

TECHNICAL INFORMATION COMMUNICATION



Quality and Continuous Improvement

Number: TIC2022-0017

Date: 8/8/2022

Title: Temporary VFD Bypass

Product Category: Light Commercial

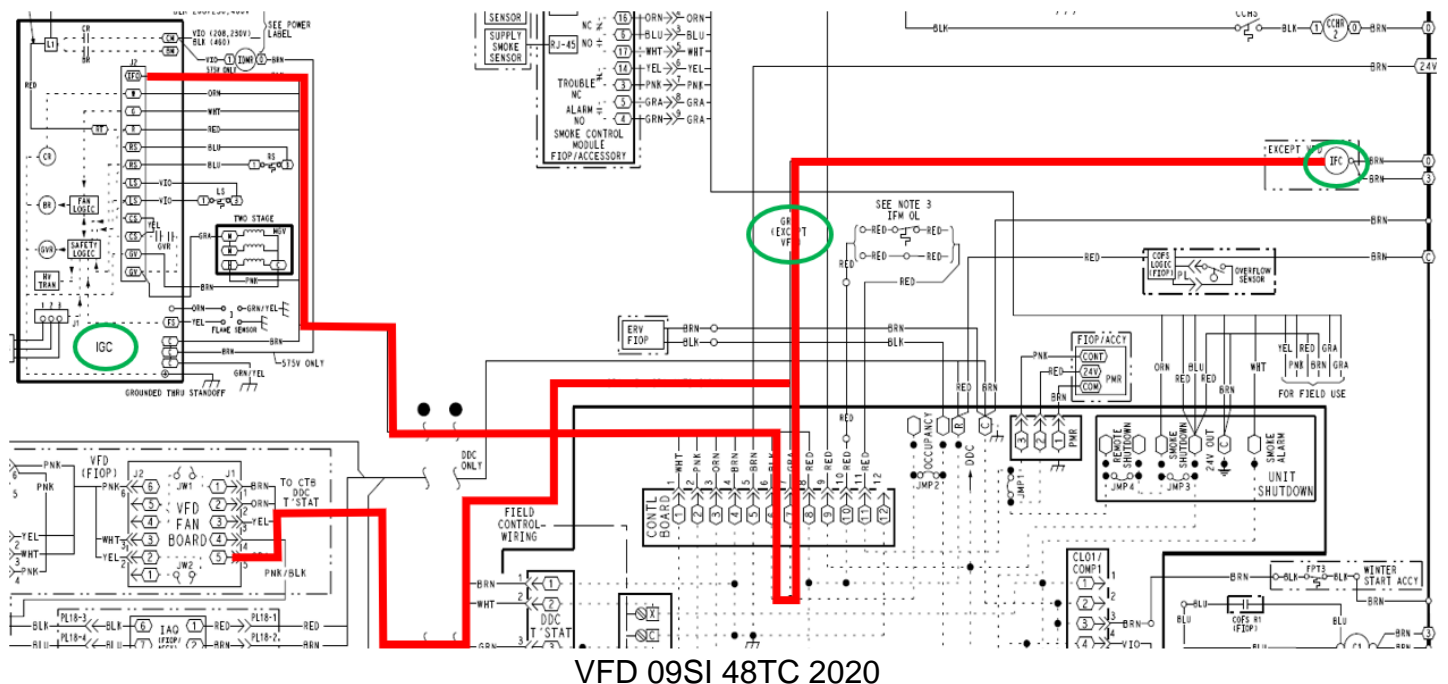
Products Affected

SRT and MRT Light Commercial Rooftops

Technical Information

In the event it is necessary to temporarily (while troubleshooting unit or waiting on a replacement part) bypass a failed VFD to restore cooling/heating operation, use the instructions in this bulletin as a guide on how to safely restore indoor fan operation.

The factory wiring for Small and Medium Rooftops equipped with VFDs have a 24VAC signal wire that can be used to control an Indoor Fan Contactor (IFC) even though the rooftop was not originally equipped with an Indoor Fan Contactor. When unused, this signal wire is capped, but is still in the wiring harness. This control signal allows for proper fan operation and shut-down in the event of a call for emergency/smoke detector shutdown.

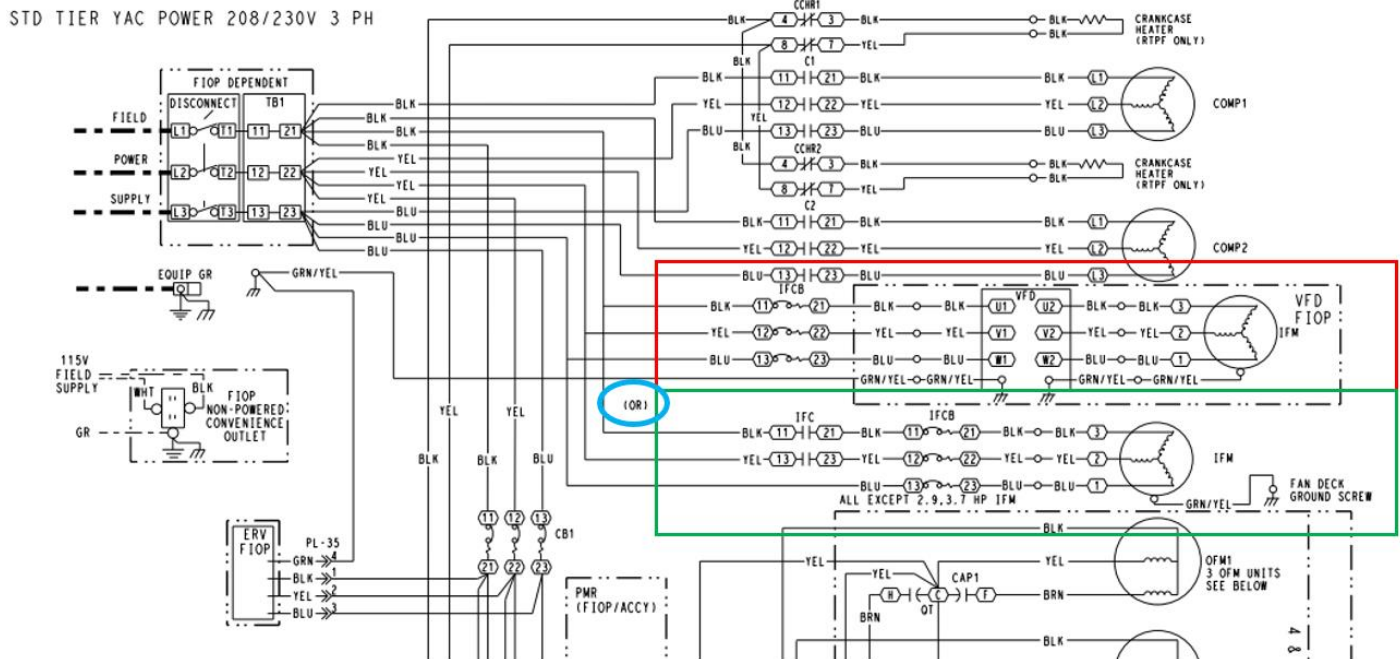


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This IFC control signal may be used in conjunction with an appropriately sized, 2-pole contactor (HN52TC040) or 3-pole contactor (HN53CD024) to control the indoor fan operation. The connection for the indoor fan controlled by a contactor is shown in the existing wiring diagrams for VFD equipped rooftops as a reference for the models not equipped with VFDs. See green box below:



High Voltage 48TC 02SM 2020

When a contactor is used to control an indoor fan that was originally controlled by a VFD, it is necessary to ensure that the motor is overload protected. RTUs originally equipped with the ACS320 VFD drives have a fuse block installed inline with the VFD. This fuse block can be used for motor protection, however the fast-acting fuses installed from the factory cannot support the higher inrush motor start current that will occur with contactor operation of the indoor fan motor. These fuses will need to be replaced with time-delay or slow-blow fuses. To size fuses for the IDF motor, use the Indoor Fan "FLA" from the unit rating plate (not the motor nameplate). Multiply the IDF motor "FLA" amperage from the unit nameplate by 1.25. Select a fuse that is between the IDF motor "FLA" and the IDF motor "FLA" times 1.25. If a standard fuse size does not exist, select the next higher fuse size above the IDF motor "FLA" times 1.25 but no larger than 1.4 times the motor "FLA". The fuse block in these units accepts class CC time delay fuses, including Bussmann FNQ-R, Littelfuse® KLDR and Mersen® ATQR.

After temporarily bypassing a VFD, test unit operation and ensure that the indoor fan is responding correctly for cooling, heating and emergency shutdowns (if equipped).

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