

QUICK START GUIDE

P2004386 REV 2



FOR FULL IOM,
SCAN BELOW



Technologic[®] IPC

QUICK START-UP GUIDE



Bell & Gossett

a xylem brand

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SAFETY AND INSTRUCTIONS

OVERVIEW

This guide provides a quick reference for installing the Technologic Intelligent Pump Controller.

NOTE: This guide does not provide safety, detailed installation or operational instructions. Refer to the P2003509 Technologic Intelligent Pump Controller Installation, Operation, and Maintenance (IOM) Manual (current version) for complete information.



WARNING

- **High Voltage** Failure to comply could result in death or serious injury.
- **Discharge Time** Failure to wait the specified time after power has been removed before performing service or repair could result in death or serious injury.

Frequency converters contain DC-link capacitors that can remain charged even when the frequency converter is not powered. To avoid electrical hazards, stop motor and disconnect:

- AC mains
- Any permanent magnet type motors
- Any remote DC-link power supplies, including battery backups, ups and DC-link connections to other frequency converters.

Wait for the capacitors to discharge completely before performing any service or repair work. Refer to the following table for wait times:

Voltage (V)	Power range		Minimum wait time (min)
	hp	kW	
200-240	1.5-5	1.1-3.7	4
200-240	7.5-60	5.5-45	15
380-480	1.5-10	1.1-7.5	4
380-480	15-125	11-90	15
380-480	150-350	90-315	20
380-480	450-600	315-450	40
525-690	1.5-10	1.1-7.5	4
525-690	1.5-10	1.1-7.5	7
525-690	15-125	11-90	15
525-690	75-350	55-315	20
525-690	350-600	315-450	30

High voltage may be present even when the warning LED indicator lights are off.

- **Leakage Current Hazard** Failure to ground the drive properly could result in death or serious injury.
- **Unintended Start** Failure to comply could result in death, serious injury, equipment, or property damage.
- **Unintended Start. Windmilling!** Failure to follow the instructions could result a risk of personal injury and equipment damage.
- Only use original spare parts to replace any worn or faulty components. The use of unsuitable spare parts may cause malfunctions, damage, and injuries as well as void the guarantee.

- This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov.
- **Equipment Hazard** Failure to follow the guidelines could result in death or serious injury.
- **Internal Failure Hazard** Failure to follow the guidelines could result in serious injury.



CAUTION

Before using the Genie, set DI18 to Stop (terminal 18 open) to prevent the unit from starting the motor. Keep terminal 18 open to avoid an unintended motor rotation. Apply the Start signal to the controller only when pump operation is desired.

PREPARE FOR INSTALLATION



WARNING! Installation must be performed by a qualified technician.

- Suitable Environment – Ensure installation is indoors and the site temperature range is 0°C (32°F) to 40°C (104°F).
- Ensure properly sized safety devices are installed in the system such as pressure relief valves, compression tanks, pressure controls, temperature controls and flow controls.
- Ensure proper guards are installed when the system has potential to operate at extreme temperatures and/or pressures.

UNPACK THE UNIT

Remove all packing materials from the product. Inspect the product to determine if any parts have been damaged or are missing. Contact your sales representative if anything is out of order.

PREPARE THE MOUNTING LOCATION

- Ensure adequate supports are utilized to handle the weight of the system, piping and fluid.
- Ensure the suction and discharge pipes are supported independently by use of pipe hangers near the pump.
- Ensure there is adequate space around the unit to ensure proper cooling and allow for maintenance and service.

MOUNT THE UNIT

- Ensure the unit is properly lifted according to the pump Installation, Operation and Maintenance manual.
- Ensure all flange bolts are adequately torqued.
- For vertically mounted installations with the motor and controller in the horizontal position, ensure that adequate support for the motor and controller is provided.
- Refer to chapter 4 Mechanical Installations in the P2003509 Technologic Intelligent Pump Controller IOM for details of installations.

INSTALL WIRING



Electrical Hazard. Dangerous voltage.

Ensure all input power disconnects and circuit breakers are locked in the off position prior to installing the input power wiring.

NOTE: External fusing is required for units without a built in fused disconnect.



Electrical Hazard

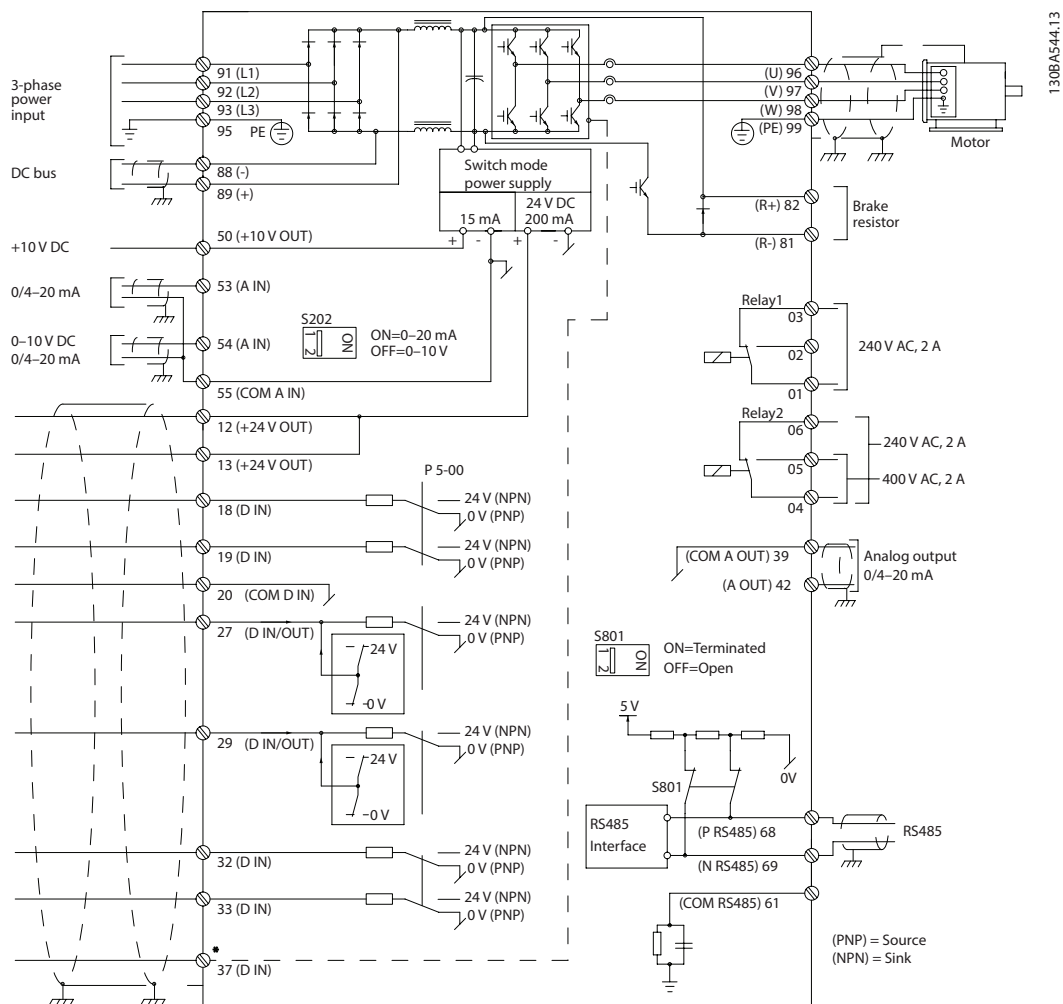
Ensure power wiring and fusing is installed according to NEC/CEC, state, local or municipal codes.



Remove the front cover to gain access to the power and control wiring terminals. Connect conduit runs from the disconnect or service panel to the drive and route the power wires through the conduit.

Refer to chapter 5 Electrical Installation and chapter 10 Technical Specifications in the P2003509 Technologic Intelligent Pump Controller IOM (current version) for details on wiring and routing.

BASIC ELECTRICAL CONNECTION

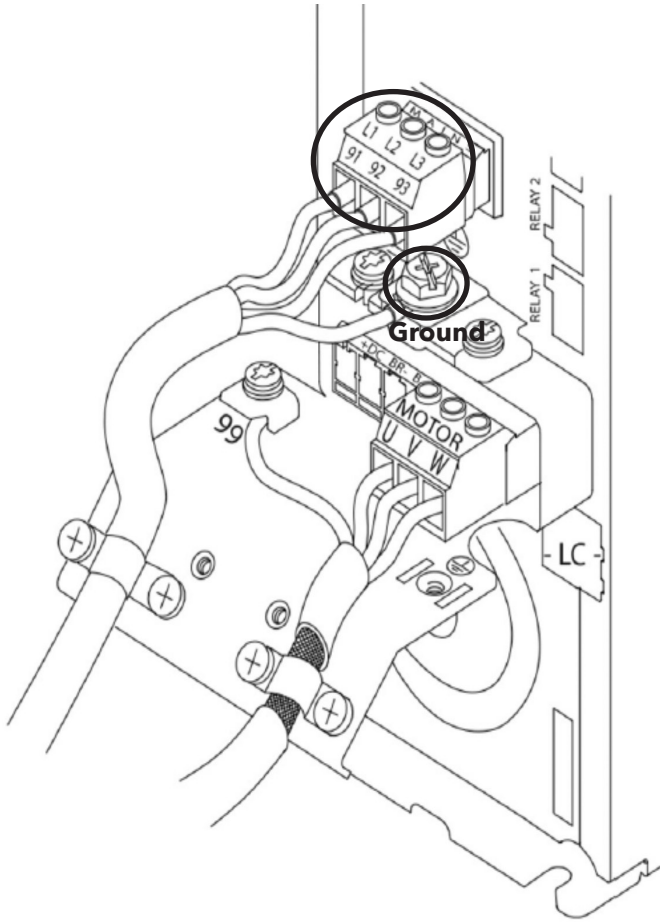


Technologic IPC Start-Up Genie

INPUT (MAINS) WIRING 3-PHASE:

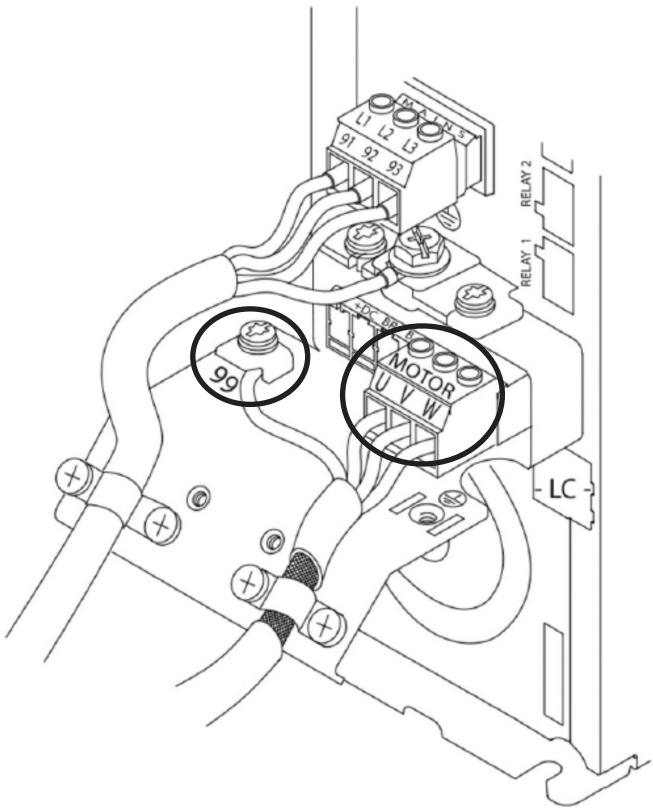
Connect 3-phase AC input power wiring to terminals L1, L2, L3 and ground the cable.

Input Terminals



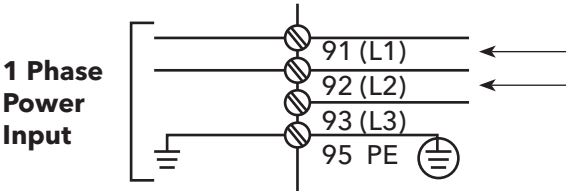
OUTPUT WIRING TO MOTORS:

Connect output motor wires to terminal block labeled U, V, W and ground the cable.



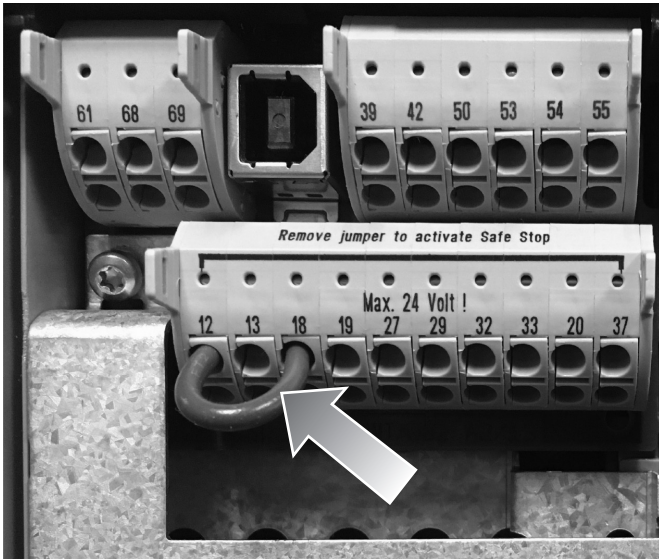
SINGLE PHASE INPUT DRIVES:

Connect single phase power wiring to L1, L2 and ground the cable.



Check IOM for specific frame size considerations

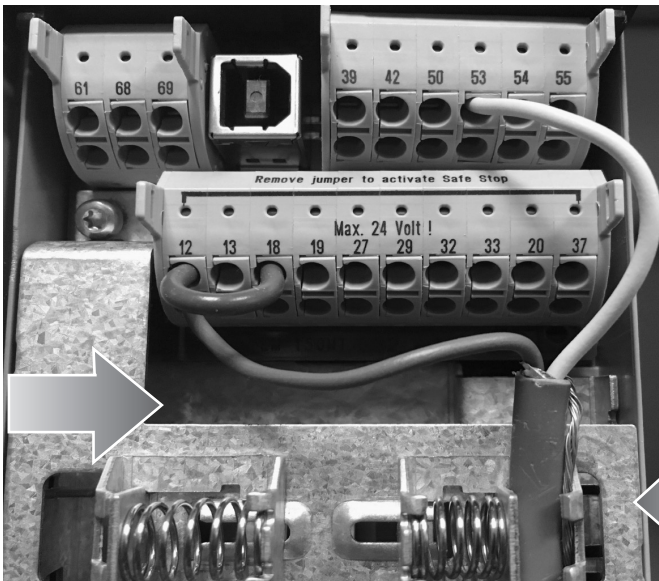
SINGLE AND MULTI-PUMP CONTROL WIRING



Install Jumper wires on:

- ✓ Terminal 12 and 18

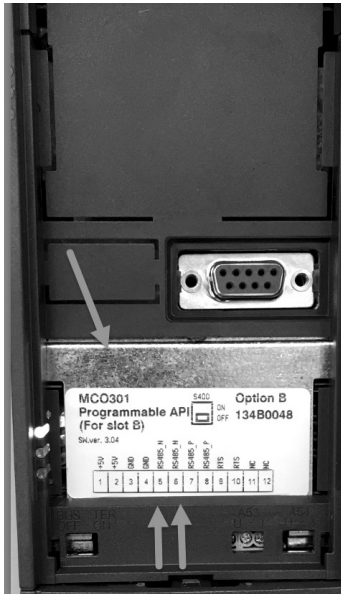
The IPC requires a start command on terminal 18. To apply a start signal connect a jumper wire between terminals 18 (DI 18, parameter 5-10) and 12 (24V dc). A start command is given to the controller when terminal 18 is connected to 24V.



For Booster or DP Applications, install Transducer cable on:

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

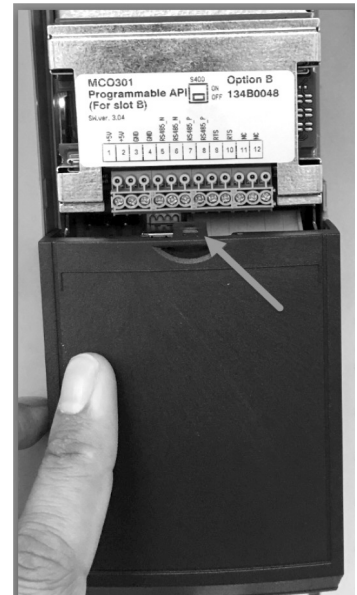
MULTI-PUMP CONNECTIONS



Connect communication wires to the bottom of this card



Carefully remove the plastic cover by unlocking the tab on the top of the drive and releasing.



Carefully remove bottom cover by unlocking tab

Connect Wires



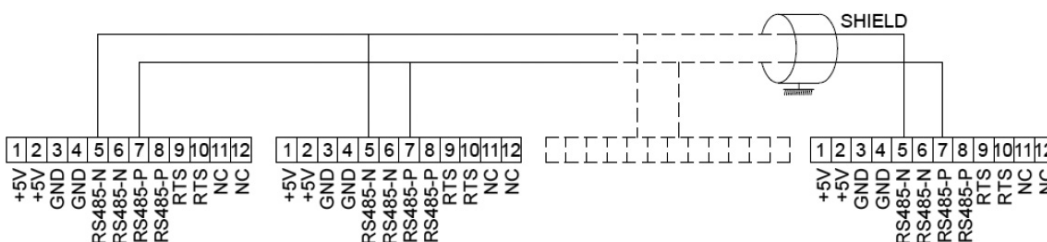
Terminal #5 to Terminal #5

Terminal #7 to Terminal #7

If using more than two controllers, follow the same wiring instructions for the additional drive.

Refer to chapter 6 MCO301 Programmable API in the P2003509 Technologic Intelligent Pump Controller IOM for additional multi-control wiring configurations.

Re-install covers and keypad and begin commissioning



COMMISSIONING STEPS

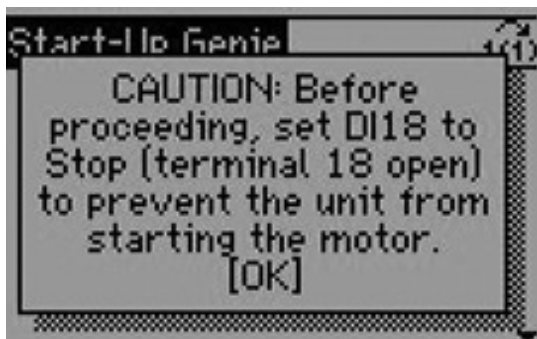
1. Power on drive(s)
2. Complete Programming.



Select Quick Menu

Select Parameter 04
"Start-Up Genie"

You are now able to start the Start-Up Genie



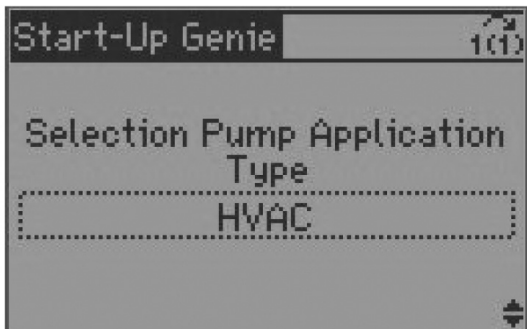
Set DI18 to Stop (terminal 18 open)



For Regional Settings Select North America or International



Select English US as Language and proceed with the down arrow

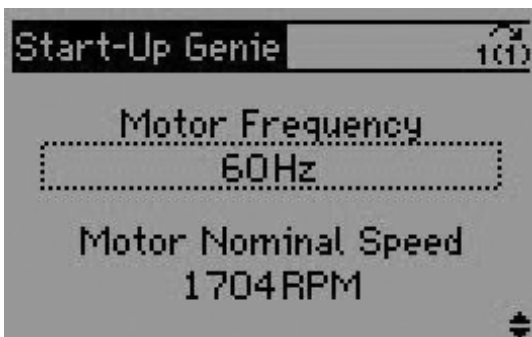


Select HVAC for Pump Application



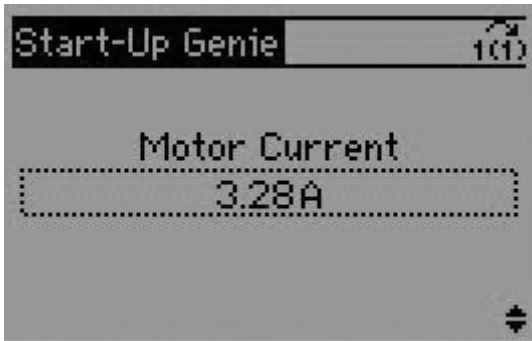
Select Motor Horsepower

Select Motor Voltage

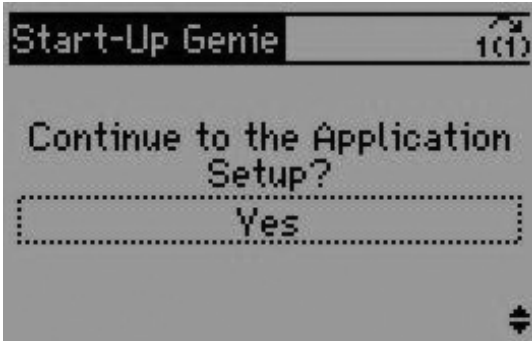


Select Motor Frequency

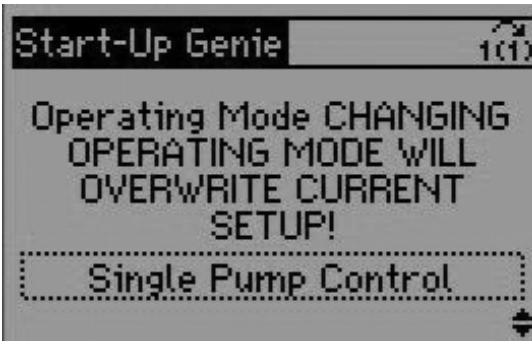
Select Motor Nominal Speed



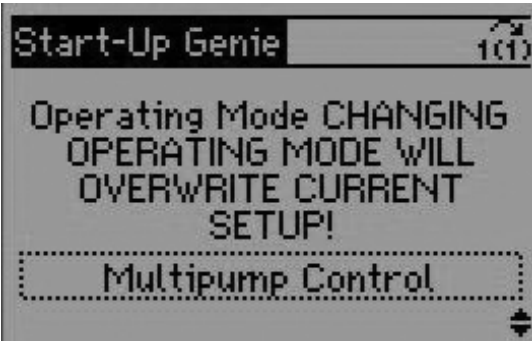
Input Motor Current



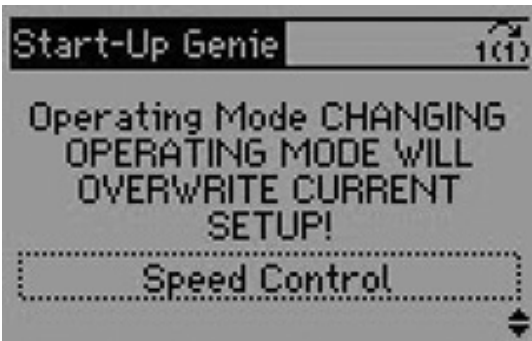
Select Yes to Continue to the Application Setup



Select either Single Pump, Multi-Pump, Or Speed Control for your application. Follow the programming for single pump application below.



For Multi-Pump Programming, continue to page 13.

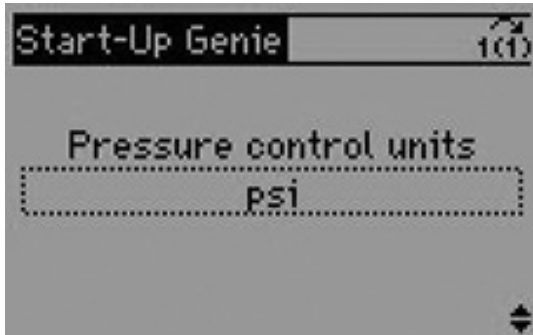


For Speed Control Programming continue to page 16.

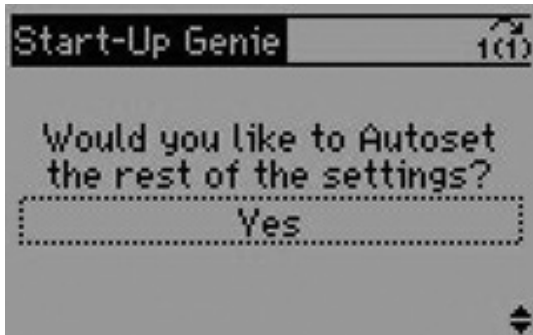
FOR SINGLE PUMP PROGRAMMING



Select Constant Pressure for Application type



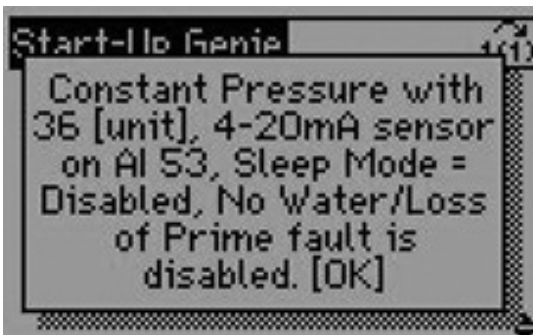
Select PSI for pressure control units



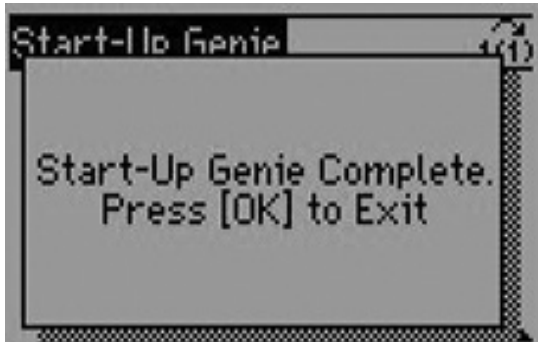
Select Yes to Autoset the rest of the settings.

For Simplex configuration, here are the parameters that will get autoset:

Autoset Configuration	Constant Pressure
Transducer Max Feedback	36 [unit]
Transducer Type	4-20mA
Feedback 1 Source	AI 53
Sleep Mode	Disabled
No Water/Loss of Prime Fault	Disabled



FOR SINGLE PUMP PROGRAMMING

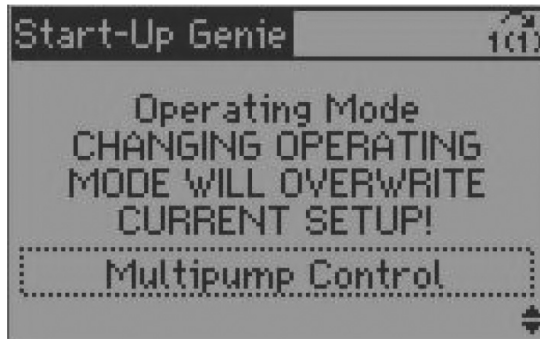


Proceed with the down arrow. Verify that Pressure Transducer is 300 PSI, you are wired in on Analog Input 53, that your sleep frequency is 30 Hz, and your restart difference is 10 [unit], the No Water loss of prime fault is enabled, and your restart time is 10 Minutes.

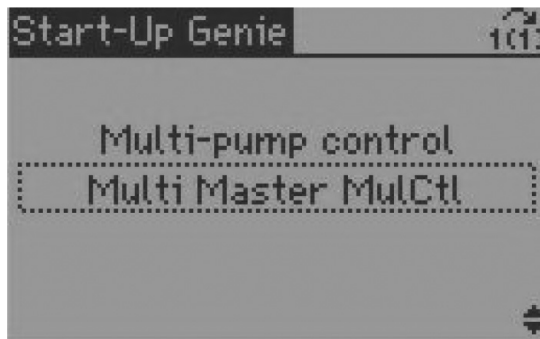


Check Pump and Motor Rotation by selecting Hand On. If motor is running backwards, power down drive, wait five minutes, and rotate motor wires from the drive. Once rotation is verified, select Off.

Select Auto On. Verify Unit meets desired PSI.

MULTI-PUMP PROGRAMMING

Select Multipump control



Select Multi Master Multi Control

Note: Other multi pump configurations are described in the IOM

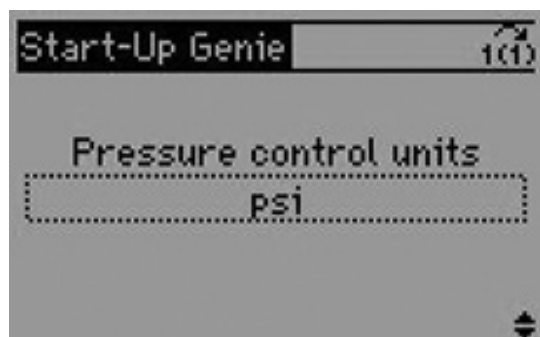


Select Pump Address for each pump

For each, use a unique address: 1, 2, 3, or 4

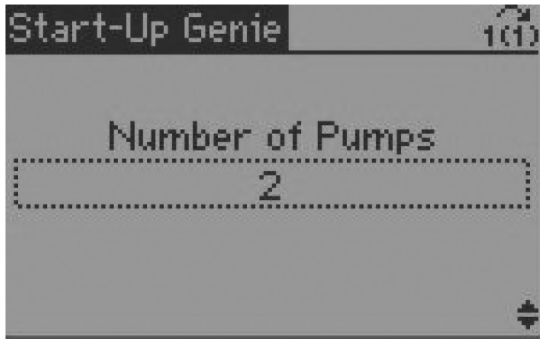


Select Constant Pressure for Application Type

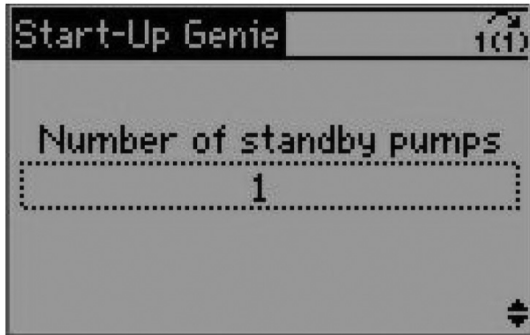


✓ Select psi for Pressure control units

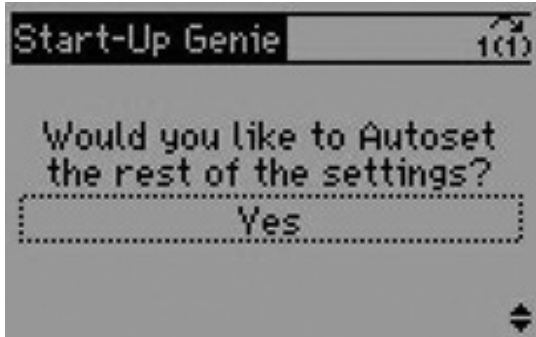
MULTI-PUMP PROGRAMMING



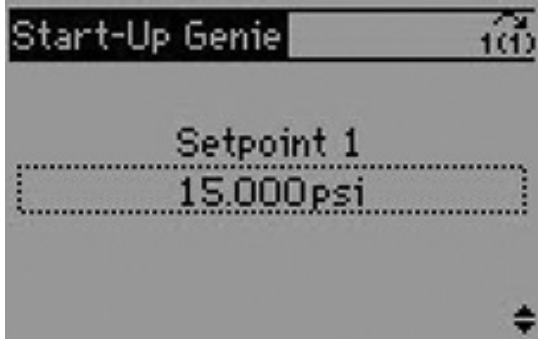
Select Number of Pumps



Select Number of Standby Pumps

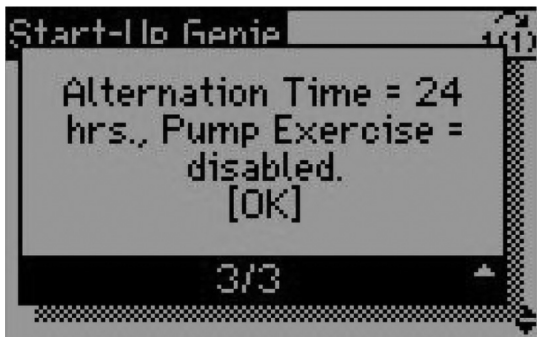
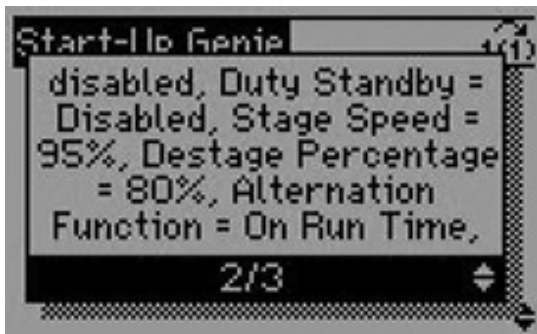
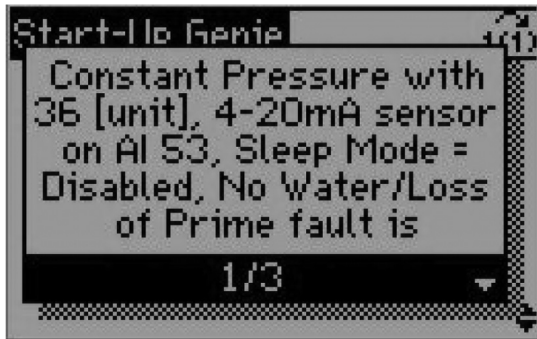


Select Yes to Autoselect the rest of the settings.



✓ Select Set point PSI

MULTI-PUMP PROGRAMMING



For Multi-Control configuration here are the parameters that will get autoset:

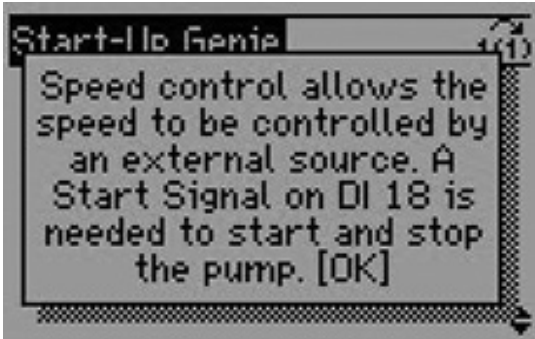
Autoset Configuration	Constant Pressure
Transducer Max Feedback	36 [unit]
Transducer Type	4-20mA
Feedback 1 Source	AI 53
Sleep Mode	Disabled
No Water/Loss of Prime Fault	Disabled
Duty Standby	Disabled
Stage Speed	95%
Destage Percentage	80%
Alternation Function	On Run Time
Alternation Time	24 Hrs
Pump Exercise	Disabled

Acknowledge Auto Set Settings by pressing the down arrow and cycling through each of the three screens.

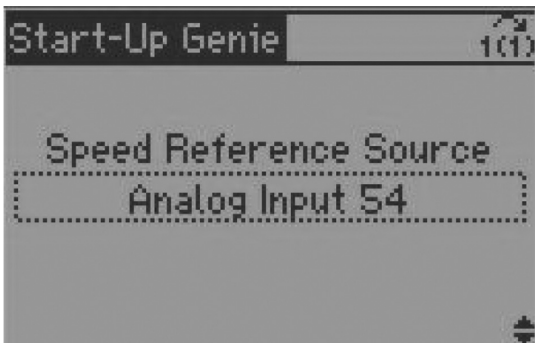
For further Multi-Pump Setups, Feedback Setup, Pump Protection Setup, Flow Compensation, Pipe Fill Setup, please refer to the IOM.

Select OK to verify Genie is completed.

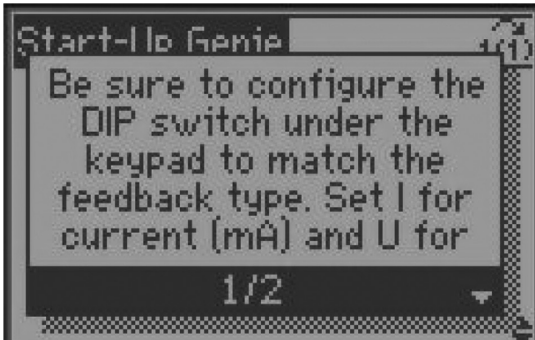
SPEED CONTROL PROGRAMMING



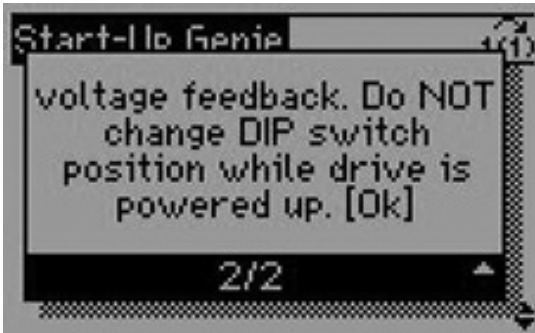
Acknowledge that speed control will require a start and stop signal on Digital Input 18

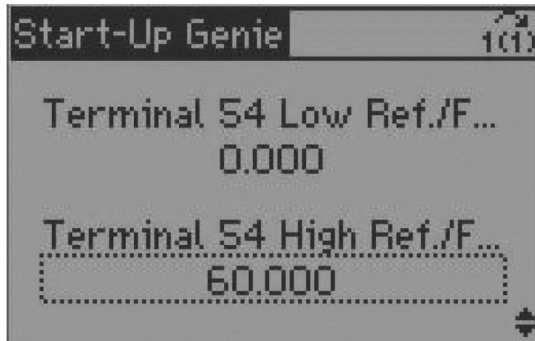


Select your Analog Input reference source

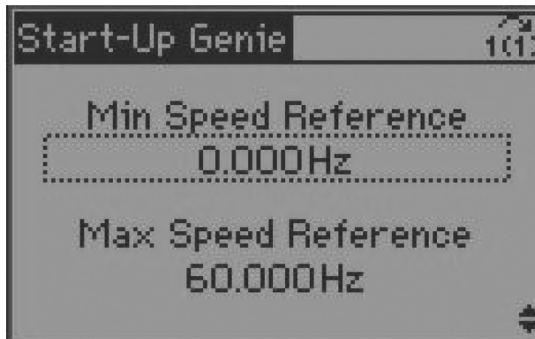


Acknowledge that your DIP switch is properly set and proceed with the down arrow.

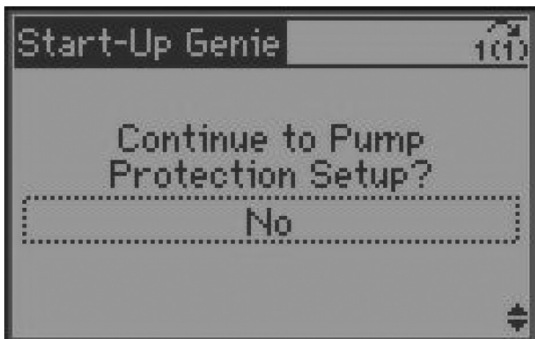


SPEED CONTROL PROGRAMMING

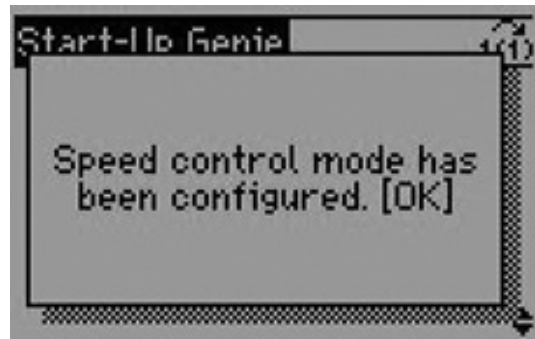
Input your minimum and maximum reference speeds



Input your minimum and maximum speed references



Select no for pump protection setup.



Click Ok to Continue.

WIRING FOR SPEED CONTROL

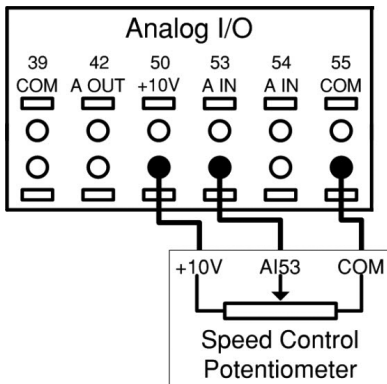


FIGURE 1 Connections for external speed signal

1. Sending a 4-20 MA input signal to the drive using analog input #53. You will wire your 4-20MA signal into Terminal #53 and common on Terminal #55. DIP switch is fixed to 4-20MA on analog input #53.

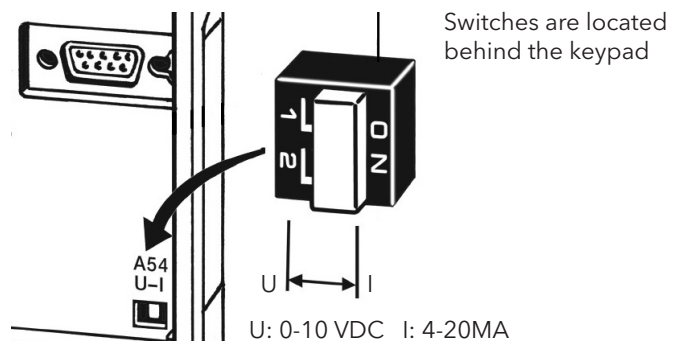


FIGURE 2 Analog Input DIP Switches. (A54 is only selectable)

2. Sending a 0-10VDC input signal to the drive using analog input #54. You will wire your 0-10VDC signal into Terminal #54 and common on Terminal #55. DIP switch is defaulted to 0-10VDC on analog input #54.

NOTES

VFD/CONTROLS TECHNICAL SUPPORT

Controls Technical Hotline 866-673-0445

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