

# WATERMAX PULSE QUICKSTART GUIDE



**WARNING:** Initial station startup must be performed by a certified Watertronics Pump Service Network Technician to validate warranty.

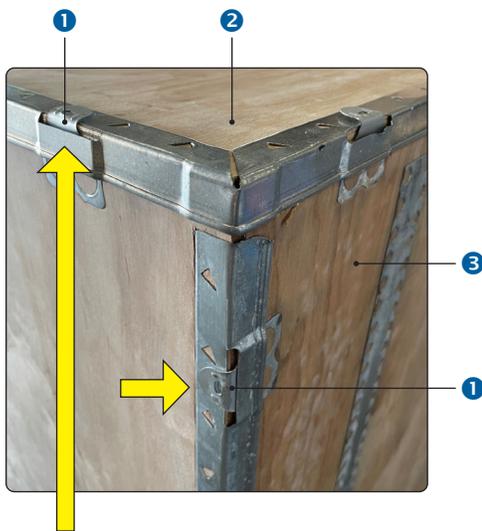
Please be aware of potential performance impact if you choose to modify WaterMax Pulse factory defaults.

*Severe injury or death may occur if operating this equipment without proper training and safety gear.*



Scan code to view the  
*Installation  
& Startup Video.*

## STATION CRATE



Top and side pieces are secured via metal tabs that can be bent straight using a flat head screwdriver to allow removal.

- 1 Straighten all tabs.
- 2 Remove top wall.
- 3 Remove side walls.

### TOOLS NEEDED

- flat head screwdriver
- 9/16 wrench or socket



### IMPORTANT: SCAN BEFORE STARTUP

A startup report must be created prior to any additional setup. Scan this QR code to begin startup report.



## STATION IDENTIFICATION

### FACTORY DEFAULT SETTINGS

- Pressure Drop Start
- Flow Stop

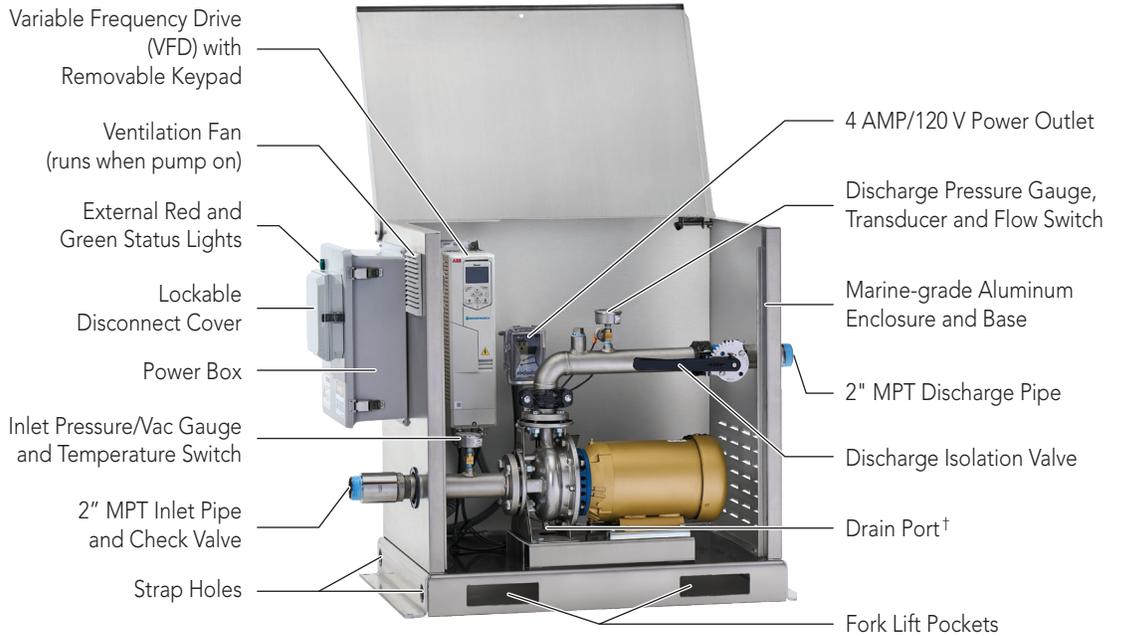
### INCLUDED WITH STATION

1. Anchoring Bolts
2. Quickstart Guide
3. Electrical Schematic
4. Keypad Cable
5. Padlock (Qty. 2)

### STATION WEIGHTS\*

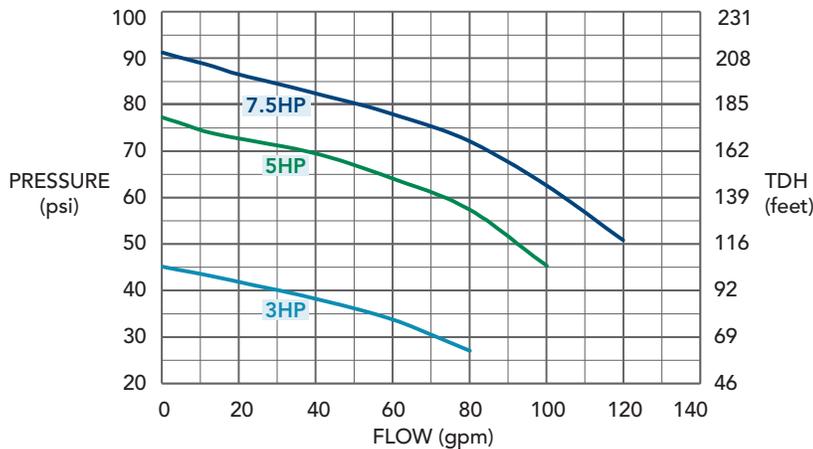
- 3HP Pulse shipping weight = 355lbs
- 5HP Pulse shipping weight = 360lbs
- 7.5HP Pulse shipping weight = 415lbs

\* Max weights, can vary by drive size.



† 3HP and 5HP pumps have socket hex drain plugs and require a 5mm standard or T-handle hex key (Allen) wrench to remove.  
7.5HP pump has a hex head drain plug, and requires a 12mm socket to remove.

## WATERMAX PULSE PERFORMANCE CURVE

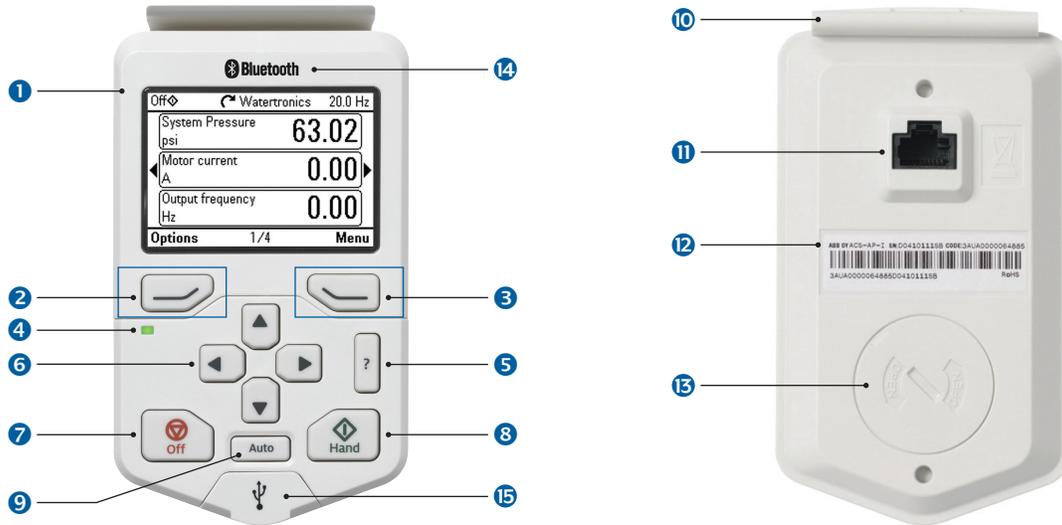


### SUGGESTED MINIMUM FLOW RATES

- 3HP = 16 GPM
- 5HP = 18 GPM
- 7.5HP = 24 GPM

For Suction Lift Operation:  
Flow limited to 100GPM with 8ft lift

# ABB ACQ580 VFD WITH REMOVABLE KEYPAD



1	Display (not a touchscreen)
2	<b>Left Softkey:</b> used to select action choice above it.
3	<b>Right Softkey:</b> used to select action choice above it.
4	<b>Status LED:</b> SOLID GREEN = good standing FLASHING GREEN = warning RED = fault

5	<b>Help</b> (hold for Bluetooth connection)
6	<b>Arrow Keys:</b> used to navigate through setup menus, home screens, and adjusting speed when in Hand Mode.
7	<b>Off:</b> station not running
8	<b>Hand:</b> runs at selected frequency
9	<b>Auto:</b> runs at user setup

10	Clip
11	RJ45 Connector
12	Type Code Label on the Control Panel
13	Battery Cover
14	Bluetooth Capable via Drivetune App
15	USB Main Port

## OPERATING UNIT AS SUCTION LIFT

The standard configuration for a WaterMax Pulse is a Booster. Unit can be used for suction lift operation with purchase of Suction Lift Kit. Contact PSN to order.

WMP Suction Lift Kit (Part# 52-16-7860) contains: inlet reducer assembly with threaded union, 3" foot valve and float switch.

1 Remove check valve; not needed for suction lift.

2 Install reducer assembly (flat side must face up) at 2" inlet connection using threaded union.



3 Install foot valve at the end of suction line (suction line not provided).



4 Install float switch (optional). Float switch wired to terminals 500 & 503.



## STEP 1. SETTING UP POWER

For safety, do not remove any of the finger guards and ensure disconnect handle is in the OFF position. Please review the electrical schematic sent with station before doing any work.



**RECOMMEND VFD IS  
IN THE OFF STATE  
DURING SETUP.**

Off	Watertronics	20.0 Hz
System Pressure	psi	63.02
Motor current	A	0.00
Output frequency	Hz	0.00
Options	1/4	Menu



**OPERATOR MUST REMAIN  
WITH STATION AT ALL  
TIMES WHEN OPERATING  
IN HAND STATE.**

### A. VOLTAGE

WaterMax Pulse is capable of operating with 208V, 240V or 480V.

Transformer is labeled and wired for either 230V or 460V from the factory. If incoming power is 208V, wire will need to be moved.



**Note: 240V & 230V and 460V & 480V are used interchangeably and refer to the same nominal voltage.**

### B. BRINGING POWER TO BOX

Preferred entry point at lower right side of power box, run wires up right side to top of disconnect.

### C. GROUNDING LOCATION

Ground appropriately to grounding lug.

### D. INCOMING POWER (SUPPLY/FUSES)

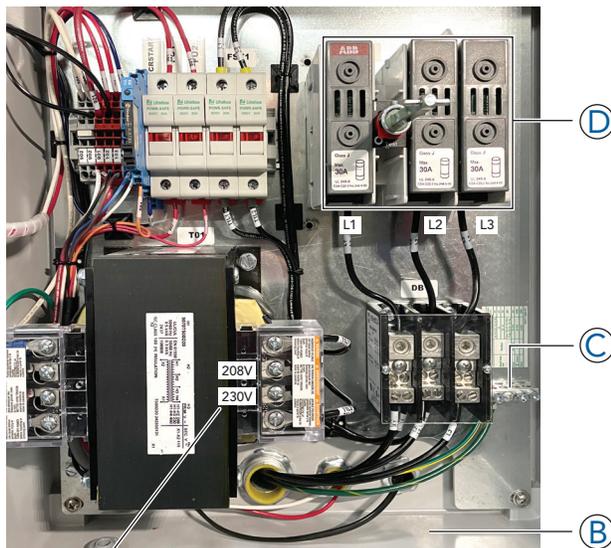
WaterMax Pulse is capable of operating on 1 or 3 phase.

If running station on 1 phase, the 3rd fuse (feeding L3) should be removed and stored for replacement use.

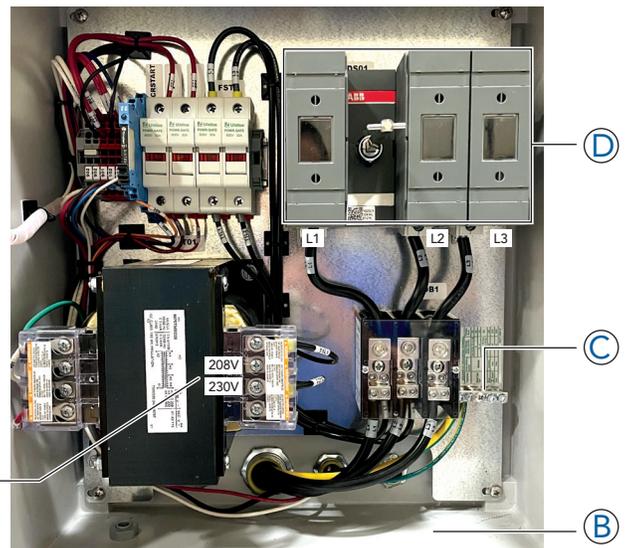
**1 PHASE (208V or 240V):** Connect supply voltage to L1, L2 and ground to grounding lug (C).

**3 PHASE (208V, 240V or 480V):** Connect supply voltage to L1, L2, L3 and ground to grounding lug (C).

**30 AMP Power Box:** Used for 3HP 208/240V and 3HP/5HP/7.5HP 480V configurations



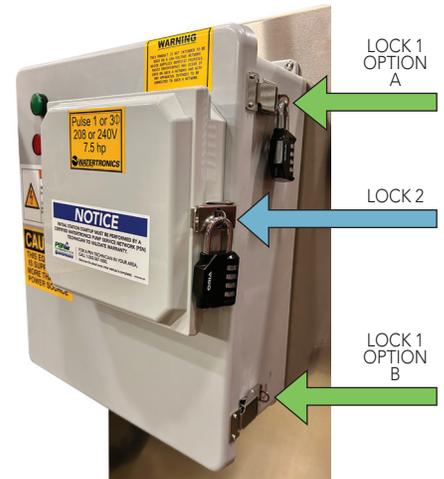
**60 AMP Power Box:** Used for 5HP and 7.5HP 208/240V configurations



**(A)** Transformer will not be labeled for the 480V variant.

## E. LOCKING POWER BOX

Lock power box using the 2 provided padlocks (shipped inside the power box). Arrows on the photo show the 3 location options to use padlocks. Follow instructions included with locks to set combination. Record your combination in a safe and accessible place for future reference.



## STEP 2. PLUMBING SETUP FOR BOOSTER STATION

Connect intake and discharge field plumbing to threaded station connections. Do NOT remove check valve on station intake.

## STEP 3. SETTING REGULATE PRESSURE (OUTPUT PSI)

The factory default is 0 PSI, a pressure regulate setpoint must be established to operate the station in Auto mode.

**1**

Choose **MENU** from home screen using Softkey.

**2**

Highlight **Pump** menu and choose **SELECT** using Softkey.

**3**

Highlight **PSI Regulate Setpoint** and choose **SELECT** using Softkey.

**4**

Highlight **PSI** and use **Right Arrow Key** to advance to Value Entry Screen.

**5**

First set PSI Regulate Setpoint to desired PSI using **Arrow Keys**, then choose **SAVE** using Softkey.

**6**

Confirm set point you entered was applied, and choose **SAVE** using Softkey.

## STEP 4. SETTING START METHOD | FACTORY DEFAULT IS PRESSURE DROP START

There are 3 starting options for the WaterMax Pulse Booster:

- A) Pressure Drop Start (Start Below PSI)
- B) Flow Start (Start Above GPM)
- C) Remote Relay Start (Start Remote Relay)

The station can use more than one start method but selected methods must ALL be satisfied to start the station.



Pressure Drop Start (Start Below PSI) is the factory default. If that is your desired method, no further action needed. Proceed to Step 5.

### A) PRESSURE DROP START (START BELOW PSI) | FACTORY DEFAULT IS 10 PSI

The 10 PSI setting indicates the system will start when the pressure drops 10 PSI below the chosen Pressure Regulate PSI Setpoint entered in Step 3. If you need to disable, change to 0 PSI.

**1**

Highlight **Start Below PSI** and choose **SELECT** using Softkey.

**2**

Highlight **PSI** and choose **SAVE** using Softkey.

**3**

Set PSI to desired value and choose **SAVE** using Softkey.

**4**

Confirm entry was applied and choose **SAVE** using Softkey.

### B) FLOW START (START ABOVE GPM) (0000 = OFF; 0005 = ON)

PLEASE NOTE: If operating as a Suction Lift Station, Flow Based Start (Start Above PSI) method is not available.

**1**

Highlight **Start Above GPM** and choose **SELECT** using Softkey.

**2**

Highlight **GPM** and use **Right Arrow Key** to advance to Value Entry Screen.

**3**

Set GPM to 5 and choose **SAVE** using Softkey. **5 GPM is the ONLY flowrate option for starting.**

**4**

Confirm entry of 5 GPM was applied and choose **SAVE** using Softkey.

### C) REMOTE RELAY START (START REMOTE RELAY)

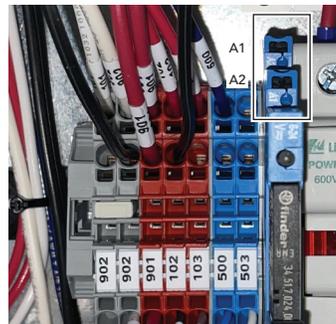
**1**

Highlight **Start Remote Relay** and choose **SELECT** using Softkey.

**2**

Highlight **YES** and choose **SAVE** using Softkey.

#### REMOTE RELAY WIRING



Wire to relay terminals A1 & A2.

## STEP 5. SETTING STOP METHOD | FACTORY DEFAULT IS FLOW STOP (STOP BELOW GPM)

There are 4 stop conditions for the WaterMax Pulse Booster:

- A) Stop Below Frequency (Hz)
- B) Stop Below Current (AMP)
- C) Flow Stop (Stop Below GPM)
- D) Remote Relay Stop (Stop Remote Relay)

The station can only use **1 stop condition**. If you turn on a condition and later want to switch to a different condition, you must deactivate the original condition by setting it back to 0.00/No for Remote Start Relay.



Flow Stop (Stop Below GPM) is the factory default. If that is your desired stop method, no further action needed. Proceed to Step 6.

### A) STOP BELOW FREQUENCY (STOP BELOW Hz)

**1**

Off ◊ Watertronics 20.0 Hz  
Pump — Factory  
Stop Below Hz  
Stop Below Amp  
Stop Below GPM  
Stop Remote Relay  
Stop Delay  
Exit Select

Highlight **Stop Below Hz** and choose **SELECT** using Softkey.

**2**

Off ◊ Watertronics 20.0 Hz  
Stop Below Hz  
Set:  
Hz 0 Hz ▶  
Cancel Save

Highlight **Hz** and use **Right Arrow Key** to advance to Value Entry Screen.

**3**

Off ◊ Watertronics 20.0 Hz  
Hz  
40 Hz  
0 60  
Cancel Save

Select desired Hz and choose **SAVE** using Softkey.  
[40Hz used as example.]

**4**

Off ◊ Watertronics 20.0 Hz  
Stop Below Hz  
Set:  
Hz 40 Hz ▶  
Cancel Save

Confirm Hz entry was applied and choose **SAVE** using Softkey.

### B) STOP BELOW CURRENT (STOP BELOW AMP)

**1**

Off ◊ Watertronics 20.0 Hz  
Pump — Factory  
Stop Below Hz  
Stop Below Amp  
Stop Below GPM  
Stop Remote Relay  
Stop Delay  
Exit Select

Highlight **Stop Below Amp** and choose **SELECT** using Softkey.

**2**

Off ◊ Watertronics 20.0 Hz  
Stop Below Amp  
Set:  
AMP 0.0 A ▶  
Cancel Save

Highlight **AMP** and use **Right Arrow Key** to advance to Value Entry Screen.

**3**

Off ◊ Watertronics 20.0 Hz  
AMP  
2.0 A  
0.0 2.9  
Cancel Save

Select desired AMP and choose **SAVE** using Softkey.  
[2AMP used as example.]

**4**

Off ◊ Watertronics 20.0 Hz  
Stop Below Amp  
Set:  
AMP 2.0 A ▶  
Cancel Save

Confirm AMP entry was applied and choose **SAVE** using Softkey.

### C) FLOW STOP (STOP BELOW GPM) | FACTORY DEFAULT IS 5 GPM (0000 = OFF; 0005 = ON)

**1**

Off ◊ Watertronics 20.0 Hz  
Pump — Factory  
Stop Below Hz  
Stop Below Amp  
Stop Below GPM  
Stop Remote Relay  
Stop Delay  
Exit Select

Highlight **Stop Below GPM** and choose **SELECT** using Softkey.

**2**

Off ◊ Watertronics 20.0 Hz  
Stop Below GPM  
Set:  
GPM 0 gpm ▶  
Cancel Save

Highlight **GPM** and use **Right Arrow Key** to advance to Value Entry Screen.

**3**

Off ◊ Watertronics 20.0 Hz  
GPM  
0005 gpm  
0 1000  
Cancel Save

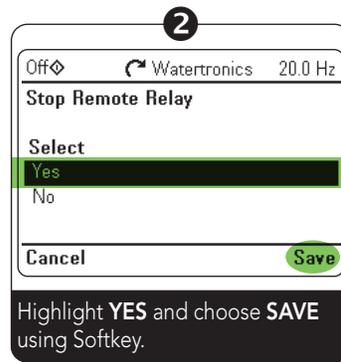
Set GPM to 5 and choose **SAVE** using Softkey. **5 GPM is the ONLY flowrate option for stopping.**

**4**

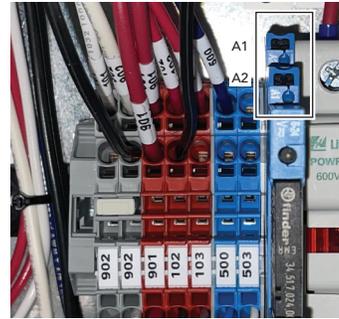
Off ◊ Watertronics 20.0 Hz  
Stop Below GPM  
Set:  
GPM 5 gpm ▶  
Cancel Save

Confirm GPM entry was applied and choose **SAVE** using Softkey.

## D) REMOTE RELAY STOP (STOP REMOTE RELAY)



### REMOTE RELAY WIRING



Wire to relay terminals A1 & A2.

## PART NUMBERS

ITEM	PART NUMBER
Suction Lift Kit (Foot Valve, Float Switch, Inlet Reducer)	52-16-7860
Fuses	
Main Disconnect	
208/240V	
3HP, 30AMP	21-30-0030
5HP, 45AMP	21-30-0045
7.5HP, 60AMP	21-30-0060
480V	
3HP, 10AMP	21-30-0010
5HP, 12AMP	21-30-0012
7.5HP, 15AMP	21-30-0015
Accessory	
Transformer 3.5AMP	21-40-0350
Outlet 5AMP	21-40-0005
Fan 1AMP	21-40-0001
Inlet Drop Pipes	
2" MPT x 2" MPT – 24" Bury	52-16-7888
2" MPT x 3" Flange – 24" Bury	52-16-7892
Discharge Drop Pipes	
2" MPT x 2" MPT – 24" Bury	52-16-7889
2" MPT x 3" Flange – 24" Bury	52-16-7893
Threaded Flange	
2" Flange	56-07-2060



To order parts or for technical information and support, call 262-367-1000.

## COMMON FAULT CODES/WARNINGS

When the system faults, the light on keypad and power box will turn red.

In the event of a power outage, the system will resume in AUTO when power is restored. If the system was running in either HAND or OFF prior to outage, it will resume in OFF once power restored.



Light will be green when system is running

During system faults, power box light will turn red.

During system faults, VFD LED light will turn red.

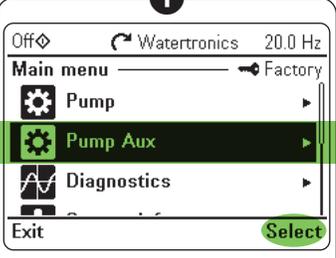


FAULT/WARNING	KEYPAD DISPLAY MESSAGE	STATES ACTIVE IN	DESCRIPTION	CORRECTIVE ACTION
High Pump Temp Fault		AUTO HAND	When water in pump or intake piping reaches 150°F or higher, the station will enter a fault state and stop running.	Diagnose problem. Fault must be manually reset.
Low Pressure Fault		AUTO	When the station runs at or below the low pressure fault setting for 240 seconds, the station will enter a fault state and stop running.	Diagnose problem. Fault must be manually reset.
High Pressure Fault		AUTO HAND	When the station runs at or above the high pressure fault setting for 60 seconds, the station will enter a fault state and stop running.	Diagnose problem. Fault must be manually reset.
Low Water Level Warning (Suction Lift Only)		AUTO OFF	When the source water reaches an unsafe pumping level based on position of float switch, the station will enter a warning state and stop running.	Diagnose problem. Once the source water reaches safe pumping level as determined by position of float switch, the station will be allowed to run again.
		HAND	When the source water reaches an unsafe pumping level based on position of float switch, the station will enter a warning state, but station will NOT stop running. Operator must remain with station when operating in HAND.	Diagnose problem. Once the source water reaches safe pumping level as determined by position of float switch, the station will be allowed to run again.

## COMMON FAULT CODES/WARNINGS

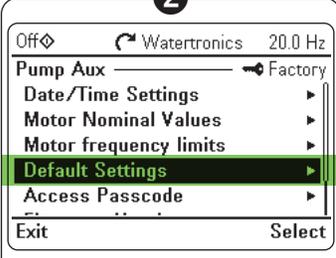
To restore WaterMax Pulse factory defaults, follow these steps. Once restored, cycle power on station.

**1**



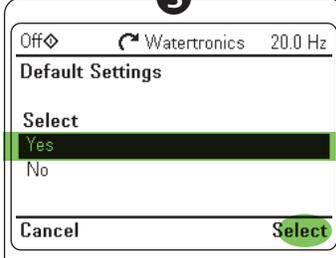
Highlight **Pump Aux** and choose **SELECT** using Softkey.

**2**



Highlight **Default Settings** and choose **SELECT** using Softkey.

**3**



Highlight **Yes** and choose **SELECT** using Softkey.

**4**

Cycle power to station.

## HOW TO CLEAR FAULTS

Once a fault has been resolved, you can clear one of two ways.

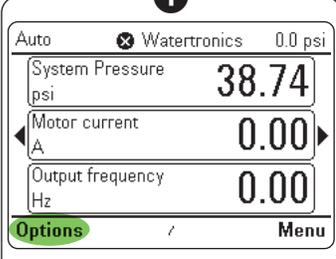
**1**



Choose **RESET** using Softkey.

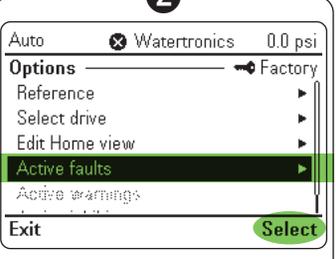
**METHOD A**  
Immediately at the screen

**1**



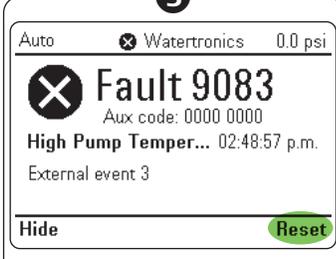
Select **OPTIONS** using Softkey.

**2**



Highlight **Active Faults** and choose **SELECT** using Softkey.

**3**



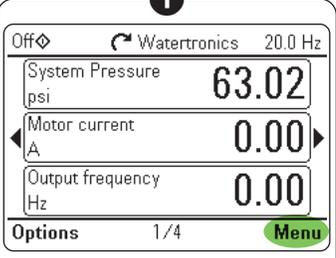
Choose **RESET** using Softkey.

**METHOD B**  
Hide and clear later – Hiding does not make fault go away.

## FAULT/WARNING EVENT LOG

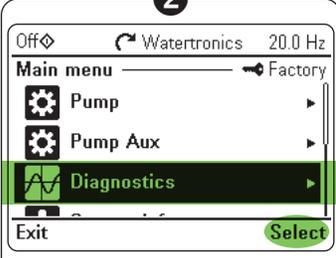
To view previous faults/event history, follow these steps.

**1**



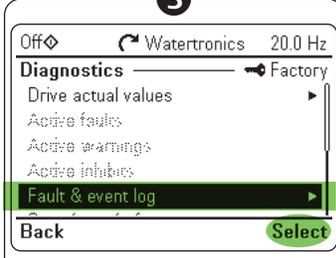
Choose **Menu** from Home Screen using Softkey.

**2**



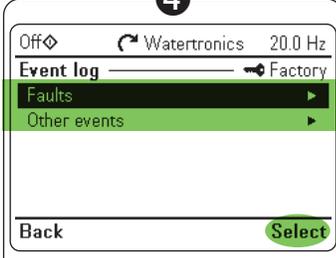
Highlight **Diagnostics** and choose **SELECT** using Softkey.

**3**



Highlight **Fault & Event Log** and choose **SELECT** using Softkey.

**4**



Highlight either **Faults** or **Other Events** and choose **SELECT** using Softkey.