

CE
**PDHX-E Series Drive
User Guide**

(PDHX15-E, PDHX15E-D)

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IMPORTANT INFORMATION FOR USERS

Installation and Operation of Digiplan Equipment

It is important that Digiplan motion control equipment is installed and operated in such a way that all applicable safety requirements are met. It is your responsibility as an installer to ensure that you identify the relevant safety standards and comply with them; failure to do so may result in damage to equipment and personal injury. In particular, you should study the contents of this user guide carefully before installing or operating the equipment.

The installation, set-up, test and maintenance procedures given in this User Guide should only be carried out by competent personnel trained in the installation of electronic equipment. Such personnel should be aware of the potential electrical and mechanical hazards associated with mains-powered motion control equipment - please see the safety warning below. The individual or group having overall responsibility for this equipment must ensure that operators are adequately trained.

Under no circumstances will the suppliers of the equipment be liable for any incidental, consequential or special damages of any kind whatsoever, including but not limited to lost profits arising from or in any way connected with the use of the equipment or this user guide.



SAFETY WARNING

High-performance motion control equipment is capable of producing rapid movement and very high forces. Unexpected motion may occur especially during the development of controller programs. **KEEP WELL CLEAR** of any machinery driven by stepper or servo motors. Never touch it while it is in operation.

This product is sold as a motion control component to be installed in a complete system using good engineering practice. Care must be taken to ensure that the product is installed and used in a safe manner according to local safety laws and regulations. In particular, the product must be enclosed such that no part is accessible while power may be applied.

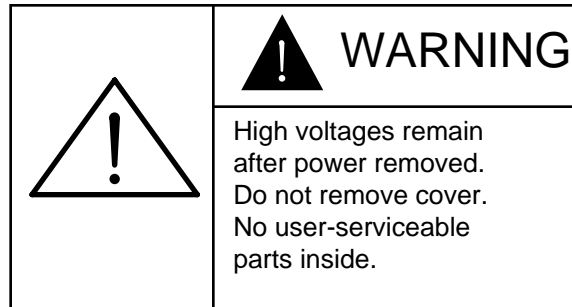
EMC INFORMATION

EMC Information is presented in boxed paragraphs (such as this one). Digiplan cannot guarantee compliance unless guidelines are strictly followed.

The information in this user guide, including any apparatus, methods, techniques, and concepts described herein, are the proprietary property of Parker Digiplan or its licensors, and may not be copied, disclosed, or used for any purpose not expressly authorised by the owner thereof.

Since Digiplan constantly strives to improve all of its products, we reserve the right to modify equipment and user guides without prior notice. No part of this user guide may be reproduced in any form without the prior consent of Digiplan.

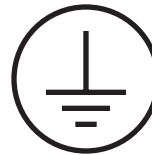
The following Warning label is fitted to the drive:



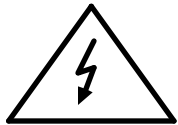
Symbols used on the PDHX-E Series of drives have the following meanings:



Refer to the accompanying documentation



Protective conductor terminal



Risk of electric shock



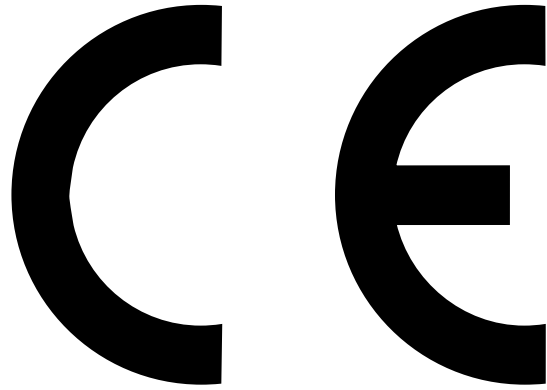
Alternating current



Hot surface



Frame or chassis terminal



Product Type: PDHX15E, PDHX15E-D

The above product is in compliance with the requirements of directives

- **89/336/EEC Electromagnetic Compatibility Directive
as amended by Directive 92/31/EEC**

The product is intended for use in the Commercial, Light Industrial and Industrial Environments as defined in the relevant EMC standards.

This product is compliant with the Low Voltage Directive.

- **73/23/EEC Low Voltage Directive**
- **93/68/EEC CE Marking Directive**

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Associated Documentation

This User Guide forms part of the documentation required to use the PDHX-E Series of stepper drives, it should be read in conjunction with the **X150/X150E Software Reference User Guide** (Part Number 1600.221.01) which provides details of individual commands.

User Guide Change Summary

When a user guide is updated, the new or changed text is differentiated with a change bar in the outside margin (this paragraph is an example). If an entire section is changed, the change bar is located on the outside margin of the section title.

This is the first issue of the PDHX-E Series Drive User Guide.

Section 1. INTRODUCTION

Product Description

The PDHX15E is a single-axis packaged ministep drive incorporating an X150E position controller. The PDHX15E-D is also available with a built-in regenerative dump circuit. The drive is a chopper-regulated MOSFET design offering high performance in low and medium power applications. The recirculating chopper regulator improves operating efficiency, minimizes power consumption and reduces motor and drive heating. The drive is powered Direct On-Line (DOL) from nominal mains supplies of 110V to 240V AC. An internal switch mode power supply is used, incorporating power factor correction to minimise distortion of the AC supply.

The PD-E series of drives have 4 selectable resolutions between 400 steps/rev and 4000 steps/rev, set using the front panel switches. They are suitable for use with EMC compatible hybrid and permanent magnet stepping motors having 4, 6, or 8 leads.

Motor short-circuit protection is assured across and between phases and between any phase and earth. If a wiring fault occurs the drive fault LED will be lit up - see ***Maintenance and Troubleshooting***.

The drives can be used as stand alone units with separate control inputs and motor connection/power inputs. The built-in controller performs position control and indexing functions using an industry-standard RS232C interface, with RS485 communication as an option. The programming language is based on Digiplan's X-code and the positioner is capable of storing and executing complex motion programs from its non-volatile memory.

The drive and integral power supply are contained in one compact enclosure, cooled by natural convection. Wall or panel vertical mounting is recommended to allow access to the front panel connectors and controls.

EMC Directive compliance has been achieved through careful product design and does involve the use of braided screen cables for the motor feed and controller inputs. However, to maintain convenient interfacing no special cable screening requirements are necessary for the user I/O connector, which may use standard equipment wire.

