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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.
• 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.
• 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.

Refer to chapter 1 Introduction and Safety in the P2003509 Technologic Intelligent Pump Controller IOM for details of safety.

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 for details on wiring and routing.
INPUT (MAINS) WIRING 3-PHASE:
Connect 3-phase AC input power wiring to terminals L1, L2, L3 and ground the cable.

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

Input Terminals

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

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 12.

For Speed Control Programming continue to page 15.
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:

<table>
<thead>
<tr>
<th>Autoset Configuration</th>
<th>Constant Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transducer Max Feedback</td>
<td>36 [unit]</td>
</tr>
<tr>
<td>Transducer Type</td>
<td>4-20mA</td>
</tr>
<tr>
<td>Feedback 1 Source</td>
<td>AI 53</td>
</tr>
<tr>
<td>Sleep Mode</td>
<td>Disabled</td>
</tr>
<tr>
<td>No Water/Loss of Prime Fault</td>
<td>Disabled</td>
</tr>
</tbody>
</table>
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 Multi-pump 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 Autoset the rest of the settings.

✔ Select Set point PSI
MULTI-PUMP PROGRAMMING

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

<table>
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<tr>
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<td>Disabled</td>
</tr>
<tr>
<td>No Water/Loss of Prime Fault</td>
<td>Disabled</td>
</tr>
<tr>
<td>Duty Standby</td>
<td>Disabled</td>
</tr>
<tr>
<td>Stage Speed</td>
<td>95%</td>
</tr>
<tr>
<td>Destage Percentage</td>
<td>80%</td>
</tr>
<tr>
<td>Alternation Function</td>
<td>On Run Time</td>
</tr>
<tr>
<td>Alternation Time</td>
<td>24 Hrs</td>
</tr>
<tr>
<td>Pump Exercise</td>
<td>Disabled</td>
</tr>
</tbody>
</table>

Acknowledge Auto Set Settings by pressing the down arrow and cycling through each of the four 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

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.

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.
VFD/CONTROLS TECHNICAL SUPPORT

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