Saving Parameters

Saving parameters to the keypad is recommended after the start-up is performed and you are satisfied with the system operation. If the programming is changed later and your VFD is no longer operating the way you intended it, you can always load your previously saved parameters from the keypad. Additionally, the programmed keypad can be used to print parameter setting settings to another VFD.

**Factory Programmed Parameters**

<table>
<thead>
<tr>
<th>Function</th>
<th>Parameter</th>
<th>Description</th>
<th>Basic</th>
<th>Supply Fan</th>
</tr>
</thead>
<tbody>
<tr>
<td>PID Control</td>
<td>SET-10</td>
<td>VFD acceleration time</td>
<td>20 sec</td>
<td>20 sec</td>
</tr>
<tr>
<td></td>
<td>SET-15</td>
<td>VFD deceleration time</td>
<td>10 sec</td>
<td>30 sec</td>
</tr>
<tr>
<td></td>
<td>SET-16</td>
<td>Stop mode</td>
<td>Coast</td>
<td>Coast</td>
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<tr>
<td></td>
<td>SET-20</td>
<td>PID Operation</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>SET-21</td>
<td>PID Feedback signal</td>
<td>(4-20mA)</td>
<td>(1-5VDC)</td>
</tr>
<tr>
<td></td>
<td>SET-22</td>
<td>Feedback unit</td>
<td>Cont</td>
<td>IVC</td>
</tr>
<tr>
<td></td>
<td>SET-25</td>
<td>Transducer Range</td>
<td>100°C</td>
<td>100°C CVDC</td>
</tr>
<tr>
<td></td>
<td>SET-36 &amp; DRV-00</td>
<td>PID Set Point</td>
<td>50°C</td>
<td>0.50 mWVC</td>
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<tr>
<td></td>
<td>SET-74</td>
<td>Level detection enable</td>
<td>No</td>
<td>No</td>
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<tr>
<td></td>
<td>SET-75</td>
<td>Level detection source</td>
<td>Current</td>
<td>Current</td>
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<td></td>
<td>SET-76</td>
<td>Level detection frequency</td>
<td>60Hz</td>
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<tr>
<td></td>
<td>SET-77</td>
<td>Level detection delay time</td>
<td>5sec</td>
<td>5sec</td>
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<td></td>
<td>SET-78</td>
<td>LDT Level</td>
<td>0.0A</td>
<td>0.0A</td>
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<tr>
<td></td>
<td>SET-80</td>
<td>Level detection trip enable</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**List of Available Features and Selections by PLC POT1 and POT2**

**Transducer:**
- **0-10VDC Transducer:** Wire the pressure or temperature transducer’s positive (POWER) wire to encoder terminal marked 24V and negative (COM) wire to terminal -24V. The encoder output should be connected to terminal V1. The shield wire should be connected to terminal AG or enclosure ground G.

**BMS Analog Control Wiring:** Use 4-20mA wires from BMS to connect to VFD for analog control. Connect 3-phase input power wires to MCP connect terminals T1, T2 & T3 and ground terminal G.

**RPM Redundant VFD Quickstart Guide**

**Wiring**

**Warning:** Input Power, Motor, and Control Wires should be in separate conduits.

**Power Wiring:**
- **Verify correct input voltage and wiring to VFD power and motor terminals.**
- **Connect 3-phase input power wires to MCP disconnect terminals 2, 4 & 6 or single-phase power wiring to terminals 2 & 4.**
- **Connect motor wiring to terminal blocks T1, T2 & T3 and ground terminal Q.**
- **Connect power source ground and ground wiring to enclosure ground terminal or stud.**

**BMS Analog Control Wiring:**
- **Use 4-20mA wires from BMS to connect to VFD for analog control.**
- **Connect 3-phase input power wires to MCP connect terminals T1, T2 & T3 and ground terminal G.**
- **Connect motor wiring to terminal blocks T1, T2 & T3 and ground terminal Q.**
- **Connect power source ground and ground wiring to enclosure ground terminal or stud.**

**Transducer Wiring:**
- **0-10VDC Transducer:** Wire the pressure or temperature transducer’s positive (POWER) wire to encoder terminal marked 24V and negative (COM) wire to terminal -24V. The encoder output should be connected to terminal V1. The shield wire should be connected to terminal AG or enclosure ground G.

**Digital Inputs & Outputs Wiring:**
- **Run Command:** Connect BMS run contact wiring to enclosures terminals 24V and STR.
- **Run Status:** Connect BMS run status input wiring to VFD1 and VFD2 terminals A1 and C1 (N.O. relay contact).
- **Fault Status:** Connect BMS fault status input wiring to VFD1 and VFD2 terminals 3A and 3C (N.O. relay contact).

**Digital Inputs & Outputs Wiring:**

**Main Display:**

**Keypad Programming**

**Mode:** Use to cycle through parameter groups.

**Lockout:** Use to lock out keypad from编程模式.

**Down:** Use to cycle through parameters.

**Up:** Use to shift cursor to the right (one digit).

**Shift:** Use to start VFD.”
Verify VFD's Basic Settings

The HOA switch should be in OFF position, VFD selector switch in VFD1, MMS1 and MMS2 in ON position. Turn on MCP disconnect and RDP will be powered up. The main VFD will be powered. Change VFD selector from VFD1 to VFD2 and back to VFD1 to power up second VFD for 30 minutes. Check motor settings in SET group.

**Verify Motor Shaft Rotation**

Put HOA switch in Hand position with VFD SW in VFD1 position and the VFD1 will begin to run the motor at 20Hz. Verify a proper motor rotation. If signal has some electrical noise, the VFD can stay at maximum when speed reference is decreased. Increase setting for filter time in parameter I/O-01 for 0-10VDC and I/O-06 for 4-20mA.

**Advanced Control Features**

These parameters with optional and safe settings for Exhaust or Supplier Fan application are not enabled by default and can be enabled at any time. You may need to adjust some parameters to provide better control for your system.

**PID (Proportional-Integral) Control with Pressure Transducer**

The Set-10 parameter should be changed to Keypad-1 to adjust a PID set-point value from VFD keypad.

**BMS or Transducer Signal Verification:**

1. Press [ENT] key from the main display DRV-00 until you see display with analog inputs V1, V2, V1S, and I. The readings shown on this display are raw VFD AD converter values from 0 to 4095.
2. Press 

**System Operation Validation**

1. Put HOA switch in Hand position. The VFD should start and run at minimum speed limit if Hand mode speed is lower than minimum limit. Increase speed to 60Hz by pressing ENTER key then UP key and ENTER again and run for a minute. The motor current should be less than motor FLA rating. If it is higher than FLA, check motor rotation, motor windings configuration and mechanical load on the motor shaft.
2. Put HOA switch in OFF position. The VFD should stop based on Stop Mode selection (Deceleration or Coast).
3. Put HOA switch in AUTO position and when start contact from BMS is closed, the VFD will start and run at speed set by BMS via analog signal or at minimum speed limit if BMS signal is lower than minimum limit.
4. If VFD follows the BMS speed signal up but does not properly follow it down, there is a high level electrical noise in analog signal. Check analog cable shield connection to enclosure ground. Increase filter time in parameter I/O-01 for 0-10VDC and I/O-06 for 4-20mA up to 500ms. If everything works well, your VFD is ready for normal operation.