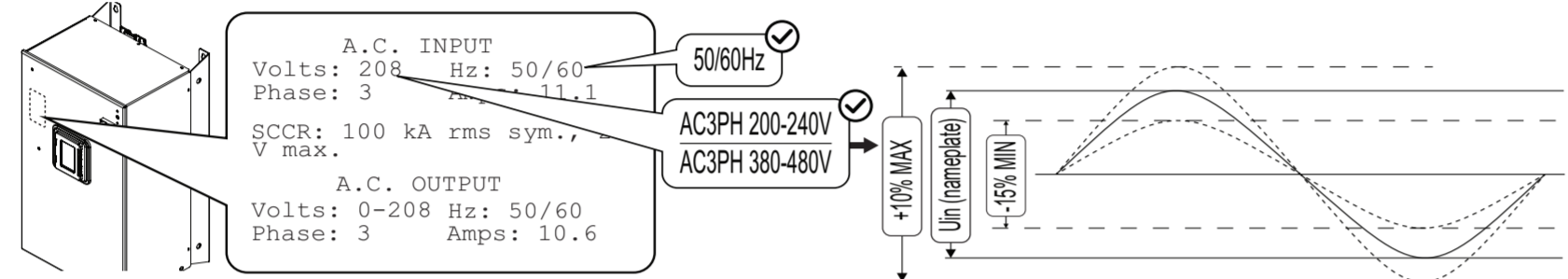
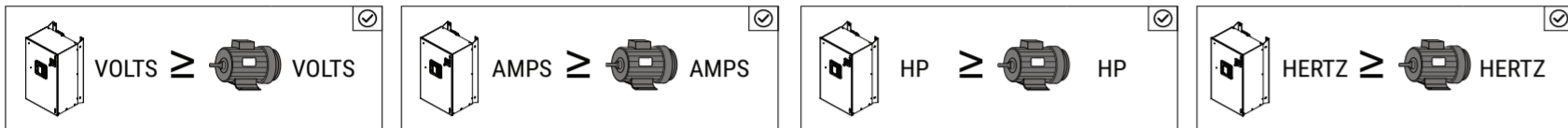
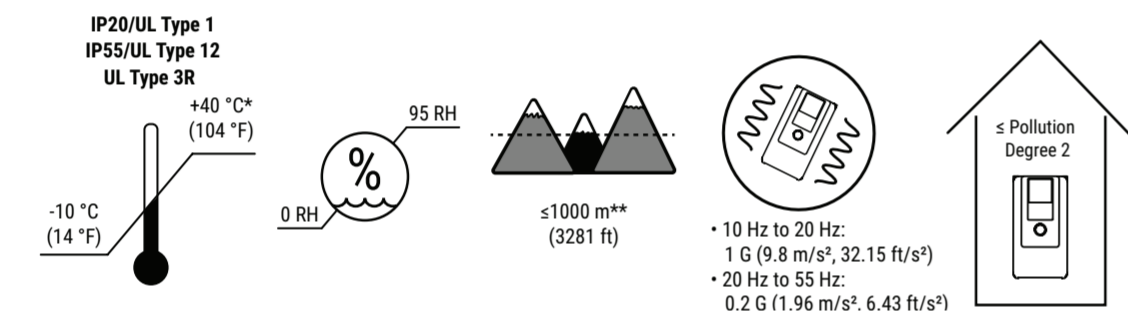


Read and follow the safety and installation procedures in the Installation & Startup (TOEPYAIF6B01) manual packaged with the bypass.

1 Confirm the Bypass and Motor Specifications



2 Confirm the Correct Installation Environment



*You can use the bypass at a maximum of 60 °C (140 °F) when you derate the output current.
**Derate the output current by 1% for each 100 m (328 ft) to install the drive in altitudes between 1000 m to 4000 m (3281 ft to 13123 ft). Refer to the Technical Reference (SIEPYAIF6B01) for derating information.

3 Select the Correct Mounting Location and Position and Mount the Bypass Vertically

Use Your Dimension Drawing to help you select the correct mounting location. The Dimension Drawing for your model is packaged with the bypass.

Bypass Model	Dimension Drawing DD.HWF.1.xx.xx	Bypass Model	Dimension Drawing DD.HWF.1.xx.xx	Bypass Model	Dimension Drawing DD.HWF.1.xx.xx
D004 - D016	W0.01	A004 - A015	W0.01	B002 - B014	W0.01
D024, D030	W1.01	A022, A028	W1.01	B021 - B034	W1.01
D046, D059	W2.01	A042, A054	W2.01	B040 - B065	W2.01
D074 - D114	W3.01	A068 - A104	W3.01	B077 - B124	W3.01
D143, D169	W4.01	A130, A154	W4.01	B156	W4.01
D211, D273	F1.01	A192, A248	F1.01	B180 - B302	F1.01

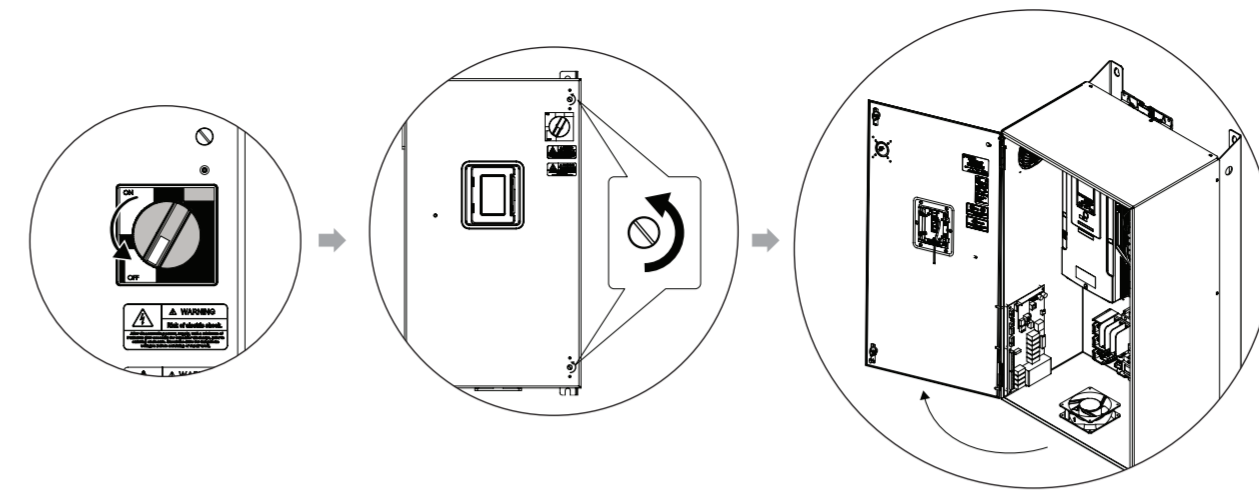
4 Select the Input and Output Wires and Branch Circuit Protection

Use your Customer Connection Drawing to help you select the correct wires. The Customer Connection Drawing for your model is packaged with the bypass.

Branch Circuit Protection

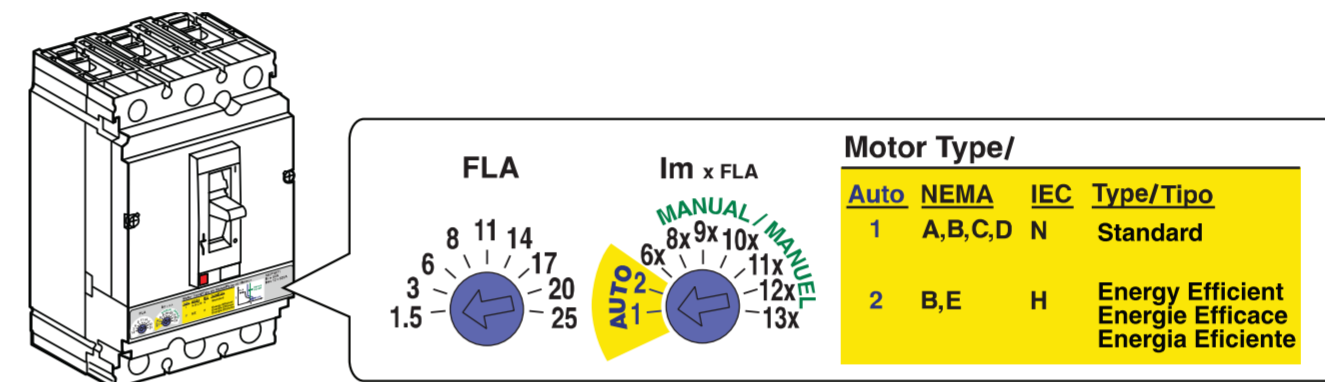
WARNING! Fire Hazard. The standard bypass includes a non-fusible disconnect switch that does not provide branch circuit protection. Branch Circuit protection is required to be installed according to applicable local codes and the requirements listed on the bypass nameplate. The bypass is suitable for use on a circuit capable of delivering not more than 100,000 RMS symmetrical amperes, 208/240 Vac and 480 Vac with the circuit breaker option or when protected by class J or class L fuses as specified on the bypass nameplate. Failure to obey can cause fire and damage to the bypass and drive or injury to personnel.

5 Open the Bypass Door

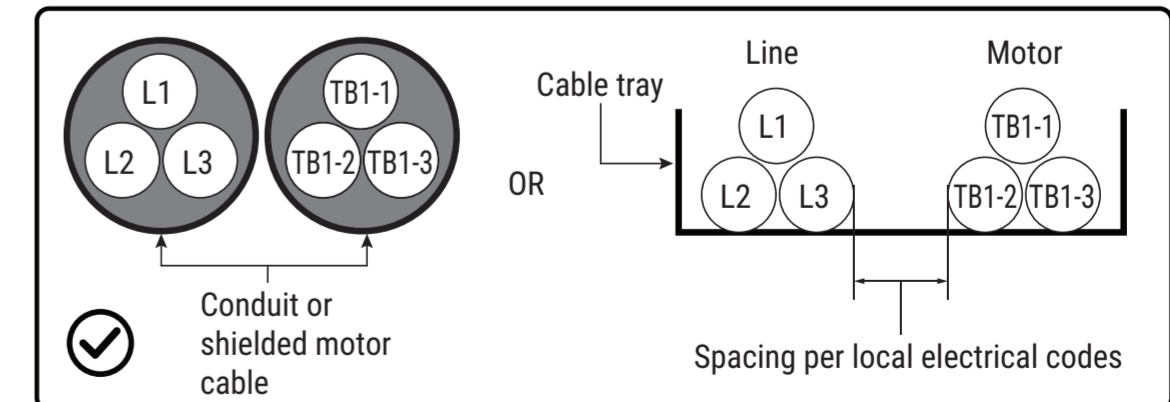
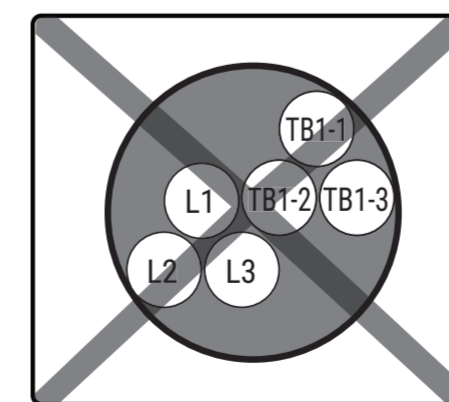
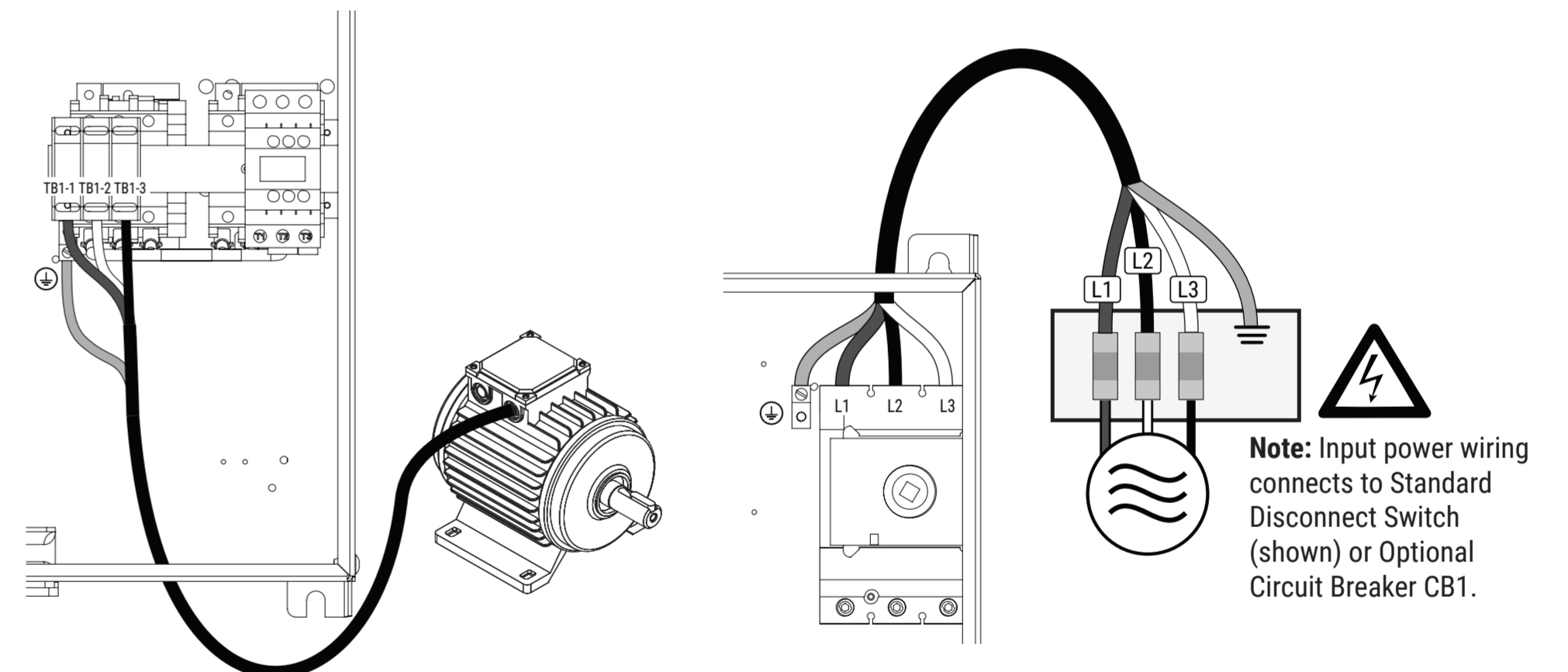


*The steps to open the front door are different for different enclosure types. The example shown here is for a UL Type 1 enclosure.

6 Optional Circuit Breaker CB1 - Set "FLA" to Match Motor FLA; Make Sure that "Im x FLA" is set to "AUTO"

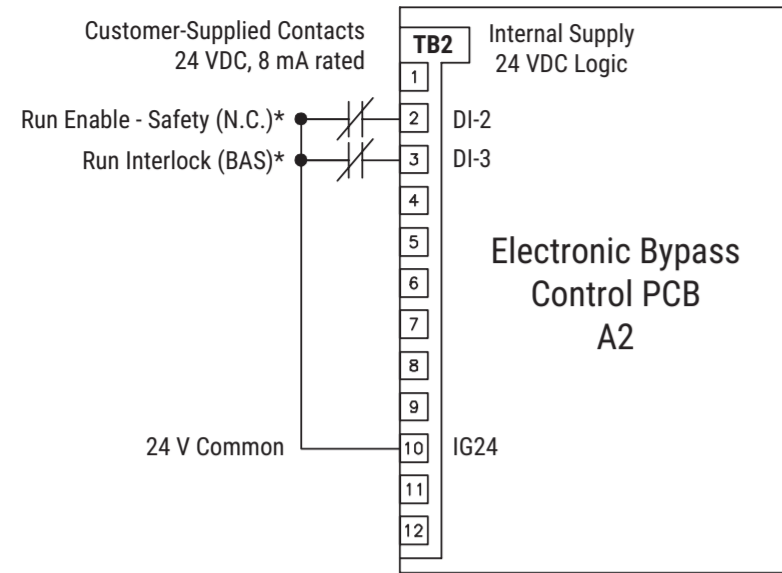


7 Install the Motor Wiring and Power Wiring



8

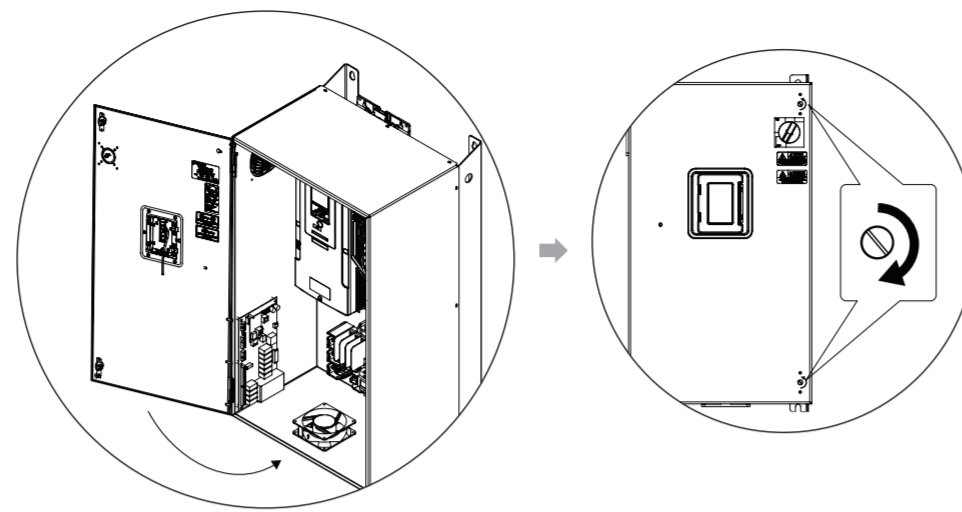
Make the Necessary Connections on the Bypass Control PCB



*You must make these connections to prevent "Safety Open" and "AL02 - Interlock Open" alarms. If a safety circuit is not available, connect a jumper between DI-2 and IG24. If an interlock circuit is not available, connect a jumper between DI-3 and IG24.

9

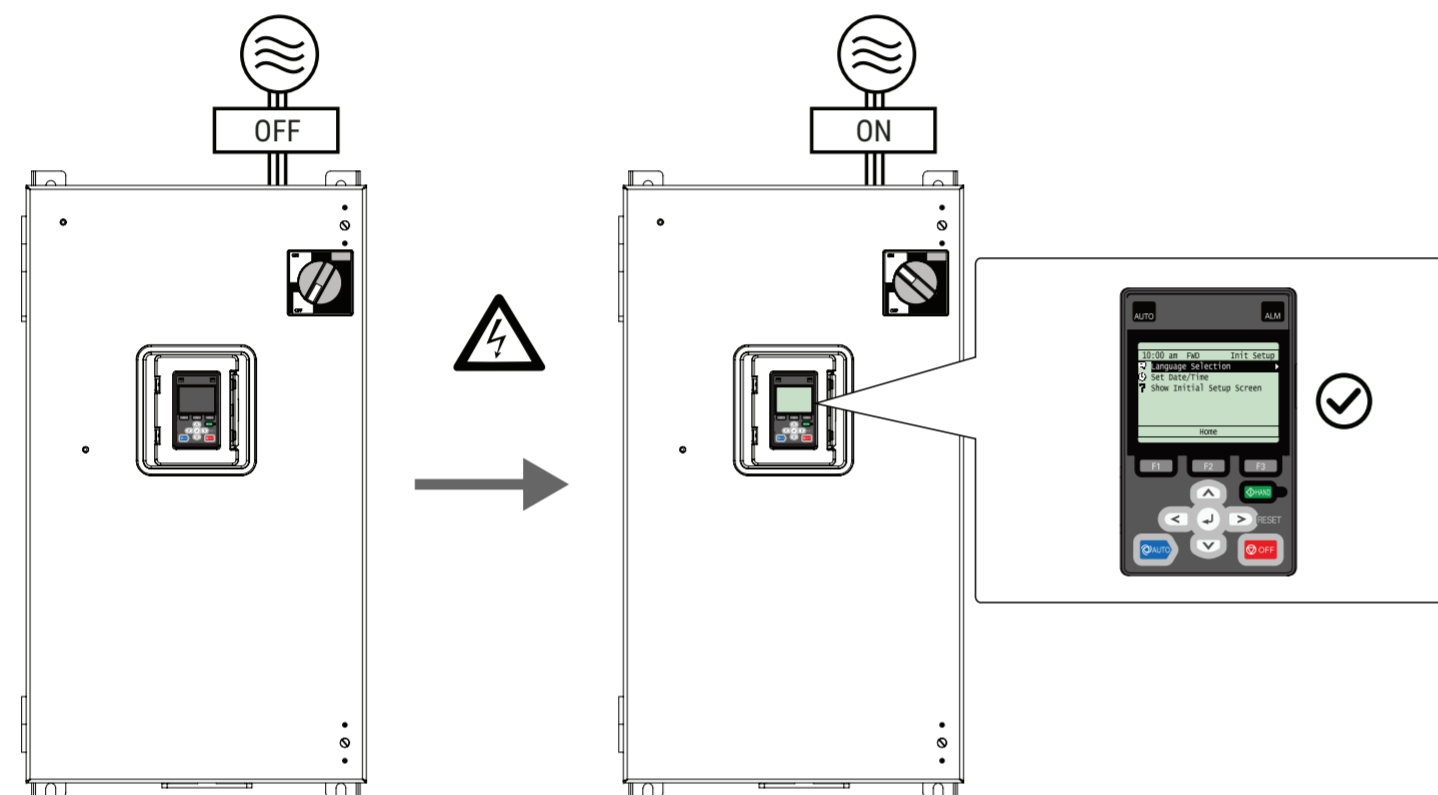
Close and Secure the Bypass Door



*The steps to open the front door are different for different enclosure types. The example shown here is for a UL Type 1 enclosure.

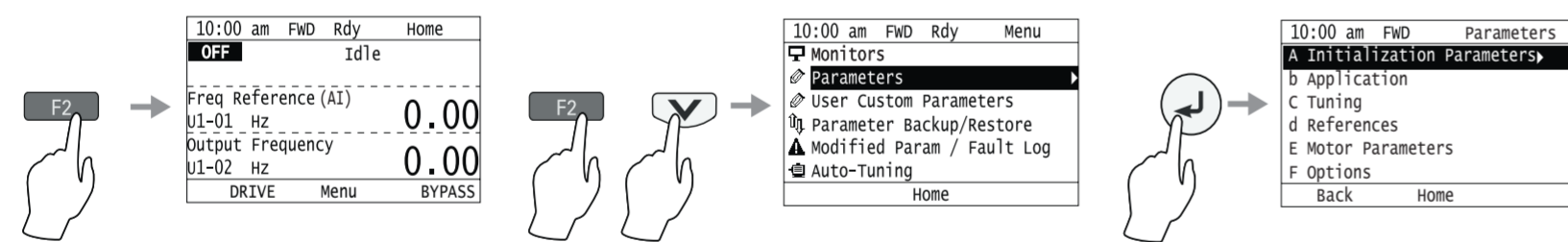
10

Energize the Bypass and Confirm It Is Ready



11

Verify That Parameters Are Set Correctly for Application

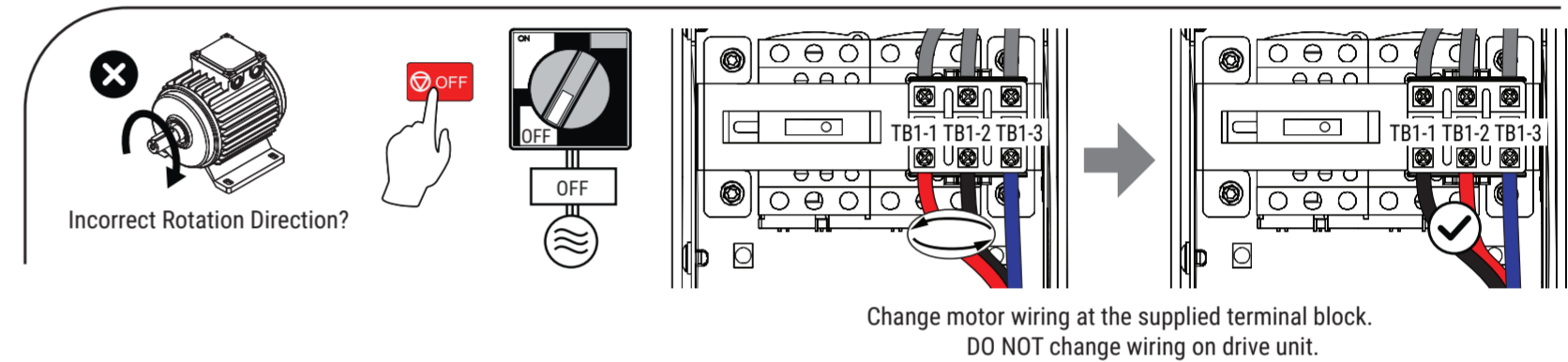
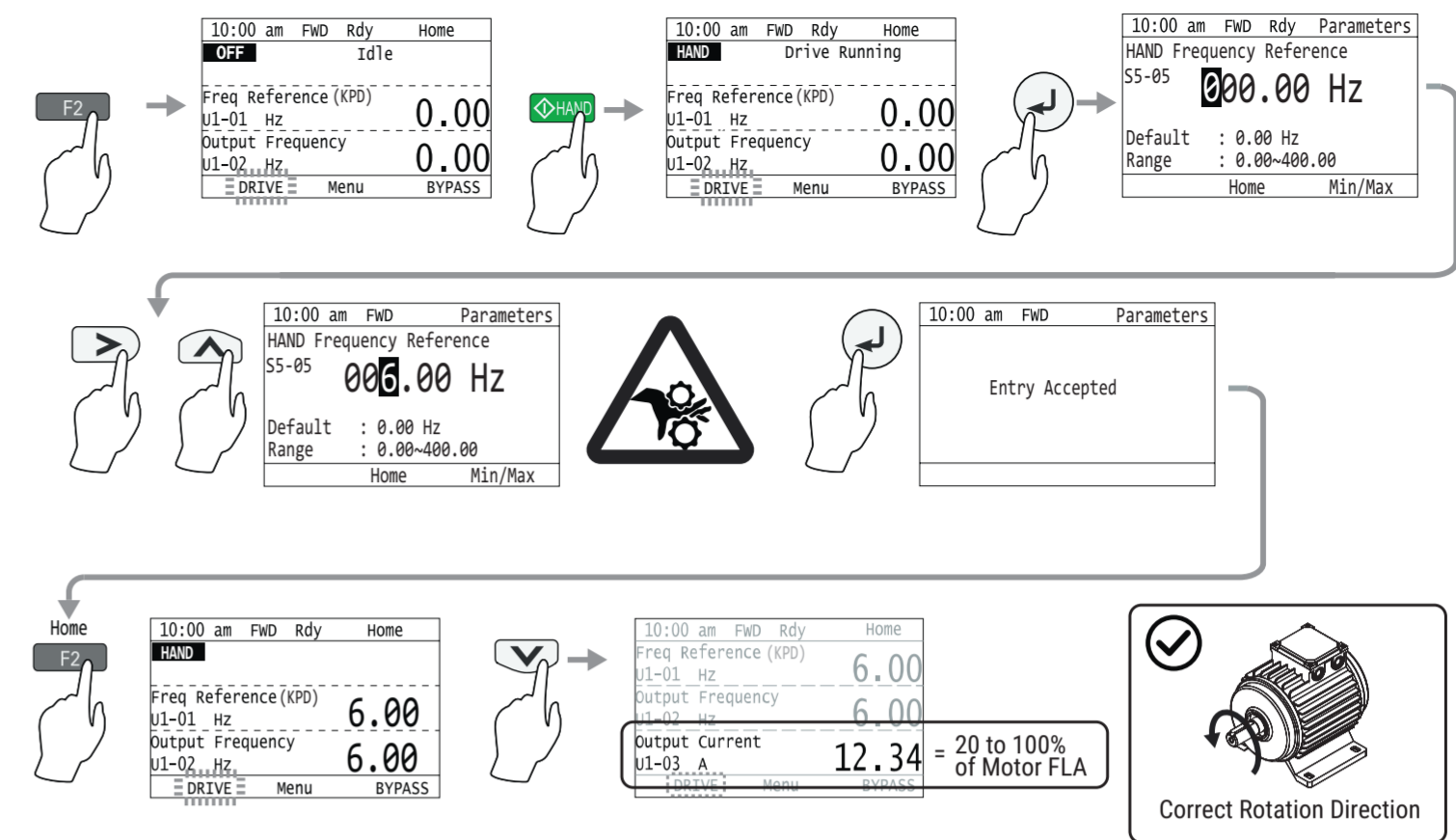


Before you check for correct motor rotation, verify that these parameters are set correctly for your application:

- b1-01 [Frequency Reference Selection 1]
- b1-02 [Run Command Selection 1]
- b3-01 [Speed Search at Start Selection]
- b3-14 [Bi-directional Speed Search]
- C1-01 [Acceleration Time 1]
- C1-02 [Deceleration Time 1]
- E2-01 [Motor Rated Current (FLA)]
- Z2-30 [Analog Input Signal Level Select]

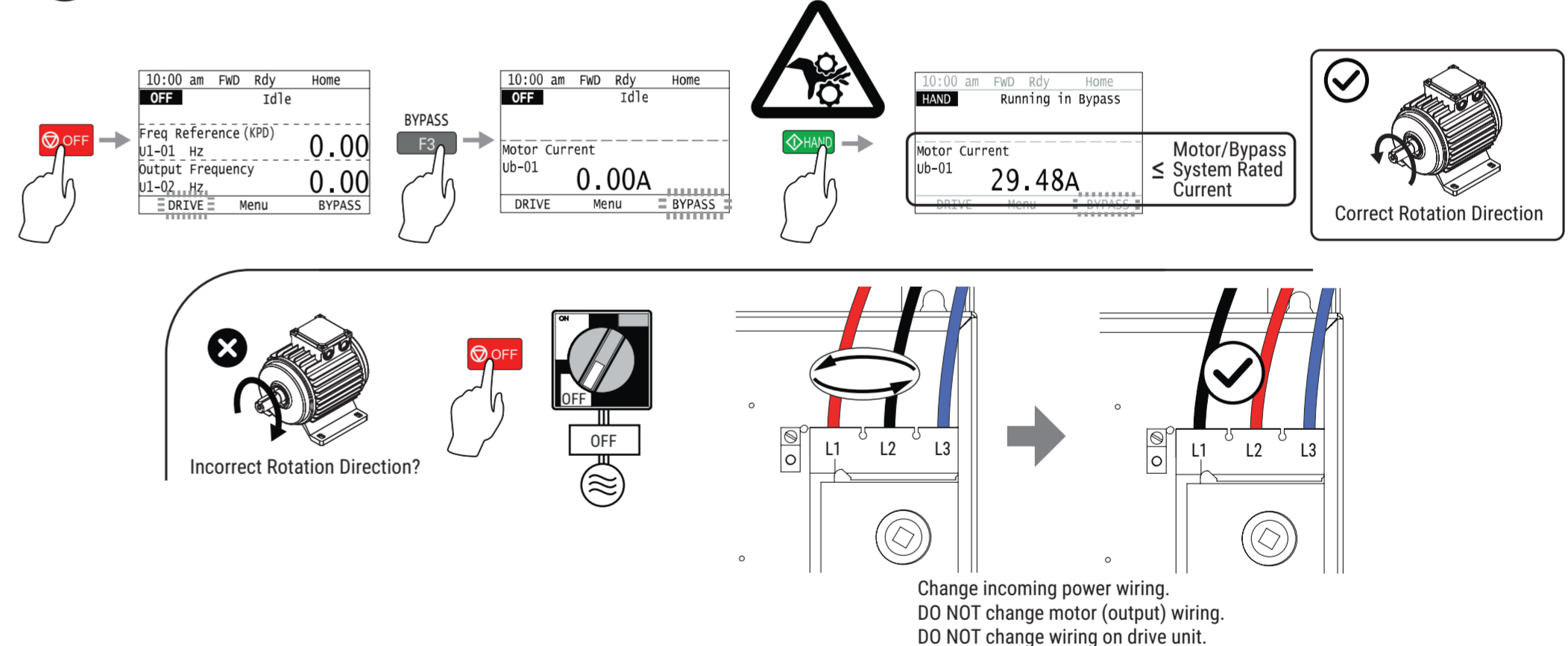
12

Do a Test Run and Check the Motor Rotation in Drive Mode



13

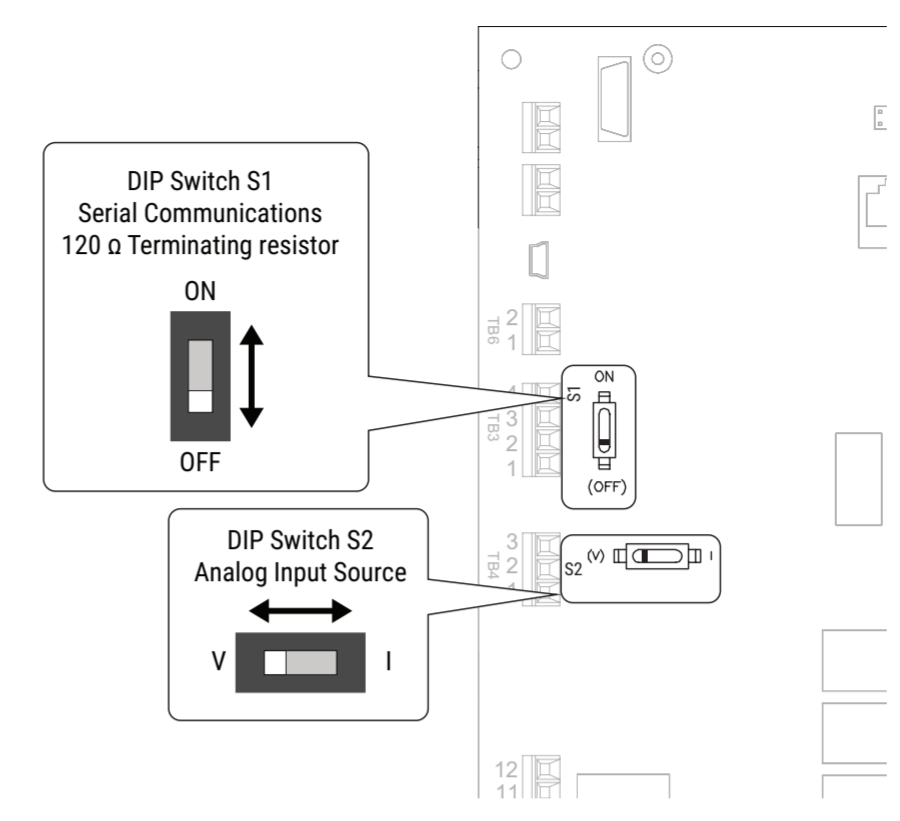
Do a Test Run and Check the Motor Rotation in Bypass Mode



A Bypass Control Circuit

Terminal Block	Type	Terminal	Parameter	Default	Name	Function (Signal Level)	
TB2	Digital Inputs	TB2-1	DI-1	Z2-01	21	Run (Auto)	Dry contact rated, photocoupler sinking input to IG24, 24 VDC 8 mA, ground fault protected
		TB2-2	DI-2	Z2-02	22	Run Enable - Safety (NC)	
		TB2-3	DI-3	Z2-03	23	Run Interlock BAS (NC)	
		TB2-4	DI-4	Z2-04	24	Remote Transfer to Bypass	
		TB2-5	DI-5	Z2-05	25	Emergency Override to Bypass	
		TB2-6	DI-6	Z2-06	0	Spare	
		TB2-7	DI-7	Z2-07	0	Spare	
		TB2-8	DI-8	Z2-08	0	Spare	
	TB2-9/10	IG24	-	-	Isolated Ground	Digital input common	
TB4	Analog Inputs	TB4-1	+10 VDC	Z2-30	0	Analog Input Power Supply	AUTO Mode Speed Reference 0 to 10 VDC (20 kΩ) or 4 to 20 mA (250 Ω)
		TB4-2	Analog Input	-	-	Analog Input Speed Reference	Analog input common
		TB4-3	COMMON	-	-	Analog Input Common	Analog input common
TB1	Digital Outputs	TB1-1/2/3	DO-7	Z2-23	7	Motor Run	Relay, dry contact form C, 30 VDC or 120 Vac, 2 Amp
		TB1-4/5/6	DO-8	Z2-24	10	HAND Mode	
		TB1-7/8/9	DO-9	Z2-25	12	AUTO Mode	
		TB1-10/11/12	DO-10	Z2-26	15	System Fault	
TB6	Ground Terminals	TB6-1/2	GROUND	-	-	Chassis Ground	-
TB3	Serial Comms	TB3-1	IG5	H5-xx	-	Isolated Ground	Ground reference for RS-485 signals
		TB3-2	TXRX+	H5-xx	-	(+) Differential Communication Signal	RS-485 BACnet, Modbus/Memobus, Metasys/N2, Apogee/P1
		TB3-3	TXRX-	H5-xx	-	(-) Differential Communication Signal	
		TB3-4	SHIELD	H5-xx	-	Shield Tie Point	Capacitively coupled to chassis ground.

D Switches on the Bypass Control Board



E How to Set Up the Drive for Monitoring via BACnet MS/TP

10:00 am FWD Rdy Menu
Monitors
Parameters
User Custom Parameters
Parameter Backup/Restore
Modified Param / Fault Log
Auto-Tuning
Home

10:00 am FWD Parameters
C Tuning
d References
E Motor Parameters
F Options
H Terminal Functions
L Protection Functions
Back Home

10:00 am FWD Parameters
H1 Digital Inputs
H2 Digital Outputs
H3 Analog Inputs
H4 Analog Outputs
H5 Serial Communication
H7 Virtual Inputs / Outputs
Back Home

10:00 am FWD Parameters
Drive Node Address
H5-01
Default : 1F
Range : 0-FF
Back Default Min/Max

10:00 am FWD Parameters
Communication Speed Selection
H5-02
9600 bps
Default : 3
Back Default

10:00 am FWD Parameters
Communication Protocol Selection
H5-08
BACnet
Default : 0
Back Default

10:00 am FWD Parameters
BACnet Device Obj ID LOW BITS
H5-14
Default : 0001
Range : 0000-FFFF
Back Default Min/Max

10:00 am FWD Parameters
BACnet Device Obj ID HIGH BITS
H5-15
Default : 00
Range : 00-3F
Back Default Min/Max

10:00 am FWD Parameters
Communication Parameters Reload
H5-20
Reload Now
Default : 0
Back Default

Set to unique node (MAC) address for your network (Hex)

Set to your network speed

Set to 3: BACnet

Set the Device Object ID numbers together to make a unique value for your installation (Hex)

Set to 1: Reload Now

B Set Frequency Reference Source

From HOA Keypad

10:00 am FWD Parameters
Frequency Reference Selection 1
b1-01
Keypad
Default : 1
Back Default

From External Terminals

10:00 am FWD Parameters
Frequency Reference Selection 1
b1-01
Analog Input
Default : 1
Back Default

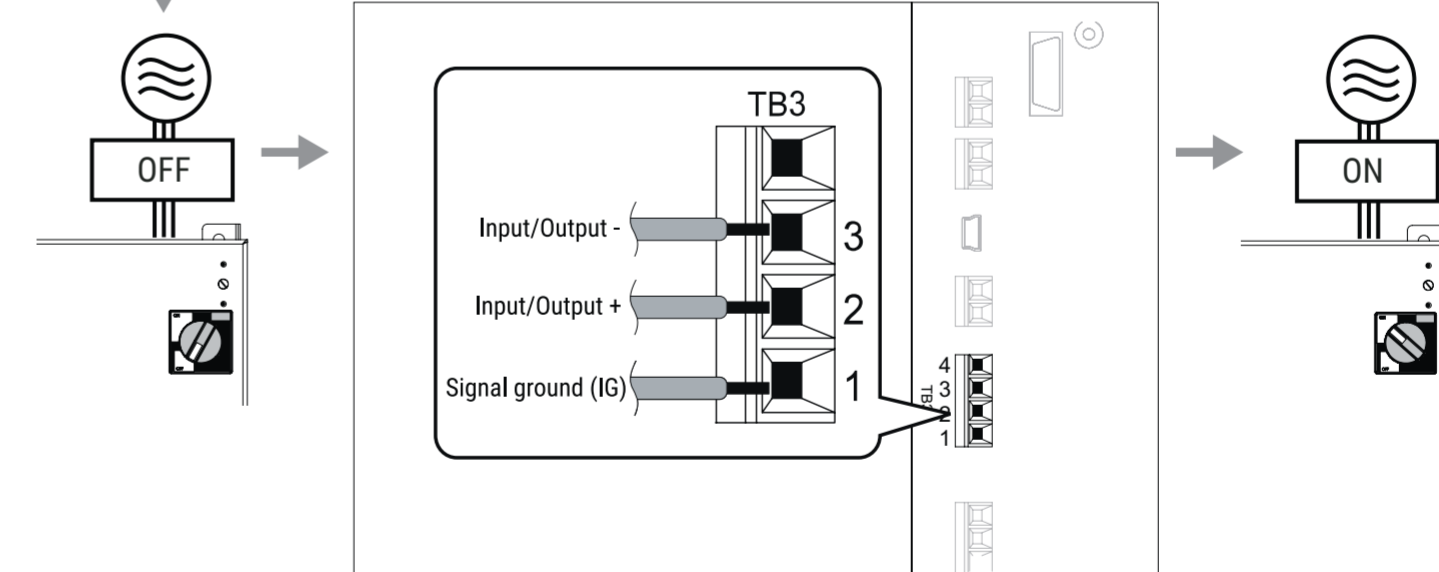
Potentiometer 2 kΩ
Set DIP Switch S2 to "V"

C Set Start/Stop Control Method from External Terminals

10:00 am FWD Parameters
Run Command Selection 1
b1-02
AUTO Command + Term Run
Default : 7
Back Default

TB2

12
11
10
9
8
7
6
5
4
3 Run Interlock (BAS) (NC)
2 Run Enable - Safety (NC)
1 Run (AUTO)



F If You Push the HAND Button but the Motor Does Not Spin (Drive Mode)



G Parameter Groups

A: Initialization	E: Motor	L: Protection Functions	Y: Application Features
A1 Initialization	E1 V/f Pattern for Motor 1	L1 Motor Protection	Y1 Application Basics
A2 User Parameters	E2 Motor 1 Parameters	L2 Power Loss Ride Through	Y2 PID Sleep and Protection
b: Application	F: Options	L3 Stall Prevention	Y4 Application Advanced
b1 Operation Mode Selection	F4 Analog Motor Option	L4 Speed Detection	YA Preset Setpoint
b2 DC Injection Braking and Short Circuit Braking	F5 Digital Output Option	L5 Fault Restart	YC Feedback Features
b3 Speed Search	F6 Communication Option	L6 Torque Detection	YF PI Auxiliary Control
b4 Timer Function	F7 Ethernet Options	L8 Drive Protection	Z: Bypass Parameters
b5 PID Control	H: Terminal Functions	L9 Drive Protection 2	Z1 Bypass Control System
b6 Dwell Function	H1 Digital Inputs	n: Special Adjustment	Z2 Bypass Digital Inputs/Outputs
b8 Energy Saving	H2 Digital Outputs	n1 Hunting Prevention	Z3 Bypass Serial Communications
C: Tuning	H3 Analog Inputs	n3 High Slip/Overexcite Braking	U: Monitors
C1 Accel & Decel Time	H4 Analog Outputs	o: Keypad-Related Settings	U1 Operation Status Monitor
C2 S-Curve Characteristics	H5 Serial Communication	o1 Keypad Display	U2 Fault Trace
C3 Slip Compensation	H6 Pulse Train Input	o2 Keypad Operation	U3 Fault History
C4 Torque Compensation	H7 Virtual Inputs/Outputs	o3 Copy Keypad Function	U4 Maintenance Monitors
C6 Carrier Frequency		o4 Maintenance Monitors	U5 PID Monitors
d: Reference Settings		o5 Log Function	U6 Operation Status Monitors
d1 Frequency Reference		S: Special Applications	Ub Bypass Control Monitors
d2 Reference Limits		S1 Dynamic Noise Control	UC BACnet Diagnostic Monitors
d3 Jump Frequency		S3 PI2 Control	
d4 Freq. Ref. Up/Down & Hold		S5 HAND/OFF/AUTO Operation	
d6 Field Weakening		S6 Protection	
d7 Offset Frequency			

Frequently Used Parameters

Parameter Number Name	Default Description	Parameter Number Name	Default Description	Parameter Number Name	Default Description
A1-03 Initialize Parameters	0 No Initialization	C1-01 Acceleration Time 1	10.0 s	E2-01 Motor Rated Current (FLA)	-
b1-01 Frequency Reference Selection 1	1 Analog Input	C1-02 Deceleration Time 1	10.0 s	L5-01 No. of Auto-Restart Attempts	0
b1-02 Run Command Selection 1	7 AUTO Command + Term Run	d2-01 Frequency Reference Upper Limit	100.0%	L5-04 Interval Method Restart Time	10.0 s
b1-03 Stopping Method Selection	1 Coast to Stop	d2-02 Frequency Reference Lower Limit	0.0%	Z2-30 Analog Input Signal Level Select	0 0 to 10 V
b3-01 Speed Search at Start Selection	0 Disabled	E1-01 Input AC Supply Voltage	-		
b3-24 Speed Search Method Selection	2 Current Detection 2	E1-04 Maximum Output Frequency	60.0 Hz		

H Troubleshooting Resources for Faults and Alarms

Resource	Choose This When:	URL	QR Code
Installation & Startup	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/toepyaif6b01	
Technical Reference	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/siepyaif6b01	

I Additional Resources **J** Customer Feedback

Product Manuals



- PDFs
 - Online HTML5-Searchable
 - Manuals App
- <https://www.yaskawa.com/FP605manuals>

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Email us: technical_documentation@yaskawa.com
Call us: 1-800-YASKAWA (927-5292)

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