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IBYSS ® VFD BYPASS - Operations and Maintenance Manual

WARNING:

INSTALLING AND SERVICING THE IBYSS BYPASS SYSTEM REQUIRES WORKING WITH HAZARDOUS VOLTAGE THAT CAN RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.

DISCONNECT ALL LINES AND CHECK VOLTAGE PRIOR TO SERVICING OR INSTALLING EQUIPMENT.

ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A QUALIFIED ELECTRICIAN.

1. OPERATION

- a. **Motor Overload** – The overload has a dial setting. This must be set to the Full Load Amps (FLA) of the motor name plate to correctly protect the motor. If an overload condition exist, this device will trip, shutting down power to the motor.
- b. **Overload Reset** – In the event of the motor tripping the overload, it will need to be reset. After taking necessary corrective action to eliminate what caused the motor overload condition, reset the overload with the external “RESET” pushbutton (Starter Control Version) or “RESET” dial on the Motor Circuit Protector (Direct Control Version).
- c. **IBYSS Bypass Switch "DRIVE" Position** Rotate **IBYSS** ® handle clockwise from "OFF" position to the "DRIVE" position. You have now provided power to the VFD and connected the VFD to the motor. This is considered the “normal operation” position. The VFD has complete control of the motor application.
- d. **IBYSS Bypass Switch "LINE" (BYPASS) Position.** To bypass the VFD, rotate the **IBYSS** switch handle counter clockwise from the "DRIVE" position, through the "OFF" position, to the "LINE" position. When the

handle is in the "LINE" position, the motor will run at full speed / full power.

- i. **Starter Control Version**(with the **IBYSS** ® handle in the "LINE" position) To START the motor, press the "LINE START" pushbutton. To STOP the motor, press the "LINE STOP" pushbutton.

Caution: You must press the "STOP" button before rotating the handle from the "LINE" position.

- ii. **Direct Control with Motor Overload Protector Version** - Set the motor overload to the Full Load Amps shown on the motor nameplate. When the **IBYSS** ® handle is rotated to the "LINE" position, the motor immediately starts. To STOP the motor, rotate the **IBYSS** ® handle clockwise to the "OFF" position.

Note: If the motor does not operate in the "LINE" position the overload relay may have tripped. To locate the overload relay, rotate the **IBYSS** ® handle from "LINE" to "OFF" and open the enclosure door. Overload relay is in the lower left corner. To reset overload press the red button, then press the black button. Close the enclosure door and rotate the handle from "OFF" to "LINE". If the motor does not start consult a qualified electrician to diagnose the system.

- e. **IBYSS Bypass Switch "TEST" Position.** This position is used to set up the VFD parameters without operating the motor. Rotate the **IBYSS** ® handle clockwise from the "OFF" position through "DRIVE" to "TEST". This allows power to the VFD input but no power to the motor. After you have set the VFD parameters, rotate the **IBYSS** ® handle counter clockwise from the "TEST" position to the "DRIVE" position.

Note: The normal operating position of the **IBYSS** ® is the "DRIVE" position. The "DRIVE" position allows full control of the motor by the VFD.

- f. **IBYSS Bypass Switch "OFF" Position.** The "OFF" Position disconnects power from the Line and Control Circuits and motor will not run. The OFF Position can be Locked and Tagged in the OFF position.

- g. **Auxiliary Contacts** – The **IBYSS** VFD Bypass system is equipped with two auxiliary contacts that may or may not be used. These Auxiliary Contacts can be used for signaling VFD/Bypass status or for interlock applications. They are tagged as terminal numbers: 13/14 and 23/24. Contacts 13/14 close when the **IBYSS** switch is in the "LINE" (BYPASS) Position. Contacts 23/24 close when the **IBYSS** switch is in the "DRIVE" and "TEST" Positions.

- h. **Fireman Override/Life Safety Shutdown** – The IBYSS VFD Bypass can be integrated into the Life Safety Override/Shutdown System.
 - i. With the **Starter Control Version**, the Contactor Control Circuit can be utilized for this purpose.
 - ii. With the **Manual Control Version**, a “SHUNT TRIP DEVICE” must be attached to the Manual Circuit Protector and wired to the Fire/Life Safety Interface.

2. MAINTENANCE

***The Disconnect Switch that supplies electrical power to this Control Panel must be turned “OFF” and locked/tagged in the “OFF” position before the enclosure door is opened and any maintenance is performed. In addition, the IBYSS Switch needs to be in the “OFF” position for the Enclosure Door to be opened.**

Fuses – Control Transformer (Starter Control Version Only)

If fuses are blown:

1. Examine the electrical circuit to determine the cause of the short circuit. Take all necessary corrective action to eliminate the cause of the short circuit condition.
2. Replace all fuses with the same type and amp rating as the fuses furnished by the factory.
3. Restart the panel and check that all problems have been corrected.

Note: There are no internal replacement parts for the following:

- Contactor
- Overload Relay
- Start and Stop Pushbutton Switches
- Control Transformer

If there is a problem with any of the above replace the entire component.

*** For more information and technical assistance, please contact Advance Controls, Inc. Technical Support Department – (941) 746-3221**