Carrier

Variable Frequency Drive (VFD) Factory-Installed Option 2-Speed Motor Control for 2-Stage Cooling Rooftop Units

Installation, Start-Up and Service Instructions

This document provides supplemental installation, setup and troubleshooting information for the Variable Frequency Drive (VFD) factory-installed option. It is to be used with the base unit Installation Instructions for 48/50TC, 50TCQ, 48/50HC, 50HCQ, and 40RU 2-Stage cooling units, sizes 07-30. Units equipped with the VFD are identified by an indicator in the unit's model number (see the unit's nameplate). Use Table 1 to identify whether a given unit is equipped with the factory-installed VFD option.

NOTE: Read the entire instruction manual before starting the installation.

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SAFETY CONSIDERATIONS

⚠ CAUTION

CONFIGURATION OVERRIDE HAZARD

DO NOT USE ABB OR CARRIER START-UP ASSISTANT ON THIS VFD APPLICATION! Use of start-up assistant will override the factory VFD configurations!

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock or other conditions which may cause personal injury or property damage. Consult a qualified installer, service agency, or your distributor or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with the kits or accessories when installing.

Follow all safety codes. Wear safety glasses and work gloves. Use quenching cloths for brazing operations and have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions attached to the unit. Consult local building codes and appropriate national electrical codes (in USA, ANSI/NFPA70, National Electrical Code (NEC); in Canada, CSA C22.1) for special requirements.

It is important to recognize safety information. This is the safety-alert symbol ⚠. When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which will result in severe personal injury or death. WARNING signifies hazards which could result in personal injury or death. CAUTION is used to identify unsafe practices, which may result in minor personal injury or product and property damage.

NOTE is used to highlight suggestions which will result in enhanced installation, reliability, or operation.

GENERAL

Staged Air Volume (SAV™) Indoor Fan Speed System

The Staged Air Volume (SAV) system utilizes a Fan Speed control board and Variable Frequency Drive (VFD) to automatically adjust the indoor fan motor speed in sequence with the unit's ventilation, cooling and heating operation. Per ASHRAE 90.1-2016 and IECC*-2015 standards, during the first stage of cooling operation the SAV system will adjust the fan motor to provide 66% of the design airflow rate for the unit. When the call for the second stage of cooling is required, the SAV™ system will allow the design airflow rate for the unit established (100%). During the heating mode, the SAV system will allow total design airflow rate (100%) operation. During ventilation mode, the SAV system will operate the fan motor at 66% of full speed.

Figures 1 and 2 show the VFDs used for the SAV indoor fan speed system.

Fig. 1 — ACH550 Variable Frequency Drive (VFD)

Fig. 2 — ACS320 Variable Frequency Drive (VFD)

Identifying Factory Option

This supplement only applies to units that meet the criteria detailed in Table 1. If the unit does not meet that criteria, discard this document.

NOTE: See Fig. 3 and 4 for examples of typical Model Number Nomenclature.

NOTE: 48/50LC units are not covered in this document; VFDs are standard equipment on belt drive LC units. VFD instructions for the 48/50LC series are found in the Installation Instructions for the LC base units.

Table 1 — Model Size/VFD Option Indicator

MODEL/SIZES	POSITION IN MODEL NUMBER	VFD FIOP INDICATOR
48/50TC / 07-30	17	G-M
50TCQ / 07-24	17	G-M
48/50HC / 07-28	17	G-M
50HCQ / 07-12	17	G-M
40RUA / 07-30	9	T
40RUS / 08-30	9	T
40RUQ / 07-25	9	T

Unit Installation with SAV Option

48/50HC, 50HCQ, 48/50TC, AND 50TCQ ROOFTOP

Refer to the base unit installation instructions for standard required operating and service clearances.

40RU WITHOUT REMOTE VFD KEYPAD

Additional service clearance is required on the rear for 40RU fan coil unit equipped with the SAV option. Increase the recommended rear panel clearance to 30 inches.

40RU WITH REMOTE VFD KEYPAD

Refer to the base unit installation instructions for standard required operating and service clearances. Install the accessory remote VFD keypad before positioning the 40RU unit in its final operating location.

NOTE: The remote VFD keypad is a field-installed option. It is not included as part of the factory-installed VFD option.

* IECC is a registered trademark of International Code Council, Inc.

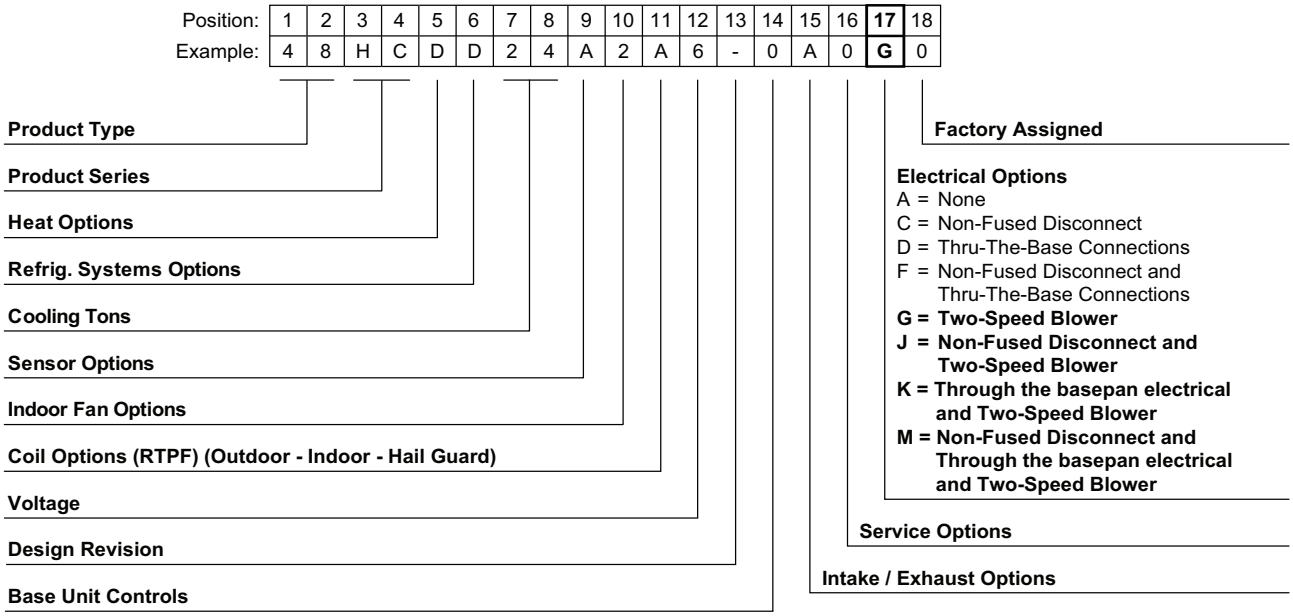


Fig. 3 — Model Number Nomenclature Example, 48/50-Series

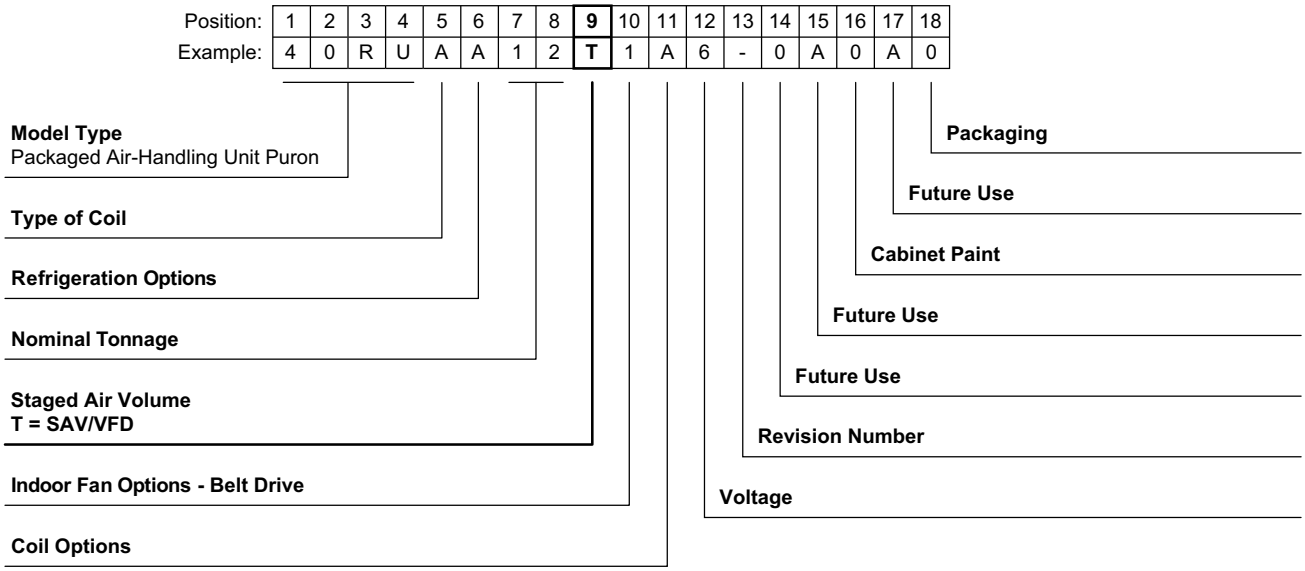


Fig. 4 — Model Number Nomenclature Example, 40RU-Series

IMPORTANT: Do NOT change units equipped with the VFD option to operate at less than the preset 66% minimum Hz setting (40 Hz). For example, do not change a unit equipped with a standard static motor to operate at less than 40 Hz (which is 66% of its 60 Hz rating).
Tables 2-10 list the minimum recommended CFM per fan motor type (single speed or 2-speed) for the units covered in this document.

Table 2 — 48TC Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
48TC 07	1800	1800	1188
48TC 08	2250	2250	1485
48TC 09	2550	2873	1896
48TC 12	3000	3380	2231
48TC 14	3600	4225	2789
48TC 16	4500	5625	3713
48TC 17	4500	4500	2970
48TC 20	5250	5250	3465
48TC 24	6000	6000	3960
48TC 28	7500	8450	5577
48TC 30	8250	8250	5445

Table 3 — 50TC Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	SPEED FAN MOTOR (AT LOW SPEED)
50TC 07	1800	1800	1188
50TC 08	2250	2250	1485
50TC 09	2550	2873	1896
50TC 12	3000	3380	2231
50TC 14	3600	4225	2789
50TC 16	4500	5625	3713
50TC 17	4500	4500	2970
50TC 20	5250	5250	3465
50TC 24	6000	6000	3960
50TC 28	7500	8450	5577
50TC 30	8250	8250	5445

Table 4 — 50TCQ Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
50TCQ 07	1800	1800	1188
50TCQ 08	2250	2535	1673
50TCQ 09	2550	2873	1896
50TCQ 12	3000	3000	1980
50TCQ 14	3750	4225	2789
50TCQ 17	4500	5070	3346
50TCQ 24	6000	6760	4462

Table 5 — 48HC Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
48HC 07	1800	1800	1300
48HC 08	2250	2535	1673
48HC 09	2550	2550	1683
48HC 11	3000	3380	2231
48HC 12	3000	3380	2231
48HC 14	3750	4225	2789
48HC 17	4500	5070	3346
48HC 20	5250	5915	3904
48HC 24	6000	7500	4950
48HC 28	7500	8450	5577

Table 6 — 50HC Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
50HC 07	1800	1800	1200
50HC 08	2250	2535	1673
50HC 09	2550	2550	1683
50HC 11	3000	3380	2231
50HC 12	3000	3380	2231
50HC 14	3750	4225	2789
50HC 17	4500	5070	3346
50HC 20	5250	5915	3904
50HC 24	6000	7500	4950
50HC 28	7500	8450	5577

Table 7 — 50HCQ Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
50HCQ 07	1800	1800	1188
50HCQ 08	2250	2250	1485
50HCQ 09	2550	2873	1896
50HCQ 12	3000	3380	2231

Table 8 — 40RUA Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
40RUA 07	1800	2030	1338
40RUA 08	2250	2535	1673
40RUA 12	3000	3380	2231
40RUA 14	3750	4225	2789
40RUA 16	4500	4500	2970
40RUA 25	6000	6000	3960
40RUA 28	7500	8450	5577
40RUA 30	9000	9295	6135

Table 9 — 40RUS Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
40RUS 08	2250	2535	1673
40RUS 10	2550	2873	1896
40RUS 12	3000	3380	2231
40RUS 14	3750	4225	2789
40RUS 16	4500	4500	2970
40RUS 25	6000	6000	3960
40RUS 28	7500	8450	5577
40RUS 30	9000	9295	6135

Table 10 — 40RUQ Min CFM Per Fan Motor Type

MODEL-SIZE	SINGLE SPEED FAN MOTOR	2-SPEED FAN MOTOR (AT HIGH SPEED)	2-SPEED FAN MOTOR (AT LOW SPEED)
40RUQ 07	1800	2030	1338
40RUQ 08	2250	2535	1673
40RUQ 12	3000	3380	2231
40RUQ 16	4500	4500	2970
40RUQ 25	6000	6000	3960

Pre-Start Check, SAV™ Option

1. Remove the access panel to reach the VFD.
- 48/50 Series: Blower compartment panel
- 40RU: Rear access panel

NOTE: See Fig. 5-22 for VFD location in the units covered by this document.

2. Read all safety, caution and warning labels.
3. Inspect wiring at the VFD for loose or disconnected wires at the terminal strip and for wires in contact with sharp edges and moving parts (pulley, belt).

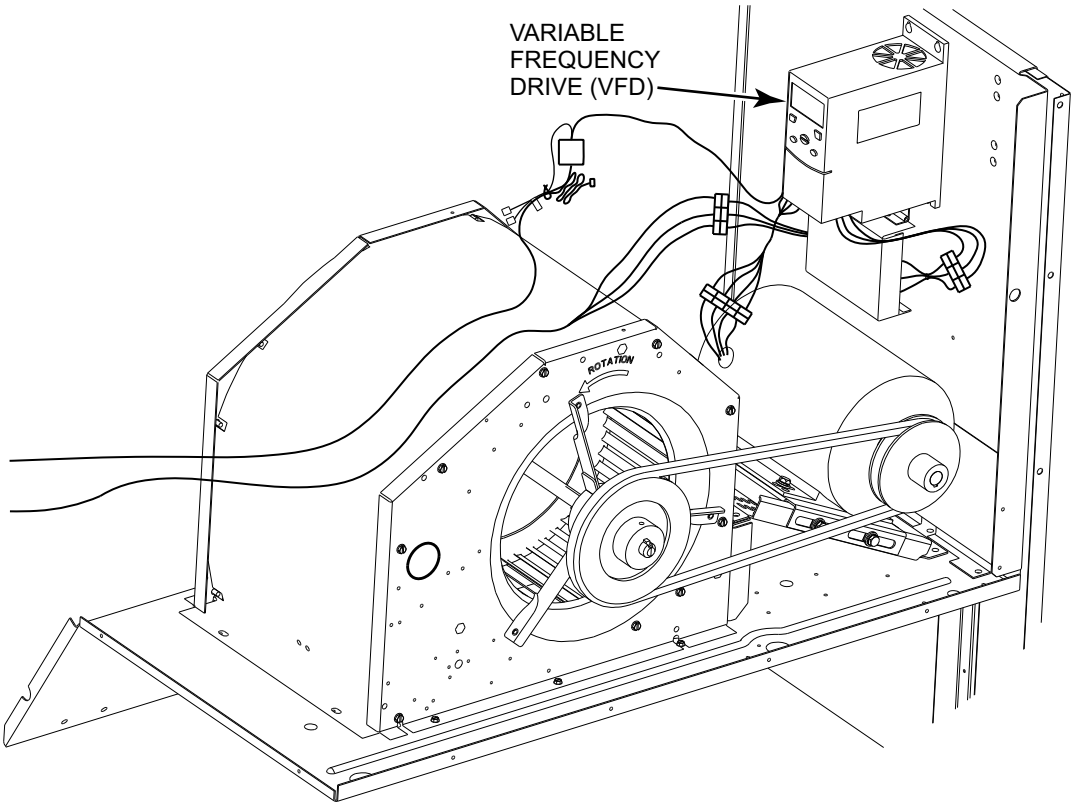


Fig. 5 — ACS320 VFD Location for the following units: 48/50TC 07 and 50TCQ 07 (208/230V and 460V units only)

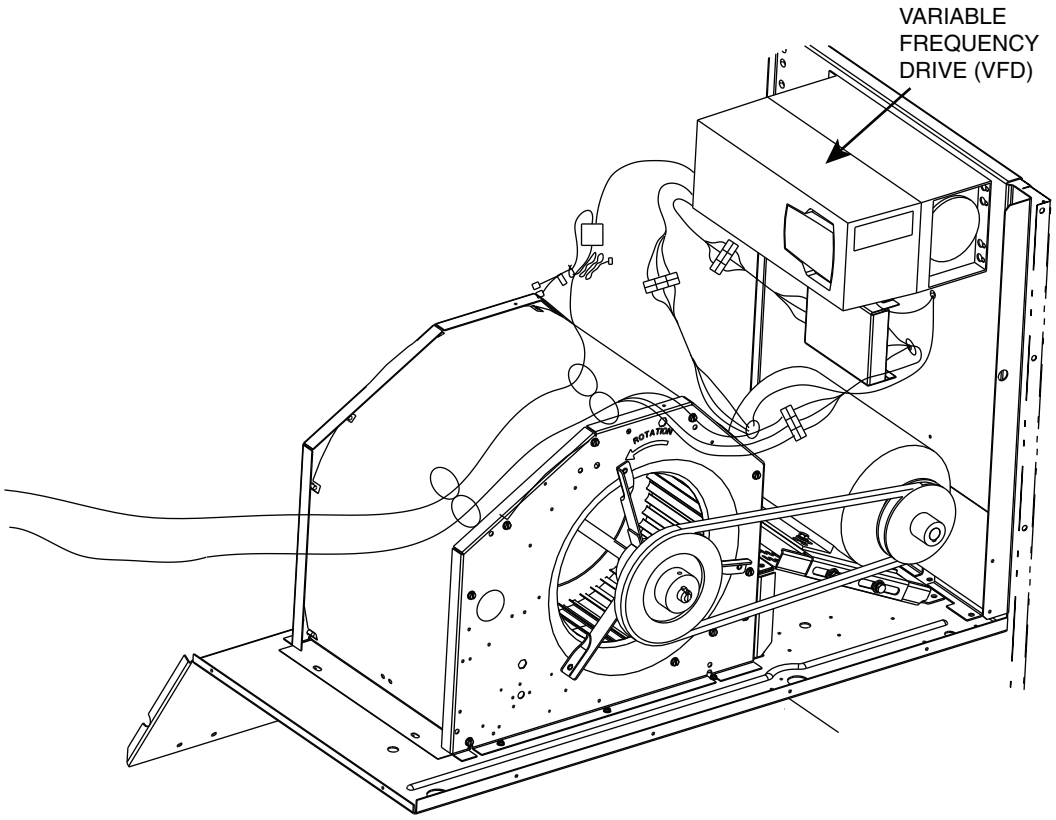


Fig. 6 — ACH550 VFD Location for the following units: 48/50TC 07 (575V units only)

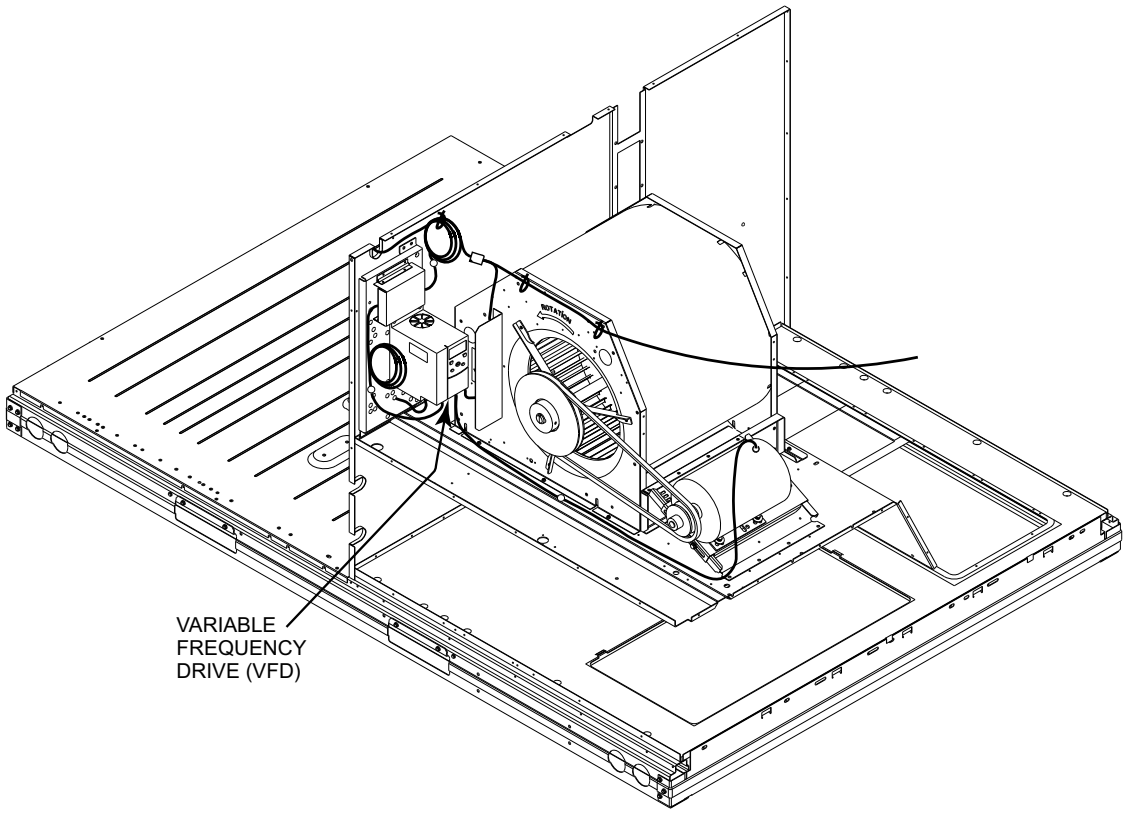


Fig. 7 — ACS320 VFD Location for the following units: 48/50TC 08 (208/230V and 460V units only)

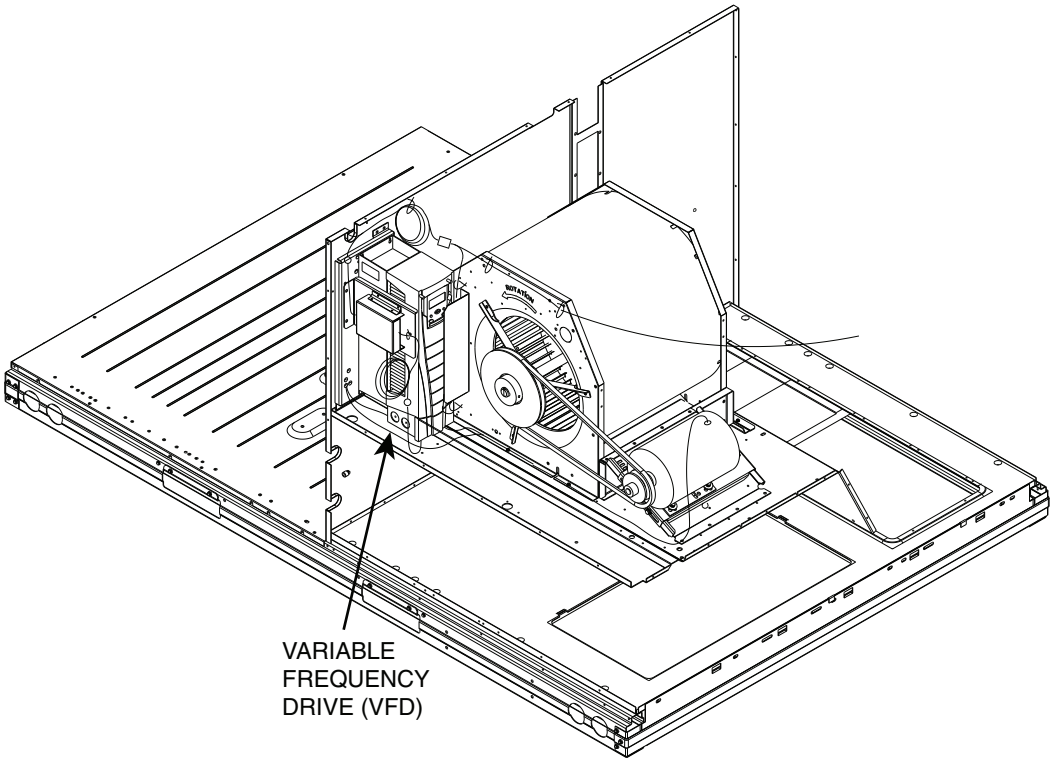


Fig. 8 — ACH550 VFD Location for the following units: 48/50TC 08 (575V units only)

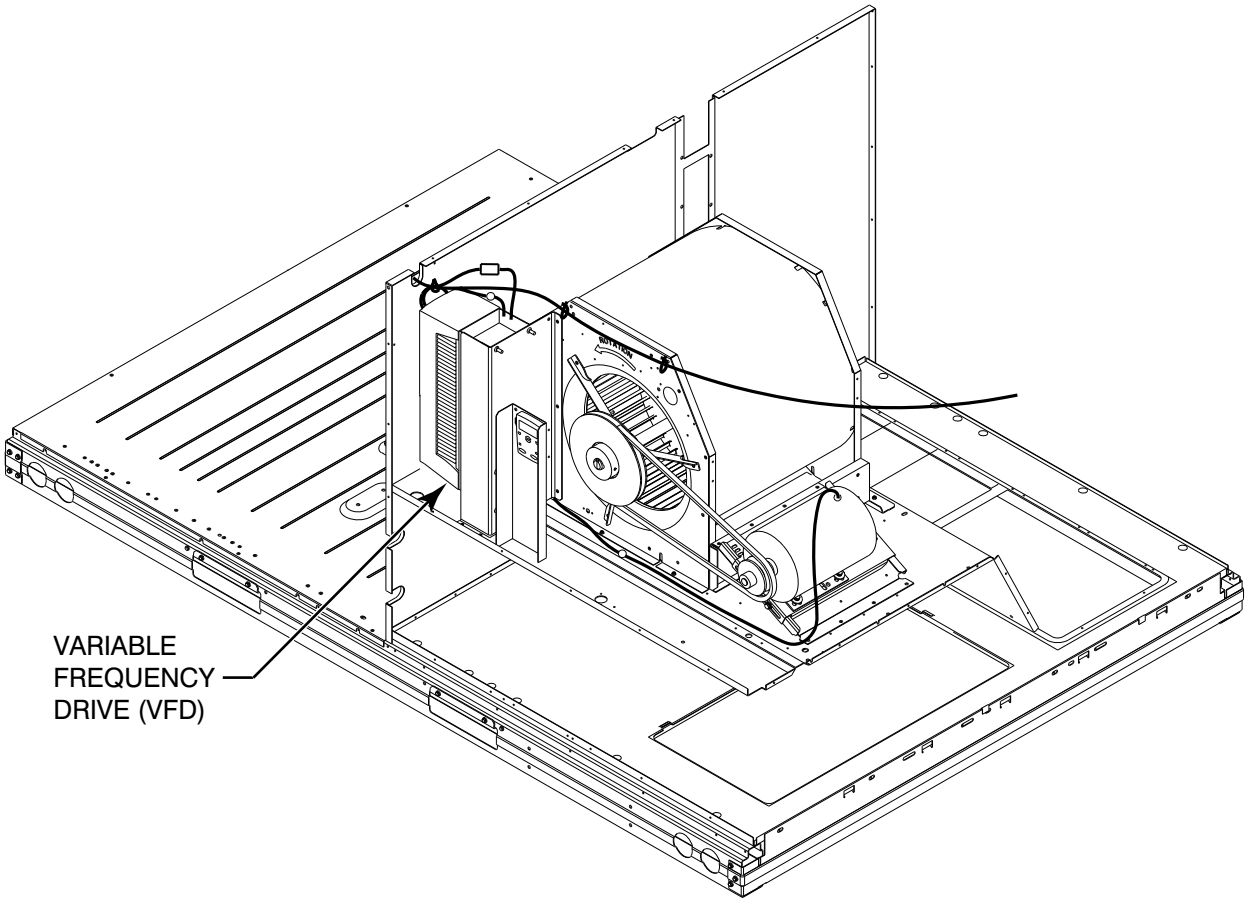


Fig. 9 — ACH550 VFD Location for the following units: 48/50HC 07 and 50HCQ 07

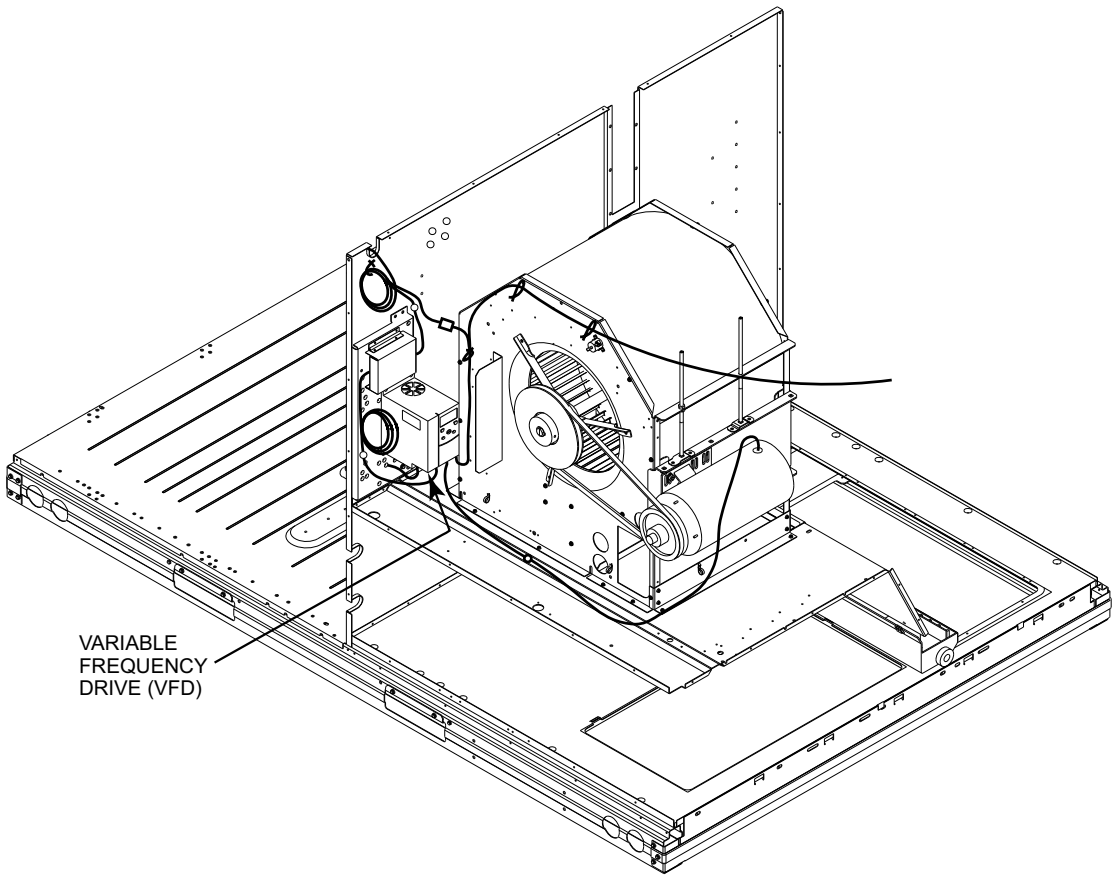


Fig. 10 — ACS320 VFD Location for the following units: 48/50TC 09-14 and 50TCQ 08-12 (208/230V and 460V units only)

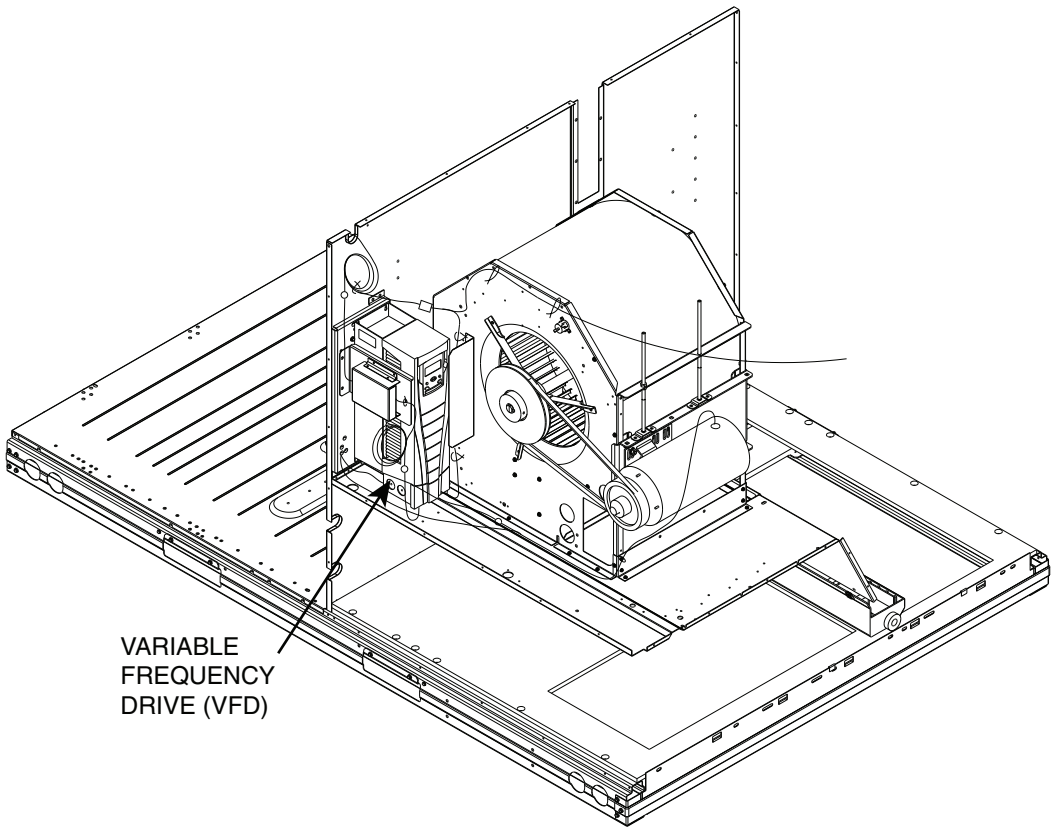


Fig. 11 — ACH550 VFD Location for the following units: 48/50TC 09-14 and 50TCQ 08-12 (575V units only)

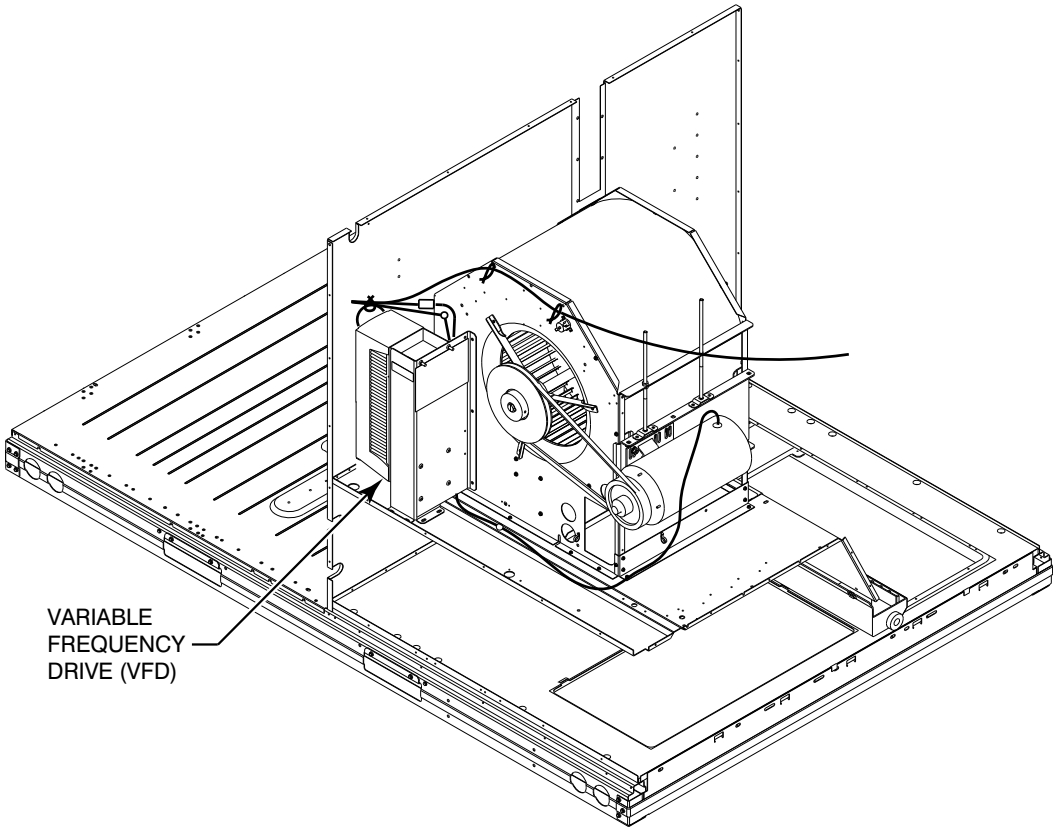


Fig. 12 — ACH550 VFD Location for the following units: 48/50HC 08-09 and 50HCQ 08-09

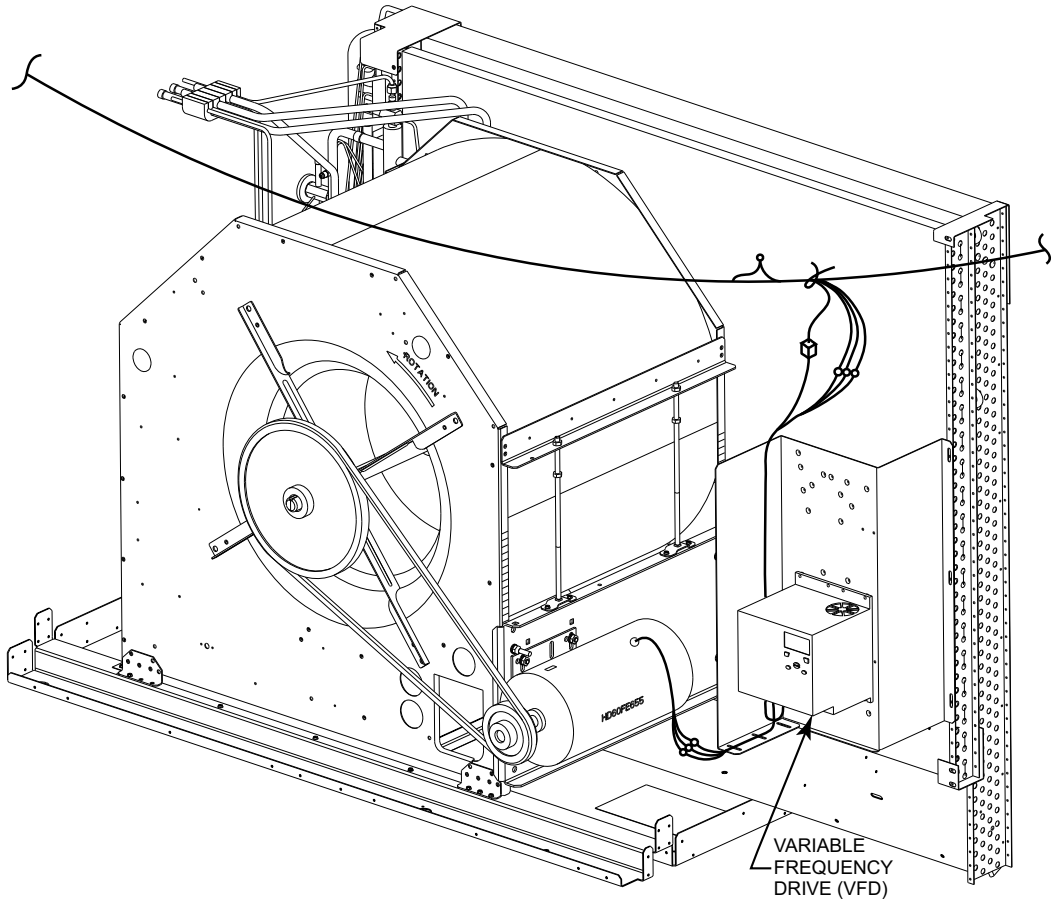


Fig. 13 — ACS320 VFD Location for the following units: 48/50TC 16 and 50TCQ 14 (208/230V and 460V units only)

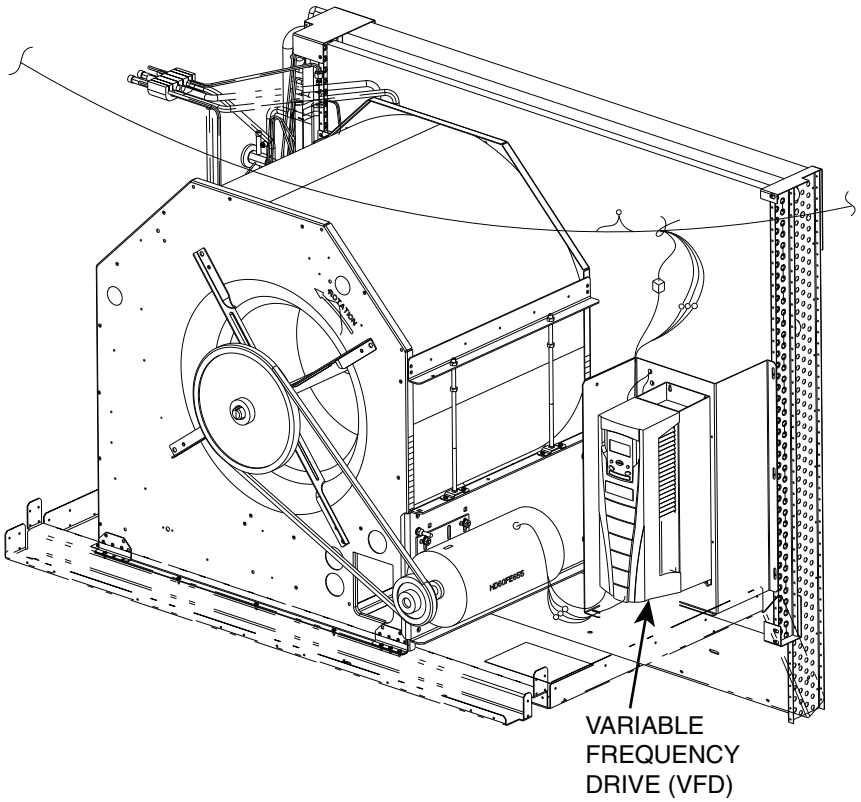


Fig. 14 — ACH550 VFD Location for the following units: 48/50TC 16 and 50TCQ 14 (575V units only)

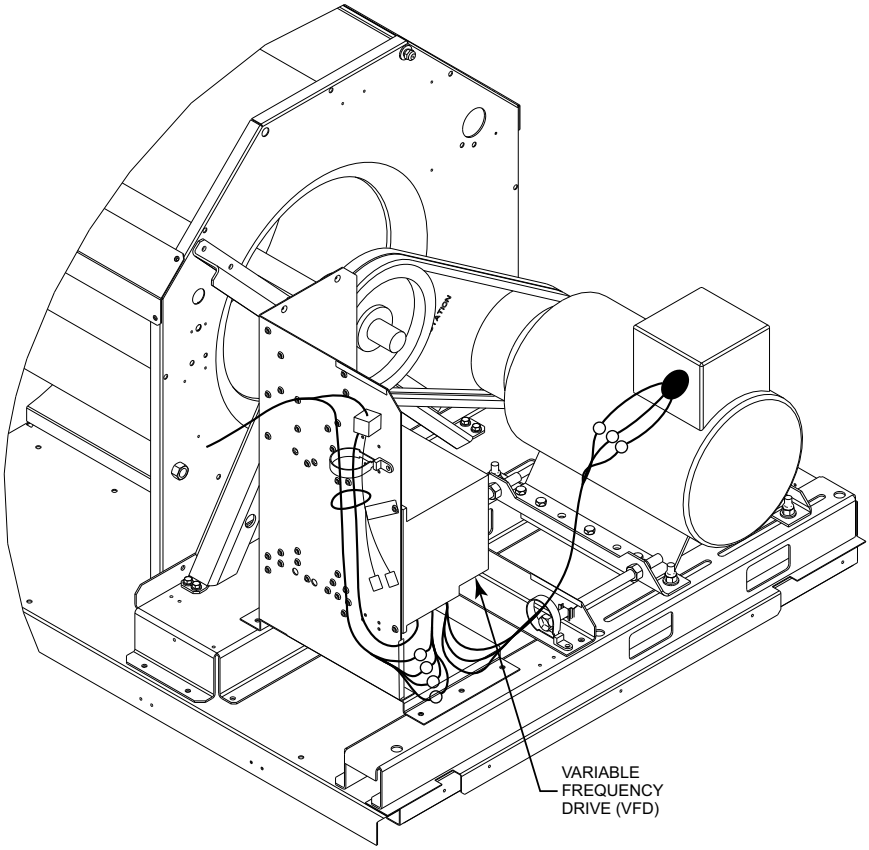


Fig. 15 — 48/50TC 17-30, 50TCQ 17-24 and 48/50HC 17-28 No ComfortLink Controls (208/230V and 460V units only)

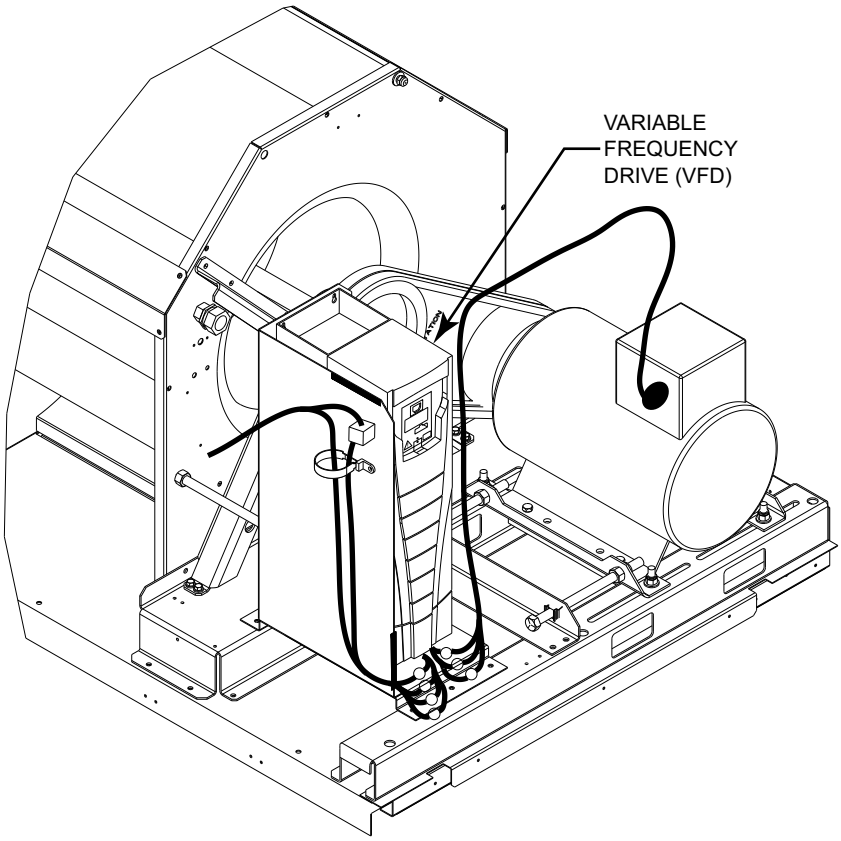


Fig. 16 — ACH550 VFD Location for the following units: 48/50TC 17-30 and 50TCQ 17-24 (575V units only), 48/50HC 17-28 ComfortLink Controls and 575 Units

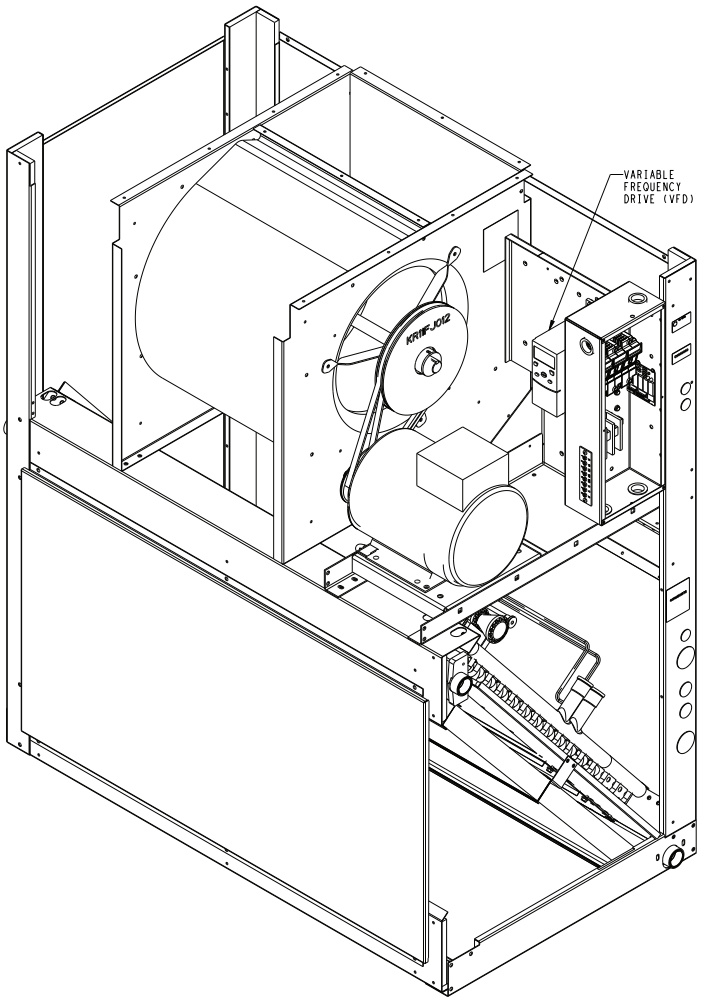


Fig. 17 — ACS320 VFD Location for the following units: 40RUA/RUQ 07-12, 40RUS 08-12 (208/230V and 460V only)

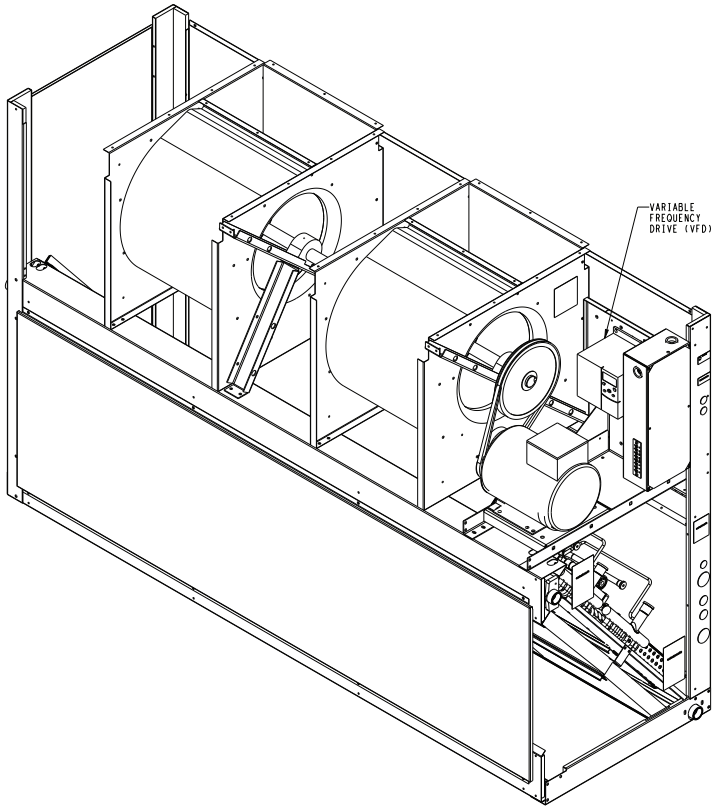


Fig. 18 — ACS320 VFD Location for the following units: 40RUA/RUS 14-25, 40RUQ 16-25 (208/230V and 460V only)

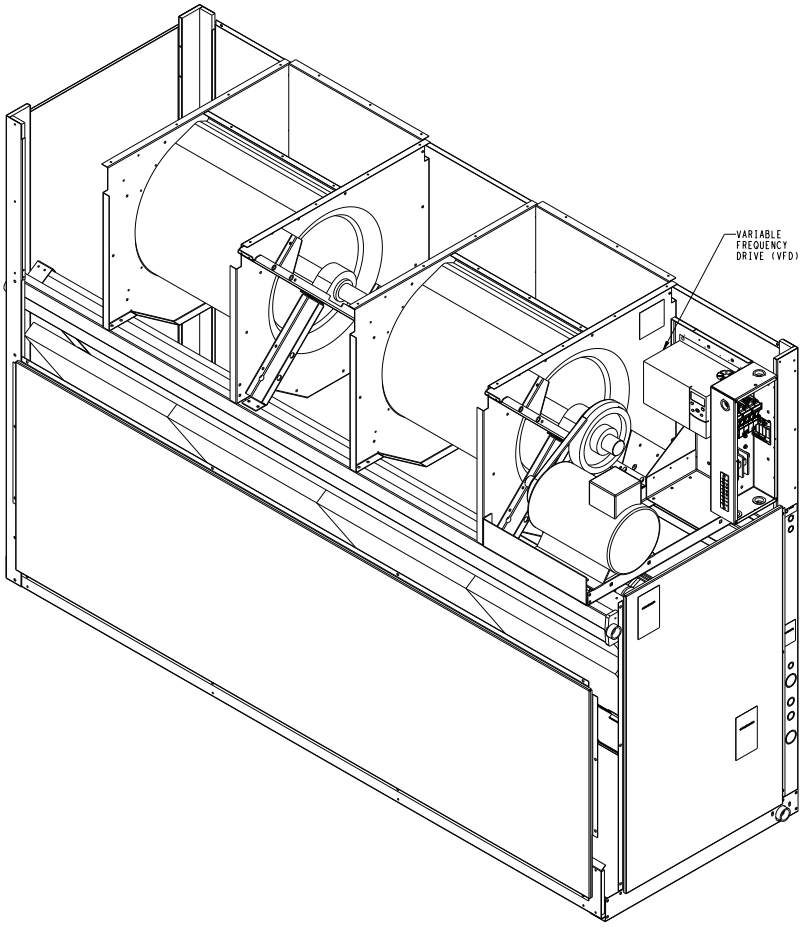


Fig. 19 — ACS320 VFD Location for the following units: 40RUA/RUS 28-30 (208/230V and 460V only)

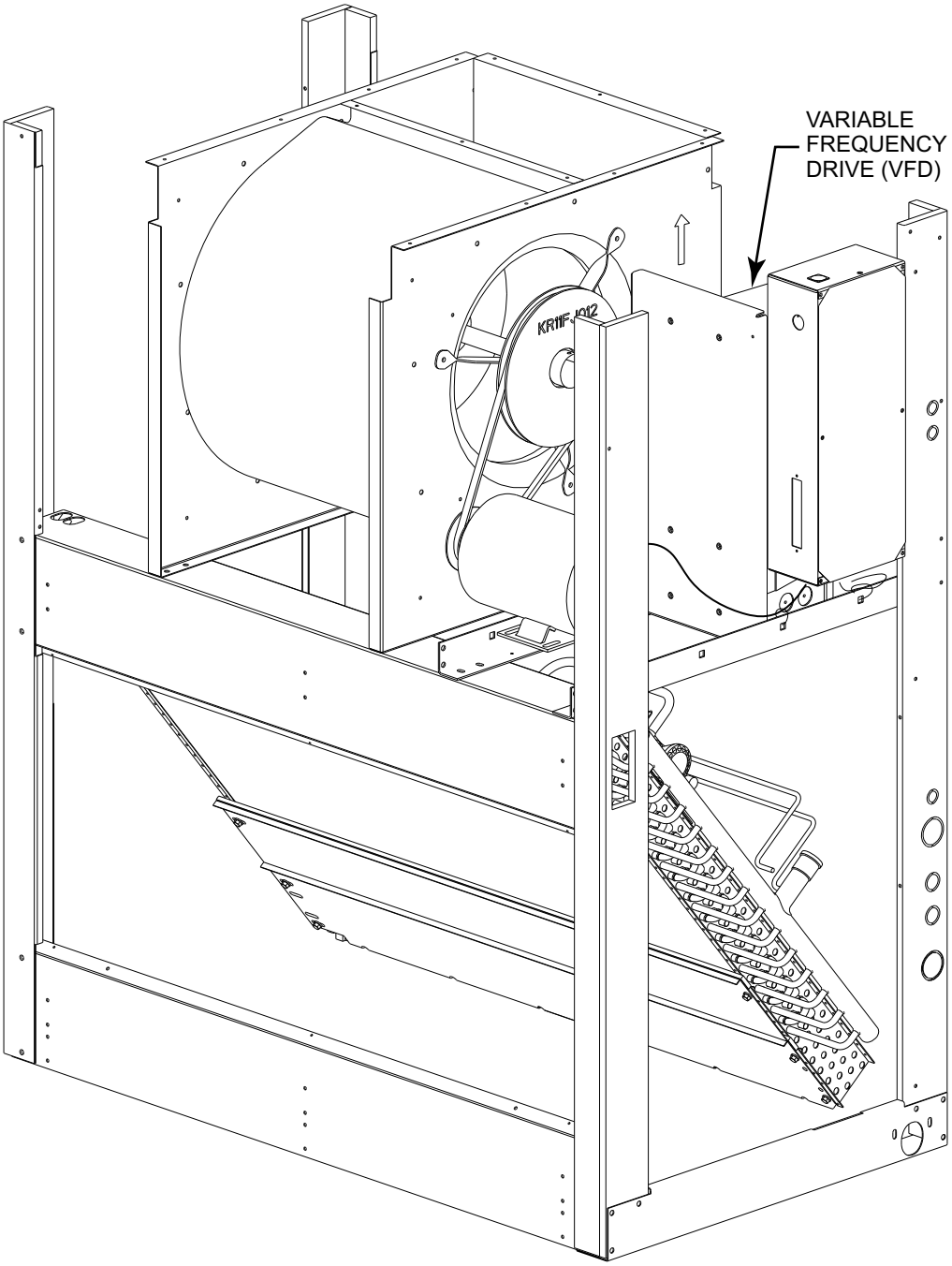


Fig. 20 — ACH550 VFD Location for the following units: 40RUA/RUQ 07-12, 40RUS 08-12 (575V only)

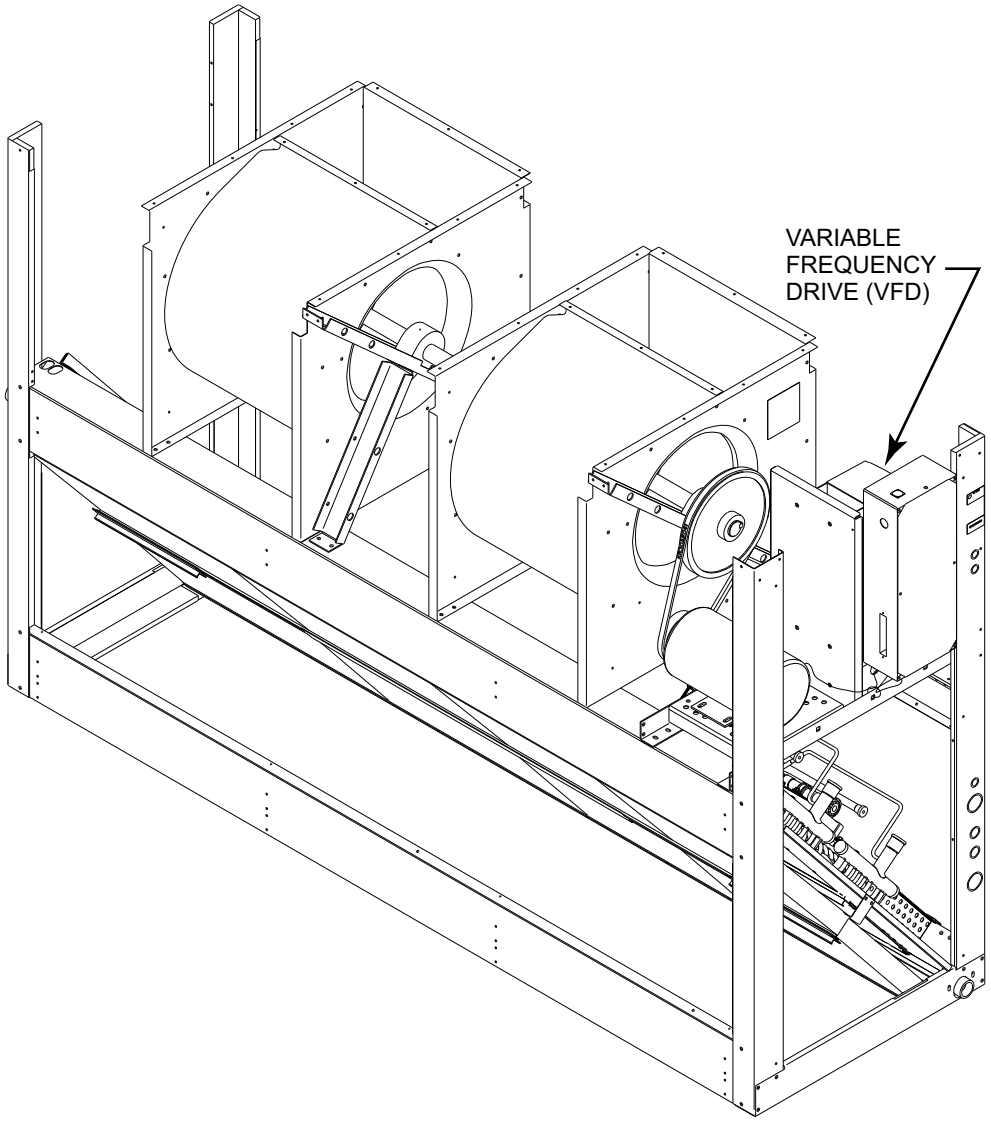


Fig. 21 — ACH550 VFD Location for the following units: 40RUA/RUS 14-25, 40RUQ 16-25 (575V only)

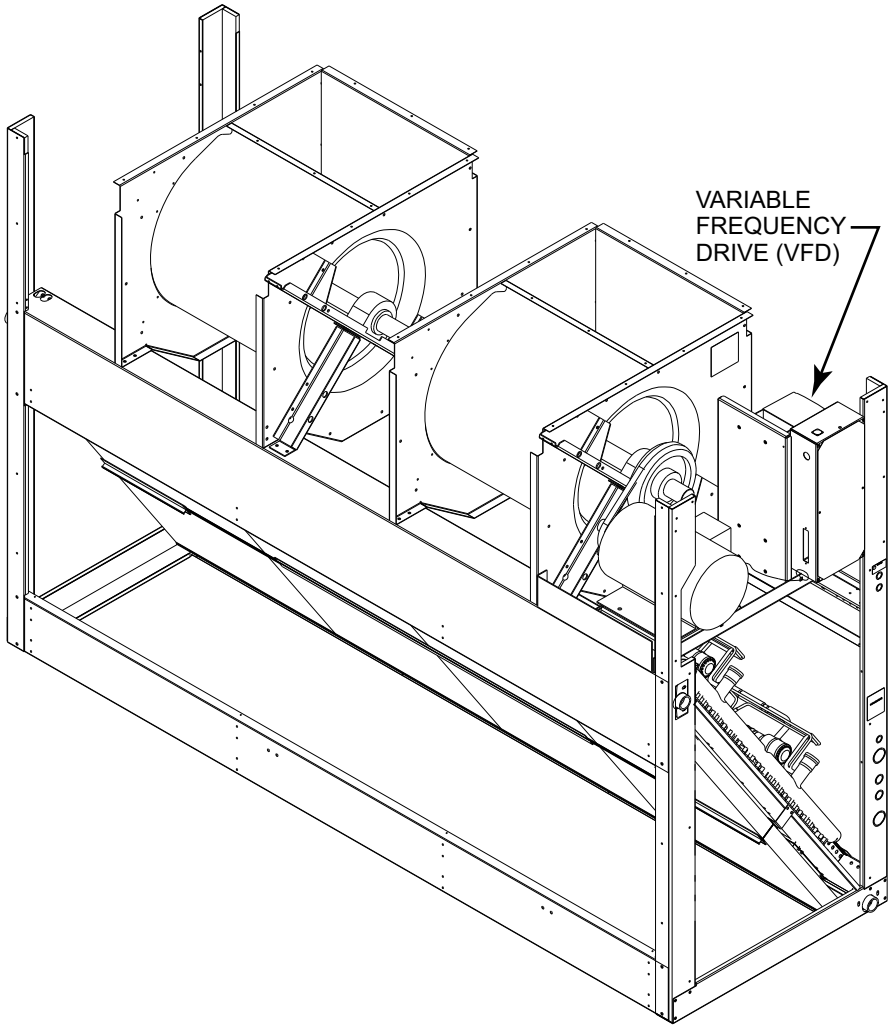


Fig. 22 — ACH550 VFD Location for the following units: 40RUA/RUS 28-30 (575V only)

START-UP, SAV™ OPTION

Compressor Rotation

Units equipped with a VFD on the indoor fan motor cannot use rotation direction of the indoor fan motor and fan to visually confirm a correct phase connection to the unit and compressors. Correct phases to equipment for proper compressor rotation. The VFD will maintain the same rotation as input phases are changed. Pressure gages MUST BE USED during cooling system start-up to confirm correct compressor rotation and operation.

Indoor Fan Motor

Raise the cooling set point at the space thermostat to higher than space temperature. Switch the thermostat's FAN switch to CONT (Continuous) position. Fan motor will start, run at reduced speed.

Check for fan rotation direction. To reverse the fan rotation, disconnect all power to unit and then switch two motor power leads between the VFD and the motor. Restore unit power and recheck fan rotation direction.

Check fan motor speed. Motor shaft should be rotating at 1150 to 1180 RPM (19.2 to 19.7 r/s).

Switch the thermostat's FAN switch to AUTO position. Fan motor will stop.

Cooling with SAV

FIRST STAGE (Y1)

Set the thermostat FAN switch to AUTO and the SYSTEM switch to COOL. Slowly lower the cooling set point until first stage compressor starts. Indoor fan motor also starts, runs at reduced speed.

SECOND STAGE (Y2)

Lower the cooling set point until second stage compressor starts. Indoor fan motor will switch to high speed.

Check fan motor speed. Motor shaft should be rotating at 1725 to 1760 RPM (28.8 to 29.3 r/s).

Confirm compressors are running at correct rotation by checking suction and discharge pressures. To reverse the compressor rotation, disconnect unit power and switch two of the unit's main power leads. Restore unit power and recheck compressor operation.

Reset thermostat cooling set point to a position above space temperature. Both compressors will shut off. Indoor fan motor will stop immediately.

40RU, 50 SERIES UNITS

Indoor fan motor will stop immediately.

48 SERIES UNITS

Indoor fan operation will continue for 45-seconds, then stop.

Operating Sequences, SAV Option

VENTILATION (FAN ONLY)

Ventilation mode occurs when the indoor fan runs without accompanying cooling or heating system operation. The thermostat's FAN selection switch will be in CONT (Continuous) position; no demand for cooling or heating will be present.

48 SERIES UNITS

The thermostat's G terminal is energized with 24-v. This signal is conveyed to the 48 Series unit's Central Terminal Board (CTB) at the field connection TSTAT terminal strip at terminal G. The 24-v signal follows an internal trace path through jumper JMP6 to connector CONTL BOARD pin 1. A harness wire connects pin 1 to IGC board terminal G. The IGC energizes its fan relay, energizing IGC terminal IFO. This 24-v signal follows a harness conductor back to the CTB's CONTL BOARD connector at pin 6 and pin 7. Pin 7 is connected to the Fan Speed Board at connector J1 pin 4. Relay K3 is energized. A 24-VDC signal is passed to the VFD terminal 14. The VFD starts the indoor fan motor and runs it at 40 Hz for reduced/low speed operation.

50HC, TC SERIES UNITS

The thermostat's G terminal is energized with 24-v. This signal is conveyed to the 50HC,TC Series unit's Control Terminal Board (CTB) at the field connection TSTAT terminal strip at terminal G. The 24-v signal follows an internal trace path through jumper JMP6 to connector CONTL BOARD pin 1. A harness wire connects pin 1 to the Fan Speed Board at connector J1 pin 4. Relay K3 is energized. A 24-VDC signal is passed to the VFD terminal 14. The VFD starts the indoor fan motor and runs it at 40 Hz for reduced/low speed operation.

50HCQ, TCQ SERIES

The thermostat's G terminal is energized with 24-v. This signal is conveyed to the 50HCQ,TCQ Series unit's Control Terminal Board (CTB) at the field connection TSTAT terminal strip at terminal G. The 24-v signal follows an internal trace path to connector REHEAT/DEFROST pin 1. A harness wire connects pin 1 to DFB board terminal P2-3. The DFB energizes its fan relay, energizing DFB terminal P3-8. This 24-v signal follows a harness conductor back to the CTB's REHEAT/DEFROST pin 2. An internal trace path connects pin 2 to CONTL BOARD connector at pin 1. Pin 1 is connected to the Fan Speed Board at connector J1 pin 4. Relay K3 is energized. A 24-VDC signal is passed to the VFD terminal 14. The VFD starts the indoor fan motor and runs it at 40 Hz for reduced/low speed operation.

Cooling (FAN Switch in AUTO)

FIRST STAGE (Y1)

When the thermostat initiates a call for First Stage Cooling by closing its Y1 contacts, the thermostat also energizes its G terminal. Follow the sequence under Ventilation above. Fan Speed Relay board relay K3 is energized, causing the VFD to start the indoor fan motor and run at 40 Hz for reduced fan speed operation.

When space temperature drops to satisfy the thermostat Y1 demand, contact Y1 opens de-energizing terminal G. Relay K3 is de-energized. The relay board output at J2-2 to the VFD is removed and indoor fan motor ramps down to stop.

SECOND STAGE (Y2)

If space temperature continues to rise, thermostat Y2 demand will be initiated. Contact Y2 will close, sending a 24-v signal to CTB's TSTAT terminal strip at Y2. An internal path passes this signal to connector DDC/TSTAT pin 6. A harness wire carries this signal to Fan Speed Relay board pin J1-3. Relay K2 is energized. The relay board's output to VFD at pin J2-2 is de-energized and the output at J2-3 is energized, causing the VFD to shift its output to the indoor fan motor to 60 Hz. The indoor fan motor ramps up to full/high speed operation.

When the space temperature drops to satisfy thermostat Y2 demand, contact Y2 opens de-energizing terminal Y2. Relay K2 is de-energized, removing the VFD input at terminal 15. Fan Speed Board output at pin J2-2 is restored to the VFD at terminal 14; VFD shifts back to 40 Hz output to the indoor fan motor and motor shifts back to reduced speed operation.

Heating

When the thermostat initiates a call for First Stage Heating by closing its W1 contacts, a 24-v signal is conveyed to the CTB's TSTAT terminal strip at W1. An internal path passes this signal to connector DDC/TSTAT pin 5. A harness wire carries this signal to Fan Speed Relay board pin J1-2. Relay K1 is energized. The relay board's output to VFD at pin J2-3 is energized, providing a 24-VDC signal to VFD terminal 15. The VFD starts the indoor fan motor, runs at 60 Hz for full/high speed operation.

When space temperature rises to satisfy the thermostat W1 demand, contact W1 opens de-energizing terminal W1. Relay K1 is de-energized. The relay board output at J2-3 to the VFD is removed.

40RU, 50-SERIES

Indoor fan motor ramps down to stop.

48-SERIES

The IGC's fan-off delay sequence will energize relay K3 for 45-seconds, causing the VFD to operate the indoor fan motor at 40 Hz (low speed) for 45-seconds, then indoor fan motor will ramp down to stop.

Operating Fan for Test and Balance

During the Test and Balance procedure, it is necessary to operate the supply fan in High Speed without concurrent operation of the Cooling or Heating systems. Use the following procedure to force the fan speed to High.

UNITS WITHOUT ACCESSORY KEYPAD

1. Set the space thermostat to SYSTEM OFF and FAN in AUTO.
2. Disconnect unit power. Lock-out/tag out.
3. Open the fan access panel and locate the VFD (see Fig. 5-22 for your specific unit).
4. Locate and connect the WHT and YEL wires extending from the VFD. The two wires are bundled together using the label shown in Fig. 23.

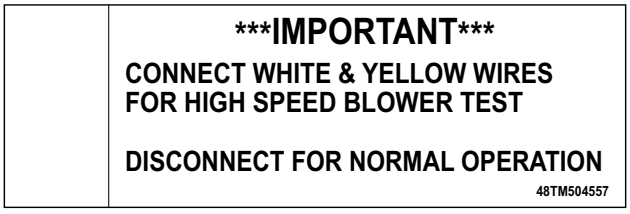


Fig. 23 — High Speed Test Label

5. Locate pressure ports or pitot tubes in the return duct and supply duct to measure external static pressure. See Fig. 24 for typical locations.
6. Restore unit power.
7. Set the space thermostat to FAN CONT.
8. Check the motor speed with stroboscope or similar tool. Motor shaft speed must be in 1725 to 1760 RPM (28.8 to 29.3 r/s) range for High Speed.
9. Replace the fan access panel.
10. Perform test and balance procedure.

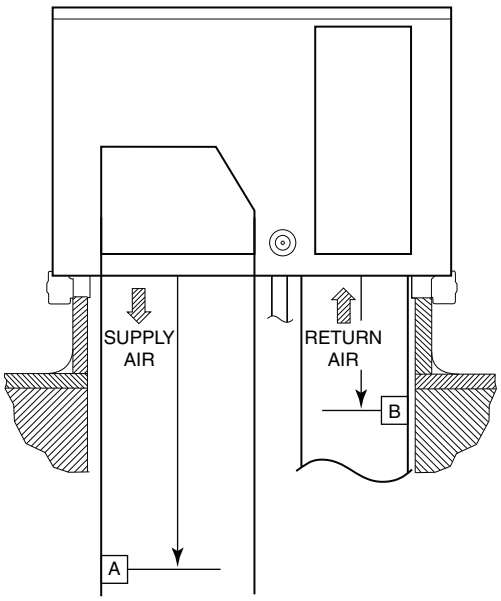
11. Adjust the supply fan speed according to base unit instructions to deliver the project selection CFM value. Ensure the selection CFM value is not lower that the "Min CFM Per Fan Motor Type" for this unit-size as found in Tables 2-10 on page 4.

To restore the unit to ready-to-start condition, disconnect the unit power and lock-out/tag-out, set the space thermostat to FAN AUTO, remove the test pressure ports from the external duct locations, and disconnect the WHT and YEL wires. Replace the supply fan access panel. Restore unit power.

UNIT WITH ACCESSORY VFD KEYPAD

1. Set the space thermostat to SYSTEM OFF and FAN in AUTO.
2. Disconnect unit power. Lock-out/tag-out.
3. Open the fan access panel (see Fig. 5-22 for specific unit).
4. Locate pressure ports or pitot tubes in the return duct and supply duct to measure external static pressure. See Fig. 24 for typical locations.
5. Restore unit power.
6. Set the space thermostat to FAN CONT.
7. At the VFD keypad, tap the HAND key and then tap the UP arrow button to increase the motor speed until 60.0 is displayed on the display screen.
8. Check the motor speed with stroboscope or similar tool. Motor shaft speed must be in 1725 to 1760 RPM (28.8 to 29.3 r/s) range for High Speed.
9. Replace the fan access panel.
10. Perform Test and Balance procedure.
11. Adjust the supply fan speed according to base unit instructions to deliver the project selection CFM value. Ensure the selection CFM value is not lower that the "Min CFM Per Fan Motor Type" for this unit-size as found in Tables 2-10 on page 4.

To restore the unit to ready-to-start condition, tap the DOWN arrow button to reduce motor speed until the 40.0 is displayed on the display screen and then tap the AUTO key. Disconnect the unit power and lock-out/tag-out, set the space thermostat to FAN AUTO. Remove the test pressure ports from the external duct locations. Restore unit power.



AHRI PRESSURE LOCATIONS

MODEL	SIZES	IN Supply Air [A]	IN Return Air [B]	MM Supply Air [A]	MM Return Air [B]
48/50HC	07-12	43.5	12	1100	310
	14	64.5	14	1640	350
	17-28	83	19	2110	490
48/50TC	07	32	10	830	260
	08-14	43.5	12	1100	310
	16	64.5	14	1640	350
	17-30	83	19	2110	490
50HCQ	07-09	43.5	12	1100	310
	12	44.5	13	1130	330
50TCQ	07	32	10	830	260
	08-12	43.5	12	1100	310
	14	44.5	14	1130	350
	17-24	83	19	2110	490

Fig. 24 — Measuring External Static Pressure — Distance Below Unit Base

⚠CAUTION

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution will result in equipment damage.

DO NOT exceed the recommended minimum Hz or CFM settings. Operating these units at a Hz setting below 40 Hz or at a CFM below the minimums listed in Tables 2-10 (page 4) will result in damage to the unit.

Figures 5-22 show the location of the VFD option in the various units covered by this document.

SAV™ Option Components

The SAV factory option is comprised of three major components and related connecting harnesses:

1. Fan Speed Relay Board
2. Variable Frequency Drive
3. Indoor Fan Motor, designed for use with VFD

Fan Speed Relay Board

This board (P/N HK50ZA002) is designated as the VFD Fan Board on the unit wiring diagram labels. It is a small (3.0 x 3.12 in., 76 x 79 mm) printed circuit board with four SPDT control relays. See Fig. 25. There is no software on this board. The relay board is located in the unit's main control box; refer to unit label diagram for Component Location view.

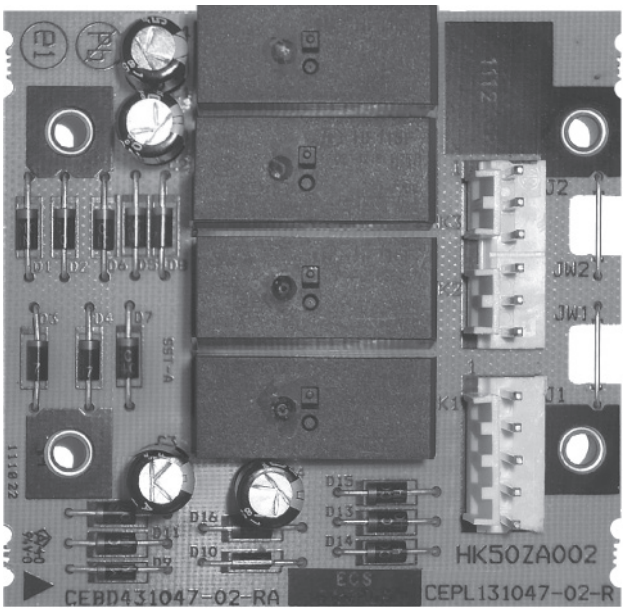


Fig. 25 — VFD Fan Board

The board is arranged in two separate circuits with individual pin connectors. Connector J1 is connected to the 24-vac input signal circuit with the four relay coils. Connector J2 is connected to the 24-VDC output circuit that connects to the VFD's terminal strip. See Fig. 27 (on page 20) for a simplified connection schematic for Fan Speed Relay board and the VFD.

In this SAV application, there are three inputs to the relay board, originating from the space thermostat's G, Y2 and W1 terminals. An input from terminal G (for continuous fan operation for ventilation or from a Y1 call) will result in the VFD starting the indoor fan motor and running the motor at LOW speed. An input from either Y2 or W1 will result in the VFD running the indoor fan motor at HIGH speed. See Table 11 for relay operation for each unit mode. Relay K4 is not used in this 2-speed application.

Table 11 — Two-Speed Configuration Logic (Thermostat Control)

INPUT	RELAY COIL STATUS K1	K2	K3	CONTROLLING OUTPUT	FAN MOTOR SPEED
G	Off	Off	On	K3	Low (40 Hz)
Y1	Off	Off	On	K3	Low (40 Hz)
Y2	Off	On	On	K2	High (60 Hz)
W1	On	On	On	K1	High (60 Hz)

Configuration Jumpers

The relay board has two configuration jumpers, marked JW1 and JW2. For this 2-speed motor application, both jumpers must be cut and open (see Fig. 26). Factory-installed boards will have these jumpers cut. Service replacement boards have these jumpers intact; servicer must cut both jumpers when installing a new service board. Failure to cut these jumpers will cause continuous fan motor operation.

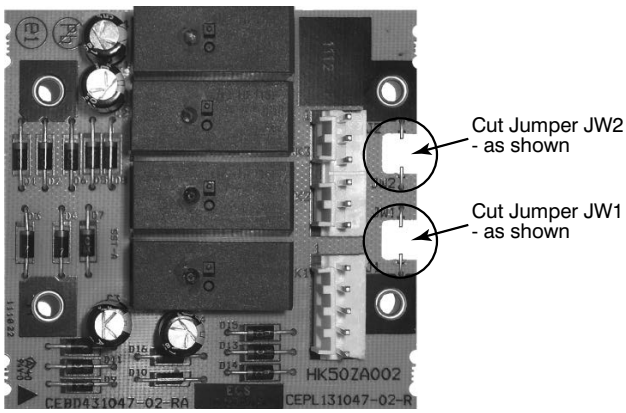


Fig. 26 — Jumpers JW1 and JW2 Cut for Two-Speed Fan Board Configuration

Variable Frequency Drive

The VFD switches the indoor fan motor speed between full/high speed (60 Hz motor operation) and reduced/low speed (40 Hz motor operation) as required by ASHRAE 90.1-2016 and IECC-2015 requirements for two-stage HVAC units. The VFD is factory-configured to match the current and power requirements for each motor selection and all wiring connections are completed by the factory; no field adjustments or connections are necessary.

While the basic VFD retains all of its standard capabilities, the SAV 2-speed application uses only a limited portion of these features to provide two discrete output speeds to the motor. Consequently the VFD is not equipped with a keypad. A keypad is available as an accessory (P/N CRDISKIT001A00) for field-installation or expanded service access to VFD parameter and troubleshooting tables. Refer to Appendix A for expanded discussion on VFD parameters and factory settings.

⚠CAUTION

CONFIGURATION OVERRIDE HAZARD

DO NOT USE ABB OR CARRIER START-UP ASSISTANT ON THIS VFD APPLICATION! Use of start-up assistant will override the factory VFD configurations!

The SAV control circuit inputs to the VFD are 24-VDC signals.

- For ACS320 VFDs the voltage is sourced from the VFD at its terminal 9 (+24 V). SAV speed inputs are received at terminals 13 (DI-2) for low speed (40 Hz) motor operation and 14 (DI-3) for high speed (60 Hz) motor operation. See Table 12 and Fig. 28 (on page 21).

- For ACH550 VFDs the voltage is sourced from the VFD at its terminal 10 (+24 V). SAV speed inputs are received at terminals 14 (DI-2) for low speed (40 Hz) motor operation and 13 (DI-3) for high speed (60 Hz) motor operation. See Table 13 and Fig. 29 (on page 21).

When neither input is present, the VFD will shut the fan motor off. There is no separate indoor fan contactor required in this application.

The VFD used in the SAV™ system has soft start capabilities to slowly ramp up the speeds, eliminating any high inrush of air volume during speed changes. It also has internal over current protection for the fan motor.

INDOOR FAN MOTOR

The indoor fan motors used with the VFD are specially manufactured for use with VFD power circuits. The motor winding insulation is specially formulated to resist breakdown due to voltage stress issues. The motor shaft includes grounding rings to prevent damage to bearings caused by grounding currents. Replace these motors with Factory Authorized Parts available from Replacement Components Division (RCD).

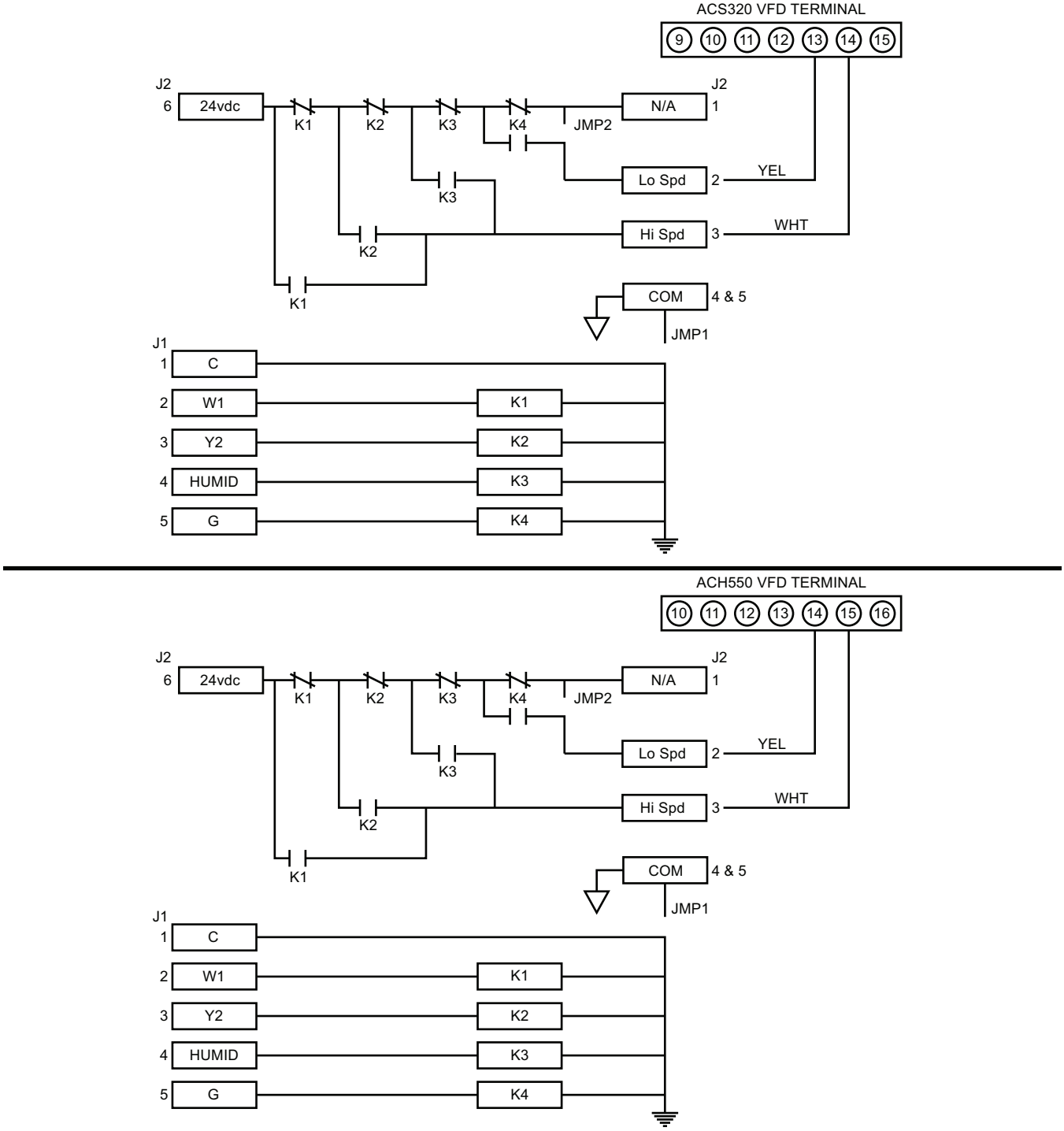


Fig. 27 — Connection Schematic - Fan Speed Relay Board and VFD

Table 12 — ACS320 VFD Terminal Designations

TERMINAL	FUNCTION
U1 V1 W1	Three-Phase main circuit input power supply
U2 V2 W2	Three-Phase AC output to motor, 0V to maximum input voltage level
10 (GND) 11 (COMMON)	Factory-supplied jumper
9 (24 VDC) 12 (DI-1)	Run (factory-supplied jumper)
9 (24 VDC) 15 (DI-4)	Start Enable 1 (factory-supplied jumper). When opened, the drive goes to emergency stop
13 (DI-2) 14 (DI-3)	Factory wired for 24 Vdc input from Fan Speed Board

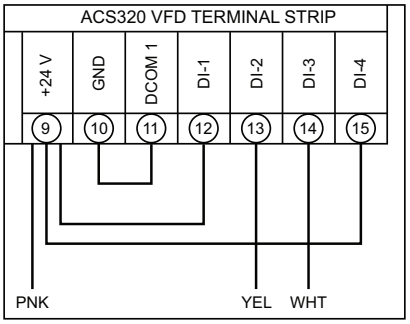


Fig. 28 — ACS320 VFD Wiring

Table 13 — ACH550 VFD Terminal Designations

TERMINAL	FUNCTION
U1 V1 W1	Three-Phase main circuit input power supply
U2 V2 W2	Three-Phase AC output to motor, 0V to maximum input voltage level
11 (GND) 12 (COMMON)	Factory-supplied jumper
10 (24 VDC) 13 (DI-1)	Run (factory-supplied jumper)
10 (24 VDC) 16 (DI-4)	Start Enable 1 (factory-supplied jumper). When opened, the drive goes to emergency stop
14 (DI-2) 15 (DI-3)	Factory wired for 24 Vdc input from Fan Speed Board

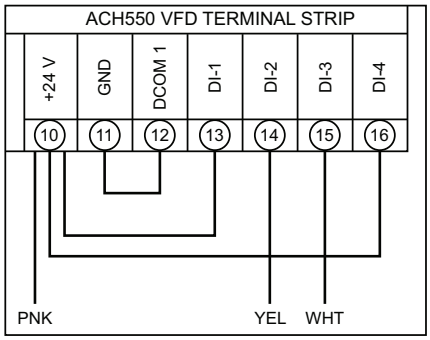


Fig. 29 — ACH550 VFD Wiring

Central Terminal Board Jumpers (48/50 Series Only)

The Central Terminal Board (CTB) is a large printed circuit board that is located in the unit control box. This printed circuit board contains multiple termination strips and connectors to simplify factory control box wiring and field control connections. Terminals are clearly marked on the board surface. See Fig. 30.

The CTB contains no software and no logic. But it does include seven configuration jumpers that are cut to configure the board to read external optional and accessory controls, including that the unit is a heat pump. Table 14 lists the control functions of the jumpers.

Table 14 — CTB Jumpers

JUMPER	CONTROL FUNCTION	NOTE
JMP1	Phase Monitor	
JMP2	Occupancy Control	
JMP3	Smoke Detector Shutdown	
JMP4	Remote Shutdown	
JMP5	Heat Pump/Reheat	50HCQ, TCQ default: Cut
JMP6	Heat Pump/Reheat	50HCQ, TCQ default: Cut
JMP7	Heat Pump/Reheat	50HCQ, TCQ default: Cut

Jumpers JMP5, JMP6 and JMP7 are located in notches across the top of the CTB (see Fig. 30). These jumpers are intact on units with gas heat or electric heat. These jumpers are factory cut on all heat pump units and on units with Humidi-MiZer® (reheat) system option.

Factory-installed boards will have these jumpers factory-cut where required. Service replacement boards have these jumpers intact; servicer must cut these jumpers as indicated in Table 15 when installing a replacement board.

Table 15 — Jumper Configuration

	UNIT TYPE / MODEL		
Configuration Jumper	Gas Heat 48HC, TC*	Electric Heat 50 HC, TC*	Heat Pump 50HCQ, TCQ
JMP5	Intact	Intact	Cut
JMP6	Intact	Intact	Cut
JMP7	Intact	Intact	Cut

* Unit without Humidi-MiZer (reheat) option.

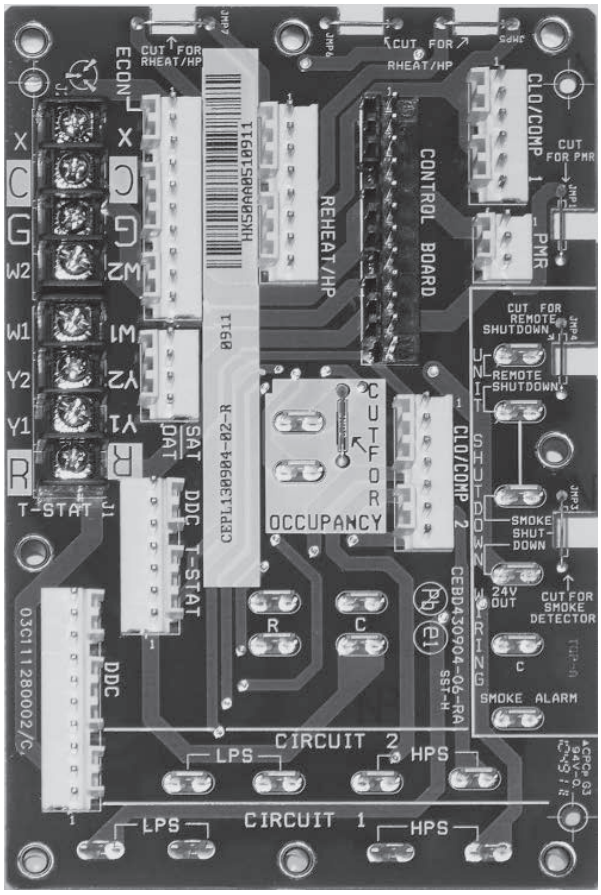


Fig. 30 — Central Terminal Board (CTB)

VFD Fuses

Table 16 details the fuse requirement for the VFD installed in 48/50TC, 50TCQ, 48/50HC, and 50HCQ units. Table 17 details the fuse requirement for the VFD installed in 40RU units. Check the control wiring diagram label on the specific unit in use for the fuse location.

Table 16 — VFD Fuse Requirements, 48/50TC, 50TCQ, 48/50HC, and 50HCQ Units

UNIT	HP	VOLTAGE	VFD	MOTOR	STANDARDIZED FUSE	FUSE P/N	HARNESS WIRE GAUGE*
48/50TC07-14 50TCQ07-12 48/50HC07-12 50HCQ07-09	1.7	208/230	HK30WA523	HD56FR233	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA530	HD56FR463	15A - CLASS CC KTK	HY10KB092	14
		575	HK30WA360	HD56FR579	10A - CLASS CC KTK	HY10KB090	14
	2.4	208/230	HK30WA523	HD56FE653	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA530	HD56FE653	15A - CLASS CC KTK	HY10KB092	14
		575	HK30WA360	HD56FE577	10A - CLASS CC KTK	HY10KB090	14
	2.9	208/230	HK30WA523	HD58FE654	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA530	HD58FE654	15A - CLASS CC KTK	HY10KB092	14
	3.7	208/230	HK30WA523	HD60FE656, HD58FR236	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA534	HD60FE656, HD58FR236	20A - CLASS CC KTK	HY10KB093	14
		575	HK30WA361	HD58FE577	10A - CLASS CC KTK	HY10KB090	14
	4.9	208/230	HK30WA523	HD60FK658	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA532	HD60FK658	30A - CLASS CC KTK	HY10KB095	14
		575	HK30WA362	HD60FE576, HD60FL576	10A - CLASS CC KTK	HY10KB090	14
48/50TC16 50TCQ14 48/50HC14 50HCQ12	2.9	208/230	HK30WA523	HD58FE654	30A - CLASS CC KTK	HY10KB300	14
		460	HK30WA530	HD58FE654	15A - CLASS CC KTK	HY10KB151	14
		575	HK30WA360	—	10A - CLASS CC KTK	HY10KB101	14
	3.7	208/230	HK30WA523	HD60FE656, HD58FR236	30A - CLASS CC KTK	HY10KB300	14
		460	HK30WA534	HD60FE656, HD58FR236	20A - CLASS CC KTK	HY10KB200	14
		575	HK30WA361	HD58FE577	10A - CLASS CC KTK	HY10KB101	14
	5	208/230	HK30WA524	HD60FK657, HD60FK659	30A - CLASS CC KTK	HY10KB300	14
		460	HK30WA532	HD60FK657, HD60FK659	30A - CLASS CC KTK	HY10KB300	14
		575	HK30WA362	HD60FE576, HD60FL576, HD60FK577	15A - CLASS CC KTK	HY10KB151	14
48/50TC17-30 50TCQ17-24 48/50HC17-28	2.9	208/230	HK30WA523	HD58FE654	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530	HD58FE654	15A - CLASS CC KTK	HY10KB151	12
		575	HK30WA360	—	10A - CLASS CC KTK	HY10KB101	12
	3.7	208/230	HK30WA523	HD58FR236	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA534	HD60FE656	20A - CLASS CC KTK	HY10KB200	12
		575	HK30WA361	HD58FE577	10A - CLASS CC KTK	HY10KB101	12
	4.9	208/230	HK30WA523	HD60FK658	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA532	HD60FK658	30A - CLASS CC KTK	HY10KB300	12
		575	HK30WA362	HD60FE576, HD60FL576	15A - CLASS CC KTK	HY10KB151	12
	5	208/230	HK30WA524	HD60FK657, HD60FK659	60 - CLASS J, JKS	HY10JK060	8
		460	HK30WA532	HD60FK657, HD60FK659	30A - CLASS CC KTK	HY10KB300	12
		575	HK30WA362	HD60FE576, HD60FL576, HD60FK577	15A - CLASS CC KTK	HY10KB151	12
	7.5	208/230	HK30WA524	HD62FK654	60 - CLASS J, JKS	HY10JK060	8
		460	HK30WA532	HD62FK654	30A - CLASS CC KTK	HY10KB300	12
		575	HK30WA362	HD62FL576	15A - CLASS CC KTK	HY10KB151	12
	10	208/230	HK30WA525	HD64FK654	60 - CLASS J, JKS	HY10JK060	8
		460	HK30WA533	HD64FK654	30A - CLASS CC KTK	HY10KB300	12
		575	HK30WA363	HD64FL576	15A - CLASS CC KTK	HY10KB151	12

*Harness wire gauge between control box and VFD.

Table 17 — VFD Fuse Requirements, 40RU Units

UNIT	HP	VOLTAGE	VFD	MOTOR	STANDARDIZED FUSE	FUSE P/N	HARNESS WIRE GAUGE*
40RU	1.7	208/230	HK30WA523	HD56FR233	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530	HD56FR463	15A - CLASS CC KTK	HY10KB151	10
		575	HK30WA360	HD56FR579	10A - CLASS CC KTK	HY10KB101	10
	2.4	208/230	HK30WA523	HD56FE653	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530	HD56FE653	15A - CLASS CC KTK	HY10KB151	10
		575	HK30WA360	HD56FE577	10A - CLASS CC KTK	HY10KB101	10
	2.9	208/230	HK30WA523	HD58FE654	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530	HD58FE654	30A - CLASS CC KTK	HY10KB300	10
	3.7	208/230	HK30WA523	HD58FR236	30A - CLASS CC KTK	HY10KB300	10
		208/230	HK30WA523	HD60FE656	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA534	HD58FR236	20A - CLASS CC KTK	HY10KB200	10
		460	HK30WA534	HD60FE656	20A - CLASS CC KTK	HY10KB200	10
		575	HK30WA361	HD58FE577	10A - CLASS CC KTK	HY10KB101	10
	5	208/230	HK30WA524	HD60FK659	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA532	HD60FK659	30A - CLASS CC KTK	HY10KB300	10
		575	HK30WA362	HD60FK577	15A - CLASS CC KTK	HY10KB151	10
	7.5	208/230	HK30WA523	HD62FK654	60A - CLASS J	HY10JK060	10
		460	HK30WA532	HD62FK654	30A - CLASS CC KTK	HY10KB300	10
		575	HK30WA362	HD62FL576	15A - CLASS CC KTK	HY10KB151	10
	10	208/230	HK30WA525	HD64FK654	60A - CLASS J	HY10JK060	10
		460	HK30WA533	HD64FK654	30A - CLASS CC KTK	HY10KB300	10
		575	HK30WA363	HD64FL576	15A - CLASS CC KTK	HY10KB151	10

*Harness wire gauge between control box and VFD.

Control and Power Wiring Diagrams

See Fig. 31-37 for examples of typical unit wiring diagrams. For details pertaining to a specific unit, see the control and power wiring diagram labels on the unit.

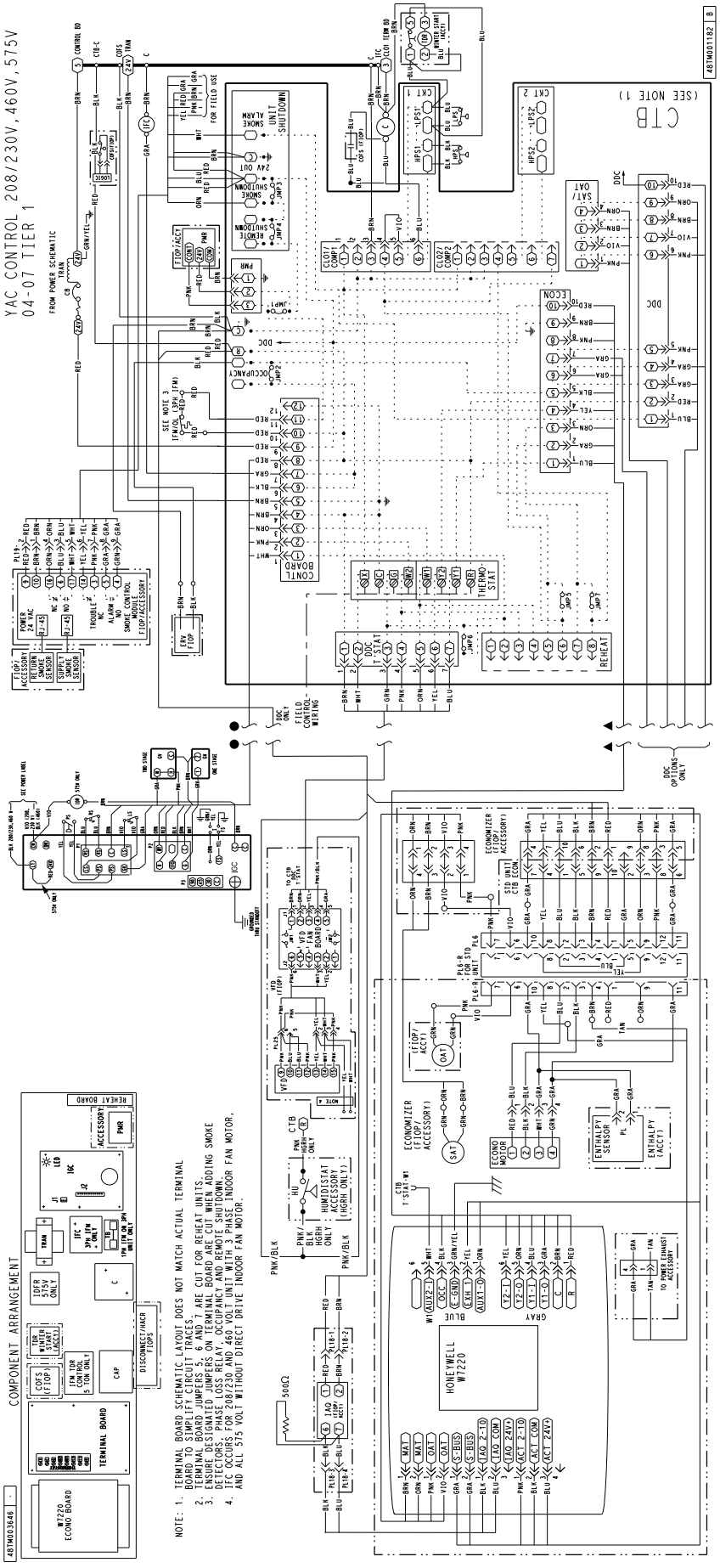


Fig. 31 — Typical Wiring Diagram - Single Package Rooftop Unit (48TC*07 with ACS320 VFD shown)

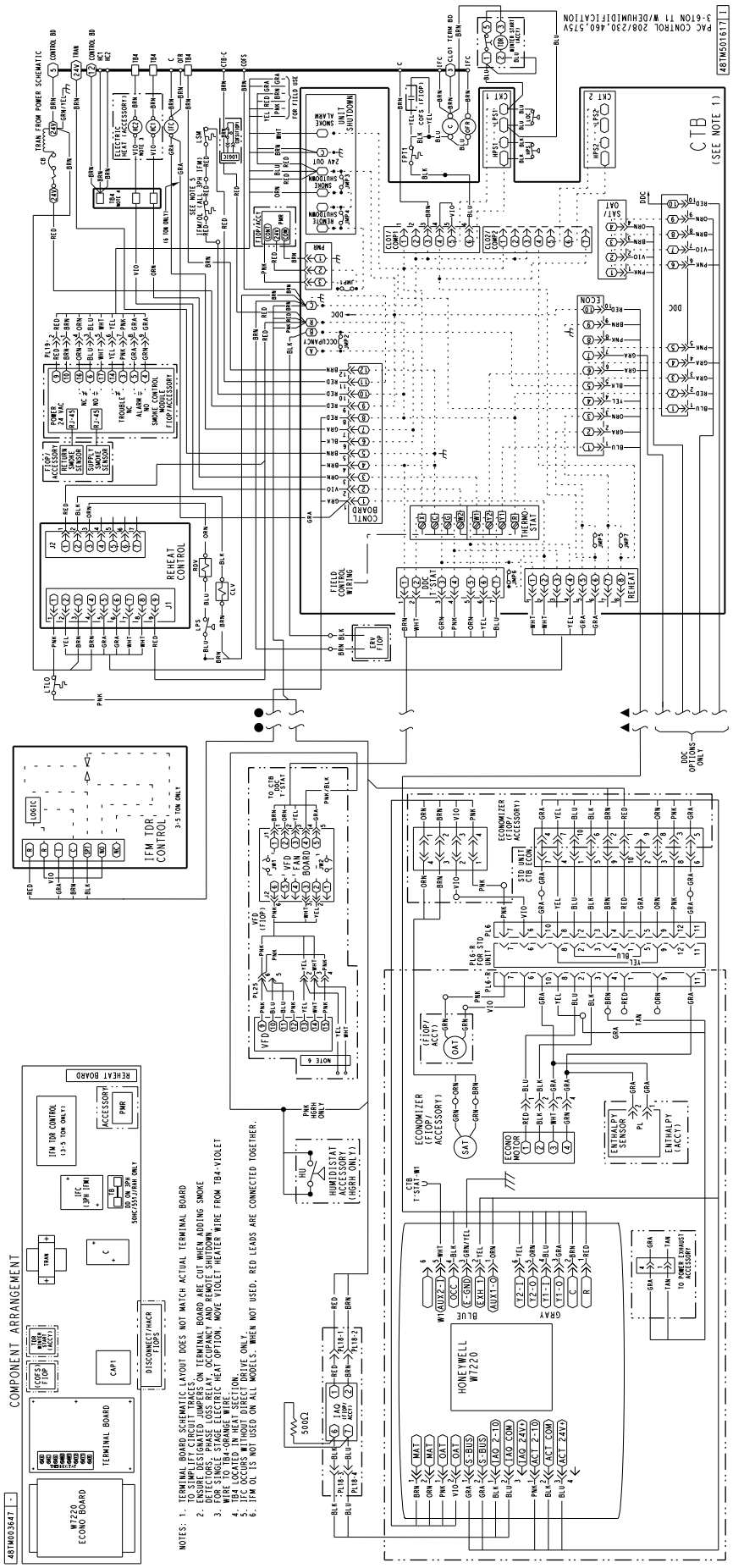


Fig. 32 — Typical Wiring Diagram - Single Package Rooftop Unit (50TC*07 with ACS320 VFD shown)

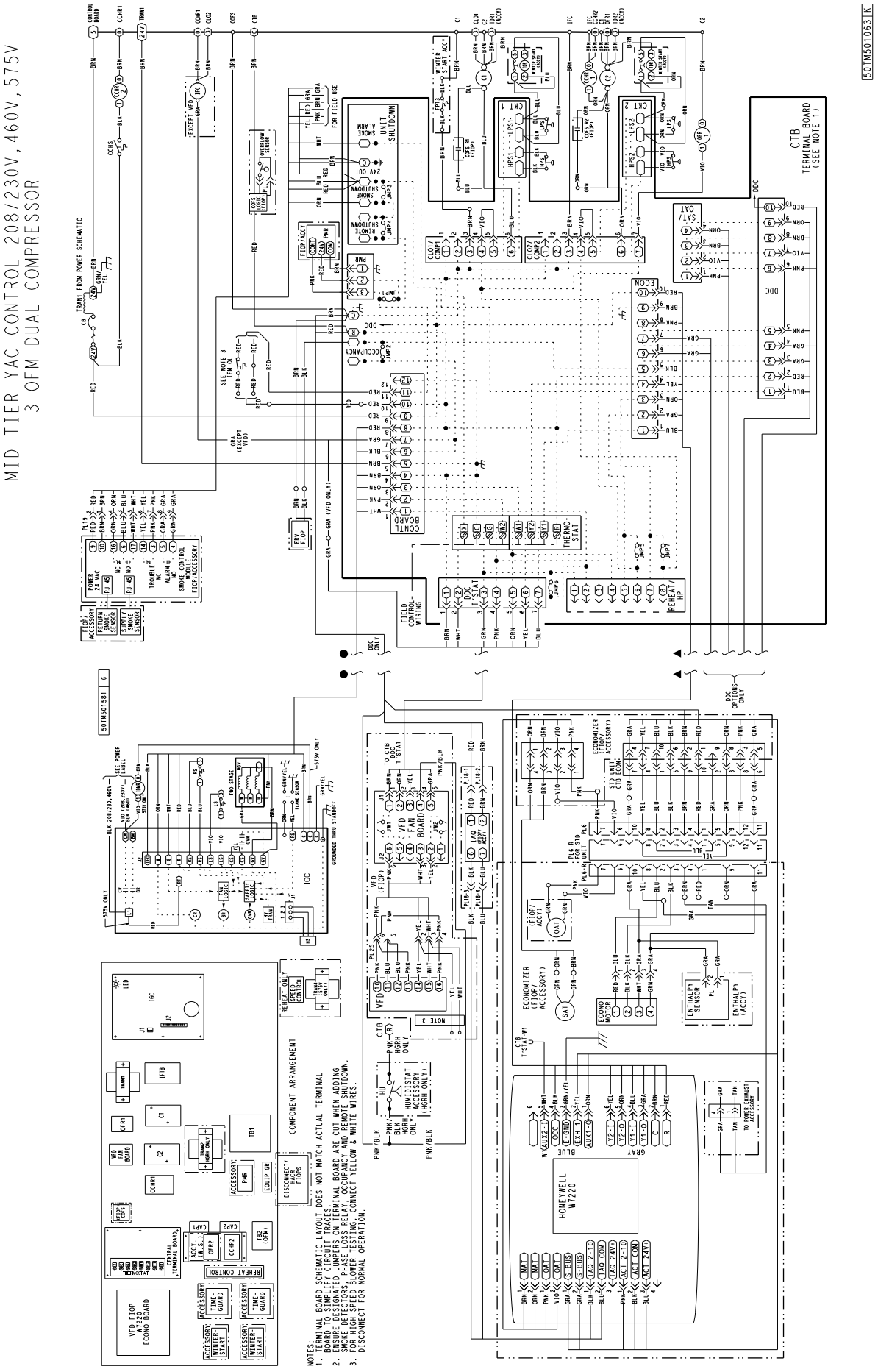


Fig. 33 — Typical Wiring Diagram - Single Package Rooftop Unit (48HC*14 with ACH550 VFD shown)

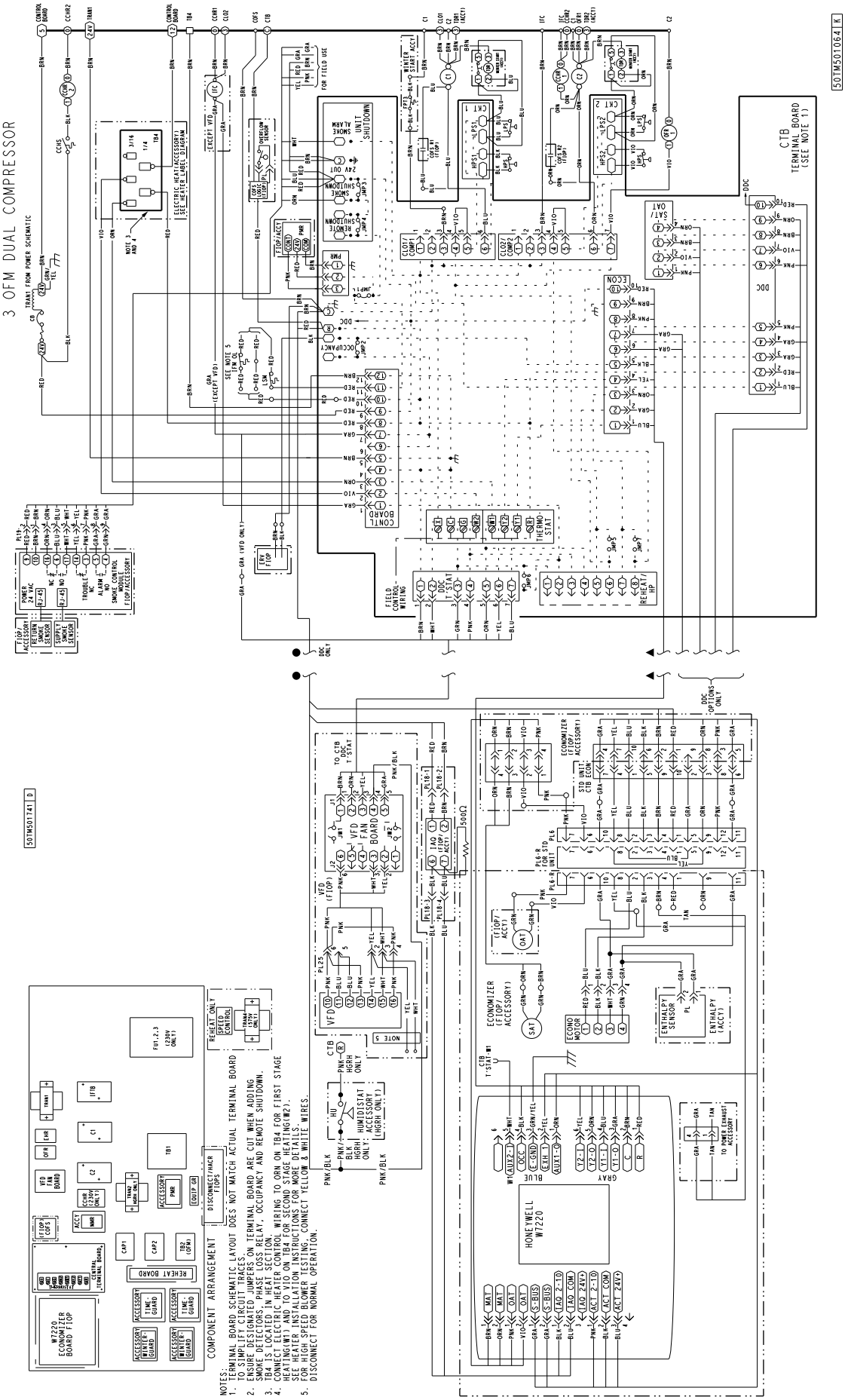
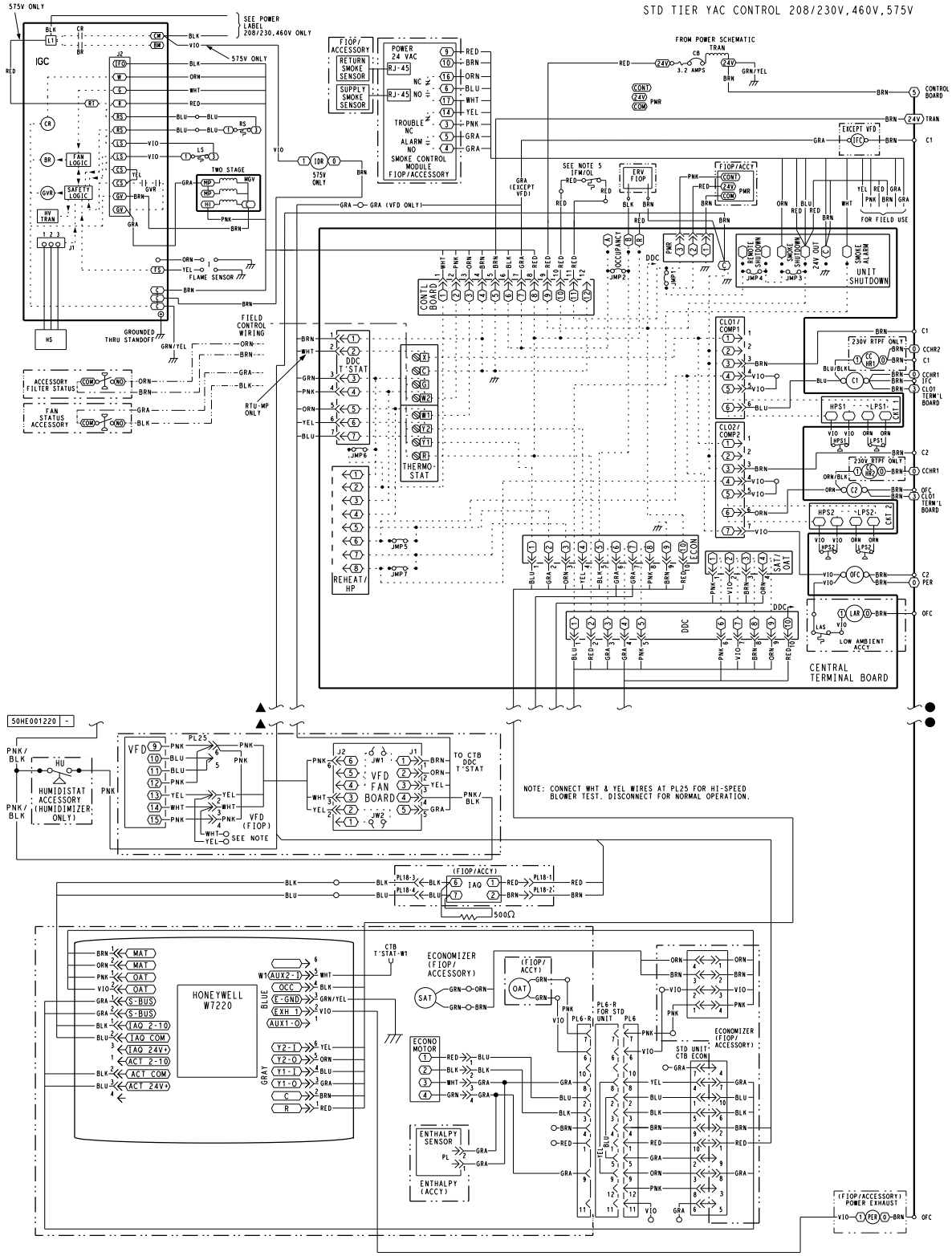


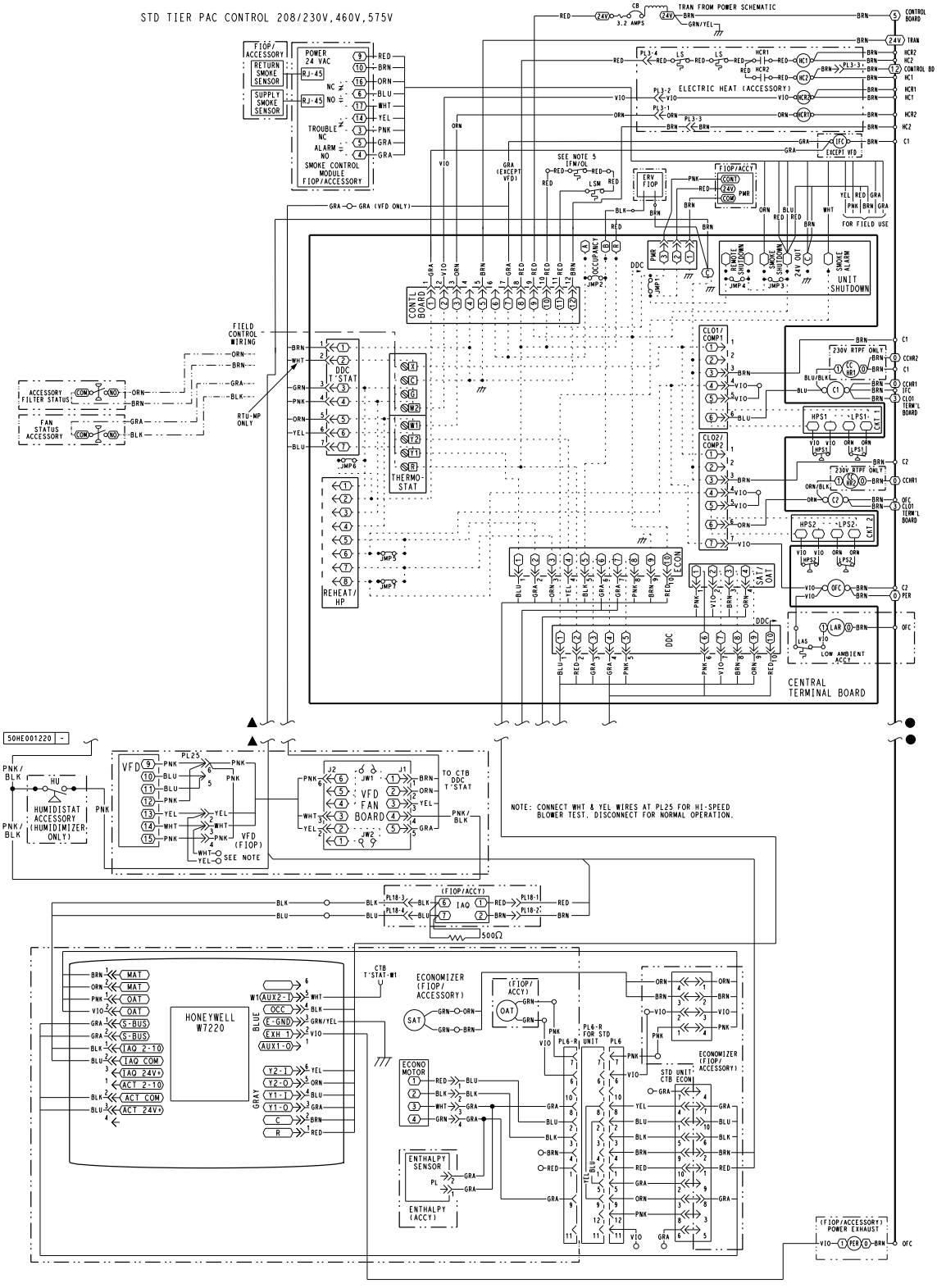
Fig. 34 — Typical Wiring Diagram - Single Package Rooftop Unit (50HC*14 with ACH550 VFD shown)



NOTES
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
2. COMPRESSOR AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
3. 208/230V UNIT TRAN IS WIRED FOR 230V UNIT. IF UNIT IS TO BE RUN WITH 208V POWER SUPPLY DISCONNECT BLK WIRE FROM 230V TAP AND CONNECT TO 200V TAP.
4. USE COPPER CONDUCTOR ONLY.
5. IFM OL IS NOT USED ON ALL MODELS. WHEN NOT USED, RED LEADS ARE CONNECTED TOGETHER.

C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCHR	CRFANKCASE HEATER RELAY
CCN	CARRIER COMFORT NETWORK
CMP SAFE	COMPRESSOR SAFFETY
COFS	CONDENSATE OVERFLOW SWITCH
COMP	COMPRESSOR MOTOR
CTB	CENTRAL TERMINAL BOARD
DDC	DIRECT DIGITAL CONTROL
ERV	ENERGY RECOVERY VENTILATOR
FIOP	FACTORY INSTALLED OPTION
FSD	FIRE SHUT DOWN
FU	FUSE
GND	GROUND
GVR	GAS VALVE RELAY
HPS	HIGH PRESSURE SWITCH
HS	HALL EFFECT SENSOR
I	IGNITOR
IAQ	INDOOR AIR QUALITY SENSORS
IDM	INDUCED DRAFT MOTOR
IDR	INDUCED DRAFT RELAY
IFC	INDOOR FAN CONTACTOR
IFM	INDOOR FAN MOTOR
IGC	INTEGRATED GAS CONTROL
IRH	INDOOR RELATIVE HUMIDITY
LA	LOW AMBIENT LOCKOUT
LAR	LOW AMBIENT RELAY
LAS	LOW AMBIENT SWITCH
LOOP PWR	CURRENT LOOP POWER
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
MGV	MAIN GAS VALVE
OAQ	OUTDOOR AIR QUALITY
OAT	OUTDOOR AIR TEMP. SEN
OFC	OUTDOOR FAN CONTACTOR
OFM	OUTDOOR FAN MOTOR
OFTB	OUTDOOR FAN TERMINAL BLOCK
OLR	OVERLOAD RELAY
PER	POWER EXHAUST RELAY
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PMR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
R	RELAY
RAT	RETURN AIR TEMP. SEN
RMT OCC	REMOTE OCCUPANCY
RS	ROLLOUT SWITCH
RTPF	ROUND TUBE PLATE FIN CONDENSER COIL
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SET	SET POINT OFFSET
SFS	SUPPLY FAN STATUS
TDR	TIME DELAY RELAY
TRAN	TRANSFORMER
VFD	VARIABLE FREQUENCY DRIVE

Fig. 35 — Typical Wiring Diagram - Single Package Rooftop Unit (48TC*17-30 & 48HC*17-28 no Comfort Link with ACS320 VFD shown)



NOTES
1. IF ANY OF THE ORIGINAL WIRE FURNISHED MUST BE REPLACED, IT MUST BE REPLACED WITH TYPE 90 C WIRE OR ITS EQUIVALENT.
2. COMPRESSOR AND FAN MOTORS ARE THERMALLY PROTECTED. THREE PHASE MOTORS ARE PROTECTED AGAINST PRIMARY SINGLE PHASING CONDITIONS.
3. 208/230V UNIT TRAN IS WIRED FOR 230V UNIT. IF UNIT IS TO BE RUN WITH 208V POWER SUPPLY DISCONNECT BLK WIRE FROM 230V TAP AND CONNECT TO 200V TAP.
4. USE COPPER CONDUCTOR ONLY.
5. IFM OL IS NOT USED ON ALL MODELS. WHEN NOT USED, RED LEADS ARE CONNECTED TOGETHER.

C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCHR	CRANKCASE HEATER RELAY
CCN	CARRIER COMFORT NETWORK
CMP SAFE	COMPRESSOR SAFETY
COFS	CONDENSATE OVERFLOW SWITCH
COMP	COMPRESSOR MOTOR
CTB	CENTRAL TERMINAL BOARD
DDC	DIRECT DIGITAL CONTROL
EVR	ENERGY RECOVERY VENTILATOR
FIOP	FACTORY INSTALLED OPTION
FSD	FIRE SHUT DOWN
FU	FUSE
GR	GROUND
HC	HEATER CONTACTOR
HCR	HEATER CONTROL RELAY
HPS	HIGH PRESSURE SWITCH
IAQ	INDOOR AIR QUALITY SENSORS
IFC	INDOOR FAN CONTACTOR
IFM	INDOOR FAN MOTOR
IRH	INDOOR RELATIVE HUMIDITY
LA	LOW AMBIENT LOCKOUT
LAR	LOW AMBIENT RELAY
LAS	LOW AMBIENT SWITCH
LOOP PWR	CURRENT LOOP POWER
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
OAQ	OUTDOOR AIR QUALITY
OAT	OUTDOOR AIR TEMP. SEN
OFC	OUTDOOR FAN CONTACTOR
OFM	OUTDOOR FAN MOTOR
OFTB	OUTDOOR FAN TERMINAL BLOCK
OLR	OVERLOAD RELAY
PER	POWER EXHAUST RELAY
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PWR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
R	RELAY
RAT	RETURN AIR TEMP. SEN
RMT OCC	REMOTE OCCUPANCY
RTPF	ROUND TUBE PLATE FIN CONDENSER COIL
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SET	SET POINT OFFSET
SFS	SUPPLY FAN STATUS
TDR	TIME DELAY RELAY
TRAN	TRANSFORMER
VFD	VARIABLE FREQUENCY DRIVE

50HE500887 | L

Fig. 36 — Typical Wiring Diagram - Single Package Rooftop Unit (50TC*17-30 & 50HC*17-28 no Comfort Link with ACS320 VFD shown)

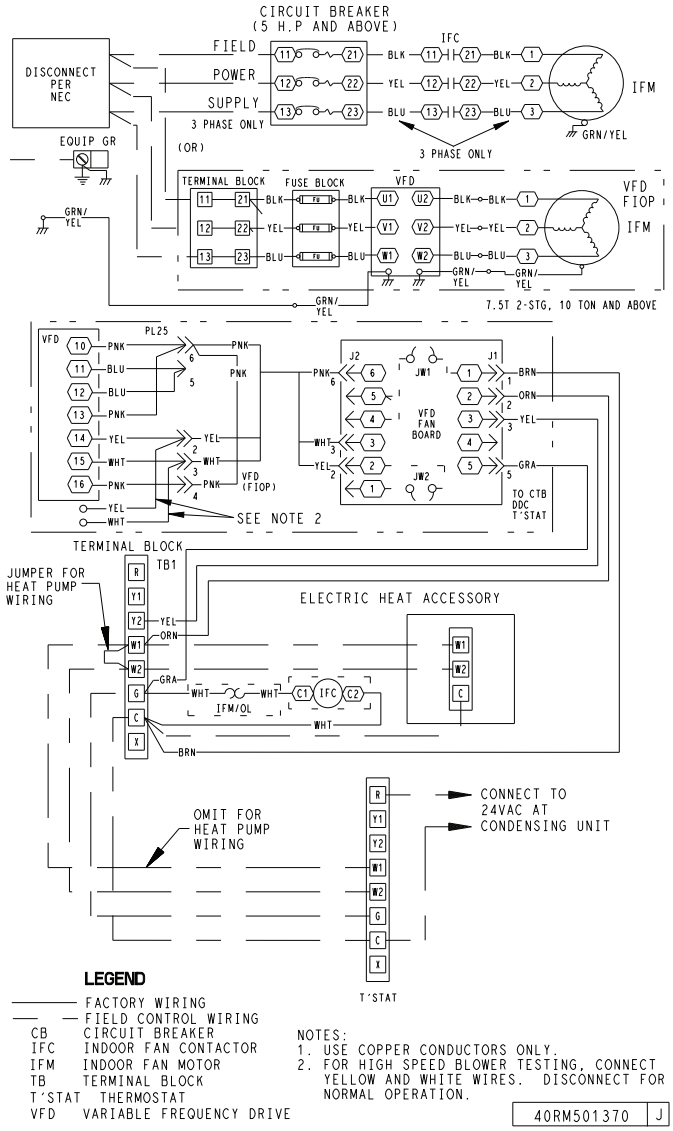


Fig. 37 — Typical Wiring Diagram - Split System Air-Handling Unit (40RU with ACH550 VFD shown)

VFD ALARMS AND FAULTS TROUBLESHOOTING

The VFD has two LEDs on its front panel that indicate VFD operating status. These LEDs are GREEN and RED.

- GREEN LED ON STEADY: Power ON to VFD
- GREEN LED FLASHING: Alarm condition detected
- RED LED ON (Steady or Flashing): Fault condition detected

Alarms

Alarms are advisory in nature. These indicate a problem has been detected by the VFD's diagnostics but this problem will not require that the VFD and its motor be shut down. Typical fault condition on the SAV™ application might be loose connections at the VFD terminal board or damaged conductors between the Fan Speed Board connector J2 and the VFD terminal strip. See Table I in Appendix A for a full list.

CLEAR THE ALARM LED

Shut off power to the VFD for five minutes. Restore power and recheck the GREEN LED. If this LED is still flashing, connect the accessory remote display keypad kit and follow the troubleshooting instructions in Appendix A, page 77.

Faults

A fault is a significant internal situation for the VFD or its motor. If the motor was running when the fault was detected, it was shutdown. See Table H in Appendix A for a full list of Faults, display codes and recommended actions. Connect the accessory remote display keypad kit and follow the troubleshooting instructions in Appendix A.

CLEAR THE FAULT LED

Shut off power to the VFD for five minutes. Restore power and recheck the RED LED.

VFD Maintenance

If installed in an appropriate environment, the VFD requires very little maintenance.

Table 18 lists the routine maintenance intervals recommended by Carrier.

Table 18 — Maintenance Intervals

MAINTENANCE	INTERVAL
Heat sink temperature check and cleaning	Every 6 to 12 months (depending on the dustiness of the environment)
HVAC control panel battery change	Every ten years

Heat Sink Cleaning

The heat sink fins accumulate dust from the cooling air. In a normal environment check the heat sink annually, in a dusty environment check more often.

Use the following procedure to clean the heat sink on AHC550 VFDs:

1. Turn off and lock out unit power.
2. Remove the drive cover (see Fig. 38).
3. Press together the retaining clips on the top cover and lift (see Fig. 39).

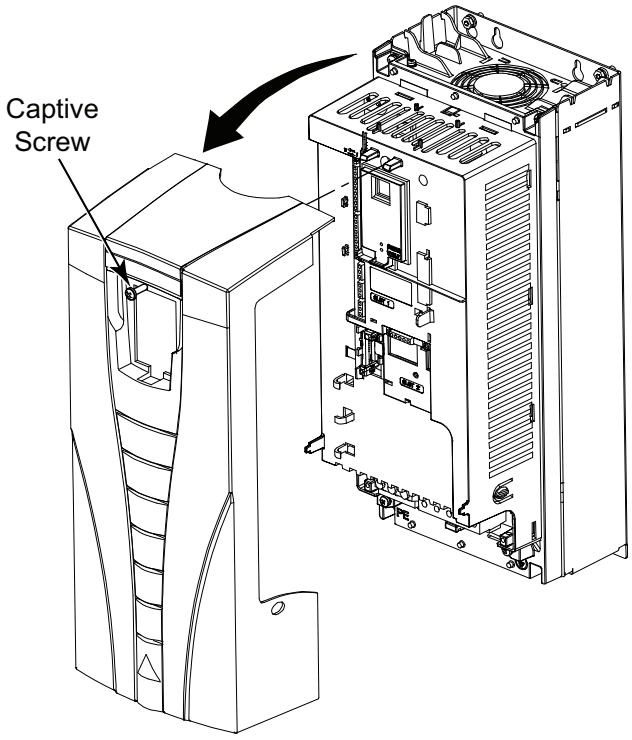


Fig. 38 — Remove ACH550 VFD Front Cover

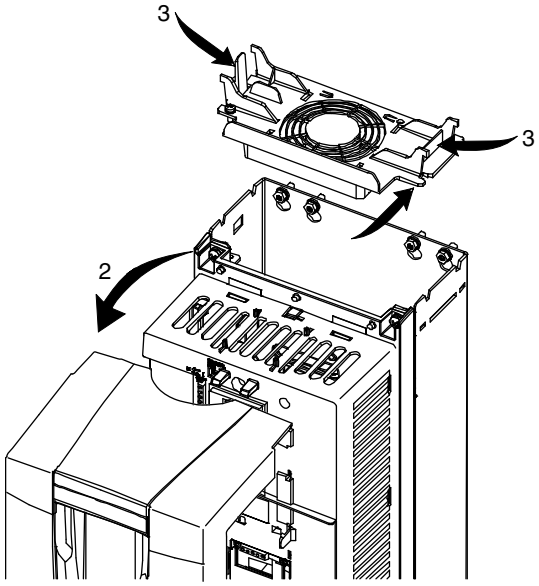


Fig. 39 — Remove Top Cover on ACH550 VFD

4. Blow clean compressed air (not humid) from bottom to top while simultaneously using a vacuum cleaner at the air outlet to trap the dust.
5. Replace the cooling fan.
6. Replace the drive cover.
7. Restore power.

Use the following procedure to clean the heat sink on ASC320 VFDs:

1. Turn off and lock out unit power.
2. Insert a small straight blade screwdriver into the slot and press in to release the top cover as shown in Fig. 40.

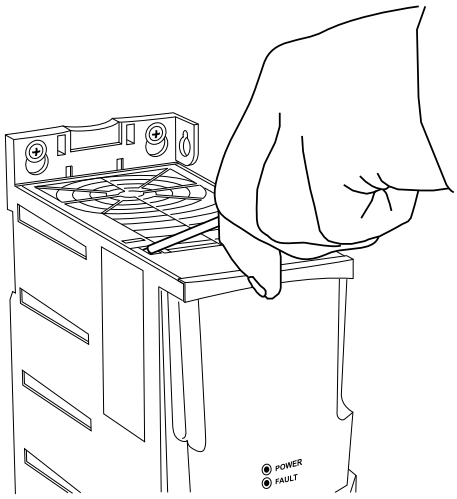


Fig. 40 — Remove Top Cover on ACS320 VFD

3. Blow clean compressed air (not humid) from top of ACS320 while simultaneously using a vacuum cleaner at the base to trap the dust.
4. Replace the top cover.
5. Restore power.

Bypass the VFD

⚠ WARNING

Bypassing the VFD is not recommended. This is a temporary procedure to provide cooling or heating operation when a new VFD is required. When in this bypass mode the fire shut down will not turn off the blower and it will continue to run. The bypass should only be used for a short duration until a new VFD has been received.

The factory-installed VFD is wired and agency approved as outlined in this manual. This VFD is utilized to help provide added efficiencies and comfort during the cooling operation.

If there is an occasion where the VFD has mis-functioned and temporary cooling/operation is required, bypass the VFD as shown in Fig. 41 and 42.

To bypass ACS320 VFD on fused units – 48/50TC 07-14, 50TCQ 07-12, 48/50HC 07-12, 50HCQ 08-09, and 40RU:

1. Turn off and lock out unit power.
2. Disconnect the connector linking the fuse to the VFD.
3. Disconnect the connector between the VFD and the indoor fan motor.
4. Disconnect the ground wires at the base of the VFD.
5. Remove the VFD, if required.
6. Connect the lead from the fuse to the lead from the indoor fan motor.
7. Connect the ground wire from the indoor fan motor to the fan deck.
8. Restore power.

To bypass ACH550 VFD on non-fused units – 48/50TC 16-30, 50TCQ 14-24, and 48/50HC 17-28:

1. Turn off and lock out unit power.
2. Disconnect the connection between the control box and the VFD.

3. Disconnect the connection between the indoor fan motor and the VFD.
4. Disconnect the ground wires at the base of the VFD.
5. Remove the VFD, if required.
6. Connect the lead from the control box to the lead from the indoor fan motor.
7. Attach the ground wire leading from the fan motor to the fan deck.
8. Restore power.

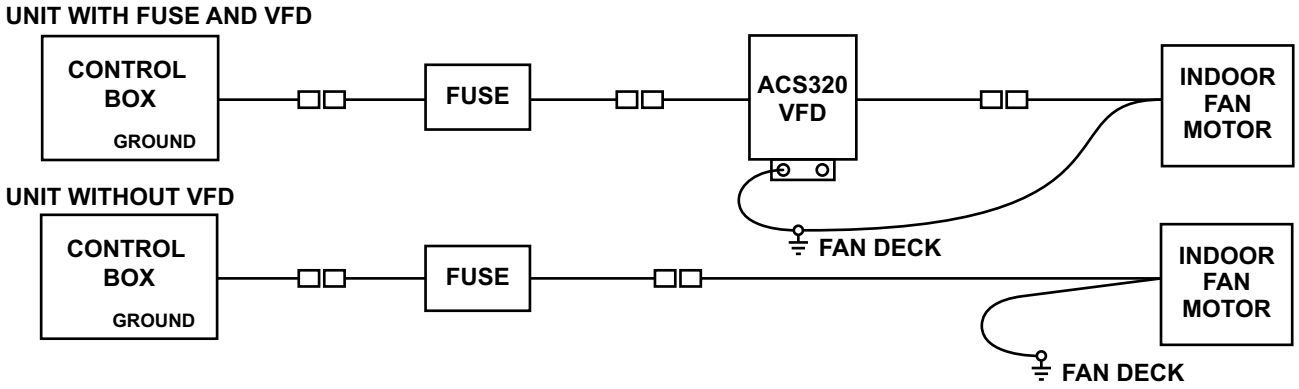


Fig. 41 — To Bypass ACS320 VFD on Fused Units — 48/50TC 07-14, 50TCQ 07-12, 48/50HC 07-12, 50HCQ 08-09, and 40RU Units

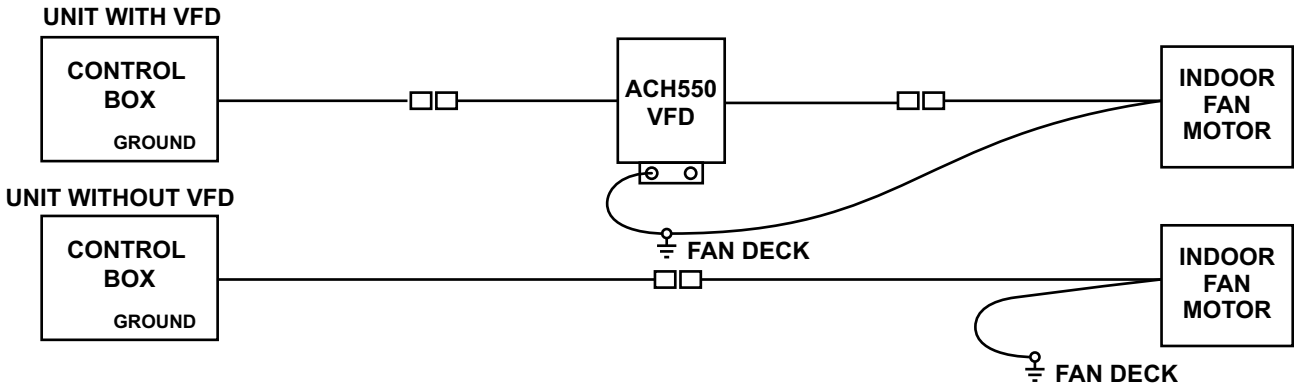


Fig. 42 — To Bypass ACH550 VFD on Non-fused Units — 48/50TC 16-30, 50TCQ 14-24, and 48/50HC 17-28 Units

VFD PARAMETERS

The parameters for the VFDs are listed in the following tables

- Table 19 — ACS320 VFD common parameters for 48/50 units with electromechanical controls
- Table 20 — ACS320 Parameters for 48/50 units with electromechanical controls
- Table 21 — ACS320 VFD common parameters for 48/50 units with I/O Flex controls
- Table 22 — ACS320 Parameters for 48/50 units with I/O Flex controls
- Table 23 — ACS320 VFD common parameters for 40RU units with electromechanical controls
- Table 24 — ACS320 Parameters for 40RU units with electromechanical controls
- Table 25 — ACS320 VFD common parameters for 40RU units with I/O Flex controls
- Table 26 — ACS320 Parameters for 40RU units with I/O Flex controls
- Table 27 — ACH550 VFD common parameters for 48/50 units with electromechanical controls
- Table 28 — ACH550 Parameters for 48/50 units with electromechanical controls
- Table 29 — ACH550 common parameters for 48/50 units with I/O Flex controls
- Table 30 — ACH550 Parameters for 48/50 units with I/O Flex controls
- Table 31 — ACH550 VFD common parameters for 40RU units with I/O Flex controls
- Table 32 — ACH550 Parameters for 40RU units with I/O Flex controls
- Table 33 — ACH550 common parameters for 48/50 units with ComfortLink controls
- Table 34 — ACH550 Parameters for 48/50 units with ComfortLink controls

Table 19 — ACS320 VFD Common Parameters for 48/50 Units with Electromechanical Controls

PARAMETERS	DESCRIPTION	SETTING ACS320
9802	COMM PROT Sel	Not Selected
9907	Motor Nominal Frequency	60Hz
1001	EXT1 Commands	—
1102	EXT1/EXT2 Sel	—
1103	REF 1 Select	—
1201	Const Speed Sel	DI 2,3
1202	Const Speed 1	40Hz
1203	Const Speed 2	60Hz
1204	Const Speed 3	60Hz
1205	Const Speed 4	—
1401	Relay Output 1	(16) FLT/ALARM
1403	Relay Output 3	Not Selected
1501	AO1 Content Sel	—
1601	Run Enable	—
1608	N/A	—
1611	Parameter View	3
2007	Minimum Frequency	0.0 HZ
2008	Maximum Frequency	60HZ
2101	Start FCN	(1) Auto
2102	Stop FCN	(1) Coast
2201	ACCEL/DECEL	(0) Not Sel
2202	ACCEL	30s
2203	DECEL	30s
2603	IR COMP Volt	0 volts
2606	Switching Freq	4 HZ
3102	Trial Time	300.0s
3103	Delay Time	6.0s
3104	AR Overcurrent	(1) Enabled
5101	FBA Type	—
5201	Station ID	—
5202	Baud Rate	—
5203	Parity	—
5301	EFB Protocol ID	—
5302	EFB Station ID	—
5303	EFB Baud Rate	—
5304	EFB Parity	—
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 20 — ACS320 VFD Parameters, for 48/50 Units with Electromechanical Controls

VFD PARAMETERS	PKG ABB ACS320	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48TM003773-DATA	48TM003773	HD56FR233	HK30WA523	3	SRT 1.7 HP 230V
48TM003776-DATA	48TM003776	HD56FR463	HK30WA530	3	SRT 1.7 HP 460V
48TM003772-DATA	48TM003772	HD56FE653	HK30WA523	3	SRT 2.4 HP 230V
48TM003784-DATA	48TM003784	HD56FE653	HK30WA530	3	SRT 2.4 HP 460V
48TM003782-DATA	48TM003782	HD58FE654	HK30WA523	3	SRT 2.9 HP 230V
48TM003777-DATA	48TM003777	HD58FE654	HK30WA530	3	SRT 2.9 HP 460V
48TM003774-DATA	48TM003774	HD60FE656	HK30WA523	3	SRT 3.7 HP 230V
48TM003783-DATA	48TM003783	HD60FE656	HK30WA534	5	SRT 3.7 HP 460V
48TM003775-DATA	48TM003775	HD60FK658	HK30WA523	3	SRT 5.3 HP 230V
48TM003778-DATA	48TM003778	HD60FK658	HK30WA532	7.5	SRT 5.3 HP 460V
50TM001206-DATA	50TM001206	HD58FE654	HK30WA523	3	STR 2.9 HP 230V
50TM001211-DATA	50TM001211	HD58FE654	HK30WA530	3	STR 2.9 HP 460V
50TM001209-DATA	50TM001209	HD60FE656	HK30WA523	3	STR 3.7 HP 230V
50TM001210-DATA	50TM001210	HD60FE656	HK30WA534	5	STR 3.7 HP 460V
50TM001208-DATA	50TM001208	HD60FK657	HK30WA524	7.5	STR 5.0 HP 230V
50TM001212-DATA	50TM001212	HD60FK657	HK30WA532	7.5	STR 5.0 HP 460V
50HE001312-DATA	50HE001312	HD58FE654	HK30WA523	3	MRT 2.9 HP 230V
50HE001316-DATA	50HE001316	HD58FE654	HK30WA530	3	MRT 2.9 HP 460V
50HE001313-DATA	50HE001313	HD60FE656	HK30WA523	3	MRT 3.7 HP 230V
50HE001317-DATA	50HE001317	HD60FE656	HK30WA534	5	MRT 3.7 HP 460V
50HE001314-DATA	50HE001314	HD60FK657	HK30WA524	7.5	MRT 5.0 HP 230V
50HE001318-DATA	50HE001318	HD60FK657	HK30WA532	7.5	MRT 5.0 HP 460V
50HE001315-DATA	50HE001315	HD62FK654	HK30WA524	7.5	MRT 7.5 HP 230V
50HE001319-DATA	50HE001319	HD62FK654	HK30WA532	7.5	MRT 7.5 HP 460V
50HE001320-DATA	50HE001320	HD60FK658	HK30WA523	3	MRT 5.3 HP 230V
50HE001321-DATA	50HE001321	HD60FK658	HK30WA532	7.5	MRT 5.3 HP 460V
50HE402586-DATA	50HE402586	HD64FK654	HK30WA525	10	MRT 10.0 HP 230V
50HE402591-DATA	50HE402591	HD64FK654	HK30WA533	10	MRT 10.0 HP 460V
50HE002320-DATA	50HE002320	HD58FE654	HK30WA523	3	MRT 2.9 HP 230V
50HE002324-DATA	50HE002324	HD58FE654	HK30WA530	3	MRT 2.9 HP 460V
50HE002321-DATA	50HE002321	HD60FE656	HK30WA523	3	MRT 3.7 HP 230V
50HE002325-DATA	50HE002325	HD60FE656	HK30WA534	5	MRT 3.7 HP 460V
50HE002322-DATA	50HE002322	HD60FK657	HK30WA524	7.5	MRT 5.0 HP 230V
50H4002326-DATA	50H4002326	HD60FK657	HK30WA532	7.5	MRT 5.0 HP 460V
50HE002323-DATA	50HE002323	HD62FK654	HK30WA524	7.5	MRT 7.5 HP 230V
50HE002327-DATA	50HE002327	HD62FK654	HK30WA532	7.5	MRT 7.5 HP 460V
50HE002331-DATA	50HE002331	HD60FK658	HK30WA523	3	MRT 5.3 HP 230V
50HE002333-DATA	50HE002333	HD60FK658	HK30WA532	7.5	MRT 5.3 HP 460V
50HE003081-DATA	50HE003081	HD58FE654	HK30WA523	3	MRT 2.9 HP 230V
50HE003082-DATA	50HE003082	HD58FE654	HK30WA530	3	MRT 2.9 HP 460V
50HE003084-DATA	50HE003084	HD60FE656	HK30WA523	3	MRT 3.7 HP 230V
50HE003085-DATA	50HE003085	HD60FE656	HK30WA534	5	MRT 3.7 HP 460V
50HE003086-DATA	50HE003086	HD60FK658	HK30WA523	3	MRT 5.3 HP 230V
50HE003087-DATA	50HE003087	HD60FK658	HK30WA532	7.5	MRT 5.3 HP 460V
50HE003089-DATA	50HE003089	HD60FK657	HK30WA524	7.5	MRT 5.0 HP 230V
50HE003090-DATA	50HE003090	HD60FK657	HK30WA532	7.5	MRT 5.0 HP 460V
50HE003092-DATA	50HE003092	HD62FK654	HK30WA524	7.5	MRT 7.5 HP 230V
50HE003093-DATA	50HE003093	HD62FK654	HK30WA532	7.5	MRT 7.5 HP 460V
48TM005163-DATA	48TM005163	HD56FR233	HK30WA523	3	SRT 1.7 HP 230V
48TM005166-DATA	48TM005166	HD56FR463	HK30WA530	3	SRT 1.7 HP 460V
48TM005162-DATA	48TM005162	HD56FE653	HK30WA523	3	SRT 2.4 HP 230V
48TM005174-DATA	48TM005174	HD56FE653	HK30WA530	3	SRT 2.4 HP 460V
48TM005164-DATA	48TM005164	HD60FE656	HK30WA523	3	SRT 3.7 HP 230V
48TM005173-DATA	48TM005173	HD60FE656	HK30WA534	5	SRT 3.7 HP 460V
48TM005165-DATA	48TM005165	HD60FK658	HK30WA523	3	SRT 5.3 HP 230V
48TM005168-DATA	48TM005168	HD60FK658	HK30WA532	7.5	SRT 5.3 HP 460V
48TM005172-DATA	48TM005172	HD58FE654	HK30WA523	3	SRT 2.9 HP 230V
48TM005167-DATA	48TM005167	HD58FE654	HK30WA530	3	SRT 2.9 HP 460V

Table 20 — ACS320 VFD Parameters, for 48/50 Units with Electromechanical Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	MAX AMPS	CROSS REFERENCE	
VFD PARAMETERS	9905	9906	9908	9909	2003	EM_PKG	CL_PKG
48TM003773-DATA	230	5.6	1725	1.7	5.6	48TM482532	48TM482683
48TM003776-DATA	460	2.9	1725	1.7	2.9	48TM482535	48TM482686
48TM003772-DATA	230	6.8	1725	2.4	6.8	48TM482531	48TM482682
48TM003784-DATA	460	3.4	1725	2.4	3.4	48TM482593	48TM482694
48TM003782-DATA	230	7.8	1725	2.9	7.8	48TM482591	48TM482692
48TM003777-DATA	460	3.8	1725	2.9	3.8	48TM482536	48TM482687
48TM003774-DATA	230	9.8	1725	3.7	9.8	48TM482533	48TM482684
48TM003783-DATA	460	4.9	1725	3.7	4.9	48TM482592	48TM482693
48TM003775-DATA	230	12.7	1740	5.3	12.7	48TM482534	48TM482685
48TM003778-DATA	460	6.4	1740	5.3	6.4	48TM482537	48TM482688
50TM001206-DATA	230	7.8	1725	2.9	7.8	50TM480822	50TM480915
50TM001211-DATA	460	3.8	1725	2.9	3.8	50TM480842	50TM480916
50TM001209-DATA	230	9.8	1725	3.7	9.8	50TM480837	50TM480917
50TM001210-DATA	460	4.9	1725	3.7	4.9	50TM480838	50TM480918
50TM001208-DATA	230	17.1	1760	5	17.1	50TM480824	50TM480921
50TM001212-DATA	460	8.6	1760	5	8.6	50TM480843	50TM480922
50HE001312-DATA	230	7.8	1725	2.9	7.8	50HE402582	50HE402817
50HE001316-DATA	460	3.8	1725	2.9	3.8	50HE402587	50HE402822
50HE001313-DATA	230	9.8	1725	3.7	9.8	50HE402583	50HE402818
50HE001317-DATA	460	4.9	1725	3.7	4.9	50HE402588	50HE402823
50HE001314-DATA	230	20.4	1760	5	20.4	50HE402584	50HE402819
50HE001318-DATA	460	10.2	1760	5	10.2	50HE402589	50HE402824
50HE001315-DATA	230	28.5	1760	7.5	28.5	50HE402585	50HE402820
50HE001319-DATA	460	13.7	1760	7.5	13.7	50HE402590	50HE402825
50HE001320-DATA	230	12.7	1740	5.3	12.7	50HE402584	50HE402819
50HE001321-DATA	460	6.4	1740	5.3	6.4	50HE402589	50HE402824
50HE402586-DATA	230	30.4	1755	10	30.4	50HE402586	50HE402821
50HE402591-DATA	460	15.2	1755	10	15.2	50HE402591	50HE402826
50HE002320-DATA	230	7.8	1725	2.9	7.8	N/A	N/A
50HE002324-DATA	460	3.8	1725	2.9	3.8	N/A	N/A
50HE002321-DATA	230	9.8	1725	3.7	9.8	N/A	N/A
50HE002325-DATA	460	4.9	1725	3.7	4.9	N/A	N/A
50HE002322-DATA	230	20.4	1760	5	20.4	N/A	N/A
50H4002326-DATA	460	10.2	1760	5	10.2	N/A	N/A
50HE002323-DATA	230	28.5	1760	7.5	28.5	N/A	N/A
50HE002327-DATA	460	13.7	1760	7.5	13.7	N/A	N/A
50HE002331-DATA	230	12.7	1740	5.3	12.7	N/A	N/A
50HE002333-DATA	460	6.4	1740	5.3	6.4	N/A	N/A
50HE003081-DATA	230	7.8	1725	2.9	7.8	N/A	N/A
50HE003082-DATA	460	3.8	1725	2.9	3.8	N/A	N/A
50HE003084-DATA	230	9.8	1725	3.7	9.8	N/A	N/A
50HE003085-DATA	460	4.9	1725	3.7	4.9	N/A	N/A
50HE003086-DATA	230	12.7	1740	5.3	12.7	N/A	N/A
50HE003087-DATA	460	6.4	1740	5.3	6.4	N/A	N/A
50HE003089-DATA	230	20.4	1760	5	20.4	N/A	N/A
50HE003090-DATA	460	10.2	1760	5	10.2	N/A	N/A
50HE003092-DATA	230	28.5	1760	7.5	28.5	N/A	N/A
50HE003093-DATA	460	13.7	1760	7.5	13.7	N/A	N/A
48TM005163-DATA	230	5.6	1725	1.7	5.6	48TM482532	48TM482683
48TM005166-DATA	460	2.9	1725	1.7	2.9	48TM482535	48TM482686
48TM005162-DATA	230	6.8	1725	2.4	6.8	48TM482531	48TM482682
48TM005174-DATA	460	3.4	1725	2.4	3.4	48TM482593	48TM482694
48TM005164-DATA	230	9.8	1725	3.7	9.8	48TM482533	48TM482684
48TM005173-DATA	460	4.9	1725	3.7	4.9	48TM482592	48TM482693
48TM005165-DATA	230	12.7	1740	5.3	12.7	48TM482534	48TM482685
48TM005168-DATA	460	6.4	1740	5.3	6.4	48TM482537	48TM482688
48TM005172-DATA	230	7.8	1725	2.9	7.8	48TM482591	48TM482692
48TM005167-DATA	460	3.8	1725	2.9	3.8	48TM482536	48TM482687

Table 21 — ACS320 VFD Common Parameters for 48/50 Units with I/O Flex Controls

PARAMETERS	DESCRIPTION	SETTING ACH550
9907	Motor Nominal Frequency	60Hz
1204	Const Speed 3	60Hz
1403	Relay Output 3	—
1611	Parameter View	3
2007	Minimum Frequency	0HZ
2008	Maximum Frequency	60HZ
2101	Start FCN	(1) Auto
2201	ACCEL/DECEL	(0) Not Sel
2603	IR COMP Volt	0 volts
2606	Switching Freq	4 HZ
3102	Trial Time	300.0s
3103	Delay Time	6.0s
3104	AR Overcurrent	(1) Enabled
5101	FBA Type	—
5301	EFB Protocol ID	—
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls

VFD PARAMETERS	PKG ABB ACS320	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48LC000507-DATA	48LC000507	HD56FR233	HK30WA504	1.5	SRT 1.7 HP 230V
48LC000508-DATA	48LC000508	HD56FR463	HK30WA512	3	SRT 1.7 HP 460V
48LC000511-DATA	48LC000511	HD56FE653	HK30WA504	1.5	SRT 2.4 HP 230V
48LC000512-DATA	48LC000512	HD56FE653	HK30WA512	3	SRT 2.4 HP 460V
48LC000514-DATA	48LC000514	HD56FR233	HK30WA504	1.5	SRT 1.7 HP 230V
48LC000515-DATA	48LC000515	HD56FR463	HK30WA511	1.5	SRT 1.7 HP 460V
48LC000517-DATA	48LC000517	HD56FE653	HK30WA517	5	SRT 2.4 HP 230V
48LC000519-DATA	48LC000519	HD58FE654	HK30WA512	3	SRT 2.9 HP 460V
48LC000521-DATA	48LC000521	HD58FE654	HK30WA505	2	SRT 2.9 HP 230V
48LC000522-DATA	48LC000522	HD58FE654	HK30WA512	3	SRT 2.9 HP 460V
48LC000524-DATA	48LC000524	HD56FR233	HK30WA504	1.5	SRT 1.7 HP 230V
48LC000525-DATA	48LC000525	HD56FR463	HK30WA511	1.5	STR 1.7 HP 460V
48LC000527-DATA	48LC000527	HD58FE654	HK30WA505	2	STR 2.9 HP 230V
48LC000528-DATA	48LC000528	HD58FE654	HK30WA512	3	SRT 2.9 HP 460V
48LC000530-DATA	48LC000530	HD56FR233	HK30WA504	1.5	STR 1.7 HP 230V
48LC000531-DATA	48LC000531	HD56FR463	HK30WA513	3	STR 1.7 HP 460V
48LC000536-DATA	48LC000536	HD56FE653	HK30WA512	3	MRT 2.4 HP 460V
48LC000662-DATA	48LC000662	HD56FR463	HK30WA512	3	MRT 1.7 HP 460V
48LC000535-DATA	48LC000535	HD56FE653	HK30WA512	3	MRT 2.4 HP 230V
48LC000539-DATA	48LC000539	HD60FK658	HK30WA506	3	MRT 4.9 HP 230V
48LC000663-DATA	48LC000663	HD56FE653	HK30WA512	3	MRT 2.4 HP 460V
48LC000543-DATA	48LC000543	HD58FE654	HK30WA512	3	MRT 2.9 HP 460V
48LC000540-DATA	48LC000540	HD60FK658	HK30WA513	3	MRT 4.9 HP 460V
48LC000542-DATA	48LC000542	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000546-DATA	48LC000546	HD60FE656	HK30WA512	3	MRT 3.7 HP 460V
48LC000545-DATA	48LC000545	HD60FE656	HK30WA505	2	MRT 3.7 HP 230V
48LC000661-DATA	48LC000661	HD56FR463	HK30WA512	3	MRT 1.7 HP 460V
48LC000547-DATA	48LC000547	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000548-DATA	48LC000548	HD58FE654	HK30WA512	3	MRT 2.9 HP 460V
48LC000550-DATA	48LC000550	HD60FK658	HK30WA506	3	MRT 5.25 HP 230V
48LC000551-DATA	48LC000551	HD60FK658	HK30WA513	3	MRT 5.25 HP 460V
48LC000553-DATA	48LC000553	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000554-DATA	48LC000554	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000556-DATA	48LC000556	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000557-DATA	48LC000557	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000559-DATA	48LC000559	HD64FK654	HK30WA535	15	MRT 10 HP 230V
48LC000560-DATA	48LC000560	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000562-DATA	48LC000562	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000563-DATA	48LC000563	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000565-DATA	48LC000565	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000566-DATA	48LC000566	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000568-DATA	48LC000568	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000569-DATA	48LC000569	HD58FE654	HK30WA512	3	MRT 2.9 HP 460V
48LC000571-DATA	48LC000571	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000572-DATA	48LC000572	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000574-DATA	48LC000574	HD62FK654	HK30WA508	10	SRT 7.5 HP 230V
48LC000575-DATA	48LC000575	HD62FK654	HK30WA515	10	STR 7.5 HP 460V
48LC000577-DATA	48LC000577	HD64FK654	HK30WA535	15	MRT 10 HP 230V
48LC000578-DATA	48LC000578	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000580-DATA	48LC000580	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000581-DATA	48LC000581	HD58FE654	HK30WA512	3	MRT 2.9 HP 460V
48LC000583-DATA	48LC000583	HD64FK654	HK30WA535	15	MRT 10 HP 230V
48LC000584-DATA	48LC000584	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000586-DATA	48LC000586	HD60FK657	HK30WA507	7.5	STR 5 HP 230V
48LC000587-DATA	48LC000587	HD60FK657	HK30WA514	7.5	STR 5 HP 460V
48LC000589-DATA	48LC000589	HD62FK654	HK30WA508	10	STR 7.5 HP 230V
48LC000590-DATA	48LC000590	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000592-DATA	48LC000592	HD64FK654	HK30WA535	15	MRT 10 HP 230V
48LC000593-DATA	48LC000593	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000595-DATA	48LC000595	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000596-DATA	48LC000596	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000598-DATA	48LC000598	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000599-DATA	48LC000599	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000601-DATA	48LC000601	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000602-DATA	48LC000602	HD58FE654	HK30WA512	3	MRT 2.9 HP 460V

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	EXT1 COMMANDS	EXT1/EXT2 SEL	REF1 SELECT	CONST SPEED SEL	CONST SPEED 1	CONST SPEED 2
VFD PARAMETERS	**9905**	**9906**	**9908**	**9909**	**1001**	**1102**	**1103**	**1201**	**1202**	**1203**
48LC000507-DATA	230	5.6	1725	1.7	(1) DI1	EXT1	AI-1	NOT SEL	52.4	60Hz
48LC000508-DATA	460	2.9	1725	1.7	(1) DI1	EXT1	AI-1	NOT SEL	52.4	60Hz
48LC000511-DATA	230	6.8	1725	2.4	(1) DI1	EXT1	AI-1	NOT SEL	52.4	60Hz
48LC000512-DATA	460	3.4	1725	2.4	(1) DI1	EXT1	AI-1	NOT SEL	52.4	60Hz
48LC000514-DATA	230	5.6	1725	1.7	(1) DI1	EXT1	AI-1	NOT SEL	42.6	60Hz
48LC000515-DATA	460	2.9	1725	1.7	(1) DI1	EXT1	AI-1	NOT SEL	42.6	60Hz
48LC000517-DATA	230	6.8	1725	2.4	(1) DI1	EXT1	AI-1	NOT SEL	42.6	60Hz
48LC000519-DATA	460	3.8	1725	2.9	(1) DI1	EXT1	AI-1	NOT SEL	42.6	60Hz
48LC000521-DATA	230	7.8	1725	2.9	(1) DI1	EXT1	AI-1	NOT SEL	41.2	60Hz
48LC000522-DATA	460	3.8	1725	2.9	(1) DI1	EXT1	AI-1	NOT SEL	41.2	60Hz
48LC000524-DATA	230	5.6	1695	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000525-DATA	460	2.9	1690	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000527-DATA	230	7.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000528-DATA	460	3.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000530-DATA	230	5.6	1695	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000531-DATA	460	2.9	1690	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000536-DATA	460	3.4	1680	2.4	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000662-DATA	460	2.9	1690	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000535-DATA	230	6.8	1680	2.4	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000539-DATA	230	12.7	1745	4.9	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000663-DATA	460	3.4	1680	2.4	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000543-DATA	460	3.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000540-DATA	460	6.4	1745	4.9	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000542-DATA	230	7.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000546-DATA	460	4.9	1750	3.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000545-DATA	230	9.8	1750	3.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000661-DATA	460	2.9	1690	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000547-DATA	230	7.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000548-DATA	460	3.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000550-DATA	230	12.7	1745	5.25	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000551-DATA	460	6.4	1745	5.25	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000553-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000554-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000556-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000557-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000559-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000560-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000562-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000563-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000565-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000566-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000568-DATA	230	7.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000569-DATA	460	3.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000571-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000572-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000574-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000575-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000577-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000578-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000580-DATA	230	7.8	1750	2.9	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000581-DATA	460	3.8	1750	2.9	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000583-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000584-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000586-DATA	230	17.1	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000587-DATA	460	8.6	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000589-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000590-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000592-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000593-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000595-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000596-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000598-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000599-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000601-DATA	230	7.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000602-DATA	460	3.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	CONST SPEED 3	CONST SPEED 4	AO1 Content Sel	MAX AMPS	STOP FCN	ACCEL	DECEL	STATION ID	BAUD RATE	PARITY
VFD PARAMETERS	1204	1205	1501	2003	2102	2202	2203	5201	5202	5203
48LC000507-DATA	60Hz	—	0103 OUTPUT FREQ	5.6	(1) Coast	30s	10s	—	—	—
48LC000508-DATA	60Hz	—	0103 OUTPUT FREQ	2.9	(1) Coast	30s	10s	—	—	—
48LC000511-DATA	60Hz	—	0103 OUTPUT FREQ	6.8	(1) Coast	30s	10s	—	—	—
48LC000512-DATA	60Hz	—	0103 OUTPUT FREQ	3.4	(1) Coast	30s	10s	—	—	—
48LC000514-DATA	60Hz	—	0103 OUTPUT FREQ	5.6	(1) Coast	30s	10s	—	—	—
48LC000515-DATA	60Hz	—	0103 OUTPUT FREQ	2.9	(1) Coast	30s	10s	—	—	—
48LC000517-DATA	60Hz	—	0103 OUTPUT FREQ	6.8	(1) Coast	30s	10s	—	—	—
48LC000519-DATA	60Hz	—	0103 OUTPUT FREQ	3.8	(1) Coast	30s	10s	—	—	—
48LC000521-DATA	60Hz	—	0103 OUTPUT FREQ	7.8	(1) Coast	30s	10s	—	—	—
48LC000522-DATA	60Hz	—	0103 OUTPUT FREQ	3.8	(1) Coast	30s	10s	—	—	—
48LC000524-DATA	60Hz	60Hz	0103 OUTPUT FREQ	5.6	(1) Coast	10s	10s	—	—	—
48LC000525-DATA	60Hz	60Hz	0103 OUTPUT FREQ	2.9	(1) Coast	10s	10s	—	—	—
48LC000527-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000528-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000530-DATA	60Hz	60Hz	0103 OUTPUT FREQ	5.6	(1) Coast	10s	10s	—	—	—
48LC000531-DATA	60Hz	60Hz	0103 OUTPUT FREQ	2.9	(1) Coast	10s	10s	—	—	—
48LC000536-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.4	(1) Coast	10s	10s	—	—	—
48LC000662-DATA	60Hz	60Hz	0103 OUTPUT FREQ	2.9	(1) Coast	10s	10s	—	—	—
48LC000535-DATA	60Hz	60Hz	0103 OUTPUT FREQ	6.8	(1) Coast	10s	10s	—	—	—
48LC000539-DATA	60Hz	60Hz	0103 OUTPUT FREQ	12.7	(1) Coast	10s	10s	—	—	—
48LC000663-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.4	(1) Coast	10s	10s	—	—	—
48LC000543-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000540-DATA	60Hz	60Hz	0103 OUTPUT FREQ	6.4	(1) Coast	10s	10s	—	—	—
48LC000542-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000546-DATA	60Hz	60Hz	0103 OUTPUT FREQ	4.9	(1) Coast	10s	10s	—	—	—
48LC000545-DATA	60Hz	60Hz	0103 OUTPUT FREQ	9.8	(1) Coast	10s	10s	—	—	—
48LC000661-DATA	60Hz	60Hz	0103 OUTPUT FREQ	2.9	(1) Coast	10s	10s	—	—	—
48LC000547-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000548-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000550-DATA	60Hz	60Hz	0103 OUTPUT FREQ	12.7	(1) Coast	10s	10s	—	—	—
48LC000551-DATA	60Hz	60Hz	0103 OUTPUT FREQ	6.4	(1) Coast	10s	10s	—	—	—
48LC000553-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000554-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000556-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000557-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000559-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000560-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000562-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000563-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000565-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000566-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000568-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000569-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000571-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000572-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000574-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000575-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000577-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000578-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000580-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000581-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000583-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000584-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000586-DATA	60Hz	60Hz	0103 OUTPUT FREQ	17.1	(1) Coast	10s	10s	—	—	—
48LC000587-DATA	60Hz	60Hz	0103 OUTPUT FREQ	8.6	(1) Coast	10s	10s	—	—	—
48LC000589-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000590-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000592-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000593-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000595-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000596-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000598-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000599-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000601-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000602-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—

— = HVAC Default, field does not require change.

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	EFB STATION ID	EFB BAUD RATE	EFB PARITY	COMM PROT SEL	RUN ENABLE		CROSS REFERENCE	
VFD PARAMETERS	5302	5303	5304	9802	1601	1608	EM_PKG	CL_PKG
48LC000507-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000508-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000511-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000512-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000514-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000515-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000517-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000519-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000521-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000522-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000524-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000525-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000527-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000528-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000530-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000531-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000536-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000662-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000535-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000539-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000663-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000543-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000540-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000542-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000546-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000545-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000661-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000547-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000548-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000550-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000551-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000553-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000554-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000556-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000557-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000559-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000560-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000562-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000563-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000565-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000566-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000568-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000569-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000571-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000572-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000574-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000575-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000577-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000578-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000580-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000581-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000583-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000584-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000586-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000587-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000589-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000590-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000592-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000593-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000595-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000596-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000598-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000599-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000601-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000602-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

VFD PARAMETERS	PKG ABB ACS320	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48LC000604-DATA	48LC000604	HD60FK658	HK30WA506	3	MRT 5.25 HP 230V
48LC000605-DATA	48LC000605	HD60FK658	HK30WA513	3	MRT 5.25 HP 460V
48LC000607-DATA	48LC000607	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000608-DATA	48LC000608	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000610-DATA	48LC000610	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000611-DATA	48LC000611	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000613-DATA	48LC000613	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000614-DATA	48LC000614	HD58FE654	HK30WA512	3	MRT 2.9 HP 460V
48LC000616-DATA	48LC000616	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000617-DATA	48LC000617	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000619-DATA	48LC000619	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000620-DATA	48LC000620	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000622-DATA	48LC000622	HD64FK654	HK30WA535	15	MRT 10 HP 230V
48LC000623-DATA	48LC000623	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000625-DATA	48LC000625	HD58FE654	HK30WA505	2	MRT 2.9 HP 230V
48LC000626-DATA	48LC000626	HD58FE654	HK30WA512	3	STR 2.9 HP 460V
48LC000628-DATA	48LC000628	HD60FK657	HK30WA507	7.5	SRT 5 HP 230V
48LC000629-DATA	48LC000629	HD60FK657	HK30WA514	7.5	STR 5 HP 460V
48LC000631-DATA	48LC000631	HD62FK654	HK30WA508	10	STR 7.5 HP 230V
48LC000632-DATA	48LC000632	HD62FK654	HK30WA515	10	STR 7.5 HP 460V
48LC000634-DATA	48LC000634	HD64FK654	HK30WA535	15	STR 10 HP 230V
48LC000635-DATA	48LC000635	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000637-DATA	48LC000637	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000638-DATA	48LC000638	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000640-DATA	48LC000640	HD60FK657	HK30WA508	10	MRT 5 HP 230V
48LC000641-DATA	48LC000641	HD60FK657	HK30WA515	10	MRT 5 HP 460V
48LC000644-DATA	48LC000644	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000645-DATA	48LC000645	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000647-DATA	48LC000647	HD60FK657	HK30WA507	7.5	MRT 5 HP 230V
48LC000648-DATA	48LC000648	HD60FK657	HK30WA514	7.5	MRT 5 HP 460V
48LC000650-DATA	48LC000650	HD62FK654	HK30WA508	10	MRT 7.5 HP 230V
48LC000651-DATA	48LC000651	HD62FK654	HK30WA515	10	MRT 7.5 HP 460V
48LC000653-DATA	48LC000653	HD64FK654	HK30WA535	15	MRT 10 HP 230V
48LC000654-DATA	48LC000654	HD64FK654	HK30WA536	30.9	MRT 10 HP 460V
48LC000664-DATA	48LC000664	HD60FK657	HK30WA515	10	MRT 5 HP 460V
50HE002320-DATA	50HE002320	HD58FE654	HK30WA523	3	MRT 2.9 HP 230V
50HE002324-DATA	50HE002324	HD58FE654	HK30WA530	3	MRT 2.9 HP 460V
50HE002321-DATA	50HE002321	HD60FE656	HK30WA523	3	MRT 3.7 HP 230V
50HE002325-DATA	50HE002325	HD60FE656	HK30WA534	5	MRT 3.7 HP 460V
50HE002322-DATA	50HE002322	HD60FK657	HK30WA524	7.5	MRT 5.0 HP 230V
50H4002326-DATA	50H4002326	HD60FK657	HK30WA532	7.5	MRT 5.0 HP 460V
50HE002323-DATA	50HE002323	HD62FK654	HK30WA524	7.5	MRT 7.5 HP 230V
50HE002327-DATA	50HE002327	HD62FK654	HK30WA532	7.5	MRT 7.5 HP 460V
50HE002331-DATA	50HE002331	HD60FK658	HK30WA523	3	MRT 5.3 HP 230V
50HE002333-DATA	50HE002333	HD60FK658	HK30WA532	7.5	MRT 5.3 HP 460V
50HE003081-DATA	50HE003081	HD58FE654	HK30WA523	3	MRT 2.9 HP 230V
50HE003082-DATA	50HE003082	HD58FE654	HK30WA530	3	MRT 2.9 HP 460V
50HE003084-DATA	50HE003084	HD60FE656	HK30WA523	3	MRT 3.7 HP 230V
50HE003085-DATA	50HE003085	HD60FE656	HK30WA534	5	MRT 3.7 HP 460V
50HE003086-DATA	50HE003086	HD60FK658	HK30WA523	3	MRT 5.3 HP 230V
50HE003087-DATA	50HE003087	HD60FK658	HK30WA532	7.5	MRT 5.3 HP 460V
50HE003089-DATA	50HE003089	HD60FK657	HK30WA524	7.5	MRT 5.0 HP 230V
50HE003090-DATA	50HE003090	HD60FK657	HK30WA532	7.5	MRT 5.0 HP 460V
50HE003092-DATA	50HE003092	HD62FK654	HK30WA524	7.5	MRT 7.5 HP 230V
50HE003093-DATA	50HE003093	HD62FK654	HK30WA532	7.5	MRT 7.5 HP 460V
48TM005163-DATA	48TM005163	HD56FR233	HK30WA523	3	SRT 1.7 HP 230V
48TM005166-DATA	48TM005166	HD56FR463	HK30WA530	3	SRT 1.7 HP 460V
48TM005162-DATA	48TM005162	HD56FE653	HK30WA523	3	SRT 2.4 HP 230V
48TM005174-DATA	48TM005174	HD56FE653	HK30WA530	3	SRT 2.4 HP 460V
48TM005164-DATA	48TM005164	HD60FE656	HK30WA523	3	SRT 3.7 HP 230V
48TM005173-DATA	48TM005173	HD60FE656	HK30WA534	5	SRT 3.7 HP 460V
48TM005165-DATA	48TM005165	HD60FK658	HK30WA523	3	SRT 5.3 HP 230V
48TM005168-DATA	48TM005168	HD60FK658	HK30WA532	7.5	SRT 5.3 HP 460V
48TM005172-DATA	48TM005172	HD58FE654	HK30WA523	3	SRT 2.9 HP 230V
48TM005167-DATA	48TM005167	HD58FE654	HK30WA530	3	SRT 2.9 HP 460V

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	EXT1 COMMANDS	EXT1/EXT2 SEL	REF1 SELECT	CONST SPEED SEL	CONST SPEED 1	CONST SPEED 2
VFD PARAMETERS	**9905**	**9906**	**9908**	**9909**	**1001**	**1102**	**1103**	**1201**	**1202**	**1203**
48LC000604-DATA	230	12.7	1745	5.25	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000605-DATA	460	6.4	1745	5.25	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000607-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000608-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000610-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000611-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000613-DATA	230	7.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000614-DATA	460	3.8	1735	2.9	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000616-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000617-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000619-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000620-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000622-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000623-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000625-DATA	230	7.8	1750	2.9	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000626-DATA	460	3.8	1750	2.9	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000628-DATA	230	17.1	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000629-DATA	460	8.6	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000631-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000632-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000634-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000635-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000637-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000638-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000640-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000641-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000644-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000645-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000647-DATA	230	20.4	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000648-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000650-DATA	230	28.5	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000651-DATA	460	14.3	1760	7.5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000653-DATA	230	30.4	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000654-DATA	460	15.2	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000664-DATA	460	10.2	1760	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
50HE002320-DATA	230	7.8	1725	2.9	—	—	—	DI 2,3	40Hz	60Hz
50HE002324-DATA	460	3.8	1725	2.9	—	—	—	DI 2,3	40Hz	60Hz
50HE002321-DATA	230	9.8	1725	3.7	—	—	—	DI 2,3	40Hz	60Hz
50HE002325-DATA	460	4.9	1725	3.7	—	—	—	DI 2,3	40Hz	60Hz
50HE002322-DATA	230	20.4	1760	5	—	—	—	DI 2,3	40Hz	60Hz
50H4002326-DATA	460	10.2	1760	5	—	—	—	DI 2,3	40Hz	60Hz
50HE002323-DATA	230	28.5	1760	7.5	—	—	—	DI 2,3	40Hz	60Hz
50HE002327-DATA	460	13.7	1760	7.5	—	—	—	DI 2,3	40Hz	60Hz
50HE002331-DATA	230	12.7	1740	5.3	—	—	—	DI 2,3	40Hz	60Hz
50HE002333-DATA	460	6.4	1740	5.3	—	—	—	DI 2,3	40Hz	60Hz
50HE003081-DATA	230	7.8	1725	2.9	—	—	—	DI 2,3	40Hz	60Hz
50HE003082-DATA	460	3.8	1725	2.9	—	—	—	DI 2,3	40Hz	60Hz
50HE003084-DATA	230	9.8	1725	3.7	—	—	—	DI 2,3	40Hz	60Hz
50HE003085-DATA	460	4.9	1725	3.7	—	—	—	DI 2,3	40Hz	60Hz
50HE003086-DATA	230	12.7	1740	5.3	—	—	—	DI 2,3	40Hz	60Hz
50HE003087-DATA	460	6.4	1740	5.3	—	—	—	DI 2,3	40Hz	60Hz
50HE003089-DATA	230	20.4	1760	5	—	—	—	DI 2,3	40Hz	60Hz
50HE003090-DATA	460	10.2	1760	5	—	—	—	DI 2,3	40Hz	60Hz
50HE003092-DATA	230	28.5	1760	7.5	—	—	—	DI 2,3	40Hz	60Hz
50HE003093-DATA	460	13.7	1760	7.5	—	—	—	DI 2,3	40Hz	60Hz
48TM005163-DATA	230	5.6	1725	1.7	—	—	—	DI 2,3	40Hz	60Hz
48TM005166-DATA	460	2.9	1725	1.7	—	—	—	DI 2,3	40Hz	60Hz
48TM005162-DATA	230	6.8	1725	2.4	—	—	—	DI 2,3	40Hz	60Hz
48TM005174-DATA	460	3.4	1725	2.4	—	—	—	DI 2,3	40Hz	60Hz
48TM005164-DATA	230	9.8	1725	3.7	—	—	—	DI 2,3	40Hz	60Hz
48TM005173-DATA	460	4.9	1725	3.7	—	—	—	DI 2,3	40Hz	60Hz
48TM005165-DATA	230	12.7	1740	5.3	—	—	—	DI 2,3	40Hz	60Hz
48TM005168-DATA	460	6.4	1740	5.3	—	—	—	DI 2,3	40Hz	60Hz
48TM005172-DATA	230	7.8	1725	2.9	—	—	—	DI 2,3	40Hz	60Hz
48TM005167-DATA	460	3.8	1725	2.9	—	—	—	DI 2,3	40Hz	60Hz

— = HVAC Default, field does not require change.

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	CONST SPEED 3	CONST SPEED 4	AO1 Content Sel	MAX AMPS	STOP FCN	ACCEL	DECEL	STATION ID	BAUD RATE	PARITY
VFD PARAMETERS	**1204**	**1205**	**1501**	**2003**	**2102**	**2202**	**2203**	**5201**	**5202**	**5203**
48LC000604-DATA	60Hz	60Hz	0103 OUTPUT FREQ	12.7	(1) Coast	10s	10s	—	—	—
48LC000605-DATA	60Hz	60Hz	0103 OUTPUT FREQ	6.4	(1) Coast	10s	10s	—	—	—
48LC000607-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000608-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000610-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000611-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000613-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000614-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000616-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000617-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000619-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000620-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000622-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000623-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000625-DATA	60Hz	60Hz	0103 OUTPUT FREQ	7.8	(1) Coast	10s	10s	—	—	—
48LC000626-DATA	60Hz	60Hz	0103 OUTPUT FREQ	3.8	(1) Coast	10s	10s	—	—	—
48LC000628-DATA	60Hz	60Hz	0103 OUTPUT FREQ	17.1	(1) Coast	10s	10s	—	—	—
48LC000629-DATA	60Hz	60Hz	0103 OUTPUT FREQ	8.6	(1) Coast	10s	10s	—	—	—
48LC000631-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000632-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000634-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000635-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000637-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000638-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000640-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000641-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000644-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000645-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000647-DATA	60Hz	60Hz	0103 OUTPUT FREQ	20.4	(1) Coast	10s	10s	—	—	—
48LC000648-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
48LC000650-DATA	60Hz	60Hz	0103 OUTPUT FREQ	28.5	(1) Coast	10s	10s	—	—	—
48LC000651-DATA	60Hz	60Hz	0103 OUTPUT FREQ	14.3	(1) Coast	10s	10s	—	—	—
48LC000653-DATA	60Hz	60Hz	0103 OUTPUT FREQ	30.4	(1) Coast	10s	10s	—	—	—
48LC000654-DATA	60Hz	60Hz	0103 OUTPUT FREQ	15.2	(1) Coast	10s	10s	—	—	—
48LC000664-DATA	60Hz	60Hz	0103 OUTPUT FREQ	10.2	(1) Coast	10s	10s	—	—	—
50HE002320-DATA	60Hz	—	—	7.8	(1) Coast	30s	30s	—	—	—
50HE002324-DATA	60Hz	—	—	3.8	(1) Coast	30s	30s	—	—	—
50HE002321-DATA	60Hz	—	—	9.8	(1) Coast	30s	30s	—	—	—
50HE002325-DATA	60Hz	—	—	4.9	(1) Coast	30s	30s	—	—	—
50HE002322-DATA	60Hz	—	—	20.4	(1) Coast	30s	30s	—	—	—
50H4002326-DATA	60Hz	—	—	10.2	(1) Coast	30s	30s	—	—	—
50HE002323-DATA	60Hz	—	—	28.5	(1) Coast	30s	30s	—	—	—
50HE002327-DATA	60Hz	—	—	13.7	(1) Coast	30s	30s	—	—	—
50HE002331-DATA	60Hz	—	—	12.7	(1) Coast	30s	30s	—	—	—
50HE002333-DATA	60Hz	—	—	6.4	(1) Coast	30s	30s	—	—	—
50HE003081-DATA	60Hz	—	—	7.8	(1) Coast	30s	30s	—	—	—
50HE003082-DATA	60Hz	—	—	3.8	(1) Coast	30s	30s	—	—	—
50HE003084-DATA	60Hz	—	—	9.8	(1) Coast	30s	30s	—	—	—
50HE003085-DATA	60Hz	—	—	4.9	(1) Coast	30s	30s	—	—	—
50HE003086-DATA	60Hz	—	—	12.7	(1) Coast	30s	30s	—	—	—
50HE003087-DATA	60Hz	—	—	6.4	(1) Coast	30s	30s	—	—	—
50HE003089-DATA	60Hz	—	—	20.4	(1) Coast	30s	30s	—	—	—
50HE003090-DATA	60Hz	—	—	10.2	(1) Coast	30s	30s	—	—	—
50HE003092-DATA	60Hz	—	—	28.5	(1) Coast	30s	30s	—	—	—
50HE003093-DATA	60Hz	—	—	13.7	(1) Coast	30s	30s	—	—	—
48TM005163-DATA	60Hz	—	—	5.6	(1) Coast	30s	30s	—	—	—
48TM005166-DATA	60Hz	—	—	2.9	(1) Coast	30s	30s	—	—	—
48TM005162-DATA	60Hz	—	—	6.8	(1) Coast	30s	30s	—	—	—
48TM005174-DATA	60Hz	—	—	3.4	(1) Coast	30s	30s	—	—	—
48TM005164-DATA	60Hz	—	—	9.8	(1) Coast	30s	30s	—	—	—
48TM005173-DATA	60Hz	—	—	4.9	(1) Coast	30s	30s	—	—	—
48TM005165-DATA	60Hz	—	—	12.7	(1) Coast	30s	30s	—	—	—
48TM005168-DATA	60Hz	—	—	6.4	(1) Coast	30s	30s	—	—	—
48TM005172-DATA	60Hz	—	—	7.8	(1) Coast	30s	30s	—	—	—
48TM005167-DATA	60Hz	—	—	3.8	(1) Coast	30s	30s	—	—	—

— = HVAC Default, field does not require change.

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	EFB STATION ID	EFB BAUD RATE	EFB PARITY	COMM PROT SEL	RUN ENABLE		CROSS REFERENCE	
VFD PARAMETERS	5302	5303	5304	9802	1601	1608	EM_PKG	CL_PKG
48LC000604-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000605-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000607-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000608-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000610-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000611-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000613-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000614-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000616-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000617-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000619-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000620-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000622-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000623-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000625-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000626-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000628-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000629-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000631-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000632-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000634-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000635-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000637-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000638-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000640-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000641-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000644-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000645-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000647-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000648-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000650-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000651-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000653-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000654-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
48LC000664-DATA	1	76.8kb/s	8 NONE 1	BACnet	DI-4	DI-1	N/A	N/A
50HE002320-DATA	—	—	—	—	—	—	N/A	N/A
50HE002324-DATA	—	—	—	—	—	—	N/A	N/A
50HE002321-DATA	—	—	—	—	—	—	N/A	N/A
50HE002325-DATA	—	—	—	—	—	—	N/A	N/A
50HE002322-DATA	—	—	—	—	—	—	N/A	N/A
50H4002326-DATA	—	—	—	—	—	—	N/A	N/A
50HE002323-DATA	—	—	—	—	—	—	N/A	N/A
50HE002327-DATA	—	—	—	—	—	—	N/A	N/A
50HE002331-DATA	—	—	—	—	—	—	N/A	N/A
50HE002333-DATA	—	—	—	—	—	—	N/A	N/A
50HE003081-DATA	—	—	—	—	—	—	N/A	N/A
50HE003082-DATA	—	—	—	—	—	—	N/A	N/A
50HE003084-DATA	—	—	—	—	—	—	N/A	N/A
50HE003085-DATA	—	—	—	—	—	—	N/A	N/A
50HE003086-DATA	—	—	—	—	—	—	N/A	N/A
50HE003087-DATA	—	—	—	—	—	—	N/A	N/A
50HE003089-DATA	—	—	—	—	—	—	N/A	N/A
50HE003090-DATA	—	—	—	—	—	—	N/A	N/A
50HE003092-DATA	—	—	—	—	—	—	N/A	N/A
50HE003093-DATA	—	—	—	—	—	—	N/A	N/A
48TM005163-DATA	—	—	—	—	—	—	48TM482532	48TM482683
48TM005166-DATA	—	—	—	—	—	—	48TM482535	48TM482686
48TM005162-DATA	—	—	—	—	—	—	48TM482531	48TM482682
48TM005174-DATA	—	—	—	—	—	—	48TM482593	48TM482694
48TM005164-DATA	—	—	—	—	—	—	48TM482533	48TM482684
48TM005173-DATA	—	—	—	—	—	—	48TM482592	48TM482693
48TM005165-DATA	—	—	—	—	—	—	48TM482534	48TM482685
48TM005168-DATA	—	—	—	—	—	—	48TM482537	48TM482688
48TM005172-DATA	—	—	—	—	—	—	48TM482591	48TM482692
48TM005167-DATA	—	—	—	—	—	—	48TM482536	48TM482687

— = HVAC Default, field does not require change.

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

VFD PARAMETERS	PKG ABB ACS320	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48TM005433-DATA	48TM005433	HD56FR233	HK30WA506	3	SRT 3 HP 230 V
48TM005436-DATA	48TM005436	HD56FR463	HK30WA512	3	SRT 3 HP 460 V
48TM005439-DATA	48TM005439	HD58FE654	HK30WA506	3	SRT 3 HP 230 V
48TM005437-DATA	48TM005437	HD58FE654	HK30WA512	3	SRT 3 HP 230 V
48TM005435-DATA	48TM005435	HD60FK658	HK30WA506	3	SRT 3 HP 230 V
48TM005438-DATA	48TM005438	HD60FK658	HK30WA514	7.5	SRT 7.5 HP 230 V
48TM005432-DATA	48TM005432	HD56FE653	HK30WA506	3	SRT 3 HP 230 V
48TM005441-DATA	48TM005441	HD56FE653	HK30WA512	3	SRT 3 HP 230 V
48TM005434-DATA	48TM005434	HD60FE656	HK30WA506	3	SRT 3 HP 230 V
48TM005440-DATA	48TM005440	HD60FE656	HK30WA517	5	SRT 5 HP 230 V
50TM001619-DATA	50TM001619	HD56FE653	HK30WA506	—	N/A
50TM001620-DATA	50TM001620	HD56FE653	HK30WA512	—	N/A
50TM001614-DATA	50TM001614	HD58FE654	HK30WA506	—	N/A
50TM001622-DATA	50TM001622	HD58FE654	HK30WA512	—	N/A
50TM001616-DATA	50TM001616	HD60FK659	HK30WA507	—	N/A
50TM001623-DATA	50TM001623	HD60FK659	HK30WA506	—	N/A
50TM001617-DATA	50TM001617	HD60FE656	HK30WA506	—	N/A
50TM001618-DATA	50TM001618	HD60FE656	HK30WA517	—	N/A

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	EXT1 COMMANDS	EXT1/EXT2 SEL	REF1 SELECT	CONST SPEED SEL	CONST SPEED 1	CONST SPEED 2
VFD PARAMETERS	**9905**	**9906**	**9908**	**9909**	**1001**	**1102**	**1103**	**1201**	**1202**	**1203**
48TM005433-DATA	230	5.6	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005436-DATA	460	2.9	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005439-DATA	230	7.8	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005437-DATA	230	7.8	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005435-DATA	230	12.7	1740	5.3	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005438-DATA	230	12.7	1740	5.3	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005432-DATA	230	6.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005441-DATA	230	6.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005434-DATA	230	9.8	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM005440-DATA	230	9.8	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001619-DATA	230	6.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001620-DATA	460	6.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001614-DATA	230	7.8	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001622-DATA	460	7.8	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001616-DATA	230	12.6	1755	5	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001623-DATA	460	6.3	1755	5	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001617-DATA	230	9.8	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM001618-DATA	460	9.8	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	CONST SPEED 3	CONST SPEED 4	AO1 CONTENTS SEL	MAX AMPS	STOP FCN	ACCEL	DECEL	STATION ID	BAUD RATE	PARITY
VFD PARAMETERS	**1204**	**1205**	**1501**	**2003**	**2102**	**2202**	**2203**	**5201**	**5202**	**5203**
48TM005433-DATA	60Hz	—	102 Speed	5.6	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005436-DATA	60Hz	—	102 Speed	2.9	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005439-DATA	60Hz	—	102 Speed	7.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005437-DATA	60Hz	—	102 Speed	7.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005435-DATA	60Hz	—	102 Speed	12.7	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005438-DATA	60Hz	—	102 Speed	12.7	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005432-DATA	60Hz	—	102 Speed	6.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005441-DATA	60Hz	—	102 Speed	6.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005434-DATA	60Hz	—	102 Speed	9.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005440-DATA	60Hz	—	102 Speed	9.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001619-DATA	60Hz	—	102 Speed	6.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001620-DATA	60Hz	—	102 Speed	6.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001614-DATA	60Hz	—	102 Speed	7.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001622-DATA	60Hz	—	102 Speed	7.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001616-DATA	60Hz	—	102 Speed	12.6	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001623-DATA	60Hz	—	102 Speed	6.3	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001617-DATA	60Hz	—	102 Speed	9.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001618-DATA	60Hz	—	102 Speed	9.8	Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1

— = HVAC Default, field does not require change.

Table 22 — ACS320 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	EFB STATION ID	EFB BAUD RATE	EFB PARITY	COMM PROT SEL	RUN ENABLE		CROSS REFERENCE	
VFD PARAMETERS	5302	5303	5304	9802	1601	1608	EM_PKG	CL_PKG
48TM005433-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005436-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005439-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005437-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005435-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005438-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005432-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005441-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005434-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
48TM005440-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001619-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001620-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001614-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001622-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001616-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001623-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001617-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A
50TM001618-DATA	—	—	—	1 Std Modbus	DI-4	DI-1	N/A	N/A

— = HVAC Default, field does not require change.

Table 23 — ACS320 VFD Common Parameters for 40RU Units with Electromechanical Controls

PARAMETERS	DESCRIPTION	SETTING ACS320
9802	COMM PROT Sel	—
9907	Motor Nominal Frequency	60Hz
1001	EXT1 Commands	—
1102	EXT1/EXT2 Sel	—
1103	REF 1 Select	—
1201	Const Speed Sel	DI 2,3
1202	Const Speed 1	40Hz
1203	Const Speed 2	60Hz
1204	Const Speed 3	60Hz
1205	Const Speed 4	—
1401	Relay Output 1	(16) FLT/ALARM
1403	Relay Output 3	—
1501	AO1 Content Sel	—
1601	Run Enable	—
1608	N/A	—
1611	Parameter View	3
2007	Minimum Frequency	0.0 HZ
2008	Maximum Frequency	60HZ
2101	Start FCN	(1) Auto
2102	Stop FCN	(1) Coast
2201	ACCEL/DECEL	(0) Not Sel
2202	ACCEL	30s
2203	DECEL	30s
2603	IR COMP Volt	0 volts
2606	Switching Freq	4 KHz
3102	Trial Time	300.0s
3103	Delay Time	6.0s
3104	AR Overcurrent	(1) Enabled
5101	FBA Type	—
5201	Station ID	—
5202	Baud Rate	—
5203	Parity	—
5301	EFB Protocol ID	—
5302	EFB Station ID	—
5303	EFB Baud Rate	—
5304	EFB Parity	—
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 24 — ACS320 VFD Parameters, for 40RU Units with Electromechanical Controls

VFD PARAMETERS	PKG ABB ACS320	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
40RU000130-DATA	40RU000130	HD56FR233	HK30WA523	3	40RU 1.7 HP 230V
40RU000131-DATA	40RU000131	HD56FR463	HK30WA530	3	40RU 1.7 HP 460V
40RU480011-DATA	40RU480011	HD56FE653	HK30WA523	3	40RU 2.4 HP 230V
40RU480012-DATA	40RU480012	HD56FE653	HK30WA530	3	40RU 2.4 HP 460V
40RU480014-DATA	40RU480014	HD58FE654	HK30WA523	3	40RU 2.9 HP 230V
40RU480015-DATA	40RU480015	HD58FE654	HK30WA530	3	40RU 2.9 HP 460V
40RU480016-DATA	40RU480016	HD60FE656	HK30WA523	5	40RU 3.7 HP 230V
40RU480017-DATA	40RU480017	HD60FE656	HK30WA534	5	40RU 3.7 HP 460V
40RU000133-DATA	40RU000133	HD58FR236	HK30WA523	5	40RU 3.7 HP 230V
40RU000134-DATA	40RU000134	HD58FR236	HK30WA534	5	40RU 3.7 HP 460V
40RU480002-DATA	40RU480002	HD60FK657	HK30WA524	7	5 40RU 5.0 HP 230V
40RU480003-DATA	40RU480003	HD60FK657	HK30WA532	7	5 40RU 5.0 HP 460V
40RU480005-DATA	40RU480005	HD62FK654	HK30WA524	7	5 40RU 7.5 HP 230V
40RU480006-DATA	40RU480006	HD62FK654	HK30WA532	7	5 40RU 7.5 HP 460V
40RU480008-DATA	40RU480008	HD64FK654	HK30WA525	10	40RU 10 HP 230V
40RU480009-DATA	40RU480009	HD64FK654	HK30WA533	10	40RU 10 HP 460V

Table 24 — ACS320 VFD Parameters, for 40RU Units with Electromechanical Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	MOTOR NOM FREQ	N. RPM	N. HP	MAX AMPS	CROSS REFERENCE	
VFD PARAMETERS	**9905**	**9906**	**9907**	**9908**	**9909**	**2003**	**EM_PKG**	**CL_PKG**
40RU000130-DATA	230	5.8	60Hz	1725	1.7	6.7	40RU480130	—
40RU000131-DATA	460	2.9	60Hz	1725	1.7	3.3	40RU480131	—
40RU480011-DATA	230	7.1	60Hz	1725	2.4	8.2	40RU480011	—
40RU480012-DATA	460	3.4	60Hz	1725	2.4	3.9	40RU480012	—
40RU480014-DATA	230	8.6	60Hz	1725	2.9	9.9	40RU480014	—
40RU480015-DATA	460	3.8	60Hz	1725	2.9	4.4	40RU480015	—
40RU480016-DATA	230	10.8	60Hz	1725	3.7	12.4	40RU480016	—
40RU480017-DATA	460	4.9	60Hz	1725	3.7	5.6	40RU480017	—
40RU000133-DATA	230	10.2	60Hz	1725	3.7	11.7	40RU480133	—
40RU000134-DATA	460	4.8	60Hz	1725	3.7	5.5	40RU480134	—
40RU480002-DATA	230	17	60Hz	1760	5	19.6	40RU480002	—
40RU480003-DATA	460	7.6	60Hz	1760	5	8.7	40RU480003	—
40RU480005-DATA	230	21.5	60Hz	1760	7.5	24.7	40RU480005	—
40RU480006-DATA	460	14.3	60Hz	1760	7.5	16.4	40RU480006	—
40RU480008-DATA	230	28 6	60Hz	1755	10	32.2	40RU480008	—
40RU480009-DATA	460	15.2	60Hz	1755	10	17.5	40RU480009	—

— = HVAC Default, field does not require change.

Table 25 — ACS320 VFD Common Parameters for 40RU Units with I/O Flex Controls

PARAMETERS	DESCRIPTION	SETTING ACS320
9802	COMM PROT Sel	BACnet
9907	Motor Nominal Frequency	60Hz
9908	N. RPM	1725
1001	EXT1 Commands	(1) DI1
1102	EXT1/EXT2 Sel	EXT1
1103	REF 1 Select	AI-1
1201	Const Speed Sel	DI 2,3
1202	Const Speed 1	40Hz
1203	Const Speed 2	60Hz
1204	Const Speed 3	60Hz
1205	Const Speed 4	—
1401	Relay Output 1	(16) FLT/ALARM
1403	Relay Output 3	—
1501	AO1 Content Sel	0103 OUTPUT FREQ
1601	RUN ENABLE	DI-1
1608	N/A	—
1611	Parameter View	3
2007	Minimum Frequency	0.0 HZ
2008	Maximum Frequency	60HZ
2101	Start FCN	(1) Auto
2102	Stop FCN	(1) Coast
2201	ACCEL/DECEL	(0) Not Sel
2202	ACCEL	30s
2203	DECEL	10s
2603	IR COMP Volt	0 volts
2606	Switching Freq	4 KHz
3102	Trial Time	300.0s
3103	Delay Time	6.0s
3104	AR Overcurrent	(1) Enable
5101	FBA Type	—
5201	Station ID	—
5202	Baud Rate	—
5203	Parity	—
5301	EFB Protocol ID	—
5302	EFB Station ID	1
5303	EFB Baud Rate	76.8kb/s
5304	EFB Parity	8 NONE 1
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 26 — ACS320 VFD Parameters, for 40RU Units with I/O Flex Controls

VFD PARAMETERS	PKG ABB ACS320	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
40RU000203-DATA	40RU000203	HD56FR233	HK30WA523	3	40RU 1.7 HP 230V
40RU000204-DATA	40RU000204	HD56FR463	HK30WA530	3	40RU 1.7 HP 460V
40RU000218-DATA	40RU000218	HD56FE653	HK30WA523	3	40RU 2.4 HP 230V
40RU000219-DATA	40RU000219	HD56FE653	HK30WA530	3	40RU 2.4 HP 460V
40RU000223-DATA	40RU000223	HD60FE656	HK30WA523	5	40RU 3.7 HP 230V
40RU000224-DATA	40RU000224	HD60FE656	HK30WA534	5	40RU 3.7 HP 460V
40RU000206-DATA	40RU000206	HD58FR236	HK30WA523	5	40RU 3.7 HP 230V
40RU000207-DATA	40RU000207	HD58FR236	HK30WA534	5	40RU 3.7 HP 460V

Table 26 — ACS320 VFD Parameters, for 40RU Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. HP	MAX AMPS	CROSS REFERENCE	
VFD PARAMETERS	**9905**	**9906**	**9909**	**2003**	**EM_PKG**	**CL_PKG**
40RU000203-DATA	230	5.8	1.7	6.7	40RU480130	—
40RU000204-DATA	460	2.9	1.7	3.3	40RU480131	—
40RU000218-DATA	230	7.1	2.4	8.2	40RU480011	—
40RU000219-DATA	460	3.4	2.4	3.9	40RU480012	—
40RU000223-DATA	230	10.8	3.7	12.4	40RU480016	—
40RU000224-DATA	460	4.9	3.7	5.6	40RU480017	—
40RU000206-DATA	230	10.2	3.7	11.7	40RU480133	—
40RU000207-DATA	460	4.8	3.7	5.5	40RU480134	—

— = HVAC Default, field does not require change.

Table 27 — ACH550 VFD Common Parameters for 48/50 Units with Electromechanical Controls

PARAMETERS	DESCRIPTION	SETTING ACH550
9802	COMM PROT Sel	—
9907	Motor Nominal Frequency	60Hz
1001	EXT1 Commands	—
1102	EXT1/EXT2 Sel	—
1103	REF 1 Select	—
1201	Const Speed Sel	DI 2,3
1202	Const Speed 1	40Hz
1203	Const Speed 2	60Hz
1204	Const Speed 3	60Hz
1205	Const Speed 4	—
1401	Relay Output 1	—
1403	Relay Output 3	16 FLT/Alarm
1501	AO1 Content Sel	—
1601	Run Enable	—
2007	Minimum Frequency	0Hz
2008	Maximum Frequency	60Hz
2101	Start FCN	Auto
2102	Stop FCN	Ramp
2201	ACCEL/DECEL	Not Sel
2202	ACCEL	30s
2203	DECEL	30s
2606	Switching Freq	4kHz
5101	FBA Type	—
5201	Station ID	—
5202	Baud Rate	—
5203	Parity	—
5301	EFB Protocol ID	—
5302	EFB Station ID	—
5303	EFB Baud Rate	—
5304	EFB Parity	—
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 28 — ACH550 VFD Parameters, for 48/50 Units with Electromechanical Controls

VFD PARAMETERS	PKG ABB ACH550	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48TM482532-DATA	48TM482532	HD56FR233	HK30WA352	3	SRT 1.7 HP 230V
48TM482535-DATA	48TM482535	HD56FR463	HK30WA356	3	SRT 1.7 HP 460V
48TM482538-DATA	48TM482538	HD56FR579	HK30WA360	3	SRT 1.7 HP 575V
48TM482531-DATA	48TM482531	HD56FE653	HK30WA352	3	SRT 2.4 HP 230V
48TM482593-DATA	48TM482593	HD56FE653	HK30WA356	3	SRT 2.4 HP 460V
48TM482530-DATA	48TM482530	HD56FE577	HK30WA360	3	SRT 2.4 HP 575V
48TM482591-DATA	48TM482591	HD58FE654	HK30WA352	3	SRT 2.9 HP 230V
48TM482536-DATA	48TM482536	HD58FE654	HK30WA356	3	SRT 2.9 HP 460V
48TM482533-DATA	48TM482533	HD60FE656	HK30WA353	5	SRT 3.7 HP 230V
48TM482592-DATA	48TM482592	HD60FE656	HK30WA357	5	SRT 3.7 HP 460V
48TM482539-DATA	48TM482539	HD58FE577	HK30WA361	5	SRT 3.7 HP 575V
48TM482534-DATA	48TM482534	HD60FK658	HK30WA354	7.5	SRT 5.3 HP 230V
48TM482537-DATA	48TM482537	HD60FK658	HK30WA358	7.5	SRT 5.3 HP 460V
48TM482540-DATA	48TM482540	HD60FE576	HK30WA362	7.5	SRT 5.3 HP 575V
50TM480839-DATA	50TM480839	HD56FE653	HK30WA352	3	STR 2.4 HP 230V
50TM480840-DATA	50TM480840	HD56FE653	HK30WA356	3	STR 2.4 HP 460V
50TM480841-DATA	50TM480841	HD56FE577	HK30WA360	3	STR 2.4 HP 575V
50TM480822-DATA	50TM480822	HD58FE654	HK30WA352	3	STR 2.9 HP 230V
50TM480842-DATA	50TM480842	HD58FE654	HK30WA356	3	STR 2.9 HP 460V
50TM480837-DATA	50TM480837	HD60FE656	HK30WA353	5	STR 3.7 HP 230V
50TM480838-DATA	50TM480838	HD60FE656	HK30WA357	5	STR 3.7 HP 460V
50TM480821-DATA	50TM480821	HD58FE577	HK30WA361	5	STR 3.7 HP 575V
50TM480824-DATA	50TM480824	HD60FK657	HK30WA354	7.5	STR 5.0 HP 230V
50TM480843-DATA	50TM480843	HD60FK657	HK30WA358	7.5	STR 5.0 HP 460V
50TM480823-DATA	50TM480823	HD60FK577	HK30WA362	7.5	STR 5.0 HP 575V
50HE402582-DATA	50HE402582	HD58FE654	HK30WA352	3	MRT 2.9 HP 230V
50HE402587-DATA	50HE402587	HD58FE654	HK30WA356	3	MRT 2.9 HP 460V
50HE402583-DATA	50HE402583	HD60FE656	HK30WA353	5	MRT 3.7 HP 230V
50HE402588-DATA	50HE402588	HD60FE656	HK30WA357	5	MRT 3.7 HP 460V
50HE402592-DATA	50HE402592	HD58FE577	HK30WA361	5	MRT 3.7 HP 575V
50HE402584-DATA	50HE402584	HD60FK657	HK30WA354	7.5	MRT 5.0 HP 230V
50HE402589-DATA	50HE402589	HD60FK657	HK30WA358	7.5	MRT 5.0 HP 460V
50HE402593-DATA	50HE402593	HD60FK577	HK30WA362	7.5	MRT 5.0 HP 575V
50HE402585-DATA	50HE402585	HD62FK654	HK30WA354	7.5	MRT 7.5 HP 230V
50HE402590-DATA	50HE402590	HD62FK654	HK30WA358	7.5	MRT 7.5 HP 460V
50HE402594-DATA	50HE402594	HD62FL576	HK30WA362	7.5	MRT 7.5 HP 575V
50HE403636-DATA	50HE403636	HD60FK658	HK30WA354	7.5	MRT 5.3 HP 230V
50HE403637-DATA	50HE403637	HD60FK658	HK30WA358	7.5	MRT 5.3 HP 460V
50HE403638-DATA	50HE403638	HD60FE576	HK30WA362	7.5	MRT 5.3 HP 575V
50HE402586-DATA	50HE402586	HD64FK654	HK30WA355	10	MRT 10.0 HP 230V
50HE402591-DATA	50HE402591	HD64FK654	HK30WA359	10	MRT 10.0 HP 460V
50HE402595-DATA	50HE402595	HD64FL576	HK30WA363	10	MRT 10.0 HP 575V
50HE003083-DATA	50HE003083	HD58FE577	HK30WA361	5	MRT 3.7 HP 575V
50HE003088-DATA	50HE003088	HD60FE576	HK30WA362	7.5	MRT 5.3 HP 575V
50HE003091-DATA	50HE003091	HD60FK577	HK30WA362	7.5	MRT 5.0 HP 575V
50HE003094-DATA	50HE003094	HD62FL576	HK30WA362	7.5	MRT 7.5 HP 575V
48TM005169-DATA	48TM005169	HD56FR579	HK30WA360	3	SRT 1.7 HP 575V
48TM005161-DATA	48TM005161	HD56FE577	HK30WA360	3	SRT 2.4 HP 575V
48TM005170-DATA	48TM005170	HD58FE577	HK30WA361	5	SRT 3.7 HP 575V
50TM001601-DATA	50TM001601	HD56FE577	HK30WA360	3	STR 2.4 HP 575V
50TM001205-DATA	50TM001205	HD58FE577	HK30WA361	5	STR 3.7 HP 575V
50TM001207-DATA	50TM001207	HD60FK577	HK30WA362	7.5	STR 5.0 HP 575V

Table 28 — ACH550 VFD Parameters, for 48/50 Units with Electromechanical Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	MAX AMPS	CROSS REFERENCE	
VFD PARAMETERS	9905	9906	9908	9909	2003	EM_PKG	CL_PKG
48TM482532-DATA	230	5.8	1725	1.7	6.7	48TM482532	48TM482683
48TM482535-DATA	460	2.9	1725	1.7	3.3	48TM482535	48TM482686
48TM482538-DATA	575	3.1	1725	1.7	3.6	48TM482538	48TM482689
48TM482531-DATA	230	7.9	1725	2.4	9.1	48TM482531	48TM482682
48TM482593-DATA	460	3.6	1725	2.4	4.1	48TM482593	48TM482694
48TM482530-DATA	575	3.8	1725	2.4	4.4	48TM482530	48TM482681
48TM482591-DATA	230	9.2	1725	2.9	10.6	48TM482591	48TM482692
48TM482536-DATA	460	4.2	1725	2.9	4.8	48TM482536	48TM482687
48TM482533-DATA	230	11.7	1725	3.7	13.5	48TM482533	48TM482684
48TM482592-DATA	460	5.4	1725	3.7	6.2	48TM482592	48TM482693
48TM482539-DATA	575	4.9	1725	3.7	5.6	48TM482539	48TM482690
48TM482534-DATA	230	13.6	1740	5.3	15.6	48TM482534	48TM482685
48TM482537-DATA	460	6.4	1740	5.3	7.4	48TM482537	48TM482688
48TM482540-DATA	575	6	1725	5.3	6.9	48TM482540	48TM482691
50TM480839-DATA	230	7.9	1725	2.4	9.1	50TM480839	—
50TM480840-DATA	460	3.6	1725	2.4	4.1	50TM480840	—
50TM480841-DATA	575	3.8	1725	2.4	4.4	50TM480841	—
50TM480822-DATA	230	9.2	1725	2.9	10.6	50TM480822	50TM480915
50TM480842-DATA	460	4.2	1725	2.9	4.8	50TM480842	50TM480916
50TM480837-DATA	230	11.7	1725	3.7	13.5	50TM480837	50TM480917
50TM480838-DATA	460	5.4	1725	3.7	6.2	50TM480838	50TM480918
50TM480821-DATA	575	4.9	1725	3.7	5.6	50TM480821	50TM480919
50TM480824-DATA	230	17.1	1760	5	19.7	50TM480824	50TM480921
50TM480843-DATA	460	8.6	1760	5	9.9	50TM480843	50TM480922
50TM480823-DATA	575	7.6	1745	5	8.7	50TM480823	50TM480920
50HE402582-DATA	230	9.2	1725	2.9	10.6	50HE402582	50HE402817
50HE402587-DATA	460	4.2	1725	2.9	4.8	50HE402587	50HE402822
50HE402583-DATA	230	11.7	1725	3.7	13.5	50HE402583	50HE402818
50HE402588-DATA	460	5.4	1725	3.7	6.2	50HE402588	50HE402823
50HE402592-DATA	575	4.9	1725	3.7	5.6	50HE402592	50HE402827
50HE402584-DATA	230	17.1	1760	5	19.7	50HE402584	50HE402819
50HE402589-DATA	460	8.6	1760	5	9.9	50HE402589	50HE402824
50HE402593-DATA	575	7.6	1745	5	8.7	50HE402593	50HE402828
50HE402585-DATA	230	23.5	1760	7.5	27	50HE402585	50HE402820
50HE402590-DATA	460	11.9	1760	7.5	13.7	50HE402590	50HE402825
50HE402594-DATA	575	9	1750	7.5	10.4	50HE402594	50HE402829
50HE403636-DATA	230	13.6	1740	5.3	15.6	50HE402584	50HE402819
50HE403637-DATA	460	6.4	1740	5.3	7.4	50HE402589	50HE402824
50HE403638-DATA	575	6	1725	5.3	6.9	50HE402593	50HE402828
50HE402586-DATA	230	30.4	1755	10	35	50HE402586	50HE402821
50HE402591-DATA	460	15.2	1755	10	17.5	50HE402591	50HE402826
50HE402595-DATA	575	11	1755	10	12.7	50HE402595	50HE402830
50HE003083-DATA	575	4.9	1725	3.7	5.6	N/A	N/A
50HE003088-DATA	575	6	1725	5.3	6.9	N/A	N/A
50HE003091-DATA	575	7.6	1745	5	8.7	N/A	N/A
50HE003094-DATA	575	9	1750	7.5	10.4	N/A	N/A
48TM005169-DATA	575	3.1	1725	1.7	3.6	N/A	N/A
48TM005161-DATA	575	3.8	1725	2.4	4.4	N/A	N/A
48TM005170-DATA	575	4.9	1725	3.7	5.6	N/A	N/A
50TM001601-DATA	575	3.8	1725	2.4	4.4	N/A	N/A
50TM001205-DATA	575	4.9	1725	3.7	5.6	N/A	N/A
50TM001207-DATA	575	7.6	1745	5	8.7	N/A	N/A

— = HVAC Default, field does not require change.

Table 29 — ACH550 VFD Common Parameters for 48/50 Units with I/O Flex Controls

PARAMETERS	DESCRIPTION	SETTING ACH550
9907	Motor Nominal Frequency	60Hz
1204	Const Speed 3	60Hz
2007	Minimum Frequency	0Hz
2008	Maximum Frequency	60Hz
2101	Start FCN	Auto
2201	ACCEL/DECEL	Not Sel
2606	Switching Freq	4kHz
5202	Baud Rate	—
5203	Parity	—
5301	EFB Protocol ID	—
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls

VFD PARAMETERS	PKG ABB ACH550	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48TM482815-DATA	48TM482815	HD56FR233	HK30WA352	3	SRT 1.7 HP 230V
48TM482819-DATA	48TM482819	HD56FR463	HK30WA356	3	SRT 1.7 HP 460V
48TM482821-DATA	48TM482821	HD56FR579	HK30WA360	3	SRT 1.7 HP 575V
48TM482814-DATA	48TM482814	HD56FE653	HK30WA352	3	SRT 2.4 HP 230V
48TM482825-DATA	48TM482825	HD56FE653	HK30WA356	3	SRT 2.4 HP 460V
48TM482813-DATA	48TM482813	HD56FE577	HK30WA360	3	SRT 2.4 HP 575V
48TM000640-DATA	48TM000640	HD58FE654	HK30WA352	3	SRT 2.9 HP 230V
48TM000641-DATA	48TM000641	HD58FE654	HK30WA356	3	SRT 2.9 HP 460V
48TM482817-DATA	48TM482817	HD60FE656	HK30WA353	5	SRT 3.7 HP 230V
48TM482824-DATA	48TM482824	HD60FE656	HK30WA357	5	SRT 3.7 HP 460V
48TM482822-DATA	48TM482822	HD58FE577	HK30WA361	5	SRT 3.7 HP 575V
48TM482818-DATA	48TM482818	HD60FK658	HK30WA354	7.5	SRT 5.3 HP 230V
48TM482820-DATA	48TM482820	HD60FK658	HK30WA358	7.5	SRT 5.3 HP 460V
48TM482823-DATA	48TM482823	HD60FE576	HK30WA362	7.5	SRT 5.3 HP 575V
50TM480969-DATA	50TM480969	HD58FE654	HK30WA352	3	STR 2.9 HP 230V
50TM480977-DATA	50TM480977	HD58FE654	HK30WA356	3	STR 2.9 HP 460V
50TM480972-DATA	50TM480972	HD60FE656	HK30WA353	5	STR 3.7 HP 230V
50TM480973-DATA	50TM480973	HD60FE656	HK30WA357	5	STR 3.7 HP 460V
50TM480968-DATA	50TM480968	HD58FE577	HK30WA361	5	STR 3.7 HP 575V
50TM480971-DATA	50TM480971	HD60FK657	HK30WA354	7.5	STR 5.0 HP 230V
50TM480978-DATA	50TM480978	HD60FK657	HK30WA358	7.5	STR 5.0 HP 460V
50TM480970-DATA	50TM480970	HD60FK577	HK30WA362	7.5	STR 5.0 HP 575V
50HE403471-DATA	50HE403471	HD58FE654	HK30WA352	3	MRT 2.9 HP 230V
50HE403559-DATA	50HE403559	HD58FE654	HK30WA356	3	MRT 2.9 HP 460V
50HE403537-DATA	50HE403537	HD60FE656	HK30WA353	5	MRT 3.7 HP 230V
50HE403514-DATA	50HE403514	HD60FE656	HK30WA357	5	MRT 3.7 HP 460V
50HE403561-DATA	50HE403561	HD58FE577	HK30WA361	5	MRT 3.7 HP 575V
50HE403538-DATA	50HE403538	HD60FK657	HK30WA354	7.5	MRT 5.0 HP 230V
50HE403468-DATA	50HE403468	HD60FK657	HK30WA358	7.5	MRT 5.0 HP 460V
50HE403562-DATA	50HE403562	HD60FK577	HK30WA362	7.5	MRT 5.0 HP 575V
50HE403557-DATA	50HE403557	HD62FK654	HK30WA354	7.5	MRT 7.5 HP 230V
50HE403515-DATA	50HE403515	HD62FK654	HK30WA358	7.5	MRT 7.5 HP 460V
50HE403563-DATA	50HE403563	HD62FL576	HK30WA362	7.5	MRT 7.5 HP 575V
50HE403642-DATA	50HE403642	HD60FK658	HK30WA354	7.5	MRT 5.3 HP 230V
50HE403643-DATA	50HE403643	HD60FK658	HK30WA358	7.5	MRT 5.3 HP 460V
50HE403644-DATA	50HE403644	HD60FE576	HK30WA362	7.5	MRT 5.3 HP 575V
50HE403558-DATA	50HE403558	HD64FK654	HK30WA355	10	MRT 10.0 HP 230V
50HE403560-DATA	50HE403560	HD64FK654	HK30WA359	10	MRT 10.0 HP 460V
50HE403564-DATA	50HE403564	HD64FL576	HK30WA363	10	MRT 10.0 HP 575V
48TM001419-DATA	48TM001419	HD56FR233	HK30WA045	2	SRT 1.7 HP 230V
48TM001420-DATA	48TM001420	HD56FR463	HK30WA046	2	SRT 1.7 HP 460V
48TM001418-DATA	48TM001418	HD56FR579	HK30WA048	3	SRT 1.7 HP 575V
48TM001422-DATA	48TM001422	HD56FE653	HK30WA001	3	SRT 2.4 HP 230V
48TM001423-DATA	48TM001423	HD56FE653	HK30WA008	3	SRT 2.4 HP 460V
48TM001421-DATA	48TM001421	HD56FE577	HK30WA048	3	SRT 2.4 HP 575V
48TM001425-DATA	48TM001425	HD56FR233	HK30WA045	2	SRT 1.7 HP 230V
48TM001426-DATA	48TM001426	HD56FR463	HK30WA046	2	SRT 1.7 HP 460V
48TM001424-DATA	48TM001424	HD56FR579	HK30WA048	3	SRT 1.7 HP 575V
48TM001427-DATA	48TM001427	HD56FE577	HK30WA048	3	SRT 2.4 HP 575V
48TM001428-DATA	48TM001428	HD58FE654	HK30WA001	3	SRT 2.9 HP 230V
48TM001429-DATA	48TM001429	HD58FE654	HK30WA008	3	SRT 2.9 HP 460V
48TM001430-DATA	48TM001430	HD58FE577	HK30WA021	5	SRT 3.7 HP 575V
48TM001431-DATA	48TM001431	HD58FE654	HK30WA001	3	SRT 2.9 HP 230V
48TM001432-DATA	48TM001432	HD58FE654	HK30WA008	3	SRT 2.9 HP 460V
48TM001124-DATA	48TM001124	HD56FR233	HK30WA001	3	SRT 1.7 HP 230V
48TM001127-DATA	48TM001127	HD56FR463	HK30WA008	3	SRT 1.7 HP 460V
48TM001133-DATA	48TM001133	HD58FE654	HK30WA001	3	SRT 2.9 HP 230V
48TM001128-DATA	48TM001128	HD58FE654	HK30WA008	3	SRT 2.9 HP 460V
48TM001125-DATA	48TM001125	HD60FE656	HK30WA002	5	SRT 3.7 HP 230V
48TM001134-DATA	48TM001134	HD60FE656	HK30WA009	5	SRT 3.7 HP 460V
48TM001131-DATA	48TM001131	HD58FE577	HK30WA021	5	SRT 3.7 HP 575V
48TM001126-DATA	48TM001126	HD60FK658	HK30WA003	7.5	SRT 4.9 HP 230V
48TM001129-DATA	48TM001129	HD60FK658	HK30WA010	7.5	SRT 4.9 HP 460V
48TM001132-DATA	48TM001132	HD60FE576	HK30WA335	7.5	SRT 4.7 HP 575V

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	EXT1 COMMANDS	EXT1/EXT 2 SEL	REF1 SELECT	CONST SPEED SEL	CONST SPEED 1	CONST SPEED 2
VFD PARAMETERS	**9905**	**9906**	**9908**	**9909**	**1001**	**1102**	**1103**	**1201**	**1202**	**1203**
48TM482815-DATA	230	5.8	1725	1.7	—	—	—	DI 3	40Hz	60Hz
48TM482819-DATA	460	2.9	1725	1.7	—	—	—	DI 3	40Hz	60Hz
48TM482821-DATA	575	3.1	1725	1.7	—	—	—	DI 3	40Hz	60Hz
48TM482814-DATA	230	7.9	1725	2.4	—	—	—	DI 3	40Hz	60Hz
48TM482825-DATA	460	3.6	1725	2.4	—	—	—	DI 3	40Hz	60Hz
48TM482813-DATA	575	3.8	1725	2.4	—	—	—	DI 3	40Hz	60Hz
48TM000640-DATA	230	9.2	1725	2.9	—	—	—	DI 3	40Hz	60Hz
48TM000641-DATA	460	4.2	1725	2.9	—	—	—	DI 3	40Hz	60Hz
48TM482817-DATA	230	11.7	1725	3.7	—	—	—	DI 3	40Hz	60Hz
48TM482824-DATA	460	5.4	1725	3.7	—	—	—	DI 3	40Hz	60Hz
48TM482822-DATA	575	4.9	1725	3.7	—	—	—	DI 3	40Hz	60Hz
48TM482818-DATA	230	13.6	1740	5.3	—	—	—	DI 3	40Hz	60Hz
48TM482820-DATA	460	6.4	1740	5.3	—	—	—	DI 3	40Hz	60Hz
48TM482823-DATA	575	6	1725	5.3	—	—	—	DI 3	40Hz	60Hz
50TM480969-DATA	230	9.2	1725	2.9	—	—	—	DI 3	40Hz	60Hz
50TM480977-DATA	460	4.2	1725	2.9	—	—	—	DI 3	40Hz	60Hz
50TM480972-DATA	230	11.7	1725	3.7	—	—	—	DI 3	40Hz	60Hz
50TM480973-DATA	460	5.4	1725	3.7	—	—	—	DI 3	40Hz	60Hz
50TM480968-DATA	575	4.9	1725	3.7	—	—	—	DI 3	40Hz	60Hz
50TM480971-DATA	230	17.1	1760	5	—	—	—	DI 3	40Hz	60Hz
50TM480978-DATA	460	8.6	1760	5	—	—	—	DI 3	40Hz	60Hz
50TM480970-DATA	575	7.6	1745	5	—	—	—	DI 3	40Hz	60Hz
50HE403471-DATA	230	9.2	1725	2.9	—	—	—	DI 3	40Hz	60Hz
50HE403559-DATA	460	4.2	1725	2.9	—	—	—	DI 3	40Hz	60Hz
50HE403537-DATA	230	11.7	1725	3.7	—	—	—	DI 3	40Hz	60Hz
50HE403514-DATA	460	5.4	1725	3.7	—	—	—	DI 3	40Hz	60Hz
50HE403561-DATA	575	4.9	1725	3.7	—	—	—	DI 3	40Hz	60Hz
50HE403538-DATA	230	17.1	1760	5	—	—	—	DI 3	40Hz	60Hz
50HE403468-DATA	460	8.6	1760	5	—	—	—	DI 3	40Hz	60Hz
50HE403562-DATA	575	7.6	1745	5	—	—	—	DI 3	40Hz	60Hz
50HE403557-DATA	230	23.5	1760	7.5	—	—	—	DI 3	40Hz	60Hz
50HE403515-DATA	460	11.9	1760	7.5	—	—	—	DI 3	40Hz	60Hz
50HE403563-DATA	575	9	1750	7.5	—	—	—	DI 3	40Hz	60Hz
50HE403642-DATA	230	13.6	1740	5.3	—	—	—	DI 3	40Hz	60Hz
50HE403643-DATA	460	6.4	1740	5.3	—	—	—	DI 3	40Hz	60Hz
50HE403644-DATA	575	6	1725	5.3	—	—	—	DI 3	40Hz	60Hz
50HE403558-DATA	230	30.4	1755	10	—	—	—	DI 3	40Hz	60Hz
50HE403560-DATA	460	15.2	1755	10	—	—	—	DI 3	40Hz	60Hz
50HE403564-DATA	575	11	1755	10	—	—	—	DI 3	40Hz	60Hz
48TM001419-DATA	230	5.8	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001420-DATA	460	2.9	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001418-DATA	575	3.1	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001422-DATA	230	7.9	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001423-DATA	460	3.6	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001421-DATA	575	3.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001425-DATA	230	5.8	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001426-DATA	460	2.9	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001424-DATA	575	3.1	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001427-DATA	575	3.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001428-DATA	230	9.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001429-DATA	460	4.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001430-DATA	575	4.9	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001431-DATA	230	9.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001432-DATA	460	4.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001124-DATA	230	5.8	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001127-DATA	460	2.9	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001133-DATA	230	9.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001128-DATA	460	4.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001125-DATA	230	11.7	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001134-DATA	460	5.4	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001131-DATA	575	4.9	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001126-DATA	230	13.6	1740	5.3	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001129-DATA	460	6.4	1740	5.3	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001132-DATA	575	6	1725	5.3	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz

— = HVAC Default, field does not require change.

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	CONST SPEED 3	CONST SPEED 4	RELAY OUT 1	RELAY OUT 3	AO1 CONTENT SEL	MAX AMPS	STOP FCN	ACCEL	DECEL	FBA TYPE
VFD PARAMETERS	**1204**	**1205**	**1401**	**1403**	**1501**	**2003**	**2102**	**2202**	**2203**	**5101**
48TM482815-DATA	60Hz	—	—	4 Fault	102 Speed	6.7	Ramp	30s	30s	—
48TM482819-DATA	60Hz	—	—	4 Fault	102 Speed	3.3	Ramp	30s	30s	—
48TM482821-DATA	60Hz	—	—	4 Fault	102 Speed	3.6	Ramp	30s	30s	—
48TM482814-DATA	60Hz	—	—	4 Fault	102 Speed	9.1	Ramp	30s	30s	—
48TM482825-DATA	60Hz	—	—	4 Fault	102 Speed	4.1	Ramp	30s	30s	—
48TM482813-DATA	60Hz	—	—	4 Fault	102 Speed	4.4	Ramp	30s	30s	—
48TM000640-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	—
48TM000641-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	—
48TM482817-DATA	60Hz	—	—	4 Fault	102 Speed	13.5	Ramp	30s	30s	—
48TM482824-DATA	60Hz	—	—	4 Fault	102 Speed	6.2	Ramp	30s	30s	—
48TM482822-DATA	60Hz	—	—	4 Fault	102 Speed	5.6	Ramp	30s	30s	—
48TM482818-DATA	60Hz	—	—	4 Fault	102 Speed	15.6	Ramp	30s	30s	—
48TM482820-DATA	60Hz	—	—	4 Fault	102 Speed	7.4	Ramp	30s	30s	—
48TM482823-DATA	60Hz	—	—	4 Fault	102 Speed	6.9	Ramp	30s	30s	—
50TM480969-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	—
50TM480977-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	—
50TM480972-DATA	60Hz	—	—	4 Fault	102 Speed	13.5	Ramp	30s	30s	—
50TM480973-DATA	60Hz	—	—	4 Fault	102 Speed	6.2	Ramp	30s	30s	—
50TM480968-DATA	60Hz	—	—	4 Fault	102 Speed	5.6	Ramp	30s	30s	—
50TM480971-DATA	60Hz	—	—	4 Fault	102 Speed	19.7	Ramp	30s	30s	—
50TM480978-DATA	60Hz	—	—	4 Fault	102 Speed	9.9	Ramp	30s	30s	—
50TM480970-DATA	60Hz	—	—	4 Fault	102 Speed	8.7	Ramp	30s	30s	—
50HE403471-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	—
50HE403559-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	—
50HE403537-DATA	60Hz	—	—	4 Fault	102 Speed	13.5	Ramp	30s	30s	—
50HE403514-DATA	60Hz	—	—	4 Fault	102 Speed	6.2	Ramp	30s	30s	—
50HE403561-DATA	60Hz	—	—	4 Fault	102 Speed	5.6	Ramp	30s	30s	—
50HE403538-DATA	60Hz	—	—	4 Fault	102 Speed	19.7	Ramp	30s	30s	—
50HE403468-DATA	60Hz	—	—	4 Fault	102 Speed	9.9	Ramp	30s	30s	—
50HE403562-DATA	60Hz	—	—	4 Fault	102 Speed	8.7	Ramp	30s	30s	—
50HE403557-DATA	60Hz	—	—	4 Fault	102 Speed	27	Ramp	30s	30s	—
50HE403515-DATA	60Hz	—	—	4 Fault	102 Speed	13.7	Ramp	30s	30s	—
50HE403563-DATA	60Hz	—	—	4 Fault	102 Speed	10.4	Ramp	30s	30s	—
50HE403642-DATA	60Hz	—	—	4 Fault	102 Speed	15.6	Ramp	30s	30s	—
50HE403643-DATA	60Hz	—	—	4 Fault	102 Speed	7.4	Ramp	30s	30s	—
50HE403644-DATA	60Hz	—	—	4 Fault	102 Speed	6.9	Ramp	30s	30s	—
50HE403558-DATA	60Hz	—	—	4 Fault	102 Speed	35	Ramp	30s	30s	—
50HE403560-DATA	60Hz	—	—	4 Fault	102 Speed	17.5	Ramp	30s	30s	—
50HE403564-DATA	60Hz	—	—	4 Fault	102 Speed	12.7	Ramp	30s	30s	—
48TM001419-DATA	60Hz	—	—	4 Fault	102 Speed	6.7	Ramp	30s	30s	64 ModBus Plus
48TM001420-DATA	60Hz	—	—	4 Fault	102 Speed	3.3	Ramp	30s	30s	64 ModBus Plus
48TM001418-DATA	60Hz	—	—	4 Fault	102 Speed	3.6	Ramp	30s	30s	64 ModBus Plus
48TM001422-DATA	60Hz	—	—	4 Fault	102 Speed	9.1	Ramp	30s	30s	64 ModBus Plus
48TM001423-DATA	60Hz	—	—	4 Fault	102 Speed	4.1	Ramp	30s	30s	64 ModBus Plus
48TM001421-DATA	60Hz	—	—	4 Fault	102 Speed	4.4	Ramp	30s	30s	64 ModBus Plus
48TM001425-DATA	60Hz	—	—	4 Fault	102 Speed	6.7	Ramp	30s	30s	64 ModBus Plus
48TM001426-DATA	60Hz	—	—	4 Fault	102 Speed	3.3	Ramp	30s	30s	64 ModBus Plus
48TM001424-DATA	60Hz	—	—	4 Fault	102 Speed	3.6	Ramp	30s	30s	64 ModBus Plus
48TM001427-DATA	60Hz	—	—	4 Fault	102 Speed	4.4	Ramp	30s	30s	64 ModBus Plus
48TM001428-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	64 ModBus Plus
48TM001429-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	64 ModBus Plus
48TM001430-DATA	60Hz	—	—	4 Fault	102 Speed	5.6	Ramp	30s	30s	64 ModBus Plus
48TM001431-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	64 ModBus Plus
48TM001432-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	64 ModBus Plus
48TM001124-DATA	60Hz	—	—	4 Fault	102 Speed	6.7	Ramp	30s	30s	64 ModBus Plus
48TM001127-DATA	60Hz	—	—	4 Fault	102 Speed	3.3	Ramp	30s	30s	64 ModBus Plus
48TM001133-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	64 ModBus Plus
48TM001128-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	64 ModBus Plus
48TM001125-DATA	60Hz	—	—	4 Fault	102 Speed	13.5	Ramp	30s	30s	64 ModBus Plus
48TM001134-DATA	60Hz	—	—	4 Fault	102 Speed	6.2	Ramp	30s	30s	64 ModBus Plus
48TM001131-DATA	60Hz	—	—	4 Fault	102 Speed	5.6	Ramp	30s	30s	64 ModBus Plus
48TM001126-DATA	60Hz	—	—	4 Fault	102 Speed	15.6	Ramp	30s	30s	64 ModBus Plus
48TM001129-DATA	60Hz	—	—	4 Fault	102 Speed	7.4	Ramp	30s	30s	64 ModBus Plus
48TM001132-DATA	60Hz	—	—	4 Fault	102 Speed	6.9	Ramp	30s	30s	64 ModBus Plus

— = HVAC Default, field does not require change.

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	STATION ID	BAUD RATE	PARITY	EFB STATION ID	EFB BAUD RATE	EFB PARITY	COMM PROT SEL	RUN ENABLE	CROSS REFERENCE	
VFD PARAMETERS	5201	5202	5203	5302	5303	5304	9802	1601	EM_PKG	CL_PKG
48TM482815-DATA	—	—	—	—	—	—	—	—	48TM482532	—
48TM482819-DATA	—	—	—	—	—	—	—	—	48TM482533	—
48TM482821-DATA	—	—	—	—	—	—	—	—	48TM482534	—
48TM482814-DATA	—	—	—	—	—	—	—	—	48TM482535	—
48TM482825-DATA	—	—	—	—	—	—	—	—	48TM482536	—
48TM482813-DATA	—	—	—	—	—	—	—	—	48TM482537	—
48TM000640-DATA	—	—	—	—	—	—	—	—	48TM482591	—
48TM000641-DATA	—	—	—	—	—	—	—	—	48TM482536	—
48TM482817-DATA	—	—	—	—	—	—	—	—	48TM482533	—
48TM482824-DATA	—	—	—	—	—	—	—	—	48TM482592	—
48TM482822-DATA	—	—	—	—	—	—	—	—	48TM482539	—
48TM482818-DATA	—	—	—	—	—	—	—	—	48TM482534	—
48TM482820-DATA	—	—	—	—	—	—	—	—	48TM482537	—
48TM482823-DATA	—	—	—	—	—	—	—	—	48TM482540	—
50TM480969-DATA	—	—	—	—	—	—	—	—	50TM480822	—
50TM480977-DATA	—	—	—	—	—	—	—	—	50TM480842	—
50TM480972-DATA	—	—	—	—	—	—	—	—	50TM480837	—
50TM480973-DATA	—	—	—	—	—	—	—	—	50TM480838	—
50TM480968-DATA	—	—	—	—	—	—	—	—	50TM480821	—
50TM480971-DATA	—	—	—	—	—	—	—	—	50TM480824	—
50TM480978-DATA	—	—	—	—	—	—	—	—	50TM480843	—
50TM480970-DATA	—	—	—	—	—	—	—	—	50TM480823	—
50HE403471-DATA	—	—	—	—	—	—	—	—	50HE403471	—
50HE403559-DATA	—	—	—	—	—	—	—	—	50HE403559	—
50HE403537-DATA	—	—	—	—	—	—	—	—	50HE403537	—
50HE403514-DATA	—	—	—	—	—	—	—	—	50HE403514	—
50HE403561-DATA	—	—	—	—	—	—	—	—	50HE403561	—
50HE403538-DATA	—	—	—	—	—	—	—	—	50HE403538	—
50HE403468-DATA	—	—	—	—	—	—	—	—	50HE403468	—
50HE403562-DATA	—	—	—	—	—	—	—	—	50HE403562	—
50HE403557-DATA	—	—	—	—	—	—	—	—	50HE403557	—
50HE403515-DATA	—	—	—	—	—	—	—	—	50HE403515	—
50HE403563-DATA	—	—	—	—	—	—	—	—	50HE403563	—
50HE403642-DATA	—	—	—	—	—	—	—	—	50HE403538	—
50HE403643-DATA	—	—	—	—	—	—	—	—	50HE403468	—
50HE403644-DATA	—	—	—	—	—	—	—	—	50HE403562	—
50HE403558-DATA	—	—	—	—	—	—	—	—	50HE403558	—
50HE403560-DATA	—	—	—	—	—	—	—	—	50HE403560	—
50HE403564-DATA	—	—	—	—	—	—	—	—	50HE403564	—
48TM001419-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001420-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001418-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001422-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001423-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001421-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001425-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001426-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001424-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001427-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001428-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001429-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001430-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001431-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001432-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001124-DATA		9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001127-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001133-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001128-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001125-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001134-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001131-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001126-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001129-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001132-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	—	—

— = HVAC Default, field does not require change.

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	PKG ABB ACH550	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48TM001122-DATA	48TM001122	HD56FE577	HK30WA048	3	SRT 2.4 HP 575V
48TM001123-DATA	48TM001123	HD56FE653	HK30WA001	3	SRT 2.4 HP 230V
48TM001130-DATA	48TM001130	HD56FR579	HK30WA048	3	SRT 1.7 HP 575V
48TM001135-DATA	48TM001135	HD56FE653	HK30WA008	3	SRT 2.4 HP 460V
48TM001207-DATA	48TM001207	HD56FR579	HK30WA048	2	SRT 1.7 HP 575V
50TM000603-DATA	50TM000603	HD58FE654	HK30WA001	3	STR 2.9 HP 230V
50TM000611-DATA	50TM000611	HD58FE654	HK30WA008	3	STR 2.9 HP 460V
50TM000606-DATA	50TM000606	HD60FE656	HK30WA002	5	STR 3.7 HP 230V
50TM000607-DATA	50TM000607	HD60FE656	HK30WA009	5	STR 3.7 HP 460V
50TM000602-DATA	50TM000602	HD58FE577	HK30WA021	5	STR 3.7 HP 575V
50TM000605-DATA	50TM000605	HD60FK659	HK30WA003	7.5	STR 5.0 HP 230V
50TM000612-DATA	50TM000612	HD60FK659	HK30WA010	7.5	STR 5.0 HP 460V
50TM000604-DATA	50TM000604	HD60FK577	HK30WA335	7.5	STR 5.0 HP 575V
50TM000608-DATA	50TM000608	HD56FE653	HK30WA001	3	STR 2.4 HP 230V
50TM000609-DATA	50TM000609	HD56FE653	HK30WA008	3	STR 2.4 HP 460V
50TM000610-DATA	50TM000610	HD56FE577	HK30WA048	3	STR 2.4 HP 575V
48LC000506-DATA	48LC000506	HD56FR579	HK30WA333	7.5	SRT 7.5 HP 575V
48LC000510-DATA	48LC000510	HD56FE577	HK30WA333	7.5	SRT 7.5 HP 575V
48LC000513-DATA	48LC000513	HD56FR579	HK30WA333	7.5	SRT 7.5 HP 575V
48LC000516-DATA	48LC000516	HD56FE577	HK30WA333	7.5	SRT 7.5 HP 575V
48LC000520-DATA	48LC000520	HD58FE577	HK30WA334	10	SRT 10 HP 575V
48LC000523-DATA	48LC000523	HD56FR579	HK30WA333	10	MRT 10 HP 575V
48LC000526-DATA	48LC000526	HD58FE577	HK30WA334	10	MRT 10 HP 575V
48LC000529-DATA	48LC000529	HD56FR579	HK30WA333	3	MRT 3 HP 575V
48LC000534-DATA	48LC000534	HD56FE577	HK30WA512	3	MRT 3 HP 575V
48LC000538-DATA	48LC000538	HD60FE576	HK30WA512	5	MRT 5 HP 575V
48LC000541-DATA	48LC000541	HD58FE577	HK30WA334	5	MRT 5 HP 575V
48LC000544-DATA	48LC000544	HD58FE577	HK30WA334	5	STR 5 HP 575V
48LC000549-DATA	48LC000549	HD58FE577	HK30WA334	7.5	MRT 7.5 HP 575V
48LC000552-DATA	48LC000552	HD60FE576	HK30WA335	7.5	MRT 7.5 HP 575V
48LC000555-DATA	48LC000555	HD60FL576	HK30WA335	7.5	MRT 7.5 HP 575V
48LC000558-DATA	48LC000558	HD62FL576	HK30WA336	7.5	MRT 7.5 HP 575V
48LC000561-DATA	48LC000561	HD64FL576	HK30WA337	7.5	MRT 7.5 HP 575V
48LC000564-DATA	48LC000564	HD60FL576	HK30WA335	7.5	MRT 7.5 HP 575V
48LC000567-DATA	48LC000567	HD62FL576	HK30WA336	7.5	MRT 7.5 HP 575V
48LC000570-DATA	48LC000570	HD58FE577	HK30WA334	7.5	MRT 7.5 HP 575V
48LC000573-DATA	48LC000573	HD60FL576	HK30WA335	7.5	MRT 7.5 HP 575V
48LC000576-DATA	48LC000576	HD62FL576	HK30WA336	10	MRT 10 HP 575V
48LC000579-DATA	48LC000579	HD64FL576	HK30WA337	10	MRT 10 HP 575V
48LC000582-DATA	48LC000582	HD58FE577	HK30WA334	10	MRT 10 HP 575V
48LC000585-DATA	48LC000585	HD64FL576	HK30WA337	3	MRT 3 HP 575V
48LC000588-DATA	48LC000588	HD60FL576	HK30WA335	3	MRT 3 HP 575V
48LC000591-DATA	48LC000591	HD62FL576	HK30WA336	3	MRT 3 HP 575V
48LC000594-DATA	48LC000594	HD64FL576	HK30WA337	3	MRT 3 HP 575V
48LC000597-DATA	48LC000597	HD60FL576	HK30WA335	3	MRT 3 HP 575V
48LC000600-DATA	48LC000600	HD62FL576	HK30WA336	3	MRT 3 HP 575V
48LC000603-DATA	48LC000603	HD58FE577	HK30WA334	3	MRT 3 HP 575V
48LC000606-DATA	48LC000606	HD60FE576	HK30WA335	3	MRT 3 HP 575V
48LC000609-DATA	48LC000609	HD60FL576	HK30WA335	5	MRT 5 HP 575V
48LC000612-DATA	48LC000612	HD62FL576	HK30WA336	5	MRT 5 HP 575V
48LC000615-DATA	48LC000615	HD58FE577	HK30WA334	5	MRT 5 HP 575V
48LC000618-DATA	48LC000618	HD60FL576	HK30WA335	5	MRT 5 HP 575V
48LC000621-DATA	48LC000621	HD62FL576	HK30WA336	5	MRT 5 HP 575V
48LC000624-DATA	48LC000624	HD64FL576	HK30WA337	5	MRT 5 HP 575V
48LC000627-DATA	48LC000627	HD58FE577	HK30WA334	7.5	MRT 7.5 HP 575V
48LC000630-DATA	48LC000630	HD60FL576	HK30WA335	7.5	MRT 7.5 HP 575V
48LC000633-DATA	48LC000633	HD62FL576	HK30WA336	7.5	MRT 7.5 HP 575V
48LC000636-DATA	48LC000636	HD64FL576	HK30WA337	7.5	MRT 7.5 HP 575V
48LC000639-DATA	48LC000639	HD60FL576	HK30WA335	7.5	SRT 7.5 HP 575V
48LC000643-DATA	48LC000643	HD60FL576	HK30WA336	7.5	STR 7.5 HP 575V
48LC000646-DATA	48LC000646	HD62FL576	HK30WA337	10	STR 10 HP 575V
48LC000649-DATA	48LC000649	HD60FL576	HK30WA335	10	SRT 10 HP 575V
48LC000652-DATA	48LC000652	HD62FL576	HK30WA336	10	STR 10 HP 575V
48LC000655-DATA	48LC000655	HD64FL576	HK30WA337	2	STR 2 HP 575V

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	EXT1 COMMANDS	EXT1/EXT 2 SEL	REF1 SELECT	CONST SPEED SEL	CONST SPEED 1	CONST SPEED 2
VFD PARAMETERS	**9905**	**9906**	**9908**	**9909**	**1001**	**1102**	**1103**	**1201**	**1202**	**1203**
48TM001122-DATA	575	3.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001123-DATA	230	7.9	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001130-DATA	575	3.1	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001135-DATA	460	3.6	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48TM001207-DATA	575	3.1	1725	1.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000603-DATA	230	9.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000611-DATA	460	4.2	1725	2.9	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000606-DATA	230	11.7	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000607-DATA	460	5.4	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000602-DATA	575	4.9	1725	3.7	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000605-DATA	230	17.1	1760	5	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000612-DATA	460	8.6	1760	5	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000604-DATA	575	7.6	1745	5	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000608-DATA	230	7.9	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000609-DATA	460	3.6	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
50TM000610-DATA	575	3.8	1725	2.4	10 COMM	8 COMM	8 COMM	DI 3	40Hz	60Hz
48LC000506-DATA	575	2.8	1725	1.7	(1) DI1	EXT1	AI-1	NOT SEL	52.4	60Hz
48LC000510-DATA	575	3.5	1725	2.4	(1) DI1	EXT1	AI-1	NOT SEL	52.4	60Hz
48LC000513-DATA	575	2.8	1725	1.7	(1) DI1	EXT1	AI-1	NOT SEL	42.6	60Hz
48LC000516-DATA	575	3.5	1725	2.4	(1) DI1	EXT1	AI-1	NOT SEL	42.6	60Hz
48LC000520-DATA	575	4.5	1725	3.7	(1) DI1	EXT1	AI-1	NOT SEL	41.2	60Hz
48LC000523-DATA	575	2.8	1690	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000526-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000529-DATA	575	2.8	1690	1.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000534-DATA	575	3.5	1680	2.4	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000538-DATA	575	6.2	1745	4.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000541-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000544-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	39.9Hz	39.9Hz
48LC000549-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000552-DATA	575	6.2	1745	5.25	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000555-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000558-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000561-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000564-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000567-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000570-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000573-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000576-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000579-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000582-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000585-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000588-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000591-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000594-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000597-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000600-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000603-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000606-DATA	575	6.2	1745	5.25	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000609-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000612-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	32.1Hz	47.7Hz
48LC000615-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000618-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000621-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000624-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	34Hz	49.4Hz
48LC000627-DATA	575	4.5	1710	3.7	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000630-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000633-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000636-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	31.5Hz	37Hz
48LC000639-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000643-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000646-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	31.4Hz	38.7Hz
48LC000649-DATA	575	7.2	1745	5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000652-DATA	575	8.9	1750	7.5	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz
48LC000655-DATA	575	12.6	1755	10	(1) DI1	EXT1	AI-1	NOT SEL	36Hz	43.2Hz

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	CONST SPEED 3	CONST SPEED 4	RELAY OUT 1	RELAY OUT 3	AO1 CONTENT SEL	MAX AMPS	STOP FCN	ACCEL	DECEL	FBA TYPE
VFD PARAMETERS	**1204**	**1205**	**1401**	**1403**	**1501**	**2003**	**2102**	**2202**	**2203**	**5101**
48TM001122-DATA	60Hz	—	—	4 Fault	102 Speed	4.4	Ramp	30s	30s	64 ModBus Plus
48TM001123-DATA	60Hz	—	—	4 Fault	102 Speed	9.1	Ramp	30s	30s	64 ModBus Plus
48TM001130-DATA	60Hz	—	—	4 Fault	102 Speed	3.6	Ramp	30s	30s	64 ModBus Plus
48TM001135-DATA	60Hz	—	—	4 Fault	102 Speed	4.1	Ramp	30s	30s	64 ModBus Plus
48TM001207-DATA	60Hz	—	—	4 Fault	102 Speed	3.6	Ramp	30s	30s	64 ModBus Plus
50TM000603-DATA	60Hz	—	—	4 Fault	102 Speed	10.6	Ramp	30s	30s	64 ModBus Plus
50TM000611-DATA	60Hz	—	—	4 Fault	102 Speed	4.8	Ramp	30s	30s	64 ModBus Plus
50TM000606-DATA	60Hz	—	—	4 Fault	102 Speed	13.5	Ramp	30s	30s	64 ModBus Plus
50TM000607-DATA	60Hz	—	—	4 Fault	102 Speed	6.2	Ramp	30s	30s	64 ModBus Plus
50TM000602-DATA	60Hz	—	—	4 Fault	102 Speed	5.6	Ramp	30s	30s	64 ModBus Plus
50TM000605-DATA	60Hz	—	—	4 Fault	102 Speed	19.7	Ramp	30s	30s	64 ModBus Plus
50TM000612-DATA	60Hz	—	—	4 Fault	102 Speed	9.9	Ramp	30s	30s	64 ModBus Plus
50TM000604-DATA	60Hz	—	—	4 Fault	102 Speed	8.7	Ramp	30s	30s	64 ModBus Plus
50TM000608-DATA	60Hz	—	—	4 Fault	102 Speed	9.1	Ramp	30s	30s	64 ModBus Plus
50TM000609-DATA	60Hz	—	—	4 Fault	102 Speed	4.1	Ramp	30s	30s	64 ModBus Plus
50TM000610-DATA	60Hz	—	—	4 Fault	102 Speed	4.4	Ramp	30s	30s	64 ModBus Plus
48LC000506-DATA	60Hz	—	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	3.2	(1) Coast	30s	10s	—
48LC000510-DATA	60Hz	—	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	4	(1) Coast	30s	10s	—
48LC000513-DATA	60Hz	—	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	3.2	(1) Coast	30s	10s	—
48LC000516-DATA	60Hz	—	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	4	(1) Coast	30s	10s	—
48LC000520-DATA	60Hz	—	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	(1) Coast	30s	10s	—
48LC000523-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	3.2	Ramp	10s	10s	—
48LC000526-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000529-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	3.2	Ramp	10s	10s	—
48LC000534-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	4	Ramp	10s	10s	—
48LC000538-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	7.1	Ramp	10s	10s	—
48LC000541-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000544-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000549-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000552-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	7.1	Ramp	10s	10s	—
48LC000555-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000558-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000561-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—
48LC000564-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000567-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000570-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000573-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000576-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000579-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—
48LC000582-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000585-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—
48LC000588-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000591-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000594-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—
48LC000597-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000600-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000603-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000606-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	7.1	Ramp	10s	10s	—
48LC000609-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000612-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000615-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000618-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000621-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000624-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—
48LC000627-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	5.2	Ramp	10s	10s	—
48LC000630-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000633-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000636-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—
48LC000639-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000643-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000646-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000649-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	8.3	Ramp	10s	10s	—
48LC000652-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	10.2	Ramp	10s	10s	—
48LC000655-DATA	60Hz	60Hz	16 FLT/Alarm	(16) FLT/ALARM	0103 OUTPUT FREQ	14.5	Ramp	10s	10s	—

— = HVAC Default, field does not require change.

Table 30 — ACH550 VFD Parameters, for 48/50 Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	STATION ID	BAUD RATE	PARITY	EFB STATION ID	EFB BAUD RATE	EFB PARITY	COMM PROT SEL	RUN ENABLE	CROSS REFERENCE	
VFD PARAMETERS	5201	5202	5203	5302	5303	5304	9802	1601	EM_PKG	CL_PKG
48TM001122-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001123-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001130-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001135-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48TM001207-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000603-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000611-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000606-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000607-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000602-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000605-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000612-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000604-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000608-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000609-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
50TM000610-DATA	1	9.6 kb/s	8 NONE 1	—	—	—	1 Std Modbus	—	N/A	—
48LC000506-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000510-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000513-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000516-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000520-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000523-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000526-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000529-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000534-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000538-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000541-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000544-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000549-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000552-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000555-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000558-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000561-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000564-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000567-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000570-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000573-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000576-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000579-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000582-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000585-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000588-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000591-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000594-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000597-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000600-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000603-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000606-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000609-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000612-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000615-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000618-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000621-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000624-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000627-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000630-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000633-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000636-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000639-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000643-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000646-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000649-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000652-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A
48LC000655-DATA	—	—	—	1	76.8kb/s	8 NONE 1	BACnet	DI-1	N/A	N/A

— = HVAC Default, field does not require change.

Table 31 — ACH550 VFD Common Parameters for 40RU Units with I/O Flex Controls

PARAMETERS	DESCRIPTION	SETTING ACH550
9802	COMM PROT SEL	1 STD MODBUS
9905	Voltage	575
9907	Motor Nominal Frequency	60Hz
9908	N. RPM	1725
1001	EXT1 Commands	10 COMM
1102	EXT1/EXT2 Sel	8 COMM
1103	REF 1 Select	8 COMM
1201	Const Speed Sel	DI 3
1202	Const Speed 1	40Hz
1203	Const Speed 2	60Hz
1204	Const Speed 3	60Hz
1205	Const Speed 4	—
1401	Relay Output 1	—
1403	Relay Output 3	4 Fault
1501	AO1 Content Sel	102 Speed
1601	RUN ENABLE	—
2007	Minimum Frequency	0Hz
2008	Maximum Frequency	60Hz
2101	Start FCN	Auto
2102	Stop FCN	Ramp
2201	ACCEL/DECEL	Not Sel
2202	ACCEL	30s
2203	DECEL	30s
2606	Switching Freq	4kHz
5101	FBA Type	64 ModBus Plus
5201	Station ID	1
5202	Baud Rate	9.6 kb/s
5203	Parity	8 NONE 1
5301	EFB Protocol ID	—
5302	EFB Station ID	—
5303	EFB Baud Rate	—
5304	EFB Parity	—
5305	EFB CTRL Profile	—

— = HVAC Default, field does not require change.

Table 32 — ACH550 VFD Parameters, for 40RU Units with I/O Flex Controls

VFD PARAMETERS	PKG ABB ACH550	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
40RU000205-DATA	40RU000205	HD56FR579	HK30WA360	3	40RU 1.7 HP 575V
40RU000220-DATA	40RU000220	HD56FE577	HK30WA360	3	40RU 2.4 HP 575V
40RU000225-DATA	40RU000225	HD58FE577	HK30WA361	5	40RU 3.7 HP 575V
40RU000208-DATA	40RU000208	HD58FE577	HK30WA361	5	40RU 3.7 HP 575V

Table 32 — ACH550 VFD Parameters, for 40RU Units with I/O Flex Controls (cont)

LOOKUP VARIABLE	N. AMPS	N. HP	MAX AMPS	CROSS REFERENCE	
VFD PARAMETERS	**9906**	**9909**	**2003**	**EM_PKG**	**CL_PKG**
40RU000205-DATA	2.8	1.7	3.2	40RU480132	—
40RU000220-DATA	3.8	2.4	4.4	40RU480013	—
40RU000225-DATA	4.9	3.7	5.6	40RU480018	—
40RU000208-DATA	4.5	3.7	5.2	40RU480135	—

— = HVAC Default, field does not require change.

Table 33 — ACH550 VFD Common Parameters for 48/50 Units with ComfortLink Controls

PARAMETERS	DESCRIPTION	SETTING ACH550
9802	COMM PROT SEL	6 LEN
9907	Motor Nominal Frequency	60Hz
1001	EXT1 Commands	—
1102	EXT1/EXT2 Sel	—
1103	REF 1 Select	—
1201	Const Speed Sel	—
1202	Const Speed 1	—
1203	Const Speed 2	—
1204	Const Speed 3	—
1205	Const Speed 4	—
1401	Relay Output 1	—
1403	Relay Output 3	—
1501	AO1 Content Sel	—
1601	RUN ENABLE	—
2007	Minimum Frequency	—
2008	Maximum Frequency	—
2101	Start FCN	—
2102	Stop FCN	—
2201	ACCEL/DECEL	—
2202	ACCEL	—
2203	DECEL	—
2606	Switching Freq	—
5101	FBA Type	—
5201	Station ID	—
5202	Baud Rate	—
5203	Parity	—
5301	EFB Protocol ID	0601 hex
5302	EFB Station ID	41
5303	EFB Baud Rate	38.4 kb/s
5304	EFB Parity	8 NONE 1
5305	EFB CTRL Profile	DCU PROFILE

— = HVAC Default, field does not require change.

Table 34 — ACH550 VFD Parameters, for 48/50 Units with ComfortLink Controls

VFD PARAMETERS	PKG ABB ACH550	MOTOR PART NUMBER	VFD PART NUMBER	DRIVE HP	DESC
48TM482683-DATA	48TM482683	HD56FR233	HK30WA352	3	SRT 1.7 HP 230V
48TM482686-DATA	48TM482686	HD56FR463	HK30WA356	3	SRT 1.7 HP 460V
48TM482689-DATA	48TM482689	HD56FR579	HK30WA360	3	SRT 1.7 HP 575V
48TM482682-DATA	48TM482682	HD56FE653	HK30WA352	3	SRT 2.4 HP 230V
48TM482694-DATA	48TM482694	HD56FE653	HK30WA356	3	SRT 2.4 HP 460V
48TM482681-DATA	48TM482681	HD56FE577	HK30WA360	3	SRT 2.4 HP 575V
48TM482692-DATA	48TM482692	HD58FE654	HK30WA352	3	SRT 2.9 HP 230V
48TM482687-DATA	48TM482687	HD58FE654	HK30WA356	3	SRT 2.9 HP 460V
48TM482684-DATA	48TM482684	HD60FE656	HK30WA353	5	SRT 3.7 HP 230V
48TM482693-DATA	48TM482693	HD60FE656	HK30WA357	5	SRT 3.7 HP 460V
48TM482690-DATA	48TM482690	HD58FE577	HK30WA361	5	SRT 3.7 HP 575V
48TM482685-DATA	48TM482685	HD60FK658	HK30WA354	7.5	SRT 5.3 HP 230V
48TM482688-DATA	48TM482688	HD60FK658	HK30WA358	7.5	SRT 5.3 HP 460V
48TM482691-DATA	48TM482691	HD60FE576	HK30WA362	7.5	SRT 5.3 HP 575V
50TM480915-DATA	50TM480915	HD58FE654	HK30WA352	3	STR 2.9 HP 230V
50TM480916-DATA	50TM480916	HD58FE654	HK30WA356	3	STR 2.9 HP 460V
50TM480917-DATA	50TM480917	HD60FE656	HK30WA353	5	STR 3.7 HP 230V
50TM480918-DATA	50TM480918	HD60FE656	HK30WA357	5	STR 3.7 HP 460V
50TM480919-DATA	50TM480919	HD58FE577	HK30WA361	5	STR 3.7 HP 575V
50TM480921-DATA	50TM480921	HD60FK657	HK30WA354	7.5	STR 5.0 HP 230V
50TM480922-DATA	50TM480922	HD60FK657	HK30WA358	7.5	STR 5.0 HP 460V
50TM480920-DATA	50TM480920	HD60FK577	HK30WA362	7.5	STR 5.0 HP 575V
50HE402817-DATA	50HE402817	HD58FE654	HK30WA352	3	MRT 2.9 HP 230V
50HE402822-DATA	50HE402822	HD58FE654	HK30WA356	3	MRT 2.9 HP 460V
50HE402818-DATA	50HE402818	HD60FE656	HK30WA353	5	MRT 3.7 HP 230V
50HE402823-DATA	50HE402823	HD60FE656	HK30WA357	5	MRT 3.7 HP 460V
50HE402827-DATA	50HE402827	HD58FE577	HK30WA361	5	MRT 3.7 HP 575V
50HE402819-DATA	50HE402819	HD60FK657	HK30WA354	7.5	MRT 5.0 HP 230V
50HE402824-DATA	50HE402824	HD60FK657	HK30WA358	7.5	MRT 5.0 HP 460V
50HE402828-DATA	50HE402828	HD60FK577	HK30WA362	7.5	MRT 5.0 HP 575V
50HE402820-DATA	50HE402820	HD62FK654	HK30WA354	7.5	MRT 7.5 HP 230V
50HE402825-DATA	50HE402825	HD62FK654	HK30WA358	7.5	MRT 7.5 HP 460V
50HE402829-DATA	50HE402829	HD62FL576	HK30WA362	7.5	MRT 7.5 HP 575V
50HE403639-DATA	50HE403639	HD60FK658	HK30WA354	7.5	MRT 5.3 HP 230V
50HE403640-DATA	50HE403640	HD60FK658	HK30WA358	7.5	MRT 5.3 HP 460V
50HE403641-DATA	50HE403641	HD60FE576	HK30WA362	7.5	MRT 5.3 HP 575V
50HE402821-DATA	50HE402821	HD64FK654	HK30WA355	10	MRT 10.0 HP 230V
50HE402826-DATA	50HE402826	HD64FK654	HK30WA359	10	MRT 10.0 HP 460V
50HE402830-DATA	50HE402830	HD64FL576	HK30WA363	10	MRT 10.0 HP 575V

Table 34 — ACH550 VFD Parameters, for 48/50 Units with ComfortLink Controls (cont)

LOOKUP VARIABLE	VOLTAGE	N. AMPS	N. RPM	N. HP	MAX AMPS	CROSS REFERENCE	
VFD PARAMETERS	9905	9906	9908	9909	2003	EM_PKG	CL_PKG
48TM482683-DATA	230	5.8	1725	1.7	6.7	48TM482532	48TM482683
48TM482686-DATA	460	2.9	1725	1.7	3.3	48TM482535	48TM482686
48TM482689-DATA	575	3.1	1725	1.7	3.6	48TM482538	48TM482689
48TM482682-DATA	230	7.9	1725	2.4	9.1	48TM482531	48TM482682
48TM482694-DATA	460	3.6	1725	2.4	4.1	48TM482593	48TM482694
48TM482681-DATA	575	3.8	1725	2.4	4.4	48TM482530	48TM482681
48TM482692-DATA	230	9.2	1725	2.9	10.6	48TM482591	48TM482692
48TM482687-DATA	460	4.2	1725	2.9	4.8	48TM482536	48TM482687
48TM482684-DATA	230	11.7	1725	3.7	13.5	48TM482533	48TM482684
48TM482693-DATA	460	5.4	1725	3.7	6.2	48TM482592	48TM482693
48TM482690-DATA	575	4.9	1725	3.7	5.6	48TM482539	48TM482690
48TM482685-DATA	230	13.6	1740	5.3	15.6	48TM482534	48TM482685
48TM482688-DATA	460	6.4	1740	5.3	7.4	48TM482537	48TM482688
48TM482691-DATA	575	6	1725	5.3	6.9	48TM482540	48TM482691
50TM480915-DATA	230	9.2	1725	2.9	10.6	50TM480822	50TM480915
50TM480916-DATA	460	4.2	1725	2.9	4.8	50TM480842	50TM480916
50TM480917-DATA	230	11.7	1725	3.7	13.5	50TM480837	50TM480917
50TM480918-DATA	460	5.4	1725	3.7	6.2	50TM480838	50TM480918
50TM480919-DATA	575	4.9	1725	3.7	5.6	50TM480821	50TM480919
50TM480921-DATA	230	17.1	1760	5	19.7	50TM480824	50TM480921
50TM480922-DATA	460	8.6	1760	5	9.9	50TM480843	50TM480922
50TM480920-DATA	575	7.6	1745	5	8.7	50TM480823	50TM480920
50HE402817-DATA	230	9.2	1725	2.9	10.6	50HE402582	50HE402817
50HE402822-DATA	460	4.2	1725	2.9	4.8	50HE402587	50HE402822
50HE402818-DATA	230	11.7	1725	3.7	13.5	50HE402583	50HE402818
50HE402823-DATA	460	5.4	1725	3.7	6.2	50HE402588	50HE402823
50HE402827-DATA	575	4.9	1725	3.7	5.6	50HE402592	50HE402827
50HE402819-DATA	230	17.1	1760	5	19.7	50HE402584	50HE402819
50HE402824-DATA	460	8.6	1760	5	9.9	50HE402589	50HE402824
50HE402828-DATA	575	7.6	1745	5	8.7	50HE402593	50HE402828
50HE402820-DATA	230	23.5	1760	7.5	27	50HE402585	50HE402820
50HE402825-DATA	460	11.9	1760	7.5	13.7	50HE402590	50HE402825
50HE402829-DATA	575	9	1750	7.5	10.4	50HE402594	50HE402829
50HE403639-DATA	230	13.6	1740	5.3	15.6	50HE402584	50HE402819
50HE403640-DATA	460	6.4	1740	5.3	7.4	50HE402589	50HE402824
50HE403641-DATA	575	6	1725	5.3	6.9	50HE402593	50HE402828
50HE402821-DATA	230	30.4	1755	10	35	50HE402586	50HE402821
50HE402826-DATA	460	15.2	1755	10	17.5	50HE402591	50HE402826
50HE402830-DATA	575	11	1755	10	12.7	50HE402595	50HE402830

APPENDIX A — REMOTE VFD KEYPAD REFERENCE

NOTE: This Appendix only applies when a unit with the factory-installed SAV™ option is equipped with the field-installed Remote VFD Keypad (Part Number: CRDISKKIT001A00).

On 48/50 Series single package rooftop units and 40RU fan coils equipped with the SAV option, the supply fan speed is controlled by a 3-phase VFD. See Fig. 5-22 for the location of the VFD in the units covered by this supplement.

The VFD is powered during normal operation to prevent condensation from forming on the boards during the off mode and is stopped by driving the speed to 0. The units use ABB VFDs. The interface wiring for the VFDs is shown in Fig. 28 and 29 (on page 21). Terminal designations are shown in the Terminal Designation table (see Tables 12 and 13 on page 21). Configurations are shown in the VFD Parameters tables (see Tables A-G on pages 68-74).

VFD Operation with Remote Keypad

The VFD keypad is shown in Fig. A. The functions of SOFT KEYS 1 and 2 change depending on what is displayed on the screen. The function of SOFT KEY 1 matches the word in the lower left-hand box on the display screen. The function of SOFT KEY 2 matches the word in the lower right-hand box on the display screen. If the box is empty, then the SOFT KEY does not have a function on that specific screen. The UP and DOWN keys are used to navigate through the menus. The OFF key is used to turn off the VFD. The AUTO key is used to change control of the drive to automatic control. The HAND key is used to change control of the drive to local (hand held) control. The HELP button is used to access the help screens.

For the VFD to operate on the units covered by this document, the drive must be set in AUTO mode. The word "AUTO" will appear in the upper left hand corner of the VFD display. Press the AUTO button to set the drive in AUTO mode.

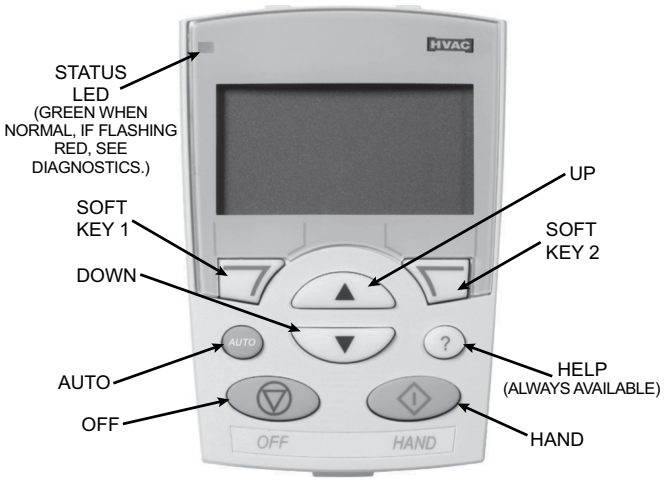


Fig. A — VFD Keypad

START UP WITH ASSISTANT

Initial start-up has been performed at the factory. Use of the start up assistant will override factory VFD configurations.

⚠ CAUTION

CONFIGURATION OVERRIDE HAZARD

DO NOT USE ABB OR CARRIER START-UP ASSISTANT ON THIS VFD APPLICATION! Use of start-up assistant will override the factory VFD configurations!

START UP BY CHANGING PARAMETERS INDIVIDUALLY

Initial start-up is performed at the factory. To start up the VFD by changing individual parameters, perform the following procedure:

1. Select MENU (SOFT KEY 2). The Main menu will be displayed.
2. Use the UP or DOWN keys to highlight PARAMETERS on the display screen and press ENTER (SOFT KEY 2).
3. Use the UP or DOWN keys to highlight the desired parameter group and press SEL (SOFT KEY 2).
4. Use the UP or DOWN keys to highlight the desired parameter and press EDIT (SOFT KEY 2).
5. Use the UP or DOWN keys to change the value of the parameter.
6. Press SAVE (SOFT KEY 2) to store the modified value. Press CANCEL (SOFT KEY 1) to keep the previous value. Any modifications that are not saved will not be changed.
7. Choose another parameter or press EXIT (SOFT KEY 1) to return to the listing of parameter groups. Continue until all the parameters have been configured and then press EXIT (SOFT KEY 1) to return to the main menu.

NOTE: The current parameter value appears above the highlight parameter. To view the default parameter value, press the UP and DOWN keys simultaneously. To restore the default factory settings, select the application macro "HVAC Default."

VFD Modes

The VFD has several different modes for configuring, operating, and diagnosing the VFD. The modes are:

1. Standard Display mode — shows drive status information and operates the drive
2. Parameters mode — edits parameter values individually
3. Start-up Assistant mode — guides the start up and configuration
4. Changed Parameters mode — shows all changed parameters
5. Drive Parameter Backup mode — stores or uploads the parameters
6. Clock Set mode — sets the time and date for the drive
7. I/O Settings mode — checks and edits the I/O settings

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table A — ACH550 VFD Parameters — 48/50TC 07-14 (575V), 50TCQ 07-12 (575V), 48/50HC 07-12 and 50HCQ 08-09

VFD PART NUMBER	REPLACEMENT COMPONENT PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 3 (1403)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA364	HK30WA302	1.7 HP 230V	HD56FR233	230	5.8	60 Hz	1725	1.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA356	HK30WA318	1.7 HP 460V	HD56FR463	460	2.9	60 Hz	1725	1.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	3.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA366	HK30WA332	1.7 HP 575V	HD56FR579	575	3.1	60 Hz	1725	1.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	3.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA352	HK30WA303	2.4 HP 230V	HD56FE653	230	7.9	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.1	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA356	HK30WA318	2.4 HP 460V	HD56FE653	460	4.0	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA360	HK30WA333	2.4 HP 575V	HD56FE577	575	3.4	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	3.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA352	HK30WA303	2.9 HP 230V	HD58FE654	230	9.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA356	HK30WA318	2.9 HP 460V	HD58FE654	460	4.6	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	5.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA353	HK30WA304	3.7 HP 230V	HD60FE656	230	11.2	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	12.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA357	HK30WA319	3.7 HP 460V	HD60FE656	460	5.6	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA361	HK30WA334	3.7 HP 575V	HD58FE577	575	4.2	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	5.3 HP 230V	HD60FK658	230	13.6	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	15.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	5.3 HP 460V	HD60FK658	460	6.4	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	7.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	5.3 HP 575V	HD60FE576	575	5.4	60 Hz	1725	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table B — ACH550 VFD Parameters — 48/50TC 16 (575V), 50TCQ 14 (575V), 48/50HC 14 and 50HCQ 12

VFD PART NUMBER	REPLACEMENT COMPONENT PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 3 (1403)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA352	HK30WA303	2.4 HP 230V	HD56FE653	230	7.9	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.1	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA356	HK30WA318	2.4 HP 460V	HD56FE653	460	4.0	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA360	HK30WA333	2.4 HP 575V	HD56FE577	575	3.4	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	3.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA352	HK30WA303	2.9 HP 230V	HD58FE654	230	9.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA356	HK30WA318	2.9 HP 460V	HD58FE654	460	4.6	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	5.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA353	HK30WA304	3.7 HP 230V	HD60FE656	230	11.2	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	12.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA357	HK30WA319	3.7 HP 460V	HD60FE656	460	5.6	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA361	HK30WA334	3.7 HP 575V	HD58FE577	575	4.2	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	5.0 HP 230V	HD60FL657	230	16.7	60 Hz	1745	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	19.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	5.0 HP 460V	HD60FL657	460	8.4	60 Hz	1745	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	5.0 HP 575V	HD60FL575	575	5.1	60 Hz	1725	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	5.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	5.0 HP 230V	HD60FK657	230	14.7	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	16.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	5.0 HP 460V	HD60FK657	460	6.8	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	7.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	5.0 HP 575V	HD60FL576	575	5.4	60 Hz	1745	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table C — ACH550 VFD Parameters — 48/50TC17-30 (575V), 50TCQ 17-24 (575V) and 48/50HC 17-28

VFD PART NUMBER	REPLACEMENT COMPONENT PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 3 (1403)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA352	HK30WA303	2.9 HP 230V	HD58FE654	230	9.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA356	HK30WA318	2.9 HP 460V	HD58FE654	460	4.6	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	5.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA353	HK30WA304	3.7 HP 230V	HD60FE656	230	11.2	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	12.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA357	HK30WA319	3.7 HP 460V	HD60FE656	460	5.6	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA361	HK30WA334	3.7 HP 575V	HD58FE577	575	4.2	60 Hz	175	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	5.0 HP 230V	HD60FK657	230	14.7	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	16.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	5.0 HP 460V	HD60FK657	460	6.8	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	7.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	5.0 HP 575V	HD60FL576	575	5.4	60 Hz	1745	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	7.5 HP 230V	HD62FK654	230	23.5	60 Hz	1760	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	27.0	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	7.5 HP 460V	HD62FK654	460	11.9	60 Hz	1760	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	13.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	7.5 HP 575V	HD62FL576	575	9.0	60 Hz	1750	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	5.0 HP 230V	HD60FL650	230	16.7	60 Hz	1740	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	19.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	5.0 HP 460V	HD60FL650	460	8.4	60 Hz	1740	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	5.0 HP 575V	HD60FL575	575	5.1	60 Hz	1725	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	5.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	5.3 HP 230V	HD60FK658	230	13.0	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	15.0	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	5.3 HP 460V	HD60FK658	460	6.4	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	7.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	5.3 HP 575V	HD60FE576	575	5.4	60 Hz	1725	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA354	HK30WA305	7.5 HP 230V	HD62FL650	230	22.9	60 Hz	1745	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	26.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA358	HK30WA320	7.5 HP 460V	HD62FL650	460	11.5	60 Hz	1745	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	13.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA362	HK30WA335	7.5 HP 575V	HD62FL575	575	8.1	60 Hz	1745	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA355	HK30WA306	10.0 HP 230V	HD64FK654	230	28.0	60 Hz	1755	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	32.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA359	HK30WA321	10.0 HP 460V	HD64FK654	460	12.6	60 Hz	1755	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	14.5	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA363	HK30WA336	10.0 HP 575V	HD64FL576	575	11.0	60 Hz	1755	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	12.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA355	HK30WA306	10.0 HP 230V	HD64FL650	230	30.8	60 Hz	1745	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	35.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA359	HK30WA321	10.0 HP 460V	HD64FL650	460	15.4	60 Hz	1745	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	17.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA363	HK30WA336	10.0 HP 575V	HD64FL575	575	11.0	60 Hz	1740	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	12.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table D — ACH550 VFD Parameters — 40RUA 07-30, 40RUS 08-30 and 40RUQ 07-25

VFD PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 3 (1403)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA360	1.7 HP 575V	HD56FR579	575	2.8	60Hz	1725	1.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	3.2	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA360	2.4 HP 575V	HD56FE577	575	3.8	60Hz	1725	2.4	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	4.4	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA361	3.7 HP 575V	HD58FE577	575	4.9	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	5.6	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA361	3.7 HP 575V	HD58FE577	575	4.5	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	5.2	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA362	5.0 HP 575V	HD60FK577	575	8.0	60Hz	1725	5	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	9.2	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA362	7.5 HP 575V	HD62FL576	575	9.0	60Hz	1725	7.5	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	10.4	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA363	10 HP 575V	HD64FL576	575	11.0	60Hz	1725	10	DI 2,3	40Hz	60Hz	60Hz	16 FLT/Alarm	12.7	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA360	1.7 HP 575V	HD56FR579	575	2.8	60Hz	1725	1.7	DI 3	40Hz	60Hz	60Hz	4 Fault	3.2	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA360	2.4 HP 575V	HD56FE577	575	3.8	60Hz	1725	2.4	DI 3	40Hz	60Hz	60Hz	4 Fault	4.4	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA361	3.7 HP 575V	HD58FE577	575	4.9	60Hz	1725	3.7	DI 3	40Hz	60Hz	60Hz	4 Fault	5.6	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s
HK30WA361	3.7 HP 575V	HD58FE577	575	4.5	60Hz	1725	3.7	DI 3	40Hz	60Hz	60Hz	4 Fault	5.2	0Hz	60Hz	4kHz	Auto	Ramp	Not Sel	30s	30s

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table E — ACS320 VFD Parameters — 48/50TC07-16 and 50TCQ07-14 (208/230V and 460V units only)

VFD PART NUMBER	REPLACEMENT COMPONENT PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 1 (1401)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA523	HK30WA506	SRT 1.7 HP 230V	HD56FR233	230	5.8	60 Hz	1725	1.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	SRT 1.7 HP 460V	HD56FR463	460	2.9	60 Hz	1725	1.7	DI 2,3	40 Hz	60H z	60 Hz	16 FLT/ Alarm	3.3	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	SRT 2.4 HP 230V	HD56FE653	230	7.9	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.1	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	SRT 2.4 HP 460V	HD56FE653	460	3.6	60 Hz	1725	2.4	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.1	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	SRT 2.9 HP 230V	HD58FE654	230	9.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	SRT 2.9 HP 460V	HD58FE654	460	4.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	SRT 3.7 HP 230V	HD60FE656	230	11.7	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	13.5	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA534	HK30WA517	SRT 3.7 HP 460V	HD60FE656	460	5.4	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	SRT 5.3 HP 230V	HD60FK658	230	13.6	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	15.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	SRT 5.3 HP 460V	HD60FK658	460	6.4	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	7.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	STR 2.9 HP 230V	HD58FE654	230	9.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	STR 2.9 HP 460V	HD58FE654	460	4.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	STR 3.7 HP 230V	HD60FE656	230	11.7	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	13.5	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA534	HK30WA517	STR 3.7 HP 460V	HD60FE656	460	5.4	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	STR 5.0 HP 230V	HD60FK657	230	17.1	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	19.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	STR 5.0 HP 460V	HD60FK657	460	8.6	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table F — ACS320 VFD Parameters — 48/50TC17-30 and 50TCQ17-24 (208/230V and 460V units only)

VFD PART NUMBER	REPLACEMENT COMPONENT PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 1 (1401)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA523	HK30WA506	MRT 2.9 HP 230V	HD58FE654	230	9.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	10.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	MRT 2.9 HP 460V	HD58FE654	460	4.2	60 Hz	1725	2.9	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	4.8	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	MRT 3.7 HP 230V	HD60FE656	230	11.7	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	13.5	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA534	HK30WA517	MRT 3.7 HP 460V	HD60FE656	460	5.4	60 Hz	1725	3.7	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	6.2	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	MRT 5.0 HP 230V	HD60FK657	230	17.1	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	19.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	MRT 5.0 HP 460V	HD60FK657	460	8.6	60 Hz	1760	5.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	9.9	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	MRT 7.5 HP 230V	HD62FK654	230	23.5	60 Hz	1760	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	27.0	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	MRT 7.5 HP 460V	HD62FK654	460	11.9	60 Hz	1760	7.5	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	13.7	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	MRT 5.3 HP 230V	HD60FK658	230	13.6	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	15.6	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	MRT 5.3 HP 460V	HD60FK658	460	6.4	60 Hz	1740	5.3	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	7.4	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA525	HK30WA508	MRT 10.0 HP 230V	HD64FK654	230	30.4	60 Hz	1755	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	35.0	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec
HK30WA533	HK30WA515	MRT 10.0 HP 460V	HD64FK654	460	15.2	60 Hz	1755	10.0	DI 2,3	40 Hz	60 Hz	60 Hz	16 FLT/ Alarm	17.1	0 Hz	60 Hz	4 kHz	Auto	Ramp	Not Sel	30 sec	30 sec

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table G — ACS320 VFD Parameters — 40RU (208/230V and 460V units only)

VFD PART NUMBER	REPLACEMENT COMPONENT PART NUMBER	DESC	MOTOR PART NUMBER	VOLT (9905)	NOM AMPS (9906)	MOTOR NOM FREQ (9907)	NOM RPM (9908)	NOM HP (9909)	CONST SPEED SEL (1201)	CONST SPEED 1 (1202)	CONST SPEED 2 (1203)	CONST SPEED 3 (1204)	RELAY OUT 1 (1403)	MAX AMPS (2003)	MIN FREQ (2007)	MAX FREQ (2008)	SWITCH FREQ (2606)	START FCN (2101)	STOP FCN (2102)	ACCEL/ DECEL (2201)	ACCEL (2202)	DECEL (2203)
HK30WA523	HK30WA506	1.7 HP 230V	HD56FR233	230	5.8	60Hz	1725	1.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	6.7	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	1.7 HP 460V	HD56FR463	460	2.9	60Hz	1725	1.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	3.3	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	2.4 HP 230V	HD56FE653	230	7.1	60Hz	1725	2.4	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	8.2	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	2.4 HP 460V	HD56FE653	460	3.4	60Hz	1725	2.4	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	3.9	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	2.9 HP 230V	HD58FE654	230	8.6	60Hz	1725	2.9	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	9.9	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA530	HK30WA512	2.9 HP 460V	HD58FE654	460	3.8	60Hz	1725	2.9	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	4.4	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	3.7 HP 230V	HD60FE656	230	10.8	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	12.4	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA534	HK30WA517	3.7 HP 460V	HD60FE656	460	4.9	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	5.6	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	3.7 HP 230V	HD58FR236	230	10.2	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	11.7	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA534	HK30WA517	3.7 HP 460V	HD58FR236	460	4.8	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	5.5	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	5.0 HP 230V	HD60FK657	230	17.0	60Hz	1760	5	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	19.6	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	5.0 HP 460V	HD60FK657	460	7.6	60Hz	1760	5	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	8.7	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA524	HK30WA507	7.5 HP 230V	HD62FK654	230	21.5	60Hz	1760	7.5	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	24.7	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA532	HK30WA514	7.5 HP 460V	HD62FK654	460	14.3	60Hz	1760	7.5	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	16.4	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA525	HK30WA508	10 HP 230V	HD64FK654	230	28	60Hz	1755	10	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	32.2	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA533	HK30WA515	10 HP 460V	HD64FK654	460	15.2	60Hz	1755	10	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	17.5	0Hz	60Hz	4kHz	Auto	(1) Coast	Not Sel	30 sec	30 sec
HK30WA523	HK30WA506	1.7 HP 230V	HD56FR233	230	5.8	60Hz	1725	1.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	6.7	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA530	HK30WA512	1.7 HP 460V	HD56FR463	460	2.9	60Hz	1725	1.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	3.3	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA523	HK30WA506	2.4 HP 230V	HD56FE653	230	7.1	60Hz	1725	2.4	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	8.2	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA530	HK30WA512	2.4 HP 460V	HD56FE653	460	3.4	60Hz	1725	2.4	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	3.9	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA523	HK30WA506	3.7 HP 230V	HD60FE656	230	10.8	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	12.4	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA534	HK30WA517	3.7 HP 460V	HD60FE656	460	4.9	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	5.6	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA523	HK30WA506	3.7 HP 230V	HD58FR236	230	10.2	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	11.7	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec
HK30WA534	HK30WA517	3.7 HP 460V	HD58FR236	460	4.8	60Hz	1725	3.7	DI 2,3	40Hz	60Hz	60Hz	16 FLT/ Alarm	5.5	0Hz	60Hz	4kHz	(1) AUTO	(1) Coast	Not Sel	30 sec	10.0 sec

Standard Display Mode

Use the standard display mode to read information on the drive status and operate the drive. To reach the standard display mode, press EXIT until the LCD display shows status information as described below. (See Fig. B.)

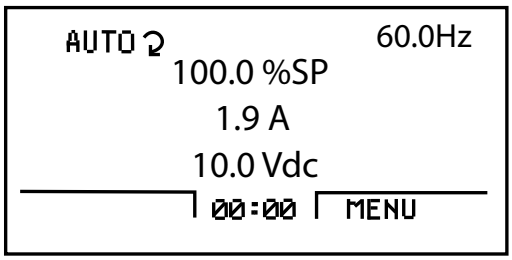


Fig. B — Standard Display Example

The top line of the LCD display shows the basic status information of the drive. The HAND icon indicates that the drive control is local from the control panel. The AUTO icon indicates that the drive is in remote control mode, such as the basic I/O or field bus.

The arrow icon indicates the drive and motor rotation status. A rotating arrow (clockwise or counterclockwise) indicates that the drive is running and at set point and the shaft direction is forward or reverse. A rotating blinking arrow indicates that the drive is running but not at set point. A stationary arrow indicates that the drive is stopped. For the units covered in this manual, the correct display rotation is clockwise.

The upper right corner shows the frequency set point that the drive will maintain.

Using parameter group 34, the middle of the LCD display can be configured to display 3 parameter values. The default display shows parameters 0103 (OUTPUT FREQ) in percent speed, 0104 (CURRENT) in amperes, and 0120 (AI1) in voltage DC.

The bottom corners of the LCD display show the functions currently assigned to the two soft keys. The lower middle displays the current time (if configured to show the time).

The first time the drive is powered up, it is in the OFF mode. To switch to local hand-held control and control the drive using the control panel, press and hold the HAND button. Pressing the HAND button switches the drive to hand control while keeping the drive running. Press the AUTO button to switch to remote input control. To start the drive press the HAND or AUTO buttons, to stop the drive press the OFF button.

To adjust the speed in HAND mode, press the UP or DOWN buttons (the reference changes immediately). The reference can be modified in the local control (HAND) mode, and can be parameterized (using Group 11 reference select) to also allow modification in the remote control mode.

Parameters Mode

The Parameters mode is used to change the parameters on the drive. To change parameters, perform the following procedure:

1. Select MENU (SOFT KEY 2). The Main menu will be displayed.
2. Use the UP or DOWN keys to highlight PARAMETERS on the display screen and press ENTER (SOFT KEY 2).
3. Use the UP or DOWN keys to highlight the desired parameter group and press SEL (SOFT KEY 2).
4. Use the UP or DOWN keys to highlight the desired parameter and press EDIT (SOFT KEY 2).
5. Use the UP or DOWN keys to change the value of the parameter.
6. Press SAVE (SOFT KEY 2) to store the modified value. Press CANCEL (SOFT KEY 1) to keep the previous value. Any modifications that are not saved will not be changed.
7. Choose another parameter or press EXIT (SOFT KEY 1) to return to the listing of parameter groups. Continue until all the parameters have been configured and then press EXIT (SOFT KEY 1) to return to the main menu.

NOTE: The current parameter value appears above the highlight parameter. To view the default parameter value, press the UP and DOWN keys simultaneously. To restore the default factory settings, select the Carrier application macro.

Changed Parameters Mode

The Changed Parameters mode is used to view and edit recently changed parameters on the drive. To view the changed parameters, perform the following procedure:

1. Select MENU (SOFT KEY 2). The Main menu will be displayed.
2. Use the UP or DOWN keys to highlight CHANGED PAR on the display screen and press ENTER (SOFT KEY 2). A list of the recently changed parameters will be displayed.
3. Use the UP or DOWN keys to highlight the desired parameter group and press EDIT (SOFT KEY 2) to change the parameter if desired.
4. Press EXIT (SOFT KEY 1) to exit the Changed Parameters mode.

Drive Parameter Backup Mode

The drive parameter back up mode is used to export the parameters from one drive to another. The parameters can be uploaded from a VFD to the removable control panel. The control panel can then be transferred to another drive and the parameters downloaded into memory.

Depending on the motor and application, there are two options available. The first option is to download all parameters. This copies both application and motor parameters to the drive from the control panel. This is recommended when using the same application for drives of the same size. This can also be used to create a backup of the parameters group for the drive.

The second option downloads only the application parameters to the drive. This is recommended when using the same application for drives of different sizes. Parameters 9905, 9906, 9907, 9908, 9909, 1605, 1607, 5201, and group 51 parameters and internal motor parameters are not copied.

Upload All Parameters

To upload and store parameters in the control panel from the VFD, perform the following procedure:

1. Select MENU (SOFT KEY 2). The Main menu will be displayed.
2. Use the UP or DOWN keys to highlight PAR BACKUP on the display screen and press ENTER (SOFT KEY 2).
3. Use the UP or DOWN keys to highlight UPLOAD TO PANEL and press SEL (SOFT KEY 2).
4. The text “Copying Parameters” will be displayed with a progress indicator. To stop the process, select ABORT (SOFT KEY 1).
5. When the upload is complete, the text “Parameter upload successful” will be displayed.
6. The display will then return to the PAR BACKUP menu. Select EXIT (SOFT KEY 1) to return to the main menu.
7. The control panel can now be disconnected from the drive.

DOWNLOAD ALL PARAMETERS

To download all parameters from the control panel to the VFD, perform the following procedure:

1. Install the control panel with the correct parameters onto the VFD.
2. Select MENU (SOFT KEY 2). The Main menu will be displayed.
3. Use the UP or DOWN keys to highlight PAR BACKUP on the display screen and press ENTER (SOFT KEY 2).
4. Use the UP or DOWN keys to highlight DOWNLOAD TO DRIVE ALL and press SEL (SOFT KEY 2).
5. The text "Restoring Parameters" will be displayed with a progress indicator. To stop the process, select ABORT (SOFT KEY 1).
6. When the download is complete, the text "Parameter download successful" will be displayed.
7. The display will then return to the PAR BACKUP menu. Select EXIT (SOFT KEY 1) to return to the main menu.
8. The control panel can now be disconnected from the drive.

DOWNLOAD APPLICATION PARAMETERS

To download application parameters only to the control panel from the VFD, perform the following procedure:

1. Install the control panel with the correct parameters onto the VFD.
2. Select MENU (SOFT KEY 2). The Main menu will be displayed.
3. Use the UP or DOWN keys to highlight PAR BACKUP on the display screen and press ENTER (SOFT KEY 2).
4. Use the UP or DOWN keys to highlight DOWNLOAD APPLICATION and press SEL (SOFT KEY 2).
5. The text "Downloading Parameters (partial)" will be displayed with a progress indicator. To stop the process, select ABORT (SOFT KEY 1).
6. When the download is complete, the text "Parameter download successful" will be displayed.
7. The display will then return to the PAR BACKUP menu. Select EXIT (SOFT KEY 1) to return to the main menu.
8. The control panel can now be disconnected from the drive.

Clock Set Mode

Use the clock set mode to set the date and time for the internal clock of the VFD. In order to use the timer functions of the VFD control, the internal clock must be set. The date is used to determine weekdays and is visible in the fault logs.

To set the clock, perform the following procedure:

1. Select MENU (SOFT KEY 2). The Main menu will be displayed.
2. Use the UP or DOWN keys to highlight CLOCK SET on the display screen and press ENTER (SOFT KEY 2). The clock set parameter list will be displayed.
3. Use the UP or DOWN keys to highlight CLOCK VISIBILITY and press SEL (SOFT KEY 2). This parameter is used to display or hide the clock on the screen. Use the UP or DOWN keys to change the parameter setting. Press OK (SOFT KEY 2) to save the configuration and return to the Clock Set menu.
4. Use the UP or DOWN keys to highlight SET TIME and press SEL (SOFT KEY 2). Use the UP or DOWN keys to change the hours and minutes. Press OK (SOFT KEY 2) to save the configuration and return to the Clock Set menu.
5. Use the UP or DOWN keys to highlight TIME FORMAT and press SEL (SOFT KEY 2). Use the UP or DOWN keys to change the parameter setting. Press OK (SOFT KEY 2) to save the configuration and return to the Clock Set menu.
6. Use the UP or DOWN keys to highlight SET DATE and press SEL (SOFT KEY 2). Use the UP or DOWN keys to change the day, month, and year. Press OK (SOFT KEY 2) to save the configuration and return to the Clock Set menu.
7. Use the UP or DOWN keys to highlight DATE FORMAT and press SEL (SOFT KEY 2). Use the UP or DOWN keys to change the parameter setting. Press OK (SOFT KEY 2) to save the configuration and return to the Clock Set menu.
8. Press EXIT (SOFT KEY 1) twice to return to the main menu.

I/O Settings Mode

Use the I/O Settings mode to view and edit the I/O settings.

To configure the I/O settings, perform the following procedure:

1. Select MENU (SOFT KEY 2). The Main menu will be displayed.
2. Use the UP or DOWN keys to highlight I/O SETTINGS on the display screen and press ENTER (SOFT KEY 2). The I/O Settings parameter list will be displayed.
3. Use the UP or DOWN keys to highlight the desired I/O setting and press SEL (SOFT KEY 2).
4. Use the UP or DOWN keys to select the parameter to view. Press OK (SOFT KEY 2).
5. Use the UP or DOWN keys to change the parameter setting. Press SAVE (SOFT KEY 2) to save the configuration. Press CANCEL (SOFT KEY 1) to keep the previous value. Any modifications that are not saved will not be changed.
6. Press EXIT (SOFT KEY 1) twice to return to the main menu.

VFD DIAGNOSTICS

The drive detects error situations and reports them using:

1. Green and red LEDs on the body of the drive (located under the keypad)
2. Status LED on the control panel
3. Control panel display
4. The Fault Word and Alarm Word parameter bits (parameters 0305 to 0309)

The form of the display depends on the severity of the error. The user can specify the severity for many errors by directing the drive to ignore the error situation, report the situation as an alarm, or report the situation as a fault.

Faults (Red LED Lit)

The VFD signals that it has detected a severe error, or fault, by:

1. Enabling the red LED on the drive (LED is either steady or flashing)
2. Setting an appropriate bit in a Fault Word parameter (0305 to 0307)
3. Overriding the control panel display with the display of a fault code
4. Stopping the motor (if it was on)

The fault code on the control panel display is temporary. Pressing the MENU, ENTER, UP button or DOWN buttons removes the fault message. The message reappears after a few seconds if the control panel is not touched and the fault is still active. See Table H for a list of fault codes.

Alarms (Green LED Flashing)

For less severe errors, called alarms, the diagnostic display is advisory. For these situations, the drive is simply reporting that it had detected something unusual. In these situations, the drive:

1. Flashes the green LED on the drive (does not apply to alarms that arise from control panel operation errors)
2. Sets an appropriate bit in an Alarm Word parameter (0308 or 0309)
3. Overrides the control panel display with the display of an alarm code and/or name

Alarm messages disappear from the control panel display after a few seconds. The message returns periodically as long as the alarm condition exists. See Table I for a list of alarm codes.

Correcting Faults

The recommended corrective action for faults is shown in the Fault Listing Table H. The VFD can also be reset to remove the fault. If an external source for a start command is selected and is active, the VFD may start immediately after fault reset.

To reset a fault indicated by a flashing red LED, turn off the power for 5 minutes. To reset a fault indicated by a red LED (not flashing), press RESET from the control panel or turn off the power for 5 minutes. Depending on the value of parameter 1604 (FAULT RESET SELECT), digital input or serial communication could also be used to reset the drive. When the fault has been corrected, the motor can be started.

History

For reference, the last three fault codes are stored into parameters 0401, 0412, 0413. For the most recent fault (identified by parameter 0401), the drive stores additional data (in parameters 0402 - 0411) to aid in troubleshooting a problem. For example, a parameter 0404 stores the motor speed at the time of the fault. To clear the fault history (all of Group 04, Fault History parameters), follow these steps:

1. In the control panel, Parameters mode, select parameter 0401.
2. Press EDIT.
3. Press the UP and DOWN buttons simultaneously.
4. Press SAVE.

Correcting Alarms

To correct alarms, first determine if the alarm requires any corrective action (action is not always required). Use Table I to find and address the root cause of the problem.

If diagnostics troubleshooting has determined that the drive is defective during the warranty period, contact Carrier.

Control Panel Cleaning

Use a soft damp cloth to clean the control panel. Avoid harsh cleaners which could scratch the display window.

Battery Replacement

A battery is only used in assistant control panels that have the clock function available and enabled. The battery keeps the clock operating in memory during power interruptions. The expected life for the battery is greater than ten years. To remove the battery, use a coin to rotate the battery holder on the back of the control panel. Replace the battery with type CR2032.

Table H — Fault Codes

FAULT CODE	FAULT NAME IN PANEL	DESCRIPTION AND RECOMMENDED CORRECTIVE ACTION
1	OVERCURRENT	Output current is excessive. Check for excessive motor load, insufficient acceleration time (parameters 2202 ACCELER TIME 1, default 30 seconds), or faulty motor, motor cables or connections.
2	DC OVERVOLT	Intermediate circuit DC voltage is excessive. Check for static or transient over voltages in the input power supply, insufficient deceleration time (parameters 2203 DECELER TIME 1, default 30 seconds), or undersized brake chopper (if present).
3	DEV OVERTEMP	Drive heat sink is overheated. Temperature is at or above 115°C (239°F). Check for fan failure, obstructions in the air flow, dirt or dust coating on the heat sink, excessive ambient temperature, or excessive motor load.
4	SHORT CIRC	Fault current. Check for short-circuit in the motor cable(s) or motor or supply disturbances.
5	OVERLOAD	Inverter overload condition. The drive output current exceeds the ratings.
6	DC OVERVOLT	Intermediate circuit DC voltage is not sufficient. Check for missing phase in the input power supply, blown fuse, or under voltage on main circuit.
7	AI1 LOSS	Analog input 1 loss. Analog input value is less than AI1 FLT LIMIT (3021). Check source and connection for analog input and parameter settings for AI1 FLT LIMIT (3021) and 3001 AI<MIN FUNCTION.
8	AI2 LOSS	Analog input 2 loss. Analog input value is less than AI2 FLT LIMIT (3022). Check source and connection for analog input and parameter settings for AI2 FLT LIMIT (3022) and 3001 AI<MIN FUNCTION.
9	MOT OVERTEMP	Motor is too hot, as estimated by the drive. Check for overloaded motor. Adjust the parameters used for the estimate (3005 - 3009). Check the temperature sensors and Group 35 parameters.
10	PANEL LOSS	Panel communication is lost and either drive is in local control mode (the control panel displays LOC), or drive is in remote control mode (REM) and is parameterized to accept start/stop, direction or reference from the control panel. To correct check the communication lines and connections. Check parameter 3002 PANEL COMM ERROR, parameters in Group 10: Command Inputs and Group 11:Reference Select (if drive operation is REM).
11	ID RUN FAIL	The motor ID run was not completed successfully. Check motor connections.
12	MOTOR STALL	Motor or process stall. Motor is operating in the stall region. Check for excessive load or insufficient motor power. Check parameters 3010 - 3012.
13	RESERVED	Not used.
14	EXT FAULT 1	Digital input defined to report first external fault is active. See parameter 3003 EXTERNAL FAULT 1.
15	EXT FAULT 2	Digital input defined to report second external fault is active. See parameter 3004 EXTERNAL FAULT 2.
16	EARTH FAULT	The load on the input power system is out of balance. Check for faults in the motor or motor cable. Verify that motor cable does not exceed maximum specified length.
17	UNDERLOAD	Motor load is lower than expected. Check for disconnected load. Check parameters 3013 UNDERLOAD FUNCTION through 3015 UNDERLOAD CURVE.
18	THERM FAIL	Internal fault. The thermistor measuring the internal temperature of the drive is open or shorted. Contact Carrier.
19	OPEX LINK	Internal fault. A communication-related problem has been detected between the OMIO and OINT boards. Contact Carrier.
20	OPEX PWR	Internal fault. Low voltage condition detected on the OINT board. Contact Carrier.

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table H — Fault Codes (cont)

FAULT CODE	FAULT NAME IN PANEL	DESCRIPTION AND RECOMMENDED CORRECTIVE ACTION
21	CURR MEAS	Internal fault. Current measurement is out of range. Contact Carrier.
22	SUPPLY PHASE	Ripple voltage in the DC link is too high. Check for missing main phase or blown fuse.
23	RESERVED	Not used.
24	OVERSPEED	Motor speed is greater than 120% of the larger (in magnitude) of 2001 MINIMUM SPEED or 2002 MAXIMUM SPEED parameters. Check parameter settings for 2001 and 2002. Check adequacy of motor braking torque. Check applicability of torque control. Check brake chopper and resistor.
25	RESERVED	Not used.
26	DRIVE ID	Internal fault. Configuration block drive ID is not valid.
27	CONFIG FILE	Internal configuration file has an error. Contact Carrier.
28	SERIAL 1 ERR	Field bus communication has timed out. Check fault setup (3018 COMM FAULT FUNC and 3019 COMM FAULT TIME). Check communication settings (Group 51 or 53 as appropriate). Check for poor connections and/or noise on line.
29	EFB CON FILE	Error in reading the configuration file for the field bus adapter.
30	FORCE TRIP	Fault trip forced by the field bus. See the field bus reference literature.
31	EFB 1	Fault code reserved for the EFB protocol application. The meaning is protocol dependent.
32	EFB 2	Fault code reserved for the EFB protocol application. The meaning is protocol dependent.
33	EFB 3	Fault code reserved for the EFB protocol application. The meaning is protocol dependent.
34	MOTOR PHASE	Fault in the motor circuit. One of the motor phases is lost. Check for motor fault, motor cable fault, thermal relay fault, or internal fault.
35	OUTP WIRING	Error in power wiring suspected. Check that input power wired to drive output. Check for ground faults.
101 - 105	SYSTEM ERROR	Error internal to the drive. Contact Carrier and report the error number.
1000	PAR HZRPM	Parameter values are inconsistent. Check for any of the following: 2001 MINIMUM SPEED > 2002 MAXIMUM SPEED 2007 MINIMUM FREQ > 2008 MAXIMUM FREQ 2001 MINIMUM SPEED / 9908 MOTOR NOM SPEED is outside of the range: -128/+128 2002 MAXIMUM SPEED / 9908 MOTOR NOM SPEED is outside of the range: -128/+128 2007 MINIMUM FREQ / 9907 MOTOR NOM FREQ is outside of the range: - 128/+128 2008 MAXIMUM FREQ / 9907 MOTOR NOM FREQ is outside of the range: -128/+128
1001	PAR PFA REFNG	Parameter values are inconsistent. Check that 2007 MINIMUM FREQ is negative, when 8123 PFA ENABLE is active.
1002	PAR PFA IOCNF	Parameter values are inconsistent. The number of programmed PFA relays does not match with Interlock configuration, when 8123 PFA ENABLE is active. Check consistency of RELAY OUTPUT parameters 1401 - 1403, and 1410 - 1412. Check 8117 NR OF AUX MOTORS, 8118 AUTOCHANGE INTERV, and 8120 INTERLOCKS.
1003	PAR AI SCALE	Parameter values are inconsistent. Check that parameter 1301 AI 1 MIN > 1302 AI 1 MAX and that parameter 1304 AI 2 MIN > 1305 AI 2 MAX.
1004	PAR AO SCALE	Parameter values are inconsistent. Check that parameter 1504 AO 1 MIN > 1505 AO 1 MAX and that parameter 1510 AO 2 MIN > 1511 AO 2 MAX.
1005	PAR PCU 2	Parameter values for power control are inconsistent: Improper motor nominal kVA or motor nominal power. Check the following parameters: 1.1 < (9906 MOTOR NOM CURR * 9905 MOTOR NOM VOLT * 1.73 / PN) < 2.6 Where: PN = 1000 * 9909 MOTOR NOM POWER (if units are kW) or PN = 746 * 9909 MOTOR NOM POWER (if units are HP, e.g., in US)
1006	PAR EXT RO	Parameter values are inconsistent. Check the extension relay module for connection and 1410 - 1412 RELAY OUTPUTS 4 - 6 have non-zero values.
1007	PAR FBUS	Parameter values are inconsistent. Check that a parameter is set for field bus control (e.g., 1001 EXT1 COMMANDS = 10 (COMM)), but 9802 COMM PROT SEL = 0.
1008	PAR PFA MODE	Parameter values are inconsistent. The 9904 MOTOR CTRL MODE must = 3 (SCALAR SPEED) when 8123 PFA ENABLE activated.
1009	PAR PCU 1	Parameter values for power control are inconsistent or improper motor nominal frequency or speed. Check for both of the following: 1 < (60 * 9907 MOTOR NOM FREQ / 9908 MOTOR NOM SPEED < 16 0.8 < 9908 MOTOR NOM SPEED / (120 * 9907 MOTOR NOM FREQ / Motor poles) < 0.992
1010	OVERRIDE/PFA CONFLICT	Override mode is enabled and PFA is activated at the same time. This cannot be done because PFA interlocks cannot be observed in the override mode.

APPENDIX A — REMOTE VFD KEYPAD REFERENCE (CONT)

Table I — ALARM CODES

ALARM CODE	ALARM NAME IN PANEL	DESCRIPTION AND RECOMMENDED CORRECTIVE ACTION
2001	—	Reserved
2002	—	Reserved
2003	—	Reserved
2004	DIR LOCK	The change in direction being attempted is not allowed. Do not attempt to change the direction of motor rotation, or Change parameter 1003 DIRECTION to allow direction change (if reverse operation is safe).
2005	I/O COMM	Field bus communication has timed out. Check fault setup (3018 COMM FAULT FUNC and 3019 COMM FAULT TIME). Check communication settings (Group 51 or 53 as appropriate). Check for poor connections and/or noise on line.
2006	AI1 LOSS	Analog input 1 is lost, or value is less than the minimum setting. Check input source and connections. Check the parameter that sets the minimum (3021) and the parameter that sets the Alarm/Fault operation (3001).
2007	AI2 LOSS	Analog input 2 is lost, or value is less than the minimum setting. Check input source and connections. Check parameter that sets the minimum (3022) and the parameter that sets the Alarm/Fault operation (3001).
2008	PANEL LOSS	Panel communication is lost and either the VFD is in local control mode (the control panel displays HAND), or the VFD is in remote control mode (AUTO) and is parameterized to accept start/stop, direction or reference from the control panel. To correct, check the communication lines and connections, Parameter 3002 PANEL LOSS, and parameters in groups 10 COMMAND INPUTS and 11 REFERENCE SELECT (if drive operation is REM).
2009	—	Reserved
2010	MOT OVERTEMP	Motor is hot, based on either the VFD estimate or on temperature feedback. This alarm warns that a Motor Overload fault trip may be near. Check for overloaded motor. Adjust the parameters used for the estimate (3005 - 3009). Check the temperature sensors and Group 35 parameters.
2011	UNDERLOAD	Motor load is lower than expected. This alarm warns that a Motor Underload fault trip may be near. Check that the motor and drive ratings match (motor is NOT undersized for the drive). Check the settings on parameters 3013 to 3015.
2012	MOTOR STALL	Motor is operating in the stall region. This alarm warns that a Motor Stall fault trip may be near.
2013*	AUTORESET	This alarm warns that the drive is about to perform an automatic fault reset, which may start the motor. To control automatic reset, use parameter group 31 (AUTOMATIC RESET).
2014	AUTOCHANGE	This alarm warns that the PFA autochange function is active. To control PFA, use parameter group 81 (PFA) and the Pump Alternation macro.
2015	PFA INTERLOCK	This alarm warns that the PFA interlocks are active, which means that the drive cannot start any motor (when Autochange is used), or a speed regulated motor (when Autochange is not used).
2016	—	Reserved
2017*	OFF BUTTON	This alarm indicates that the OFF button has been pressed.
2018	PID SLEEP	This alarm warns that the PID sleep function is active, which means that the motor could accelerate when the PID sleep function ends. To control PID sleep, use parameters 4022 - 4026 or 4122 - 4126.
2019	ID RUN	The VFD is performing an ID run.
2020	OVERRIDE	Override mode is activated.
2021	START ENABLE 1 MISSING	This alarm warns that the Start Enable 1 signal is missing. To control Start Enable 1 function, use parameter 1608. To correct, check the digital input configuration and the communication settings.
2022	START ENABLE 2 MISSING	This alarm warns that the Start Enable 2 signal is missing. To control Start Enable 2 function, use parameter 1609. To correct, check the digital input configuration and the communication settings.
2023	EMERGENCY STOP	Emergency stop is activated.

* This alarm is not indicated by a relay output, even when the relay output is configured to indicate alarm conditions, parameter 1401 RELAY OUTPUT = 5 (ALARM) or 16 (FLT/ALARM).

Reset After Using Start-Up Assistant

⚠ CAUTION

CONFIGURATION OVERRIDE HAZARD

DO NOT USE ABB OR CARRIER START-UP ASSISTANT ON THIS VFD APPLICATION! Use of start-up assistant will override the factory VFD configurations!

The following section details how to reset the VFD after accidentally using Start-Up Assistant.

When the VFD has been incorrectly programmed by using Start-Up Assistant, the drive may be locked in an override loop because of motor ID Run Fail (error code 11) and First Start (error code 2025).

Use the following procedure to reset the factory configurations for ACS320 VFDs:

1. Disconnect unit power. Lock-out/tag out.
2. Remove the VFD's terminal cover.
3. Disconnect the D11 input at terminal 12. The terminals are numbered on the bottom of the block (see Fig. C for the location of terminal block that contains terminal 12).
4. Connect the VFD Keypad accessory to the VFD (if not already connected).

NOTE: The VFD Keypad is a field-installed accessory; it is not included with the factory-installed VFD option.

5. Go immediately to parameter 1705 OVERRIDE ENABLE and select "Off".

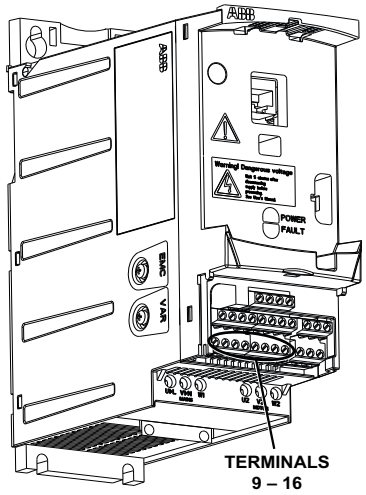


Fig. C — ACS320 Terminal Blocks

6. At this point, providing you have a clean backup of the drive, you can select “DOWNLOAD FULL SET” from ’PAR BACKUP” from the Main Menu.
   If you do not have a clean backup the drive will have to be manually programmed following the instructions in this document.
7. When the correct parameters have been uploaded, disconnect power to the unit, reconnect DI1 to Terminal 12, and replace the terminal cover.
8. Reconnect power to the unit. The VFD is now commissioned from the backup file.

Use the following procedure to reset the factory configurations for ACH550 VFDs:

1. Disconnect unit power. Lock-out/tag-out.
2. Remove the VFD’s front cover (see Fig. 38 on page 31).
3. Disconnect the DI1 input at Terminal 13 (see Fig. D for location of DI1).
4. Connect the VFD Keypad accessory to the VFD (if not already connected).

NOTE: The VFD Keypad is a field-installed accessory; it is not included with the factory-installed VFD option.

5. With the wire disconnected, use the keypad to stop the loop and enter “358” in parameter 1704 OVERRIDE PASS CODE.
6. Go immediately to parameter 1705 OVERRIDE ENABLE and select “Off”.
7. At this point, providing you have a clean backup of the drive, you can select “DOWNLOAD FULL SET” from “PAR BACKUP” from the Main Menu.
8. If you do not have a clean backup the drive will have to be manually programmed following the instructions in this document.
9. When the correct parameters have been uploaded, disconnect power to the unit, reconnect DI1 to Terminal 13, and replace the VFD cover.
10. Reconnect power to the unit. The VFD is now commissioned from the backup file.

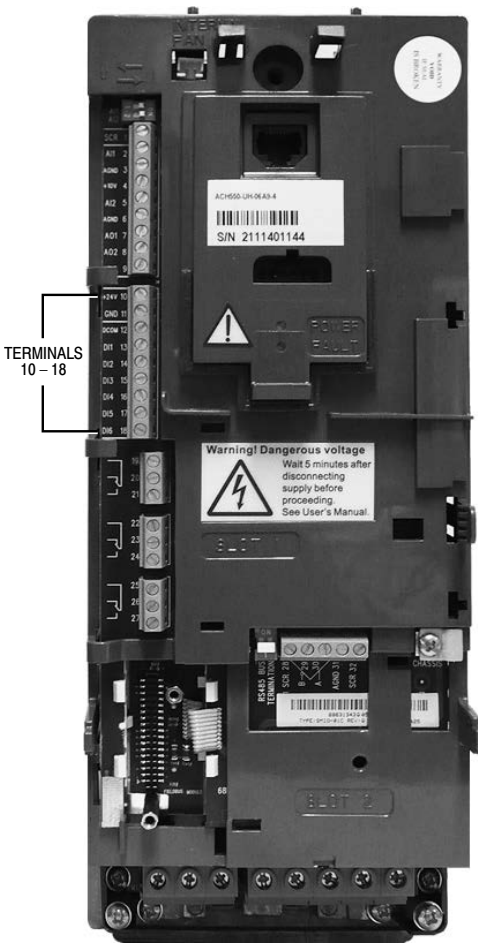


Fig. D — Terminal Block Location on ACH550 VFD

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