

Honeywell VFD CORE Three Contactor Bypass Assemblies

INSTALLATION INSTRUCTIONS

APPLICATION

The VFD CORE Three Contactor Bypass Assemblies channel electrical power either through or around the Variable Frequency Drive (VFD).

INSTALLATION

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instruction, Honeywell VFD CORE manual to make sure the product is suitable for your application.
3. Verify bypass model is correct; no damage has been incurred; no screws, connections, and terminations are loose.
4. Installer must be a trained, experienced service technician, with VFD operation experience.
5. After installation is complete, check out product operation as provided in these instructions.

WARNING

1. Installation requires work with voltages that may cause serious injury or death.
2. This instruction manual is intended as a guide only. End user is responsible for proper application of this assembly, insuring proper conformance, directives, intended use and maintaining all safety practices as described in Honeywell VFD CORE manual, local codes, and local safety authorities.
3. Disconnect power supply before installation, and before any servicing.

LOCATION AND MOUNTING

Locate the device in a clean, dry, well-ventilated area with an ambient temperature below 104°F (40C). Refer to VFD CORE user manual "Minimum Mounting Clearances" for free air space requirements above and to the sides of VFD CORE. Insure proper branch/short circuit protection is provided.

WIRING

IMPORTANT

All installation wiring must comply with all local and national electrical codes. Variable Frequency Drives can store energy. Refer to the VFD manual for safe work practices and appropriate wait times before servicing after equipment power has been de-energized. All safety, warning and caution information located in the Honeywell VFD CORE manuals must be read, understood and followed.

WARNING

After power has been turned off to the VFD, the VFD's capacitors may still be holding a high voltage charge. Please wait at least 5 minutes for 30 HP or less to discharge to a safe voltage level, 10 minutes for 40 HP and above.

1. Ensure that bypass panel voltage corresponds with that of the power supply.
2. To access the bypass panel wiring compartment:
 - (1) Ensure the main disconnect handle is in the OFF position.
 - (2) Open the cover.
 - (3) Test for power.
3. Refer to VFD CORE Manual Chapters 4, 5 and 6 for proper VFD wiring instruction and terminal specifications.
4. Terminate input three phase power to line side of main fused disconnect. Refer to bypass panel schematic.
5. Terminate three phase motor wires to motor terminals "T1", "T2", "T3". Refer to bypass panel schematic.
6. Terminate control wires to terminals in bypass panel and I/O terminals on VFD. Refer to bypass panel schematic and VFD CORE manual.
7. Leave jumper J1 on bypass panel terminals 1 & 3 if fire/smoke/safety shutdown is not used. If this shutdown is used, remove jumper J1 and terminate to bypass panel terminals 1 & 3.
8. Refer to schematic for typical wiring.
9. **IMPORTANT:** Use only copper wire with 167° F (75° C) minimum.



OPERATION

1. Make sure bypass panel and motor are properly grounded
2. Make sure all wire connection points are tight, including all bypass panel connection points.
3. Make sure all safeties (customer option, such as smoke detector or fire alarm) are connected and in working order.
4. Double check correct voltage is being applied and power and motor wires are terminated in the correct place.
5. Verify motor FLA does not exceed VFD output amp rating and bypass starter overload relay setting dial.
6. Set bypass starter overload relay adjustment dial to motor FLA.
7. Verify building automation system is ready for start, stop, speed command; all wires are terminated in the correct location.
8. Make sure all personnel, debris, etc are clear.

Before applying power, verify main input disconnect handle is in the “OFF” position; “Bypass/Off/Test/VFD” selector switch is in the “OFF” position and all personnel, debris and equipment are clear of the VFD and Bypass.

1. Apply input power, check three phase voltage on line side of main disconnect switch.
2. Turn main disconnect handle to “ON” position.
3. Turn “Bypass/Off/Test/VFD” selector switch to “Test” position. Enter all appropriate parameters in “Startup Wizard” and all motor nameplate data. See VFD CORE manuals.
4. Turn “Bypass/Off/Test/VFD” selector switch to “VFD” position. Press “Hand” button for local (keypad) control. See VFD CORE manuals. Start VFD and check motor rotation.

- (1) If motor is rotating backwards in VFD mode, shut down power, lock out power source, wait until VFD stored energy has dissipated, switch incoming motor wires on the “T1” and “T2” terminals in the bypass panel, or motor wires “T1” and “T2” in the motor junction box. Reenergize power and check rotation of motor again.
5. Turn “Bypass/Off/Test/VFD” selector switch to “Off” position. Wait for motor to stop. Turn selector switch to “Bypass” position then back to “Off” position. Do not leave the motor running in “Bypass” position. Check motor rotation.
 - (1) If motor is rotating backwards in Bypass mode, shut down power, lock out power source, test incoming voltage on incoming line power wiring to line side of main disconnect switch. Once it is established that power is shut down, swap incoming wires on “L1” and “L2” of main disconnect switch. Re-energize power and check rotation again.



CAUTION

Letting motor run the incorrect direction in bypass mode can cause equipment damage.

Bypass panel “Bypass/Off/Test/VFD” selector switch has four operating positions:

1. **VFD:** Device directs power to VFD first, then to the motor. VFD controls the motor as it would without the bypass panel.
2. **OFF:** Device stops power. Power is cut off to the motor and the VFD.
3. **TEST:** Device directs power to VFD *only*. This allows for VFD calibration, adjustments, and diagnostics.
4. **BYPASS:** Device directs power to motor *only*. Cuts power to the VFD. The motor operates at full speed with full power.

Automation and Control Solutions

Honeywell International Inc.
1985 Douglas Drive North
Golden Valley, MN 55422
customer.honeywell.com