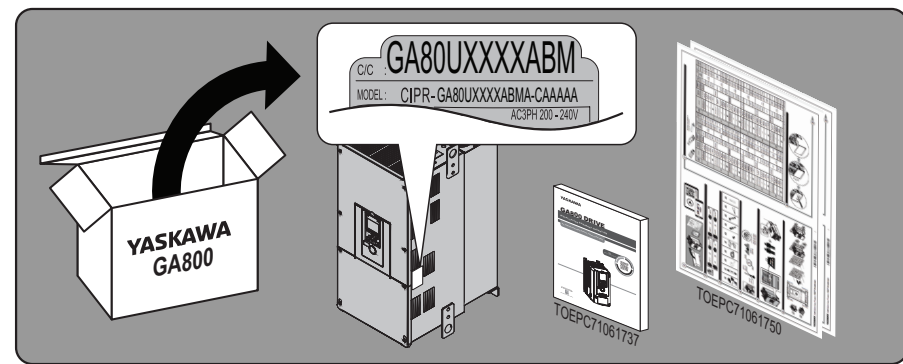
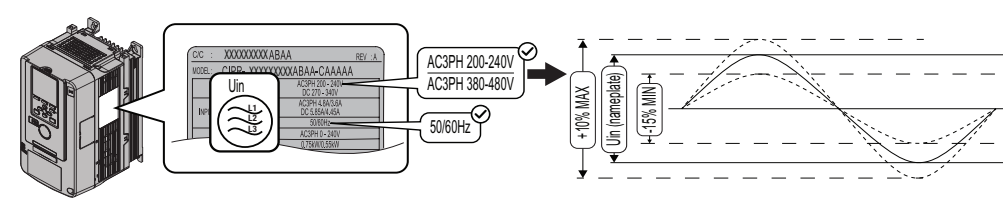
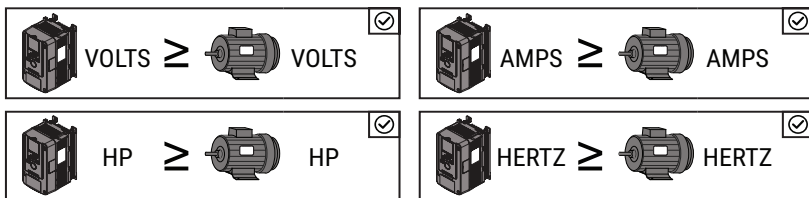


GA800 Quick Setup Procedure for Models GA80U2257 to 2415 and 4208 to 4720

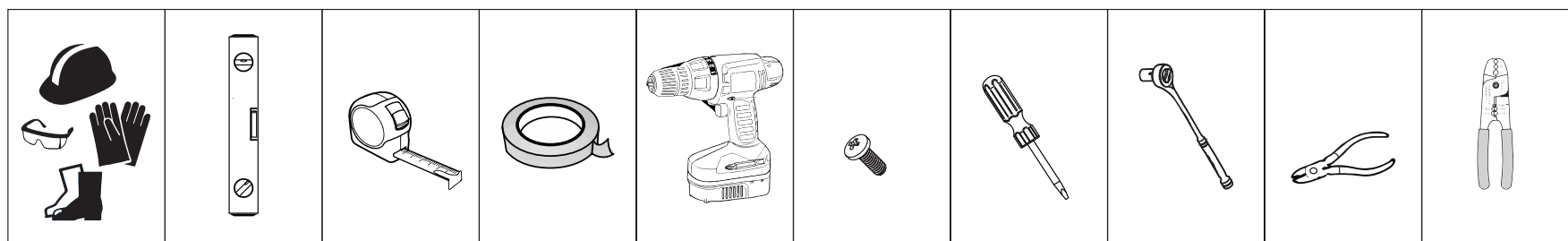


Read and follow the safety and installation procedures in the Installation & Primary Operation (TOEPC71061737) manual packaged with the drive.

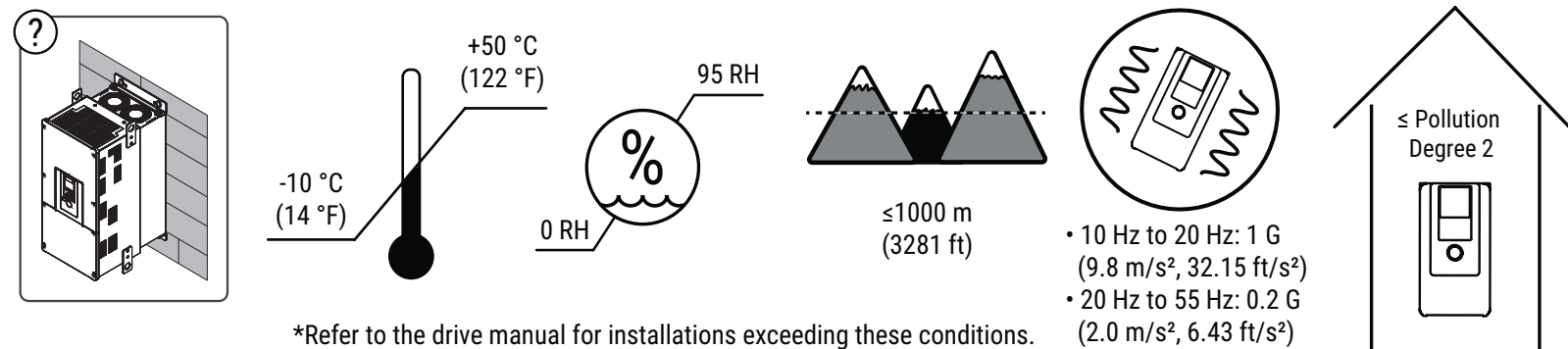
1 Confirm the Drive and Motor Specifications



2 Collect the Required Tools and Equipment

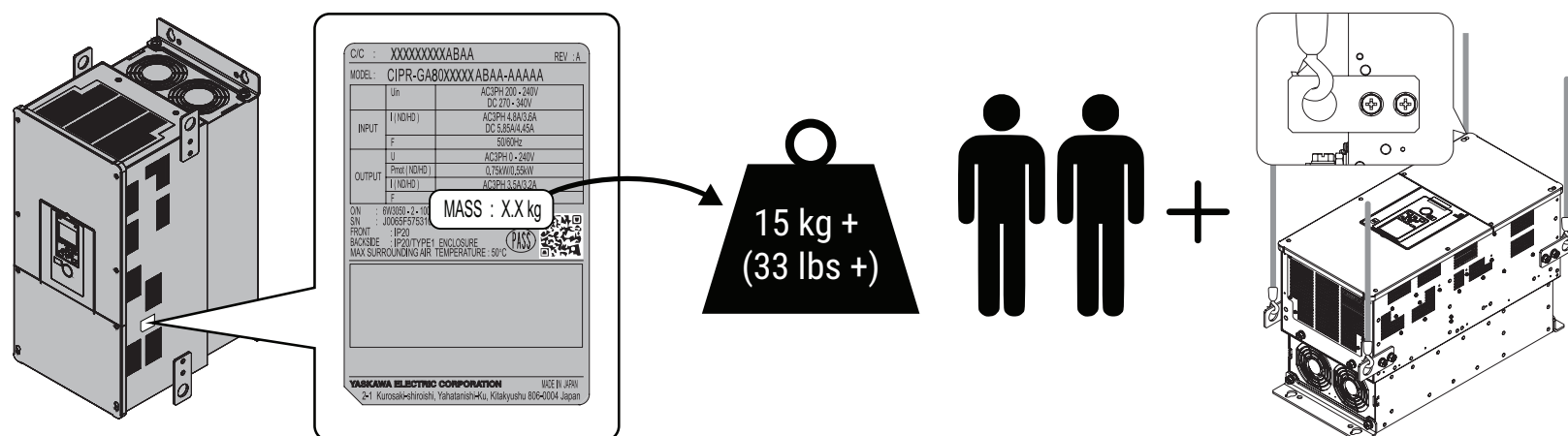


3 Confirm the Correct Drive Installation Environment

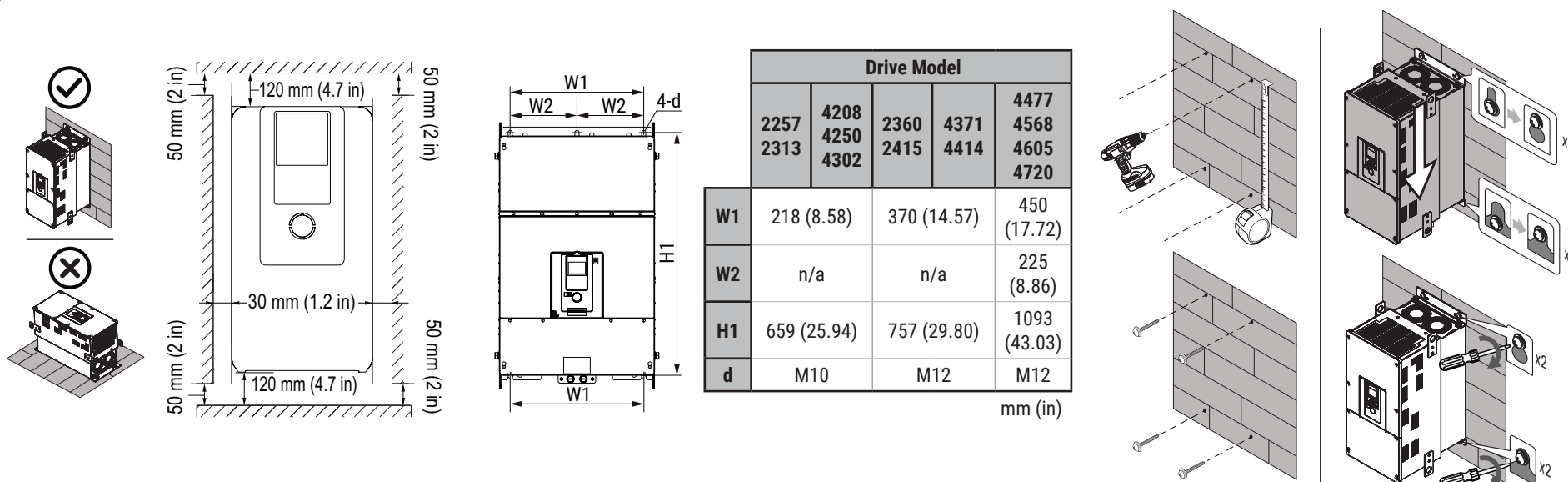


*Refer to the drive manual for installations exceeding these conditions.

4 Correctly Lift the Drive

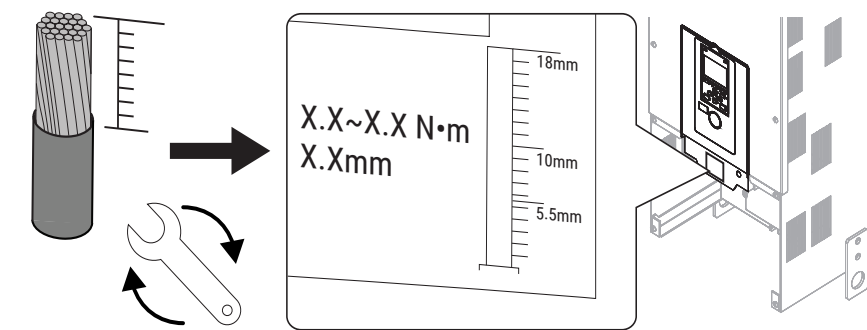


5 Mount the Drive Vertically



6 Select the Correct Branch Circuit Protection, Wires, and Wire Strip Length, and Tightening Torque

Factory-Recommended Wires and Crimp Terminals: Use UL-Listed, vinyl-coated insulated copper wires for operation with a continuous maximum permitted temperature of 75 °C at 600 V. Use UL-Listed closed-loop crimp terminals to maintain compliance with UL 508C. Use the tools recommended by Panduit Corp. to crimp the closed-loop crimp terminals. To comply with UL standards, use only insulated crimp terminals or crimp terminals with heat-shrinkable tubing.



Model	R/L1, S/L2, T/L3	U/T1, V/T2, W/T3	-, +1	+3	⊕
AWG, kcmil (Recommended Value in Parentheses)					
Panduit Crimp Terminal Part Number **					
Three-Phase 200 V Class					
2257	2/0 - 4/0 x 2P (2/0 x 2P)	4/0 - 250 x 2P (4/0 x 2P)	1/0 x 2P (1/0 x 2P)	3 - 350 (3)	
	S2/0-38R-X	S4/0-38R-5	S1/0-38R-X	S2-38R-X	
2313	2/0 - 4/0 x 2P (4/0 x 2P)	2/0 - 4/0 x 2P (3/0 x 2P)	4/0 - 250 x 2P (250 x 2P)	1/0 x 2P (1/0 x 2P)	2 - 350 (2)
	S4/0-38R-5	S3/0-38R-5	S250-38R-5	S1/0-38R-X	S2-38R-X
2360	250 - 300 x 2P (250 x 2P)		300 - 400 x 2P (350 x 2P)	1/0 - 4/0 x 2P (3/0 x 2P)	1 - 350 (1)
	S250-12R-5	LCA350-12-X or LCA350-12-6	S3/0-12R-5	S2-12R-X	
2415	250 - 300 x 2P (250 x 2P)	250 - 300 x 2P (300 x 2P)	300 - 400 x 2P (350 x 2P)	1/0 - 4/0 x 2P (3/0 x 2P)	1 - 350 (1)
	S250-12R-5	LCA300-12-X or LCA300-12-6	LCA350-12-X or LCA350-12-6	S3/0-12R-5	S2-12R-X
Three-Phase 400 V Class					
4208	2/0 - 4/0 x 2P (1/0 x 2P)	4/0 - 250 x 2P (3/0 x 2P)	1/0 x 2P (1/0 x 2P)	4 - 350 (4)	
	S1/0-38R-X	S3/0-38R-5	S1/0-38R-X	P4-38R-E or S4-38R-E	
4250	2/0 - 4/0 x 2P (2/0 x 2P)	4/0 - 250 x 2P (3/0 x 2P)	1/0 x 2P (1/0 x 2P)	2 - 350 (2)	
	S2/0-38R-X	S3/0-38R-5	S1/0-38R-X	P2-38R-X or S2-38R-X	
4302	2/0 - 4/0 x 2P (3/0 x 2P)	4/0 - 250 x 2P (4/0 x 2P)	1/0 x 2P (1/0 x 2P)	2 - 350 (2)	
	S3/0-38R-5	S4/0-38R-5	S1/0-38R-X	P2-38R-X or S2-38R-X	
4371	250 - 300 x 2P (250 x 2P)		300 - 400 x 2P (350 x 2P)	1 - 4/0 x 2P (3/0 x 2P)	1 - 350 (1)
	S250-12R-5	LCA350-12-X or LCA350-12-6	S3/0-12R-5	S2-12R-X	
4414	250 - 300 x 2P (300 x 2P)		300 - 400 x 2P (400 x 2P)	1 - 4/0 x 2P (4/0 x 2P)	1 - 350 (1)
	LCA300-12-X or LCA300-12-6	LCA400-12-6	S4/0-12R-5	S2-12R-X	
4477	250 - 300 x 4P (250 x 4P)	250 - 300 x 4P (4/0 x 4P)	300 - 400 x 4P (4/0 x 4P)	4/0 x 4P (3/0 x 4P)	1/0 - 300 (1/0)
	S250-12R-5	S4/0-12R-5	S4/0-12R-5	S3/0-12R-5	S1/0-12R-X
4568	250 - 300 x 4P (250 x 4P)	250 - 300 x 4P (4/0 x 4P)	300 - 400 x 4P (300 x 4P)	4/0 x 4P (3/0 x 4P)	2/0 - 300 (2/0)
	S250-12R-5	S4/0-12R-5	LCA300-12-X or LCA300-12-6	S3/0-12R-5	S2/0-12R-X
4605	250 - 300 x 4P (300 x 4P)		300 - 400 x 4P (400 x 4P)	4/0 x 4P (4/0 x 4P)	2/0 - 300 (2/0)
	LCA300-12-X or LCA300-12-6	LCA400-12-6	S4/0-12R-5	S2/0-12R-X	
4720	250 - 300 x 4P (300 x 4P)		300 - 400 x 4P (400 x 4P)	4/0 x 4P (4/0 x 4P)	2/0 - 300 (2/0)
	LCA300-12-X or LCA300-12-6	LCA400-12-6	S4/0-12R-5	S2/0-12R-X	

** For use with PANDUIT Corp. heat-shrinkable tubing HSTT series or an equivalent UL-recognized heat shrinkable tubing rated 600 V minimum.

UL Compliance: Install one of these types of short circuit protection devices to comply with UL 508C. Semiconductor protective type fuses are recommended, but the table also shows alternative short circuit protection devices. When you use MCCBs, RK1, or RK5 fuses as UL listed drive protection devices, you must mount the drive in a ventilated enclosure according to the minimum enclosure volume specified in this document.

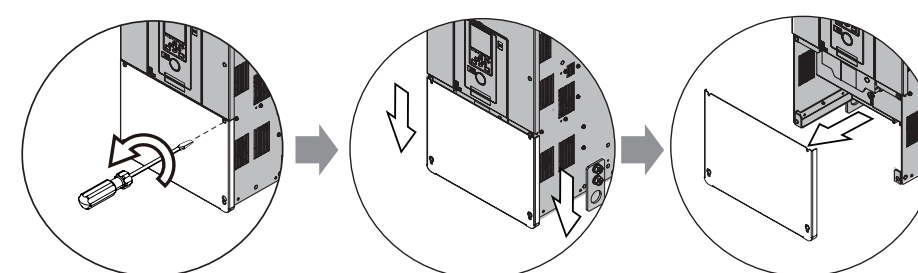
Molded Case Circuit Breaker (MCCB) and Non-Semiconductor Fuse Ratings: Maximum MCCB rating is 200% of the Normal-Duty drive full load output amp (FLA) rating. Maximum CC, J, T, RK1, or RK5 fuse rating is 175% of the Normal-Duty drive full load output amp (FLA) rating. You can substitute an alternate UL listed current limiting type MCCB where the peak let-through current and I²t of the alternate MCCB is not greater than the specified MCCB in this table.

Short Circuit Current Rating (SCCR): The maximum SCCR provided by drive and fuse, or drive and MCCB combinations in this document, is 100,000 RMS symmetrical amps. Use the protection specified in this document to prepare the drive for use on a circuit capable of delivering not more than 100,000 RMS symmetrical amps and not more than 240 Vac (240 V models) and 480 Vac (480 V models) when there is a short circuit in the power supply.

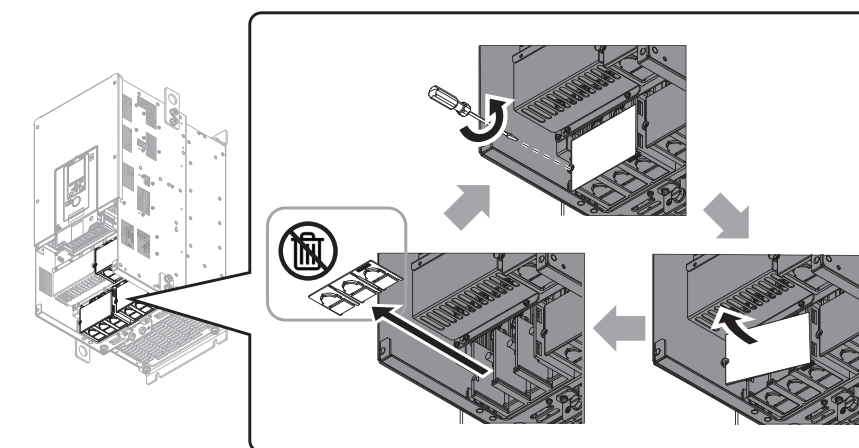
Model	Semiconductor Fuse Manufacturer: Eaton/Bussmann Part Number	Class CC, J, or T Fuse Maximum Size (Amps)	MCCB Maximum Size (Amps)	Class RK1 or RK5 Fuse Maximum Size (Amps)	Enclosure Volume Minimum Size (in³)
Three-Phase 200 V Class					
2257	FWH-600A **	400	500	400	14657
2313	FWH-700A or FWH-800A **	500	600	500	14657
2360	FWH-800A or FWH-1000B **	600	700	600	52800
2415	FWH-1000B **	700	800	n/a	52800
Three-Phase 400 V Class					
4208	FWH-500A **	350	400	350	14657
4250	FWH-600A **	400	500	400	14657
4302	FWH-700A **	500	600	500	14657
4371	FWH-800A	600	700	600	52800
4414	FWH-800A or FWH-1000B	700	800	n/a	52800
4477	FWH-1000B or FWH-1200B	800	900	n/a	52800
4568	FWH-1000B or FWH-1200B	900	1000	n/a	52800
4605	FWH-1200B or FWH-1400A	1000	1200	n/a	52800
4720	FWH-1200B or FWH-1400A	1200	1400	n/a	52800

** When you use semiconductor fuses for the drive with UL Type 1 Kit, install the drive in a supplemental enclosure. The UL Type 1 Kit does not support internal fuses for this drive model.

7 Remove the Terminal Cover



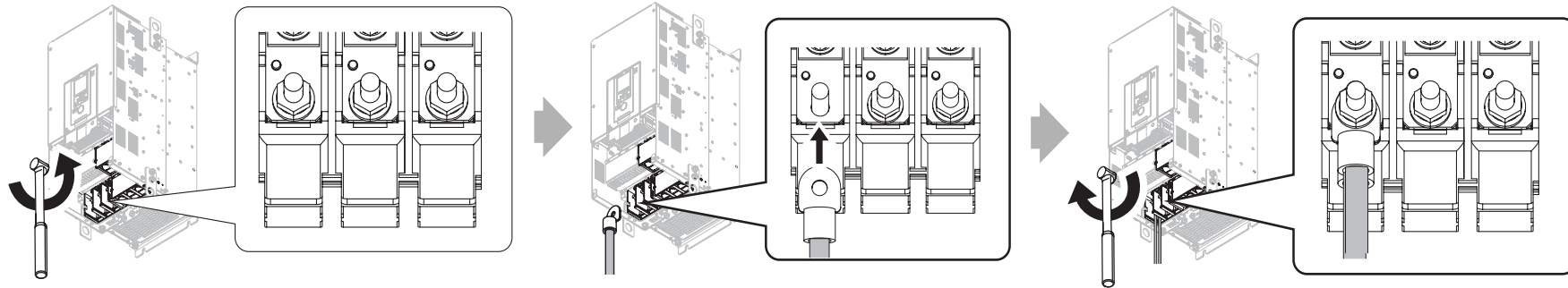
8 Remove the Terminal Block Cover and Wiring Cover



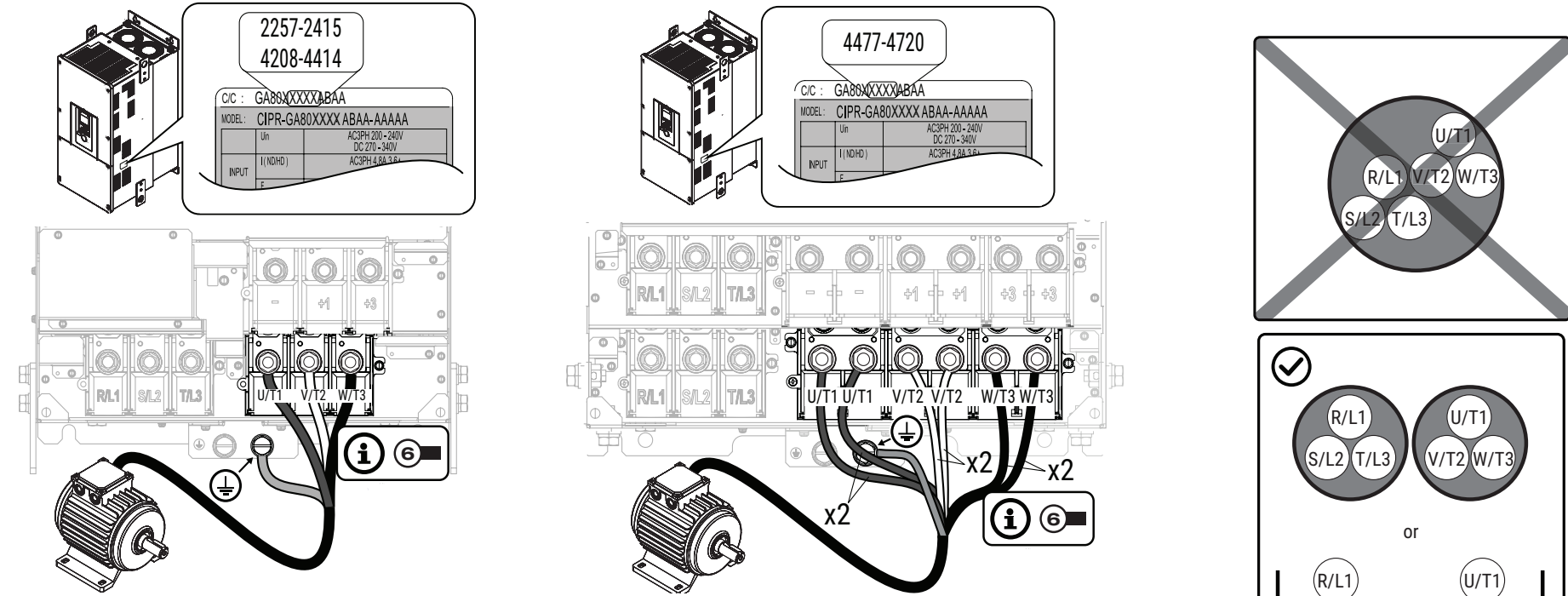
Flip Over for Steps

9 to 16

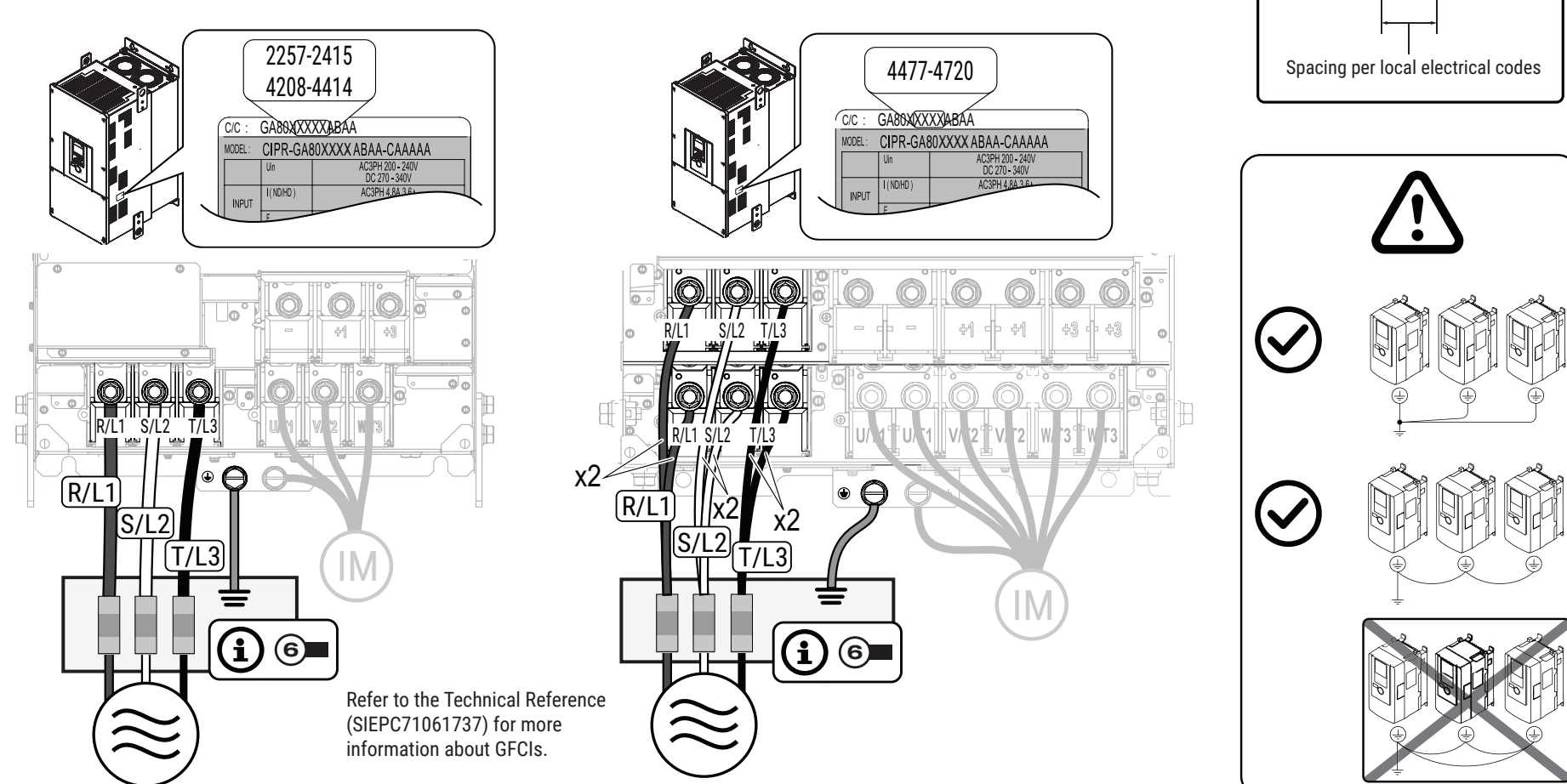
9 Remove Terminal Block Nut to Attach Crimp Terminals



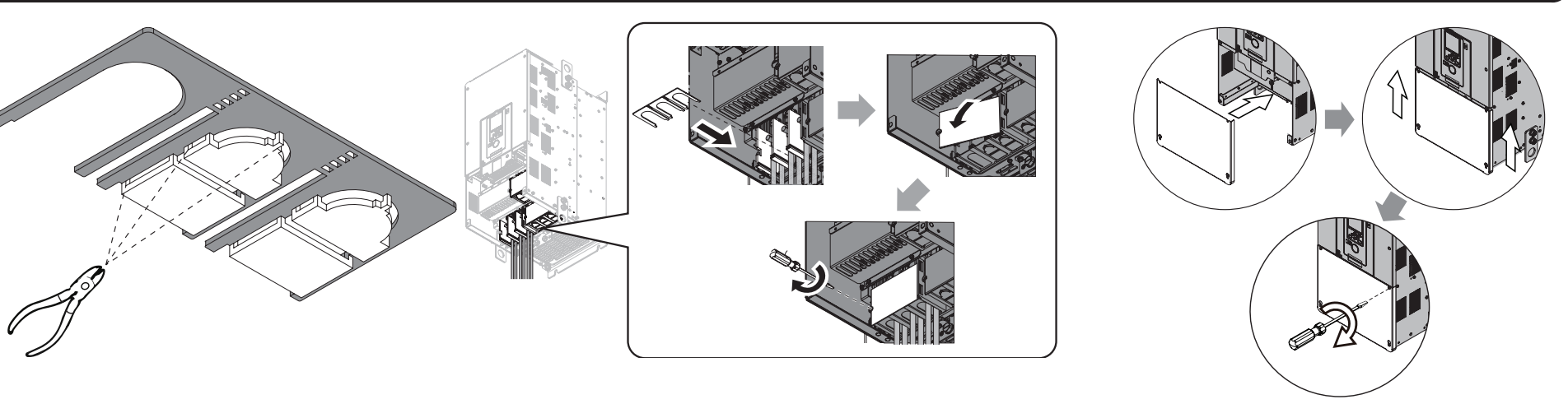
10 Install the Motor Wiring



11 Install the Power Wiring



12 Remove the Tabs and Install the Wiring Cover, Terminal Block Cover, and Terminal Cover



13 Determine the Correct Auto-Tuning Method

Motor Connection and Load Condition	
Use Stationary Auto-Tuning T1-01 = 1	Use Rotational Auto-Tuning T1-01 = 0

14 Collect and Record Auto-Tuning Data from Motor Nameplate

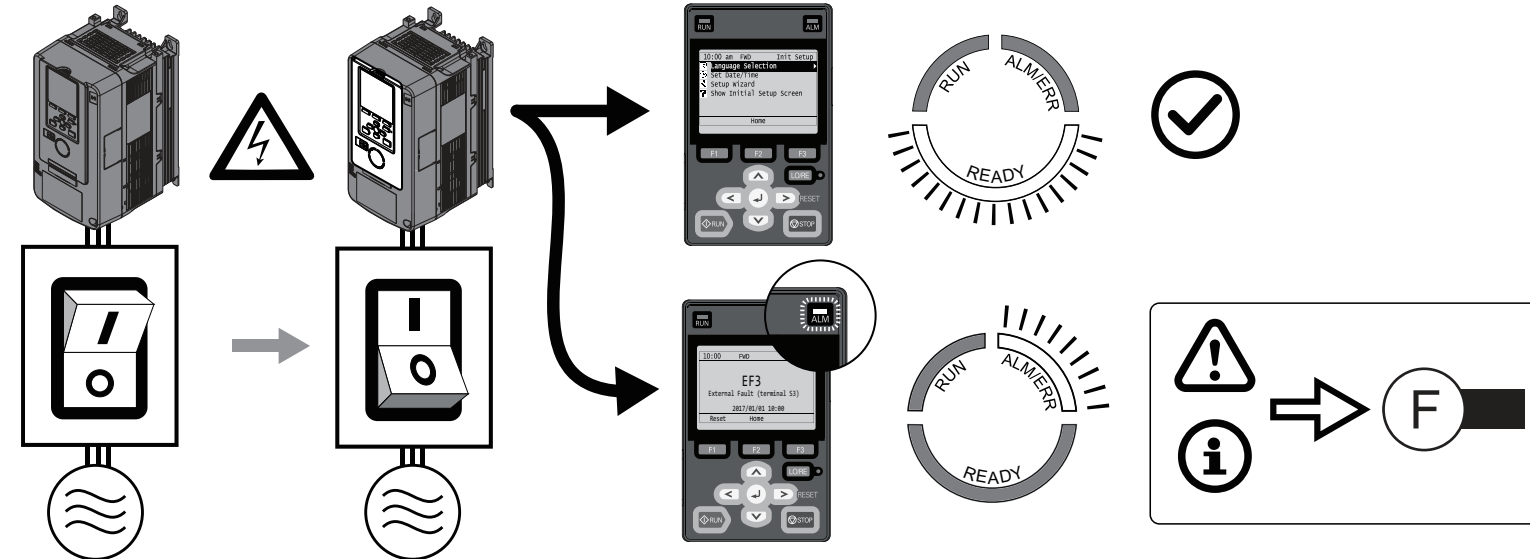
3 PHASE INVERTER DUTY AC INDUCTION MOTOR NAMEPLATE EXAMPLE

MODEL XX	123AAA123XX-X0	X	FRAME 123AX
POLES X	ENC XXX	CODE X	DES A
VOLTS XXX	FL RPM XXXX	FL AMPS XX/XX	TYPE ABC INS X0
SF 1.0	DUTY CONT	MAX AMB °C XX	TEMP. SENSORS T-STATS
SERIAL	N.L. AMPS XX.X/XX.X	U.S.E. BRG. XXX	ROTOR WK? X.X
MAX RPM 4200	S.E. BRG. 309	U.S.E. BRG. XXX	ROTOR WK? X.X
HZ 60	HP XX	RPM XXXX	TORQUE (LB FT) XX.X
T20 XX	XX	XXX	VOLTS (HIGH CONN) XXX
OHMS PH. R1: .XXX	R2: .XXX	X1: X.XX	AMPS (HIGH CONN) XX.X
		X2: X.XX	
		XM: XX.X	

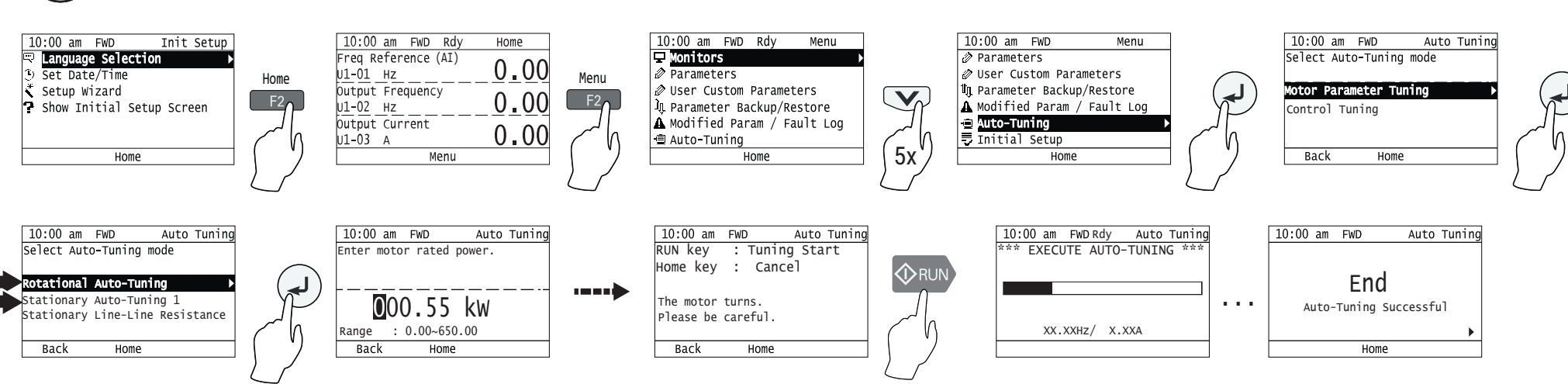
Reference	Motor Nameplate Data	Motor Nameplate Value	T1-xx Parameter (Ex-xx Parameter *)
A	Motor Rated Power	(HP x 0.746) kW	T1-02 (E2-11)
B	Motor Rated Voltage	V	T1-03 (E1-05)
C	Motor Rated Current (FLA)	A	T1-04 (E2-01)
D	Motor Rated Frequency (Base Frequency)	Hz	T1-05 (E1-04/E1-06)
E	Motor Pole Count	-	T1-06 (E2-04)
F	Motor Rated RPM	RPM	T1-07
G	Motor No-Load Current **	A	T1-09 (E2-03)
-	Motor Rated Slip ** **	0.000 Hz	T1-10 (E2-02)
-	Test Mode Selection **	-	T1-12
-	Motor No-Load Voltage	V	T1-13

* Auto-Tuning will automatically set the E1-xx and E2-xx parameters. You can manually adjust Ex-xx parameters after Auto-Tuning.
 ** These values are only necessary for Stationary Auto-Tuning (T1-01 = 1).
 *** If you do not know this value, leave at the default value of 0.000.

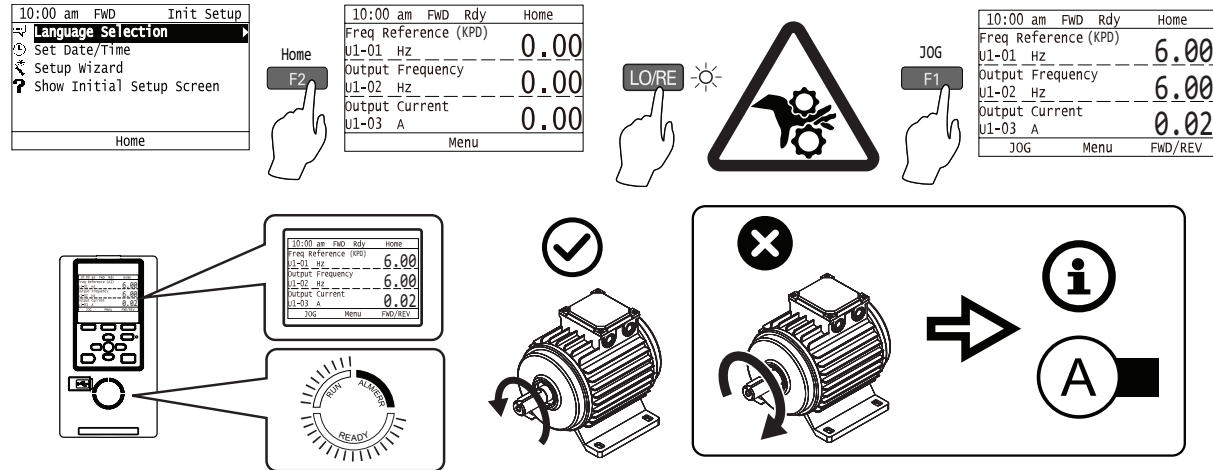
15 Energize the Drive and Confirm It Is Ready



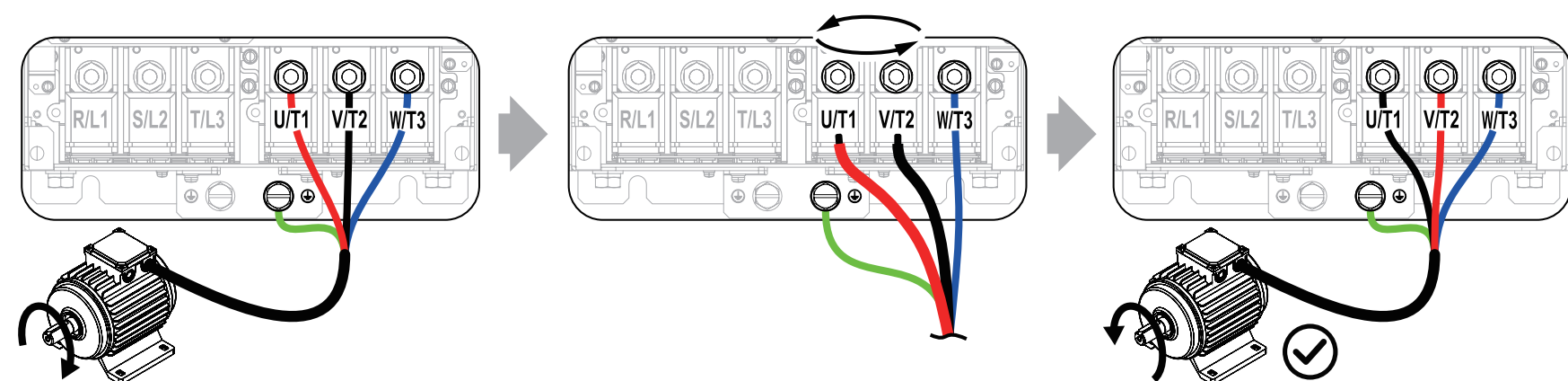
16 Use Auto-Tuning Data from Motor Nameplate to Set Parameters and Auto-Tune the Drive



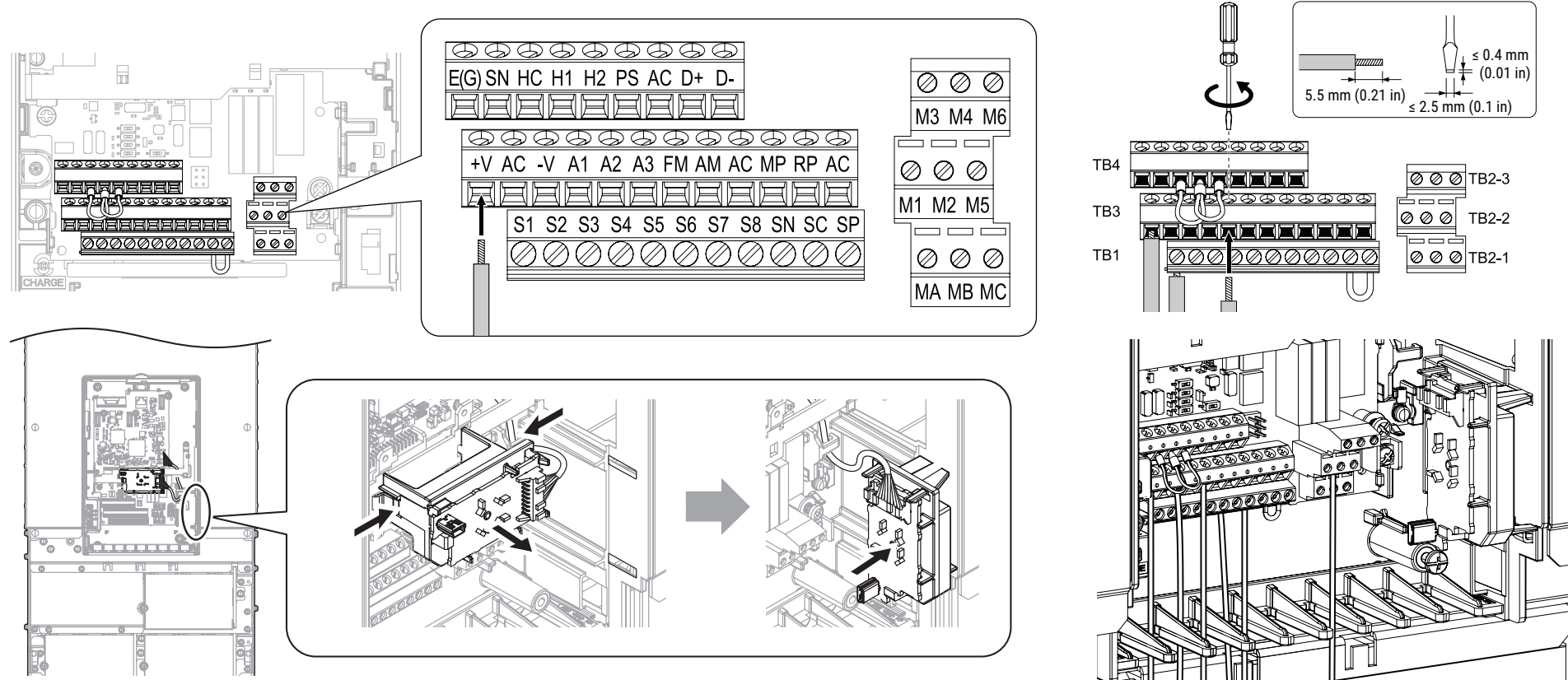
17 Set the Drive for LOCAL Control and Check the Motor Rotation Direction



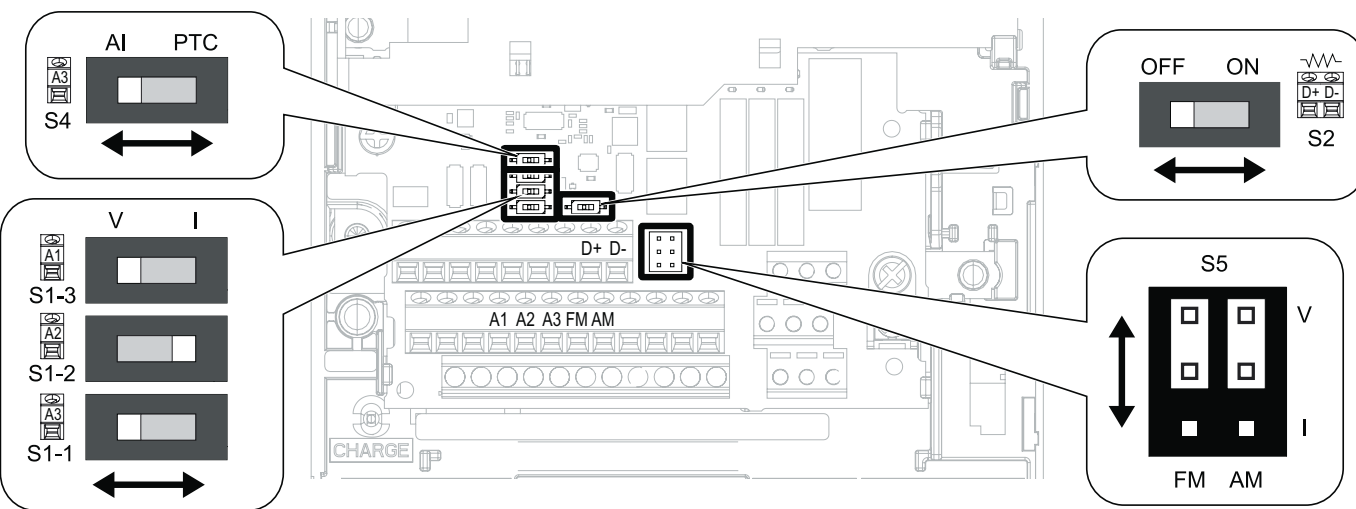
A If the Motor Does Not Rotate in the Correct Direction



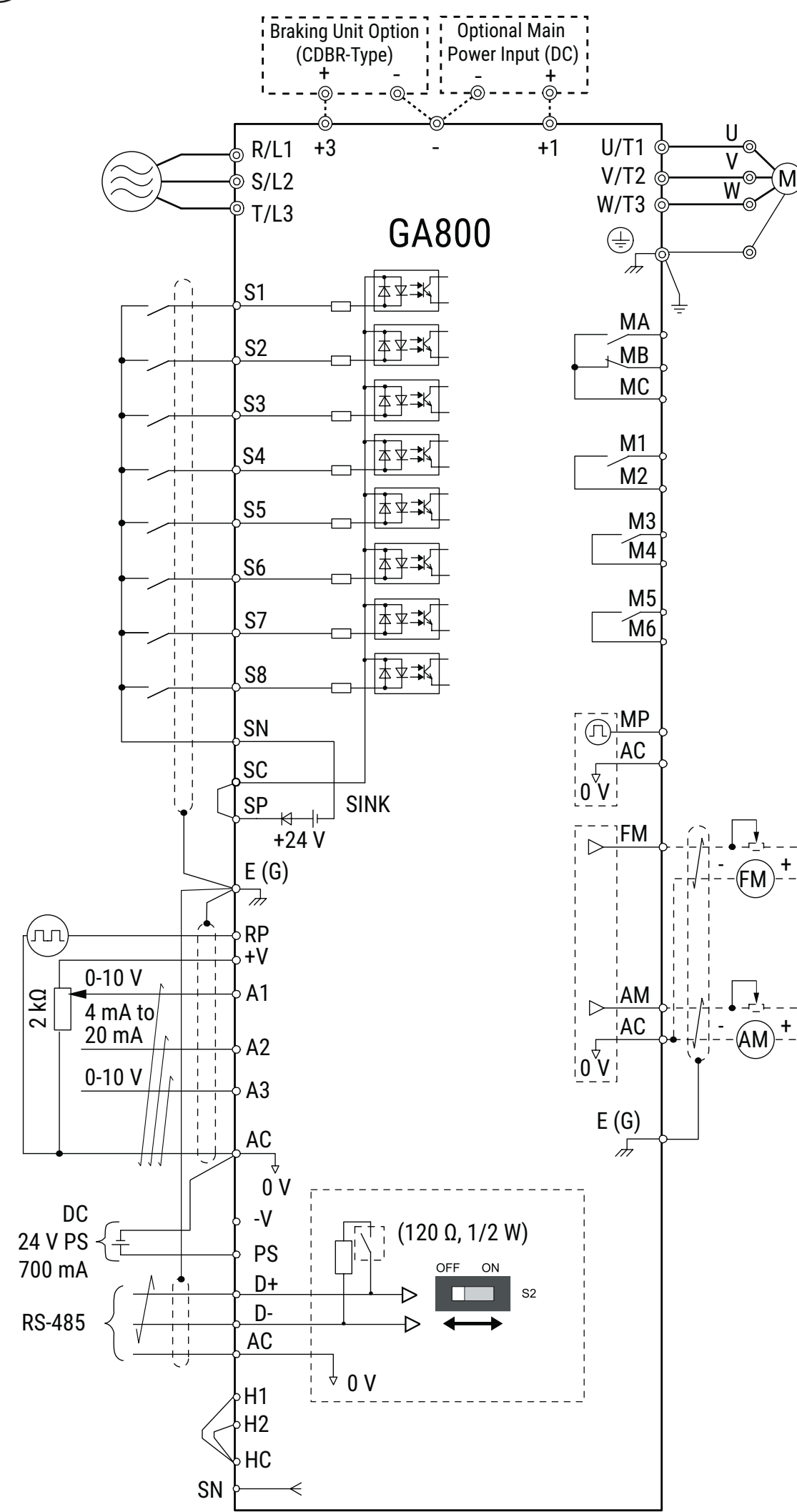
B Control Circuit Configuration and Accessibility



C Switches and Jumpers on the Control Board

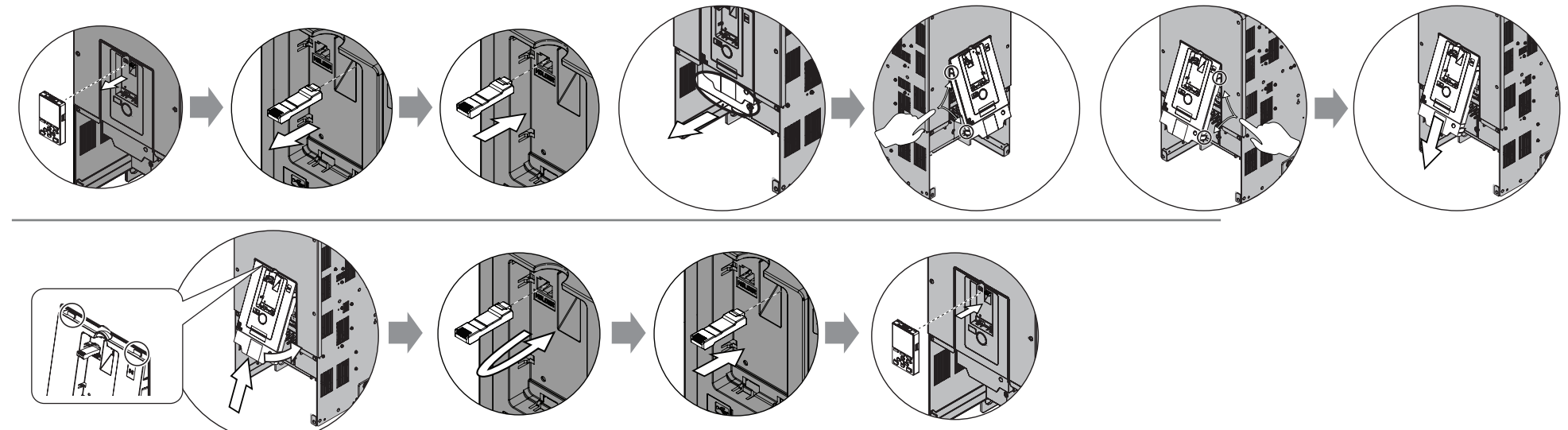


D Connection Diagram and Terminal Functions





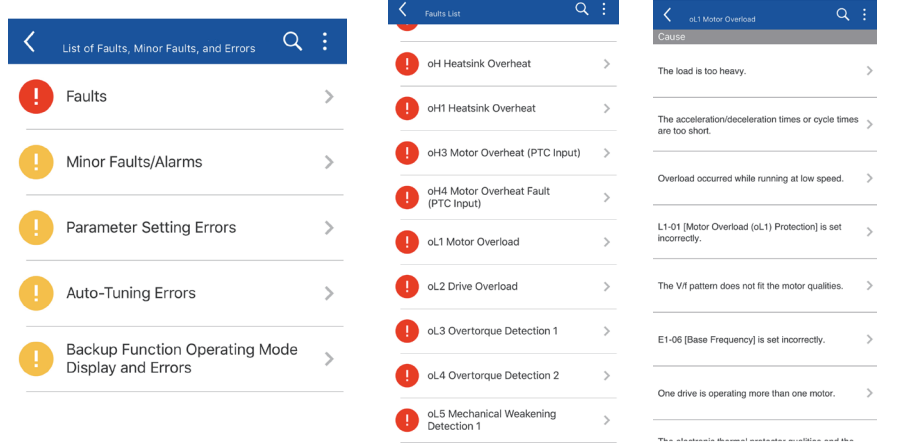



Terminal	Type	Signal Level	Default
S1	MFDI 1	Photocoupler 24 V, 6 mA	Forward run/Stop
S2	MFDI 2		Reverse run/Stop
S3	MFDI 3		External fault
S4	MFDI 4		Fault reset
S5	MFDI 5		Multi-step speed 1
S6	MFDI 6		Multi-step speed 2
S7	MFDI 7		Jog command
S8	MFDI 8		Baseblock command
SN	MFDI power 0 V	24 V, 150 mA maximum	-
SC	MFDI common		-
SP	MFDI power + 24 VDC	-	-
H1	Safe disable input 1	24 V, 6 mA Internal impedance: 4.7 kΩ Minimum OFF time: 2 ms	-
H2	Safe disable input 2		-
HC	Safe disable common		-
RP	Master frequency reference pulse train input	Response frequency: 0 ~ 32 kHz H level duty: 30 ~ 70% H level voltage: 3.5 ~ 13.2 V L level voltage: 0.0 ~ 0.8 V Input impedance: 3 kΩ	-
+V	Frequency setting power supply	10.5 V (20 mA maximum)	-
-V	Frequency setting power supply	-10.5 V (20 mA maximum)	-
A1	MFAI 1	-10 V ~ +10 V/-100% ~ +100% 0 V ~ 10 V/100% (input impedance 20 kΩ) 4 mA ~ 20 mA/100% (input impedance 250 Ω)	Master frequency reference
A2	MFAI 2	-10 V ~ +10 V/-100% ~ +100% 0 V ~ 10 V/100% (input impedance 20 kΩ) 4 mA ~ 20 mA/100% (input impedance 250 Ω)	Combined w/A1
A3	MFAI 3/PTC input	-10 V ~ +10 V/-100% ~ +100% 0 V ~ 10 V/100% (input impedance 20 kΩ) 4 mA ~ 20 mA/100% (input impedance 250 Ω) PTC input	Auxiliary frequency reference
AC	Common	0 V	-
E(G)	Connect shielded cable	-	-
MA	Fault relay out	30 VDC, 10 mA ~ 1 A 250 VAC, 10 mA ~ 1 A Minimum load: 5 V, 10 mA	Fault
MB	Fault relay out	30 VDC, 10 mA ~ 1 A 250 VAC, 10 mA ~ 1 A Minimum load: 5 V, 10 mA	Fault
MC	Common	-	-
M1	MFDO	30 VDC, 10 mA ~ 1 A 250 VAC, 10 mA ~ 1 A Minimum load: 5 V, 10 mA	During run
M2	MFDO		Zero speed
M3	MFDO		Speed agree 1
M4	MFDO	-	-
M5	MFDO	-	-
M6	MFDO	-	-
MP	Pulse train out	32 kHz maximum	Output frequency
FM	MFAO 1	0 V ~ +10 V/0% ~ 100% -10 V ~ +10 V/-100% ~ +100% 4 mA ~ 20 mA	Output frequency
AM	MFAO 2	0 V ~ +10 V/0% ~ 100% -10 V ~ +10 V/-100% ~ +100% 4 mA ~ 20 mA	Output current
AC	Common	0 V	-
PS	External 24 V PS input	21.6 VDC ~ 26.4 VDC, 700 mA	-
AC	External 24 V PS ground	0V	-
D+	Communication +	MEMOBUS/Modbus, RS-485	-
D-	Communication -	115.2 kbps maximum	-
AC	Common	0 V	-

E How to Remove the Drive Front Cover



F Troubleshooting Resources for Drive Faults and Alarms



Resource	Choose This When:	URL	QR Code
Installation & Primary Operation	You have access to the paper copy of the manual that was packaged with the drive. This manual lists all drive faults and alarms, and offers a selection of causes and solutions. 	https://www.yaskawa.com/TOEPC71061737	 PDF download
DriveWizard Mobile App	You want to use your smartphone or tablet and use the embedded help to look up the full complement of causes and solutions to all drive faults and alarms. 	https://www.yaskawa.com/dwm	 App download
Maintenance & Troubleshooting Manual	You want to download a PDF of the manual to your smartphone or tablet. This manual lists the full complement of causes and solutions to all drive faults and alarms and also includes detailed information about drive maintenance, wiring, and programming. 	https://www.yaskawa.com/TOEPYAIGA8001	 PDF download

I Parameter Groups

A: Initialization	d: Reference Settings	F: Options	L: Protection Functions	o: Keypad-Related Settings
A1 Initialization	d1 Frequency Reference	F1 PG Option Setup (Encoder)	L1 Motor Protection	o1 Keypad Display
A2 User Parameters	d2 Reference Limits	F2 Analog Input Option	L2 Power Loss Ride Through	o2 Keypad Operation
b: Application				
b1 Operation Mode Selection	d3 Jump Frequency	F3 Digital Input Option	L3 Stall Prevention	o3 Copy Keypad Function
b2 DC Injection Braking and Short Circuit Braking	d4 Freq. Ref. Up/Down & Hold	F4 Analog Output Option	L4 Speed Detection	o4 Maintenance Monitors
b3 Speed Search	d5 Torque Control	F5 Digital Output Option	L5 Fault Restart	o5 Log Function
b4 Timer Function	d6 Field Weakening/Forcing	F6 Communication Option	L6 Torque Detection	q: DriveWorksEZ Parameters
b5 PID Control	d7 Offset Frequency	F7 Ethernet Options	L7 Torque Limit	r: DriveWorksEZ Connections
b6 Dwell Function	E: Motor		L8 Drive Protection	T: Motor Tuning
b7 Droop Control	E1 V/f Pattern for Motor 1	H: Terminal Functions		U: Monitors
b8 Energy Saving	E2 Motor 1 Parameters	H1 Digital Inputs	L9 Drive Protection 2	U1 Operation Status Monitors
b9 Zero Servo	E3 V/f Pattern for Motor 2	H2 Digital Outputs	n: Special Adjustment	
C: Tuning				
C1 Accel & Decel Time	E4 Motor 2 Parameters	H3 Analog Inputs	n1 Hunting Prevention	U2 Fault Trace
C2 S-Curve Characteristics	E5 PM Motor Settings	H4 Analog Outputs	n2 Auto Freq. Regulator (AFR)	U3 Fault History
C3 Slip Compensation	E9 Motor Setting	H5 Modbus Communication	n3 High Slip/Overexcite Braking	U4 Maintenance Monitors
C4 Torque Compensation		H6 Pulse Train Input/Output	n4 AOLV Tuning	U5 PID Monitors
C5 Auto Speed Regulator (CSR)		H7 Virtual Inputs/Outputs	n5 Feed Forward Control	U6 Operation Status Monitors
C6 Duty & Carrier Frequency			n6 Online Tuning	U8 DriveWorksEZ Monitors
			n7 EZ Drive	
			n8 PM Motor Control Tuning	

J If You Push the Run Button but the Motor Does Not Spin

The diagram illustrates the steps to troubleshoot a motor that does not spin when the Run button is pressed. It shows the drive's display screen with various parameters and the physical Run button being pressed.

Step 1: The display shows the Run button being pressed. The screen displays: 10:00 am FWD Rdy Home, Freq Reference (KPD) 0.00, U1-01 Hz 0.00, Output Frequency 0.00, U1-02 Hz 0.00, Output Current 0.00, U1-03 A 0.00, JOG Menu FWD/REV.

Step 2: The user presses the F2 key. The screen displays: 10:00 am FWD Rdy Home, Language Selection, Set Date/Time, Setup Wizard, Show Initial Setup Screen, Home.

Step 3: The user presses the F2 key again. The screen displays: 10:00 am FWD Rdy Home, Freq Reference (KPD) 0.00, U1-01 Hz 0.00, Output Frequency 0.00, U1-02 Hz 0.00, Output Current 0.00, U1-03 A 0.00, Menu.

Step 4: The user presses the F2 key. The screen displays: 10:00 am FWD Rdy Home, Parameters, Reference 1, d1-01 000.00 Hz, Default: 0.00 Hz, Range: 0.00-60.00, Back Default Min/Max.

Step 5: The user presses the F2 key. The screen displays: 10:00 am FWD Rdy Home, Parameters, Reference 1, d1-01 010.00 Hz, Default: 0.00 Hz, Range: 0.00-60.00, Back Default Min/Max.


Step 6: The user presses the F2 key. The screen displays: 10:00 am FWD Rdy Home, Parameters, Entry Accepted.


Step 7: The user presses the Run button. The screen displays: 10:00 am FWD Rdy Home, Freq Reference (KPD) 10.00, U1-01 Hz 10.00, Output Frequency 0.00, U1-02 Hz 0.00, Output Current 0.00, U1-03 A 0.00, JOG Menu FWD/REV. The motor is shown spinning at 10 Hz.

G Additional Resources

H Customer Feedback

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Mobile App

DriveWizard® Mobile Commissioning Smartphone App
<https://www.yaskawa.com/dwm>

Product Manuals

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<https://www.yaskawa.com/ga800manuals>

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www.yaskawa.com/DRV-F-0006

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