

PCU-1000/7500



EN – ORIGINAL INSTRUCTION

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To improve comprehension for people whose first language is not English, we have written parts of this manual in Simplified Technical English (STE). STE is a controlled language originally developed for aerospace industry maintenance manuals. It offers a carefully limited and standardized subset of English, along with specific writing rules.

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PREFACE

Using this manual

Pictograms and symbols

The following pictograms and symbols are used in this manual:

| | |
|--|--|
|  | TIP Suggestions and recommendations to simplify carrying out tasks and actions |
|  | ATTENTION A remark with additional information for the user. A remark brings possible problems to the user's attention. |
|  | CAUTION! Procedures, if not carried out with the necessary caution, could damage the product, the workshop or the environment. |
|  | CAUTION Denotes risk of electric shock. |
|  | WARNING! Fire hazard! Important warning to prevent fire. |
|  | WARNING! Explosion hazard! Important warning to prevent explosions. |
|  | Personal protective equipment (PPE) Instruction to use respiratory protection when you do service, maintenance and repair jobs, as well as during functional testing. We recommend to use a half-face respirator according to DIN EN 141/143, protection class P3. |
|  | Personal protective equipment (PPE) Instruction to use protective gloves when you do service, maintenance and repair jobs. |

Text indicators

Listings indicated by "-" (hyphen) concern enumerations.
Listings indicated by "•" (bullet point) describe steps to perform.

Service and technical support

For information about specific adjustments, maintenance or repair jobs which are not dealt with in this manual, please contact the supplier of the product. He will always be willing to help you. Make sure you have the following specifications at hand:

- product name
- serial number

You can find these data on the identification plate.

Product indications

Unless specifically stated, the contents of this manual applies to the PCU-1000/7500.

1 INTRODUCTION

1.1 Identification of the product

The identification plate contains, among other things, the following data:

- product name
- serial number
- supply voltage and frequency

1.2 General description

PCU-1000/7500 is an energy saving control unit, which together with pressure sensor PC-500, makes a fully automatic system for the control of a vehicle exhaust fan.



ATTENTION

The control unit, PCU-1000/7500, is delivered without cable for supply connection, PC-500 and motor overload. The control unit must be provided with relevant motor overload for the exhaust fan.

1.3 Technical specifications

| PCU-1000 | | |
|------------------------|---|---|
| Supply | AC-3 alternative AC-1 | |
| | Internal supply voltage | 24 AC Secondary |
| | External supply voltage | 120V, 208V, 230V, 380V, 460V, 575V |
| Power consumption | max. 75 W | |
| Input | PC-500 or similar potential free switch | |
| Outputs | Fan motor AC-3 alternative AC-1 | |
| | Relay exit: normally open | |
| | Relay exit: normally closed | |
| | Note: Relay exits may for example be used at external supervision alarm controls | |
| Operating | Automatic | Fully automatic start/stop of the exhaust fan by PC-500 |
| | Manual | Continuously running the exhaust fan |
| | Stop | Manual stop of the exhaust fan |
| Max. power | ≤ 5.5 kW @ 400 V | |
| Stop delay timer range | 7 seconds - 6 minutes | |

| PCU-7500 | | |
|-------------------|---|------------------------------------|
| Supply | AC-3 alternative AC-1 | |
| | Internal supply voltage | 24 AC Secondary |
| | External supply voltage | 120V, 208V, 230V, 380V, 460V, 575V |
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PCU-7500

| | | |
|------------------------|--|---|
| Operating | Automatic | Fully automatic start/stop of the exhaust fan by PC-500 |
| | Manual | Continuously running the exhaust fan |
| | Stop | Manual stop of the exhaust fan |
| Max. power | $5,5 \text{ kW} \leq \text{PCU-7500} \leq 7,5 \text{ kW @ } 400 \text{ V}$ | |
| Stop delay timer range | 7 seconds - 6 minutes | |

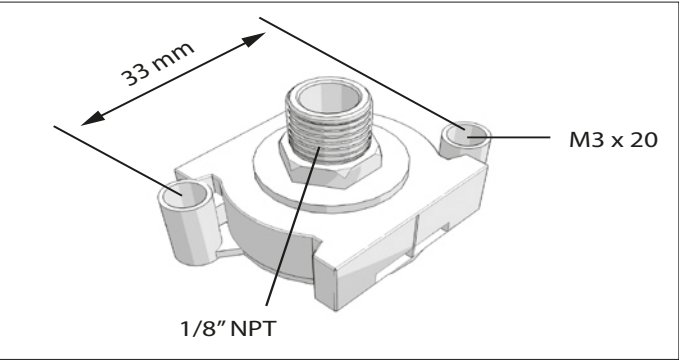


Fig. 1.1 PC-500; pressure sensor

2 PRODUCT DESCRIPTION

2.1 Product components

The product consists of the following main components and elements:

- Fig. 2.1
- A Fan indicator
 - B Automatic start/stop
 - C Manual stop
 - D Manual start

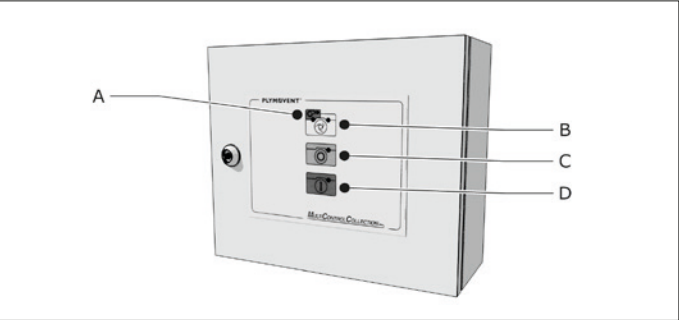


Fig. 2.1 PCU-1000/7500; front

Fig. 2.2
A Stop delay timer

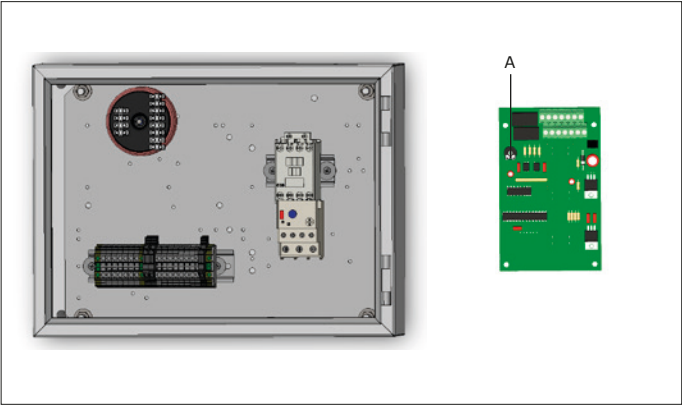


Fig. 2.2 PCU-1000/7500; inside

2.2 Operation

PCU-1000/7500 is a control unit, with the possibility to both manual and automatic control the exhaust fan up to 7.5 kW @ 400 V/3ph/50Hz. When the control unit is in "automatic" position, the exhaust fan starts by a signal from pressure sensor PC-500 or any other similar external potential free contact.

PC-500 reacts on pressure increase which occurs when a vehicle starts and increases the pressure in the system. When the engine is turned on, the pressure sensor reacts and sends a signal to the control unit. Then, the control unit starts the exhaust fan. The fan stops after the pre-adjusted after-run time is out. The after-run time can be pre-adjusted between 7 sec. and 6 min. When the control unit is in "on" position the exhaust fan runs continuously.

The control unit also has a position for manual stop (see Fig. 2.1 C) of the exhaust fan. Observe that when the control unit and the fan are stopped manually or automatically, (stop delay time is out), and the motor is still running there is a risk of exhaust gas leakage from the system and a risk that the exhaust hose melts due to the temperature increase.

3 SAFETY INSTRUCTIONS

General

The manufacturer does not accept any liability for damage to the product or personal injury caused by ignoring of the safety instructions in this manual, or by negligence during installation, use, maintenance, and repair of the product mentioned on the cover of this document and any corresponding accessories. Specific working conditions or used accessories may require additional safety instructions. Immediately contact your supplier if you detect a potential danger when using the product.

The user of the product is always fully responsible for observing the local safety instructions and regulations. Observe all applicable safety instructions and regulations.

User manual

- Everyone working on or with the product, must be familiar with the contents of this manual and must strictly observe the instructions therein. The management should instruct the personnel in accordance with the manual and observe all instructions and directions given.
- Do not change the order of the steps to perform.
- Keep the manual with the product.

Users

- The use of this product is exclusively reserved to authorised, trained and qualified users. Temporary personnel and personnel in training can only use the product under supervision and responsibility of skilled engineers.
- Stay alert and keep your attention to your work. Do not use the product when you are under the influence of drugs, alcohol or medicine.
- The product is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children must be supervised not to play with the product.

Technical specifications

Do not change the specifications given in this manual.

Modifications

Modification of (parts of) the product is not allowed.

Installation

- The installation of this product is exclusively reserved to authorised, trained and qualified engineers.
- The electric connection must be executed in accordance with the local codes and requirements. Ensure compliance with the EMC regulatory arrangements.
- During installation, always use Personal Protective Equipment (PPE) to avoid injury. This also applies to persons who enter the work area during installation.
- Use sufficient climbing gear and safety guards when working on a higher level than 2 metres (local restrictions may apply).
- Do not install the product in front of entrances and exits which must be used for emergency services.
- Mind any gas and water pipes and electric cables.
- Make sure that the workspace is well illuminated.
- Stay alert and keep your attention to your work. Do not install the product when you are under the influence of drugs, alcohol or medicine.
- Air containing particles such as chromium, nickel, beryllium, cadmium, lead etc., should never be recycled. This air must always be brought outside the working area.

Use

- Inspect the product and check it for damage. Verify the functioning of the safety features.
- Check the working environment. Do not allow unauthorised persons to enter the working environment.
- Protect the product against water and humidity.
- Make sure the room is always sufficiently ventilated; this applies especially to confined spaces.
- Make sure that the workshop, in the vicinity of the product, contains sufficient approved fire extinguishers (suitable for fire classes ABC).

Service, maintenance and repairs

- Obey the maintenance intervals given in this manual. Overdue maintenance can lead to high costs for repair and revisions and can render the guarantee null and void.
- Always use Personal Protective Equipment (PPE) to avoid injury. This also applies for persons who enter the work area.
- Make sure the room is sufficiently ventilated.
- Use tools, materials, lubricants and service techniques which have been approved by the manufacturer. Never use worn tools and do not leave any tools in or on the product.
- Use sufficient climbing gear and safety guards when working on a higher level than 2 metres (local restrictions may apply).
- Clean the area afterwards.

4 INSTALLATION



CAUTION!

Do not attempt installation of this unit unless you are familiar with the necessary tools, equipment, utility connections and potential hazards. Installation should be performed only by a qualified service provider. Failure to do so could result in reduced performance of the unit, serious personal injury or death.



CAUTION!

Fire hazard!
Never install the control box in areas with flammable gases.



ATTENTION

The PCU-1000/7500 control box is delivered without cables for external field wiring. All interconnect cables/wire size used shall comply to the NEC codes. The glands used for inserting the cable into the PCU-1000/7500 control box should be placed in the bottom of the casing. The cable should fit tightly in the gland to prevent any moisture entering the inside of the PCU-1000/7500 control box.

4.1 Unpacking

Check that the product is complete. The package should contain:

- PCU-1000/7500 control box
- door key

The control unit is delivered complete with functions for manual and automatic start/stop of the exhaust fan.

4.2 Electric connection

- Connect the PCU-1000/7500 in accordance with the separately supplied electrical diagram.



CAUTION

Electric connection to be executed in accordance with local requirements. Ensure compliance with the EMC regulatory arrangements.



CAUTION

Make sure the machine is suitable for connection to the local mains. Information about the connection voltage and frequency can be found on the identification plate.

5 MAINTENANCE

The PCU-1000/7500 requires no specific maintenance.

6 TROUBLESHOOTING

If the PCU-1000/7500 does not function (correctly), please contact your supplier.

7 SPARE PARTS

| Position | Article number | Description |
|----------|----------------|--|
| 1 | 0000101414 | Contacteur A&B K12 relay (PCU-1000) |
| 1a | 0040900210 | Relay 100-C16KJ10 |
| 2 | 0000101413 | Transformer relay |
| 3 | 0000101415 | Fuse 1,6 A 5x20 mm relay |
| 4 | 0000101409 | Fuse 3,15 A 5x20 mm relay |
| 5 | 0000101410 | Circuit board with push button |
| | 0000100716 | PC-500 (external material, see fig. 1.1) |
| | 0040900220 | Thermal relay 3,2-16 A |

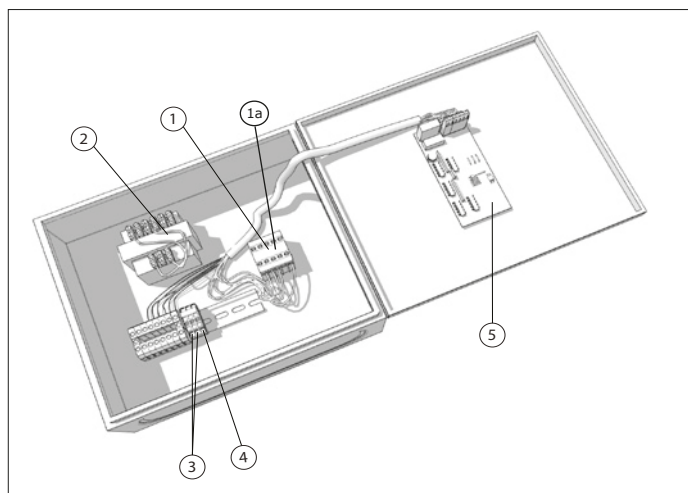


Fig. 7.1 PCU-1000/7500 spare parts

8 DISPOSAL

After life of the product, dispose it of in accordance with federal, state or local regulations.

CE DECLARATION

CE declaration of conformity for machinery

We, Plymovent Industrial Solutions B.V., Koraalstraat 9, 1812 RK Alkmaar, the Netherlands, herewith declare, on our own responsibility, that the product(s):

- PCU-1000/7500

which this declaration refers to, is in accordance with the conditions of the following Directives:

- 2014/30/EU EMC

- 2014/35/EU LVD

and is/are in conformity with the following harmonized standard(s) and/or other such normative documents + amendments, if any:

- EN 60204-1:2006

- EN 61439-1:2009

- EN 610000-6-1:2007

- EN 610000-6-3:2007

Alkmaar, the Netherlands, November 8th 2019

Kees Janssen
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