

User's Guide



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LDPF63000 6 Digit Large Display



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It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING : These products are not designed for use in, and should not be used for, human applications.



- LARGE LED DISPLAY READABLE TO 70 FEET
- VARIOUS DIGITAL INPUT MODULES;
COUNT AND RATE INPUT
SERIAL SLAVE
- ALARMS, ANALOG OUTPUT, AND COMMUNICATION
- PROGRAMMABLE USER INPUTS
- PROGRAMMABLE FUNCTION KEYS
- UNIVERSAL AC/DC POWERED MODELS
- PC SOFTWARE FOR METER CONFIGURATION
- NEMA 4/IP65

GENERAL DESCRIPTION

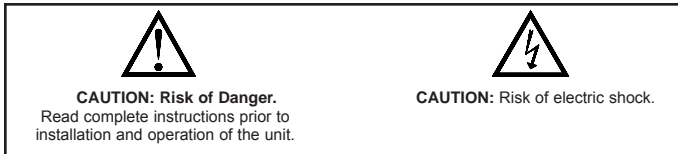
The LDPF63000 Display is a versatile display that can increase productivity by offering the plant floor or production area a large visual display of their current status. Whether your measurement is rate or count, the LDPF63000 can satisfy your requirement. These LDPF63000 displays accept various digital inputs through the use of input modules that allow the unit to adapt to most any application. Additional plug-in option cards can add alarms, analog output, and communication/bus capabilities, making the LDPF63000 a truly Intelligent Panel Meter.

SAFETY SUMMARY

All safety regulations, local codes and instructions that appear in this and corresponding literature, or on equipment, must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



The protective conductor terminal is bonded to conductive parts of the equipment for safety purposes and must be connected to an external protective earthing system.



SPECIFICATIONS

Input specifications, wiring, and programming information is contained in the corresponding DPF93 literature shipped with your order.

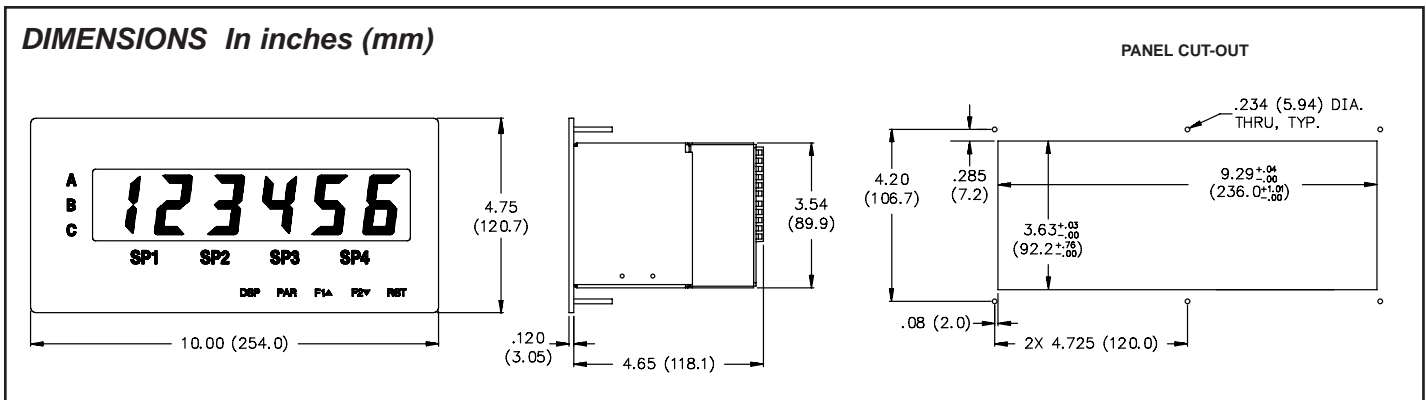
- DISPLAY:** 1.5" (38 mm) Red LED
6-Digit: (-99999 to 999999)
- POWER REQUIREMENTS:**
AC Modules: 85 to 250 VAC, 50/60 Hz, 18 VA
DC Modules: 11 to 36 VDC or 24 VAC $\pm 10\%$, 50/60 Hz, 14 W
- ANNUNCIATORS:** A, B, C, SP1, SP2, SP3, and SP4
- KEYPAD:** Five tactile membrane switches integrated into the front panel
- CERTIFICATIONS AND COMPLIANCES:**

SAFETY

UL Recognized Component, File #E313607, UL61010A-1, CSA 22.2 No. 1010-1
Recognized to US and Canadian requirements under the Component Recognition Program of Underwriters Laboratories, Inc.
UL Listed, File # E313547, UL508, CSA C22.2 No. 14-M95
LISTED by Und. Lab. Inc. to U.S and Canadian safety standards
Type 4 Enclosure rating (Face Only), UL50
IEC 61010-1, EN 61010-1: Safety requirements for electrical equipment for measurement, control, and laboratory use, Part 1.
IP65 Enclosure rating (Face only), IEC 529

ELECTROMAGNETIC COMPATIBILITY

EMC specifications are found in the DPF93 literature.



6. ENVIRONMENTAL CONDITIONS:

Operating Temperature Range: Shown in DPF93 literature
Storage Temperature Range: -40 to 60°C
Operating and Storage Humidity: 0 to 85% max. RH (non-condensing)
Altitude: Up to 2000 meters

7. MOUNTING REQUIREMENTS:

Max. panel thickness is 0.375" (9.5 mm)
Min. panel thickness for NEMA 4/IP65 sealing is 0.060" (1.57 mm)

8. MODULE INSTALLATION:

24-pin shrouded connector on LDPF63000 engages connector on input module upon installation. Shroud ensures proper alignment by providing a lead-in for the module connector.

9. CONNECTIONS: All wiring connections are made to the module via high compression cage-clamp terminal blocks. Wiring instructions are provided.



CAUTION: DISCONNECT ALL POWER BEFORE INSTALLING OR REMOVING MODULE

10. CONSTRUCTION: Steel front panel, enclosure, and rear cover with textured black polyurethane paint for scratch and corrosion resistance protection. Sealed front panel meets NEMA 4/IP65 specifications for indoor use when properly installed. Installation Category II, Pollution Degree 2. Panel gasket and keps nuts included.

11. WEIGHT: 2.7 lbs (1.2 kg) (*less module*)

OPTIONAL PLUG-IN CARDS AND ACCESSORIES



WARNING: Disconnect all power to the unit before installing Plug-in cards.

Adding Option Cards

The LDPF63000 meter can be fitted with up to three optional plug-in cards. However, only one card from each function type can be installed at a time. The function types include Setpoint Alarms (LDP6-CDS), Communications (LDP6-CDC), and Analog Output (LDP6-CDL). The cards can be installed initially or at a later date. Each optional plug-in card is shipped with installation and programming instructions.

COMMUNICATION CARDS (LDP6-CDC)

A variety of communication protocols are available for the LDPF63000 series. Only one of these cards can be installed at a time. When programming the unit via Crimson, the RS232 or RS485 Cards must be used.

- LDP6-CDC10 - RS485 (Terminal) LDP6-CDC1C - RS485 (Connector)
- LDP6-CDC20 - RS232 (Terminal) LDP6-CDC2C - RS232 (Connector)
- LDP6-CDC40 - Modbus (Terminal) LDP6-CDC4C - Modbus (Connector)

SETPOINT CARDS (LDP6-CDS)

This series has four setpoint alarm output plug-in cards. Only one of these cards can be installed at a time. (Logic state of the outputs can be reversed in the programming.) These plug-in cards include:

- LDP6-CDS10 - Dual Relay, FORM-C, Normally open & closed
- LDP6-CDS20 - Quad Relay, FORM-A, Normally open only
- LDP6-CDS30 - Isolated quad sinking NPN open collector
- LDP6-CDS40 - Isolated quad sourcing PNP open collector

LINEAR DC OUTPUT (LDP6-CDL)

Either a 0(4)-20 mA or 0-10 V retransmitted linear DC output is available from the analog output plug-in card. The programmable output low and high scaling can be based on the input, max, min, or total display value. Reverse slope output is possible by reversing the scaling point positions.

LDP6-CDL10 - Retransmitted Analog Output Card

PROGRAMMING SOFTWARE (DP6-SOFT)

DP6-SOFT is a Windows® based program that allows configuration of the LDPF63000 meter from a PC. This software offers standard drop-down menu commands, that make it easy to program the meter. The unit program can then be saved in a PC file for future use. A serial plug-in card is required to program the meter using the software.

1.0 ASSEMBLING THE DISPLAY



CAUTION: The input module main circuit board and the option cards contain static sensitive components. Before handling the module or the cards, discharge static charges from your body by touching a grounded bare metal object. Handle the module by the rear plastic cover only, and the option cards by the board edges. Dirt, oil or other contaminants that contact the circuit boards or components can adversely affect circuit operation.



WARNING: Exposed line voltage exists on the input module main circuit board and the option cards. **DO NOT** apply power to the module OR load circuits until the module is properly installed in the LDPF63000 case.



NOTE: All module and option card labels must be installed as shown for safety purposes.

Installing the Option Cards

Prior to installing the LDPF63000 Display, it is recommended that the option cards be assembled first. This will allow you the opportunity to insure all the boards are fitted properly into their connectors. Refer to the literature enclosed with the option cards for installation instruction.

Removing The Input Module

To remove the input module from the LDPF63000 Display, first remove all power and load circuits. Then insert a flat screwdriver blade ($\frac{3}{16}$ " or $\frac{1}{4}$ ") into the narrow slot between the LDPF63000 rear cover plate and the module's plastic cover as illustrated in Figure 1. Twist the screwdriver in the direction shown to disengage the internal connectors while firmly squeezing and pulling back on the rear finger tabs (top and bottom). Carefully slide the module out of the case, keeping it properly aligned with the case opening.

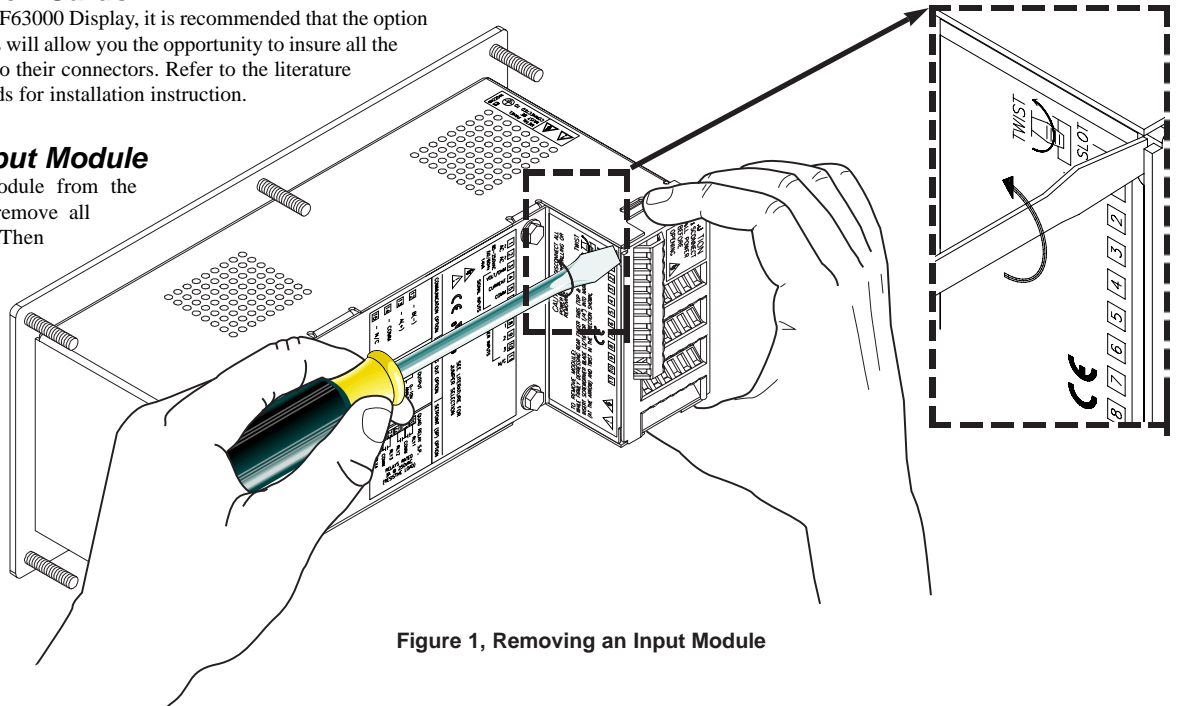


Figure 1, Removing an Input Module

Reinstalling the Input Module

To reinstall the Input Module, align the module with the opening in the LDPF63000 case, as illustrated. The module must be oriented as shown, with terminal #1 toward the top of the case. Carefully slide the module into the LDPF63000 case. The LDPF63000 and input module connectors will begin to engage about $\frac{1}{4}$ " from the bottom. At this point, apply a small amount of pressure to the rear of the input module to fully engage the connection. Be sure the module fully snaps into the slots at the rear of the LDPF63000 case. The display is ready for installation.

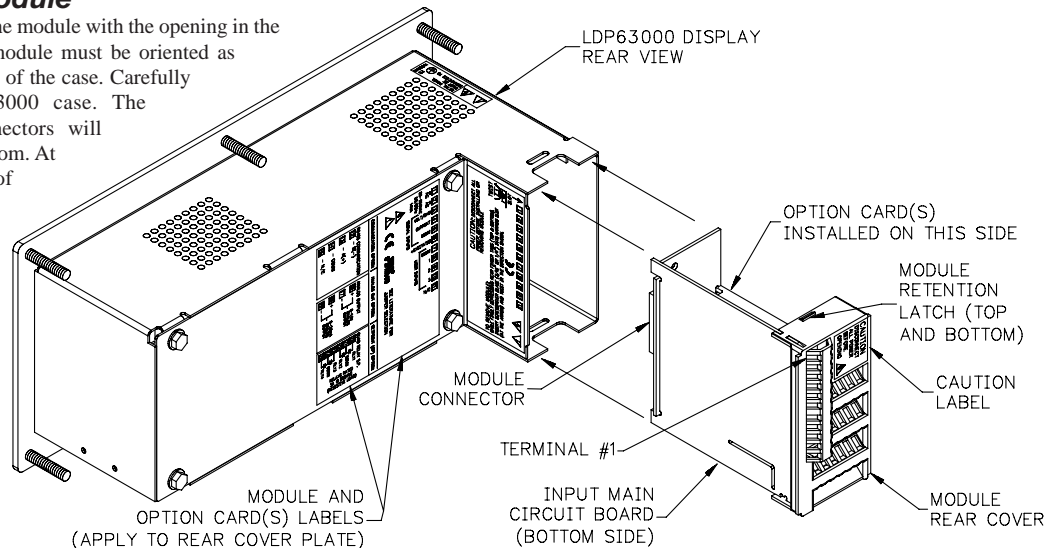


Figure 2, Reinstalling an Input Module and Option Cards

Installing the Labels

Each option card and the input module are shipped with a connection label. These labels must be applied to the rear of the LDPF63000 in the positions shown in the drawing.

2.0 INSTALLING THE DISPLAY

LDPF63000 DISPLAY INSTALLATION

The LDPF63000 display is intended to be mounted into a panel or enclosure. The display is provided with a gasket to provide a water-tight seal. The recommended minimum panel thickness for NEMA 4/IP65 sealing is 0.060" (1.57 mm).

For panel mounting, prepare the panel cut-out to the dimensions shown. The supplied template may be used to mark the cut-out and hole locations on the panel. After the panel cut-out has been deburred, slide the panel gasket over the rear of the display and onto the mounting studs. Insert the display into the panel cut-out as illustrated in Figure 3. Install six # 10-32 keps nuts (supplied) and tighten evenly for uniform gasket compression. Do not over-tighten the nuts.

By using additional mounting accessories, the LDPF63000 can be surface-wall mounted, suspended, or bottom mounted. Separate installation instructions are provided with the mounting accessories.

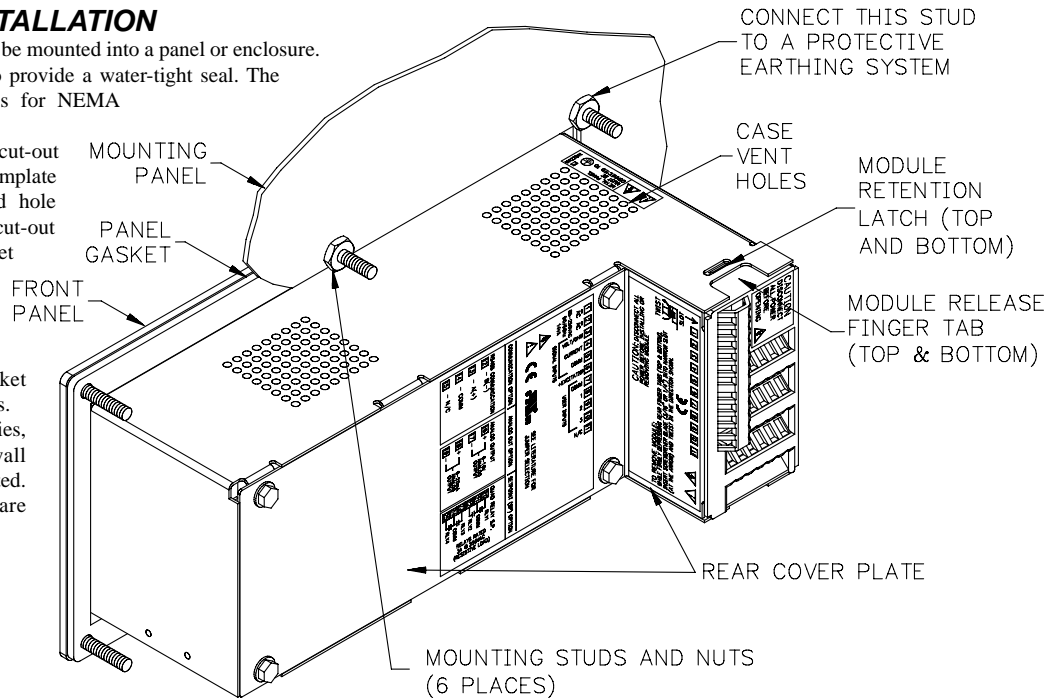


Figure 3, Installing The LDPF63000 Into A Panel

Environment And Cleaning

The display should be installed in a location that does not exceed the maximum operating temperature and provides good air circulation. Placing the system near devices that generate excessive heat should be avoided.

The bezel should be cleaned only with a soft cloth and neutral soap product. Do NOT use solvents. Continuous exposure to direct sunlight may accelerate the aging process of the bezel.

3.0 WIRING AND PROGRAMMING THE DISPLAY

Once assembled, the LDPF63000 has all the same functions and capabilities of our DPF9x00 Series Intelligent Panel Meters. Therefore, you will find the appropriate wiring and programming information in a separate manual packed with your LDPF63000 Display. Simply follow the instructions to wire and program the display for your application.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **25 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **two (2) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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