Installation Instructions

PowerFlex® 750-Series AC Drive

Introduction

When reading this document, look for this symbol "**Step x**" to guide you through the 5 BASIC STEPS needed to install and perform a Start-Up of the PowerFlex® 750-Series Adjustable Frequency AC drive. A Human Interface Module (HIM) is required to perform the Start-Up routine covered in this manual.

The information provided Does Not replace the User Manual and is intended for qualified drive service personnel only.

For detailed PowerFlex 750-Series drive information including programming, application considerations, and related precautions refer to the following publications online at:
www.rockwellautomation.com/literature

Reference Materials

Title	Publication
PowerFlex 750-Series User Manual	750-UM001
Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual	20HIM-UM001
PowerFlex 750-Series Safe Torque Off User Manual	750-UM002
Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Safety Reference Manual	750-RM001
PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual	750COM-UM001
PowerFlex 750-Series Drive DeviceNet Option Module User Manual	750COM-UM002
PowerFlex 7-Class Network Communication Adapter User Manuals	750COM-UMxxx
Dynamic Braking Resistor Calculator	PFLEX-AT001
Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives	DRIVES-IN001

To order paper copies of technical documentation, contact your local Rockwell Automation distributor or sales representative.

To find your local Rockwell Automation distributor, visit
www.rockwellautomation.com/locations

Allen-Bradley Drives Technical Support

Online at...	By Email at...	By Telephone at...
www.ab.com/support/abdrives	support@drives.ra.rockwell.com	262-512-8176

Product Certification

Product Certifications and Declarations of Conformity are available on the internet at: **www.rockwellautomation.com/products/certification**

Installation Instructions in Other Languages

English	This instruction sheet is available in multiple languages at http://rockwellautomation.com/literature. Select publication language and type "750-IN001" in the search field.
Deutsch	Dieses Instruktionsblatt kann in mehreren Sprachen unter http://rockwellautomation.com/literature gelesen werden. Bitte Ihre Sprache anwählen und "750-IN001" im Suchfeld eintippen.
Français	Ces instructions sont disponibles dans différentes langues à l'adresse suivante: http://rockwellautomation.com/literature. Sélectionner la langue puis taper << 750-IN001 >> dans le champ de recherche.
Italiano	La presente scheda d'istruzione è disponibile in varie lingue sul sito http://rockwellautomation.com/literature. Selezionare la lingua desiderata e digitare "750-IN001" nel campo di ricerca.
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Português	Esta folha de instruções está disponível em várias línguas em http://rockwellautomation.com/literature. Seleccione a língua de publicação e entre com "750-IN001" no espaço de busca.
Chinese (simplified)	从以下网页可以获得本说明书的多种语言的版本：http://rockwellautomation.com/literature 。请选择出版物的语言，并在搜索栏输入 "750-IN001 印?
Japanese	本説明書シートの多言語版は Web サイト http://rockwellautomation.com/literature にて入手できます。出版言語を選択し、検索フィールドに 「750-IN001」 とタイプしてください。
Korean	이 명령 부 http://rockwellautomation.com/literature에서 여러 언어로 사용할 수있습니다. 출판 언어와 유형을 선택하십시오 "750 - IN001"검색 필드에있다.

Table of Contents

Catalog Number Explanation

Position	1…3	4	5	6	7	8…10	11	12	13	14	15	16	17	18
	20F	1	1	N	D	248	A	A	0	N	N	N	N	N
	a	b	c	d	e	f	g	h						

a

Drive

Code	Type
20F	PowerFlex 753
20G	PowerFlex 755

b

Future Use

c

Input Type ∗

Code	Description	Frames
1	6 Pulse, w/DC Terminals	2…7
4	DC Common Bus with Precharge	5…7
A	6 Pulse, w/o DC Terminals	6, 7

∗ For Frames 2…4, Code 1 also provides the functionality of DC Common Bus with Precharge. For Frames 5 and larger, Code 4 is required for DC Common Bus with Precharge.

d

Enclosure

Code	Description
F	Flange (NEMA/UL Type 4X back) § ‡
G	IP54, NEMA/UL Type 12 §
N	IP20/IP00, NEMA/UL Type Open ❄

‡ For Frames 6…7 a User Installed Flange Kit is available to convert a Code N drive that provides a NEMA/UL Type 4X back.

§ Frames 2…5 only.

❄ Frames 2…5 are IP20, Frames 6…7 are IP00.

e

Voltage Rating

Code	Voltage
C	400V AC
D	480V AC

f1

ND Rating

400V, 50 Hz Input

Code	Amps	kW	Frame Enclosure Code N	F	G
2P1	2.1	0.75	2	2	2
3P5	3.5	1.5			
5P0	5.0	2.2			
8P7	8.7	4			
011	11.5	5.5			
015	15.4	7.5			
022	22	11			
030	30	15	3	3	3
037	37	18.5			
043	43	22			
060	60	30	4	4	4
072	72	37			5
085	85	45	5	5	
104	104	55			6
140	140	75	6	‡	
170	170	90			
205	205	110			
260	260	132			7
302	302	160	7		
367	367	200			
456	456	250			

‡ For Frames 6…7 a User Installed Flange Kit is available to convert a Code N drive that provides a NEMA/UL Type 4X back.

f2

ND Rating

480V, 60 Hz Input

Code	Amps	Hp	Frame Enclosure Code N	F	G
2P1	2.1	1	2	2	2
3P4	3.4	2			
5P0	5.0	3			
8P0	8.0	5			
011	11	7.5			
014	14	10			
022	22	15			
027	27	20	3	3	3
034	34	25			
040	40	30			
052	52	40	4	4	4
065	65	50			5
077	77	60	5	5	
096	96	75			6
125	125	100	6	‡	
156	156	125			
186	186	150			
248	248	200			7
302	302	250	7		
361	361	300			
415	415	350			

‡ For Frames 6…7 a User Installed Flange Kit is available to convert a Code N drive that provides a NEMA/UL Type 4X back.

g

Filtering and CM Cap Configuration

Code	Filtering	Default CM Cap Connection
A ➢	Yes	Jumper Removed
J ➢	Yes	Jumper Installed

➢ In all cases, jumpers are included for field reconfiguration as desired.

h

Dynamic Braking

Code	Internal Resistor ⌘	Internal Transistor ✦
A	No	Yes
B	Yes	Yes
N	No	No

⌘ Frame 2 only.

✦ Standard on Frames 2…5, Optional on Frames 6…7.

Step 1 Read the General Precautions

Qualified Personnel

ATTENTION: Only qualified personnel familiar with adjustable frequency AC drives and associated machinery should plan or implement the installation, start-up and subsequent maintenance of the system. Failure to comply may result in personal injury and/or equipment damage.

Personal Safety

ATTENTION: To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before servicing. Check the DC bus voltage at the Power Terminal Block by measuring between the +DC and -DC terminals (refer to page 44 for location), between the +DC terminal and the chassis, and between the -DC terminal and the chassis. The voltage must be zero for all three measurements.

ATTENTION: Hazard of personal injury or equipment damage exists when using bipolar input sources. Noise and drift in sensitive input circuits can cause unpredictable changes in motor speed and direction. Use speed command parameters to help reduce input source sensitivity.

ATTENTION: Risk of injury or equipment damage exists. DPI or SCANport host products must not be directly connected together via 1202 cables. Unpredictable behavior can result if two or more devices are connected in this manner.

ATTENTION: The drive start/stop/enable control circuitry includes solid state components. If hazards due to accidental contact with moving machinery or unintentional flow of liquid, gas or solids exists, an additional hardwired stop circuit may be required to remove the AC line to the drive. An auxiliary braking method may be required.

ATTENTION: Hazard of personal injury or equipment damage due to unexpected machine operation exists if the drive is configured to automatically issue a Start or Run command. Do not use these functions without considering applicable local, national and international codes, standards, regulations or industry guidelines.

Product Safety

ATTENTION: An incorrectly applied or installed drive can result in component damage or a reduction in product life. Wiring or application errors such as under sizing the motor, incorrect or inadequate AC supply, or excessive surrounding air temperatures may result in malfunction of the system.

ATTENTION: This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage may result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference Guarding Against Electrostatic Damage, publication 8000-4.5.2 or any other applicable ESD protection handbook.

ATTENTION: Configuring an analog input for 0-20 mA operation and driving it from a voltage source could cause component damage. Verify proper configuration prior to applying input signals.

ATTENTION: A contactor or other device that routinely disconnects and reapplies the AC line to the drive to start and stop the motor can cause drive hardware damage. The drive is designed to use control input signals that will start and stop the motor. If an input device is used, operation must not exceed one cycle per minute or drive damage will occur.

Class 1 LED Product

ATTENTION: Hazard of permanent eye damage exists when using optical transmission equipment. This product emits intense light and invisible radiation. Do not look into module ports or fiber optic cable connectors.

CE Conformity

Compliance with the Low Voltage Directive and Electromagnetic Compatibility Directive has been demonstrated using harmonized European Norm (EN) standards published in the Official Journal of the European Communities. PowerFlex 750-Series drives comply with the EN standards listed below when installed according to this PowerFlex 750-Series AC Drive Installation Instructions and the PowerFlex 750-Series AC Drive User Manual.

CE Declarations of Conformity are available online at:
www.rockwellautomation.com/products/certification/

Low Voltage Directive (2006/95/EC)

- EN 61800-5-1 Adjustable speed electrical power drive systems – Part 5-1: Safety requirements – Electrical, thermal and energy.

EMC Directive (2004/108/EC)

- EN 61800-3 Adjustable speed electrical power drive systems – Part 3: EMC product standard including specific test methods.

General Considerations

- For CE compliance, drives must satisfy installation requirements related to both EN 61800-5-1 and EN 61800-3 provided in this document.
- PowerFlex 750-Series AC Drives comply with the EMC requirements of EN 61800-3 when installed according to good EMC practices and the instructions provided in this document. However, many factors can influence the EMC compliance of an entire machine or installation, and compliance of the drive itself does not ensure compliance of all applications.
- PowerFlex 750-Series drives are not intended to be used on public low-voltage networks which supply domestic premises. Without additional mitigation, radio frequency interference is expected if used on such a network. The installer is responsible to take measures such as supplementary line filters and enclosures to prevent interference, in addition to the installation requirements of this document.
- Requirements for supplementary mitigation related to specific high frequency emission limits are provided in Table 1.

- PowerFlex 750-Series drives generate harmonic current emissions on the AC supply system. When operated on a public low-voltage network it is the responsibility of the installer or user to ensure that applicable requirements of the distribution network operator have been met. Consultation with the network operator and Rockwell Automation may be necessary.

ATTENTION: PowerFlex 750-Series drives produce DC current in the protective earthing conductor which may reduce the ability of RCD's (residual current-operated protective devices) or RCM's (residual current-operated monitoring devices) of type A or AC to provide protection for other equipment in the installation.

Installation Requirements Related to EN 61800-5-1 and the Low Voltage Directive

- 600V and 690V class PowerFlex 750-Series drives are designed to be CE compliant only if they are NOT connected to "corner-earthed" supply systems where one of the three phases of the supply system has been earthed.
- Voltage classes up to 480V PowerFlex 750-Series drives are compliant with the CE LV Directive when used on a "corner-earthed" supply system as well as all other common supply systems for altitudes up to and including 2000 m (6562 ft).
- When used at altitudes above 2000 m (6562 ft) up to a maximum of 4865 m (15,961 ft), PowerFlex 750-Series drives of voltage classes up to 480V may not be powered from a "corner-earthed" supply system in order to maintain compliance with the CE LV Directive.
- Drives provided in the IP54, NEMA/UL Type 12 enclosure are compliant with the CE LV Directive when installed in pollution degree 1…4 environments. All other enclosure types must be installed in a pollution degree 1 or 2 environment to be compliant with the CE LV Directive. Characteristics of the different pollution degree ratings are provided in Table 6 on page 12.
- NEMA/UL Open Type and Flange Mount drives must either be installed in a supplementary enclosure or equipped with a "NEMA Type 1 Kit" to be CE compliant with respect to protection against electrical shock.
- PowerFlex 750-Series drives produce leakage current in the protective earthing conductor which exceeds 3.5 mA AC and/or 10 mA DC. The minimum size of the protective earthing (grounding) conductor used in the application must comply with local safety regulations for high protective earthing conductor current equipment.

Installation Requirements Related to EN 61800-3 and the EMC Directive

- The drive must be earthed (grounded) as described in the PowerFlex 750-Series User Manual, publication 750-UM001.
- Output power wiring to the motor must employ cable with a braided shield providing 75% or greater coverage, or the cables must be housed in metal conduit, or equivalent shielding must be provided. Continuous shielding must be provided from the drive enclosure to the motor enclosure. Both ends of the motor cable shield (or conduit) must terminate with a low-impedance connection to earth. At the drive end of the motor cable, either

  a) The cable shield must be clamped to a properly-installed "EMC plate" for the drive. Kit number 20-750-EMC1-F*x*.

  or

  b) The cable shield or conduit must terminate in a shielded connector used in conjunction with a properly-installed conduit plate or conduit box provided in the "NEMA Type 1 Kit" for the drive. Kit number 20-750-NEMA1-F*x*.
- At the motor end, the motor cable shield or conduit must terminate in a shielded connector which must be properly installed in an earthed motor wiring box attached to the motor. The motor wiring box cover must be installed and earthed.
- All control (I/O) and signal wiring to the drive must use cable with a braided shield providing 75% or greater coverage, or the cables must be housed in metal conduit, or equivalent shielding must be provided. When shielded cable is used, only the drive end of the cable shield should be terminated with a low-impedance connection to earth. The cable shield may be terminated either by using a shielded connector in conjunction with a conduit plate or conduit box, or the shield may be clamped to an "EMC plate."
- Motor cabling must be separated from control and signal wiring wherever possible.
- Maximum motor cable length must not exceed the maximum length indicated in Table 1 for compliance with radio frequency emission limits for the specific standard and installation environment.
- EMC cores must be applied to input power and motor cabling for some models of the PowerFlex 750-Series drives as indicated in Table 1.
- The drive must be powered from an earthed supply system such as a TN or TT system and the PE-A and PE-B jumpers in the drive must be installed (see Drive Power Jumper Configuration starting on page 53).

Table 1 PowerFlex 750-Series RF Emission Compliance and Installation Requirements

	Standard / Limits			
Drive Frame Catalog Number	**EN61800-3 Cat. C1 EN61000-6-3 CISPR11 Group 1 Class B**	**EN61800-3 Cat. C2 EN61000-6-4 CISPR11 Group 1 Class A (input power ≤ 20 kVA)**	**EN61800-3 Cat. C3 (I ≤ 100 A) CISPR11 Group 1 Class A (Input power > 20 kVA)**	**EN61800-3 Cat. C3 I > 100 A**
Frame 2 20F11xx2P1…20F11xx022 20G11xx2P1…20G11xx022	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input core (1)	30 m motor cable limit with input core (1)	N/A
Frame 3 20F11xx030…20F11xx043 20G11xx030…20G11xx043	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input core (1)	30 m motor cable limit with input core (1)	N/A
Frame 4 20F11xx060…20F11xx072 20G11xx060…20G11xx072	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input and output cores (1)	30 m motor cable limit with input and output cores (1)	N/A
Frame 5 20F11xx085…20F11xx104 20G11xx085…20G11xx104	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit with input and output cores (1)	30 m motor cable limit with input and output cores (1)	30 m motor cable limit with input and output cores (1)
Frame 6 20F11xx140…20F11xx260 20G11xx140…20G11xx260	Compliance possible with supplementary mitigation (Consult factory)	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit	30 m motor cable limit
Frame 7 20F11xx302…20F11xx477 20G11xx302…20G11xx477	Compliance possible with supplementary mitigation (Consult factory)	Compliance possible with supplementary mitigation (Consult factory)	30 m motor cable limit	30 m motor cable limit
	More Stringent Limits ←		→	Less Stringent Limits

(1) Rating-specific EMC cores are part of EMC kit numbers 20-750-EMC1-xx and 20-750-EMC2-xx.

Step 2 Mount the Drive

Important: IP00, IP20, and NEMA/UL Open Type PowerFlex 750-Series drives must be mounted in a clean, dry location. Contaminants such as oils, corrosive vapors and abrasive debris must be kept out of the enclosure. These enclosures are intended for indoor use primarily to provide a degree of protection against contact with enclosed equipment. These enclosures offer no protection against airborne contaminants. Refer to Table 6 and Table 7 for an explanation of enclosure options.

Operating Conditions and Temperatures

PowerFlex 750-Series drives are designed to operate at the following air temperatures without derating.

Table 2 Acceptable Surrounding Air Temperature

Enclosure Rating	Temperature Range	Drive
IP20, NEMA/UL Open Type	0...50 °C (32...122 °F)	Frames 2...5, All Ratings
IP00, NEMA/UL Open Type	0...50 °C (32...122 °F)	Frames 6...7, All Ratings
IP20, NEMA/UL Type 1 (with Debris Hood)	0...40 °C (32...104 °F)	Frames 2...5, All Ratings
IP20, NEMA/UL Type 1 (with Debris Label)	0...40 °C (32...104 °F)	Frames 6...7, All Ratings
Flange Mount -		
Front:		
IP20, NEMA/UL Open Type	0...50 °C (32...122 °F)	Frames 2...5, All Ratings
IP00, NEMA/UL Open Type	0...50 °C (32...122 °F)	Frames 6...7, All Ratings
Back/Heat Sink:		
IP66, NEMA/UL Type 4X	0...40 °C (32...104 °F)	All Frames, All Ratings
Stand-alone/Wall Mount -		
IP54, NEMA/UL Type 12	0...40 °C (32...104 °F)	All Frames, All Ratings

Table 3 400 Volt Ratings - Watts Loss

Frame (1)	ND kW	External Watts	Internal Watts	Total Watts
2	0.75	16	55	71
	1.5	26	57	83
	2.2	39	58	97
	4.0	75	64	139
	5.5	108	70	178
	7.5	161	80	241
	11	225	86	311
3	15	300	103	403
	18.5	362	115	477
	22	505	126	631
4	30	487	130	617
	37	615	147	762
5	45	705	162	867
	55	928	201	1129
6	75	1239	319	1558
	90	1381	300	1681
	110	1893	381	2274
	132	2449	502	2951
7	160	2566	461	3027
	200	3322	586	3908
	250	3922	743	4665

(1) Enclosure codes F and N only.

Table 4 480 Volt Ratings - Watts Loss

Frame (1)	ND Hp	External Watts	Internal Watts	Total Watts
2	1.0	17	60	77
	2.0	27	61	88
	3.0	41	63	104
	5.0	71	68	139
	7.5	108	74	182
	10	149	81	230
	15	237	91	328
3	20	273	101	374
	25	368	115	483
	30	503	126	629
4	40	422	125	547
	50	559	144	703
5	60	646	158	804
	75	855	189	1044
6	100	1109	299	1408
	125	1299	294	1593
	150	1718	358	2076
	200	2384	492	2876
7	250	2704	491	3195
	300	3409	606	4015
	350	3604	683	4287

(1) Enclosure codes F and N only.

Table 5 Environmental Specifications

Specification	Description
Altitude	1000 m (3300 ft) maximum without derating
Storage Temperature	–40…70 °C (–40…158 °F)
Atmosphere	**Important:** Drive **must not** be installed in an area where the ambient atmosphere contains volatile or corrosive gas, vapors or dust. If the drive is not going to be installed for a period of time, it must be stored in an area where it will not be exposed to a corrosive atmosphere.
Relative Humidity	5…95% non-condensing
Shock - Operating	Frame 2…6: 15 g peak for 11 ms duration (±1.0 ms) Frame 7: 10 g peak for 11 ms duration (±1.0 ms)
Shock - Packaged for Shipment	Frame 2: 381 mm (15 in.) drop height Frame 3…4: 330 mm (13 in.) drop height Frame 5: 305 mm (12 in.) drop height Frame 6…7: Meets International Safe Transit Association (ISTA) test procedure 2B
Vibration - Operating	Frame 2: 1.000 mm (0.040 in.) displacement, 2 g peak Frame 3…5: 1.000 mm (0.040 in.) displacement, 1.5 g peak Frame 6…7: 1.000 mm (0.040 in.) displacement, 1 g peak
Vibration - Packaged for Shipment Sinusoidal Loose Load:	Frame 2…5: 20.0 mm (0.8 in.) peak to peak, 2…5.186 Hz; 1.1 g peak from 5.186…20 Hz Frame 6…7: Meets ISTA 2B packaging standards
Random Secured:	Frame 2…5: Frequency (Hz) / PSD (g^2/Hz) 1 / 0.00005 4 / 0.01 16 / 0.01 40 / 0.001 80 / 0.001 200 / 0.00001 Frame 6…7 Meets International Safe Transit Association (ISTA) test procedure 2B
Surrounding Environment Pollution Degree (1) Pollution Degree 1 & 2: Pollution Degree 3 & 4:	 All enclosures acceptable. Enclosure that meets or exceeds IP54, NEMA/UL Type 12 required.

(1) Refer to Table 6 on page 12 for descriptions of each pollution degree rating.

Table 6 Pollution Degree Ratings According to EN 61800-5-1

Pollution Degree	Description
1	No pollution or only dry, non-conductive pollution occurs. The pollution has no influence.
2	Normally, only non-conductive pollution occurs. Occasionally, however, a temporary conductivity caused by condensation is to be expected, when the drive is out of operation.
3	Conductive pollution or dry non-conductive pollution occurs, which becomes conductive due to condensation, which is to be expected.
4	The pollution generates persistent conductivity caused, for example by conductive dust or rain or snow.

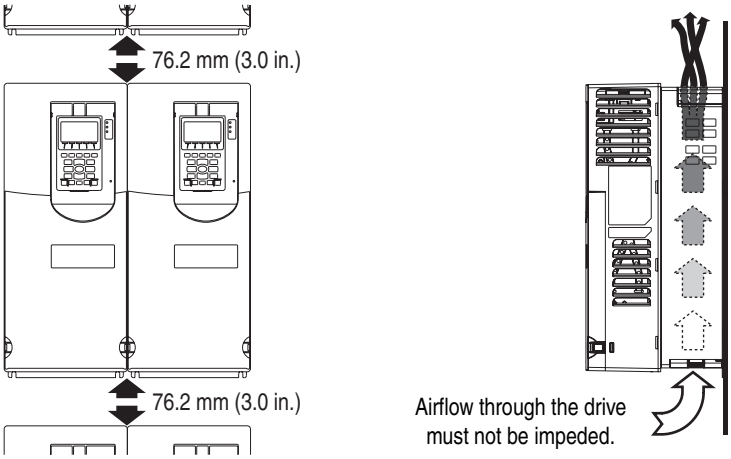
Table 7 Drive Enclosure Ratings

Frames	Enclosure Type (Cat. No. Position 6)	Installed Accessory Kit	Front Side Rating		Back Side/Heat Sink Rating	
			Enclosure Type	Pollution Degree	Enclosure Type	Pollution Degree
2, 3, 4, 5	N	None	IP20 NEMA/UL Open Type	1, 2	IP20 NEMA/UL Open Type	1, 2
		NEMA Type 1	IP20 NEMA/UL Type 1	1, 2	IP20 NEMA/UL Type 1	1, 2
		Flange	IP20 NEMA/UL Type 1	1, 2	IP20 NEMA/UL Type 1	1, 2
	F	None	IP20 NEMA/UL Open Type	1, 2	IP66 NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54 NEMA/UL Type 12	1, 2, 3, 4	IP54 NEMA/UL Type 12	1, 2, 3, 4
6, 7	N	None	IP00 NEMA/UL Open Type	1, 2	IP00 NEMA/UL Open Type Kit	1, 2
		NEMA Type 1	IP20 NEMA/UL Type 1	1, 2	IP20 NEMA/UL Type 1	1, 2
		NEMA Type 4X Flange	IP00 NEMA/UL Open Type	1, 2	IP66 NEMA/UL Type 4X	1, 2, 3, 4
	G	None	IP54 NEMA/UL Type 12	1, 2, 3, 4	IP54 NEMA/UL Type 12	1, 2, 3, 4

Minimum Mounting Clearances

Specified vertical clearance requirements (indicated in Figure 1) are intended to be from drive to drive. Other objects can occupy this space; however, reduced airflow may cause protection circuits to fault the drive. The drive must be mounted in a vertical orientation as shown. In addition, inlet air temperature must not exceed the product specification.

Figure 1 Drive Enclosure Minimum Mounting Clearances

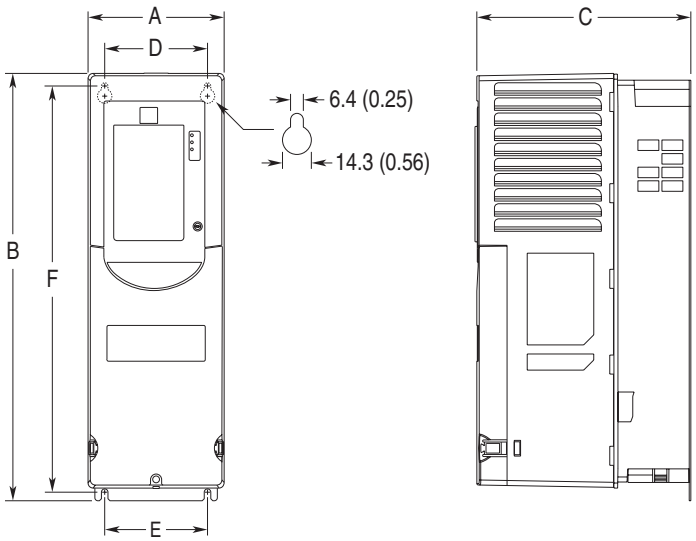


Dimensions

Table 8 Frame/Rating Cross-Reference

400V AC Input			480V AC Input			Frame Size		
Catalog Number	Normal Duty kW Output	Heavy Duty kW Output	Catalog Number	Normal Duty Hp Output	Heavy Duty Hp Output	Enclosure Code		
						N	F	G
20x...C2P1	0.75	0.75	20x...D2P1	1	1	2	2	2
20x...C3P5	1.5	1.5	20x...D3P4	2	2			
20x...C5P0	2.2	2.2	20x...D5P0	3	3			
20x...C8P7	4	4	20x...D8P0	5	5			
20x...C011	5.5	5.5	20x...D011	7.5	7.5			
20x...C015	7.5	5.5	20x...D014	10	7.5			
20x...C022	11	7.5	20x...D022	15	10			
20x...C030	15	11	20x...D027	20	15	3	3	3
20x...C037	18.5	15	20x...D034	25	20			
20x...C043	22	18.5	20x...D040	30	25			
20x...C060	30	22	20x...D052	40	30	4	4	4
20x...C072	37	30	20x...D065	50	40			5
20x...C085	45	37	20x...D077	60	50	5	5	
20x...C104	55	45	20x...D096	75	60			6
20x...C140	75	55	20x...D125	100	75	6	N/A	
20x...C170	90	75	20x...D156	125	100			
20x...C205	110	90	20x...D186	150	125			
20x...C260	132	110	20x...D248	200	150			7
20x...C302	160	132	20x...D302	250	200	7		
20x...C367	200	160	20x...D361	300	250			
20x...C456	250	200	20x...D415	350	300			

Figure 2 IP20, NEMA/UL Open Type Frames 2…5 *(Frame 2 Shown)*

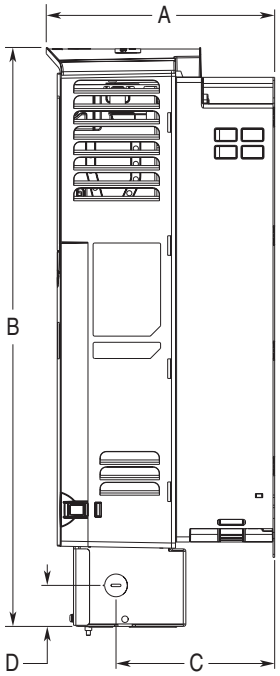


Dimensions are in millimeters and (inches).
Weights are in kilograms and (pounds).

Frame	A	B	C	D	E	F	Weight *kg (lb)*
2	134.5 (5.30)	424.2 (16.70)	212.0 (8.35)	100.0 (3.94)	100.0 (3.94)	404.2 (15.91)	7.8 (17.2)
3	190.0 (7.48)	454.0 (17.87)	212.0 (8.35)	158.0 (6.22)	158.0 (6.22)	435.0 (17.13)	11.8 (26.1)
4	222.0 (8.74)	474.0 (18.66)	212.0 (8.35)	194.0 (7.64)	202.0 (7.95)	455.0 (17.91)	13.6 (30.0)
5	270.0 (10.63)	550.0 (21.65)	212.0 (8.35)	238.0 (9.37)	238.0 (9.37)	531.0 (20.91)	20.4 (45.0)


M6 (1/4 in.) mounting hardware recommended.

Figure 3 NEMA/UL Type 1 Kit Frames 2…5 *(Frame 4 Shown)*

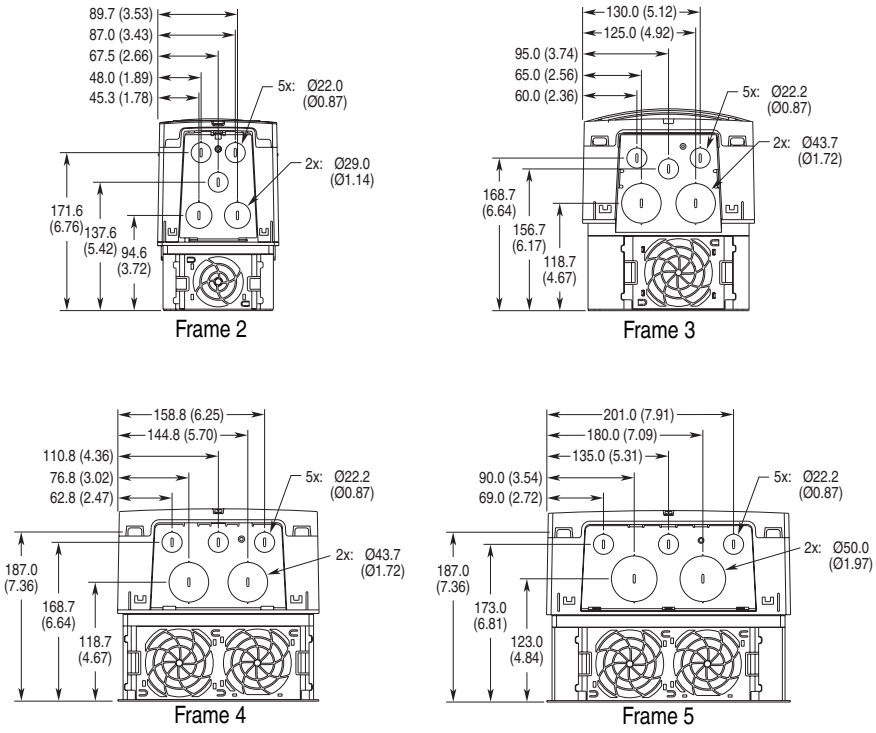


Dimensions are in millimeters and (inches).

Frame	A	B	C	D
2	222.2 (8.75)	497.1 (19.57)	117.7 (4.63)	38.0 (1.50)
3	223.1 (8.78)	530.1 (20.87)	154.7 (6.09)	38.0 (1.50)
4	222.7 (8.77)	564.4 (22.22)	154.7 (6.09)	40.0 (1.57)
5	222.7 (8.77)	665.4 (26.20)	155.0 (6.10)	55.0 (2.17)

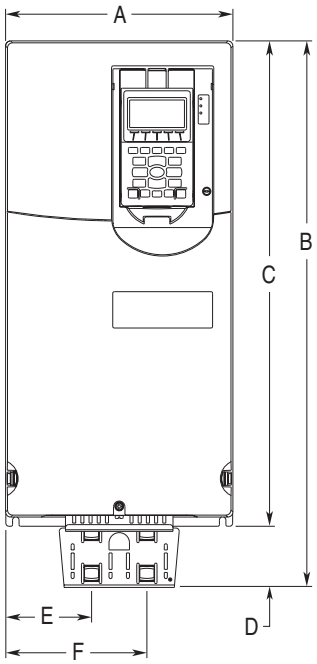
Important: NEMA Type 1 Kits (20-750-NEMA-F*x*) do not change the mounting dimensions in Figure 2.

Figure 4 NEMA/UL Type 1 Frames 2…5 Bottom View Dimensions



Dimensions are in millimeters and (inches).

Figure 5 EMC Plate Kit Frames 2...5 *(Frame 4 Shown)*

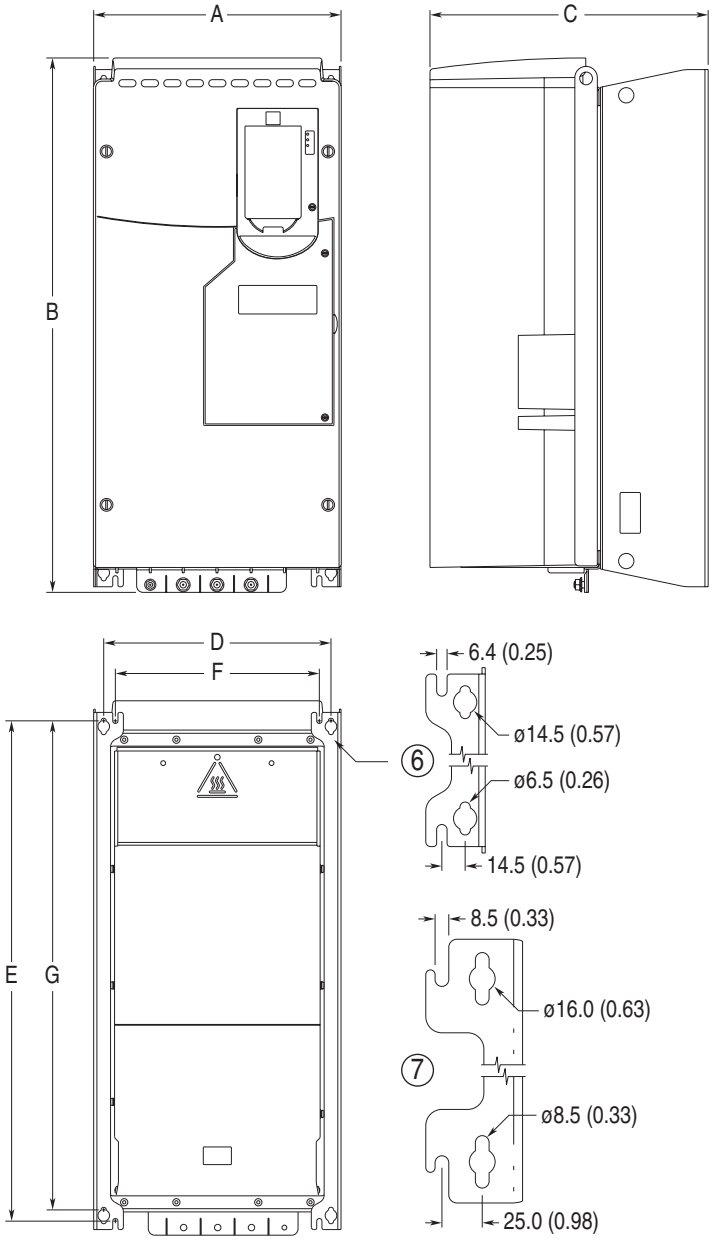


Dimensions are in millimeters and (inches).

Frame	A	B	C	D	E	F
2	134.5 (5.30)	485.9 (19.13)	424.2 (16.70)	61.7 (2.43)	43.5 (1.71)	79.5 (3.13)
3	190.0 (7.48)	514.0 (20.24)	454.0 (17.87)	60.0 (2.36)	74.0 (2.91)	116.0 (4.57)
4	222.0 (8.74)	533.7 (21.01)	474.0 (18.66)	59.7 (2.35)	84.0 (3.31)	138.0 (5.43)
5	270.0 (10.63)	609.7 (24.00)	550.0 (21.65)	59.7 (2.35)	77.8 (3.06)	191.8 (7.55)

Important: EMC Kits (20-750-EMC-F*x*) do not change the mounting dimensions in Figure 2. Refer to the PowerFlex 750-Series EMC Plate and Core(s) Installation Instructions, publication 750-IN006, for detailed information on kit installation.

Figure 6 IP00, NEMA/UL Open Type Frames 6 & 7 *(Frame 6 Shown)*

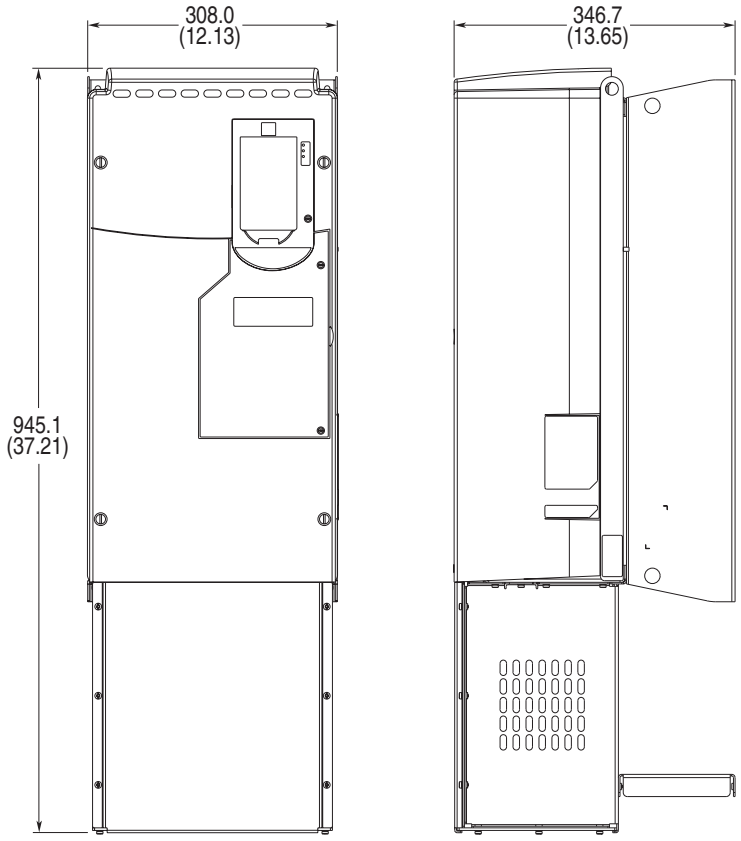


Dimensions are in millimeters and (inches).
Weights are in kilograms and (pounds).

Frame	A	B	C	D	E	F	G	Weight *kg (lb)*
6	308.0 (12.13)	665.5 (26.20)	346.4 (13.64)	283.0 (11.14)	623.0 (24.53)	254.0 (10.00)	609.0 (23.98)	38.6 (85.0)
7	430.0 (16.93)	881.5 (34.70)	349.6 (13.76)	380.0 (14.96)	838.0 (32.99)	330.0 (12.99)	825.0 (32.48)	72.6…108.9 (160.0…240.0)

Frame 6: M6 (1/4 in.) mounting hardware recommended.
Frame 7: M8 (5/16 in.) mounting hardware recommended.

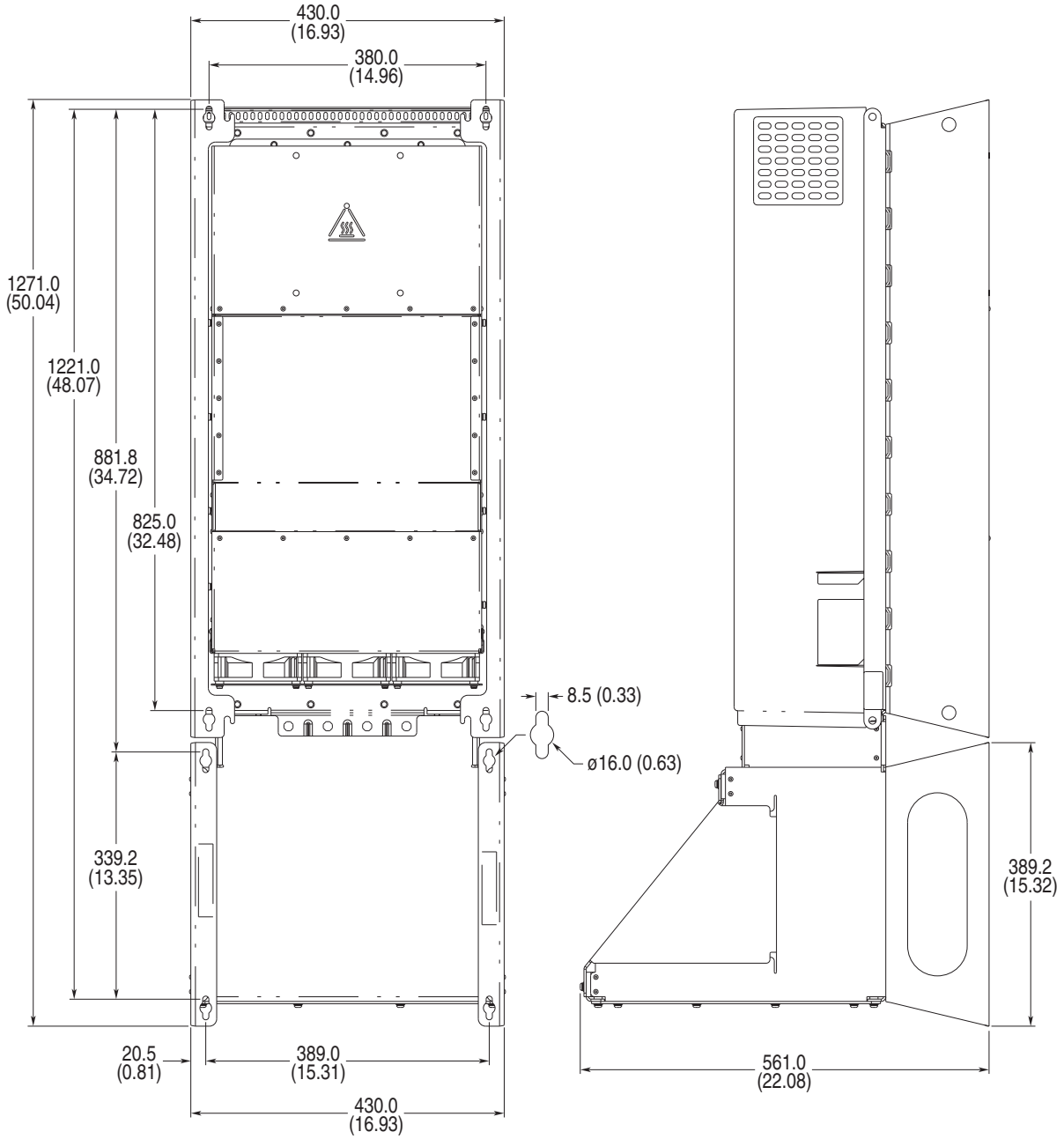
Figure 7 NEMA/UL Type 1 Kit Frame 6



Dimensions are in millimeters and (inches).

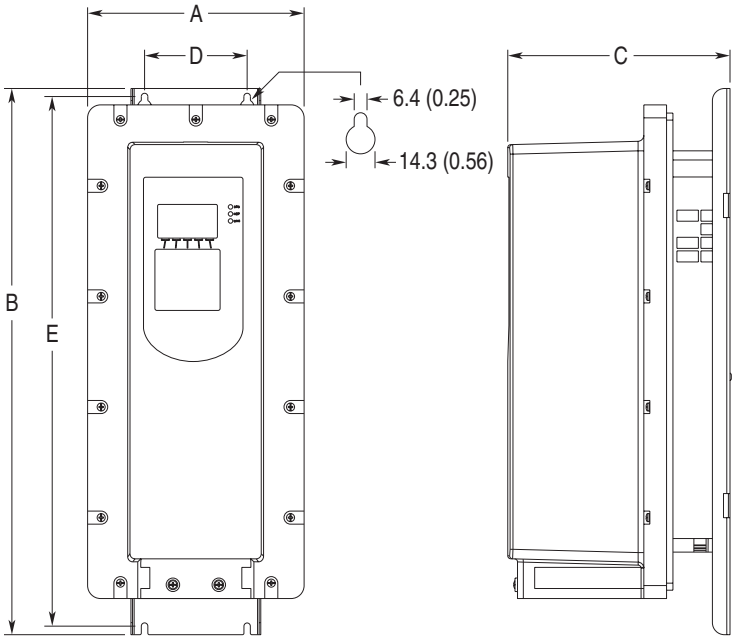
Important: NEMA Type 1 Kit (20-750-NEMA-F6) does not change the mounting dimensions in Figure 6.

Figure 8 NEMA/UL Type 1 Frame 7



Dimensions are in millimeters and (inches).

Figure 9 IP54, NEMA/UL Type 12 Frames 2...5 *(Frame 2 Shown)*

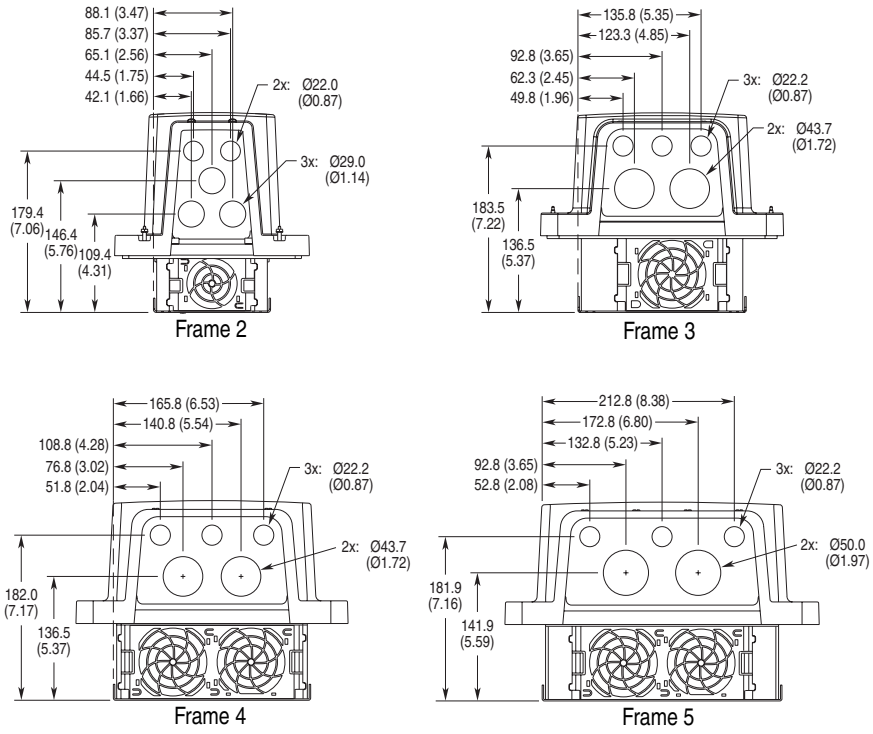


Dimensions are in millimeters and (inches).
Weights are in kilograms and (pounds).

Frame	A	B	C	D	E	Weight *kg (lb)*
2	215.3 (8.48)	543.2 (21.39)	222.2 (8.75)	100.0 (3.94)	528.2 (20.80)	7.8 (17.2)
3	268.0 (10.55)	551.0 (21.69)	220.1 (8.67)	158.0 (6.22)	533.0 (20.98)	11.8 (26.1)
4	300.0 (11.81)	571.0 (22.48)	220.1 (8.67)	194.0 (7.64)	553.0 (21.77)	13.6 (30.0)
5	348.0 (13.70)	647.0 (25.47)	220.1 (8.67)	238.0 (9.37)	629.0 (24.76)	20.4 (45.0)

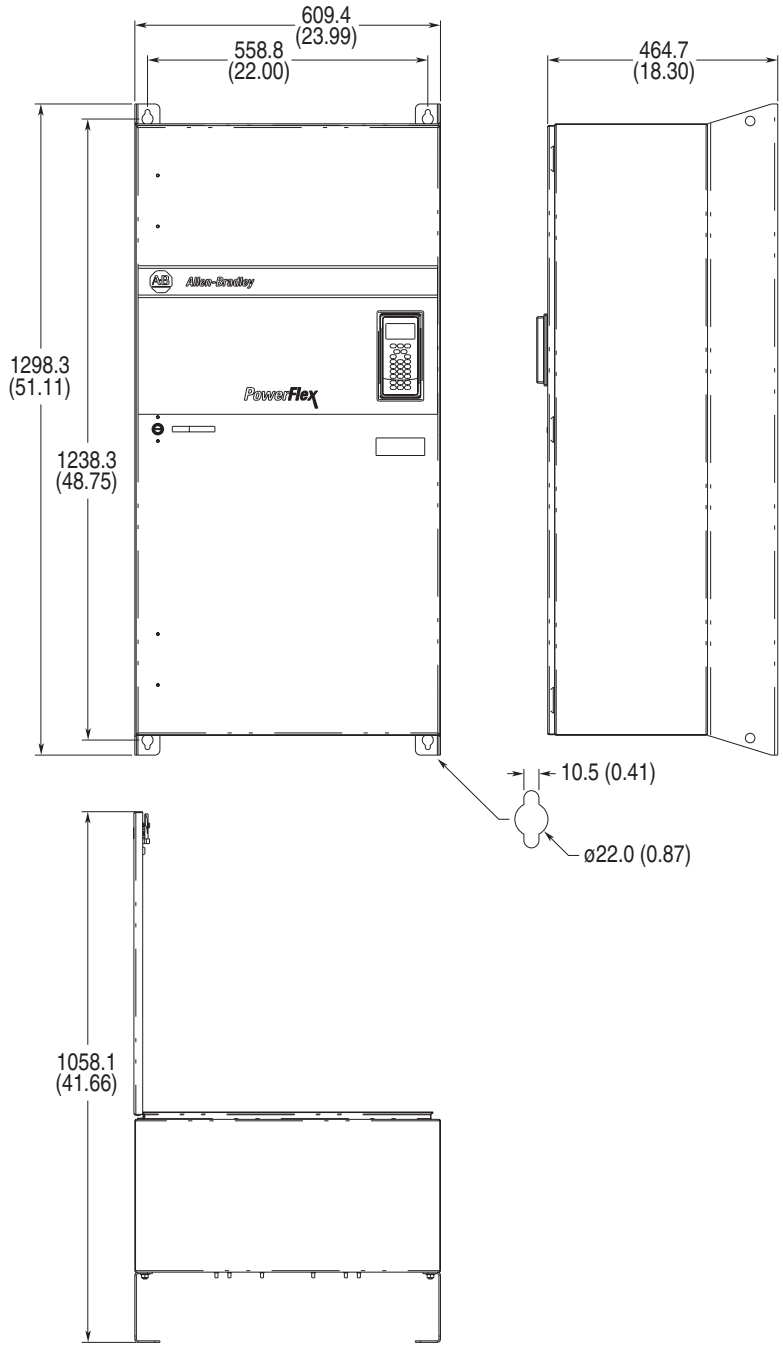
M6 (1/4 in.) mounting hardware recommended.

Figure 10 IP54, NEMA/UL Type 12 Frames 2…5 Bottom View Dimensions



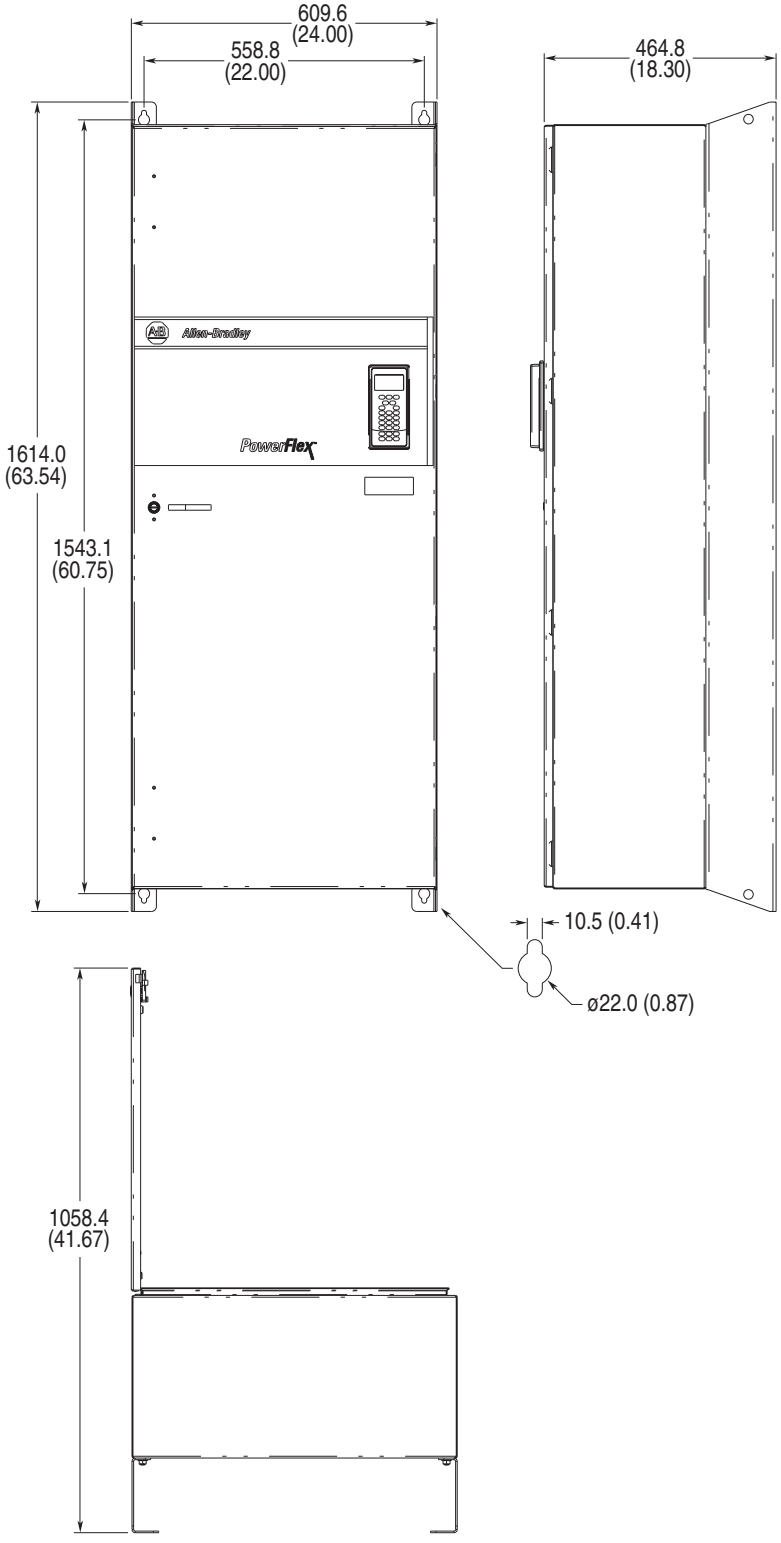
Dimensions are in millimeters and (inches).

Figure 11 IP54, NEMA/UL Type 12, Frame 6



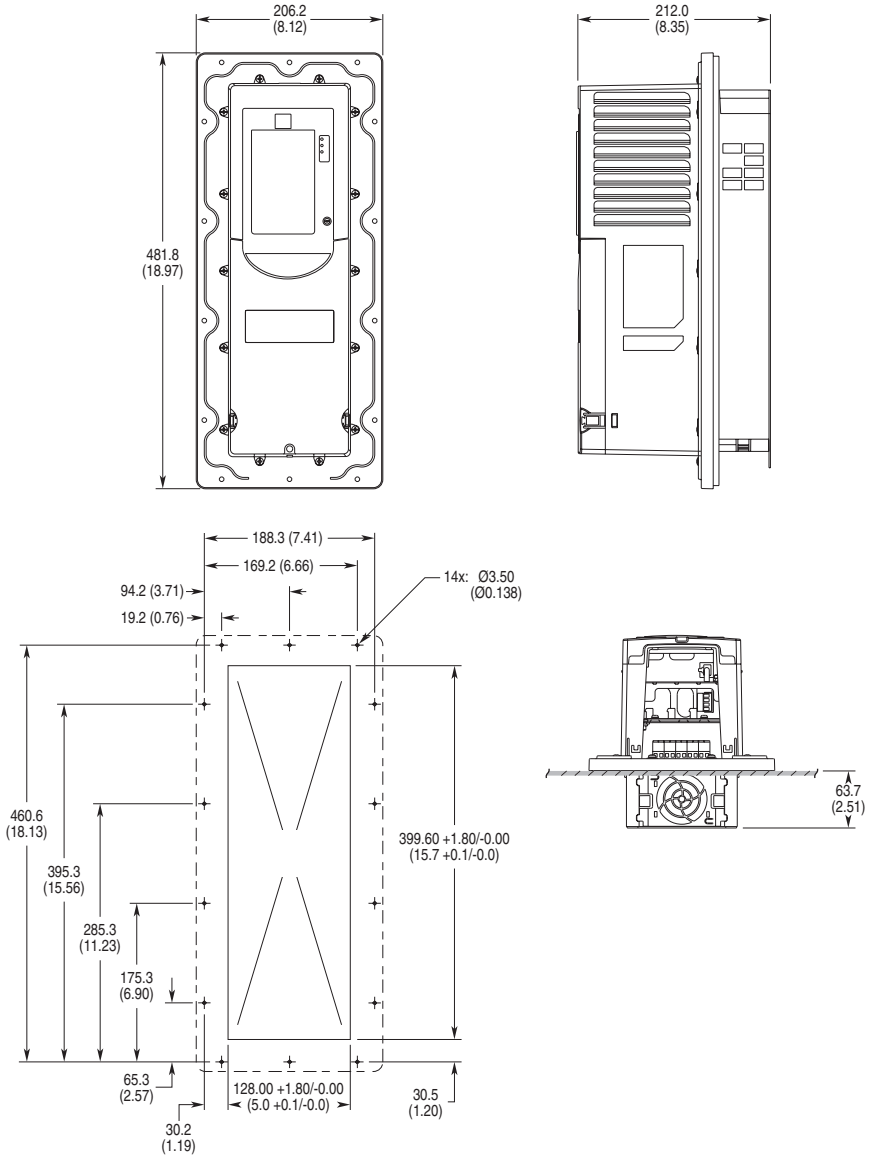
Dimensions are in millimeters and (inches).

Figure 12 IP54, NEMA/UL Type 12, Frame 7



Dimensions are in millimeters and (inches).

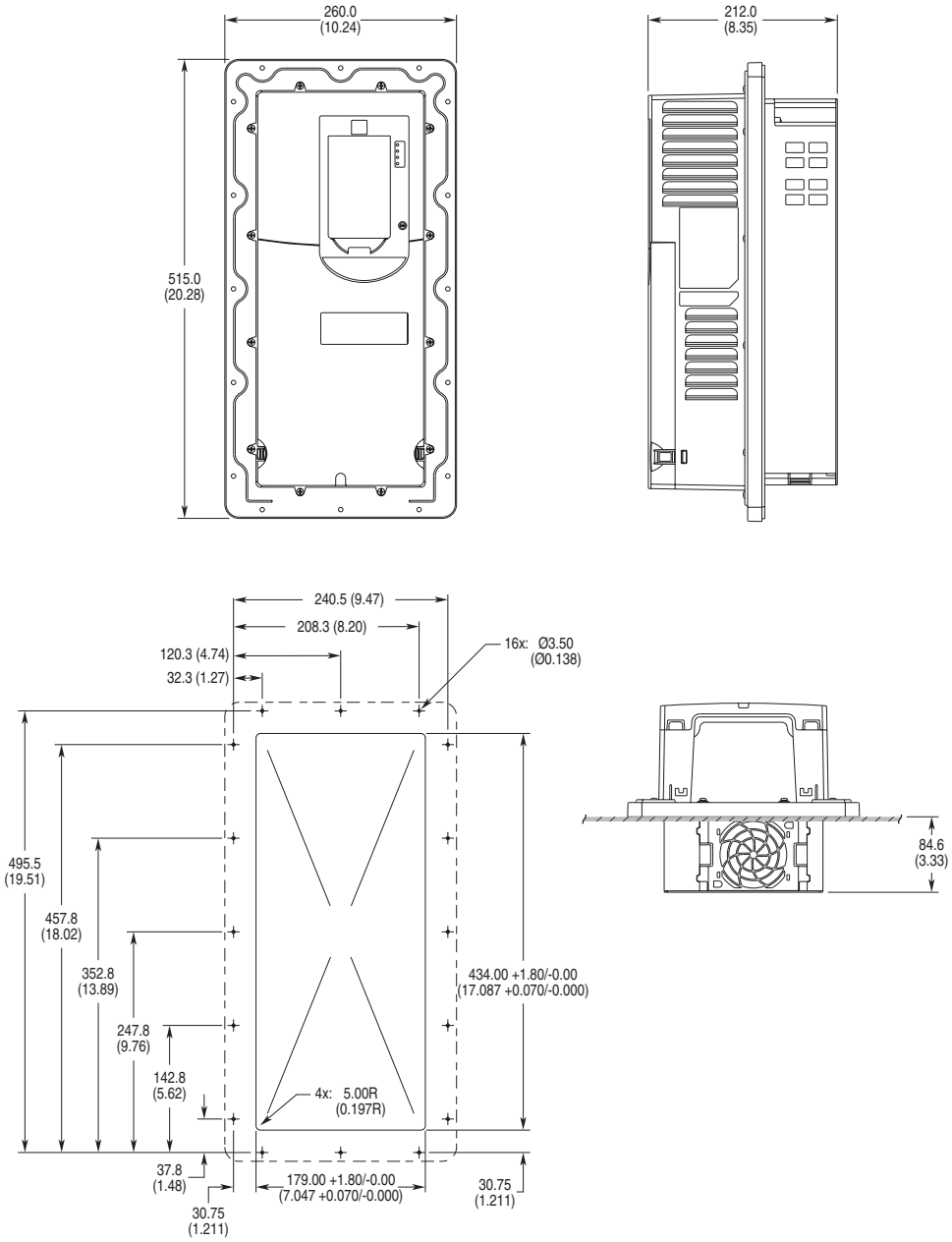
Figure 13 Flange Mount Frame 2



Dimensions are in millimeters and (inches).

Important: Must use mounting hardware supplied to meet enclosure rating.

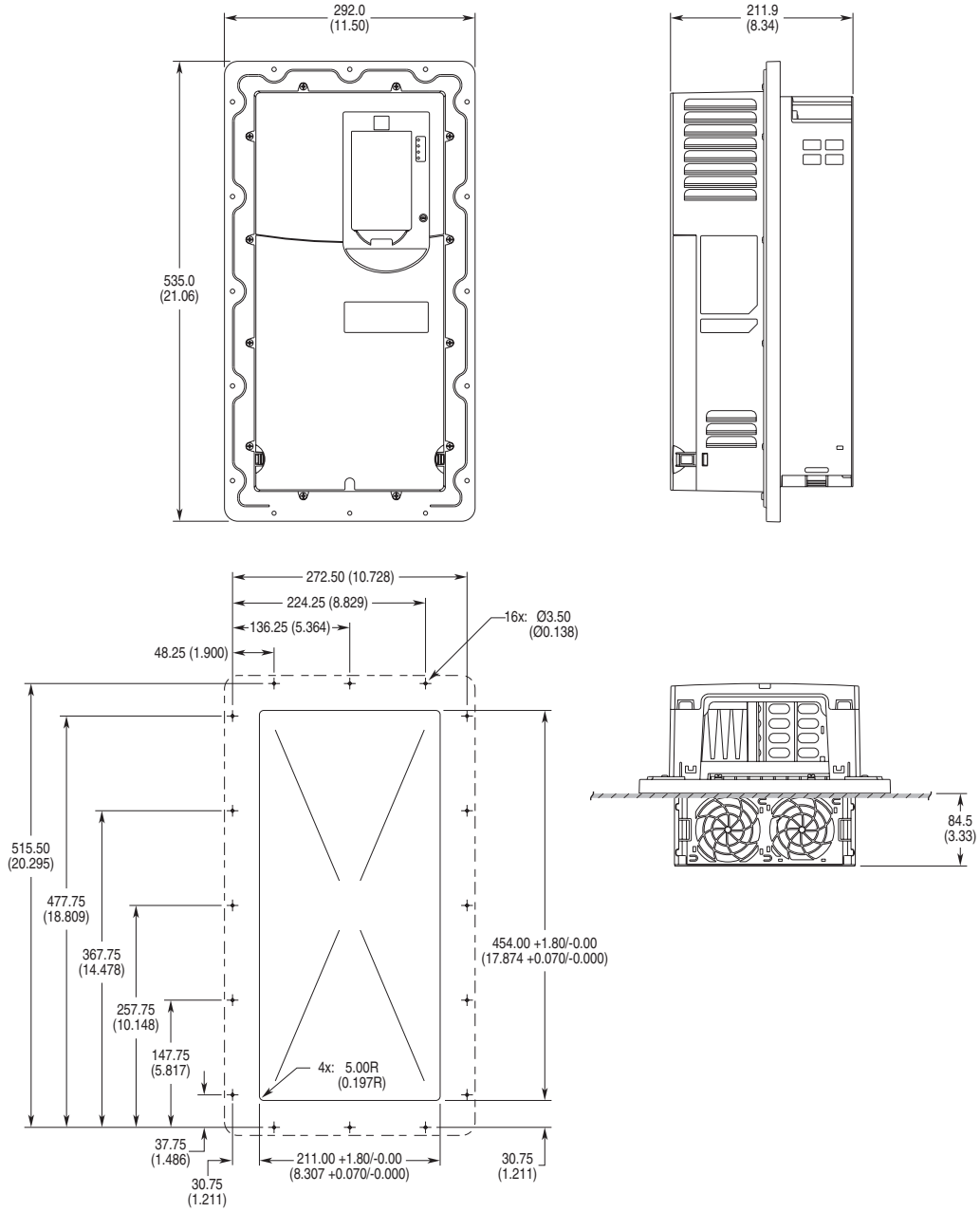
Figure 14 Flange Mount Frame 3



Dimensions are in millimeters and (inches).

Important: Must use mounting hardware supplied to meet enclosure rating.

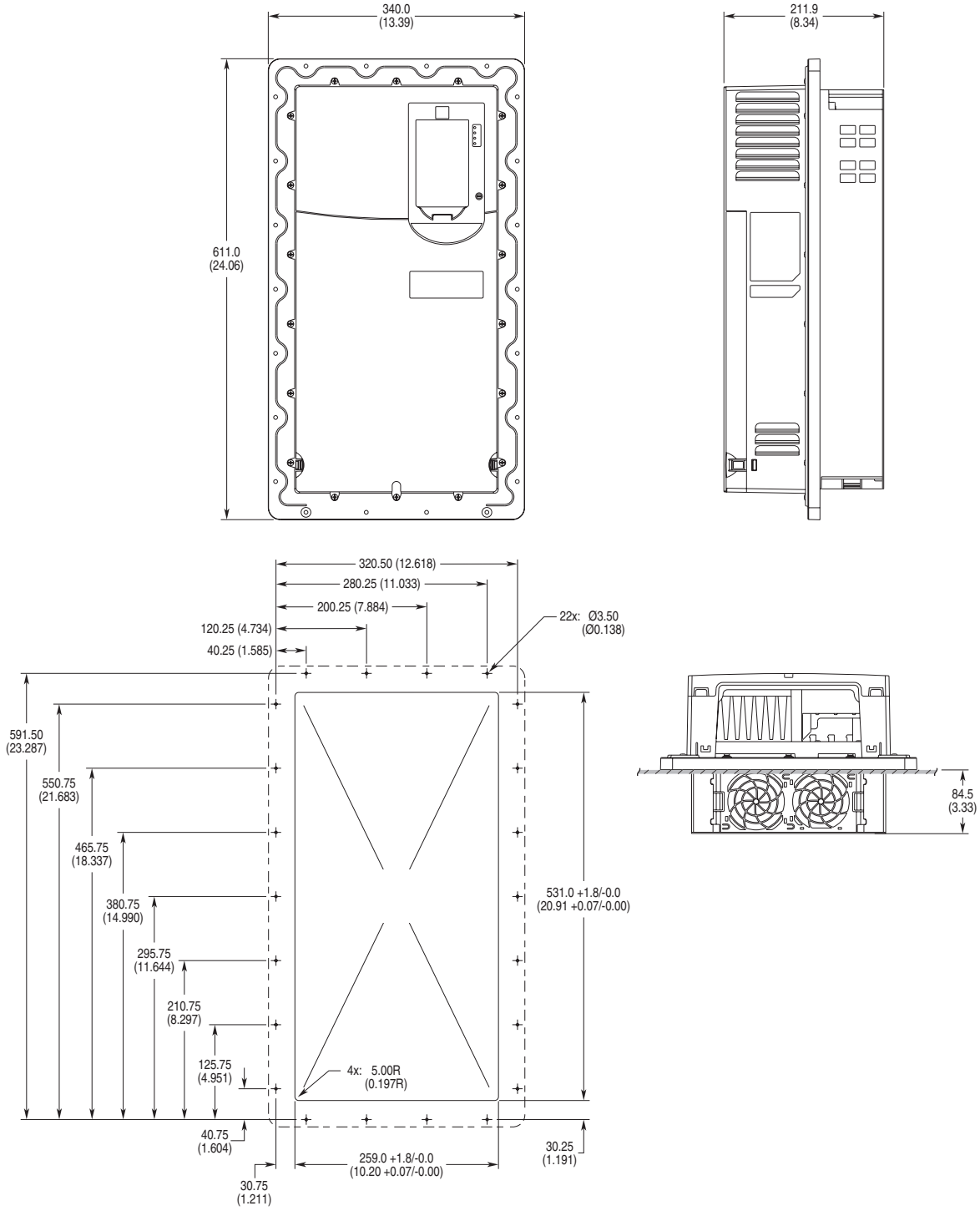
Figure 15 Flange Mount Frame 4



Dimensions are in millimeters and (inches).

Important: Must use mounting hardware supplied to meet enclosure rating.

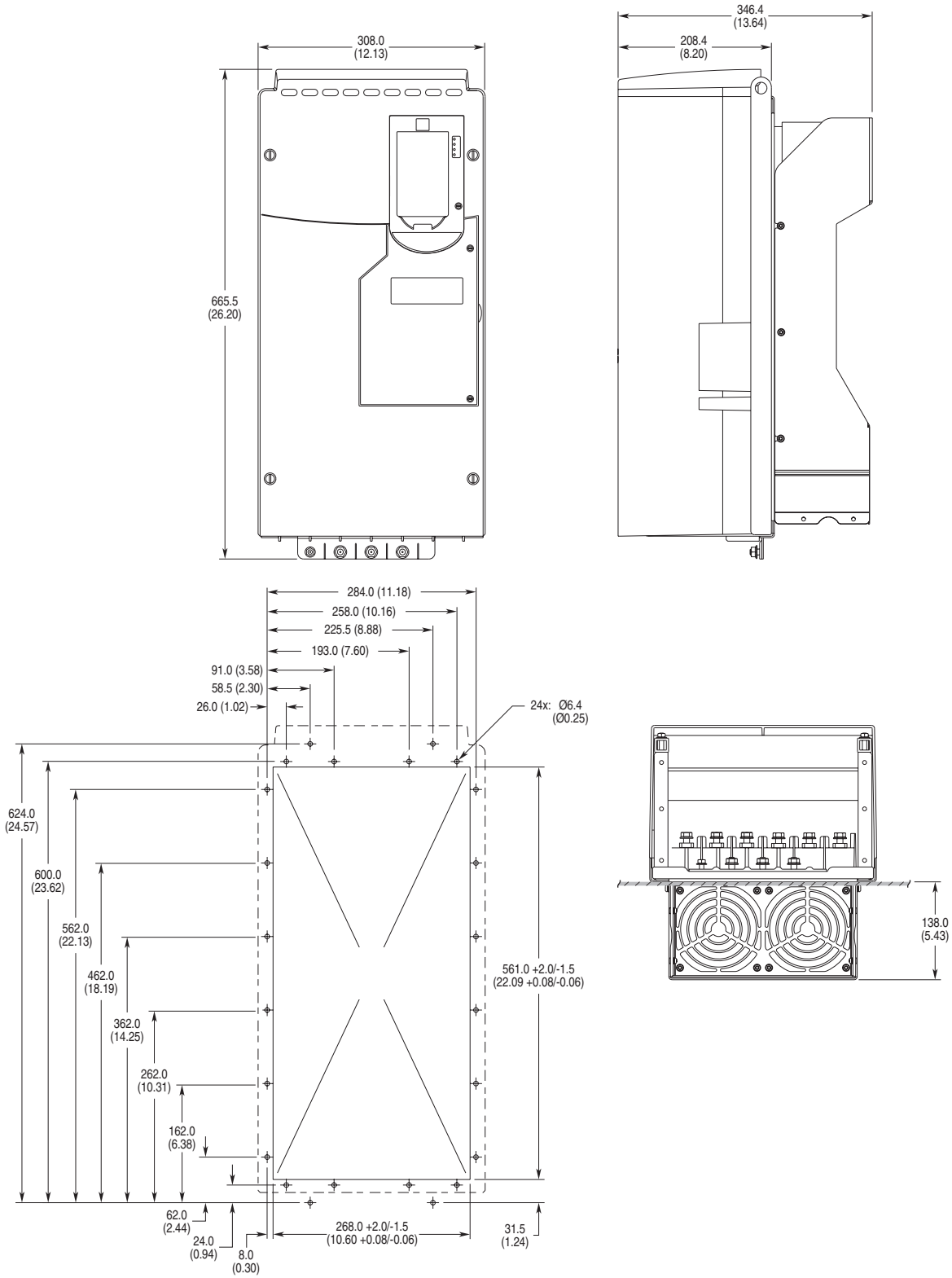
Figure 16 Flange Mount Frame 5



Dimensions are in millimeters and (inches).

Important: Must use mounting hardware supplied to meet enclosure rating.

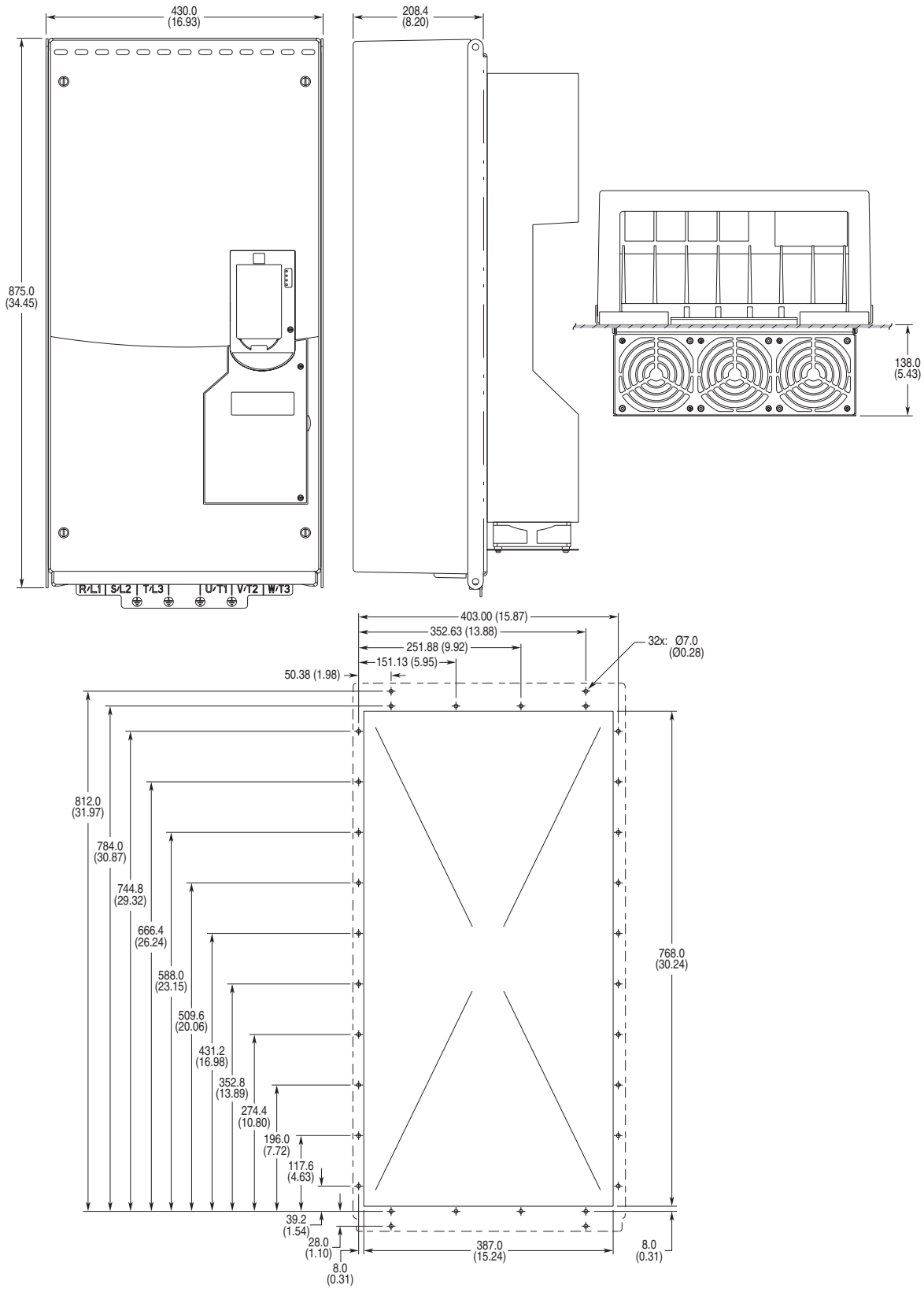
Figure 17 Flange Mount Frame 6



Dimensions are in millimeters and (inches).

Important: Must use Flange Adapter kit (20-750-FLNG4-F6) to meet enclosure rating.

Figure 18 Flange Mount Frame 7



Dimensions are in millimeters and (inches).

Important: Must use Flange Adapter kit (20-750-FLNG4-F7) to meet enclosure rating.

Lifting the Drive

The dimensions and weights specified must be taken into consideration when mounting the drive. All lifting equipment and lifting components (hooks, bolts, lifts, slings, chains, etc.) must be properly sized and rated to safely lift and hold the weight of the drive while mounting.

ATTENTION: To guard against possible personal injury and/or equipment damage…

- Inspect all lifting hardware for proper attachment before lifting drive.
- Do not allow any part of the drive or lifting mechanism to make contact with electrically charged conductors or components.
- Do not subject the drive to high rates of acceleration or deceleration while transporting to the mounting location or when lifting.
- Do not allow personnel or their limbs directly underneath the drive when it is being lifted and mounted.

Figure 19 **Frame 6 Open Type and Flange Mount:** Weight 38.6 kg (85.0 lb)

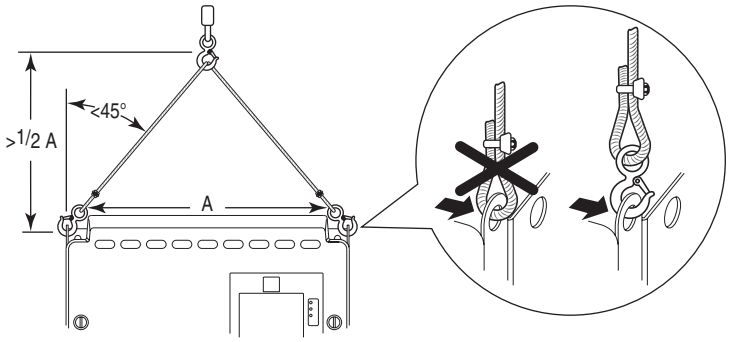
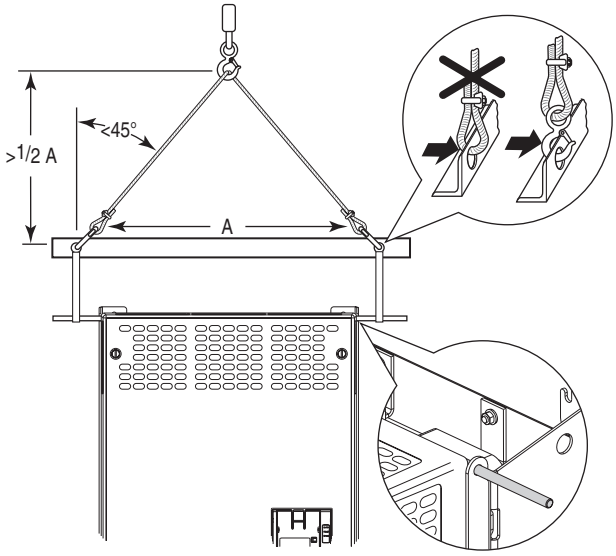
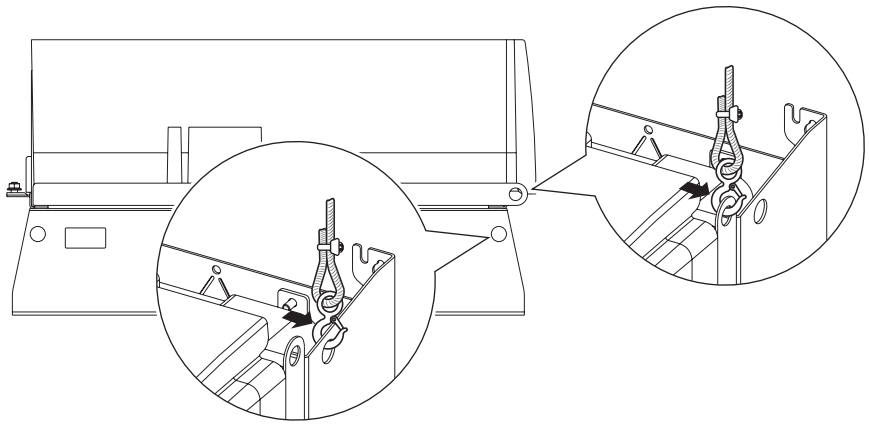


Figure 20 **Frame 7 Open Type and Flange Mount:** Weight 72.6…108.9 kg (160.0…240.0 lb)
Frame 6 NEMA/UL Type 4X/12: Weight 90.7 kg (200 lb)
Frame 7 NEMA/UL Type 4X/12: Weight 171 kg (377 lb)

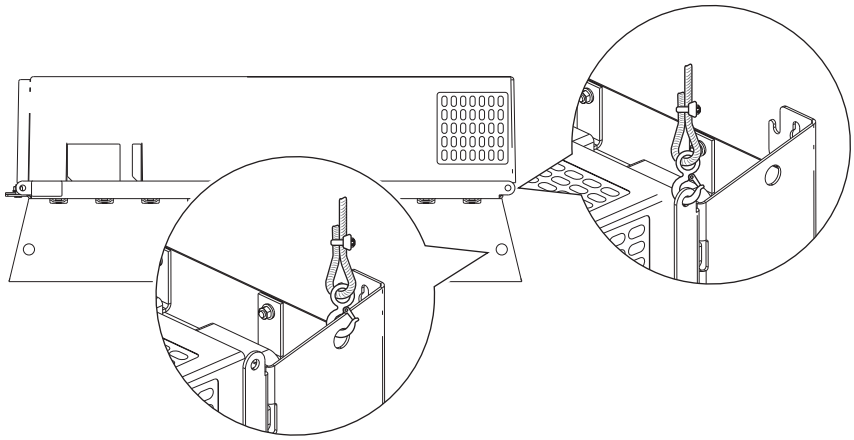


IP00, NEMA/UL Open Type

Frame 6 Lifting Points – 6 Places

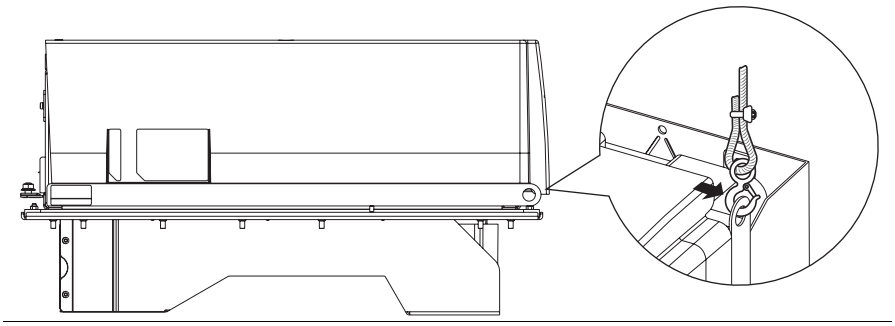


Frame 7 Lifting Points – 8 Places

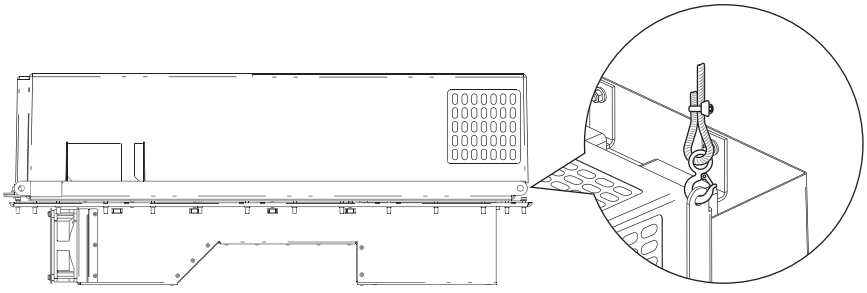


IP66, NEMA/UL Type 4X/12 Flange Mount

Frame 6 Lifting Points – 2 Places

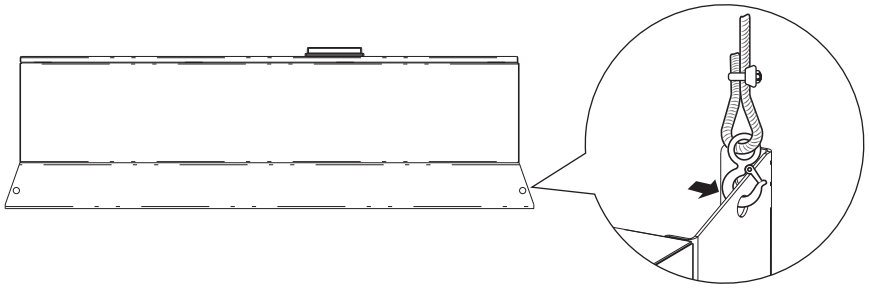


Frame 7 Lifting Points – 4 Places



IP54, NEMA/UL Type 12

Frame 6 and 7 Lifting Points – 4 Places



Opening the Cover

Figure 21 IP20, NEMA/UL Open Type, Frames 2…5

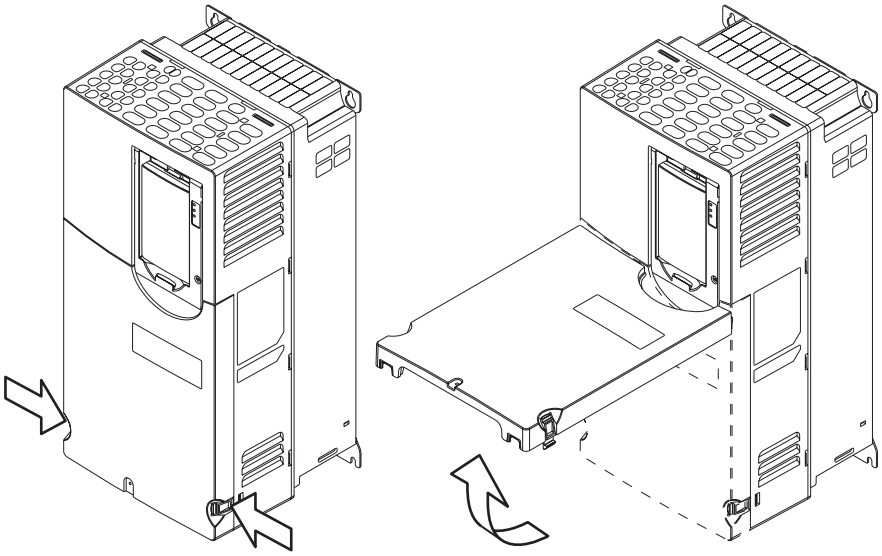
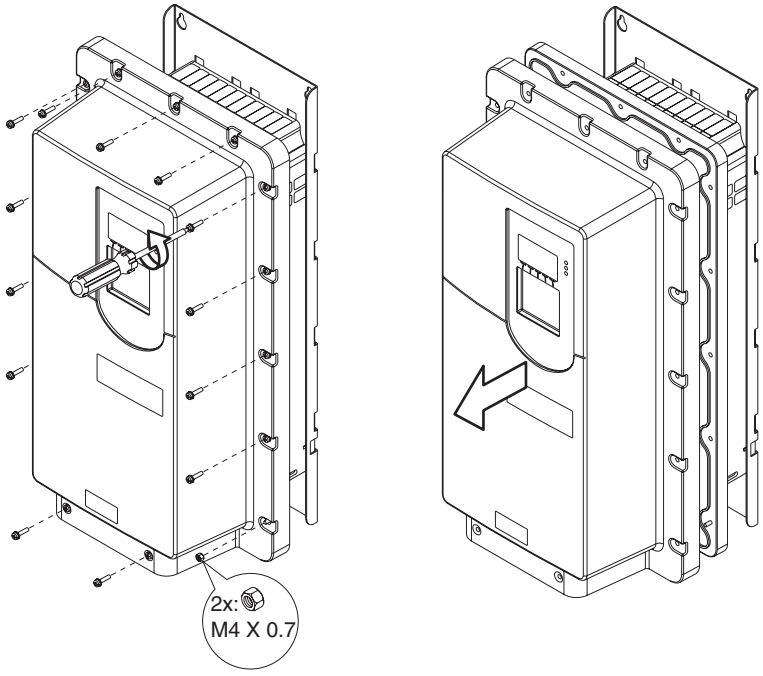


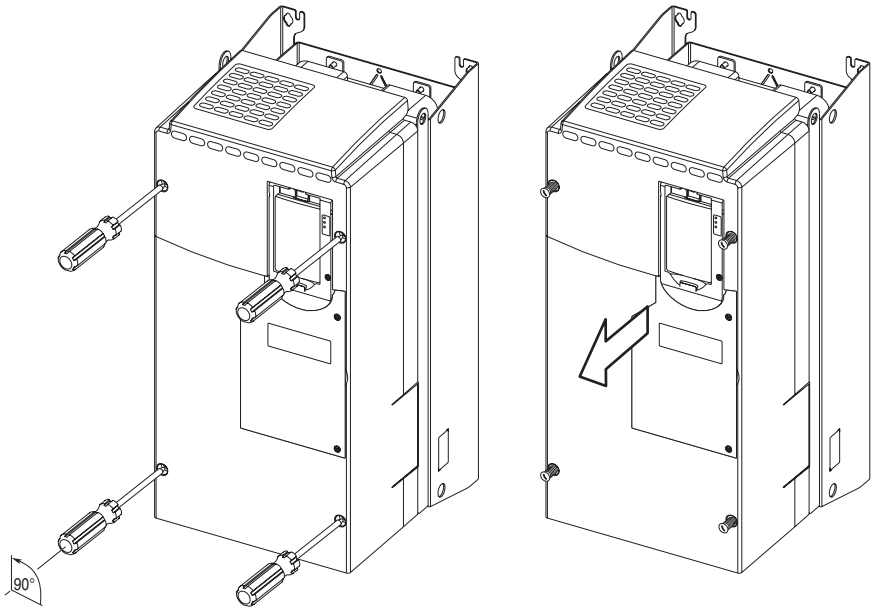
Figure 22 IP54, NEMA/UL Type 12, Frames 2…5



When cover is replaced:

- Recommended torque (screws and nuts) = 0.68 N•m (6.0 lb•in)
- Recommended screwdriver = 6.4 mm (0.25 in.) flat or T20 Hexalobular
- Recommended hex socket = 7 mm

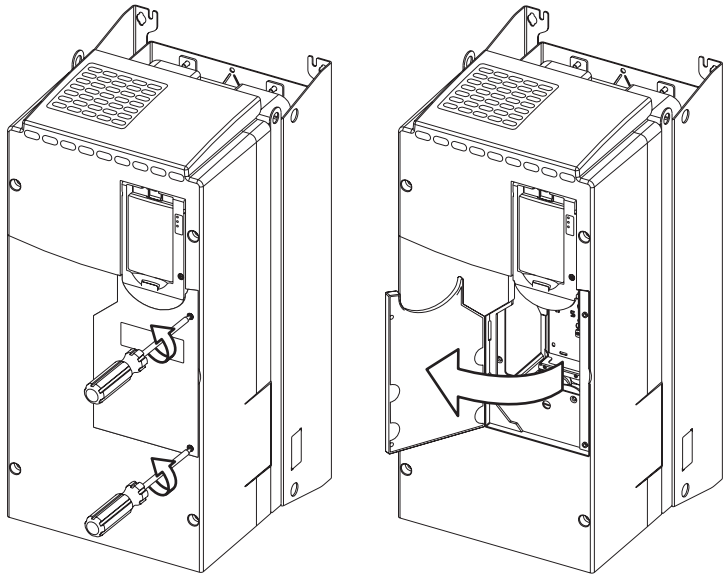
Figure 23 IP00, NEMA/UL Open Type, Frames 6 & 7



When cover is replaced:

- Recommended screwdriver = 9.5 mm (0.375 in.) flat

Figure 24 IP00, NEMA/UL Open Type, Frames 6 & 7 Access Door



When door is replaced:

- Recommended screwdriver = 6.4 mm (0.25 in.) flat or T20 Hexalobular

Step 3 Wire the Drive

ATTENTION: National Codes and standards (NEC, VDE, BSI etc.) and local codes outline provisions for safely installing electrical equipment. Installation must comply with specifications regarding wire types, conductor sizes, branch circuit protection and disconnect devices. Failure to do so may result in personal injury and/or equipment damage.

Special Considerations

PowerFlex 750-Series drives are suitable for use on a circuit capable of delivering up to a maximum of 200,000 rms symmetrical amperes, 480 volts with recommended fuses/circuit breakers.

ATTENTION: To guard against personal injury and/or equipment damage caused by improper fusing or circuit breaker selection, use only the recommended line fuses/circuit breakers specified in Fusing on page 50.

If a Residual Current Detector (RCD) is used as a system ground fault monitor, only Type B (adjustable) devices should be used to avoid nuisance tripping.

Unbalanced, Ungrounded, Impedance or Phase Grounded Distribution Systems

If phase to ground voltage will exceed 125% of normal line to line voltage or the supply system is ungrounded, refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.

ATTENTION: PowerFlex 750-Series drives contain protective MOVs and common mode capacitors that are referenced to ground. To guard against drive damage, these devices must be configured according to the recommendations in Table 21 on page 54. See pages 55…57 for jumper locations.

Input Power Conditioning

Certain events on the power system supplying a drive can cause component damage or shortened product life. These conditions are divided into 2 basic categories:

1. **All drives**
   - The power system has power factor correction capacitors switch in and out of the system, either by the user or by the power company.
   - The power source has intermittent voltage spikes in excess of 6000 volts. These spikes could be caused by other equipment on the line or by events such as lightning strikes.
   - The power source has frequent interruptions.
2. **5 Hp or Less Drives (in addition to "1" above)**
   - The supply transformer is larger than 100 kVA or the available short circuit (fault) current is greater than 100,000A.
   - The impedance on the input side of the drive is less than 0.5%.

If any of these conditions exist, additional source impedance is required. The total input impedance is a function of all transformers, cabling, and reactors (if used) that supply power to the drive. The impedance can be calculated using the information supplied in Wiring and Grounding Guidelines for PWM AC Drives, publication DRIVES-IN001.

Motor Considerations

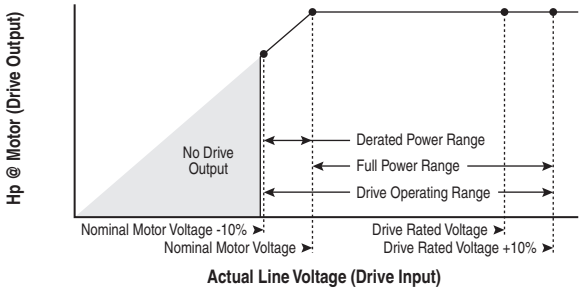
Due to the operational characteristics of AC variable frequency drives, motors with inverter grade insulation systems designed to meet or exceed NEMA MG1 Part 31.40.4.2 standards for resistance to spikes of 1600 volts are recommended.

Guidelines must be followed when using non-inverter grade motors to avoid premature motor failures. Refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 for recommendations.

Voltage Tolerance

Drive Rating	Nominal Line Voltage	Nominal Motor Voltage	Drive Full Power Range	Drive Operating Range
380…400	380	380	380…528	342…528
	400	400	400…528	
	480	460	460…528	

Drive Full Power Range =	Nominal Motor Voltage to Drive Rated Voltage + 10%. Rated current is available across the entire Drive Full Power Range
Drive Operating Range =	Lowest Nominal Motor Voltage - 10% to Drive Rated Voltage + 10%. Drive Output is linearly derated when Actual Line Voltage is less than the Nominal Motor Voltage

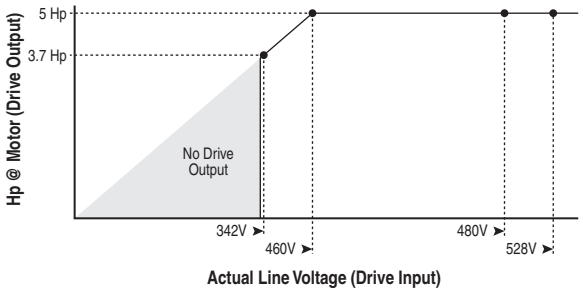


Example:

Calculate the maximum power of a 5 Hp, 460V motor connected to a 480V rated drive supplied with 342V Actual Line Voltage input.

- Actual Line Voltage / Nominal Motor Voltage = 74.3%
- 74.3% × 5 Hp = 3.7 Hp
- 74.3% × 60 Hz = 44.6 Hz

At 342V Actual Line Voltage, the maximum power the 5 Hp, 460V motor can produce is 3.7 Hp at 44.6 Hz.



Wire Recommendations

Type		Wire Type(s)	Description	Min. Insulation Rating
Power (1)(2)	Standard	–	• Four tinned copper conductors with XLPE insulation. • Copper braid/aluminum foil combination shield and tinned copper drain wire. • PVC jacket.	600V, 75 °C (167 °F)
Signal (1)(3)(4)	Standard Analog I/O	–	0.750 mm^2 (18 AWG), twisted pair, 100% shield with drain.	300V, 75…90 °C (167…194 °F)
	Remote Pot	–	0.750 mm^2 (18 AWG), 3 conductor, shielded.	
	Encoder/ Pulse I/O <30 m (100 ft)	Combined	0.196 mm^2 (24 AWG) individually shielded pairs.	
	Encoder/ Pulse I/O 30 to 152 m (100 to 500 ft)	Signal	0.196 mm^2 (24 AWG) individually shielded pairs.	
		Power	0.750 mm^2 (18 AWG) in.dividually shielded pairs	
		Combined	0.330 mm^2 (18 AWG), power is 0.500 mm^2 (20 AWG) individually shielded pairs.	
	Encoder/ Pulse I/O 152 to 259 m (500 to 850 ft.)	Signal	0.196 mm^2 (24 AWG) individually shielded pairs.	
		Power	0.750 mm^2 (18 AWG) individually shielded pairs.	
		Combined	0.750 mm^2 (18 AWG) individually shielded pairs.	
Digital I/O **Safety Inputs** **Homing Inputs** (1)(3)(4)	Un-shielded	–	Per US NEC or applicable national or local code.	300V, 60 °C (140 °F)
	Shielded	Multi-conductor shielded cable	0.750 mm^2 (18 AWG), 3 conductor, shielded.	

(1) Control and signal wires should be separated from power wires by at least 0.3 meters (1 foot).

(2) The use of shielded wire for AC input power may not be necessary but is always recommended.

(3) If the wires are short and contained within a cabinet which has no sensitive circuits, the use of shielded wire may not be necessary, but is always recommended.

(4) I/O terminals labeled "(–)" or "Common" are not referenced to earth ground and are designed to greatly reduce common mode interference. Grounding these terminals can cause signal noise.

Terminal Block Specifications

Table 9 Frames 2…5 Power Terminal Block

Frame	Wire Size Range[1] [2] Maximum	Wire Size Range[1] [2] Minimum	Strip Length	Recommended Torque	Recommended Tool(s)
2	4.0 mm^2 (10 AWG)	0.2 mm^2 (24 AWG)	8.0 mm (0.31 in.)	0.5 N•m (4.4 lb•in)	#1 Flat Screwdriver
3	16.0 mm^2 (6 AWG)	0.5 mm^2 (20 AWG)	10.0 mm (0.39 in.)	1.2 N•m (10.6 lb•in)	#2 Flat Screwdriver
4	25.0 mm^2 (3 AWG)	2.5 mm^2 (14 AWG)	10.0 mm (0.39 in.)	2.7 N•m (24 lb•in)	#2 Pozidrive® 492-C Phillips® 0.25 in. Flat Screwdriver
5	35.0 mm^2 (1 AWG)	10.0 mm^2 (8 AWG)	12.0 mm (0.5 in.)	4.0 N•m (35 lb•in)	#2 Pozidrive® 492-C Phillips® 0.25 in. Flat Screwdriver

(1) Maximum/minimum wire sizes that the terminal block will accept - these are not recommendations.
(2) Terminal blocks are designed to accept a single wire.

Table 10 Frames 6 & 7 Power Terminal Block

Frame	Maximum Lug Width	Recommended Torque	Terminal Bolt Size	Recommended Tool
6	34.6 mm (1.36 in.)	11.3 N•m (100 lb•in)	M8 x 1.25	13 mm Hex Socket
7	43.5 mm (1.71 in.)	11.3 N•m (100 lb•in)	M8 x 1.25	13 mm Hex Socket

Table 11 Frames 2…7 PE Grounding Stud

Frame	Recommended Torque	Terminal Bolt Size	Recommended Tool
2	1.36 N•m (12 lb•in)	M4	7 mm Hex Deep Socket
3	3.4 N•m (30 lb•in)	M6	10 mm Hex Deep Socket
4	3.4 N•m (30 lb•in)	M6	10 mm Hex Deep Socket
5	3.4 N•m (30 lb•in)	M6	10 mm Hex Deep Socket
6	11.3 N•m (100 lb•in)	M8	13 mm Hex Socket
7	11.3 N•m (100 lb•in)	M8	13 mm Hex Socket

Figure 25 Typical Terminal Block Location and Termination Points

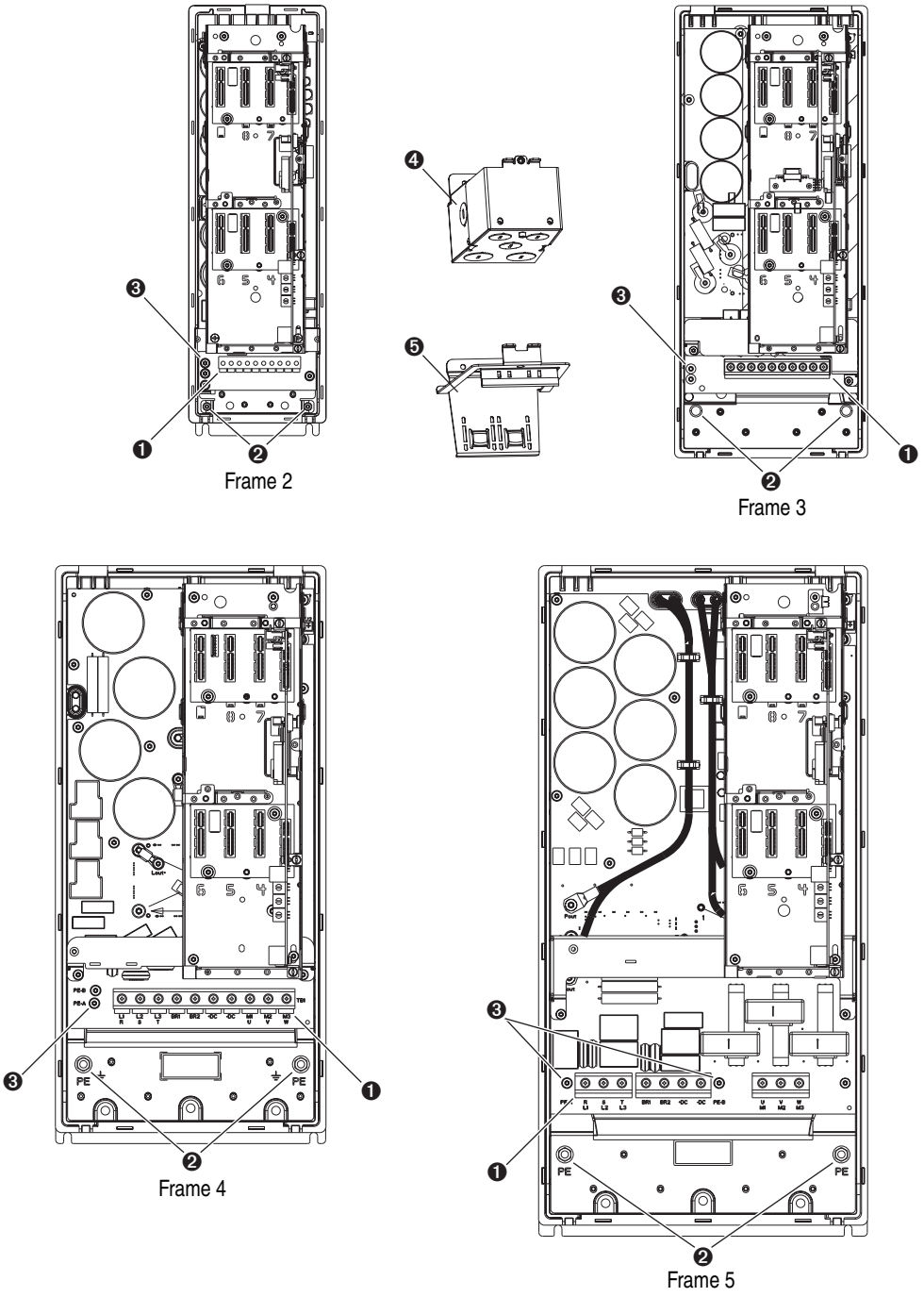
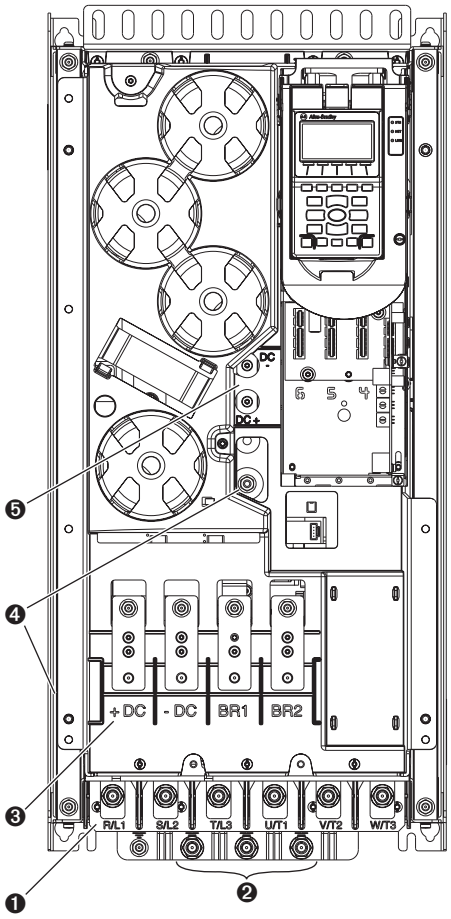


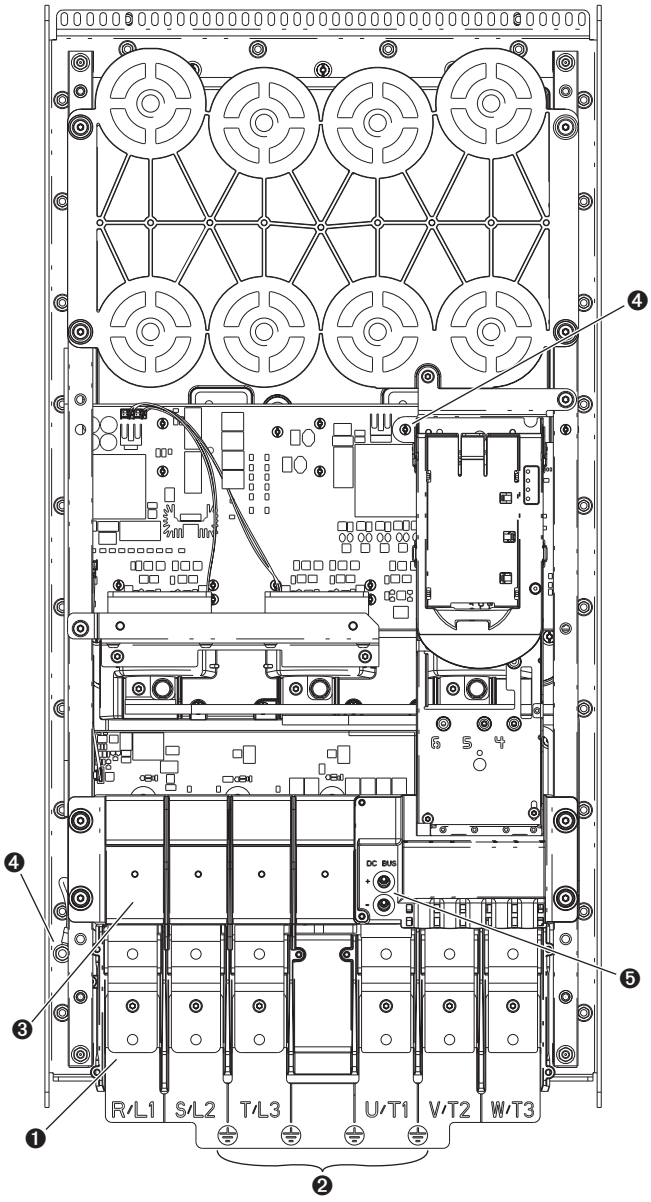
Table 12 Frames 2…5

No.	Name	Description
❶	Power Terminal Block	R/L1, S/L2, T/L3, BR1, BR2, +DC, -DC, U/T1, V/T2, W/T3
❷	PE Grounding Studs	Terminating point to chassis ground for incoming AC line and motor shields.
❸	PE-A and PE-B	MOV and CMC Jumper Screws
❹	Optional NEMA/UL Type 1 Conduit Box	Terminating point to chassis ground for incoming AC line, motor shields, and control wire shields.
❺	Optional EMC Plate	Terminating point to chassis ground for incoming AC line, motor shields, and control wire shields.

Figure 26 Typical Terminal Block Location and Termination Points (continued)



Frame 6

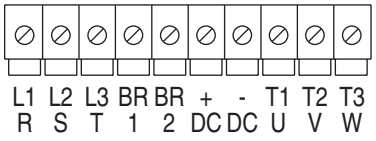
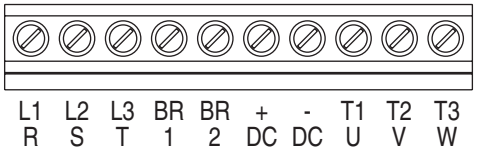
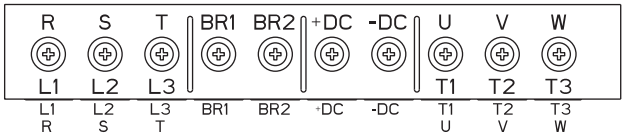
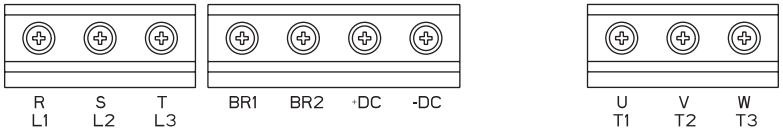
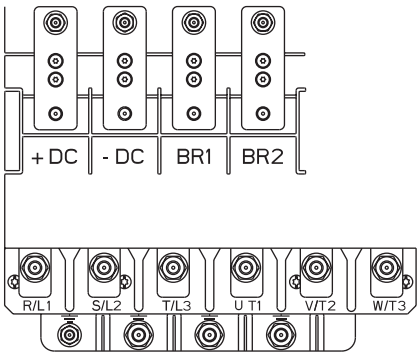
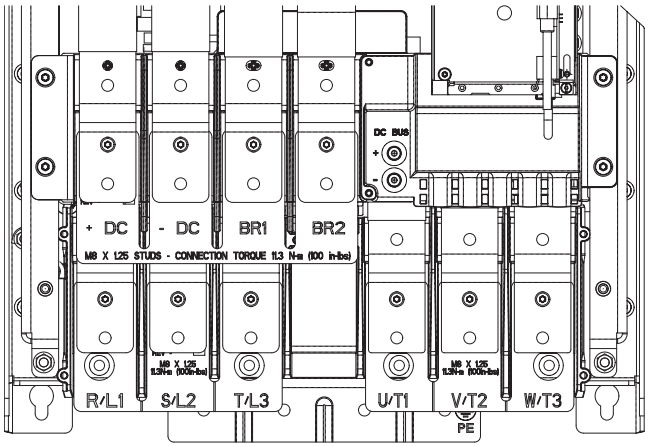


Frame 7

Table 13 Frames 6…7

No.	Name	Description
❶	Power Terminals	R/L1, S/L2, T/L3, U/T1, V/T2, W/T3
❷	PE Grounding Studs	Terminating point to chassis ground for incoming AC line and motor shield.
❸	DC Bus and Brake Terminals	+DC, -DC, BR1, BR2
❹	PE-A and PE-B	MOV and CMC Jumper Wires
❺	DC+ and DC-	Bus Voltage Test Points

Power Terminal Blocks

Frame	Power Terminal Blocks
2	
3	
4	
5	
6 (1)	
7 (1)	

(1) DC Bus Terminals are optional on Frame 6 and 7 drives: catalog number position 5.
Dynamic Brake Resistor Terminals are optional on Frame 6 and 7 drives: catalog number position 12.
Refer to Catalog Number Explanation on page 4.

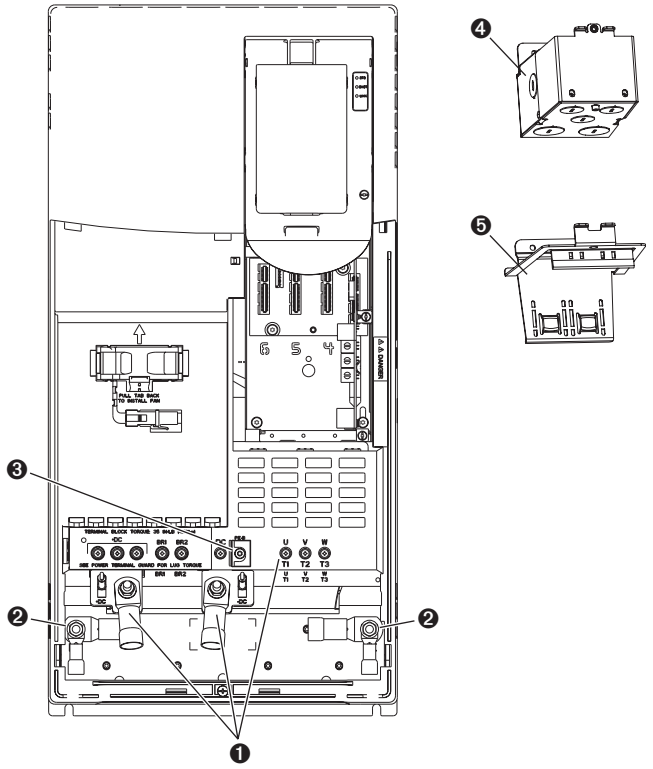
Power Terminal Block Designations

Terminal	Description	Notes
+DC	DC Bus (+)	DC Input Power or Dynamic Brake Chopper
-DC	DC Bus (–)	DC Input Power or Dynamic Brake Chopper
BR1	DC Brake (+)	Dynamic Brake Resistor Connection (+)
BR2	DC Brake (–)	Dynamic Brake Resistor Connection (–)
U	U (T1)	Motor Connections (1)
V	V (T2)	
W	W (T3)	
R	R (L1)	AC Line Input Power
S	S (L2)	
T	T (L3)	
PE / ⏚	PE Ground	Terminating point to chassis ground for incoming AC line and motor shield.

(1) **Important:** Motors with NEMA MG1 Part 31.40.4.2 inverter grade insulation systems are recommended. If you intend to connect a motor that is not rated inverter grade, refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 for recommendations.

Common Bus Power Wiring

Figure 27 Common Bus Terminal Block Location and Termination Points



Frame 5

Table 14 Frame 5 Common Bus

No.	Name	Description
❶	Power Terminal Connections	+DC, -DC, U/T1, V/T2, W/T3
❷	PE Grounding Studs	Terminating point to chassis ground for incoming DC line and motor shields.
❸	PE-B	CMC Jumper Screw
❹	Optional NEMA/UL Type 1 Conduit Box	Terminating point to chassis ground for incoming AC line, motor shields, and control wire shields.
❺	Optional EMC Plate	Terminating point to chassis ground for incoming AC line, motor shields, and control wire shields.

Figure 28 Common Bus Terminal Block Location and Termination Points (continued)

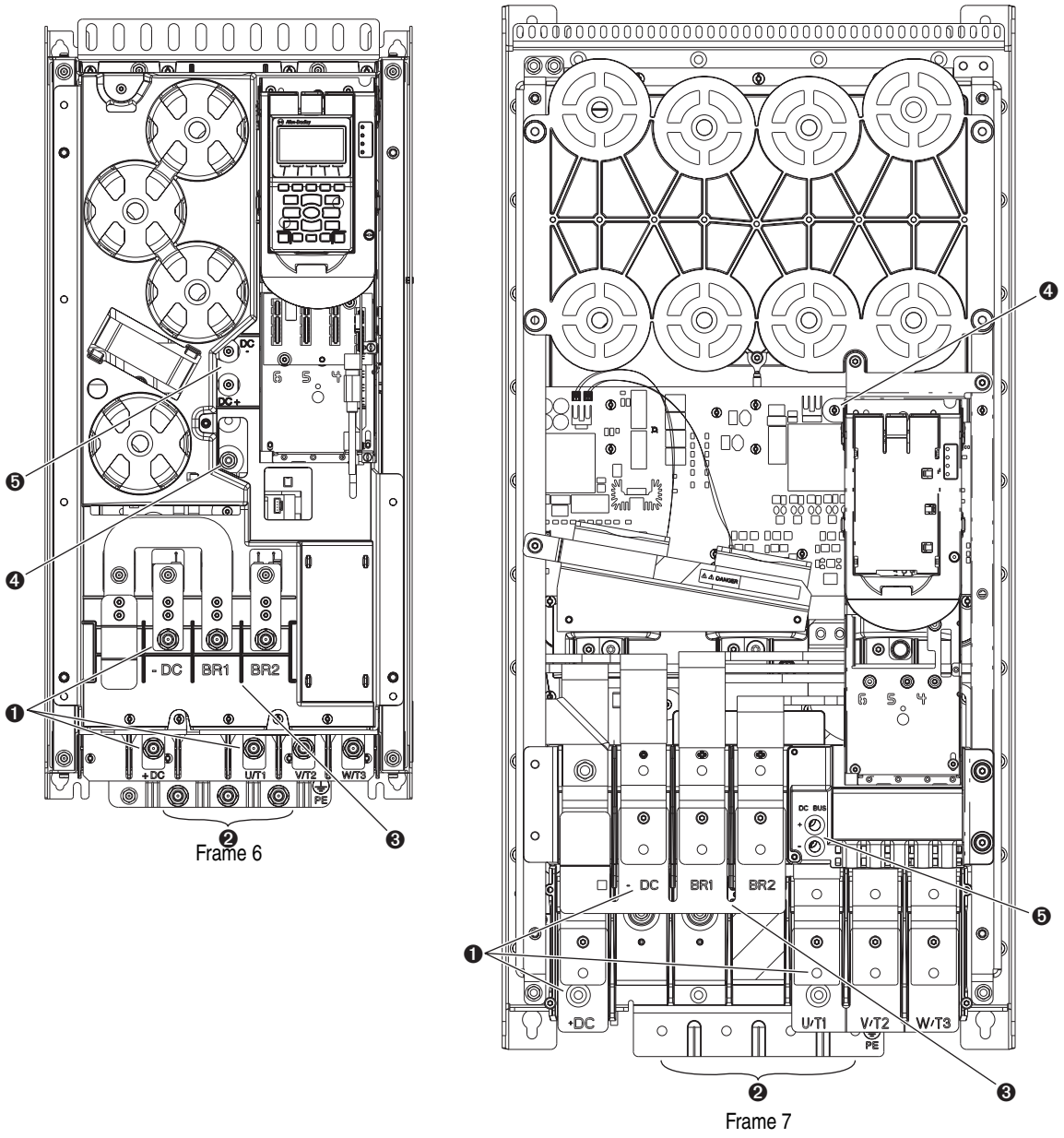
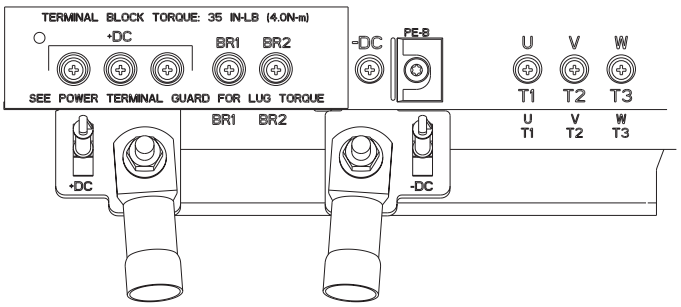
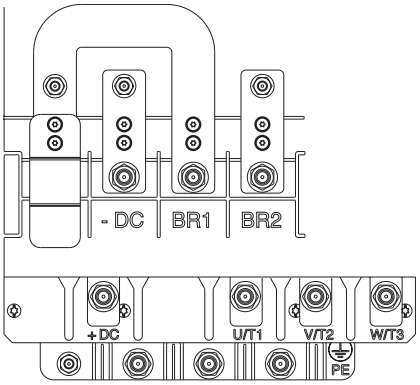
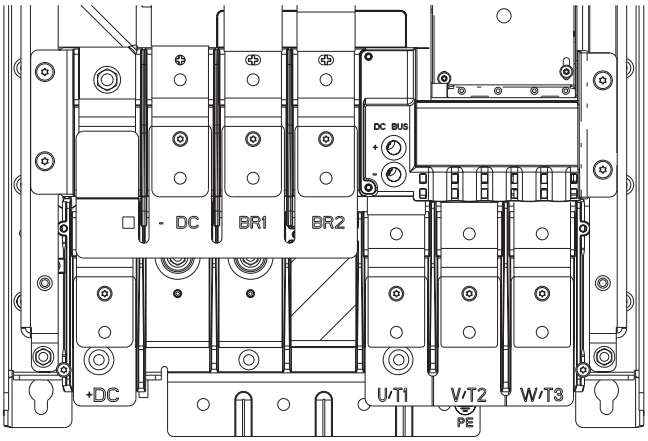


Table 15 Frames 6…7 Common Bus

No.	Name	Description
❶	Power Terminals	+DC, -DC, U/T1, V/T2, W/T3
❷	PE Grounding Studs	Terminating point to chassis ground for incoming DC line and motor shield.
❸	DC Bus and Brake Terminals	+DC, -DC, BR1, BR2
❹	PE-B	CMC Jumper Wire
❺	DC+ and DC-	Bus Voltage Test Points

Common Bus Power Terminal Blocks

Frame	Power Terminal Blocks
5	
6 (1)	
7 (1)	

(1) Dynamic Brake Resistor Terminals are optional on Frame 6 and 7 drives: catalog number position 12. Refer to Catalog Number Explanation on page 4.

Terminal	Description	Notes
+DC	DC Bus (+)	DC Input Power
-DC	DC Bus (–)	DC Input Power
BR1	DC Brake (+)	Dynamic Brake Resistor Connection (+)
BR2	DC Brake (–)	Dynamic Brake Resistor Connection (–)
U	U (T1)	Motor Connections (1)
V	V (T2)	
W	W (T3)	
PE / ⏚	PE Ground	Terminating point to chassis ground for incoming DC line and motor shield.

(1) **Important:** Motors with NEMA MG1 Part 31.40.4.2 inverter grade insulation systems are recommended. If you intend to connect a motor that is not rated inverter grade, refer to Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 for recommendations.

Minimum Dynamic Brake Resistance

Table 16 400 Volt Ratings - Minimum Resistance

Frame	ND kW	Minimum Resistance	Maximum DB Current
2	0.75	31.6	25
	1.5	31.6	25
	2.2	31.6	25
	4.0	31.6	25
	5.5	31.6	25
	7.5	31.6	25
	11	22.6	34.9
3	15	31.6	25
	18.5	31.6	25
	22	16.6	47.6
4	30	15.8	50
	37	15.8	50
5	37 (IP54, NEMA/UL Type 12)	7.9	100
	45	7.9	100
	55	7.9	100
6	55 (IP54, NEMA/UL Type 12)	3.3	239.4
	75	3.3	239.4
	90	3.3	239.4
	110	3.3	239.4
	132	3.3	239.4
7	132 (IP54, NEMA/UL Type 12)	2.4	329
	160	2.4	329
	200	2.4	329
	250	1.65	478.8

Table 17 480 Volt Ratings - Minimum Resistance

Frame	ND Hp	Minimum Resistance	Maximum DB Current
2	1.0	31.6	25
	2.0	31.6	25
	3.0	31.6	25
	5.0	31.6	25
	7.5	31.6	25
	10	31.6	25
	15	22.6	34.9
3	20	31.6	25
	25	31.6	25
	30	16.6	47.6
4	40	15.8	50
	50	15.8	50
5	50 (IP54, NEMA/UL Type 12)	7.9	100
	60	7.9	100
	75	7.9	100
6	75 (IP54, NEMA/UL Type 12)	3.3	239.4
	100	3.3	239.4
	125	3.3	239.4
	150	3.3	239.4
	200	3.3	239.4
7	200 (IP54, NEMA/UL Type 12)	2.4	329
	250	2.4	329
	300	2.4	329
	350	1.65	478.8

Using 750-Series Drives with Regen Power Units

If a Regenerative unit (i.e., 1336 REGEN) is used as a bus supply or a brake, the common mode capacitors should be disconnected. Refer to page 53 for information on removing common mode capacitors.

Regenerative Unit to Drive Connections

Regenerative Brake Mode

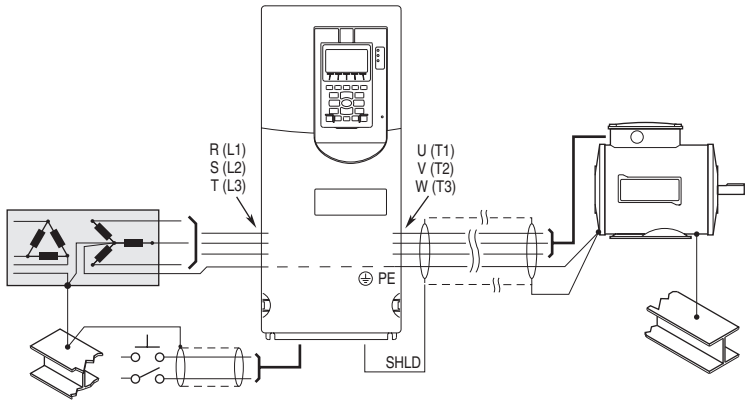
	Terminals	
Frame(s)	**1336 Regen**	**PowerFlex 750-Series Drive**
2...7	DC+ & DC-	+DC & -DC

Regenerative Bus Supply Mode

	Terminals	
Frame(s)	**1336 Regen**	**PowerFlex 750-Series Drive**
2...7	DC+ & DC-	+DC & -DC

Refer to 1336 REGEN Line Regeneration Package User Manual, publication 1336-REGEN-5.0, for more information.

Power & Ground Wiring



Drive, Fuse & Circuit Breaker Ratings

Table 19 and Table 20 provide drive ratings (including continuous, 1 minute and 3 second) and recommended AC line input fuse and circuit breaker information. Sizes listed are the recommended sizes based on 40 degree C and the U.S N.E.C. Other country, state or local codes may require different ratings.

Refer to Table 18 which describes input device requirements based on physical installation choice.

Table 18 Input Device Requirements

Frames	Enclosure Catalog Code	Enclosure Type	Installation Type	UL Certification Required	UL Certification Not Required
2, 3, 4, 5	N	IP20 NEMA/UL Open Type	Installed in a non-ventilated cabinet. Heat sink is inside or outside of cabinet.	All devices in Table 19 are acceptable.	All devices in Table 19 are acceptable.
	F	Flange			
	N	IP20 NEMA/UL Open Type	Installed outside of cabinet using NEMA Type 1 kit or in a ventilated cabinet.	Devices in Table 19 excluding time delay fuses and maximum value for non-time delay fuses.	
	F	Flange			
	G	IP54 NEMA/UL Type 12	Installed inside or outside of any cabinet.	All devices in Table 19 are acceptable.	
6, 7	N	IP00 NEMA/UL Open Type	Installed in any cabinet. Heat sink is inside or outside of cabinet.	All devices in Table 19 are acceptable.	
			Installed outside of cabinet using NEMA Type 1 kit.		
	G	IP54 NEMA/UL Type 12	Installed inside or outside of any cabinet.	All devices in Table 19 are acceptable.	

Fusing

For optimum protection, semiconductor type fusing is recommended.

For general purpose fusing, refer to the recommended types listed below.

- **IEC** – BS88 (British Standard) Parts 1 & 2(1), EN60269-1, Parts 1 & 2, type gG or equivalent should be used.
- **UL** – UL Class CC, T, RK1 or J should be used.

(1) Typical designations include, but may not be limited to the following; Parts 1 & 2: AC, AD, BC, BD, CD, DD ED, EFS, EF, FF, FG, GF, GG, GH.

Table 19 400 Volt AC Input Protection Devices

Applied Rating (1)	Frame (2)	Continuous Output Amps	Drive Sized For Normal Duty			Drive Sized For Heavy Duty			Input Quantities		AC Input Protection Devices										Input Quantities		DC Input Protection
			Catalog Number	Output Overload Amps		Catalog Number	Output Overload Amps		Continuous AC Input		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker Max Size (5)	Motor Circuit Protector (6)	140M Motor Starter with Adjustable Current Range (7) (8)				Continuous DC Input		Non-Time Delay Fuse
			(x = F or G)	60 sec	3 sec	(x = F or G)	60 sec	3 sec	kVA	Amps	Min (3)	Max (4)	Min (3)	Max (4)							kW	Amps	
400 Volt AC Input																					**540 Volt DC Input**		
0.75 kW	2	2.1	20x…C2P1	3.1	3.7	20x…C2P1	3.1	3.7	1.2	1.7	3	6	3	8	15	3	M-C2E-B25	M-D8E-B25			1.1	2.1	JKS-6
1.5 kW	2	3.5	20x…C3P5	5.2	6.3	20x…C3P5	5.2	6.3	1.9	2.8	6	7	6	12	15	7	M-C2E-B40	M-D8E-B40			2.0	3.7	JKS-8
2.2 kW	2	5	20x…C5P0	7.5	9.0	20x…C5P0	7.5	9.0	3.1	4.5	6	10	6	20	20	7	M-C2E-B63	M-D8E-B63			2.9	5.3	JKS-10
4.0 kW	2	8.7	20x…C8P7	13.0	15.6	20x…C8P7	13.0	15.6	5.4	7.8	10	17.5	10	30	30	15	M-C2E-C10	M-D8E-C10	M-F8E-C10		5.0	9.3	HSJ15
5.5 kW	2	11.5	20x…C011	17.2	20.7	20x…C011	17.2	20.7	7.4	10.7	15	25	15	45	45	15	M-C2E-C16	M-D8E-C16	M-F8E-C16		6.8	12.6	HSJ20
7.5 kW	2	15.4	20x…C015	16.9	23.1	20x…C022	24.2	33.0	10.1	14.6	20	30	20	60	60	20	M-C2E-C20	M-D8E-C20	M-F8E-C20		9.2	17.0	HSJ25
11 kW	2	22	20x…C022	24.2	33.0	20x…C030	33.0	45.0	14.6	21.1	30	45	30	80	80	30	M-C2E-C25	M-D8E-C25	M-F8E-C25		13.3	24.6	HSJ40
15 kW	3	30	20x…C030	33.0	45.0	20x…C037	45.0	55.5	19.9	28.7	40	60	40	120	100	50			M-F8E-C32		18.1	33.6	HSJ50
18.5 kW	3	37	20x…C037	40.7	55.5	20x…C043	55.5	66.6	24.5	35.4	45	80	45	125	110	50			M-F8E-C45		22.3	41.4	HSJ70
22 kW	3	43	20x…C043	47.3	64.5	20x…C060	66.0	90.0	28.5	41.2	55	90	55	150	120	60					26.0	48.1	HSJ90
30 kW	4	60	20x…C060	66.0	90.0	20x…C072	90.0	108.0	39.8	57.4	75	125	75	225	180	100					36.2	67.1	HSJ100
37 kW	4	72	20x…C072	79.2	108.0	20x…C085	108.0	129.6	48.9	70.5	90	150	90	275	200	100					44.5	82.4	HSJ125
45 kW	5	85	20x…C085	93.5	127.5	20x…C104	127.5	156.0	57.7	83.3	110	175	110	325	250	150					52.5	97.3	HSJ150
55 kW	5	104	20x…C104	114.4	156.0	20x…C140	156.0	210.0	71.3	102.9	130	225	130	400	300	150					64.9	120.2	HSJ175
75 kW	6	140	20x…C140	154.0	210.0	20x…C170	210.0	255.0	95.0	137.2	175	300	175	550	400	250					86.5	160.3	HSJ250
90 kW	6	170	20x…C170	187.0	255.0	20x…C205	255.0	307.5	115.4	166.5	225	375	225	600	500	250					105.1	194.6	HSJ350
110 kW	6	205	20x…C205	225.5	307.5	20x…C260	307.5	390.0	139.1	200.8	275	450	275	600	600	400					126.7	234.7	HSJ350
132 kW	6	260	20x…C260	286.0	390.0	20x…C302	390.0	468.0	176.5	254.7	325	575	325	750	700	400					160.7	297.7	HSJ400
160 kW	7	302	20x…C302	332.2	453.0	20x…C367	453.0	550.5	205.0	295.9	400	675	400	900	900	600					186.7	345.7	Bussman 170M6608
200 kW	7	367	20x…C367	403.7	550.5	20x…C456	550.5	684.0	249.1	359.5	475	800	475	1000	1100	600					226.9	420.2	Bussman 170M6612
250 kW	7	456	20x…C456	501.6	684.0				309.5	446.7	600	1000	600	1800	1300	600					281.9	522.0	Bussman 170M6613

Notes:

(1) "Applied Rating" refers to the motor that will be connected to the drive. For example, a "C015 drive" can be used in Normal Duty mode on a 7.5 kW motor, or in Heavy Duty mode on a 5.5 kW motor. The drive can be programmed for either mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current with respect to Heavy Duty mode. See parameter 306 [Duty Rating].

(2) Enclosure codes F and N only. See Table 8 for frame sizes of other enclosure types.

(3) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.

(4) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.

(5) Circuit Breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.

(6) Recommended Motor circuit protector - Instantaneous trip circuit breaker. The trip setting should be set to the input current of the drive and should be sized for the continuous current of the system.

(7) Bulletin 140M with adjustable current range should have the current trip set to the minimum range that the device will not trip.

(8) Manual Self-Protected (Type E) Combination Motor Controller. 480Y/277V and 600Y/347V AC Input.

Table 20 480 Volt AC Input Protection Devices

Applied Rating (1)	Frame (2)	Continuous Output Amps	Drive Sized For Normal Duty			Drive Sized For Heavy Duty			Input Quantities		AC Input Protection Devices										Input Quantities		DC Input Protection
			Catalog Number	Output Overload Amps		Catalog Number	Output Overload Amps		Continuous AC Input		Dual Element Time Delay Fuse		Non-Time Delay Fuse		Circuit Breaker Max Size (5)	Motor Circuit Protector (6)	140M Motor Starter with Adjustable Current Range (7) (8)				Continuous DC Input		Non-Time Delay Fuse
			(x = F or G)	60 sec	3 sec	(x = F or G)	60 sec	3 sec	kVA	Amps	Min (3)	Max (4)	Min (3)	Max (4)							kW	Amps	
480 Volt AC Input																					**650 Volt DC Input**		
1.0 Hp	2	2.1	20x…D2P1	3.1	3.7	20x…D2P1	3.1	3.7	1.3	1.6	2	6	2	8	15	3	M-C2E-B25	M-D8E-B25			1.2	1.9	JKS-6
2.0 Hp	2	3.4	20x…D3P4	5.1	6.1	20x…D3P4	5.1	6.1	2.2	2.6	4	7	4	12	15	7	M-C2E-B40	M-D8E-B40			1.9	3.0	JKS-6
3.0 Hp	2	5	20x…D5P0	7.5	9.0	20x…D5P0	7.5	9.0	3.2	3.9	6	10	6	20	20	7	M-C2E-B63	M-D8E-B63			2.9	4.5	JKS-10
5.0 Hp	2	8	20x…D8P0	12.0	14.4	20x…D8P0	12.0	14.4	5.7	6.9	10	17.5	10	30	30	15	M-C2E-C10	M-D8E-C10	M-F8E-C10		5.2	8.1	HSJ15
7.5 Hp	2	11	20x…D011	16.5	19.8	20x…D011	16.5	19.8	7.9	9.5	12	20	12	40	40	15	M-C2E-C16	M-D8E-C16	M-F8E-C16	CMN-2500	7.2	11.1	HSJ20
10 Hp	2	14	20x…D014	15.4	21.0	20x…D022	24.2	33.0	10.4	12.5	20	30	20	55	50	20	M-C2E-C16	M-D8E-C16	M-F8E-C16	CMN-4000	9.5	14.7	HSJ30
15 Hp	2	22	20x…D022	24.2	33.0	20x…D027	33.0	40.5	16.6	19.9	30	50	30	80	80	30	M-C2E-C25	M-D8E-C25	M-F8E-C25	CMN-4000	15.1	23.3	HSJ40
20 Hp	3	27	20x…D027	29.7	40.5	20x…D034	40.5	51.0	20.6	24.8	35	60	35	100	100	50			M-F8E-C32	CMN-4000	18.8	28.9	HSJ50
25 Hp	3	34	20x…D034	37.4	51.0	20x…D040	51.0	61.2	25.9	31.2	45	75	45	125	100	50			M-F8E-C45	CMN-6300	23.6	36.4	HSJ60
30 Hp	3	40	20x…D040	44.0	60.0	20x…D052	60.0	78.0	30.5	36.7	50	90	50	150	120	50			M-F8E-C45	CMN-9000	27.8	42.9	HSJ80
40 Hp	4	52	20x…D052	57.2	78.0	20x…D065	78.0	97.5	39.7	47.7	65	110	65	200	150	70				CMN-9000	36.1	55.7	HSJ90
50 Hp	4	65	20x…D065	71.5	97.5	20x…D077	97.5	117.0	49.6	59.6	90	125	90	250	175	100				CMN-9000	45.1	69.7	HSJ100
60 Hp	5	77	20x…D077	84.7	115.5	20x…D096	115.5	144.0	60.1	72.3	100	170	100	300	225	100					54.7	84.5	HSJ150
75 Hp	5	96	20x…D096	105.6	144.0	20x…D125	144.0	187.5	74.9	90.1	125	200	125	375	275	125					68.3	105.3	HSJ175
100 Hp	6	125	20x…D125	137.5	187.5	20x…D156	187.5	234.0	97.6	117.4	175	275	175	500	375	250					88.9	137.1	HSJ200
125 Hp	6	156	20x…D156	171.6	234.0	20x…D186	234.0	280.8	121.8	146.5	200	350	200	600	450	250					110.9	171.2	HSJ300
150 Hp	6	186	20x…D186	204.6	279.0	20x…D248	279.0	372.0	145.2	174.6	250	400	250	600	550	250					132.2	204.1	HSJ400
200 Hp	6	248	20x…D248	272.8	372.0	20x…D302	372.0	453.0	193.6	232.8	325	550	325	700	700	400					176.3	272.1	HSJ400
250 Hp	7	302	20x…D302	332.2	453.0	20x…D361	453.0	543.6	235.7	283.5	400	675	400	900	900	600					214.7	331.3	Bussman 170M6608
300 Hp	7	361	20x…D361	397.1	541.5	20x…D415	541.5	649.8	281.8	338.9	475	800	475	1000	1000	600					256.6	396.1	Bussman 170M6612
350 Hp	7	415	20x…D415	456.5	622.5				323.9	389.6	525	900	525	1200	1200	600					295.0	455.3	Bussman 170M6612

Notes:

(1) "Applied Rating" refers to the motor that will be connected to the drive. For example, a "D014 drive" can be used in Normal Duty mode on a 10 Hp motor, or in Heavy Duty mode on a 7.5 Hp motor. The drive can be programmed for either mode. Wiring and fuses can be sized based on the programmed mode. For any given drive catalog number, Normal Duty mode provides higher continuous current but smaller overload current with respect to Heavy Duty mode. See parameter 306 [Duty Rating].

(2) Enclosure codes F and N only. See Table 8 for frame sizes of other enclosure types.

(3) Minimum protection device size is the lowest rated device that supplies maximum protection without nuisance tripping.

(4) Maximum protection device size is the highest rated device that supplies drive protection. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.

(5) Circuit Breaker - inverse time breaker. For US NEC, minimum size is 125% of motor FLA. Ratings shown are maximum.

(6) Recommended Motor circuit protector - Instantaneous trip circuit breaker. The trip setting should be set to the input current of the drive and should be sized for the continuous current of the system.

(7) Bulletin 140M with adjustable current range should have the current trip set to the minimum range that the device will not trip.

(8) Manual Self-Protected (Type E) Combination Motor Controller. 480Y/277V and 600Y/347V AC Input.

Drive Power Jumper Configuration

PowerFlex 750-Series drives contain protective MOVs and common mode capacitors that are referenced to ground. To guard against drive damage and/or operation problems, these devices must be properly configured according to Table 21.

MOV, AC EMI Capacitor, and Common Mode Capacitor Circuits

Figure 29 MOV and AC EMI Capacitor Phase to Ground

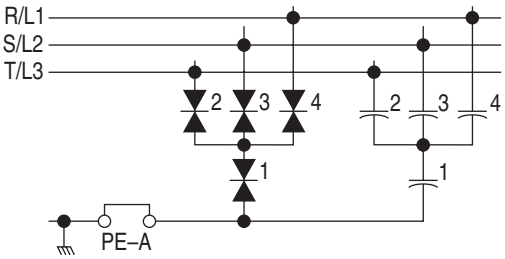
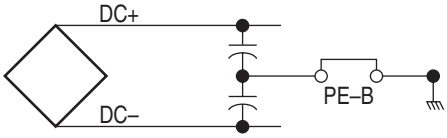


Figure 30 Common Mode Capacitors to Ground



ATTENTION: PE-A and PE-B jumpers must be configured according to the recommendations in Table 21.

ATTENTION: To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before removing/installing jumpers. Check the DC bus voltage at the Power Terminal Block by measuring between the +DC and -DC terminals (refer to Figure 25 and Figure 26 for location), between the +DC terminal and chassis, and between the -DC terminal and the chassis. The voltage must be zero for all three measurements.

Table 21 Recommended Power Jumper Configurations

Power Source Type [1]	MOV / Input Filter Caps (PE-A) [2]	DC Bus Common Mode Caps (PE-B)	Default Configuration (Cat. No. Position 11)	Benefits Of Correct Configuration on Power Source Type
Unknown	Connected	Disconnected	A	See below.
• AC fed Solidly Grounded • DC fed from passive rectifier which has a Solidly Grounded AC source	Connected	Connected	J	UL compliance, Reduced electrical noise, Most stable operation, EMC compliance, Reduced voltage stress on components and motor bearings
• AC fed Ungrounded • Impedance Grounded • DC fed from an active converter	Disconnected	Disconnected	N/A	Helps avoid severe equipment damage when ground fault occurs

(1) It is highly recommended to accurately determine the power source type and then configure appropriately.

(2) When MOVs are disconnected, the power system must have its own transient protection to insure known and controlled voltages.

To connect or disconnect these devices, refer to the jumper locations shown in Figure 32, Figure 33 and Figure 34.

In addition, on an ungrounded distribution system where the line-to-ground voltages on any phase could exceed 125% of the nominal line-to-line voltage, an isolation transformer should be installed. See Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 at www.rockwellautomation.com/literature for more information on impedance grounded and ungrounded systems.

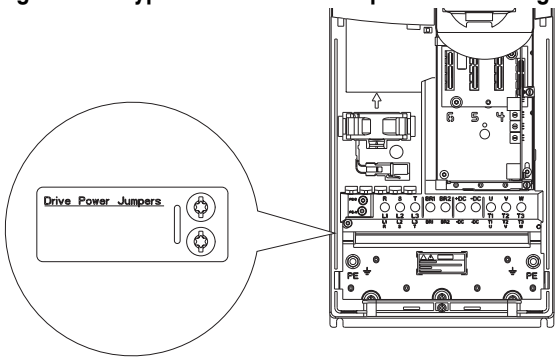
Power Jumper Screw Removal and Storage

Frames 2…5 use jumper screws to complete an electrical connection when installed. Install or remove jumper screws according to the recommendations in Table 21.

ATTENTION: Hazard of equipment damage exists if jumpers are not properly disconnected. For Frames 2…5, completely remove the jumper screw from the circuit board.

When power jumper screws are not used, they are stored on the left interior chassis wall as shown.

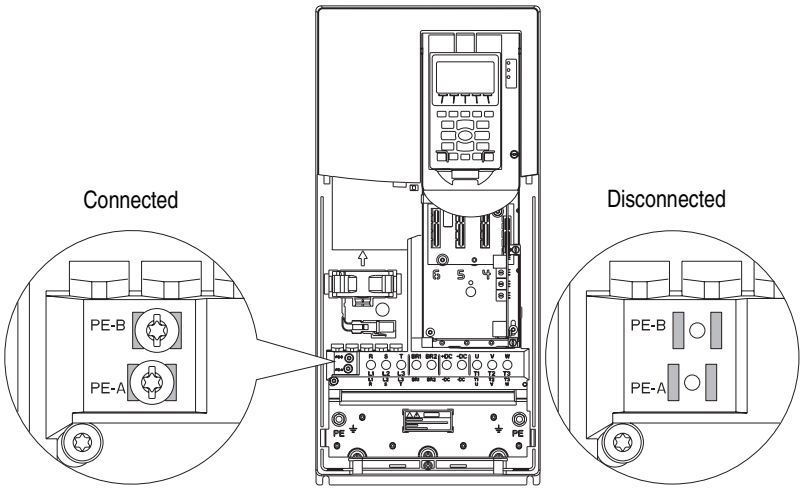
Figure 31 Typical Frame 2...5 Jumper Screw Storage Location (Frame 4 shown)



When screws are installed:

- Recommended torque = 1.36 N•m (12.0 lb•in) +/- 0.14 N•m (1.2 lb•in)
- Recommended screwdriver = 6.4 mm (0.25 in.) flat or T15 Hexalobular

Figure 32 Typical Frame 2...5 Jumper Screw Installation Locations (Frame 4 shown)

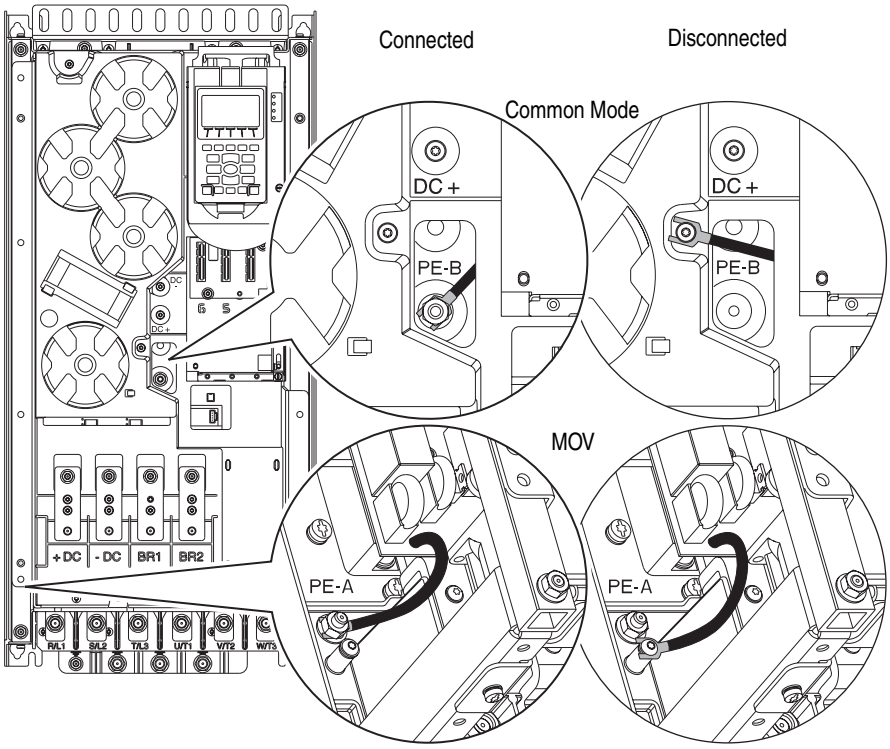


Power Jumper Wire Removal and Storage

Frames 6…7 use jumper wires to complete an electrical connection when installed. Install or remove jumper wires according to the recommendations in Table 21.

ATTENTION: Hazard of equipment damage exists if jumpers are not properly disconnected. For Frames 6…7, secure the disconnected jumper wire to the standoff provided.

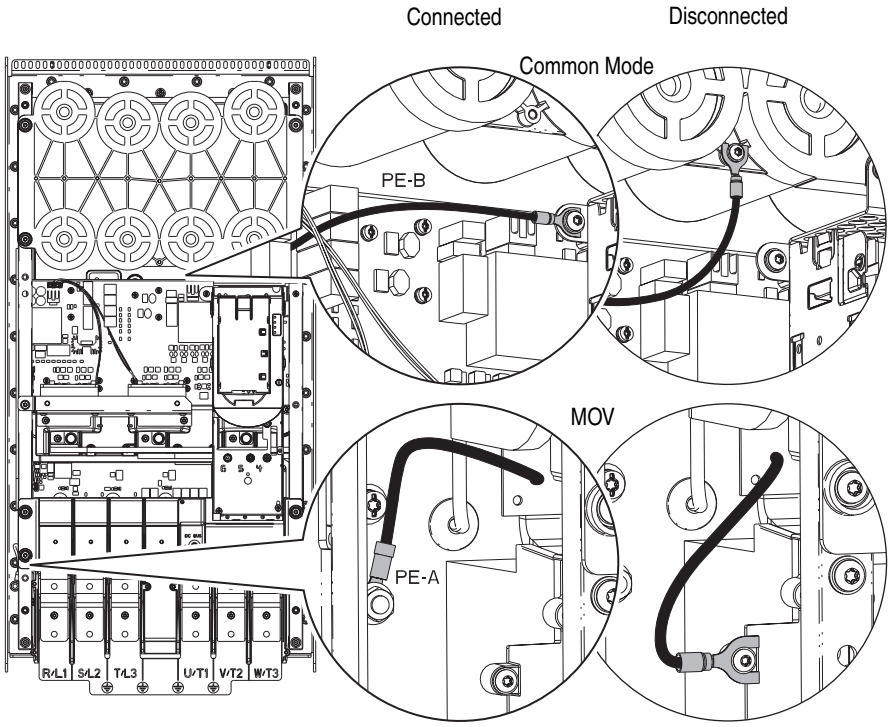
Figure 33 Frame 6 Jumper Wire Locations



When jumper wires are connected:

- Recommended torque (screws and nuts) = 1.36 N•m (12.0 lb•in)
- Recommended hex socket = 7 mm
- Recommended screwdriver = T20 Hexalobular

Figure 34 Frame 7 Jumper Wire Locations



When jumper wires are connected:

- Recommended torque (screws and nuts) = 1.36 N•m (12.0 lb•in)
- Recommended hex socket = 7 mm
- Recommended screwdriver = T20 Hexalobular

Step 4 I/O Wiring

Important points to remember about I/O wiring:

- Always use copper wire.
- Wire with an insulation rating of 600V or greater is recommended.
- Control and signal wires should be separated from power wires by at least 0.3 meters (1 foot).
- In order to maintain electrical safety for all user-accessible low voltage circuits (ELV and PELV circuits), I/O terminals designated for 24V or lower voltage must not be connected to a circuit of higher voltage or a circuit which is not adequately insulated from dangerous voltages with double or reinforced insulation within other connected equipment or wiring.
- In order to provide electrical safety for user-accessible low voltage I/O circuits which are referenced to earth (PELV circuits) and which may be touched simultaneously, care should be taken to provide a common earth reference for all equipment connected to the drive.

Important: I/O terminals labeled "(–)" or "Common" are not referenced to earth ground and are designed to greatly reduce common mode interference. Grounding these terminals can cause signal noise.

ATTENTION: Hazard of personal injury or equipment damage exists when using bipolar input sources. Noise and drift in sensitive input circuits can cause unpredictable changes in motor speed and direction. Use speed command parameters to help reduce input source sensitivity.

I/O Terminal Blocks

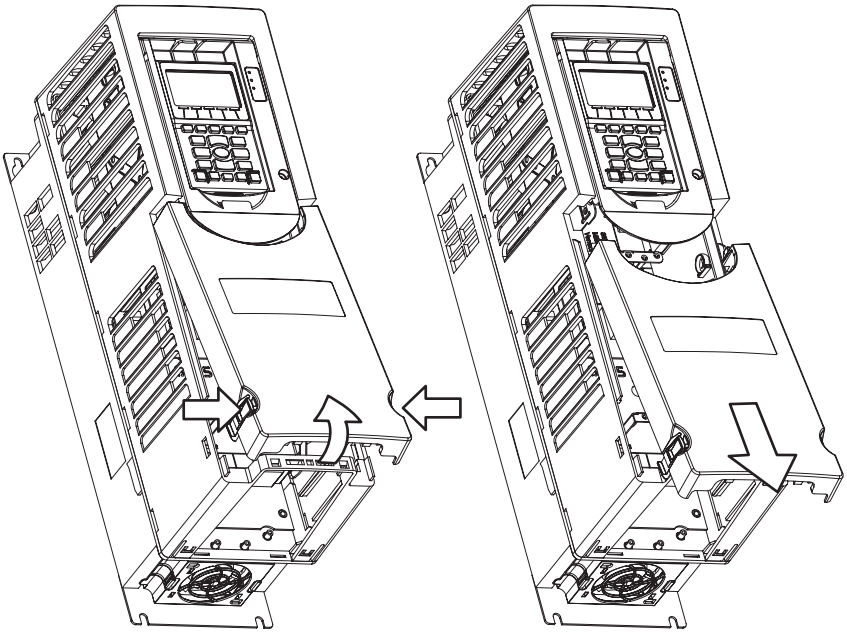
Table 22 I/O Terminal Block Specifications

Name	Wire Size Range		Torque		Strip Length
	Maximum	Minimum	Maximum	Recommended	
753 Control Module TB2	2.5 mm^2 (14 AWG)	0.3 mm^2 (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
753 Control Module TB1 and TB3	2.5 mm^2 (14 AWG)	0.3 mm^2 (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
755 Control Module TB1	2.5 mm^2 (14 AWG)	0.3 mm^2 (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
755 I/O Module TB1	2.5 mm^2 (14 AWG)	0.3 mm^2 (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
755 I/O Module TB2	4.0 mm^2 (12 AWG)	0.25 mm^2 (24 AWG)	0.5 N•m (4.4 lb•in)	0.4 N•m (3.5 lb•in)	7 mm (0.28 in.)
Safe Torque Off	0.8 mm^2 (18 AWG)	0.3 mm^2 (28 AWG)	N/A		10 mm (0.39 in.)
Single Incremental Encoder	0.8 mm^2 (18 AWG)	0.3 mm^2 (28 AWG)	N/A		10 mm (0.39 in.)
Safe Speed Monitor TB1 and TB2	2.5 mm^2 (14 AWG)	0.25 mm^2 (24 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)
Dual Incremental Encoder	0.8 mm^2 (18 AWG)	0.3 mm^2 (28 AWG)	N/A		10 mm (0.39 in.)
Universal Feedback Module	0.8 mm^2 (18 AWG)	0.3 mm^2 (28 AWG)	N/A		10 mm (0.39 in.)
Auxiliary Power Supply TB1	2.5 mm^2 (14 AWG)	0.3 mm^2 (28 AWG)	0.25 N•m (2.2 lb•in)	0.2 N•m (1.8 lb•in)	6 mm (0.24 in.)

Access Drive Control Pod

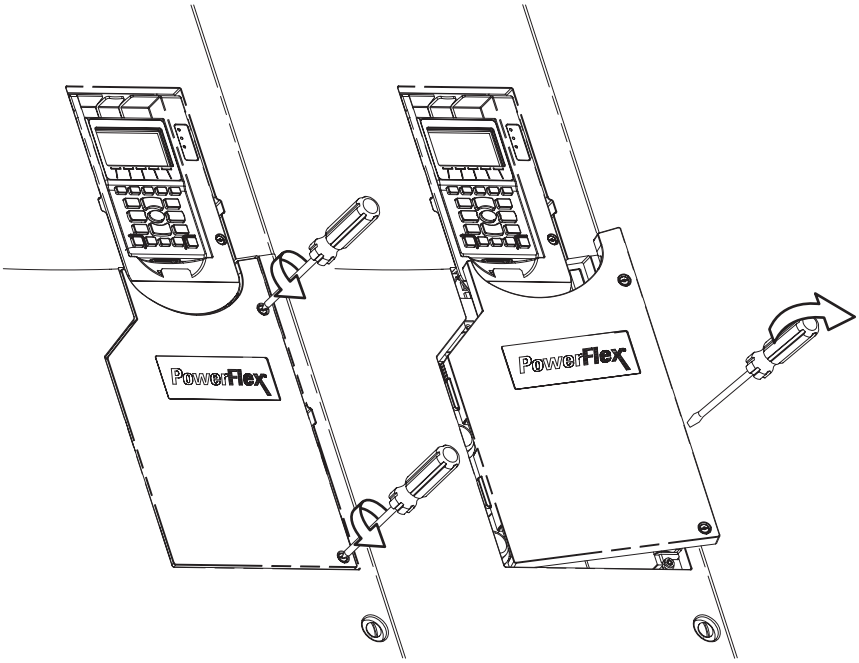
1. Remove drive cover

Frames 2…5



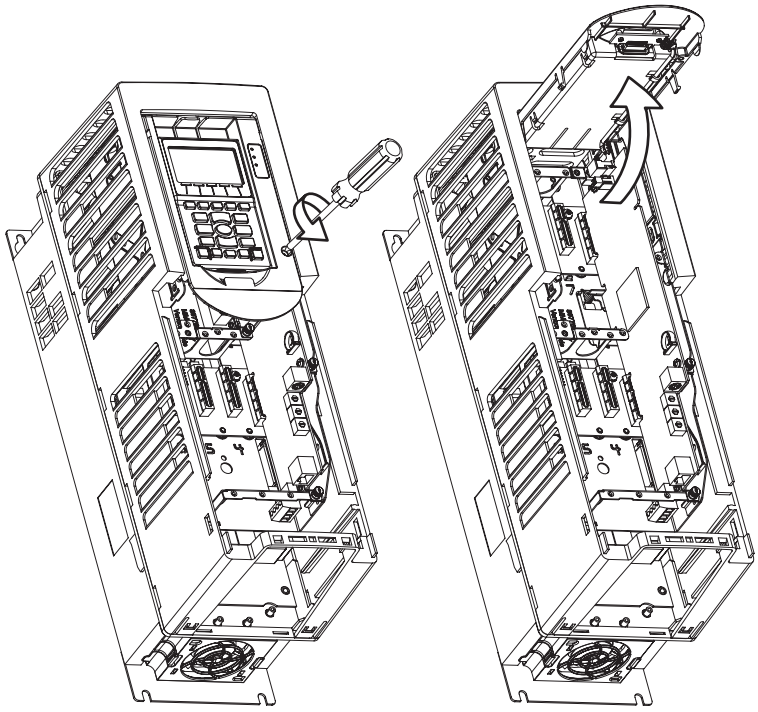
– Squeeze locking tabs and pull out bottom of cover.
– Pull cover down and away from the chassis.

Frames 6…7



– Loosen door screws.
– Gently pry the door open to remove.

2. Lift the Human Interface Module (HIM) cradle (All Frames).



– Loosen the retention screw.

– Lift the cradle until the latch engages.

PowerFlex 753 Main Control Board

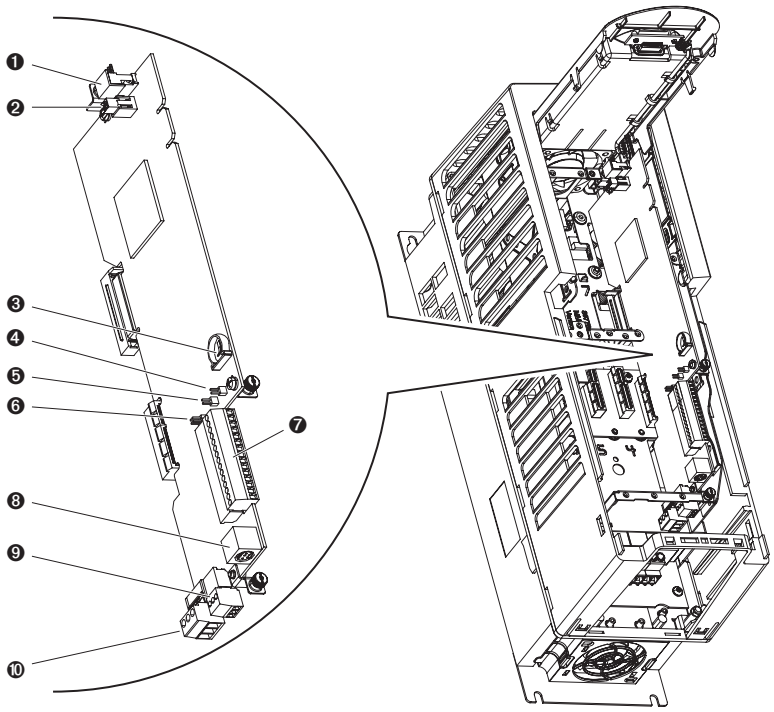


Table 23 753 Main Control Board Details

No.	Name	Description
❶	HIM Connector	DPI Port 1 (HIM Cradle) connection.
❷	Fan Connector	Power supply for internal cooling fan (Frames 2 & 3).
❸	Battery Receptacle 	User installed CR1220 lithium coin cell battery provides power to the Real Time Clock (Optional, not supplied).
❹	Jumper J1 ENABLE	Hardware enable jumper. Removed when a hardware enable configuration is utilized.
❺	Jumper J2 SAFETY	Safety enable jumper. Removed when safety option is installed.
❻	Jumper J4 Input Mode	Input mode jumper. Select voltage mode or current mode.
❼	TB1	I/O terminal block.
❽	DPI Port 2	Cable connection for handheld and remote HIM options.
❾	TB3	Digital input power terminal block.
❿	TB2	Relay terminal block.

Table 24 J4 Input Mode Jumper

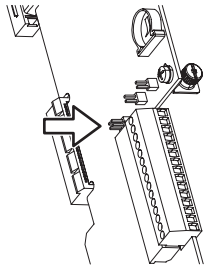
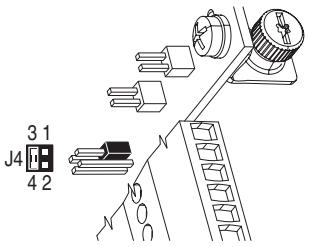
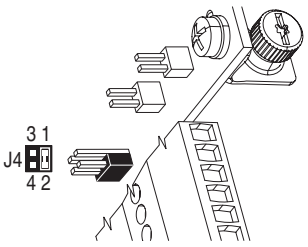
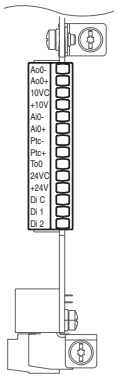
Jumper Position	Voltage Mode	Current Mode
		

Table 25 TB1 Terminal Designations



Terminal	Name	Description	Related Param
Ao0–	Analog Out 0 (–)	Bipolar, ±10V, 11 bit & sign, 2 k ohm minimum load. 4-20 mA, 11 bit & sign, 400 ohm maximum load.	
Ao0+	Analog Out 0 (+)		
10VC	10 Volt Common	For (+) 10 Volt references. 2k ohm minimum.	
+10V	+10 Volt Reference		
Ai0–	Analog Input 0 (–)	Isolated (1), bipolar, differential, ±10V, 11 bit & sign, 88k ohm input impedance.	
Ai0+	Analog Input 0 (+)		
Ptc–	Motor PTC (–)	Motor protection device (Positive Temperature Coefficient).	
Ptc+	Motor PTC (+)		
T0	Transistor Output 0	Open drain output, 48V DC, 250 mA maximum load.	
24VC	24 Volt Common	Drive supplied logic input power. 150 mA maximum	
+24V	+24 Volt DC		
Di C	Digital Input Common	24V DC - Opto isolated Low State: less than 5V DC High State: greater than 20V DC	
Di 1	Digital Input 1		
Di 2	Digital Input 2		

(1) Differential Isolation - External source must be maintained at less than 160V with respect to PE. Input provides high common mode immunity.

Note: 753 Main Control Board I/O TB1 wiring examples begin on page 69.

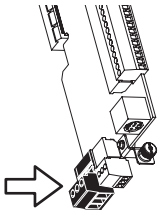
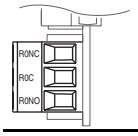


Table 26 TB2 Terminal Designations

Fixed I/O	Terminal	Name	Description
	R0NC	Relay 0 N.C.	Output Relay 0 normally closed contact.
	R0C	Relay 0 Common	Output Relay 0 common
	R0NO	Relay 0 N.O.	Output Relay 0 normally open contact.

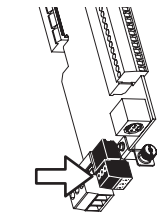
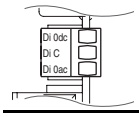


Table 27 TB3 Terminal Designations

Power Block	Terminal	Name	Description
	Di 0dc	Digital Input 120V AC	Connections for DC power supply.
	Di C	Digital Input Common	Digital input common
	Di 0ac	Digital Input 24V DC	Connections for AC power supply.

PowerFlex 755 Main Control Board

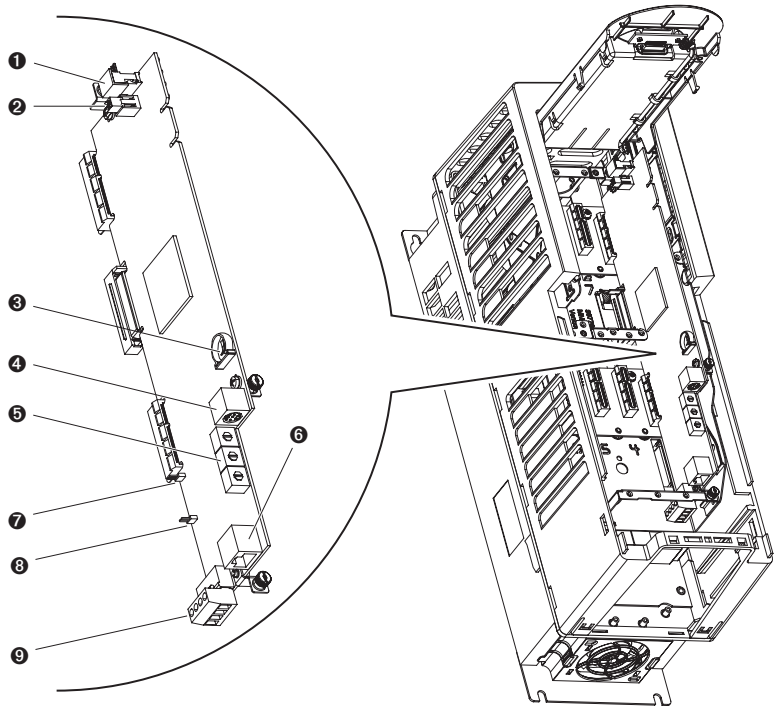


Table 28 Control Board Details

No.	Name	Description
❶	HIM Connector	DPI Port 1 (HIM Cradle) connection.
❷	Fan Connector	Power supply for internal cooling fan (Frames 2 & 3).
❸	Battery Receptacle 	User installed CR1220 lithium coin cell battery provides power to the Real Time Clock (Optional, not supplied).
❹	DPI Port 2	Cable connection for handheld and remote HIM options.
❺	Embedded EtherNet/IP(1) Address Selectors	Rotary switches for setting lowest octet of EtherNet address (forces address to 192.168.1.xxx). Refer to the User Manual, publication 750-UM001 for instructions on setting the IP address.
❻	Embedded EtherNet/IP(1) Connector	Network cable connection.
❼	Jumper J2 SAFETY	Safety enable jumper. Removed when safety option is installed.
❽	Jumper J1 ENABLE	Hardware enable jumper. Removed when a hardware enable configuration is utilized.
❾	TB1	I/O terminal block.

(1) Refer to the PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual, publication 750COM-UM001.

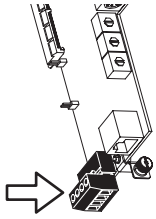
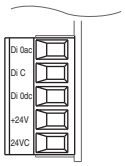


Table 29 TB1 I/O Terminal Designations

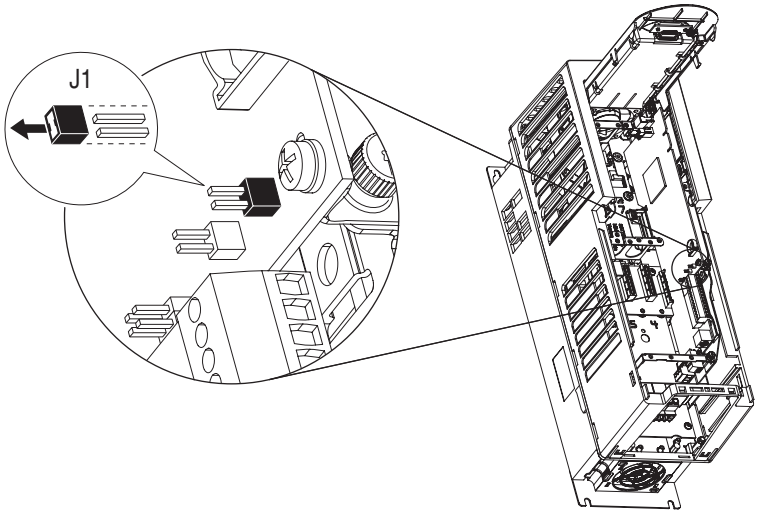
Fixed I/O	Terminal	Name	Description
	Di 0ac	Digital Input 120V AC	Connections for AC power supply.
	Di C	Digital Input Common	Digital input common
	Di 0dc	Digital Input 24V DC	Connections for DC power supply.
	+24V	+24 Volt Power	Connections for drive supplied 24V power.
	24VC	24 Volt Common	

Hardware Enable Circuitry

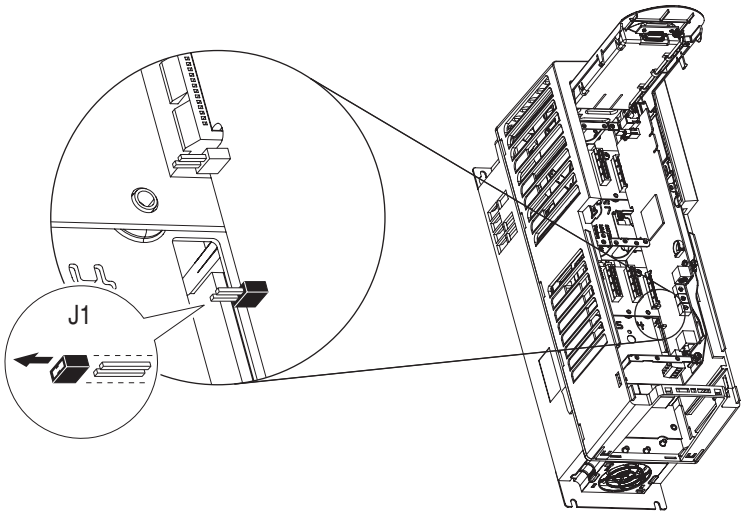
The main control module has one digital input that can be used as a general purpose programmable input, or by removal of a jumper, configured as a dedicated hardware enable, which is unaffected by parameter settings. To configure the input as a dedicated hardware enable, complete the following steps.

1. Access the control pod as described beginning on page 59.
2. Locate and remove Jumper J1 ENABLE on the Main Control Board (see diagram).

PowerFlex 753 - J1 Jumper Location



PowerFlex 755 - J1 Jumper Location

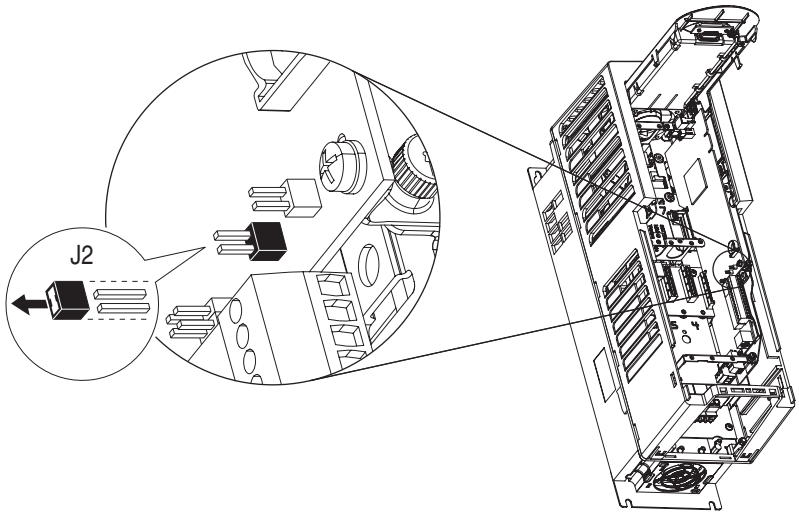


Safety Enable Circuitry

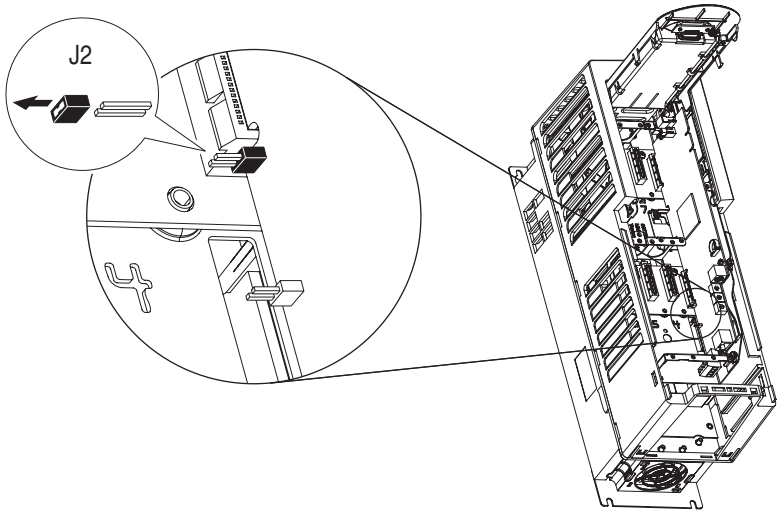
The drive ships with the safety enable jumper (J2 SAFETY) installed. This jumper must be removed when using the safe torque off or speed monitoring safety options.

Important: Failure to remove the jumper will cause the drive to fault when a start command is issued.

PowerFlex 753 - J2 Jumper Location

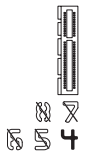


PowerFlex 755 - J2 Jumper Location



Option Module Installation

Compatible port locations may be restricted for each module. An icon with position number(s) is provided to indicate which option module ports are compatible. For example, the icon to the right indicates that the option module is only compatible with port 4.

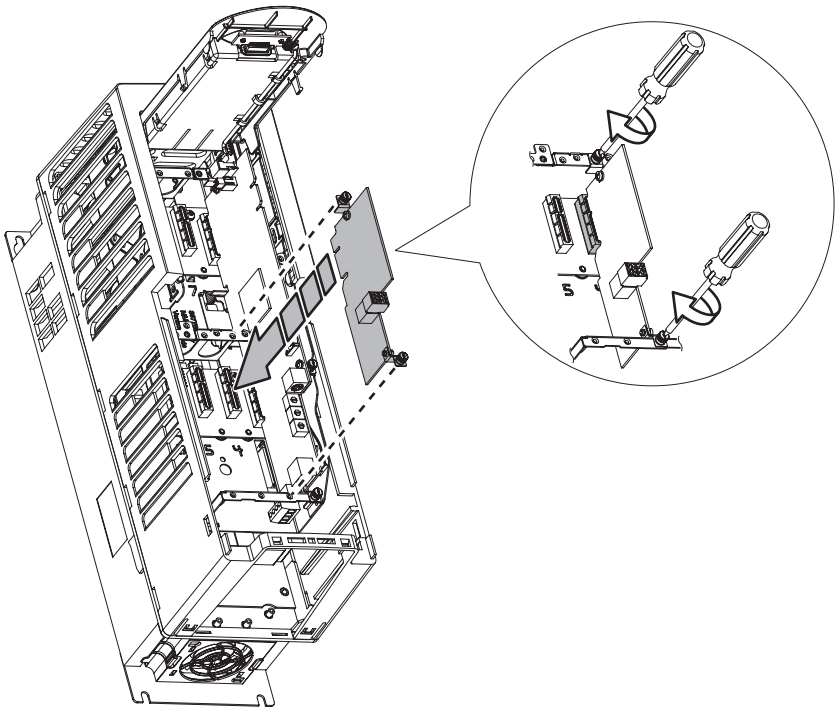


ATTENTION: Hazard of equipment damage exists if an option module is installed or removed while the drive is powered. To avoid damaging the drive, verify that the voltage on the bus capacitors has discharged completely and all control power is removed before performing any work on the drive. Check the DC bus voltage at the Power Terminal Block by measuring between the +DC and -DC terminals (refer to Figure 25 and Figure 26 for location), between the +DC terminal and chassis, and between the -DC terminal and the chassis. The voltage must be zero for all three measurements.

To install an option module:

1. Firmly press the module edge connector into the desired port.
2. Tighten the top and bottom retaining screws.
   - Recommended torque = 0.45 N•m (4.0 lb•in)
   - Recommended screwdriver = T15 Hexalobular

   Important: Do not over-tighten retaining screws.



I/O Module

20-750-2262C-2R
20-750-2262D-2R
20-750-2263C-1R2T

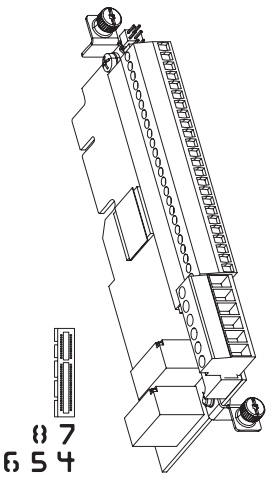


Table 30 Input Mode Jumpers

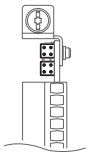
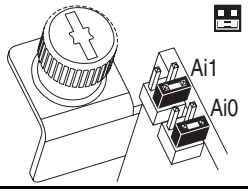
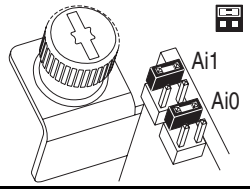
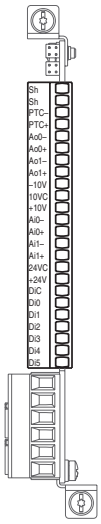
Jumper Position	Voltage Mode	Current Mode
		

Table 31 TB1 Terminal Designations



Terminal	Name	Description	Related Param
Sh	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.	
Sh			
Ptc–	Motor PTC (–)	Motor protection device (Positive Temperature Coefficient).	40
Ptc+	Motor PTC (+)		
Ao0–	Analog Out 0 (–)	Bipolar, ±10V, 11 bit & sign, 2 k ohm minimum load. 4-20 mA, 11 bit & sign, 400 ohm maximum load.	75
Ao0+	Analog Out 0 (+)		
Ao1–	Analog Out 1 (–)		85
Ao1+	Analog Out 1 (+)		
–10V	–10 Volt Reference	2k ohm minimum.	
10VC	10 Volt Common	For (–) and (+) 10 Volt references.	
+10V	+10 Volt Reference	2k ohm minimum.	
Ai0–	Analog Input 0 (–)	Isolated (2), bipolar, differential, ±10V, 11 bit & sign, 88k ohm input impedance.	50, 70
Ai0+	Analog Input 0 (+)		
Ai1–	Analog Input 1 (–)		60, 70
Ai1+	Analog Input 1 (+)		
24VC	24 Volt Common	Drive supplied logic input power. 200 mA max.	
+24V	+24 Volt DC		
Di C	Digital Input Common	Common for Digital Inputs 0…5	
Di 0	Digital Input 0 (1)	24V DC - Opto isolated Low State: less than 5V DC High State: greater than 20V DC 11.2 mA DC 115V AC, 50/60 Hz - Opto isolated Low State: less than 30V AC High State: greater than 100V AC	1
Di 1	Digital Input 1 (1)		
Di 2	Digital Input 2 (1)		
Di 3	Digital Input 3 (1)		
Di 4	Digital Input 4 (1)		
Di 5	Digital Input 5 (1)		

(1) Digital Inputs are either 24 Volts DC (2262C) or 115 Volts AC (2262D) based on module catalog number. Ensure applied voltage is correct for I/O module.

(2) Differential Isolation - External source must be maintained at less than 160V with respect to PE. Input provides high common mode immunity.

Table 32 TB2 Terminal Designations (2 Relay Outputs: 2R))

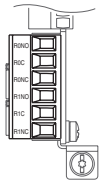
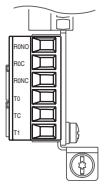
Relay Out	Terminal	Name	Description	Related Param
	R0NO	Relay 0 N.O.	Relay contact output Rating: 240V AC or 24V DC = 2 A max. Inductive/Resistive	10
	R0C	Relay 0 Common		
	R0NC	Relay 0 N.C.		
	R1NO	Relay 1 N.O.		20
	R1C	Relay 1 Common		
	R1NC	Relay 1 N.C.		

Table 33 TB2 Terminal Designations (1 Relay and 2 Transistor Outputs: IR2T)

Relay Out	Terminal	Name	Description	Related Param
	R0NO	Relay 0 N.O.	Relay contact output Rating: 240V AC or 24V DC = 2 A max. Inductive/Resistive	10
	R0C	Relay 0 Common		
	R0NC	Relay 0 N.C.		
	T0	Transistor Output 0	Transistor output Rating: 24V DC = 1 A max. Resistive	20
	TC	Transistor Output Common		
	T1	Transistor Output 1		30

Parameter Access

Refer to Select A Device on page 96 for instructions on how to access parameters on an option module.

Table 34 I/O Module Parameter List By Number

Number	Parameter Name	Group
1	Dig In Sts	Digital Inputs
2	Dig In Filt Mask(1)	Digital Inputs
3	Dig In Filt(1)	Digital Inputs
5	Dig Out Sts	Digital Outputs
6	Dig Out Invert	Digital Outputs
7	Dig Out Setpoint	Digital Outputs
10	RO0 Sel	Digital Outputs
11	RO0 Level Sel	Digital Outputs
12	RO0 Level	Digital Outputs
13	RO0 Level CmpSts	Digital Outputs
14	RO0 On Time	Digital Outputs
15	RO0 Off Time	Digital Outputs
20	RO1 Sel(2)	Digital Outputs
	TO0 Sel(3)	Digital Outputs
21	RO1 Level Sel(2)	Digital Outputs
	TO0 Level Sel(3)	Digital Outputs
22	RO1 Level(2)	Digital Outputs
	TO0 Level(3)	Digital Outputs
23	RO1 Level CmpSts(2)	Digital Outputs
	TO0 Level CmpSts(3)	Digital Outputs
24	RO1 On Time(2)	Digital Outputs
	TO0 On Time(3)	Digital Outputs
25	RO1 Off Time(2)	Digital Outputs
	TO0 Off Time(3)	Digital Outputs
30	TO1 Sel(3)	Digital Outputs
31	TO1 Level Sel(3)	Digital Outputs
32	TO1 Level(3)	Digital Outputs
33	TO1 Level CmpSts(3)	Digital Outputs
34	TO1 On Time(3)	Digital Outputs
35	TO1 Off Time(3)	Digital Outputs
40	PTC Cfg	Motor PTC
41	PTC Sts	Motor PTC
42	PTC Raw Value	Motor PTC
45	Anlg In Type	Analog Inputs
46	Anlg In Sqrt	Analog Inputs
47	Anlg In Loss Sts	Analog Inputs
50	Anlg In0 Value	Analog Inputs

Number	Parameter Name	Group
56	Anlg In0 Filt BW	Analog Inputs
60	Anlg In1 Value	Analog Inputs
61	Anlg In1 Hi	Analog Inputs
62	Anlg In1 Lo	Analog Inputs
63	Anlg In1 LssActn	Analog Inputs
64	Anlg In1 Raw Val	Analog Inputs
65	Anlg In1 Filt Gn	Analog Inputs
66	Anlg In1 Filt BW	Analog Inputs
70	Anlg Out Type	Analog Outputs
71	Anlg Out Abs	Analog Outputs
75	Anlg Out0 Sel	Analog Outputs
76	Anlg Out0 Stpt	Analog Outputs
77	Anlg Out0 Data	Analog Outputs
78	Anlg Out0 DataHi	Analog Outputs
79	Anlg Out0 DataLo	Analog Outputs
80	Anlg Out0 Hi	Analog Outputs
81	Anlg Out0 Lo	Analog Outputs
82	Anlg Out0 Val	Analog Outputs
85	Anlg Out1 Sel	Analog Outputs
86	Anlg Out1 Stpt	Analog Outputs
87	Anlg Out1 Data	Analog Outputs
88	Anlg Out1 DataHi	Analog Outputs
89	Anlg Out1 DataLo	Analog Outputs
90	Anlg Out1 Hi	Analog Outputs
91	Anlg Out1 Lo	Analog Outputs
92	Anlg Out1 Val	Analog Outputs
99	PredMaint Sts	Predictive Main
100	RO0 Load Type	Predictive Main
101	RO0 Load Amps	Predictive Main
102	RO0 TotalLife	Predictive Main
103	RO0 ElapsedLife	Predictive Main
104	RO0 RemainLife	Predictive Main
105	RO0 LifeEvntLvl	Predictive Main
106	RO0 LifeEvntActn	Predictive Main
110	RO1 Load Type(2)	Predictive Main
111	RO1 Load Amps(2)	Predictive Main
112	RO1 TotalLife(2)	Predictive Main

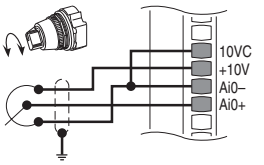
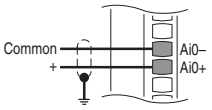
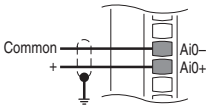
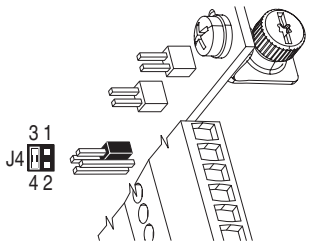
Number	Parameter Name	Group
51	Anlg In0 Hi	Analog Inputs
52	Anlg In0 Lo	Analog Inputs
53	Anlg In0 LssActn	Analog Inputs
54	Anlg In0 Raw Val	Analog Inputs
55	Anlg In0 Filt Gn	Analog Inputs

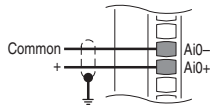
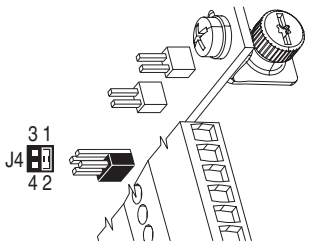
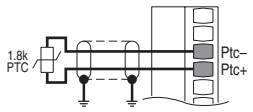
Number	Parameter Name	Group
113	RO1 ElapsedLife(2)	Predictive Main
114	RO1 RemainLife(2)	Predictive Main
115	RO1 LifeEvntLvl(2)	Predictive Main
116	RO1 LifeEvntActn(2)	Predictive Main

(1) Parameter applies to models C-2R and C-1R2T only.
(2) Parameter applies to models C-2R and D-2R only.
(3) Parameter applies to model C-1R2T only.

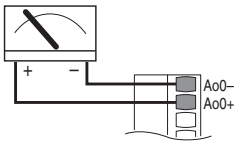
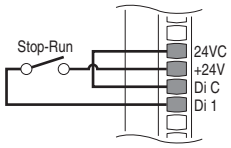
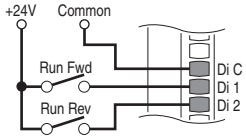
I/O Wiring Examples

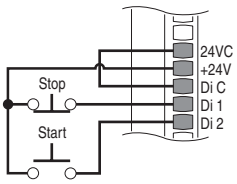
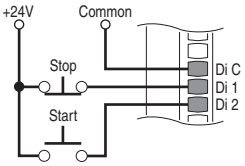
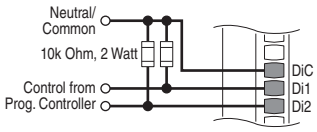
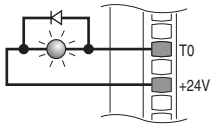
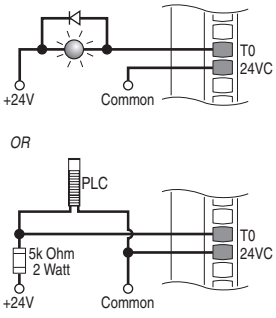
753 Main Control Board TB1 Wiring Examples

Input/Output	Connection Example	Required Parameter Changes
Potentiometer Unipolar Speed Reference 10k Ohm Pot. Recommended (2k Ohm Minimum)		• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port 0: P260 [Anlg In0 Value] • Adjust Scaling Port 0: P261 [Anlg In0 Hi] = 10 Volt Port 0: P262 [Anlg In0 Lo] = 0 Volt Port 0: P547 [Spd Ref A AnlgHi] = 60 Hz Port 0: P548 [Spd Ref A AnlgLo] = 0 Hz • View Results Port 0: P260 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
Analog Input Bipolar Speed Reference ±10V Input		• Set Direction Mode Port 0: P308 [Direction Mode] = 1 “Bipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port 0: P260 [Anlg In0 Value] • Adjust Scaling Port 0: P261 [Anlg In0 Hi] = +10 Volt Port 0: P262 [Anlg In0 Lo] = -10 Volt Port 0: P547 [Spd Ref A AnlgHi] = +60 Hz Port 0: P548 [Spd Ref A AnlgLo] = -60 Hz • View Results Port 0: P260 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
Analog Voltage Input Unipolar Speed Reference 0 to +10V Input	 	• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port 0: P260 [Anlg In0 Value] • Adjust Scaling Port 0: P261 [Anlg In0 Hi] = 10 Volt Port 0: P262 [Anlg In0 Lo] = 0 Volt Port 0: P547 [Spd Ref A AnlgHi] = 60 Hz Port 0: P548 [Spd Ref A AnlgLo] = 0 Hz • View Results Port 0: P260 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]

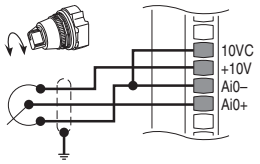
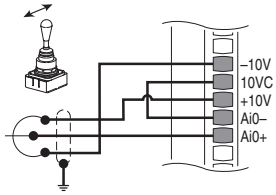
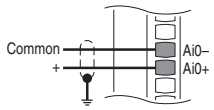
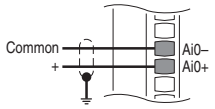
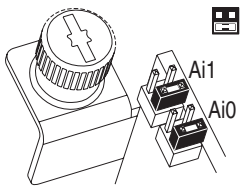
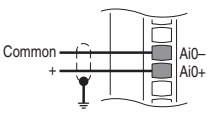
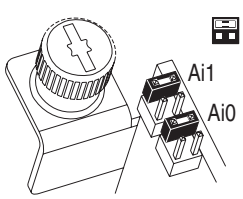
Input/Output	Connection Example	Required Parameter Changes
Analog Current Input Unipolar Speed Reference 0-20 mA Input	 	• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port 0: P260 [Anlg In0 Value] • Adjust Scaling Port 0: P261 [Anlg In0 Hi] = 20 mA Port 0: P262 [Anlg In0 Lo] = 0 mA Port 0: P547 [Spd Ref A AnlgHi] = 60 Hz Port 0: P548 [Spd Ref A AnlgLo] = 0 Hz • View Results Port 0: P260 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
HW Input PTC PTC Nominal = 1.8 k Ohm PTC Trip = 3.1k Ohm PTC Reset = 2.2 k Ohm		• Configuration Port 0: P250 [PTC Cfg] = 0 “Ignore,” 1 “Alarm,” 2 “Flt Minor,” 3 “FltCoastStop,” 4 “Flt RampStop,” or 5 “Flt CL Stop” • View Results Port 0: P251 [PTC Status]

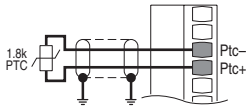
ATTENTION: To avoid an electric shock hazard, the connection of the motor temperature sensor requires double or reinforced insulation between motor live parts and the PTC.

Analog Voltage Output ±10V, 0…20 mA Bipolar +10V Unipolar		• Configuration Port 0: P270 [Anlg Out Type], bit 0 = 0 • Set Selection Port 0: P275 [Anlg Out0 Sel] = Port 0: P3 [Mtr Vel Fdbk] • Adjust Scaling Port 0: P278 [Anlg Out0 DataHi] = 60 Hz Port 0: P279 [Anlg Out0 DataLo] = 0 Hz Port 0: P280 [Anlg Out0 Hi] =10V/20 mA Port 0: P281 [Anlg Out0 Lo] = 0V/0 mA • View Results Port 0: P277 [Anlg Out0 Data] Port 0: P282 [Anlg Out0 Val]
2-Wire Control Non-Reversing 24V DC internal supply		• Set Direction Mode Port 0: P308 [Direction Mode] = 2 “Rev Disable” • Configuration Port 0: P150 [Digital In Cfg] = 1 “Run Level” • Set Selection Port 0: P163 [DI Run] = Port 0: P220 [Digital In Sts], bit 1 = Digital In 1 • View Results Port 0: P220 [Digital In Sts] Port 0: P935 [Drive Status 1]
2-Wire Control Reversing External supply		• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Configuration Port 0: P150 [Digital In Cfg] = 1 “Run Level” • Set Selection Port 0: P164 [DI Run Forward] = Port 0: P220 [Digital In Sts], bit 1 = Digital In 1 Port 0: P165 [DI Run Reverse] = Port 0: P220 [Digital In Sts], bit 2 = Digital In 2 • View Results Port 0: P220 [Digital In Sts] Port 0: P935 [Drive Status 1]

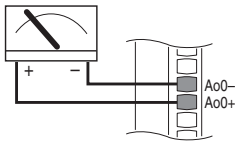
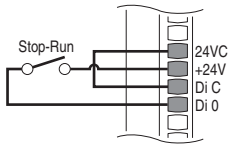
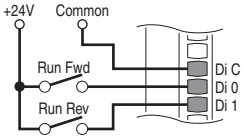
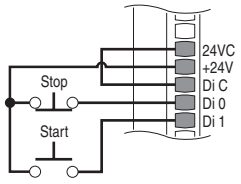
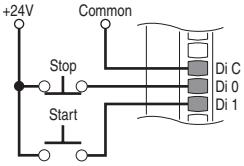
Input/Output	Connection Example	Required Parameter Changes
3-Wire Control Internal supply		• Set Selection Port 0: P158 [DI Stop] = Port 0: P220 [Digital In Sts], bit 1 = Digital In 1 Port 0: P161 [DI Start] = Port 0: P220 [Digital In Sts], bit 2 = Digital In 2 • View Results Port 0: P220 [Digital In Sts] Port 0: P935 [Drive Status 1]
3-Wire Control External supply		• Set Selection Port 0: P158 [DI Stop] = Port 0: P220 [Digital In Sts], bit 1 = Digital In 1 Port 0: P161 [DI Start] = Port 0: P220 [Digital In Sts], bit 2 = Digital In 2 • View Results Port 0: P220 [Digital In Sts] Port 0: P935 [Drive Status 1]
Digital Input PLC Output Module		• Set Selection Port 0: P158 [DI Stop] = Port 0: P220 [Digital In Sts], bit 1 = Digital In 1 Port 0: P161 [DI Start] = Port 0: P220 [Digital In Sts], bit 2 = Digital In 2 • View Results Port 0: P220 [Digital In Sts] Port 0: P935 [Drive Status 1]
Digital Output Internal supply		• Set Selection Port 0: P240 [TO0 Sel] = Port 0: P935 [Drive Status 1], bit 7 = Faulted • View Results Port 0: P225 [Dig Out Sts]
Digital Output External supply		

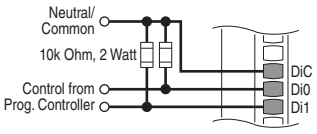
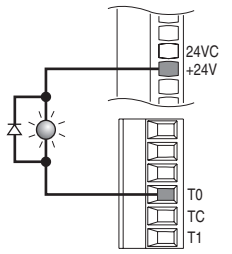
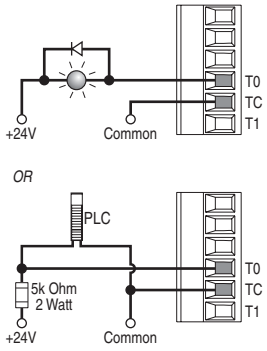
750-Series I/O Module TB1 Wiring Examples

Input/Output	Connection Example	Required Parameter Changes
Potentiometer Unipolar Speed Reference 10k Ohm Pot. Recommended (2k Ohm Minimum)		• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port X (I/O Module): P50 [Anlg In0 Value] • Adjust Scaling Port X (I/O Module): P51 [Anlg In0 Hi] = 10 Volt Port X (I/O Module): P52 [Anlg In0 Lo] = 0 Volt Port 0: P547 [Spd Ref A AnlgHi] = 60 Hz Port 0: P548 [Spd Ref A AnlgLo] = 0 Hz • View Results Port X (I/O Module): P50 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
Joystick Bipolar Speed Reference ±10V Input		• Set Direction Mode Port 0: P308 [Direction Mode] = 1 “Bipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port X (I/O Module): P50 [Anlg In0 Value] • Adjust Scaling Port X (I/O Module): P51 [Anlg In0 Hi] = +10 Volt Port X (I/O Module): P52 [Anlg In0 Lo] = -10 Volt Port 0: P547 [Spd Ref A AnlgHi] = +60 Hz Port 0: P548 [Spd Ref A AnlgLo] = -60 Hz • View Results Port X (I/O Module): P50 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
Analog Input Bipolar Speed Reference ±10V Input		• Set Direction Mode Port 0: P308 [Direction Mode] = 1 “Bipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port X (I/O Module): P50 [Anlg In0 Value] • Adjust Scaling Port X (I/O Module): P51 [Anlg In0 Hi] = +10 Volt Port X (I/O Module): P52 [Anlg In0 Lo] = -10 Volt Port 0: P547 [Spd Ref A AnlgHi] = +60 Hz Port 0: P548 [Spd Ref A AnlgLo] = -60 Hz • View Results Port X (I/O Module): P50 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
Analog Voltage Input Unipolar Speed Reference 0 to +10V Input	 	• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port X (I/O Module): P50 [Anlg In0 Value] • Adjust Scaling Port X (I/O Module): P51 [Anlg In1 Hi] = 10 Volt Port X (I/O Module): P52 [Anlg In1 Lo] = 0 Volt Port 0: P547 [Spd Ref A AnlgHi] = 60 Hz Port 0: P548 [Spd Ref A AnlgLo] = 0 Hz • View Results Port X (I/O Module): P50 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]
Analog Current Input Unipolar Speed Reference 0-20 mA Input	 	• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Set Selection Port 0: P545 [Spd Ref A Sel] = Port X (I/O Module): P50 [Anlg In0 Value] • Adjust Scaling Port X (I/O Module): P51 [Anlg In0 Hi] = 20 mA Port X (I/O Module): P52 [Anlg In0 Lo] = 0 mA Port 0: P547 [Spd Ref A AnlgHi] = 60 Hz Port 0: P548 [Spd Ref A AnlgLo] = 0 Hz • View Results Port X (I/O Module): P50 [Anlg In0 Value] Port 0: P592 [Selected Spd Ref]

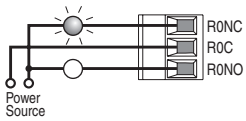
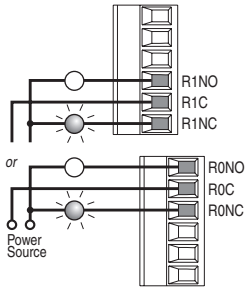
Input/Output	Connection Example	Required Parameter Changes
HW Input PTC PTC Nominal = 1.8 k Ohm PTC Trip = 3.1k Ohm PTC Reset = 2.2 kOhm		• Configuration Port X (I/O Module): P40 [PTC Cfg] = 0 “Ignore,” 1 “Alarm,” 2 “Flt Minor,” 3 “Flt CoastStop,” 4 “Flt RampStop,” or 5 “Flt CL Stop” • View Results Port X (I/O Module): P41 [PTC Sts] Port X (I/O Module): P42 [PTC Raw Value]

ATTENTION: To avoid an electric shock hazard, the connection of the motor temperature sensor requires double or reinforced insulation between motor live parts and the PTC.

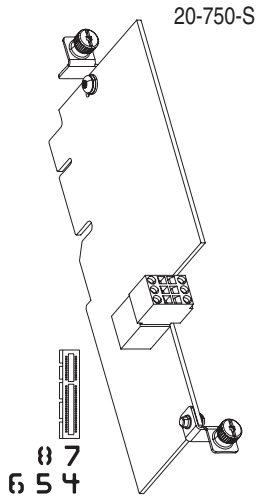
Analog Voltage Output ±10V, 0…20 mA Bipolar +10V Unipolar		• Configuration Port X (I/O Module): P70 [Anlg Out Type], bit 0 = 0 • Set Selection Port X (I/O Module): P75 [Anlg Out0 Sel] = Port 0: P3 [Mtr Vel Fdbk] • Adjust Scaling Port X (I/O Module): P78 [Anlg Out0 DataHi] = 60 Hz Port X (I/O Module): P79 [Anlg Out0 DataLo] = 0 Hz Port X (I/O Module): P80 [Anlg Out0 Hi] =10V/20 mA Port X (I/O Module): P81 [Anlg Out0 Lo] = 0V/0 mA • View Results Port X (I/O Module): P77 [Anlg Out0 Data] Port X (I/O Module): P82 [Anlg Out0 Val]
2-Wire Control **Non-Reversing** 24V DC internal supply		• Set Direction Mode Port 0: P308 [Direction Mode] = 2 “Rev Disable” • Configuration Port 0: P150 [Digital In Cfg] = 1 “Run Level” • Set Selection Port 0: P163 [DI Run] = Port X (I/O Module): P1 [Dig In Sts], bit 0 = Input 0 • View Results Port X (I/O Module): P1 [Dig In Sts] Port 0: P935 [Drive Status 1]
2-Wire Control **Reversing** External supply		• Set Direction Mode Port 0: P308 [Direction Mode] = 0 “Unipolar” • Configuration Port 0: P150 [Digital In Cfg] = 1 “Run Level” • Set Selection Port 0: P164 [DI Run Forward] = Port X (I/O Module): P1 [Dig In Sts], bit 0 = Input 0 Port 0: P165 [DI Run Reverse] = Port X (I/O Module): P1 [Dig In Sts], bit 1 = Input 1 • View Results Port X (I/O Module): P1 [Dig In Sts] Port 0: P935 [Drive Status 1]
3-Wire Control Internal supply		• Set Selection Port 0: P158 [DI Stop] = Port X (I/O Module): P1 [Dig In Sts], bit 0 = Input 0 Port 0: P161 [DI Start] = Port X (I/O Module): P1 [Dig In Sts], bit 1 = Input 1 • View Results Port X (I/O Module): P1 [Dig In Sts] Port 0: P935 [Drive Status 1]
3-Wire Control External supply		• Set Selection Port 0: P158 [DI Stop] = Port X (I/O Module): P1 [Dig In Sts], bit 0 = Input 0 Port 0: P161 [DI Start] = Port X (I/O Module): P1 [Dig In Sts], bit 1 = Input 1 • View Results Port X (I/O Module): P1 [Dig In Sts] Port 0: P935 [Drive Status 1]

Input/Output	Connection Example	Required Parameter Changes
Digital Input PLC Output Module		• Set Selection Port 0: P158 [DI Stop] = Port X (I/O Module): P1 [Dig In Sts], bit 0 = Input 0 Port 0: P161 [DI Start] = Port X (I/O Module): P1 [Dig In Sts], bit 1 = Input 1 • View Results Port X (I/O Module): P1 [Dig In Sts] Port 0: P935 [Drive Status 1]
Digital Output Internal supply		• Set Selection Port X (I/O Module): P20 [TO0 Sel] = Port 0: P935 [Drive Status 1], bit 7 = Faulted • View Results Port X (I/O Module): P5 [Dig Out Sts]
Digital Output External supply		

Relay Wiring Examples

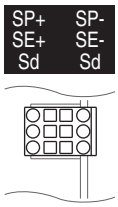
Input/Output	Connection Example	Required Parameter Changes
Relay Output External supply	753 Main Control Board 	• Set Selection Port 0: P230 [RO0 Sel] = Port 0: P935 [Drive Status 1], bit 7 = Faulted • View Results Port 0: P225 [Dig Out Sts]
	750-Series I/O Module 	• Set Selection Port X (I/O Module): P10 [RO0 Sel] = Port 0: P935 [Drive Status 1], bit 7 = Faulted • View Results Port X (I/O Module): P5 [Dig Out Sts]

Safe Torque Off Option Module

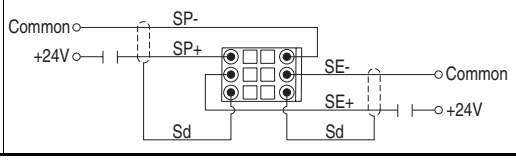


The safe torque off option is just one component in a safety control system. Components in the system must be chosen and applied appropriately to achieve the desired level of operational safety. For detailed information on applying this option, refer to the PowerFlex 750-Series Safe Torque Off User Manual, publication 750-UM002.

Table 35 TB2 Terminal Designations



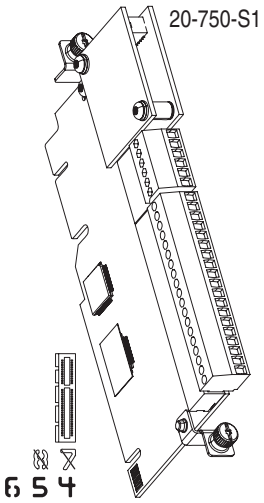
Terminal	Name	Description
SP+	+24 Volt Safety Power	User-supplied 24 volt power. 45 mA typical
SP-	Safety Power Common	
SE+	+24 Volt Safety Enable	User-supplied 24 volt power. 25 mA typical
SE-	Safety Enable Common	
Sd	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
Sd	Shield	

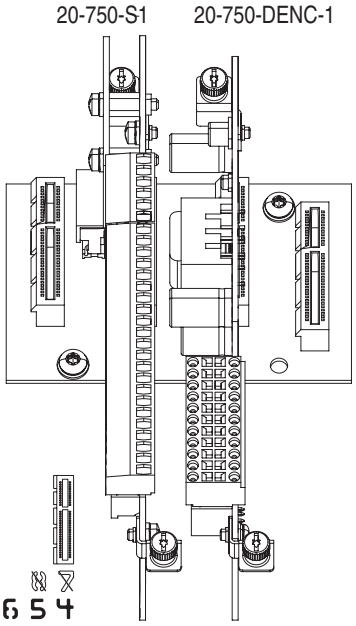
Safety Input	Connection Example
Power Supply	

Installation Notes

1. Ensure the safety enable jumper (J2 SAFETY) is removed.
2. Ensure the hardware enable jumper (J1 ENABLE) is installed. If not installed, the drive will fault when a start command is issued.

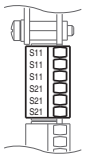
Safe Speed Monitor Option Module





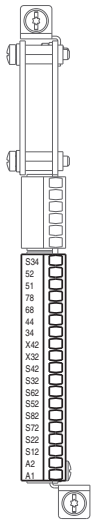
The Safe Speed Monitor option is just one component in a safety control system. Components in the system must be chosen and applied appropriately to achieve the desired level of operational safety. For detailed information on applying this option, refer to the Safe Speed Monitor Option Module for PowerFlex 750-Series AC Drives Safety Reference Manual, publication 750-RM001.

Table 36 TB1 Terminal Designations



Terminal	Name	Signal Name	Description
S11	Pto0	TEST_OUT_0	Pulse test source for safety inputs.
S11			
S11			
S21	Pto1	TEST_OUT_1	Pulse test source for safety inputs.
S21			
S21			

Table 37 TB2 Terminal Designations



Terminal	Name	Description	Related Param
S34	Res0	Reset	
52	Dco1	Door Control Output. Enables pulse testing.	74
51	Dco0		
78	Slo1	Safe Limited Speed Output. Enables pulse testing.	73
68	Slo0		
44	Sso1	Safe Stop Output. Enables pulse testing.	72
34	Sso0		
X42	Lmi1	Lock Monitoring Input	60
X32	Lmi0		
S42	Dmi1	Door Monitoring Input	58
S32	Dmi0		
S62	Sli1	Safe Limited Speed Input	52
S52	Sli0		
S82	Esm1	Enabling Switch Monitoring Input	54
S72	Esm0		
S22	Ssi1	Safe Stop Input	44
S12	Ssi0		
A2	24VC	Customer supplied 24V DC. Module is not functional without these connections.	
A1	+24V		

Installation Notes

1. Ensure the safety enable jumper (J2 SAFETY) is removed.
2. Ensure the hardware enable jumper (J1 ENABLE) is installed. If not installed, the drive will fault when a start command is issued.

Important: When the Safe Speed Monitor option is used with the Dual Incremental Encoder option, both modules must be installed on the same backplane (ports 6, 5, 4).

Table 38 Safe Speed Monitor Parameter List By Number

Number	Parameter Name	Group
1	Password	Security
5	Lock State	Security
6	Operating Mode	Security
7	Reset Defaults	Security
10	Signature ID	Security
13	New Password	Security
17	Password Command	Security
18	Security Code	Security
19	Vendor Password	Security
20	Cascaded Config	General
21	Safety Mode	General
22	Reset Type	General
24	OverSpd Response	General
27	Fbk Mode	Feedback
28	Fbk 1 Type	Feedback
29	Fbk 1 Units	Feedback
30	Fbk 1 Polarity	Feedback
31	Fbk 1 Resolution	Feedback
32	Fbk 1 Volt Mon	Feedback
33	Fbk 1 Speed	Feedback
34	Fbk 2 Units	Feedback
35	Fbk 2 Polarity	Feedback
36	Fbk 2 Resolution	Feedback
37	Fbk 2 Volt Mon	Feedback
38	Fbk 2 Speed	Feedback
39	Fbk Speed Ratio	Feedback
40	Fbk Speed Tol	Feedback
41	Fbk Pos Tol	Feedback
42	Direction Mon	Feedback
43	Direction Tol	Feedback
44	Safe Stop Input	Stop
45	Safe Stop Type	Stop
46	Stop Mon Delay	Stop
47	Max Stop Time	Stop
48	Standstill Speed	Stop
49	Standstill Pos	Stop
50	Decel Ref Speed	Stop
51	Stop Decel Tol	Stop
52	Lim Speed Input	Limited Speed
53	LimSpd Mon Delay	Limited Speed
54	Enable SW Input	Limited Speed
55	Safe Speed Limit	Limited Speed
56	Speed Hysteresis	Limited Speed
57	Door Out Type	Door Control
58	DM Input	Door Control
59	Lock Mon Enable	Door Control
60	Lock Mon Input	Door Control
61	Max Speed Enable	Max Speed
62	Safe Max Speed	Max Speed
63	Max Spd Stop Typ	Max Speed
64	Max Accel Enable	Max Speed
65	Safe Accel Limit	Max Speed
66	Max Acc Stop Typ	Max Speed
67	Fault Status	Faults
68	Guard Status	Faults
69	IO Diag Status	Faults
70	Config Flt Code	Security/Faults
72	SS Out Mode	General
73	SLS Out Mode	General
74	Door Out Mode	Door Control

Single Incremental Encoder Option Module

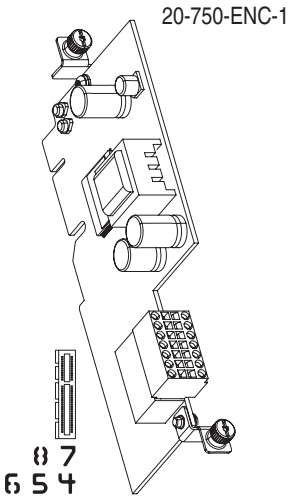
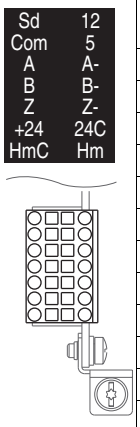


Table 39 Single Incremental Encoder Specifications

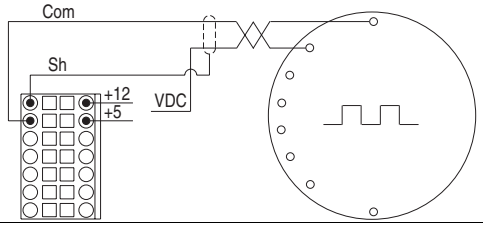
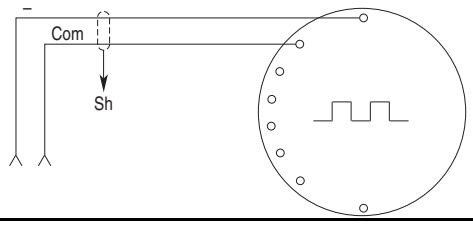
Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA,
	5V DC minimum to 15V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

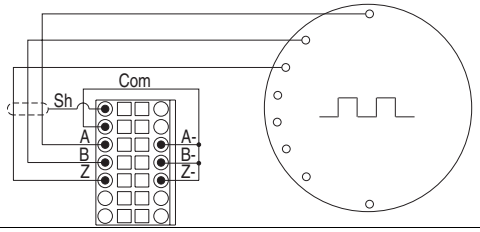
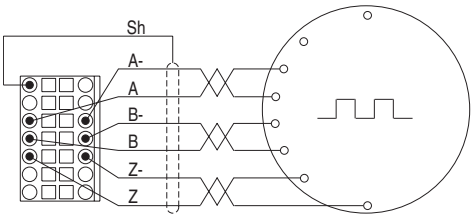
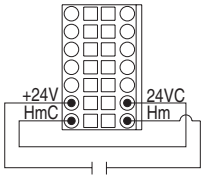
Table 40 TB1 Terminal Designations



Terminal	Name	Description
Sd	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
12	+12 Volt DC Power	Power supply for encoder 250 mA.
Com	Common	+12V and +5V Common
5	+5 Volt DC Power	Power supply for encoder 250 mA.
A	Encoder A	Single channel or quadrature A input.
A-	Encoder A (NOT)	
B	Encoder B	Quadrature B input.
B-	Encoder B (NOT)	
Z	Encoder Z	Pulse, marker or registration input.
Z-	Encoder Z (NOT)	
+24	+24 Volt	Power source for homing input.
24C	Common	
HmC	Homing Input Common	Captures the AB edge counter.
Hm	Homing Input	

Table 41 Single Incremental Encoder Sample Wiring

I/O	Connection Example
Encoder Power by Drive 12V DC, 250 mA OR 5V DC, 250 mA	
Separately Powered Encoder	

I/O	Connection Example
Encoder Signal – Single-Ended, Dual Channel	
Encoder Signal – Differential, Dual Channel	
Homing Signal– Internal Drive Power	

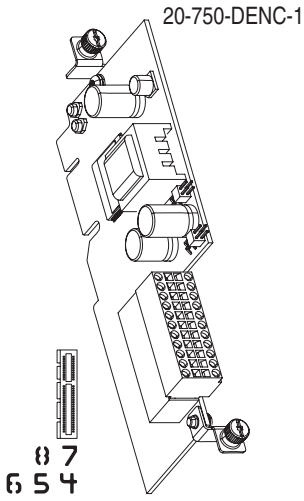
Parameter Access

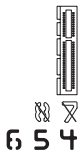
Refer to Select A Device on page 96 for instructions on how to access an option parameter set.

Table 42 Single Incremental Encoder Parameter List By Number

Number	Parameter Name
1	Encoder Cfg
2	Encoder PPR
3	Fdbk Loss Cfg
4	Encoder Feedback
5	Encoder Status
6	Error Status
7	Phase Loss Count
8	Quad Loss Count

Dual Incremental Encoder Option Module





See **Important** statement on page 76.

Table 43 Dual Incremental Encoder Jumper Settings

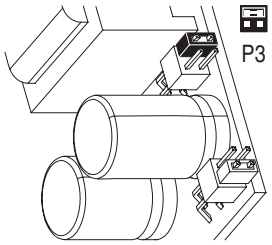
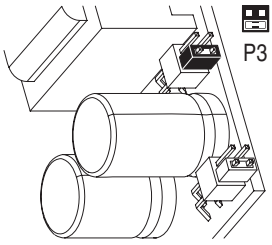
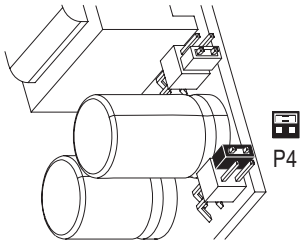
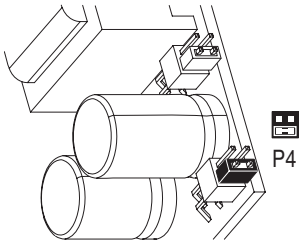
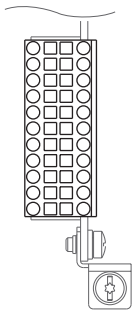
Jumper	Enabled Position	Storage Position
P3 - Safety Jumper Enables use with speed monitoring safety option (20-750-S1).		
P4 - 12V Jumper Enables use with 12 volt supply in "Enabled" position and 5 volt supply in "Storage" position.		

Table 44 Dual Incremental Encoder Specifications

Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
	5V DC minimum to 15V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table 45 Dual Incremental Encoder Terminal Designations

ES	EC
0A	0A-
0B	0B-
0Z	0Z-
Sd	Sd
ES	EC
1A	1A-
1B	1B-
1Z	1Z-
24	24C
Hm	HmC



Terminal	Name	Description
ES	+12 or +5 Volt DC Power	Power supply for Encoder 0, 250 mA.
EC	Common	+12V and +5V Encoder 0, common
0A	Encoder 0: A	Single channel or quadrature A input.
0A-	Encoder 0: A (NOT)	
0B	Encoder 0: B	Quadrature B input.
0B-	Encoder 0: B (NOT)	
0Z	Encoder 0: Z	Pulse, marker or registration input.
0Z-	Encoder 0: Z (NOT)	
Sd	Encoder Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.
Sd	Encoder Shield	
ES	+12 or +5 Volt DC Power	Power supply for Encoder 1, 250 mA.
EC	Common	+12V and +5V Encoder 1, common
1A	Encoder 1: A	Single channel or quadrature A input.
1A-	Encoder 1: A (NOT)	
1B	Encoder 1: B	Quadrature B input.
1B-	Encoder 1: B (NOT)	
1Z	Encoder 1: Z	Pulse, marker or registration input.
1Z-	Encoder 1: Z (NOT)	
24	+24 Volt	Power source for homing input.
24C	Common	
Hm	Homing Input	Captures the AB edge counter.
HmC	Homing Input Common	

Table 46 Dual Incremental Encoder Parameter List By Number

Number	Parameter Name	Group
1	Enc 0 Cfg	Encoder 0
2	Enc 0 PPR	Encoder 0
3	Enc 0 FB Lss Cfg	Encoder 0
4	Enc 0 FB	Encoder 0
5	Enc 0 Sts	Encoder 0
6	Enc 0 Error Sts	Encoder 0
7	Enc 0 PhsLss Cnt	Encoder 0
8	Enc 0 QuadLssCnt	Encoder 0

Number	Parameter Name	Group
11	Enc 1 Cfg	Encoder 1
12	Enc 1 PPR	Encoder 1
13	Enc 1 FB Lss Cfg	Encoder 1
14	Enc 1 FB	Encoder 1
15	Enc 1 Sts	Encoder 1
16	Enc 1 Error Sts	Encoder 1
17	Enc 1 PhsLss Cnt	Encoder 1
18	Enc 1 QuadLssCnt	Encoder 1
20	Homing Cfg	Homing Cfg
21	Module Sts	Module Status

Universal Feedback Option Module (755 Drives Only)

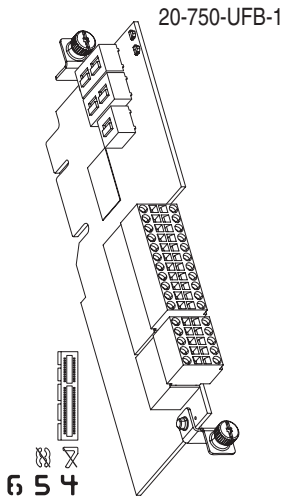
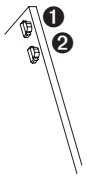


Table 47 Universal Feedback Option Module LED Indication



LED	Name	Color	State	Description
❶	Board	Unlit	Off	Not powered.
		Green	Flashing	Initializing, not active. Communication lost, attempting to reconnect.
			Steady	Operational, no faults are present.
		Red	Flashing	Module error. • Check P1 [Module Sts]
			Steady	Normal operation.
				Module is booting.
				Fatal module error. • Cycle power • Flash update module firmware • Replace module
		Yellow	Flashing	A type 2 alarm condition exists. • Check P1 [Module Sts]
			Steady	A type 1 alarm condition exists. • Check P1 [Module Sts]
		Yellow / Green	Flashing Alternately	Module is flash updating.
❷	DPI	Unlit	Off	Not powered. Not communicating.
		Green	Flashing	Module is attempting to communicate with the DPI host.
			Steady	• Properly connected and communicating. • Module is flash updating.
		Red	Flashing	Module is not communicating with the DPI host.
			Steady	DPI communication failure such as invalid port.
		Yellow	Flashing	Normal operation.
			Steady	Peripheral is connected to a SCANport product and does not support a SCANport compatibility mode.

Table 48 Universal Feedback Option Module DIP Switch Settings (Safety Application)

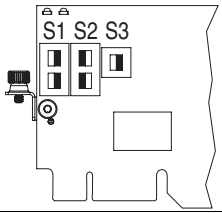
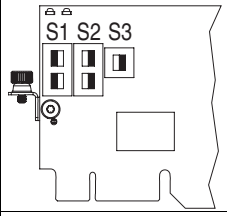
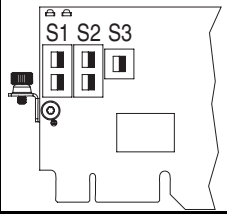
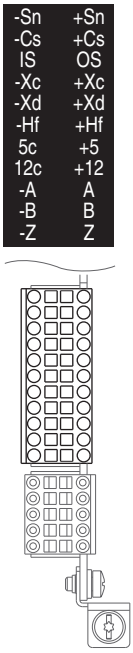
Safety Channel Selection	DIP Switch Settings
Primary Safety Channel To connect feedback signals to the Primary Safety Channel, set: S1 sliders to ON S2 sliders to OFF S3 slider to ON	
Secondary Safety Channel To connect feedback signals to the Secondary Safety Channel, set: S1 sliders to OFF S2 sliders to ON S3 slider to ON	
Primary and Secondary Safety Channels To connect feedback signals to both the Primary and Secondary Safety Channels, set: S1 sliders to ON S2 sliders to ON S3 slider to ON	

Table 49 Universal Feedback Incremental AquadB Encoder

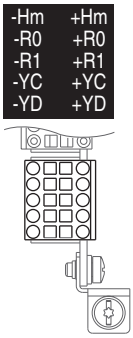
Consideration	Description
Input	Differential or Single Ended operation, Constant Current Sink operation ~10 mA
	3.5V DC minimum to 7.5V DC maximum sourcing 10 mA minimum high state voltage of 3.5V DC maximum low state voltage of 0.4V DC
Maximum Cable Length	30 m (100 ft) @ 5V, 183 m (600 ft) @ 12V
Maximum Input Frequency	250 kHz

Table 50 TB1 Terminal Designations



Terminal	Name	Description
-Sn	Sine (–)	Negative Sine signal
+Sn	Sine (+)	Positive Sine signal
-Cs	Cosine (–)	Negative Cosine signal
+Cs	Cosine (+)	Positive Cosine signal
Is	Inner Shield	Heidenhain inner shield terminal
Os	Outer Shield	Cable shield terminal
-Xc	Channel X Clock (–)	Negative clock terminal (Channel X)
+Xc	Channel X Clock (+)	Positive clock terminal (Channel X)
-Xd	Channel X Data (–)	Negative data terminal (Channel X)
+Xd	Channel X Data (+)	Positive data terminal (Channel X)
-Hf	Heidenhain Supply Feedback (–)	For incremental feedback applications, tie terminal -Hf to 5c and terminal +Hf to +5 for proper voltage regulation.
+Hf	Heidenhain Supply Feedback (+)	
5c	Common	+5V Common
+5	+5 Volt DC Power	Power supply for encoder 250 mA
12c	Common	+12V Common
+12	+12 Volt DC Power	Power supply for encoder (10.5V @ 250 mA)
-A	Encoder A (NOT)	Single channel or quadrature A input or encoder output.
A	Encoder A	
-B	Encoder B (NOT)	Quadrature B input or encoder output.
B	Encoder B	
-Z	Encoder Z (NOT)	Pulse, marker or registration input or encoder output.
Z	Encoder Z	

Table 51 TB2 Terminal Designations



Terminal	Name	Description
-Hm	Home Input (–)	12V DC @ 9 mA to 24V DC @ 40 mA
+Hm	Home Input (+)	
-R0	Registration Input 0 (–)	Positive and negative encoder registration terminals. 12V DC @ 9 mA to 24V DC @ 40 mA
+R0	Registration Input 0 (+)	
-R1	Registration Input 1 (–)	
+R1	Registration Input 1 (+)	
-Yc	Channel Y Clock (–)	Negative clock terminal (Channel Y)
+Yc	Channel Y Clock (+)	Positive clock terminal (Channel Y)
-Yd	Channel Y Data (–)	Negative data terminal (Channel Y)
+Yd	Channel Y Data (+)	Positive data terminal (Channel Y)

Important: Only one linear feedback device can be connected to the option module. Wire the device to either Channel X on TB1 or Channel Y on TB2.

Table 52 Universal Feedback Option Module Parameter List By Number

Number	Parameter Name	Group
1	Module Sts	Module
2	Module Err Reset	Module
5	FB0 Position	Feedback 0
6	FB0 Device Sel	Feedback 0
7	FB0 Identify	Feedback 0
8	FB0 Cfg	Feedback 0
9	FB0 Loss Cfg	Feedback 0
10	FB0 Sts	Feedback 0
15	FB0 IncAndSC PPR	Feedback 0
16	FB0 Inc Cfg	Feedback 0
17	FB0 Inc Sts	Feedback 0
20	FB0 SSI Cfg	Feedback 0
21	FB0 SSI Resol	Feedback 0
22	FB0 SSI Turns	Feedback 0
25	FB0 Lin CPR	Feedback 0
26	FB0 Lin Upd Rate	Feedback 0
27	FB0 LinStahl Sts	Feedback 0
35	FB1 Position	Feedback 1
36	FB1 Device Sel	Feedback 1
37	FB1 Identify	Feedback 1
38	FB1 Cfg	Feedback 1
39	FB1 Loss Cfg	Feedback 1
40	FB1 Sts	Feedback 1
45	FB1 IncAndSC PPR	Feedback 1
46	FB1 Inc Cfg	Feedback 1
47	FB1 Inc Sts	Feedback 1
50	FB1 SSI Cfg	Feedback 1
51	FB1 SSI Resol	Feedback 1
52	FB1 SSI Turns	Feedback 1
55	FB1 Lin CPR	Feedback 1
56	FB1 Lin Upd Rate	Feedback 1
57	FB1 LinStahl Sts	Feedback 1
80	Enc Out Sel	Encoder Out
81	Enc Out Mode	Encoder Out
82	Enc Out FD PPR	Encoder Out
83	Enc Out Z Offset	Encoder Out
84	Enc Out Z PPR	Encoder Out

Number	Parameter Name	Group
90	Rgsn Arm	Registration
91	Rgsn In 0 Filter	Registration
92	Rgsn In 1 Filter	Registration
93	Rgsn HmIn Filter	Registration
94	Rgsn Sts	Registration
100	Rgsn Latch1 Cfg	Registration
101	Rgsn Latch1 Psn	Registration
102	Rgsn Latch1 Time	Registration
103	Rgsn Latch2 Cfg	Registration
104	Rgsn Latch2 Psn	Registration
105	Rgsn Latch2 Time	Registration
106	Rgsn Latch3 Cfg	Registration
107	Rgsn Latch3 Psn	Registration
108	Rgsn Latch3 Time	Registration
109	Rgsn Latch4 Cfg	Registration
110	Rgsn Latch4 Psn	Registration
111	Rgsn Latch4 Time	Registration
112	Rgsn Latch5 Cfg	Registration
113	Rgsn Latch5 Psn	Registration
114	Rgsn Latch5 Time	Registration
115	Rgsn Latch6 Cfg	Registration
116	Rgsn Latch6 Psn	Registration
117	Rgsn Latch6 Time	Registration
118	Rgsn Latch7 Cfg	Registration
119	Rgsn Latch7 Psn	Registration
120	Rgsn Latch7 Time	Registration
121	Rgsn Latch8 Cfg	Registration
122	Rgsn Latch8 Psn	Registration
123	Rgsn Latch8 Time	Registration
124	Rgsn Latch9 Cfg	Registration
125	Rgsn Latch9 Psn	Registration
126	Rgsn Latch9 Time	Registration
127	RgsnLatch10 Cfg	Registration
128	RgsnLatch10 Psn	Registration
129	RgsnLatch10 Time	Registration

Auxiliary Power Supply Option Module

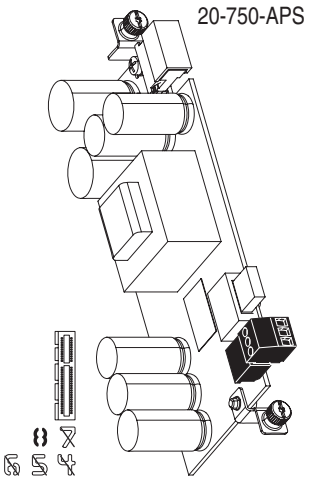
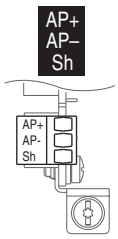


Table 53 TB1 Terminal Designations

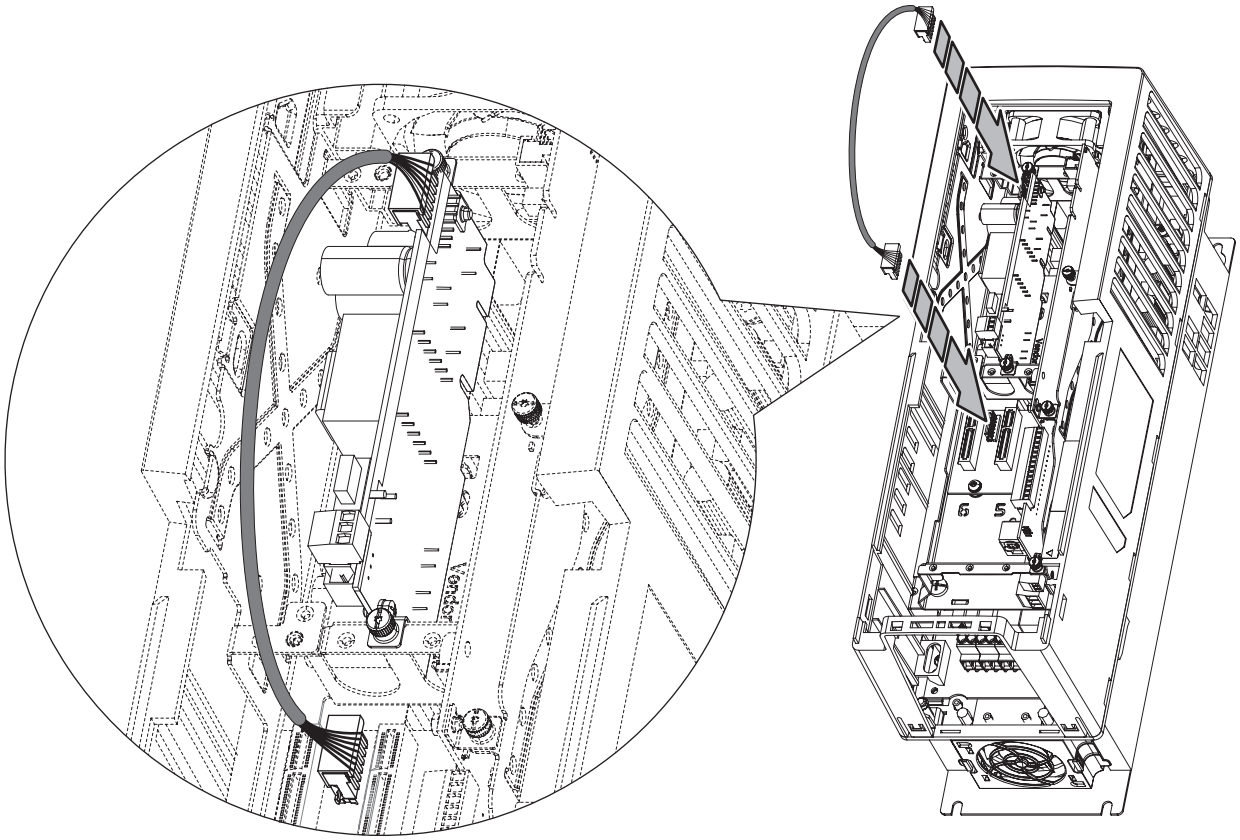


Terminal	Name	Description
AP+	+24 Volt Auxiliary Power	Connections for customer supplied 24V/3A power supply.
AP–	Auxiliary Power Common	
Sh	Shield	Terminating point for wire shields when an EMC plate or conduit box is not installed.

Important: The Auxiliary Power Supply option module may be installed in any option port. Due to its size, the module will extend over and block an adjacent port. Therefore, installation in Port 8 is recommended.

A connector cable is provided with Auxiliary Power Supply option modules for use in PowerFlex 753 drives. The cable is used to connect the module to the backplane when installed on the upper control pod brackets. The connector cable is not used with PowerFlex 755 drives.

Figure 35 Auxiliary Power Supply Installation in 753 Drives



DeviceNet Option Module

For complete information on the DeviceNet Option Module, refer to the PowerFlex 750-Series Drive DeviceNet Option Module User Manual, publication 750COM-UM002.

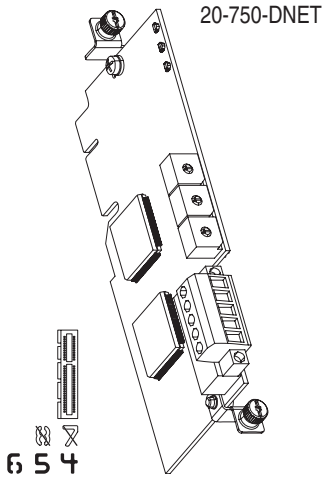
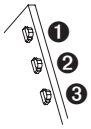
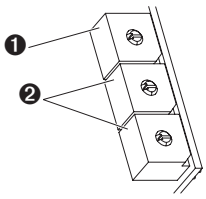


Table 54 DeviceNet Option Module LED Indication



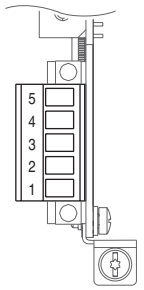
LED	Name	Description
❶	Port	DPI Connection Status
❷	MOD	Option Module Status
❸	NET A	DeviceNet Status

Table 55 DeviceNet Option Module Rotary Switches



Switch	Name	Description
❶	Data Rate Switch	Sets the DeviceNet data rate at which the option module communicates.
❷	Node Address Switches	Sets the node address of the option module.

Table 56 TB1 Terminal Designations



Terminal	Color	Signal	Function
5	Red	V+	Power Supply
4	White	CAN_H	Signal High
3	Bare	SHIELD	Shield
2	Blue	CAN_L	Signal Low
1	Black	V-	Common

ControlNet Option Module

For complete information on the ControlNet Option Module, refer to the PowerFlex 20-750-CNETC Coaxial ControlNet Option Module User Manual, publication 750COM-UM003.

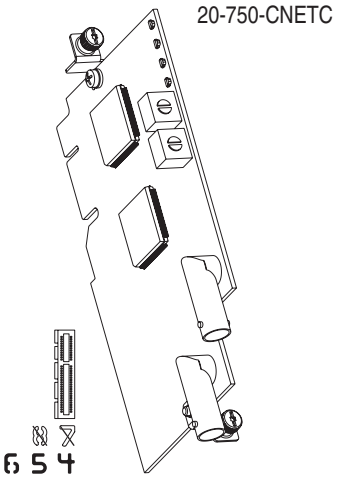
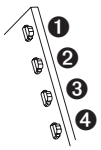
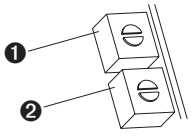


Table 57 ControlNet Option Module LED Indication



LED	Name	Description
❶	Port	DPI Connection Status
❷	MOD	Option Module Status
❸	NET A	ControlNet Channel A Status
❹	NET B	ControlNet Channel B Status

Table 58 ControlNet Option Module Rotary Switches

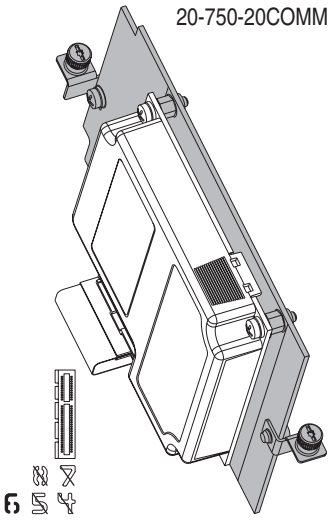


Switch	Name	Description
❶	TENS Switch	Sets the node address of the option module.
❷	ONES Switch	

Table 59 Coax Receptacles

Receptacle	Name	Description
❶	Channel A	Channel A BNC connection to the network.
❷	Channel B	Channel B (redundant) BNC connection to the network.

20-COMM Carrier



Enables use of some 20-COMM adapters with PowerFlex 750-Series drives. See Table 60.

Refer to publication 750COM-IN001 for instructions on installing a 20-COMM adapter on the 20-COMM Carrier.

Table 60 20-COMM-* Network Adapter Compatibility with 750-Series Drives

Adapter Type	Accesses Ports 2, 3, and 6 for I/O Connections (Implicit and Explicit Messaging)	Accesses Port 7 through 14 Devices	Supports Drive Add On Profiles	Supports Asian-Languages (5)
20-COMM-B BACnet MS/TP	No			
20-COMM-C ControlNet (Coax)	✓ (1)	✓ v3.001 (3)	✓ (4)	✓ v3.001 (3)
20-COMM-D DeviceNet		✓ v2.005 (3)	No	
20-COMM-E EtherNet/IP		✓ v4.001 (3)	✓ (4)	✓ v4.001 (3)
20-COMM-H RS-485 HVAC	✓ (2)	No		
20-COMM-I Interbus	✓ (1)			
20-COMM-K CANopen				
20-COMM-L LonWorks	No			
20-COMM-M Modbus/TCP	✓ (1)	✓ v2.001 (3)	No	✓ v2.001 (3)
20-COMM-P Profibus DP		No		
20-COMM-Q ControlNet (Fiber)		✓ v3.001 (3)	✓ (4)	✓ v3.001 (3)
20-COMM-R Remote I/O		No		
20-COMM-S RS-485 DF1				

(1) Controller must be capable of reading/writing 32-bit floating point (REAL) values.
(2) Only works in the Modbus RTU mode.
(3) Requires this adapter firmware version or higher.
(4) Requires firmware version v1.05 or higher of the drive Add On Profiles for RSLogix 5000 version v16 or higher.
(5) Chinese, Japanese, and Korean languages are supported at the time of publication.

Step 5 Start-Up Check List

- This check list supports the Start-Up menu option.
- A Human Interface Module (HIM) is required to run the Start-Up routine.

  Important: See page 92 for an overview of Human Interface Module (HIM) display elements and menu navigation.

- The Start-Up routine may modify parameter values for Analog and Digital I/O.

ATTENTION: Power must be applied to the drive to perform the following start-up procedure. Some of the voltages present are at incoming line potential. To avoid electric shock hazard or damage to equipment, only qualified service personnel should perform the following procedure. Thoroughly read and understand the procedure before beginning.

Prepare For Initial Drive Start-Up

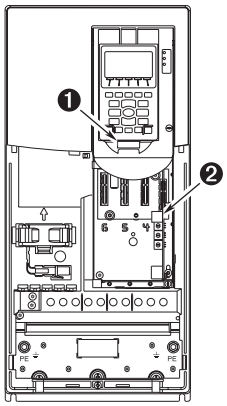
❑ **1.** Confirm that all inputs are connected to the correct terminals and are secure.

❑ **2.** Verify that AC line power at the disconnect device is within the rated value of the drive.

❑ **3.** Verify that control power voltage is correct.

❑ **4.** The remainder of this procedure requires that a Human Interface Module (HIM) be connected to DPI Port 1 or 2.

Figure 36 DPI Ports ❶ and ❷



❑ **5.** Apply AC power and control voltages to the drive.

If any digital inputs are configured to Stop – CF, Run, or Enable, verify that signals are present or the drive will not start. Refer to Troubleshooting – Drive Fault and Alarm Descriptions on page 98 for a list of potential digital input conflicts.

If the STS LED is not flashing green at this point, refer to Status Indicators on page 97.

❑ **6.** When prompted, select a display language. The Start-Up Screen will automatically display for drives that have not been previously configured.

If the Start-Up screen is not displayed press the Enter key.

❑ **7.** Press the Enter key to display the Start-Up Menu.

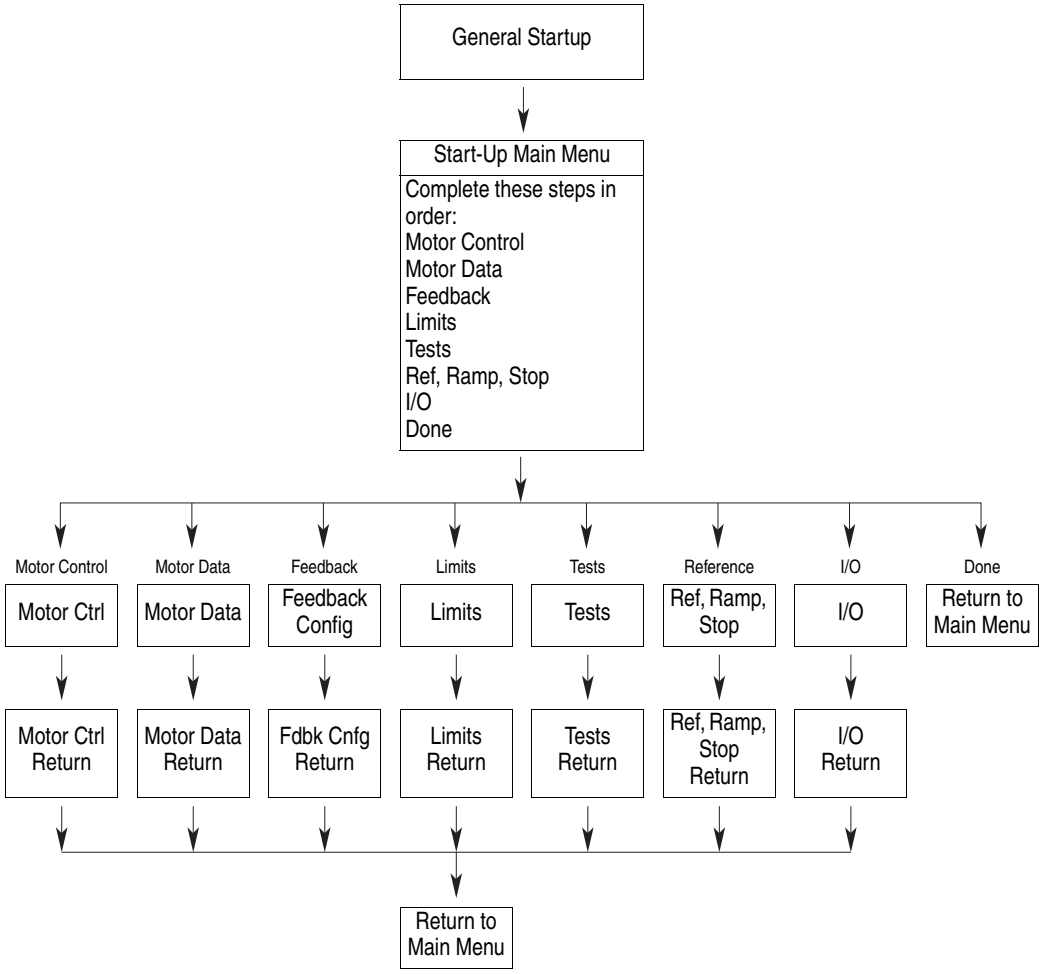
❑ **8.** Use the Up/Down Arrow keys to highlight “2. Basic”.

❑ **9.** Press the Enter key. Follow the menu using the Enter key which will step you through the Start-Up routine.

The Start-Up routine asks simple questions and prompts you to input required information.

Start-Up Menu

The General Start-Up menu is displayed by default upon initial power up of the drive.

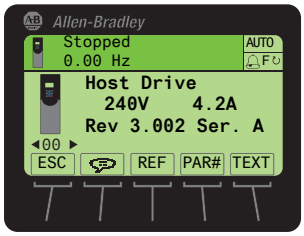


Navigate to Start-Up Menu Using the HIM

1. To access the Start-Up menu after the initial drive power-up, apply power to the drive.

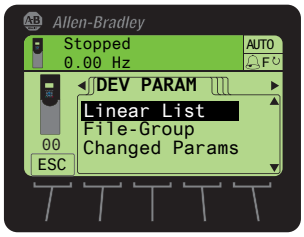
   Upon a subsequent power up, the Status screen for Port 00 (Host Drive) is shown by default.

Figure 37 Status Screen



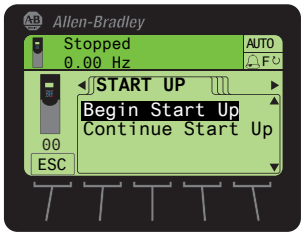
2. Press the (Folders) key to access the Folder screen.

Figure 38 Folder Screen



3. Use the 4 or 6 key to scroll to the START UP folder screen.

Figure 39 Start Up Screen



4. Use the 2 or 8 key to select one of the start up options.

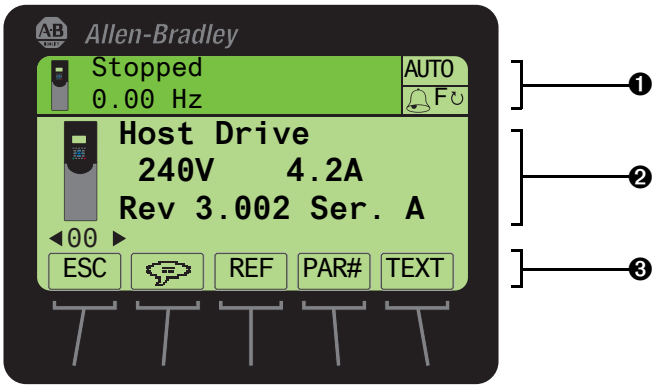
Complete information about using the HIM (Catalog Numbers 20-HIM-A6 and 20-HIM-C6S) to configure and monitor your drive is provided in the Enhanced PowerFlex 7-Class Human Interface Module (HIM) User Manual, publication 20HIM-UM001.

LCD Display Elements

The HIM display is divided into three zones:

❶ Status Bar
❷ Data Area
❸ Soft Key Labels

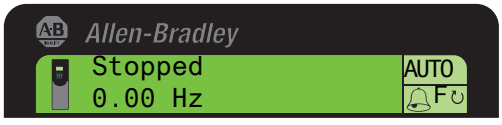
Figure 40 HIM Display Zones



Status Bar

The Status Bar provides information about the operating condition of the Host Drive.

Figure 41 Status Bar on the Display Screen

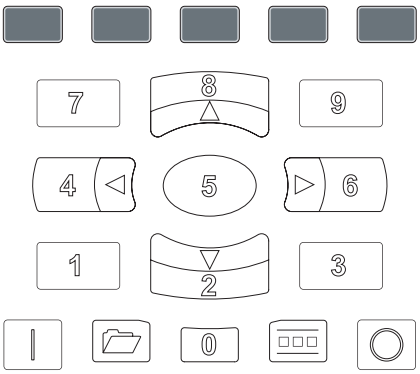


Element		Description
	Host Icon	A small image of the connected Host Drive.
Stopped	Status Text	Indicates current Host Drive operating status. Text flashes when a fault is present.
0.00 Hz	Feedback	Indicates drive output feedback (for example, Hz, RPM, amps, etc.)
AUTO / MAN	Mode Indication	Indicates Auto or Manual HIM status.
	Alarm Indication	Bell icon indicates that an alarm is present.
F R	Rotation Indication	Indicates direction of Host Drive operation.

Soft Keys

Up to five dynamic *soft keys* (shown shaded in Figure 42) may be available. A *soft key* changes its function/name based on the HIM screen or data entry mode. When a *soft key* is active, its present function is shown on the LCD screen in its corresponding Soft Key Label (item 3 in Figure 40).

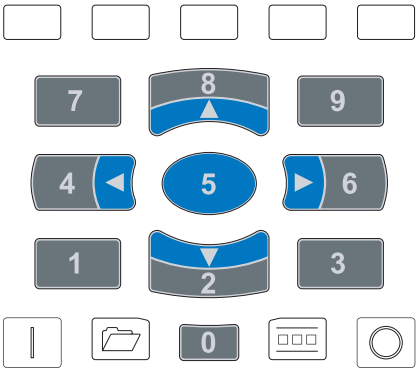
Figure 42 Soft Keys



Navigation and Number Keys

The five blue multi-function keys shown in Figure 43 are used to scroll menus/screens, perform corresponding functions displayed in the Data Area (item 2 in Figure 40) or enter numeric values. The five gray number keys (0, 1, 3, 7, and 9) are used only to enter their respective numeric value.

Figure 43 Navigation and Number Keys

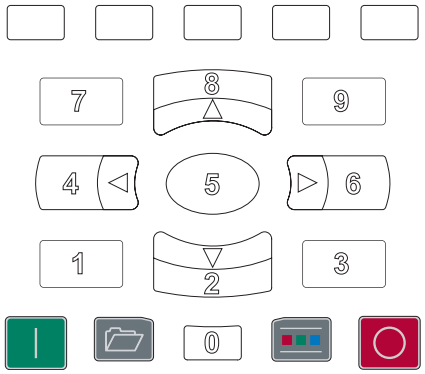


Key	Name	Description
	2/Down Arrow	• Enters the numeric value “2.” • Scrolls down to select an item.
	4/Left Arrow	• Enters the numeric value “4.” • Scrolls left to select an item.
	5/Enter	• Enters the numeric value “5.” • Displays the next level of a selected menu item. • Enters new values. • Performs intended actions.
	6/Right Arrow	• Enters the numeric value “6.” • Scrolls right to select an item.
	8/Up Arrow	• Enters the numeric value “8.” • Scrolls up to select an item.

Single Function Keys

Each of the four single-function keys shown in Figure 44 always performs only its dedicated function.

Figure 44 Single Function Keys

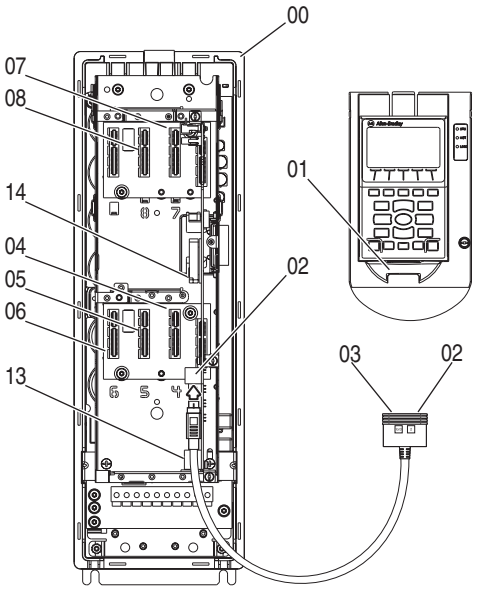


Key	Name	Description
	Start	Start the drive.
	Folder	Access parameters, diagnostics, memory functions, preferences, and other tasks such as Start-Up.
	Control Bar	Access jog, direction, auto/manual, and other control functions.
	Stop	Used to stop the drive or clear a fault. This key is always active. Controlled by parameter 370 [Stop Mode A].

Drive Device Ports

Connectors, embedded devices, and installed option modules such as I/O, communication adapters, and DeviceLogix, have unique port number assignments. Connectors and embedded devices have fixed port numbers that cannot be changed. Option modules are assigned a port number when installed.

Figure 45 Drive Device Ports



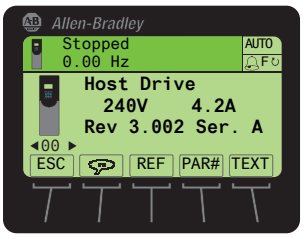
Port	Device	Description
00	Host Drive	Fixed port for the drive.
01	HIM	Fixed port at HIM cradle connector. Splitter cable connector provides Port 01 when HIM cradle connector is unused.
02	DPI Port	Handheld or Remote HIM connection. Splitter cable connection.
03	Splitter Cable	Connects to DPI Port 02. Provides Port 02 and Port 03.
04…08	Option Modules	Available ports for option modules. Refer to the I/O Wiring section, beginning on page 67, for each option's port recommendations. (Ports 07 and 08 PowerFlex 755 drives only.)
09…12	Reserved for future use.	
13	EtherNet/IP	Fixed port for embedded EtherNet/IP (PowerFlex 755 drives only).
14	DeviceLogix	Fixed port for embedded DeviceLogix (PowerFlex 755 drives only).

Select A Device

1. Access the Status Screen.

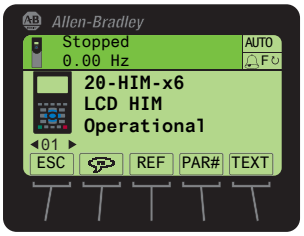
   When the drive is powered up, the Status screen for Port 00 (Host Drive) is shown by default.

Figure 46 Status Screen Displaying Port 00 (Host Drive)



2. Use the 4 ◂ or ▸ 6 key to scroll to the desired port.

Figure 47 Status Screen Displaying Port 01 (HIM Installed In Cradle)



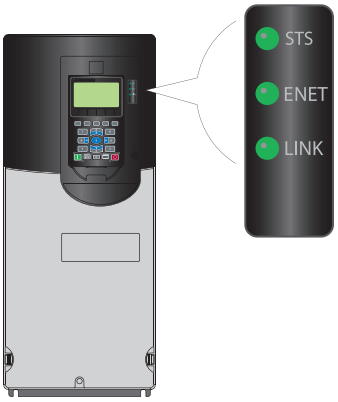
3. Press the PAR# soft key or the (Folders) key to access parameters.

Status Indicators

PowerFlex 753

Table 61 PowerFlex 753 Drive Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready but not running, and no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	Drive is not running, a type 2 (non-configurable) alarm condition exists and the drive cannot be started.
		Steady	Drive is not running, a type 1 alarm condition exists. The drive can be started.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. When running, the drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue. Use parameter 950 [Minor Flt Config] to enable. If not enabled, acts like a major fault.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm exists.
	Green / Red	Flashing Alternately	Drive is flash updating.



PowerFlex 755

Table 62 PowerFlex 755 Drive Status Indicator Descriptions

Name	Color	State	Description
STS (Status)	Green	Flashing	Drive ready but not running, and no faults are present.
		Steady	Drive running, no faults are present.
	Yellow	Flashing	Drive is not running, a type 2 (non-configurable) alarm condition exists and the drive cannot be started.
		Steady	Drive is not running, a type 1 alarm condition exists. The drive can be started.
	Red	Flashing	A major fault has occurred. Drive will stop. Drive cannot be started until fault condition is cleared.
		Steady	A non-resettable fault has occurred.
	Red / Yellow	Flashing Alternately	A minor fault has occurred. When running, the drive continues to run. System is brought to a stop under system control. Fault must be cleared to continue. Use parameter 950 [Minor Flt Config] to enable. If not enabled, acts like a major fault.
	Yellow / Green	Flashing Alternately	When running, a type 1 alarm exists.
	Green / Red	Flashing Alternately	Drive is flash updating.
ENET	Unlit	Off	Adapter and/or network is not powered, adapter is not properly connected to the network, or adapter needs an IP address.
	Red	Flashing	An EtherNet/IP connection has timed out.
		Steady	Adapter failed the duplicate IP address detection test.
	Red / Green	Flashing Alternately	Adapter is performing a self-test.
	Green	Flashing	Adapter is properly connected but is not communicating with any devices on the network.
		Steady	Adapter is properly connected and communicating on the network.
LINK	Unlit	Off	Adapter is not powered or is not transmitting on the network.
	Green	Flashing	Adapter is properly connected and transmitting data packets on the network.
		Steady	Adapter is properly connected but is not transmitting on the network.

Important: The Status Indicator LEDs on the HIM cradle do not indicate the status of Communication Networks, other than the status of Port 13, embedded EtherNet. If a Communication Adapter is installed, refer to that option's user manual for a description of LED location and indication.

Fault and Alarm Display Codes

PowerFlex 750-Series fault and alarm codes are displayed in one of three formats.

- Port 00 (Host Drive) displays the event number only. For example, Fault 3 “Power Loss” is displayed as:
  Fault Code 3.
- Ports 01 through 09 use the format PEEE, indicating port number (P) and event number (EEE). For example, Fault 1 “Analog In Loss” on an I/O module installed in Port 4 is displayed as:
  Fault Code 4001.
- Ports 10 through 14 use the format PPEEE, indicating port number (PP) and event number (EEE). For example, Fault 37 “Net IO Timeout” on Port 14 is displayed as:
  Fault Code 14037.

Troubleshooting – Drive Fault and Alarm Descriptions

The table below contains a list of drive faults and alarms, the type of fault or alarm, the action taken when the drive faults, the parameter used to configure the fault or alarm (if applicable), and a description and action (where applicable).

Important: See the User Manual, publication 750-UM001, for descriptions of faults and alarms generated by installed option modules.

Table 63 Drive Fault and Alarm Types, Descriptions and Actions

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
0	No Entry					
2	Auxiliary Input	Resettable Fault	Coast			An auxiliary input interlock is open.
3	Power Loss	Configurable		P449 [Power Loss Actn]	Y	The DC bus voltage remained below the P451/P454 [Pwr Loss X Level] of nominal for longer than the time programmed in P452/P455 [Pwr Loss X Time].
4	UnderVoltage	Configurable		P460 [UnderVltg Action]	Y	If the bus voltage, P11 [DC Bus Volts] falls below the value set in P461 [UnderVltg Level] an undervoltage condition exists.
5	OverVoltage	Resettable Fault	Coast		Y	The DC bus voltage exceeded the maximum value.
7	Motor Overload	Configurable		P410 [Motor OL Actn]	Y	An internal electronic overload trip has occurred.
8	Heatsink OvrTemp	Resettable Fault	Coast		Y	The heatsink temperature has exceeded 100% of the drive temperature.
9	Trnsistr OvrTemp	Resettable Fault	Coast		Y	The output transistors have exceeded the maximum operating temperature.
10	DynBrake OvrTemp	Alarm 1				The dynamic brake resistor has exceeded its maximum operating temperature.
12	HW OverCurrent	Resettable Fault	Coast		Y	The drive output current has exceeded the hardware current limit.
13	Ground Fault	Resettable Fault	Coast		Y	A current path to earth ground greater than 25% of drive rating has occurred.

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
14	Ground Warning	Configurable				The ground current has exceeded the level set in P467 [Ground Warn Lvl].
15	Load Loss	Configurable		P441 [Load Loss Action]		The output torque current is below the value programmed in P442 [Load Loss Level] for a time period greater than the time programmed in P443 [Load Loss Time].
17	Input Phase Loss	Configurable		P462 [InPhase LossActn]		The DC bus ripple has exceeded a preset level.
18	Motor PTC Trip	Configurable		P250 [PTC Config]		Motor PTC (Positive Temperature Coefficient) over temperature.
20	TorqPrv Spd Band	Resettable Fault	Coast			The difference between P2 [Commanded SpdRef] and P3 [Mtr Vel Fdbk] has exceeded the level programmed in P1105 [Speed Dev Band] for a time period greater than the time programmed in P1106 [SpdBand Intgrtr].
21	Output PhaseLoss	Configurable		P444 [OutPhaseLossActn]		The current in one or more phases has been lost or remains below a preset level.
24	Decel Inhibit	Configurable		P409 [Dec Inhibit Actn]		The drive is not following a commanded deceleration because it is attempting to limit the bus voltage.
25	OverSpeed Limit	Resettable Fault	Coast		Y	The motor operating speed exceeds the limit set by the maximum speed setting P524 [Overspeed Limit]. For forward motor rotation, this limit is P520 [Max Fwd Speed] + P524 [Overspeed Limit]. For reverse motor rotation, this limit is P521 [Max Rev Speed] - P524 [Overspeed Limit]. When flux vector control modes are selected in P35 [Motor Ctrl Mode] the motor operating speed is determined by P131 [Active Vel Fdbk]. For all other non-flux vector control modes, the motor operating speed is determined by P1 [Output Frequency].
26	Brake Slipped	Alarm 1				The encoder movement has exceeded the level in P1110 [Brk Slip Count] after the brake was set and the brake slip maneuver is controlling the drive. (Drive is active.)
		Alarm 2				The encoder movement has exceeded the level in P1110 [Brk Slip Count] after the brake was set and the brake slip maneuver is finished. (Drive is stopped.)
27	Torq Prove Cflct	Alarm 2				When P1100 [Trq Prove Cfg] is enabled, P35 [Motor Ctrl Mode], P125 [Pri Vel Fdbk Sel] and P135 [Mtr Psn Fdbk Sel] must be properly set. If these parameters point to a feedback module, the module parameters must also be properly set.
28	TrqProv EnclsCfg	Alarm 2				Encoderless TorqProve has been enabled but user has not read and understood application concerns of encoderless operation. Refer to the PowerFlex 750-Series User Manual, publication 750-UM001, for information and precautions relating to the use of TorqProve with no encoder.
29	Analog In Loss	Configurable		263 [Anlg In0 LssActn]		Analog input has a lost signal.
33	AuRsts Exhausted	Resettable Fault	Coast			The drive unsuccessfully attempted to reset a fault and resume running for the programmed number of tries.
36	SW OverCurrent	Resettable Fault	Coast		Y	The drive output current has exceeded the 1 ms current rating. This rating is greater than the 3 second current rating and less than the hardware overcurrent fault level. It is typically 200…250% of the drive continuous rating.
38	Phase U to Gnd	Resettable Fault	Coast			A phase to ground fault has been detected between the drive and motor in this phase.
39	Phase V to Gnd					
40	Phase W to Gnd					
41	Phase UV Short	Resettable Fault	Coast			Excessive current has been detected between these two output terminals.
42	Phase VW Short					
43	Phase WU Short					
44	Phase UNot ToGnd	Resettable Fault	Coast			A phase to ground fault has been detected between the drive and motor in this phase.
45	Phase VNot ToGnd					
46	Phase WNot ToGnd					

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
48	System Defaulted	Resettable Fault	Coast			The drive was commanded to write default values.
49	Drive Powerup	–				A Power Up Marker in the Fault Queue indicating that the drive power cycled.
51	Clr Fault Queue	–				Indication that the fault queue has been cleared.
55	Crtl Bd Overtemp	Resettable Fault	Coast			The temperature sensor on the main control board detected excessive heat. See product temperature requirement.
58	Module Defaulted	Resettable Fault	Coast			The module was commanded to write default values.
59	Invalid Code	Resettable Fault	Coast			Internal error.
61	Shear Pin 1	Configurable		P435 [Shear Pin 1 Actn]	Y	The programmed value in P436 [Shear Pin1 Level] has been exceeded.
62	Shear Pin 2	Configurable		P438 [Shear Pin 2 Actn]	Y	The programmed value in P439 [Shear Pin2 Level] has been exceeded.
64	Drive OverLoad	Alarm 1			Y	P940 [Drive OL Count] has exceeded 50% but is less than 100%.
		Resettable Fault	Coast			P940 [Drive OL Count] has exceeded 100%. Reduce the mechanical load on the drive.
67	Pump Off	Alarm 1				Pump Off condition has been detected.
71	Port 1 Adapter	Resettable Fault	Coast			The DPI communications option has a fault. See device event queue.
72	Port 2 Adapter					
73	Port 3 Adapter					
74	Port 4 Adapter					
75	Port 5 Adapter					
76	Port 6 Adapter					
77	IR Volts Range	Alarm 2				The default for P70 [Autotune] is 1 “Calculate” and the value calculated from the motor nameplate values returned a value for P73 [IR Voltage Drop] which is not in the range of acceptable values.
		Resettable Fault	Coast			P70 [Autotune] is set to 2 “Static Tune” or 3 “Rotate Tune” and the value measured by the Autotune procedure for P73 [IR Voltage Drop] is not in the range of acceptable values.
78	FluxAmpsRef Rang	Alarm 2				The default for P70 [Autotune] is 1 “Calculate” and the value for flux amps determined by the Autotune procedure exceeds the value programmed in P26 [Motor NP Amps].
		Resettable Fault	Coast			P70 [Autotune] is set to 2 “Static Tune” or 3 “Rotate Tune” and the value for flux amps measured by the Autotune procedure exceeds the value programmed in P26 [Motor NP Amps].
79	Excessive Load	Resettable Fault	Coast			The motor did not come up to speed in the allotted time during Autotune.
80	AutoTune Aborted	Resettable Fault	Coast			The Autotune function was manually canceled or a fault occurred.
81	Port 1 DPI Loss	Resettable Fault	Coast			The DPI port stopped communicating. Check connections and drive grounding.
82	Port 2 DPI Loss					
83	Port 3 DPI Loss					
84	Port 4 DPI Loss					
85	Port 5 DPI Loss					
86	Port 6 DPI Loss					
87	IXo VoltageRange	Alarm 2				The default for P70 [Autotune] is 1 “Calculate” and the voltage calculated for motor inductive impedance exceeds 25% of the value of P25 [Motor NP Volts].
		Resettable Fault	Coast			P70 [Autotune] is set to 2 “Static Tune” or 3 “Rotate Tune” and the voltage measured for motor inductive impedance exceeds 25% of the value of P25 [Motor NP Volts].

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
91	Pri VelFdbk Loss	Configurable		Note: See option module for config parameter number		A Feedback Loss has been detected for the source of P134 [Aux Vel Feedback]. This could be due to a problem detected by the feedback option module selected by P125 [Pri Vel Fdbk Sel] or due to a loss in communication between the feedback option module and main control board. The source of primary velocity feedback must be configured not to fault if the feedback loss switchover feature is used.
93	Hw Enable Check	Resettable Fault	Coast			Hardware enable is disabled (jumper installed) but indicates not enabled.
94	Alt VelFdbk Loss	Configurable		Note: See option module for config parameter number		A Feedback Loss has been detected for the source of P128 [Alt Vel Fdbk Sel]. This could be due to a problem detected by the feedback option module selected by P128 [Alt Vel Fdbk Sel] or due to a loss in communication between the feedback option module and main control board.
95	Aux VelFdbk Loss	Configurable				A Feedback Loss has been detected for the source of P132 [Aux Vel Fdbk Sel]. This could be due to a problem detected by the feedback option module selected by P132 [Aux Vel Fdbk Sel] or due to a loss in communication between the feedback option module and main control board.
96	PositionFdbkLoss	Configurable				A Feedback Loss has been detected for the source of P847 [Psn Fdbk]. This could be due to a problem detected by the feedback option module selected by P135 [Mtr Psn Fdbk Sel] or due to a loss in communication between the feedback option module and main control board.
97	Auto Tach Switch	Resettable Fault	Coast			Indication that either of the two following conditions exists. • Tach switch has occurred and alternate feedback device has failed. • Tach switch has not occurred, Auto Tach Switch Option is enabled and both primary and alternate devices have failed.
100	Parameter Chksum	Resettable Fault	Coast			The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
104	Pwr Brd Checksum	Non-Reset Fault				The checksum read from the non-volatile storage does not match the checksum calculated. Data set to default value.
106	Incompat MCB-PB	Non-Reset Fault	Coast			The main control board did not recognize the power structure. Flash with newer Application version.
107	Replaced MCB-PB	Resettable Fault	Coast			The main control board was moved to a different power structure. Data set to default values.
108	Anlg Cal Chksum	Non-Reset Fault	Coast			The checksum read from the analog calibration data does not match the checksum calculated.
111	PwrBd Invalid ID	Non-Reset Fault	Coast			Power structure ID invalid. Flash with newer Application version.
112	PwrBd App MinVer	Resettable Fault	Coast			Power structure needs newer Application version. Flash with newer Application version.
113	Tracking DataErr	Resettable Fault	Coast			Internal data error.
115	PwrDn Table Full	Resettable Fault	Coast			Internal data error.
116	PwrDnEntry2Large	Resettable Fault	Coast			Internal data error.
117	PwrDn Data Chksm	Resettable Fault	Coast			Internal data error.
118	PwrBd PwrDn Chks	Resettable Fault	Coast			Internal data error.
124	App ID Changed	Resettable Fault	Coast			Application Firmware changed. Verify Application version.
125	Using Backup App	Resettable Fault	Coast			Application did not flash correctly. Reflash.
134	Start On PowerUp	Alarm 1				When P345 [Start At PowerUp] is enabled, an alarm will be set for the time programmed in P346 [PowerUp Delay].

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
137	Ext Prechrg Err	Configurable		P323 [Prchrg Err Cfg]		The seal contact on the external precharge contactor has opened (as signalled by P190 [DI Prchrg Seal]) while the drive was running (PWM was active).
138	Precharge Open	Resettable Fault	Coast			The internal precharge was commanded to open while the drive was running (PWM was active). The internal fault latch will be automatically cleared when PWM is disabled.
141	Autn Enc Angle	Resettable Fault	Coast			P78 [Encdrlss AngComp] is out of range.
142	Autn Spd Rstrct	Resettable Fault	Coast			Frequency limit settings are preventing the drive from reaching a suitable speed during an Inertia Tune test.
143	Autotune CurReg	Resettable Fault	Coast			Calculated values for P96 [VCL Cur Reg Kp] and/or P97 [VCL Cur Reg Ki] are out of range.
144	Autotune Inertia	Resettable Fault	Coast			Results from the Inertia Tune test out of range for P76 [Total Inertia].
145	Autotune Travel	Resettable Fault	Coast			When P77 [Inertia Test Lmt] is set, the Inertia Tune test was prevented from reaching a suitable speed to run the test.
152	No Stop Source	Resettable Fault	Coast			Last stop source has been removed.
155	Bipolar Conflict	Alarm 2				P308 [Direction Mode] is set to 1 “Bipolar” or 2 “Rev Disable” and one or more digital input is enabled for direction control.
157	DigIn Cfg B	Alarm 2				Digital input conflict. Correct Digital Input configuration.
158	DigIn Cfg C	Alarm 2				Digital input conflict. Correct Digital Input configuration.
161	Sleep Cfg	Alarm 2				There is a Sleep/Wake configuration error. With Sleep Wake Mode = Direct, possible causes include: Drive is stopped and Wake Level < Sleep Level. Stop=CF, Run, Run Fwd, or Run Rev is not configured in Digital Input functions.
162	Waking	Alarm 2				The Wake timer is counting toward a value that will start the drive.
168	HeatSinkUnderTmp	Resettable Fault				Heatsink temperature sensor is reporting a value below -18.7 °C (-1.66 °F) or the sensor feedback circuit is open.
169	PWM Freq Reduced	Alarm 1				The PWM Frequency has been reduced from the value set in P38 [PWM Frequency] due to excessive IGBT junction temperatures.
170	CurLimit Reduced	Alarm 1				The current limit value has been reduced from the value set in P422/423 [Current Limit X] due to excessive IGBT junction temperatures or P940 [Drive OL Count] = 95%.
171	Adj Vltg Ref	Alarm 1				Invalid adjustable voltage reference selection conflict.
177	Profiling Active	Alarm 1				The Profile/Indexer is active.
178	Homing Active	Alarm 1				The Homing function is active.
179	Home Not Set	Alarm 1				The Home position was not set before profile operation.
185	Freq Conflict	Alarm 2				Indicates that the values of P520 [Max Fwd Speed] and P521 [Max Rev Speed] are in conflict with the value of P63 [Break Frequency].
186	VHz Neg Slope	Alarm 2				Indicates that the V/Hz curve segment resulted in a negative V/Hz slope.
187	VHz Boost Limit	Alarm 2				Indication that one of the two following conditions exists. • P60 [Start/Acc Boost] and P61 [Run Boost] are greater than P25 [Motor NP Volts] x 0.25 when P65 [VHz Curve] = 0 “Custom V/Hz.” • P61 [Run Boost] is greater than P25 [Motor NP Volts] x 0.25 when P65 [VHz Curve] = 1 “Fan/Pump.”
190	PM FV Pri Fdbk	Alarm 2				Indicates a control mode and primary feedback device configuration error. P35 [Motor Ctrl Mode] is set to a flux vector “FV” control mode, P125 [Pri Vel Fdbk Sel] is set to 137 (port 0, P137 [Open Loop Fdbk]).

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
191	PM FV Alt Fdbk	Alarm 2				Indicates a control mode and alternate feedback device configuration error. P35 [Motor Ctrl Mode] is set to a flux vector "FV" control mode, P635 [Spd Options Ctrl] is set to bit 7 "Auto Tach SW," P125 [Pri Vel Fdbk Sel] is set to 137 (port 0, P137 [Open Loop Fdbk]).
192	Fwd Spd Lim Cfg	Alarm 2				The forward speed reference is out of range. Verify the settings of P38 [PWM Frequency] and P520 [Max Fwd Speed]. Lower carrier frequencies reduce the output frequency range. Verify that P522 [Min Fwd Speed] is less than P520 [Max Fwd Speed].
193	Rev Spd Lim Cfg	Alarm 2				The reverse speed reference is out of range. Verify the settings of P38 [PWM Frequency] and P521 [Max Rev Speed]. Lower carrier frequencies reduce the output frequency range. Verify that P523 [Min Rev Speed] is less than P521 [Max Rev Speed].
203	Port 13 Adapter	Resettable Fault	Coast			The embedded EtherNet/IP adapter has a fault. See EtherNet event queue.
204	Port 14 Adapter	Resettable Fault	Coast			The DeviceLogix adapter has a fault.
205	DPI TransportErr	Alarm 1				A DPI Communication Error has occurred.
210	HW En Jumper Out	Resettable Fault	Coast			A Safety Option module is present and Jumper J1 ENABLE is removed. Install the jumper.
211	Safety Brd Fault	Resettable Fault	Coast			A Safety option module has indicated a fault. Verify that Jumper J1 ENABLE is installed. Reset or power cycle drive.
212	Safety JumperOut	Resettable Fault	Coast			Jumper J2 SAFETY is not installed and a Safety option module is not present. Install the jumper.
213	Safety Jumper In	Resettable Fault	Coast			Jumper J2 SAFETY is installed and a Safety option module is present. Remove the jumper.
214	SafetyPortCnflct	Alarm 2				Allowable number of safety options exceeded.
224	Port 4 Comm Loss	Resettable Fault	Coast			The device at the port has stopped communicating with the main control board. Verify that the device is present and functional. Verify network connections. Verify options installed in ports 4…8 are seated in the port and secured with mounting screws.
225	Port 5 Comm Loss					
226	Port 6 Comm Loss					
227	Port 7 Comm Loss					
228	Port 8 Comm Loss					
229	Port 9 Comm Loss					
230	Port10 Comm Loss					
231	Port11 Comm Loss					
232	Port12 Comm Loss					
233	Port13 Comm Loss					
234	Port14 Comm Loss					
244	Port 4 Cfg	Alarm 2				The main control board does not have the correct option in the port. Option may not be compatible with product or MCB firmware needs to be updated to support it. Option my have to be moved or removed, accept option configuration change.
245	Port 5 Cfg					
246	Port 6 Cfg					
247	Port 7 Cfg					
248	Port 8 Cfg					
249	Port 9 Cfg					
250	Port 10 Cfg					
251	Port 11 Cfg					
252	Port 12 Cfg					
253	Port 13 Cfg					
254	Port 14 Cfg					

Event No.	Fault/Alarm Text	Type	Fault Action	Configuration Parameter	Auto Reset	Description/Action(s)
264	Port 4 Checksum	Resettable Fault	Coast			A option module storage checksum failed. Option data has been set to default values.
265	Port 5 Checksum					
266	Port 6 Checksum					
267	Port 7 Checksum					
268	Port 8 Checksum					
269	Port 9 Checksum					
270	Port10 Checksum					
271	Port11 Checksum					
272	Port12 Checksum					
273	Port13 Checksum					
274	Port14 Checksum					
291	HS Fan Life	Configurable		P493 [HSFan EventActn]		Predictive maintenance function has reached the event level. Perform maintenance.
292	In Fan Life	Configurable		P500 [InFan EventActn]		
293	MtrBrng Life	Configurable		P506 [MtrBrngEventActn]		
294	MtrBrng Lube	Configurable		P510 [MtrLubeEventActn]		
295	MachBrng Life	Configurable		P515 [MtrBrngEventActn]		
296	MachBrng Lube	Configurable		P519 [MchLubeEventActn]		
307	Port7InvalidCard	Non-Reset Fault	Coast			Option not valid in that port. Remove option module.
308	Port8InvalidCard	Non-Reset Fault	Coast			
313	ENet Checksum	Resettable Fault	Coast			Ethernet/IP storage checksum failed. Data set to default values.
314	DLX Checksum	Resettable Fault	Coast			DeviceLogix storage checksum failed. Data set to default values.
14037	Net IO Timeout	Configurable		P52 [DLX Prog Cond]		DeviceLogix has been disabled.

Important: Fault and Alarm event numbers between 3000 and 13999 are generated by a module installed in a port. Refer to Fault and Alarm Display Codes on page 98 for an explanation.

Refer to the following publications for detailed fault and alarm information.

Event Number Range	Publication Title	Publication Number
3000…12999	PowerFlex 750-Series AC Drives User Manual	750-UM001
13000…13999	PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual	750COM-UM001

Manually Clearing Faults

Step	Key(s)
1. Press the “Clear” soft key to acknowledge the fault. The fault information will be removed so that you can use the HIM. 2. Address the condition that caused the fault. The cause must be corrected before the fault can be cleared. 3. After corrective action has been taken, clear the fault by one of these methods: • Press Stop (if running the drive will stop) • Cycle drive power • Select the “Clear” soft key on the HIM Diagnostic folder Faults menu.	

Common Symptoms and Corrective Actions

Drive does not Start from Start or Run Inputs wired to the terminal block.

Cause(s)	Indication	Corrective Action
Drive is Faulted	Flashing red status light	Clear fault. • Press Stop • Cycle power • "Clear Faults" on the HIM Diagnostic menu.
Incorrect input wiring. See page 69 for wiring examples. • 2 wire control requires Run, Run Forward, Run Reverse or Jog input. • 3 wire control requires Start and Stop inputs. • Verify 24 Volt Common is connected to Digital Input Common.	None	Wire inputs correctly.
Incorrect digital input programming. • Mutually exclusive choices have been made (i.e., Jog and Jog Forward). • 2 wire and 3 wire programming may be conflicting. • Start configured without a Stop configured.	None	Configure input function.
	Flashing yellow status light and "DigIn Cnfg B" or "DigIn Cnfg C" indication on LCD HIM. P936 [Drive Status 2] shows type 2 alarm(s).	Resolve input function conflicts.
Terminal block does not have control.	None	Check P324 [Logic Mask].

Drive does not Start from HIM.

Cause(s)	Indication	Corrective Action
Drive is configured for 2 wire level control.	None	Change P150 [Digital In Conf] to correct control function.
Another device has Manual control.	None	
Port does not have control.	None	Change P324 [Logic Mask] to enable correct port.

Drive does not respond to changes in speed command.

Cause(s)	Indication	Corrective Action
No value is coming from the source of the command.	LCD HIM Status Line indicates "At Speed" and output is 0 Hz.	1. If the source is an analog input, check wiring and use a meter to check for presence of signal. 2. Check P2 [Commanded SpdRef] for correct source.
Incorrect reference source has been programmed.	None	3. Check P545 [Spd Ref A Sel] for the source of the speed reference. 4. Reprogram P545 [Spd Ref A Sel] for correct source.
Incorrect Reference source is being selected via remote device or digital inputs.	None	5. Check P935 [Drive Status 1] bits 12 and 13 for unexpected source selections. 6. Check P220 [Digital In Sts] to see if inputs are selecting an alternate source. 7. Check configuration of P173-175 [DI Speed Sel X] functions.

Motor and/or drive will not accelerate to commanded speed.

Cause(s)	Indication	Corrective Action
Acceleration time is excessive.	None	Reprogram P535/536 [Accel Time X].
Excess load or short acceleration times force the drive into current limit, slowing or stopping acceleration.	None	Check P935 [Drive Status 1], bit 27 to see if the drive is in Current Limit. Remove excess load or reprogram P535/536 [Accel Time X].
Speed command source or value is not as expected.	None	Check for the proper Speed Command using Steps 1 through 7 above.
Programming is preventing the drive output from exceeding limiting values.	None	Check P520 [Max Fwd Speed], P521 [Max Rev Speed] and P37 [Maximum Freq] to assure that speed is not limited by programming.

Motor operation is unstable.

Cause(s)	Indication	Corrective Action
Motor data was incorrectly entered or Autotune was not performed.	None	1. Correctly enter motor nameplate data. 2. Perform “Static Tune” or “Rotate Tune” Autotune procedure.

Drive will not reverse motor direction.

Cause(s)	Indication	Corrective Action
Digital input is not selected for reversing control.	None	Check that the DI Reversing function is correctly configured.
Digital input is incorrectly wired.	None	Check digital input wiring.
Direction mode parameter is incorrectly programmed.	None	Reprogram P308 [Direction Mode] for analog “Bipolar” or digital “Unipolar” control.
Motor wiring is improperly phased for reverse.	None	Switch two motor leads.
A bipolar analog speed command input is incorrectly wired or signal is absent.	None	1. Use meter to check that an analog input voltage is present. 2. Check bipolar analog signal wiring. Positive voltage commands forward direction. Negative voltage commands reverse direction.

Stopping the drive results in a Decel Inhibit fault.

Cause(s)	Indication	Corrective Action
The bus regulation feature is enabled and is halting deceleration due to excessive bus voltage. Excess bus voltage is normally due to excessive regenerated energy or unstable AC line input voltages. Internal timer has halted drive operation.	Decel Inhibit fault screen. LCD Status Line indicates “Faulted”.	1. Reprogram parameters 372/373 [Bus Reg Mode X] to eliminate any “Adjust Freq” selection. 2. Disable bus regulation (parameters 372/373 [Bus Reg Mode X]) and add a dynamic brake. 3. Correct AC input line instability or add an isolation transformer. 4. Reset drive.

Drive (Port 0) Parameter List

Number	Parameter Name	Group
1	Output Frequency	Metering
2	Commanded SpdRef	Metering
3	Mtr Vel Fdbk	Metering
4	Commanded Trq	Metering
5	Torque Cur Fdbk	Metering
6	Flux Cur Fdbk	Metering
7	Output Current	Metering
8	Output Voltage	Metering
9	Output Power	Metering
10	Output Powr Fctr	Metering
11	DC Bus Volts	Metering
12	DC Bus Memory	Metering
13	Elapsed MWH	Metering
14	Elapsed kWH	Metering
15	Elapsed Run Time	Metering
20	Rated Volts	Drive Data
21	Rated Amps	Drive Data
22	Rated kW	Drive Data
25	Motor NP Volts	Motor Data
26	Motor NP Amps	Motor Data
27	Motor NP Hertz	Motor Data
28	Motor NP RPM	Motor Data
29	Mtr NP Pwr Units	Motor Data
30	Motor NP Power	Motor Data
31	Motor Poles	Motor Data
35	Motor Ctrl Mode	Mtr Ctrl Options
36	Maximum Voltage	Mtr Ctrl Options
37	Maximum Freq	Mtr Ctrl Options
38	PWM Frequency	Mtr Ctrl Options
40	Mtr Options Cnfg	Mtr Ctrl Options
42	Bus Utilization	Mtr Ctrl Options
43	Flux Up Enable	Mtr Ctrl Options
44	Flux Up Time	Mtr Ctrl Options
45	Flux Down Ki	Mtr Ctrl Options
46	Flux Down Kp	Mtr Ctrl Options
47	Econ At Ref Ki	Mtr Ctrl Options
48	Econ AccDec Ki	Mtr Ctrl Options
49	Econ AccDec Kp	Mtr Ctrl Options
50	Stability Filter	Mtr Ctrl Options
51	Stab Volt Gain	Mtr Ctrl Options
52	Stab Angle Gain	Mtr Ctrl Options
60	Start Acc Boost	Volts per Hertz
61	Run Boost	Volts per Hertz
62	Break Voltage	Volts per Hertz
63	Break Frequency	Volts per Hertz
64	SVC Boost Filter	Volts per Hertz
65	VHz Curve	Volts per Hertz
70	Autotune	Autotune
71	Autotune Torque	Autotune
73	IR Voltage Drop	Autotune
74	Ixo Voltage Drop	Autotune
75	Flux Current Ref	Autotune

Number	Parameter Name	Group
76	Total Inertia	Autotune
77	Inertia Test Lmt	Autotune
78	Encdrlss AngComp	Autotune
79	Encdrlss VltComp	Autotune
80	PM Cfg [755]	Autotune
81	PM PriEnc Offset [755]	Autotune
82	PM AltEnc Offset [755]	Autotune
83	PM OfstTst Cur [755]	Autotune
84	PM OfstTst CRamp [755]	Autotune
85	PM OfstTst FRamp [755]	Autotune
86	PM CEMF Voltage [755]	Autotune
87	PM IR Voltage [755]	Autotune
88	PM IXq Voltage [755]	Autotune
89	PM IXd Voltage [755]	Autotune
91	PM Vqs Reg Kp [755]	Autotune
92	PM Vqs Reg Ki [755]	Autotune
93	PM Dir Test Cur [755]	Autotune
95	VCL Cur Reg BW	Vector Regulator
96	VCL Cur Reg Kp	Vector Regulator
97	VCL Cur Reg Ki	Vector Regulator
98	VEncdls FReg Kp	Vector Regulator
99	VEncdls FReg Ki	Vector Regulator
100	Slip Reg Enable	Vector Regulator
101	Slip Reg Ki	Vector Regulator
102	Slip Reg Kp	Vector Regulator
103	Flux Reg Enable	Vector Regulator
104	Flux Reg Ki	Vector Regulator
105	Flux Reg Kp	Vector Regulator
106	Trq Adapt Speed	Vector Regulator
107	Trq Adapt En	Vector Regulator
108	Phase Delay Comp	Vector Regulator
109	Trq Comp Mode	Vector Regulator
110	Trq Comp Mtring	Vector Regulator
111	Trq Comp Regen	Vector Regulator
112	Slip Adapt Iqs	Vector Regulator
113	SFAdapt SlewLmt	Vector Regulator
114	SFAdapt SlewRate	Vector Regulator
115	SFAdapt CnvrgLvl	Vector Regulator
116	SFAdapt CnvrgLmt	Vector Regulator
125	Pri Vel Fdbk Sel	Feedback
126	Pri Vel FdbkFltr	Feedback
127	Pri Vel Feedback	Feedback
128	Alt Vel Fdbk Sel	Feedback
129	Alt Vel FdbkFltr	Feedback
130	Alt Vel Feedback	Feedback
131	Active Vel Fdbk	Feedback
132	Aux Vel Fdbk Sel	Feedback
133	Aux Vel FdbkFltr	Feedback
134	Aux Vel Feedback	Feedback
135	Mtr Psn Fdbk Sel	Feedback
136	Load Psn FdbkSel [755]	Feedback
137	Open Loop Fdbk	Feedback

Number	Parameter Name	Group
138	Simulator Fdbk	Feedback
139	Delayed Spd Ref [755]	Feedback
140	Virtual EncDelay [755]	Feedback
141	Virtual Enc EPR [755]	Feedback
142	Virtual Enc Psn [755]	Feedback
150	Digital In Cfg	Digin Functions
155	DI Enable	Digin Functions
156	DI Clear Fault	Digin Functions
157	DI Aux Fault	Digin Functions
158	DI Stop	Digin Functions
159	DI Cur Lmt Stop	Digin Functions
160	DI Coast Stop	Digin Functions
161	DI Start	Digin Functions
162	DI Fwd Reverse	Digin Functions
163	DI Run	Digin Functions
164	DI Run Forward	Digin Functions
165	DI Run Reverse	Digin Functions
166	DI Jog 1	Digin Functions
167	DI Jog 1 Forward	Digin Functions
168	DI Jog 1 Reverse	Digin Functions
169	DI Jog 2	Digin Functions
170	DI Jog 2 Forward	Digin Functions
171	DI Jog 2 Reverse	Digin Functions
172	DI Manual Ctrl	Digin Functions
173	DI Speed Sel 0	Digin Functions
174	DI Speed Sel 1	Digin Functions
175	DI Speed Sel 2	Digin Functions
177	DI MOP Inc	Digin Functions
178	DI MOP Dec	Digin Functions
179	DI Accel 2	Digin Functions
180	DI Decel 2	Digin Functions
181	DI SpTqPs Sel 0	Digin Functions
182	DI SpTqPs Sel 1	Digin Functions
185	DI Stop Mode B	Digin Functions
186	DI BusReg Mode B	Digin Functions
187	DI PwrLoss ModeB	Digin Functions
188	DI Pwr Loss	Digin Functions
189	DI Precharge	Digin Functions
190	DI Prchrg Seal	Digin Functions
191	DI PID Enable	Digin Functions
192	DI PID Hold	Digin Functions
193	DI PID Reset	Digin Functions
194	DI PID Invert	Digin Functions
195	DI Torque StptA	Digin Functions
196	DI Fwd End Limit	Digin Functions
197	DI Fwd Dec Limit	Digin Functions
198	DI Rev End Limit	Digin Functions
199	DI Rev Dec Limit	Digin Functions
200	DI PHdwr OvrTrvl	Digin Functions
201	DI NHdwr OvrTrvl	Digin Functions
220	Digital In Sts	Digital Inputs
222	Dig In Filt Mask [753]	Digital Inputs
223	Dig In Filt [753]	Digital Inputs
225	Dig Out Sts [753]	Digital Outputs
226	Dig Out Invert [753]	Digital Outputs
227	Dig Out Setpoint [753]	Digital Outputs
230	RO0 Sel [753]	Digital Outputs
231	RO0 Level Sel [753]	Digital Outputs
232	RO0 Level [753]	Digital Outputs
233	RO0 Level CmpSts [753]	Digital Outputs
234	RO0 On Time [753]	Digital Outputs
235	RO0 Off Time [753]	Digital Outputs
240	TO0 Sel [753]	Digital Outputs
241	TO0 Level Sel [753]	Digital Outputs
242	TO0 Level [753]	Digital Outputs
243	TO0 Level CmpSts [753]	Digital Outputs
244	TO0 On Time [753]	Digital Outputs
245	TO0 Off Time [753]	Digital Outputs
250	PTC Cfg [753]	Motor PTC
251	PTC Status [753]	Motor PTC
255	Anlg In Type [753]	Analog Inputs
256	Anlg In Sqrt [753]	Analog Inputs
257	Anlg In Loss Sts [753]	Analog Inputs
260	Anlg In0 Value [753]	Analog Inputs
261	Anlg In0 Hi [753]	Analog Inputs
262	Anlg In0 Lo [753]	Analog Inputs
263	Anlg In0 LssActn [753]	Analog Inputs
264	Anlg In0 Raw Val [753]	Analog Inputs
265	Anlg In0 Filt Gn [753]	Analog Inputs
266	Anlg In0 Filt BW [753]	Analog Inputs
270	Anlg Out Type [753]	Analog Outputs
271	Anlg Out Abs [753]	Analog Outputs
275	Anlg Out0 Sel [753]	Analog Outputs
276	Anlg Out0 Stpt [753]	Analog Outputs
277	Anlg Out0 Data [753]	Analog Outputs
278	Anlg Out0 DataHi [753]	Analog Outputs
279	Anlg Out0 DataLo [753]	Analog Outputs
280	Anlg Out0 Hi [753]	Analog Outputs
281	Anlg Out0 Lo [753]	Analog Outputs
282	Anlg Out0 Val [753]	Analog Outputs
285	RO PredMaint Sts [753]	R0 Predict Main
286	RO0 Load Type [753]	R0 Predict Main
287	RO0 Load Amps [753]	R0 Predict Main
288	RO0 TotalLife [753]	R0 Predict Main
289	RO0 ElapsedLife [753]	R0 Predict Main
290	RO0 RemainLife [753]	R0 Predict Main
291	RO0 LifeEvntLvl [753]	R0 Predict Main
292	RO0 LifeEvntActn [753]	R0 Predict Main
300	Speed Units	Preferences
301	Access Level	Preferences
302	Language	Preferences
305	Voltage Class	Control Cfg
306	Duty Rating	Control Cfg
308	Direction Mode	Control Cfg
309	SpdTrqPsn Mode A	Control Cfg
310	SpdTrqPsn Mode B	Control Cfg
311	SpdTrqPsn Mode C	Control Cfg
312	SpdTrqPsn Mode D	Control Cfg
313	Actv SpTqPs Mode	Control Cfg
314	SLAT Err Stpt	Control Cfg

Number	Parameter Name	Group
315	SLAT Dwell Time	Control Cfg
321	Prchrg Control	Control Cfg
322	Prchrg Delay	Control Cfg
323	Prchrg Err Cfg	Control Cfg
324	Logic Mask	Auto Manual Ctrl
325	Auto Mask	Auto Manual Ctrl
326	Manual Cmd Mask	Auto Manual Ctrl
327	Manual Ref Mask	Auto Manual Ctrl
328	Alt Man Ref Sel	Auto Manual Ctrl
329	Alt Man Ref AnHi	Auto Manual Ctrl
330	Alt Man Ref AnLo	Auto Manual Ctrl
331	Manual Preload	Auto Manual Ctrl
336	Reset Meters	Drive Memory
345	Start At PowerUp	Start Features
346	PowerUp Delay	Start Features
347	Auto Retry Fault	Start Features
348	Auto Rstrt Tries	Start Features
349	Auto Rstrt Delay	Start Features
350	Sleep Wake Mode	Start Features
351	SleepWake RefSel	Start Features
352	Sleep Level	Start Features
353	Sleep Time	Start Features
354	Wake Level	Start Features
355	Wake Time	Start Features
356	FlyingStart Mode	Start Features
357	FS Gain	Start Features
358	FS Ki	Start Features
359	FS Speed Reg Ki	Start Features
360	FS Speed Reg Kp	Start Features
361	FS Excitation Ki	Start Features
362	FS Excitation Kp	Start Features
363	FS Reconnect Dly	Start Features
364	FS Msrmnt CurLvl	Start Features
370	Stop Mode A	Braking Features
371	Stop Mode B	Braking Features
372	Bus Reg Mode A	Braking Features
373	Bus Reg Mode B	Braking Features
374	Bus Reg Lvl Cnfg	Braking Features
375	Bus Reg Level	Braking Features
376	Bus Limit Kp	Braking Features
377	Bus Limit Kd	Braking Features
378	Bus Limit ACR Ki	Braking Features
379	Bus Limit ACR Kp	Braking Features
380	Bus Reg Ki	Braking Features
381	Bus Reg Kp	Braking Features
382	DB Resistor Type	Braking Features
383	DB Ext Ohms	Braking Features
384	DB Ext Watts	Braking Features
385	DB ExtPulseWatts	Braking Features
388	Flux Braking En	Braking Features
389	Flux Braking Lmt	Braking Features
390	Flux Braking Ki	Braking Features
391	Flux Braking Kp	Braking Features
393	DC Brake Lvl Sel	Braking Features
394	DC Brake Level	Braking Features
395	DC Brake Time	Braking Features
396	DC Brake Ki	Braking Features
397	DC Brake Kp	Braking Features
398	DC Brk Vq Fltr	Braking Features
399	DC Brk Vd Fltr	Braking Features
400	Fast Braking Ki [755]	Braking Features
401	Fast Braking Kp	Braking Features
402	Brake Off Adj 1	Braking Features
403	Brake Off Adj 2	Braking Features
409	Dec Inhibit Actn	Braking Features
410	Motor OL Actn	Motor Overload
411	Mtr OL at Pwr Up	Motor Overload
412	Mtr OL Alarm Lvl	Motor Overload
413	Mtr OL Factor	Motor Overload
414	Mtr OL Hertz	Motor Overload
415	Mtr OL Reset Lvl	Motor Overload
416	MtrOL Reset Time	Motor Overload
418	Mtr OL Counts	Motor Overload
419	Mtr OL Trip Time	Motor Overload
420	Drive OL Mode	Load Limits
421	Current Lmt Sel	Load Limits
422	Current Limit 1	Load Limits
423	Current Limit 2	Load Limits
424	Active Cur Lmt	Load Limits
425	Current Rate Lmt	Load Limits
426	Regen Power Lmt	Load Limits
427	Motor Power Lmt	Load Limits
428	Current Limit Kd	Load Limits
429	Current Limit Ki	Load Limits
430	Current Limit Kp	Load Limits
431	Id Lo FreqCur Kp	Load Limits
432	Iq Lo FreqCur Kp	Load Limits
433	Jerk Gain	Load Limits
434	Shear Pin Cfg	Load Limits
435	Shear Pin 1 Actn	Load Limits
436	Shear Pin1 Level	Load Limits
437	Shear Pin 1 Time	Load Limits
438	Shear Pin 2 Actn	Load Limits
439	Shear Pin2 Level	Load Limits
440	Shear Pin 2 Time	Load Limits
441	Load Loss Action	Load Limits
442	Load Loss Level	Load Limits
443	Load Loss Time	Load Limits
444	OutPhaseLossActn	Load Limits
445	Out PhaseLossLvl	Load Limits
449	Power Loss Actn	Power Loss
450	Pwr Loss Mode A	Power Loss
451	Pwr Loss A Level	Power Loss
452	Pwr Loss A Time	Power Loss
453	Pwr Loss Mode B	Power Loss
454	Pwr Loss B Level	Power Loss
455	Pwr Loss B Time	Power Loss
456	PwrLoss RT BusKp	Power Loss
457	PwrLoss RT BusKd	Power Loss
458	PwrLoss RT ACRKp	Power Loss

Number	Parameter Name	Group
459	PwrLoss RT ACRKi	Power Loss
460	UnderVltg Action	Power Loss
461	UnderVltg Level	Power Loss
462	InPhase LossActn	Power Loss
463	InPhase Loss Lvl	Power Loss
464	DC Bus Mem Reset	Power Loss
466	Ground Warn Actn	Ground Fault
467	Ground Warn Lvl	Ground Fault
469	PredMaint Status	Predictive Main
470	PredMaintAmbTemp	Predictive Main
471	PredMaint Rst En	Predictive Main
472	PredMaint Reset	Predictive Main
488	HSFan Derate	Predictive Main
489	HSFan TotalLife	Predictive Main
490	HSFan ElpsdLife	Predictive Main
491	HSFan RemainLife	Predictive Main
492	HSFan EventLevel	Predictive Main
493	HSFan EventActn	Predictive Main
494	HSFan ResetLog	Predictive Main
495	InFan Derate	Predictive Main
496	InFan TotalLife	Predictive Main
497	InFan ElpsdLife	Predictive Main
498	InFan RemainLife	Predictive Main
499	InFan EventLevel	Predictive Main
500	InFan EventActn	Predictive Main
501	InFan ResetLog	Predictive Main
502	MtrBrngTotalLife	Predictive Main
503	MtrBrngElpsdLife	Predictive Main
504	MtrBrngRemainLif	Predictive Main
505	MtrBrngEventLvl	Predictive Main
506	MtrBrngEventActn	Predictive Main
507	MtrBrng ResetLog	Predictive Main
508	MtrLubeElpsdHrs	Predictive Main
509	MtrLubeEventLvl	Predictive Main
510	MtrLubeEventActn	Predictive Main
511	MchBrngTotalLife	Predictive Main
512	MchBrngElpsdLife	Predictive Main
513	MchBrngRemainLif	Predictive Main
514	MchBrngEventLvl	Predictive Main
515	MchBrngEventActn	Predictive Main
516	MchBrngResetLog	Predictive Main
517	MchLubeElpsdHrs	Predictive Main
518	MchLube EventLvl	Predictive Main
519	MchLubeEventActn	Predictive Main
520	Max Fwd Speed	Speed Limits
521	Max Rev Speed	Speed Limits
522	Min Fwd Speed	Speed Limits
523	Min Rev Speed	Speed Limits
524	Overspeed Limit	Speed Limits
525	Zero Speed Limit	Speed Limits
526	Skip Speed 1	Speed Limits
527	Skip Speed 2	Speed Limits
528	Skip Speed 3	Speed Limits
529	Skip Speed Band	Speed Limits
535	Accel Time 1	Speed Ramp Rates
536	Accel Time 2	Speed Ramp Rates
537	Decel Time 1	Speed Ramp Rates
538	Decel Time 2	Speed Ramp Rates
539	Jog Acc Dec Time	Speed Ramp Rates
540	S Curve Accel	Speed Ramp Rates
541	S Curve Decel	Speed Ramp Rates
545	Spd Ref A Sel	Speed Reference
546	Spd Ref A Stpt	Speed Reference
547	Spd Ref A AnlgHi	Speed Reference
548	Spd Ref A AnlgLo	Speed Reference
549	Spd Ref A Mult	Speed Reference
550	Spd Ref B Sel	Speed Reference
551	Spd Ref B Stpt	Speed Reference
552	Spd Ref B AnlgHi	Speed Reference
553	Spd Ref B AnlgLo	Speed Reference
554	Spd Ref B Mult	Speed Reference
555	Spd Ref Scale	Speed Reference
556	Jog Speed 1	Speed Reference
557	Jog Speed 2	Speed Reference
558	MOP Reference	Speed Reference
559	Save MOP Ref	Speed Reference
560	MOP Rate	Speed Reference
561	MOP High Limit	Speed Reference
562	MOP Low Limit	Speed Reference
563	DI ManRef Sel	Speed Reference
564	DI ManRef AnlgHi	Speed Reference
565	DI ManRef AnlgLo	Speed Reference
571	Preset Speed 1	Speed Reference
572	Preset Speed 2	Speed Reference
573	Preset Speed 3	Speed Reference
574	Preset Speed 4	Speed Reference
575	Preset Speed 5	Speed Reference
576	Preset Speed 6	Speed Reference
577	Preset Speed 7	Speed Reference
588	Spd Ref Filter	Speed Reference
589	Spd Ref Fltr BW	Speed Reference
590	Spd Ref FltrGain	Speed Reference
591	Spd Ref Sel Sts	Speed Reference
592	Selected Spd Ref	Speed Reference
593	Limited Spd Ref	Speed Reference
594	Ramped Spd Ref	Speed Reference
595	Filtered Spd Ref	Speed Reference
596	Speed Rate Ref	Speed Reference
597	Final Speed Ref	Speed Reference
600	Trim Ref A Sel	Speed Trim
601	Trim Ref A Stpt	Speed Trim
602	Trim RefA AnlgHi	Speed Trim
603	Trim RefA AnlgLo	Speed Trim
604	Trim Ref B Sel	Speed Trim
605	Trim Ref B Stpt	Speed Trim
606	Trim RefB AnlgHi	Speed Trim
607	Trim RefB AnlgLo	Speed Trim
608	TrmPct RefA Sel	Speed Trim
609	TrmPct RefA Stpt	Speed Trim
610	TrmPct RefA AnHi	Speed Trim

Number	Parameter Name	Group
611	TrmPct RefA AnLo	Speed Trim
612	TrmPct RefB Sel	Speed Trim
613	TrmPct RefB Stpt	Speed Trim
614	TrmPct RefB AnHi	Speed Trim
615	TrmPct RefB AnLo	Speed Trim
616	SpdTrimPrcRefSrc	Speed Trim
617	Spd Trim Source	Speed Trim
620	Droop RPM at FLA	Slip/Droop Comp
621	Slip RPM at FLA	Slip/Droop Comp
622	Slip Comp BW	Slip/Droop Comp
623	VHzSV SpdTrimReg	Slip/Droop Comp
635	Spd Options Ctrl	Speed Regulator
636	Speed Reg BW	Speed Regulator
637	SReg FB Fltr Sel	Speed Regulator
638	SReg FB FltrGain	Speed Regulator
639	SReg FB Fltr BW	Speed Regulator
640	Filtered SpdFdbk	Speed Regulator
641	Speed Error	Speed Regulator
642	Servo Lock Gain [755]	Speed Regulator
643	SpdReg AntiBckup	Speed Regulator
644	Spd Err Fltr BW	Speed Regulator
645	Speed Reg Kp	Speed Regulator
646	Speed Reg Max Kp	Speed Regulator
647	Speed Reg Ki	Speed Regulator
648	Alt Speed Reg BW	Speed Regulator
649	Alt Speed Reg Kp	Speed Regulator
650	Alt Speed Reg Ki	Speed Regulator
651	AltSpdErr FltrBW	Speed Regulator
652	SReg Trq Preset	Speed Regulator
653	Spd Loop Damping	Speed Regulator
654	Spd Reg Int Out	Speed Regulator
655	Spd Reg Pos Lmt	Speed Regulator
656	Spd Reg Neg Lmt	Speed Regulator
657	SReg OutFltr Sel	Speed Regulator
658	SReg OutFltrGain	Speed Regulator
659	SReg OutFltr BW	Speed Regulator
660	SReg Output	Speed Regulator
663	VHzSV Spd Reg Kp	Speed Regulator
664	VHzSV Spd Reg Ki	Speed Regulator
665	Speed Comp Sel	Speed Comp
666	Speed Comp Gain	Speed Comp
667	Speed Comp Out	Speed Comp
670	Pos Torque Limit	Torque Limits
671	Neg Torque Limit	Torque Limits
675	Trq Ref A Sel	Torque Reference
676	Trq Ref A Stpt	Torque Reference
677	Trq Ref A AnlgHi	Torque Reference
678	Trq Ref A AnlgLo	Torque Reference
679	Trq Ref A Mult	Torque Reference
680	Trq Ref B Sel	Torque Reference
681	Trq Ref B Stpt	Torque Reference
682	Trq Ref B AnlgHi	Torque Reference
683	Trq Ref B AnlgLo	Torque Reference
684	Trq Ref B Mult	Torque Reference
685	Selected Trq Ref	Torque Reference

Number	Parameter Name	Group
686	Torque Step	Torque Reference
687	Notch Fltr Freq	Torque Reference
688	Notch Fltr Atten	Torque Reference
689	Filtered Trq Ref	Torque Reference
690	Limited Trq Ref	Torque Reference
695	Inertia CompMode [755]	Inertia Comp
696	Inertia Acc Gain [755]	Inertia Comp
697	Inertia Dec Gain [755]	Inertia Comp
698	Inert Comp LPFBW [755]	Inertia Comp
699	Inertia Comp Out [755]	Inertia Comp
700	Ext Ramped Ref [755]	Inertia Comp
704	InAdp LdObs Mode [755]	Friction Comp
705	Inertia Adapt BW [755]	Friction Comp
706	InertiaAdaptGain [755]	Friction Comp
707	Load Estimate [755]	Friction Comp
708	InertiaTrqAdd [755]	Friction Comp
709	IA LdObs Delay [755]	Friction Comp
710	InertAdptFltrBW [755]	Friction Comp
711	Load Observer BW [755]	Friction Comp
720	PTP PsnRefStatus	Position Cfg/Sts
721	Position Control	Position Cfg/Sts
722	Psn Selected Ref	Position Cfg/Sts
723	Psn Command	Position Cfg/Sts
724	Psn Reg Status	Position Cfg/Sts
725	Zero Position	Position Cfg/Sts
726	In Pos Psn Band	Position Cfg/Sts
727	In Pos Psn Dwell	Position Cfg/Sts
730	Homing Status	Position Homing
731	Homing Control	Position Homing
732	DI Find Home	Position Homing
733	DI Redefine Psn	Position Homing
734	DI OL Home Limit	Position Homing
735	Find Home Speed	Position Homing
736	Find Home Ramp	Position Homing
737	Actual Home Psn	Position Homing
738	User Home Psn	Position Homing
745	PsnWatch1 Select [755]	Position Watch
746	PsnWatch1 DtctIn [755]	Position Watch
747	PsnWatch1 Stpt [755]	Position Watch
748	PsnWatch2 Select [755]	Position Watch
749	PsnWatch2 DtctIn [755]	Position Watch
750	PsnWatch2 Stpt [755]	Position Watch
765	Psn Ref Select	Direct
766	Psn Direct Stpt	Direct
767	Psn Direct Ref	Direct
770	PTP Control	Point to Point
771	PTP Mode	Point to Point
772	DI Indx Step	Point to Point
773	DI Indx StepRev	Point to Point
774	DI Indx StepPrst	Point to Point
775	PTP Ref Sel	Point to Point
776	PTP Reference	Point to Point
777	PTP Feedback	Point to Point
778	PTP Ref Scale	Point to Point
779	PTP Index Preset	Point to Point

Number	Parameter Name	Group
780	PTP Setpoint	Point to Point
781	PTP Accel Time	Point to Point
782	PTP Decel Time	Point to Point
783	PTP Speed FwdRef	Point to Point
784	PTP Command	Point to Point
785	PTP Fwd Vel Lmt	Point to Point
786	PTP Rev Vel Lmt	Point to Point
787	PTP S Curve	Point to Point
788	PTP Vel Override	Point to Point
789	PTP EGR Mult	Point to Point
790	PTP EGR Div	Point to Point
795	PLL Control [755]	Phase Lock Loop
796	PLL Ext Spd Sel [755]	Phase Lock Loop
797	PLL Ext Spd Stpt [755]	Phase Lock Loop
798	PLL Ext SpdScale [755]	Phase Lock Loop
799	PLL Psn Ref Sel [755]	Phase Lock Loop
800	PLL Psn Stpt [755]	Phase Lock Loop
801	PLL BW [755]	Phase Lock Loop
802	PLL LPFilter BW [755]	Phase Lock Loop
803	PLL Virt Enc RPM [755]	Phase Lock Loop
804	PLL EPR Input [755]	Phase Lock Loop
805	PLL Rvls Input [755]	Phase Lock Loop
806	PLL Psn Out Fltr [755]	Phase Lock Loop
807	PLL Speed Out [755]	Phase Lock Loop
808	PLL Speed OutAdv [755]	Phase Lock Loop
809	PLL Enc Out [755]	Phase Lock Loop
810	PLL Enc Out Adv [755]	Phase Lock Loop
811	PLL EPR Output [755]	Phase Lock Loop
812	PLL Rvls Output [755]	Phase Lock Loop
815	Psn Ref EGR Out	Electronic Gear
816	Psn EGR Mult	Electronic Gear
817	Psn EGR Div	Electronic Gear
820	Psn Offset 1 Sel	Position Offset
821	Psn Offset 1	Position Offset
822	Psn Offset 2 Sel	Position Offset
823	Psn Offset 2	Position Offset
824	Psn Offset Vel	Position Offset
825	LdPsn Fdbk Mult [755]	Ld Psn Fdbk Scal
826	LdPsn Fdbk Div [755]	Ld Psn Fdbk Scal
830	PsnNtchFltrFreq	Position Reg
831	PsnNtchFltrDepth	Position Reg
832	Psn Out Fltr Sel	Position Reg
833	Psn Out FltrGain	Position Reg
834	Psn Out Fltr BW	Position Reg
835	Psn Error	Position Reg
836	Psn Actual	Position Reg
837	Psn Load Actual [755]	Position Reg
838	Psn Reg Ki	Position Reg
839	Psn Reg Kp	Position Reg
840	PReg Pos Int Lmt	Position Reg
841	PReg Neg Int Lmt	Position Reg
842	PsnReg IntgrlOut	Position Reg
843	PsnReg Spd Out	Position Reg
844	PReg Pos Spd Lmt	Position Reg
845	PReg Neg Spd Lmt	Position Reg

Number	Parameter Name	Group
846	Psn Reg Droop	Position Reg
847	Psn Fdbk	Position Reg
871	Port 1 Reference	Comm Control
872	Port 2 Reference	Comm Control
873	Port 3 Reference	Comm Control
874	Port 4 Reference	Comm Control
875	Port 5 Reference	Comm Control
876	Port 6 Reference	Comm Control
877	Port13 Reference [755]	Comm Control
878	Port14 Reference	Comm Control
879	Drive Logic Rslt	Comm Control
880	DPI Ref Rslt	Comm Control
881	DPI Ramp Rslt	Comm Control
882	DPI Logic Rslt	Comm Control
883	Drive Ref Rslt [753]	Comm Control
884	Drive Ramp Rslt [753]	Comm Control
885	Port Mask Act	Security
886	Logic Mask Act	Security
887	Write Mask Act	Security
888	Write Mask Cfg	Security
895	Data In A1	DPI Datalinks
896	Data In A2	DPI Datalinks
897	Data In B1	DPI Datalinks
898	Data In B2	DPI Datalinks
899	Data In C1	DPI Datalinks
900	Data In C2	DPI Datalinks
901	Data In D1	DPI Datalinks
902	Data In D2	DPI Datalinks
905	Data Out A1	DPI Datalinks
906	Data Out A2	DPI Datalinks
907	Data Out B1	DPI Datalinks
908	Data Out B2	DPI Datalinks
909	Data Out C1	DPI Datalinks
910	Data Out C2	DPI Datalinks
911	Data Out D1	DPI Datalinks
912	Data Out D2	DPI Datalinks
919	Stop Owner	Owners
920	Start Owner	Owners
921	Jog Owner	Owners
922	Dir Owner	Owners
923	Clear Flt Owner	Owners
924	Manual Owner	Owners
925	Ref Select Owner	Owners
930	Speed Ref Source	Status
931	Last StartSource	Status
932	Last Stop Source	Status
933	Start Inhibits	Status
934	Last StrtInhibit	Status
935	Drive Status 1	Status
936	Drive Status 2	Status
937	Condition Sts 1	Status
940	Drive OL Count	Status
941	IGBT Temp Pct	Status
942	IGBT Temp C	Status
943	Drive Temp Pct	Status

Number	Parameter Name	Group
944	Drive Temp C	Status
945	At Limit Status	Status
946	Safety Port Sts	Status
950	Minor Flt Cfg	Fault/Alarm Info
951	Last Fault Code	Fault/Alarm Info
952	Fault Status A	Fault/Alarm Info
953	Fault Status B	Fault/Alarm Info
954	Status1 at Fault	Fault/Alarm Info
955	Status2 at Fault	Fault/Alarm Info
956	Fault Frequency	Fault/Alarm Info
957	Fault Amps	Fault/Alarm Info
958	Fault Bus Volts	Fault/Alarm Info
959	Alarm Status A	Fault/Alarm Info
960	Alarm Status B	Fault/Alarm Info
961	Type 2 Alarms	Fault/Alarm Info
962	AlarmA at Fault	Fault/Alarm Info
963	AlarmB at Fault	Fault/Alarm Info
970	Testpoint Sel 1	Testpoints
971	Testpoint Fval 1	Testpoints
972	Testpoint Lval 1	Testpoints
974	Testpoint Sel 2	Testpoints
975	Testpoint Fval 2	Testpoints
976	Testpoint Lval 2	Testpoints
978	Testpoint Sel 3	Testpoints
979	Testpoint Fval 3	Testpoints
980	Testpoint Lval 3	Testpoints
982	Testpoint Sel 4	Testpoints
983	Testpoint Fval 4	Testpoints
984	Testpoint Lval 4	Testpoints
1035	PkDtct Stpt Real [755]	Peak Detection
1036	PkDtct Stpt Dint [755]	Peak Detection
1037	PkDtct1 In Sel [755]	Peak Detection
1038	PkDtct1PresetSel [755]	Peak Detection
1039	Peak1 Cfg [755]	Peak Detection
1040	Peak 1 Change [755]	Peak Detection
1041	PeakDetect1 Out [755]	Peak Detection
1042	PkDtct2 In Sel [755]	Peak Detection
1043	PkDtct2PresetSel [755]	Peak Detection
1044	Peak2 Cfg [755]	Peak Detection
1045	Peak 2 Change [755]	Peak Detection
1046	PeakDetect2 Out [755]	Peak Detection
1065	PID Cfg	Process PID
1066	PID Control	Process PID
1067	PID Ref Sel	Process PID
1068	PID Ref AnlgHi	Process PID
1069	PID Ref AnlgLo	Process PID
1070	PID Setpoint	Process PID
1071	PID Ref Mult	Process PID
1072	PID Fdbk Sel	Process PID
1073	PID Fdbk AnlgHi	Process PID
1074	PID Fdbk AnlgLo	Process PID
1075	PID FBLoss SpSel	Process PID
1076	PID FBLoss TqSel	Process PID
1077	PID Fdbk	Process PID
1078	PID Fdbk Mult	Process PID

Number	Parameter Name	Group
1079	PID Output Sel	Process PID
1080	PID Output Mult	Process PID
1081	PID Upper Limit	Process PID
1082	PID Lower Limit	Process PID
1083	PID Deadband	Process PID
1084	PID LP Filter BW	Process PID
1085	PID Preload	Process PID
1086	PID Prop Gain	Process PID
1087	PID Int Time	Process PID
1088	PID Deriv Time	Process PID
1089	PID Status	Process PID
1090	PID Ref Meter	Process PID
1091	PID Fdbk Meter	Process PID
1092	PID Error Meter	Process PID
1093	PID Output Meter	Process PID
1100	Trq Prove Cfg [755]	Torque Prove
1101	Trq Prove Setup [755]	Torque Prove
1102	DI FloatMicroPsn [755]	Torque Prove
1103	Trq Prove Status [755]	Torque Prove
1104	Trq Lmt SlewRate [755]	Torque Prove
1105	Speed Dev Band [755]	Torque Prove
1106	SpdBand Intgrtr [755]	Torque Prove
1107	Brk Release Time [755]	Torque Prove
1108	Brk Set Time [755]	Torque Prove
1109	Brk Alarm Travel [755]	Torque Prove
1110	Brk Slip Count [755]	Torque Prove
1111	Float Tolerance [755]	Torque Prove
1112	MicroPsnScalePct [755]	Torque Prove
1113	ZeroSpdFloatTime [755]	Torque Prove
1120	Fiber Control [753]	Fibers Function
1121	Fiber Status [753]	Fibers Function
1122	Sync Time [753]	Fibers Function
1123	Traverse Inc [753]	Fibers Function
1124	Traverse Dec [753]	Fibers Function
1125	Max Traverse [753]	Fibers Function
1126	P Jump [753]	Fibers Function
1129	DI Fiber SyncEna [753]	Fibers Function
1130	DI Fiber TravDis [753]	Fibers Function
1131	Adj Vltg Config [753]	Adjustable Vltg
1133	Adj Vltg Select [753]	Adjustable Vltg
1134	Adj Vltg Ref Hi [753]	Adjustable Vltg
1135	Adj Vltg Ref Lo [753]	Adjustable Vltg
1136	Adj Vltg TrimSel [753]	Adjustable Vltg
1137	Adj Vltg Trim Hi [753]	Adjustable Vltg
1138	Adj Vltg Trim Lo [753]	Adjustable Vltg
1139	Adj Vltg Command [753]	Adjustable Vltg
1140	Adj Vltg AccTime [753]	Adjustable Vltg
1141	Adj Vltg DecTime [753]	Adjustable Vltg
1142	Adj Vltg Preset1 [753]	Adjustable Vltg
1143	Adj Vltg Preset2 [753]	Adjustable Vltg
1144	Adj Vltg Preset3 [753]	Adjustable Vltg
1145	Adj Vltg Preset4 [753]	Adjustable Vltg
1146	Adj Vltg Preset5 [753]	Adjustable Vltg
1147	Adj Vltg Preset6 [753]	Adjustable Vltg
1148	Adj Vltg Preset7 [753]	Adjustable Vltg

Number	Parameter Name	Group
1149	Adj Vltg RefMult [753]	Adjustable Vltg
1150	Adj Vltg Scurve [753]	Adjustable Vltg
1151	Adj Vltg TrimPct [753]	Adjustable Vltg
1152	Min Adj Voltage [753]	Adjustable Vltg
1165	Rod Speed [753]	Pump Jack
1166	Rod Torque [753]	Pump Jack
1167	Rod Speed Cmd [753]	Pump Jack
1168	TorqAlarm Action [753]	Pump Jack
1169	TorqAlarm Config [753]	Pump Jack
1170	TorqAlarm Dwell [753]	Pump Jack
1171	TorqAlarm Level [753]	Pump Jack
1172	TorqAlm Timeout [753]	Pump Jack
1173	TorqAlarm TOActn [753]	Pump Jack
1174	Total Gear Ratio [753]	Pump Jack
1175	Max Rod Speed [753]	Pump Jack
1176	Max Rod Torque [753]	Pump Jack
1177	Min Rod Speed [753]	Pump Jack
1178	Motor Sheave [753]	Pump Jack
1179	OilWell Pump Cfg [753]	Pump Jack
1180	PCP Pump Sheave [753]	Pump Jack
1181	Gearbox Limit [753]	Pump Jack
1182	Gearbox Rating [753]	Pump Jack
1183	Gearbox Ratio [753]	Pump Jack
1184	Gearbox Sheave [753]	Pump Jack
1187	Pump Off Config [753]	Pump Off
1188	Pump Off Setup [753]	Pump Off
1189	Pump Off Action [753]	Pump Off
1190	Pump Off Control [753]	Pump Off
1191	Pump Off Status [753]	Pump Off
1192	Pump Cycle Store [753]	Pump Off
1193	Set Top ofStroke [753]	Pump Off
1194	Torque Setpoint [753]	Pump Off
1195	Pump Off Level [753]	Pump Off
1196	Pump Off Speed [753]	Pump Off
1197	Pump Off Time [753]	Pump Off
1198	Pct Cycle Torque [753]	Pump Off
1199	Pct Lift Torque [753]	Pump Off
1200	Pct Drop Torque [753]	Pump Off
1201	Stroke Pos Count [753]	Pump Off
1202	Stroke Per Min [753]	Pump Off
1203	Pump Off Count [753]	Pump Off
1204	PumpOff SleepCnt [753]	Pump Off
1205	Day Stroke Count [753]	Pump Off
1206	DI PumpOff Disbl [753]	Pump Off
1207	Pump OffSleepLvl [753]	Pump Off
1210	Profile Status [755]	Profiling
1212	Units Traveled [755]	Profiling
1213	Profile Command [755]	Profiling
1215	Counts Per Unit [755]	Profiling
1216	ProfVel Override [755]	Profiling
1217	Prof DI Invert [755]	Profiling
1218	DI Hold Step [755]	Profiling
1219	DI Abort Step [755]	Profiling
1220	DI Abort Profile [755]	Profiling
1221	DI Vel Override [755]	Profiling
1222	DI StrtStep Sel0 [755]	Profiling
1223	DI StrtStep Sel1 [755]	Profiling
1224	DI StrtStep Sel2 [755]	Profiling
1225	DI StrtStep Sel3 [755]	Profiling
1226	DI StrtStep Sel4 [755]	Profiling
1230…1380	Step 1…16 Type [755]	Profiling
1231…1381	Step 1…16 Velocity [755]	Profiling
1232…1382	Step 1…16 Accel [755]	Profiling
1233…1383	Step 1…16 Decel [755]	Profiling
1234…1384	Step 1…16 Value [755]	Profiling
1235…1385	Step 1…16 Dwell [755]	Profiling
1236…1386	Step 1…16 Batch [755]	Profiling
1237…1387	Step 1…16 Next [755]	Profiling
1238…1388	Step 1…16 Action [755]	Profiling
1239…1389	Step 1…16 Dig In [755]	Profiling
1390	PCAM Control [755]	Camming
1391	PCAM Mode [755]	Camming
1392	PCAM Psn Select [755]	Camming
1393	PCAM Psn Stpt [755]	Camming
1394	PCAM Psn Ofst [755]	Camming
1395	PCAM PsnOfst Eps [755]	Camming
1396	PCAM Span X [755]	Camming
1397	PCAM Scale X [755]	Camming
1398	PCAM Span Y [755]	Camming
1399	PCAM ScaleY Sel [755]	Camming
1400	PCAM ScaleYSetPt [755]	Camming
1401	PCAM VelScaleSel [755]	Camming
1402	PCAM VelScaleSP [755]	Camming
1403	PCAM Slope Begin [755]	Camming
1404	PCAM Slope End [755]	Camming
1405	PCAM Main EndPnt [755]	Camming
1406	PCAM Main Types [755]	Camming
1407…1437	PCAM Main Pt X 0…15 [755]	Camming
1408…1438	PCAM Main Pt Y 0…15 [755]	Camming
1439	PCAM Aux EndPnt [755]	Camming
1440	PCAM Aux Types [755]	Camming
1441…1469	PCAM Aux Pt X 1…15 [755]	Camming
1442…1470	PCAM Aux Pt Y 1…15 [755]	Camming
1471	PCAM Status [755]	Camming
1472	PCAM Vel Out [755]	Camming
1473	PCAM Psn Out [755]	Camming
1474	DI PCAM Start [755]	Camming

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Notes:

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