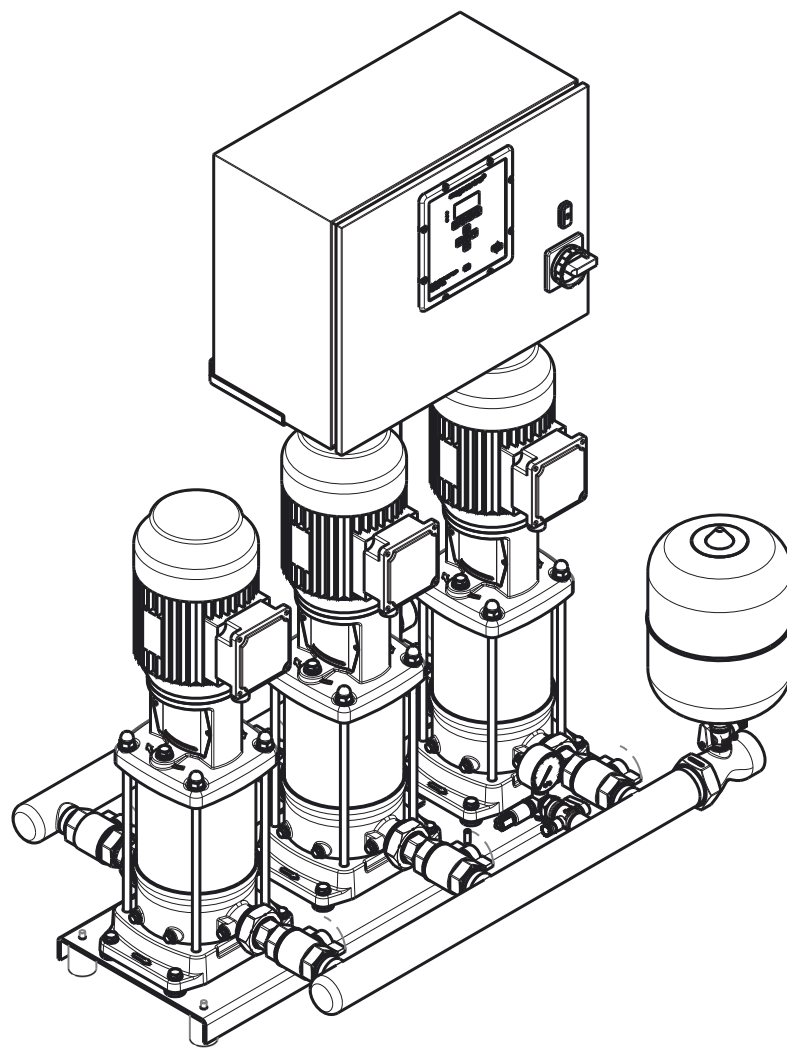


# Hydro-Unit Premium Line

Installation and operating instructions  
series: HU 2/3 DPV(M)E Megacontrol



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# 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 in a fixed place near the product which can be accessed by all personnel.



**READ THE (SUPPLEMENTARY) DOCUMENTATION**  
**Read the user and operating instructions.**

## 1.2 Icons and symbols

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



**WARNING**  
**Danger of electric Voltage. Safety sign according to IEC 417 - 5036**



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



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



**ENVIRONMENTAL INSTRUCTION**  
**Remarks with respect to the environment.**

## 2 Identification, service, and technical support

### 2.1 Identification, service and technical support

The name plate indicates the type series / size, main operating data and identification number. Please quote this information in all queries, repeat orders and particularly when ordering spare parts. If you need any additional information or instructions exceeding the scope of this manual or in case of damage please contact DP-Pumps's nearest customer service centre.

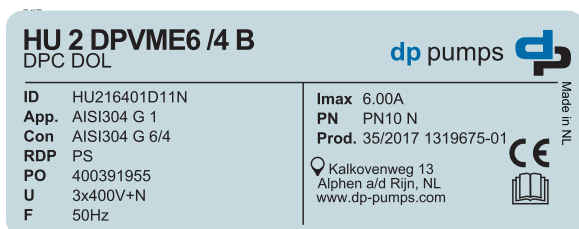


Figure 1: Example: Identification sticker

Table 1: sticker identification

Indication	Meaning
HU 2 DPVME6/4 B	Installation type
DPC DOL	Controller type and start-up method
ID	Article number
App.	Material valve and connection size
Con.	Material and connecting piping size
RDP	Run-dry protection type
PO	Purchase order number
U	Voltage
F	Mains frequency of the installation
Imax	Maximum current consumption of the installation
PN	Pressure class and design
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 valid from MCIII version V 1.7.1. Apart from this manual, the additional documentation given below is available as well:

Table 3: Supplementary documentation

Document	Code
General terms of delivery	119 / 1998
Installation and operation instructions pumps	BE00000377
Installation and operation instructions Meg-acontrol	BE00000508
Technical documentation	97004467

See also: [www.dp-pumps.com](http://www.dp-pumps.com)

Table 4: Software version

Firmware version (see parameter: 4-1-3)	version
V 1.7.1	07-2016
V 1.6.2	01-2016

See also: [www.dp-pumps.com](http://www.dp-pumps.com)

# 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

The products of DP-Pumps are designed to function in an environmentally friendly way during their entire lifetime. Therefore, when applicable, always use biodegradable lubricants for maintenance.



### 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

The owner is responsible for the dismantling and environmentally friendly disposal of the product.



### ENVIRONMENTAL INSTRUCTION

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



# 5 Introduction

## 5.1 General

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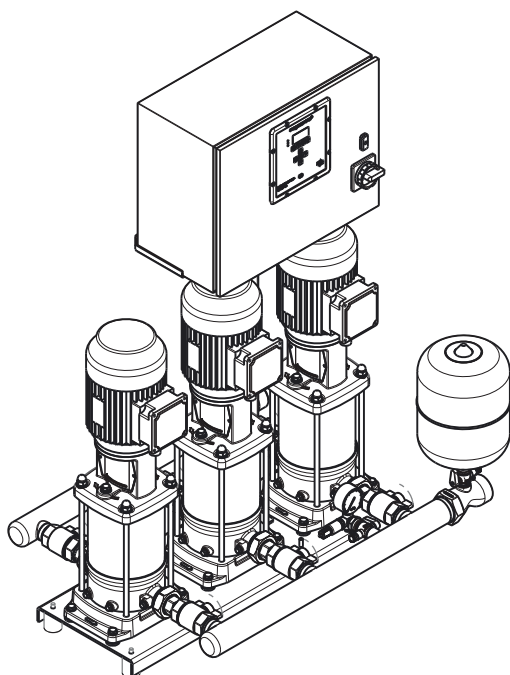


Figure 2: Installations type HU 2/3 Premium Line Megacontrol MF

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Units of the type HU 2/3 Premium Line Megacontrol MF are manufactured by DP-Pumps.

## 5.2 Intended use

The installation HU 2/3 Premium Line Megacontrol MF 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 installation and operating instructions. When in doubt the product must be used as becomes evident from its construction, version and function.

## 5.3 Working range

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

Table 5: Specification of the working range

Type	HU 2/3 Premium Line Megacontrol MF
Maximum ambient temperature [°C]	0 - 30
Liquid temperature [°C]	+4 - 40 <sup>1</sup>
Maximum working pressure [kPa]	1.000 / 1600 Unless indicated otherwise
Inlet pressure (if water inlet is under pressure)	> 110 kPa
Water tank	Position pump below water level
Suction pressure [kPa]	Not cavitating <sup>1</sup> . Suction pressure plus pump pressure, must never be higher than the maximum working pressure: 1000 kPa (PN10 Installation) 1600 kPa (PN16 installation)
Maximum height	1000 m above sea level

1. Contact your supplier for more detailed advice.

Table 6: Specific applications

type	application area
HU 2/3 Premium Line Megacontrol MF	(Drinking) water supply systems, irrigation systems, water treatment systems, car-wash systems, sprinkler systems and discharge of condensed water.

## 5.4 Operation

### 5.4.1 Standard operation

The Megacontrol is an intelligent control to operate the different parts of a booster installation comprising up to 3 pumps. The system pressure is controlled using a pressure transmitter on the discharge of the installation.

When as a result of an increasing water consumption the pressure drops below the set point pressure, a pump will be activated.

The pumps will be switched off again when the set point pressure has been reached and the minimum run time has expired. The minimum after-run time is continuously optimised. This results in considerable energy savings.

### 5.4.2 Adjustable settings

The Megacontrol is programmable via the operating panel (Human Machine Interface, HMI) and is guarded from unauthorised use by means of a password protection.

The service port provides access to the parameters of the programme that may be used to optimise the performance of the installation (see parameter list).



#### **WARNING**

**Always use the special service port cable for access to the parameters via the service port!**

### 5.4.3 Number of operating hours per pump

The current number of operating hours of a pump determines which pump will be switched on or off next. The pump with the least operating hours will be switched on first and the pump with the most operating hours will be switched off first. This makes sure that all pumps, including the backup pump, have an equal number of operating hours.

### 5.4.4 Test run

In order to prevent a pump from standing still for a long period, an automatic test-run function has been included.

### 5.4.5 Temperature sensor (option)

When the Megacontrol has been provided with a temperature sensor, it will generate a temperature-dependent alarm.

Not Urgent:

a non-urgent alarm is generated when the room temperature exceeds the set temperature.

Urgent:

an urgent alarm is generated when the 24-hour average room temperature exceeds the set temperature.

### 5.4.6 Monitoring of supply side/ run-dry protection

Standard is the Premium Line Megacontrol MF equipped with a pressure transmitter switch at the suction line as run-dry protection



#### **ATTENTION**

**The pressure switch is fixed at 20 kPa for a switch-off signal to the megacontrol and a pressure of 110 kPa for an enable signal to the megacontrol.**

The following run-dry protections can be connected:

1. Pressure transmitter in supply pipe (option)  
A pressure transmitter can be installed in the supply pipe. This transmitter will register the pre-pressure for:
  - The PID control.
  - Read-out on the display.
  - The run-dry protection.
2. Float switch in pre fill reservoir (standard).  
A float switch can be installed in the pre fill reservoir . This switch will detect water level for the run-dry protection.
3. Pressure transmitter in pre fill reservoir and supply valve (option)  
A pressure transmitter can be installed in the pre fill reservoir. This pressure transmitter will register the water level for:

- High water alarm.
- Control of the supply valve. The supply valve may be controlled to open, close, or proportionally open or close as desired (option).
- Critical water-level indication.
- Run-dry protection.
- Two digital contacts for two extra level messages (only available on megacontrol 6 pump version).

#### 5.4.7 Pressure vessel

All Premium Line Megacontrol MF units are provided with a flow-through pressure vessel on a flow-through t-piece. This guarantees a good refreshment of the pressure vessel. Even with limited switching on and off of the pumps. The constriction in the t-piece provides a higher flow velocity at the location of the small paddle in the shut off valve. Therefore enough fresh water enters the vessel, even at low flow rates.

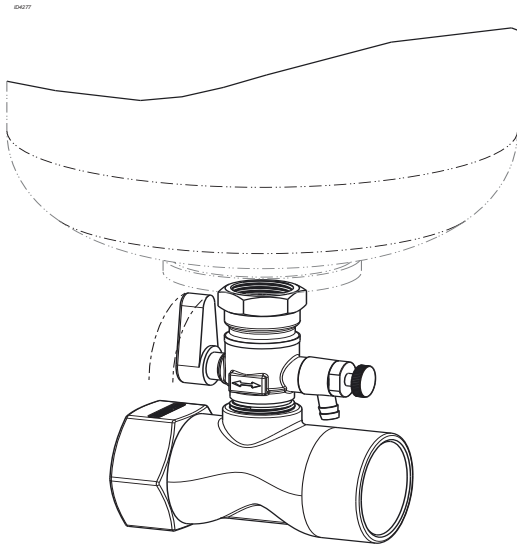


Figure 3: Pressure vessel with shut off valve and flow through t-piece

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## 5.5 ISSO publications 55.1 and 55.2

The ISSO 55.1 and 55.2 state:

#### Preconditions:

- Avoid heating of the drinking water as a result of too high internal temperatures, maximum requirement 25°C.
- Avoid long-lasting stagnation/standing still of the drinking water in the membrane tank. When the tank is functioning well, a minimum of 30 switches/day is required for sufficient flow-through.

#### Assessment:

Table 7: Average daily

Twenty-four hours' average internal temperatures	≤ 25 °C	> 25 °C
Use	Assessment	Assessment
Sufficient change of the membrane tank (more than 30 switches per day)	0	- (1)
No/insufficient change of the membrane tank (fewer than 30 switches per day)	- (2)	--- (3)

- 1 Slightly negative assessment (-) because of too high temperature.
- 2 Slightly negative assessment (-) because of too few changes.
- 3 Negative assessment (-) because of too high temperature and too few changes.

See ISSO publications 55.1 and 55.2 for installation adjustments with respect to the above assessments.

# 6 Transport

## 6.1 Transport



**WARNING**  
Lift the installation using a hoisting device.



**WARNING**  
The installation must be hoisted according to the applicable hoisting guidelines. Only qualified personnel is allowed to hoist the installation.

Lifting/hoisting advice

- with a fork-lift truck or pallet truck of sufficient width below the ground plate/pallet.

Always observe the instructions as indicated by the labels on the installation.



Figure 4: piping label

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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).

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## 6.2 Storage

### 6.2.1 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).

### 6.2.2 Inspection during storage

1. Turn a shaft every three months<sup>1</sup>. 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 Installation

## 7.1 Setting up the installation

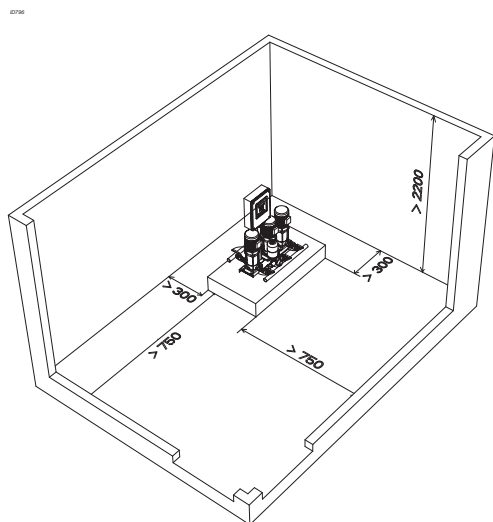


Figure 5: Positioning of the installation

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Preferably set up the installation in an environment with at least the following properties:

Item	Requirements
Room	<ul style="list-style-type: none"> <li>Clean, dry, frost-free, cool<sup>1</sup> and ventilated, and can be provided with light;</li> <li>The surface must be large enough for easy access to the installation.</li> <li>The height of the installation room must meet the minimum requirements of the Buildings Decree.</li> <li>The layout must be such, that any released water can be discharged without causing inconvenience.</li> </ul>
Foundation	<ul style="list-style-type: none"> <li>The installation must be free from the walls.</li> <li>The concrete base must be smooth and level.</li> <li>The foundation must be large enough to carry all support points</li> </ul>

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

Connect the installation as follows:

- Connect the suction manifold (indicated with label) to the supply line of the building.
- Connect the discharge manifold (indicated with label) to the discharge line.

In order to minimise the noise level, proceed as follows:

- Position the installation on silent blocks (option).
- Fix the suction and delivery pipes correctly using a bracket.
- Mount a pipe compensator in the supply and discharge pipes (option).
- In case of contamination, insert a filter in the supply pipe.
- Manifolds must be connected free of tension.
- Ensure proper sizing of suction and delivery pipes that are to be connected to the installation. The maximum flow rate in the pipes must be below 2 m/s.



### ATTENTION

Use a run-dry protection. Connection contacts can be found in the control panel.



### ATTENTION

Mount a valve in the discharge line. This in order to avoid having to drain the entire pipe in case of a repair.

#### 7.1.1 Change connection side

If necessary, the connection side of one or both of the manifolds can be changed by turning over the manifolds. Proceed as follows:

- 1 Remove the pressure vessel and t-piece (if mounted).
- 2 Undo the couplings on the base of the pumps, hold on to the gaskets<sup>2</sup>.
- 3 Screw the pressure gauge and drain plug from the pressure set, take of the cable of the pressure transmitter/switch.
- 4 Turn the manifold over and use the couplings with gaskets to mount it to the base of the pumps.

2. If the unit has been in use, we recommend replacing the gaskets.

- 5 Screw in the pressure gauge on the top of the pressure set and the drain plug on the opposite side, put back the cable of the pressure transmitter/switch, it will fit in one direction.

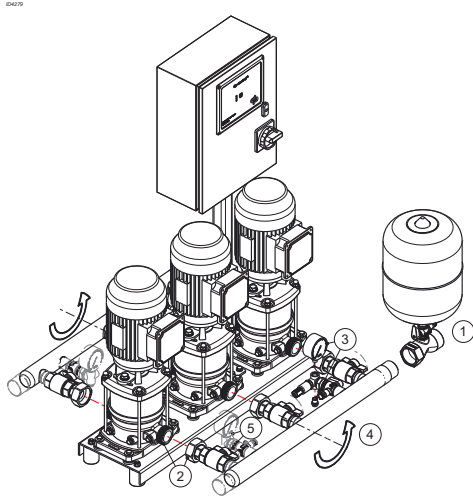


Figure 6: Change connection side

### 7.1.2 Connecting the pressure vessel on standard installations

With the Premium Line Megacontrol MF installations a separate pressure vessel is included. For a proper operation of the installation it is necessary to mount the pressure vessel on the discharge side of the unit. This can be done directly on the manifold, or further down the main discharge pipe. Mount the t-piece with shut off valve on an accessible place and screw the pressure vessel therein. There is an o-ring in the shut off valve, so it is not required to use a thread sealant.

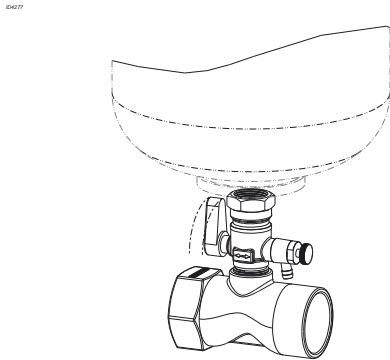


Figure 7: Mounting instruction t-piece with shut off valve.

### 7.1.3 Indicators

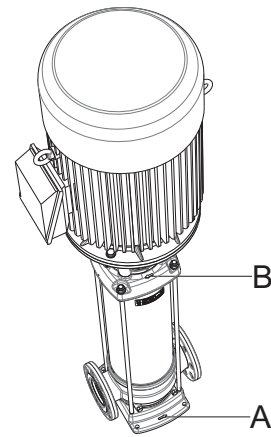


Figure 8: Indicators

The arrow (A) on the pump foot indicates the flow direction of the liquid. The arrow (B) on the head piece indicates the rotating direction of the motor.

## 7.2 Electrical installation



### WARNING

Only authorised personnel is allowed to perform the electrical connection of the installation in accordance with the local regulations.

Electrical connections:

- Make sure that the electrical specifications correspond with the voltage the installation is connected to. Consult 'Electrical circuit diagrams' for the correct connection diagram.
- Connect the installation using an interruptible connection (separator).
- Close the door of the control panel after having completed the installation.
- Earthing:



### WARNING

The ground plate of the Hydro-Unit has been equipped with an earthing connection. This earthing connection must be directly corrected to the central earthing point of the building. The earthing connection requires periodic checking and protection against corrosion with an electrically conductive agent, e.g. MOLYKOTE® HSC PLUS.

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**WARNING**  
In case of installations fitted with a frequency converter, the earthing connection must be connected before installing the power cable.

### 7.3 Commissioning



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

Before you run the system:

- Flush the installation with potable water, disinfect the system if necessary.

#### 7.3.1 In a open or closed circuit with sufficient supply pressure (see figure 9 Closed circuit)

Proceed as follows:

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

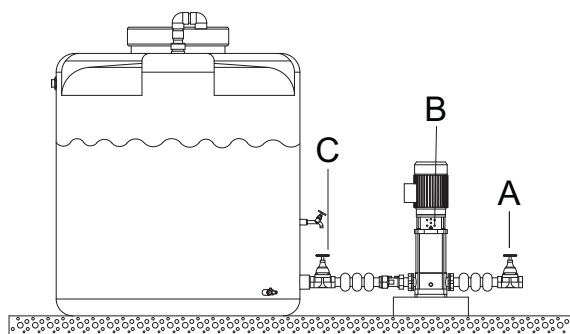


Figure 9: Closed circuit



**ATTENTION**  
Seen from the top of the motor the pump must rotate clockwise. In case of a 3-phase motor the rotating direction can be changed by switching two of the three contact wires.



**WARNING**  
Turn off the main from the central control panel

#### 7.3.2 Pre-pressure 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:

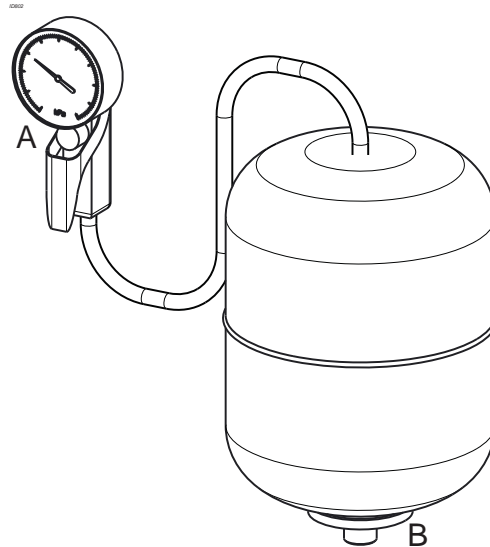


Figure 10: Set the pre-pressure

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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. The maximum pre-pressure: 200 kPa below the pressure class (PN).

# 8 Operation

## 8.1 Control panel (HMI)

The control panel comprises a back-lit display, function, navigation, and operating keys, LED's, and 2 access points for the service interface. The display shows important information for pump system operation. Data can be displayed in plain text and parameters can be set.

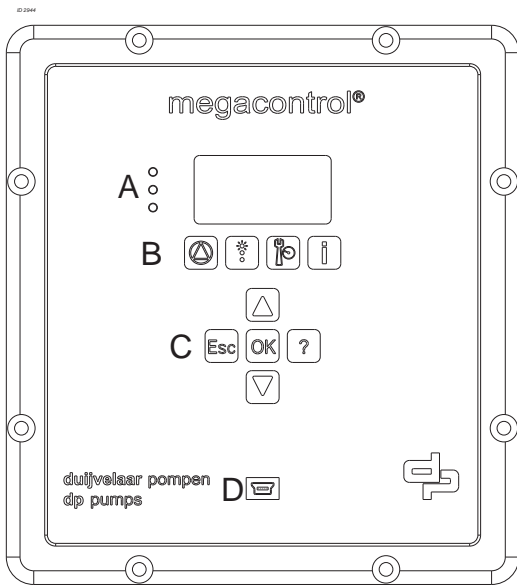


Figure 11: Front Megacontrol

Table 8: Traffic lights

A: LED's
The "traffic light" signals provide information about the pump system's operating status. LED's:
<ul style="list-style-type: none"> <li>• Red: Alert / urgent alarm is active.</li> <li>• Amber: Warning / non-urgent alarm is active.</li> <li>• Green: O.K. / trouble-free operation.</li> </ul>

Table 9: Function keys

B: Function keys	
	Operation
	Diagnosis
	Settings
	Information

Table 10: Navigation keys

C: Navigation keys	
The navigation keys are used for navigating in the menu and for confirming settings.	
	<b>Up or Down</b> <ul style="list-style-type: none"> <li>• Move up / down through the root menu (displays the measured values of the system input);</li> <li>• Move up / down through the menu options or;</li> <li>• Increase / decrease a value when you are entering numerals.</li> </ul>
	<b>Escape key</b> <ul style="list-style-type: none"> <li>• Delete / reset entry (the entry is not saved);</li> <li>• Return to the previous menu level.</li> </ul>
	<b>OK key</b> <ul style="list-style-type: none"> <li>• Access to the quick menu;</li> <li>• Confirm a setting;</li> <li>• Confirm a menu selection.</li> <li>• Go to the next number when you are entering numerals.</li> </ul>
	<b>Help key</b> <ul style="list-style-type: none"> <li>• Displays a help text for each selected menu option.</li> </ul>

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### D: Service interface RS232

The service interface allows a PC / Notebook to be connected with use of the special service port cable. The Megacontrol PC software can be used to configure and parameterize the pump system if you do not have access to a control panel. The Megacontrol software can also be updated via this interface. A second service interface is located on the back side of the controller.

### 8.1.1 Display

The 7-row display contains the following information:

The diagram shows a 7-row display. Row 1 contains a number '1' on the left and a number '4' on the right. Row 2 is shaded and contains a number '2'. Row 3 contains a number '3' on the left and a small downward-pointing triangle on the right. Rows 4, 5, and 6 are shaded and contain three dots '....'. Row 7 contains a number '5' on the left and '00:00' on the right.

Table 11: Display rows

Display	Meaning
1 1-1-1	Displays the selected parameter no.
2 <b>Parameter / Function</b>	Parameter name, Function key: <ul style="list-style-type: none"> <li>• Operation</li> <li>• Diagnosis</li> <li>• Settings</li> <li>• Info</li> </ul>
3 <b>Parameter name</b>	List of selectable parameters
4 <b>Level</b>	Operating level: <ul style="list-style-type: none"> <li>• All</li> <li>• User</li> <li>• Service</li> <li>• Factory</li> </ul>
	“Scroll bar” within the list of selectable parameters
5 <b>MM-YY 00:00</b>	Current date and time

The number of the current menu or parameter is displayed in the top left of the screen. This number indicates the path through the menu levels and, therefore, allows you to quickly locate parameters (see “Parameter list”).

The date and time is displayed in the bottom right of the screen. If a fault occurs, this is displayed in the bottom line and alternating with the date and time.

### 8.1.2 Continuous display

When in operation the most common values, like the system pressure are shown on the display continuously. By pushing the navigation buttons Up and Down all selected values are passing by. In Parameter setting 3-10 “Root menu” these values can be selected as preset value. The selected values are marked with a “√”

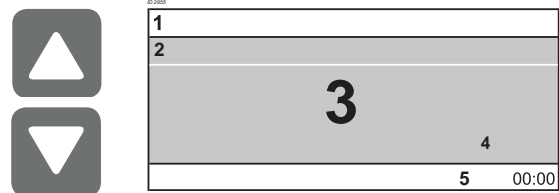


Table 12: Display example

Display	Meaning
1 1-1-1	Displays the selected parameter no.
2 System pressure	
3 525	
4 kPa	
5 <b>MM-JJ 00:00</b>	Current date and time

#### 8.1.2.1 Quick menu

Having access to the most used parameters a Quick menu can be entered by pressing the OK key.



### 8.1.3 Access levels

To prevent accidental or unauthorized access to the Megacontrol parameters, various access levels have been defined.

Table 13: Access levels

Access levels:	Explanation:
<b>Standard</b>	Unless users log on to one of the access levels, they will only have limited access to parameters.
<b>User</b>	Access level for expert users. It enables access to all the parameters required for commissioning. You have to enter a password under 3-2-1 “Log in”. The standard password for users is <b>7353</b> .
<b>Service</b>	Access level for service technicians. You have to enter a password under 3-2-1 Log in.
<b>Factory</b>	Access level for the manufacturer only.



### ATTENTION

If no keys are pressed for ten minutes, the system automatically returns to the default access level.

#### 8.1.4 Displaying and changing parameters

The parameter numbers contain the navigation path, which helps you find a particular parameter quickly and easily. The first digit of the parameter number indicates the first menu level, which can be called up directly via the four function keys. Subsequent steps are carried out via the navigation keys.



1--Operation



2--Diagnosis



3--Settings



4--Info

#### Example: Parameter 3-5-10 Delta P correction:

First digit of parameter number: 3-5-10

**3 Settings**    5 Pressure    10 Delta P correction



Press the third function key for Settings. **3-1** appears in the top left of the screen.

Second digit of parameter number: 3-5-10

**3 Settings**    **5 Pressure**    10 Delta P correction



Change the display **3-1** on the screen (top left) to **3-5** by pressing the navigation keys.



To confirm the selection, press OK. **3-5** appears in the top left of the screen.

Third digit of parameter number: 3-5-10

**3 Settings**    **5 Pressure**    **10 Delta P correction**



Change the display **3-5-1** on the screen (top left) to **3-5-10** by pressing the navigation keys.



To confirm the selection, press OK. **3-5-10** appears in the top left of the screen.

## 8.2 Manual operation of the pumps

By pressing the Quick access key "Operation", information like system pressure and pump load can be retrieved. Also, the pump operating mode like **Automatic**, **Manual** and **Disabled** can be alternated / selected. Subsequent steps are carried out by using the navigation keys.

#### Example: Parameter 1-2-1 (Pumps) Operation mode:

First digit of parameter number: 1-2-1

**1 Operation**    2 Pumps    1 Operation mode



Press the first function key for Operation. **1-1** appears in the top left of the screen.

Second digit of parameter number: 1-2-1

**1 Operation**    **2 Pumps**    1 Operation mode



Change the display **1-1** on the screen (top left) to **1-2** by pressing the navigation keys.



To confirm the selection, press OK. **1-2** appears in the top left of the screen.

Third digit of parameter number: 1-2-1

**1 Operation**    **2 Pumps**    **1 Operation mode**



To confirm the selection, press OK. **1-2-1** appears in the top left of the screen.



Select the **pump number** by pressing the navigation keys.



To confirm the selection, press OK.



Select the operation mode **manual (on (10 s))**.



To confirm the selection, press OK.

The selected pump will run for a period of 10 seconds and stops. The pump operation mode is changed to **Disabled (off)** This is to avoid that the pump runs unprotected.

### 8.2.1 Putting the pump into automatic operation again

The pump has to be put in operation again by selecting the **Automatic mode**.



Stay in the selected parameter **1-2-1 Operation mode** and press OK.



Select the **pump number** again by pressing the navigation keys.



To confirm the selection, press OK.



Select the operation mode **Automatic**.



To confirm the selection, press OK.

### 8.3 Retrieve and reset a fault

Information about faults can be retrieved by pressing the 'diagnosis' hot key

#### Example: Parameter 2-1-1 Current messages



Press the diagnosis key. **2-1 General** appears in the display.



Press the OK key. 2-1-1 Current messages appears in the display.



Press the OK key again. The list with the current faults or the message 'no faults' appears in the display.

When there is a fault that has a circle with a dot in it, the fault is still active



No Water

When there is a fault that has an open circle, the fault is not active, but has not been acknowledged yet.



No Water

When there is a fault that has a circle with a dot in it and a check mark following the fault message, the fault is still active and the fault has been acknowledged as well. When



Press the diagnosis key. **2-1 General** appears in the display.



Press the OK key. The display then shows 2-1-1 Current messages; 2-1-2 History.



You can select History by pressing the navigation key.



Press the OK key. The list of faults from the past appears.



You can select the fault by pressing the navigation key.



Press the OK key. The below listed information becomes visible.

The following information about the fault is known:

- Date and time of occurrence of the fault
- Date and time of acknowledgement of the fault
- Date and time of remedy of the fault

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

Turn the shaft every three months<sup>3</sup>. 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.

## 9.3 Cleaning instructions

Clean the Hydro-Unit Premium Line using a dry cloth



**WARNING**

Make sure the installation is switched off.



**WARNING**

The pump may be hot.

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

# 10 Hydro-Unit configuration

## 10.1 Hydro-Unit MCMF



**ATTENTION**  
See factory settings 3-2-2-1

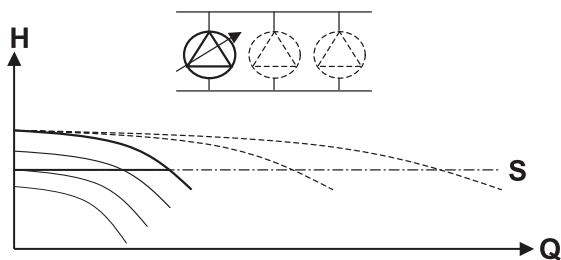


Figure 12: 1 pump operation, 1 pump variable

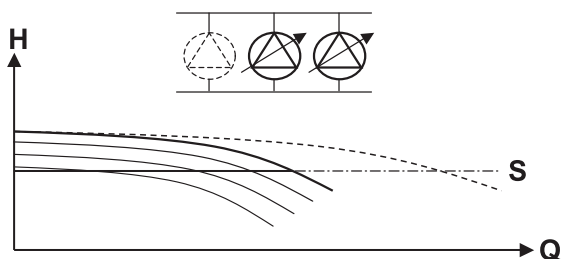


Figure 13: 2 pump operation, 2 pump variable

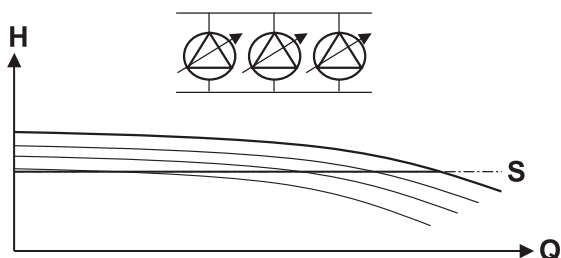


Figure 14: 3 pump operation, 3 pump variable

The Hydro-Unit MCMF is equipped with multiple variable frequency converter. If the Hydro-Unit is frequency-controlled, the required system pressure is sensed by a pressure sensor on the discharge of the installation. An integrated adjustable PID-controller in the software of the Megacontrol ensures that the system pressure remains constant by successively switching on or off one or more (whether or not) frequency-controlled pumps with delay. A pump is only switched on or off when 100% or respectively 0% of the frequency has been reached.

Table 14: Specific parameter settings MCMF

Parameter	Value
3-1-1-3-1	Pressure kPa
3-3-1	Number of pumps 2 - 3
3-3-2	Inlet Switch
3-3-3	Discharge VFD fixed all
3-4-2-1	Sensor press. 4 mA See pressure transmitter
3-4-2-2	Sensor press. 20 mA See pressure transmitter
3-4-2-3	Pumps ON sensor fail 1
3-4-2-4	Max power Limitation of the maximum power / maximum system load (1 pump is 100%)
3-4-3-1	Communication Danfoss MicroDrive
3-4-3-2	Proportional const. 3
3-4-3-3	Integral const. 0.9
3-4-3-4	Differential const. 0
3-4-3-5-1	No flow bandwidth 0-1000 kPa / 0-2500 kPa 6 / 16
3-4-3-5-2	No flow time 16
3-4-3-5-3	No flow step 3
3-4-3-5-4	No flow max. power 100
3-4-3-9	VFD Ramp-Up Depends on motor size
3-4-3-10	VFD Ramp-Down Depends on motor size
3-4-3-11	VFD min. frequency 30 Hz
3-4-3-12	VFD max. frequency 50/60 Hz
3-4-3-13	P nominal of VFD Motor power W
3-4-3-14	U nominal of VFD 230 or 400 V. See scheme VFD
3-4-3-15	F nominal of VFD 50/60 Hz
3-4-3-16	I nominal of VFD $I_{\max}$ motor (by correct f and U) / $I_{\max}$ VFD
3-4-3-17	RPM nominal of VFD RPM at the correct f
3-4-3-26	Start select Digital input
3-4-3-27	Slip Compensation 0
3-5-1	Set point 400
3-5-3	Bandwidth With pressure vessel 10 kPa Without pressure vessel 20 kPa
3-5-4	Accumulation press. 30 kPa
3-5-5	Max.set point See pressure class
3-5-11	High pressure alarm See pressure class
3-5-13	Low pressure alarm 100 kPa

Parameter		Value
3-6-1	Opt. pump starts /h	30
3-6-2	Min. run time	10
3-6-3	Min. run time corr.	0
3-6-8	RDP delay	Default 30 s
		Float/level control 1 s

## 10.2 Hydro-Unit PumpDrive 2 Eco



**ATTENTION**  
See factory settings 3-2-2-1

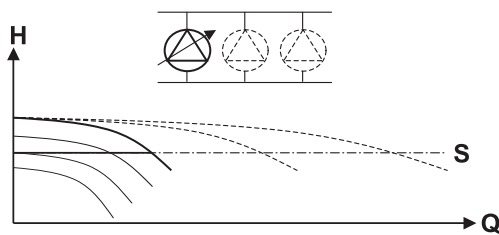


Figure 15: 1 pump operation, 1 pump variable

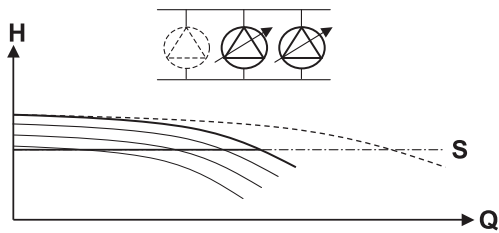


Figure 16: 2 pump operation, 2 pump variable

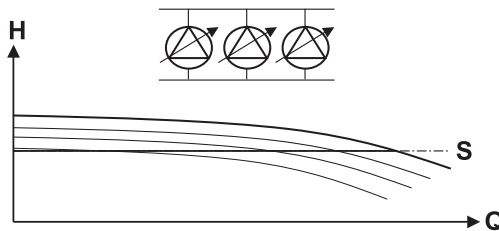


Figure 17: 3 pump operation, 3 pump variable

The Hydro-Unit Megacontrol is equipped with multiple variable frequency drives. If the Hydro-Unit is rotation-controlled, the required system pressure is sensed by a pressure sensor on the outlet side of the installation. An integrated adjustable PID-controller in the software of the Megacontrol ensures that the system pressure remains constant by successively switching on or off one or more (whether or not) rotation-controlled pumps with delay. A pump is only switched on when 100% or respectively 0% of the speed has been reached.

Table 15: Specific parameter settings Megacontrol

Parameter		Value
3-1-1-3-1	Pressure	kPa
3-3-1	Number of pumps	1 2
3-3-2	Inlet	Switch
3-3-3	Discharge	VFD fixed all
3-4-2-1	Sensor press. 4 mA	See pressure transmitter
3-4-2-2	Sensor press. 20 mA	See pressure transmitter
3-4-2-3	Pumps ON sensor fail	1
3-4-2-4	Max power	Limitation of the maximum power / maximum system load (1 pump is 100%)
3-4-3-1	Communication	PumpDrive 2
3-4-3-2	Proportional const.	3
3-4-3-3	Integral time.	0.9
3-4-3-4	Differential time.	0
3-4-3-5-1	No flow bandwidth 0-1000 kPa	6
		0-2500 kPa
3-4-3-5-2	No flow time	16
3-4-3-5-3	No flow step	3
3-4-3-5-4	No flow max. power	100
3-4-3-9	VFD Ramp-Up	Depends on motor size
3-4-3-10	VFD Ramp-Down	Depends on motor size
3-4-3-11	VFD min. frequency	30 Hz
3-4-3-12	VFD max. frequency	50/60 Hz
3-4-3-13	P nominal of VFD	Motorpower W
3-4-3-14	U nominal of VFD	400 V
3-4-3-15	F nominal of VFD	50/60 Hz
3-4-3-16	I nominal of VFD	I <sub>max</sub> motor (by correct F and U) / I <sub>max</sub> VFD
3-4-3-17	RPM nominal of VFD	RPM at the correct F
3-5-1	Set point	400
3-5-3	Bandwidth	With pressure vessel 10 kPa / Without pressure vessel 20 kPa
3-5-4	Accumulation press.	30 kPa
3-5-5	Max.set point	See pressure class
3-5-11	High pressure alarm	See pressure class
3-5-13	Low pressure alarm	100 kPa
3-6-1	Opt. pump starts/h	30
3-6-2	Min. run time	10
3-6-3	Min. run time corr.	0
3-6-8	RDP delay	Default 30 s
		Float-level control 1 s

Table 16: Parameter list PumpDrive 2 Eco

Parameter	Description	Help text	Factory setting
3-1-2-2	Operating Keys Require Login	Direct access to the MAN, OFF, AUTO and FUNC operating keys can be disabled via this parameter.	1=ON
3-2-1	Nominal Motor Data	-	-
3-2-1-1	Nominal Motor Power	Nominal power of motor as per name plate	Minimum to maximum limit of value range set in kW
3-2-1-2	Nominal Motor Voltage	Nominal voltage of motor as per name plate	Minimum to maximum limit of value range set in V
3-2-1-3	Nominal Motor Frequency	Nominal frequency of motor as per name plate	Minimum to maximum limit of value range set in Hz
3-2-1-4	Nominal Motor Current	Nominal current of motor as per name plate	Minimum to maximum limit of value range set in A
3-2-1-5	Nominal Motor Speed	Nominal speed of motor as per name plate	Minimum to maximum limit of value range set in rpm
3-2-1-6	Nominal Cos Phi Value	Cos phi of motor at nominal power	0.00...1.00
3-2-2	Motor Speed Limitation	-	-
3-2-2-1	Minimum Motor Speed	-	3-11-1-1...3-2-2-2 (rpm)
3-2-2-2	Maximum Motor Speed	-	3-2-2-1...3-11-1-2 (rpm)
3-2-3	Thermal Motor Protection	-	-
3-2-3-1	PTC Analysis	Motor temperature monitoring	OFF ON
3-2-3-2	Thermal Motor Protection Behaviour	Behaviour for detection of excessive motor temperature	Self-acknowledging Non-self-acknowledging (Service Tool only)
3-2-4	Motor Direction of Rotation	Setting the direction of rotation of the motor with respect to the motor shaft	0=Clockwise 1=Anti-clockwise
3-3-1	Motor Control Method	Selecting the control method	Asynchronous Motor Vector Control
3-3-3-1	Start Automatic Motor Adaptation	2. Standard AMA: The extended motor data is determined by taking a measurement with the motor being at a standstill.	Standard AMA - Motor at Standstill
3-6	Open-loop and Closed-loop Control	-	-
3-6-1	Type of Control	Selecting the control method. The controller is deactivated when OFF (Open-loop Control) is selected.	1=Discharge Pressure
3-6-5-1	Fixed Speed 1	Fixed speed selectable via digital inputs	3-2-2-1...3-2-2-2
3-7-1	Role in Multiple Pump System	Selecting the role of the frequency inverter in a multiple pump configuration. The active master control device is responsible for starting and stopping pumps, as well as for open-loop and closed-loop control. All input variables required for open-loop or closed-loop control must be connected to the master control device and all redundant master control devices. The redundant master control device which is to serve as the active master control is selected automatically based on a configurable transfer time. Auxiliary control devices and redundant master control devices receive their control value from the master control device.	1=Auxiliary Control



Parameter	Description	Help text	Factory setting
3-8-6-1	Digital Input 1 Function	Configurable function of digital input 1	No Function Control Digital Bit 0
3-8-6-2	Digital Input 2 Function	Configurable function of digital input 2	No Function Control Digital Bit 0
3-8-6-3	Digital Input 3 Function	Configurable function of digital input 3	No Function
3-9-8-1	Flow Rate Estimation	Activation of flow rate estimation	0=OFF
3-10-10-2	Upper Limit	Defining the upper limit value for warning. When the upper limit value is exceeded, a warning is triggered after the time delay has lapsed.	3-10-10-1...3-11-8-2 50/60 Hz
4-1-1	Device ID	User-defined device name for identifying the drive. The control panel just allows read-only access to this parameter. The device name can only be changed via the ServiceTool/APP.	1 - 6

## 10.3 Explanation of parameters

### 10.3.1 Pressure settings set points

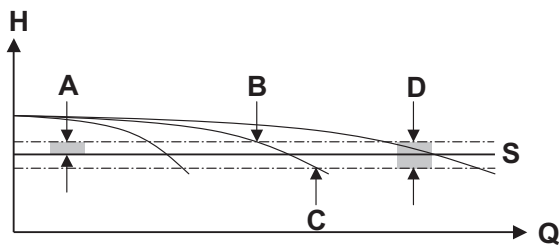


Figure 18: Pressure settings set points fixed speed

Table 17: Pressure settings set points fixed speed

ID	Parameter	Description
S	3-5-1	Set point
A	3-5-3	Bandwidth
B		Switch-off pressure
C		Switch-on pressure
D		2 x bandwidth

Table 18: Pressure settings set points variable speed

ID	Parameter	Description
A	3-5-4	Accumulation pressure
B	3-5-3	Bandwidth
C		Switch-on pressure 1st pump
D		Switch-off pressure last pump
S	3-5-1	Set point

### 10.3.2 Special inputs

See BE00000508 chapter 9: Special input/output

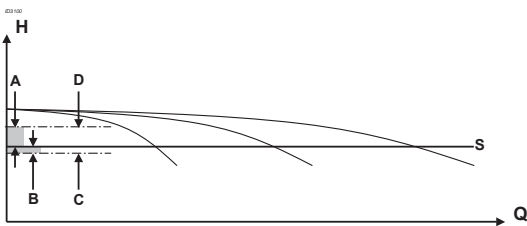


Figure 19: Pressure settings set points variable speed



# 11 Parameters

## 11.1 Parameter list

The parameters of the main menu are related to the standard (default) settings of the installation. The standard (default) settings can be adjusted where necessary and may also be reset whenever required. On the basis of the standard set parameters, an installation will operate as it should. Additional, extra parameters may be used, e.g. those under 'advanced', 'pressure', 'delays' and 'clock'. In order to use these additional parameters, you should activate the corresponding sub menus.



### ATTENTION

For unit-specific values see: 'Factory settings'.



### ATTENTION

Certain parameters are not visible, depending on the configuration.

Table 19: Access level parameter list

Access level	Read	Write
Everybody	e	e
User	c	c
Service	s	s
Factory	f	f
Nobody		n
Development	d	d

### 11.1.1 Parameter list

For the parameter list: See BE00000508 Control units chapter 10

# 12 Failures

## 12.1 Failure messages Megacontrol

Table 20: Faults list Megacontrol

Failure message:	Explanation:	Failure output:
Failure PT. Dis.	Failure Pressure Transmitter discharge side (value >20mA) replace PT and reset system	Urgent
Sys. press.to low	System pressure too long under minimum value (3-5-13)	Urgent <sup>1</sup>
Sys press.to high	System pressure too long above maximum value (3-5-11)	Urgent <sup>1</sup>
Sys. press.to low	System pressure too long under minimum value (3-5-13)	Non urgent <sup>2</sup>
Sys press.to high	System pressure too long above maximum value (3-5-11)	Non urgent <sup>2</sup>
No water	No sufficient water or -pressure available at suction side	Urgent <sup>1</sup>
No water	No sufficient water or -pressure available at suction side	Non urgent <sup>2</sup>
Maintenance req.	Maintenance is required	Non urgent
More pumps fail	More than two pumps out of order	Urgent
No refresh tank #	No water refreshm in tank # (sensed by the flow detector) check precharged air pressure	Urgent
Aver temp to high	Average room temperature to high (sensed by the temperature sensor)	Urgent
Curr temp to high	Current room temperature to high (sensed by the temperature sensor)	Non urgent
Temp.failure Pump #	Failure pump #. Solve problem and reset the system	Non urgent
Failure valve	Failure supply valve. Solve problem and reset the system	Urgent
Inlet sensor fail	Failure inlet Sensor for level or pressure. (signal out of range) replace Sensor and reset system.	Urgent
High water level	Water level in receiver tank too high	Non urgent
Crit. water level	Water level in receiver tank critical (near to empty)	Non urgent
Low water level	Water level in receiver tank too low (system shut down for run dry protection)	Urgent <sup>1</sup>
Low water level	Water level in receiver tank too low (system shut down for run dry protection)	Non urgent <sup>2</sup>
Comm. Error FC #	Communication to variable frequency drive # is broken	Non urgent
Incor. check sum F #	FC # Incorrect check sum within the protocol	Non urgent
Temp. sensor fail	Failure Room Temperature Sensor. replace R.T.S. and reset system	Non urgent
24V out of range	Failure message due to internal 24V supply out of range	Non urgent
5V out of range	failure message due to internal 5V supply out of range	Non urgent
3V out of range	Failure message due to internal 3V supply out of range	Non urgent
External off	Failure message due to an external off command	Urgent
Fire alarm	Failure message due to an external fire alarm command	Urgent
Failure VFD	Failure of the VFD drive at discharge mode VFD change-over or VFD fixed one	Urgent
Br. Wire Sens.dis	Failure Pressure Transmitter discharge side (value lower then 4mA) connect or replace Pressure Transmitter and reset system	Urgent
Br. Wire Sens.Inl	Failure inlet Sensor for level or pressure. (wire break detection) Replace Sensor and reset system.	Urgent
Fail. several FCs	Failure for more than one FC occurs	Urgent
Leakage	There is a leakage in the unit. Solve problem and reset the system	Urgent
Eeprom HW Error	The Eeprom data was not saved due to HW problem	Urgent
Manual off Pump # off		Not urgent
Manual On Pump #		Not urgent
More Pumps off		Not urgent

Failure message:	Explanation:	Failure output:
Internal Failure P#		Not urgent
Mains Failure P#		Not urgent
Over voltageP#		Not urgent
Under voltage P#		Not urgent
Overload Failure P#		Not urgent
Brake resistor P#		Not urgent
Temp. Failure P#		Not urgent
ATM Failure P#		Not urgent
Flushing		Not urgent
Valve opened oftenly		Urgent
Circuit Fail. FC#		Not urgent
Ext. Power Operation	External power supply operation	Not urgent
Setpoint Reduction	Automatic Setpoint Reduction because of inlet pressure dropdown	Not urgent
Factory Test		Not urgent
MPO Failure	Incorrect switching point configured or sensor failure	Not urgent
ASR Shutdown	Automatic Setpoint Reduction Shutdown because of inlet pressure dropdown	Urgent
BC IO not connected		
Failure RW-pump 1	Failure rainwater pump 1. Solve problem and reset the system.	Not urgent
Failure RW-pump 2	Failure rainwater pump 2. Solve problem and reset the system.	Not urgent
No rainwater	No rainwater is available.	Not urgent
Failure DW-valve	Failure of the drinking water inlet valve.	Not urgent
Starts/h RW-pump 1	Maximum starts per hour of rainwater pump 1 are exceeded.	
Starts/h RW-pump 2	Maximum starts per hour of rainwater pump 2 are exceeded.	
Use of potable water	Potable water was used.	Not urgent
Hygienic addition	The tank inlet was flushed with potable water.	Not urgent
Forced hyg. Addition	Flushing of tank inlet with potable water was forced.	Not urgent
Manual Off RW-pump 1		
Manual Off RW-pump 2		
Manual On RW-pump 1		
Manual On RW-pump 2		
Tank filling	The tank is filled due to a triggered start of the rainwater pumps.	
Hyg. add. Incomplete	Hygienic addition was incomplete, because tank was filled or failure of drinking water inlet valve.	
Occured:	Failures that have occurred recently.	
Acknowledged:	Failures that got acknowledged.	
Cleared:	Failures that got cleared	
Data:		
No failures		

1. Manual alarm reset = Urgent.
2. Automatic alarm reset = Not urgent.

## 12.2 Failure messages frequency converter



### ATTENTION

The error codes are displayed in the error log of the Megacontrol. For specific information about the error codes please consult the (technical) documentation of the frequency converter concerned.

### 12.2.1 KSB PumpDrive Eco

For failure messages, see the PumpDrive 2 manual (4074.81/..)

## 12.3 Failure table Hydro-Unit Premium Line



### WARNING

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

Problem	Possible cause	Possible solution	Checkpoints
Leakage along the shaft.	Shaft seal worn.	Replace the shaft seal.	Check the pump for fouling.
	Pump has been operated without water.	Replace the shaft seal.	
Pump is vibrating and produces a lot of noise.	There is no water in the pump.	Fill and de-aerate the pump.	Check if the supply pipes are not clogged.
	No water supply.	Restore the water supply.	
	Bearings of pump and/or motor defective.	Have the bearings replaced by a certified company.	
	Hydraulic assembly defective.	Replace the hydraulic assembly.	
Installation / pump does not start.	No voltage on the connecting clamps.	Check the power supply.	<ul style="list-style-type: none"> <li>• Circuit</li> <li>• Main switch</li> <li>• Fuses</li> </ul>
	Thermal motor safety switch triggered	Reset the thermal motor safety. Contact the supplier, if this problem occurs more often	
	Run-dry protection triggered.	Restore the water supply. Reset the installation.	
	Pressure set point incorrect.	Adjust the pressure set-point.	
Installation / pump supplies insufficient capacity and/or pressure.	There is air in the pump.	Vent the pump.	
	Capacity of water meter in the supply line is too small.	Increase the capacity of the water meter.	
	Discharge and/or suction shut-off valve is closed.	Open both shut-off valves.	
	System resistance too high.	Adjust the set points	
Let the supplier check the system			
Pumps continuously start and stop.	Pressure vessel(s) leaky or incorrect pre-pressure.	Have your supplier check the installation.	

# 13 Annexes

## 13.1 P&ID

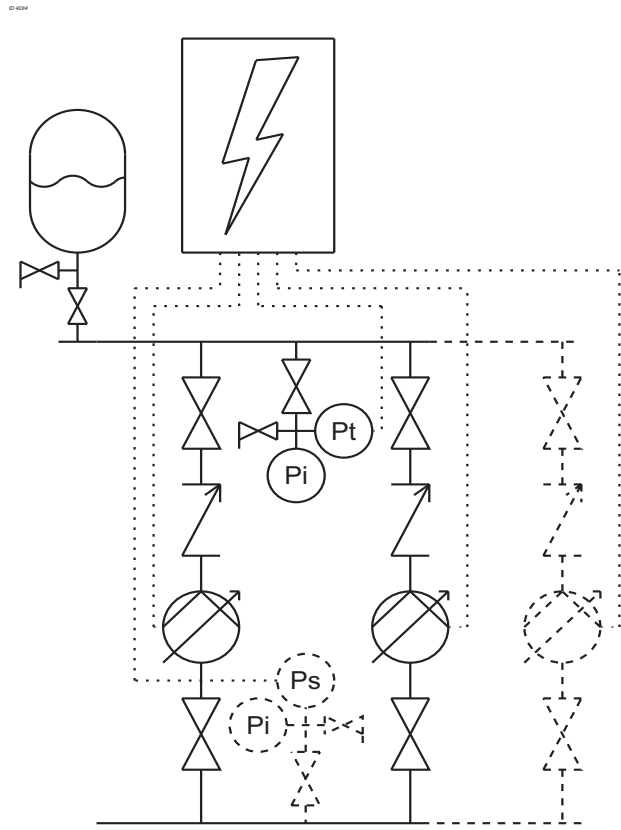


Figure 20: Hydro-Unit Premium Line Megacontrol MF

20131392-A



## 13.2 Connections

### 13.2.1 Terminal strip X 0 Pumps MCMF

Table 21: Terminal strip

Terminal strip X 0 Pumps	
Frequency converter 1	U1 Pump 1
	V1 Pump 1
	W1 Pump 1
Frequency converter 2	U1 Pump 2
	V1 Pump 2
	W1 Pump 2
Frequency converter 3	U1 Pump 3
	V1 Pump 3
	W1 Pump 3



**ATTENTION**  
pump cables are connected directly to frequency converter



**ATTENTION**  
The alarm contact is closed when the installations are without power or in case of a fault

### 13.2.2 Terminal strip for external contacts

See included wiring diagram for external wiring connection.

### 13.3 Electrical connections

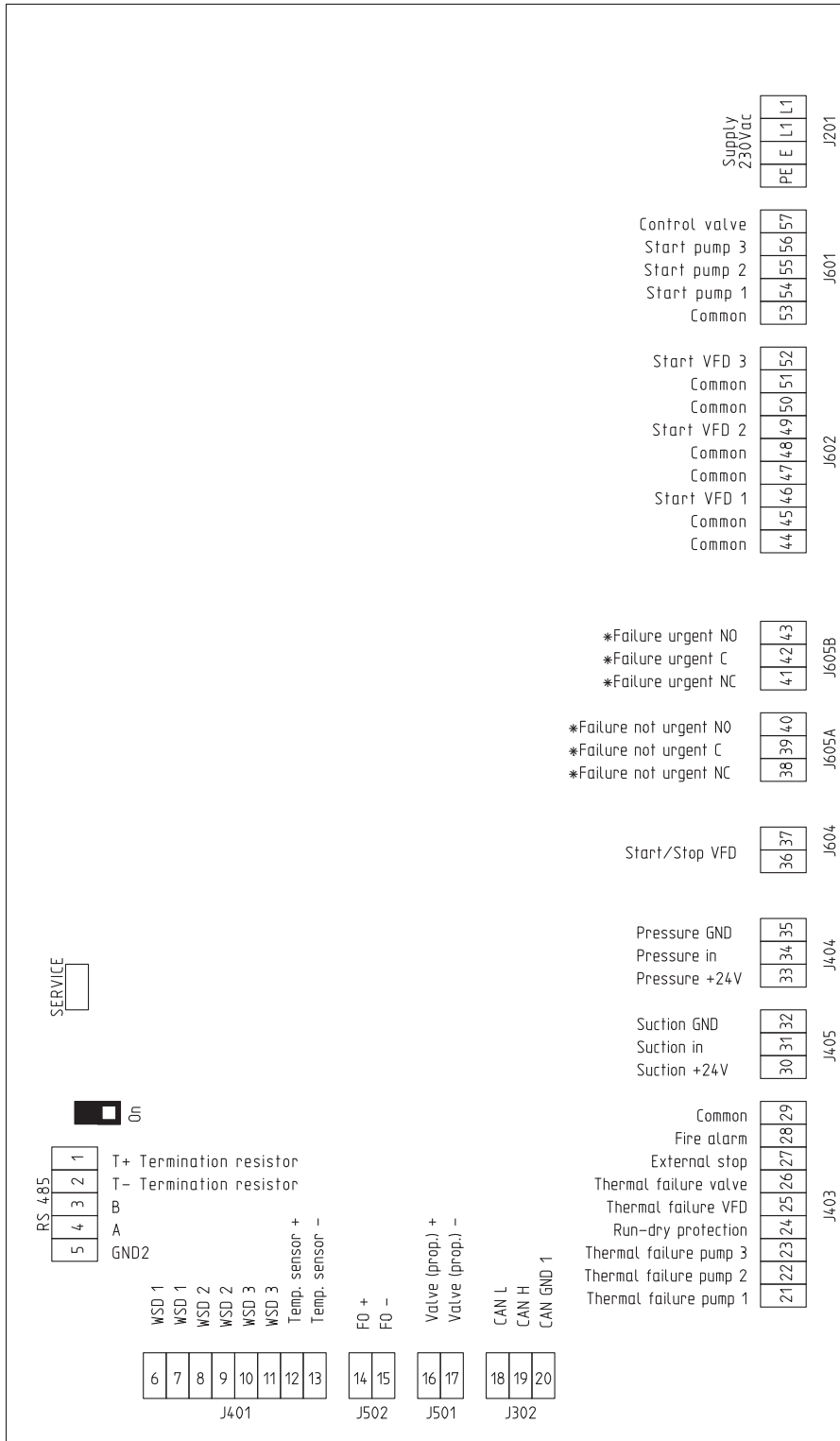


Figure 21: Megacontrol Lay-out 1-3 pumps

\* Connections 38/39 and 41/42 are closed in case of fault and power cut.



## 13.4 EC 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 the manufacturer in his own responsibility, that the products:

Product: Hydro-Unit  
Type: Premium Line Megacontrol MF

Serial number: 01/2015 1000000-01 [...] 52/2018 9999999-99

to which this declaration relates, are constructed in conformity with the following harmonized international standards:

- EN 809+A1/C1:2010
- EN ISO 12100:2010
- IEC 60204-1:2006
- IEC 61000-6-1:2007
- IEC 61000-6-3/A1:2011
- IEC 61000-3-2 ( $I \leq 16$  A)
- IEC 61000-3-12 ( $16$  A  $< I < 75$  A)

in according with the provisions of:

- Machinery directive 2006/42/EC
- EMC directive 2014/30/EU
- RoHS 2011/65/EU

The installation is subject to this declaration of conformity as a stand alone product.

Make sure the appliance or installation in which the Hydro-Unit Premium Line is built in, has got a declaration of compliance with the directives listed above, for its complete assembly.



Alphen aan den Rijn, 18/01/2016

Responsible person:  
W. Ouwehand, technical director



## 13.5 CE conformity marking

The product is CE-marked and fulfils the requirements specified in the European Electromagnetic Compatibility Directive 2004/108/EC dated 15 December 2004, Annex I. Compliance with the provisions of the directive is certified by a Declaration of Conformity. In accordance with the EN 61000-6-1 standard, the product meets Class B requirements (limits to EN 55011). The integrated frequency inverter fulfils the requirements of the EN 61800-3 product standard.

Table 22: Classification by category

Category	C1	C2	C3	C4
Mode of sales distribution	Unrestricted distribution	Restricted distribution	Restricted distribution	Restricted distribution
Environment	1ste environment	1ste or 2nd environment (operator's decision)	2nd environment	2nd environment
Voltage/current	<1000 V			≥ 1000 V $I_n > 400$ A Connection to IT network
EMC competence	No special requirement	Installation and commissioning by personnel suitably trained in EMC applications		EMC plan required
Limit to EN 55011	Class B	Class A1 (+warning)	Class A2 (+warning)	Value exceed class A2 limits





## **dp pumps**

**dp pumps**  
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10/2017

BE00000547-C / EN

Original instructions

Can be changed without prior notice

