



DIGITAL WATER SWITCHING UNIT INSTALLATION MANUAL



A smooth day is a good day. That's why Vada is dedicated to creating pump solutions that you can count on. With a focus on easy selection, simple installation and high quality, you can hold your head high knowing your reputation is protected. It's Vada. Performance simplified.

THANK YOU



Date purchased:

Purchased from:

Purchase invoice number:

Product serial number:

Product model number:



KNOW YOUR PRODUCT

The Vada Flow Boss Digital Water Switching Unit allows for water source switching between tank and mains water. With a large interactive panel, the VFB-DSU provides system information including a log of rain water used, real time flow rate, water pressure, current and error conditions.





SPECIFICATIONS

- Mains water supply inlet: 25mm FI
- Pump connection: 25mm FI
- Water outlet connection: 25mm FI
- Minimum mains pressure: 100kPA / 1 bar
- Max operating pressure: 1000kPA / 10 bar
- Minimum flow rate: 1 lpm
- Voltage: 1~230-240V 50Hz
- Maximum electrical load: 10A / 2400W
- IP Rating: IP44

HELPFUL HINT

Vada strongly recommends installing the float switch (supplied), in the tank on site. Installing a float switch prevents air from re-entering the suction line and damaging your Vada product. Installing a float switch also reduces build up from tank debris entering the pump.

APPLICATIONS

The Vada Flow Boss Digital Water Switching Unit is suitable for the following applications:

Water source switching (tank/main)



PREPARING FOR INSTALLATION

For successful installation, ensure you have all pieces required for your product combination.

What we've supplied:







Vada Flow Boss Digital Water Switching Unit

Barrel union kit □ x2 mesh

inline filters



*If the incoming mains pressure to your property is greater than the specified 1000 kPa (10 bar), you MUST fit a pressure reduction valve of appropriate capacity upstream of the VFB-DSU. The recommended pressure is 500kPa as per AS/NZS 3500.

What you'll need to supply:





Suction pipe (internal diameter must be no smaller than 25mm)

Discharge pipe Thread tape (internal diameter must be no smaller than 25mm)

Fittings to suit





Pump cover

Isolation valve Swing check valve



Y-Strainer



Brace inlet and outlet connections while fitting the Digital Water Switch. Any movement of connections may disturb internal seals and cause leakage.

If the incoming mains pressure to the property is greater than the specified 1000kPa, please fit a pressure reduction valve of appropriate capacity upstream of the Digital Water Switch. The recommended pressure is 500kpa to suit AS/NZS 3500. Fitting this type of device to the entire house will extend the life of other appliances such as washing machines, hot water service and dishwashers.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.



If the supply cord is damaged it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

PART 1: PREPARING THE VADA FLOW BOSS DIGITAL SWITCHING UNIT

1. Insert two mesh inline filters on the mains water inlet and pump inlet of the unit.



2. Ensure the height of the tank outlet from the base of the tank is at least 100mm. If installing a submersible pump, ensure there is a 100mm gap between the base of the pump and the base of the tank.



Note: Clean water is essential for the reliable operation of your switching unit. It is recommended to install first flush diverters and leaf guards on your rainwater tank.

PART 2: CONNECTING THE DIGITAL WATER SWITCHING UNIT TO THE PUMP

HELPFUL HINTS

In this manual the VFB-DSU is pictured with a jet pump. If you're installing the VFB-DSU with a submersible pump, the connection will differ slightly.

If connecting a VFB-DSU to a submersible pump, you will need to mount the VFB-DSU onto a bracket.

1. Wrap thread tape around both ends of a 25mm nipple.



2. Thread the nipple into the female socket of the pump discharge until it is watertight. Do not overtighten.



3. Connect the 25mm female end of the barrel union to the nipple until it is watertight. Do not overtighten.



4. Wrap thread seal tape around another 25mm nipple.



5. Thread the nipple into the base of the switching unit until it is watertight. Do not overtighten.





Note: If you cannot screw the switching unit on top of the barrel union due to space limitations, you can unscrew the barrel union nut and release the nipple from the union. Rethread the nipple into the switching unit making sure the union nut remains on the nipple. Re-join the union to complete connection.

6. Connect the VFB-DSU to the discharge port on the pump.



7. Connect the incoming mains water supply to the 'MAINS' port on the VFB-DSU. This is marked 'MAINS' with an arrow pointing out of the VFB-DSU (indicating water flow direction).



Note: Brace this fitting to prevent movement while connecting to the mains supply.

 Connect the household plumbing to 'OUTLET' port on the VFB-DSU. This is marked 'OUTLET' on the unit with an arrow pointing out of the unit (indicating water flow direction).



9. For easy maintenance install an isolation valve on either side of the VFB-DSU.



Note: Vada strongly recommends installing the float switch (supplied), in the tank on site. Installing a float switch prevents air from re-entering the suction line and damaging your Vada product. Installing a float switch also reduces build up from tank debris entering the pump.

> Brace this fitting to prevent movement while connecting to the mains supply.

Movement of this fitting could disturb internal seals, causing leakage.

Pipe Marking

In accordance with AS/NZS 3500.1:2003, pipe and outlets connected to the Vada Digital Water Switching Unit must be marked as follows:

- Outlets connected to the unit must be marked with the wording "RAINWATER".
- Piping systems connected the unit must be clearly marked at 1m spacings with the word "RAINWATER".

PART 3: INSTALL A FLOAT SWITCH

Vada strongly recommends that you install a float switch in the tank. Without a float switch, the level of tank water when the water run outs, or runs very low, causes a whirlpool or bathtub effect. Air can get trapped in the suction pipe, causing the pump to lose prime. Follow the instructions below to install a Float Switch.

1. Use a hole saw to drill a 16mm hole on the roof of the tank for float switch cable penetration.



Note: You will need to find a suitable location in the roof that is within reach of the manhole.

2. Install the cable gland with the locknut positioned inside the tank.



3. Insert the float into the tank:

Surface tank installations:

Drape the level sensor up against the side of the tank, lifting the cable until the float is 70mm above the suction. Mark the positions of the cable that is level with the roof of the tank using marking tape (not supplied).

In-ground installations:

Lower the float into the tank. Position the float 70mm above the suction fittings or pump inlet. Use marking tape on the cable to indicate top of tank position.



4. Once in position, route the cable to the switching unit and plug the connector to the matching receptor on the underside of the VFB-DSU. Using cable ties, fix the cable to the pipework near the switching unit to avoid the cable being pulled free.



ELECTRICAL CONNECTION

WARNING: Hazardous voltage can cause shock, burn, or cause death.

The supply voltage for the Digital Water Switch must be within 230–240V.

If the power supply cord or pump interconnection cord is damaged, it MUST be replaced by an authorised service agent to avoid hazard.

To avoid dangerous or fatal electrical shock, turn off power to the digital water switch before working on any electrical connections.

 Before connecting the unit to an electrical power supply, connect the pump and switching unit using the provided IEC appliance connectors on the end of the interconnection cords. Ensure there are no water traces on the connectors. Push them firmly into each other to ensure intended splash (water) proof protection.



 Check that the tank level sensor is securely connected to the base of the unit using the bayonet fitting, and the lead is cable tied to the connecting pipework to stop it from being pulled free.



3. Connect the switching unit to the power supply by either:

a. Hard wiring: Local authorities may require the pump to be hard wired.



Important: If this applies to you, the electrical connection must be done by a qualified electrician with pump knowledge according to the National wiring rule (AS/NZS 3000) and/ or any local council requirements.

b. Inserting the plug into the suitable socket outlet:

It is recommended to connect the switching unit to a socket outlet protected by a residual current device – RCD (also known as an earth leakage circuit breaker – ELCB) with a rated tripping current not exceeding 30mA.



Note: Contact a qualified electrician if you cannot verify that the socket outlet is protected by RCD. RCD tripping indicates an electrical problem. If the RCD trips and will not reset, have a qualified electrician inspect and repair the electrical system.

4. Protect your pump solution from wind, rain and sun with a suitable pump cover.



Congratulations, the installation is complete!

OPERATION

PART 1: COMMISSIONING THE UNIT

1. Put a small amount of water in the tank (just about the level of the tank sensor).



2. Open an outlet on the household side of the VFB-DSU.



3. The pump will start. Turn the tap off, and the pump will stop. Temporarily disconnect the float switch connection (fitting in base). This indicates to the switching unit that there is no water in the tank, and to switch to mains supply operation.



4. Open an outlet on the household side of the VFB-DSU. The VFB-DSU should now be allowing mains water to supply the demand.



5. Close the tap and replace the float switch connection.



If there are any variations to these outcomes, please refer to the Troubleshooting section on page 28.

PART 2: INITIAL START UP

Controls & Display



1. Once the power is turned on, the LCD screen will illuminate.



2. If this is the first time the unit has been powered, the internal EEPROM will reset (EEPROM is where all the user data is saved).



OPERATION

Additional Functions

Historical Water Consumption

This function allows you to view the historical water consumption for each month. 12 months of historical data is saved.

1. Press the 'up' or 'down' arrow and select the month that is of interest.



Flow Rate and Pressure

1. Press the "MODE" button until you see "Flow" and "Press" readings displayed.



3. Provided that Mains water is available to the unit, the following default screen will appear:



When using for the first time, the total water pumped since installation should be zero. The date of installation will be random.

4. To set the date and time, press the 'Time Set' button.



 Press either 'up' or 'down' arrow to select the correct day of the month. When the correct value is observed, press the 'Time Set' button again.



6. Repeat this procedure until the correct month, year, and time details are complete.



7. If you wish to make the current time the Installation Date, the confirm 'Yes'.



8. If you wish to clear all historical water data, the confirm 'Yes'.



9. In the event the user inputs incorrect information, the 'Invalid Data' screen will appear.



 The VFB-DSU has been set to its basic settings. For advanced settings and additional functions, refer to 'Advanced Settings Overview' on page 18.



OPERATION

Current Draw

1. Press the "MODE" button until "Pump Current" is displayed.



Current Time

1. Press the "MODE" button until you see the current time and date displayed.



ADVANCED SETTINGS OVERVIEW

You can enter the 'Advanced Setting' menu by holding the RESET button down for 5 seconds. The user can scroll through the following settings by pressing the "RESET" key:

- 1. Cut In Flow
- 2. Cut Out Flow
- 3. Minimum Pressure
- 4. Maximum Run Time
- 5. Float/Floatless

You can exit 'Advanced Setting' menu anytime by pressing the "MODE" key.



Cut In Flow

This function is used to determine the flow rate at which the pump will activate (aka: cut in). The Cut In flow rate must be higher than the Cut Out flow rate.

- 1. Press the "RESET" button until you reach "Cut In Flow".
- 2. Press the 'up' or 'down' arrow to select the appropriate cut in level.



Note: It is recommended the Cut In flow rate be 1 lpm.

Cut Out Flow

This function is used to determine the flow rate at which the pump will stop (aka: cut out).

- 1. Press the "RESET" button again to select the "Cut Out Flow".
- 2. Press the 'up' or 'down' arrow to select the appropriate cut out level.



Note: It is recommended the Cut-Out flow rate be 1 lpm.

Minimum Pressure

- 1. Press the "RESET" button until you reach "Min Pressure".
- 2. Press the 'up' or 'down' arrow to select the appropriate pressure.



Note: The Min-Max pressure required for the switching unit is 100–1000kPa. It is recommended to operate the unit between 500–750kPa.

Maximum Run Time

This function is used to ensure that the pump will never over run in the event a tap is mistakenly left open, or a toilet cistern is leaking.

- 1. Press the "RESET" button until you reach "Max Run Time".
- 2. Press the 'up' or 'down' arrow to select the appropriate max run time.



Float/Floatless

Important: It is strongly recommended to install a float switch in the tank. Failure to do so may void warranty. Please refer to page 11 for more detail on why installing a float switch is necessary for your installation.

- 1. Press the "RESET" button until you reach "Floatless Y/N"
- 2. Press the 'up' or 'down' arrow to select whether the unit is Floatless or not.



Note: The VFB-DSU will be set to operate on "Float" setting by default.

PRODUCT DIMENSIONS

- A. 52mm
- B. 181mm
- C. 80mm
- D. 106mm
- E. 75mm
- F. 235mm
- G. 119mm
- H. 120mm
- I. 115mm J. Ø48mm









TECHNICAL INFORMATION

SPECIFICATIONS

Supply voltage	1~230-240 50Hz
Max electrical load	10A / 2400W
Power standby	3.5W
Control power (on)	30W
IP rating	IP44
Min flow rate	1lpm
Min mains pressure	1 bar
Max operating pressure	10 bar
Min-max water temperature	1°C-40°C
Min-max ambient temperature	1°C-40°C

CONNECTION	
Mains water supply inlet	25mm FI BSP
Pump connection	25mm FI BSP
Water outlet connection	25mm FI BSP



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FAULT MODE



GENERAL OPERATION

Loss of Prime

On occasion, the pump may not be able to reprime itself after the tank has refilled. This will require intervention from the homeowner to reprime the pump to gain full use of the system. Refer to the pump manual for instructions on how to reprime the pump.

Tip: Loss of prime is greatly reduced if a float switch is installed. For instructions on how to install a float switch, refer to page 11.



Loss of Power

If power to the switching unit is interrupted, the system will automatically default to mains water supply. When power is restored, the switching unit will revert to normal operation.



Loss of Mains Supply Water

If town supply water is shut off in your area, the switching unit may not be able to detect water demand in the household (e.g. if the toilet cistern needs refilling). You can override normal control and start the pump to supply water out of the rain tank. Simply press the 'Mode' button.



FLOATLESS OPERATION

Important: It is strongly recommended to install a float switch. Refer to page 11 for installation instructions.

The Digital Water Switching Unit is designed to supply rainwater from the tank to meet household demand. If the unit detects the flowrate of rainwater falling below the value set in 'Cut Out Flow', and pressure drops below the 'Min Pressure' setting, the unit will shut the pump off and revert to mains water supply.

1. The LED on the switching unit will flash red during this period to indicate the tank water is not available.



2. After 24 hours the switching unit will automatically reset and allow the pump to operate and check for rainwater.



3. If there is water in the tank and the pump reprimes, it will revert to normal operation mode.



 If there is no rainwater in the tank, it will proceed to check the system as per steps 1–3. It will then also lock out the pump for a period of 7 days.



 After 7 days the switching unit will automatically reset and recheck for rainwater availability in the tank.



FAULT MODE

6. If rainwater is detected the system will revert to normal operation.



7. If no rainwater is detected then the switching unit will go to a further 7 day lock out as per step 4. The unit will continue to automatically recheck every 7 days for rainwater in the tank.



8. If at any time the tank fills with rainwater during these lockout periods, the system can be overridden by turning power off to the switching unit for 10 seconds which will reset the system.



EVENT	RESET TIME
1st lockout	24 hours
2nd lockout	7 days

SERVICE & MAINTENANCE







Removing the unit for service

1. Switch off power to the unit before proceeding.



 Close shut off isolation valve at inlet, outlet, and water tank gate valve. Carefully release all pressure from the pump and piping system.



Note: Never tighten or loosen fittings while the pump is operating.

To reset from 'loss of prime' mode

1. Turn off power 10 seconds, turn power supply back on.



SERVICE & MAINTENANCE

2. Alternatively, press the 'Reset' key to reset from 'Loss of Prime' mode. Then reprime the pump.



3. Switching unit should resume normal operation.



ERROR CODES

DISPLAY	CAUSE	SOLUTION
PUMP DRY Error Code 1	Tank water empty, switching unit is using mains water supply	Turn power to the unit off and on, or press the 'Reset' button to reset the fault AFTER the tank has been refilled.
MAX RUN TIME Error Code 2	Pump has reached maximum run time	 Check for potential leakage in pipework or fittings. Check maximum run time setting.
OVER CURRENT Error Code 3	Over current detected (measured current exceeds 10amps)	 Check pump for mechanical resistance. Refer to troubleshooting in pump manual. Check pump motor for electrical faults. Refer to troubleshooting in pump manual.
NO PUMP CONNECTED/ CHECK FUSE Error Code 4	No load detected	 Check to make sure the pump is connected. Check for blown fuse on the back of the switching unit. This must be done by a licensed electrician.

Having trouble? Sort it out here, quick smart.

If these solutions do not solve the problem, please visit your local Reece branch.

SYMPTOM	CAUSE	SOLUTION
No water is delivered from pump or pump performance is decreased.	Rainwater tank is empty.	 Check rainwater tank level. If empty/low, wait for tank to fill.
	No power at outlet.	Check power supply, circuit breakers and plug connected to pump.
	Isolation valve is shut.	Open isolation valve at water source.
	Bad signal from float switch.	Check installation and operation of the float switch. Refer to page 11 for installation instructions.
	Pump has overheated.	Allow pump to cool down.
	Pump is not primed.	Refer to pump manual on how to prime pump.
	In-line strainer on the suction line is blocked.	Clean Y-strainer of any dirt and debris.
	Mesh filter in the water switching unit is blocked.	 Switch power off. Isolate water. Remove pump barrel union. Inspect/clean/replace filter.
	Pump is worn.	Have pump serviced by a licensed service agent or suitably qualified professional.
No water is delivered from pump: Digital Water Switching Unit has gone into "loss of prime".	Valve on or between tank and switching unit inlet is closed.	 Open gate valve and prime the pump. Refer to pump manual on how to prime the pump. Reset the switching unit by pressing 'Reset' key.
	Mesh filter in the water switching unit is blocked.	 Switch power off. Isolate water. Remove pump barrel union. Inspect/clean/replace filter.
	Pump is not primed.	 Open gate valve and prime the pump. Refer to pump manual on how to prime the pump. Reset the switching unit by pressing 'Reset' key.

SYMPTOM	CAUSE	SOLUTION
Pump continually runs or cycles on and off consistently over time when no outlets open.	Leak in the plumbing system.	 Identify where the leak is e.g. toilet or tap leaking. Repair the leak.
	Issue with pump.	Refer to pump manual for troubleshooting.
	Air lock in the system.	 Bleed air from system. Above ground tank: Remove priming plug on pump casing. Allow water to flow through via gravity until all air has been expelled. Below ground tank: Ensure foot valve is installed, fill up suction line and casing from priming port. Activate appliances/outlets sequentially from the nearest to the furthest outlet. Repeat if necessary. If problem persists, please contact Reece store pump was purchased from.
No water supply at all.	Mains water valve is closed.	Check mains water isolation valve is open.
	Blockage in system.	Check mains water and tank water piping for obstructions.
	Incoming mains water pressure is greater than 1000kPa.	Fit a pressure reduction valve to reduce incoming mains pressure. The recommended pressure is 500kPa as per AS/NZS 3500.
Poor water pressure through pump.	Mesh filter in the water switching unit is blocked.	 Switch power off. Isolate water. Remove pump barrel union. Inspect/clean/replace filter.
	Pump is worn.	Have pump serviced by a licensed service agent or suitably qualified professional.
	The pump has been incorrectly sized for the application.	Contact the Reece store where the product was purchased from.

You have purchased a quality product from Reece Australia. This product is covered by a 2 year product warranty, 2 year parts and labour. This warranty covers faults in the product construction, material, and assembly.

The first 12 months are covered by an onsite visit from service agent after assessed by Reece After Sales and deemed a possible product fault. Infield service may also be conducted digitally in circumstances where an agent cannot physically attend the site. Warranty is subject to an evaluation by the agent based on installation instructions set out in the product manual.

A service fee may be charged to the customer if an aftersales service call is attended, and the fault is deemed to be a result of incorrect installation, or the points outlined below. Please note the site environment and associated product must be accessible and safe workplace for the service agent.

If a product is suspected of being faulty, please return to the Reece store it was purchased from and the product will be inspected by an authorised Reece representative. Products which are found upon inspection to be defective in construction, material, or assembly, will be repaired or exchanged with an equivalent product free of charge within the warranty period outlined above. Replaced items become Reece's property. Charges may apply if installation terms have not been met. All replacement products will be available for collection without charge to the customer at the nearest Reece branch to the customer's location, or elsewhere as agreed between the customer and Reece. Please note, warranty repairs may only be performed by our service representatives or an authorised customer service workshop, and any attempt to repair the device by the customer or unauthorised third parties shall terminate the warranty.

WARRANTY CONDITIONS

The warranty will apply only under all the following conditions:

- The pump has been installed by a qualified, licensed personnel.
- The pump is returned in good condition and has not arrived damaged.
- The pump is located so that it will NOT be prone to freezing.
- The pump is being used with clean water only and is NOT being used with alternative fluids specifically abrasive, corrosive, or explosive fluids.
- The pump is isolated from electrical supply during installation and any subsequent service work.
- The electrical installation is in accordance with the national wiring rules (AS/NZS 3000).
- The pump has NOT been lifted/moved/ carried by the electrical or float switch cables.
- The steps outlined in this manual and all accompanying quick start guides have been adhered to.
- The pump has been installed for and subjected to domestic residential use only subject to local building a municipality guideline.
- Failure is due to a fault in the manufacture of the project. In this case, proof of purchase, date of purchase and serial number is required.

This warranty does not include faults caused by:

- Failure to adhere to the conditions above.
- Normal wear and tear.
- Inadequate or complete lack of maintenance.

- Chemical, electrochemical, or electrical influences.
- Harsh detergents or abrasive cleaners used on product finishes.
- Unsuitable or improper use.
- Incorrect installation or installation not in accordance with the instructions provided.
- Inadequate protection of the pump.

EXCLUSIONS

To the fullest extent permitted by law, Reece excludes all liability for damage or injury to any person, damage to any property and any indirect consequential or other loss or damage. To the maximum extent permitted by law, Reece excludes all warranties other than those set out above.

