltage stabilized to provide 1/20-stop full power repeatability with AC line voltage fluctuations of 20 volts (105-125 volts).

2. Power Switch

Switches the AC power on/off. A memory circuit retains the output settings when the unit is switched back on or when the AC power is interrupted.

3. Modeling Lamp

Depress the pushbutton switch to toggle between the three modeling lamp modes:

FULL - The modeling lamp is at full brightness regardless of the flash power setting.

RATIO - The modeling lamp will automatically ratio (track) with the flash power setting.

OFF - The modeling lamp is off (indicated by both the Full and Ratio LED's off).

TRIM- The Modeling lamps can be trimmed without losing ratio if they are too bright or too dim in their default setting.

4. TEST Button/Ready Light

The unit can be flashed by depressing the TEST button. When changing power levels, power can be discharged through the flashtube instantly with this button instead of waiting for the power to be bled through the discharge resistor of the internal circuitry. The switch illuminates when the Power Supply has recharged to full power.

5. SYNC Outlets

The camera connects to this outlet via the R4158 Sync Extension Cord (included).

Note: Proper polarity is important with cameras that utilize grounded shutter switch circuits (cameras that utilize PC cords). If the unit does not flash on initial set-up the polarity may be reversed. To achieve the correct polarity – Reverse the camera sync cord at the point where it joins the Sync Extension Cord. This establishes a common ground between the camera body and the flash unit. If the polarity is incorrect the unit could self-flash or flash intermittently.

6. Photo Eye (Slave)

Permits remote triggering from other flash units. The Photo Eye can be enabled/ disabled by pushing the photo eye button. (When the button is illuminated the photo-eye is enabled).

7. RESET 15 Amp Circuit Breaker

Automatically protects the flash circuit against excessive overloads. When activated, it will pop out about 1/4" and the unit will become inoperative. To reset, wait at least 30 seconds and depress the RESET button. If the circuit breaker continues to activate, consult the factory or your authorized Norman service center.

8. Power Trim Knob

Adjusts the flash output from full to –5 f-stops in 1/10 increment settings. In combine mode either power trim knob will change the output level of the entire pack.

9. Flash Verification

Visual- Flash verification will visually indicate when the unit has flashed. The modeling lamp will cycle on and off, then return to its previous state.

Audible- The unit will beep twice when the unit has flashed and returned to full power.

This function can be enabled / disabled by toggling the Flash Verification audible / visual pushbutton switch.

10. Combine- When the pack is in combine mode; all of the power in the power pack is distributed evenly to all lampheads that are enabled.

11. Lamphead Enable- Enables a Lamphead to be turned off without unplugging the Lamphead. When "on" the Lamphead enable button illuminates and the lamphead display shows the output level the lamp is set for. Upon a misfire, the Lamphead enable button will blink on the head or heads that misfired. If enabled and there is no Lamphead plugged in, a misfire will be recorded upon each flash.

12. Cooling fan- The D12 and D24 utilizes a cooling fan to remove excess heat from the unit. Care should be taken to prevent blocking the vents on the sides of the unit. (Not shown located on side panel of unit).

13. Slow Recharge- When enabled, the units recycle time is increased. This feature is useful when operating at a location that has sub-par wiring.

14. Led Displays- Indicate the exact power setting, in watt-seconds, for each lamphead. The displays also show error codes.

15. Computer Control Modular Jack- Used to hook up power pack to a computer via serial port; contact factory sales about use and computer software.

16. Optional Pocket Wizard antenna-

**For Norman D12R and D24R
Digital Power Supplies Supplied with
the PocketWizard™ Receiver**

The D12R and D24R Incorporate
a built-in PocketWizard™ receiver which is internally wired for simple operation.
No Batteries are required.

Operation
The PocketWizard™ enabled D12R and D24R “listens” for wireless data transmissions from a
PocketWizard™ transmitter upon power up for the first 30 seconds of operation. The D12R
and D24R automatically scans continuously through the channels and if it detects continuous
valid trigger signals for 4 seconds on a particular channel it will set itself to operate on that
channel. To do this, press and hold the “test” button on your transmitter. If no valid trigger
data is found within the first 30 seconds from power up, the unit will set itself to operate on
the last channel used prior to the previous power down.

When you apply power to the D12R or D24R, the radio receiver will not respond for the first
30 seconds, unless you “teach” it a new channel (by pressing and holding the “test” button on
your transmitter). After learning, the unit will flash to indicate it is ready on the new channel.

Power Option Examples

Note: All listed examples are for the D24, 2400 watt-second digital power supply.
(Divide the power in half for D12, 1200 watt-second digital power supply.)



Full Power, Isolate mode, 2 lampheads

Full Power, Isolate mode, 3 lampheads



Full power, combine mode, 1 lamphead

Full power, combine mode, 3 lampheads

ADVANCED OPERATION

Alarm System

In the event of a misfire the alarm system is reset automatically by flashing the unit or by pressing any button on the control panel.

Thermal Protection

The D12 and D24 are protected with an internal overtemp cutout. In the event of an overtemp, the Power pack will be disabled; The Power Pack will automatically reset itself after it has cooled down.

SERVICE

Should not be attempted by user. **Consult an authorized Norman Service Center.**

Modeling lamp or flashtube replacement. Always unplug unit and discharge stored energy by pressing the Test button. Wait 10 minutes for any residual charge on the main capacitors to drain and let the flashtube and modeling lamp cool before handling. Always handle modeling lamp with clean gloves or cloth to avoid transfer of body oils to lamp dome. Carefully remove old flashtube and/or modeling lamp and replace with new.

Never place metal object or fingers into modeling lamp or flashtube sockets.

DIAGNOSTIC TROUBLESHOOTING / ERROR CODES

This information can assist the operator in determining the source of a malfunction and it can assist an authorized Norman Service Center in servicing a Norman Power Pack. These codes flash on the LED Display, signifying the following:

Over Temp- Indicates the unit has exceeded normal operating temperatures. In the first stage, the unit goes into slow recycle mode; this is indicated by the slow recycle mode switch blinking. The second stage the unit is disabled and will not function until a safe operating temperature is reached; this is indicated by the unit blinking "hot" on the displays.

GENERAL TROUBLESHOOTING

Unit will not flash:

- Flashtube is not installed properly.
- Sync cord polarity not correct (see 'SYNC Outlet' page 5)

Constant misfires:

- Lamphead not plugged in.
- Flash tube not installed properly
- Bad flashtube

Unit does not turn on:

- Check power cord
- Check circuit breaker

Photo Eye does not flash unit:

- Photo-eye switch is off
- Trigger flash is out of range

Modeling light will not turn on.

- Modeling lamp is not installed properly
- Modeling lamp is broken
- Modeling lamp is turned off. Check the control panel switches (see page 5)

Note: If you are still experiencing trouble after checking the above general troubleshooting guidelines contact Photo Control Customer Service or your Norman Service Center.

SPECIFICATIONS

Power:	D12: 1200 W-S / D24: 2400 W-S
Recycle Time:	D12: 2.0 sec / D24: 2.6 sec.
Power Control:	Full to -5 F-Stops
Modeling Lamp Control:	Off, Ratio, Full, Trim
Trigger:	Built-in Photo-eye, ¼" Sync Jack, Test Button PocketWizard built-in models D12R and D24R
Supply Voltage:	105-125 VAC, 60Hz, 15A
Consumption:	15A
Voltage Stabilization:	+/- 1%
Overload Protection:	15A Circuit Breaker
Weight:	D12: 12.26 pounds / D24: 18.18 pounds
Sync Voltage:	6 VDC



Manufactured by **Photo Control Corporation**

www.photo-control.com

Email: pcc-info@photo-control.com

4800 Quebec Avenue North, Minneapolis, MN 55428

(763) 537-3601 Voice, (763) 537-2852 Fax

(Pub. No. 332-035A)