

IMPORTANT
 Please attach your sales invoice/docket here as proof of purchase should warranty service be required.

Please do not return Warranty - Retain for your records.

Purchased From

Purchase Date..... Serial No..... Model No.....



**Pacific
Australia**

Head Office

Pentair Water Australia Pty Ltd
 Notting Hill Victoria, Australia
 Tel: +61 3 9574 4000 Fax: +61 3 9562 7237
 Email: Sales@pentairwater.com.au
 www.pentairwater.com.au



Pentair Water New Zealand Ltd

Penrose Auckland New Zealand
 Tel: +64 9 579 6254 Fax: +64 9 579 6497
 Email: auckland@pentairwater.com.au

Americas

Pentair, Inc.

www.pentair.com

Europe

Pentair Pumps S.p.A
 www.Pentairpumps.it

Asia

China

www.pentairwater.com

India

www.pentairwater.com

© information contained here-in remains the property of Pentair Water Pty Ltd. Any reproduction, display, publication, modification or distribution is strictly prohibited without the prior written permission of Pentair Water Pty Ltd.

Disclaimer: Every endeavour has been made to publish the correct details in this owner's manual. No responsibility will be taken for errors, omissions or changes in product specifications. Pentair Water reserves the right to change specifications

L100172 0608



CHAPTER 1 - INTRODUCTION2

1.1 PARTICULAR SIGNS

1.2 GENERAL INFORMATION

1.3 PRELIMINARY CHECKS

CHAPTER 2 – TECHNICAL FEATURES3

2.1 FIELD LIMITATIONS .

2.2 INBOUND SIGNAL FEATURES

CHAPTER 3 - INSTALLATION3

3.1 HYDRAULIC CONNECTION

3.2 PRESSURISED TANK (EXPANSION VESSEL)

3.3 ELECTRICAL CONNECTION

CHAPTER 4 - FUNCTIONING4

4.1 PRODUCT DESCRIPTION

4.2 CONTROL PANEL DESCRIPTION

4.2.1 DISPLAYS

4.3 PROGRAMMING

4.3.1 PROGRAMMING CLOCK/DATE

4.3.2 SET POINT

4.3.3 ADVANCED PARAMETERS

4.4 MANUAL START OF MOTOR/PRIMING

4.4.1 MANUAL START/STOP

4.5 DESCRIPTION OF SIGNALS ON DISPLAY

CHAPTER 5.0 – TABLES AND DESIGNS9

5.1 DATA PLATE

5.2 POSITIVE SUCTION HEAD INSTALLATION

5.3 POSITIVE SUCTION HEAD INSTALLATION

5.4 ELECTRICAL CONNECTION BOARD – POWER BOARD

5.5 CONNECTIONS BOARD – CONTROL BOARD

WARRANTY AND CONTACT DETAILS14

Pentair Water warrants that, when this product is used for the purpose it was designed, is correctly housed and vented against weather, vermin, dust etc., that it will be free of material and manufacturing defects at the time of the original purchase.
This warranty is limited to the cost of the product and does not cover third party costs including the costs of electricians, plumbers, etc. unless authorised by Pentair Water.

TERMS AND CONDITIONS APPLICABLE INTERNATIONALLY

How long the warranty is effective Internationally

1) This Pentair Water product is warranted for 12 months for all parts from the date of the first consumer purchase. Should any parts fail as a result of such defects within the specified period, the part will be replaced free of charge. (This does not include travel charges, removal and reinstallation charges.)

TERMS AND CONDITIONS APPLICABLE IN AUSTRALIA AND NEW ZEALAND

1) YOU SHOULD CAREFULLY READ THE INSTRUCTIONS SUPPLIED PRIOR TO USING THIS PENTAIR WATER PRODUCT.

This product is to be installed and operated in accordance with the instructions provided. This warranty will not apply if it is used in a manner other than in accordance with the instructions.

What the warranty covers:

Pentair Water warrants its products to be free of defects in material and workmanship during the warranty period. If a product proves to be defective in material or workmanship during the warranty period, then Pentair Water will, at its sole option repair or replace the product with a like product. Replacement product or parts may include re-manufactured or refurbished parts or components.

How long the warranty is effective:

- 1) This Pentair Water product is warranted for 36 months warranty for all parts from the date of the first consumer purchase.
- 2) Authorised workshop labour will be free of charge for the first 36 month period from date of the first consumer purchase when unit is found to have failed due to defective workmanship or material supplied by Pentair Water Australia. Infield service by an authorised Pentair Water Service Agent will incur a travel, removal & reinstallation fee payable by customer.
- 3) Where this Pentair Water product is sold for commercial application as defined in the relevant Trade Practices and Consumer Protection legislation the warranty shall be for a period of six months from the date of purchase by the end user.

Who the warranty protects:

This warranty is valid only for the consumer purchaser.

What the warranty does not cover:

- 1) Damage, deterioration or malfunction resulting from:
 - a) accident, misuse, negligence, fire, water, lightning, or other acts of nature, unauthorised product modification or failure to follow instructions supplied with the product;
 - b) repair or attempted repair by anyone not authorised by Pentair Water;
 - c) any damage to the product due to shipment;
 - d) removal or installation of the product;
 - e) causes external to the product such as electric power fluctuations or failure;
 - f) use of supplies or parts not meeting Pentair Water specifications;
 - g) normal wear and tear;
 - h) water ingress or exposure to abnormal corrosive conditions or "run dry" conditions;
 - i) any other cause which does not relate to a product defect.
- 2) Damage caused to the product as a consequence of use of another manufacturer's product used in conjunction with Pentair Water and affiliate companies.
- 3) Ingress of insects into the unit causing electrical malfunction is not warranted, care should be taken to avoid this occurrence.

Spare Parts:

Spare parts are usually stocked for a reasonable period of time following last production.

Pentair Water does not warrant that spare parts will be made available for the whole of the reasonable period and reserves its right to cease supplying spare parts or providing facilities for repair of spare parts in circumstances which are beyond its control including the requirement to remove spare parts from sale as a consequence of changes in the law or otherwise as it deems fit.

How to get service:

In Australia please contact 1800 664 266 In New Zealand please contact 0800 664 269

Claims under this warranty must give evidence of date of purchase, model and serial number of the product and the claimants name, address and telephone number.

- 1) To obtain warranted service, you will be required to provide to either Pentair Water state office or recommended service agent-
 - a) the product;
 - b) confirmation in writing specifying the nature of your claim;
 - c) proof providing date of original purchase;
 - d) full contact details including name and address;
 - e) the serial number of the product if any.
- 2) The product is to be forwarded by the customer freight paid to an Authorised Pentair Water service agent.
- 3) Warranty service work will be denied or suspended, on equipment not readily accessible to service personnel, that is products that are behind barriers, tiled or bricked in, installed in roofs or second story external walls including inaccessible power points.
- 4) Any service of any product which is found to be faulty due to abuse, fair wear & tear, misuse or improper installation will be charged to the owner at the service agents current servicing hourly rate.

Limitation of implied warranties:

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION CONTAINED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Exclusion of damages:

PENTAIR WATER'S LIABILITY IS LIMITED TO THE COST OF REPAIR OR REPLACEMENT OF THE PRODUCT. QNGA SHALL NOT BE LIABLE FOR:

- 1) DAMAGE TO OTHER PROPERTY CAUSED BY ANY DEFECTS IN THE PRODUCT, DAMAGES BASED UPON INCONVENIENCE, LOSS OF USE OF THE PRODUCT, LOSS OF TIME, LOSS OF PROFITS, LOSS OF BUSINESS OPPORTUNITY, LOSS OF GOODWILL, INTERFERENCE OF BUSINESS RELATIONSHIPS, OR OTHER COMMERCIAL LOSS, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
- 2) ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.
- 3) ANY CLAIM AGAINST THE CUSTOMER BY ANY OTHER PARTY.

Effective law:

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Nothing in this warranty limits or restricts, or is intended to derogate from, any right or remedy which the purchaser or ultimate user of the product may have pursuant to Australian state and/or Australian federal consumer protection legislation, New Zealand Sale of Goods Act, Consumer Guarantees Act, Fair Trading Act or any other relevant and applicable New Zealand legislation or authority and where necessary shall so be read and construed.

NOTES:

CHAPTER 1 - INTRODUCTION

1.1 PARTICULAR SIGNS

Caution 	<ul style="list-style-type: none">The attention sign indicates the procedures requiring your absolute attention, otherwise you may cause damage to the machine or equipment connected to it
Danger 	<ul style="list-style-type: none">The danger sign indicates the procedures requiring your absolute attention, otherwise you may get an electric shock
NOTE 	<ul style="list-style-type: none">The note sign offers important information highlighted outside the text to which it refers

1.2 GENERAL INFORMATION

With this manual PENTAIR WATER ITALY wants to provide the necessary information to install, use and maintain the inverter coupled with a NOCCHI motor pump.

Caution 	<ul style="list-style-type: none">Incorrect use can dangerously damage the machine or the equipment, as well as result in guarantee forfeiture
---	--

The CPS module has a single phase power supply and controls a three phase pump by reading the pressure of the electronic transducer mounted on the collector outlet.

The module enables the operator to select the various system functions using a keyboard and LCD display mounted on same.

NOTE 	<ul style="list-style-type: none">This manual refers to standard type execution
--	---

1.3 PRELIMINARY CHECKS

NOTE 	<ul style="list-style-type: none">Always keep the original packaging for possible future transport of the machine.
--	--

- Check the packaging is intact
- Open the packaging and remove the machine
- Check the machine corresponds to that ordered
- Check the machine is not damaged
- If you receive an incorrect or damaged machine, notify PENTAIR WATER ITALY or the authorised dealer within and not after 10 (ten) days from date of purchase

CHAPTER 2 – TECHNICAL FEATURES

	<ul style="list-style-type: none"> For the motor pump refer to the information contained in the specific manuals
Caution 	<ul style="list-style-type: none"> Do not use the product in environments with acid, corrosive and/or inflammable gas Do not use the motor pump with dangerous liquids

2.1 FIELD LIMITATIONS

- Environmental temperature : +0°C to 40°C
- Temperature of pumped liquid : refer to the specific motor pump manual
- Level of protection : IP55 (if installed on motors with an IP55 or superior level)
- Maximum operational pressure : refer to the specific motor pump manual
- Voltage of inverter : 1x230 Vac ±10 %
- Voltage of outlet inverter : 3x230 Vac ±10 %
- Inbound frequency : 50/60 Hz +3%
- Maximum nominal power : 1.5 Kw
- Maximum nominal outbound current : 6.5 Amp
- Wave shape : sinusoidal
- Inbound filter : complies with EMC directive

2.2 INBOUND SIGNAL FEATURES

- Pressure of transducer:
 - Pressure field : from 0 to 10 Bar
 - Outbound signal : from 0 to 5 Volt
 - Connection : ¼ male
 - Electrical connector : removable, provided with 2m of cable

CHAPTER 3 - INSTALLATION

Caution 	<ul style="list-style-type: none"> The installation operations must be performed by expert, qualified personnel Use specific guards and equipment as per safety standards Fully comply with safety and accident prevention standards in force
---	--

3.1 HYDRAULIC CONNECTION

The system can be used with a direct connection to the aqueduct or suction from a first tank.

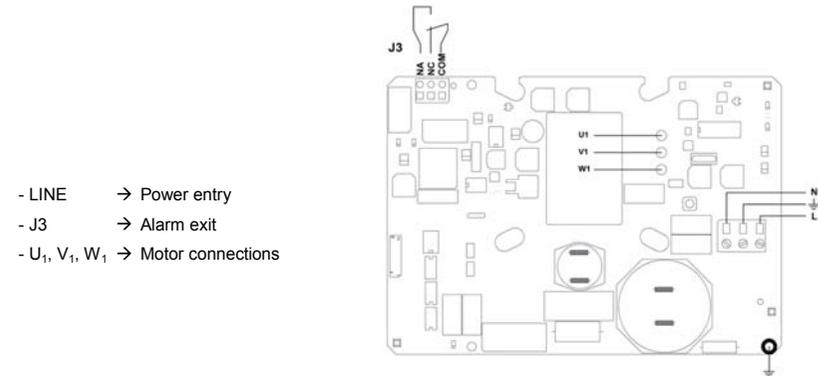
Caution 	<ul style="list-style-type: none"> For connection to the aqueduct, pay full attention to local standards in force Check the sum of the intake pressure and the maximum pressure of the motor pump do not exceed the maximum values allowed by the system
---	--

TANK: follow the indications described in the use and maintenance manual for the motor pump used. It is possible to use a float to deactivate the system (to avoid the system drying up).

3.2 PRESSURISED TANK (EXPANSION VESSEL)

Caution 	<ul style="list-style-type: none"> Check the maximum pressure of the tank can support the maximum pressure of the system
---	---

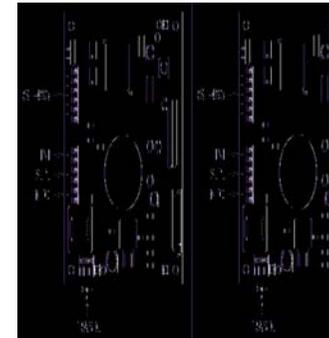
5.4 ELECTRICAL CONNECTION BOARD – POWER BOARD



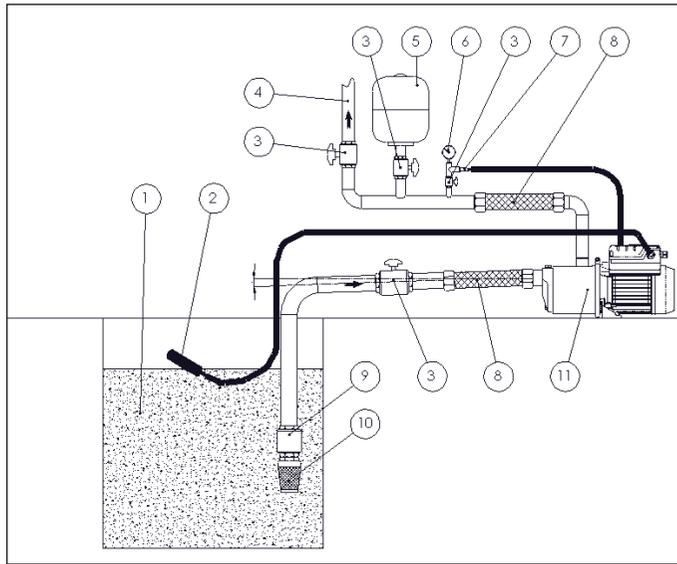
- LINE → Power entry
- J3 → Alarm exit
- U₁, V₁, W₁ → Motor connections

5.5 CONNECTIONS BOARD – CONTROL BOARD

- RS-485 → Communication port
- INI → INIBIT input: NC external contact
- S.P. → External Set Point (EST): NA contact
- NTC → NTC sensor input to control temperature
- TRASD. → Input 0+Volts for pressure transducer
 - + → Positive
 - - → Negative
 - D → Signal



5.3 POSITIVE SUCTION HEAD INSTALLATION



- | | |
|-------------------------------------|--------------------------------------|
| 1 Basin or tank | 7 Pressure transducer |
| 2 Float | 8 Flexible tube |
| 3 Shut-off valve | 9 Non return valve |
| 4 Outlet tubing | 10 Filter |
| 5 Tank/autoclave membrane (8 l min) | 11 Motor pump complete with inverter |
| 6 Gauge | |

For the installation of the positive suction head, ensure the correct inclination of the suction piping until the air present in the tubing can exit the outlet tubing.

It is necessary to install an expansion vessel on the outlet side of at least 8 litres to avoid the motor pump functioning continuously.
Check the preloading pressure of the first tank on the system: this value must be 0.8 Bar less than working pressure (lower SET-POINT).

3.3 ELECTRICAL CONNECTION

Danger 	<ul style="list-style-type: none"> • Ensure power is cut to all the connections • Always disconnect the electrical power cable before performing operations on the electrical or mechanical parts of the motor pump • Having disconnected the power cable, wait for the LINE led to switch off (about 1 minute) and until the condensers unload before performing intervention on the CPS
Caution 	<ul style="list-style-type: none"> • Perform the electrical connections in compliance with local standards in force • It is the responsibility of the installer to ensure that the electrical power supply system has an effective earthing system in compliance with standards in force

The CPS comes with a Shuko (EEC 7/7) type power plug.
Connect the plug in an accessible position in case it is necessary to deactivate the system.
In case of damage to the power cable, it must be replaced in an assistance centre or by qualified personnel.

The CPS comes with a 2 m shielded cable, for the pressure transducer, connected to the module. For positioning see chapter 5.

NOTE 	<ul style="list-style-type: none"> • Before switching on or after a long period without power, the display may flash; this indicates the internal clock must be regulated (see chap. 4.3.3)
--	--

CHAPTER 4 - FUNCTIONING

4.1 PRODUCT DESCRIPTION

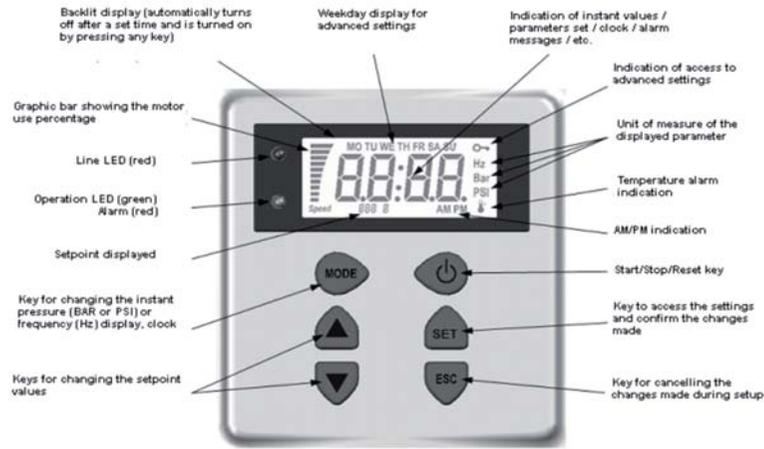
The system is composed of a motor pump and an electronic control system (inverter) that enables the pressure to be maintained constant in the system, reducing or increasing the rotation speed of the pump motor.

When the system pressure goes below the threshold set, the module starts the pump to reset the set point pressure; the rotation speed of the pump varies based on the water request, therefore, greater request requires greater speed, until the maximum set pressure is reached.

When the request for water decreases, speed will also reduce until the pump reaches the minimum speed set and after which, if there are no further decreases in pressure (i.e. new water requests), the pump will go in stand by until a new cycle begins.

4.2 CONTROL PANEL DESCRIPTION

The control panel is shown in fig. 1 and is composed of:



4.2.1 DISPLAYS

Press the MODE button to alternate the various displays available

- BAR/PSI → System pressure
- Hz → Motor frequency
- A → Absorbed current
- hh:mm → Time

The parameter displayed by default is pressure (BAR or PSI); after 10 minutes of displaying one of the other parameters the system automatically returns to displaying pressure.

4.3 PROGRAMMING

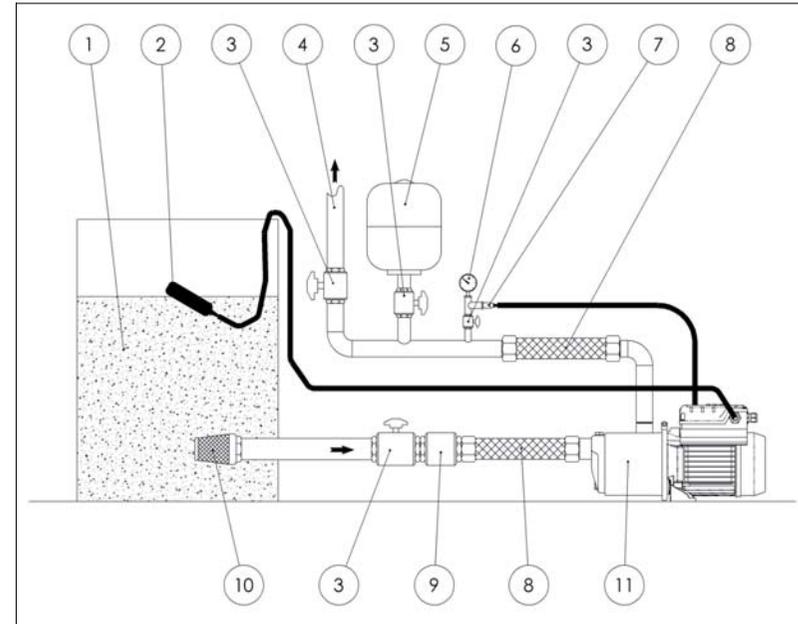
Functioning of the module is programmable using a series of parameters grouped into 3 sub-menus:

NOTE	<ul style="list-style-type: none"> • The CPS module indicates with the symbol the modification status of the parameter.
-------------	---

MENU	DESCR DISPLAY	PARAMETER NAME	DESCRIPTION	DEF	MIN	MAX
PRO G R A M M E	TIME	Time	Time on system	00:00	00:00	23:59
	GIO	Day of week	Day of week	MO	MO	SU
SET P O I N T	SET 1	Set Point 1	Main pressure value	3	1	8
	SET 2	Set Point 2	Secondary pressure value (set only if parameter SET N = 2)	2	1	8
ADVANCED PARAMETERS	COR	Nominal current*	Pump nominal current (read on plate: In)	6	1	8
	SET N	Number of SET POINTS	Number of set points used	1	1	2
	TPR E	Unit of measurement	Pressure unit of measurement	BAR	BAR	PSI
	ROT	Motor rotation direction *	Motor rotation direction	POS	POS	NEG

* Values set by the manufacturer

5.2 POSITIVE SUCTION HEAD INSTALLATION

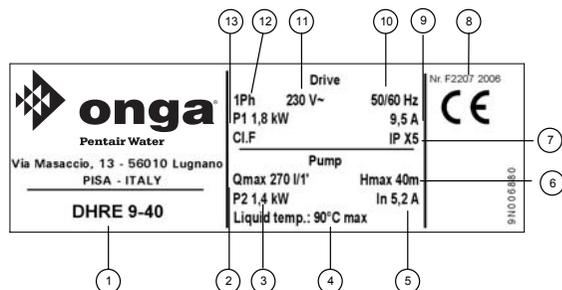


- | | |
|-------------------------------------|--------------------------------------|
| 1 Basin or tank | 7 Pressure transducer |
| 2 Float | 8 Flexible tube |
| 3 Shut-off valve | 9 Non return valve |
| 4 Outlet tubing | 10 Filter |
| 5 Tank/autoclave membrane (8 l/min) | 11 Motor pump complete with inverter |
| 6 Gauge | |

MESS DISPLAY	DESCRIPTION		ACTION
EROL	Power surge error	This error occurs when the current absorbed by the module is greater than triple the nominal current. This condition can be caused when the pump is blocked by foreign bodies. This alarm condition closes the J3 contact on the power board for possible external signals (alarm light, siren, etc.)	Cut off the power supply and wait for the LINE Led to switch off. Check the pump freely rotates and if necessary remove foreign bodies that block correct functioning. Turn power back on. If the error persists, contact your nearest assistance centre.
ERST	Configuration error	This error occurs when the control board cannot correctly communicate with the power part. This alarm condition closes the J3 contact on the power board for possible external signals (alarm light, siren, etc.)	Press the button  or cut the power off and wait until the LINE Led switches off and after which restart the system. If the error occurs again, contact your nearest assistance centre.
HOSE	Lack of transducer pressure signal	This signal occurs when the control board cannot identify the transducer pressure signal.	Check the pressure transducer is correctly connected. If the error occurs again, contact your nearest assistance centre.

CHAPTER 5.0 – TABLES AND DESIGNS

5.1 DATA PLATE



- | | |
|---------------------------------|--|
| 1 Type of motor pump | 7 Insulation class and level of protection |
| 2 Maximum flow rate l/min | 8 Date and year of production |
| 3 Nominal power | 9 Absorbed current |
| 4 Maximum temperature of liquid | 10 Frequency |
| 5 Nominal current | 11 Power voltage |
| 6 Maximum head in metres | 12 Number of phases |
| | 13 Absorbed power |

4.3.1 PROGRAMMING CLOCK/DATE

	<ul style="list-style-type: none"> During the first installation phase, the module display flashes to indicate the internal clock needs updating The clock is equipped with a battery to maintain the time and date for 24 hours if there is no power
---	---

To modify the time, repeatedly press the "MODE" button until you arrive to the time parameter.

- Press the "SET" button for 10 sec to change the time.
- During the modification of the SET POINT parameters, the symbol  on the display lights up.
- With the buttons ▲▼ it is possible to modify the time.
- Press SET to move onto changing the day.
- With the buttons ▲▼ it is possible to modify the day.
- To memorise the values press the button "SET". The symbol  disappears.

4.3.2 SET POINT

To access this menu press and release the SET button:

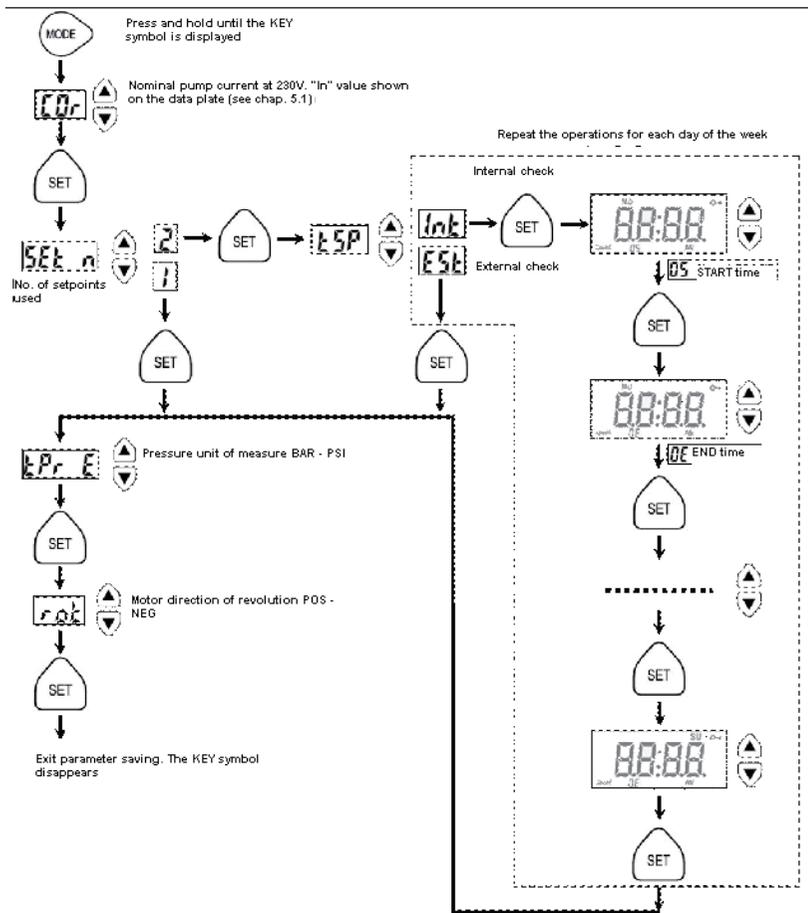
- During the modification of the SET POINT parameters, the symbol  lights up on the display;
- With the buttons ▲▼ it is possible to modify the pressure values.
- To memorise the value press the SET button. The symbol  disappears.
- SET POINT 1: Pressure desired by the system, the module varies the motor speed to maintain the system pressure as near as possible to that set. During the regulation of this parameter, the writing "SE 1" appears.
- SET POINT 2: Present only if the module was set to function with two SET POINTS (see "ADVANCED PARAMETERS"). When setting this parameter the display shows "SET2" Set "SETn = 2" and proceed to program SET1 and then SET2.
- Press "SET" to confirm.

If two SET POINTS are present, it is possible to select the one desired using the "S.P. external contact (see electrical connections diagram) or the internal clock (see Chapt 4.3.3).

	<ul style="list-style-type: none"> Pressing the ESC button you exit programming mode without saving the modified parameters
---	--

4.3.3 ADVANCED PARAMETERS

	<ul style="list-style-type: none"> The CPS module indicates with the symbol  the modification status of the parameter.
	<ul style="list-style-type: none"> During the programming phase, it is possible to return to the previous parameters by pressing the "MODE" button Pressing the "ESC" button you exit programming mode without saving the data



4.4 MANUAL START OF MOTOR/PRIMING

This procedure is applicable when you want to manually start the system or prime the pump.

It is possible to manually start the motor by pressing the following sequence of buttons:

Buttons sequence with pump off Last button pressed for 10 seconds The pump remains on until the last button is pressed	
--	--

Caution 	<ul style="list-style-type: none"> During manual start-up, the motor rotates at maximum speed and the pressure control is not activated, therefore the pump reaches its maximum pressure Ensure there is water inside the pump unit, otherwise the pump seal will be destroyed
--------------------	--

4.4.1 MANUAL START/STOP

It is possible to manually stop the pump by pressing the START/STOP button: in this situation the display alternatively shows the writing STOP and the pressure value.
To exit the STOP condition, press the START/STOP button again.
During STOP status the module is not operational.

Sequence of buttons	
---------------------	--

Caution 	<ul style="list-style-type: none"> Remember to enable the system for automatic functioning
--------------------	---

4.5 DESCRIPTION OF SIGNALS ON DISPLAY

MESS DISPLAY	DESCRIPTION		ACTION
INIBIT	Inhibit intervention signal	The condition is operative and generated by the external command that closes the inhibit input.	Check Inhibit external sensor (e.g.: float).
ALAT	No water alarm - temporary	This condition is present when there is a lack of water. The module is waiting to restart to attempt an automatic reset. After: 1 – 5 – 60 – 720 minutes.	Check the water level in the first tank or the aqueduct pressure. Wait for the programmed attempted restart or press the button for a manual restart.
ALAF	No water alarm - definitive	This condition occurs when there is no water and the automatic restart system has not activated or 4 restart attempts occurred already without managing to reset the system functioning. This alarm condition closes the J3 contact on the power board for possible external signals (alarm light, siren, etc.)	Check the water level in the first tank or the aqueduct pressure. Press the button to manually restart the system. If the ALAF alarm condition occurs again, contact your nearest assistance centre.
ERCO	Communication error	This error condition occurs when the control board cannot communication with the power part. This alarm condition closes the J3 contact on the power board for possible external signals (alarm light, siren, etc.)	Cut the power off and wait until the LINE Led switches off and after which turn power back on. If the ERCO error condition occurs again, contact your nearest assistance centre.
EROT	Over voltage error	This error condition occurs when the voltage exceeds by 10% the nominal voltage (230V). This alarm condition closes the J3 contact on the power board for possible external signals (alarm light, siren, etc.)	Press the button or cut the power off and wait until the LINE Led switches off and after which restart the system. If the error occurs again, contact your nearest assistance centre.
ERUT	Under voltage error	This error condition occurs when the voltage is 10% less than the nominal voltage (230V). This alarm condition closes the J3 contact on the power board for possible external signals (alarm light, siren, etc.)	Press the button or cut the power off and wait until the LINE Led switches off and after which restart the system. If the error occurs again, contact your nearest assistance centre.