



THE STANDARD FOR ENERGY & POWER MEASUREMENT

LPC-HDPQ LOCKABLE PORTABLE CASE



User Instructions

Dranetz

1000 New Durham Road, Edison, New Jersey 08818

Telephone 1-800-372-6832 or 732-287-3680

sales@dranetz.com • www.dranetz.com

Published by Dranetz
1000 New Durham Road
Edison, NJ 08818-4019 USA
Telephone: 1-800-372-6832 or 732-287-3680
Fax: 732-248-1834
Web site: www.dranetz.com
Copyright ©2015 Dranetz
All rights reserved.

No part of this book may be reproduced, stored in a retrieval system, or transcribed in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—with prior written permission from the publisher, Dranetz, Edison, NJ 08818-4019.
Printed in the United States of America.

WARNING

Death, serious injury, or fire hazard could result from improper connection of this instrument. Read and understand this manual before connecting this instrument. Follow all installation and operating instructions while using this instrument.

Connection of this instrument must be performed in compliance with the National Electrical Code (ANSI/NFPA 70-2014) of USA and any additional safety requirements applicable to your installation.

Installation, operation, and maintenance of this instrument must be performed by qualified personnel only. The National Electrical Code defines a qualified person as “one who has demonstrated the skills and knowledge related to the construction and operation of the electrical equipment and installations, and who has received safety training on the hazards involved.”

Qualified personnel who work on or near exposed energized electrical conductors must follow applicable safety related work practices and procedures including appropriate personal protective equipment in compliance with the Standard for Electrical Safety Requirements for Employee Workplaces (ANSI/NFPA 70E-2012) of USA and any additional workplace safety requirements applicable to your installation.

ADVERTENCIA

Una conexión incorrecta de este instrumento puede producir la muerte, lesiones graves y riesgo de incendio. Lea y entienda este manual antes de conectar. Observe todas las instrucciones de instalación y operación durante el uso de este instrumento.

La conexión de este instrumento a un sistema eléctrico se debe realizar en conformidad con el Código Eléctrico Nacional (ANSI/NFPA 70-2014) de los E.E.U.U., además de cualquier otra norma de seguridad correspondiente a su establecimiento.

La instalación, operación y mantenimiento de este instrumento debe ser realizada por personal calificado solamente. El Código Eléctrico Nacional define a una persona calificada como "una que esté familiarizada con la construcción y operación del equipo y con los riesgos involucrados."

El personal cualificado que trabaja encendido o acerca a los conductores eléctricos energizados expuestos debe seguir prácticas y procedimientos relacionados seguridad aplicable del trabajo incluyendo el equipo protector personal apropiado en conformidad con el estándar para los requisitos de seguridad eléctricos para los lugares de trabajo del empleado (ANSI/NFPA 70E-2012) de los E.E.U.U. y cualquier requisito de seguridad adicional del lugar de trabajo aplicable a su instalación.

AVERTISSEMENT

Si l'instrument est mal connecté, la mort, des blessures graves, ou un danger d'incendie peuvent s'en suivre. Lisez attentivement ce manuel avant de connecter l'instrument. Lorsque vous utilisez l'instrument, suivez toutes les instructions d'installation et de service.

Cet instrument doit être connecté conformément au National Electrical Code (ANSI/NFPA 70-2014) des Etats-Unis et à toutes les exigences de sécurité applicables à votre installation.

Cet instrument doit être installé, utilisé et entretenu uniquement par un personnel qualifié. Selon le National Electrical Code, une personne est qualifiée si "elle connaît bien la construction et l'utilisation de l'équipement, ainsi que les dangers que cela implique".

Le personnel qualifié qui travaillent dessus ou s'approchent des conducteurs électriques activés exposés doit suivre des pratiques en matière et des procédures reliées par sûreté applicable de travail comprenant le matériel de protection personnel approprié conformément à la norme pour des conditions de sûreté électriques pour les lieux de travail des employés (ANSI/NFPA 70E-2012) des Etats-Unis et toutes les conditions de sûreté additionnelles de lieu de travail applicables à votre installation.

WARNUNG

Der falsche Anschluß dieses Gerätes kann Tod, schwere Verletzungen oder Feuer verursachen. Bevor Sie dieses Instrument anschließen, müssen Sie die Anleitung lesen und verstanden haben. Bei der Verwendung dieses Instruments müssen alle Installation- und Betriebsanweisungen beachtet werden.

Der Anschluß dieses Instruments muß in Übereinstimmung mit den nationalen Bestimmungen für Elektrizität (ANSI/NFPA 70-2014) der Vereinigten Staaten, sowie allen weiteren, in Ihrem Fall anwendbaren Sicherheitsbestimmungen, vorgenommen werden.

Installation, Betrieb und Wartung dieses Instruments dürfen nur von Fachpersonal durchgeführt werden. In den nationalen Bestimmungen für Elektrizität wird ein Fachmann als eine Person bezeichnet, welche "mit der Bauweise und dem Betrieb des Gerätes sowie den dazugehörigen Gefahren vertraut ist."

Qualifiziertes Personal, das an bearbeiten oder herausgestellte angezogene elektrische Leiter sich nähern, muß anwendbare Sicherheit bezogener Arbeit Praxis und Verfahren einschließlich passende persönliche schützende Ausrüstung gemäß dem Standard für elektrische Sicherheitsauflagen für Angestellt-Arbeitsplätze (ANSI/NFPA 70E-2012) der Vereinigten Staaten und alle zusätzlichen Arbeitsplatzsicherheitsauflagen folgen, die auf Ihre Installation anwendbar sind.

Safety Precautions

The following safety precautions must be followed whenever any type of voltage or current connection is being made to the instrument.

- Connect the green safety (earth) ground first, before making any other connections.
- Before connecting to electric circuits or pulse initiating equipment, open their related breakers or disconnects. It is recommended NOT TO install any connection of the instrument on live power lines. Only Qualified Service personnel that have demonstrated the abilities and received the proper safety training are capable of connecting to live circuits.
- Connections must be made to the instrument first, then connect to the circuit to be monitored.
- Wear proper personal protective equipment, including safety glasses and insulated gloves when making connections to power circuits.
- Hands, shoes and floor must be dry when making any connection to a power line.
- Make sure the unit is turned OFF before connecting probes to the rear panel.
- Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective.
- If the equipment is used in a manner not specified in this user's guide, the protection provided by the equipment may be impaired. These safety precautions are repeated where appropriate throughout this manual.

Medidas de seguridad

Las medidas de seguridad siguientes deberán observarse cuando se realice cualquier tipo de conexión al instrumento.

- o Antes de hacer cualquier conexión, deberá enchufarse el conector de seguridad verde a tierra.
- o Cuando se haga conexiones a circuitos eléctricos o a equipo de activación por pulso, deberá abrirse sus respectivas cajas de seguridad. NO deberá hacerse ninguna conexión del instrumento en líneas eléctricas bajo tensión.
- o Las conexiones deberán hacerse primero al instrumento y, luego, al circuito a ser monitorizado.
- o Al hacer conexiones a circuitos eléctricos, deberá utilizar anteojos y guantes protectores.
- o Sus manos, zapatos y el piso deberán estar secos en todo momento en que se haga una conexión a un cable eléctrico.
- o Verifique que la unidad esté DESACTIVADA antes de conectar sondas en el panel posterior.
- o Previo a cada uso, deberá verificarse que los cables no estén rotos y que el material aislante no tenga rajaduras. Reemplace de inmediato cualquier parte defectuosa.

Mesures de Sécurité

Les mesures de sécurité suivantes doivent être prises chaque fois qu'un type de connexion quelconque est effectué sur l'instrument.

- o Connecter d'abord la prise de terre de sécurité verte (terre) avant d'effectuer toute autre connexion.
- o Ouvrir les disjoncteurs correspondants lors d'une connexion à des circuits électriques ou à des équipement de génération d'impulsions. NE PAS effectuer de connexion d'instrument sur des lignes électriques sous tension.
- o Une fois toutes les connexions de l'instrument effectuées, connecter au circuit à contrôler.
- o Porter des lunettes de protection et des gants isolants pour effectuer des connexions aux circuits électriques.
- o S'assurer que les mains, les chaussures et le sol soient secs lors de connexions à une ligne électrique.
- o S'assurer que l'unité est ÉTEINTE avant de connecter les sondes au panneau arrière.
- o Inspecter tous les câbles, avant chaque utilisation, pour s'assurer que les isolants ne sont pas coupés ou fendus. Remplacer immédiatement tous les équipements défectueux.

Sicherheitsvorkehrungen

Die folgenden Sicherheitsvorkehrungen sind immer dann zu befolgen, wenn eine Verbindung zum Instrument hergestellt wird.

- o Schließen Sie zuerst die grüne Sicherheits-/Erdleitung an, bevor Sie eine andere Verbindung herstellen.
- o Öffnen Sie beim Anschluß an elektrische Stromkreise oder Impulsauslösungseinrichtungen die entsprechenden Unterbrecher. Es dürfen KEINE Anschlüsse an das Instrument unter stromführenden Spannungsleitungen montiert werden.
- o Die Verbindungen müssen zuerst am Instrument und danach an der zu überwachenden Schaltung hergestellt werden.
- o Tragen Sie Schutzbrillen und Isolierhandschuhe, wenn Sie Anschlüsse an den Stromkreisen vornehmen.
- o Hände, Schuhe und Fußboden müssen trocken sein, wenn Sie Anschlüsse an den Stromkreisen durchführen.
- o Stellen Sie sicher, daß das Gerät AUSgeschaltet ist, bevor Sie an der rückwärtigen Konsole Meßfühler anschließen.
- o Prüfen Sie vor jedem Gebrauch alle Kabel auf Bruchstellen und Risse in der Isolierung. Wechseln Sie schadhafte Kabel sofort aus.

Introduction

The Lockable Portable Case (LPC-HDPQ) is a weather resistant enclosure for the Dranetz HDPQ Xplorer, Xplorer 400, Guide, or Visa and its cable connections. The enclosure is sturdy, lightweight, weatherproof, rated IP 65 for dust and water, and intended for indoor or outdoor use. The corrosion-resistant enclosure will withstand windblown dust and rain, splashing water, and ice formation.

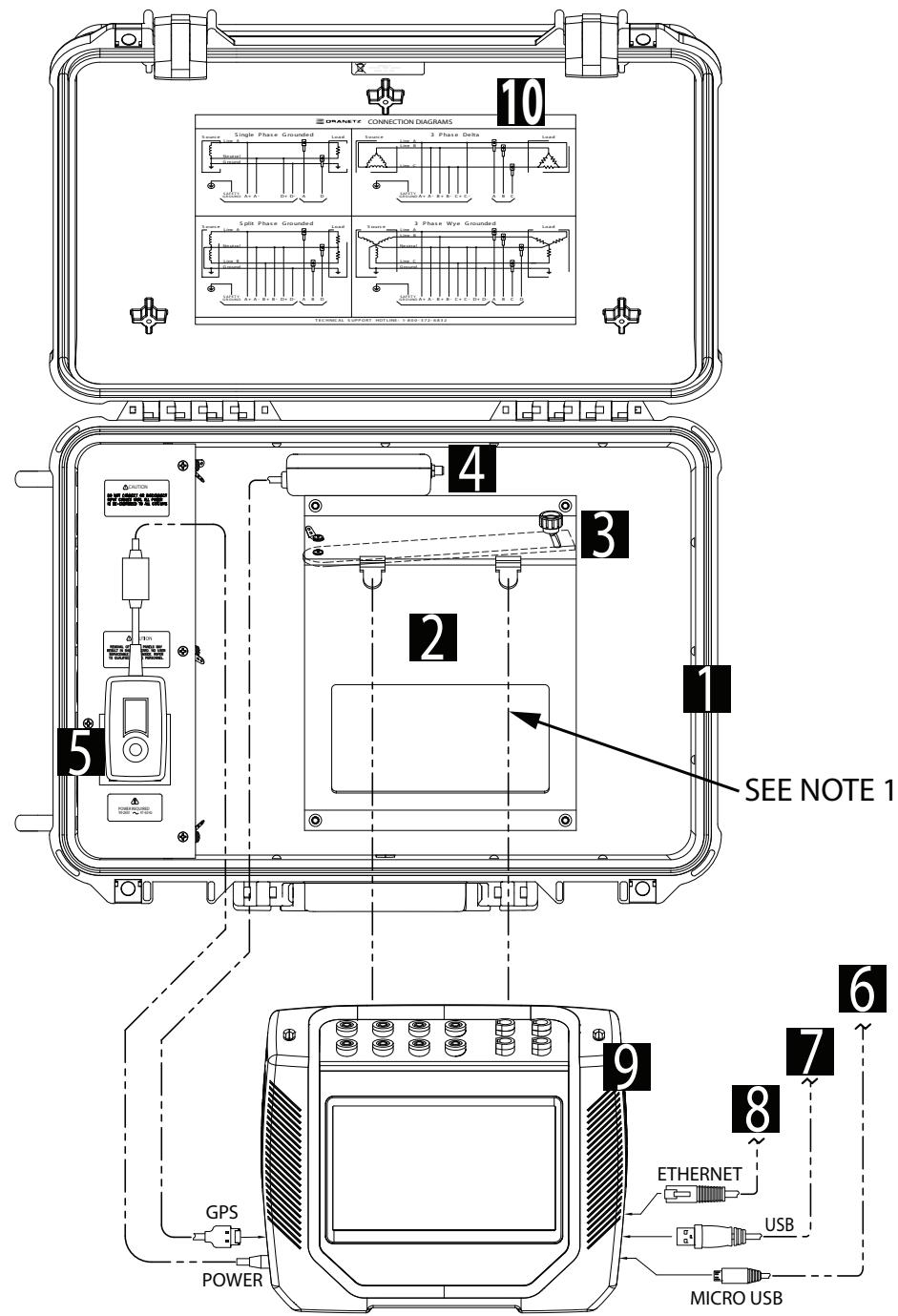
This instruction guide contains procedures on how to install and mount the Dranetz HDPQ instrument in the enclosure. It also describes the items found inside the assembly along with their part numbers. When mounted inside the LPC-HDPQ, the operation of the instrument is unchanged. Please refer to the Dranetz HDPQ User's Guide for operating instructions.

Read all Warning and Safety Precautions before attempting to connect and operate the instrument.

The available enclosures are described as follows.

Part Number	Description
LPC-HDPQ-US	Dranetz HDPQ Lockable Portable Case With US power cord (118462-G1)
LPC-HDPQ-EU	Dranetz HDPQ Lockable Portable Case With Euro power cord (118463-G1)
LPC-HDPQ-UK	Dranetz HDPQ Lockable Portable Case With UK power cord (118464-G1)

LPC-HDPQ Enclosure Constructional Details



NOTE 1:

The lines identify the location holes to mount the Xplorer, Guide, or Visa onto the mounting plate.

See complete mounting instructions on page 17 .

Description	
1	Enclosure - Allows indoor or outdoor installation of the Xplorer, Guide, or Visa, while protecting it from harsh environmental conditions.
2	Mounting Plate – Used to securely mount the HDPQ inside the enclosure.
3	Locking Mechanism – Secures the HDPQ to the mounting plate.
4	GPS Receiver * – Optional accessory not included with enclosure (mounting location shown).
5	AC Adapter * - Use to supply power to the HDPQ Xplorer, Guide, or Visa, when it is inside the enclosure. The AC adapter is supplied as a standard accessory with the HDPQ instrument and is not included with the enclosure assembly.
6	Micro USB – internal cable to connect to the HDPQ and interface to outside of the enclosure
7	USB Male – internal cable to connect to the HDPQ and interface to outside of the enclosure.
8	Ethernet - internal cable to connect to the HDPQ and interface to outside of the enclosure.
9	HDPQ * –Xplorer, Guide, or Visa is a hand-held, eight channel power quality monitor. The Xplorer, Guide, or Visa unit is not included with the enclosure assembly.
10	Decal, Connection Diagram - Graphic representation showing the correct voltage and current connection of the following circuit configurations: <ul style="list-style-type: none"> - Single Phase Grounded - 3 Phase Delta - Split Phase Grounded - 3 Phase Wye Grounded.

* These items are not included with the LPC-HDPQ.

Refer to the User's Guide for detailed instructions on unpacking the HDPQ instrument, its use, and for the list of Standard and Optional Accessories.

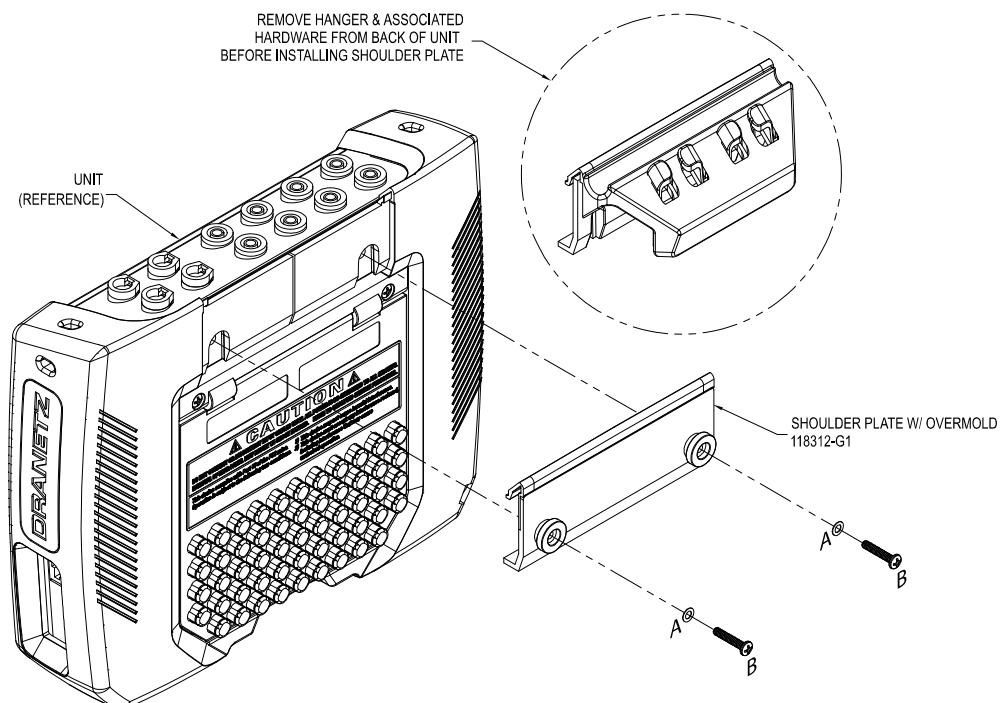
Getting Started

Instrument Mounting Bracket

The HDPQ can be mounted inside the LPC-HDPQ, but you must remove the standard hanger mounting bracket and replace it with the keyhole mounting plate (P/N 118312-G1) supplied with the standard accessories included with the HDPQ instrument.

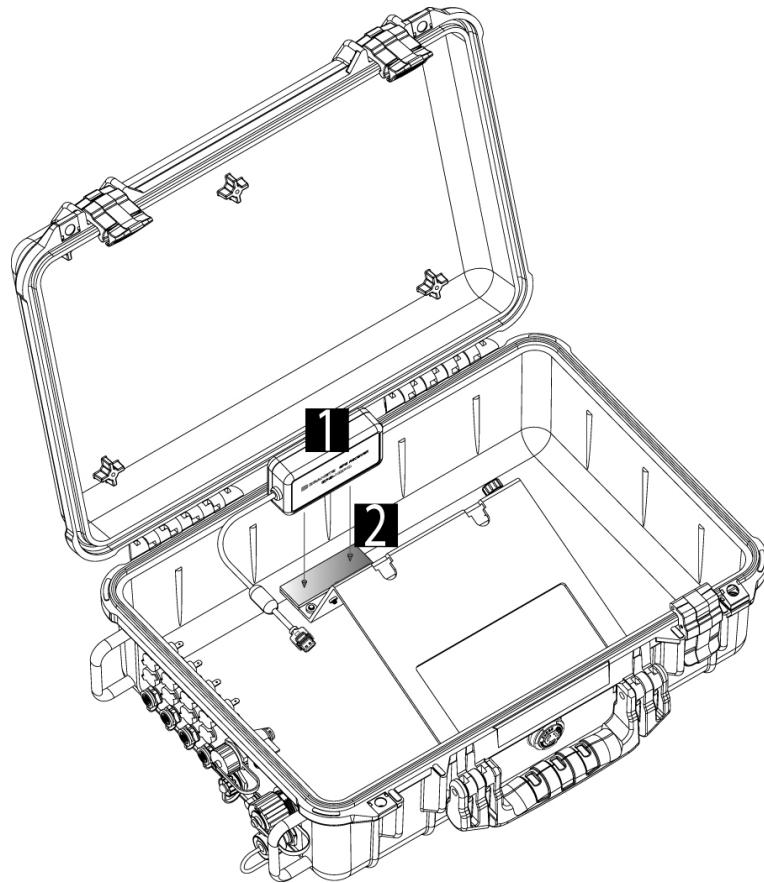
The Keyhole Mounting Kit allows the HDPQ-Xplorer, Guide, or Visa to be attached to the LPC-HDPQ mounting bracket.

1. Remove the hanger bracket from the instrument by removing two #6-32 x 5/16" long screws and two flat washers from the hanger bracket.
2. Replace the hanger bracket with the keyhole mounting plate (P/N 118312-G1) and secure it to the instrument with the supplied hardware (two #6-32 x 3/4" inch long screws and two flat washers) as shown.



Once the keyhole mounting plate is attached to the HDPQ instrument, you are ready to mount the HDPQ inside the LPC-HDPQ enclosure.

Mounting the Optional GPS Receiver



Description	
1	Using the supplied alcohol wipe, clean the area under the downward bottom side of the GPS Receiver. Remove the top Velcro strip from the enclosure at location 2. Remove the protective backing from the Velcro strip and attach to the downward bottom side of the GPS Receiver that was just cleaned.
2	Mount the GPS Receiver with the Velcro attached and mount to the existing Velcro strip in the enclosure. Align the GPS enclosure on its side as shown and press firmly until the Velcro strips fully mate to one another. Once set in place do not remove for at least 24 hours. There is a setting time for the Velcro to adhere to the GPS Receiver.

Internal Connections in the Enclosure

Connect all of the following internal cables of the LPC-HDPQ to the HDPQ instrument.

1. Voltage Cables

Connect the internal voltage cables to the HDPQ each channel is marked the accordingly CH A +, CH A -, CH B +, CH B -, CH C+, CH C -, CH D +, and CH D - .

2. Current Cables

Connect the internal current cables to the HDPQ each channel is marked accordingly CH A, CH B, CH C, and CH D.

3. Ethernet Cable

Connect the internal Ethernet cable to the HDPQ.

4. USB A

Connect the internal USB cable to the HDPQ.

5. USB Micro

Connect the internal USB micro cable to the HDPQ.

6. GPS Cables

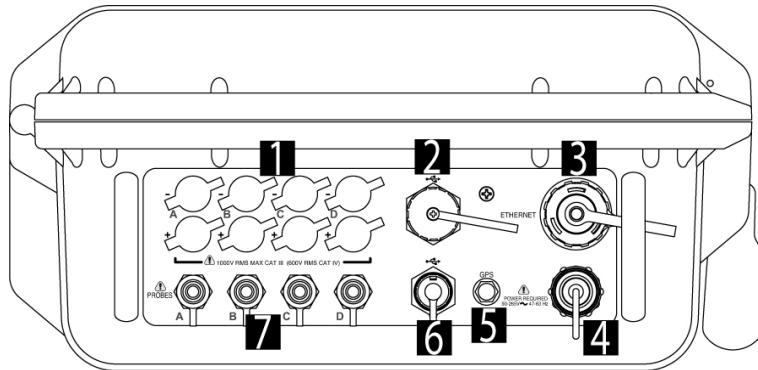
*These connections are only used if you are installing the optional GPS-HDPQ Receiver.

Connect the internal GPS cable with SMA connector of the LPC-HDPQ to the optional GPS-HDPQ. Next connect the other end of the GPS-HDPQ receiver to the HDPQ.

7. AC Adapter

Plug the AC adapter into the power inlet plug in the enclosure, connect the DC output jack of the AC adapter into the left side of the HDPQ instrument.

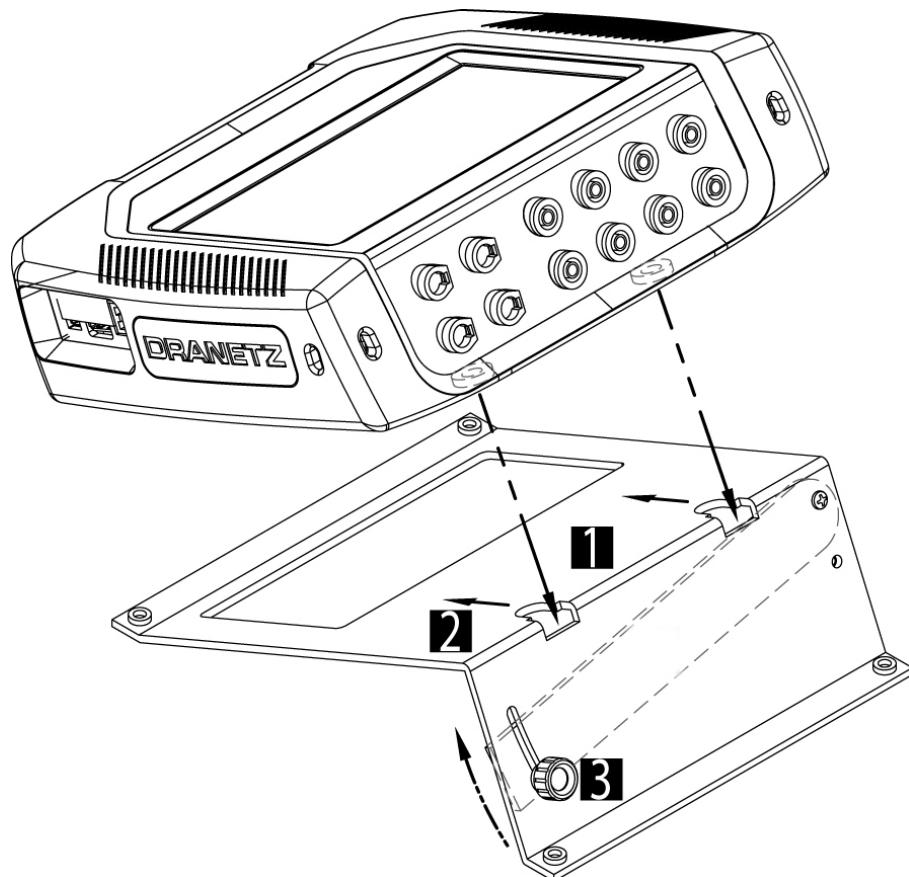
Connections to the Enclosure



Description	
1	Voltage Input Connectors – provide connection to the + and – differential voltage measurement input connectors rated 1000 V RMS Max. Use voltage cable set VCS-HDPQ (118375-G1) supplied with HDPQ instrument standard accessories.
2	USB A Connector – USB port used for saving data to a USB flash drive or upgrading instrument firmware via USB flash drive.
3	Power Input connector – one power cord cable supplied with each of the following packages LPC-HDPQ-US 118462-G1 (US power cord) LPC-HDPQ-EU 118463-G1 (EU power cord) LPC-HDPQ-UK 118464-G1 (UK power cord)
4	Ethernet Connector * – optional external cable available for Ethernet CAT 5e connection.
5	GPS Input Connector * – Allows connection of optional SMA connector type antenna devices.
6	USB Micro Connector * – Allows connection to a computer for plug and play file transfer from the HDPQ instrument.
7	Current Input Connectors – provide connection to the current measurement channels CH A, B, C, and D of the HDPQ. Four LPC-HDPQ-TREXT1 (118461-G1) 16 inch cables are supplied with the enclosure that allow connection of Dranetz probes with Hypertronic connector types DRANFLEX, TR, or PR series current probes.

* Refer to page 18 for optional mating cables.

Mounting the HDPQ into the Enclosure



Installation Steps	
1	Align the instrument with the mounting holes facing down and insert into the mounting holes securely.
2	Slide the instrument downward until the instrument is fully seated in the mounting bracket.
3	The locking bar provides a means of securing the HDPQ instrument to the mounting bracket of the enclosure. Loosen the locking knob and raise the knob upward until the instrument is secure and then tighten the knob. This mechanism slides a locking bar to secure the instrument in the enclosure. Check to make sure that the instrument is mechanically secure.

Optional Accessories

For pricing and availability, contact Dranetz Customer Service Department at (732) 287-3680 or 1-800-372-6832.

Part Number	Description
GPS-HDPQ	GPS Receiver (118410-G1)
GPSMA-HDPQ	GPS Magnetic Mount Antenna (902088-LF)
GPSMAKIT-HDPQ	GPS Receiver and Magnetic Mount Antenna Kit
LPC-HDPQ-ETH	Ethernet cable, RJ45 Male to RJ45 Male, 2 Meters (118445-G1)
LPC-HDPQ-USB	USB cable Male A to Male B, 2 Meters (118446-G1)
LPC-HDPQ-USBM	USB cable Micro B to USB Male A, 2 Meters (118447-G1)
LPC-HDPQ-TREXT6	Current Probe Adapter Cable (118461-G2), circular 5 pin male (5 pin) to female Hypertronics connector (4 pin), 6 ft

Specifications

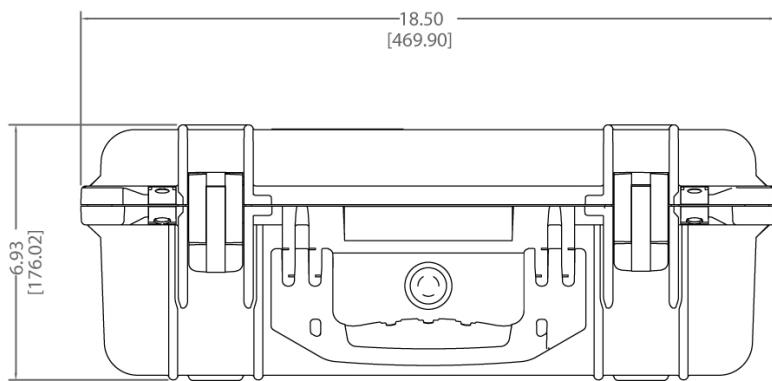
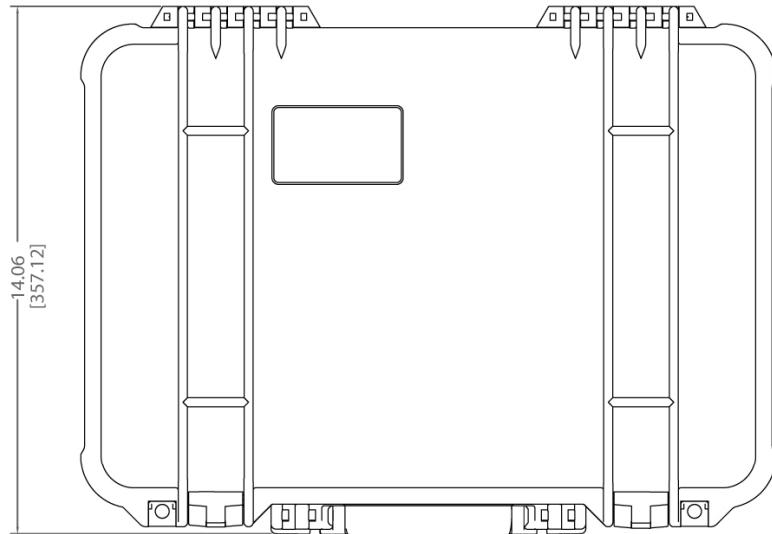
Physical

- Polypropylene molded case with handle
- Weight 10 lbs

Environmental

- Operating Range
Refer to applicable Dranetz HDPQ User Guide
- IP Rating 65

Case Dimensions
Inches [mm]



Statements and Notices

The LPC-HDPQ is a Dranetz branded accessory and warranty information is as follows.

Statement of Warranty

All Dranetz manufactured portable instruments and accessories are warranted to the original purchaser against defective material and workmanship for a period of three years from the date of invoice. User replaceable instrument batteries are warranted for a period of one year from the date of invoice. Certain Dranetz branded accessories, such as current transformers and other accessories not manufactured by Dranetz, are warranted to the original purchaser against defective material and workmanship for a period of one year from the date of invoice. Warranties for products and accessories sold by, but not branded as Dranetz, are covered by their respective manufacturer's warranties and are not warranted by Dranetz. Dranetz will repair or replace, at its option, all defective equipment that is returned, freight prepaid, during the warranty period. There will be no charge for repair, provided there is no evidence that the equipment has been mishandled or abused. This warranty shall not apply to any defects resulting from improper or inadequate maintenance, buyer-supplied hardware/software interfacing, unauthorized modification or misuse of the equipment, operation outside of environmental specifications, or improper site preparation or maintenance.

Statement of reliability

The information in this manual has been reviewed and is believed to be entirely reliable, however, no responsibility is assumed for any inaccuracies. All material is for informational purposes only and is subject to change without prior notice.

Notice regarding proprietary rights

This publication contains information proprietary to Dranetz. By accepting and using this manual, you agree that the information contained herein will be used solely for the purpose of operating equipment of Dranetz.

Copyright

This publication is protected under the Copyright laws of the United States, Title 17 et seq. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form, by any means, electronic, mechanical, magnetic, optical, chemical, manual, or otherwise, without the prior written consent of Dranetz, 1000 New Durham Road, Edison, New Jersey 08818.

Copyright © 2015 Dranetz

All Rights Reserved. Printed in the United States of America.

Trademarks

Dranetz HDPQ® is a registered trademark of Dranetz.

