

Hydro-Unit

User and operating instructions

Serie: HU1/FU1 (FS/PS) ECO

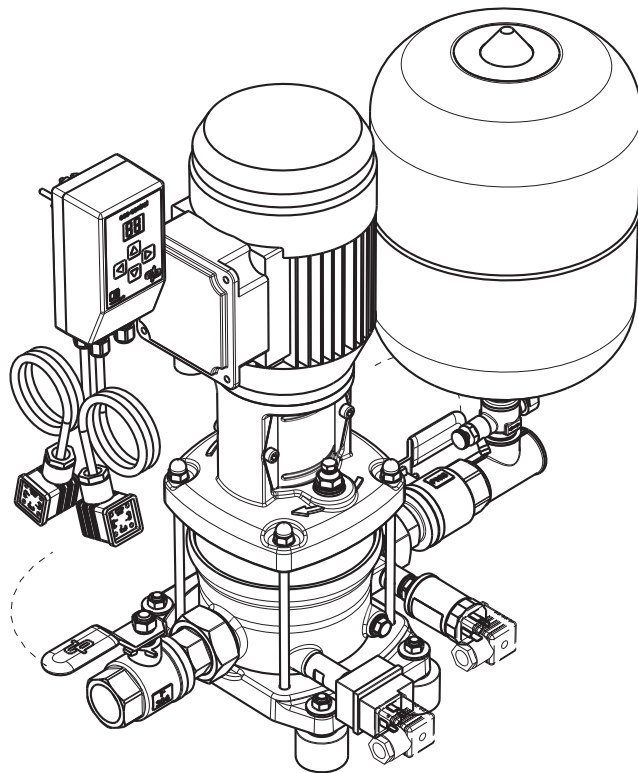


Table of Contents

| | | |
|----------|---|----|
| 1 | Introduction | |
| 1.1 | Preface..... | 4 |
| 1.2 | Icons and symbols | 4 |
| 2 | Identification, service and technical support | |
| 2.1 | Identification, service and technical support | 5 |
| 2.2 | Supplementary documentation | 5 |
| 3 | Warranty | |
| 3.1 | Terms of warranty | 6 |
| 4 | Safety and environment | |
| 4.1 | General | 7 |
| 4.2 | Users..... | 7 |
| 4.3 | Safety provisions..... | 7 |
| 4.4 | Safety precautions | 8 |
| 4.5 | Environmental aspects..... | 8 |
| 5 | Introduction | |
| 5.1 | General | 9 |
| 5.2 | Intended use | 9 |
| 5.3 | Working range..... | 10 |
| 5.4 | Operation of HU1/FU1 PS DPVE 2/4/6 B up to 1.1 kW (pressure control)..... | 11 |
| 5.5 | Operation of HU1 FS DPVE 2 B up to 0.55 kW (flow control) | 15 |
| 5.6 | Operation of FU1 PS DPVE 2/4/6 B up to 1.1 kW (fire alarm control) | 18 |
| 6 | Transport | |
| 6.1 | Transport and storage..... | 20 |
| 6.2 | Transport..... | 20 |
| 6.3 | Storage..... | 20 |
| 7 | System | |
| 7.1 | Mechanical installation..... | 21 |
| 7.2 | Setting up the installation..... | 21 |
| 7.3 | Electrical installation | 22 |
| 7.4 | Commissioning | 22 |
| 8 | Operation | |
| 8.1 | General | 24 |
| 8.2 | Indication / fault..... | 24 |
| 8.3 | Operation | 25 |
| 9 | Maintenance | |
| 9.1 | Introduction | 26 |
| 9.2 | Checking points | 26 |
| 9.3 | Lubrication..... | 26 |
| 9.4 | Maintaining the pump for an extended period of non-operation | 26 |
| 9.5 | Cleaning instructions..... | 26 |

10 Annexes

| | |
|--|----|
| 10.1 Overview of alarm codes ECO-Control | 27 |
| 10.2 Fault code table Hydro-Unit ECO | 28 |
| 10.3 Controller unit ECO-Control | 29 |
| 10.4 Electrical connections | 31 |
| 10.5 Parameter list | 32 |
| 10.6 CE declaration of conformity | 34 |



1 Introduction

1.1 Preface

This manual contains important information for reliable, proper and efficient operation. Compliance with the operating instructions is of vital importance to ensure reliability and a long service life of the product and to avoid any risks.

The first chapters contain information about this manual and safety in general. The following chapters provide information about normal use, installation, maintenance and repairs of the product. The annex contains the declaration(s) of conformity.

- Make yourself familiar with the content.
- Accurately follow the directions and instructions.
- Never change the sequence of the operations to be carried out.
- Keep this manual or a copy of it together with the logbook in a fixed place near the product which can be accessed by all personnel.



ATTENTION

Is used to introduce safety instructions whose non-observance may lead to damage to the installation and its functions.



ENVIRONMENTAL INSTRUCTION

Remarks with respect to the environment.



FOR INDOOR USE ONLY

Connect the Hydro-Unit ECO only indoors.

1.2 Icons and symbols

In this manual and in all accompanying documentation the following icons and symbols are used.



WARNING

Danger of electric tension. Safety sign to IEC 417 - 5036



WARNING

Operations or procedures, if carried out without caution, may cause personal injury or damage to the installation. General hazard sign according to ISO 7000-0434.



READ THE (SUPPLEMENTARY) DOCUMENTATION

Read the user and operating instructions.

2 Identification, service and technical support

2.1 Identification, service and technical support

The identification sticker mentions the type/size, the main operating data and the serial number. Please mention these data in all queries, repeat orders and particularly when ordering spare parts. If you need any additional information or instructions not included in this manual or in case of damage, please contact the nearest customer service centre of DP-Pumps.

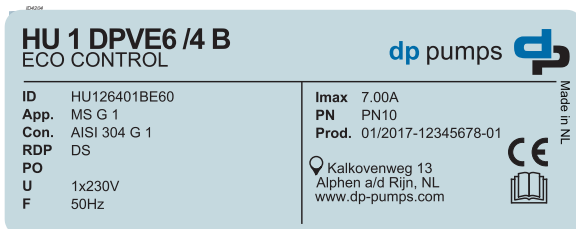


Figure 1: Example identification sticker

Table 1: explanation of the sticker

| Indication | Meaning |
|--------------|--|
| HU1DPVE6/4 B | Installation type |
| ECO-Control | Type of controller and start-up method |
| ID | Item number |
| App. | Material of fittings and connection size |
| Con. | Material of pipes and connection size |
| RDP | Type of run-dry protection |
| PO | Purchase order number |
| U | Supply voltage of the installation |
| F | Frequency of the installation |
| Imax | Maximum absorbed power of the installation |
| PN | Pressure class of the installation and construction type |
| Prod. | Production week/year and number |

The following address data are available for service and technical support:

Table 2: Address service department

| | |
|--|---|
| DP-Pumps | Tel: +31 172 488388 Fax: +31 172 468930 Internet: www.dp-pumps.com E-mail: dp@dp-pumps.com |
| Kalkovenweg 13 2401 LJ Alphen a/d Rijn The Netherlands | |

2.2 Supplementary documentation

This version is applicable for software from version 3.4. Apart from this manual, the documentation given below is available as well:

Table 3: supplementary documentation

| Document | Code |
|--|------------|
| General terms of delivery | 119 / 1998 |
| Technical documentation about the pump | 97004453 |
| Technical documentation about the installation | 97004468 |
| Documentation | BE00000391 |

Also see: www.dp.nl

| Software version | Manual version from: |
|-----------------------|----------------------|
| ECO-Control V 3.4 | 11/2011 |
| ECO-Control V 3.5 | 01/2012 |
| ECO-Control V 3.9/4.1 | 08/2013 |

Also see: www.dp.nl

3 Warranty

3.1 Terms of warranty

The warranty period is settled by the terms of your contract or at least by the general terms and conditions of sales.



ATTENTION

Modifications or alterations of the product supplied are only permitted after consultation with the manufacturer. Original spare parts and accessories authorized by the manufacturer ensure safety. The use of other parts can invalidate any liability of the manufacturer for consequential damage.



ATTENTION

The warranty relating to the operating reliability and safety of the product supplied is only valid if the product is used in accordance with its designated use as described in the following sections of this manual. The limits stated in the data sheet must not be exceeded under any circumstances.

The warranty becomes invalid if one or more of the points below occur.

- The buyer makes modifications himself.
- The buyer carries out repairs himself or has these carried out by a third party.
- The product has been handled or maintained improperly.
- The product has non original DP-Pumps spare parts fitted.

DP-Pumps repairs defects under warranty when:

- They are caused by flaws in the design, the material or the production.
- They are reported within the warranty period.

Other terms of warranty have been included in the general terms of delivery, which are available upon request.

4 Safety and environment

4.1 General

This DP-Pumps product has been developed using state-of-the-art technology and is manufactured with utmost care and is subject to continuous quality control.

DP-Pumps does not accept any liability for damage or injury caused by not following the directions and instructions in this manual or by carelessness during the installation, use or maintenance of the product.

Non-compliance with the safety instructions can jeopardize the safety of personnel, the environment and the product itself. Non-compliance with these safety instructions will also lead to forfeiture of any and all rights to claims for damages.

Non-compliance can result in:

- failure of important pump/system functions,
- failure of prescribed maintenance or service,
- injury caused by electrical, mechanical and chemical effects,
- leakage to the environment of hazardous substances,
- explosions.

Depending on the application, extra safety measures may be required. Contact DP-Pumps if a potential danger arises during use.



ATTENTION

The owner of the product is responsible for compliance with the local safety regulations and internal company guidelines.



ATTENTION

Not only must the general safety instructions laid down in this chapter on "Safety" be complied with, but also the safety instructions outlined under specific headings.

4.2 Users

All personnel involved in the operation, maintenance, inspection and installation of the product must be fully qualified to carry out the work involved and be aware of all applicable responsibilities, authorisations and supervisions. If the personnel in question is not in

possession of the required know-how, appropriate training and instruction must be provided. The operator may require the manufacturer/supplier to provide sufficient training and/or instructions. The operator is responsible for ensuring that the contents of the operating instructions are fully understood by the responsible personnel.

4.3 Safety provisions

The product has been designed with the greatest possible care. Original parts and accessories meet the safety regulations. Modifications in the construction or the use of non-original parts may lead to a safety risk.



ATTENTION

Make sure that the product operates within its working range. Only then the product performance is guaranteed.

4.3.1 Labels on the product

The icons, warnings and instructions applied to the product are part of the safety provisions. The labels may not be removed or covered. Labels must remain legible during the entire life of the product. Replace damaged labels immediately.

4.4 Safety precautions

4.4.1 During normal use

- For questions regarding the power supply contact the local electricity company.
- Isolate possible hot parts to avoid injury through direct contact.
- For your safety always assemble undeformed coupling guards (when applicable) before putting the pump into use.
- Always close the terminal box of the motor.
- Always close the control panel where applicable

4.4.2 During installation, maintenance and repair

Only authorised personnel may install, maintain and inspect the product and repair electrical components. Observe the local safety regulations.



WARNING

Before proceeding with any installation, maintenance or repair, disconnect the power supply and secure this disconnection.



WARNING

Surfaces of a pump can be hot after continuous or intermittent operation.



WARNING

Secure the area before starting a pump to avoid hazardous situations with rotating parts.



WARNING

Take utmost care when handling dangerous liquids. Avoid danger to persons or the environment when conducting repairs, draining liquids or venting. It is strongly recommended to place a leakage tray under the pump.



WARNING

Immediately after completing the work, all safety-relevant and protective devices must be re-installed and / or re-activated.



WARNING

Please observe all instructions set out in the chapter "Commissioning" before returning the product to service.

4.5 Environmental aspects

4.5.1 General

This product of DP-Pumps is designed to function in an environmentally friendly way during their entire life.



ENVIRONMENTAL INSTRUCTION

Always act according to the laws, by-laws regulations and instructions with respect to health, safety and the environment.

4.5.2 Dismantling

Dismantle the product and dispose of it in an environmentally friendly way. The owner is responsible for this.



ENVIRONMENTAL INSTRUCTION

Ask at the local government about the re-use or the environmentally friendly processing of discarded materials.



ENVIRONMENTAL INSTRUCTION

All components of the ECO-ControlHUare manufactured in accordance with RoHS II directive 2011/65/EU.

5 Introduction

5.1 General



ATTENTION

DP-Pumps advises to install a pressure gauge in the inlet and outlet pipes so that the reading of the pressure value is independent from the installation.

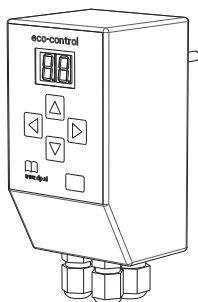


Figure 2: Control units of the type ECO-Control.

Control units of the type ECO-Control are manufactured by DP-Pumps.

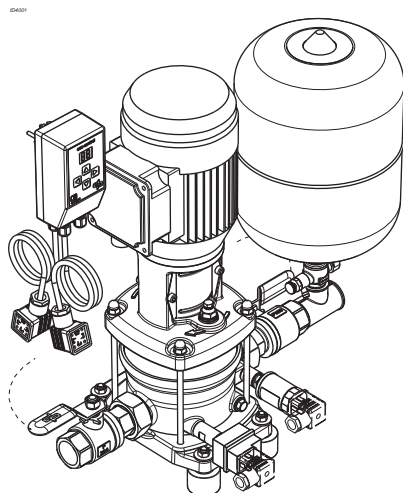


Figure 3: Installations of the type Hydro-Unit ECO

HU1/FU1 DPVE ECO-Control installations are manufactured by DP-Pumps, Alphen aan den Rijn.

5.2 Intended use

The installation Hydro-Unit ECO is suitable for increasing the pressure in (drinking) water installations and for pumping liquids with a viscosity identical to the viscosity of water, within the indicated working range (see "Working range").

Any other or further use of the installation is not in conformity with its intended use. DP-Pumps does not accept any liability for any damage or injury resulting from this. The installation has been produced in accordance with the actual standards and guidelines. Use the installation exclusively in a perfect technical state, in conformity with the intended use described below.

The *Intended use* as laid down in ISO 12100:2010 is the use for which the technical product is intended according to the specifications of the manufacturer. The use of the product has been described in the available documentation and information. Always observe the instructions as given in the user and operating instructions. When in doubt the product must be used as becomes evident from its construction, version and function.

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5.3 Working range

The working range of the installation can be summarised as follows:

Table 4: Specification of the working range

| Type | Hydro-Unit ECO |
|--------------------------------|---|
| Ambient temperature [°C] | 0 - 30 |
| Liquid temperature [°C] | +4 - 40 ¹ |
| Maximum working pressure [kPa] | 1,000 Unless indicated otherwise |
| Supply pressure [kPa] | Non-cavitating ¹ . Minimum: 110 kPa Maximum: supply pressure plus pump pressure together may not exceed 1000 kPa |
| Maximum height | 1000 m above sea level |

1. Contact your supplier for more advice.

Table 5: Specific applications

| Type | Area of application |
|----------------|---|
| Hydro-Unit ECO | (Drinking) water supply systems, irrigation systems, water treatment systems, car-wash systems, sprinkler systems and discharge of condensed water. |

5.4 Operation of HU1/FU1 PS DPVE 2/4/6 B up to 1.1 kW (pressure control)

5.4.1 Operation

This paragraph describes the operation of the hydro unit if it is fitted with a pressure transducer and the eco-control is set to "pressure control". For "flow control" or "fire control", see the following paragraphs.

Terms and Conditions:

- Run-dry protection must be present (NO/NC), see parameter 2 in table 6 Parameter settings for pressure control
- Fire alarm must not be present (NO/NC), see parameter 23 in table 6 Parameter settings for pressure control

For more settings, see table 6 Parameter settings for pressure control

For fault codes, see table 7 Alarm codes for "pressure control"

5.4.2 Parameter settings for HU1/FU1 PS

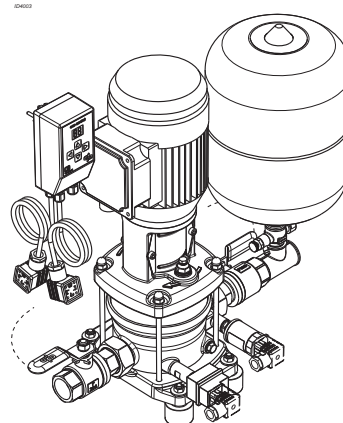


Figure 4: HU1/FU1 PS DPVE 2/4/6 B up to 1.1 kW

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Table 6: Parameter settings for pressure control

| Parameter | Description | Range | Factory setting | Unit | Explanation | Comment |
|-----------|-------------------------------------|------------------|-----------------|------------|--|---|
| 0 | Pump control | 1 2 3 4 | 1 | - | 1 = Pressure control 2 = Flow control 3 = Fire control 4=Break-unit | Changing this setting does not function as a reset |
| 1 | Reset dry run and temperature alarm | 0 1 | 1 | - | 0 = Automatic reset 1 = Manual reset | Reset pump + alarm |
| 2 | Type of run-dry contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 3 | Type of pressure reader | 0 1 | 0 | - | 0=0-10 bar 1=-1-10 bar | Display flashes below 0 bar |
| 4 | Action at pressure reader fault | 0 1 | 1 | - | 0 = Pump on 1 = Pump off | |
| 5 | Target value for system pressure | 0-9.9 | 3.8 | bar | | |
| 6 | Band width for pressure control | 0-9.9 | 0.3 | bar | Definite switching pump on/off | $p_{in} = p_{desired} - \text{band width}$ |
| 7 | Limit value high pressure alarm | 0-9.9 | 9.9 | bar | | Pump off + alarm |
| 8 | Reset high pressure alarm | 0 1 | 0 | - | 0= Automatic reset alarm 1= Manual reset alarm | Automatic reset of the pump when the pressure drops again |
| 9 | Limit value low pressure alarm | 0-9.9 | 1.0 | bar | | Pump off + alarm |
| 10 | Reset low pressure alarm | 0 1 | 0 | - | 0= Automatic reset alarm 1= Manual reset alarm | Automatic reset of the pump when sufficient pressure |
| 11 | Maximum number of starts | 0-99 | 20 | n/ hour | Maximum given by manufacturer | No pump out/alarm |

| Parameter | Description | Range | Factory setting | Unit | Explanation | Comment |
|-----------|-------------------------------|--------|-----------------|------|--|--|
| 12 | Minimum run time | 0-99 | 60 | s | Against starting frequently | |
| 13 | Minimum run time - correction | 0-99 | 10 | s | Correction for many/few starts | Minimum = par 12 |
| 14 | Delay run-dry alarm | 0-99 | 10 | s | | Pump off + alarm |
| 15 | Delay high/low pressure alarm | 0-99 | 60 | s | | See par 7 - 10 |
| 16 | Test turn - interval | 0-99 | 1 | D | | D = days |
| 17 | Test-run time | 0-99 | 30 | s | | (Alarm) code 22 |
| 18 | Nominal motor current | 0-9.9 | I_{nom} | A | Type plate motor | |
| 19 | Delay for exceeding I_{nom} | 0-99 | 5 | s | | Pump off + alarm |
| 20 | Limit value low motor current | 0-99 | 20 | % | % of I_{mom} | Alarm (automatic reset) |
| 23 | Type of fire alarm contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 24 | Alarm contact (output) | 0 1 | 0 | - | 0 = Closed during alarm 1 = Open during alarm | NO NC |
| 25 | Delay for run-dry recovery | 0-99 | 5 | s | Delayed pump release | If par 1=0 |
| 26 | Reset all settings | 0 1 | 0 | - | 0 = No action 1 = All parameters to factory settings ¹ | When par 0 = 1/2/3 -> 2, when 4 it remains 4 |

1. Note: a reset will result in all settings being returned to the factory settings as described in the parameter list. After a reset, set the correct target value (par 5), delay high/low pressure alarm (par 15), and the nominal motor current (par 18). Incorrect settings may result in the installation working improperly or not at all.



ATTENTION

The lowest alarm code always has priority over the higher alarm code.

Table 7: Alarm codes for "pressure control"

| Alarm code | Description | Parameter | Auto-reset | Manual reset | Pump relay | Alarm | Remarks |
|------------|---------------------------------|-----------|----------------------|-------------------|------------|-------|---|
| 11 | Motor current too high/pump off | | No | Yes | Off | Yes | Par. 21 does not apply to the pressure control |
| 12 | Fire alarm activated | Par.0=1/2 | Yes | No | On | Yes | |
| | | Par.0=3 | No | Yes | | | |
| 13 | Run-dry protection activated | Par.1=0 | Yes | No | Off | Yes | |
| 14 | Run-dry protection activated | Par.1=1 | No | Yes | Off | Yes | |
| 15 | Temp. Input activated | Par.1=0 | Yes | No | Off | Yes | |
| | | Par.1=1 | No | Yes | Off | Yes | |
| 16 | Pressure reader fault | Par.4=0 | Yes | No | On | Yes | |
| | | Par.4=1 | Yes | No | Off | Yes | |
| 17 | Discharge pressure too high | Par.8=1 | No (motor relay Yes) | Yes (alarm relay) | Off | Yes | Only the alarm relay requires manual resetting. |

| Alarm code | Description | Parameter | Auto-reset | Manual reset | Pump relay | Alarm | Remarks |
|------------|---------------------------------|-----------|----------------------|-------------------|------------|-------|---|
| 18 | Discharge pressure too low | Par.10=1 | No (motor relay Yes) | Yes (alarm relay) | Off | Yes | Only the alarm relay requires manual resetting, the pump relay is automatically reset |
| 19 | Discharge pressure too high | Par.8=0 | Yes | No | Off | Yes | |
| 20 | Discharge pressure too low | Par.10=0 | Yes | No | On | Yes | |
| 21 | Motor current too low | | Yes | No | On | Yes | |
| 22 | Test-run cycle during operation | | n/a | n/a | On | No | |

5.4.3 Basic operation pressure control

Switch-off pressure = target value (parameter 5) + bandwidth (parameter 6)
example: $3.8 + 0.3 = 4.1$ bar

If the pressure in the system drops below the switch-on pressure, (target value (parameter 5) - bandwidth (parameter 6)) example: $3.8 - 0.3 = 3.5$ bar, the pump will be started. The minimum run time will now also be started. (parameter 12)

- When the minimum run time is complete, and the pressure in the system is still under the cut-out pressure, nothing will happen and the pump will continue to run.
- When the minimum run time is complete, and the pressure in the system is over the cut-out pressure, the pump will be switched off.
- When the minimum run time is not complete, and the pressure in the system is above the cut-out pressure, the pump will be switched off after the expiry of the minimum run time.

5.4.4 Basic operation excessive pressure

If the system pressure exceeds the maximum set pressure, and the delay time (parameter 15) has expired, the high pressure alarm will be generated and the pump switched off.

The fault can only be reset when the pressure is below the value in parameter 7. The notification must then be reset when parameter 8 is '1'. The pump relay will always be reset automatically. Only the alarm can be reset manually or automatically, depending on parameter 8 = 0 or 1 and alarm code 17 or 19.

5.4.5 Basic operation insufficient pressure

- When the system pressure drops below the set low pressure value (parameter 9), and the high/low pressure alarm delay time (parameter 15) has expired, and low pressure action (parameter 10) is 0, the controller will generate an alarm. As

soon as the pressure is above the set low pressure, the alarm will be reset automatically. The pump relay will remain on.

- When the system pressure drops below the set low pressure value, and the high/low pressure alarm delay time has expired, and low pressure action is 1, the controller will generate an alarm and the pump will be switched off.
- The system can be put under pressure again by pressing the right arrow key.



ATTENTION

Note: After pressing the right arrow key, the pump will always run without taking the protection systems into account!



ATTENTION

Do not press the right arrow key for longer than 10 seconds!



ATTENTION

See 10.2 Fault code table Hydro-Unit ECO


5.4.6 Basic operation minimum run time correction

The pump may start a maximum number of times per hour (parameter 11). The pump has a minimum run time (parameter 12).

When the pump switches on more occasions per hour than the maximum number that has been set for starts (parameter 11), the minimum run time (parameter 12) with a limited time will be extended automatically after one hour by a correction factor (parameter 13).

If, after an hour, the number of starts has remained below the maximum number of starts per hour (parameter 11), the minimum run time will be decreased automatically. The minimum run time can never be less than the value set in parameter 12.

5.4.7 Basic operation RDP (run-dry protection)

- If there is pre-pressure present, the pump may be started.
- If the pre-pressure is no longer present, the run-dry protection will be started (parameter 14).
- If the minimum pre-pressure has not returned when the run-dry protection is complete, the installation will register a fault (Par. 1 = 0/1). The pump will be switched off (alarm code 13 or 14).
- If the pre-pressure returns before the run-dry protection is complete, the installation continues to run as normal.
- If the "Automatic reset" (parameter 1) has the value "0" (Automatic reset), the installation will return to "Automatic reset" if the pre-pressure returns.
- If parameter 1 is set to 1, "No automatic reset", the installation will not return to "Automatic reset" itself if the pre-pressure is present, this will only occur after the reset button has been pressed  the installation will be operational again.



ATTENTION

See 10.2 Fault code table Hydro-Unit ECO.

5.4.8 Fire alarm

Fire alarm always takes precedence over other notifications. The pump will continue to run as long as the fire contact is tripped (NC/NO according to the setting of parameter 23).

If the motor current exceeds the maximum current set in parameter 18, the pump will be stopped.



ATTENTION

This fire alarm signal is also active in the pressure control (parameter 0 set to 1). If the fire alarm is active, the pump runs. The fire alarm signal, the notification, has an auto-reset function.



ATTENTION

Fire alarm is always controlled by an external contact (NO/NC) see parameter 23.

5.5 Operation of HU1 FS DPVE 2 B up to 0.55 kW (flow control)

5.5.1 Operation

Terms and Conditions:

- Run-dry protection must be present
- Fire alarm must not be present (NO/NC), see parameter 23 in table 8 Flow control parameter settings

For more settings, see table 8 Flow control parameter settings

For fault codes, see table 9 Alarm codes for "flow control"

5.5.2 Parameter settings for HU1 FS

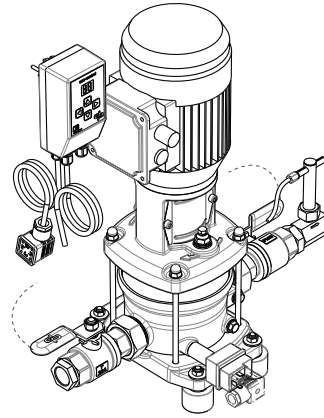


Figure 5: HU1 FS DPVE 2 B up to 0.55 kW

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Table 8: Flow control parameter settings

| Parameter | Description | Range | Factory setting | Unit | Explanation | Comment |
|-----------|-------------------------------------|------------------|-----------------|------------|--|--|
| 0 | Pump control | 1 2 3 4 | 2 | - | 1 = Pressure control 2 = Flow control 3 = Fire control 4=Break-unit | Changing this setting does not function as a reset |
| 1 | Reset dry run and temperature alarm | 0 1 | 1 | - | 0 = Automatic reset 1 = Manual reset | Reset pump + alarm |
| 2 | Type of run-dry contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 11 | Maximum number of starts | 0-99 | 20 | n/ hour | Maximum given by manufacturer | No pump out/alarm |
| 12 | Minimum run time | 0-99 | 60 | s | Against starting frequently | |
| 13 | Minimum run time - correction | 0-99 | 10 | s | Correction for many/few starts | Minimum = par 12 |
| 14 | Delay run-dry alarm | 0-99 | 10 | s | | Pump off + alarm |
| 16 | Test turn - interval | 0-99 | 1 | D | | D = days |
| 17 | Test-run time | 0-99 | 30 | s | | (Alarm) code 22 |
| 18 | Nominal motor current | 0-9.9 | I_{nom} | A | Type plate motor | |
| 19 | Delay for exceeding I_{nom} | 0-99 | 5 | s | | Pump off + alarm |
| 20 | Limit value low motor current | 0-99 | 20 | % | % of I_{nom} | Alarm (automatic reset) |
| 23 | Type of fire alarm contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 24 | Alarm contact (output) | 0 1 | 0 | - | 0 = Closed during alarm 1 = Open during alarm | NO NC |
| 25 | Delay for run-dry recovery | 0-99 | 5 | s | Delayed pump release | If par 1=0 |
| 26 | Reset all settings | 0 1 | 0 | - | 0 = No action 1= All parameters to factory settings ¹ | When par 0 = 1/2/3 -> 2, when 4 it remains 4 |

1. Note: a reset will result in all settings being returned to the factory settings as described in the parameter list. After a reset, adjust the nominal motor current (par 18). Incorrect settings may result in the installation working improperly or not at all.

**ATTENTION**

The lowest alarm code always has priority over the higher alarm code.

Table 9: Alarm codes for "flow control"

| Alarm code | Description | Parameter | Auto-reset | Manual reset | Pump relay | Alarm | Remarks |
|------------|---------------------------------|-----------|------------|--------------|------------|-------|---------|
| 11 | Motor current too high/pump off | Par.20=0 | No | Yes | Off | Yes | |
| 12 | Fire alarm activated | Par.0=1/2 | Yes | No | On | Yes | |
| | | Par.0=3 | No | Yes | | | |
| 13 | Run-dry protection activated | Par.1=0 | Yes | No | Off | Yes | |
| 14 | Run-dry protection activated | Par.1=1 | No | Yes | Off | Yes | |
| 15 | Temp. Input activated | Par.1=0 | Yes | No | Off | Yes | |
| | | Par.1=1 | No | Yes | Off | Yes | |
| 21 | Motor current too low | | Yes | No | On | Yes | |
| 22 | Test-run cycle during operation | | n/a | n/a | On | No | |

5.5.3 Basic operation flow control

Flow circuit works via a contact. The pump switches on if the contact is made. The minimum turning time will now be started. (parameter 12). If the contact is broken, the pump is turned off if the minimum run time has elapsed.


5.5.4 Basic operation minimum run time correction

The pump may only be started up a maximum number of times per hour (parameter 11). The pump has a minimum run time (parameter 12).

When the pump switches on more occasions per hour than the maximum number that has been set for starts (parameter 11), the minimum run time (parameter 12) with a limited time will be extended automatically for the following hour by a correction factor (parameter 13).

If, after an hour, the number of starts has remained below the maximum number of starts per hour (parameter 11), the minimum run time will be decreased automatically again. The minimum "Minimum run time correction" (parameter 13) is the same as the minimum run time (parameter 12).

5.5.5 Basic operation RDP (run-dry protection)

- If there is pre-pressure present, the pump may be started.
- If the pre-pressure is no longer present, the run-dry protection will be started (parameter 14).
- If the minimum pre-pressure has not returned when the run-dry protection is complete, the installation will register a fault (Par. 1 = 0/1). The pump will be switched off (alarm code 13 or 14).
- If the pre-pressure returns before the run-dry protection is complete, the installation continues to run as normal.
- If the "Automatic reset" (parameter 1) has the value "0" (Automatic reset), the installation will return to "Automatic reset" if the pre-pressure returns.
- If parameter 1 is set to 1, "No automatic reset", the installation will not return to "Automatic reset" itself if the pre-pressure is present, this will only occur after the reset button has been pressed  the installation will be operational again.

**ATTENTION**

See 10.2 Fault code table Hydro-Unit ECO.

5.5.6 Fire alarm

Fire alarm always takes precedence over other notifications. The pump will continue to run as long as the fire contact is tripped (NC/NO according to the setting of parameter 23).

If the motor current exceeds the maximum current set in parameter 18, the pump will be stopped.



ATTENTION

This fire alarm signal is also active in the flow control (parameter 0 set to 2). If the fire alarm is active, the pump runs. The fire alarm signal, the notification, has an auto-reset function.



ATTENTION

Fire alarm is always controlled by an external contact (NO/NC) see parameter 23.

5.6 Operation of FU1 PS DPVE 2/4/6 B up to 1.1 kW (fire alarm control)

5.6.1 Operation

Terms and Conditions:

- Run-dry protection must be present

For more settings, see table 10 Parameter settings for FU1 PB

For fault codes, see table 11 Alarm codes in the event of "fire control"

5.6.2 Parameter settings for FU1 PB

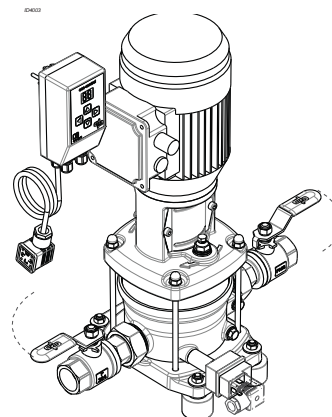


Figure 6: FU1 PB DPVE 2-6 B up to 1.1 kW

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Table 10: Parameter settings for FU1 PB

| Parameter | Description | Range | Factory setting | Unit | Explanation | Comment |
|-----------|---|------------------|-----------------|------|--|---|
| 0 | Pump control | 1 2 3 4 | 3 | - | 1 = Pressure control 2 = Flow control 3 = Fire control 4=Break-unit | Changing this setting does not function as a reset |
| 1 | Reset dry run and temperature alarm | 0 1 | 1 | - | 0 = Automatic reset 1 = Manual reset | Reset pump + alarm |
| 14 | Delay run-dry alarm | 0-99 | 10 | s | | Pump off + alarm |
| 16 | Test turn - interval | 0-99 | 1 | D | | D = days |
| 17 | Test-run time | 0-99 | 30 | s | | (Alarm) code 22 |
| 18 | Nominal motor current | 0-9.9 | I_{nom} | A | Type plate motor | |
| 19 | Delay for exceeding I_{nom} | 0-99 | 5 | s | | Pump off + alarm |
| 20 | Limit value low motor current | 0-99 | 20 | % | % of I_{mom} | Alarm (automatic reset) |
| 21 | Current monitoring in the event of fire alarm | 0 1 | 0 | - | 0 = Current monitoring enabled 1 = Current monitoring disabled | Function only works in the event of a fire alarm. During test run, the current monitoring is always active. |
| 22 | Fire alarm | 0 1 | 0 | - | 0 = Manual reset 1 = Automatic reset | Reset pump, alarm always manual reset |
| 23 | Type of fire alarm contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 24 | Alarm contact (output) | 0 1 | 0 | - | 0 = Closed during alarm 1 = Open during alarm | NO NC |
| 25 | Delay for run-dry recovery | 0-99 | 5 | s | Delayed pump release | If par 1=0 |
| 26 | Reset all settings | 0 1 | 0 | - | 0 = No action 1= All parameters to factory settings ¹ | When par 0 = 1/2/3 -> 2, when 4 it remains 4 |

1. Note: a reset will result in all settings being returned to the factory settings as described in the parameter list. Set the nominal motor current (par 18). Incorrect settings may result in the installation working improperly or not at all.

**ATTENTION**

The lowest alarm code always has priority over the higher alarm code.

Table 11: Alarm codes in the event of "fire control"

| Alarm code | Description | Parameter | Auto-reset | Manual reset | Pump relay | Alarm | Remarks |
|------------|--|-----------|------------|--------------|------------|-------|--|
| 10 | Fire alarm activated/motor current monitoring deactivated. | Par. 20=1 | No | Yes | On | Yes | Pump relay remains controlled, even when the motor current is too high |
| 11 | Motor current too high/pump off | Par.20=0 | No | Yes | Off | Yes | |
| 12 | Fire alarm activated | Par.0=1/2 | Yes | No | On | Yes | |
| | | Par.0=3 | No | Yes | | | |
| 13 | Run-dry protection activated | Par.1=0 | Yes | No | Off | Yes | |
| 14 | Run-dry protection activated | Par.1=1 | No | Yes | Off | Yes | |
| 15 | Temp. Input activated | Par.1=0 | Yes | No | Off | Yes | |
| | | Par.1=1 | No | Yes | Off | Yes | |
| 21 | Motor current too low | | Yes | No | On | Yes | |
| 22 | Test-run cycle during operation | | n/a | n/a | On | No | ¹ |

1. In the event of a test run, the current protection operates independently of parameter 20, and in the event of current exceeding the set motor current, switches the pump relay and the alarm relay on.

5.6.3 Basic operation of the fire alarm

The pump will be switched on in the event that the fire alarm contact (parameter 23) is made or broken (NO/NC). The pump only switches off by means of a reset on the ECO-Control (if the fire alarm contact is reset). Fire alarm always takes precedence over other notifications. The pump will continue to run as long as the fire contact is tripped (NC/NO according to the setting of parameter 23).

If the current exceeds the maximum current set in parameter 18, the pump will be stopped, unless current monitoring is disabled by parameter 21.

- If the "Automatic reset" (parameter 1) has the value "0" (Automatic reset) during a test run, the installation will begin to run if the pre-pressure returns.
- If parameter 1 is set to 1, "No automatic reset", the installation will not begin to run if the pre-pressure is present. The installation will only begin to run if the reset button arrow keys are pressed.

**ATTENTION**

See 10.2 Fault code table Hydro-Unit ECO.

5.6.4 Basic operation of run-dry protection during a test run

- If there is pre-pressure present, the pump may be started.
- If the pre-pressure is no longer present, the run-dry delay will be started (parameter 14).
- If the minimum pre-pressure has not returned when the run-dry delay is complete, the installation will register a fault, depending on parameter 1 = 0/1. The pump will be switched off (alarm code 13 or 14).
- If the pre-pressure returns before the run-dry delay time is complete, the installation continues to run as normal.

- The fire alarm has a higher priority than dry-running and the pump will always switch on.

6 Transport

6.1 Transport and storage

1. Transport the control unit in the position as indicated on the pallet or packaging.
2. Check if the control unit is stable.
3. Observe the instructions on the packaging (if present).



ATTENTION

Store the control unit in a dry and dust-free place.

6.2 Transport



WARNING

Lift the installation using a hoisting device.



WARNING

Hoist the installation according to the applicable hoisting guidelines. Only qualified personnel is allowed to hoist the installation.

1. Transport the installation in the position indicated on the pallet or packaging.
2. Check if the installation is stable.
3. Observe the instructions on the packaging (if present).

6.3 Storage

6.3.1 Preparations for storage

1. Protect the system against the risk of frost.
2. Store the installation in a frost-free environment.
3. Place the installation in the position as indicated on the packaging.
4. When applicable: Keep the vessel under pressure (1/2 bar).

6.3.2 Inspection during storage

1. Turn a shaft every three months¹. This protects the seals from seizure.
2. After a storage period of six months or longer, inspect the installation before using it again.

-
1. period may vary per application or medium. Please consult your sales representative for application details.

7 System

7.1 Mechanical installation

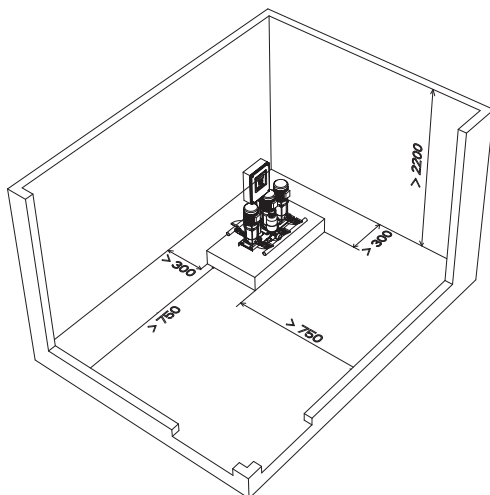


ATTENTION
If parts are missing or damaged, please contact the supplier.



ATTENTION
Provide sufficient support for the ECO-Control, for example by making use of a double wall socket, which will also support the bottom side.

7.2 Setting up the installation



Set the installation preferable in an environment with at least the following properties:

| Item | Requirements |
|------------|--|
| Room | <ul style="list-style-type: none"> • Clean, dry, frost-free, cool¹ and ventilated, and can provided with light; • The surface must be wide enough, so that the installation can be accessed easily. • The height of the installation room must meet the minimum requirements. • The set-up must be such, that any released water can be discharged without causing inconvenience. |
| Foundation | <ul style="list-style-type: none"> • The installation must be free from the walls. • The concrete surface must be smooth and level. • The foundation must be large enough to carry all support points |

1. Cool is defined as a temperature of between 4 °C and 25 °C, and preferably lower than 20 °C.

The set-up area must be in conformance with Vewin worksheet 4.3 - chapter 5.

- Connect the suction line to the supply line (indicated with sticker).
- Connect the outlet line to the outlet line of the building (indicated with sticker).

In order to reduce the noise level to a minimum, proceed as follows:

- Position the installation on silent blocks (option).
- Make sure the suction and outlet lines are mounted correctly using a bracket.
- Mount a line compensator in the supply and discharge lines (option).
- Insert a filter in the supply line in case of pollution.
- Manifolds must be connected free of tension.
- Diameter of the supply lines large enough. The flow in the manifold has to be < 2 m/s.



ATTENTION
If not present, install a run-dry protection. Use the connectors in the ECO Control. See 12 Top view on electrical connections ECO-Control



ATTENTION

Mount a valve in the discharge line. This prevents that in case of a repair the entire line needs to be drained.



WARNING

Hydro-Unit ECO is not designed for and **CANNOT** be installed in locations classified as hazardous.

7.2.1 Indicators

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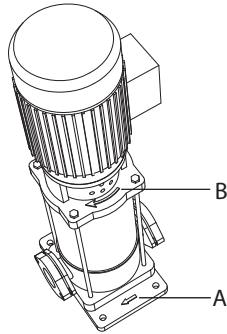


Figure 7: Indicators

The arrow (A) on the pump housing indicates the flow direction of the liquid. The arrow (B) on the top bracket indicates the rotating direction of the motor.

7.3 Electrical installation



WARNING

Only authorized personnel is allowed to connect the installation electrically in accordance with the local regulations.

Electrical connections

- Make sure that the motor specifications correspond with the power supply to which the pump motor is connected.
- Before installing or servicing this pump, be certain pump power source is disconnected.
- Installation and electrical wiring must adhere to state and local codes and must be completed before priming the pump. Check appropriate community agencies, or contact local electrical and pump professionals.
- The Hydro-Unit ECO should be connected to a maximum 16 amps circuit breaker or maximum 16 amps fuse block in both phases of the electric circuit.
- Connect the installation using an interruptible connection (plug).
- Do not connect pump to a power supply until permanently grounded. For maximum safety, ground pump to a circuit equipped with a fault interrupter device.
- Voltage of power supply must match the voltage of the pump.

7.4 Commissioning



WARNING

Never switch on the installation when it does not contain any liquid.

Before commissioning the system:

- Purge the installation in conformity with the water worksheets, worksheet 2.4: Purge and disinfect drinking water installations.

7.4.1 In an open or closed circuit with sufficient supply pressure (see figure 8 Sufficient pre-pressure)

Carry out the following steps:

- 1 Switch off the main power.
- 2 Close the inlet valve (C) and the outlet valve (A).
- 3 Remove the plug (B) from the motor stool.
- 4 Gradually open the inlet valve (C) until the liquid flows from the plug opening.
- 5 Close the plug opening.
- 6 Open the inlet valve (C) completely.
- 7 Switch on the main power.
- 8 Check the direction of rotation of the pump.
- 9 Fully open the discharge valve.

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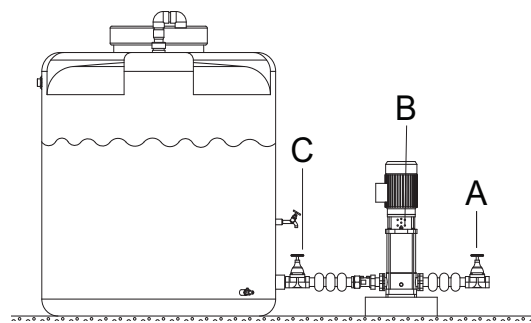


Figure 8: Sufficient pre-pressure

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ATTENTION

Seen from the upper side of the motor, rotate the pump clockwise (B), see figure 7.

The control unit has been pre-programmed and pre-set with factory settings (see 'Default values' at the parameter settings concerned).

The following parameters can be set as required:

Table 12: Parameter settings for HU1/FU1 PS

| Parameter | Description | Default |
|-----------|-----------------------|---------|
| 5 | Target value | 3.8 |
| 6 | bandwidth | 0.3 |
| 18 | Nominal amperage: [A] | 2.6 |

Switch-off pressure = target value (parameter 5) + bandwidth (parameter 6)

example: $3.8 + 0.3 = 4.1$ bar

If the pressure in the system drops below the switch-on pressure (target value (parameter 5) - bandwidth (parameter 6))

example: $3.8 - 0.3 = 3.5$ bar.

The pump will then be started. The minimum run time will also be started. (parameter 12)

7.4.2 Pre-pressure of the pressure vessel

For a correct functioning of the installation, the pre-pressure in the pressure vessel must be 50 kPa lower than the switch-on pressure. Proceed as follows to determine the pre-pressure:

- 1 Measure the pressure (A) in the vessel when there is no pressure on the water side (B).
- 2 Fill the vessel with nitrogen or air. Preferably use nitrogen.



WARNING

Before putting the installation into use, first put the pressure vessel under pressure. Maximum allowable pre-pressure: 200 kPa under the pressure class (PN)

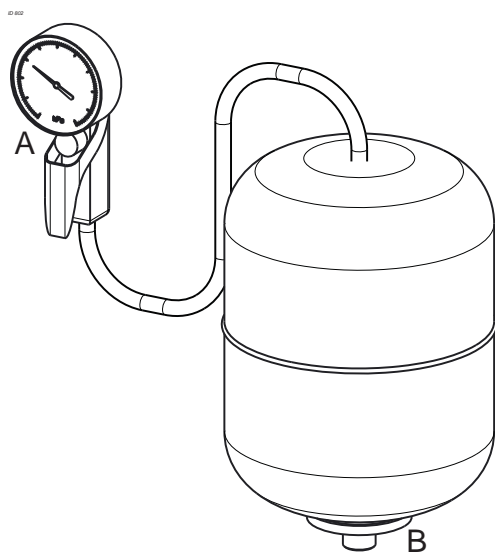


Figure 9: Pre-pressure of the pressure vessel

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8 Operation

8.1 General

8.1.1 Operate/read the ECO-Control general

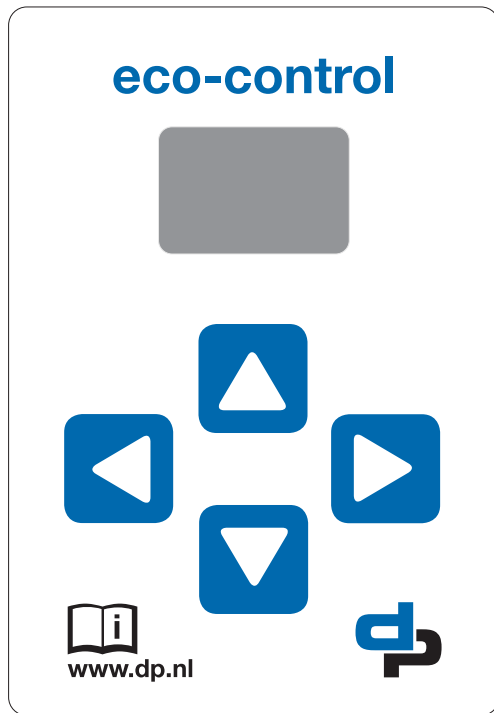


Figure 10: Display ECO-Control

The display is for:

- Reading the process values.
- Reading the faults/messages, see table 13 Overview of alarm codes ECO-Control.
- Reading the parameters.
- Reading the parameter values.

In the ECO-Control 4 operating/reading conditions are possible:

- operating mode;
- fault mode;
- parameter setting mode;
- parameter changing mode.

The operating modes can be recognised as follows by the:

- pressure controller at the pressure reading in the display;
- flow/brand controller at the bottom-left point at the second figure in the display;
- fault mode by the change of the display between the operating mode and a fault mode.
- parameter setting mode at the bottom-right point beside the second figure in the display;

The parameter changing mode is only accessible through the parameter setting mode and it has no further characteristics.

8.1.2 Indications

- When pressing an arrow key, all faults are reset except for the faults that are still present at that moment.
- Pressing one of the arrow keys resets all internal timers, such as the counter of the number of pump starts per hour.
- When the power of the ECO-Control is switched off, all counters are reset. The parameter values are retained.
- The counter for the test run starts counting as soon as the ECO-Control is empowered. This counter is reset after the test run, which means that the test run moves on each time by the value of parameter 17. This implies that the test run does not take place every day at, for example, 17.00 hours.
- The motor current low message is generated on the basis of a measurement. This is based on a percentage parameter 20 of the motor current set in parameter 18.
- When parameter 26 is set to 1, the parameters of the ECO-Control are reset to the factory settings.

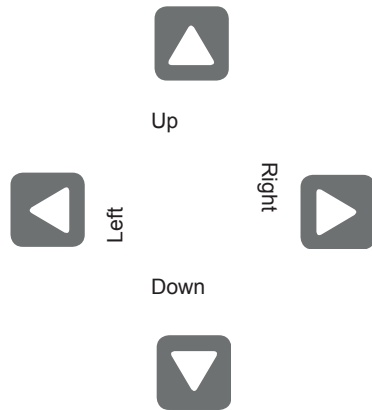
8.2 Indication / fault

The software version is shown for a short time during the start-up.

The screen shows the pressure in the system, flow (1) / no flow (0) or fire alarm (1) / no fire alarm (0) during operation.

8.3 Operation

8.3.1 Arrow keys



Various functions can be called up by means of the arrow keys:

Arrow key left  is for:

- resetting faults; hold 1 s. By release the key follows a reset;
- switching to the parameter setting mode when pressed for 10 seconds;
- cancelling changes in the parameter changing mode;
- returning to the operating mode from the parameter setting mode.

Arrow key right  is for:

- resetting faults; hold 1 s. By release the key follows a reset;
- switching between the parameter setting mode and the parameter changing mode;
- confirming changes in the parameter changing mode;
- Pump test and concurrent reading the motor current.

Arrow key up  is for:

- resetting faults; hold 1 s. By release the key follows a reset;
- calibration² of the motor current (the pump relay is switched off, the motor current is 0 A). Press the key for 10 seconds. The calibration is completed when the display shows the value 0;
- scrolling up through the parameters;
- changing the values in the parameter setting mode and the parameter changing mode, see table 15 Overview of configuration parameters in ECO-Control.

Arrow key down  is for:

- resetting faults; hold 1 s. By release the key follows a reset;
- calibration² of the pressure reader at 4 mA (the pressure reader must be pressureless and have an output of +/- 4 mA) Press the push button for 10 seconds to perform the calibration. The calibration is completed when the display shows the value 0;
- scrolling down through the parameters;
- changing the values in the parameter setting mode and the parameter changing mode, see table 15 Overview of configuration parameters in ECO-Control.

2. This is done in the factory, but it can also be done when replacing the motor and/or the pressure reader.

9 Maintenance

9.1 Introduction



WARNING
Observe the general safety precautions for installation, maintenance and repair.

Regular maintenance is necessary for correct operation of the installation. For maintenance of the installation, please contact your supplier. A draft maintenance contract is available upon request.

9.2 Checking points

Check the following points at least annually.

- pumps
- non-return valves
- shut-off valves
- switching material
- pressure vessel(s)
- pressure gauges

9.3 Lubrification

Standard motors, with a maximum power of 7.5 kW, are provided with maintenance free sealed bearings.

9.4 Maintaining the pump for an extended period of non-operation

Turn the shaft every three months³. This protects the seals from seizure.

Protect the pump if there is a risk of frost. Proceed as follows:

1. Close all pump valves.
2. Drain each pump and/or the system.
3. Remove all plugs from the pump.
4. Open the shut-off and fill/air vent plug, if present.

-
3. period may vary per application or medium. Please consult your sales representative for application details.

9.5 Cleaning instructions

The Hydro-Unit ECO can be cleaned using a dry cloth.



WARNING
The installation must first be switched off.



WARNING
The pump may be hot.

10 Annexes

10.1 Overview of alarm codes ECO-Control

Table 13: Overview of alarm codes ECO-Control



| Alarm code | Description | Parameter | Auto-reset | Manual reset | Pump relay | Alarm | Remarks |
|------------|---------------------------------|-----------|----------------------|-------------------|------------|-------|---|
| 10 | Motor current too high/pump on | Par.21=1 | No | Yes | On | Yes | Only if Par. 0 = 3 (fire control) |
| 11 | Motor current too high/pump off | Par.21=0 | No | Yes | Off | Yes | |
| 12 | Fire alarm activated | Par.0=1/2 | Yes | No | On | Yes | |
| | | Par.0=3 | No | Yes | | | |
| 13 | Run-dry protection activated | Par.1=0 | Yes | No | Off | Yes | |
| 14 | Run-dry protection activated | Par.1=1 | No | Yes | Off | Yes | |
| 15 | Thermal input activated | Par.1=0 | Yes | No | Off | Yes | |
| | | Par.1=1 | No | Yes | Off | Yes | |
| 16 | Pressure reader fault | Par.4=0 | Yes | No | On | Yes | |
| | | Par.4=1 | Yes | No | Off | Yes | |
| 17 | Discharge pressure too high | Par.8=1 | No (motor relay Yes) | Yes (alarm relay) | Off | Yes | Only the alarm relay must be reset manually |
| 18 | Discharge pressure too low | Par.10=1 | No (motor relay Yes) | Yes (alarm relay) | Off | Yes | Only the alarm relay must be reset manually as soon as the pressure is higher than the value set for Par 9. The pump relay resets automatically |
| 19 | Discharge pressure too high | Par.8=0 | Yes | No | Off | Yes | |
| 20 | Discharge pressure too low | Par.10=0 | Yes | No | On | Yes | |
| 21 | Motor current too low | | Yes | No | On | Yes | |
| 22 | Test-run cycle during operation | | n/a | n/a | On | No | |

10.2 Fault code table Hydro-Unit ECO



WARNING

Observe the general safety precautions for installation, maintenance and repair.

| Problem | Possible cause | Possible solution | Checkpoints |
|---|---|---|--|
| Leakage along the pump shaft of the pump. | The shaft seal is worn. | Replace the shaft seal. | Check the pump for dirt. |
| | The pump has run without water. | Replace the shaft seal. | |
| The pump is vibrating and makes a lot of noise. | There is no water in the pump. | Fill and vent the pump. | |
| | There is no supply. | Make sure there is sufficient supply. | Check for obstructions in the supply pipe. |
| | The bearings of the pump/motor are defective. | Have the bearings replaced by a certified company. | |
| | Hydraulic system defective. | Replace the hydraulic system. | |
| The installation/pump does not start. | No power. | Check the power supply. | <ul style="list-style-type: none"> • Circuit • Fuses |
| | No pre-pressure | Check the water supply, reset the installation  | |
| | System pressure too low | Check the water supply, reset the installation  | |
| | Run-dry protection triggered. | Restore the water supply. Reset the installation. | |
| | The pressure switch has been set incorrectly. | Have the supplier re-adjust the installation. | |
| The installation/pump supplies insufficient capacity and/or pressure. | There is air in the pump. | Vent the pump. | |
| | The water meter in the supply pipe is too small. | Install a larger water meter. | |
| | The outlet and/or inlet valve is closed. | Open both valves. | |
| The pump continuously starts and stops. | The membrane switch vessel(s) have a leak or an incorrect pressure value. | Have the supplier re-adjust the installation. | |

10.3 Controller unit ECO-Control

10.3.1 Dimensions ECO-Control

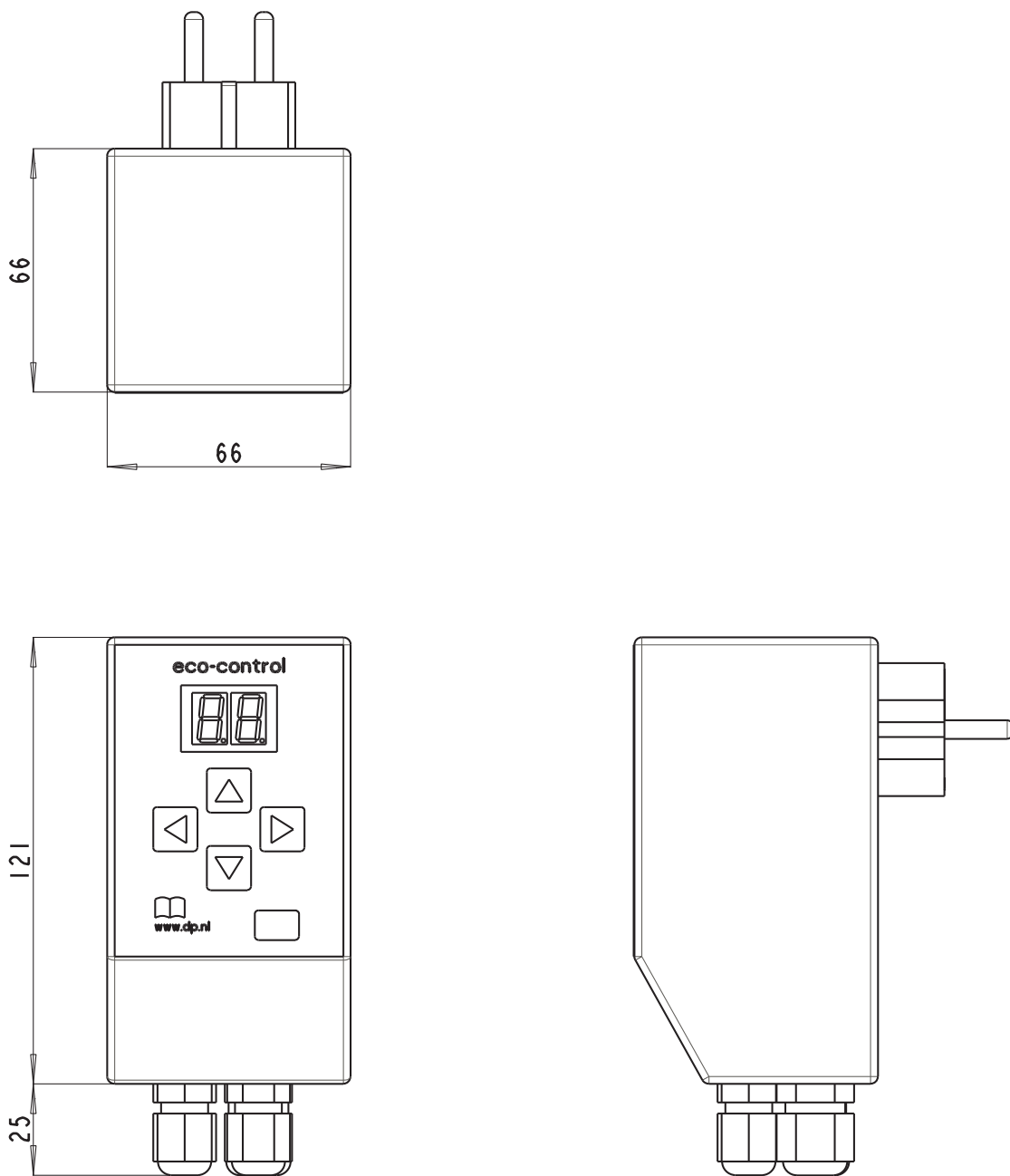


Figure 11: Dimensions ECO-Control

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10.3.2 Specification ECO-Control:

- item number DP: 77870400;
- control for 1 pump in a casing with a wall socket connection;
- power 1 x 230 V 50 Hz maximum pre-fuse 16 A slow;
- display with 2 figures for reading the process values and setting parameters;
- keyboard with 4 arrow keys;
- control current ECO-Control protected by an electronic fuse;
- glass fuses 2x 10 A slow, dimensions 20 x 5 mm for protection against short circuit of the pump.

10.3.2.1 Analogue and digital inputs:

- 1x analogue input 4-20 mA power 16 VDC for the pressure reader in the pressure control mode (Par. 0 = 1) / 1.2 VDC for control in the flow control (Par. 0 = 2);
- 1x digital input for RDP (run-dry protection);
- 1x digital input for klixon connection;
- 1x digital input for fire alarm switch;

10.3.2.2 Digital outputs:

- 1x digital output for pump control 1 x 230 V – 7.20 A (motor max. 1.1 kW – 1 x 230 V)
- 1x digital output for external signal potential free (max. 50 VAC – 1.00 A)

10.4 Electrical connections

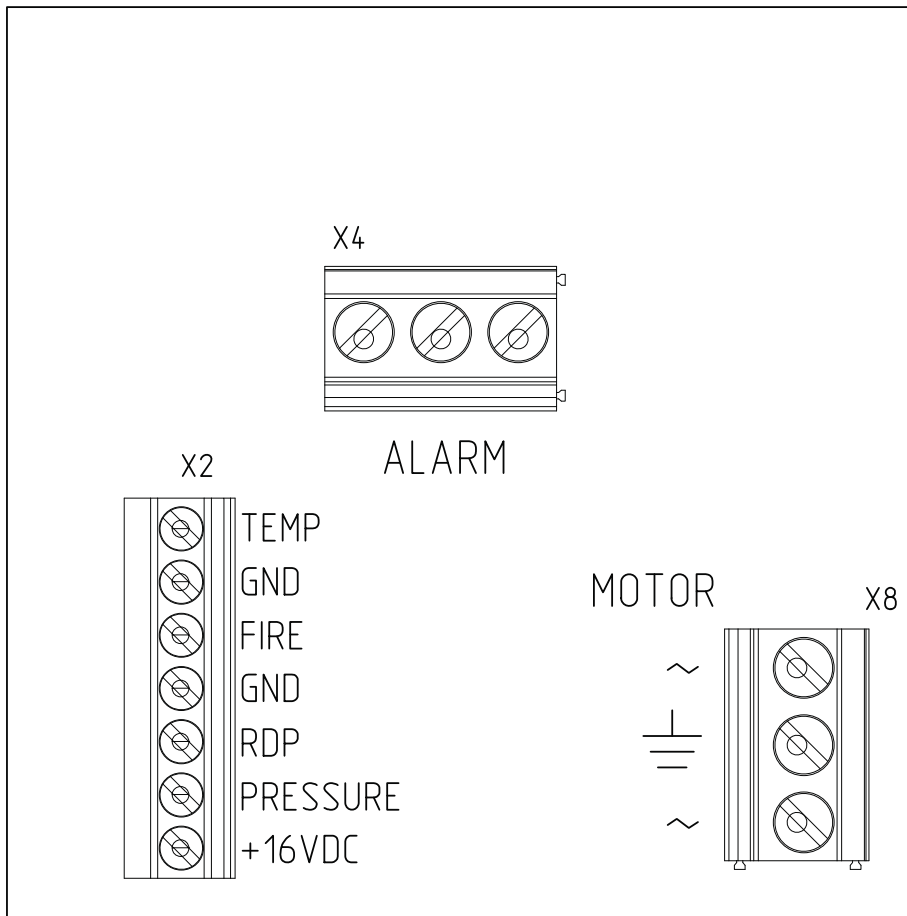


Figure 12: Top view on electrical connections ECO-Control

Table 14: Electrical connections

| Terminal: | Code: | Connection: |
|-----------|----------|---|
| X2 | +16 VDC | Pressure reader / flow switch |
| | PRESSURE | |
| | RDP | Run-dry protection |
| | GND | |
| | FIRE | External fire alarm |
| | GND | External temperature monitoring for pump |
| | TEMP | |
| X4 | ALARM | Alarm for external fault message potential free |
| X8 | MOTOR | Motor cable connection |

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10.5 Parameter list



ATTENTION

For unit-specific values, see table 6 Parameter settings for pressure control, table 8 Flow control parameter settings or table 10 Parameter settings for FU1 PB.

10.5.1 Settings

Table 15: Overview of configuration parameters in ECO-Control

| Parameter | Description | Range | Factory setting | Unit | Explanation | Comment |
|-----------|---|------------------|-----------------|------------|--|---|
| 0 | Pump control | 1 2 3 4 | 2 | - | 1 = Pressure control 2 = Flow control 3 = Fire control 4 = Break-unit | Changing this setting does not function as a reset |
| 1 | Reset dry run and temperature alarm | 0 1 | 1 | - | 0 = Automatic reset 1 = Manual reset | Reset pump + alarm |
| 2 | Type of run-dry contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 3 | Type of pressure reader | 0 1 | 0 | - | 0=0-10 bar 1=-1-10 bar | Display flashes below 0 bar |
| 4 | Action at pressure reader fault | 0 1 | 1 | - | 0 = Pump on 1 = Pump off | |
| 5 | Setpoint for system pressure | 0-9.9 | 3.8 | bar | | |
| 6 | Band width for pressure control | 0-9.9 | 0.3 | bar | Definite switching pump on/off | $p_{in} = p_{desired} - \text{band width}$ |
| 7 | Limit value high pressure alarm | 0-9.9 | 9.9 | bar | | Pump off + alarm |
| 8 | Reset high pressure alarm | 0 1 | 0 | - | 0 = Alarm + auto reset 1 = Alarm + manual reset | Automatic reset of the pump when the pressure drops again |
| 9 | Limit value low pressure alarm | 0-9.9 | 1.0 | bar | | Pump off + alarm |
| 10 | Reset low pressure alarm | 0 1 | 0 | - | 0= Automatic reset alarm 1= Manual reset alarm | Automatic reset of the pump when sufficient pressure |
| 11 | Maximum number of starts | 0-99 | 20 | n/ hour | Maximum given by manufacturer | No pump out/alarm |
| 12 | Minimum run time | 0-99 | 60 | s | Against starting frequently | |
| 13 | Minimum run time - correction | 0-99 | 10 | s | Correction for many/few starts | Minimum = par 12 |
| 14 | Delay run-dry alarm | 0-99 | 10 | s | | Pump off + alarm |
| 15 | Delay high/low pressure alarm | 0-99 | 60 | s | | See par 7 - 10 |
| 16 | Test turn - interval | 0-99 | 1 | D | | D = days |
| 17 | Test-run time | 0-99 | 30 | s | | (Alarm) code 22 |
| 18 | Nominal motor current | 0-9.9 | 2.6 | A | Type plate motor | |
| 19 | Delay for exceeding I_{nom} | 0-99 | 5 | s | | Pump off + alarm |
| 20 | Limit value low motor current | 0-99 | 20 | % | % of I_{nom} | Alarm (automatic reset) |
| 21 | Current monitoring in the event of fire alarm | 0 1 | 0 | - | 0 = Current monitoring enabled 1 = Current monitoring disabled | Function only works in the event of a fire alarm. During test run, the current monitoring is always active. |

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| Parameter | Description | Range | Factory setting | Unit | Explanation | Comment |
|-----------|----------------------------|--------|-----------------|------|---|--|
| 22 | Fire alarm | 0 1 | 0 | - | 0 = Manual reset 1 = Automatic reset | Reset pump, alarm always manual reset |
| 23 | Type of fire alarm contact | 0 1 | 0 | - | 0 = Opening generates an alarm 1 = Closing generates an alarm | NC NO |
| 24 | Alarm contact (output) | 0 1 | 0 | - | 0 = Closed during alarm 1 = Open during alarm | NO NC |
| 25 | Delay for run-dry recovery | 0-99 | 5 | s | Delayed pump release | If par 1=0 |
| 26 | Reset all settings | 0 1 | 0 | - | 0 = No action 1= All parameters to factory settings ¹ | When par 0 = 1/2/3 -> 2, when 4 it remains 4 |

TPG: 20130870

- Note: a reset will result in all settings being returned to the factory settings as described in the parameter list. After a reset, set the correct setpoint (par 5), delay high/low pressure alarm (par 15), and the nominal motor current (par 18). Incorrect settings may result in the installation working improperly or not at all.

10.6 CE declaration of conformity

Undersigned:

DP-Pumps
Kalkovenweg 13
2401 LJ Alphen aan den Rijn, The Netherlands
Tel: (+31)(0)-172-48 83 88

Declares as manufacturer entirely on his own responsibility that the product:

Product: Hydro-Unit ECO
Type: HU1 FS DPVE ECO-Control DOL
HU1 / FU1 PS DPVE ECO-Control DOL
FU1 FS DPVE ECO-Control DOL

Serial number: 43/2018 1000000-01 [...] 53/2020 9999999-99

to which this declaration refers, have been constructed in compliance with the following harmonised international standards:

- ISO 12100:2010
- EN 809+A1/C1:2010
- IEC 60204-1:2006
- IEC 61000-6-1:2007
- IEC 61000-6-3/A1:2011

according to the stipulations of:

- Machine directive 2006/42/EC
- EMC directive 2014/30/EU

If the installation is used as a stand-alone product, it is subject to this declaration of conformity.

If the installation is built in into an appliance or assembled with other equipment in certain systems, it shall not be put into operation until a declaration has been issued for the appliance concerned that this complies with the directives listed above.



Alphen aan den Rijn,
28/02/2017

Authorized representative:
M.H. Schaap, product development



dp pumps

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10/2018

BE00000649-B / EN

Original instructions

Can be changed without prior notice

