

AQUAVAR IPC

Installation and Start-Up instructions
for single pump commissioning

By Ken Capuano



Shipping Inspection:

Inspect the package

1. Inspect the package for damaged or missing items upon delivery.

2. Note any damaged or missing items on the receipt and freight bill.

3. File a claim with the shipping company if anything is out of order.

If the product has been picked up at a distributor, make a claim directly to the distributor.

Inspect the Controller

1. Remove packing materials from the product.

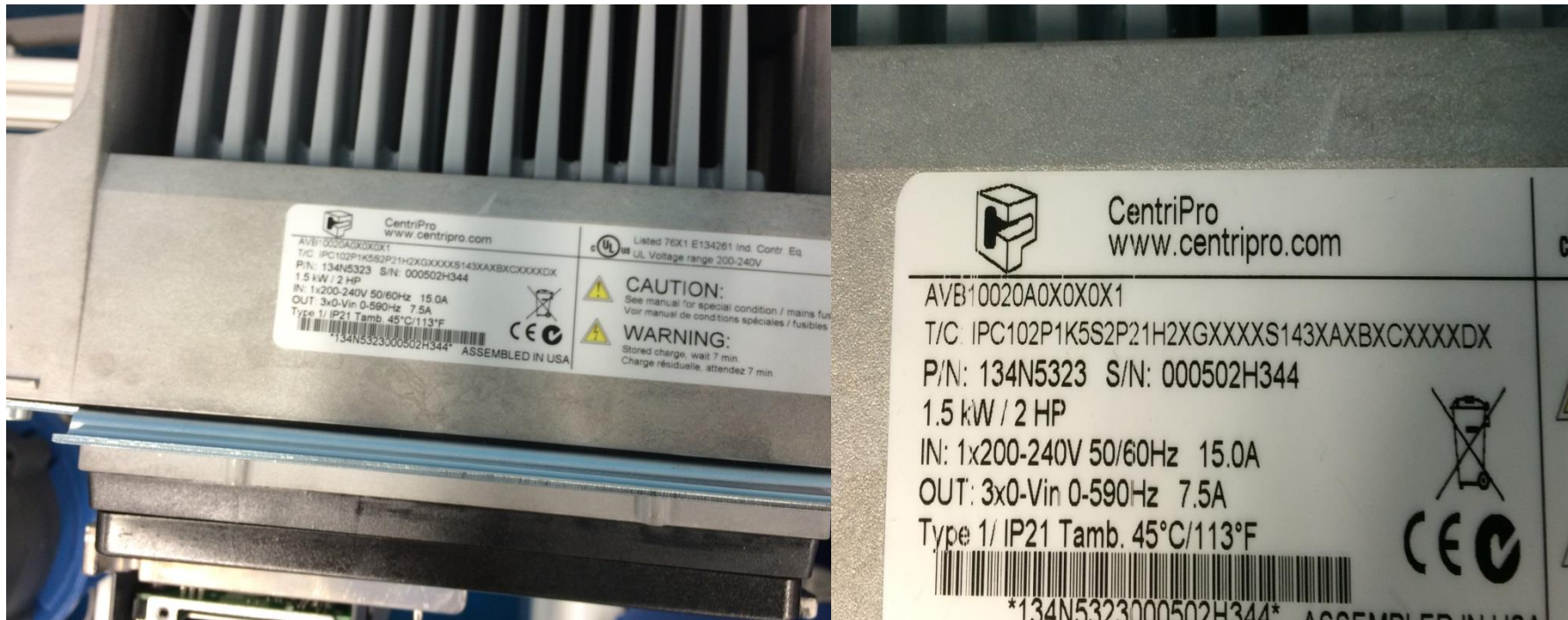
2. Inspect the product to determine if any parts have been damaged or are missing.

3. If applicable, unfasten the product by removing any screws, bolts, or straps.

4. Contact the local sales representative if there is any issue.

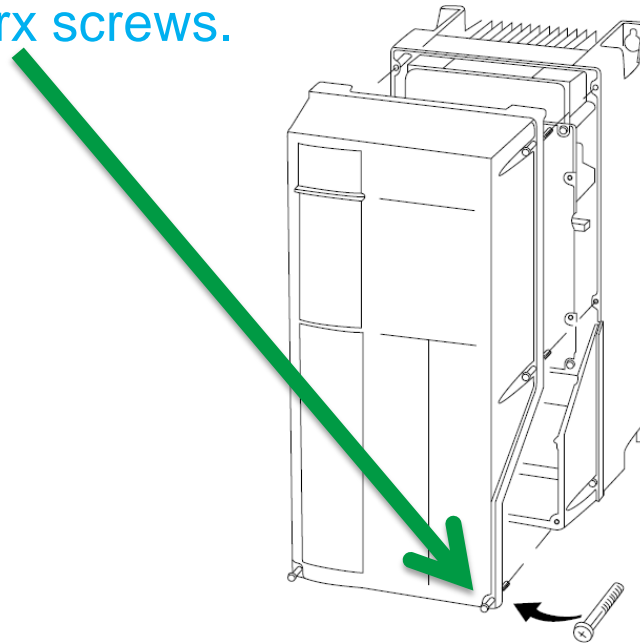
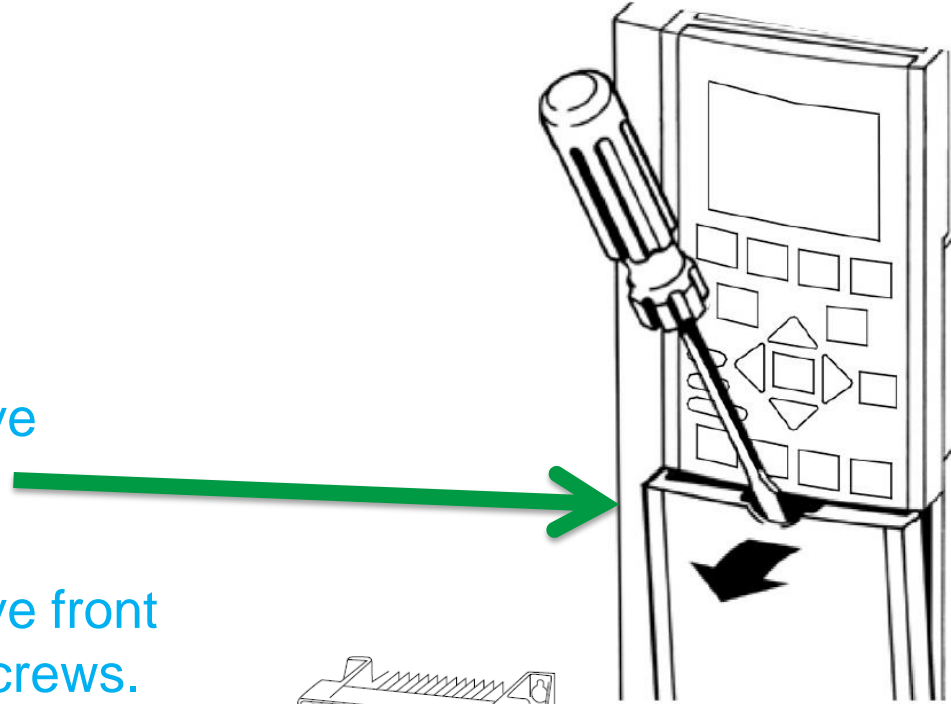
Installation Preparation

Please locate IPC Identification Label on top of Controller. Record information and compare to order and invoice.



Control Wiring Preparation

- ✓ PLEASE NOTE: Torx Screwdriver required for ALL INSTALLATIONS!
- ✓ A2, A3, B3, B4, C3, C4 sizes remove access cover plate with a flathead screwdriver.
- ✓ A4, A5, B1, B2, C1, C2 sizes remove front cover by loosening attached Torx screws.



Keypad Removal

Remove keypad by first unlocking top section and then towards the lower section to remove it from the serial connector.



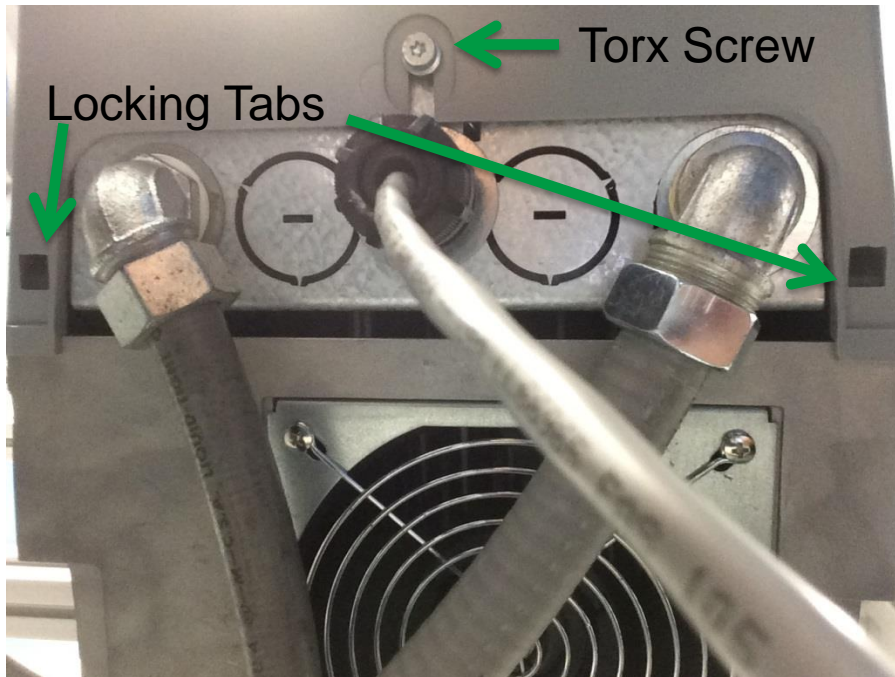
Transducer Input Selection

VERY CAREFULLY move dip switch on A53 to the right to the “I” position. Use a small flat screwdriver. This switch can break easily if force is applied. Use your flashlight to locate the dipswitch and it’s position. You can also remove the keypad holder and visually see the switch. Move it until you hear a slight click.



Cover removal on A-3 IP 20/21

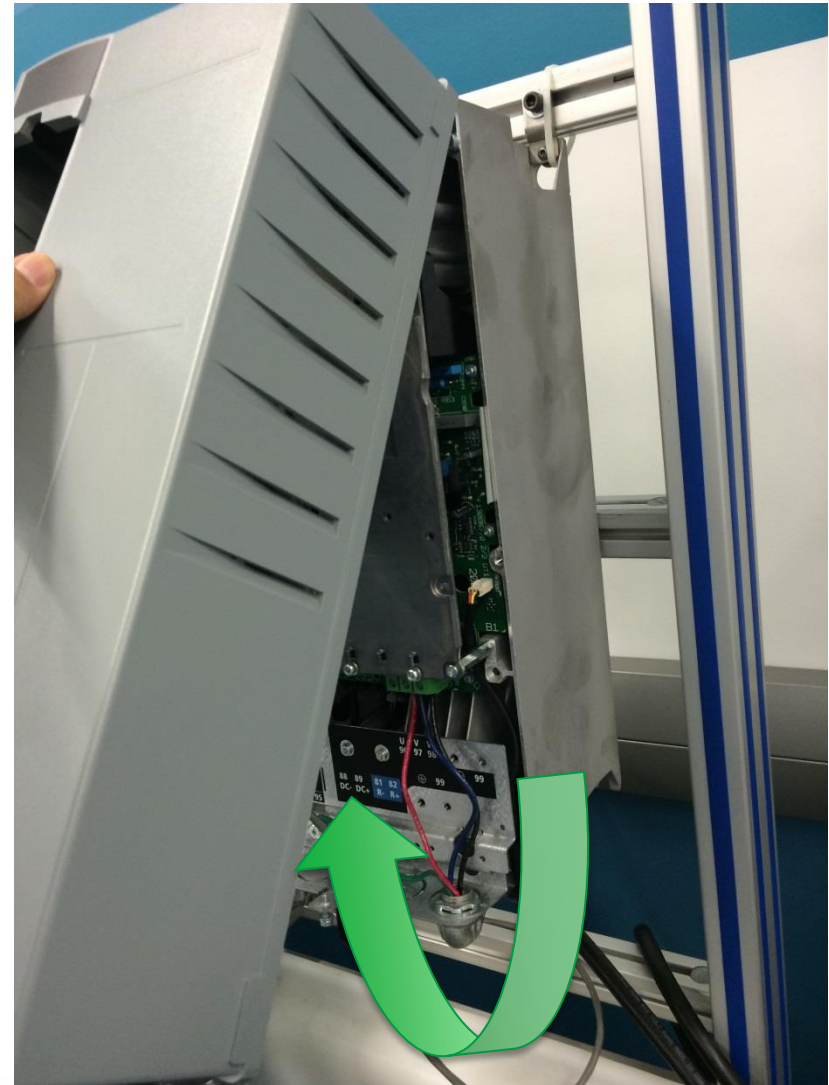
To remove the IP20/21 type cover you will have to remove or loosen the Torx screw in the center, and also push in the locking tabs on the left and right side. These are located on the bottom of the cover.



Bottom of Cover

A-3 IP 20/21 Cover removal:

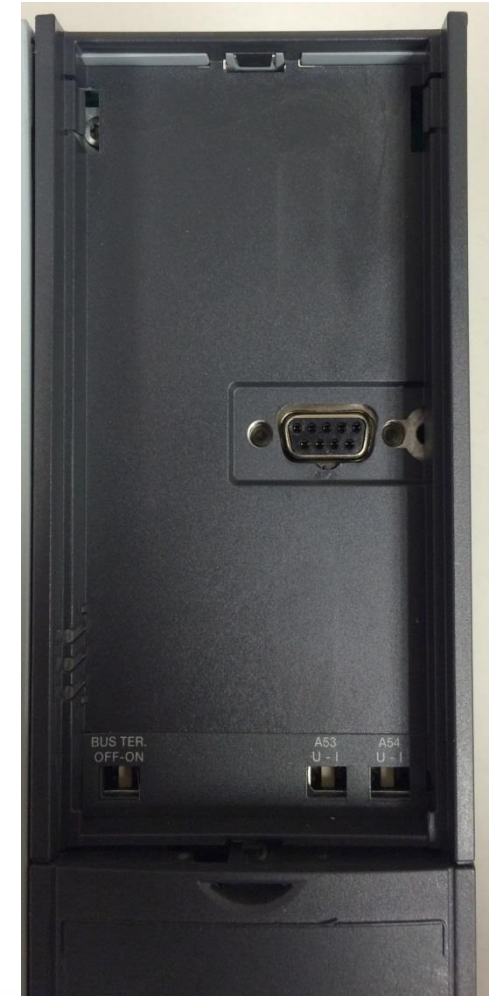
Once the locking tabs are unlocked, remove the cover in this orientation and lift up at an angle. There is also a slot underneath the cover that holds it in position.



Cover removal on A-2 IP20/21 Frame:



Remove keypad by first unlocking top section and then towards the lower section to remove it from the serial connector.

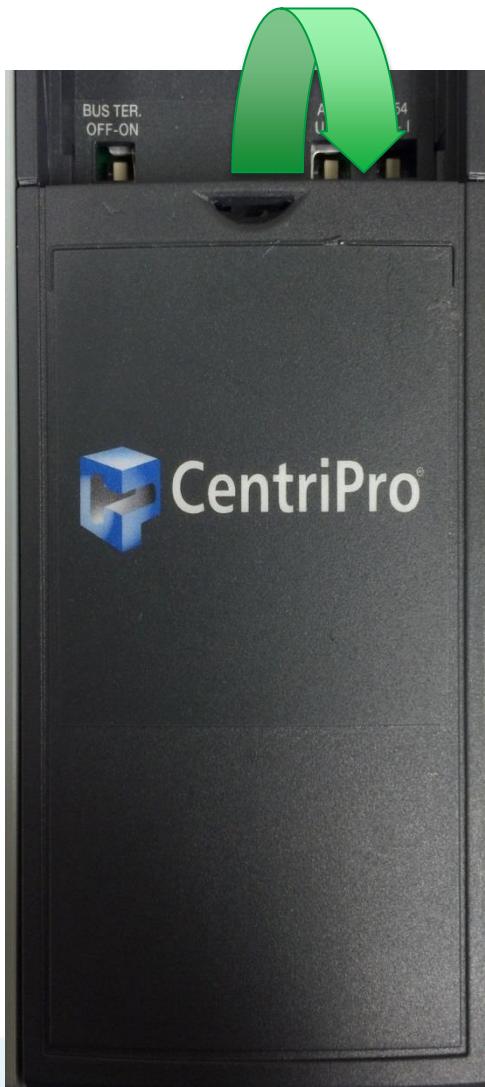


Cover removal on A-2 IP20/21 Frame:

VERY CAREFULLY move dip switch on A53 to the right to the “I” position. Use a small flat screwdriver. This switch can break easily if force is applied. Use your flashlight to locate the dipswitch and it’s position. You can also remove the keypad holder and visually see the switch. Move it until you hear a slight click.



Cover removal on A-2 IP20/21 Frame:



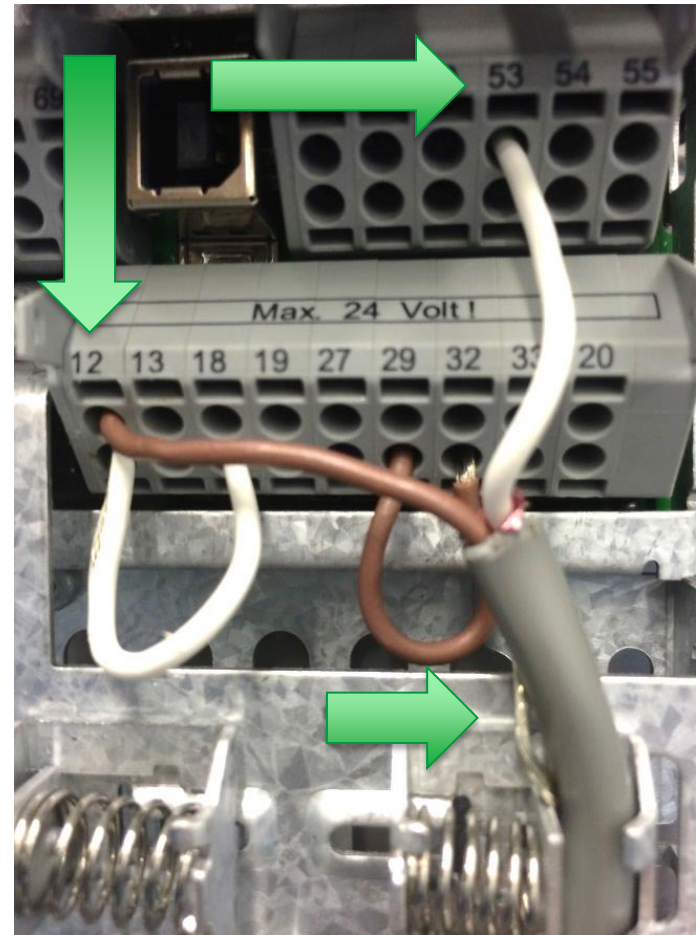
Remove cover from top to gain access to wiring terminals.



Transducer wiring:

Install Transducer cable on:

- ✓ Brown on terminal 12 (24V)
- ✓ White on terminal 53 (4-20MA)
- ✓ Place ground shield between spring clip and shielded cable.



Control Wiring Preparation

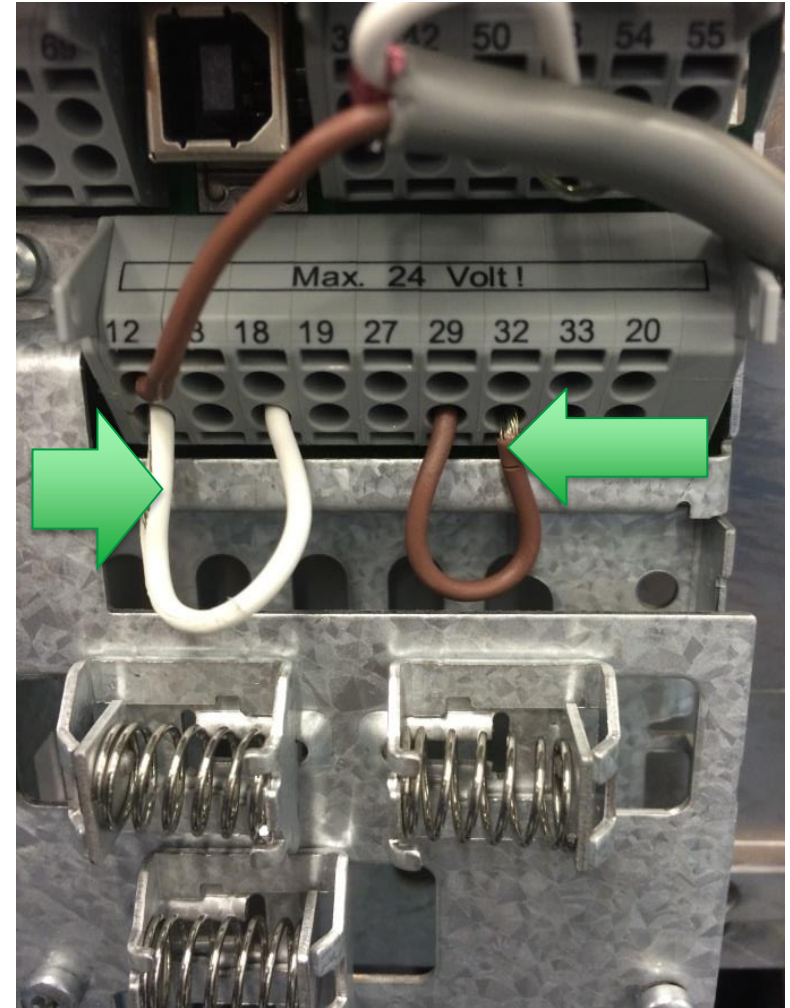
Install Jumper wires on:

- ✓ Terminal 12 and 18

The IPC has been configured to require a start command on terminal 18. To apply a start signal connect a jumper wire between terminals 18 (DI 18, parameter 5-10) and 12 (24V dc). A start command is given to the controller when terminal 18 is connected to 24V.

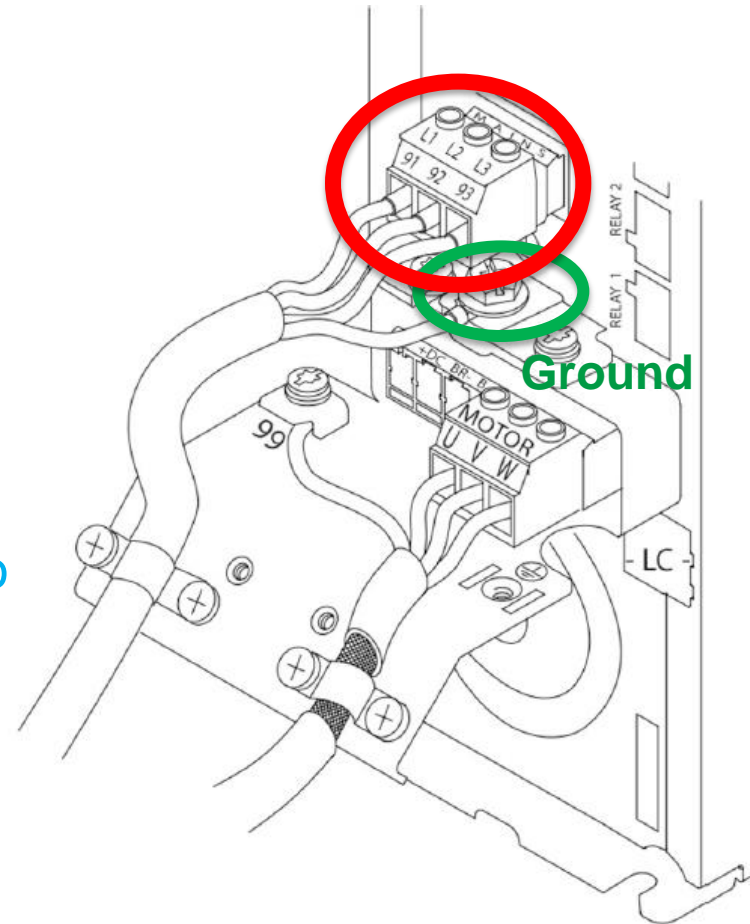
- ✓ Terminal 29 and 32

This jumper allows the drive to automatically restart in the event of a no water loss of prime.



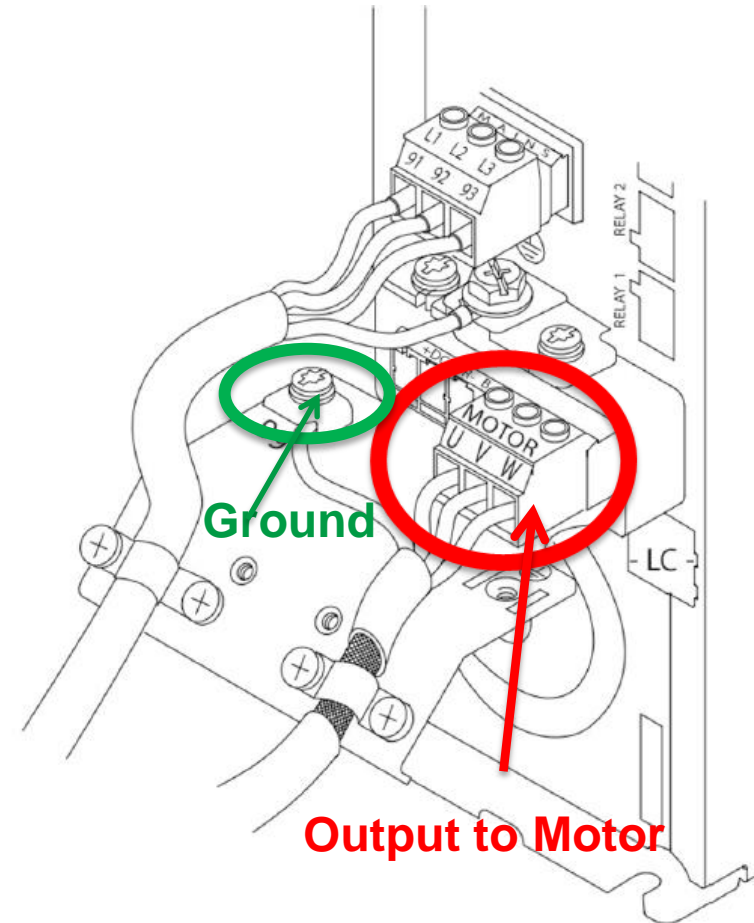
Input (Mains) Wiring

- ❖ Size wiring based upon the input current of the frequency converter. For maximum wire sizes, see Power-dependent specifications section.
- ❖ Comply with local and national electrical codes for cable sizes.
- ❖ Connect 3-phase AC input power wiring to terminals L1, L2, and L3.
- ❖ Connect single phase power wiring to L1 & L2.
- ❖ Depending on the configuration of the equipment, input power will be connected to the mains input terminals or the input disconnect.
- ❖ Ground the cable in accordance with grounding instructions in Earth (Grounding) Requirements.



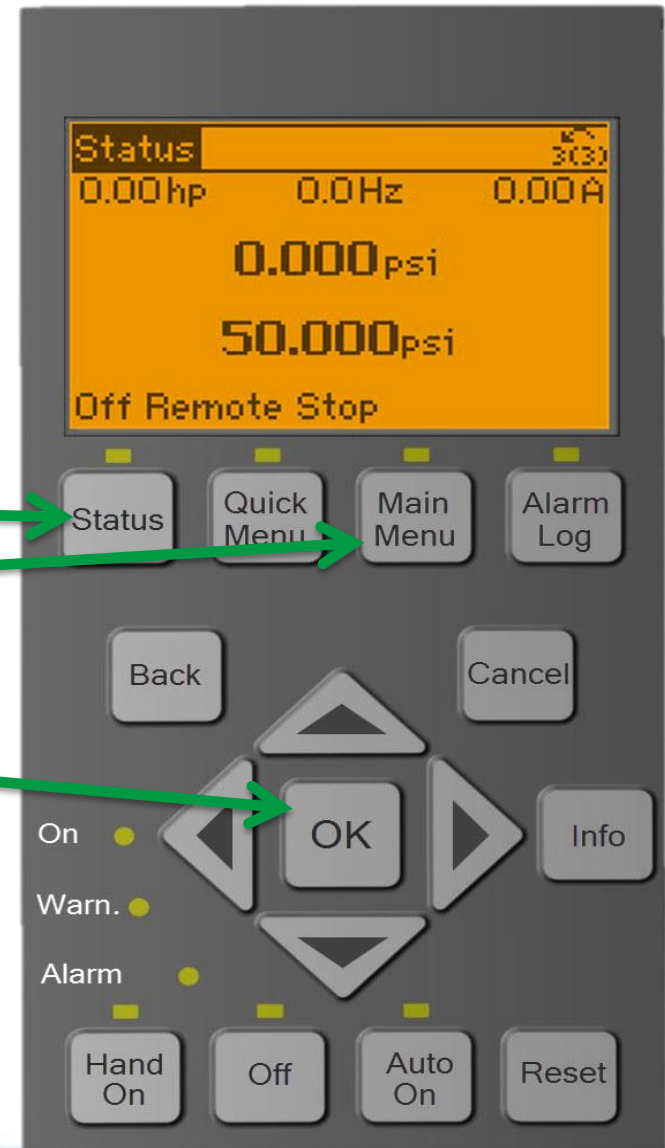
Output wiring to motor

- Comply with local and national electrical codes for cable sizes.
- Connect output motor wires to terminal block labeled U, V, W
- Ground the cable in accordance with grounding instructions in Earth (Grounding) Requirements.
- Please refer to the Aquavar IOM.
- Check incoming voltages and verify that they are in specification of drive rating.
- You may then apply power.



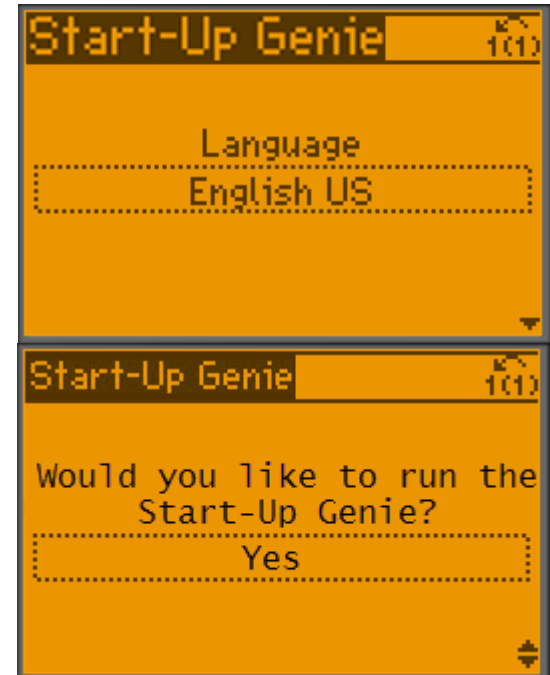
Perform Factory Reset of Aquavar IPC

- Hold down these three buttons TOGETHER while applying power.
- ✓ Status
- ✓ Main Menu
- ✓ OK
- When the drive displays “INITIALIZING” you may let go



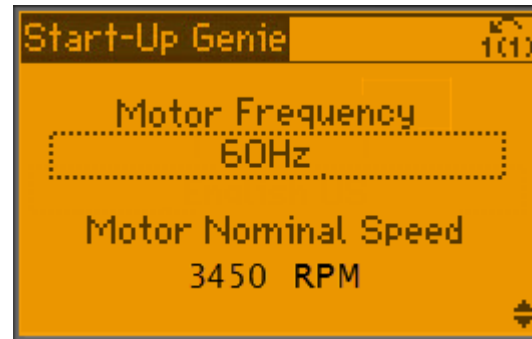
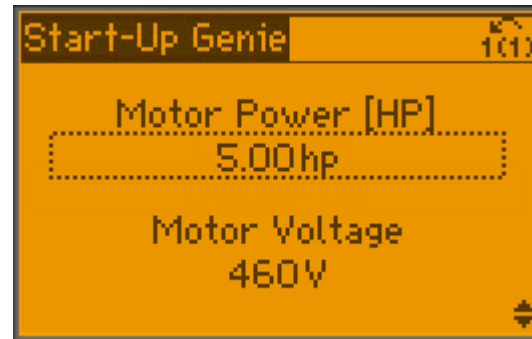
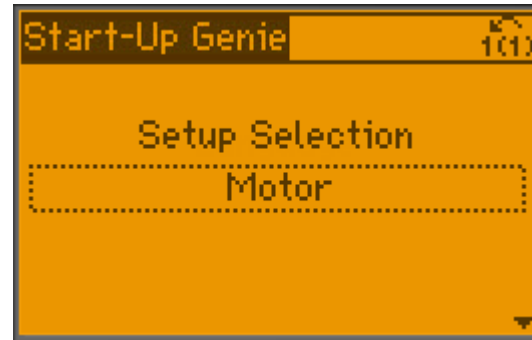
Start-Up Genie

- ✓ Select English as Language and proceed with the down arrow
- ✓ The Start-Up Genie will begin automatically after the initial power up (Screen 2) or it can be engaged by selecting Start-Up Genie under Quick Menus
- ✓ Select yes with and proceed with the down arrow.



Motor Setup Selection

- ✓ Select Motor and advance with the down arrow.
- ✓ Input motor horsepower and motor voltage and advance with the down arrow.
- ✓ Select motor frequency and motor nominal speed voltage



Motor Setup Selection

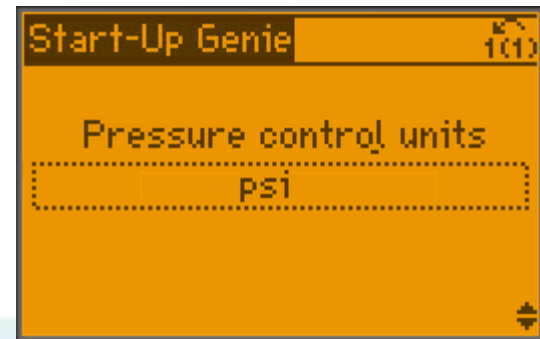
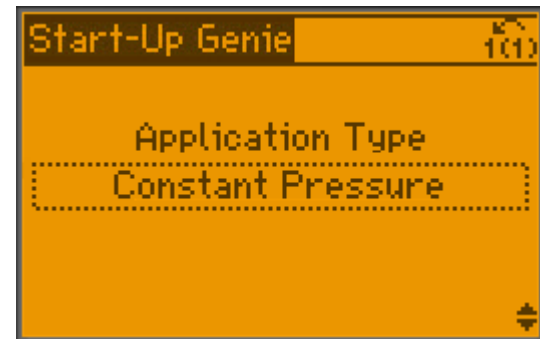
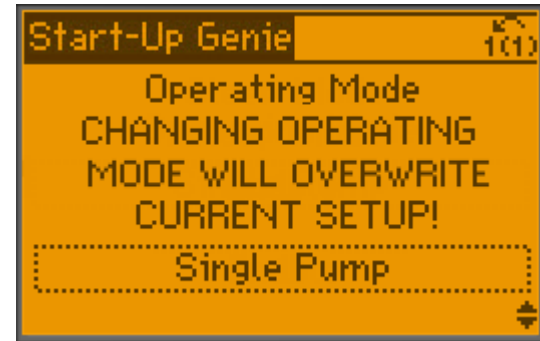
- ✓ Input motor current (Full Load Amps).
- ✓ Enter Current Limit
(Service Factor Amps)/(Full Load Amps)
- ✓ Select motor type.
- ✓ Select Sleep Frequency Low Limit
- ✓ Select yes to continue application setup

The image displays four sequential screenshots of the 'Start-Up Genie' motor setup interface, which has an orange background and a title bar with a back arrow and '1(1)'.

- Screenshot 1:** Shows 'Motor Current' with a value of '10.38A' and 'Current Limit' with a value of '110.0%'. Both values are in dotted-line input boxes.
- Screenshot 2:** Shows 'Motor Type' with a value of 'Surface' in a dotted-line input box.
- Screenshot 3:** Shows 'SleepFrequency/Low Limit [Hz]' with a value of '30.0Hz' in a dotted-line input box.
- Screenshot 4:** Shows the prompt 'Continue to the Application Setup' with a 'Yes' response in a dotted-line input box.

Single Pump Commissioning

- ✓ Select Single Pump.
- ✓ Select Constant Pressure for Application Type
- ✓ Select PSI for pressure control units



Single Pump Commissioning

✓ Select Ramp Time

Fast: 5 sec accelerate, 3 sec decelerate.

Medium: 10 sec accelerate, 5 sec decelerate.

Slow: 20 sec accelerate, 10 sec decelerate.



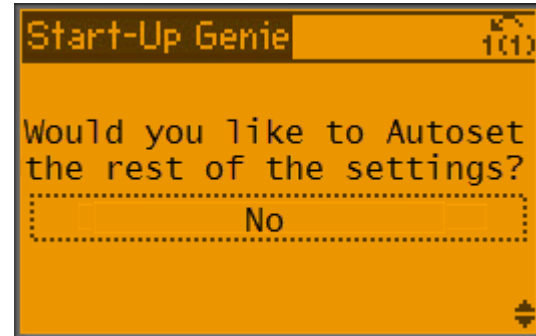
Single Pump Commissioning

- ✓ Select No for Auto set.

This will give users the option to set the remaining parameters to the most common settings.

- ✓ Select Yes for feedback setup.

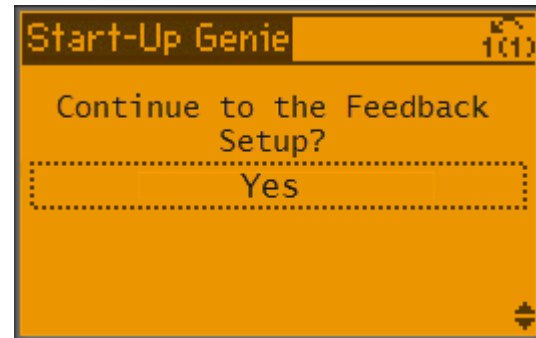
- ✓ Select 1 for feedback sources



Start-Up Genie 1(1)

Would you like to Autoset the rest of the settings?

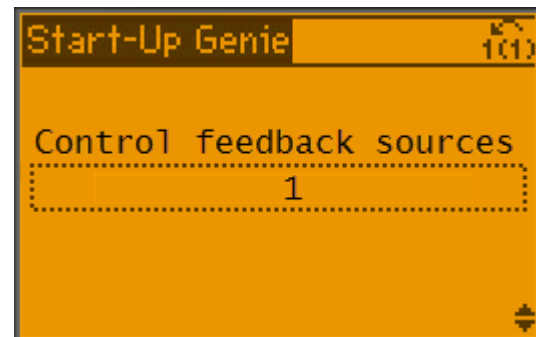
No



Start-Up Genie 1(1)

Continue to the Feedback Setup?

Yes



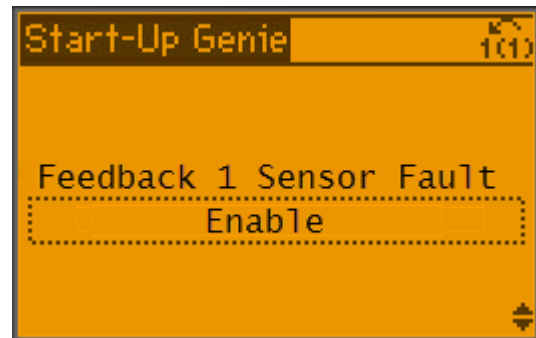
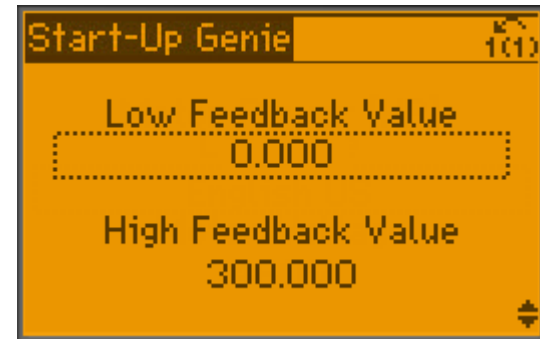
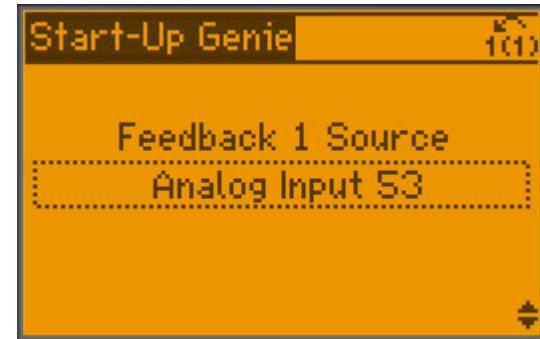
Start-Up Genie 1(1)

Control feedback sources

1

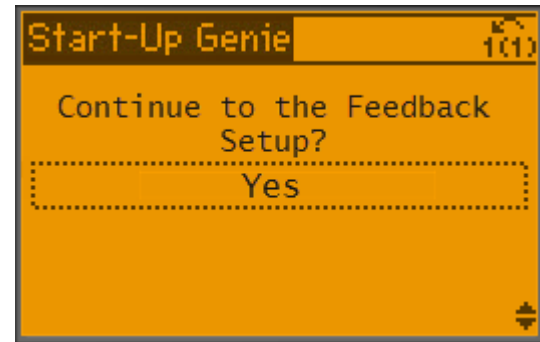
Single Pump Commissioning

- ✓ Select Analog Input 53 for Feedback 1 Source.
- ✓ Select 0 for Low Feedback Value and 300 for High Feedback (0-300PSI Transducer)
- ✓ Enable Feedback 1 Sensor Fault.



Single Pump Commissioning

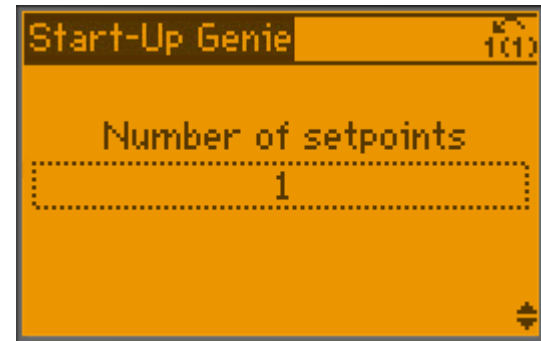
- ✓ Select Yes to continue the Feedback setup.
- ✓ Select 1 for Number of set points.
- ✓ Enter your Set point PSI in set point 1.



Start-Up Genie 1(1)

Continue to the Feedback Setup?

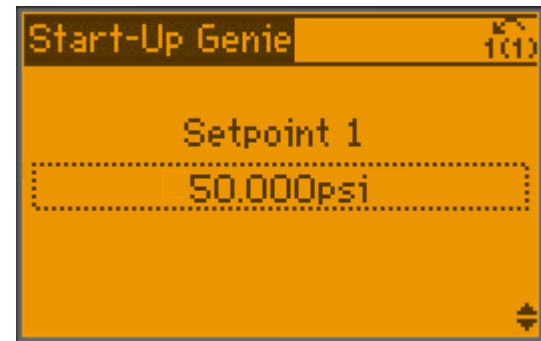
Yes



Start-Up Genie 1(1)

Number of setpoints

1



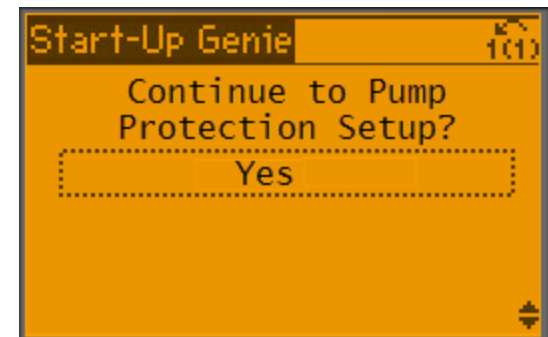
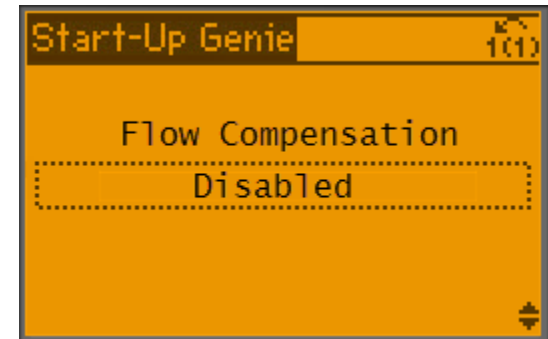
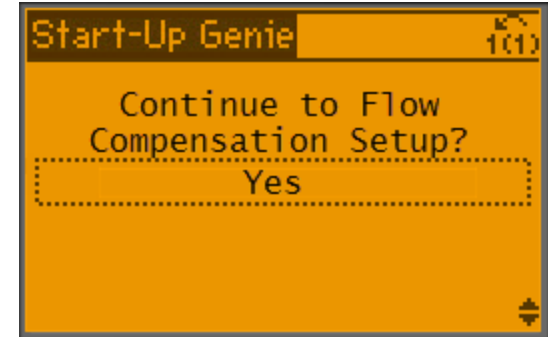
Start-Up Genie 1(1)

Setpoint 1

50.000psi

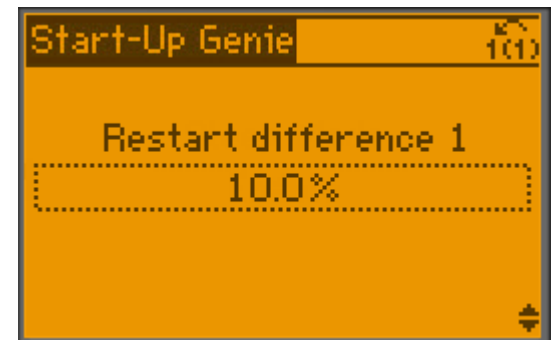
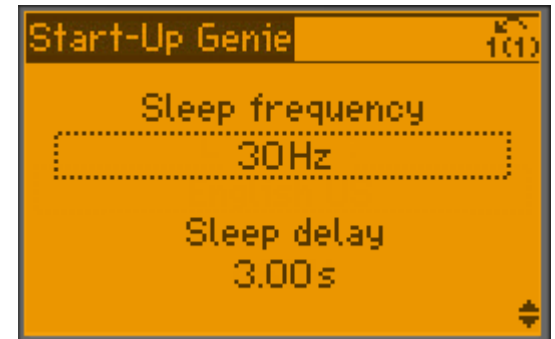
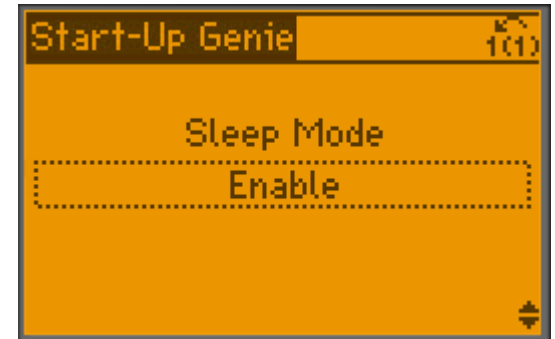
Single Pump Commissioning

- ✓ Select Yes to continue the flow compensation Setup.
- ✓ Select Disabled for Flow Compensation.
- ✓ Select Yes to continue to protection setup.



Single Pump Commissioning

- ✓ Select Enable for sleep mode.
- ✓ Select 30 Hz for Sleep Frequency. 3 Seconds for Sleep Delay
- ✓ Select 10% for Restart difference 1.



Single Pump Commissioning

- ✓ Select 3 Seconds for Minimum Run Time. 10 Seconds for Minimum Sleep Time.
- ✓ Select 0 PSI for Flow Check Window.
- ✓ Select 10 Seconds for Flow Check Low Time.
- ✓ Select 10 Seconds for Flow Check High Time.

The image displays four sequential screenshots of the 'Start-Up Genie' configuration interface, which has an orange background and a title bar with a close button. Each screen shows a specific parameter being configured in a dotted-line text box.

- Screen 1:** Shows 'Minimum Run Time' set to '3s' and 'Minimum Sleep Time' set to '10s'.
- Screen 2:** Shows 'Flow Check Window' set to '0.000psi'.
- Screen 3:** Shows 'Flow Check Low Time' set to '10s'.
- Screen 4:** Shows 'Flow Check High Time' set to '10s'.

- ✓ Select Off for No flow Power Calibration. We are selecting OFF as lines are not yet pressurized, and we still need to verify proper rotation. Please perform once these are satisfied.
- ✓ Select Enable for No Water Loss of Prime
- ✓ Since we are not performing this until lines are pressurized, the HP value that is listed is not valid. Just proceed until you actually run the calibration.
- ✓ Select Enable for No Water Loss of Prime Restart

The image displays four sequential screenshots of the 'Start-Up Genie' interface, which is used for configuring water system calibrations. Each screen has a title bar that reads 'Start-Up Genie' and a status indicator '1(1)' in the top right corner. The interface is orange with black text and features a dashed rectangular box for user input.

- Screen 1:** The prompt is 'Run the No Flow Power Calibration Setup?'. The input box contains the text 'Off'.
- Screen 2:** The prompt is 'No Water/Loss of Prime Fault'. The input box contains the text 'Enable'.
- Screen 3:** The prompt is 'No Water/Loss of Prime Limit'. The input box contains the text '8.60hp'.
- Screen 4:** The prompt is 'No Water/Loss of Prime Restart'. The input box contains the text 'Enable'.

- ✓ The no water/Loss of Prime ensures that you have your jumper installed on terminals 29 and 32.
- ✓ Select OK to Continue.
- ✓ Select your Restart Time for no water loss of prime.
- ✓ Select your no water loss of prime seconds delay..

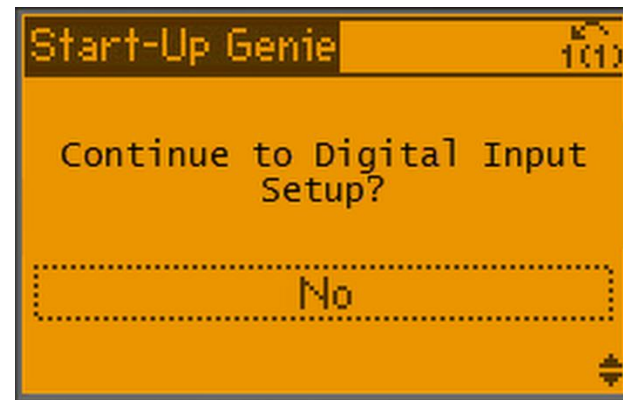


- ✓ Select Alarm for Under Pressure Function
- ✓ Select Delay Time Seconds.
- ✓ Select Under Pressure Difference %.
- ✓ Select No for pump protection on Digital Input 19 : A pump or system protection function can be implemented using digital input DI 19 and an external switch. Pump Protect Alarm is active when this input is 'O' or Open..
- ✓ Select No for pump protection on digital input 27

The image displays four sequential screenshots of the 'Start-Up Genie' configuration interface, which has an orange background and a black header bar. Each screenshot shows a specific configuration step with a title bar, a main title, a selection box, and a confirmation button.

- Screenshot 1:** The title bar reads 'Start-Up Genie' and '101'. The main title is 'Under Pressure Function'. The selection box shows 'Alarm' selected. A confirmation button is at the bottom right.
- Screenshot 2:** The title bar reads 'Start-Up Genie' and '101'. The main title is 'Under Pressure Delay Time'. The selection box shows '10s' selected. Below it, 'Under Pressure Difference' is set to '10.0%'. A confirmation button is at the bottom right.
- Screenshot 3:** The title bar reads 'Start-Up Genie' and '101'. The main title is 'Setup Pump Protection Through Digital Input 19?'. The selection box shows 'No' selected. A confirmation button is at the bottom right.
- Screenshot 4:** The title bar reads 'Start-Up Genie' and '101'. The main title is 'Setup Pump Protection Through Digital Input 27?'. The selection box shows 'No' selected. A confirmation button is at the bottom right.

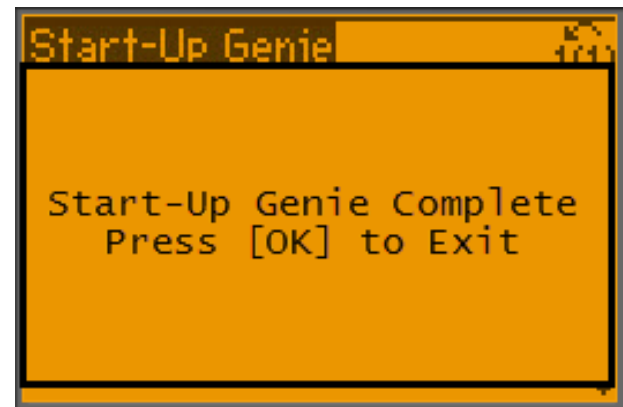
✓ Select No for Digital Input Select.



✓ Select Exit for Setup Selection.



✓ Press OK to Exit the Genie

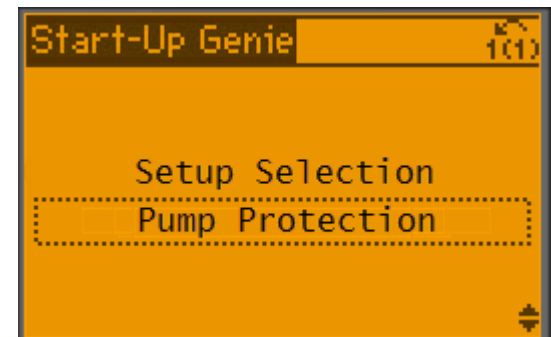


Single Pump Commissioning

- ✓ Check Pump and Motor Rotation by selecting Hand On. If motor is running backwards, power down drive, wait five minutes, and rotate motor wires. Once rotation is verified, select Off.
- ✓ Select Auto On. Verify Unit cycles into sleep mode at desired PSI.

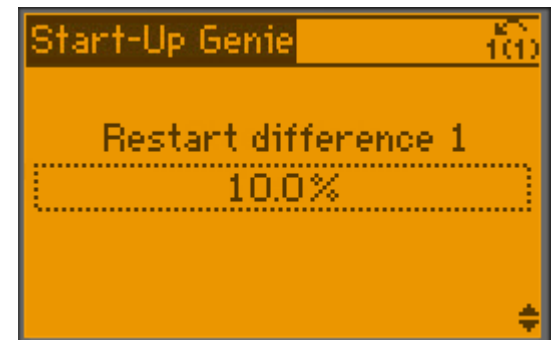
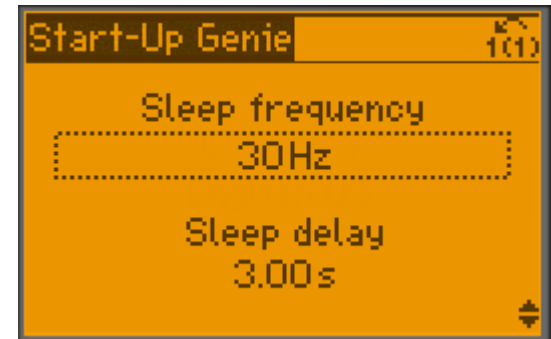
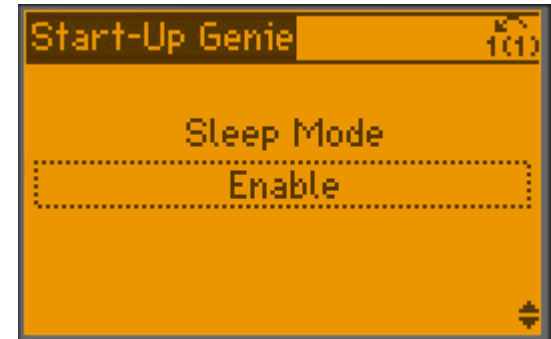


- ✓ Perform No Flow Power Calibration
- ✓ Select Quick Menu
- ✓ Select 04 Startup Genie
- ✓ Change Setup Selection to Pump Protection.



Single Pump Commissioning

- ✓ Select Enable for sleep mode.
- ✓ Select 30 Hz for Sleep Frequency. 3 Seconds for Sleep Delay
- ✓ Select 10% for Restart difference 1.



Single Pump Commissioning

- ✓ Select 3 Seconds for Minimum Run Time. 10 Seconds for Minimum Sleep Time.
- ✓ Select 0 PSI for Flow Check Window.
- ✓ Select 10 Seconds for Flow Check Low Time.
- ✓ Select 10 Seconds for Flow Check High Time.

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- Screen 3:** Shows 'Flow Check Low Time' set to '10s'.
- Screen 4:** Shows 'Flow Check High Time' set to '10s'.

- ✓ Select Enable for No Flow Power Calibration.
- ✓ Follow all onscreen instructions carefully.
- ✓ Close outlet valve before starting
- ✓ The drive will now run through steps 1-4.
- ✓ Once the calibration is completed select OK and the down arrow to proceed..

