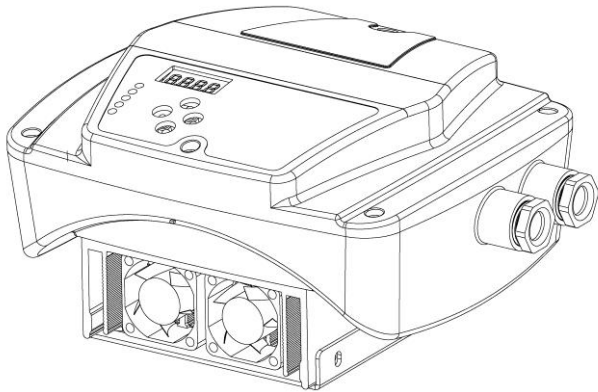


INSTRUCTION MANUAL – VARIABLE SPEED DRIVE PUMP CONTROLLER



REEFE® VSD inverter controllers use the latest VVVF (Variable Voltage and Variable Frequency) AC frequency speed regulation technology. Combined with pressure sensing technology through measuring of real-time system pressure, this allows the controller to automatically adjust the motor speed and maintain a constant outlet pressure. They are very efficient, easy to install and have user friendly interface controls for quick setup. No programming is required, simply set your desired operating pressure and press RUN...let the controller save you money on your operating costs.

CODE	MODEL	POWER					PRESSURE SENSOR RANGE	PRESSURE TRANSDUCER RANGE	LIQUID TEMPERATURE
		WATTS	SUPPLY	VOLTS	OUTPUT	OUTPUT FREQ. RANGE (HZ)			
16909	VSD1-15	1.5 kW	Single Phase	240V	3 Phase	20~50	4-20mA	10 bar	0~+100°C
16954	VSD1-15-240	1.5 kW	Single Phase	240V	Single Phase	20~50	4-20mA	10 bar	0~+100°C
16916	VSD1-22	2.2 kW	Single Phase	240V	3 Phase	20~50	4-20mA	10 bar	0~+100°C
16923	VSD3-22	2.2 kW	3 Phase	415V	3 Phase	20~50	4-20mA	10 bar	0~+100°C
16930	VSD3-40	4.0 kW	3 Phase	415V	3 Phase	20~50	4-20mA	10 bar	0~+100°C
16947	VSD3-55	5.5 kW	3 Phase	415V	3 Phase	20~50	4-20mA	10 bar	0~+100°C

Before installation and use of this product, please read and follow these instructions carefully! Take note that these VSD Controllers must be installed by a qualified and licenced Electrician. The installer is responsible to ensure the controller is sized correctly to the pump to which it is being connected to. This product is not to be used as the only source of water supply for critical applications such as medical equipment. It is recommended that you implement a standby (dual) pump system for backup operations in critical applications. This controller is specifically designed for the operation of pump motors only and is not to be used for any other purpose.

CONTENTS

1.	Summary	
1.1.	Product Information	3
1.2.	Applications	3
1.3.	Product Features	3
2.	Safety and Notice	
2.1.	Notices Prior to Use	4
2.2.	Pre-Use Check	5
2.3.	Installation Environmental Conditions	5
3.	Product Size and Technical Data	
3.1.	Product Size	6
3.1.1.	Dimensions	6
3.1.2.	Technical Data	7
4.	Installation and Operation Instruction	
4.1.	Installation and Operation	8
4.1.1.	Single-phase Inverter Wiring Diagram and Instructions	8
4.1.2.	Double Pump Installation Diagram and Instructions	9
4.2.	Wiring	10
4.2.1.	Wiring Diagram and Instruction	10
4.3.	Operation Instruction	11
4.3.1.	Checking Before Operation	11
4.3.2.	Operating Steps	11
4.3.3.	Button and Function Instruction	13
5.	Maintenance	
5.1.	Product Maintenance	14

1. SUMMARY

Thank you for purchasing this REEFE® Variable Speed (variable frequency) pump controller also referred to as VSD. Before installation and use you must read and understand the operating instructions and familiarise yourself with the fault codes.

1.1. Product Introduction

REEFE® VSD incorporates industry-leading PWM (pulse width modulation) technology, using VVVF frequency conversion variable pressure control mode, combined with pressure sensing technology. It adjusts the motor speed through real-time monitoring of pipe network pressure changes, so as to realize precise control of the supply pressure, and also assisting to save water and electricity.

1.2. Applications

This product is ideal for pumping applications with varying demand of water supply such as in high-rise buildings, restaurants, hotels, houses, amenities blocks, process plants, dosing systems etc.

1.3. Product Features

- i) The core technology: Three patented algorithms for the control of motor drives.
- ii) Energy-efficient: Compared with traditionally controlled water pumps, VSD achieves energy savings of up to 30%-60%.
- iii) Simple operation: all functions at the touch of a button, no need for any specialist trained technicians.
- iv) Increased Pump Service Life: The normal torque and abrasion on the pump shaft may be reduced because of the reduction in average speeds.
- v) Due to the soft start and stop of the water pump, it can also eliminate water hammer. (water hammer effect can lead to serious damage to the pipes and associated equipment)
- vi) Comprehensive protection: It has the most comprehensive protection technology for overcurrent, overvoltage, undervoltage, short circuit, locked-rotor etc.

2. SAFETY AND NOTICE

2.1. Notices Prior to Use

- i) Please read the manual carefully before installation and operation.
- ii) All Electrical installation must be completed by a licenced Electrician, all warranty is void if installed by an unqualified person.
- iii) Before operation of this product, the installer must ensure it is wired correctly, and that it is Earthed correctly to a circuit protected by a Circuit Breaker with an integral RCD (Safety Switch).
- iv) Pay attention to all safety warnings and instructions in the manual, failure to do so voids all warranty and may lead to harm and danger to persons.



DANGER: Risk of Electric Shock: Disconnect VSD from the power supply and wait 5 minutes to allow any retained current to discharge before opening the VSD.



WARNING: If the VSD is damaged do not attempt to use the device, it may damage the pump and you may be at risk of harm.

- v) Additional safety warnings;

 DANGER	1. Please be sure to use the correct power supply - refer to the nameplate.
	2. Disconnect power supply when installing and maintaining this product. This product must be earthed according to Australian electrical safety standards.
	3. DANGER: NOT TO BE USED IN HAZARDOUS AREAS. Not to be used with hazardous, corrosive, flammable or explosive substances, or in any area that is deemed to be a high-risk area.
	4. Don't install the VSD & pump underwater or in any place where water may be splashed or sprayed onto the controller, it must be in a well ventilated and well drained area, protected from the weather, dust, dirt, leaves, insects, rodents, reptiles etc, by way of a pump cover or a weatherproof enclosure. Installation under eaves of houses is not an acceptable level of protection from the weather.
	5. If the device will not be used for 18 months or more, the capacitors must be replaced by a licenced Electrician, before it is used again.
	6. Don't open the cover or touch the controller terminals when power is on, no exceptions.
	7. Always wait for 5 minutes after the power is isolated, ensure all the indicator lights are out completely, before opening the cover, otherwise there is risk of electric shock.
	8. Ensure hands are dry while operating the control panel, do not use wet hands.
	9. If the wiring is damaged or perished, it must be replaced by a licenced Electrician.

 CAUTION	10. Installation and the operation must comply with all applicable safety, electrical & plumbing regulations. It is the installer's responsibility to ensure compliance; all warranty is void if this is not followed. The installation must include a 4L pressure tank on the discharge pipe. (The inflation pressure of the pressure tank is to be 65% of the set Pressure of the VSD)
	11. Installation and maintenance is only to be carried out by qualified persons, all electrical work must be performed by a licenced Electrician.
	12. The Installer takes responsibility for the correct installation, and must ensure the Owner or delegated person is competent in maintenance, and the Owner takes responsibility that maintenance is only performed by competent persons.
	13. If the motor overheats, please close the inlet valve immediately and turn off the power supply, contact your installer or dealer or service centre do not contact us as we have no knowledge of your installation. The pump is not to be used again until the fault is investigated and rectified. Warranty does not cover damage to the pump as we have no control over the type of pump this device is used with, nor do we have any control over the installation, warranty is usually limited to the supply of a replacement VSD if it is proved to have a fault that is covered by warranty.
	14. If you cannot eliminate the pump fault simply, please close the inlet valve immediately and cut off the power, contact your installer or dealer or service centre. Do not contact us as we have no knowledge of your installation. The pump is not to be used again until the fault is investigated and rectified.
	15. Isolation measures must be taken so as to protect the VSD from interference by children, incompetent persons, vandals and wildlife.
16. If the ambient temperature and/or humidity is high, the controller must be sufficiently ventilated to avoid electrical failure from condensation.	

2.2. Pre-Use Check

Every VSD has had testing of functionality before leaving the factory, however the installer must check the following before installation:

- i. Ensure the model and type is what you have ordered.
- ii. Check whether the product has been damaged during transportation, if the product is damaged, DO NOT operate and contact your dealer immediately.

2.3. Installation Environmental Conditions

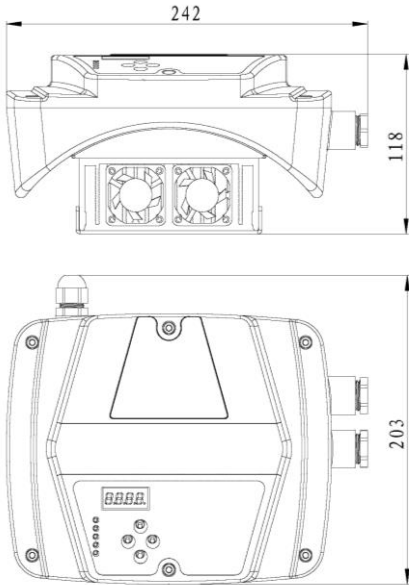
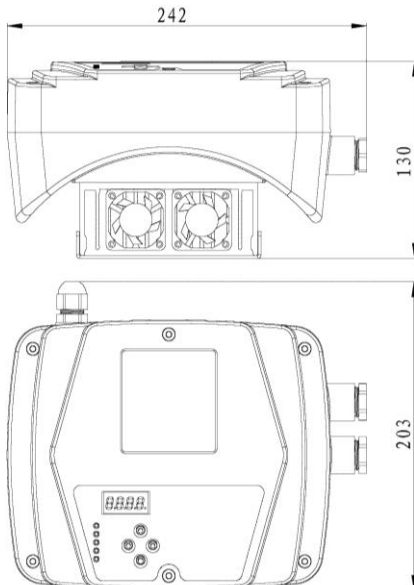
The installation condition of the VSD has a direct impact on the function and service life, so the installation surroundings must conform to the following conditions;

1. VSD must be protected from exposure to weather and the elements, and only used in ambient temperature of -10°C to $+40^{\circ}\text{C}$
2. Do not install near radioactive material or fuel.
3. Do not install where there may be electromagnetic interference.
4. Protect from dust, food particles, cotton or wool particles, metal filings and any other foreign substance that will block the cooling fans of the VSD.
5. IMPORTANT: a quality Check-Valve & a Y-Strainer must be installed in the inlet pipe.
6. IMPORTANT: The installation must include a Check-Valve on the Outlet, and a 4L (or larger) Pressure Tank on the discharge pipe. (The inflation pressure of the pressure tank is to be 65% of the set Pressure of the VSD)

3. PRODUCT SIZE AND TECHNICAL DATA

3.1. Product Size

3.1.1. Dimensions

0.75kW - 2.2KW VSD dimension	4.0KW VSD dimension
	

3.1.2. Technical Data

NO.	ITEM SPEC	0.75KW		1.5KW		2.2KW		4.0KW	
		1.	Input power	240VAC or 415VAC		240VAC or 415VAC		240VAC or 415VAC	
2.	Allowable voltage range	180VAC to 450VAC		180VAC to 450VAC		180VAC to 450VAC		310VAC to 450VAC	
3.	Input frequency	50/60Hz		50/60Hz		50/60Hz		50/60Hz	
4.	Output voltage	1~220V		1~220V		3~220V		3~380V	
5.	Main pump type	single-phase pump	three-phase pump	single-phase pump	three-phase pump	single-phase pump	three-phase pump	three-phase pump	
6.	Auxiliary pump type	/	/	/	single-phase pump	/	/		
7.	Max motor power	0.75KW		1.5KW		2.2KW		4.0KW	
8.	Output frequency range	20~50Hz or 20~60Hz							
9.	Pressure sensor	24V, 4-20mA							
10.	Pressure setting range	1.0~9.0bar							
11.	System configuration requirement	Must install a quality Check-Valve & a Y-Strainer in the inlet pipe and a 4L (or larger) pressure tank on the discharge pipe. (The inflation pressure of the pressure tank is to be 65% of the set Pressure of the VSD)							
12.	Ambient temperature	-10°C to +40°C							
13.	Liquid Temperature	Refer to the specifications of the Pump, but no greater than 100°C							
14.	Self-starting pressure	Factory Setting is 0.3 bar differential between Setting & Current Pressure							

4. INSTALLATION AND OPERATION INSTRUCTION

4.1. Installation and Operation

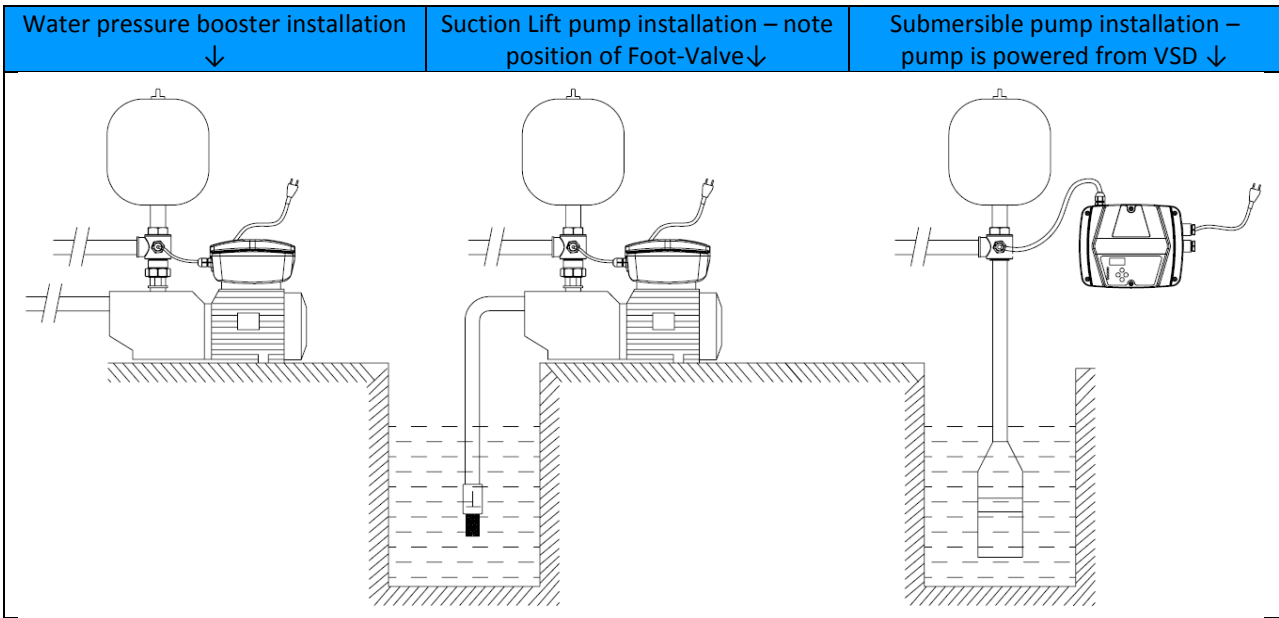
4.1.1. Single-pump installation Diagram

4.1.2. **IMPORTANT:** a Check-Valve must also be installed in the inlet pipe.

4.1.3. **IMPORTANT:** Pipe sizes are critical - Pressure of the water at the discharge (taps, showers, irrigation etc) is affected by the pipe size. The **SMALLER** your pipes, the **LOWER** the pressure will be at discharge. Example: 13mm ID pipe over 20 metres at 30Lpm will reduce pressure at discharge by 240kPa (2.4bar) - whereas if 25mm ID pipe is used for 20 meters at 30Lpm it only reduces pressure by a miniscule 10kPa. Smaller pipe also means that more power will be used as the pump has to work harder to overcome the extra back-pressure from small pipes. A small short-term saving (in the cost of the pipes) will become a long-term liability.

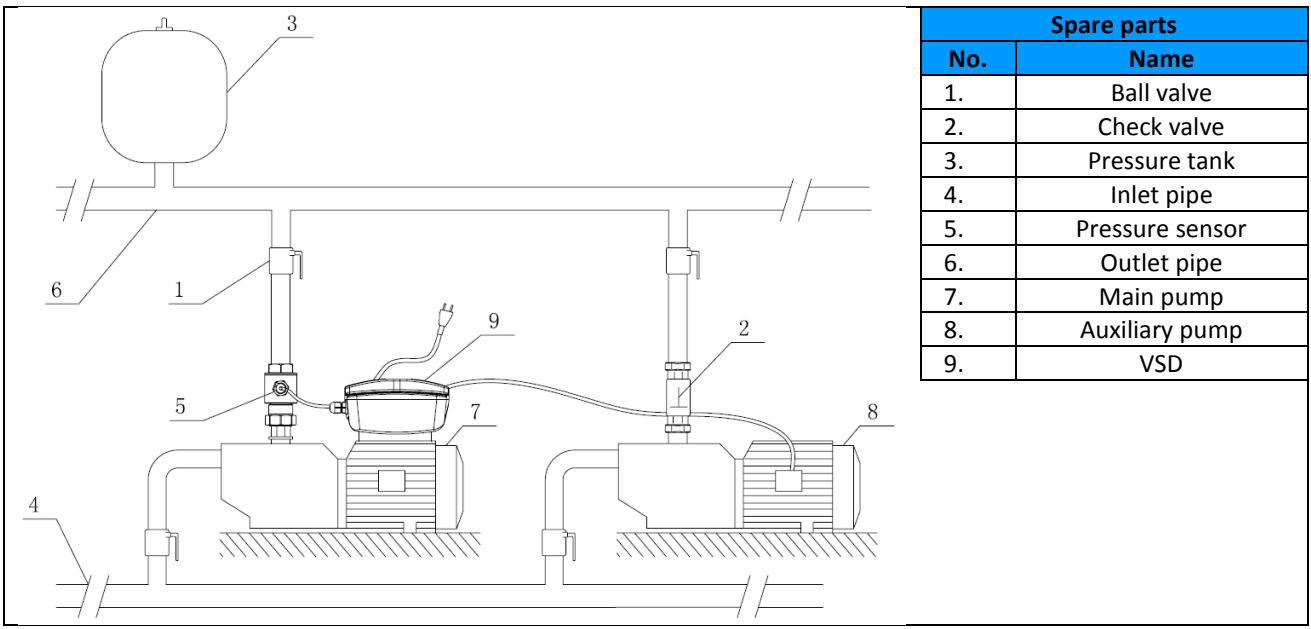
Usual pipe size is;

- SUCTION: For short pipes, no less than the INLET size of the pump, for longer pipes go up a size or two, consult with your dealer to be sure.
- DISCHARGE: For short pipes, no less than one size less than the OUTLET size of the pump, for longer pipes the main delivery pipe should be the size of the OUTLET, for pipes longer than 30m consult with your dealer to be sure.



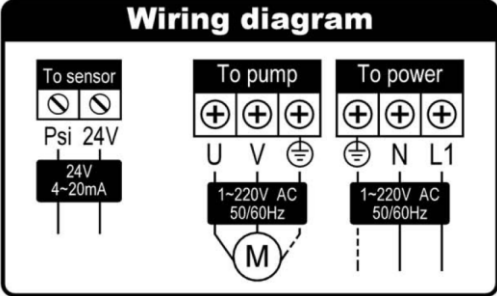
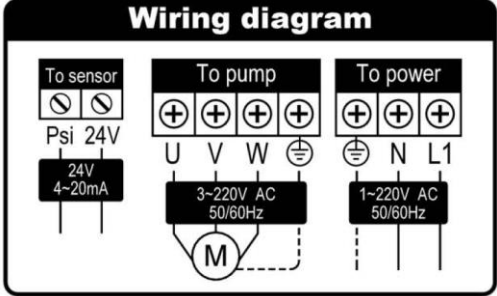
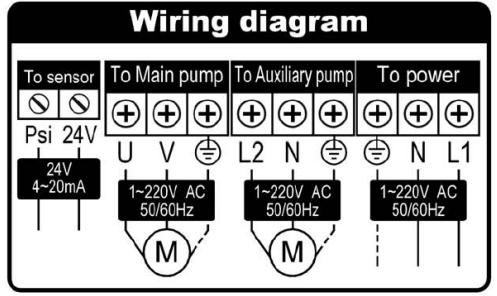
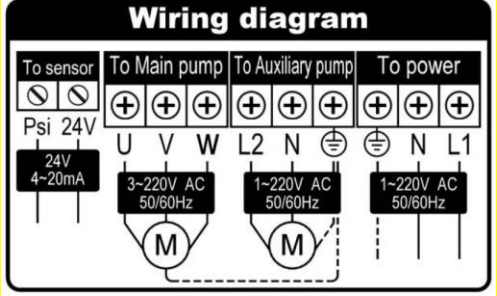
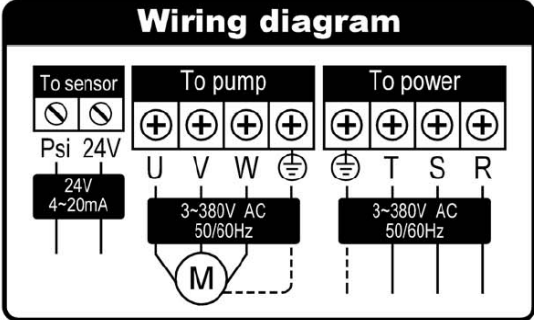
4.1.4. Double Pump Installation Diagram and Instructions

4.1.5. **IMPORTANT:** a Check-Valve must also be installed in the inlet pipe.



4.2. Wiring

4.2.1. Wiring Diagram and Instruction

single-phase in and single-phase out wiring diagram	single-phase in and three-phase out wiring diagram
 <p>Wiring diagram</p> <p>To sensor: Psi 24V, 24V 4-20mA</p> <p>To pump: U, V, ground, 1-220V AC 50/60Hz</p> <p>To power: ground, N, L1, 1-220V AC 50/60Hz</p>	 <p>Wiring diagram</p> <p>To sensor: Psi 24V, 24V 4-20mA</p> <p>To pump: U, V, W, ground, 3-220V AC 50/60Hz</p> <p>To power: ground, N, L1, 1-220V AC 50/60Hz</p>
<p>single-phase in and single-phase out (with auxiliary pump)wiring diagram</p>	<p>single-phase in and three-phase out (auxiliary pump) wiring diagram</p>
 <p>Wiring diagram</p> <p>To sensor: Psi 24V, 24V 4-20mA</p> <p>To Main pump: U, V, ground, 1-220V AC 50/60Hz</p> <p>To Auxiliary pump: L2, N, ground, 1-220V AC 50/60Hz</p> <p>To power: ground, N, L1, 1-220V AC 50/60Hz</p>	 <p>Wiring diagram</p> <p>To sensor: Psi 24V, 24V 4-20mA</p> <p>To Main pump: U, V, W, ground, 3-220V AC 50/60Hz</p> <p>To Auxiliary pump: L2, N, ground, 1-220V AC 50/60Hz</p> <p>To power: ground, N, L1, 1-220V AC 50/60Hz</p>
<p>three-phase in and three-phase out wiring diagram</p>	<p>Note and description of product wiring</p>
 <p>Wiring diagram</p> <p>To sensor: Psi 24V, 24V 4-20mA</p> <p>To pump: U, V, W, ground, 3-380V AC 50/60Hz</p> <p>To power: ground, T, S, R, 3-380V AC 50/60Hz</p>	<ul style="list-style-type: none"> i. Don't connect the AC mains to the output terminals U, V, W . ii. Wiring is only to be done while the power off and disconnected. iii. Verify the VSD rated voltage and the input supply voltage are consistent iv. Dielectric Voltage Withstand Test must NOT be performed on these VSD. v. Terminal screw tightening torque 1.7N.m. vi. Ensure the Earth terminal is connected before wiring the main circuit terminals. vii. Connect the input power after replacing the cover panel. When the power is connected, don't remove the panel.

4.3. Operation Instruction

4.3.1. Checking before Operation

- i. Check the input power and surroundings comply with the instructions.
- ii. Check the pressure sensor (transducer) is connected to the VSD correctly.
- iii. Check the pump is installed correctly according to the manufacturers instruction manual.
- iv. Ensure that the pump is primed correctly. If the pump is three phase, please check the direction of motor rotation is correct. If the motor rotates in reverse, have licenced Electrician adjust the wiring accordingly.

4.3.2. Operating Steps

- i. Connect power, display "00.00" bar, the power indicator light should be on.
- ii. Open the outlet valve, press "RUN" and start the pump
- iii. At anytime you can press "STOP" to stop the pump
- iv. Press "▲" or "▼" to raise or lower the working pressure (setting pressure), if you want to change the pressure press "▲" to increase the pressure or press "▼" to reduce the working (setting) pressure
- v. Open the tap after setting pressure, the VSD will adjust the speed of the pump according to the water demand. Observe whether the pump is running normally, the pressure shown in the display "Current Pressure" should be reasonably constant. If it is, the installation is successful.
- vi. If the pump starts & stop or operates continuously this is NOT a fault with the VSD, it means that either something is leaking (and it can be very slight leak the VSD is very sensitive) or you have the





Setting Pressure too high (if the Setting pressure is higher than the max pressure of the pump the VSD is trying to make the pump reach a pressure that is impossible, so it never turns off)

4.3.3. Button and Function Instruction

Schematic Diagram	NO.	Name or Function	Instruction
	1.	STOP	Stops the pump manually; also press this button to restart the pump after it has stopped due to no water (run dry)
	2.	Reduce Pressure Setting	Press the button once to reduce the pressure in increments of 0.1bar, press and hold to the reduce pressure rapidly.
	3.	Increase Pressure Setting	Press the button once to increase the pressure in increments of 0.1bar, press and hold to the increase the pressure rapidly.
	4.	RUN	Starts the pump manually, also press this button to restart the pump after it has stopped due to no water (run dry)
	5.	FAILURE	This light blinks when there is a water shortage (tank empty or suction pipe lost prime) the VSD will attempt to restart automatically at intervals of: 8sec, 1min, 10min, 30min, 1hr, 2hr, then 2hourly repeatedly. If the tank will be dry for days, turn the power off.
	6.	SET	LED flashes when setting the pressure
	7.	PUMP	For Dual Pump Applications: When the main pump is operating at full speed and standby pump is operating, the indicator flashes quickly. When the main pump is maintaining constant speed (constant pressure), the indicator flashes slowly. When the indicator is off, the main pump has stopped.
	8.	POWER	Indicates when power is connected.
	9.	Current Pressure	Display indicates the current pressure it is reading from the Transducer. Unit: bar
	10.	Setting pressure	Display value indicates what pressure the VSD will run the pump at. Unit: bar. Default Factory Setting is 3bar

4.3.4. Fault Codes and Explanations

No.	Fault	Display Message	Instruction
1	Over-Voltage		240V versions: If the voltage is higher than 270V it shows this code, once the Voltage reduces back to less than 260V, VSD will revert to normal operation.
2	Under-Voltage		If the voltage is lower than 100V it shows this code, once the Voltage increases back above 110V, VSD will revert to normal operation.
3	Thermal protection		When the VSD air-cooled radiator temperature reaches 80°C it shows this code, when the temperature drops back to lower than 60°C, the VSD will revert to normal operation.
4	Sensor error (Transducer)		If the Transducer (Pressure Sensor) is damaged or disconnected this code displays, the VSD will revert to normal operation after the problem is rectified/the Transducer is replaced.

5	Over pressure		This code displays if the pipe pressure reaches 99% of the maximum allowable pressure for the Transducer. Once the pressure reduces to less than 96% of the max pressure, the VSD will revert to normal operation.
6	Dropped Phase		When the input is three phase power, this code indicates that the power supply has dropped from 3 Phase to 2 or 1 phase. Contact your power supplier.
7	Overload		This code shows when current draw (Amps) are too high, Contact a licenced Electrician to inspect and troubleshoot.
8	Current overload or short circuit		This code shows when the motor short circuits or has seized or has some other problem to cause high current-draw (high Amperage draw) Contact a licenced Electrician to inspect and troubleshoot.

WARRANTY RECORD - FILL IN AND RETAIN THIS WITH YOUR ORIGINAL PURCHASE RECEIPT

DATE OF PURCHASE/...../..... DEALER/STORENAME.....
 DEALER SUBURB/TOWN.....MODEL NUMBER OF VSD.....
 BATCH/SERIAL NUMBER.....

Do NOT send this form to us; retain it for your record.

INSTALLATION CHECKLIST: MUST BE FILLED IN FOR WARRANTY TO APPLY

Installer Name _____ Qualification: _____ Phone Number: _____
 Wiring completed by Electrician _____ Licence No: _____
 Installation Address: _____

Tick the boxes as the item is completed/correct, put n/a if not applicable;

- I have checked that the VSD is the correct size/power for the pump to which it is being connected to
- The VSD & Pump are being used for appropriate purpose for which they are intended, according to these instructions and the pump manufacturers instructions
- The Power Circuit the VSD & Pump are connected to is RCD (Safety Switch) Protected and the Electrician certifies that it is of suitable size for the kW/Amps of the motor of the pump.
- A Y-Strainer or Pre-filter is installed in the suction pipe to prevent particles entering the pump
- A quality Check-Valve is fitted in the suction pipe near the inlet of the pump, or for suction-lift applications, a Foot-Valve is fitted in the tank at least 300mm above the base of the tank.
- All swarf has been removed from the tank after cutting openings etc.
- Barrel Unions are fitted on the pipe connections for easy removal & replacement
- A Ball Valve or Gate Valve is fitted to the suction pipe (the pipe from tank to pump) and to the discharge also
- Pipe is sized appropriately for the application (suitable diameter and length)
- The installation is constructed so the pump can be easily removed or replaced.
- For Connections to Town Water: The pump is installed in accordance with National & Local Plumbing Regulations
- The Electrical Supply cable is plugged into a Power Outlet that is in accordance with the current standard of Electrical Safety Regulations AS/NZS 3000 – or the pump has been wired directly to the power circuit by a Licenced Electrician.
- The Pump has been primed (filled with water) started, tested, and operates correctly.
- The pipes and connections and the barrel-union on the pump, and toilet cisterns and irrigation (if connected) have been checked for leaks.
- The pump is protected from sunlight and rain and from interference by children or vandals, with a suitable vented pump-cover or enclosure.
- The Owner/Resident has been shown how to re-prime and re-set the pump (re-fill the pump with water if it runs dry) and if it is a suction-lift application the Owner/Resident has been shown how to check if the suction pipe has lost prime and how to re-prime the suction pipe.
- The Owner/Resident has been shown how to reset the pressure settings and explained that if the pressure is set too high the pump will never turn off (run continuously) and explained that the higher the pressure is set to the more electricity and water is used.
- If the pump starts & stops or runs continuously I have checked the Pressure settings and if that does not resolve the issue I have checked for leaks by performing a Pressure-test on ALL the pipework including the SUCTION pipework.

Signed by the Installer: _____ Date Installed: ____/____/____

5. Maintenance

6. **(WARNING) ELECTRICAL PRECAUTIONS**

7. Before servicing a pump, always shut off the power supply and then make sure you are not standing in water and that there is no risk of electrical shock.
8. If the pump is direct-wired to the electrical circuit, contact a qualified licensed electrician to disconnect it before attempting any repairs or servicing.
9. **DO NOT ATTEMPT ELECTRICAL REPAIRS OF ANY SORT UNLESS YOU ARE A LICENSED ELECTRICIAN**

2 YEAR WARRANTY CONDITIONS

1. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. If you are a consumer as defined by the Australian Consumer Law, you are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. If you (the purchaser) do not fall within the meaning of 'consumer' in the Australian Consumer Law the provisions of the Australian Consumer Law will not apply to you. The following conditions form part of the instructions and do not over-ride your statutory rights.
2. This warranty covers failure due to manufacturing defects for VSD purchased from Ascento and used in mainland Australia. We shall repair or replace faulty goods when we ascertain that the fault is due to manufacturing defects, within the period of time as advised by us for any particular item. If you require a refund, you must return the item to the original place of purchase.
3. Faults or losses or failure caused due to: Accidents, misuse, lack of maintenance, not following these instructions, damage caused by lightning strike/power surges/spikes/brownouts/operating the VSD on power other than mains power/operating the VSD on power supplied by a domestic generator - are not covered by warranty.
4. Warranty will be void if any tampering or removal of identification labels or electrical cables has occurred, or any non-genuine parts have been fitted, or repairs have been carried out by unqualified persons. No warranty applies for goods sold or used for HIRE or RENT or LEASE
5. The Warranty excludes accidental or deliberate breakages, normal wear and tear, fading or breakdown due to the effect of exposure to sunlight or chemicals or any other external factor that may affect the life of the product.
6. This VSD product is guaranteed as fit for the purpose of controlling pumps that are pumping CLEAN FRESH WATER in normal domestic or commercial use, and for NO OTHER USE. Performance data quoted is generally from test data and is approximate and does not take into account factors in the installation such as loss of pressure and flow due to pipework & pipe-fittings & valves. It is the purchaser's responsibility to ensure that the product is fit for their purpose and of sufficient size & performance for their application.
7. IMPORTANT: No electrical appliances last forever. Therefore ALL installations must be constructed to allow the owner to easily remove the pump for servicing, and to easily remove the pump for replacement, warranty replacement or upgrading. Install the pump using Barrel-Union fittings so that the owner can EASILY remove the pump and/or controller for service or replacement. Warranty is void if there is no Barrel Unions used and the pump and pump controller cannot be EASILY removed for service. NEVER install pumps such that persons need to get inside a tank to remove/work on the pump. Warranty is VOID if persons have to get inside the tank to remove or repair the pump or controller. Warranty replacement does not normally include costs of removal and re-installation as we have no control over the method of installation. A check-valve must be fitted to the inlet & the outlet of the pump to avoid backflow; warranty is void if not fitted. A Prefilter or Y-Strainer must be fitted between the tank and the pump, warranty is void if not fitted. Also ball-valves or gate-valves must be fitted on the discharge to avoid loss of water during servicing. WARNING: Penetrations through metal tanks for the power cable must conform to electrical code and be approved by a licenced electrician. WARNING: Swarf from cutting tank penetration (plastic or metal) may lead to pump failure which is not covered by warranty. Remove ALL SWARF before installing the pump.
8. Before installing or servicing disconnect from the power supply
9. This VSD is not to be used as your sole water supply. For critical applications where loss of water supply could cause serious consequences, use a DUAL PUMP System so you have a backup water supply or use a TOWN-WATER BACK-UP System.
10. This VSD MUST NOT be installed in any manner that if it were to leak, or fail to work, that it would cause damage or loss to property or persons. It MUST be installed in a well-ventilated and drained area. All warranty is void if this condition is not heeded and no liability can be accepted in the case of damage or loss caused by failing to comply with this condition.
11. The VSD must be correctly earthed and connected to its own separate circuit, with an integral RCD (safety switch) having a rated residual operating current not exceeding 30mA, in the circuit breaker.
12. In the case of a fault, refer to the Fault Codes and Explanations, first. Secondly, refer to your installer. As the method and style of installation is completely out of our control we cannot be held responsible for failure which is due to any factor, other than failure due to a manufacturing defect. If you are certain that the failure is due to a manufacturing defect, you can return the faulty appliance to the original place of purchase, with proof of purchase, for replacement or refund. Alternatively you can mail us at PO BOX 650 MORNINGSIDE QLD 4170 or send an email to customerservice@ascento.com.au with a photo of the faulty item, copy of your purchase receipt, a description of the problem, and your name and address and phone number - we will review your request and send you a replacement directly if we accept your warranty claim. Or call us on 1800 807 604 with the above information; however we will always require a copy of your purchase receipt. Do not send the product to us unless we ask you to do so.
13. If an exact replacement is not available, the closest equivalent product will be supplied at our discretion.
14. This warranty does not exclude any non-excludable rights according to Australian Law. However any condition that is made void by Australian Law does not void the remaining conditions, which shall stand unaltered.

PRIVACY STATEMENT: We will not use your address or phone or fax number, or email address for marketing without your express permission. We will not sell or provide it to any other third party for the purpose of marketing. Thank you for purchasing our product.

ASCENTO GROUP AUSTRALIA | REEFE PUMPS | 37 Export St Lytton Brisbane QLD 4178

P: 1800 807 604 • F: 1800 807 609 • E: sales@ascento.com.au • W: www.ascento.com.au