D372-80-880
Issue B Original

Instruction Manual

Pump Display Terminal

Description	Item Number
Pump Display Terminal (5W XL)	D372-80-700

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Contents

Illustrations

cg/6011/10/08

Contents

Tables

Associated publications

Publication title	Publication number
Vacuum pump and vacuum system safety	P300-20-000

1 Introduction

1.1 Scope and definitions

This manual provides installation, operation and maintenance instructions for the Edwards Pump Display Terminal. You must use the Pump Display Terminal as specified in the manual.

Read this manual before you install and operate the Pump Display Terminal. Important safety information is highlighted as WARNING and CAUTION instructions; you must obey these instructions. The use of WARNINGS and CAUTIONS is defined below.

WARNING

Warnings are given where failure to observe the instruction could result in injury or death to people.

CAUTION

Cautions are given where failure to observe the instruction could result in damage to the equipment, associated equipment and process

The following IEC warning labels appear on the pump:

Warning - refer to accompanying documentation.

Warning - Edwards offer European customers a recycling service.

The units used throughout this manual conform to the SI international system of units of measurement.

1.2 Description

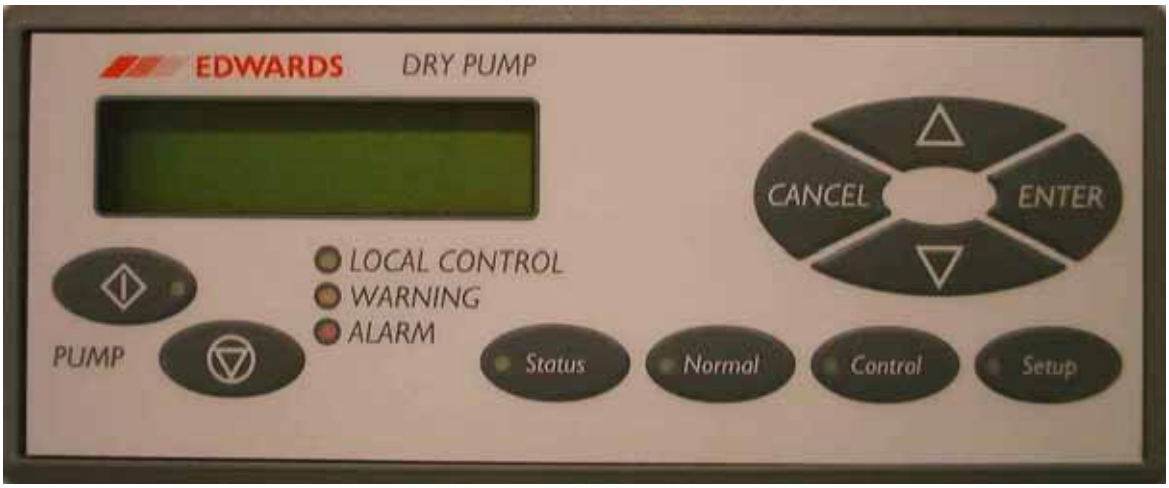
CAUTION

The PDT connector is intended ONLY for connection to an Edwards pumping system fitted with the appropriate host port. BOCE and its agents will not be responsible for any damage or loss resulting from connection of the Pump Display Terminal to any socket other than that for which it is intended.

The Pump Display Terminal is designed for use with the Edwards Dry Pumping System. The Pump Display Terminal allows you to observe the state of the pumping system, the values of certain internal parameters and control the pump. It is powered from and communicates with the pumping system via a RS232 (ASCII) interface.

The Pump Display Terminal is connected to the host pumping system through the connector on the end of the coiled cable.

Figure 1 - Front view of the Edwards Pump Display Terminal

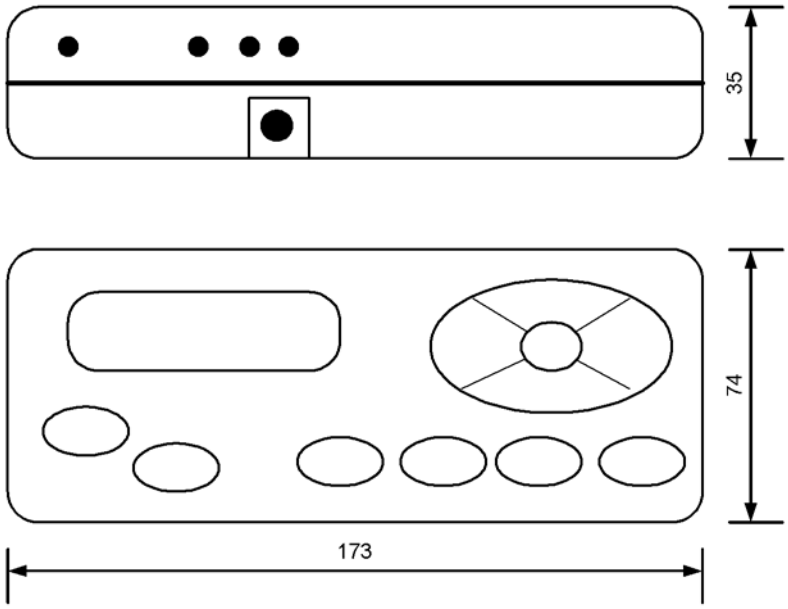


2 Technical Data

2.1 Mechanical Data

Dimensions	See Figure 2
Maximum mass	Approximately 200 g

Figure 2 - Dimensions (mm)



2.2 Electrical data

Voltage	18 to 32 V d.c.
Current	200 mA max.

2.3 Communications data

Communications protocol	EIA RS232
Baud rate	9600 Baud
Data bits	8
Stop bits	1
Parity setting	No Parity

2.4 Electrical connectors

The PDT has a flying lead connection using a coiled cable. When extended, the cable has a nominal length of 1 metre. The PDT may also be used via a separately supplied extension cable of up to a maximum of 25 m in length. Refer to Section 7.2 for available cables.

The cable is fitted with a 5 way XLR plug, accommodating RS232 transmit and receive and the d.c. power supply on the following pins (See Table 1):

Table 1 - Pin Descriptions

Pin No.	Description	Name	Direction
1	RS232/supply return	0 V	input from host
2	+ve supply	+ V d.c.	input from host
3	RS232 data	RXD	output to host
4	RS232 data	TXD	output to host
5	reserved for future use		
E	Shield	GND	

3 Installation

3.1 Unpack and Inspect

Remove all of the packaging material and check the Pump Display Terminal. If the Pump Display Terminal is damaged, follow the Edwards return of equipment procedures that are laid out in the back of this manual. Do not use the Pump Display Terminal if it is damaged.

Check that your package contains items that are listed in Table 2. If any of these items are missing, notify your supplier in writing within three days. If the Pump Display Terminal is not to be used immediately, store it in suitable conditions as described in Section 6.

Table 2 - Checklist of components

Quantity	Description	Check(✓)
1	Instruction Manual (This manual)	☐
1	Pump Display Terminal	☐

3.2 Connect the Pump Display Terminal

On initial power-up of the Pump Display Terminal, the indicator LED's should light briefly, the screen backlight should illuminate, and the text screen should display the following message:

Display Line 1: BOCE Terminal

Display Line 2: XXXXXXXXX (where X is the product version number)

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4 Operation

The Pump Display Terminal provides monitoring, setup and control of the pumping system it is connected to.

The pumping system may be started using the Pump On button ( ) and stopped using the Pump Off button ( ). Refer to Figure 1.

Other functions are accessed using the four menu buttons:

Status	Pumping system status
Normal	The main display
Control	To take and release control
Setup	To change settings on the pumping system

For further detail on the operation of the Pump Display Terminal with your pumping system please refer to the instruction manual supplied with the pumping system.

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5 Maintenance

5.1 Safety

WARNING

Obey the safety instructions given below and take note of the appropriate precautions. If you do not you could cause injury to people and damage to equipment.

There are no serviceable parts in the Pump Display Terminal. Do not open. Return to your nearest Edwards service centre for any repairs that are necessary.

The Edwards return of equipment forms can be found at the rear of this manual.

5.2 General

- Clean the Pump Display Terminal with a damp cloth. Do not immerse in water, or use solvents.
- Inspect all electrical connections and check that they are secure.
- Inspect all electrical cables and check that they are not damaged and have not overheated.

5.3 Fault finding

Table 3 - Fault Finding

Check	Action
The backlight and indicators do not illuminate.	Check that the connector is properly inserted and the host pumping system power is switched on.
The display is showing "BOCE Terminal connecting ..."	The host pumping system is not responding. This may be because of incorrect connection of the RS232TX and RX lines. Ensure that the host system is a BOCE pumping system and that all cables between the Pump Display Terminal and the host pumping system are genuine BOCE parts.
Are the cables too long?	Ensure that the communications cables are less than 25 m long. If the communications cables are longer than 25 m, ensure that line-drivers are correctly incorporated into the communications cables.

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6 Storage and Disposal

6.1 Storage

Store the Pump Display Terminal in clean dry conditions until required. When required for use, install the Pump Display Terminal as described in Section 3 of this manual.

6.2 Disposal

Dispose of the Pump Display Terminal and any components safely in accordance with all local and national safety and environmental requirements.

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7 Spares and Accessories

7.1 Introduction

Edwards products, spares and accessories are available from Edwards companies in Belgium, Brazil, Canada, France, Germany, Hong Kong, Italy, Japan, Korea, Switzerland, United Kingdom, U.S.A. and a worldwide network of distributors. The majority of these centres employ Service Engineers who have undergone comprehensive training courses.

Order spare parts and accessories from your nearest Edwards company or distributor. When you order, please state for each part required:

- Model and Item Number of your equipment.
- Serial Number (if any).
- Item Number and description of the part.

7.2 Accessories

Accessory	Item Number
5 way XLR extension cable 3 m	D373-70-591
5 way XLR extension cable 5 m	D373-70-592
5 way XLR extension cable 10 m	D373-70-595
5 way XLR extension cable 15 m	D373-70-596
5 way XLR extension cable 25 m	D373-70-597
PDT Adaptor RJ12 plug to 5 way XLR socket	D373-70-726

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Return the equipment or components for service

Before you send your equipment to us for service or for any other reason, you must send us a completed Declaration of Contamination of Vacuum Equipment and Components – Form HS2. The HS2 form tells us if any substances found in the equipment are hazardous, which is important for the safety of our employees and all other people involved in the service of your equipment. The hazard information also lets us select the correct procedures to service your equipment.

We provide instructions for completing the form in the Declaration of Contamination of Vacuum equipment and Components – Procedure HS1.

If you are returning a vacuum pump, note the following:

- If a pump is configured to suit the application, make a record of the configuration before returning the pump. All replacement pumps will be supplied with default factory settings.
- Do not return a pump with accessories fitted. Remove all accessories and retain them for future use.
- The instruction in the returns procedure to drain all fluids does not apply to the lubricant in pump oil reservoirs.

Download the latest documents from www.edwardsvacuum.com/HSForms/, follow the procedure in HS1, fill in the electronic HS2 form, print it, sign it, and return the signed copy to Edwards.

Note: *If we do not receive a completed HS2 form, we will not accept the return of the equipment.*

P20006120E

EU Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Edwards Ltd
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
UK

Documentation Officer
Jana Sigmunda 300
Lutín , 78349
Czech Republic
T: +42(0) 580 582 728
documentation@edwardsvacuum.com

The product specified and listed below

Product Description: Pump Display Terminal

Pump Display Terminal (5 WAY XLR)	D37280700

Is in conformity with the relevant Union harmonisation legislation:

2014/30/EU	Electromagnetic compatibility (EMC) directive Class A Emissions, Industrial Immunity
2011/65/EU	Restriction of certain hazardous substances (RoHS) directive as amended by Delegated Directive (EU) 2015/863

Based on the relevant requirements of harmonised standards and technical documentation:

EN IEC 61326-1:2021	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2024-10-04*

You must retain the signed legal declaration for future reference
This declaration becomes invalid if modifications are made to the product without prior agreement.

Nick Barratt - Engineering Manager, Eastbourne

Ed Neuss – General Manager, Eastbourne

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Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Edwards Ltd
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
UK

Documentation Officer
documentation@edwardsvacuum.com

The product specified and listed below

Product Description: Pump Display Terminal

Pump Display Terminal (5 WAY XLR)	D37280700

The object of the declaration described above is in conformity with relevant statutory requirements:

Electromagnetic Compatibility Regulations 2016
Class A Emissions, Industrial Immunity

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Relevant designated standards or technical specifications are as follows:

EN IEC 61326-1:2021	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2024-10-04*

You must retain the signed legal declaration for future reference
This declaration becomes invalid if modifications are made to the product without prior agreement.

Signed for and on behalf of Edwards Ltd

Nick Barratt - Engineering Manager, Eastbourne

Ed Neuss – General Manager, Eastbourne

ADDITIONAL LEGISLATION AND COMPLIANCE INFORMATION

EMC (EU, UK): Class A Industrial equipment

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

RoHS (EU, UK): Material Exemption Information

This product is compliant with the following Exemptions
Annex III:

- 6(c) Copper alloy containing up to 4% **lead** by weight
- 7(a) **Lead** in high melting temperature type solders (i.e. **lead**-based alloys containing 85 % by weight or more **lead**)
- 7(c) I Electrical and electronic components containing **lead** in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound

REACH (EU, UK)

This product is a complex article which is not designed for intentional substance release. To the best of our knowledge the materials used comply with the requirements of REACH. The product manual provides information and instruction to ensure the safe storage, use, maintenance and disposal of the product including any substance based requirements.

Article 33.1 Declaration (EU, UK)

This product contains Candidate List Substances of Very High Concern above 0.1%ww by article as clarified under the 2015 European Court of Justice ruling in case C-106/14.

- Lead (Pb)
  This substance is present in certain brass / electrical or electronic components.
- Lead Oxide / Lead monoxide / Lead (II) oxide
  This substance is present in certain electrical or electronic components.
- 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol (DBMC)
  This substance is present in certain electrical or electronic components.

Additional Applicable Requirements

The product is in scope for and complies with the requirements of the following:

2012/19/EU	Directive on waste electrical and electronic equipment (WEEE)

材料成分声明
China Material Content Declaration

	有害物质 Hazardous Substances					
部件名称 Part name 	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr VI)	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
铜接头 Brass connectors	X	O	O	O	O	O
电缆/电线/连接器 Cable/wire/connector	X	O	O	O	O	O
印刷电路组件 (PCA) Printed Circuit Assembly (PCA)	X	O	O	O	O	O
电子元件和控件 Electronics and Controls	X	O	O	O	O	O

O: 表示该有害物质在该部件的所有均质材料中的含量低于 GB/T 26572 标准规定的限量要求。
O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: 表示该有害物质在该部件的至少一种均质材料中的含量超出 GB/T26572 标准规定的限量要求。
X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

This product has been manufactured under a quality management system certified to ISO 9001:2015

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