Setting Variable Frequency Drive (VFD) Parameters Using the Control Panel (Keypad)

Product: Cutler-Hammer SVX/SPX 9000 VFD

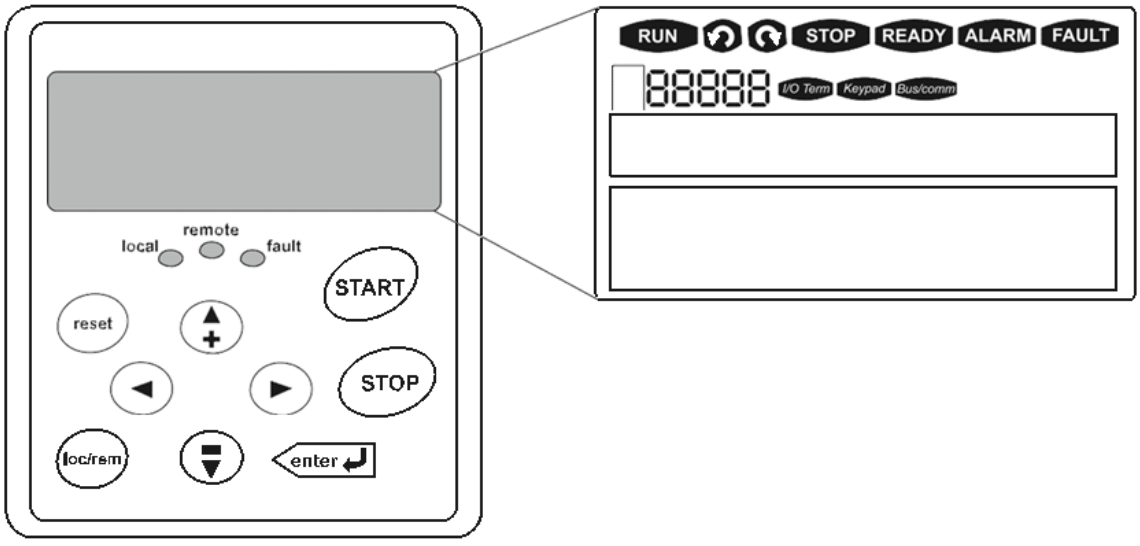
Responsibility: Maintenance	**Revision: 1.0 (07-01-2013)**	**Verified:** Chris Childs (7/01/13)
Tools required: Screwdriver (Philips and Flathead)		**Time Required: 30 min**

1.0 Purpose: To provide the proper instruction to set up the drive parameters through the control panel (Keypad) on the Cutler-Hammer SVX/SPX9000 Variable Frequency Drive (VFD)

2.0 Scope: This Work Instruction is applicable to Cutler-Hammer SVX/SPX 9000 Variable Frequency Drive (VFD)

3.0 Safety: Follow all existing plant safety procedures.

4.0 Basic Keypad Information



Keypad and Display

4.1 Navigation Buttons

Indicator	Description
RUN	**Run** Indicates that the SVX9000 is running and controlling the load. Blinks when a stop command has been given but the SVX9000 is still ramping down.
	Counterclockwise Operation The output phase rotation is BAC, corresponding to counterclockwise rotation of most motors.
	Clockwise Operation The output phase rotation is ABC, corresponding to clockwise rotation of most motors.
STOP	**Stop** Indicates that the SVX9000 is stopped and not controlling the load.
READY	**Ready** Indicates that the SVX9000 is ready to be started.
ALARM	**Alarm** Indicates that there is one or more active drive alarm(s).
FAULT	**Fault** Indicates that there is one or more active drive fault(s).
I/O Term	**I/O Terminal** Indicates that the I/O terminals have been chosen for control.
Keypad	**Keypad** Indicates that the keypad has been chosen for control.
Bus/comm	**Bus/Communications** Indicates that the communications bus control has been chosen for control.

4.2 Indicator Lights

Indicator	Description
local	**Local — Steady Illumination** Indicates that the SVX9000 is ready to be started and operated from the Local mode. **Local — Flashing** Indicates that the SVX9000 is ready for operating command to select Local or Remote operation.
remote	**Remote** Indicates that the SVX9000 is operating and controlling the load remotely.
fault	**Fault** Indicates that there is one or more active drive fault(s).

4.3 Navigation Buttons

Button	Description
START	**Start** This button operates as the START button for normal operation when the "Keypad" is selected as the active control.
enter	**Enter** This button is used in the parameter edit mode to save the parameter setting and move to the next parameter ... • to reset the Fault History if pressed while in the "Fault History" menu. • to confirm the acceptance of a change. • to change a virtual button status while in the "Button" menu. • to confirm the start-up list at the end of the Start-Up Wizard. • when the "Operate" menu is active, to exit the "Operate" submenu.
STOP	**Stop** This button has two integrated operations. The button operates as STOP button during normal operation ... • motor STOP from the keypad, which is always active unless disabled by the "StopButtonActive" parameter. • used to reset the active faults.
reset	**Reset** Resets the active faults.
loc/rem	**Local / Remote** Switches between LOCAL and REMOTE control for start, speed reference and reverse functions. The control locations corresponding to local and remote can be selected within an application.
◄	**Left Arrow** • navigation button, movement to left. • in parameter edit mode, exits mode, backs up one step. • cancels edited parameter (exit from a parameter edit mode). • When in "Operate" menu will move backward through menu. • At end of "Start-Up Wizard", repeats the "Start-Up Wizard" setup menu.
►	**Right Arrow** • navigation button, movement to right. • enter parameter group mode. • enter parameter mode from group mode. • When in "Operate" menu will move forward through menu.
▲ + ▼ −	**Up and Down Arrows** • move either up or down a menu list to select the desired menu item. • editing a parameter/password, while the active digit/character is scrolled. • increase/decrease the reference value of the selected parameter. • in the "Operate" menu, will cause the display of the current reference source and value and allow its change if the keypad is the active reference source. Used to set the password (if defined) when leaving the "Operate" menu. • scroll through the "Active Faults" menu when the SVX9000 is stopped.

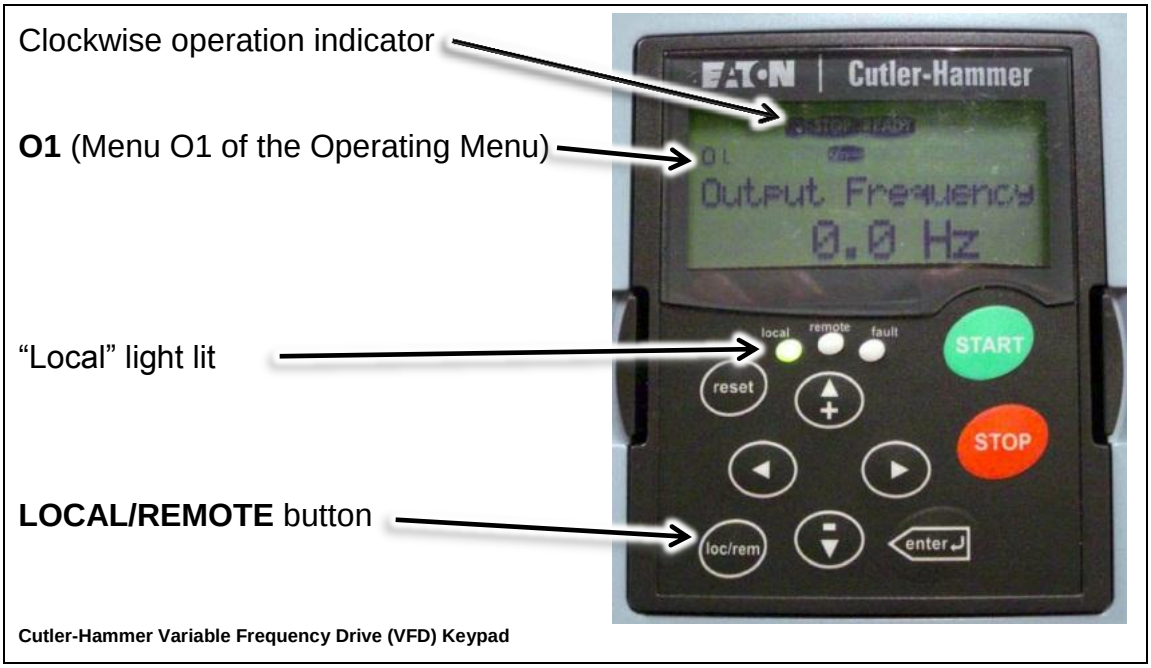
5.0 Setting Up Drive Parameter with the Control Panel (Keypad) – Newly wired VFD

The Cutler-Hammer SVX/SPX 9000 Variable Frequency Drive (VFD) is used to control and operate a conveyor motor. The only difference between the SVX and the SPX is the firmware on the microprocessor; the SPX is used with Intellimerge conveyor and encoder applications. The following procedures explain how to use the keypad to set up the drive.

5.1 Turn power **ON** to the drive if it is not already on. Power must be supplied to the drive in order for the keypad to operate.

5.2 Check that the display on the keypad displays information. If data is displayed, the connection is complete. If data is not visible on the display, check to make sure that the keypad is properly seated and secure.

5.3 Press the LOCAL/REMOTE button (**loc/rem**) on the keypad to change control from remote mode to local mode. The “local” light beneath the keypad display should now be lit.



Cutler-Hammer Variable Frequency Drive (VFD) Keypad

5.4 Press the Up ▲ or Down ▼ arrow to scroll the value and set the output frequency of the drive to 5 Hz. (Full speed is 60 Hz.)

5.5 Press the 

START button.

5.6 Check the direction of the motor.

5.7 Press the 

STOP button.

5.8 If the direction of the motor is correct, jump to 5.13.

5.9 If the direction of the motor is reversed, turn **OFF** the main disconnect on the control panel and switch any two motor leads on T1, T2, or T3.

5.10 Turn **ON** the main disconnect.

5.11 Press the 

START button.

5.12 Verify that the direction of the motor is correct.

5.13 Press the 

LOCAL/REMOTE button (**loc/rem**) to return the drive to remote mode. The “remote” light should now be lit.

6.0 Copying Parameters from Drive to Drive

Using the SVX/SPX Keypad, it is easy to copy parameters from one drive to another. To copy parameters from drive to drive, perform the following steps:

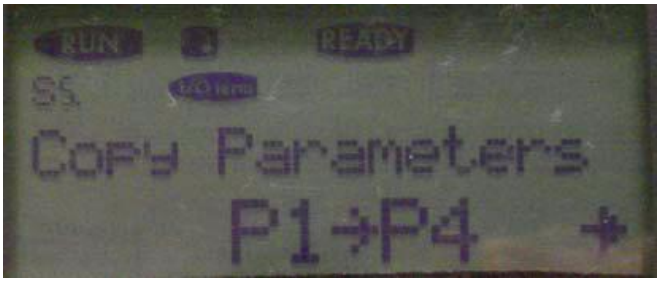
6.1 Turn **ON** the drive that contains the parameters you want to copy from (Drive #1).

6.2 Press the Left arrow ◀ on the keypad until you get to the Mx menus (M1, M2, etc.).

6.3 Press the Up ▲ or Down ▼ arrow until you reach the **M5 System Menu**.

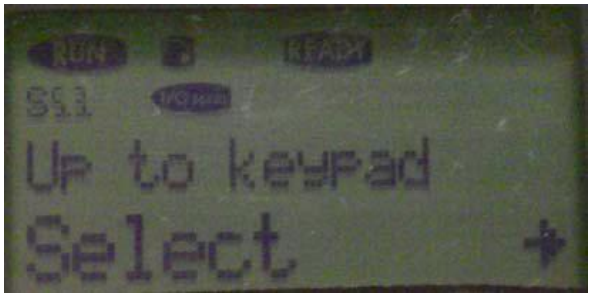
6.4 Press the Right arrow ▶ to get into the System Menu.

6.5 Press the Down arrow ▼ until you see **S5.3 Copy Parameters**.



6.6 Press the Right arrow ▶ to get into the Copy Parameters Menu.

6.7 Press the Down arrow ▼ until you see **S5.3.2 Upload to Keypad.**



6.8 Press the Right arrow ▶ to copy the parameters in the drive to the keypad.

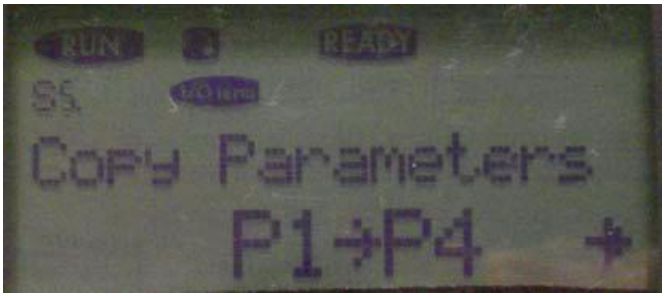
6.9 Disconnect the keypad (Keypad #1) from Drive #1 and connect it to the drive you wish to copy the parameters to (Drive #2).

6.10 Press the Left arrow ◀ until you get to the Mx menus (M1, M2, etc.).

6.11 Press the Up ▲ or Down ▼ arrow until you reach the **M5 System Menu**.

6.12 Press the Right arrow ▶ to get into the System Menu.

6.13 Press the Down arrow ▼ until you see **S5.3.2 Copy Parameters.**

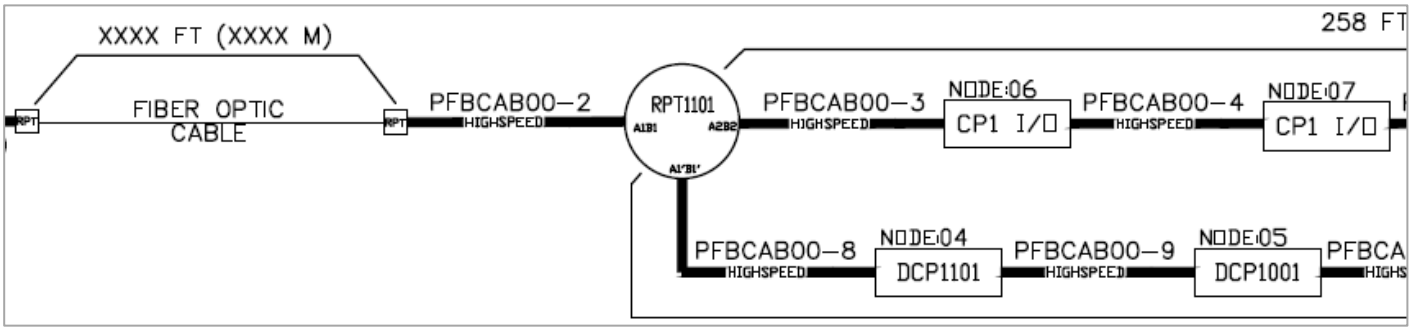


6.14 Press the Right arrow ▶ to get into the **Copy Parameters** menu.

6.15 Press the Down arrow ▼ until you see **S5.3.3 Download from Keypad.**

6.16 Press the Right arrow ▶ to copy the parameters from the keypad to the drive.

6.17 Set the communication parameters (node address, baud rate, PPO type, etc.) on Drive #2. Make sure to change the node address per the network schematic from the address that was copied from Drive #1.



6.18 Turn **OFF** the drive.

6.19 Once the display goes dead on the drive; allow five seconds then, turn drive **ON**.

6.20 Remove the keypad (Keypad #1) you just downloaded from Drive #1, and replace it with the keypad that belongs with Drive #2 (Keypad #2).

6.21 Repeat steps 6.1 – 6.8 to upload the new parameters in Drive #2 to Keypad #2. This insures that the parameters match and no parameters will be written over by mistake.