

# HIGH-5 CONTROL KEYPAD

ABB ACS355 THREE-PHASE VFD

- 1) **Status LED:**
  - a. Green – Normal Operation
  - b. Blinking Green – Fan drive is in alarm. Consult the drive's User Manual for alarm conditions.
  - c. Red – Fan drive has faulted. Consult the drive's User Manual for fault conditions.
- 2) **LOC/REM Indicator:** Indicates whether the drive in local or remote control. See LOC/REM button entry below for more detail.
- 3) **Rotation Indicator:** Indicates rotation of the fan motor shaft (and fan blades). See item #2 in the section entitled *Additional Information*.
- 4) **Fan Speed Set Point:** Indicates fan speed as a percent of maximum (%). This percentage corresponds to a read-only RPM reading (see #5 below). Can be adjusted using the up and down arrows (see #7 below).
- 5) **Read-Only Parameters:** Give real-time readouts of the following conditions:
  - a. Fan speed – Expressed in RPM (see #4 above)
  - b. Fan motor amperage – Indicates the current being drawn by the fan motor, expressed in Amperes (A)
  - c. Fan motor torque – Indicates fan motor output torque, expressed in percentage (%)
- 6) **Soft Keys:** Located directly below functions displayed in the lower corners of the keypad screen. Right Soft Key is generally not used during basic fan operation. Left Soft Key controls fan direction. See section entitled *Additional Information*.
- 7) **Up/Down Arrows:** Allow for adjustment of the Fan Speed Set Point (either while the fan is stopped or in motion). See section entitled *Fan Operation*.
- 8) **LOC/REM Button:** Toggles between local and remote control of the fan drive. If LOC is displayed in the upper left corner of the keypad screen, control of the drive is initiated locally (i.e. from the keypad). If REM is displayed, control is initiated from an external source (i.e. another drive or fieldbus).
- 9) **Help Button:** Provides more information during drive programming. Not used for fan operation.
- 10) **Start/Stop Buttons:** Used to start and stop the fan. See section entitled *Fan Operation*.



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**FAN ROTATION: Proper rotation is achieved when the directional indicator (#3 in Image 1) is clockwise and the blade flaps are trailing. If rotation is not correct, swap two of the wires on the output (motor) side of the VFD (U2, V2, or W2).**

## FAN OPERATION

### STARTING THE FAN:

- 1) Make sure the LOC/REM Indicator shows the fan drive is in local (LOC) mode. The fan **will not** respond to inputs from the keypad if the drive is in remote (REM) mode. Use the LOC/REM Button as needed to ensure local control.
- 2) Using the Up/Down Arrow keys, adjust the Fan Speed Set Point. Remember, the Fan Speed Set Point is based on **percentage of maximum speed**. **This percentage corresponds to the read-only RPM indicator.**
- 3) Press the **START** button, and allow the fan to ramp up to speed. This may take a few seconds. To prevent damage to the gearbox, it is recommended that the fan reach its Set Point speed before making any further adjustments.
- 4) If the initial Set Point adjustment is unsatisfactory, refer to the section below entitled “*Adjusting Fan Speed While in Motion*” to achieve the desired fan RPM.

### ADJUSTING FAN SPEED WHILE IN MOTION:

- 1) Ensure local (LOC) control of the drive (see above).
- 2) Use the Up/Down Arrow keys to adjust the Fan Speed Set Point as desired. **For best results**, use the Read-Only Fan Speed indicator (in RPMs) as a gauge for your desired setting. The fan will then ramp up or down in response to the changing input.

**⚠ Caution: DO NOT adjust the Fan Speed up and down repeatedly in large increments. Allow the fan to reach the new speed before making any further adjustments.**

### STOPPING THE FAN:

- 1) Ensure local (LOC) control of the drive (see above).
- 2) Press the **STOP** button. The fan will then ramp down to a complete stop. This may take a few seconds. **Allow the fan to stop COMPLETELY before restarting.**

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## ADDITIONAL INFORMATION

- 1) Fan drives are programmed prior to shipment. In order to ensure continuity, drive parameters are locked by means of a three-digit passcode. Should troubleshooting of the drive become necessary, contact Patterson at (800) 768-3985. A passcode can then be given to unlock the drive's parameters. It is highly recommended that the parameters be relocked (using the same passcode) prior to putting the fan back in service.
- 2) Patterson's High-5 fans are designed to maximize air movement while spinning in the FORWARD direction. However, they can be run in REVERSE. Follow these steps:
  - a. If the fan is stopped, press the left Soft Key with the letters "DIR" above it. When the fan is started, it will run in the reverse direction.
  - b. If the fan is running, press the **STOP** button, and allow the fan to come to a **complete** stop. Then press the left Soft Key with the letters "DIR" above it. When the fan is started, it will run in the reverse direction.
- 3) Please be aware that each fan is programmed to have a minimum fan speed, set at some level above 0%. This is to protect the fan motor. The minimum speed will vary depending on the size of the fan.

