Supplemental Instructions

ACH180 Variable Frequency Drive

CONTENTS

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes, including ANSI (American National Standards Institute) Z223.1. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

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.

⚠DANGER

PERSONAL INJURY HAZARD

Failure to follow this warning will result in personal injury or death.

NEVER enter an enclosed fan cabinet or reach into a unit while the fan is running.

⚠WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow these safety precautions could lead to severe personal injury or death.

LOCK OPEN AND TAG the fan motor power disconnect switch before working on a fan. Take fuses with you and note removal on tag. LOCK OPEN AND TAG the electric heat coil power disconnect switch before working on or near heaters (if equipped).

INTRODUCTION

When variable frequency drive (VFD) is factory-installed, it is wired to the motor and fully tested before shipment. Drive programming is also done at the factory, including electronic overload, which is programmed for the motor FLA. For additional VFD technical data and fuse requirements, refer to Tables 3-5. Open the VFD front cover and the fan section access door to check for any damage before proceeding.

IMPORTANT: 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.

Table 1 — Brand, Model, Size and VFD option Indicator

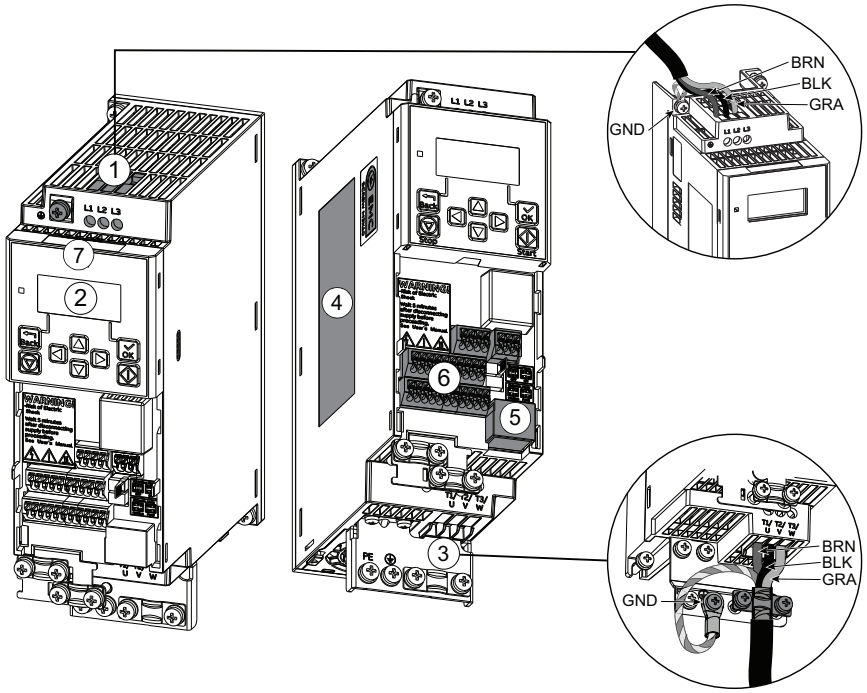
BRAND	MODEL	SIZES	POSITION IN MODEL NUMBER	VFD FIOP INDICATOR
Carrier	48/50TC	07-30	17	G-M
	50TCQ	07-24	17	G-M
	48/50HC	07-28	17	G-M
	50HCQ	07-12	17	G-M
	40RU	07-30	9	T
Bryant	580J/558J	07-30	17	D-E
	548J	07-24	17	D-E
	581J/551J	07-28	17	D-E
	549J	07-12	17	D-E
	524J	07-30	9	2

Table 1 — Brand, Model, Size and VFD option Indicator (cont)

BRAND	MODEL	SIZES	POSITION IN MODEL NUMBER	VFD FIOP INDICATOR
ICP	RGS/RAS	072-336	14	T
	RHS	090-240	14	T
	RGH/RAH	072-303	14	T
	RHH	072-120	14	T
	FAS	072-300	11	2

Wiring

1. Select a suitable location in the bottom of the VFD to connect field-supplied power source.
2. Refer to the wiring diagram supplied with the VFD. Connect the line voltage power source to the line voltage terminals (L1, L2, L3) as shown (see Fig. 1).
3. Refer to the factory-supplied voltage warning label and verify that the power source is correct.
4. Connect the ground wire to the grounding lug provided on the bottom of the VFD.
5. Select another suitable location on the bottom of the VFD to connect the field-supplied control wiring.
6. Locate and connect the control wiring. Refer to Fig. 2-3 and Table 2.



1	Input power connection terminal	5	Panel and PC tool port (RJ45)
2	Integrated control panel	6	Fixed control terminals
3	Motor connection terminal	7	Model information label
4	Type designation label		

Fig. 1 — ACH180 Terminal Connections

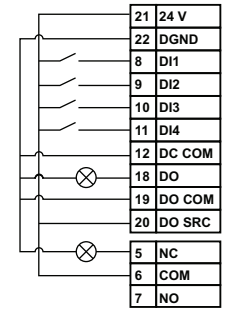
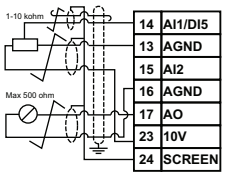
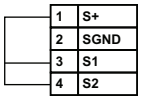
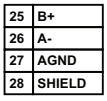
CONNECTION	TERM	DESCRIPTION	
Digital I/O and Relay Output Connections			
	**24 V**	Aux. +24 vdc, max 200 mA	
	DGND	Aux. voltage output common	
	DI1	Stop (0) / Start (1)	
	DI2	Not configured	
	DI3	Not configured	
	DI4	Start interlock 1 (1 = allow start)	
	DCOM	Digital input common	
	DO	Not energized	
	DO COM	Digital output common	
	DO SRC	Digital output auxiliary voltage	
	NC	Digital output	Running
	COM		
	NO		
Analog I/O			
	**AI1/DI5**	Speed reference (0-10V)	
	AGND	Analog input circuit common	
	AI2	Not used	
	AGND	Analog output circuit common	
	AO	Output frequency (0-20 mA)	
	10V	Ref. voltage +10 vdc	
	SCREEN	Signal cable shield (screen)	
Safe Torque Off (STO) (only on ACH180-04S)			
	**S+**	Safe torque off function. Connected at the factory. Drive starts only when both circuits are closed.	
	SGND		
	S1		
	S2		
EIA-485 Modbus RTU			
	**B+**	Embedded Modbus RTU (EIA-485)	
	A-		
	AGND		
	SHIELD		

Fig. 2 — Wiring Terminals

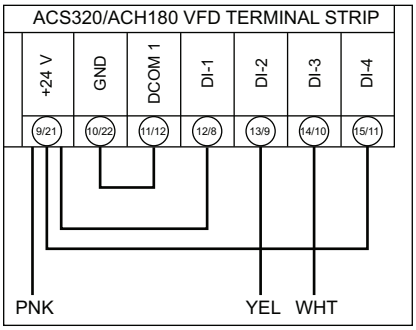


Fig. 3 — ACS320/ACH180 VFD Wiring

Table 2 — ACS320/ACH180 VFD Terminal Designations

TERMINAL	FUNCTION
U1/L1 V1/L2 W1/L3	Three-phase main circuit input power supply
U2/T1 V2/T2 W2/T3	Three-phase AC output to motor, 0V to maximum input voltage level
10/22 (GND) 11/12 (COMMON)	- Auxiliary voltage output common - Digital input common
9/21 (24 VDC) 12/8 (DI1)	Auxiliary voltage output: +24 vdc, max 200 mA
9/21 (24 VDC) 15/11 (DI4)	Start Enable 1. When opened, the drive goes to emergency stop
13/9 (DI2) 14/10 (DI3)	Factory wired for 24 vdc input from Fan Speed Board

START-UP AND TEST

1. Close and secure the fan access door and the VFD cover.
2. Apply power and allow drive to initialize.
3. Ensure VFD has been programmed with the correct values for parameters 30.14 to maximum VFD output frequency to limit motor speed to the fan maximum.
4. Verify max fan rpm.
5. Verify motor hp, Hz and nominal operating speed on motor nameplate.
6. Verify motor voltage and nominal amperage on motor nameplate.
7. Select MENU to enter the main menu.
8. Select PARAMETERS with the UP/DOWN buttons.
9. Select SAVE to store the modified value.
10. Select BACK to return to the listing of parameters.
11. Select Parameter 30.14 and verify it equals the maximum VFD output frequency.
12. If values are equal, then go to Step 15.
13. If values are not equal, select EDIT, press the UP/DOWN buttons to match the required value.
14. Select SAVE to store the modified value.
15. Select EXIT/BACK to return to the listing of parameters.
16. Select EXIT/BACK to return to the main menu.
17. Press the HAND button and verify that the drive operates at 8 Hz.
18. Press Up arrow to increase speed and Down arrow to decrease speed.
19. Press the Off button and verify that the fan stops.
20. Press the Auto button to operate the drive from Control board unit system. Verify that all VFD interface functions are working (start/stop, speed controls, fire/smoke, etc.) between the VFD and the unit.
21. Refer to Tables 3-14 for additional VFD information.

Table 3 — ACH180 – VFD Data

CARRIER PART NUMBER	ABB PART NUMBER (ACH180-04S-)	VOLTAGE	DIMENSIONAL REFERENCE	NOMINAL HP (RATED AT 240/480V)	ACTUAL AMPS / CONTINUOUS CURRENT	FUSE-AMPS
HK30WB501	06A9	208-230	R1	1.5	6.6	JJN-15
HK30WB502	07A8	208-230	R1	2	7.4	JJN-20
HK30WB503	09A8	208-230	R1	3	9.3	JJN-20
HK30WB504	15A6	208-230	R2	3	14.6	JJN-30
HK30WB505	17A5	208-230	R2	5	16.7	JJN-35
HK30WB506	025A	208-230	R3	7.5	24.2	JJN-40
HK30WB507	033A	208-230	R3	10	30.8	JJN-50
HK30WB508	048A	208-230	R4	15	46.2	JJN-70
HK30WB509	04A0	460	R1	2	3.8	JJS-10
HK30WB510	05A6	460	R1	3	5.3	JJS-20
HK30WB511	09A4	460	R1	5	8.9	JJS-25
HK30WB512	12A6	460	R1	7.5	12	JJS-30
HK30WB513	17A0	460	R2	10	16.2	JJS-35
HK30WB514	25A0	460	R2	15	23.8	JJS-40
HK30WB515	033A	460	R3	20	30.5	JJS-60
HK30WB516	038A	460	R4	25	36	JJS-70
HK30WB517	045A	460	R4	30	42	JJS-70
HK30WB518	050A	460	R4	30	48	JJS-70
HK30WB519	03A7	208-230	R0	0.75	3.5	JJN-10
HK30WB520	04A8	208-230	R0	1	4.6	JJN-10
HK30WB521	01A8	460	R0	0.75	1.7	JJS-10
HK30WB522	03A3	460	R0	1.5	3.1	JJS-10
HK30WB523	02A6	460	R0	1	2.5	JJS-10
HK30WB524	02A4	208-230	R0	0.5	2.3	JJN-6

Table 4 — VFD Fuse Requirements
48/50TC, 50TCQ, 48/50HC and 50HCQ Units
580J/558J, 548J, 581J/551J and 549J Units
RGS, RAS, RHS, RGH, RAH and RHH Units

UNIT	HP	VOLTAGE	VFD (ASC320 / ACH180)	MOTOR	STANDARDIZED FUSE	FUSE PART NUMBER	HARNESS WIRE GAUGE
48/50TC 07-14 50TCQ 07-12 48/50HC 07-12 50HCQ 07-09 580J/558J 07-14 548J 07-12 581J/551J 07-12 549J 07-09 RGS072-150 RAS072-120 RHS072-120 RGH072-120 RAH072-120 RHH072-102	1.7	208/230	HK30WA523 (320) HK30WB505 (180)	HD56FR233	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA530 (320) HK30WB510 (180)	HD56FR463	15A - CLASS CC KTK	HY10KB092	14
	2.4	208/230	HK30WA523 (320) HK30WB505 (180)	HD56FE653	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA530 (320) HK30WB510 (180)	HD56FE653	15A - CLASS CC KTK	HY10KB092	14
	2.9	208/230	HK30WA523 (320) HK30WB505 (180)	HD58FE654	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA530 (320) HK30WB510 (180)	HD58FE654	15A - CLASS CC KTK	HY10KB092	14
	3.7	208/230	HK30WA523 (320) HK30WB505 (180)	HD60FE656, HD58FR236	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA534 (320) HK30WB511 (180)	HD60FE656, HD58FR236	20A - CLASS CC KTK	HY10KB093	14
	4.9	208/230	HK30WA523 (320) HK30WB505 (180)	HD60FK658	30A - CLASS CC KTK	HY10KB095	14
		460	HK30WA532 (320) HK30WB512 (180)	HD60FK658	30A - CLASS CC KTK	HY10KB095	14
48/50TC 16 50TCQ 14 48/50HC 14 50HCQ 12 580J/558J 16 548J 14 581J/551J 14 549J 12 RGS180 RAS180 RHS150 RGH150 RAH150 RHH120	2.9	208/230	HK30WA523 (320) HK30WB505 (180)	HD58FE654	30A - CLASS CC KTK	HY10KB300	14
		460	HK30WA530 (320) HK30WB510 (180)	HD58FE654	15A - CLASS CC KTK	HY10KB151	14
	3.7	208/230	HK30WA523 (320) HK30WB505 (180)	HD60FE656, HD58FR236	30A - CLASS CC KTK	HY10KB300	14
		460	HK30WA534 (320) HK30WB511 (180)	HD60FE656, HD58FR236	20A - CLASS CC KTK	HY10KB200	14
	5	208/230	HK30WA524 (320) HK30WB507 (180)	HD60FK657, HD60FK659	30A - CLASS CC KTK	HY10KB300	14
		460	HK30WA532 (320) HK30WB512 (180)	HD60FK659	30A - CLASS CC KTK	HY10KB300	14
48/50TC 17-30 50TCQ 17-24 48/50HC 17-28 580J/558J 17-30 548J 17-24 581J/551J 17-28 RGS210-336 RAS210-336 RHS210-240 RGH210-300 RAH210-300	2.9	208/230	HK30WA523 (320) HK30WB505 (180)	HD58FE654	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530 (320) HK30WB510 (180)	HD58FE654	15A - CLASS CC KTK	HY10KB151	12
	3.7	208/230	HK30WA523 (320) HK30WB505 (180)	HD58FR236	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA534 (320) HK30WB511 (180)	HD60FE656	20A - CLASS CC KTK	HY10KB200	12
	4.9	208/230	HK30WA523 (320) HK30WB505 (180)	HD60FK658	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA532 (320) HK30WB512 (180)	HD60FK658	30A - CLASS CC KTK	HY10KB300	12
	5	208/230	HK30WA524 (320) HK30WB507 (180)	HD60FK657,	60 - CLASS J, JKS	HY10JK060	8
		460	HK30WA532 (320) HK30WB512 (180)	HD60FK657, HD60FK659	30A - CLASS CC KTK	HY10KB300	12
	7.5	208/230	HK30WA524 (320) HK30WB507 (180)	HD62FK654	60 - CLASS J, JKS	HY10JK060	8
		460	HK30WA532 (320) HK30WB512 (180)	HD62FK654	30A - CLASS CC KTK	HY10KB300	12
	10	208/230	HK30WA525 (320) HK30WB507 (180)	HD64FK654	60 - CLASS J, JKS	HY10JK060	8
		460	HK30WA533 (320) HK30WB513 (180)	HD64FK654	30A - CLASS CC KTK	HY10KB300	12

Table 5 — VFD Fuse Requirements
40RU Units
524J Units
FAS Units

UNIT	HP	VOLTAGE	VFD (ASC320 / ACH180)	MOTOR	STANDARDIZED FUSE	FUSE PART NUMBER	HARNESS WIRE GAUGE
40RU 524J FAS	1.7	208/230	HK30WA523 (320) HK30WB505 (180)	HD56FR233	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530 (320) HK30WB510 (180)	HD56FR463	15A - CLASS CC KTK	HY10KB151	10
	2.4	208/230	HK30WA523 (320) HK30WB505 (180)	HD56FE653	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530 (320) HK30WB510 (180)	HD56FE653	15A - CLASS CC KTK	HY10KB151	10
	2.9	208/230	HK30WA523 (320) HK30WB505 (180)	HD58FE654	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA530 (320) HK30WB510 (180)	HD58FE654	30A - CLASS CC KTK	HY10KB300	10
	3.7	208/230	HK30WA523 (320) HK30WB505 (180)	HD58FR236	30A - CLASS CC KTK	HY10KB300	10
		208/230	HK30WA523 (320) HK30WB505 (180)	HD60FE656	30A - CLASS CC KTK	HY10KB300	10
		460	HK30WA534 (320) HK30WB511 (180)	HD58FR236	20A - CLASS CC KTK	HY10KB200	10
		460	HK30WA534 (320) HK30WB511 (180)	HD60FE656	20A - CLASS CC KTK	HY10KB200	10
	5	208/230	HK30WA524 (320) HK30WB507 (180)	HD60FK659	30A - CLASS CC KTK	HY1KB300	10
		460	HK30WA532 (320) HK30WB512 (180)	HD60FK659	30A - CLASS CC KTK	HY10KB300	10
	7.5	208/230	HK30WA523 (320) HK30WB505 (180)	HD62FK654	60A - CLASS J	HY10JK060	10
		460	HK30WA532 (320) HK30WB512 (180)	HD62FK654	30A - CLASS CC KTK	HY10KB300	10
	10	208/230	HK30WA525 (320) HK30WB507 (180)	HD64FK654	60A - CLASS J	HY10JK060	10
		460	HK30WA533 (320) HK30WB513 (180)	HD64FK654	30A - CLASS CC KTK	HY10KB300	10

Table 6 — ACS320/ACH180 VFD Common Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with Electromechanical Controls

PARAMETERS ACS320 / ACH180	DESCRIPTION	SETTING ACS320 / ACH180
9802 / 58.01	COMM PROT Sel	Not Selected
9907 / 99.08	Motor Nominal Frequency	60 Hz
1001 / 20.01	EXT1 Commands	—
1102 / 19.11	EXT1 / EXT2 Sel	—
1103 / 28.11	REF 1 Select	—
1201 / 28.22	Const Speed Sel	DI 2,3 / DI2
1201 / 28.23	Const Speed Sel	DI 2,3 / DI3
1202 / 28.26	Const Speed 1	40 Hz
1203 / 28.27	Const Speed 2	60 Hz
1204 / 28.28	Const Speed 3	60 Hz
1205 / 28.29	Const Speed 4	—
1401 / 10.24	Relay Output 1	(16) FLT / ALARM
1403 / NA	Relay Output 3	Not Selected
1501 / 13.12	A01 Content Sel	—
1601 / 20.40	Run Enable	—
1608 / 20.41	N/A	—
1611 / NA	Parameter View	3 / NA
2007 / 30.13	Minimum Frequency	0.0 HZ
2008 / 30.14	Maximum Frequency	60 HZ
2101 / 21.19	Start FCN	(1) Auto / (2) Automatic
2102 / 21.03	Stop FCN	(1) Coast / (0) Coast
2201 / 28.71	ACCEL / DECEL	(0) Not Sel
2202 / 28.72	ACCEL	30s
2203 / 28.73	DECEL	30s
2603 / 97.13	IR COMP Volt	0 volts
2606 / 97.01	Switching Freq	4 HZ
3102 / 31.15	Trial Time	300.0s
3103 / 31.16	Delay Time	6.0s
3104 / 31.12	AR Overcurrent	(1) Enabled
5101 / NA	FBA Type	—
5201 / NA	Station ID	—
5202 / NA	Baud Rate	—
5203 / NA	Parity	—
5301 / 58.02	EFB Protocol ID	—
5302 / 58.03	EFB Station ID	—
5303 / 58.04	EFB Baud Rate	—
5304 / 58.05	EFB Parity	—
5305 / 58.25	EFB CTRL Profile	—

Table 7 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with Electromechanical Controls

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER (ACS320 / ACH180)	DESCRIPTION
48TM003773-DATA / 48TM009827-DATA	48TM003773	HD56FR233	HK30WA523 / HK30WB505	SRT 1.7 HP 230V
48TM003776-DATA / 48TM009830-DATA	48TM003776	HD56FR463	HK30WA530 / HK30WB510	SRT 1.7 HP 460V
48TM003772-DATA / 48TM009826-DATA	48TM003772	HD56FE653	HK30WA523 / HK30WB505	SRT 2.4 HP 230V
48TM003784-DATA / 48TM009835-DATA	48TM003784	HD56FE653	HK30WA530 / HK30WB510	SRT 2.4 HP 460V
48TM003782-DATA / 48TM009833-DATA	48TM003782	HD58FE654	HK30WA523 / HK30WB505	SRT 2.9 HP 230V
48TM003777-DATA / 48TM009831-DATA	48TM003777	HD58FE654	HK30WA530 / HK30WB510	SRT 2.9 HP 460V
48TM003774-DATA / 48TM009828-DATA	48TM003774	HD60FE656	HK30WA523 / HK30WB505	SRT 3.7 HP 230V
48TM003783-DATA / 48TM009834-DATA	48TM003783	HD60FE656	HK30WA534 / HK30WB511	SRT 3.7 HP 460V
48TM003775-DATA / 48TM009829-DATA	48TM003775	HD60FK658	HK30WA523 / HK30WB505	SRT 5.3 HP 230V
48TM003778-DATA / 48TM009832-DATA	48TM003778	HD60FK658	HK30WA532 / HK30WB512	SRT 5.3 HP 460V
50TM001206-DATA / 50TM003500-DATA	50TM001206	HD58FE654	HK30WA523 / HK30WB505	STR 2.9 HP 230V
50TM001211-DATA / 50TM003504-DATA	50TM001211	HD58FE654	HK30WA530 / HK30WB510	STR 2.9 HP 460V
50TM001209-DATA / 50TM003502-DATA	50TM001209	HD60FE656	HK30WA523 / HK30WB505	STR 3.7 HP 230V
50TM001210-DATA / 50TM003503-DATA	50TM001210	HD60FE656	HK30WA534 / HK30WB511	STR 3.7 HP 460V
50TM001208-DATA / 50TM003501-DATA	50TM001208	HD60FK657	HK30WA524 / HK30WB507	STR 5.0 HP 230V
50TM001212-DATA / 50TM003505-DATA	50TM001212	HD60FK657	HK30WA532 / HK30WB512	STR 5.0 HP 460V
50HE001312-DATA / 50HE007829-DATA	50HE001312	HD58FE654	HK30WA523 / HK30WB505	MRT 2.9 HP 230V
50HE001316-DATA / 50HE007833-DATA	50HE001316	HD58FE654	HK30WA530 / HK30WB510	MRT 2.9 HP 460V
50HE001313-DATA / 50HE007830-DATA	50HE001313	HD60FE656	HK30WA523 / HK30WB505	MRT 3.7 HP 230V
50HE001317-DATA / 50HE007834-DATA	50HE001317	HD60FE656	HK30WA534 / HK30WB511	MRT 3.7 HP 460V
50HE001314-DATA / 50HE007831-DATA	50HE001314	HD60FK657	HK30WA524 / HK30WB507	MRT 5.0 HP 230V
50HE001318-DATA / 50HE007835-DATA	50HE001318	HD60FK657	HK30WA532 / HK30WB512	MRT 5.0 HP 460V
50HE001315-DATA / 50HE007832-DATA	50HE001315	HD62FK654	HK30WA524 / HK30WB507	MRT 7.5 HP 230V
50HE001319-DATA / 50HE007836-DATA	50HE001319	HD62FK654	HK30WA532 / HK30WB512	MRT 7.5 HP 460V
50HE001320-DATA / 50HE007837-DATA	50HE001320	HD60FK658	HK30WA523 / HK30WB505	MRT 5.3 HP 230V
50HE001321-DATA / 50HE007838-DATA	50HE001321	HD60FK658	HK30WA532 / HK30WB512	MRT 5.3 HP 460V
50HE402586-DATA / 50HE007858-DATA	50HE402586	HD64FK654	HK30WA525 / HK30WB507	MRT 10.0 HP 230V
50HE402591-DATA / 50HE007859-DATA	50HE402591	HD64FK654	HK30WA533 / HK30WB513	MRT 10.0 HP 460V
50H4002326-DATA / 50HE007828-DATA	50H4002326	H060FK657	HK30WA532 / HK30WB512	MRT 5.0 HP 460V
50HE003081-DATA / 50HE007848-DATA	50HE003081	HD58FE654	HK30WA523 / HK30WB505	MRT 2.9 HP 230V
50HE003082-DATA / 50HE007849-DATA	50HE003082	HD58FE654	HK30WA530 / HK30WB510	MRT 2.9 HP 460V
50HE003084-DATA / 50HE007850-DATA	50HE003084	HD60FE656	HK30WA523 / HK30WB505	MRT 3.7 HP 230V
50HE003085-DATA / 50HE007851-DATA	50HE003085	HD60FE656	HK30WA534 / HK30WB511	MRT 3.7 HP 460V
50HE003086-DATA / 50HE007852-DATA	50HE003086	HD60FK658	HK30WA523 / HK30WB505	MRT 5.3 HP 230V
50HE003087-DATA / 50HE007853-DATA	50HE003087	HD60FK658	HK30WA532 / HK30WB512	MRT 5.3 HP 460V
50HE003089-DATA / 50HE007854-DATA	50HE003089	HD60FK657	HK30WA524 / HK30WB507	MRT 5.0 HP 230V
50HE003090-DATA / 50HE007855-DATA	50HE003090	HD60FK657	HK30WA532 / HK30WB512	MRT 5.0 HP 460V
50HE003092-DATA / 50HE007856-DATA	50HE003092	HD62FK654	HK30WA524 / HK30WB507	MRT 7.5 HP 230V
50HE003093-DATA / 50HE007857-DATA	50HE003093	HD62FK654	HK30WA532 / HK30WB512	MRT 7.5 HP 460V
48TM005163-DATA / 48TM009837-DATA	48TM005163	HD56FR233	HK30WA523 / HK30WB505	SRT 1.7 HP 230V
48TM005166-DATA / 48TM009840-DATA	48TM005166	HD56FR463	HK30WA530 / HK30WB510	SRT 1.7 HP 460V
48TM005162-DATA / 48TM009836-DATA	48TM005162	HD56FE653	HK30WA523 / HK30WB505	SRT 2.4 HP 230V
48TM005174-DATA / 48TM009845-DATA	48TM005174	HD56FE653	HK30WA530 / HK30WB510	SRT 2.4 HP 460V
48TM005164-DATA / 48TM009838-DATA	48TM005164	HD60FE656	HK30WA523 / HK30WB505	SRT 3.7 HP 230V
48TM005173-DATA / 48TM009844-DATA	48TM005173	HD60FE656	HK30WA534 / HK30WB511	SRT 3.7 HP 460V
48TM005165-DATA / 48TM009839-DATA	48TM005165	HD60FK658	HK30WA523 / HK30WB505	SRT 5.3 HP 230V
48TM005168-DATA / 48TM009842-DATA	48TM005168	HD60FK658	HK30WA532 / HK30WB512	SRT 5.3 HP 460V
48TM005172-DATA / 48TM009843-DATA	48TM005172	HD58FE654	HK30WA523 / HK30WB505	SRT 2.9 HP 230V
48TM005167-DATA / 48TM009841-DATA	48TM005167	HD58FE654	HK30WA530 / HK30WB510	SRT 2.9 HP 460V

Table 7 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with Electromechanical Controls (cont)

VFD PARAMETERS ACS320 / ACH180	VOLTAGE 9905 / 99.07	N. AMPS 9906 / 99.06	N. RPM 9908 / 99.09	N. HP 9909 / 99.10	MAX AMPS 2003 / 30.17
48TM003773-DATA / 48TM009827-DATA	230	5.6	1725	1.7	5.6
48TM003776-DATA / 48TM009830-DATA	460	2.9	1725	1.7	2.9
48TM003772-DATA / 48TM009826-DATA	230	6.8	1725	2.4	6.8
48TM003784-DATA / 48TM009835-DATA	460	3.4	1725	2.4	3.4
48TM003782-DATA / 48TM009833-DATA	230	7.8	1725	2.9	7.8
48TM003777-DATA / 48TM009831-DATA	460	3.8	1725	2.9	3.8
48TM003774-DATA / 48TM009828-DATA	230	9.8	1725	3.7	9.8
48TM003783-DATA / 48TM009834-DATA	460	4.9	1725	3.7	4.9
48TM003775-DATA / 48TM009829-DATA	230	12.7	1740	5.3	12.7
48TM003778-DATA / 48TM009832-DATA	460	6.4	1740	5.3	6.4
50TM001206-DATA / 50TM003500-DATA	230	7.8	1725	2.9	7.8
50TM001211-DATA / 50TM003504-DATA	460	3.8	1725	2.9	3.8
50TM001209-DATA / 50TM003502-DATA	230	9.8	1725	3.7	9.8
50TM001210-DATA / 50TM003503-DATA	460	4.9	1725	3.7	4.9
50TM001208-DATA / 50TM003501-DATA	230	17.1	1760	5	17.1
50TM001212-DATA / 50TM003505-DATA	460	8.6	1760	5	8.6
50HE001312-DATA / 50HE007829-DATA	230	7.8	1725	2.9	7.8
50HE001316-DATA / 50HE007833-DATA	460	3.8	1725	2.9	3.8
50HE001313-DATA / 50HE007830-DATA	230	9.8	1725	3.7	9.8
50HE001317-DATA / 50HE007834-DATA	460	4.9	1725	3.7	4.9
50HE001314-DATA / 50HE007831-DATA	230	20.4	1760	5	20.4
50HE001318-DATA / 50HE007835-DATA	460	10.2	1760	5	10.2
50HE001315-DATA / 50HE007832-DATA	230	28.5	1760	7.5	28.5
50HE001319-DATA / 50HE007836-DATA	460	13.7	1760	7.5	13.7
50HE001320-DATA / 50HE007837-DATA	230	12.7	1740	5.3	12.7
50HE001321-DATA / 50HE007838-DATA	460	6.4	1740	5.3	6.4
50HE402586-DATA / 50HE007858-DATA	230	30.4	1755	10	30.4
50HE402591-DATA / 50HE007859-DATA	460	15.2	1755	10	15.2
50H4002326-DATA / 50HE007828-DATA	460	10.2	1760	5	10.2
50HE003081-DATA / 50HE007848-DATA	230	7.8	1725	2.9	7.8
50HE003082-DATA / 50HE007849-DATA	460	3.8	1725	2.9	3.8
50HE003084-DATA / 50HE007850-DATA	230	9.8	1725	3.7	9.8
50HE003085-DATA / 50HE007851-DATA	460	4.9	1725	3.7	4.9
50HE003086-DATA / 50HE007852-DATA	230	12.7	1740	5.3	12.7
50HE003087-DATA / 50HE007853-DATA	460	6.4	1740	5.3	6.4
50HE003089-DATA / 50HE007854-DATA	230	20.4	1760	5	20.4
50HE003090-DATA / 50HE007855-DATA	460	10.2	1760	5	10.2
50HE003092-DATA / 50HE007856-DATA	230	28.5	1760	7.5	28.5
50HE003093-DATA / 50HE007857-DATA	460	13.7	1760	7.5	13.7
48TM005163-DATA / 48TM009837-DATA	230	5.6	1725	1.7	5.6
48TM005166-DATA / 48TM009840-DATA	460	2.9	1725	1.7	2.9
48TM005162-DATA / 48TM009836-DATA	230	6.8	1725	2.4	6.8
48TM005174-DATA / 48TM009845-DATA	460	3.4	1725	2.4	3.4
48TM005164-DATA / 48TM009838-DATA	230	9.8	1725	3.7	9.8
48TM005173-DATA / 48TM009844-DATA	460	4.9	1725	3.7	4.9
48TM005165-DATA / 48TM009839-DATA	230	12.7	1740	5.3	12.7
48TM005168-DATA / 48TM009842-DATA	460	6.4	1740	5.3	6.4
48TM005172-DATA / 48TM009843-DATA	230	7.8	1725	2.9	7.8
48TM005167-DATA / 48TM009841-DATA	460	3.8	1725	2.9	3.8

Table 8 — ACS320/ACH180 VFD Common Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls

PARAMETERS ACS320 / ACH180	DESCRIPTION	SETTING ACS320 / ACH180
9907 / 99.08	Motor Nominal Frequency	60 Hz
1204 / 28.28	Const Speed 3	60 Hz
1403 / NA	Relay Output 3	—
1611 / NA	Parameter View	3
2007 / 30.13	Minimum Frequency	0 HZ
2008 / 30.14	Maximum Frequency	60 HZ
2101 / 21.19	Start FCN	(1) Auto / (2) Automatic
2201 / 28.71	ACCEL / DECEL	(0) Not Sel
2603 / 97.13	IR COMP Volt	0 volts
2606 / 97.01	Switching Freq	4 HZ
3102 / 31.15	Trial Time	300.0s
3103 / 31.16	Delay Time	6.0s
3104 / 31.12	AR Overcurrent	(1) Enabled
5101 / NA	FBA Type	—
5301 / 58.02	EFB Protocol ID	—
5305 / 58.25	EFB CTRL Profile	—

ACS320/ACH180 VFD Parameters, Units with I/O Flex Controls

UNITS WITH VFD BACNET COMMUNICATION
(COMMONLY FOR APPLE)

NOTE: Within the Model Number Nomenclature for these units, the 14th position "A" commonly indicates this unit meets Apple specifications. See Table 9.

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple)

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER ACS320 / ACH180	DESCRIPTION
48LC000507-DATA / 48LC001067-DATA	48LC000507	HD56FR233	HK30WA504 / HK30WB502	SRT 1.7 HP 230V
48LC000508-DATA / 48LC001068-DATA	48LC000508	HD56FR463	HK30WA512 / HK30WB510	SRT 1.7 HP 460V
48LC000511-DATA / 48LC001069-DATA	48LC000511	HD56FE653	HK30WA504 / HK30WB502	SRT 2.4 HP 230V
48LC000512-DATA / 48LC001070-DATA	48LC000512	HD56FE653	HK30WA512 / HK30WB510	SRT 2.4 HP 460V
48LC000514-DATA / 48LC001071-DATA	48LC000514	HD56FR233	HK30WA504 / HK30WB502	SRT 1.7 HP 230V
48LC000515-DATA / 48LC001072-DATA	48LC000515	HD56FR463	HK30WA511 / HK30WB509	SRT 1.7 HP 460V
48LC000517-DATA / 48LC001073-DATA	48LC000517	HD56FE653	HK30WA517 / HK30WB511	SRT 2.4 HP 230V
48LC000519-DATA / 48LC001074-DATA	48LC000519	HD58FE654	HK30WA512 / HK30WB510	SRT 2.9 HP 460V
48LC000521-DATA / 48LC001075-DATA	48LC000521	HD58FE654	HK30WA505 / HK30WB503	SRT 2.9 HP 230V
48LC000522-DATA / 48LC001076-DATA	48LC000522	HD58FE654	HK30WA512 / HK30WB510	SRT 2.9 HP 460V
48LC000524-DATA / 48LC001077-DATA	48LC000524	HD56FR233	HK30WA504 / HK30WB502	SRT 1.7 HP 230V
48LC000525-DATA / 48LC001078-DATA	48LC000525	HD56FR463	HK30WA511 / HK30WB509	STR 1.7 HP 460V
48LC000527-DATA / 48LC001079-DATA	48LC000527	HD58FE654	HK30WA505 / HK30WB503	STR 2.9 HP 230V
48LC000528-DATA / 48LC001080-DATA	48LC000528	HD58FE654	HK30WA512 / HK30WB510	SRT 2.9 HP 460V
48LC000530-DATA / 48LC001081-DATA	48LC000530	HD56FR233	HK30WA504 / HK30WB502	STR 1.7 HP 230V
48LC000531-DATA / 48LC001082-DATA	48LC000531	HD56FR463	HK30WA513 / HK30WB511	STR 1.7 HP 460V
48LC000536-DATA / 48LC001084-DATA	48LC000536	HD56FE653	HK30WA512 / HK30WB510	MRT 2.4 HP 460V
48LC000662-DATA / 48LC001164-DATA	48LC000662	HD56FR463	HK30WA512 / HK30WB510	MRT 1.7 HP 460V
48LC000535-DATA / 48LC001083-DATA	48LC000535	HD56FE653	HK30WA512 / HK30WB510	MRT 2.4 HP 230V
48LC000539-DATA / 48LC001085-DATA	48LC000539	HD60FK658	HK30WA506 / HK30WB505	MRT 4.9 HP 230V
48LC000663-DATA / 48LC001165-DATA	48LC000663	HD56FE653	HK30WA512 / HK30WB510	MRT 2.4 HP 460V
48LC000543-DATA / 48LC001088-DATA	48LC000543	HD58FE654	HK30WA512 / HK30WB510	MRT 2.9 HP 460V
48LC000540-DATA / 48LC001086-DATA	48LC000540	HD60FK658	HK30WA513 / HK30WB511	MRT 4.9 HP 460V
48LC000542-DATA / 48LC001087-DATA	48LC000542	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000546-DATA / 48LC001090-DATA	48LC000546	HD60FE656	HK30WA512 / HK30WB510	MRT 3.7 HP 460V
48LC000545-DATA / 48LC001089-DATA	48LC000545	HD60FE656	HK30WA505 / HK30WB503	MRT 3.7 HP 230V
48LC000661-DATA / 48LC001163-DATA	48LC000661	HD56FR463	HK30WA512 / HK30WB510	MRT 1.7 HP 460V
48LC000547-DATA / 48LC001091-DATA	48LC000547	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000548-DATA / 48LC001092-DATA	48LC000548	HD58FE654	HK30WA512 / HK30WB510	MRT 2.9 HP 460V
48LC000550-DATA / 48LC001093-DATA	48LC000550	HD60FK658	HK30WA506 / HK30WB505	MRT 5.25 HP 230V
48LC000551-DATA / 48LC001094-DATA	48LC000551	HD60FK658	HK30WA513 / HK30WB511	MRT 5.25 HP 460V
48LC000553-DATA / 48LC001095-DATA	48LC000553	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000554-DATA / 48LC001096-DATA	48LC000554	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000556-DATA / 48LC001097-DATA	48LC000556	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000557-DATA / 48LC001098-DATA	48LC000557	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER ACS320 / ACH180	DESCRIPTION
48LC000559-DATA / 48LC001099-DATA	48LC000559	HD64FK654	HK30WA535 / HK30WB508	MRT 10 HP 230V
48LC000560-DATA / 48LC001100-DATA	48LC000560	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000562-DATA / 48LC001101-DATA	48LC000562	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000563-DATA / 48LC001102-DATA	48LC000563	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000565-DATA / 48LC001103-DATA	48LC000565	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000566-DATA / 48LC001104-DATA	48LC000566	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000568-DATA / 48LC001105-DATA	48LC000568	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000569-DATA / 48LC001106-DATA	48LC000569	HD58FE654	HK30WA512 / HK30WB510	MRT 2.9 HP 460V
48LC000571-DATA / 48LC001107-DATA	48LC000571	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000572-DATA / 48LC001108-DATA	48LC000572	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000574-DATA / 48LC001109-DATA	48LC000574	HD62FK654	HK30WA508 / HK30WB507	SRT 7.5 HP 230V
48LC000575-DATA / 48LC001110-DATA	48LC000575	HD62FK654	HK30WA515 / HK30WB513	STR 7.5 HP 460V
48LC000577-DATA / 48LC001111-DATA	48LC000577	HD64FK654	HK30WA535 / HK30WB508	MRT 10 HP 230V
48LC000578-DATA / 48LC001112-DATA	48LC000578	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000580-DATA / 48LC001113-DATA	48LC000580	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000581-DATA / 48LC001114-DATA	48LC000581	HD58FE654	HK30WA512 / HK30WB510	MRT 2.9 HP 460V
48LC000583-DATA / 48LC001115-DATA	48LC000583	HD64FK654	HK30WA535 / HK30WB508	MRT 10 HP 230V
48LC000584-DATA / 48LC001116-DATA	48LC000584	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000586-DATA / 48LC001117-DATA	48LC000586	HD60FK657	HK30WA507 / HK30WB506	STR 5 HP 230V
48LC000587-DATA / 48LC001118-DATA	48LC000587	HD60FK657	HK30WA514 / HK30WB512	STR 5 HP 460V
48LC000589-DATA / 48LC001119-DATA	48LC000589	HD62FK654	HK30WA508 / HK30WB507	STR 7.5 HP 230V
48LC000590-DATA / 48LC001120-DATA	48LC000590	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000592-DATA / 48LC001121-DATA	48LC000592	HD64FK654	HK30WA535 / HK30WB508	MRT 10 HP 230V
48LC000593-DATA / 48LC001122-DATA	48LC000593	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000595-DATA / 48LC001123-DATA	48LC000595	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000596-DATA / 48LC001124-DATA	48LC000596	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000598-DATA / 48LC001125-DATA	48LC000598	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000599-DATA / 48LC001126-DATA	48LC000599	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000601-DATA / 48LC001127-DATA	48LC000601	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000602-DATA / 48LC001128-DATA	48LC000602	HD58FE654	HK30WA512 / HK30WB510	MRT 2.9 HP 460V

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	VOLTAGE 9905 / 99.07	N. AMPS 9906 / 99.06	N. RPM 9908 / 99.09	N. HP 9909 / 99.10	EXT1 COMMANDS 1001 / 20.01	EXT7 / EXT2 SEL 1102 / 19.11	REF1 SPEED SEL 1103 / 28.11
48LC000507-DATA / 48LC001067-DATA	230	5.6	1725	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000508-DATA / 48LC001068-DATA	460	2.9	1725	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000511-DATA / 48LC001069-DATA	230	6.8	1725	2.4	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000512-DATA / 48LC001070-DATA	460	3.4	1725	2.4	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000514-DATA / 48LC001071-DATA	230	5.6	1725	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000515-DATA / 48LC001072-DATA	460	2.9	1725	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000517-DATA / 48LC001073-DATA	230	6.8	1725	2.4	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000519-DATA / 48LC001074-DATA	460	3.8	1725	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000521-DATA / 48LC001075-DATA	230	7.8	1725	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000522-DATA / 48LC001076-DATA	460	3.8	1725	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000524-DATA / 48LC001077-DATA	230	5.6	1695	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000525-DATA / 48LC001078-DATA	460	2.9	1690	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000527-DATA / 48LC001079-DATA	230	7.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000528-DATA / 48LC001080-DATA	460	3.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000530-DATA / 48LC001081-DATA	230	5.6	1695	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000531-DATA / 48LC001082-DATA	460	2.9	1690	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000536-DATA / 48LC001084-DATA	460	3.4	1680	2.4	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000662-DATA / 48LC001164-DATA	460	2.9	1690	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000535-DATA / 48LC001083-DATA	230	6.8	1680	2.4	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000539-DATA / 48LC001085-DATA	230	12.7	1745	4.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000663-DATA / 48LC001165-DATA	460	3.4	1680	2.4	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000543-DATA / 48LC001088-DATA	460	3.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000540-DATA / 48LC001086-DATA	460	6.4	1745	4.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000542-DATA / 48LC001087-DATA	230	7.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000546-DATA / 48LC001090-DATA	460	4.9	1750	3.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000545-DATA / 48LC001089-DATA	230	9.8	1750	3.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000661-DATA / 48LC001163-DATA	460	2.9	1690	1.7	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000547-DATA / 48LC001091-DATA	230	7.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000548-DATA / 48LC001092-DATA	460	3.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000550-DATA / 48LC001093-DATA	230	12.7	1745	5.25	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000551-DATA / 48LC001094-DATA	460	6.4	1745	5.25	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000553-DATA / 48LC001095-DATA	230	20.4	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000554-DATA / 48LC001096-DATA	460	10.2	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000556-DATA / 48LC001097-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000557-DATA / 48LC001098-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000559-DATA / 48LC001099-DATA	230	30.4	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000560-DATA / 48LC001100-DATA	460	15.2	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000562-DATA / 48LC001101-DATA	230	20.4	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000563-DATA / 48LC001102-DATA	460	10.2	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000565-DATA / 48LC001103-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000566-DATA / 48LC001104-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000568-DATA / 48LC001105-DATA	230	7.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000569-DATA / 48LC001106-DATA	460	3.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000571-DATA / 48LC001107-DATA	230	20.4	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000572-DATA / 48LC001108-DATA	460	10.2	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000574-DATA / 48LC001109-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000575-DATA / 48LC001110-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000577-DATA / 48LC001111-DATA	230	30.4	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000578-DATA / 48LC001112-DATA	460	15.2	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000580-DATA / 48LC001113-DATA	230	7.8	1750	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000581-DATA / 48LC001114-DATA	460	3.8	1750	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000583-DATA / 48LC001115-DATA	230	30.4	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000584-DATA / 48LC001116-DATA	460	15.2	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000586-DATA / 48LC001117-DATA	230	17.1	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000587-DATA / 48LC001118-DATA	460	8.6	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000589-DATA / 48LC001119-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000590-DATA / 48LC001120-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000592-DATA / 48LC001121-DATA	230	30.4	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000593-DATA / 48LC001122-DATA	460	15.2	1755	10	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000595-DATA / 48LC001123-DATA	230	20.4	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000596-DATA / 48LC001124-DATA	460	10.2	1760	5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000598-DATA / 48LC001125-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000599-DATA / 48LC001126-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000601-DATA / 48LC001127-DATA	230	7.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000602-DATA / 48LC001128-DATA	460	3.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	CONST SPEED SEL 1201 / 28.22	CONST SPEED SEL 1201 / 28.23	CONST SPEED 1 1202 / 28.26	CONST SPEED 2 1203 / 28.27	CONST SPEED 3 1204 / 28.28	CONST SPEED 4 1205 / 28.29
48LC000507-DATA / 48LC001067-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	52.4	60 Hz	60 Hz	—
48LC000508-DATA /48LC001068-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	52.4	60 Hz	60 Hz	—
48LC000511-DATA / 48LC001069-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	52.4	60 Hz	60 Hz	—
48LC000512-DATA / 48LC001070-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	52.4	60 Hz	60 Hz	—
48LC000514-DATA / 48LC001071-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	42.6	60 Hz	60 Hz	—
48LC000515-DATA / 48LC001072-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	42.6	60 Hz	60 Hz	—
48LC000517-DATA / 48LC001073-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	42.6	60 Hz	60 Hz	—
48LC000519-DATA / 48LC001074-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	42.6	60 Hz	60 Hz	—
48LC000521-DATA / 48LC001075-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	41.2	60 Hz	60 Hz	—
48LC000522-DATA / 48LC001076-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	41.2	60 Hz	60 Hz	—
48LC000524-DATA / 48LC001077-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000525-DATA / 48LC001078-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000527-DATA / 48LC001079-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000528-DATA / 48LC001080-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000530-DATA / 48LC001081-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000531-DATA / 48LC001082-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000536-DATA / 48LC001084-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000662-DATA / 48LC001164-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000535-DATA / 48LC001083-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000539-DATA / 48LC001085-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000663-DATA / 48LC001165-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000543-DATA / 48LC001088-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000540-DATA / 48LC001086-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000542-DATA / 48LC001087-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000546-DATA / 48LC001090-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000545-DATA / 48LC001089-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000661-DATA / 48LC001163-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	39.9 Hz	39.9 Hz	60 Hz	60 Hz
48LC000547-DATA / 48LC001091-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000548-DATA / 48LC001092-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000550-DATA / 48LC001093-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000551-DATA / 48LC001094-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000553-DATA / 48LC001095-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000554-DATA / 48LC001096-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000556-DATA / 48LC001097-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000557-DATA / 48LC001098-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000559-DATA / 48LC001099-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000560-DATA / 48LC001100-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000562-DATA / 48LC001101-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000563-DATA / 48LC001102-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000565-DATA / 48LC001103-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000566-DATA / 48LC001104-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000568-DATA / 48LC001105-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000569-DATA / 48LC001106-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000571-DATA / 48LC001107-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000572-DATA / 48LC001108-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000574-DATA / 48LC001109-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000575-DATA / 48LC001110-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000577-DATA / 48LC001111-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000578-DATA / 48LC001112-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000580-DATA / 48LC001113-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000581-DATA / 48LC001114-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000583-DATA / 48LC001115-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000584-DATA / 48LC001116-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000586-DATA / 48LC001117-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000587-DATA / 48LC001118-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000589-DATA / 48LC001119-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000590-DATA / 48LC001120-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000592-DATA / 48LC001121-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000593-DATA / 48LC001122-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000595-DATA / 48LC001123-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000596-DATA / 48LC001124-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000598-DATA / 48LC001125-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000599-DATA / 48LC001126-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000601-DATA / 48LC001127-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000602-DATA / 48LC001128-DATA	NOT SEL/ (0) Always Off	NOT SEL/ (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	A01 CONTENT SEL 1501 / 13.12	MAX AMPS 2003 / 30.17	STOP FCN 2102 / 21.03	ACCEL 2202 / 28.72	DECEL 2203 / 28.73	STATION ID 5201	BAUD RATE 5202	PARITY 5203
48LC000507-DATA / 48LC001067-DATA	0103 OUTPUT FREQ /(3) Output Frequency	5.6	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000508-DATA /48LC001068-DATA	0103 OUTPUT FREQ /(3) Output Frequency	2.9	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000511-DATA / 48LC001069-DATA	0103 OUTPUT FREQ /(3) Output Frequency	6.8	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000512-DATA / 48LC001070-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.4	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000514-DATA / 48LC001071-DATA	0103 OUTPUT FREQ /(3) Output Frequency	5.6	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000515-DATA / 48LC001072-DATA	0103 OUTPUT FREQ /(3) Output Frequency	2.9	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000517-DATA / 48LC001073-DATA	0103 OUTPUT FREQ /(3) Output Frequency	6.8	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000519-DATA / 48LC001074-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000521-DATA / 48LC001075-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000522-DATA / 48LC001076-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	30s	10s	—	—	—
48LC000524-DATA / 48LC001077-DATA	0103 OUTPUT FREQ /(3) Output Frequency	5.6	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000525-DATA / 48LC001078-DATA	0103 OUTPUT FREQ /(3) Output Frequency	2.9	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000527-DATA / 48LC001079-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000528-DATA / 48LC001080-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000530-DATA / 48LC001081-DATA	0103 OUTPUT FREQ /(3) Output Frequency	5.6	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000531-DATA / 48LC001082-DATA	0103 OUTPUT FREQ /(3) Output Frequency	2.9	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000536-DATA / 48LC001084-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000662-DATA / 48LC001164-DATA	0103 OUTPUT FREQ /(3) Output Frequency	2.9	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000535-DATA / 48LC001083-DATA	0103 OUTPUT FREQ /(3) Output Frequency	6.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000539-DATA / 48LC001085-DATA	0103 OUTPUT FREQ /(3) Output Frequency	12.7	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000663-DATA / 48LC001165-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000543-DATA / 48LC001088-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000540-DATA / 48LC001086-DATA	0103 OUTPUT FREQ /(3) Output Frequency	6.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000542-DATA / 48LC001087-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000546-DATA / 48LC001090-DATA	0103 OUTPUT FREQ /(3) Output Frequency	4.9	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000545-DATA / 48LC001089-DATA	0103 OUTPUT FREQ /(3) Output Frequency	9.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000661-DATA / 48LC001163-DATA	0103 OUTPUT FREQ /(3) Output Frequency	2.9	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000547-DATA / 48LC001091-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000548-DATA / 48LC001092-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000550-DATA / 48LC001093-DATA	0103 OUTPUT FREQ /(3) Output Frequency	12.7	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000551-DATA / 48LC001094-DATA	0103 OUTPUT FREQ /(3) Output Frequency	6.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000553-DATA / 48LC001095-DATA	0103 OUTPUT FREQ /(3) Output Frequency	20.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000554-DATA / 48LC001096-DATA	0103 OUTPUT FREQ /(3) Output Frequency	10.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000556-DATA / 48LC001097-DATA	0103 OUTPUT FREQ /(3) Output Frequency	28.5	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000557-DATA / 48LC001098-DATA	0103 OUTPUT FREQ /(3) Output Frequency	14.3	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000559-DATA / 48LC001099-DATA	0103 OUTPUT FREQ /(3) Output Frequency	30.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000560-DATA / 48LC001100-DATA	0103 OUTPUT FREQ /(3) Output Frequency	15.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000562-DATA / 48LC001101-DATA	0103 OUTPUT FREQ /(3) Output Frequency	20.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000563-DATA / 48LC001102-DATA	0103 OUTPUT FREQ /(3) Output Frequency	10.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000565-DATA / 48LC001103-DATA	0103 OUTPUT FREQ /(3) Output Frequency	28.5	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000566-DATA / 48LC001104-DATA	0103 OUTPUT FREQ /(3) Output Frequency	14.3	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000568-DATA / 48LC001105-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000569-DATA / 48LC001106-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000571-DATA / 48LC001107-DATA	0103 OUTPUT FREQ /(3) Output Frequency	20.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000572-DATA / 48LC001108-DATA	0103 OUTPUT FREQ /(3) Output Frequency	10.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000574-DATA / 48LC001109-DATA	0103 OUTPUT FREQ /(3) Output Frequency	28.5	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000575-DATA / 48LC001110-DATA	0103 OUTPUT FREQ /(3) Output Frequency	14.3	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000577-DATA / 48LC001111-DATA	0103 OUTPUT FREQ /(3) Output Frequency	30.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000578-DATA / 48LC001112-DATA	0103 OUTPUT FREQ /(3) Output Frequency	15.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000580-DATA / 48LC001113-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000581-DATA / 48LC001114-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000583-DATA / 48LC001115-DATA	0103 OUTPUT FREQ /(3) Output Frequency	30.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000584-DATA / 48LC001116-DATA	0103 OUTPUT FREQ /(3) Output Frequency	15.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000586-DATA / 48LC001117-DATA	0103 OUTPUT FREQ /(3) Output Frequency	17.1	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000587-DATA / 48LC001118-DATA	0103 OUTPUT FREQ /(3) Output Frequency	8.6	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000589-DATA / 48LC001119-DATA	0103 OUTPUT FREQ /(3) Output Frequency	28.5	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000590-DATA / 48LC001120-DATA	0103 OUTPUT FREQ /(3) Output Frequency	14.3	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000592-DATA / 48LC001121-DATA	0103 OUTPUT FREQ /(3) Output Frequency	30.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000593-DATA / 48LC001122-DATA	0103 OUTPUT FREQ /(3) Output Frequency	15.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000595-DATA / 48LC001123-DATA	0103 OUTPUT FREQ /(3) Output Frequency	20.4	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000596-DATA / 48LC001124-DATA	0103 OUTPUT FREQ /(3) Output Frequency	10.2	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000598-DATA / 48LC001125-DATA	0103 OUTPUT FREQ /(3) Output Frequency	28.5	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000599-DATA / 48LC001126-DATA	0103 OUTPUT FREQ /(3) Output Frequency	14.3	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000601-DATA / 48LC001127-DATA	0103 OUTPUT FREQ /(3) Output Frequency	7.8	(1) Coast /(0) Coast	10s	10s	—	—	—
48LC000602-DATA / 48LC001128-DATA	0103 OUTPUT FREQ /(3) Output Frequency	3.8	(1) Coast /(0) Coast	10s	10s	—	—	—

Table 9 — ACS320/ACH180 VFD Parameters for 4848/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	EFB STATION ID 5302 / 58.03	EFB BAUD RATE 5303 / 58.04	EFB PARITY 5304 / 58.05	COMM PROT SEL 9802 / 58.01	RUN ENABLE 1601 / 20.40	START INTERLOCK 1608 / 20.41
48LC000507-DATA / 48LC001067-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000508-DATA / 48LC001068-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000511-DATA / 48LC001069-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000512-DATA / 48LC001070-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000514-DATA / 48LC001071-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000515-DATA / 48LC001072-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000517-DATA / 48LC001073-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000519-DATA / 48LC001074-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000521-DATA / 48LC001075-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000522-DATA / 48LC001076-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000524-DATA / 48LC001077-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000525-DATA / 48LC001078-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000527-DATA / 48LC001079-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000528-DATA / 48LC001080-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000530-DATA / 48LC001081-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000531-DATA / 48LC001082-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000536-DATA / 48LC001084-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000662-DATA / 48LC001164-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000535-DATA / 48LC001083-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000539-DATA / 48LC001085-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000663-DATA / 48LC001165-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000543-DATA / 48LC001088-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000540-DATA / 48LC001086-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000542-DATA / 48LC001087-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000546-DATA / 48LC001090-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000545-DATA / 48LC001089-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000661-DATA / 48LC001163-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000547-DATA / 48LC001091-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000548-DATA / 48LC001092-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000550-DATA / 48LC001093-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000551-DATA / 48LC001094-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000553-DATA / 48LC001095-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000554-DATA / 48LC001096-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000556-DATA / 48LC001097-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000557-DATA / 48LC001098-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000559-DATA / 48LC001099-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000560-DATA / 48LC001100-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000562-DATA / 48LC001101-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000563-DATA / 48LC001102-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000565-DATA / 48LC001103-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000566-DATA / 48LC001104-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000568-DATA / 48LC001105-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000569-DATA / 48LC001106-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000571-DATA / 48LC001107-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000572-DATA / 48LC001108-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000574-DATA / 48LC001109-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000575-DATA / 48LC001110-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000577-DATA / 48LC001111-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000578-DATA / 48LC001112-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000580-DATA / 48LC001113-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000581-DATA / 48LC001114-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000583-DATA / 48LC001115-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000584-DATA / 48LC001116-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000586-DATA / 48LC001117-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000587-DATA / 48LC001118-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000589-DATA / 48LC001119-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000590-DATA / 48LC001120-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000592-DATA / 48LC001121-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000593-DATA / 48LC001122-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000595-DATA / 48LC001123-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000596-DATA / 48LC001124-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000598-DATA / 48LC001125-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000599-DATA / 48LC001126-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000601-DATA / 48LC001127-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000602-DATA / 48LC001128-DATA	1	76.8 kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER ACS320 / ACH180	DESCRIPTION
48LC000604-DATA / 48LC001129-DATA	48LC000604	HD60FK658	HK30WA506 / HK30WB505	MRT 5.25 HP 230V
48LC000605-DATA / 48LC001130-DATA	48LC000605	HD60FK658	HK30WA513 / HK30WB511	MRT 5.25 HP 460V
48LC000607-DATA / 48LC001131-DATA	48LC000607	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000608-DATA / 48LC001132-DATA	48LC000608	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000610-DATA / 48LC001133-DATA	48LC000610	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000611-DATA / 48LC001134-DATA	48LC000611	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000613-DATA / 48LC001135-DATA	48LC000613	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000614-DATA / 48LC001136-DATA	48LC000614	HD58FE654	HK30WA512 / HK30WB510	MRT 2.9 HP 460V
48LC000616-DATA / 48LC001137-DATA	48LC000616	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000617-DATA / 48LC001138-DATA	48LC000617	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000619-DATA / 48LC001139-DATA	48LC000619	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000620-DATA / 48LC001140-DATA	48LC000620	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000622-DATA / 48LC001141-DATA	48LC000622	HD64FK654	HK30WA535 / HK30WB508	MRT 10 HP 230V
48LC000623-DATA / 48LC001142-DATA	48LC000623	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000625-DATA / 48LC001143-DATA	48LC000625	HD58FE654	HK30WA505 / HK30WB503	MRT 2.9 HP 230V
48LC000626-DATA / 48LC001144-DATA	48LC000626	HD58FE654	HK30WA512 / HK30WB510	STR 2.9 HP 460V
48LC000628-DATA / 48LC001145-DATA	48LC000628	HD60FK657	HK30WA507 / HK30WB506	SRT 5 HP 230V
48LC000629-DATA / 48LC001146-DATA	48LC000629	HD60FK657	HK30WA514 / HK30WB512	STR 5 HP 460V
48LC000631-DATA / 48LC001147-DATA	48LC000631	HD62FK654	HK30WA508 / HK30WB507	STR 7.5 HP 230V
48LC000632-DATA / 48LC001148-DATA	48LC000632	HD62FK654	HK30WA515 / HK30WB513	STR 7.5 HP 460V
48LC000634-DATA / 48LC001149-DATA	48LC000634	HD64FK654	HK30WA535 / HK30WB508	STR 10 HP 230V
48LC000635-DATA / 48LC001150-DATA	48LC000635	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000637-DATA / 48LC001151-DATA	48LC000637	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000638-DATA / 48LC001152-DATA	48LC000638	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000640-DATA / 48LC001153-DATA	48LC000640	HD60FK657	HK30WA508 / HK30WB507	MRT 5 HP 230V
48LC000641-DATA / 48LC001154-DATA	48LC000641	HD60FK657	HK30WA515 / HK30WB513	MRT 5 HP 460V
48LC000644-DATA / 48LC001155-DATA	48LC000644	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000645-DATA / 48LC001156-DATA	48LC000645	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000647-DATA / 48LC001157-DATA	48LC000647	HD60FK657	HK30WA507 / HK30WB506	MRT 5 HP 230V
48LC000648-DATA / 48LC001158-DATA	48LC000648	HD60FK657	HK30WA514 / HK30WB512	MRT 5 HP 460V
48LC000650-DATA / 48LC001159-DATA	48LC000650	HD62FK654	HK30WA508 / HK30WB507	MRT 7.5 HP 230V
48LC000651-DATA / 48LC001160-DATA	48LC000651	HD62FK654	HK30WA515 / HK30WB513	MRT 7.5 HP 460V
48LC000653-DATA / 48LC001161-DATA	48LC000653	HD64FK654	HK30WA535 / HK30WB508	MRT 10 HP 230V
48LC000654-DATA / 48LC001162-DATA	48LC000654	HD64FK654	HK30WA536 / HK30WB515	MRT 10 HP 460V
48LC000664-DATA / 48LC001166-DATA	48LC000664	HD60FK657	HK30WA515 / HK30WB513	MRT 5 HP 460V
50H4002326-DATA / 50HE007828-DATA	50H4002326	H060FK657	HK30WA532 / HK30WB512	MRT 5.0 HP 460V
50HE003081-DATA / 50HE007848-DATA	50HE003081	HD58FE654	HK30WA523 / HK30WB505	MRT 2.9 HP 230V
50HE003082-DATA / 50HE007849-DATA	50HE003082	HD58FE654	HK30WA530 / HK30WB510	MRT 2.9 HP 460V
50HE003084-DATA / 50HE007850-DATA	50HE003084	HD60FE656	HK30WA523 / HK30WB505	MRT 3.7 HP 230V
50HE003085-DATA / 50HE007851-DATA	50HE003085	HD60FE656	HK30WA534 / HK30WB511	MRT 3.7 HP 460V
50HE003086-DATA / 50HE007852-DATA	50HE003086	HD60FK658	HK30WA523 / HK30WB505	MRT 5.3 HP 230V
50HE003087-DATA / 50HE007853-DATA	50HE003087	HD60FK658	HK30WA532 / HK30WB512	MRT 5.3 HP 460V
50HE003089-DATA / 50HE007854-DATA	50HE003089	HD60FK657	HK30WA524 / HK30WB507	MRT 5.0 HP 230V
50HE003090-DATA / 50HE007855-DATA	50HE003090	HD60FK657	HK30WA532 / HK30WB512	MRT 5.0 HP 460V
50HE003092-DATA / 50HE007856-DATA	50HE003092	HD62FK654	HK30WA524 / HK30WB507	MRT 7.5 HP 230V
50HE003093-DATA / 50HE007857-DATA	50HE003093	HD62FK654	HK30WA532 / HK30WB512	MRT 7.5 HP 460V
48TM005163-DATA / 48TM009837-DATA	48TM005163	HD56FR233	HK30WA523 / HK30WB505	SRT 1.7 HP 230V
48TM005166-DATA / 48TM009840-DATA	48TM005166	HD56FR463	HK30WA530 / HK30WB510	SRT 1.7 HP 460V
48TM005162-DATA / 48TM009836-DATA	48TM005162	HD56FE653	HK30WA523 / HK30WB505	SRT 2.4 HP 230V
48TM005174-DATA / 48TM009845-DATA	48TM005174	HD56FE653	HK30WA530 / HK30WB510	SRT 2.4 HP 460V
48TM005164-DATA / 48TM009838-DATA	48TM005164	HD60FE656	HK30WA523 / HK30WB505	SRT 3.7 HP 230V
48TM005173-DATA / 48TM009844-DATA	48TM005173	HD60FE656	HK30WA534 / HK30WB511	SRT 3.7 HP 460V
48TM005165-DATA / 48TM009839-DATA	48TM005165	HD60FK658	HK30WA523 / HK30WB505	SRT 5.3 HP 230V
48TM005168-DATA / 48TM009842-DATA	48TM005168	HD60FK658	HK30WA532 / HK30WB512	SRT 5.3 HP 460V
48TM005172-DATA / 48TM009843-DATA	48TM005172	HD58FE654	HK30WA523 / HK30WB505	SRT 2.9 HP 230V
48TM005167-DATA / 48TM009841-DATA	48TM005167	HD58FE654	HK30WA530 / HK30WB510	SRT 2.9 HP 460V

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	VOLTAGE 9905 /99.07	N. AMPS 9906 /99.06	N. RPM 9908 / 99.09	N. HP 9909 / 99.10	EXT1 COMMANDS 1001 / 20.01	EXT7 / EXT2 SEL 1102 /19.11	REF1 SPEED SEL 1103 / 28.11
48LC000604-DATA / 48LC001129-DATA	230	12.7	1745	5.25	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000605-DATA / 48LC001130-DATA	460	6.4	1745	5.25	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000607-DATA / 48LC001131-DATA	230	20.4	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000608-DATA / 48LC001132-DATA	460	10.2	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000610-DATA / 48LC001133-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000611-DATA / 48LC001134-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000613-DATA / 48LC001135-DATA	230	7.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000614-DATA / 48LC001136-DATA	460	3.8	1735	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000616-DATA / 48LC001137-DATA	230	20.4	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000617-DATA / 48LC001138-DATA	460	10.2	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000619-DATA / 48LC001139-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000620-DATA / 48LC001140-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000622-DATA / 48LC001141-DATA	230	30.4	1755	10.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000623-DATA / 48LC001142-DATA	460	15.2	1755	10.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000625-DATA / 48LC001143-DATA	230	7.8	1750	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000626-DATA / 48LC001144-DATA	460	3.8	1750	2.9	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000628-DATA / 48LC001145-DATA	230	17.1	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000629-DATA / 48LC001146-DATA	460	8.6	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000631-DATA / 48LC001147-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000632-DATA / 48LC001148-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000634-DATA / 48LC001149-DATA	230	30.4	1755	10.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000635-DATA / 48LC001150-DATA	460	15.2	1755	10.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000637-DATA / 48LC001151-DATA	230	20.4	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000638-DATA / 48LC001152-DATA	460	10.2	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000640-DATA / 48LC001153-DATA	230	20.4	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000641-DATA / 48LC001154-DATA	460	10.2	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000644-DATA / 48LC001155-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000645-DATA / 48LC001156-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000647-DATA / 48LC001157-DATA	230	20.4	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000648-DATA / 48LC001158-DATA	460	10.2	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000650-DATA / 48LC001159-DATA	230	28.5	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000651-DATA / 48LC001160-DATA	460	14.3	1760	7.5	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000653-DATA / 48LC001161-DATA	230	30.4	1755	10.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000654-DATA / 48LC001162-DATA	460	15.2	1755	10.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
48LC000664-DATA / 48LC001166-DATA	460	10.2	1760	5.0	(1) DI 1 / (1) In 1 Start	EXT1	AI-1 / (1) AI 1 Scaled
50H4002326-DATA / 50HE007828-DATA	460	10.2	1760	5.0	—	—	—
50HE003081-DATA / 50HE007848-DATA	230	7.8	1725	2.9	—	—	—
50HE003082-DATA / 50HE007849-DATA	460	3.8	1725	2.9	—	—	—
50HE003084-DATA / 50HE007850-DATA	230	9.8	1725	3.7	—	—	—
50HE003085-DATA / 50HE007851-DATA	460	4.9	1725	3.7	—	—	—
50HE003086-DATA / 50HE007852-DATA	230	12.7	1740	5.3	—	—	—
50HE003087-DATA / 50HE007853-DATA	460	6.4	1740	5.3	—	—	—
50HE003089-DATA / 50HE007854-DATA	230	20.4	1760	5.0	—	—	—
50HE003090-DATA / 50HE007855-DATA	460	10.2	1760	5.0	—	—	—
50HE003092-DATA / 50HE007856-DATA	230	28.5	1760	7.5	—	—	—
50HE003093-DATA / 50HE007857-DATA	460	13.7	1760	7.5	—	—	—
48TM005163-DATA / 48TM009837-DATA	230	5.6	1725	1.7	—	—	—
48TM005166-DATA / 48TM009840-DATA	460	2.9	1725	1.7	—	—	—
48TM005162-DATA / 48TM009836-DATA	230	6.8	1725	2.4	—	—	—
48TM005174-DATA / 48TM009845-DATA	460	3.4	1725	2.4	—	—	—
48TM005164-DATA / 48TM009838-DATA	230	9.8	1725	3.7	—	—	—
48TM005173-DATA / 48TM009844-DATA	460	4.9	1725	3.7	—	—	—
48TM005165-DATA / 48TM009839-DATA	230	12.7	1740	5.3	—	—	—
48TM005168-DATA / 48TM009842-DATA	460	6.4	1740	5.3	—	—	—
48TM005172-DATA / 48TM009843-DATA	230	7.8	1725	2.9	—	—	—
48TM005167-DATA / 48TM009841-DATA	460	3.8	1725	2.9	—	—	—

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320/ ACH180	CONST SPEED SEL 1201 / 28.22	CONST SPEED SEL 1201 / 28.23	CONST SPEED 1 1202 / 28.26	CONST SPEED 2 1203 / 28.27	CONST SPEED 3 1204 / 28.28	CONST SPEED 4 1205 / 28.29
48LC000604-DATA / 48LC001129-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000605-DATA / 48LC001130-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000607-DATA / 48LC001131-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000608-DATA / 48LC001132-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000610-DATA / 48LC001133-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000611-DATA / 48LC001134-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	32.1 Hz	47.7 Hz	60 Hz	60 Hz
48LC000613-DATA / 48LC001135-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000614-DATA / 48LC001136-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000616-DATA / 48LC001137-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000617-DATA / 48LC001138-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000619-DATA / 48LC001139-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000620-DATA / 48LC001140-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000622-DATA / 48LC001141-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000623-DATA / 48LC001142-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	34 Hz	49.4 Hz	60 Hz	60 Hz
48LC000625-DATA / 48LC001143-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000626-DATA / 48LC001144-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000628-DATA / 48LC001145-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000629-DATA / 48LC001146-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000631-DATA / 48LC001147-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000632-DATA / 48LC001148-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000634-DATA / 48LC001149-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000635-DATA / 48LC001150-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.5 Hz	37 Hz	60 Hz	60 Hz
48LC000637-DATA / 48LC001151-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000638-DATA / 48LC001152-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000640-DATA / 48LC001153-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000641-DATA / 48LC001154-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000644-DATA / 48LC001155-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000645-DATA / 48LC001156-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
48LC000647-DATA / 48LC001157-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000648-DATA / 48LC001158-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000650-DATA / 48LC001159-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000651-DATA / 48LC001160-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000653-DATA / 48LC001161-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000654-DATA / 48LC001162-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	36 Hz	43.2 Hz	60 Hz	60 Hz
48LC000664-DATA / 48LC001166-DATA	NOT SEL / (0) Always Off	NOT SEL / (0) Always Off	31.4 Hz	38.7 Hz	60 Hz	60 Hz
50H4002326-DATA / 50HE007828-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003081-DATA / 50HE007848-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003082-DATA / 50HE007849-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003084-DATA / 50HE007850-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003085-DATA / 50HE007851-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003086-DATA / 50HE007852-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003087-DATA / 50HE007853-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003089-DATA / 50HE007854-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003090-DATA / 50HE007855-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003092-DATA / 50HE007856-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
50HE003093-DATA / 50HE007857-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005163-DATA / 48TM009837-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005166-DATA / 48TM009840-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005162-DATA / 48TM009836-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005174-DATA / 48TM009845-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005164-DATA / 48TM009838-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005173-DATA / 48TM009844-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005165-DATA / 48TM009839-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005168-DATA / 48TM009842-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005172-DATA / 48TM009843-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005167-DATA / 48TM009841-DATA	DI 2,3 / DI2	DI 2,3 / DI3	40 Hz	60 Hz	60 Hz	—

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	A01 CONTENT SEL 1501 / 13.12	MAX AMPS 2003 / 30.17	STOP FCN 2102 / 21.03	ACCEL 2202 / 28.72	DECEL 2203 / 28.73	STATION ID 5201	BAUD RATE 5202	PARITY 5203
48LC000604-DATA / 48LC001129-DATA	0103 OUTPUT FREQ / (3) Output Frequency	12.7	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000605-DATA / 48LC001130-DATA	0103 OUTPUT FREQ / (3) Output Frequency	6.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000607-DATA / 48LC001131-DATA	0103 OUTPUT FREQ / (3) Output Frequency	20.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000608-DATA / 48LC001132-DATA	0103 OUTPUT FREQ / (3) Output Frequency	10.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000610-DATA / 48LC001133-DATA	0103 OUTPUT FREQ / (3) Output Frequency	28.5	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000611-DATA / 48LC001134-DATA	0103 OUTPUT FREQ / (3) Output Frequency	14.3	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000613-DATA / 48LC001135-DATA	0103 OUTPUT FREQ / (3) Output Frequency	7.8	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000614-DATA / 48LC001136-DATA	0103 OUTPUT FREQ / (3) Output Frequency	3.8	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000616-DATA / 48LC001137-DATA	0103 OUTPUT FREQ / (3) Output Frequency	20.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000617-DATA / 48LC001138-DATA	0103 OUTPUT FREQ / (3) Output Frequency	10.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000619-DATA / 48LC001139-DATA	0103 OUTPUT FREQ / (3) Output Frequency	28.5	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000620-DATA / 48LC001140-DATA	0103 OUTPUT FREQ / (3) Output Frequency	14.3	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000622-DATA / 48LC001141-DATA	0103 OUTPUT FREQ / (3) Output Frequency	30.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000623-DATA / 48LC001142-DATA	0103 OUTPUT FREQ / (3) Output Frequency	15.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000625-DATA / 48LC001143-DATA	0103 OUTPUT FREQ / (3) Output Frequency	7.8	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000626-DATA / 48LC001144-DATA	0103 OUTPUT FREQ / (3) Output Frequency	3.8	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000628-DATA / 48LC001145-DATA	0103 OUTPUT FREQ / (3) Output Frequency	17.1	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000629-DATA / 48LC001146-DATA	0103 OUTPUT FREQ / (3) Output Frequency	8.6	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000631-DATA / 48LC001147-DATA	0103 OUTPUT FREQ / (3) Output Frequency	28.5	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000632-DATA / 48LC001148-DATA	0103 OUTPUT FREQ / (3) Output Frequency	14.3	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000634-DATA / 48LC001149-DATA	0103 OUTPUT FREQ / (3) Output Frequency	30.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000635-DATA / 48LC001150-DATA	0103 OUTPUT FREQ / (3) Output Frequency	15.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000637-DATA / 48LC001151-DATA	0103 OUTPUT FREQ / (3) Output Frequency	20.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000638-DATA / 48LC001152-DATA	0103 OUTPUT FREQ / (3) Output Frequency	10.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000640-DATA / 48LC001153-DATA	0103 OUTPUT FREQ / (3) Output Frequency	20.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000641-DATA / 48LC001154-DATA	0103 OUTPUT FREQ / (3) Output Frequency	10.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000644-DATA / 48LC001155-DATA	0103 OUTPUT FREQ / (3) Output Frequency	28.5	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000645-DATA / 48LC001156-DATA	0103 OUTPUT FREQ / (3) Output Frequency	14.3	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000647-DATA / 48LC001157-DATA	0103 OUTPUT FREQ / (3) Output Frequency	20.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000648-DATA / 48LC001158-DATA	0103 OUTPUT FREQ / (3) Output Frequency	10.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000650-DATA / 48LC001159-DATA	0103 OUTPUT FREQ / (3) Output Frequency	28.5	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000651-DATA / 48LC001160-DATA	0103 OUTPUT FREQ / (3) Output Frequency	14.3	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000653-DATA / 48LC001161-DATA	0103 OUTPUT FREQ / (3) Output Frequency	30.4	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000654-DATA / 48LC001162-DATA	0103 OUTPUT FREQ / (3) Output Frequency	15.2	1) Coast / (0) Coast	10s	10s	—	—	—
48LC000664-DATA / 48LC001166-DATA	0103 OUTPUT FREQ / (3) Output Frequency	10.2	1) Coast / (0) Coast	10s	10s	—	—	—
50H4002326-DATA / 50HE007828-DATA	—	10.2	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003081-DATA / 50HE007848-DATA	—	7.8	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003082-DATA / 50HE007849-DATA	—	3.8	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003084-DATA / 50HE007850-DATA	—	9.8	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003085-DATA / 50HE007851-DATA	—	4.9	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003086-DATA / 50HE007852-DATA	—	12.7	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003087-DATA / 50HE007853-DATA	—	6.4	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003089-DATA / 50HE007854-DATA	—	20.4	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003090-DATA / 50HE007855-DATA	—	10.2	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003092-DATA / 50HE007856-DATA	—	28.5	1) Coast / (0) Coast	30s	30s	—	—	—
50HE003093-DATA / 50HE007857-DATA	—	13.7	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005163-DATA / 48TM009837-DATA	—	5.6	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005166-DATA / 48TM009840-DATA	—	2.9	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005162-DATA / 48TM009836-DATA	—	6.8	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005174-DATA / 48TM009845-DATA	—	3.4	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005164-DATA / 48TM009838-DATA	—	9.8	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005173-DATA / 48TM009844-DATA	—	4.9	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005165-DATA / 48TM009839-DATA	—	12.7	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005168-DATA / 48TM009842-DATA	—	6.4	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005172-DATA / 48TM009843-DATA	—	7.8	1) Coast / (0) Coast	30s	30s	—	—	—
48TM005167-DATA / 48TM009841-DATA	—	3.8	1) Coast / (0) Coast	30s	30s	—	—	—

Table 9 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and BACnet Communication (Commonly for Apple) (cont)

VFD PARAMETERS ACS320 / ACH180	EFB STATION ID 5302 / 58.03	EFB BAUD RATE 5303 / 58.04	EFB PARITY 5304 / 58.05	COMM PROT SE L 9802 / 58.01	RUN ENABLE 1601 / 20.40	START INTERTLOCK 1608 / 20.41
48LC000604-DATA / 48LC001129-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000605-DATA / 48LC001130-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000607-DATA / 48LC001131-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000608-DATA / 48LC001132-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000610-DATA / 48LC001133-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000611-DATA / 48LC001134-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000613-DATA / 48LC001135-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000614-DATA / 48LC001136-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000616-DATA / 48LC001137-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000617-DATA / 48LC001138-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000619-DATA / 48LC001139-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000620-DATA / 48LC001140-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000622-DATA / 48LC001141-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000623-DATA / 48LC001142-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000625-DATA / 48LC001143-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000626-DATA / 48LC001144-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000628-DATA / 48LC001145-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000629-DATA / 48LC001146-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000631-DATA / 48LC001147-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000632-DATA / 48LC001148-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000634-DATA / 48LC001149-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000635-DATA / 48LC001150-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000637-DATA / 48LC001151-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000638-DATA / 48LC001152-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000640-DATA / 48LC001153-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000641-DATA / 48LC001154-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000644-DATA / 48LC001155-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000645-DATA / 48LC001156-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000647-DATA / 48LC001157-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000648-DATA / 48LC001158-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000650-DATA / 48LC001159-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000651-DATA / 48LC001160-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000653-DATA / 48LC001161-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000654-DATA / 48LC001162-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
48LC000664-DATA / 48LC001166-DATA	1	76.8kb/s	8 NONE 1	BACnet / BACnet (2)	DI4 / (5) DI4	DI1 / (2) DI1
50H4002326-DATA / 50HE007828-DATA	—	—	—	—	—	—
50HE003081-DATA / 50HE007848-DATA	—	—	—	—	—	—
50HE003082-DATA / 50HE007849-DATA	—	—	—	—	—	—
50HE003084-DATA / 50HE007850-DATA	—	—	—	—	—	—
50HE003085-DATA / 50HE007851-DATA	—	—	—	—	—	—
50HE003086-DATA / 50HE007852-DATA	—	—	—	—	—	—
50HE003087-DATA / 50HE007853-DATA	—	—	—	—	—	—
50HE003089-DATA / 50HE007854-DATA	—	—	—	—	—	—
50HE003090-DATA / 50HE007855-DATA	—	—	—	—	—	—
50HE003092-DATA / 50HE007856-DATA	—	—	—	—	—	—
50HE003093-DATA / 50HE007857-DATA	—	—	—	—	—	—
48TM005163-DATA / 48TM009837-DATA	—	—	—	—	—	—
48TM005166-DATA / 48TM009840-DATA	—	—	—	—	—	—
48TM005162-DATA / 48TM009836-DATA	—	—	—	—	—	—
48TM005174-DATA / 48TM009845-DATA	—	—	—	—	—	—
48TM005164-DATA / 48TM009838-DATA	—	—	—	—	—	—
48TM005173-DATA / 48TM009844-DATA	—	—	—	—	—	—
48TM005165-DATA / 48TM009839-DATA	—	—	—	—	—	—
48TM005168-DATA / 48TM009842-DATA	—	—	—	—	—	—
48TM005172-DATA / 48TM009843-DATA	—	—	—	—	—	—
48TM005167-DATA / 48TM009841-DATA	—	—	—	—	—	—

UNITS WITH VFD MODBUS COMMUNICATION
(COMMONLY FOR 7-ELEVEN)

NOTE: Within the Model Number Nomenclature for these units, the 17th position "S" commonly indicates this unit meets 7-Eleven specifications. See Table 10.

Table 10 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and ModBus Communication (Commonly for 7-Eleven)

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER ACS320 / ACH180	DESCRIPTION
48TM005433-DATA / 48TM009847-DATA	48TM005433	HD56FR233	HK30WA506 / HK30WB505	SRT 3 HP 230 V
48TM005436-DATA / 48TM009850-DATA	48TM005436	HD56FR463	HK30WA512 / HK30WB510	SRT 3 HP 460 V
48TM005439-DATA / 48TM009853-DATA	48TM005439	HD58FE654	HK30WA506 / HK30WB505	SRT 3 HP 230 V
48TM005437-DATA / 48TM009851-DATA	48TM005437	HD58FE654	HK30WA512 / HK30WB510	SRT 3 HP 230 V
48TM005435-DATA / 48TM009849-DATA	48TM005435	HD60FK658	HK30WA506 / HK30WB505	SRT 3 HP 230 V
48TM005438-DATA / 48TM009852-DATA	48TM005438	HD60FK658	HK30WA514 / HK30WB512	SRT 7.5 HP 230 V
48TM005432-DATA / 48TM009846-DATA	48TM005432	HD56FE653	HK30WA506 / HK30WB505	SRT 3 HP 230 V
48TM005441-DATA / 48TM009855-DATA	48TM005441	HD56FE653	HK30WA512 / HK30WB510	SRT 3 HP 230 V
48TM005434-DATA / 48TM009848-DATA	48TM005434	HD60FE656	HK30WA506 / HK30WB505	SRT 3 HP 230 V
48TM005440-DATA / 48TM009854-DATA	48TM005440	HD60FE656	HK30WA517 / HK30WB511	SRT 5 HP 230 V
50TM001619-DATA / 50TM003510-DATA	50TM001619	HD56FE653	HK30WA506 / HK30WB505	—
50TM001620-DATA / 50TM003511-DATA	50TM 001620	HD56FE653	HK30WA512 / HK30WB510	—
50TM001614-DATA / 50TM003506-DATA	50TM001614	HD58FE654	HK30WA506 / HK30WB505	—
50TM001622-DATA / 50TM003512-DATA	50TM 001622	HD58FE654	HK30WA512 / HK30WB510	—
50TM001616-DATA / 50TM003507-DATA	50TM001616	HD60FK659	HK30WA507 / HK30WB506	—
50TM001623-DATA / 50TM003513-DATA	50TM 001623	HD60FK659	HK30WA506 / HK30WB505	—
50TM001617-DATA / 50TM003508-DATA	50TM001617	HD60FE656	HK30WA506 / HK30WB505	—
50TM001618-DATA / 50TM003509-DATA	50TM001618	HD60FE656	HK30WA517 / HK30WB511	—

Table 10 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and ModBus Communication (Commonly for 7-Eleven) (cont)

VFD PARAMETERS ACS320 / ACH180	VOLTAGE 9905 / 99.07	N. AMPS 9906 /99.06	N. RPM 9908 /99.09	N. HP 9909 /99.10	EXT1 COMMANDS 1001 / 20.01	EXT7 / EXT2 SEL 1102 / 19.11	REF1 SELECT CONST 1103 / 28.11
48TM005433-DATA / 48TM009847-DATA	230	5.6	1725	1.7	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005436-DATA / 48TM009850-DATA	460	2.9	1725	1.7	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005439-DATA / 48TM009853-DATA	230	7.8	1725	2.9	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005437-DATA / 48TM009851-DATA	230	7.8	1725	2.9	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005435-DATA / 48TM009849-DATA	230	12.7	1740	5.3	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005438-DATA / 48TM009852-DATA	230	12.7	1740	5.3	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005432-DATA / 48TM009846-DATA	230	6.8	1725	2.4	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005441-DATA / 48TM009855-DATA	230	6.8	1725	2.4	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005434-DATA / 48TM009848-DATA	230	9.8	1725	3.7	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
48TM005440-DATA / 48TM009854-DATA	230	9.8	1725	3.7	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001619-DATA / 50TM003510-DATA	230	6.8	1725	2.4	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001620-DATA / 50TM003511-DATA	460	6.8	1725	2.4	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001614-DATA / 50TM003506-DATA	230	7.8	1725	2.9	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001622-DATA / 50TM003512-DATA	460	7.8	1725	2.9	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001616-DATA / 50TM003507-DATA	230	12.6	1755	5	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001623-DATA / 50TM003513-DATA	460	6.3	1755	5	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001617-DATA / 50TM003508-DATA	230	9.8	1725	3.7	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1
50TM001618-DATA / 50TM003509-DATA	460	9.8	1725	3.7	10 COMM / (14) Embedded Fieldbus	8 COMM / (32) EFB MCW bit 11	8 COMM / (8) EFB ref1

Table 10 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and ModBus Communication (Commonly for 7-Eleven) (cont)

VFD PARAMETERS ACS320 / ACH180	CONST SPEED SEL 1201 / 28.22	CONST SPEED SEL 1201 / 28.23	CONST SPEED 1 1202 / 28.26	CONST SPEED 2 1203 / 28.27	CONST SPEED 3 1204 / 28.28	CONST SPEED 4 1205 / 28.29
48TM005433-DATA / 48TM009847-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005436-DATA / 48TM009850-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005439-DATA / 48TM009853-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005437-DATA / 48TM009851-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005435-DATA / 48TM009849-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005438-DATA / 48TM009852-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005432-DATA / 48TM009846-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005441-DATA / 48TM009855-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005434-DATA / 48TM009848-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
48TM005440-DATA / 48TM009854-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001619-DATA / 50TM003510-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001620-DATA / 50TM003511-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001614-DATA / 50TM003506-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001622-DATA / 50TM003512-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001616-DATA / 50TM003507-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001623-DATA / 50TM003513-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001617-DATA / 50TM003508-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—
50TM001618-DATA / 50TM003509-DATA	DI3 / DI2	DI3 / DI3	40 Hz	60 Hz	60 Hz	—

Table 10 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and ModBus Communication (Commonly for 7-Eleven) (cont)

VFD PARAMETERS ACS320 / ACH180	A01 CONTENTS SEL 1501 / 13.12	MAX AMPS 2003 / 30.17	STOP FCN 2102 / 21.03	ACCEL 2202 / 28.72	DECEL 2203 / 28.73	STATION ID 5201	BAUD RATE 5202	PARITY 5203
48TM005433-DATA / 48TM009847-DATA	102 Speed / (1) Motor Speed	5.6	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005436-DATA / 48TM009850-DATA	102 Speed / (1) Motor Speed	2.9	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005439-DATA / 48TM009853-DATA	102 Speed / (1) Motor Speed	7.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005437-DATA / 48TM009851-DATA	102 Speed / (1) Motor Speed	7.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005435-DATA / 48TM009849-DATA	102 Speed / (1) Motor Speed	12.7	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005438-DATA / 48TM009852-DATA	102 Speed / (1) Motor Speed	12.7	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005432-DATA / 48TM009846-DATA	102 Speed / (1) Motor Speed	6.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005441-DATA / 48TM009855-DATA	102 Speed / (1) Motor Speed	6.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005434-DATA / 48TM009848-DATA	102 Speed / (1) Motor Speed	9.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
48TM005440-DATA / 48TM009854-DATA	102 Speed / (1) Motor Speed	9.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001619-DATA / 50TM003510-DATA	102 Speed / (1) Motor Speed	6.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001620-DATA / 50TM003511-DATA	102 Speed / (1) Motor Speed	6.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001614-DATA / 50TM003506-DATA	102 Speed / (1) Motor Speed	7.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001622-DATA / 50TM003512-DATA	102 Speed / (1) Motor Speed	7.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001616-DATA / 50TM003507-DATA	102 Speed / (1) Motor Speed	12.6	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001623-DATA / 50TM003513-DATA	102 Speed / (1) Motor Speed	6.3	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001617-DATA / 50TM003508-DATA	102 Speed / (1) Motor Speed	9.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1
50TM001618-DATA / 50TM003509-DATA	102 Speed / (1) Motor Speed	9.8	Ramp / (1) Ramp	30.0s	30s	1	9.6 kb/s	8 NONE 1

Table 10 — ACS320/ACH180 VFD Parameters for 48/50TC, 50TCQ, 48/50HC and 50HCQ Units 580J/558J, 548J, 581J/551J and 549J Units RGS, RAS, RHS, RGH, RAH and RHH Units with I/O Flex Controls and ModBus Communication (Commonly for 7-Eleven) (cont)

VFD PARAMETERS ACS320 / ACH180	EFB STATION ID 5302 / 58.03	EFB BAUD RATE 5303 / 58.04	EFB PARITY 5304 / 58.05	COMM PROT SEL 9802 / 58.01	RUN ENABLE 1601 / 20.40	START INTERLOCK 1608 / 20.41
48TM005433-DATA / 48TM009847-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005436-DATA / 48TM009850-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005439-DATA / 48TM009853-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005437-DATA / 48TM009851-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005435-DATA / 48TM009849-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005438-DATA / 48TM009852-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005432-DATA / 48TM009846-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005441-DATA / 48TM009855-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005434-DATA / 48TM009848-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
48TM005440-DATA / 48TM009854-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001619-DATA / 50TM003510-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001620-DATA / 50TM003511-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001614-DATA / 50TM003506-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001622-DATA / 50TM003512-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001616-DATA / 50TM003507-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001623-DATA / 50TM003513-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001617-DATA / 50TM003508-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1
50TM001618-DATA / 50TM003509-DATA	—	—	—	1 Std Modbus / (1) Modbus RTU	DI4 / (5) DI4	DI1 / (2) DI1

Table 11 — ACS320/ACH180 VFD Common Parameters for 40RU, 524J, FAS Units with Electromechanical Control

PARAMETERS ACS320 / ACH180	DESCRIPTION	VFD FAN BOARD SETTING ACS320 / ACH180	UNIT CONTROL BOARD (UCB) SETTING ACS320 / ACH180
9802 / 58.01	COMM PROT Sel	—	—
9907 / 99.08	Motor Nominal Frequency	60 Hz	60 Hz
1001 / 20.01	EXT1 Commands	—	DI1
1102 / 19.11	EXT1/EXT2 Sel	—	EXT1
1103 / 28.11	REF 1 Select	—	AI1
1201 / 28.22	Const Speed Sel	DI2,3 / DI2	DI2,3 / DI2
1201 / 28.23	Const Speed Sel	DI2,3 / DI3	DI2,3 / DI3
1202 / 28.26	Const Speed 1	40 Hz	40 Hz
1203 / 28.27	Const Speed 2	60 Hz	60 Hz
1204 / 28.28	Const Speed 3	60 Hz	60 Hz
1205 / 28.29	Const Speed 4	—	—
1301 / 12.17	Minimum AI1	—	0.02
1401 / 10.24	Relay Output 1	(16) FLT / ALARM	FAULT (-1) / (15) Fault (-1)
1403 / NA	Relay Output 3	—	—
1501 / 13.12	A01 Content Sel	—	—
1601 / 20.40	Run Enable	—	—
1608 / 20.41	Start Enable 1	—	Not Sel
1611 / NA	Parameter View	3	3
2007 / 30.13	Minimum Frequency	0.0 HZ	0.0 HZ
2008 / 30.14	Maximum Frequency	60 HZ	60 HZ
2101 / 21.19	Start FCN	(1) Auto / (2) Automatic	(1) Auto / (2) Automatic
2102 / 21.03	Stop FCN	(1) Coast / (0) Coast	(1) Coast / (0) Coast
2201 / 28.71	ACCEL / DECEL	(0) Not Sel	(0) Not Sel
2202 / 28.72	ACCEL	30s	30s
2203 / 28.73	DECEL	30s	30s
2603 / 97.13	IR COMP Volt	0 volts	0 volts
2606 / 97.01	Switching Freq	4 KHz	4 KHz
3102 / 31.15	Trial Time	300.0s	300.0s
3103 / 31.16	Delay Time	6.0s	6.0s
3104 / 31.12	AR Overcurrent	(1) Enabled	(1) Enabled
5101 / NA	FBA Type	—	—
5201 / NA	Station ID	—	—
5202 / NA	Baud Rate	—	—
5203 / NA	Parity	—	—
5301 / 58.02	EFB Protocol ID	—	—
5302 / 58.03	EFB Station ID	—	—
5303 / 58.04	EFB Baud Rate	—	—
5304 / 58.05	EFB Parity	—	—
5305 / 58.25	EFB CTRL Profile	—	—

Table 12 — ACS320/ACH180 VFD Parameters for 40RU, 524J, FAS Units with Electromechanical Controls

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER ACS320 / ACH180	DESCRIPTION
40RU000130-DATA / 40RU001050-DATA	40R0000130	HD56FR233	HK30WA523 / HK30WB505	40RU 1.7 HP 230V
40RU000131-DATA / 40RU001051-DATA	40R0000131	HD56FR463	HK30WA530 / HK30WB510	40RU 1.7 HP 460V
40RU480011-DATA / 40RU001078-DATA	40RU480011	HD56FE653	HK30WA523 / HK30WB505	40RU 2.4 HP 230V
40RU480012-DATA / 40RU001079-DATA	40RU480012	HD56FE653	HK30WA530 / HK30WB510	40RU 2.4 HP 460V
40RU480014-DATA / 40RU001080-DATA	40RU480014	HD58FE654	HK30WA523 / HK30WB505	40RU 2.9 HP 230V
40RU480015-DATA / 40RU001081-DATA	40RU480015	HD58FE654	HK30WA530 / HK30WB510	40RU 2.9 HP 460V
40RU480016-DATA / 40RU001082-DATA	40RU480016	HD60FE656	HK30WA523 / HK30WB505	40RU 3.7 HP 230V
40RU480017-DATA / 40RU001083-DATA	40RU480017	HD60FE656	HK30WA534 / HK30WB511	40RU 3.7 HP 460V
40RU000133-DATA / 40RU001052-DATA	40R0000133	HD58FR236	HK30WA523 / HK30WB505	40RU 3.7 HP 230V
40RU000134-DATA / 40RU001053-DATA	40R0000134	HD58FR236	HK30WA534 / HK30WB511	40RU 3.7 HP 460V
40RU480002-DATA / 40RU001072-DATA	40RU480002	HD60FK657	HK30WA524 / HK30WB507	5 40RU 5.0 HP 230V
40RU480003-DATA / 40RU001073-DATA	40RU480003	HD60FK657	HK30WA532 / HK30WB512	5 40RU 5.0 HP 460V
40RU480005-DATA / 40RU001074-DATA	40RU480005	HD62FK654	HK30WA524 / HK30WB507	5 40RU 7.5 HP 230V
40RU480006-DATA / 40RU001075-DATA	40RU480006	HD62FK654	HK30WA532 / HK30WB512	5 40RU 7.5 HP 460V
40RU480008-DATA / 40RU001076-DATA	40RU480008	HD64FK654	HK30WA525 / HK30WB507	40RU 10 HP 230V
40RU480009-DATA / 40RU001077-DATA	40RU480009	HD64FK654	HK30WA533 / HK30WB513	40RU 10 HP 460V

Table 12 — ACS320/ACH180 VFD Parameters for 40RU, 524J, FAS Units with Electromechanical Controls (cont)

VFD PARAMETERS ACS320 / ACH180	VOLTAGE 9905 / 99.07	N. AMPS 9906 / 99.06	MOTOR NOM FREQ 9907 / 99.08	N. RPM 9908 / 99.09	N. HP 9909 / 99.10	MAX AMPS 2003 / 30.17
40RU000130-DATA / 40RU001050-DATA	230	5.8	60 Hz	1725	1.7	6.7
40RU000131-DATA / 40RU001051-DATA	460	2.9	60 Hz	1725	1.7	3.3
40RU480011-DATA / 40RU001078-DATA	230	7.1	60 Hz	1725	2.4	8.2
40RU480012-DATA / 40RU001079-DATA	460	3.4	60 Hz	1725	2.4	3.9
40RU480014-DATA / 40RU001080-DATA	230	8.6	60 Hz	1725	2.9	9.9
40RU480015-DATA / 40RU001081-DATA	460	3.8	60 Hz	1725	2.9	4.4
40RU480016-DATA / 40RU001082-DATA	230	10.8	60 Hz	1725	3.7	12.4
40RU480017-DATA / 40RU001083-DATA	460	4.9	60 Hz	1725	3.7	5.6
40RU000133-DATA / 40RU001052-DATA	230	10.2	60 Hz	1725	3.7	11.7
40RU000134-DATA / 40RU001053-DATA	460	4.8	60 Hz	1725	3.7	5.5
40RU480002-DATA / 40RU001072-DATA	230	17	60 Hz	1760	5	19.6
40RU480003-DATA / 40RU001073-DATA	460	7.6	60 Hz	1760	5	8.7
40RU480005-DATA / 40RU001074-DATA	230	21.5	60 Hz	1760	7.5	24.7
40RU480006-DATA / 40RU001075-DATA	460	14.3	60 Hz	1760	7.5	16.4
40RU480008-DATA / 40RU001076-DATA	230	28 6	60 Hz	1755	10	32.2
40RU480009-DATA / 40RU001077-DATA	460	15.2	60 Hz	1755	10	17.5

Table 13 — ACS320/ACH180 VFD Common Parameters for 40RU, 524J, FAS Units with I/O Flex Controls

PARAMETERS	DESCRIPTION	SETTING ACS320 / ACH180
9802 / 58.01	COMM PROT Sel	BACnet
9907 / 99.08	Motor Nominal Frequency	60 Hz
9908 / 99.09	N. RPM	1725
1001 / 20.01	EXT1 Commands	(1) DI1
1102 / 19.11	EXT1 / EXT2 Sel	EXT1 / 0 (EXT1)
1103 / 28.11	REF 1 Select	AI-1
1201 / 28.22	Const Speed Sel	DI 2,3 / DI2
1201 / 28.23	Const Speed Sel	DI 2,3 / DI3
1202 / 28.26	Const Speed 1	40 Hz
1203 / 28.27	Const Speed 2	60 Hz
1204 / 28.28	Const Speed 3	60 Hz
1205 / 28.29	Const Speed 4	—
1401 / 10.24	Relay Output 1	(16) FLT / ALARM
1403 / NA	Relay Output 3	—
1501 / 13.12	A01 Content Sel	0103 OUTPUT FREQ / 3 (Output frequency)
1601 / 20.40	RUN ENABLE	DI1
1608 / 20.41	N/A	—
1611 / NA	Parameter View	3
2007 / 30.13	Minimum Frequency	0.0 HZ
2008 / 30.14	Maximum Frequency	60 HZ
2101 / 21.19	Start FCN	(1) Auto / 2 (Automatic)
2102 / 21.03	Stop FCN	(1) Coast / 0 (Coast)
2201 / 28.71	ACCEL / DECEL	(0) Not Sel
2202 / 28.72	ACCEL	30s
2203 / 28.73	DECEL	10s
2603 / 97.13	IR COMP Volt	0 volts
2606 / 97.01	Switching Freq	4 KHz
3102 / 31.15	Trial Time	300.0s
3103 / 31.16	Delay Time	6.0s
3104 / 31.12	AR Overcurrent	(1) Enable
5101 / NA	FBA Type	—
5201 / NA	Station ID	—
5202 / NA	Baud Rate	—
5203 / NA	Parity	—
5301 / 58.02	EFB Protocol ID	—
5302 / 58.03	EFB Station ID	1
5303 / 58.04	EFB Baud Rate	76.8 kb/s
5304 / 58.05	EFB Parity	8 NONE 1
5305 / 58.25	EFB CTRL Profile	—

Table 14 — ACS320/ACH180 VFD Parameters for 40RU, 524J, FAS Units with I/O Flex Controls

VFD PARAMETERS ACS320 / ACH180	PKG	MOTOR PART NUMBER	VFD PART NUMBER ACS320 / ACH180	DESCRIPTION
40RU000203-DATA / 40RU001054-DATA	40R0000203	HD56FR233	HK30WA523 / HK30WB505	40RU 1.7 HP 230V
40RU000204-DATA / 40RU001055-DATA	40R0000204	HD56FR463	HK30WA530 / HK30WB510	40RU 1.7 HP 460V
40RU000218-DATA / 40RU001058-DATA	40R0000218	HD56FE653	HK30WA523 / HK30WB505	40RU 2.4 HP 230V
40RU000219-DATA / 40RU001059-DATA	40R0000219	HD56FE653	HK30WA530 / HK30WB510	40RU 2.4 HP 460V
40RU000223-DATA / 40RU001060-DATA	40RU000223	HD60FE656	HK30WA523 / HK30WB505	40RU 3.7 HP 230V
40RU000224-DATA / 40RU001061-DATA	40RU000224	HD60FE656	HK30WA534 / HK30WB511	40RU 3.7 HP 460V
40RU000206-DATA / 40RU001056-DATA	40R0000206	HD58FR236	HK30WA523 / HK30WB505	40RU 3.7 HP 230V
40RU000207-DATA / 40RU001057-DATA	40R0000207	HD58FR236	HK30WA534 / HK30WB511	40RU 3.7 HP 460V

Table 14 — ACS320/ACH180 VFD Parameters for 40RU, 524J, FAS Units with I/O Flex Controls (cont)

VFD PARAMETERS ACS320 / ACH180	VOLTAGE 9905 / 99.07	N. AMPS 9906 / 99.06	N. HP 9909 / 99.10	MAX AMPS 2003 / 30.17
40RU000203-DATA / 40RU001054-DATA	230	5.8	1.7	6.7
40RU000204-DATA / 40RU001055-DATA	460	2.9	1.7	3.3
40RU000218-DATA / 40RU001058-DATA	230	7.1	2.4	8.2
40RU000219-DATA / 40RU001059-DATA	460	3.4	2.4	3.9
40RU000223-DATA / 40RU001060-DATA	230	10.8	3.7	12.4
40RU000224-DATA / 40RU001061-DATA	460	4.9	3.7	5.6
40RU000206-DATA / 40RU001056-DATA	230	10.2	3.7	11.7
40RU000207-DATA / 40RU001057-DATA	460	4.8	3.7	5.5

ACH180 VFD STANDARD KEYPAD DETAIL

By default, the ACH180 has an integrated control panel. (See Fig. 4.)

1. Display, shows the **Home** view as default.
2. **Status LED**, green and red colors indicate the state and potential problems.
3. **Back** key, opens the **Options** view.
4. Arrow keys, for menu navigation and setting values.
5. **OK** key, opens the **Menu** in the **Home** view.
6. **Off** key, stops the drive and switches to the Off mode.
7. **Auto/Hand** key, opens a selection screen view that allows the user to select between **Auto** and **Hand** modes.

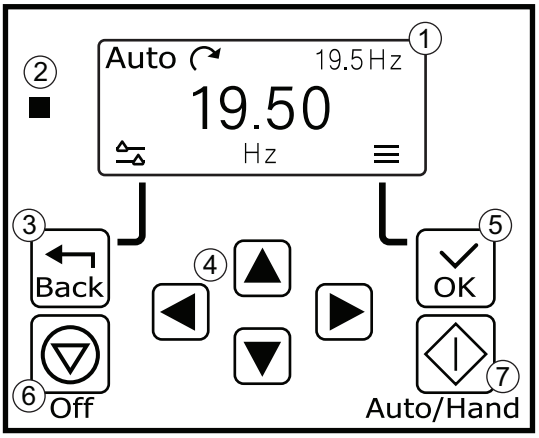
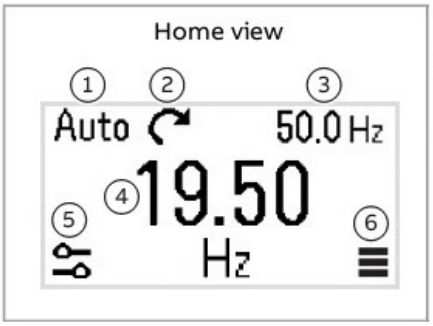


Fig. 4 — ACH180 Integrated Keypad

Submenus

The Main menu items have submenus. Some submenus also have menus and/or option lists. The content of the submenus depends on the drive type.

The Home view is the main view. You can open the main Menu and Options menu from the Home view. (See Fig. 5.)



1	Control location - Hand, Off or Auto
2	Rotation direction - forward or reverse
3	Location reference setting - enabled
4	Frequency - target
5	Options menu - quick access menu
6	Main menu - menu list

Fig. 5 — ACH180 Home View

Options Menu and Main Menu

The ACH180 drives have 5 menu options available (see Fig. 6):

1. Motor data/motor parameters
2. Motor Control
3. Diagnostics
4. Energy Efficiency
5. Parameters

Figures 7-11 show the available options and information within each of the submenus.

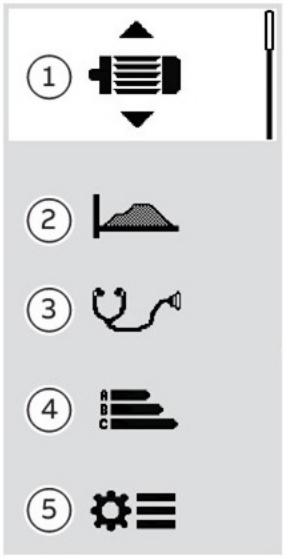
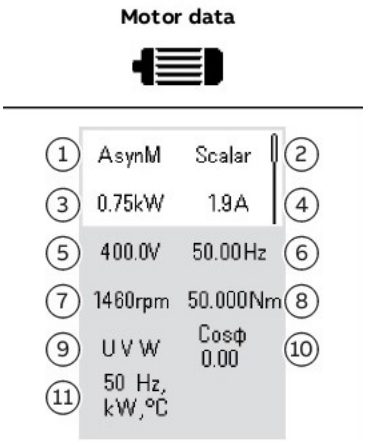
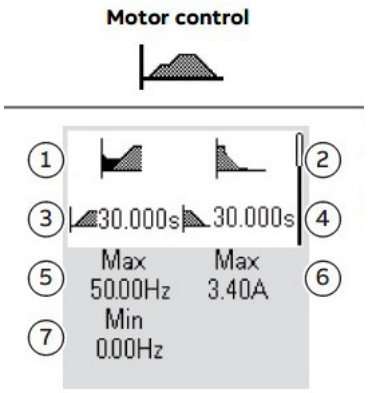


Fig. 6 — ACH180 Options Menu Items



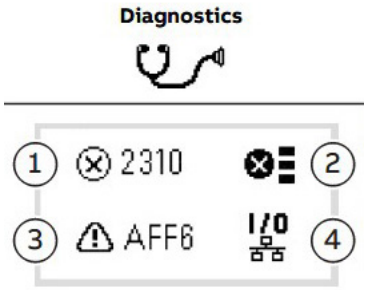
1	Motor type - AsynM, PMSM, EC, Ti
2	Control mode - Scalar, Vector
3	Nominal power
4	Nominal current
5	Nominal voltage
6	Nominal frequency
7	Nominal speed
8	Nominal torque
9	Phase order, U V W, U W V
10	Nominal Cosphi
11	Unit selection, SI or US units

Fig. 7 — Motor Data Submenu



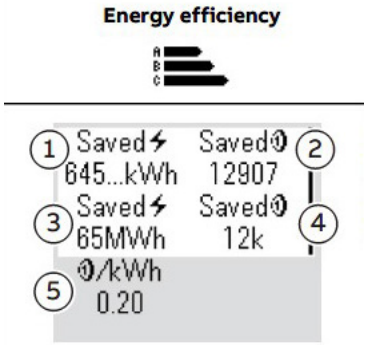
1	Start mode - Const time, Automatic
2	Stop mode - Coast, Ramp, DC hold
3	Acceleration time
4	Deceleration time
5	Maximum allowed speed
6	Maximum allowed current
7	Minimum allowed speed

Fig. 8 — Motor Control Submenu



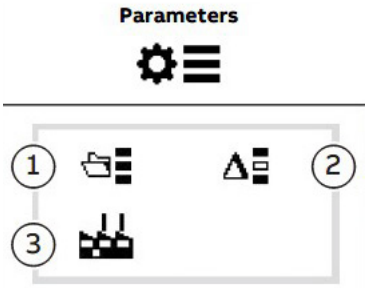
1	Active Fault - shows the fault code
2	Fault History - list of latest fault codes (newest first)
3	Active Warnings - shows the warning code
4	Connection Status - Fieldbus and I/O signals

Fig. 9 — Diagnostics Submenu



1	Saved energy in kWh
2	Saved money
3	Saved energy in MW
4	Saved money x 1000
5	Cost per kWh h

Fig. 10 — Energy Efficiency Submenu



1	Complete parameter list - groups menu with complete parameters and parameter levels
2	Modified parameter list
3	Parameter restore - resets the drive to the factory default parameters

Fig. 11 — Parameters Submenu

ACH180 VFD Diagnostics

The drive detects error situations and reports them using the Status LED on the control panel (see Fig 4). See Table 15 for more information about the Fault and Alarm Codes.

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.
3. Overriding the control panel display with the display of a fault code.
4. Stopping the motor (if it was on).

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.
3. Overrides the control panel display with the display of an alarm code and/or name.

Table 15 — Fault and Alarm Codes for ACH180 VFD

CODE (HEX)	WARNING / AUX. CODE	CAUSE	WHAT TO DO
A2B1	Overcurrent	Output current has exceeded internal fault limit. In addition to an actual overcurrent situation, this warning may also be caused by an earth fault or supply phase loss.	Check motor load. Check acceleration times in parameter group 23 Speed reference ramp (speed control) or 28 Frequency reference chain (frequency control). Also check parameters 46.01 Speed scaling, 46.02 Frequency scaling and 46.03 Torque scaling. Check motor and motor cable (including phasing and delta/star connection). Check for an earth fault in motor or motor cables by measuring the insulation resistances of motor and motor cable. See chapter Electrical installation, section checking the insulation of the assembly in the Hardware manual of the drive. Check there are no contactors opening and closing in motor cable. Check that the start-up data in parameter group 99 Motor data corresponds to the motor rating plate. Check that there are no power factor correction capacitors or surge absorbers in motor cable.
A2B3	Earth leakage	Drive has detected load unbalance typically due to earth fault in motor or motor cable.	Check there are no power factor correction capacitors or surge absorbers in motor cable. Check for an earth fault in motor or motor cables by measuring the insulation resistances of motor and motor cable. See chapter Electrical installation, section checking the insulation of the assembly in the Hardware manual of the drive. If an earth fault is found, fix or change the motor cable and/or motor. If no earth fault can be detected, contact your local representative.
A2B4	Short circuit	Short-circuit in motor cable(s) or motor.	Check motor and motor cable for cabling errors. Check motor and motor cable (including phasing and delta/star connection). Check for an earth fault in motor or motor cables by measuring the insulation resistances of motor and motor cable. See chapter Electrical installation, section checking the insulation of the assembly in the Hardware manual of the drive. Check there are no power factor correction capacitors or surge absorbers in motor cable.
A6A4	Motor nominal value	The motor parameters are set incorrectly.	Check the auxiliary code. Refer to codes A780-A784 below.
	Motor nominal value 0001	The drive is not dimensioned correctly.	Check the auxiliary code. Refer to codes A780-A784 below. Check the settings of the motor configuration parameters in groups 98 and 99. Check that the drive is sized correctly for the motor.
A780	Motor stall Programmable warning: 31.24 Stall function	Motor is operating in stall region because of, for example, excessive load or insufficient motor power.	Check motor load and drive ratings. Check fault function parameters.
A783	Motor overload	Motor current is too high.	Check for overloaded motor. Adjust the parameters used for the motor overload function (35.51-35.53) and 35.55-35.56.
A784	Motor disconnect	All three output phases are disconnected from motor.	Check that switches between drive and motor are closed. Check that all cables between drive and motor are connected and secured. If no issue was detected and drive output was actually connected to motor, contact your local representative.
A7AB	Extension I/O configuration failure	Installed extension module is not the same as configured.	Check that the installed extension module (shown by parameter 15.02 Detected extension module) is the same as selected by parameter 15.01 Extension module type.
A7C1	FBAA communication Programmable warning: 50.02 FBAA communication loss function	Cyclical communication between drive and Fieldbus adapter module A or between PLC and Fieldbus adapter module A is lost.	Check status of Fieldbus communication. See user documentation of Fieldbus interface. Check settings of parameter groups 50 Fieldbus adapter (FBA), 51 FBA A settings, 52 FBA A data in and 53 FBA A data out. Check cable connections. Check if communication master is able to communicate.
A7CE	EFB comm loss Programmable warning: 58.14 Communication loss action	Communication break in embedded Fieldbus (EFB) communication.	Check the status of the Fieldbus master (online/offline/error, etc.). Check cable connections to the EIA-485/X5 terminals 29, 30 and 31 on the control unit.
A7EE	Panel loss Programmable warning: 49.05 Communication loss action	Control panel or PC tool selected as active control location for drive has ceased communicating.	Check PC tool or control panel connection. Check control panel connector. Check mounting platform if being used. Disconnect and reconnect the control panel.
A88F	Cooling fan	Maintenance timer limit exceeded.	Consider changing the cooling fan. Parameter 05.04 Fan On-Time Counter shows the running time of the cooling fan.
AFAR	Auto reset	A fault is about to be auto reset.	Informative warning. See the settings in parameter group 31 Fault functions.
AFE1	Emergency stop (off 2)	Drive has received an emergency stop (mode selection off 2) command.	Check that it is safe to continue operation. Then return emergency stop push button to normal position. Restart drive. If the emergency stop was unintentional, check the source selected by parameter 21.05 Emergency stop source.
AFE2	Emergency stop (off 1 or off 3)	Drive has received an emergency stop (mode selection off 1 or off 3) command.	Check that it is safe to continue operation. Then return emergency stop push button to normal position. Restart drive. If the emergency stop was unintentional, check the source selected by parameter 21.05 Emergency stop source. Informative warning. See parameter 21.22 Start delay.

Table 15 — Fault and Alarm Codes for ACH180 VFD (cont)

CODE (HEX)	WARNING / AUX. CODE	CAUSE	WHAT TO DO
AFE9	Start delay	The start delay is active and the drive will start the motor after a predefined delay.	Check that it is safe to continue operation. Then return emergency stop push button to normal position. Restart drive. If the emergency stop was unintentional, check the source selected by parameter 21.05 Emergency stop source. informative warning. See parameter 21.22 Start delay.
AFED	Run permissive	Run permissive is keeping the drive from running the motor.	Check the setting of (and source selected by) parameter 20.40 Run permissive.
AFEE	Start interlock 1	Start interlock 1 is keeping the drive from starting.	Check the signal source selected for parameter 20.41 Start interlock 1.
AFEF	Start interlock 2	Start interlock 2 is keeping the drive from starting.	Check the signal source selected for parameter 20.42 Start interlock 2.
AFFO	Start interlock 3	Start interlock 3 is keeping the drive from starting.	Check the signal source selected for parameter 20.43 Start interlock 3.
AFF1	Start interlock 4	Start interlock 4 is keeping the drive from starting.	Check the signal source selected for parameter 20.44 Start interlock 4.
AFF2	Run permissive forced warning	A forced Di is used as a source for parameter 20.40 Run permissive.	If 20.40 Run permissive uses DIx as the source, check if the bit corresponding to DIx in parameter 10.03 Di force selection is 1.
AFF3	Start interlock forced warning	One or more forced DIs is used as a source for one or more of parameters 20.41 Start interlock 1 - 20.44 Start interlock 4.	Check all parameters 20.41 Start interlock 1 - 20.44 Start interlock 4. If any of these parameters uses DIx as the source, check if the bit corresponding to DIx in parameter 10.03 DI force selection is 1.
AFF5	Override new start required	The Safe torque off function was active and has been reset while in Override.	A new start signal is required to start the drive again.
AFF6	Identification run	Motor ID run will occur at next start.	Informative warning.
AFF8	Motor heating active	Pre-heating is being performed	Informative warning. Motor pre-heating is active. Current specified by parameter 21.16 Preheating current is being passed through the motor.
AFFE	Override active	Drive is in Override mode.	Informative warning.
B5A2	Power applied	The drive was powered up or the control board was rebooted successfully.	Informative event.
B681	Hand mode selected	The drive was placed in Hand mode.	Informative event. Check the control panel to ensure that the current control location is correct.
B682	Off mode selected	The drive was placed in Off mode.	Informative event. Check the control panel to ensure that the current control location is correct.
B683	Auto mode selected	The drive was placed in Auto mode.	Informative event. Check the control panel to ensure that the current control location is correct.
2310	Overcurrent	Output current has exceeded internal fault limit. In addition to an actual overcurrent situation, this fault may also be caused by an earth fault or supply phase loss.	Check motor load. Check acceleration times in parameter group 23 Speed reference ramp (speed control) or 28 Frequency reference chain (frequency control). Also check parameters 46.01 Speed scaling, 46.02 Frequency scaling and 46.03 Torque scaling. Check motor and motor cable (including phasing and delta/star connection). Check there are no contactors opening and closing in motor cable. Check that the start-up data in parameter group 99 corresponds to the motor rating plate. Check that there are no power factor correction capacitors or surge absorbers in motor cable. Check for an earth fault in motor or motor cables by measuring the insulation resistances of motor and motor cable. See chapter Electrical installation, section checking the insulation of the assembly in the Hardware manual of the drive.
FF61	ID run	Motor ID run was not completed successfully.	Check safety circuit connections. For more information, see chapter The Safe torque off function in the Hardware manual of the drive and description of parameter 31.22 STO indication run/stop (page 520). Check the value of parameter 95.04 Control board supply. Check the nominal motor values in parameter group 99 Motor data. Check that no external control system is connected to the drive. Cycle the power to the drive (and its control unit, if powered separately). Check that no operation limits prevent the completion of the ID run. Restore parameters to default settings and try again. Check that the motor shaft is not locked. Check the auxiliary code.

RECOMMENDED MAINTENANCE (ACH180)

It is recommended that the ACH180 receive regular maintenance by the user. These maintenance items include:

- Control panel cleaning
- Annual actions (see Table 16)
- Cleaning the Heatsink

Control Panel Cleaning

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

Table 16 — Recommended Annual Actions by the User

CONNECTIONS AND ENVIRONMENT	
Quality of the Supply Voltage	P
SPARE PARTS	
Spare Parts	I
Reforming DC Circuit Capacitors of Spare Drives	P
INSPECTIONS	
Tightness of Terminals	I
Dustiness, Corrosion and Temperature	I
Cleaning the Heatsink	P

MAINTENANCE TASK/OBJECT[a,b]	**YEARS FROM START-UP**						
	3	**6**	**9**	**12**	**15**	**18**	**21**
COOLING FANS							
Main Cooling Fan (Frames R1-R4)		R		R		R	
FUNCTIONAL SAFETY							
Safety Function Test	I (See the maintenance information of the safety function.)						
Safety Component Expiry (mission time T_M)	20 years						

NOTE(S):

a. Maintenance and component replacement intervals are based on the assumption that the equipment is operated within the specified ratings and ambient conditions. ABB recommends annual drive inspections to ensure the highest reliability and optimum performance.
b. Long term operation near the specified maximum ratings or ambient conditions may require shorter maintenance intervals for certain components. Consult your local ABB Service representative for additional maintenance recommendations.

LEGEND

ACTION		**DESCRIPTION**
I	—	Inspection (visual inspection and maintenance action if needed)
P	—	Performance of on/off-site work (commissioning, tests, measurements or other work)
R	—	Replacement

Cleaning the Heatsink

The drive module heatsink fins pick up dust from the cooling air. The drive runs into overtemperature warnings and faults if the heatsink is not clean. When necessary, clean the heatsink as follows.

1. Stop the drive. Refer to the section "SAFETY CONSIDERATIONS" on page 1 before performing any work.
2. Remove the module cooling fan(s). See the separate instructions.
3. Blow dry, clean and oil-free compressed air from bottom to top and simultaneously use a vacuum cleaner at the air outlet to trap the dust. If there is a risk of dust entering adjoining equipment, do the cleaning in another room.
4. Reinstall the cooling fan.

Replacing the Cooling Fans

Parameter 05.04 Fan On-Time Counter shows the running time of the cooling fan. After you replace the fan, reset the fan counter.

NOTE: Replacement fans are available from Carrier Replacement Components Division (RCD).

1. Stop the drive and lockout unit energy.
2. Press the two clips by fingers to open the fan cover.
3. Carefully lift the fan cover out of the drive. Note that the fan cover holds the cooling fan. (See Fig. 12.)

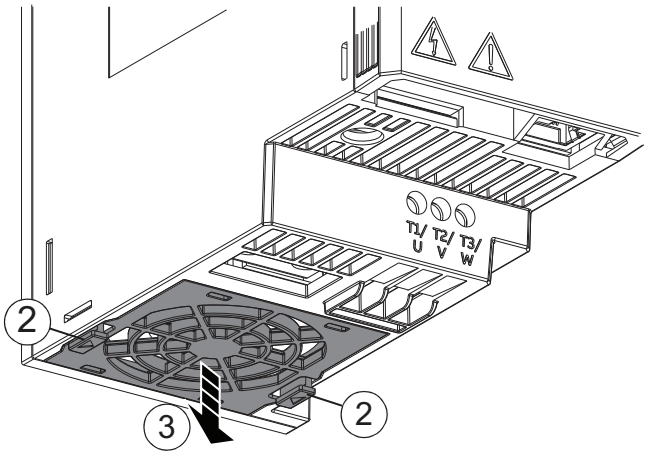


Fig. 12 — Lifting the Fan Cover out of Drive

4. Disconnect the fan power cable. (See Fig. 13.)

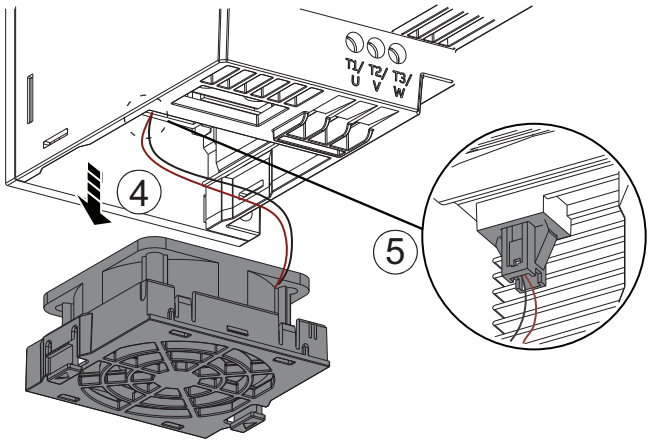


Fig. 13 — Disconnecting the Fan

5. Free the fan clips and remove the fan from the fan cover.
6. Install the new fan into the fan cover. Make sure that the air flow is in the correct direction. The air flows in from the bottom of the drive and out from the top of the drive. As shown in the following figure, the side with the fan power cable is aligned to the double bars sign on the fan cover. (See Fig. 14.)

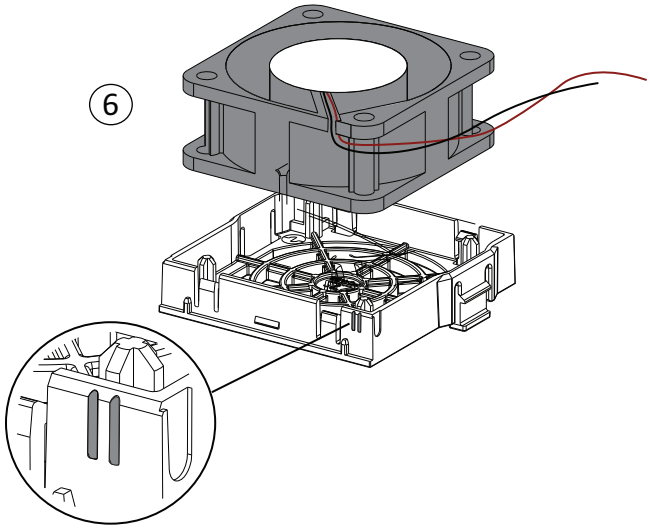


Fig. 14 — Install New Fan into Fan Cover

7. Connect the fan power cable. (See Fig. 15.)

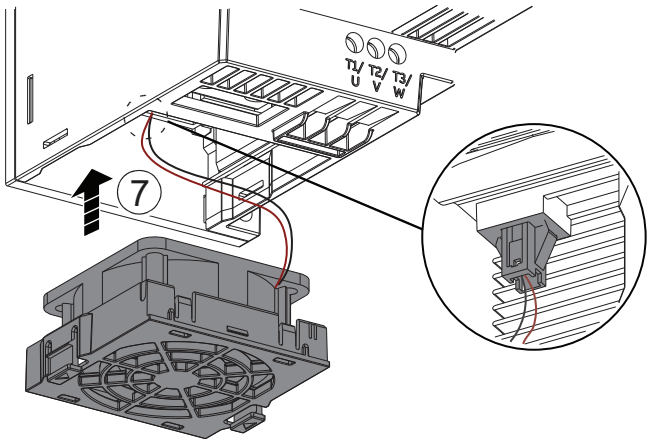


Fig. 15 — Connect Fan To Power

8. Carefully put the fan cover into position in the drive. Make sure that the fan power cable is routed correctly. Push the cover to lock into position. (See Fig. 16.)

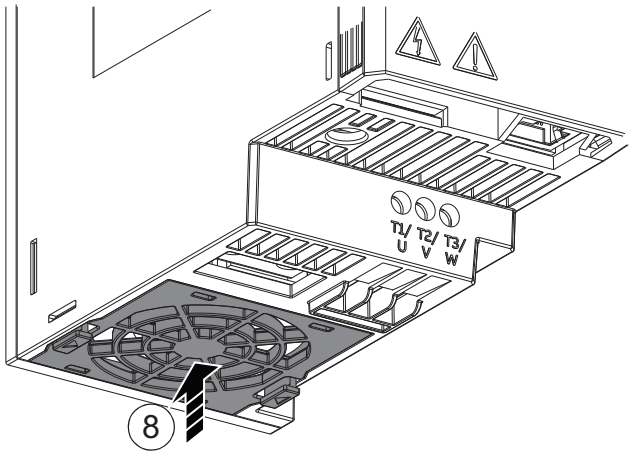


Fig. 16 — Place Fan Cover Back into Drive