Installation Instructions
Original Instructions

Allen-Bradley
by ROCKWELL AUTOMATION

PowerFlex 750-Series Products with TotalFORCE Control

Catalog Numbers 20G, 20J

Rockwell Automation

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

WARNING: Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT: Identifies information that is critical for successful application and understanding of the product.

These labels may also be on or inside the equipment to provide specific precautions.

SHOCK HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.

BURN HAZARD: Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

ARC FLASH HAZARD: Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

The following icon may appear in the text of this document.

Identifies information that is useful and can help to make a process easier to do or easier to understand.

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

Table of Contents

Preface

This manual provides procedures for the mechanical and electrical installation of PowerFlex® 755T products with TotalFORCE® control. This manual includes the basic steps to transport, position, and join the product enclosures, to make internal electrical connections, to connect to the AC supply source and to the motor, and to wire basic I/O.

This manual provides instructions for an initial product installation. Assembly procedures in chapters 1...5 assume that supply power is not connected. Once the product is connected to a power supply, always verify that system power is not present before performing any work on the product. See safety-related practices that are contained in the publication NFPA 70E, Standard for Electrical Safety in the Work Place.

This manual is intended for two types of personnel:

- Qualified personnel familiar with handling heavy equipment.
- Qualified electricians or other personnel who have experience with electrical terminology, equipment, methods, and safety precautions.

The Additional Resources section is a directory of Rockwell Automation® publications that provide detailed drive information from wiring and grounding recommendations to troubleshooting and repair.

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Added 400V 160 kW (480V 250 Hp) frame 6 ratings.	Throughout
Rittal corner base/plinth system model numbers updated.	Floor Mounting Options on page 67
Added Access AC Precharge Components Panel section for frame 7 products.	Access AC Precharge Components Panel—Frame 7 on page 146
New Publication: See the PowerFlex 755T Products with TotalFORCE Control Input Protection Devices Reference Data, publication 750-RD103, to select the recommended fuses and circuit breakers for your application needs.	Fuse and Circuit Breaker Selection on page 231

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Resource	Description
PowerFlex 755T Drive Resources	Find technical content to help you install, configure, use, and maintain your PowerFlex® 755T architecture-class AC drives. Includes downloads of control block diagrams and parameter and drive conditions data.
PowerFlex Drives with TotalFORCE Control Parameters Reference Data, publication 750-RD101	Provides the parameters for PowerFlex® products with TotalFORCE® control.
PowerFlex Drives with TotalFORCE Control Conditions Reference Data, publication 750-RD102	Provides the fault, alarm, event, and exception codes for PowerFlex® products with TotalFORCE® control.

Resource	Description
PowerFlex 755T Products with TotalFORCE Control Input Protection Devices Reference Data, publication 750-RD103	Provides a list of recommended fuses and circuit breakers for PowerFlex® 755TL, 755TR, and 755TM products based product voltage class, current draw, and duty rating.
PowerFlex 750-Series Products with TotalFORCE Control Technical Data, publication 750-TD100	Provides detailed information on: • Drive and bus supply specifications • Option specifications • Fuse and circuit breaker ratings
PowerFlex 755TM IP00 Open Type Kits Technical Data, publication 750-TD101	Provides detailed information on: • Kit selection • Kit ratings and specifications • Option specifications
PowerFlex 755TS Products with TotalFORCE Control Technical Data, publication 750-TD104	Provides detailed information on: • Drive specifications • Option specifications • Fuse and circuit breaker ratings
PowerFlex 750-Series Products with TotalFORCE Control Installation Instructions, publication 750-IN100	Provides the basic steps to install PowerFlex® 755TL low harmonic drives, PowerFlex® 755TR regenerative drives, and PowerFlex® 755TM drive systems.
PowerFlex 755TS Products with TotalFORCE Control Installation Instructions, publication 750-IN119	Provides the basic steps to install PowerFlex® 755TS drives.
PowerFlex 755T Flux Vector Tuning, publication 750-AT006	Provides guidance on how to tune Flux Vector position and velocity loops, filters, and other features to achieve the level of performance that is required for a given application. This publication is intended for novice drives users and users with advanced skills.
PowerFlex 20-HIM-A6 and 20HIM-C6S HIM (Human Interface Module) User Manual, publication 20HIM-UM001	Provides detailed information on HIM components, operation, and features.
PowerFlex 755TM IP00 Open Type Kits Installation Instructions, publication 750-IN101	Provides instructions to install IP00 Open Type kits in user-supplied enclosures.
PowerFlex 755TM AC Precharge Modules Unpacking and Lifting Instructions, publication 750-IN102	These publications provide detailed information on: • Component weights • Precautions and recommendations • Hardware attachment points • Lifting the component out of the packaging
PowerFlex 755TM DC Precharge Modules Unpacking and Lifting Instructions, publication 750-IN103	
PowerFlex 755TM Power and Filter Modules Unpacking and Lifting Instructions, publication 750-IN104	
PowerFlex 750-Series Service Cart and DC Precharge Module Lift Instructions, publication 750-IN105	Provides detailed setup and operating instructions for the module service cart and DC precharge module lift.
PowerFlex 755TM Power and Filter Module Storage Hardware Instructions, publication 750-IN106	Provides detailed installation and usage instructions for this hardware accessory.
PowerFlex 755T Power Module Service Ramp Instructions, publication 750-IN108	Provides detailed usage instructions for the module service ramp.

Resource	Description
Industry Installation Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-AT003	Provides basic information on enclosure systems, considerations to help protect against environmental contaminants, and power and grounding considerations for installing Pulse Width Modulated (PWM) AC drives.
Drives in Common Bus Configurations with PowerFlex 755TM Bus Supplies Application Technique, publication DRIVES-AT005	Provides basic information to properly wire and ground the following products in common bus applications: • PowerFlex® 755TM drive system for common bus solutions • PowerFlex® 750-Series AC and DC input drivexs • Kinetix® 5700 servo drives
Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001	Provides basic information to properly wire and ground PWM AC drives.
PowerFlex 750-Series I/O, Feedback, and Power Option Modules Installation, publication 750-IN111	Provides instructions to install and wire PowerFlex® 750-Series option modules.
PowerFlex Drives with TotalFORCE Control Programming Manual (firmware revision 6.xxx and earlier), publication 750-PM100	Provides detailed information on: • I/O, control, and feedback options • Parameters and programming • Faults, alarms, and troubleshooting
PowerFlex 750-Series AC Drives with TotalFORCE Control Quick Start, publication 750-QS100	Provides the basic steps that are required to start up PowerFlex® 750-Series AC Drives with TotalFORCE® Control.
CIP Security with Rockwell Automation Products Application Technique, publication SECURE-AT001	Describes how to plan and implement a Rockwell Automation system that supports the CIP Security protocol.
System Security Design Guidelines Reference Manual, publication SECURE-RM001	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
PowerFlex 750-Series Products with TotalFORCE Control Reference Manual, publication 750-RM100	Provides detailed setup and programming instructions for common applications.
PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual - Frames 5 and 6, publication 750-TG102	Provides detailed information on: • Preventive maintenance • Component testing • Hardware replacement procedures
PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual - Frames 6L and 7L, publication 750-TG103	Provides detailed information on: • Preventative maintenance • Component testing • Hardware replacement procedures
PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual - Frames 7...15, publication 750-TG104	Provides detailed information on: • Preventative maintenance • Component testing • Hardware replacement procedures

Resource	Description
System Security Design Guidelines Reference Manual, SECURE-RM001	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
Industrial Automation Wiring and Grounding Guidelines, 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Selection and Configuration tools, rok.auto/systemtools	Helps configure complete, valid catalog numbers and build complete quotes based on detailed product information.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

PowerFlex 755T Product Overview

PowerFlex® 755T drive products provide harmonic mitigation, regeneration, non-regenerative, and common bus solutions that help reduce energy costs, gain flexibility, and increase productivity. PowerFlex® drives use TotalFORCE® technology to achieve motor control through precise, adaptive control of torque, velocity, and position. TotalFORCE® technology incorporates several patented features that are designed to help optimize your system and maintain productivity through improved machine uptime.

PowerFlex® 755TL and 755TR drives expand the proven PowerFlex® family product portfolio and provide solutions for harmonic mitigation and regeneration. These drives offer energy saving features and simplified installation and startup. PowerFlex® 755TL and 755TR products can include enhanced corrosive gas protection (XT) to help provide electrical reliability and suitability in industrial environments with corrosive atmospheres.

In this manual we refer to the PowerFlex® 755TS products with TotalFORCE® as:

- PowerFlex 755T products when referring to the group of drives, bus supplies, and common bus inverters.
- PowerFlex 755TL drive when referring to the low harmonic drive product.
- PowerFlex 755TR drive when referring to the regenerative drive product.
- PowerFlex 755TM drive system when referring to regenerative bus supply and common bus inverter products.

Qualified Personnel

ATTENTION: Risk of injury or equipment damage exists.

Only qualified personnel familiar with PowerFlex drive products and associated machinery should plan or implement the installation, startup, and subsequent maintenance of the system. Failure to comply can result in personal injury and/or equipment damage.

Personal Safety

ATTENTION: Risk of injury or death exists.

To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged before servicing.

Frames 5 and 6

Measure the DC bus voltage at the power terminal block by measuring between the +DC and –DC terminals. Also, measure between the +DC terminal and the chassis, and between the –DC terminal and the chassis. The voltage must be zero for all three measurements.

Frame 6L

Measure the DC bus voltage by measuring between the DC+ and DC– testpoint sockets on the bottom of the chassis. Also measure between the DC+ testpoint and PE ground bus bar (GND), and the DC– testpoint and the PE ground bus bar (GND).

Frames 7...15 and 7L

Measure the DC bus voltage by measuring between the +DC and – DC testpoint sockets on the front of the power module. Also measure between the +DC testpoint and chassis GND, and the –DC testpoint and chassis GND.

ATTENTION: Risk of injury or equipment damage exists.

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: Risk of injury or death exists.

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: Risk of injury or equipment damage exists.

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.

ATTENTION: Risk of injury or death exists.

Potentially fatal voltages can result from improper usage of an oscilloscope and other test equipment. The oscilloscope chassis can be at a potentially fatal voltage if not properly grounded. If an oscilloscope is used to measure high-voltage waveforms, use only a dual channel oscilloscope in the differential mode with X 100 probes. It is recommended that the oscilloscope is used in the A minus B Quasi-differential mode and the oscilloscope chassis is grounded to an earth ground.

ATTENTION: Risk of injury or death exists.

A possible hazard of personal injury due to prolonged exposure to high sound levels. Follow applicable local, national, and international codes, standards, regulations, or industry guidelines for hearing protection when exposed to potentially damaging noise hazards.

Product Safety

ATTENTION: Risk of equipment damage exists.

This product contains electrostatic discharge (ESD) sensitive parts and assemblies.

Static control precautions are required when you install these assemblies. Component damage can result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference any applicable ESD protection handbook.

Class 1 LED Product

ATTENTION: Risk of injury or death exists.

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.

PowerFlex 755TL Drive Ratings to Frame Size Cross-references

Figure 1. Nameplate 1 - PowerFlex 755TL Drive

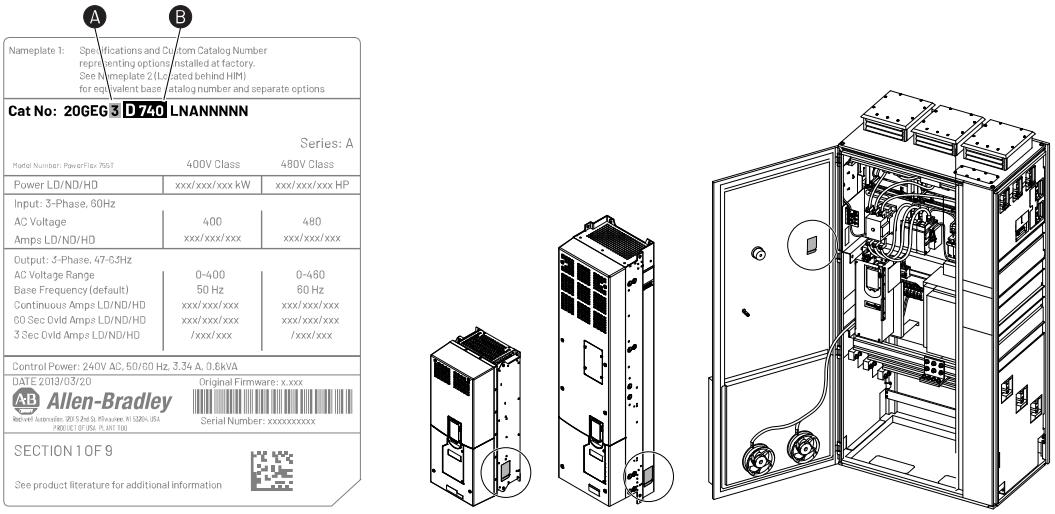


Table 1. PowerFlex 755TL Drive Enclosure and Rating Codes

A - Enclosure Code (Cat. No. Position 6) and Frame Size			B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
5	–	–	C015	D014	E011	F015
			C022	D022	E017	F020
			C030	D027	E022	F023
			C037	D034	E027	F030
			C043	D040	E032	F034
			C060	D052	E041	F046
			C072	D065	E052	F050
			C085	D077	E062	F061
			C104	D096	–	–
6	–	–	C140	D125	E077	F082
			C176	D156	E099	F098
			C205	D186	E125	F119
			C260	D248	E144	F142
			C303	D303	–	–

Table 1. PowerFlex 755TL Drive Enclosure and Rating Codes (continued)

A - Enclosure Code (Cat. No. Position 6) and Frame Size			B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
–	7	7	C302	D302	E192	F171
			C367	D361	E242	F215
			C460	D430	E295	F265
			C540	D505	E355	F330
			C585	D617	E395	F370
–	8	8	C302	D302	E242	F215
			C367	D361	E295	F265
			C460	D430	E355	F330
			C540	D505	E395	F370
			C585	D545	E435	F415
			C650	D617	E545	F505
			C750	D710	–	–
			C770	D740	–	–
–	9	9	C920	D800	E595	F565
			C1K0	D960	E690	F650
			C1K1	D1K0	E760	F735
			C1K2	D1K1	E825	F820
			C1K4	D1K3	E980	F920
–	10	10	C1K6	D1K4	E1K1	F1K0
			C1K7	D1K6	E1K2	F1K1
			C2K1	D2K0	E1K5	F1K4

PowerFlex 755TR Drive Ratings to Frame Size Cross-references

Figure 2. Nameplate 1 - PowerFlex 755TR Drive

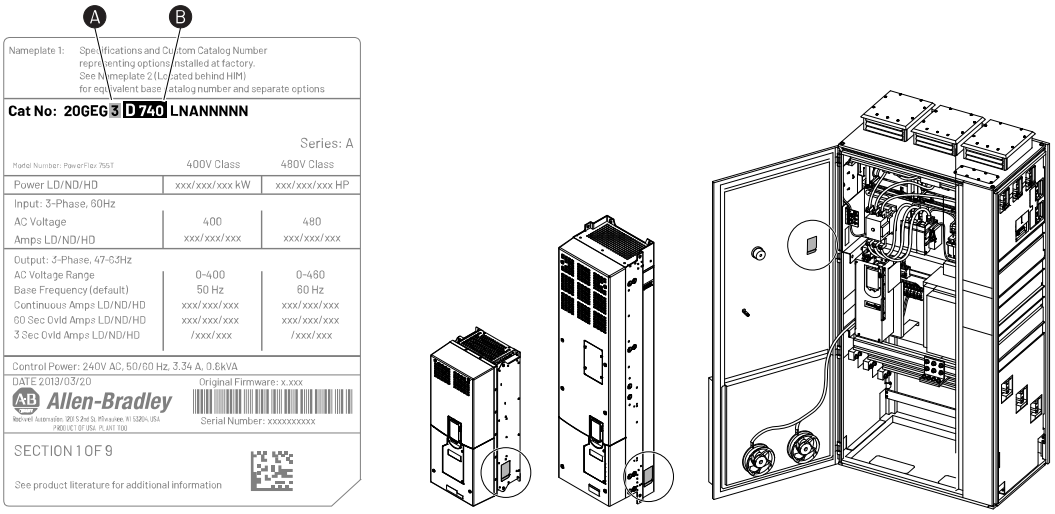


Table 2. PowerFlex 755TR Drive Enclosure and Rating Codes

A - Enclosure Code (Cat. No. Position 6) and Frame Size			B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
5	–	–	C015	D014	E011	F015
			C022	D022	E017	F020
			C030	D027	E022	F023
			C037	D034	E027	F030
			C043	D040	E032	F034
			C060	D052	E041	F046
			C072	D065	E052	F050
			C085	D077	E062	F061
			C104	D096	–	–
6	–	–	C140	D125	E077	F082
			C176	D156	E099	F098
			C205	D186	E125	F119
			C260	D248	E144	F142
			C303	D303	–	–

Table 2. PowerFlex 755TR Drive Enclosure and Rating Codes (continued)

A - Enclosure Code (Cat. No. Position 6) and Frame Size			B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
–	7	7	C302	D302	E192	F171
			C367	D361	E242	F215
			C460	D430	E295	F265
			C540	D505	E355	F330
			C585	D617	E395	F370
–	8	8	C302	D302	E242	F215
			C367	D361	E295	F265
			C460	D430	E355	F330
			C540	D505	E395	F370
			C585	D545	E435	F415
			C650	D617	E545	F505
			C750	D710	–	–
			C770	D740	–	–
–	9	9	C920	D800	E595	F565
			C1K0	D960	E690	F650
			C1K1	D1K0	E760	F735
			C1K2	D1K1	E825	F820
			C1K4	D1K3	E980	F920
–	10	10	C1K6	D1K4	E1K1	F1K0
			C1K7	D1K6	E1K2	F1K1
			C2K1	D2K0	E1K5	F1K4
–	11	11	C2K8	D2K6	E2K0	F1K8
–	12	12	C3K5	D3K4	E2K4	F2K3
–	13	13	C4K2	D4K0	E2K9	F2K7
–	14	14	C5K4	D5K4	E3K9	F3K6

Table 2. PowerFlex 755TR Drive Enclosure and Rating Codes (continued)

A - Enclosure Code (Cat. No. Position 6) and Frame Size			B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
–	15	15	C6K7	D6K7	E4K9	F4K5

PowerFlex 755TM Modular AFE Bus Supply Ratings to Frame Size Cross-references

Figure 3. Nameplate 1 - PowerFlex 755TL Bus Supply

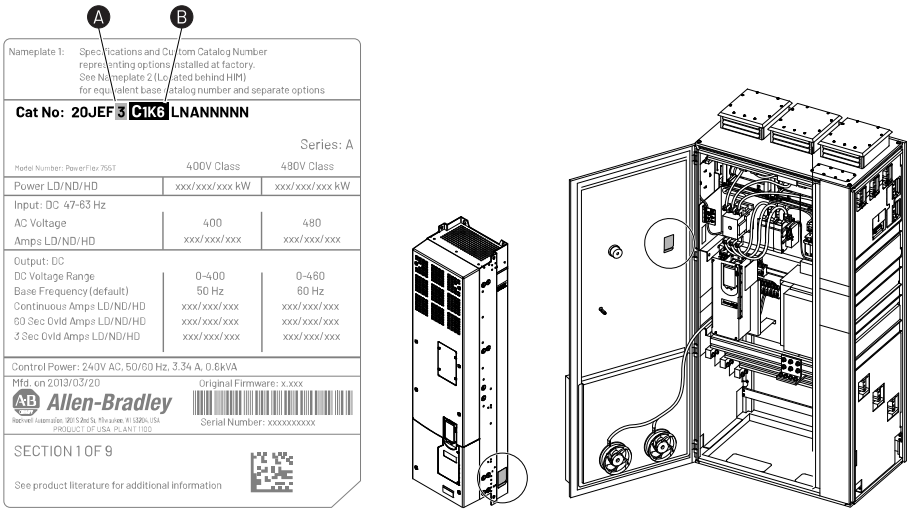


Table 3. PowerFlex 755TM Bus Supply Enclosure and Rating Codes

A - Enclosure Code (Cat. No. Position 6) and Frame Size						
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
6	–	–	C140	D125	E077	F082
			C176	D156	E099	F098
			C205	D186	E125	F119
			C260	D248	E144	F142
–	7	7	C302	D302	E192	F171
			C367	D361	E242	F215
			C460	D430	E295	F265
			C540	D505	E355	F330

Table 3. PowerFlex 755TM Bus Supply Enclosure and Rating Codes (continued)

A - Enclosure Code (Cat. No. Position 6) and Frame Size						
Code N **IP00, UL Open Type**	**Code 3** **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
			C585	D617	E395	F370
–	8	8	C302	D302	E242	F215
			C367	D361	E295	F265
			C460	D430	E355	F330
			C540	D505	E395	F370
			C585	D545	E435	F415
			C650	D617	E545	F505
			C750	D710	–	–
			C770	D740	–	–
–	9	9	C920	D800	E595	F565
			C1K0	D960	E690	F650
			C1K1	D1K0	E760	F735
			C1K2	D1K1	E825	F820
			C1K4	D1K3	E980	F920
–	10	10	C1K6	D1K4	E1K1	F1K0
			C1K7	D1K6	E1K2	F1K1
			C2K1	D2K0	E1K5	F1K4
–	11	11	C2K8	D2K6	E2K0	F1K8
–	12	12	C3K5	D3K4	E2K4	F2K3
–	13	13	C4K2	D4K0	E2K9	F2K7
–	14	14	C5K6	D5K4	E3K9	F3K6
–	15	15	C7K0	D6K7-	E4K9	F4K5

PowerFlex 755TM Modular CBI Ratings to Frame Size Cross-references

Figure 4. Nameplate 1 - PowerFlex 755TL CBI

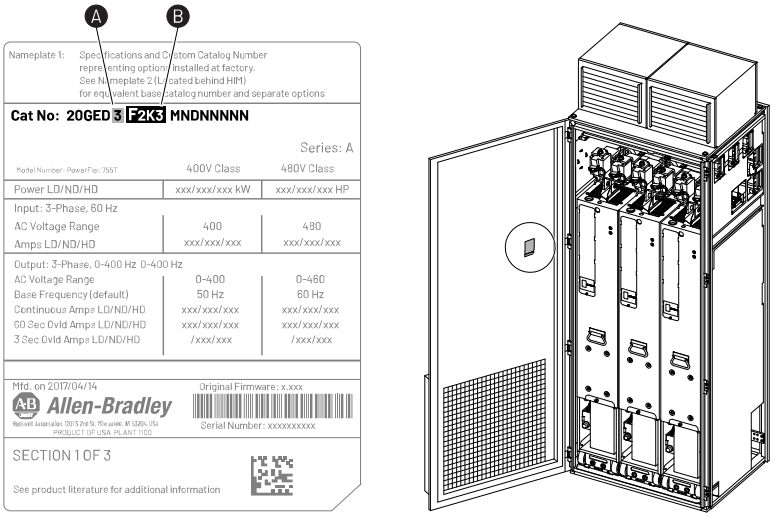


Table 4. PowerFlex 755TM CBI Enclosure and Rating Codes

A - Enclosure Code (Cat. No. Position 6) and Frame Size		B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code 3 **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
8	8	C302	D302	E242	F215
		C367	D361	E295	F265
		C460	D430	E355	F330
		C540	D505	E395	F370
		C585	D545	E435	F415
		C650	D617	E545	F505
		C750	D710	—	—
		C770	D740	—	—
9	9	C920	D800	E595	F565
		C1K0	D960	E690	F650
		C1K1	D1K0	E760	F735
		C1K2	D1K1	E825	F820
		C1K4	D1K3	E980	F920
10	10	C1K6	D1K4	E1K1	F1K0

Table 4. PowerFlex 755TM CBI Enclosure and Rating Codes (continued)

A - Enclosure Code (Cat. No. Position 6) and Frame Size		B - Input Voltage (Cat. No. Position 7) and ND Amp Rating (Cat. No. Positions 8...10)			
Code 3 **IP21, UL Type 1**	**Code 4** **IP54, UL Type 12**	**400V AC**	**480V AC**	**600V AC**	**690V AC**
		C1K7	D1K6	E1K2	F1K1
		C2K1	D2K0	E1K5	F1K4
11	11	C2K8	D2K6	E2K0	F1K8
12	12	C3K5	D3K4	E2K4	F2K3
13	13	C4K2	D4K0	E2K9	F2K7
14	14	C5K6	D5K4	E3K9	F3K6
15	15	C7K0	D6K7	E4K9	F4K5

Installation Tools

This list includes the tools that are needed for installation and test measurements.

IMPORTANT: Care must be taken to be sure that tools and/or hardware components do not fall into open drive assemblies. Do not energize the drive unless all loose tools and/or hardware components have been removed from the drive assemblies and enclosure.

Table 5. Installation Tools

Tool Description	Details
Allen socket wrench	3 mm, 4 mm, 5 mm (with long extension)
Allen socket wrench extension	254 mm (10 in.)
Box wrench	7 mm, 8 mm, 10 mm, 13 mm, 15 mm, 17 mm, 19 mm, 22 mm
Crimp tools	For cable terminals 1.5...240
Current clamp	1000 A (AC, rms), signal output
ESD-protected place of work	Work surface, floor cover, seat, and ground connections
ESD-protective clothing	Wrist wrap, shoes, overall clothing (coat)
Flash light / Task light	For inspections
Flat-nose screwdriver	3 mm (0.12 in.), 5 mm (0.19 in.), 6.4 mm (0.25 in.)
Fuse puller	—
Hexagonal socket wrench	2.5 mm, 7 mm, 8 mm, 10 mm, 12 mm, 13 mm, 17 mm, 18 mm

Table 5. Installation Tools (continued)

Tool Description	Details
Insulation tester	1000V DC
Level	–
Lift strap	5/16 in. J-hook style, 24 in. long, 1000 lb min.
Module service cart	The optional module service cart (20-750-MCART1) is recommended to handle and transport power modules. Important: The service cart is required to handle and transport LCL filter modules.
DCPC module lift	Used together with the module service cart to remove DC precharge modules.
Module storage hardware	Module storage hardware (20-750-MINV-ATIP) helps to stabilize power and filter modules during temporary storage after removal.
Multi-meter	Digital multi-meter, capable of AC and DC voltage, continuity, resistance, capacitance measurements, and forward diode bias tests. Fluke model 87 III or equivalent.
Nose pliers	–
Open end wrenches	Two 1-1/2 in. open end wrenches to tighten coolant hose connections.
Oscilloscope	Portable, digitizing, dual channel scope, with isolation
Phillips screwdriver/bit	#1, #2
Ratcheting wrench	1...12 N•m (8.8...106 lb•in)
Torque wrench	1...12 N•m (8.8...106 lb•in)
Torque wrench	6...50 N•m (53...443 lb•in)
Torx, star, or hexalobular screw driver/bit	#15, #20, #25, #30, #40, #45
Wire cutter	–

Configuration Tools

Any of the following configuration tools can be used:

- PowerFlex® 20-HIM-A6 or 20-HIM-C6S HIM. See the PowerFlex 20-HIM-A6 or 20-HIM-C6S HIM (Human Interface Module) User Manual, publication 20HIM-UM001.
- Connected Components Workbench™ (CCW) software R10.00 or later. Connected Components Workbench™ software is the recommended standalone software tool for use with PowerFlex® drives. You can obtain a free copy by Internet download at the Product Compatibility and Download Center rok.auto/pcdc.
- Controller configuration software, such as RSLogix 5000® software, version 20.00 or later, or Studio 5000 Logix Designer® application, version 21.00 and later.
- Automatic Device Configuration (ADC), an RSLogix 5000® software feature, which supports the automatic download of configuration data. The download occurs after the Logix controller establishes an EtherNet/IP™ network connection to a PowerFlex® 755TL, 755TR, or 755TM product and its associated peripherals.
- A computer connection to the EtherNet/IP™ network.

Hardware Installation Diagrams

The assembly illustrations throughout this manual contain diagrams (as shown here) that identify the following: sequence number (if necessary), type of fastener, fastener size, tool type and size, and final assembly torque.

Figure 5. Fastener Diagram

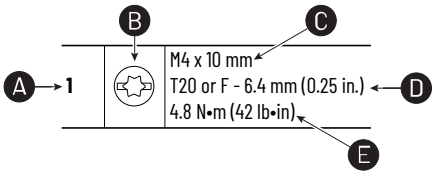


Table 6. Fastener Diagram Elements

Item	Name	Description
A	Sequence number	When used, the sequence number corresponds with a step in a procedure.
B	Fastener type	A graphic representation of the fastener drive type.
C	Fastener size	Specifies diameter x thread pitch x length as necessary.
D	Tool type and size	The recommended tool for the specified fastener drive type.
E	Torque	Specifies the final assembly torque for the fastener.

Table 7. Fastener Drive Types

Graphic	Description
	Flat-head screw
	Hexagonal bolt
	Hexagonal nut or standoff
	Hexagonal screw
	Torx screw
	Phillips screw
	Pozidriv screw
	Slotted torx screw

Table 7. Fastener Drive Types (continued)

Graphic	Description
	Slotted Phillips

Table 8. Tool Types

F	Flat-nose screwdriver
Px	Phillips screwdriver/bit and size
PZx	Pozidriv screwdriver/bit and size
Txx	Torx screwdriver/bit and size
xx mm	Hexagonal socket wrench

Fastener Torque Sequences

ATTENTION: Risk of equipment damage exists.

Components can be damaged if the tightening procedure is not performed to specification.

These figures illustrate the initial and final torque sequences for components that are fastened to a heatsink by using two, four, and six screws. The initial torque is 1/3 (33%) of the final torque, except six-point mountings, which require a 0.7 N•m (6 lb•in) initial torque. The numeric illustration labels are for your assistance. Drive components do not contain these labels.

Figure 6. Two-point Mounting

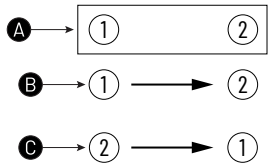


Figure 7. Four-point Mounting

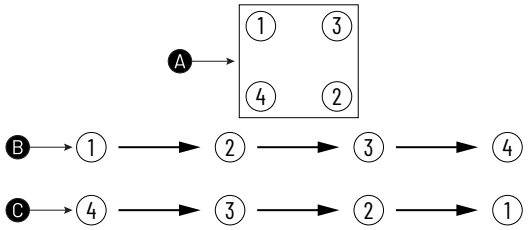


Figure 8. Six-point Mounting

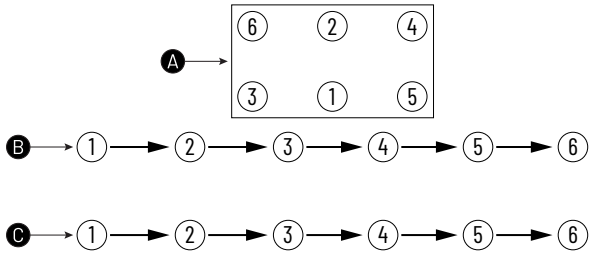


Table 9. Torque Sequences

Item	Description
A	Fastener pattern
B	Initial torque sequence
C	Final torque sequence

Receiving, Handling, and Storage

PowerFlex® 755T wall mount and floor mount products are bolted to wooden skids for shipment. For ease of handling, Rockwell Automation recommends leaving the products bolted to the skids until moved to the final installation area. Floor mount cabinets must remain in an upright position during handling.

ATTENTION: Risk of injury or equipment damage exists.

Never attempt to lift or move the product by any means other than the handling methods outlined in this publication. PowerFlex drive product cabinets are top- and front-heavy.

ATTENTION: Risk of injury or equipment damage exists.

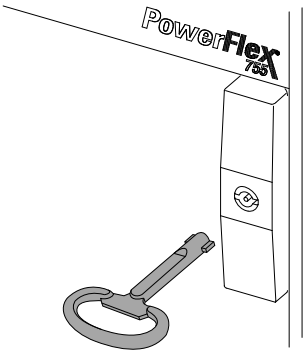
Exercise caution when moving the product to ensure the equipment is not scratched, dented, or damaged in any manner. Stabilize the product during handling to prevent tipping and injury to personnel.

Receiving

Standard packaged PowerFlex® 755T wall mount products are boxed and shipped as a whole unit. Standard packaged PowerFlex® 755T floor mount products are shipped upright as a whole unit or in shipping sections as required. See Shipment Sections for details on shipment configurations. Each unit or shipping section is bolted to a shipping skid with removable shipping cleats and is covered with clear plastic wrap. Protection is for upright shipping and is not waterproof or watertight.
Heavy duty/export packaging is similar to standard packaging, but uses a plastic wrap suitable for occasional light water-spray. In addition, wood framing and sheeting surround the unit or shipping section. Heavy duty/export packaging is not waterproof, watertight, or intended for long-term storage.

1. Upon delivery of the PowerFlex® 755T product, refer to the packing slip for sizes and exact shipping weights. The packing slip also lists the items that are included in the shipment.
2. Inspect the shipment for damaged or lost items. If the packaging appears to be damaged, unpack the equipment for further inspection. Open the doors or remove covers and inspect the major components for signs of damage. PowerFlex® 755T floor mount enclosures are equipped with a key-operated door latch. A double-bit door key is taped to the enclosure door.

   Figure 9. Key-operated Door Latch and Key



3. If there is evidence of damage or loss, follow this procedure:
   a. Note on the delivery receipt that the equipment being received is damaged.
   b. Contact the carrier that made the delivery and schedule an inspection.
   c. Inform your local Rockwell Automation® representative that the equipment is damaged.
   d. Retain all product packaging for review by the carrier.

   For further assistance, contact your Rockwell Automation® representative.

Approximate Weights for PowerFlex 755T Drive Products

Some products are divided for shipment. The weight of each section and the total weight are listed in the tables in this section.

When lifting and handling these components, follow all applicable local, national, and international codes, standards, regulations or industry guidelines for safe practices.

Frames 5...7 PowerFlex Drives and Bus Supplies

Frame 5, 6, 6L, and 7 products ship as complete units.

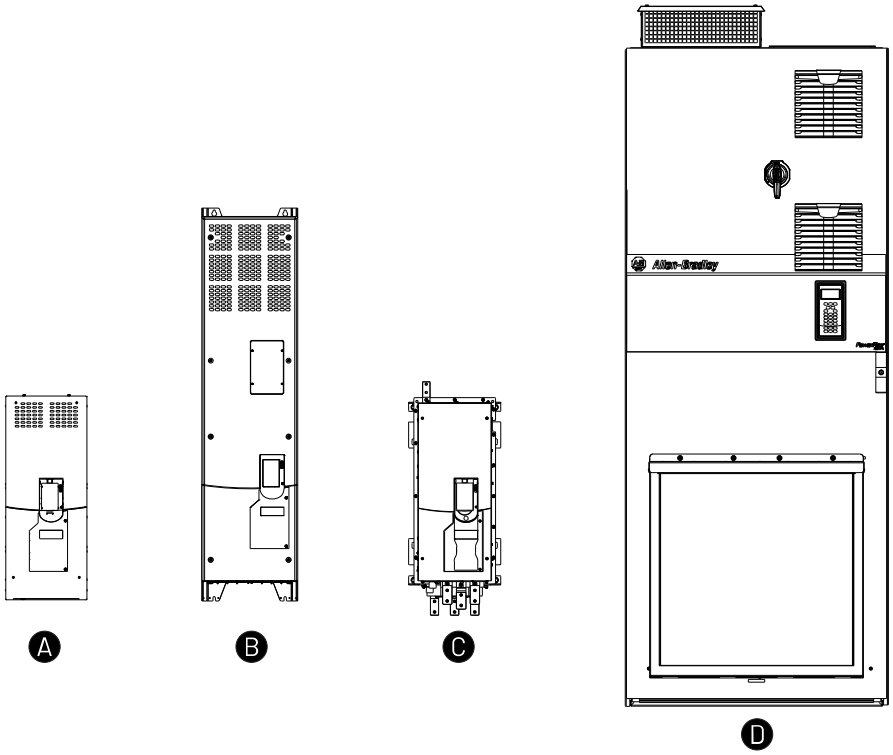


Table 10. Approximate Maximum Weight

Device	Item	Frame Size	Approximate Weight [kg (lb)]
755TL drives	A	5	73 (160)
	B	6	145 (320)
	D	7	567 (1250)
755TR drives	A	5	73 (160)
	B	6	145 (320)
	C	6L	196 (431)
	D	7	567 (1250)
755TM bus supplies	B	6	145 (320)

Table 10. Approximate Maximum Weight (continued)

Device	Item	Frame Size	Approximate Weight [kg (lb)]
	D	7	454 (1000)

Shipment Sections Frames 8...12 PowerFlex Drives and Bus Supplies

This diagram illustrates how frame 8...12 drives and bus supplies are divided for shipment.

Figure 10. Shipment Sections—Frames 8...12 Drives and Bus Supplies

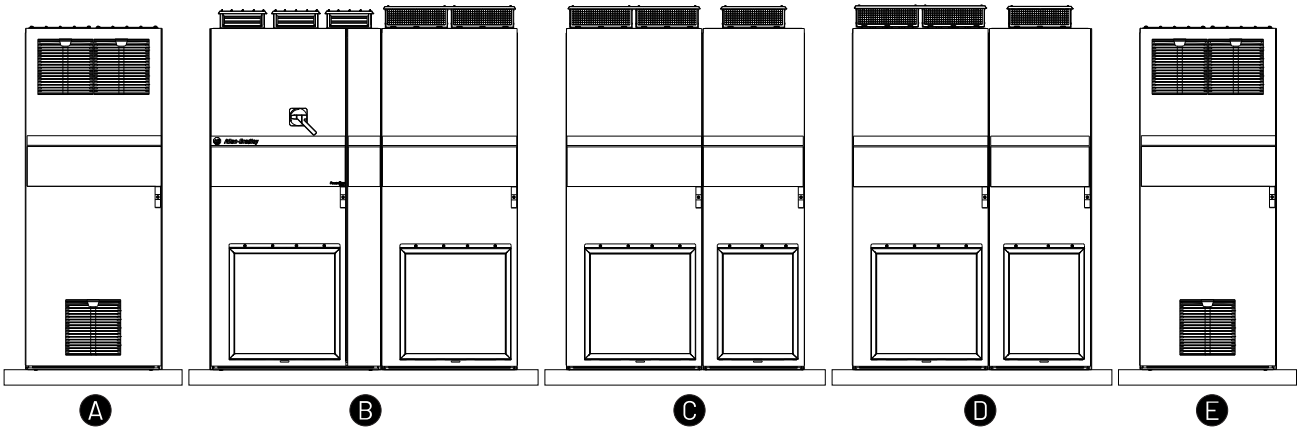


Table 11. Section Identification

Item	Description
A	Entry Wire Bay (Optional)
B	Left Section
C	Center Section
D	Right Section
E	Exit Wire Bay (Optional)

Table 12. Approximate Maximum Unit Weights—Frames 8...12 Drives and Bus Supplies

Device	Frame Size	Approximate Maximum Weight [kg (lb)]			
		Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
755TL drives	8	Total: 900 (1984)	—	Total: 987 (2176)	—
	9	Total: 1683 (3710)	—	Total: 1770 (3902)	—
	10	Left section: 1553 (3423) Right section: 1370 (3021)	Left section: 1630 (3593) Right section: 1370 (3021)	Left section: 1553 (3423) Right section: 1457 (3213)	Left section: 1640 (3616) Right section: 1457 (3213)

Table 12. Approximate Maximum Unit Weights—Frames 8...12 Drives and Bus Supplies (continued)

Device	Frame Size	Approximate Maximum Weight [kg (lb)]			
		Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
		Total: 2923 (6444)	Total: 3000 (6614)	Total: 3010 (6636)	Total: 3097 (6829)
755TR drives	8	Total: 900 (1984)	—	987 (2176)	—
	9	Total: 1683 (3710)	—	Total: 1770 (3902)	—
	10	Left section: 1553 (3423) Right section: 1370 (3021) Total: 2923 (6444)	Left section: 1630 (3593) Right section: 1370 (3021) Total: 3000 (6614)	Left section: 1553 (3423) Right section: 1457 (3213) Total: 3010 (6636)	Left section: 1640 (3616) Right section: 1457 (3213) Total: 3097 (6829)
	11	Left section: 1642 (3621) Right section: 2018 (4449) Total: 3660 (8070)	Wire bay: 242 (533) Left section: 1642 (3621) Right section: 2018 (4449) Total: 3902 (8603)	Wire bay: 242 (533) Left section: 1642 (3621) Right section: 2018 (4449) Total: 3902 (8603)	Each wire bay: 242 (533) Left section: 1642 (3621) Right section: 2018 (4449) Total: 4144 (9136)
	12	Left section: 1642 (3621) Center section: 1419 (3128) Right section: 1363 (3004) Total: 4424 (9753)	Wire bay: 242 (533) Left section: 1642 (3621) Center section: 1419 (3128) Right section: 1363 (3004) Total: 4666 (10286)	Wire bay: 242 (533) Left section: 1642 (3621) Center section: 1419 (3128) Right section: 1363 (3004) Total: 4666 (10286)	Each wire bay: 242 (533) Left section: 1642 (3621) Center section: 1419 (3128) Right section: 1363 (3004) Total: 4908 (10819)
755TM bus supplies	8	Total: 709 (1563)	—	—	—
	9	Total: 1180 (2601)	—	—	—
	10	Total: 2106 (4643)	Wire bay: 126 (278) Right section: 2106 (4643) Total: 2232 (4921)	—	—
	11	Left section: 1642 (3621) Right section: 889 (1959) Total: 2531 (5580)	Wire bay: 242 (533) Left section: 1642 (3621) Right section: 889 (1959) Total: 2773 (6113)	—	—
	12	Left section: 1642 (3621) Right section: 1443 (3182) Total: 3085 (6803)	Wire bay: 242 (533) Left section: 1642 (3621) Right section: 1443 (3182) Total: 3327 (7336)	—	—

Figure 11. Frame 12 Drive with Optional Wiring Bay

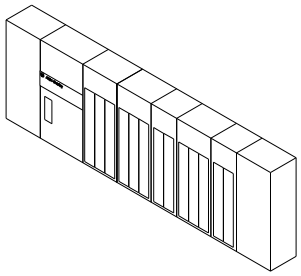
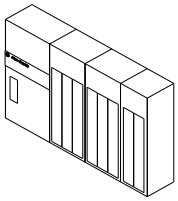


Figure 12. Frame 12 Bus Supply



Shipment Sections Frame 13 PowerFlex Drives

This diagram illustrates how frame 13 products are divided for shipment.

Figure 13. Shipment Sections Frame 13

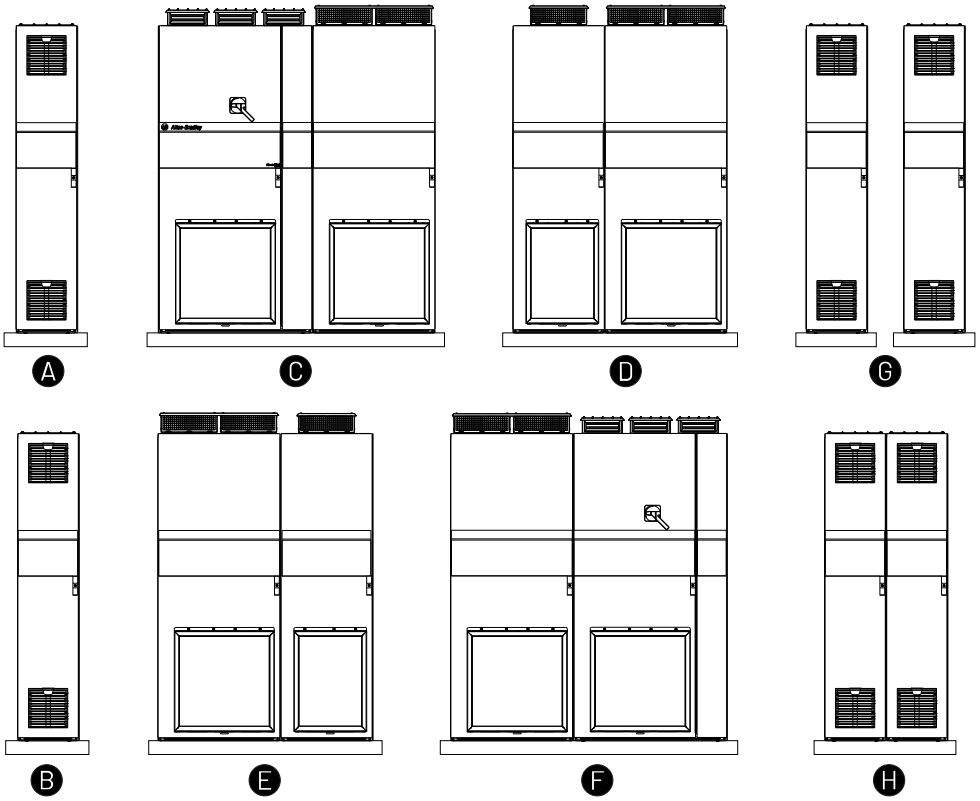


Table 13. Approximate Weights—PowerFlex 755T Frame 13 Drives, Final Back-to-Back Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
A	Fiber routing and entry wire bay	291 (642)	1 of 6
B	DC voltage balance and exit wire bay	291 (642)	6 of 6
Left-to-right oriented sections			
C	Left section	1553 (3423)	2 of 6
D	Right section	1370 (3021)	3 of 6
Right-to-left oriented sections			
E	Left section	1370 (3021)	4 of 6
F	Right section	1553 (3423)	5 of 6
Total for all sections:	—	6428 (14,172)	—

Figure 14. Final Back-to-Back Configuration, PowerFlex755T Frame 13 Drive

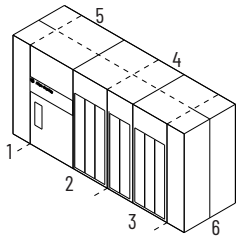


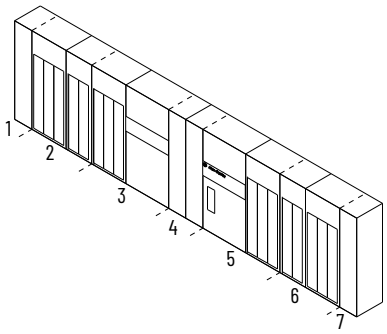
Table 14. Approximate Weights—PowerFlex 755T Frame 13 Drives, Final In-Line Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
H	Entry wire bays	252 (556)	4 of 7
G	Left exit wire bay	126 (278)	1 of 7
G	Right exit wire bay	126 (278)	7 of 7
Left-to-right oriented sections			
C	Left section	1553 (3423)	5 of 7
D	Right section	1370 (3021)	6 of 7
Right-to-left oriented sections			

Table 14. Approximate Weights—PowerFlex 755T Frame 13 Drives, Final In-Line Configuration (continued)

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
E	Left section	1370 (3021)	2 of 7
F	Right section	1553 (3423)	3 of 7
Total for all sections:	—	6350 (14,000)	—

Figure 15. Final In-Line Configuration, PowerFlex 755T Frame 13 Drives



Shipment Sections Frame 14 PowerFlex Drives

This diagram illustrates how frame 14 products are divided for shipment.

Figure 16. Shipment Sections—Frame 14 Drives

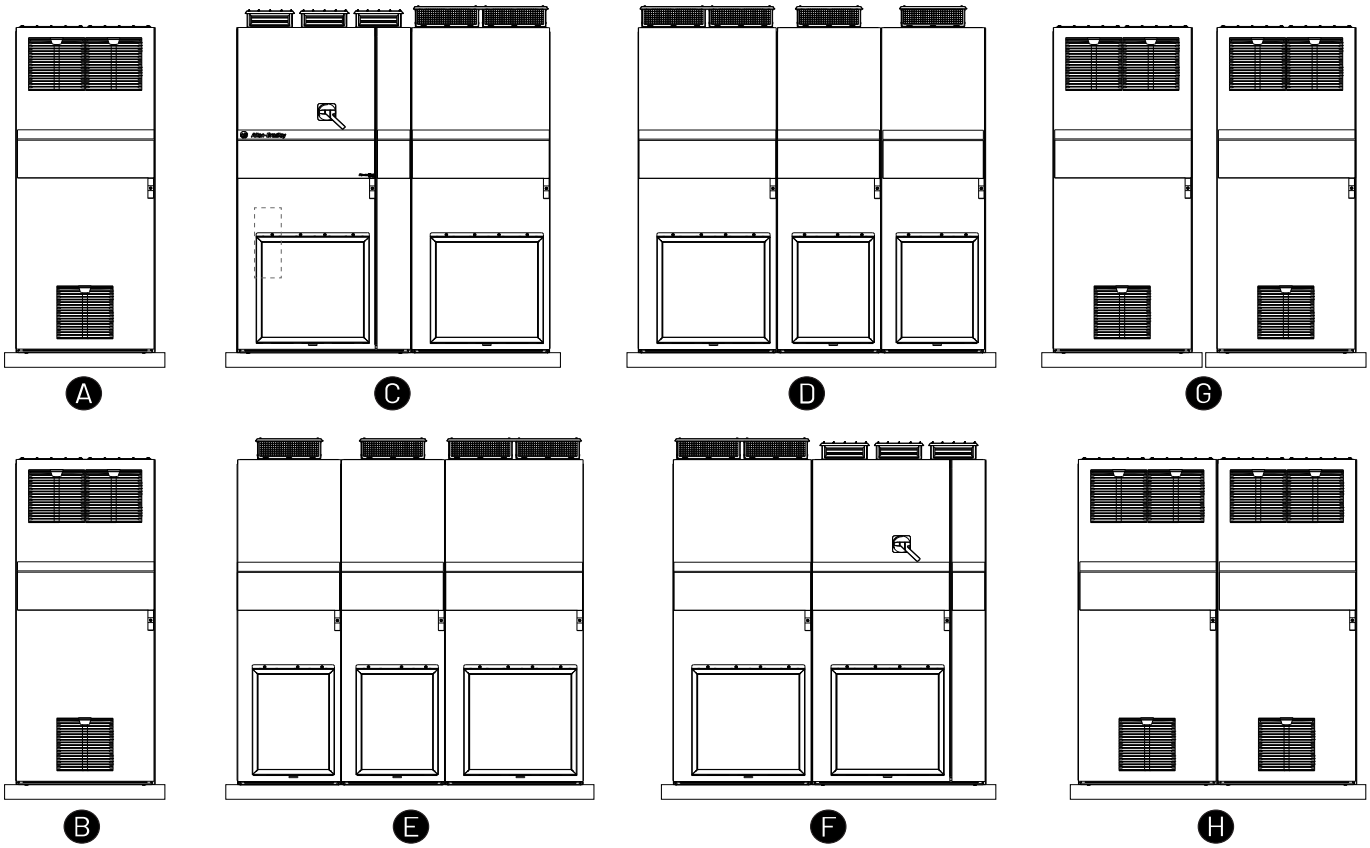


Table 15. Approximate Weights—PowerFlex 755T Frame 14 Drives, Final Back-to-Back Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
A	Fiber routing and entry wire bay	523 (1154)	1 of 6
B	DC voltage balance and exit wire bay	523 (1154)	6 of 6
Left-to-right oriented sections			
C	Left section	1642 (3621)	2 of 6
D	Right section	2018 (4449)	3 of 6
Right-to-left oriented sections			
E	Left section	2018 (4449)	4 of 6
F	Right section	1642 (3621)	5 of 6
Total for all sections:	—	8366 (18,448)	—

Figure 17. Final Back-to-Back Configuration, PowerFlex 755T Drives Frame 14

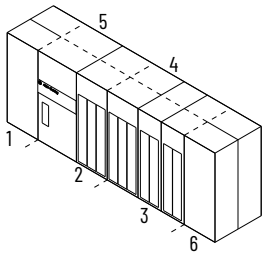
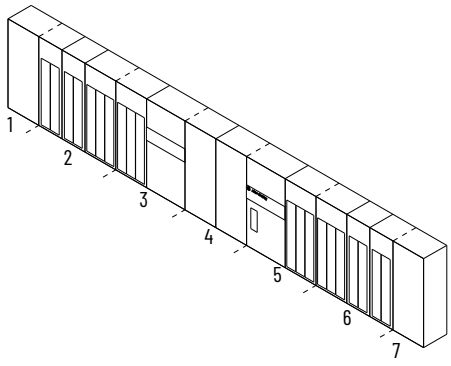


Table 16. Approximate Weights—PowerFlex 755T Frame 14 Drives, Final In-Line Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
H	Entry wire bays	484 (1066)	4 of 7
G	Left exit wire bay	242 (533)	1 of 7
G	Right exit wire bay	242 (533)	7 of 7
Left-to-right oriented sections			
C	Left section	1642 (3621)	5 of 7
D	Right section	2018 (4449)	6 of 7
Right-to-left oriented sections			
E	Left section	2018 (4449)	2 of 7
F	Right section	1642 (3621)	3 of 7
Total for all sections:	–	8288 (18,272)	–

Figure 18. Final In-Line Configuration, PowerFlex 755T Drives Frame 14



Shipment Sections Frame 15 PowerFlex Drives

This diagram illustrates how frame 15 products are divided for shipment.

Figure 19. Shipment Sections—Frame 15 Drives

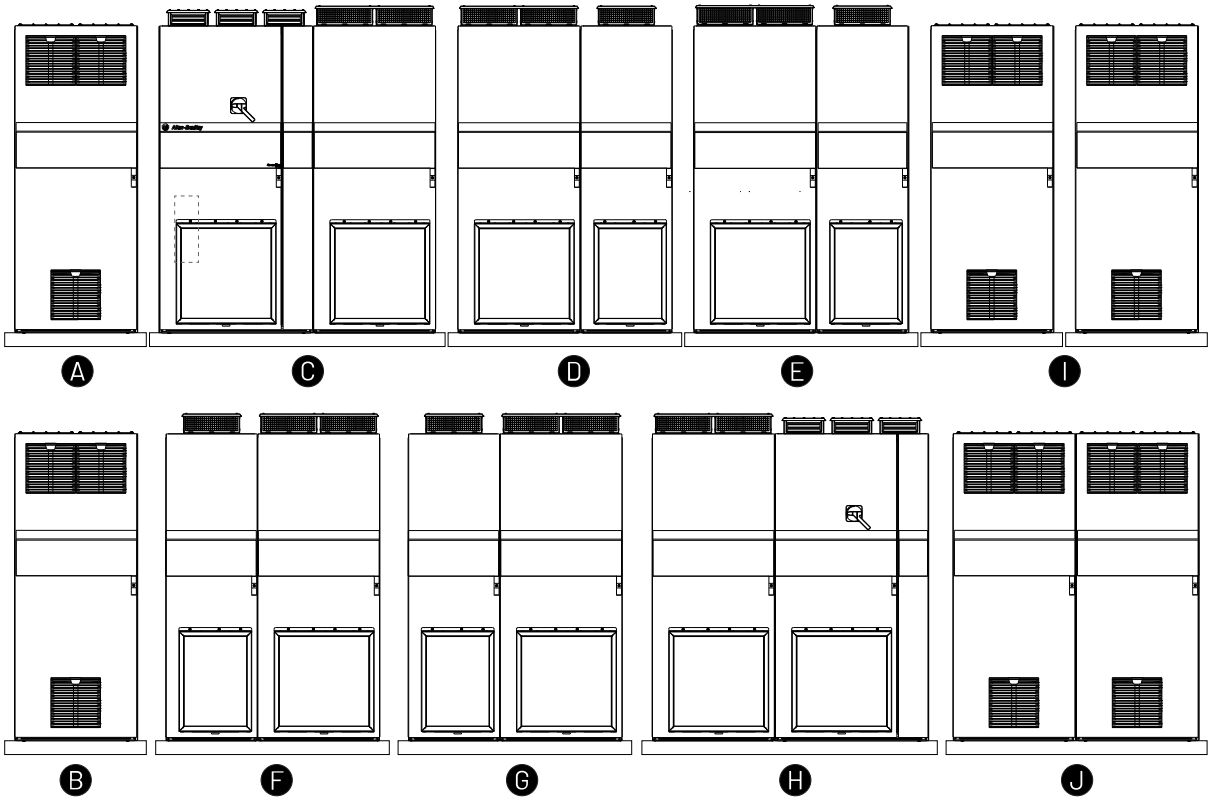


Table 17. Approximate Weights—PowerFlex 755T Frame 15 Drives, Final Back-to-Back Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
A	Fiber routing and entry wire bays	523 (1154)	1 of 8
B	DC voltage balance and exit wire bays	523 (1154)	8 of 8
Left-to-right oriented sections			
C	Left section	1642 (3621)	2 of 8
D	Center section	1419 (3128)	3 of 8
E	Right section	1363 (3004)	4 of 8
Right-to-left oriented sections			
F	Left section	1363 (3004)	5 of 8
G	Center section	1419 (3128)	6 of 8
H	Right section	1642 (3621)	7 of 8
Total for all sections:	–	9894 (21,814)	–

Figure 20. Final Back-to-Back Configuration, PowerFlex 755T Frame 15 Drives

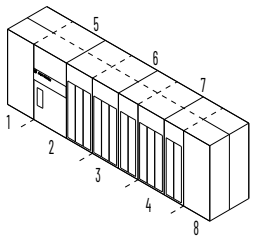
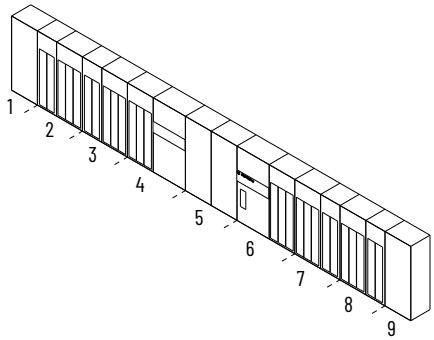


Table 18. Approximate Weights - PowerFlex 755T Frame 15 Drives, Final In-Line Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
J	Entry wire bays	484 (1066)	5 of 9
I	Left exit wire bay	242 (533)	1 of 9
I	Right exit wire bay	242 (533)	9 of 9
Left-to-right oriented sections			
C	Left section	1642 (3621)	6 of 9
D	Center section	1419 (3128)	7 of 9
E	Right section	1363 (3004)	8 of 9
Right-to-left oriented sections			
F	Left section	1363 (3004)	2 of 9
G	Center sections	1419 (3128)	3 of 9
H	Right section	1642 (3621)	4 of 9
Total for all sections:	–	9816 (21,638)	–

Figure 21. Final In-Line Configuration, PowerFlex 755T Frame 15 Drives



Shipment Sections Frame 13 PowerFlex Bus Supplies

This diagram illustrates how products are divided for shipment.

Figure 22. Shipment Sections—Frame 13 Bus Supplies

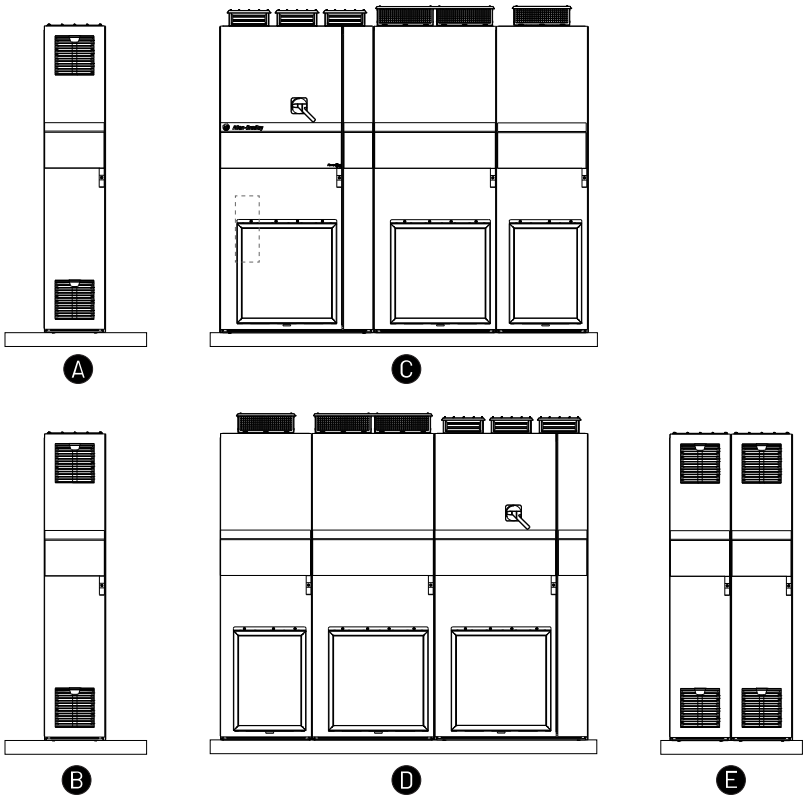


Table 19. Approximate Weights—PowerFlex 755T Frame 13 Bus Supplies, Final Back-to-Back Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
A	Fiber routing and entry wire bays	252 (556)	1 of 4
B	DC voltage balance and exit wire bays	252 (556)	4 of 4
Left-to-right oriented sections			
C	Center section	2106 (4643)	2 of 4
Right-to-left oriented sections			
D	Center section	2106 (4643)	3 of 4
Total for all sections:	—	4716 (10,398)	—

Figure 23. Frame 13 Bus Supplies, Final Back-to-Back Configuration

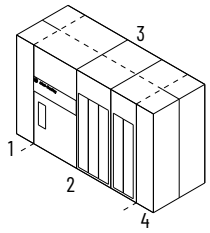
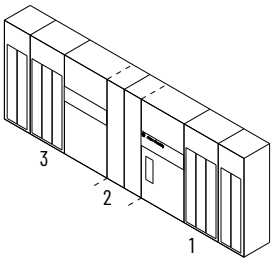


Table 20. Approximate Weights—PowerFlex 755T Frame 13 Bus Supplies, Final In-Line Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
E	Fiber routing and entry wire bays	252 (556)	2 of 3
Left-to-right oriented sections			
C	Center section	2106 (4643)	1 of 3
Right-to-left oriented sections			
D	Center section	2106 (4643)	3 of 3
Total for all sections:	–	4464 (9842)	–

Figure 24. Frame 13 Bus Supplies, Final In-Line Configuration



Shipment Sections Frame 14 PowerFlex Bus Supplies

This diagram illustrates how frame 14 bus supply products are divided for shipment.

Figure 25. Shipment Sections—Frame 14 Bus Supplies

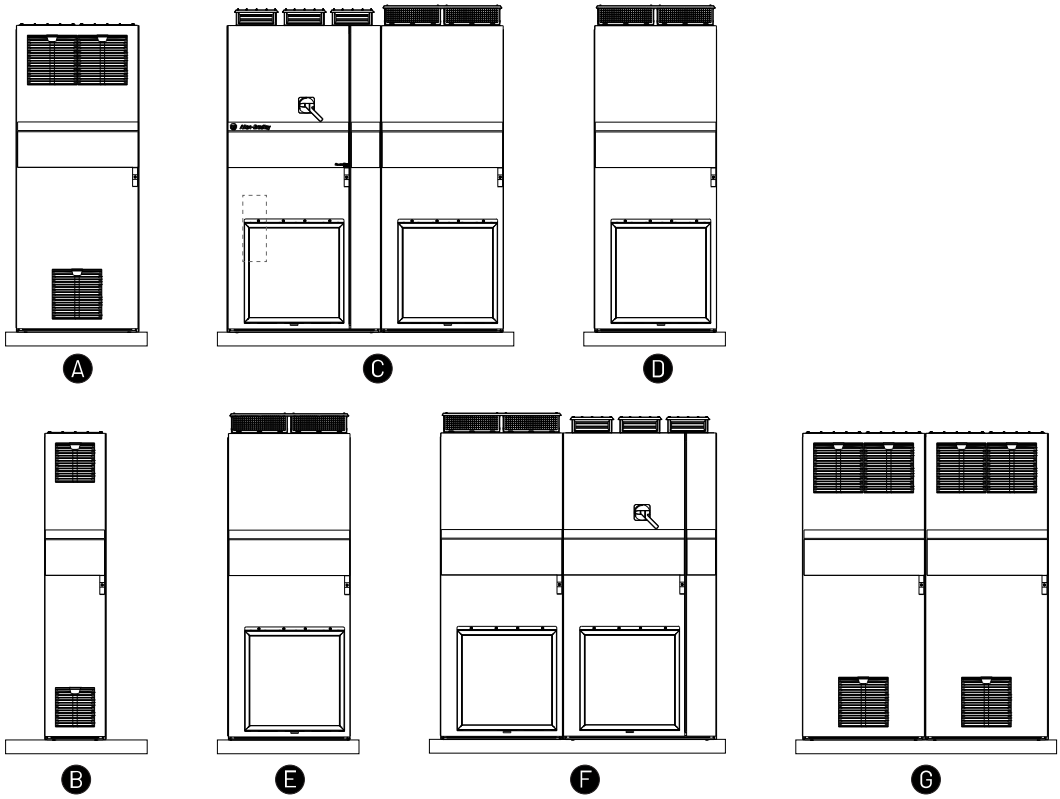


Table 21. Approximate Weights—PowerFlex 755TM Frame 14 Bus Supplies, Final Back-to-Back Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wiring bay sections			
A	Fiber routing and entry wire bays	484 (1066)	1 of 6
B	DC voltage balance bays	252 (556)	6 of 6
Left-to-right oriented sections			
C	Left section	1642 (3621)	2 of 6
D	Right section	889 (1959)	3 of 6
Right-to-left oriented sections			
E	Left section	889 (1959)	4 of 6
F	Right section	1642 (3621)	5 of 6
Total for all sections:	–	5798 (12,782)	–

Figure 26. PowerFlex 755TM Frame 14 Bus Supplies, Final Back-to-Back Configuration

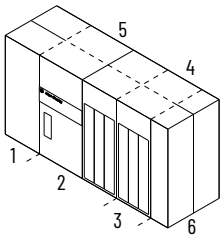
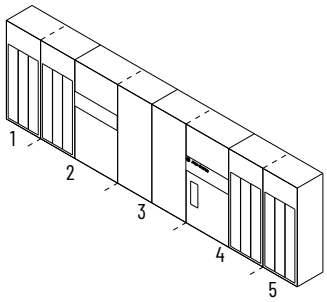


Table 22. Approximate Weights—PowerFlex 755T Frame 14 Bus Supplies, In-Line Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
G	Fiber routing and entry wire bays	484 (1066)	3 of 5
Left-to-right oriented sections			
C	Left section	1642 (3621)	4 of 5
D	Right section	889 (1959)	5 of 5
Right-to-left oriented sections			
E	Left section	889 (1959)	1 of 5
F	Right section	1642 (3621)	2 of 5
Total for all sections:	—	5546 (12,226)	—

Figure 27. PowerFlex 755T Frame 14 Bus Supplies, Final In-Line Configuration



Shipment Sections Frame 15 PowerFlex Bus Supplies

This diagram illustrates how frame 15 bus supplies are divided for shipment.

Figure 28. Shipment Sections—Frame 15 Bus Supplies

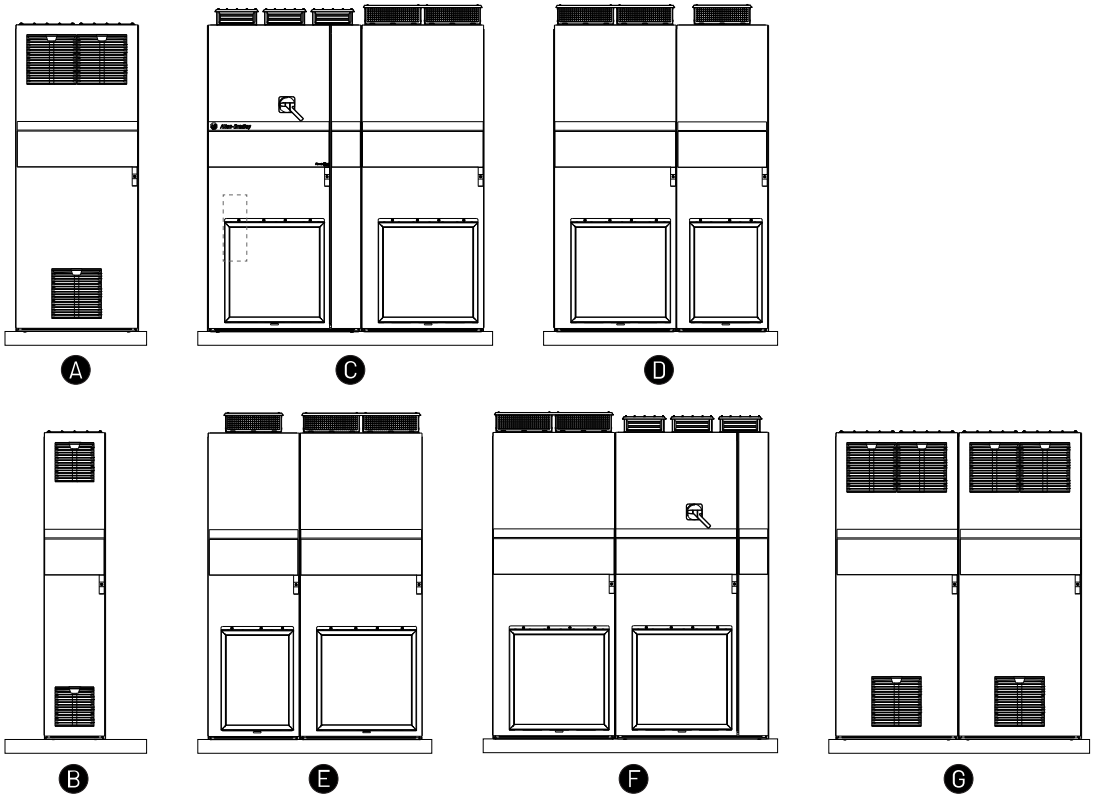


Table 23. Approximate Weights—PowerFlex 755TM Frame 15 Bus Supplies, Final Back-to-Back Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
A	Fiber routing and entry wire bays	484 (1066)	1 of 6
B	DC voltage balance bays	252 (556)	6 of 6
Left-to-right oriented sections			
C	Left section	1642 (3621)	2 of 6
D	Right section	1443 (3182)	3 of 6
Right-to-left oriented sections			
E	Left section	1443 (3182)	4 of 6
F	Right section	1642 (3621)	5 of 6
Total	—	6906 (15,228)	—

Figure 29. PowerFlex 755TM Frame 15 Bus Supplies, Final Back-to-Back Configuration

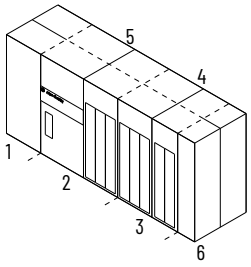
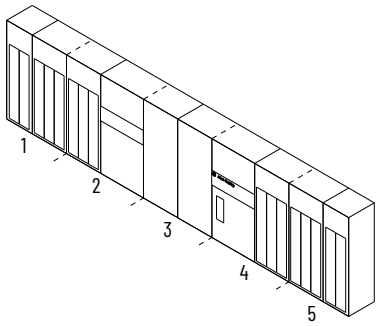


Table 24. Approximate Weights—PowerFlex 755T Frame 15 Bus Supplies, In-Line Configuration

Item	Description	Approximate Maximum Weight [kg (lb)]	Section No.
Wire bay sections			
G	Fiber routing and entry wire bays	484 (1066)	3 of 5
Left-to-right oriented sections			
C	Left section	1642 (3621)	4 of 5
D	Right section	1443 (3182)	5 of 5
Right-to-left oriented sections			
E	Left section	1443 (3182)	1 of 5
F	Right section	1642 (3621)	2 of 5
Total for all sections:	—	6654 (14,672)	—

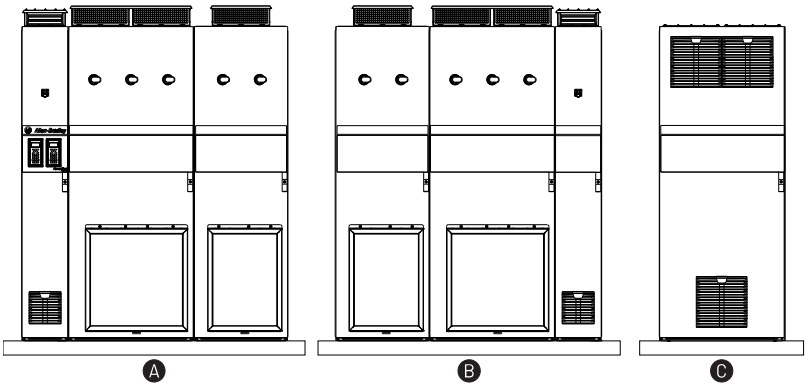
Figure 30. PowerFlex 755T Frame 15 Bus Supplies, Final In-Line Configuration



Shipment Sections Frame 8...15 PowerFlex Common Bus Inverters

This diagram illustrates how products are divided for shipment. Frame 15 is shown. Frame 8...12 common bus inverters ship as one in-line section.

Figure 31. Shipment Sections Frame 8...15 Common Bus Inverters



Item	Description
A	Left-to-right oriented section with control bay
B	Right-to-left oriented section with control bay
C	Exit wire bays (back-to-back)

Table 25. Approximate Maximum Unit Weights—PowerFlex 755TM Frame 8...12 Common Bus Inverters

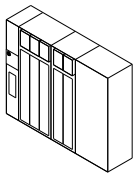
Frame Size	Approximate Maximum Weight [kg (lb)]				
	Power Bay	with Control Bay	with Exit Wire Bay	with Control and Exit Wire Bay	
8	374 (825)	455 (1004)	477 (1052)	588 (1231)	
9	611 (1348)	692 (1527)	714 (1575)	796 (1754)	
10	873 (1924)	954 (2103)	954 (2103)	1057 (2331)	
11	1284 (2830)	1365 (3009)	1503 (3313)	1584 (3492)	
12	1580 (3483)	1542 (3400)	1799 (3966)	1880 (4145)	

Table 26. Approximate Maximum Weights—PowerFlex 755TM Frame 13...15 Common Bus Inverters

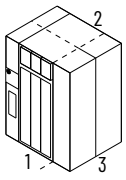
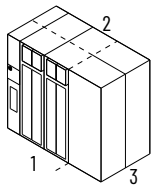
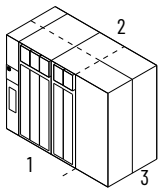
Frame Size	Approximate Maximum Weight [kg (lb)]			
	Back-to-Back Configuration			
	Description	Weight	Section No.	Illustration
13	Left-to-right oriented section	954 (2103)	1 of 3	
	Right-to-left oriented section	954 (2103)	2 of 3	
	Fiber routing, DC voltage balance, and exit wire bays	291 (642)	3 of 3	

Table 26. Approximate Maximum Weights—PowerFlex 755TM Frame 13...15 Common Bus Inverters (continued)

Frame Size	Approximate Maximum Weight [kg (lb)]			
	Back-to-Back Configuration			
	Description	Weight	Section No.	Illustration
	Total for all sections:	2199 (4848)	–	
14	Left-to-right oriented section	1365 (3009)	1 of 3	
	Right-to-left oriented section	1365 (3009)	2 of 3	
	Fiber routing, DC voltage balance, and exit wire bays	523 (1151)	3 of 3	
	Total for all sections:	3253 (7172)	–	
15	Left-to-right oriented section	1542 (3400)	1 of 3	
	Right-to-left oriented section	1542 (3400)	2 of 3	
	Fiber routing, DC voltage balance, and exit wire bays	523 (1154)	3 of 3	
	Total for all sections:	3607 (7954)	–	

Approximate Maximum Component Weights

Table 27. Power Modules

Description	Cat. No.	Max Module Weight [kg (lb)]	Max Weight with Packaging [kg (lb)]
Power module (frame 7 only)	20-750-MI4-xnnnxnnn	113 (250)	164 (362)
Power module	20-750-MI1-xnnnxnnn 20-750-MI1-xnnnxnnnC (copper)	142 (312)	194 (424)
Power module with a paralleling inductor	20-750-MI2-xnnnxnnn 20-750-MI2-xnnnxnnnC (copper)		
Power module with a reflected wave filter	20-750-MI3-xnnnxnnn 20-750-MI3-xnnnxnnnC (copper)		

Table 28. LCL Filter Modules

Voltage	Amps (normal duty)	Cat. No.	Max Module Weight [kg (lb)]	Max Weight with Packaging [kg (lb)]
400	600	20-750-ML4-C585D617 (frame 7 only)	175 (385)	226 (497)
480	600			
600	395	20-750-ML4-E395F370		

Table 28. LCL Filter Modules (continued)

Voltage	Amps (normal duty)	Cat. No.	Max Module Weight [kg (lb)]	Max Weight with Packaging [kg (lb)]
690	370	(frame 7 only)		
400	540	20-750-ML1-C540D505	213 (470)	264 (582)
480	505			
400	770	20-750-ML1-C770D740		
480	740			
600	395	20-750-ML1-E395F370		
690	370			
600	545	20-750-ML1-E545F505		
690	505			
400	1100	20-750-ML1-C1K1D1K0	322 (710)	373 (822)
480	1000			
400	1400	20-750-ML1-C1K4D1K3		
480	1300			
600	760	20-750-ML1-E760F735		
690	735			
600	980	20-750-ML1-E980F920		
690	920			

Table 29. Precharge Modules

Unit	Frame Size	Max Module Weight [kg (lb)]	Max Weight with Packaging [kg (lb)]
AC precharge (Includes AC precharge module catalog numbers: 20-750-MACP-xx-xnx.)	8	41 (90)	71 (157)
	9	132 (291)	173 (381)
DC precharge (Includes DC precharge module catalog numbers: 20-750-MDCP1-xx-xnx and 20-750-MDCP2-xx-xnx.)	8...15	41 (90)	44 (97)

Table 30. Entry and Exit Wiring Bay

Bay Width [mm (in.)]	Maximum Weight [kg (lb)]	Maximum Ship Weight [kg (lb)]
400 (15.7)	102 (225)	129 (285)
800 (31.5)	242 (535)	309 (682)

Table 31. IP54, UL Type 12 Roof Fan Assembly

Bay Width [mm (in.)]	Maximum Weight [kg (lb)]	Maximum Ship Weight [kg (lb)]
400 (15.7)	25 (55)	30 (66)
600 (23.6)	25 (55)	32 (71)
800 (31.5)	50 (110)	57 (126)

Approximate Maximum Shipping Weights

The following approximate maximum shipping weights include packaging.

Table 32. Approximate Maximum Shipping Weights—755TL Drive Frames 5...10

Frame Size	Approximate Maximum Ship Weight [kg (lb)]			
	Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
5	Total: 105 (231)	–	–	–
6	Total: 186 (410)	–	–	–
7	Total: 660 (1455)	–	–	–
8	Total: 993 (2189)	–	Total: 1113 (2454)	–
9	Total: 1817 (4006)	–	Total: 1928 (4251)	–
10	Left section: 1683 (3710) Right section: 1467 (3234) Total: 3150 (6944)	Left section: 1782 (3929) Right section: 1467 (3234) Total: 3249 (7163)	Left section: 1697 (3741) Right section: 1601 (3530) Total: 3298 (7271)	Left section: 1753 (3865) Right section: 1601 (3530) Total: 3354 (7395)

Table 33. Approximate Maximum Shipping Weights—755TR Drive Frames 5...12

Frame Size	Approximate Maximum Ship Weight [kg (lb)]			
	Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
5	Total: 105 (231)	–	–	–
6	Total: 186 (410)	–	–	–

Table 33. Approximate Maximum Shipping Weights—755TR Drive Frames 5...12 (continued)

Frame Size	Approximate Maximum Ship Weight [kg (lb)]			
	Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
6L	Total: 196 (431)	—	—	—
7	Total: 660 (1455)	—	—	—
8	Total: 993 (2189)	—	Total: 1113 (2454)	—
9	Total: 1817 (4006)	—	Total: 1928 (4251)	—
10	Left section: 1683 (3710) Right section: 1467 (3234) Total: 3150 (6944)	Left section: 1782 (3929) Right section: 1467 (3234) Total: 3249 (7163)	Left section: 1697 (3741) Right section: 1601 (3530) Total: 3298 (7271)	Left section: 1753 (3865) Right section: 1601 (3530) Total: 3354 (7395)
11	Left section: 1786 (3937) Right section: 2166 (4775) Total: 3952 (8712)	Wire bay: 309 (681) Left section: 1786 (3937) Right section: 2166 (4775) Total: 4261 (9393)	Left section: 1786 (3937) Right section: 2166 (4775) Exit wire bay: 309 (681) Total: 4261 (9393)	Entry wire bay: 309 (681) Left section: 1786 (3937) Right section: 2166 (4775) Exit wire bay: 309 (681) Total: 4570 (10,074)
12	Left section: 1786 (3937) Center section: 1541 (3397) Right section: 1485 (3274) Total: 4812 (10,608)	Wire bay: 309 (681) Left section: 1786 (3937) Center section: 1541 (3397) Right section: 1485 (3274) Total: 5121 (11,289)	Left section: 1786 (3937) Center section: 1541 (3397) Right section: 1485 (3274) Wire bay: 309 (681) Total: 5121 (11,289)	Entry wire bay: 309 (681) Left section: 1786 (3937) Center section: 1541 (3397) Right section: 1485 (3274) Exit wire bay: 309 (681) Total: 5430 (11,970)

Table 34. Approximate Maximum Shipping Weights—755TM Bus Supply Frames 6...12

Frame Size	Approximate Maximum Ship Weight [kg (lb)]			
	Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
6	Total: 186 (410)	—	—	—
7	Total: 527 (1164)	—	—	—
8	Total: 782 (1724)	—	—	—
9	Total: 1277 (2815)	—	—	—
10	Total: 2264 (4991)	Entry wire bay: 185 (408) Right section: 2264 (4991) Total: 2449 (5399)	—	—
11	Left section: 1772 (3907)	Entry wire bay: 309 (681)	—	—

Table 34. Approximate Maximum Shipping Weights—755TM Bus Supply Frames 6...12 (continued)

Frame Size	Approximate Maximum Ship Weight [kg (lb)]			
	Input and Power Bay	with Entry Wire Bay	with Exit Wire Bay	with Entry and Exit Wire Bay
	Right section: 956 (2108) Total: 2531 (5580)	Left section: 1772 (3907) Right section: 956 (2108) Total: 3037 (6696)		
12	Left section: 1772 (3907) Right section: 1540 (3395) Total: 3312 (7302)	Entry wire bay: 309 (681) Left section: 1772 (3907) Right section: 1540 (3395) Total: 3621 (7983)	–	–

Table 35. Approximate Maximum Shipping Weights—755TR Drive Frames 13...15

Frame Size	Approximate Maximum Ship Weight [kg (lb)]	
	Back-to-Back Configuration	In-Line Configuration
13	Left-to-right orientation Left section: 1836 (4048) Right section: 1533 (3380)	Left-to-right orientation Left section: 1836 (4048) Right section: 1533 (3380)
13	Right-to-left orientation Left section: 1533 (3380) Right section: 1836 (4048)	Right-to-left orientation Left section: 1533 (3380) Right section: 1836 (4048)
13	Wire bays Entry: 376 (829) Exit: 376 (829)	Wire bays Entry: 376 (829) Left Exit: 188 (414) Right Exit: 188 (414)
13	Total: 7490 (16,513)	Total: 7490 (16,513)
14	Left-to-right orientation Left section: 1893 (4173) Right section: 2223 (4901)	Left-to-right orientation Left section: 1893 (4173) Right section: 2223 (4901)
14	Right-to-left orientation Left section: 2223 (4901) Right section: 1893 (4173)	Right-to-left orientation Left section: 2223 (4901) Right section: 1893 (4173)
14	Wire bays Entry: 608 (1340) Exit: 608 (1340)	Wire bays Entry: 608 (1340) Left exit: 312 (688)

Table 35. Approximate Maximum Shipping Weights—755TR Drive Frames 13...15 (continued)

Frame Size	Approximate Maximum Ship Weight [kg (lb)]	
	Back-to-Back Configuration	In-Line Configuration
		Right exit: 312 (688)
14	Total: 9448 (20,829)	Total: 9464 (20,865)
15	Left-to-right orientation Left section: 1836 (4048) Center section: 1607 (3543) Right section: 1551 (3419)	Left-to-right orientation Left section: 1836 (4048) Center section: 1607 (3543) Right section: 1551 (3419)
15	Right-to-left orientation Left section: 1551 (3419) Center section: 1607 (3543) Right section: 1836 (4048)	Right-to-left orientation Left section: 1551 (3419) Center section: 1607 (3543) Right section: 1836 (4048)
15	Wire bays Entry: 608 (1340) Exit: 608 (1340)	Wire bays Entry: 608 (1340) Left Exit: 312 (688) Right Exit: 312 (688)
15	Total: 11,204 (24,701)	Total: 11,220 (24,736)

Table 36. Approximate Maximum Shipping Weights—755TM Bus Supply Frames 13...15

Frame Size	Approximate Maximum Ship Weight [kg (lb)]	
	Back-to-Back Configuration	In-Line Configuration
13	Left-to-right orientation Center section: 2350 (5181)	Left-to-right orientation Center section: 2350 (5181)
13	Right-to-left orientation Center section: 2350 (5181)	Right-to-left orientation Center section: 2350 (5181)
13	Wire bays Entry: 337 (743) Balance: 337 (743)	Wire bays Entry: 322 (710)
13	Total: 5374 (11,848)	Total: 5022 (11,072)
14	Left-to-right orientation Left section: 1836 (4048) Right section: 1016 (2240)	Left-to-right orientation Left section: 1836 (4048) Right section: 1016 (2240)

Table 36. Approximate Maximum Shipping Weights—755TM Bus Supply Frames 13...15 (continued)

Frame Size	Approximate Maximum Ship Weight [kg (lb)]	
	Back-to-Back Configuration	In-Line Configuration
14	Right-to-left orientation Left section: 1016 (2240) Right section: 1836 (4048)	Right-to-left orientation Left section: 1016 (2240) Right section: 1836 (4048)
14	Wire bays Entry: 569 (1254) Balance: 337 (743)	Wire bays Entry: 617 (1360)
14	Total: 6610 (14,573)	Total: 6321 (13,935)
15	Left-to-right orientation Left section: 1836 (4048) Right section: 1631 (3596)	Left-to-right orientation Left section: 1836 (4048) Right section: 1631 (3596)
15	Right-to-left orientation Left section: 1631 (3596) Right section: 1836 (4048)	Right-to-left orientation Left section: 1631 (3596) Right section: 1836 (4048)
15	Wire bays Entry: 569 (1254) Exit/Balance: 337 (743)	Wire bays Entry: 617 (1360)
15	Total: 7840 (17,284)	Total: 7551 (16,647)

Table 37. Approximate Maximum Shipping Weights—PowerFlex 755TM Common Bus Inverter Frames 8...12

Frame size	Approximate Maximum Ship Weight [kg (lb)]			
	Power Bay	with Control Bay	with Exit Wire Bay	with Control and Exit Wire Bay
8	433 (955)	520 (1146)	544 (1199)	679 (1497)
9	674 (1486)	761 (1678)	803 (1770)	891 (1964)
10	940 (2072)	1045 (2304)	1047 (2308)	1156 (2549)
11	1377 (3036)	1464 (3228)	1637 (3609)	1738 (3832)
12	1677 (3697)	1789 (3944)	1951 (4301)	2040 (4497)

Table 38. Approximate Maximum Shipping Weights—PowerFlex 755TM Common Bus Inverter Frames 13...15

Frame Size	Approximate Maximum Ship Weight [kg (lb)]
	Back-to-Back Configuration
13	Left-to-right orientation Section: 1104 (2434)
13	Right-to-left orientation Section: 1104 (2434)
13	Wire bays Exit/Balance: 376 (829)
13	Total: 2584 (5697)
14	Left-to-right orientation Section: 1530 (3373)
14	Right-to-left orientation Section: 1530 (3373)
14	Wire bays Exit/Balance: 608 (1340)
14	Total: 3668 (8087)
15	Left-to-right orientation Section: 1766 (3893)
15	Right-to-left orientation Section: 1766 (3893)
15	Wire bays Exit/Balance: 608 (1340)
15	Total: 4140 (9127)

Handling

Two methods of handling PowerFlex 755T cabinet mount products within the receiving facility are acceptable.

- Transport by lift truck
- Overhead lifting (crane or hoist)

PowerFlex 755T cabinet mount products must be handled in the upright vertical position. Failure to comply with this requirement can lead to internal component and enclosure damage.

ATTENTION: Risk of injury or equipment damage exists.

Follow local codes and guidelines and your company safety procedures when you handle PowerFlex drive products.

To avoid personal injury and structural damage to the PowerFlex drive product, do not lift or move the equipment by any means other than what is described in this publication. PowerFlex drive products are top- and front-heavy.

The following guidelines are provided to help avoid personal injury and equipment damage during handling and to help stabilize the product during transport to the installation site.

- Keep the product bolted to the shipping skid to minimize possibility of tipping.
- The factory-installed structural angles must remain secured to the enclosure during handling. Structural angles provide lift points and help minimize flexing of the enclosure during handling.
- Handle the PowerFlex® 755T product carefully to avoid damage to the enclosures and paint.
- Keep the product in an upright position. PowerFlex® 755T products, frame 7 and larger, are not to be tipped or laid flat during handling.

Before moving the product, verify that the route is clear of all obstructions and that other workers are a safe distance away.

Transport by Lift Truck

PowerFlex® cabinet-mount products are bolted to shipping skids that facilitate transport by a lift truck. If you are using a lift truck, see the following procedure.

ATTENTION: Risk of equipment damage exists.

Verify that the lift truck can handle the weight and size of the drive safely. Shipment weights can be found on the packing slip that is included with each shipment.

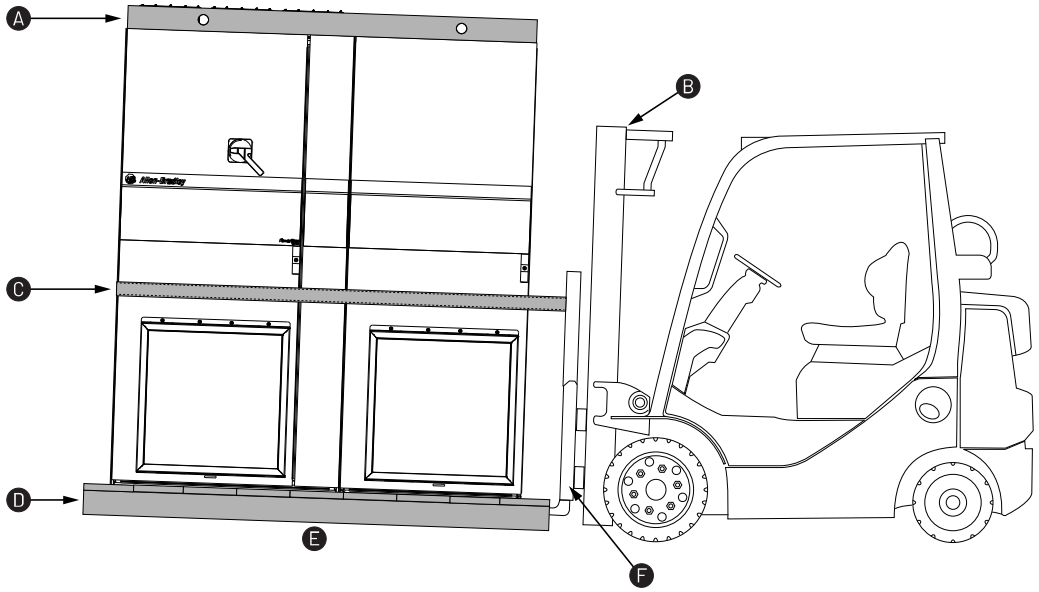
1. Lift only from underneath the shipping skid. Position the PowerFlex® product on the forks so that the load is balanced and does not tilt. PowerFlex® products are top- and front-heavy.

   IMPORTANT: The use of a belt is to help prevent the load from slipping forward during a sudden stop. Do not excessively tighten the belt. Belt tension must not bend, buckle, or otherwise distort the enclosure.

2. Keep the load against the load backrest of the lift truck. Use a belt to secure the PowerFlex® product to the lift truck. Tilt the load a few degrees backward toward the lift truck mast.
3. Start and stop the lift truck gradually and slowly to avoid jerky movements. When traveling with the load, drive slowly with the forks carried as low as possible, consistent with safe operation.

   IMPORTANT: The use of a belt is to help prevent the load from slipping forward during a sudden stop. Do not excessively tighten the belt. Belt tension must not bend, buckle, or otherwise distort the enclosure.

Figure 32. Use a Lift Truck to Transport a PowerFlex® 755T Enclosure



Item	Description
A	Structural angles
B	Carriage and mast
C	Belt the enclosure to the carriage before lifting and moving
D	Shipping skid
E	Lift only from underneath the shipping skid
F	Load backrest

Overhead Lift by Crane or Hoist

All lifting equipment and components (hooks, bolts, lifts, slings, chains, and so forth) must be properly sized and rated to lift and hold the weight of the equipment safely. Follow local codes and guidelines and your company safety procedures when you handle PowerFlex products. Shipment weights can be found on the packing slip that is included with each shipment. See Approximate Weights for PowerFlex 755T Drive Products on page 25 for approximate weights. Structural angles with lifting holes are affixed to the top of the product enclosures.

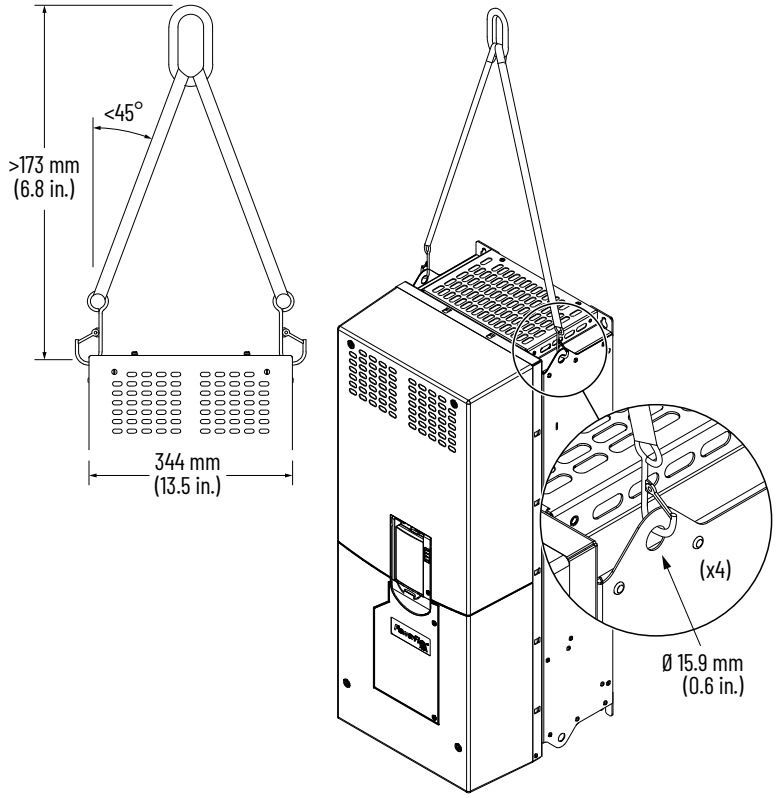
ATTENTION: Risk of injury or equipment damage exists.

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

Attach Lift Hardware to Frames 5 and 6

1. Remove the anchor bolts to release the product from the shipping skid.
2. Rig the lifting hardware according to the following diagram.

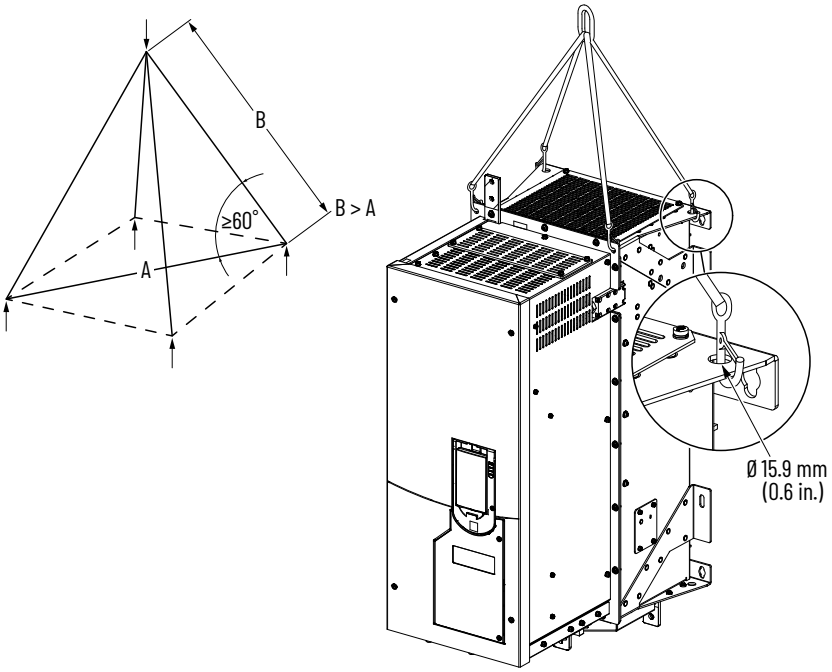
Figure 33. Chassis Two-Point Lift Rigging—Frames 5 and 6



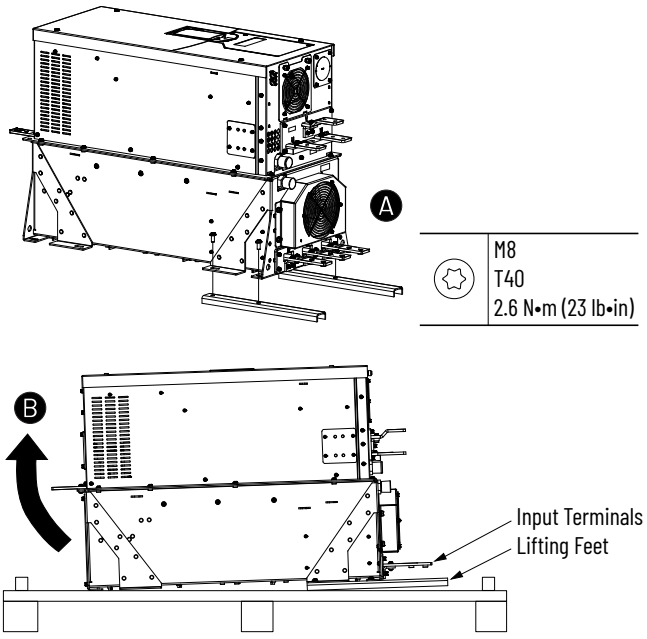
Attach Lift Hardware to Frame 6L

1. Remove the anchor bolts to release the product from the shipping skid.
2. Rig the lifting hardware according to the following diagram.

Figure 34. Chassis Four-Point Lift Rigging—Frame 6L



3. Attach lifting feet (A) to help protect the input terminals during the lift.

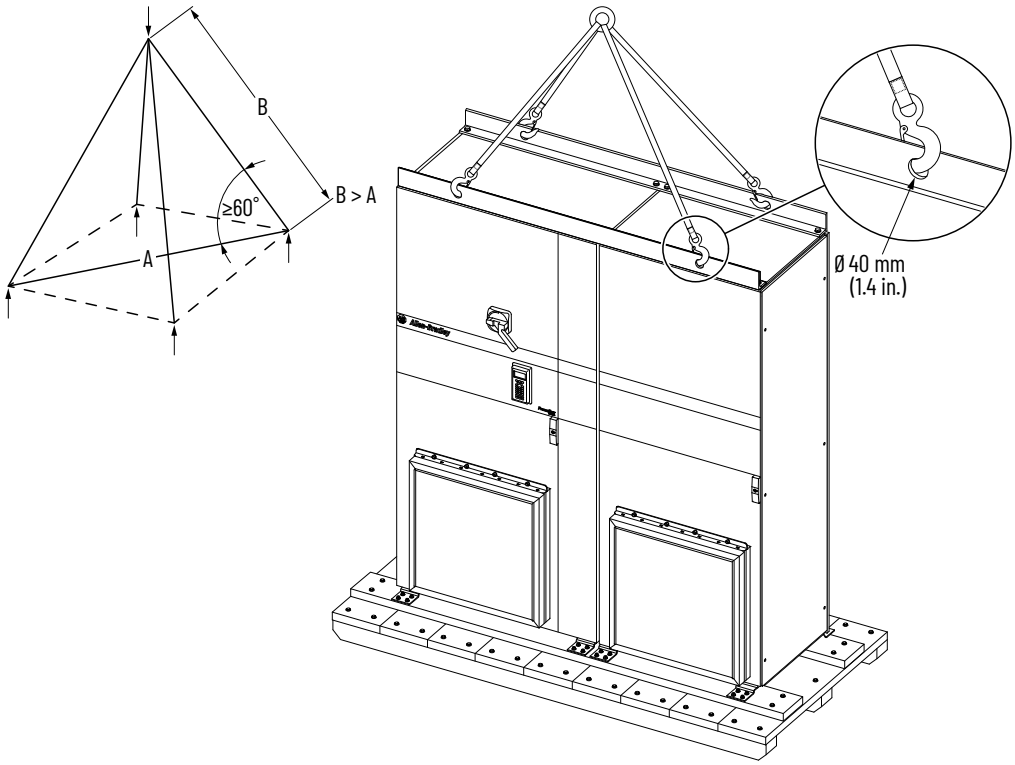


4. Lift the drive (B) by the four lift points.

Attach Lifting Hardware to Cabinets

1. Attach rigging to overhead crane, hoist, or similar lifting device.
2. Do not pass straps or cables through the lifting holes in the structural angle. Use slings with load-rated hooks or shackles.
3. Adjust the rigging lengths to compensate for any unequal weight distribution of the load and support the PowerFlex® 755T product in an upright position.
4. To reduce tension on the rigging and compression on the structural angle, verify that the angle between the straps or cables and horizontal plane is greater than 60°.

Figure 35. Cabinet Lifting Points and Rigging—Frames 7...15



5. To minimize the possibility of tipping, leave the product bolted to the shipping skid during transport to the installation site.

Storage

PowerFlex® 755T products are wrapped in plastic to help prevent dirt and dust from entering the enclosure during shipment. If you must store the equipment after you receive it, take the following precautions.

ATTENTION: Risk of equipment damage exists.

PowerFlex drive products are designed for indoor applications and do not have sufficient packaging for outdoor storage. Store PowerFlex drive products in a heated building that offers adequate air circulation and protection from dirt and moisture.

- Do not remove the protective plastic wrap.
- Do not store the product outdoors.
- Do not store the product in an area where it is exposed to a corrosive atmosphere.
- Store the product in an area that is clean and dry.
- Store the product in a conditioned building with adequate air circulation.
- Maintain a storage temperature of -40...+70 °C (-40...+158 °F).
- Maintain a relative humidity of 5...95% non-condensing.
- Heating and moisture protection devices must be used if the rate of change in relative humidity and/or ambient temperature can lead to condensation on the stored equipment.
- If the product is stored for a long time, reform the bus capacitors before use. For instructions on how to reform the bus capacitors, visit rok.auto/support.

Installation Preparation

This chapter covers the conditions, requirements, and specifications necessary to install your PowerFlex® drive product.

CE Conformity

Compliance with the Low Voltage Directive and Electromagnetic Compatibility Directive has been demonstrated using harmonized European Norm (EN) standards, which are referenced by the Official Journal of the European Union. PowerFlex® 755T products comply with the EN standards that are listed in this section when installed according to these installation instructions.

EU Declarations of Conformity are available online at: rok.auto/certifications

Low Voltage Directive (LVD)

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

EMC Directive

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

General Considerations

- For EU compliance, drives must satisfy installation requirements that are related to both EN 61800-5-1 and EN 61800-3 provided in this document.
- PowerFlex® drive products comply with the EMC requirements of EN 61800-3 when installed according to good EMC practices and the instructions that are 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 end user applications.
- PowerFlex® drive products are not intended to be used on public low-voltage networks that 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, and the installation requirements of this document.
- PowerFlex® drive products 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 can be necessary.

ATTENTION: Risk of equipment damage exists.

PowerFlex drive products produce DC current in the protective earthing conductor which can reduce the ability of RCDs (residual current operated protective devices) or RCMs (residual current-operated monitoring devices) of type A or AC to provide protection for other equipment in the installation. Where an RCD or RCM is used for protection in case of direct or indirect contact, only an RCD or RCM of Type B is allowed if jumpers aren't properly disconnected on the supply side of this product.

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

- Voltage classes up to 690V PowerFlex® drive products are compliant with the CE LVD when used on a 'corner-earthed' supply system and all other common grounded 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 4800 m (15,748 ft), PowerFlex® drive products of voltage classes up to 480V cannot be powered from a 'corner-earthed' supply system to maintain compliance with the CE LVD. Altitude derating curves are provided in 750-TD100.

- Drives that are provided in the IP54, UL Type 12 enclosure are compliant with the CE LVD when installed in pollution degree 1…4 environments where no gaseous contaminants are present. All other enclosure types must be installed in a pollution degree 1 or 2 environment to be compliant with the CE LVD. Characteristics of the different pollution degree ratings are provided in 750-TD100.
- PowerFlex® drive products produce leakage current in the protective earthing conductor that exceeds 3.5 mA AC and/or 10 mA DC. The minimum size of the protective earthing (grounding) conductor that is used in the application must comply with local safety regulations for high-protective earthing conductor current equipment.

ATTENTION: Risk of equipment damage exists.

PowerFlex drive products produce DC current in the protective earthing conductor which can reduce the ability of RCDs (residual current operated protective devices) or RCMs (residual current-operated monitoring devices) of type A or AC to provide protection for other equipment in the installation. Where an RCD or RCM is used for protection in case of direct or indirect contact, only an RCD or RCM of Type B is allowed if jumpers aren't properly disconnected on the supply side of this product.

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

- The drive must be earthed (grounded).
- 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, terminate the shield at the PE Grounding Bar.
- 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 that is 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, the cable shield is terminated with a low-impedance connection to earth at only one end of the cable, preferably the end where the receiver is located. When the cable shield is terminated at the drive end, it can be terminated either by using a shielded connector with a conduit plate or conduit box, or the shield can be clamped to an 'EMC plate.'
- Motor cables must be separated from control and signal wiring wherever possible.
- Maximum motor-cable length must not exceed the maximum length for compliance with radio-frequency emission limits for the specific standard and installation environment.
- 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 correctly configured.
- Verify that appropriate system design or filtering is used so that fault number 14118 'CapOvrResonance' does not occur during standard operation.

Table 39. PowerFlex 755T Input Product RF Emission Compliance and Installation Requirements

AC Input Drive Frame and Catalog Number	EN61800-3 Category C3 [1] I > 100 A	EN61800-3 Category C2 EN61000-6-4 Category CISPR11 Group 1 Class A (Input Power ≤ 20 kVA)
Frame 5 20G1xxC015…20G1xxC104 and 20G1xxD014…20G1xxD096	150 m (492 ft) motor cable limit.	N61800-3 Category C2 for conducted and radiated emissions is available for frame 5 drives. Requires 20-750-EMC2-F5 EMC C2 filter kit.

1. Intended to be powered from an industrial power network that is supplied by a dedicated power transformer or generator and not from low voltage power lines that supply other customers.

Table 39. PowerFlex 755T Input Product RF Emission Compliance and Installation Requirements (continued)

AC Input Drive Frame and Catalog Number	EN61800-3 Category C3 [1] I > 100 A	EN61800-3 Category C2 EN61000-6-4 Category CISPR11 Group 1 Class A (Input Power ≤ 20 kVA)
Frame 6 20G1xxC140...20G1xxC303 and 20G1xxD125...20G1xxD303	150 m (492 ft) motor cable limit.	EN61800-3 Category C2 for conducted and radiated emissions is available for frame 6 drives and bus supplies. Requires 20-750-EMC2-F6 EMC C2 filter kit.
Frame 6L 20G1xxC360 and 20G1xxD360	150 m (492 ft) motor cable limit.	EN61800-3 Category C2 for conducted and radiated emissions is available for frame 6L drives. Requires 20-750-EMC2-F6L EMC C2 filter kit.
Frame 7 20G1xxC302...20G1xxC585 and 20G1xxD302...20G1xxD617	150 m (492 ft) motor cable limit.	EN61800-3 Category C2 for conducted and radiated emissions is available for frame 7 drives and bus supplies. Requires Filtering selection P. IP21 drives only provide conducted emissions. IP54 drives provide conducted and radiated emissions.
Frame 8 20G1xxC302...20G1xxC770 and 20G1xxD302...20G1xxD740	150 m (492 ft) motor cable limit.	EN61800-3 Category C2 for conducted emissions is available for frame 8 drives and bus supplies. Requires an 20-750-MEMCC2-Fn EMC C2 filter kit.
Frame 9 20G1xxC920...20G1xxC1K4 and 20G1xxD800...20G1xxD1K3	150 m (492 ft) motor cable limit.	
Frame 10 20G1xxC1K6...20G1xxC2K1 and 20G1xxD1K4...20G1xxD2K0	150 m (492 ft) motor cable limit.	
Frame 11 20G1xxC2K8 and 20G1xxD2K6	150 m (492 ft) motor cable limit.	
Frame 12 20G1xxC3K5 and 20G1xxD3K4	150 m (492 ft) motor cable limit.	
Frame 13 20G1xxC4K2 and 20G1xxD4K0	150 m (492 ft) motor cable limit.	
Frame 14 20G1xxC5K6 and 20G1xxD5K4	150 m (492 ft) motor cable limit.	
Frame 15 20G1xxC7K0 and 20G1xxD6K7	150 m (492 ft) motor cable limit.	

1. Intended to be powered from an industrial power network that is supplied by a dedicated power transformer or generator and not from low voltage power lines that supply other customers.

Location Planning

Consider the following when you decide where to install your PowerFlex® product.

- Environment - temperature, humidity, and vibration or shock
- Ventilation and air conditioning
- Input power cable entry points
- Motor cable exit points
- Product dimensions
- Overall height of installation area
- Alignment with other equipment
- Future needs

Mounting Surface—Wall-mount Products

Install wall mounted products on a flat vertical surface.

- Install the product in a vertical orientation.
- Verify that the product makes full contact with the mounting surface.
- Do not use standoffs or spacers.

Mounting Surface—Floor-mount Products

Install floor mounted products on a flat and level surface such that all enclosures in the line-up are within ±0.25 mm (0.010 in.) vertical orientation. If necessary, use metal shims to level the enclosures before joining them.

- Install product enclosures in an upright orientation.
- Verify that the product enclosures are square, vertical, and stable.
- Verify that filters and debris screens are installed.

Various mounting options are acceptable.

- Corner base/plinth system
- Structural steel system
- Anchor bolt system
- Concrete screw system

Environment

The installation site must be compatible with the level of protection that is provided by the enclosure.

- PowerFlex® 755T products are only intended for indoor use.
- Protect the equipment from moisture and direct sunlight.
- Protect fans and electronics by avoiding dust or metallic particles.

Surrounding air temperature	IP00, UL Open Type: -20…+50 °C (-4…+122 °F) Frames 5 and 6, all ratings IP00, UL Open Type: 0…50 °C (32…122 °F) Frame 6L, all ratings
Ambient temperature	IP00, UL Open Type: 0…50 °C (32…122 °F) Frame 6L, all ratings IP20, UL Type 1: -20…+50 °C (-4…+122 °F) Frames 5 and 6, all ratings IP21, UL Type 1: -20…+40 °C (-4…+104 °F) Frames 7…15, all ratings IP54, UL Type 12: -20…+40 °C (-4…+104 °F) Frames 7…15, all ratings

Coolant temperature	IP00, UL Open Type: 0…50 °C (32…122 °F) Frame 6L, all ratings
Ambient temperature with derating	60 °C (140 °F) Frames 5 and 6, all ratings 50 °C (122 °F) or 55 °C (134 °F) Frames 7…15, all ratings See Derating Guidelines in the PowerFlex® 750-Series Products with TotalFORCE® Control, publication 750-TD100.
Storage temperature	-40…+70 °C (-40…+158 °F)
Relative humidity	5…95% noncondensing
Atmospheric protection	A harsh environment is defined as a copper or silver reactivity level greater than 1000 angstroms per 30 days exposure. No condensation is allowed. See ISA-71.04-2013 for details on how to measure reactivity levels on copper and silver test coupons.

Corrosive Environment Installations

The following requirements must be met for PowerFlex® 755T product installations in environments where corrosive gases are prevalent.

- The PowerFlex® 755T product must be manufactured with corrosive gas protection (XT) features that provide protection against contamination and corrosion.
- All fiber-optic transceivers and printed circuit board edge connectors are coated with dielectric grease.
- Apply dielectric grease to option card edge connectors before installation in the control pod. See the hardware service manual for your product for instructions on to apply dielectric grease and maintaining dielectric grease connections.
  - PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual - Frames 5 and 6, publication 750-TG102
  - PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual - Frames 6L and 7L, publication 750-TG103
  - PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual - Frames 7…15, publication 750-TG104
- All unused wire harness connectors, circuit board connectors, terminal bocks, and fiber-optic transceivers and ports are sealed with protective covers.

Seismic Qualified Installations

In a seismic qualified installation, PowerFlex® 755T products must be rigidly mounted according to local standards and codes. In addition, the installation must comply with any guidance that is provided by a qualified Structural Professional Engineer.

Minimum Enclosure Volume—Frame 6L

When installing a PowerFlex® 755TR frame 6L liquid cooled drive in an enclosure, use an enclosure with the following specifications for UL compliant installations.

Table 40. Frame 6L UL Compliant Enclosure Specifications

Approximate Enclosure Dimensions			Minimum Enclosure Volume
Height	**Width**	**Depth**	
2000 mm	800 mm	800 mm	1,280 L
78.75 in.	31.5 in.	31.5 in.	78,110 cu. in.

Power System Resonance Conditions

Power system harmonics and system resonance conditions present challenges for industrial electrical systems with non-linear loads (for example, diode rectifiers, thyristor phase-controlled front-end converters, and so forth). Capacitive and inductive filters on a shared AC power source interact with source harmonics to create resonant current flows. This condition causes component stress, excess heating, and can result in reduced product life. Because the interaction of each load must be considered, system resonance conditions are challenging to predict.

For detailed information about power system resonance conditions and mitigation techniques, see Knowledgebase Answer ID 1093310.

PowerFlex 755T Resonance Detection Capabilities

PowerFlex® 755T active front-end products monitor for line-side resonance currents. Detection is a key to help prevent unexpected power system resonance failures.

When system resonance is detected, PowerFlex® 755T active front end drives and bus supplies continue operation and provide an early-warning of line-side resonance through alarm 14117 'CapHighResonance'.

When power system resonance levels surpass thresholds for reliable operation, 14118 'CapOverResonance' provides a fault. You have the option to configure the desired response to a system over resonance condition using parameter 0:453 [CapOvrRsncActn]. See publication 750-PM100 for firmware revision 6 and earlier or publication 750-RD101 for firmware revision 10 and later for more information.

Energy Pause Mode

If line-side resonance occurs while the line side converter is not modulating, commonly connected equipment is likely the cause. The energy pause feature is a useful way to disconnect the line side converter from the AC source when converter modulation is not required. Additionally, the energy pause feature shuts down peripheral devices to save energy during standby periods.

Minimum Mounting Clearances

Specified vertical clearance requirements that are indicated for drive frames 5, 6, and 6L are intended to be from the drive to the closest object that can restrict airflow through the drive heatsink and chassis. The drive must be mounted in a vertical orientation as shown and must make full contact with the mounting surface. Do not use standoffs or spacers.

Figure 36. Mounting Clearances—Frame 5 Wall Mount

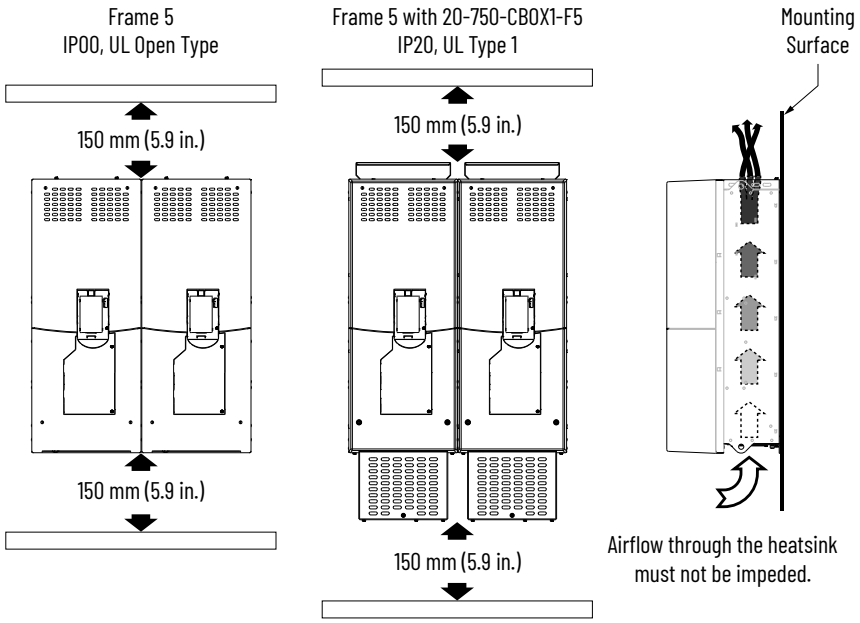


Figure 37. Mounting Clearances—Frame 6 Wall Mount

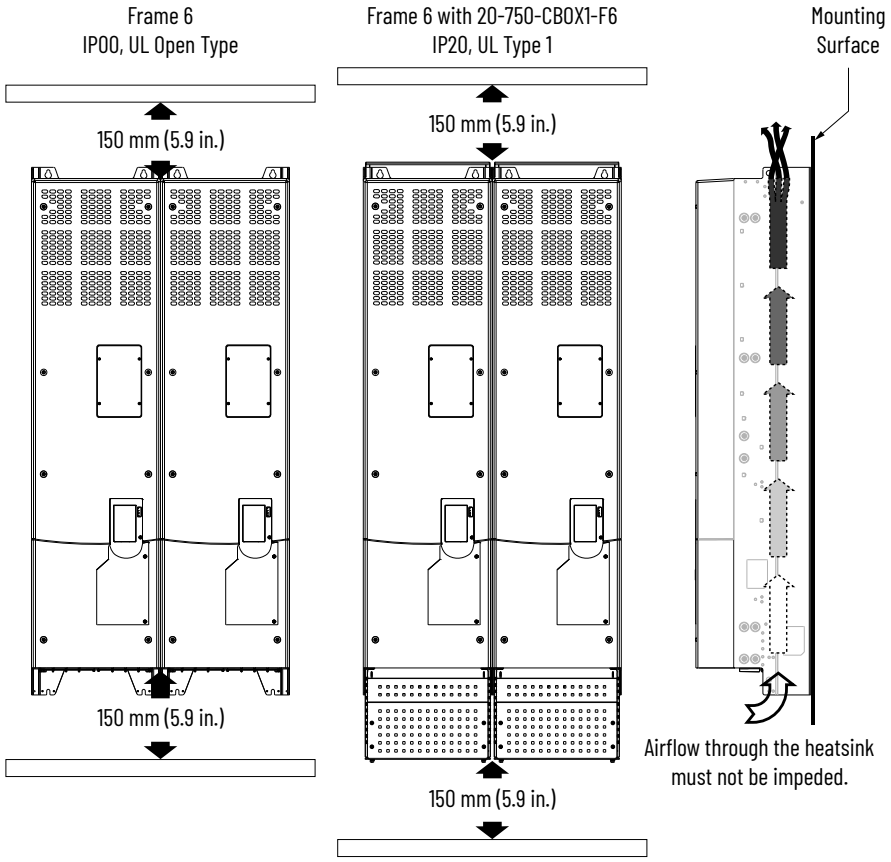
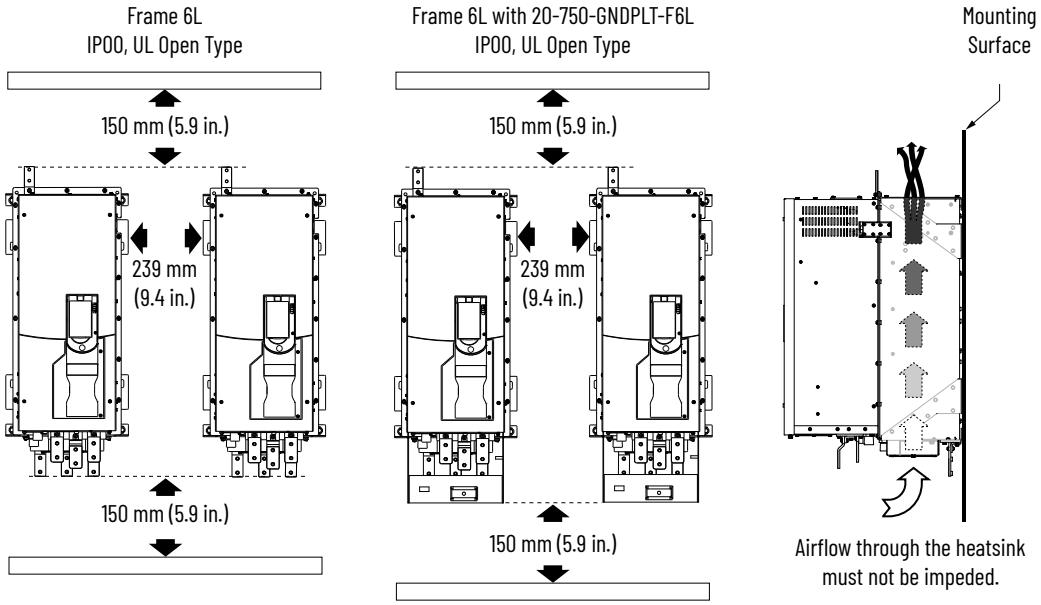


Figure 38. Mounting Clearances—Frame 6L Wall Mount



The overhead clearance requirements that are indicated for drive frames 7...15 allow access to the exhaust hoods and cooling fan housings.

Figure 39. Mounting Clearances—Frame 7 Floor Mount

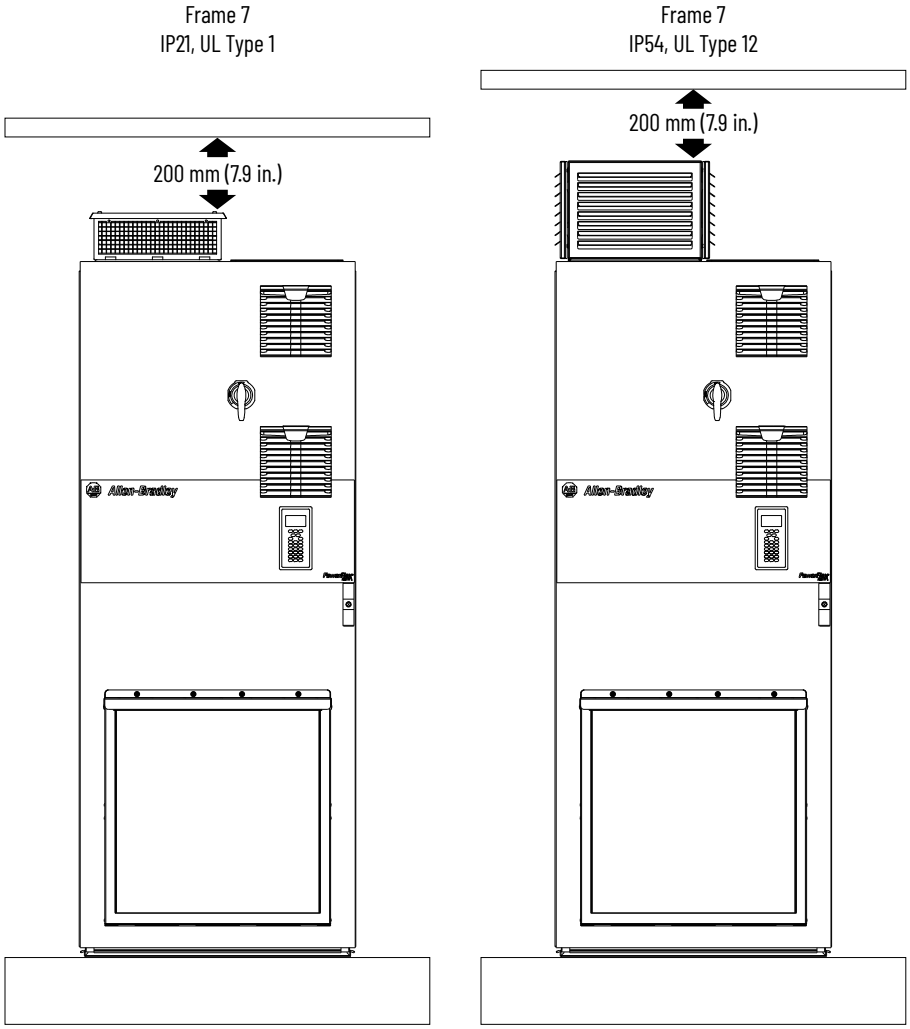
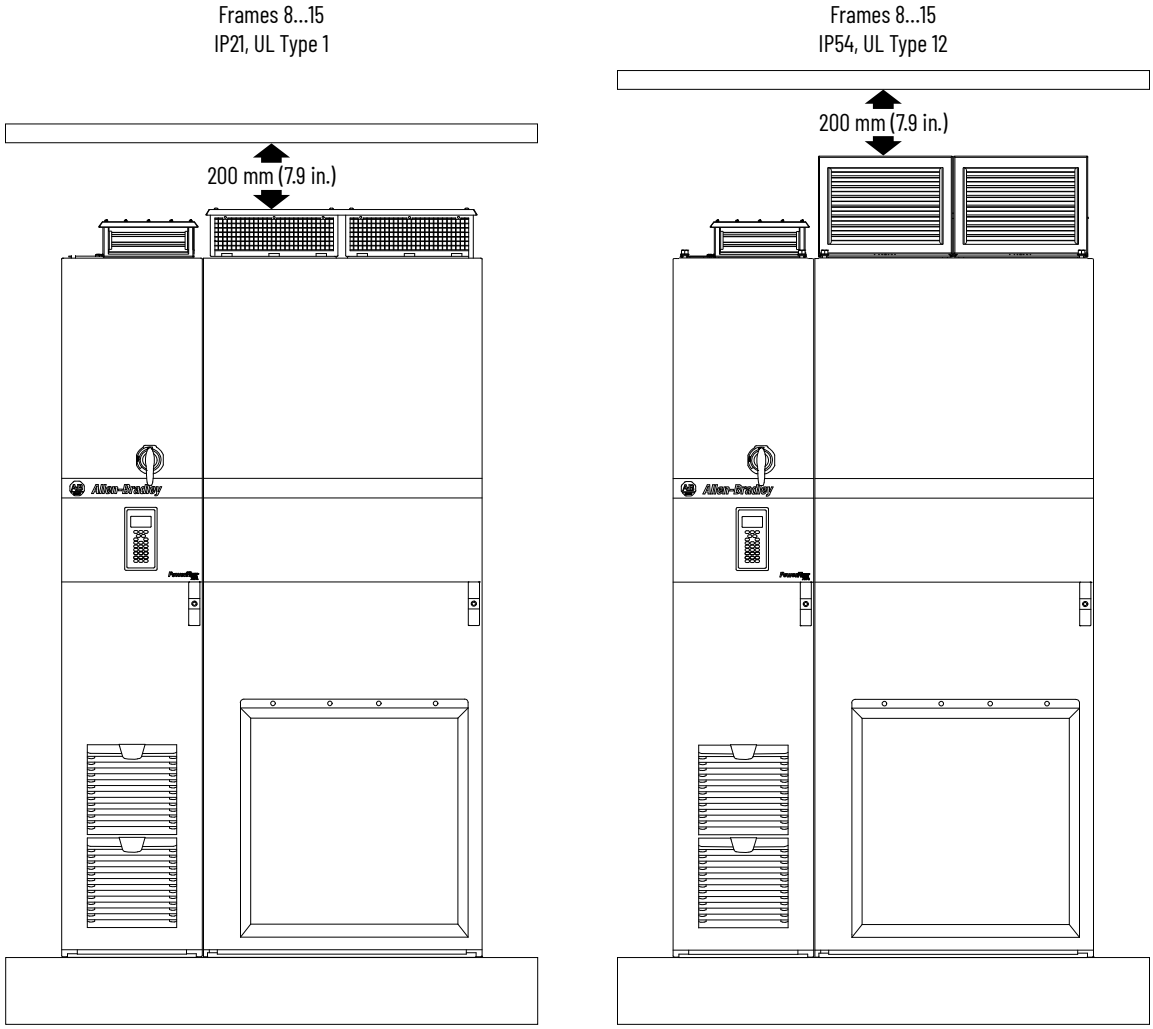


Figure 40. Mounting Clearances—Frames 8...15 Floor Mount



Airflow through the enclosure must not be impeded. Regular inspection and replacement of the filter media is required to maintain proper cooling. See the PowerFlex 750-Series Products with TotalFORCE Control Hardware Service Manual, publication 750-TG100 for filter media maintenance schedules.

Figure 41. Airflow Clearances—Frame 7 Floor Mount

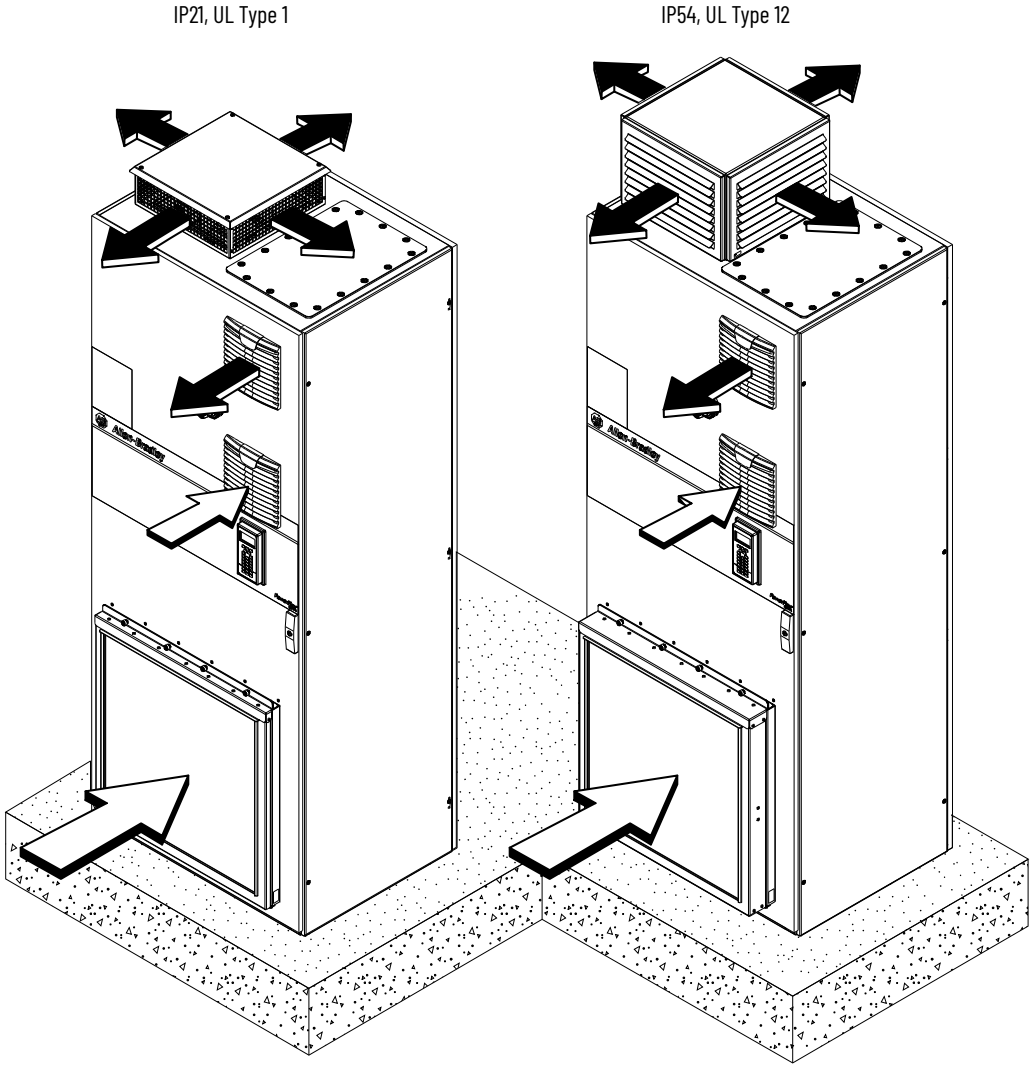
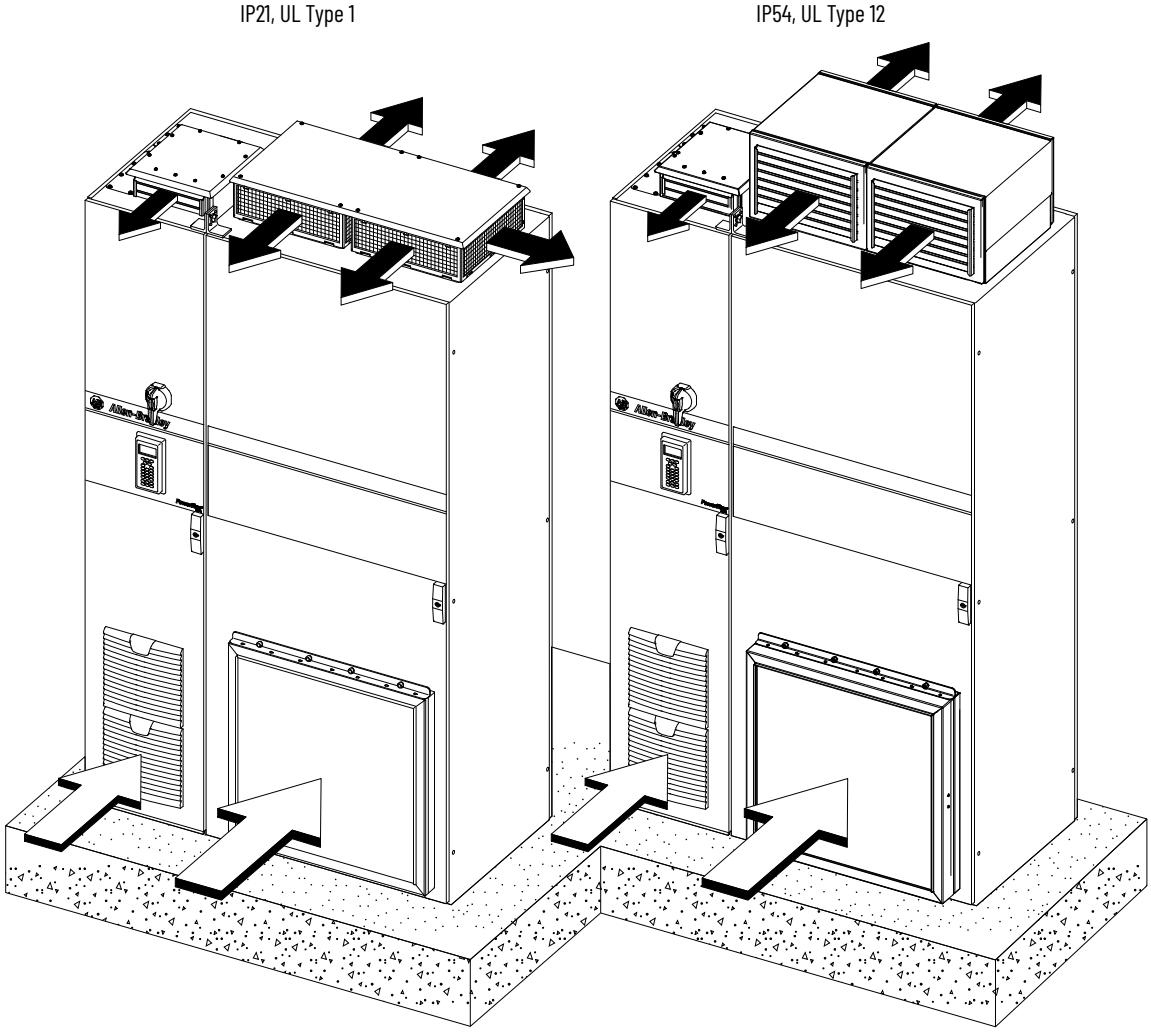
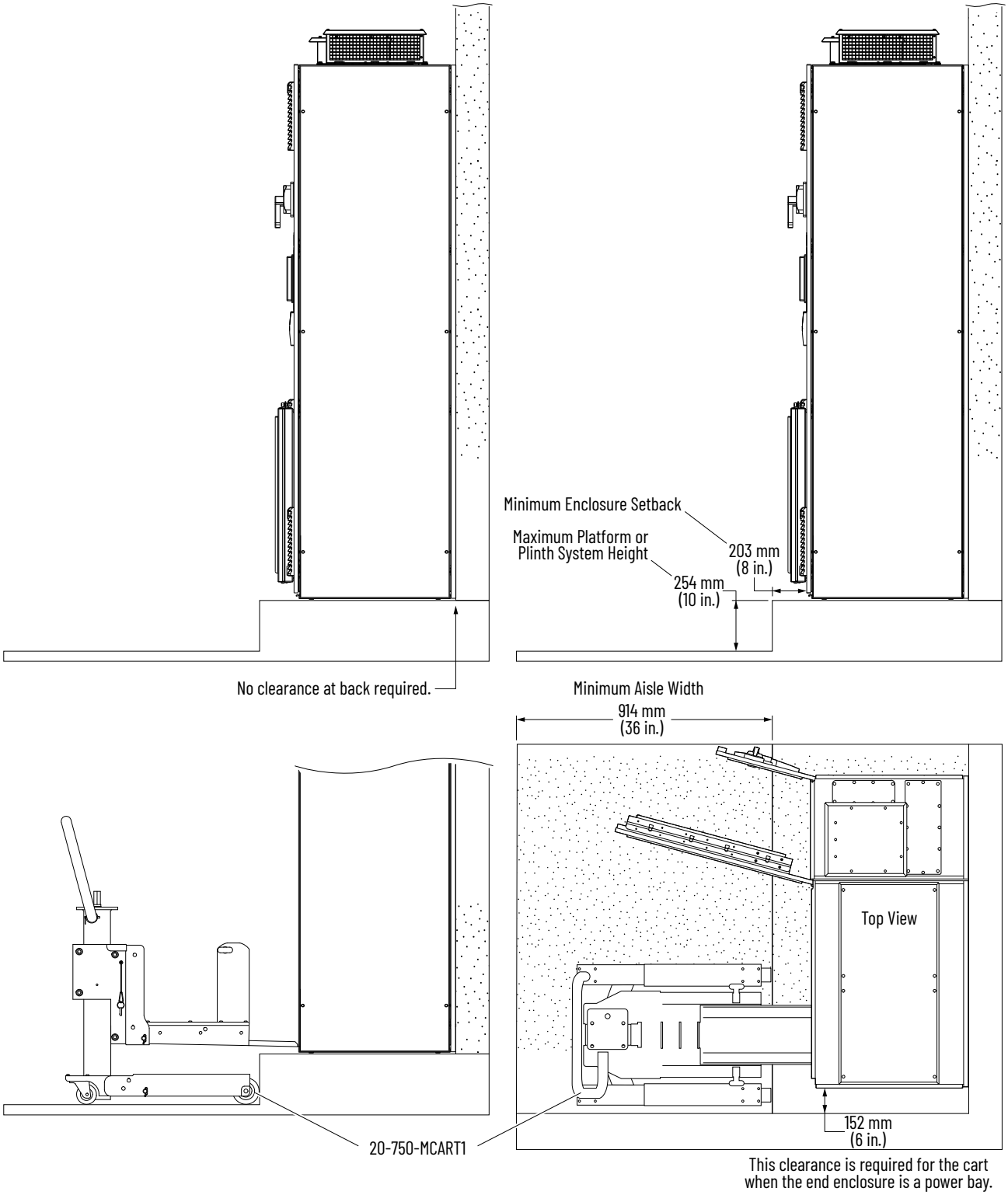


Figure 42. Airflow Clearances—Frames 8...15 Floor Mount



PowerFlex® 755T products can be mounted on a service pad or platform. The platform height and enclosure setback measurements that are indicated in this figure are the maximum that is allowed for by the PowerFlex® 750-Series service cart (20-750-MCART1). The platform height measurement is also an installation limit per NEC requirements for the disconnect switch.

Figure 43. Mounting Clearances for Enclosure Access—Frames 7...15



Floor Mounting Options

Install floor mount products on a flat and level surface such that all enclosures in the line-up are within ±0.25 mm (0.010 in.) vertical orientation. If necessary, use metal shims to level the enclosures before joining them.

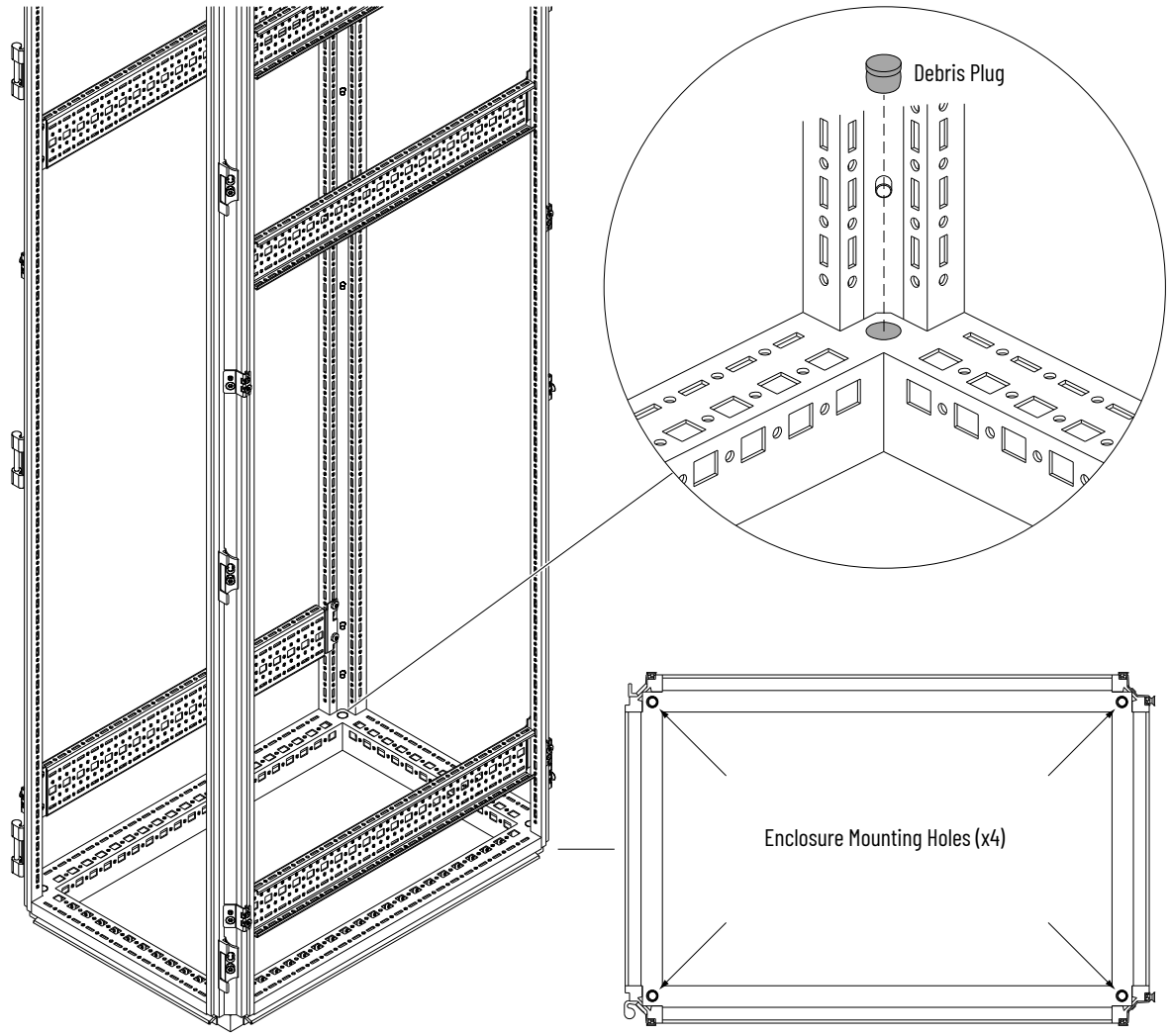
- Install product enclosures in an upright orientation.
- Verify that the product enclosures are square, vertical, and stable.
- Verify that filters and debris screens are installed.

Various mounting options are acceptable:

- Rittal corner base/plinth system
- Structural steel system
- Anchor bolt system
- Concrete screw system

For all mounting options, all four corner mounting holes must be used to secure the enclosure properly. Remove the debris plug when using mounting hardware that must pass through the mounting hole.

Figure 44. Typical Enclosure Mounting Holes



Rittal Corner Base/Plinth System

Rittal corner base/plinth systems are available from Rittal Corporation in 100 mm (4.0 in.) and 200 mm (8.0 in.) heights. Systems provide a base/plinth for each corner of a Rittal TS 8 enclosure and are secured by using an M12 screw in each corner. Follow the installation instructions for the product.

Figure 45. Rittal Corner Base/Plinth Mounting

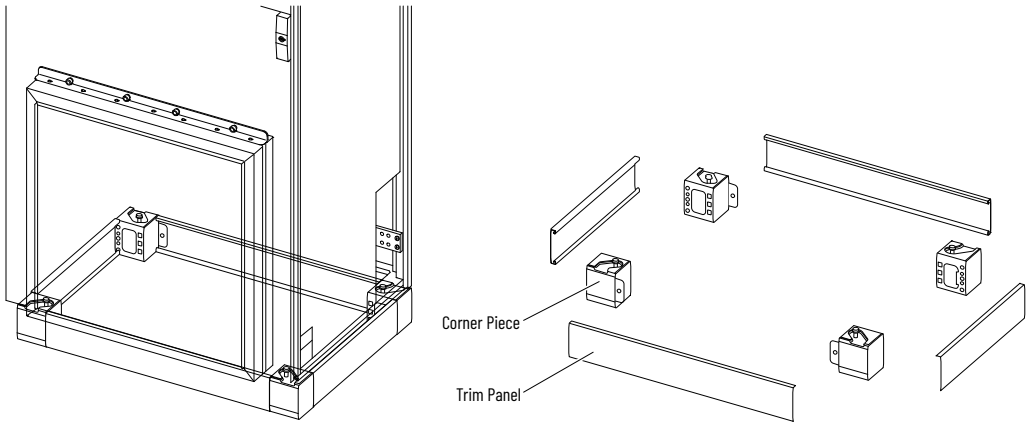


Table 41. Rittal Corner Base/Plinth System Components

Component Name	Height [mm (in.)]	Width and Depth [mm (in.)]	Rittal Model No.
Trim panels with corner pieces	100 (3.94)	300 (11.8)	8660000
		400 (15.7)	8660001
		600 (23.6) [2]	8660002
		800 (31.5)	8660003
		850 (33.5)	8660004
		1000 (39.4)	8660005
		1100 (43.3)	8660006
		1200 (47.2)	8660007
		1600 (63.0)	8660008
		1800 (70.9)	8660009
	200 (7.87)	300 (11.8)	8660020
		400 (15.7)	8660021
		600 (23.6) 1	8660022
		800 (31.5)	8660023
		1000 (39.4)	8660024

2. All PowerFlex 755T floor mount enclosures are 600 mm (23.6 in.) deep.

Table 41. Rittal Corner Base/Plinth System Components (continued)

Component Name	Height [mm (in.)]	Width and Depth [mm (in.)]	Rittal Model No.
		1200 (47.2)	8660025
		1600 (63.0)	8660026
		1800 (70.9)	8660027
Trim panel only	100 (3.94)	300 (11.8)	8660030
		400 (15.7)	8660031
		500 (19.7)	8660032
		600 (23.6)	8660033
		800 (31.5)	8660034
		1000 (39.4)	8660035
		1200 (47.2)	8660036
	200 (7.87)	300 (11.8)	8660040
		400 (15.7)	8660041
		500 (19.7)	8660042
		600 (23.6)	8660043
		800 (31.5)	8660044
		1000 (39.4)	8660045
		1200 (47.2)	8660046

Structural Steel System

Enclosures can be mounted to structural steel that is anchored to concrete that meets the following specifications and minimum dimensions.

- Material: ASTM A-36 / ASME SA36, or equivalent
- The minimum length indicates the length of beam (I) under each corner of the bay. Using the minimum length of beam provides a block shaped base under each corner. Alternatively, you can use two beams running parallel, each spanning from one corner to another.

Figure 46. Structural Steel Beam Cross-sections

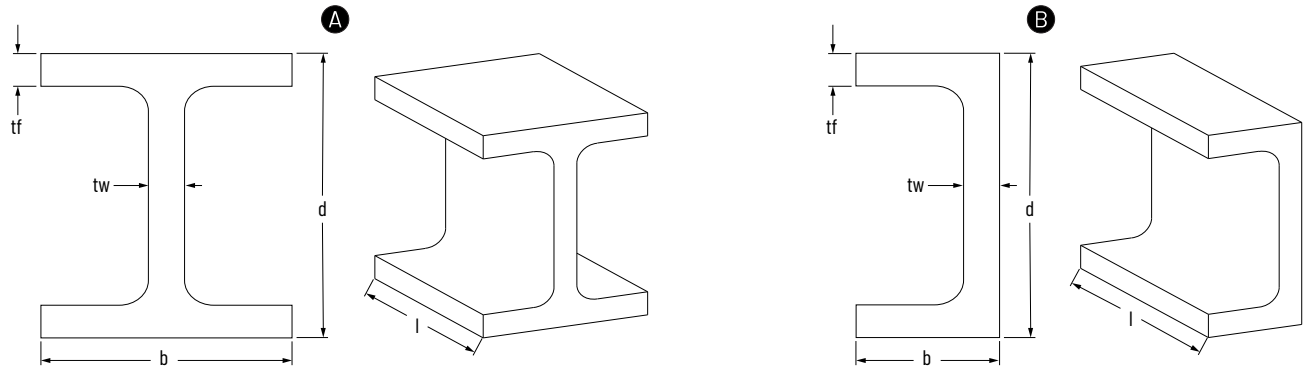
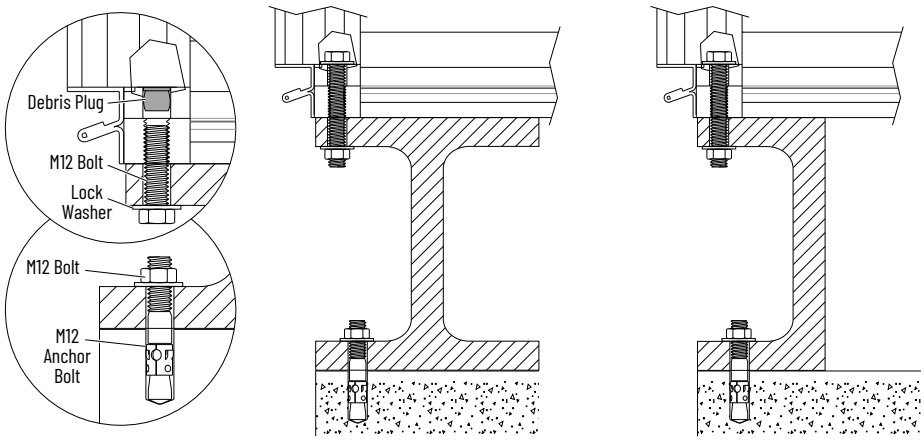


Table 42. Steel Beam Dimensions

Item	Style	Depth (d) [mm (in.)]	Width (b) [mm (in.)]	Thickness (tw) [mm (in.)]	Flange (tf) [mm (in.)]	Length (l) [mm (in.)]
A	Wide Flange Beam	100 (4.0)	100 (4.0)	7.6 (0.3)	10.2 (0.4)	100 (4.0)
B	Channel Beam	100 (4.0)	43 (1.7)	7.6 (0.3)	7.6 (0.3)	100 (4.0)

Enclosures can be mounted directly to structural steel beams by using M12-1.75 screws threaded into the threaded corner holes. The enclosures must be secured to the anchor bolts in all four corners by using M12 nuts and lock washers. Secure the steel beam to the concrete floor by using M12 (0.5 in.) anchor bolts.

Figure 47. Structural Steel Mounting Configurations

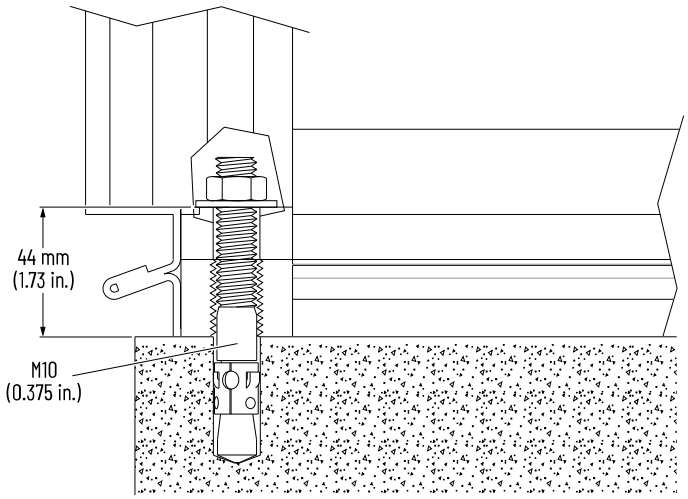


Anchor Bolt System

Enclosures can be mounted directly to a level concrete surface by using M10 (0.375 in.) anchor bolts.

The enclosures must be secured to the anchor bolts in all four corners by using M10 nuts and lock washers.

Figure 48. Anchor Bolt System Cross-section

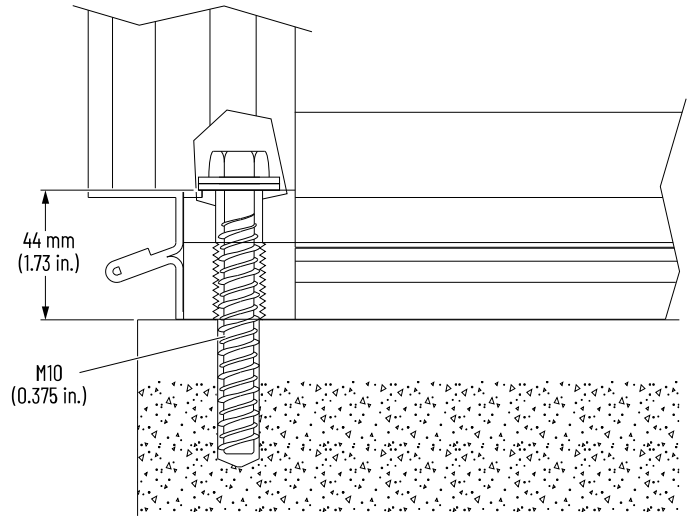


Concrete Screw System

Enclosures can be mounted directly to a level concrete surface by using M10 (0.375 in.) concrete screws.

The enclosures must be secured by the concrete screws in all four corners.

Figure 49. Concrete Screw System Cross-section



Installation Site Requirements

Figure 50. Cross-section View of Cable Bottom Entry and Exit

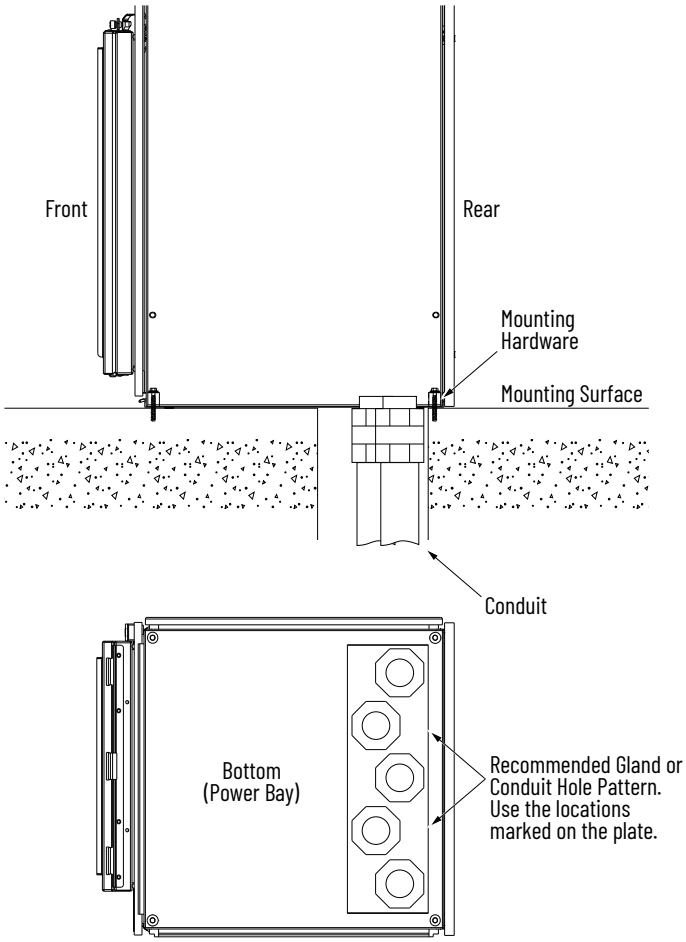
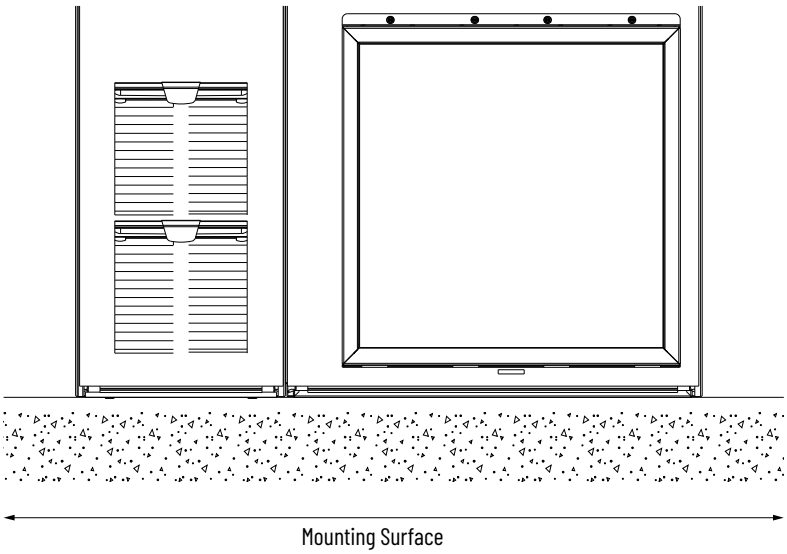


Figure 51. Mount on Level Surface



Install the product on a flat and level surface such that all enclosures in the lineup are with ±0.25 mm (0.010 in.) vertical orientation.

Recommended Mounting Hardware

Property Class 8.8 or better (Grade 5 or better)

Table 43. Recommended Mounting Hardware

Frame Size	Fastener Size	Usage
Frame 5	M8 (5/16 in.)	Use four-bolt mounting pattern.
Frame 6	M8 (3/8 in.)	Use four-bolt mounting pattern.
Frame 6L	M8 (5/16 in.)	Use four-bolt mounting pattern.
Frames 7...15	M12 (0.5 in.)	Threads into the cabinet mounting hole. • Corner base/plinth system • Structural steel system
Frames 7...15	M10 (0.375 in.)	Passes through the cabinet mounting hole. • Anchor bolt system • Concrete screw system

PowerFlex 755TL and 755TR Drives Approximate Dimensions—Frames 5, 6, and 6L

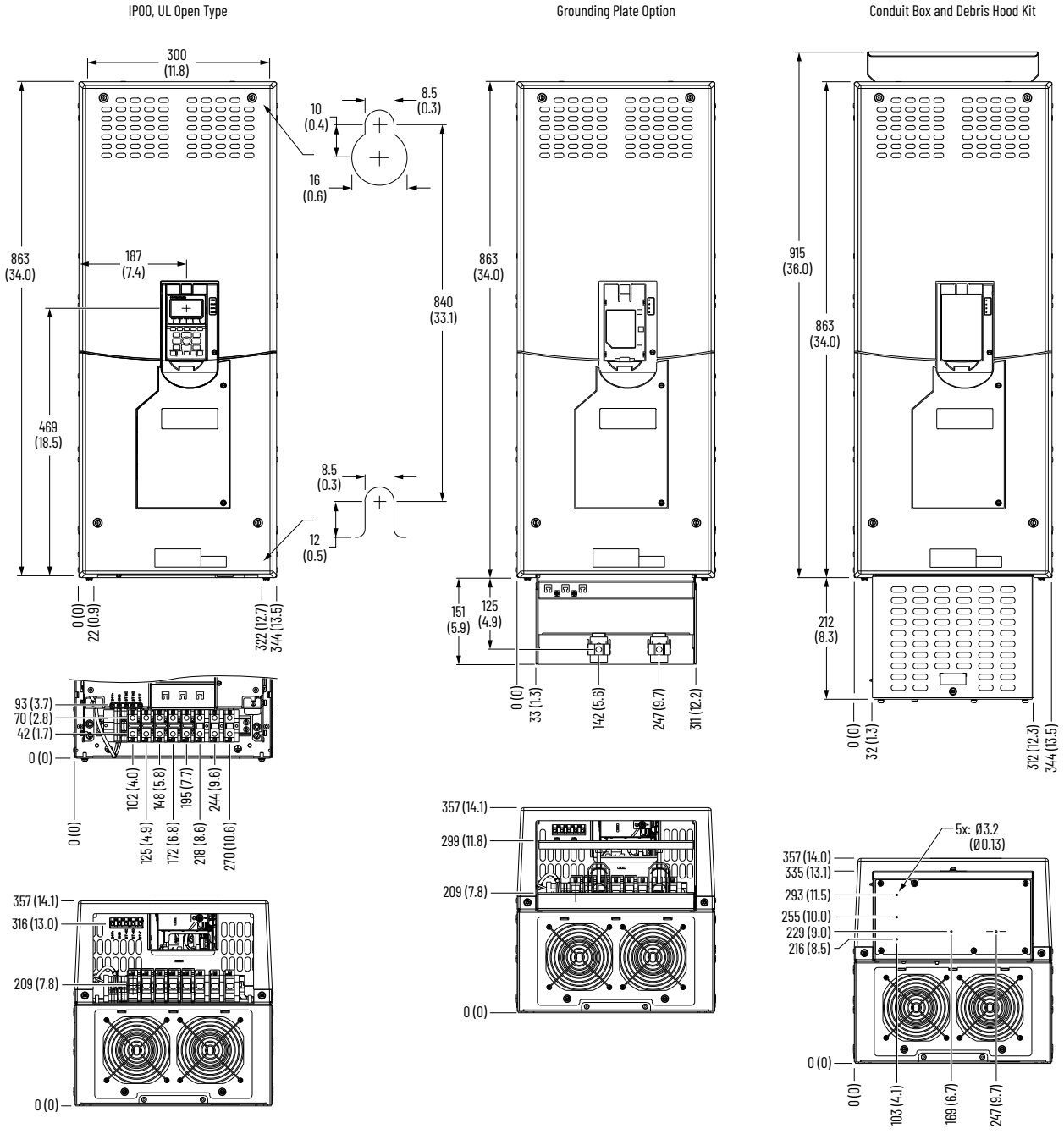
The following table lists the dimensional drawings that are provided in this section.

Table 44. Dimensional Drawing Index

Description	Page
Frame 5 Drives Front and Bottom Views	Figure 52: Frame 5 Drives Front and Bottom Views—Dimensions are in mm (in.) on page 74
Frame 6 Drives Front and Bottom Views	Figure 53: Frame 6 Drives Front and Bottom Views—Dimensions are in mm (in.) on page 75
Frame 6L Drives Front and Bottom Views	Figure 54: Frame 6L Drives Front and Bottom Views—Dimensions in mm (in.) on page 76

Frame 5 Drives

Figure 52. Frame 5 Drives Front and Bottom Views—Dimensions are in mm (in.)

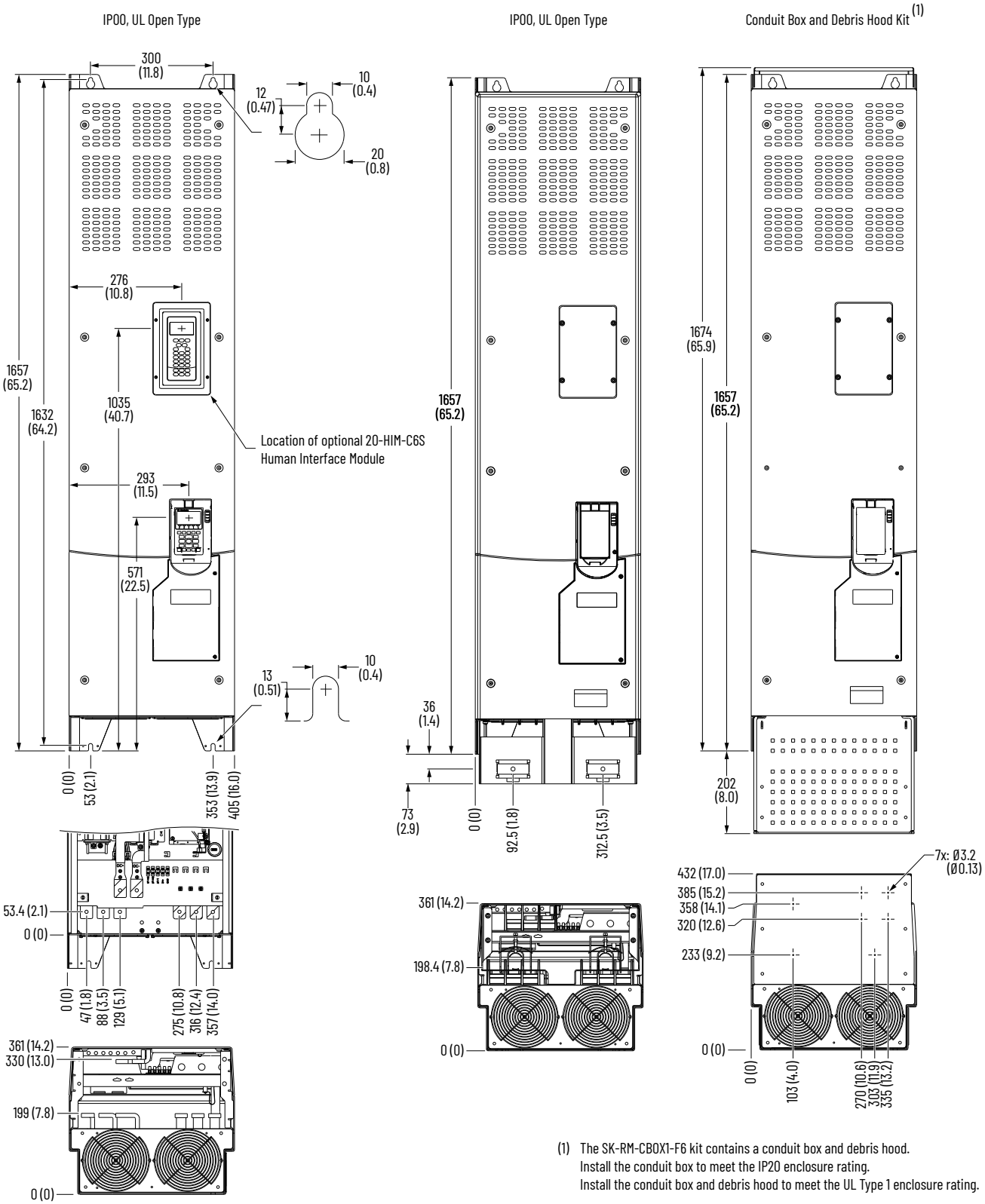


IMPORTANT:

- The optional marine discharge kit includes a conduit box and debris hood.
- The SK-RM-CBOX1-F5 kit contains a conduit box and debris hood. Install the conduit box to meet the IP20 enclosure rating. Install the conduit box and debris hood to meet the UL Type 1 enclosure rating.

Frame 6 Drives

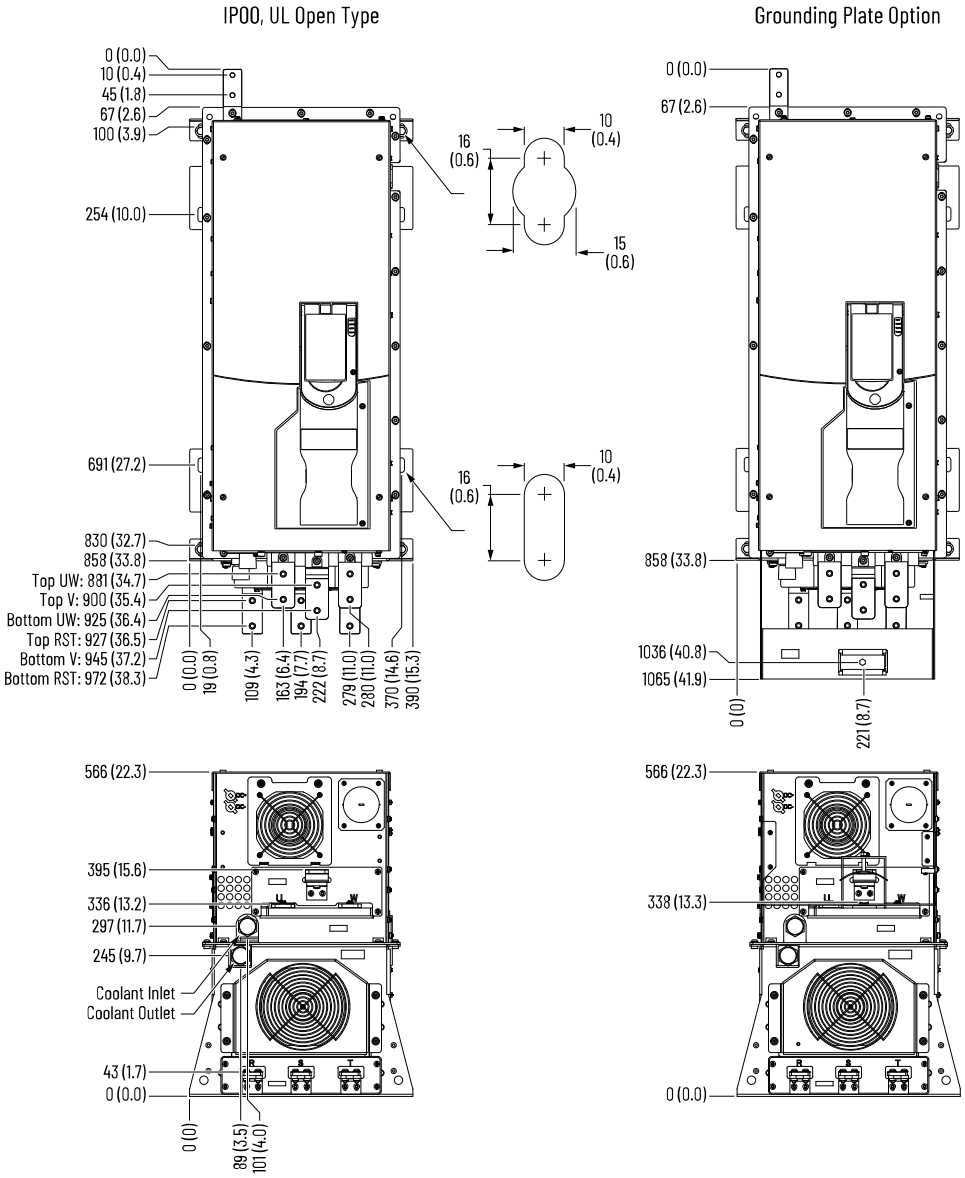
Figure 53. Frame 6 Drives Front and Bottom Views—Dimensions are in mm (in.)



(1) The SK-RM-CBOX1-F6 kit contains a conduit box and debris hood.
Install the conduit box to meet the IP20 enclosure rating.
Install the conduit box and debris hood to meet the UL Type 1 enclosure rating.

Frame 6L Drives

Figure 54. Frame 6L Drives Front and Bottom Views—Dimensions in mm (in.)



PowerFlex 755TL and 755TR Drives Approximate Dimensions—Frame 7

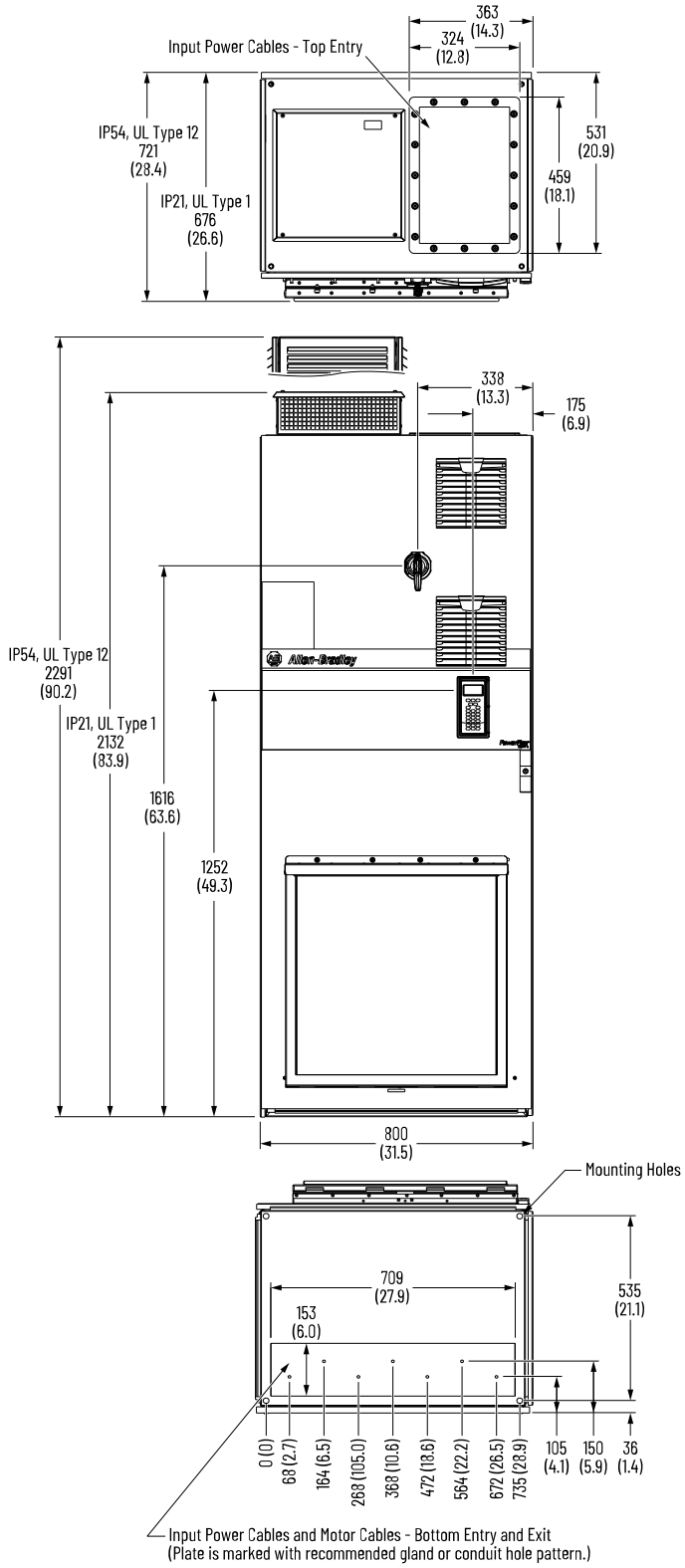
The following table lists the dimensional drawings that are provided in this section.

Table 45. Dimensional Drawing Index

Description	Page
Frame 7 Drives Top, Front, and Bottom Views	Frame 7 Drives on page 77

Frame 7 Drives

Figure 55. Frame 7 Drives Top, Front, and Bottom Views—Dimensions are in mm (in.)



PowerFlex 755TL and 755TR Drives Approximate Dimensions—Frames 8...15

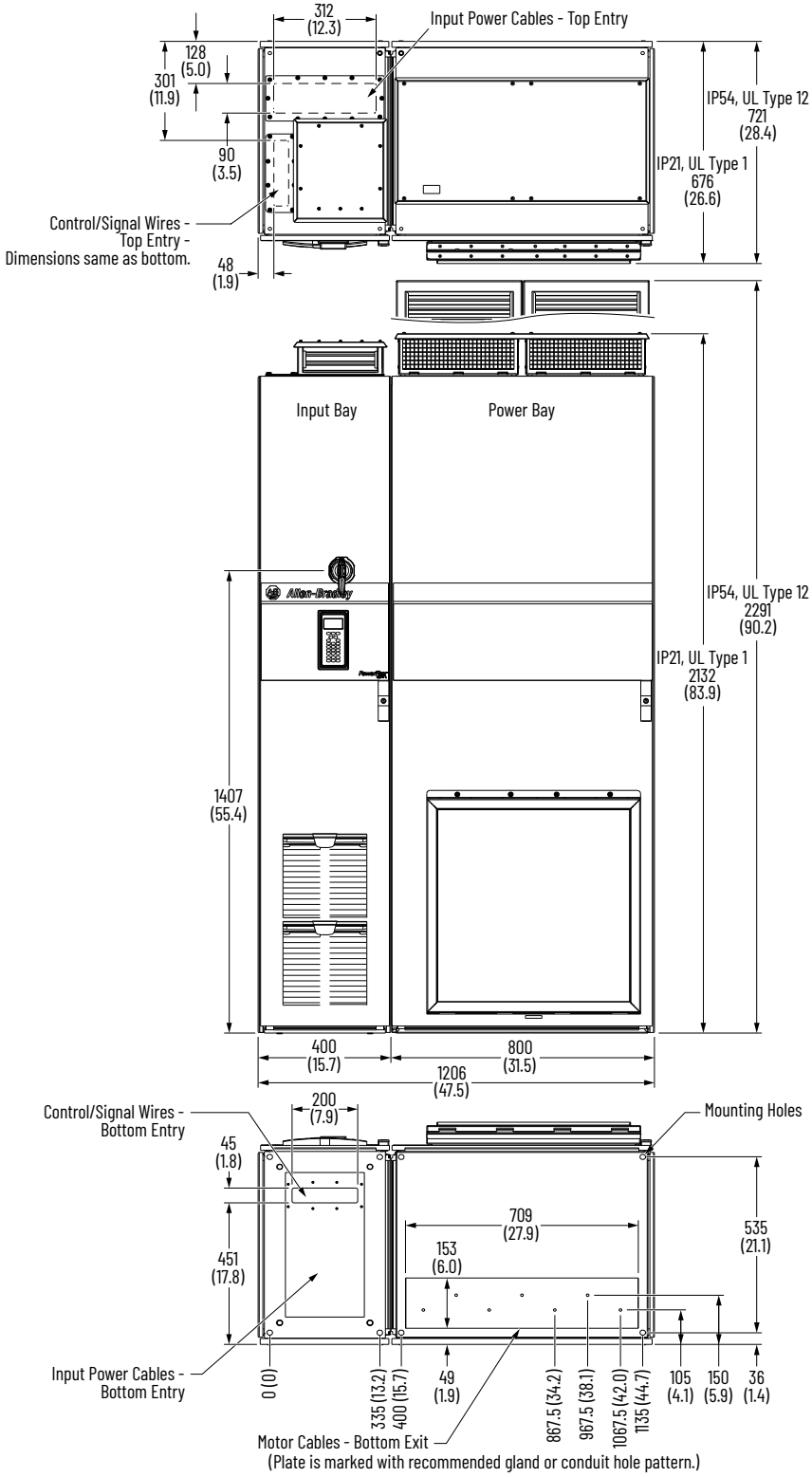
The following table lists the dimensional drawings that are provided in this section.

Table 46. Drives Dimensional Drawing Index

Description	Page
Frame 8 Drives Top, Front, and Bottom Views	Figure 56: Frame 8 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.) on page 79
Frame 9 Drives Top, Front, and Bottom Views	Figure 57: Frame 9 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.) on page 80
Frame 10 Drives Top, Front, and Bottom Views	Figure 58: Frame 10 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.) on page 81
Frame 11 Drives Top, Front, and Bottom Views	Figure 59: Frame 11 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.) on page 82
Frame 12 Drives Top, Front, and Bottom Views	Figure 60: Frame 12 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.) on page 83
Frame 13...15 Drives Top and Front Views	Figure 61: Frame 13...15 Drives—Top and Front Views—Dimensions are in mm (in.) on page 84
Frame 13 Drives Bottom Views	Figure 62: Frame 13 Drives—Bottom Views—Dimensions are in mm (in.) on page 86
Frame 14 Drives Bottom Views	Figure 63: Frame 14 Drives—Bottom Views—Dimensions are in mm (in.) on page 87
Frame 15 Drives Bottom Views	Figure 64: Frame 15 Drives—Bottom Views—Dimensions are in mm (in.) on page 88
Drives Optional Entry and Exit Wire Bays	Figure 65: Drives Optional Entry and Exit Wire Bays—Top, Front, and Bottom Views—Dimensions are in mm (in.) on page 89

Frame 8 Drives

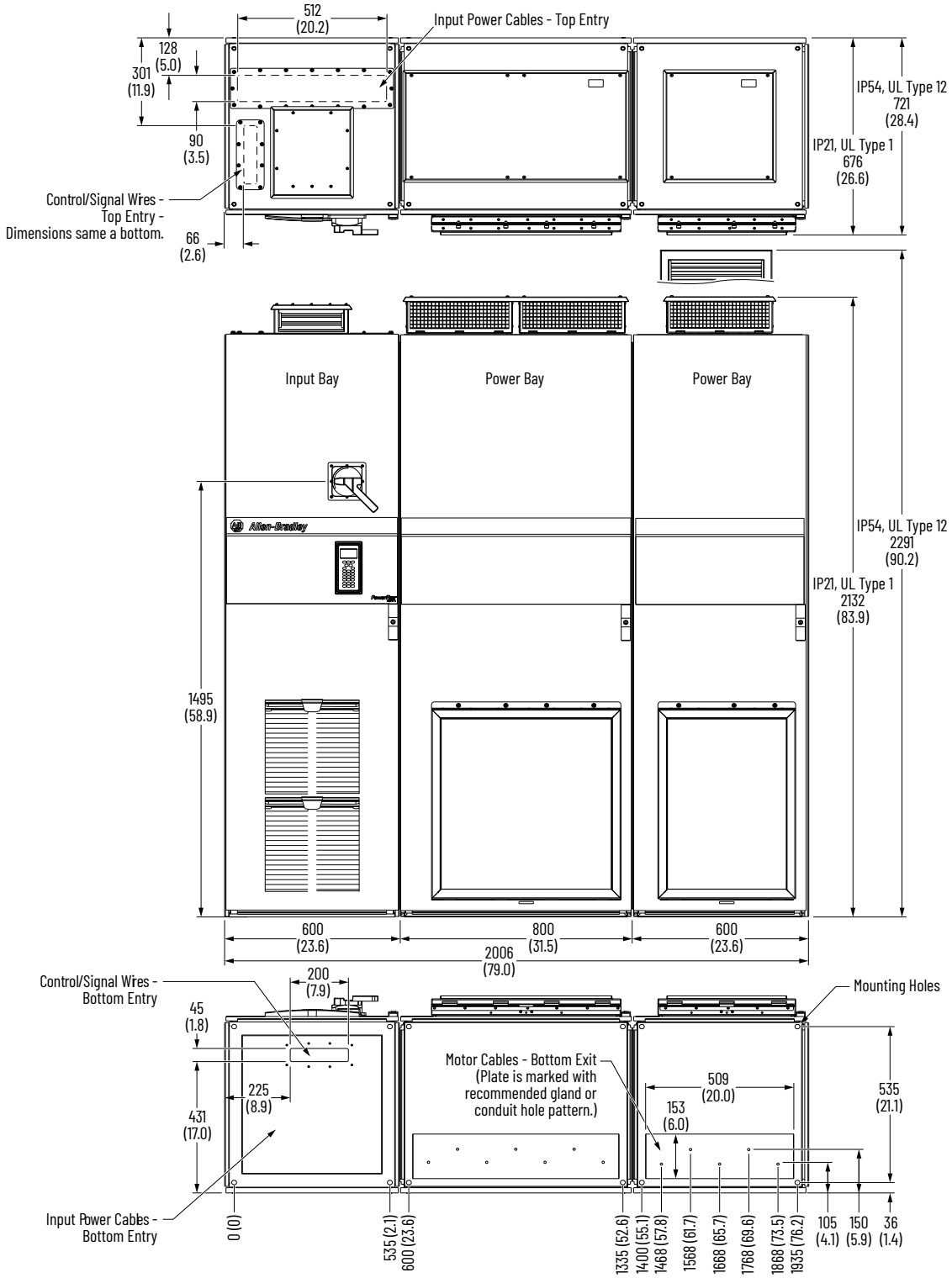
Figure 56. Frame 8 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Optional Wire Bays on page 89 for optional exit wire bay dimensions.

Frame 9 Drives

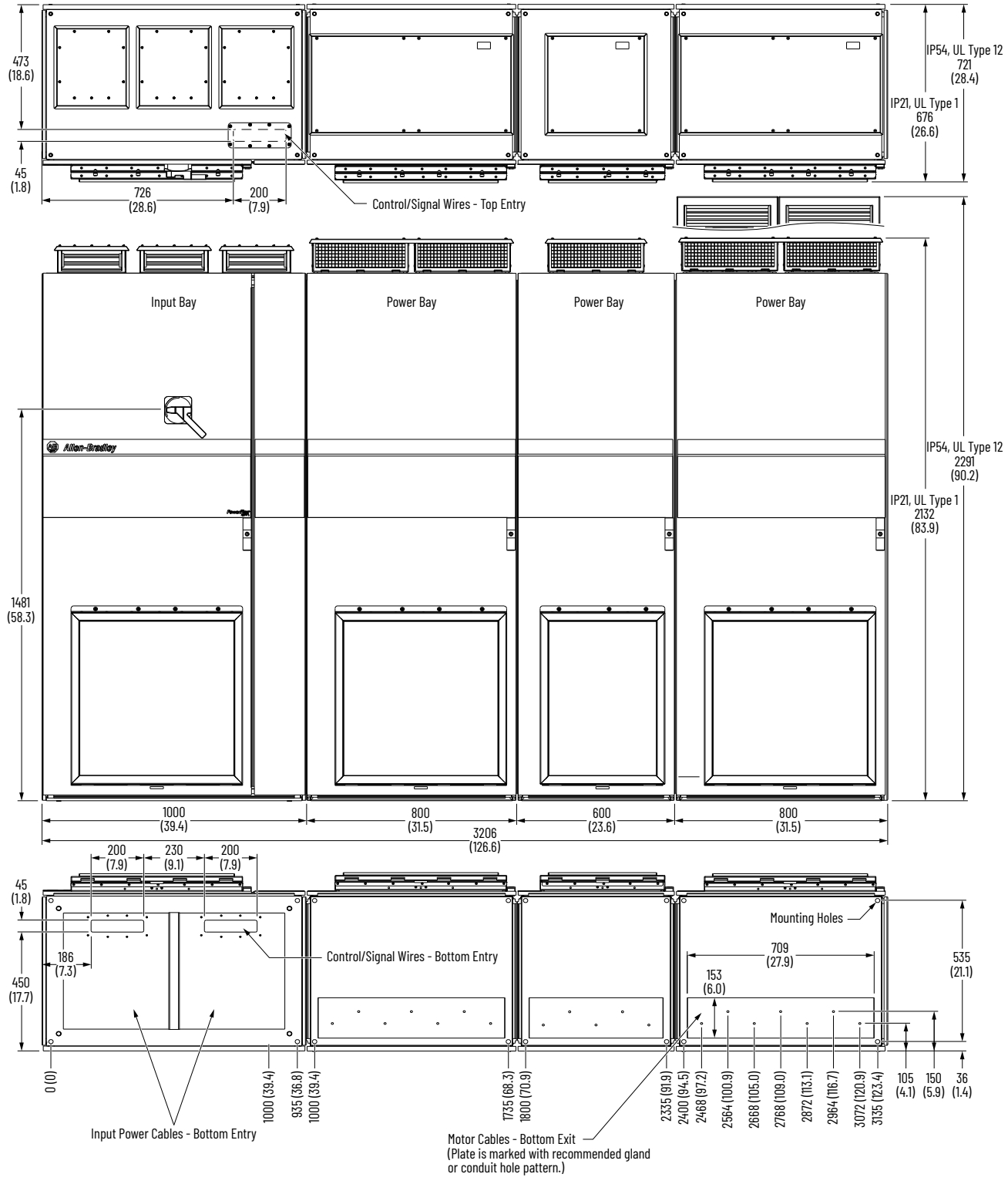
Figure 57. Frame 9 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Optional Wire Bays on page 89 for optional exit wire bay dimensions.

Frame 10 Drives

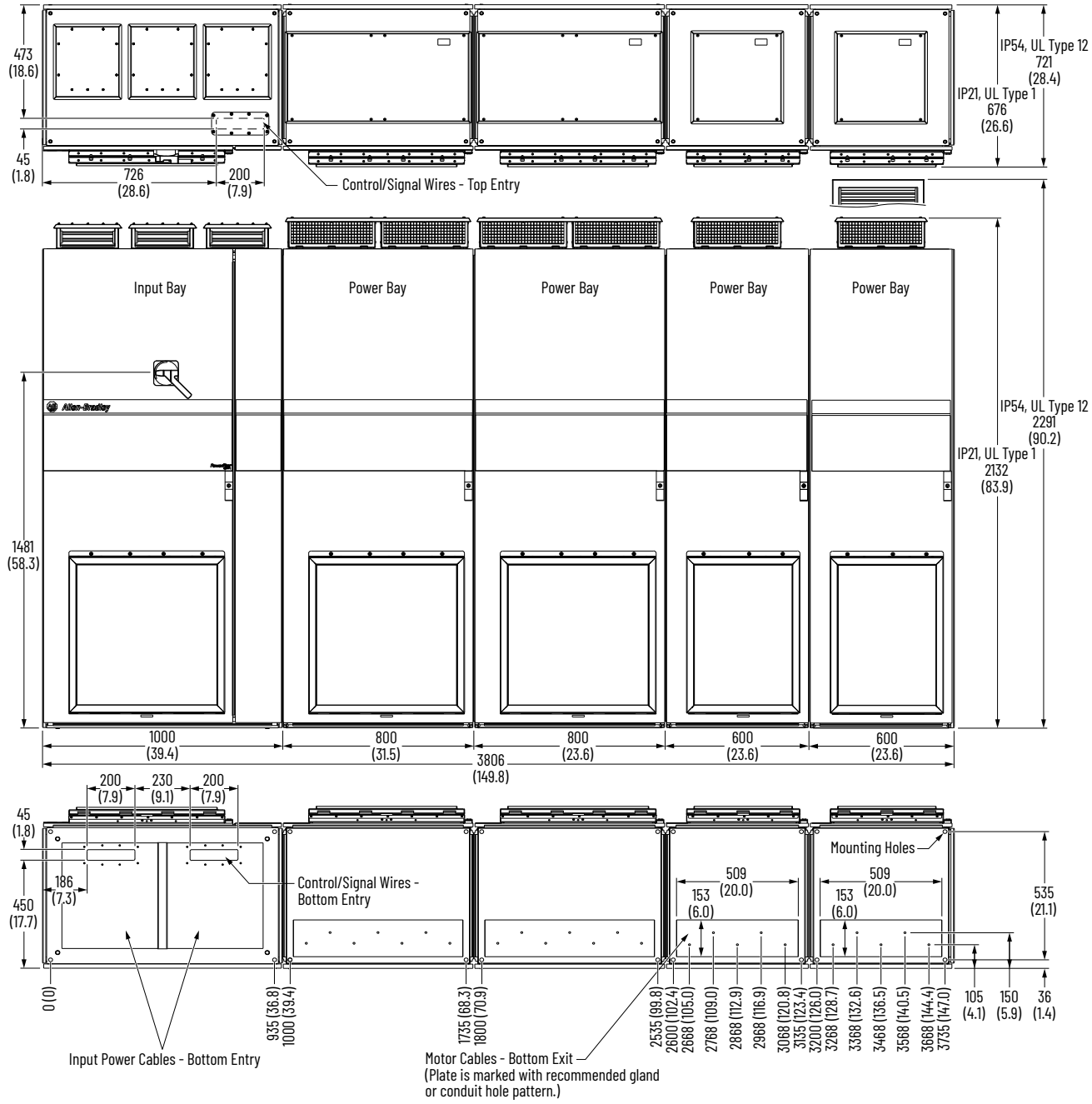
Figure 58. Frame 10 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Optional Wire Bays on page 89 for optional entry and exit wire bay dimensions.

Frame 11 Drives

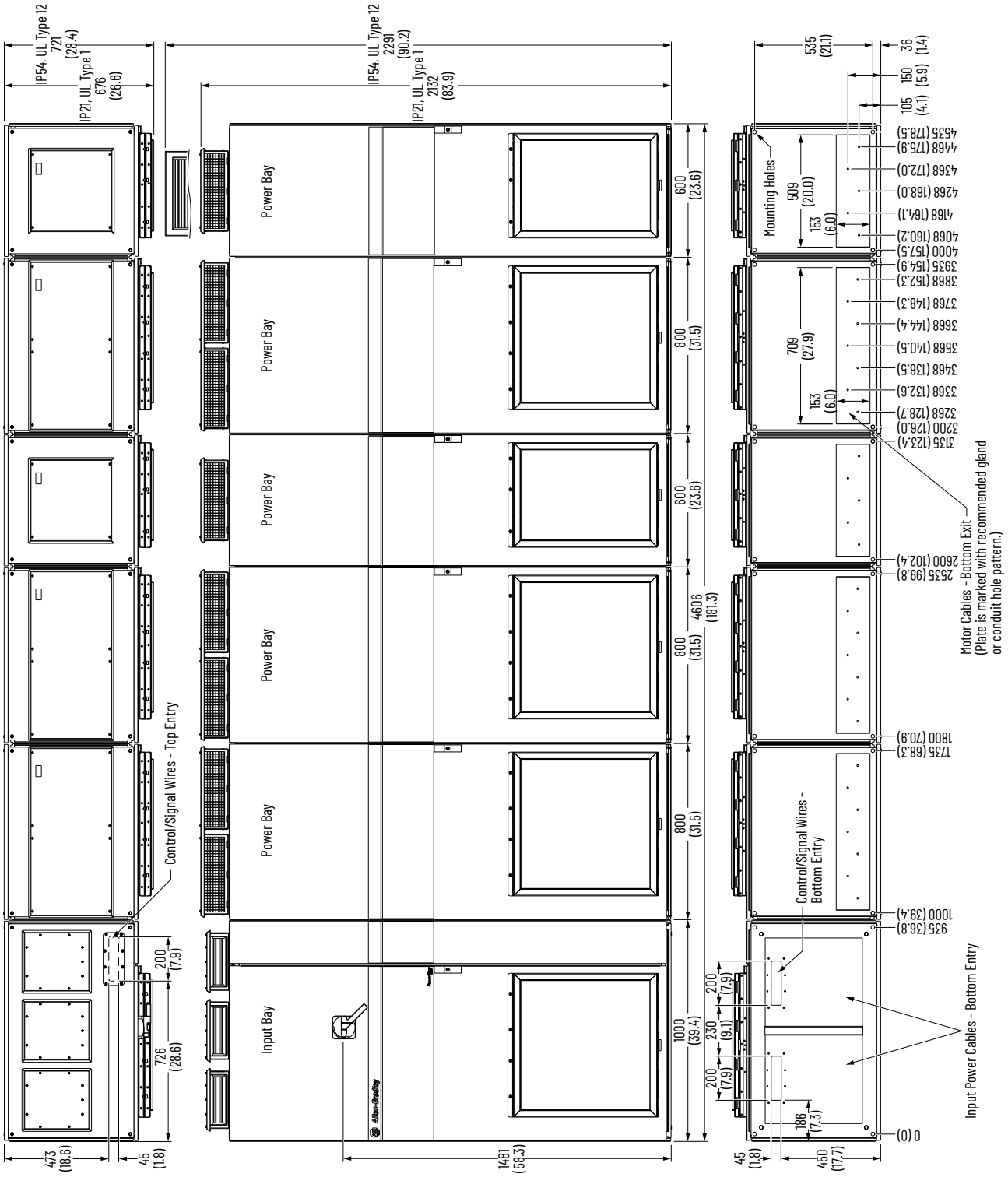
Figure 59. Frame 11 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Optional Wire Bays on page 89 for optional exit wire bay dimensions.

Frame 12 Drives

Figure 60. Frame 12 Drives—Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Optional Wire Bays on page 89 for optional entry and exit wire bay dimensions.

Frame 13...15 Drives

Figure 61. Frame 13...15 Drives—Top and Front Views—Dimensions are in mm (in.)
This image shows a Frame 13 drive.

Table 47. Frame 13...15 Drives Configuration Dimensions

Frame	Back-to-Back Configuration						In-Line Configuration					
	IP21, UL Type 1			IP54, UL Type 12			IP21, UL Type 1			IP54, UL Type 12		
	A	B	C	A	B	C	A	B	C	A	B	C
13	4000 (157.4)	2132 (83.9)	1352 (53.2)	4000 (157.4)	2291 (90.2)	1442 (56.8)	8000 (314.8)	2132 (83.9)	676 (26.6)	8000 (314.8)	2291 (90.2)	721 (28.4)
14	5400 (212.6)	2132 (83.9)	1352 (53.2)	5400 (212.6)	2291 (90.2)	1442 (56.8)	10,800 (425.2)	2132 (83.9)	676 (26.6)	10,800 (425.2)	2291 (90.2)	721 (28.4)
15	6200 (244.1)	2132 (83.9)	1352 (53.2)	6200 (244.1)	2291 (90.2)	1442 (56.8)	12,400 (488.2)	2132 (83.9)	676 (26.6)	12,400 (488.2)	2291 (90.2)	721 (28.4)

Figure 62. Frame 13 Drives—Bottom Views—Dimensions are in mm (in.)

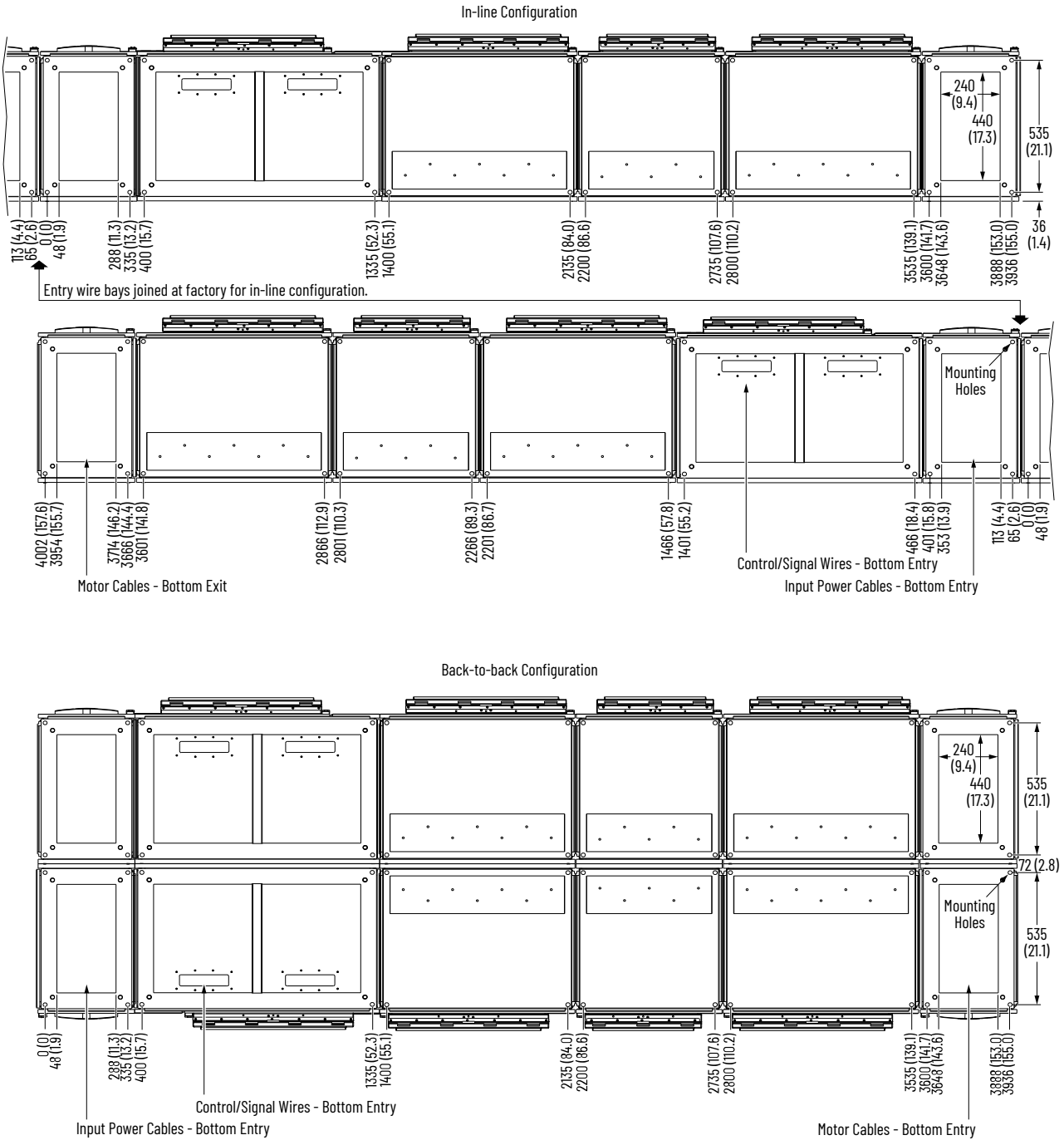


Figure 63. Frame 14 Drives—Bottom Views—Dimensions are in mm (in.)

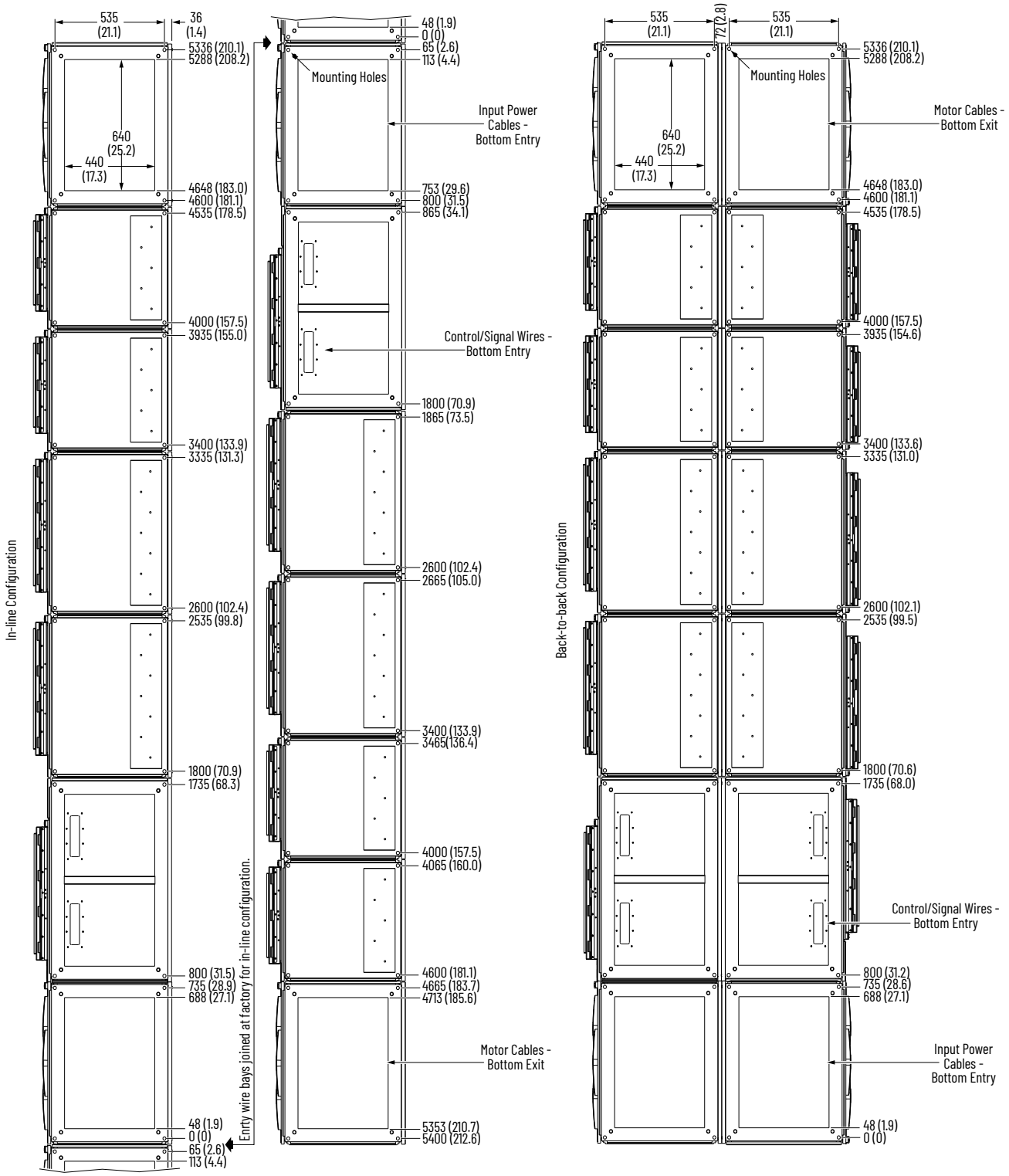
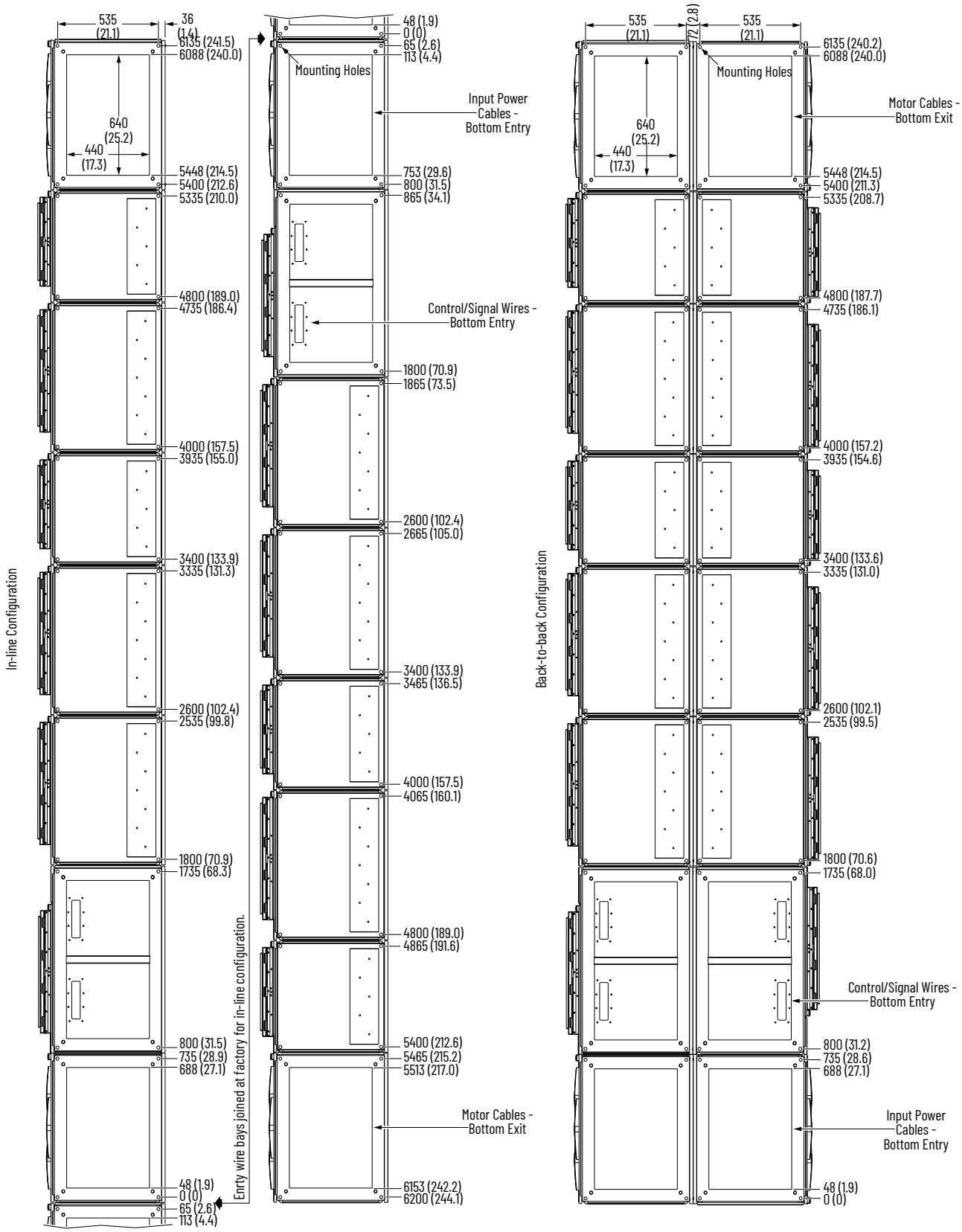
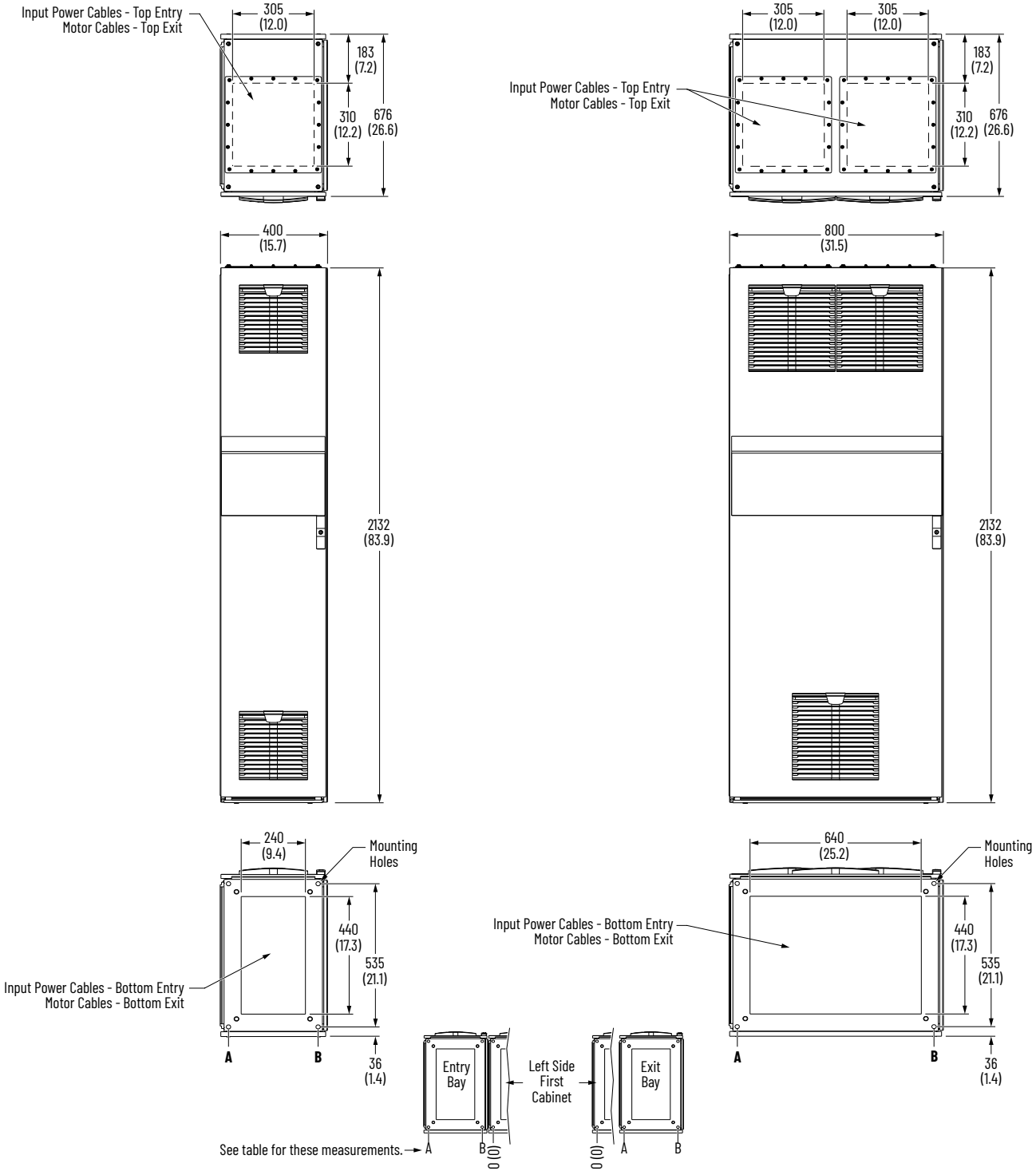


Figure 64. Frame 15 Drives—Bottom Views—Dimensions are in mm (in.)



Optional Wire Bays

Figure 65. Drives Optional Entry and Exit Wire Bays—Top, Front, and Bottom Views—Dimensions are in mm (in.)



Frame	Entry Bay – 400 (15.7) Wide		Exit Bay – 400 (15.7) Wide		Entry Bay – 800 (31.5) Wide		Exit Bay – 800 (31.5) Wide	
	A	B	A	B	A	B	A	B
8	–	–	1200 (47.2)	1535 (60.4)	–	–	–	–
9	–	–	2000 (78.7)	2335 (91.9)	–	–	–	–
10	400 (15.7)	65 (2.6)	3200 (126.0)	3535 (139.2)	–	–	–	–
11	–	–	–	–	800 (31.5)	65 (2.6)	3800 (149.6)	4535 (178.5)
12	–	–	–	–	800 (31.5)	65 (2.6)	4600 (181.1)	5335 (210.0)

PowerFlex 755TM Bus Supplies Approximate Dimensions—Frame 6

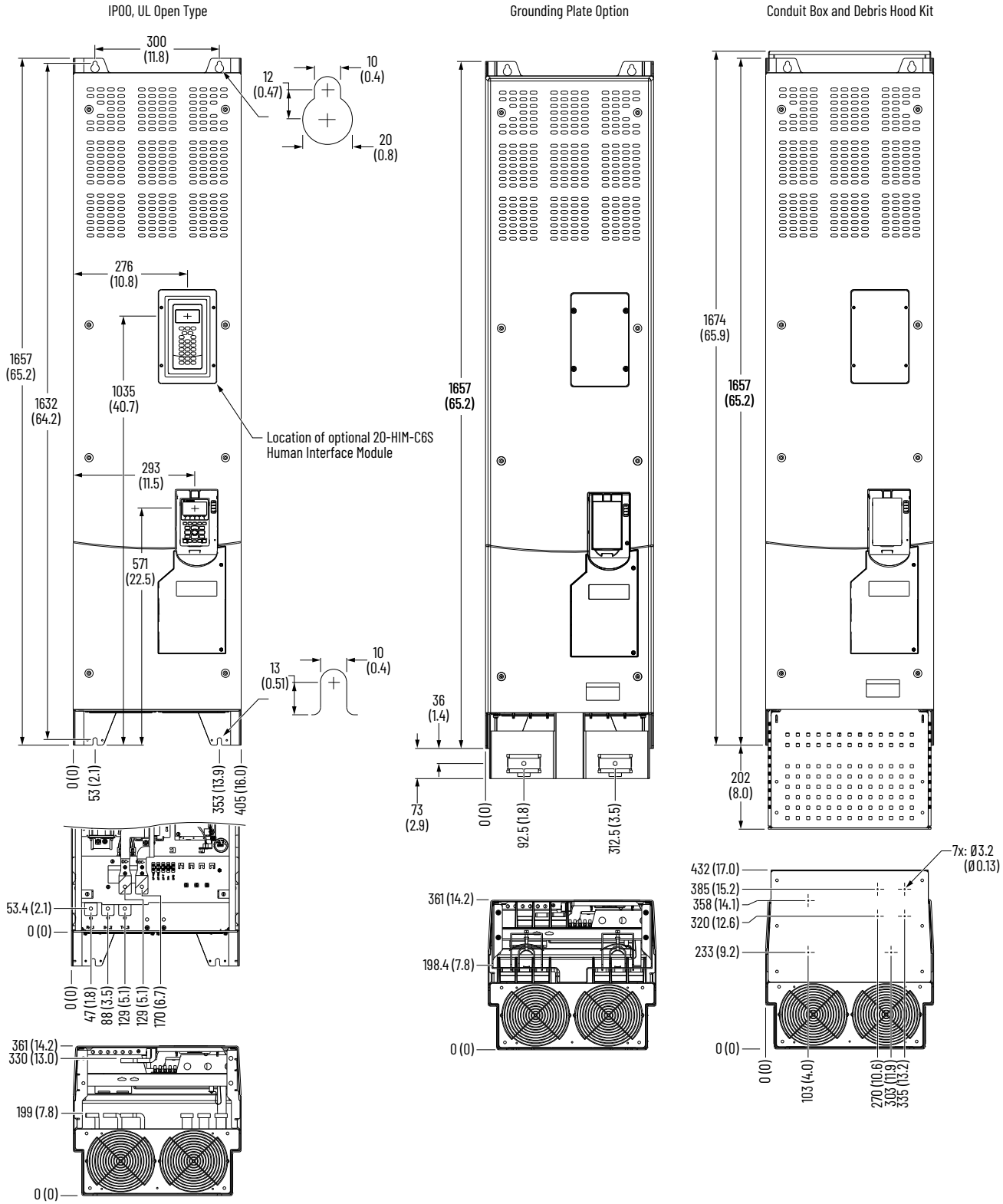
The following table lists the dimensional drawings that are provided in this section.

Table 48. Dimensional Drawing Index

Description	Page
Frame 6 Bus Supplies Top, Front, Bottom, and Side Views	Figure 66: Frame 6 Bus Supplies Top, Front, Bottom, and Side Views—Dimensions are in mm (in.) on page 91

Frame 6 Bus Supplies

Figure 66. Frame 6 Bus Supplies Top, Front, Bottom, and Side Views—Dimensions are in mm (in.)



IMPORTANT:

- The SK-RM-CBOX1-F5 kit contains a conduit box and debris hood. Install the conduit box to meet the IP20 enclosure rating. Install the conduit box and debris hood to meet the UL Type 1 enclosure rating.

See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

PowerFlex 755TM Bus Supplies Approximate Dimensions—Frame 7

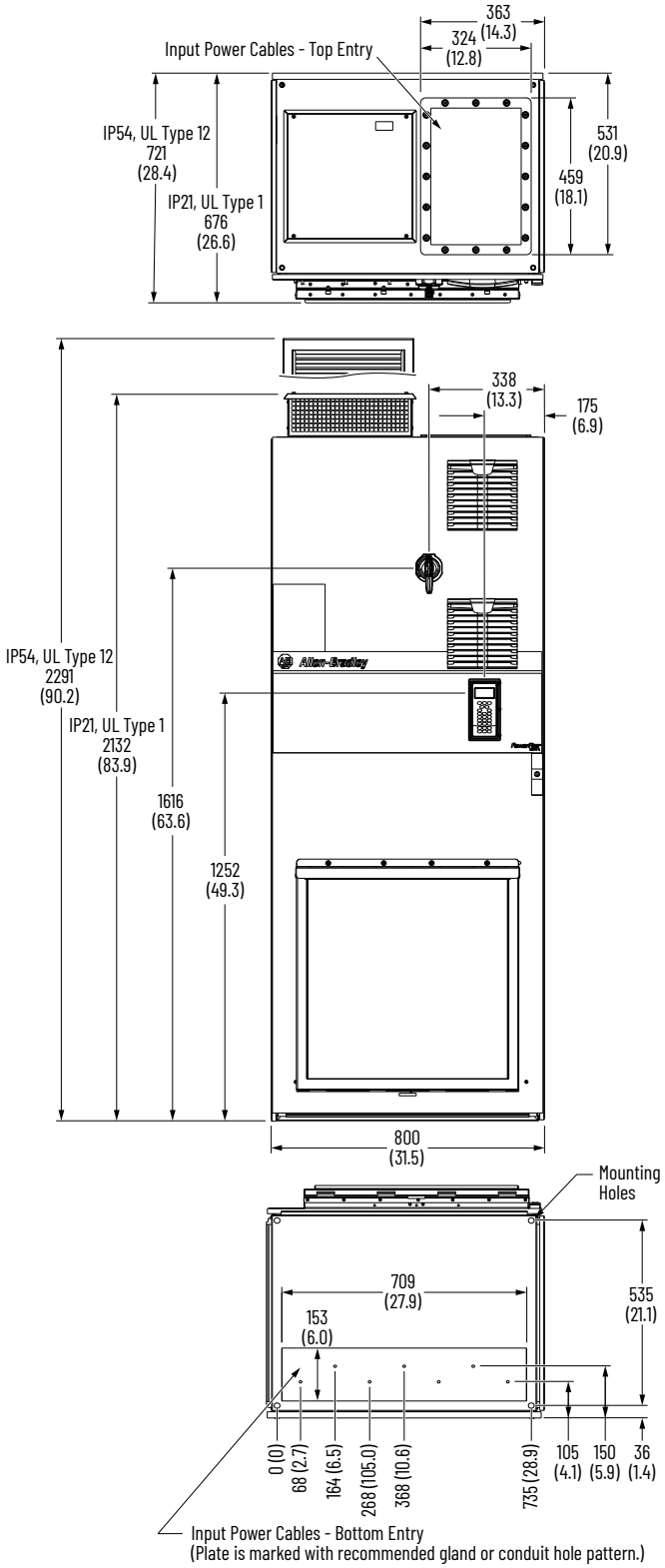
The following table lists the dimensional drawings that are provided in this section.

Table 49. Dimensional Drawing Index

Description	Page
Frame 7 Bus Supplies Top, Front, Bottom, and Side Views	Figure 67: Frame 7 Bus Supplies Top, Front, Bottom, and Side Views—Dimensions are in mm (in.) on page 93

Frame 7 Bus Supplies

Figure 67. Frame 7 Bus Supplies Top, Front, Bottom, and Side Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

PowerFlex 755TM Bus Supplies Approximate Dimensions—Frames 8...15

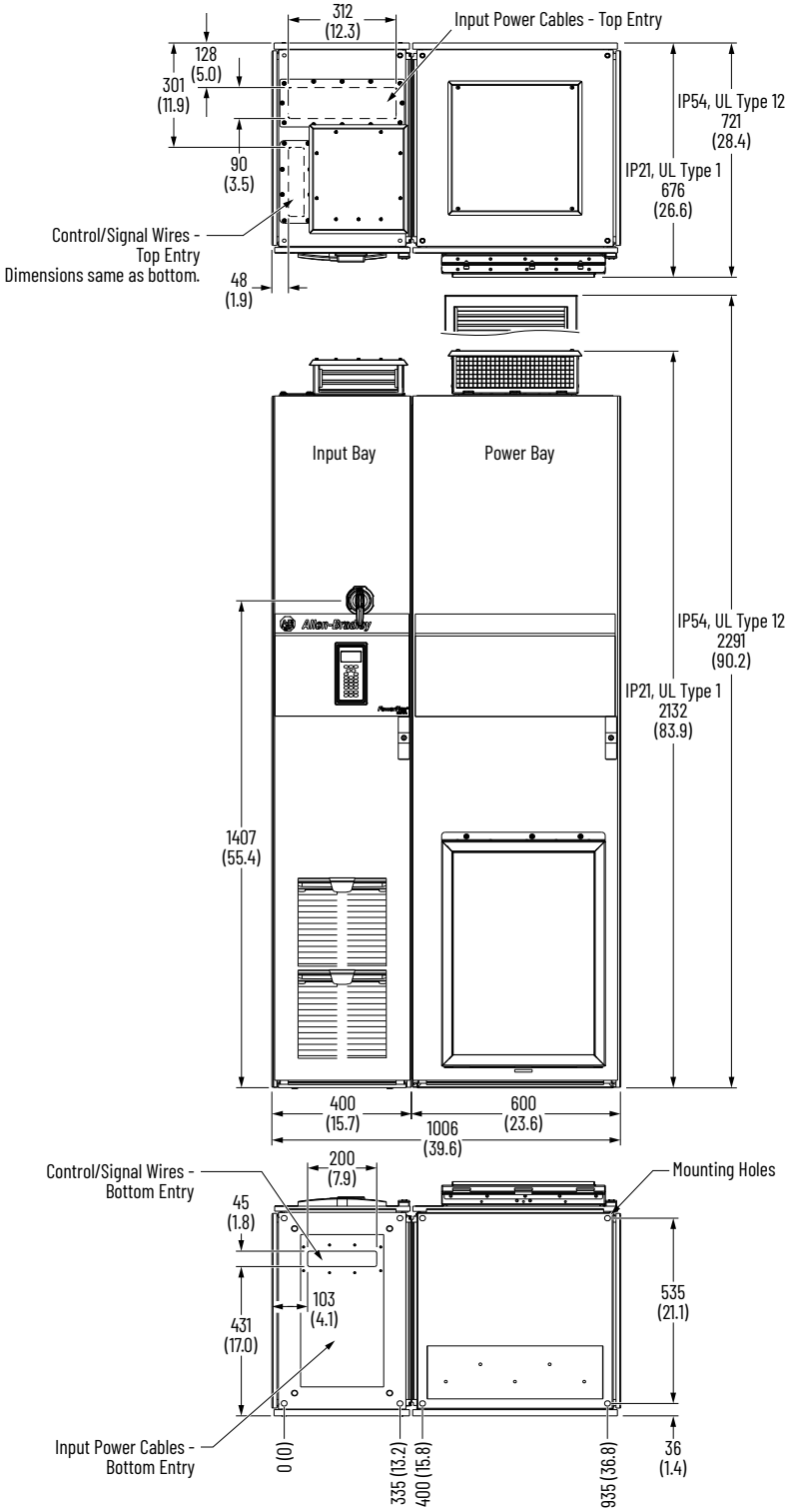
The following table lists the dimensional drawings that are provided in this section.

Table 50. Dimensional Drawing Index

Description	Page
Frame 8 Bus Supplies Top, Front, Bottom, and Side Views	Frame 8 Bus Supplies on page 95
Frame 9 Bus Supplies Top, Front, Bottom, and Side Views	Frame 9 Bus Supplies on page 96
Frame 10 Bus Supplies Top, Front, Bottom, and Side Views	Frame 10 Bus Supplies on page 97
Frame 11 Bus Supplies Top, Front, Bottom, and Side Views	Frame 11 Bus Supplies on page 98
Frame 12 Bus Supplies Top, Front, Bottom, and Side Views	Frame 12 Bus Supplies on page 99
Frame 13...15 Bus Supplies Top and Front Views	Frame 13...15 Bus Supplies on page 100
Bus Supplies Optional Entry Wire Bays	Bus Supplies Optional Entry Wire Bays on page 102

Frame 8 Bus Supplies

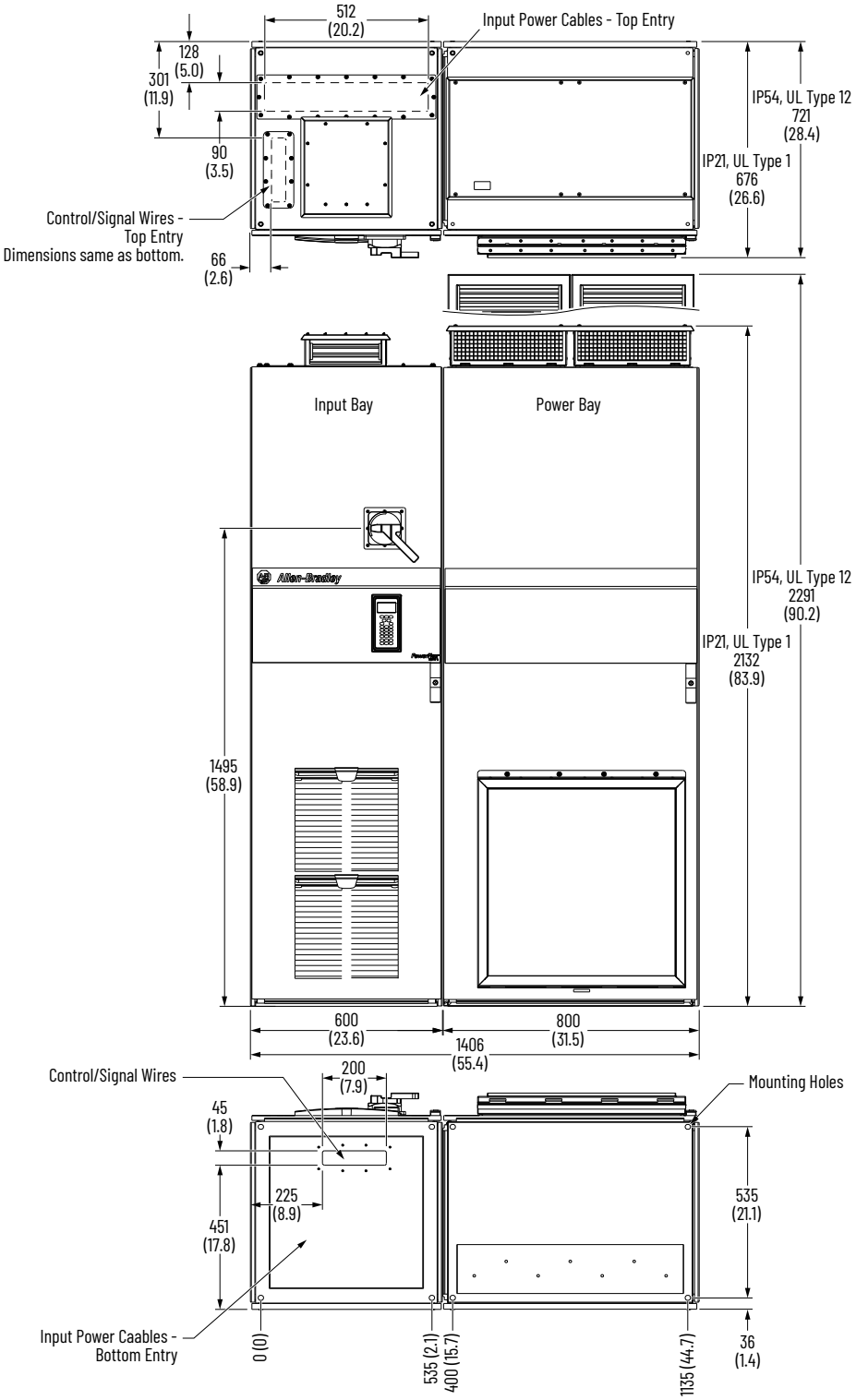
Figure 68. Frame 8 Bus Supplies Top, Front, Bottom, and Side Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

Frame 9 Bus Supplies

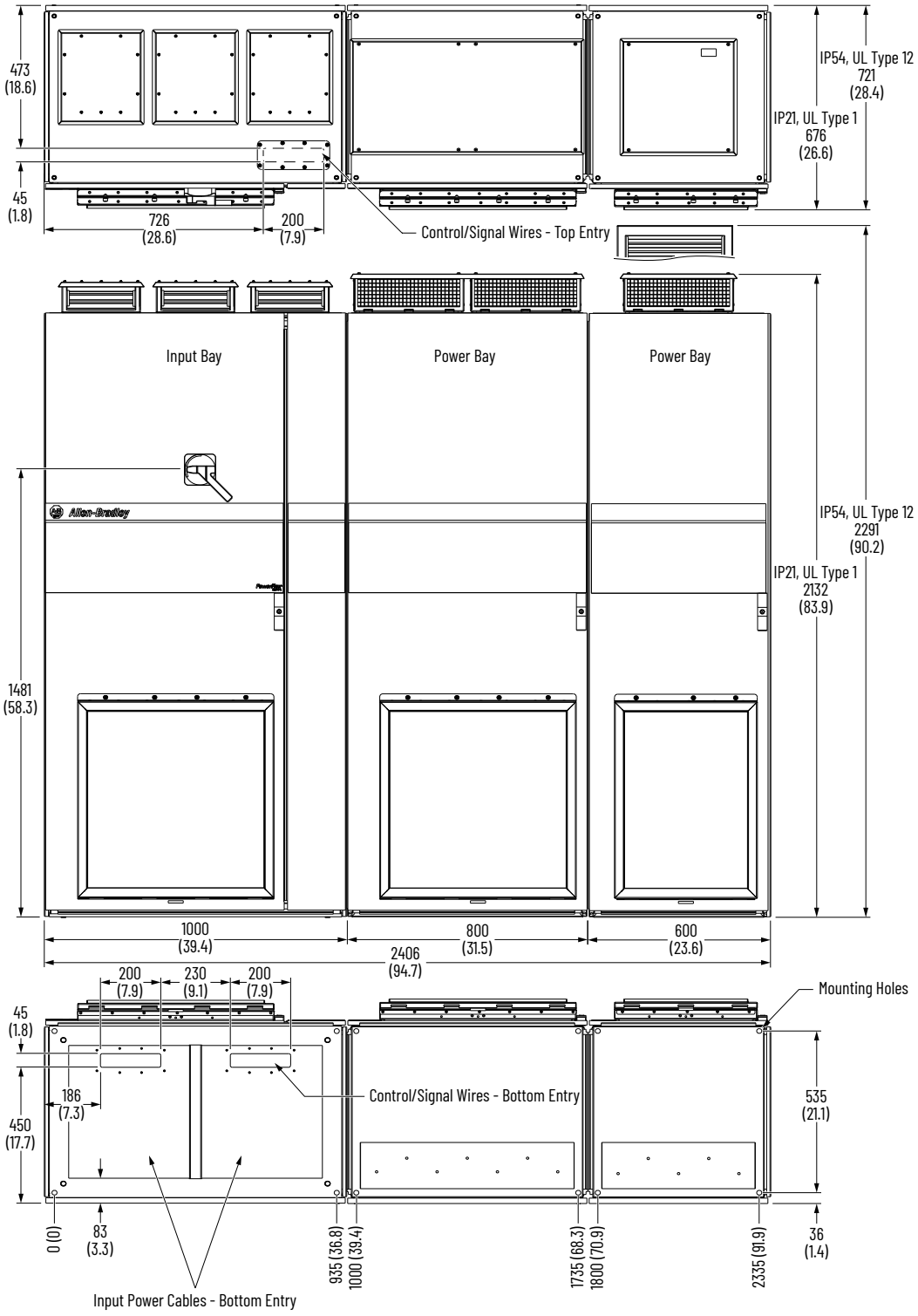
Figure 69. Frame 9 Bus Supplies Top, Front, Bottom, and Side Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

Frame 10 Bus Supplies

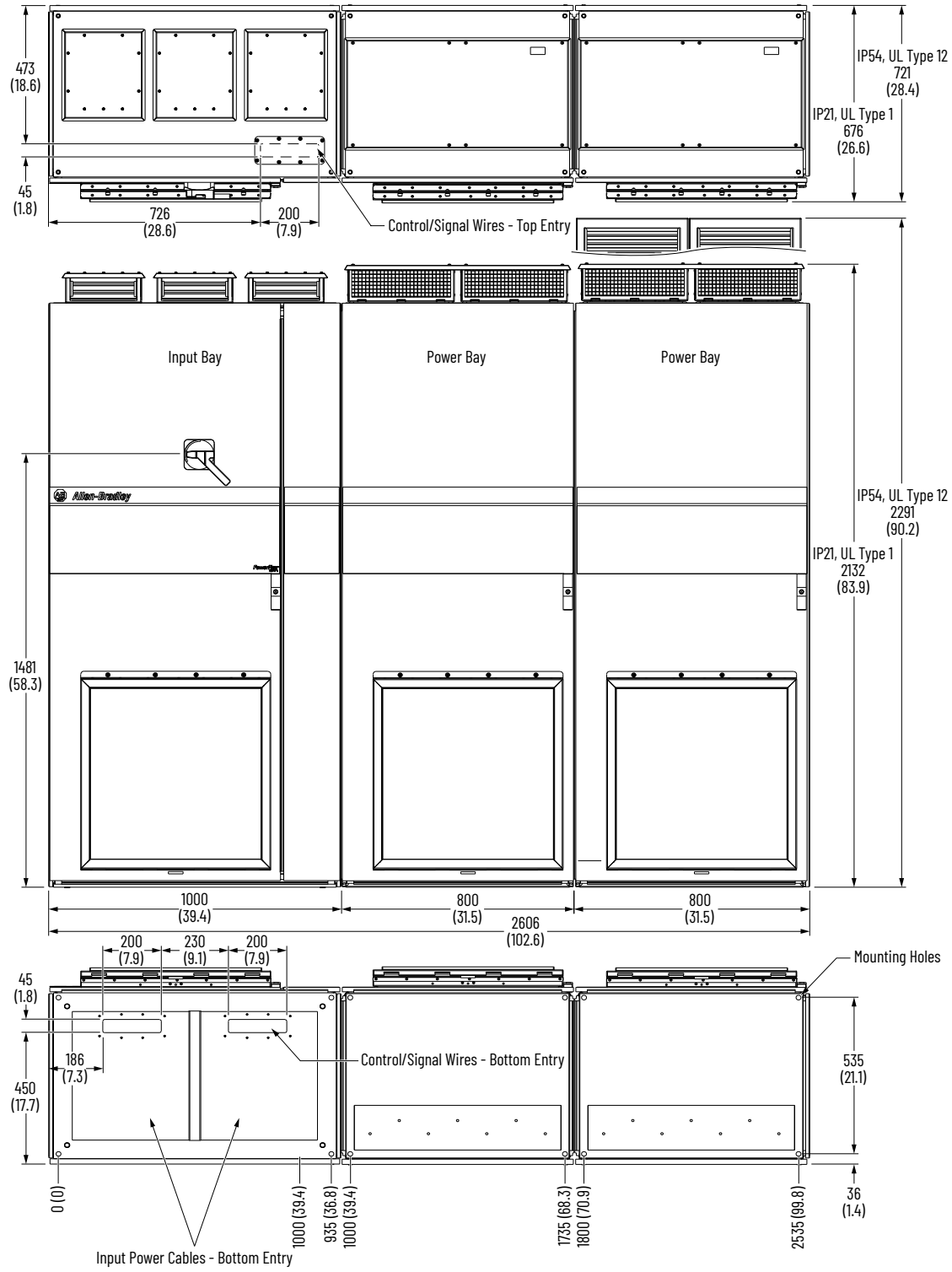
Figure 70. Frame 10 Bus Supplies Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

Frame 11 Bus Supplies

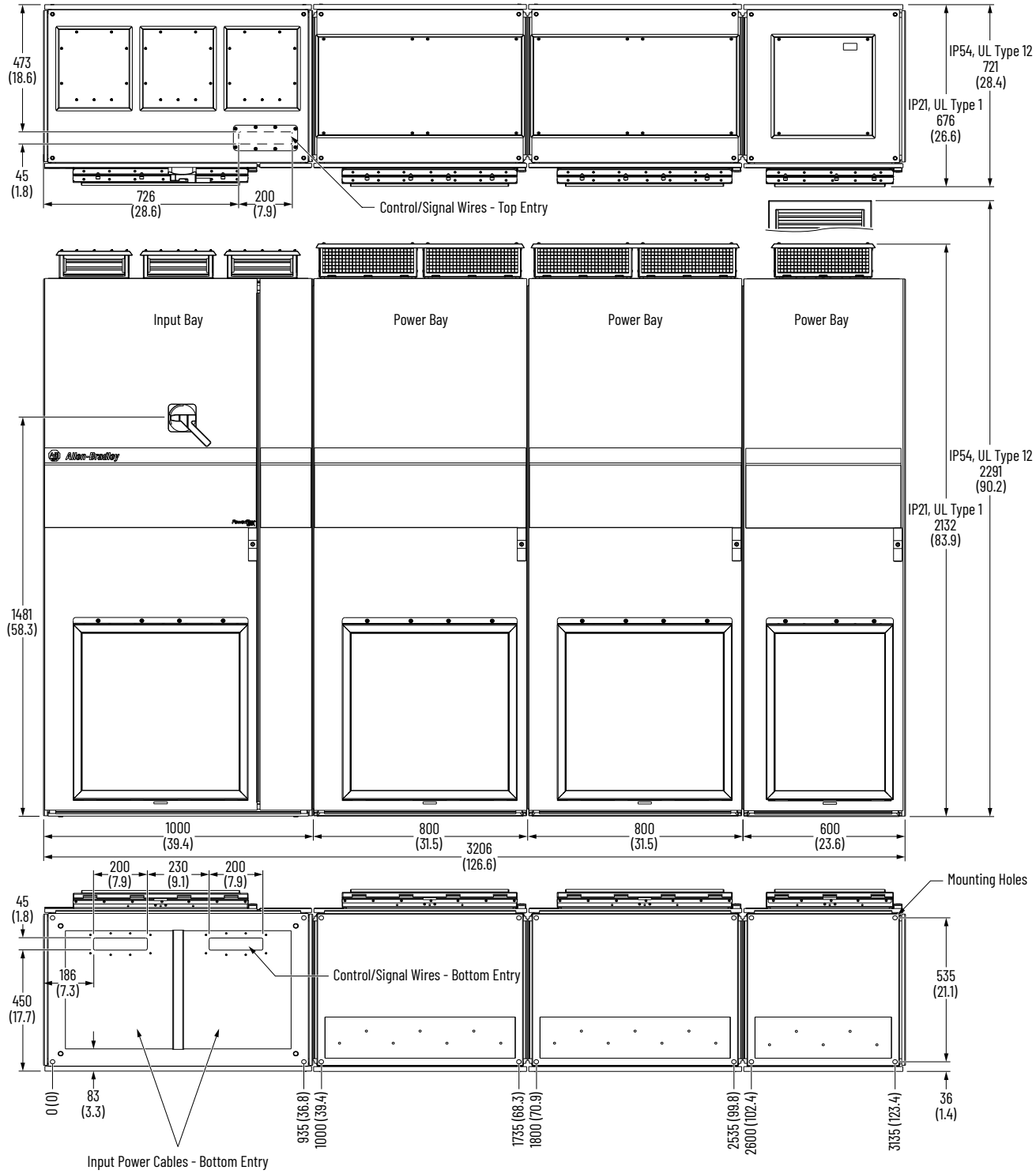
Figure 71. Frame 11 Bus Supplies Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

Frame 12 Bus Supplies

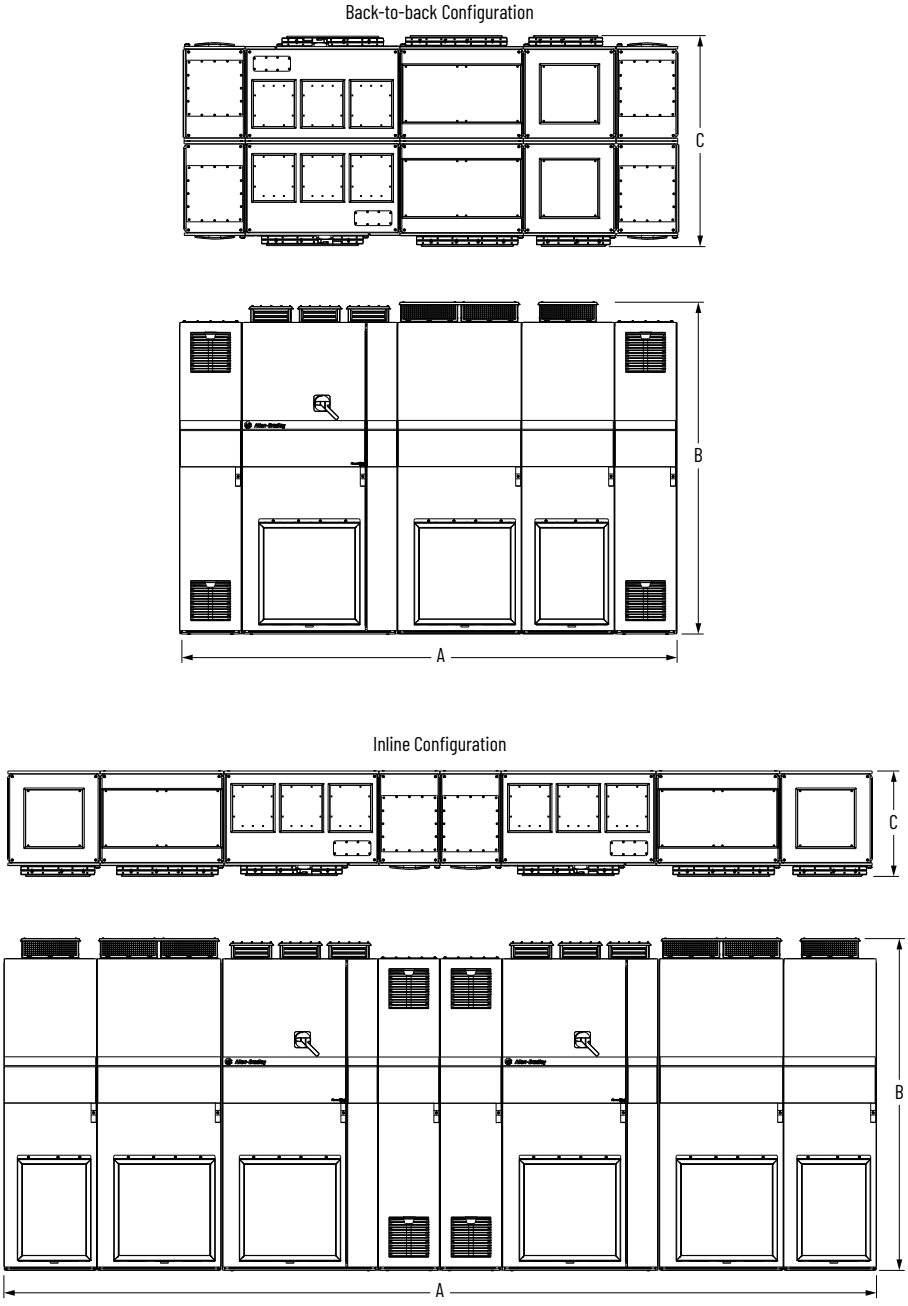
Figure 72. Frame 12 Bus Supplies Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

Frame 13...15 Bus Supplies

Figure 73. Frame 13...15 Bus Supplies Top and Front Views—Dimensions are in mm (in.)—Frame 13 Shown



See Bus Supplies Optional Entry Wire Bays on page 102 for optional entry wire bay dimensions.

Table 51. Frame 13...15 Bus Supplies Configuration Dimensions

Frame	Back-to-Back Configuration						In-Line Configuration					
	IP21, UL Type 1			IP54, UL Type 12			IP21, UL Type 1			IP54, UL Type 12		
	A	B	C	A	B	C	A	B	C	A	B	C
13	3200 (125.9)	2132 (83.9)	1352 (53.2)	3200 (125.9)	2291 (90.2)	1442 (56.8)	5600 (220.4)	2132 (83.9)	676 (26.6)	5600 (220.4)	2291 (90.2)	721 (28.4)
14	3800 (149.6)	2132 (83.9)	1352 (53.2)	3800 (149.6)	2291 (90.2)	1442 (56.8)	6800 (267.8)	2132 (83.9)	676 (26.6)	6800 (267.8)	2291 (90.2)	721 (28.4)
15	4400 (173.2)	2132 (83.9)	1352 (53.2)	4400 (173.2)	2291 (90.2)	1442 (56.8)	8000 (315.0)	2132 (83.9)	676 (26.6)	8000 (315.0)	2291 (90.2)	721 (28.4)

Bus Supplies Optional Entry Wire Bays

Figure 74. Optional Entry Wire Bays Top, Front, and Bottom Views—Dimensions are in mm (in.)

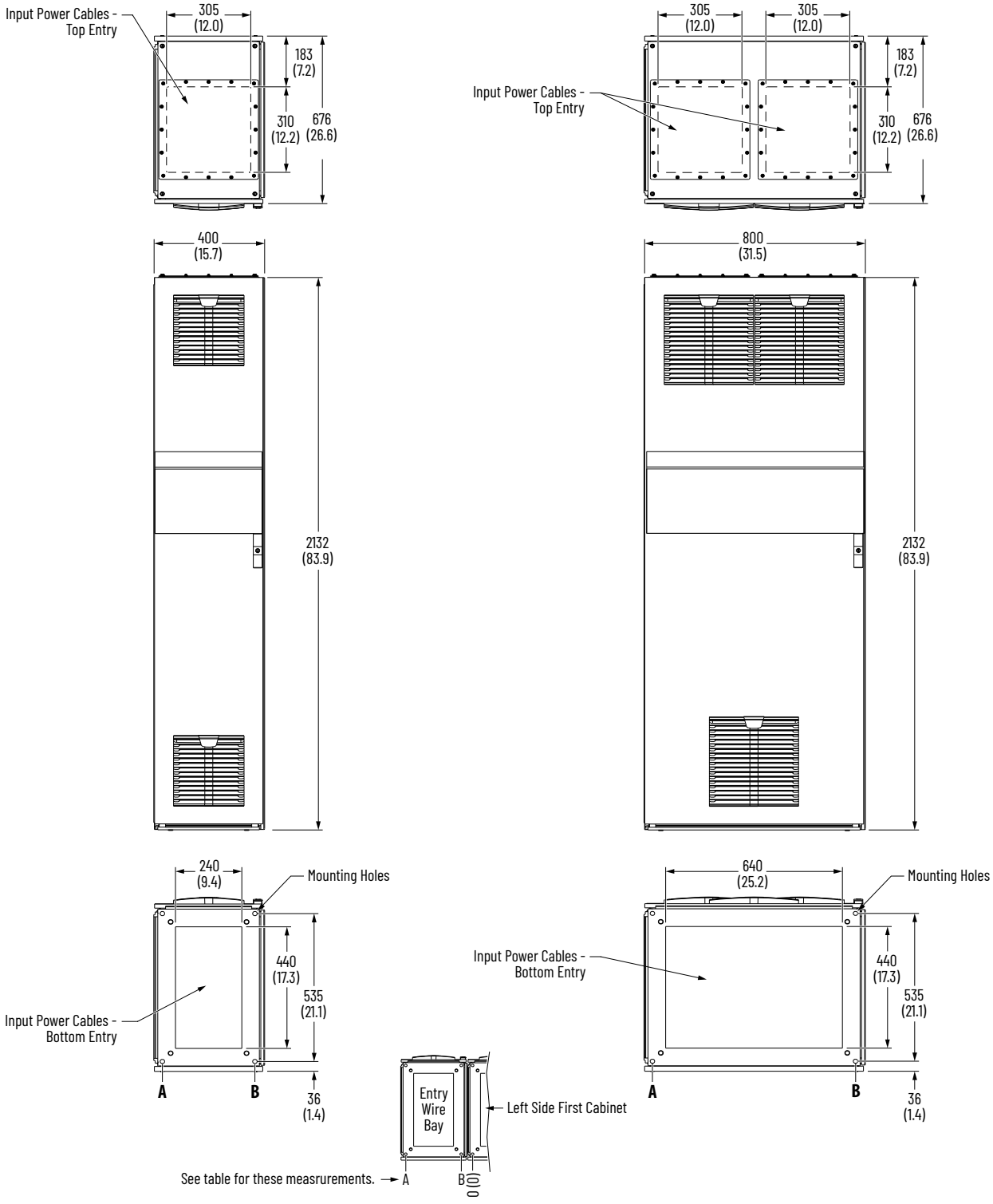


Table 52. Bus Supplies Entry Bay Dimensions [mm (in.)]

Frame	Entry Bay – 400 (15.7) Wide		Entry Bay – 800 (31) Wide	
	A	B	A	B
8	–	–	–	–
9	–	–	–	–
10	400 (15.7)	65 (2.6)	–	–
11	–	–	800 (31.5)	65 (2.6)
12	–	–	800 (31.5)	65 (2.6)

PowerFlex 755TM Common Bus Inverters Approximate Dimensions—Frames 8...15

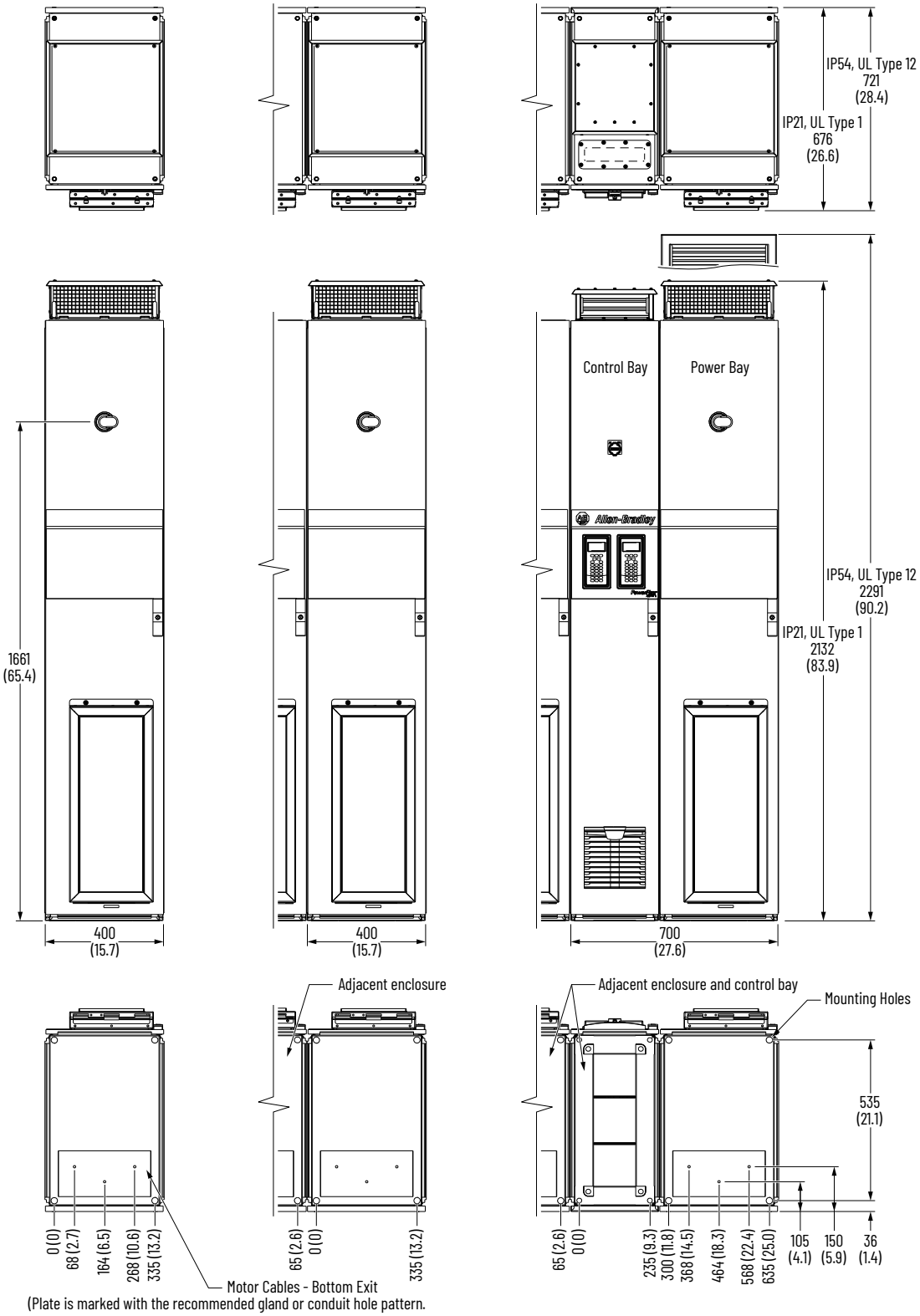
The following table lists the dimensional drawings that are provided in this section.

Table 53. Dimensional Drawing Index

Description	Page
Frame 8 Common Bus Inverters Top, Front, and Bottom Views	Frame 8 Common Bus Inverters on page 104
Frame 9 Common Bus Inverters Top, Front, and Bottom Views	Frame 9 Common Bus Inverters on page 105
Frame 10 Common Bus Inverters Top, Front, and Bottom Views	Frame 10 Common Bus Inverters on page 106
Frame 11 Common Bus Inverters Top, Front, and Bottom Views	Frame 11 Common Bus Inverters on page 107
Frame 12 Common Bus Inverters Top, Front, and Bottom Views	Frame 12 Common Bus Inverters on page 108
Frame 13 Common Bus Inverters Top, Front, and Bottom Views	Frame 13 Common Bus Inverters on page 109
Frame 14 Common Bus Inverters Top, Front, and Bottom Views	Frame 14 Common Bus Inverters on page 110
Frame 15 Common Bus Inverters Top, Front, and Bottom Views	Frame 15 Common Bus Inverters on page 111
Control Bay and Optional Exit Wire Bays Top, Front, and Bottom Views	Common Bus Inverters Control Bay and Optional Exit Wire Bays on page 112

Frame 8 Common Bus Inverters

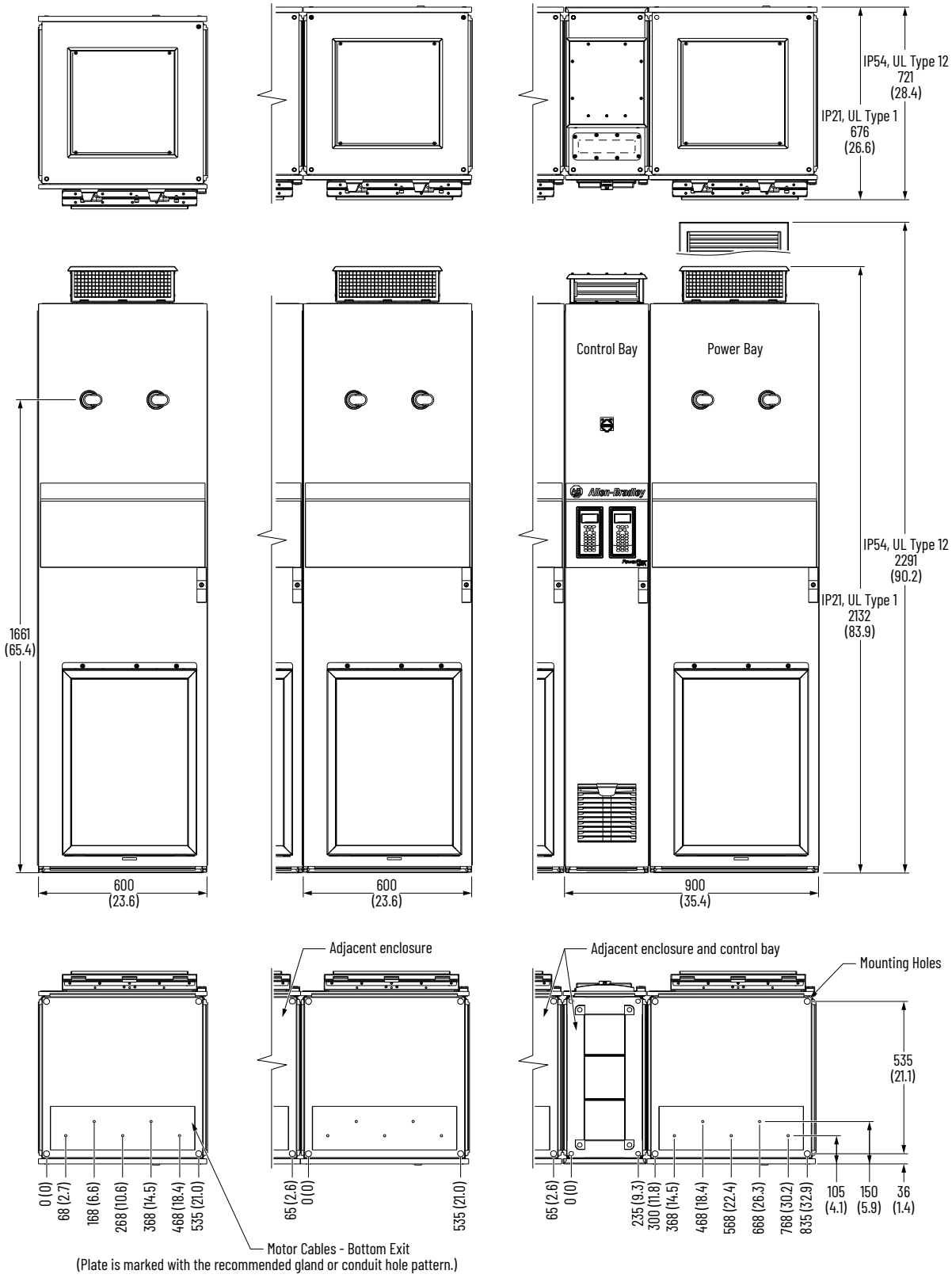
Figure 75. Frame 8 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 9 Common Bus Inverters

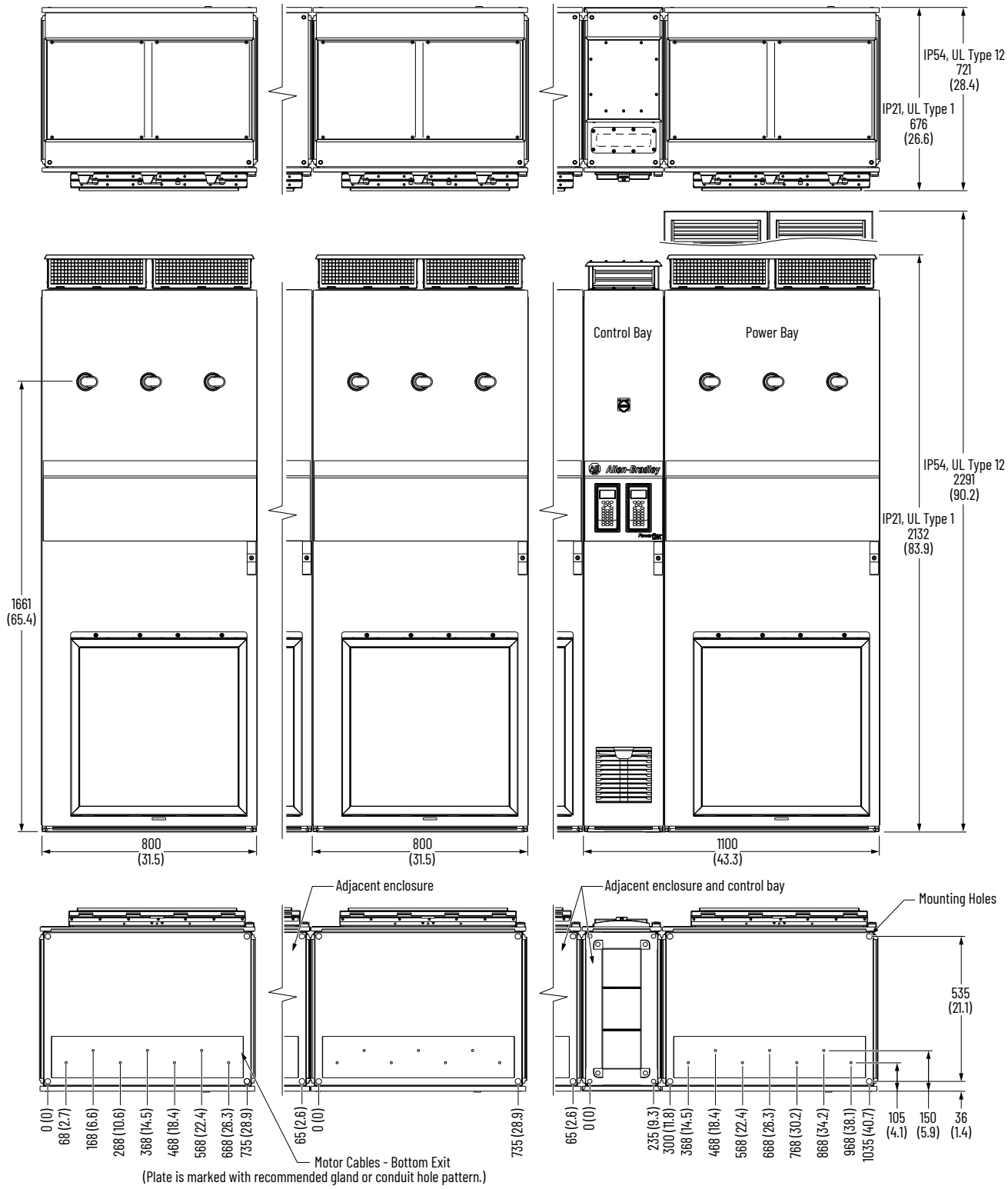
Figure 76. Frame 9 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 10 Common Bus Inverters

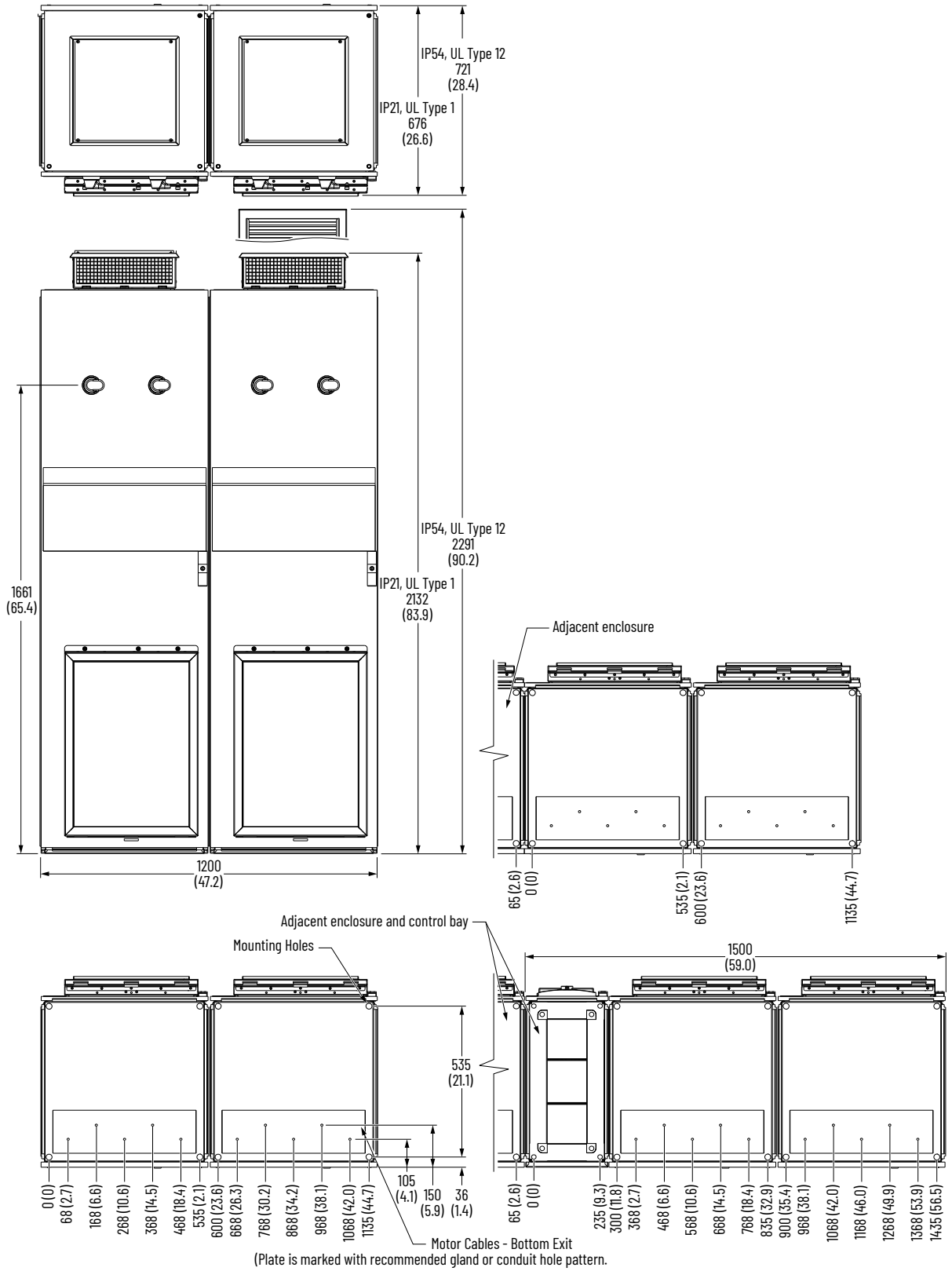
Figure 77. Frame 10 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 11 Common Bus Inverters

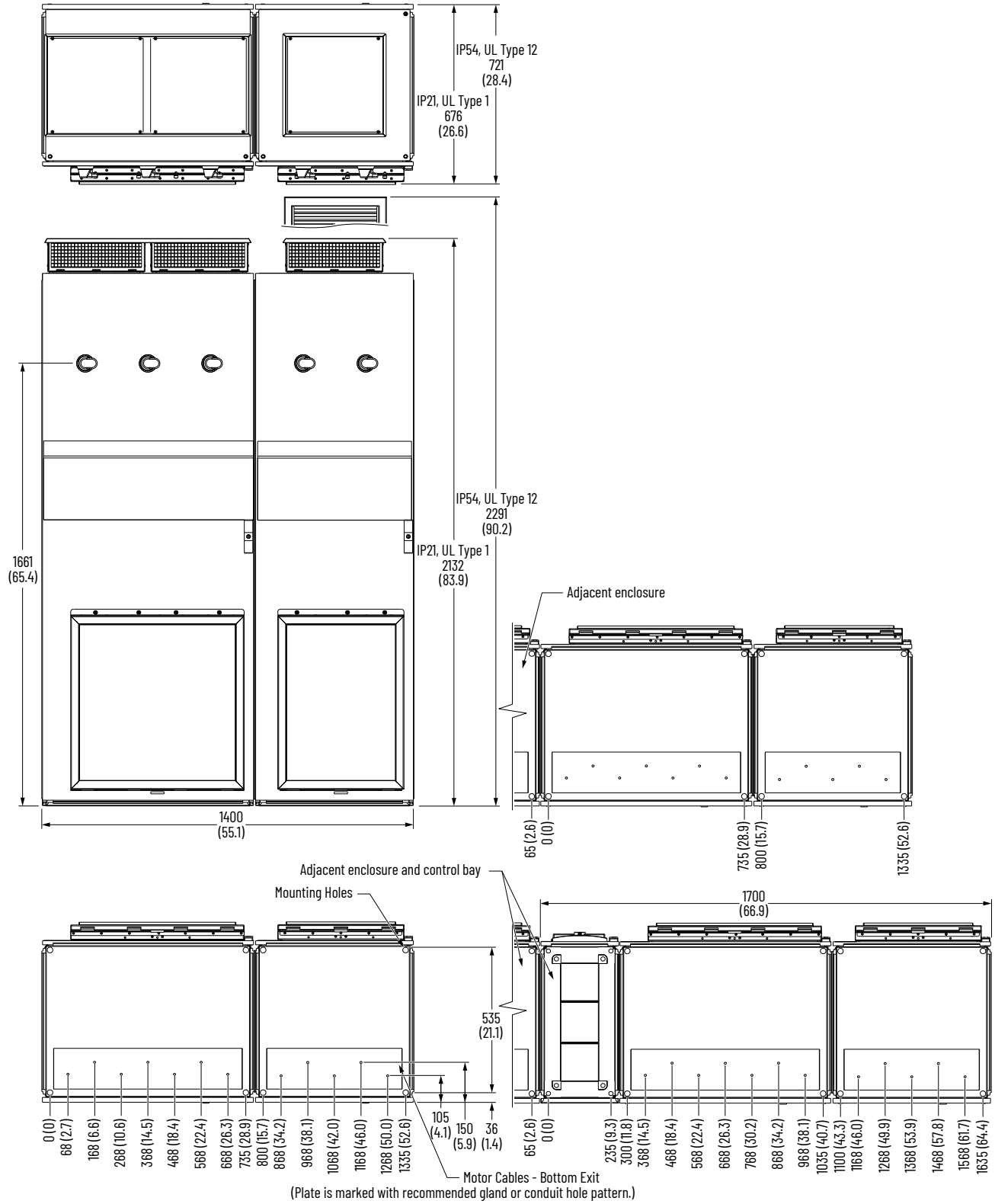
Figure 78. Frame 11 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 12 Common Bus Inverters

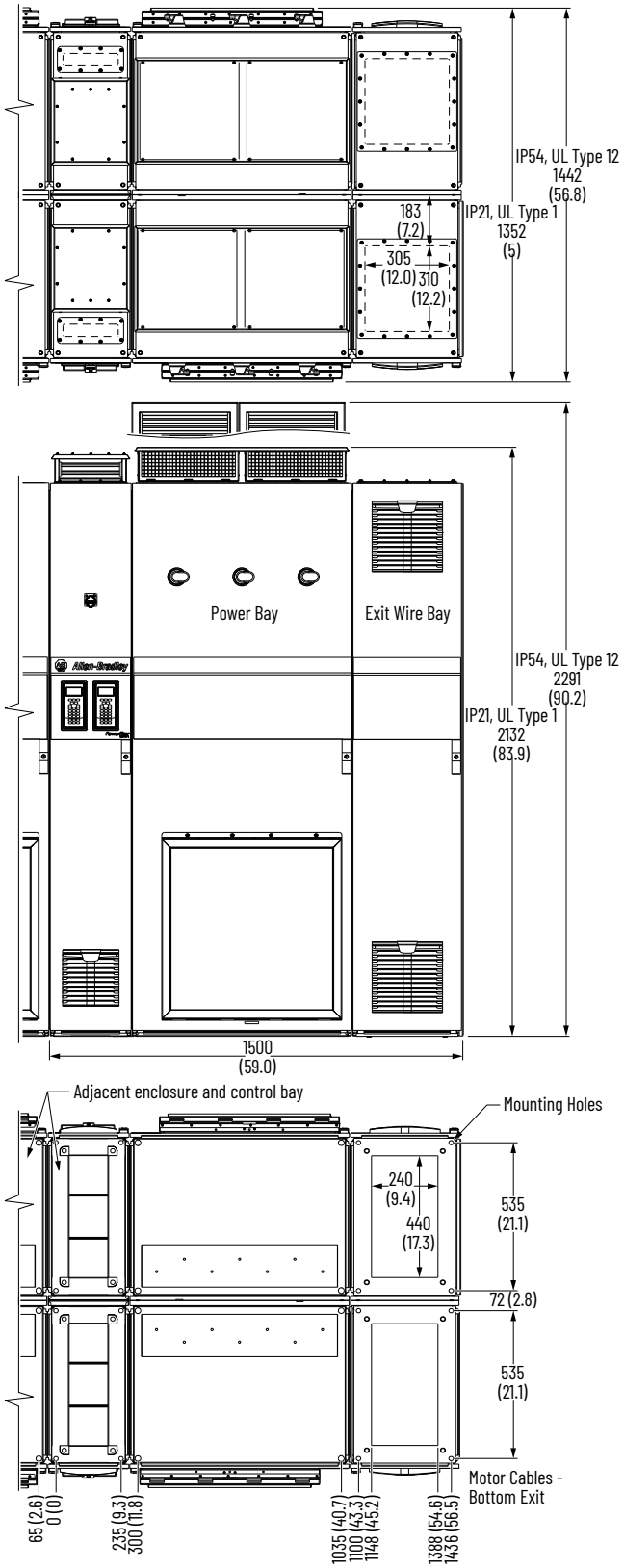
Figure 79. Frame 12 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 13 Common Bus Inverters

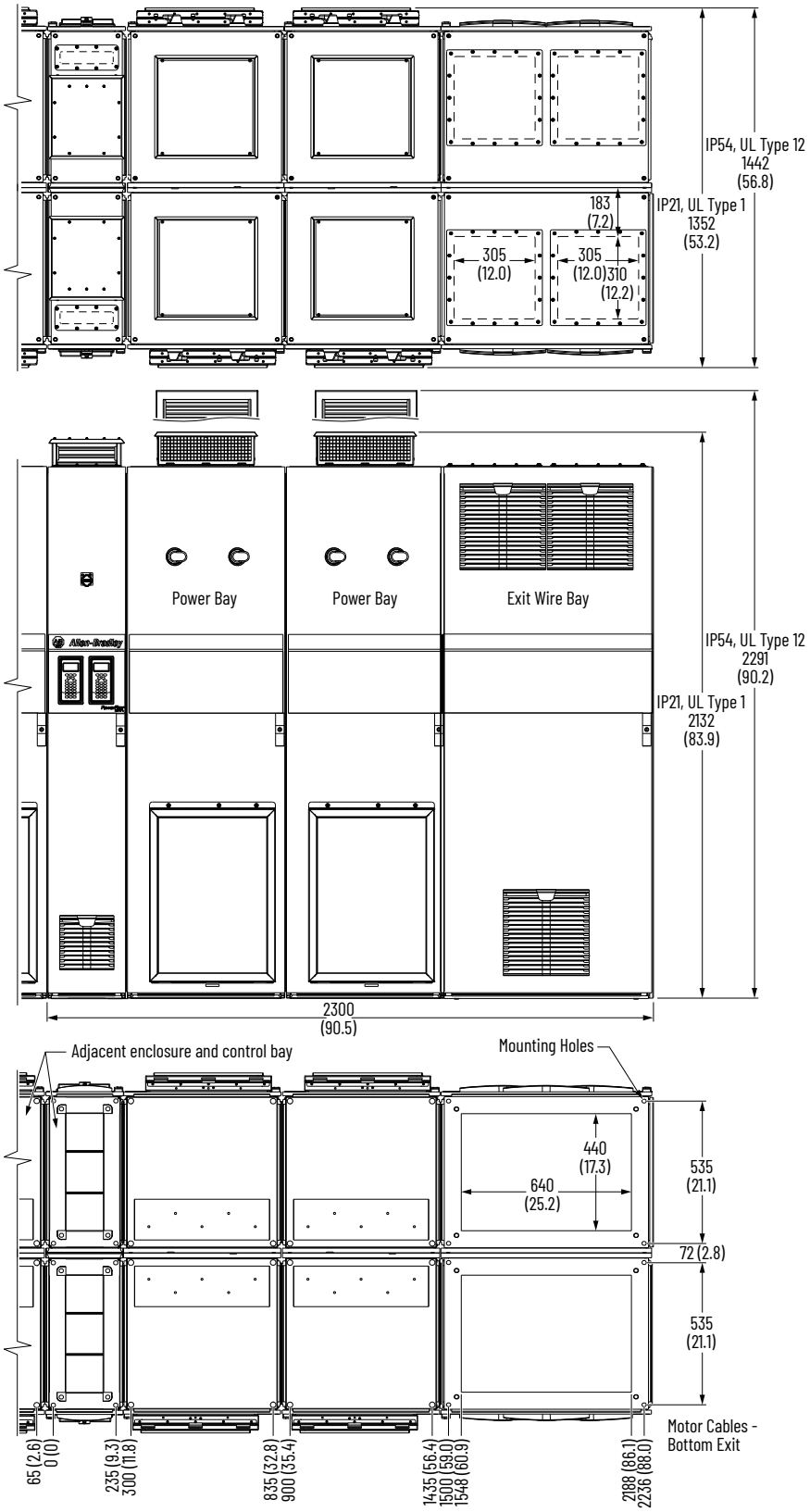
Figure 80. Frame 13 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 14 Common Bus Inverters

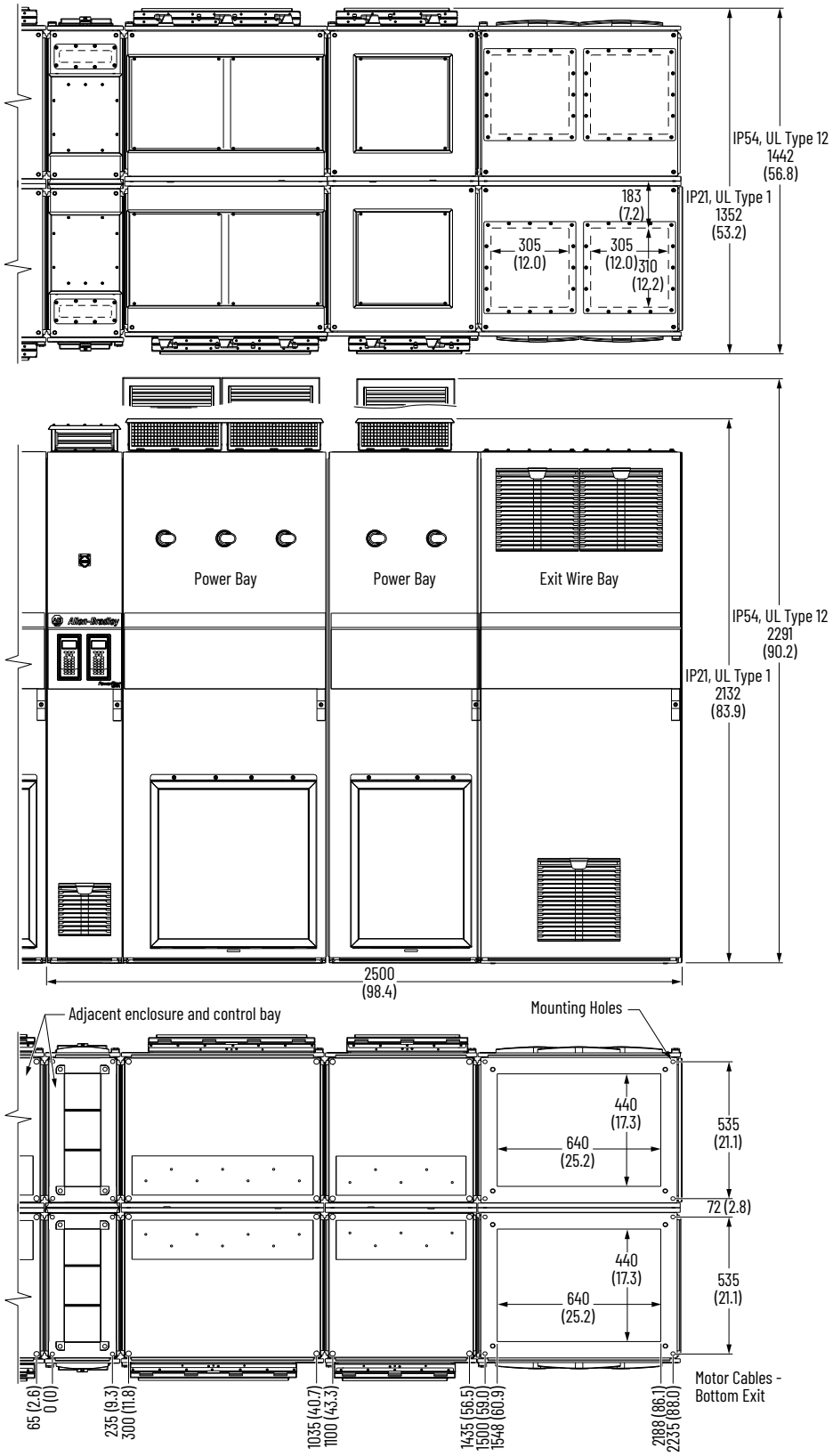
Figure 81. Frame 14 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Frame 15 Common Bus Inverters

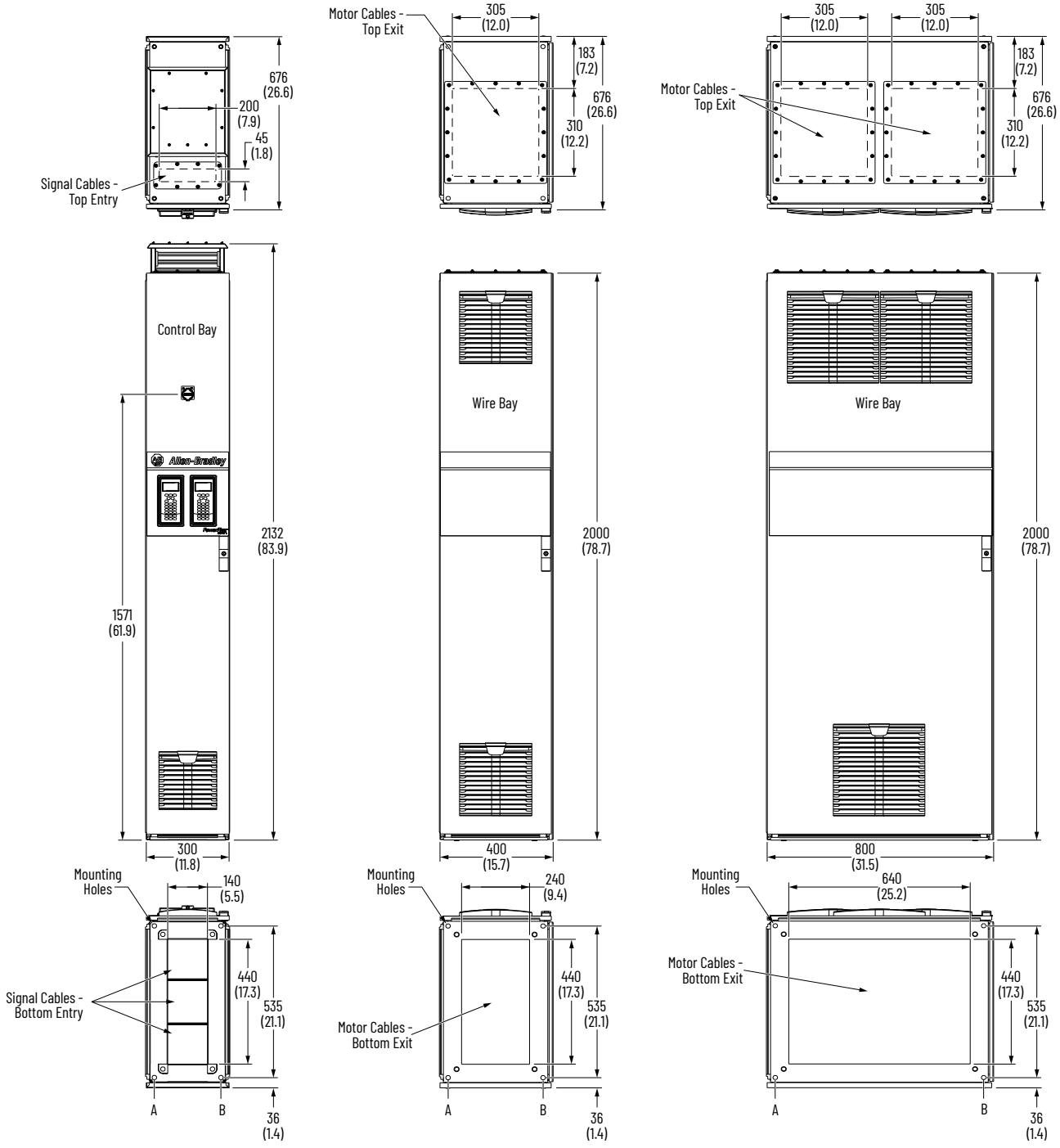
Figure 82. Frame 15 Common Bus Inverters Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Common Bus Inverters Control Bay and Optional Exit Wire Bays

Figure 83. Common Bus Inverters Control Bay and Optional Exit Wire Bays Top, Front, and Bottom Views—Dimensions are in mm (in.)



See Bus Supplies Optional Entry Wire Bays on page 102 for optional exit wire bay dimensions.

Table 54. Common Bus Inverters Control and Exit Bay Dimensions [mm (in.)]

Frame	Control Bay – 300 (11.8) Wide		Exit Bay – 400 (15.7) Wide		Exit Bay – 800 (31.5) Wide	
	A	B	A	B	A	B
8	300 (11.8)	65 (2.6)	400 (15.7)	735 (28.9)	–	–
9	300 (11.8)	65 (2.6)	600 (23.6)	935 (36.8)	–	–
10	300 (11.8)	65 (2.6)	800 (31.5)	1135 (44.7)	–	–
11	300 (11.8)	65 (2.6)	–	–	1200 (47.2)	1935 (76.1)
12	300 (11.8)	65 (2.6)	–	–	1400 (55.1)	2135 (84.0)

Mechanical and Electrical Installation

The PowerFlex® 755T installation process is divided into three principal tasks:

- Mechanically install the enclosures
- Make the electrical interconnections between enclosures if required
- Make power supply and motor connections [chapter link]

Installation of Products with Corrosive Gas Protection (XT)

PowerFlex® products manufactured with XT use protective covers to help seal connectors against environments with corrosive gases. To help provide improved performance in these environments, only remove protective covers to make a required connection. Do not remove protective covers from unused connectors.

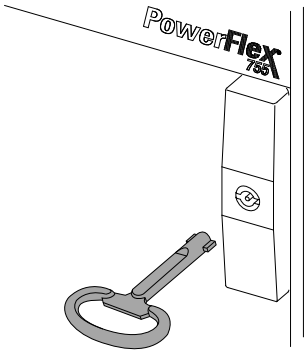
Prepare Floor Mount Enclosures

Access to the enclosure interior is required during product installation to complete the following tasks:

- Join enclosures with external hardware (applies to product that is divided for shipment)
- Anchor the enclosure to the mounting surface
- Make electrical interconnections

If your installation involves multiple enclosure sections, you can refer to the approximate dimensions section to help you understand how the enclosures are arranged.

1. Use the double-bit key that is provided to open the power bay door.



2. To access interior components and to make mechanical and electrical connections, remove the protective touch guards. See Remove Protective Touch Guards on page 138 for instructions for removing the guards that are found in each enclosure type.
3. To determine which power and LCL filter modules you must remove to facilitate installation, review Component Removal Requirements on page 116.
4. Remove the required power modules and LCL filter modules for the product you are installing. Each module is marked with a unique position number that corresponds with a module location inside the cabinet. See Component Removal Requirements on page 116. The PowerFlex® 750-Series module service cart, catalog number 20-750-MCART1 is recommended to move power modules and is required for LCL filter modules.

Release Enclosure From Shipping Skid

The shipping skid platform helps to stabilize product enclosures during transport and handling. It is recommended that you keep an enclosure fastened to the shipping skid as long as possible to help protect the enclosure from damage and to minimize the tip hazard.

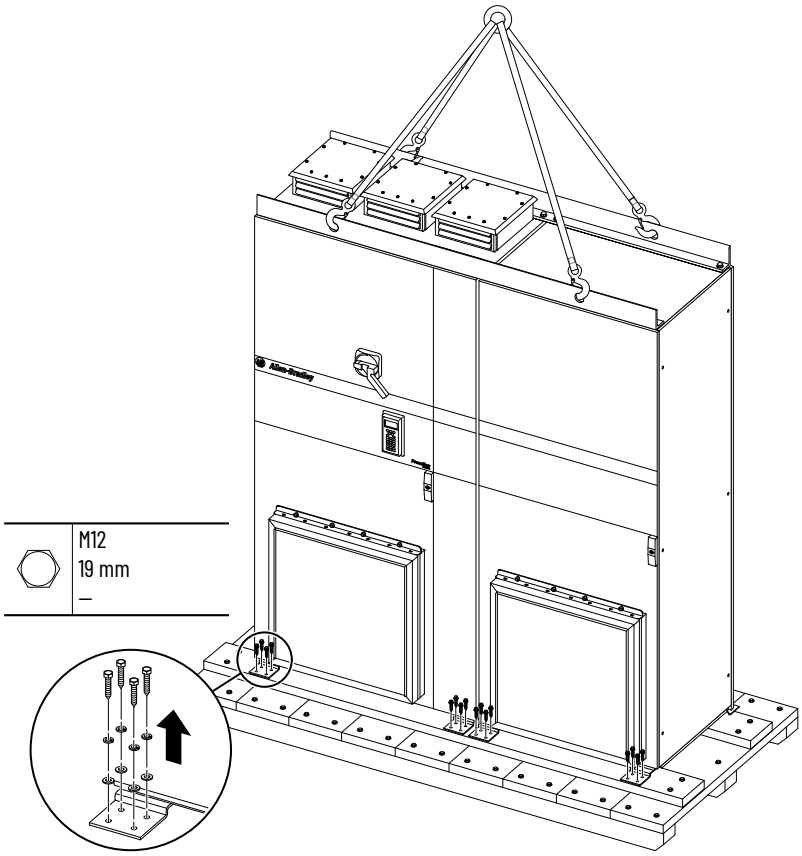
Before you release the product enclosure, particularly if your product consists of multiple enclosures, familiarize yourself with the final arrangement for the installation. See the dimensional drawing for your product.

When you have determined that it is time to release an enclosure, follow these steps.

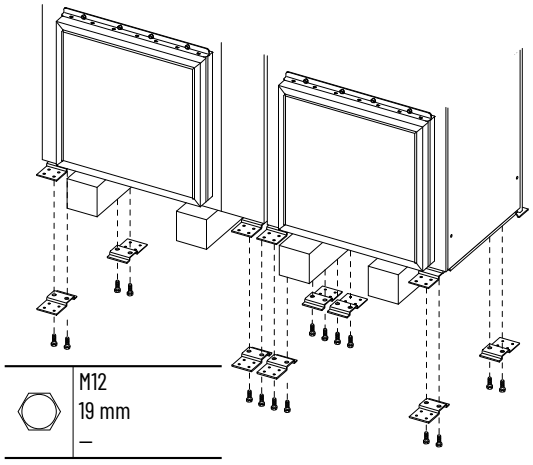
ATTENTION: Risk of equipment damage exists.

Install the drive on a level surface (± 1 mm per meter [± 0.036 in. per 36 in.] of drive length in all directions). If necessary, use metal shims to level the enclosures before joining them; any attempt to level after joining can twist or misalign the enclosures.

1. Release the enclosure from the shipping skid. For multiple enclosures, start with input bay.



2. Place the enclosure on supports, such as wooden beams, to provide enough space to remove the bolts that secure the cleats to the enclosure.



3. Position and place the enclosure.

Component Removal Requirements

This section outlines which components must be removed to install each PowerFlex® 755T floor mount product. Each figure illustrates the minimum requirement to allow adequate access to join and anchor the enclosures, and to interconnect busbars. All modules can be removed however to improve access during installation. With all modules removed, it is easier to place, align, join, anchor, and interconnect the enclosures.

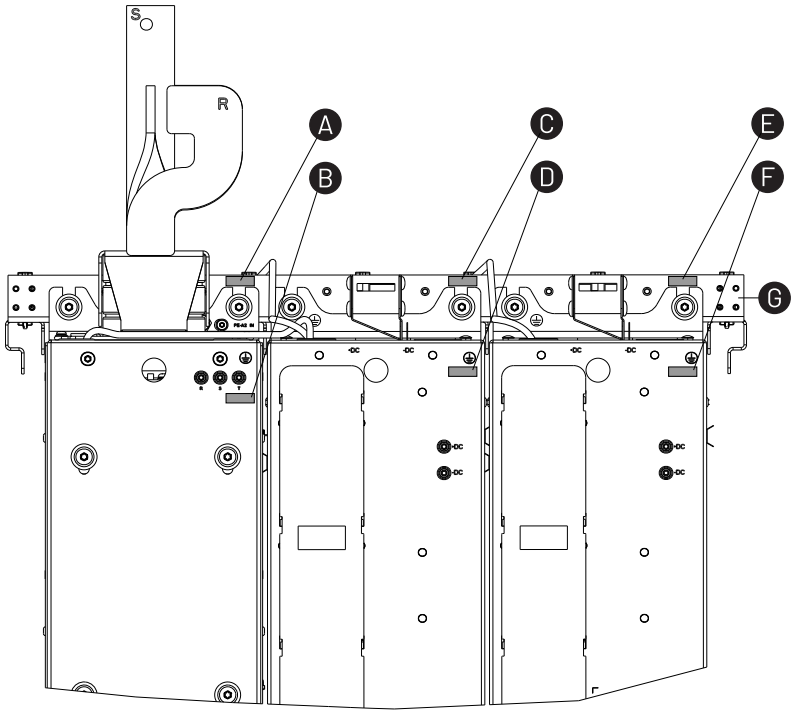
For instructions on how to remove these components from the enclosure, see the following sections.

- Remove Frame 7 Power Module
- Remove Frame 8...15 Power Module
- Remove Frame 7 LCL Filter Module
- Remove Frame 8...15 LCL Filter Module

Designated Component Positions

IMPORTANT: LCL filter modules and power modules are labeled to indicate their designated position in the product enclosure. Always reinstall modules in their corresponding factory-designated position. Make note of these labels during component removal. See the following figure for label locations.

Figure 84. LCL Filter Module and Power Module Position Labels



Item	Description
A	FO Label on Control Bus Assembly
B	FO Label on LCL Filter Module
C	LO Label on Control Bus Assembly
D	LO Label on Line Side Power Module

Item	Description
E	M0 Label on Control Bus Assembly
F	M0 Label on Motor Side Power Module
G	Control Bus Assembly

LCL Filter Module Position Designation Labels

This table provides the possible position designation labels for LCL filter modules.

Table 55. LCL Filter Module Labels for Frame Size

Frame Size								
7	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
F0	F0	F0	F0	F0	F0	F0	F0	F0
–	–	–	F2	F2	F2	F2	F2	F2
–	–	–	–	–	F4	F3	F4	F4
–	–	–	–	–	–	F5	F6	F5
–	–	–	–	–	–	–	–	F7
–	–	–	–	–	–	–	–	F9

Table 56. Early Production LCL Filter Module Labels for Frame Size

Frame Size								
7	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
LCL0	LCL0	LCL0	LCL0	LCL0	LCL0	LCL0	LCL0	LCL0
–	–	–	LCL1	LCL1	LCL1	LCL1	LCL1	LCL1
–	–	–	–	–	LCL2	LCL2	LCL2	LCL2
–	–	–	–	–	–	LCL3	LCL3	LCL3
–	–	–	–	–	–	–	–	LCL4
–	–	–	–	–	–	–	–	LCL5

Temporary Component Storage

During installation, it is recommended that you designate a secure temporary storage area for the components that you remove from the enclosure. LCL filter modules and power modules present a tip-over hazard when removed from the enclosure. Measures must be taken to be sure that modules are stored in such a way that they do not pose a hazard.

Do not store components in active isles or work areas. A dedicated area that is designated for the temporary storage of the components that are removed during the installation process is recommended. Loose components can be hazardous and easily damaged.

Recommended Equipment and Accessories

Equipment is available that is designed to help you safely handle major components. The following equipment is recommended:

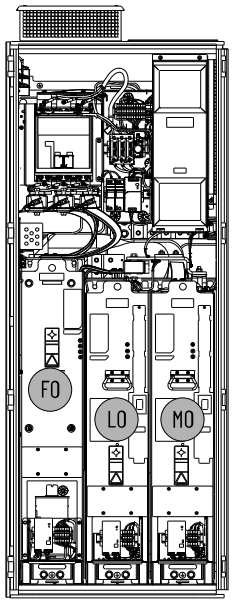
- PowerFlex 750-Series module service cart, catalog number 20-750-MCART1, publication 750-IN105
- PowerFlex 755T DC precharge module lift, catalog number 20-750-MCART2, publication 750-IN105
- PowerFlex 750TM power and LCL filter module storage hardware, catalog number 20-750-MINV-ATIP, publication 750-IN106
- PowerFlex 755T power module service ramp, catalog number 20-750-MRAMP1, publication 750-IN108

IMPORTANT: The service ramp is used only with power modules when the cabinet is mounted directly to the floor. Do not use the ramp to remove LCL filter modules from the cabinet. Review service ramp instructions before using.

Removal of PowerFlex 755TL and 755TR Drive Components

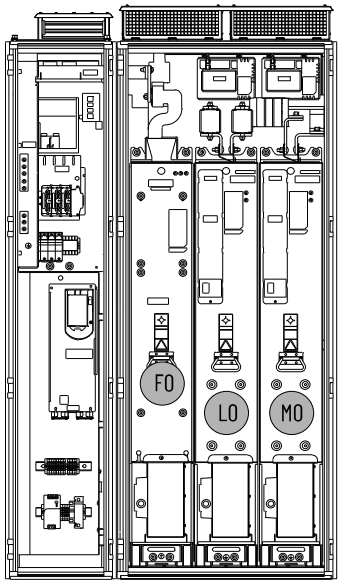
This section lists the LCL filter modules, line side converters, and motor side inverters that you must remove to install the product. Removal of these components provides access to join and anchor the cabinets, and for making the electrical interconnections between the cabinets.

Figure 85. Frame 7 Drives



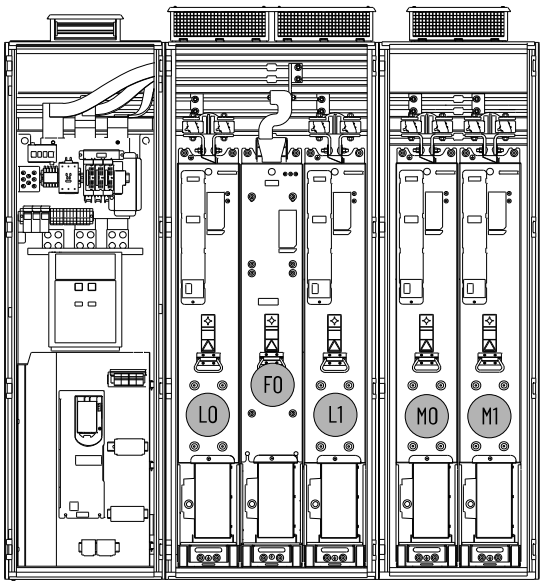
Remove Position No.	Module Type	Shipping Split Section
F0	LCL filter	Section 1 of 1
L0	Line side converter	
M0	Motor side inverter	

Figure 86. Frame 8 Drives



Remove Position No.	Module Type	Shipping Split Section
F0	LCL filter	Section 1 of 1
L0	Line side converter	
M0	Motor side inverter	

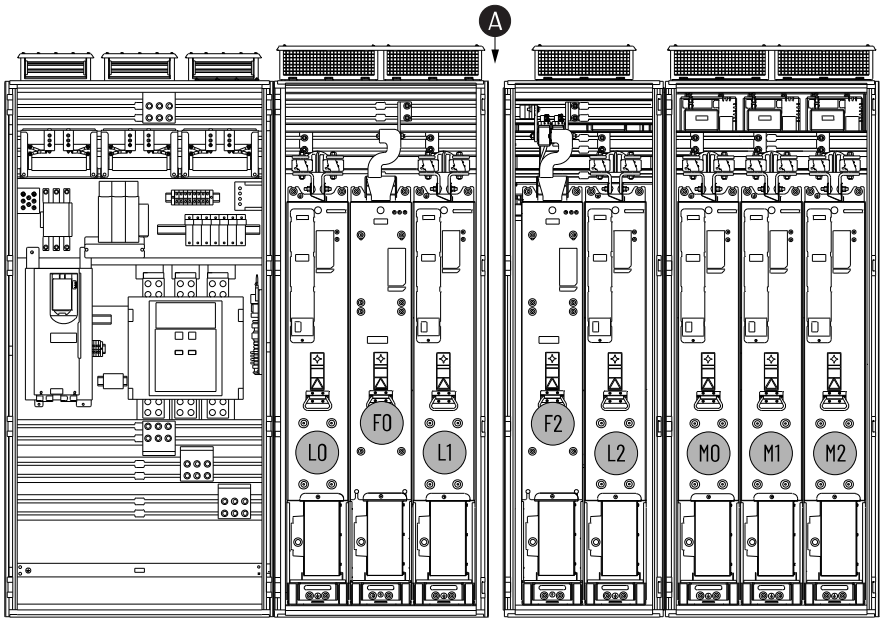
Figure 87. Frame 9 Drives



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 1
F0	LCL filter	

Remove Position No.	Module Type	Shipping Split Section
M0, M1	Motor side inverter	

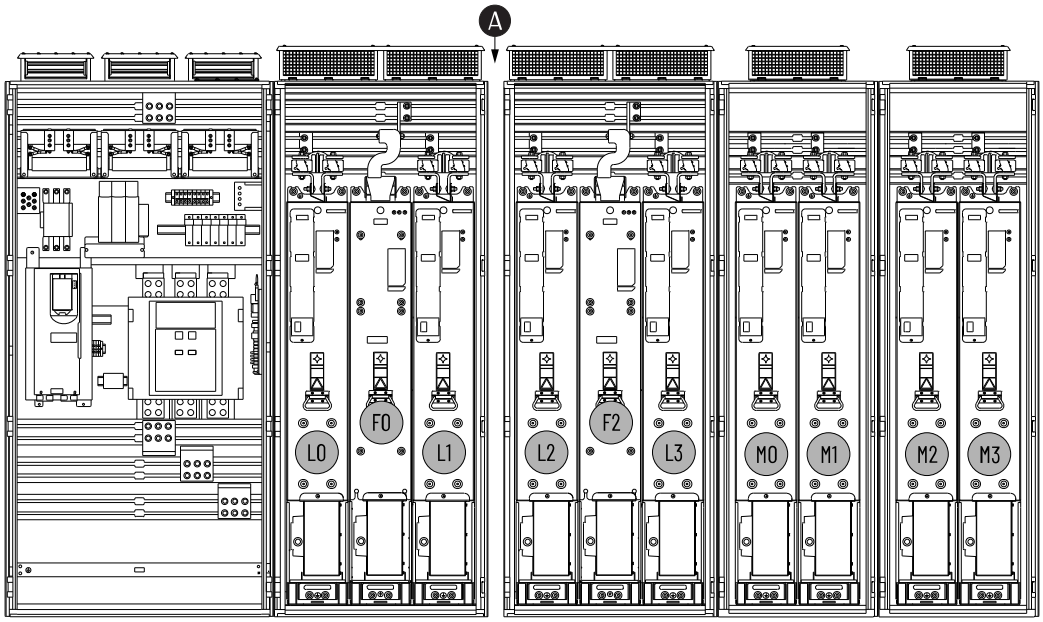
Figure 88. Frame 10 Drives



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 2 (left section)
F0	LCL filter	
F2	LCL filter	Section 2 of 2 (right section)
L2	Line side converter	
M0, M1, M2	Motor side inverter	

A = Shipping split location

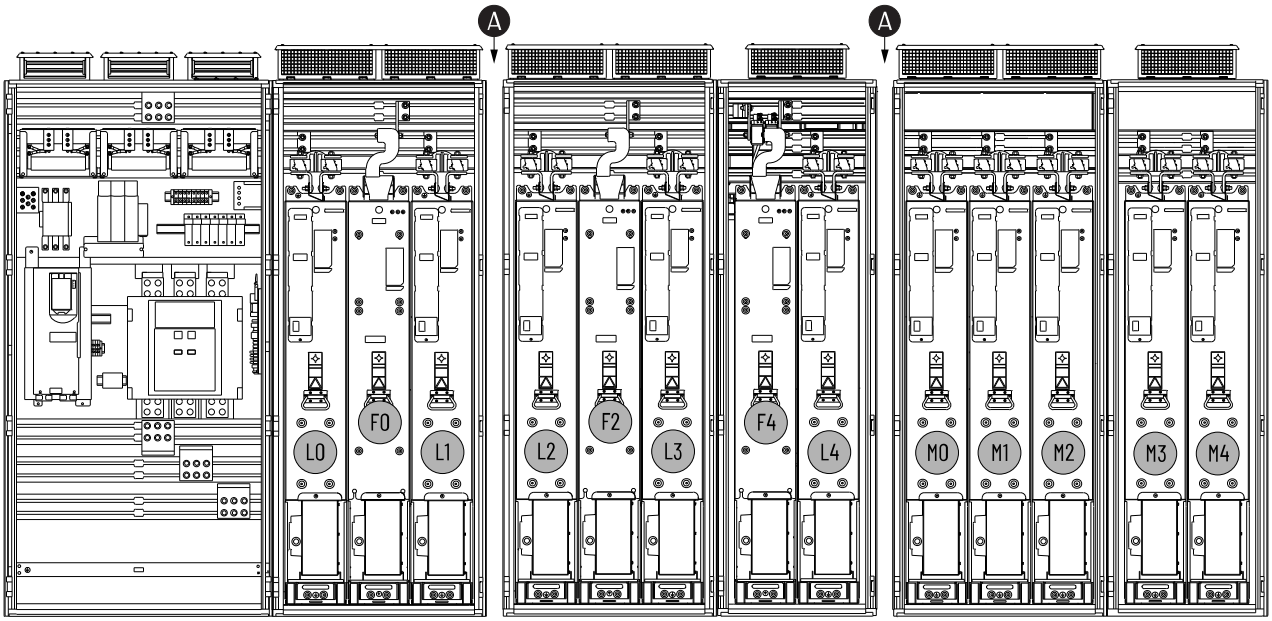
Figure 89. Frame 11 Drives



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 2 (left section)
F0	LCL filter	
L2, L3	Line side converter	Section 2 of 2 (right section)
F2	LCL filter	
M0, M1, M2, M3	Motor side inverter	

A = Shipping split location

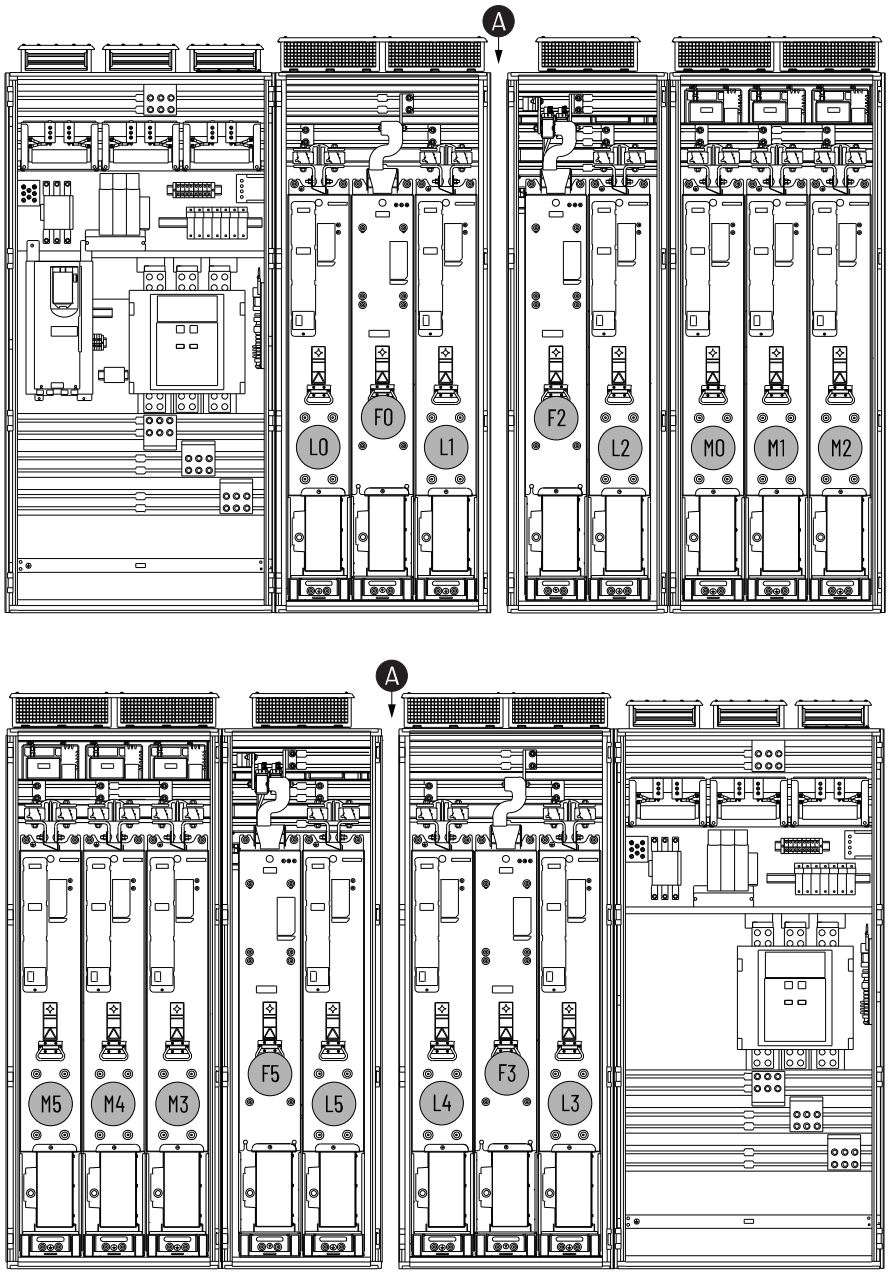
Figure 90. Frame 12 Drives



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 3 (left section)
F0	LCL Filter	
L2, L3, L4	Line side converter	Section 2 of 3 (center section)
F2, F4	LCL Filter	
M0, M1, M2, M3, M4	Motor side inverter	Section 3 of 3 (right section)

A = Shipping split location

Figure 91. Frame 13 Drives

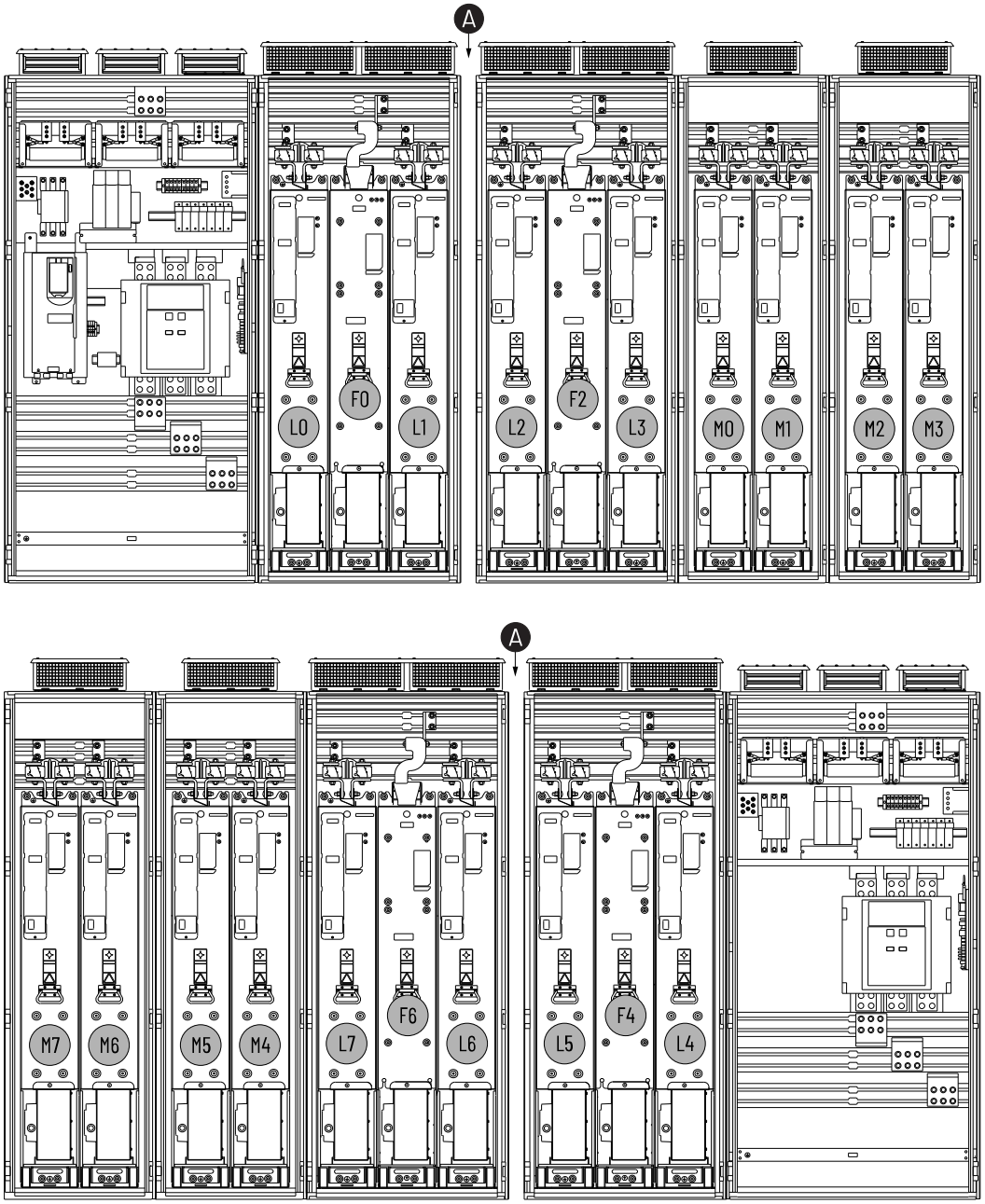


Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 2 of 6 (back-to-back left section) Section 5 of 7 (in-line left section)
F0	LCL filter	
F2	LCL filter	Section 3 of 6 (back-to-back right section) Section 6 of 7 (in-line right section)
L2	Line side converter	
M0, M1, M2	Motor side inverter	
M5, M4, M3	Motor side inverter	Section 4 of 6 (back-to-back left section)

Remove Position No.	Module Type	Shipping Split Section
F5	LCL filter	Section 2 of 7 (in-line left section)
L5	Line side converter	
L4, L3	Line side converter	Section 5 of 6 (back-to-back right section)
F3	LCL filter	Section 3 of 7 (in-line right section)

A = Shipping split location

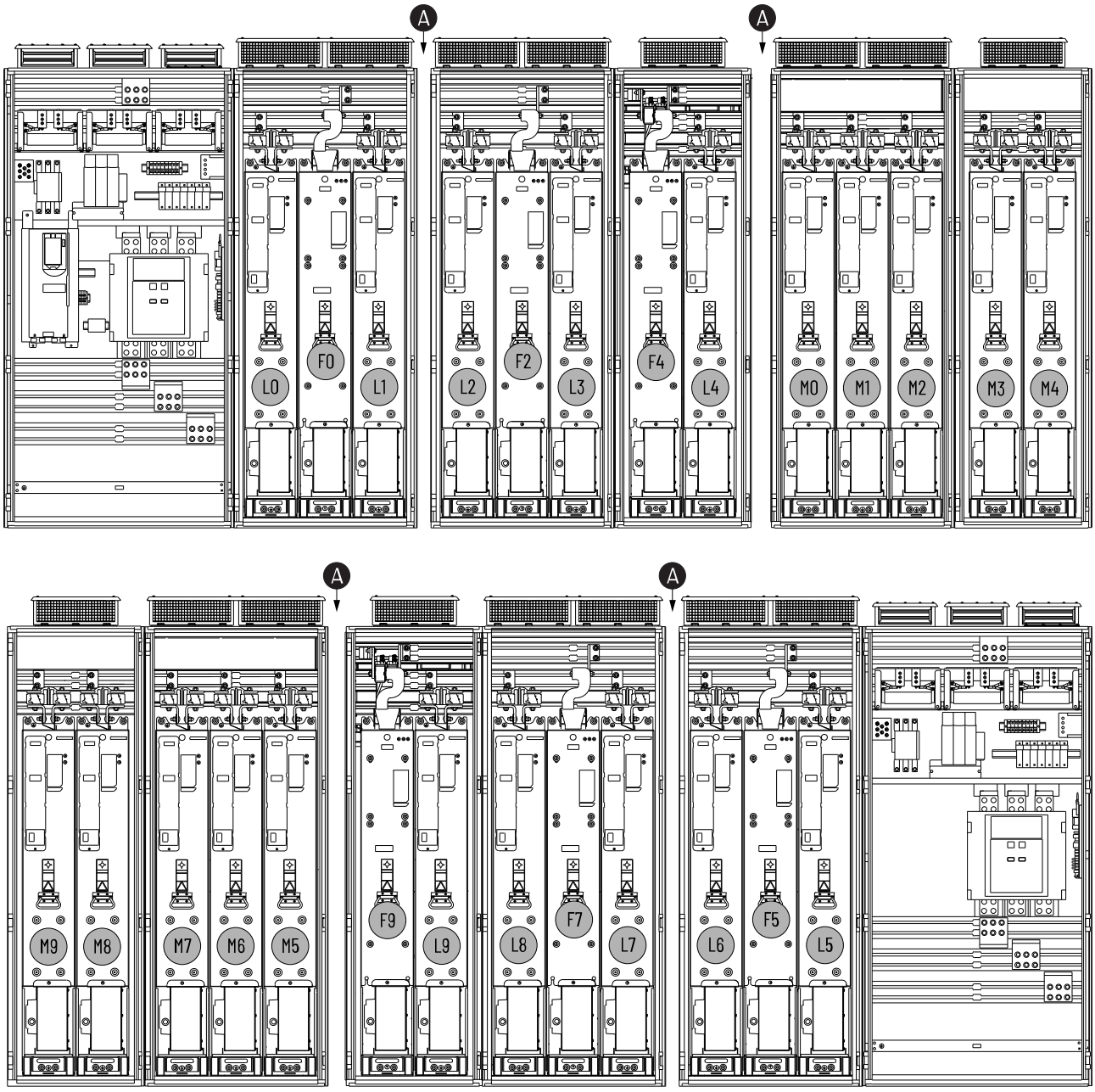
Figure 92. Frame 14 Drives



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 2 of 6 (back-to-back left section) Section 5 of 7 (in-line left section)
F0	LCL filter	
L2, L3	Line side converter	Section 3 of 6 (back-to-back right section) Section 6 of 7 (in-line right section)
F2	LCL filter	
M0, M1, M2, M3	Motor side inverter	
M7, M6, M5, M4	Motor side inverter	Section 4 of 6 (back-to-back left section) Section 2 of 7 (in-line left section)
F6	LCL filter	
L7, L6	Line side converter	
L5, L4	Line side converter	Section 5 of 6 (back-to-back right section) Section 3 of 7 (in-line right section)
F4	LCL filter	

A = Shipping split location

Figure 93. Frame 15 Drives



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 2 of 8 (back-to-back left section) Section 6 of 9 (in-line left section)
F0	LCL filter	
L2, L3, L4	Line side converter	Section 3 of 8 (back-to-back center section) Section 7 of 9 (in-line center section)
F2, F4	LCL filter	
M0, M1, M2, M3, M4	Motor side inverter	Section 4 of 8 (back-to-back right section) Section 8 of 9 (in-line right section)

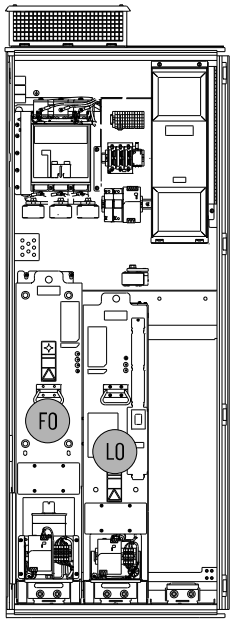
Remove Position No.	Module Type	Shipping Split Section
M9, M8, M7, M6, M5	Motor side inverter	Section 5 of 8 (back-to-back left section) Section 2 of 9 (in-line left section)
F9, F7	LCL filter	Section 6 of 8 (back-to-back center section) Section 3 of 9 (in-line center section)
L9, L8, L7	Line side converter	
L6, L5	Line side converter	Section 7 of 8 (back-to-back right section) Section 4 of 9 (in-line right section)
F5	LCL filter	

A = Shipping split location

Removal of PowerFlex 755TM Bus Supply Components

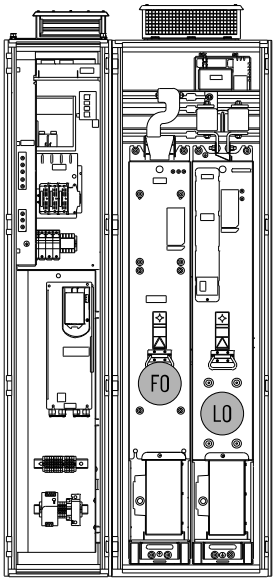
This section lists the LCL filter modules and line side converters that you must remove to install the product. For instructions on how to remove these components from the enclosure, see the Remove Frame 7 Power Module and Remove Frame 7 LCL Filter Module sections.

Figure 94. Frame 7 Bus Supply



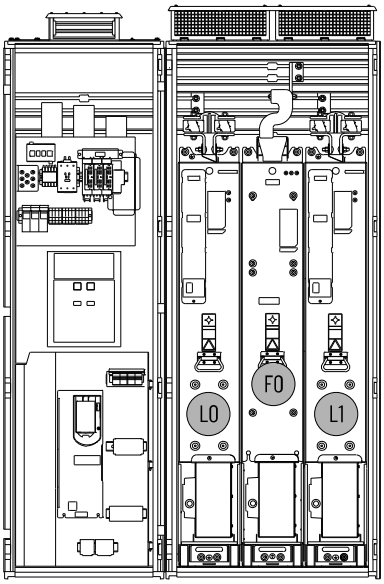
Remove Position No.	Module Type	Shipping Split Section
F0	LCL filter	Section 1 of 1
L0	Line side converter	

Figure 95. Frame 8 Bus Supply



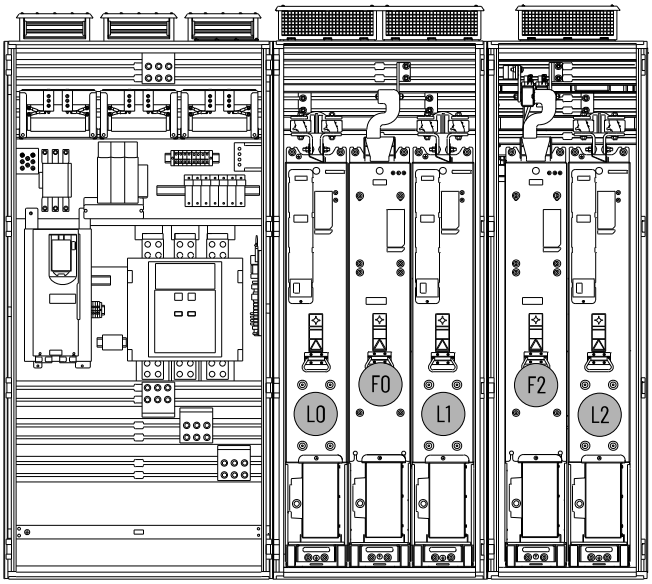
Remove Position No.	Module Type	Shipping Split Section
F0	LCL filter	Section 1 of 1
L0	Line side converter	

Figure 96. Frame 9 Bus Supply



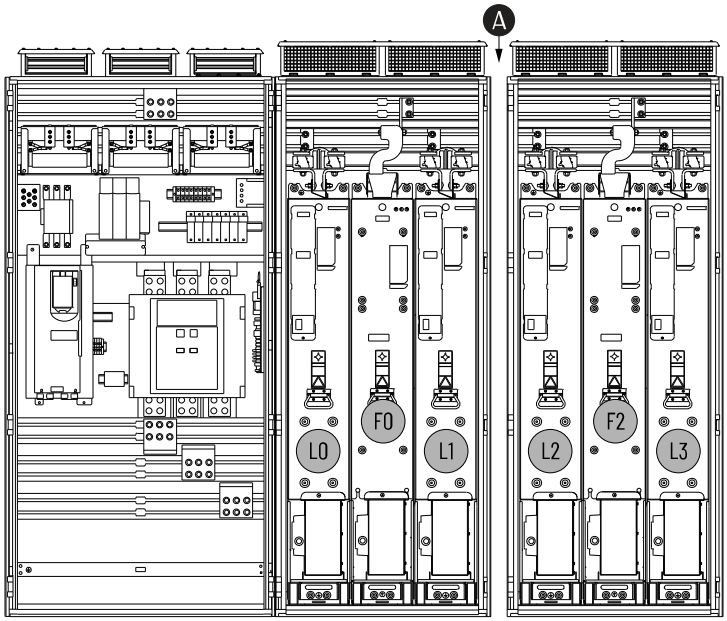
Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 1
F0	LCL filter	

Figure 97. Frame 10 Bus Supply



Remove Position No.	Module Type	Shipping Split Section
L0, L1, L2	Line side converter	Section 1 of 1
F0, F2	LCL filter	

Figure 98. Frame 11 Bus Supply

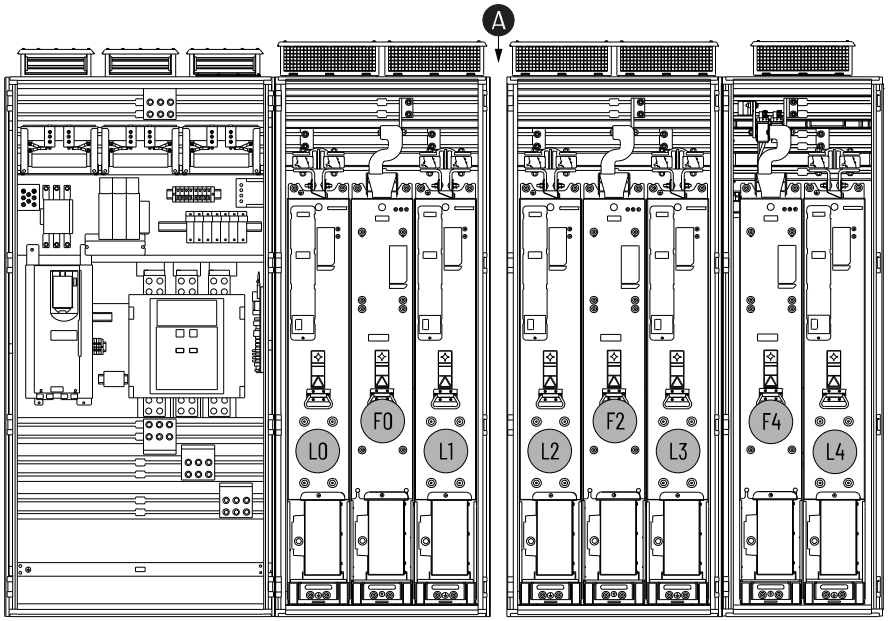


Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 2 (left section)
F0	LCL filter	

Remove Position No.	Module Type	Shipping Split Section
L2, L3	Line side converter	Section 2 of 2 (right section)
F2	LCL filter	

A = Shipping split location

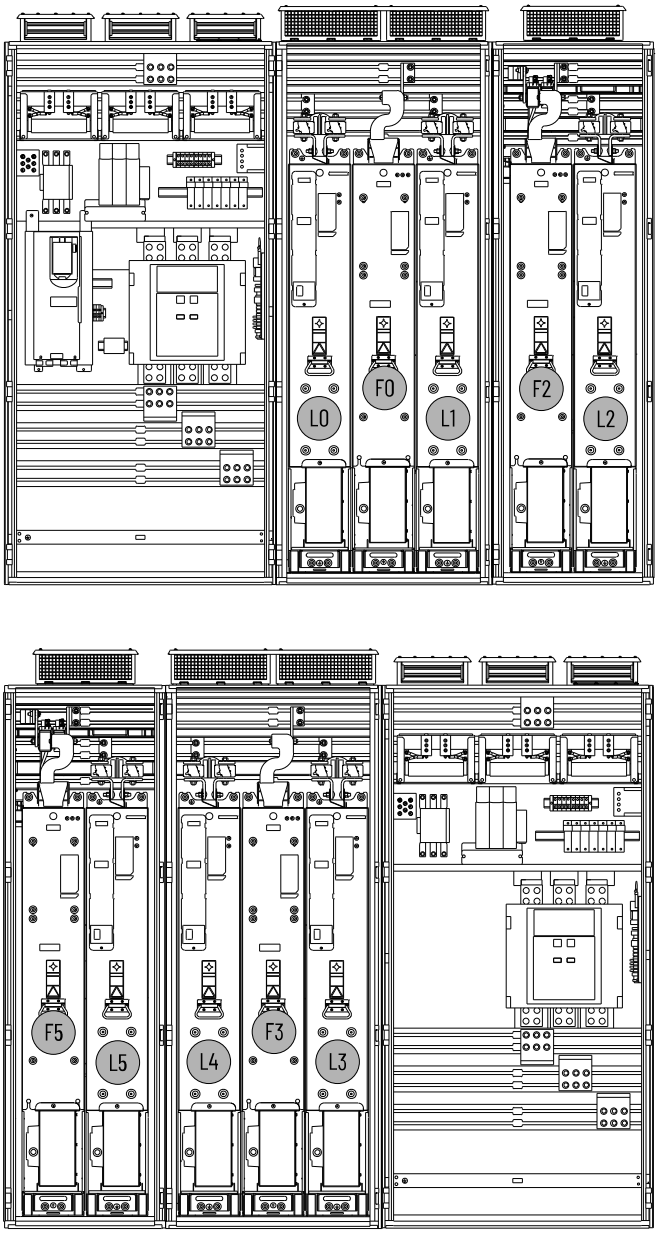
Figure 99. Frame 12 Bus Supply



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 1 of 2 (left section)
F0	LCL filter	
L2, L3, L4	Line side converter	Section 2 of 2 (right section)
F2, F4	LCL filter	

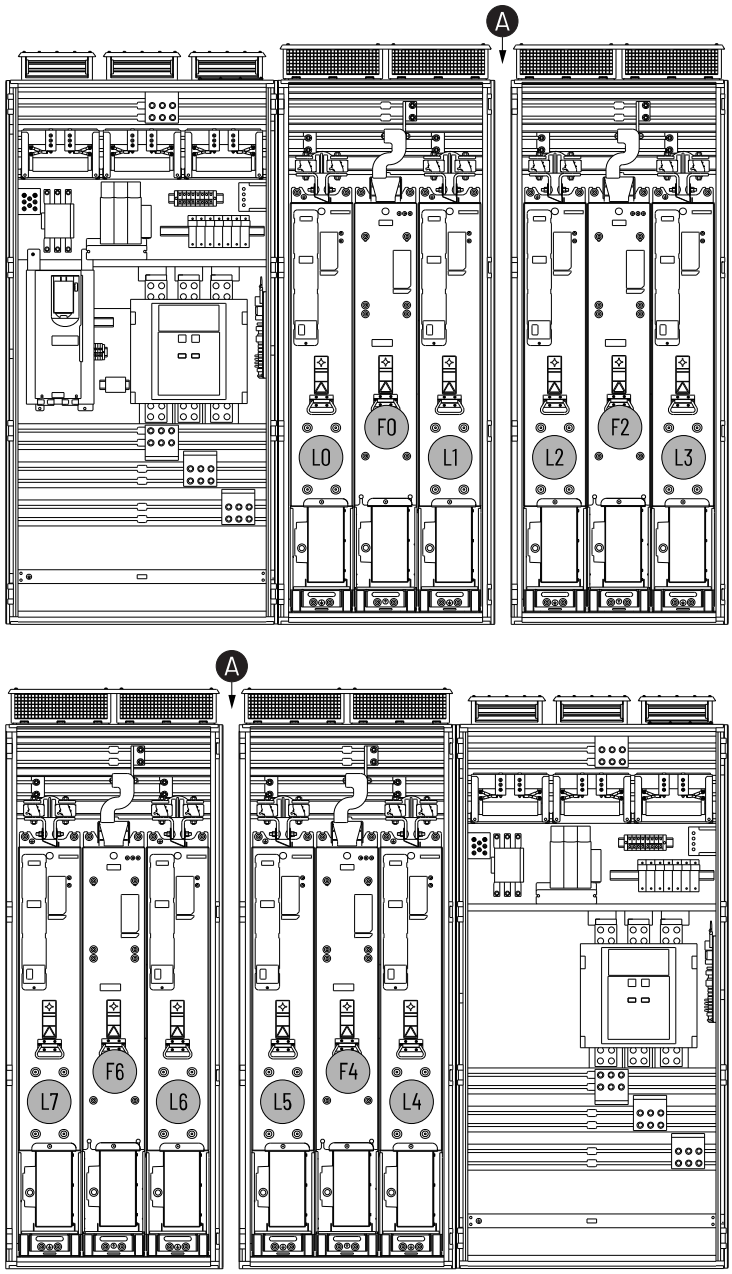
A = Shipping split location

Figure 100. Frame 13 Bus Supply



Remove Position No.	Module Type	Shipping Split Section
L0, L1, L2	Line side converter	Section 2 of 4 (back-to-back center section) Section 1 of 3 (in-line center section)
F0, F2	LCL filter	
F5, F3	LCL filter	Section 3 of 4 (back-to-back center section) Section 3 of 3 (in-line center section)
L5, L4, L3	Line side converter	

Figure 101. Frame 14 Bus Supply

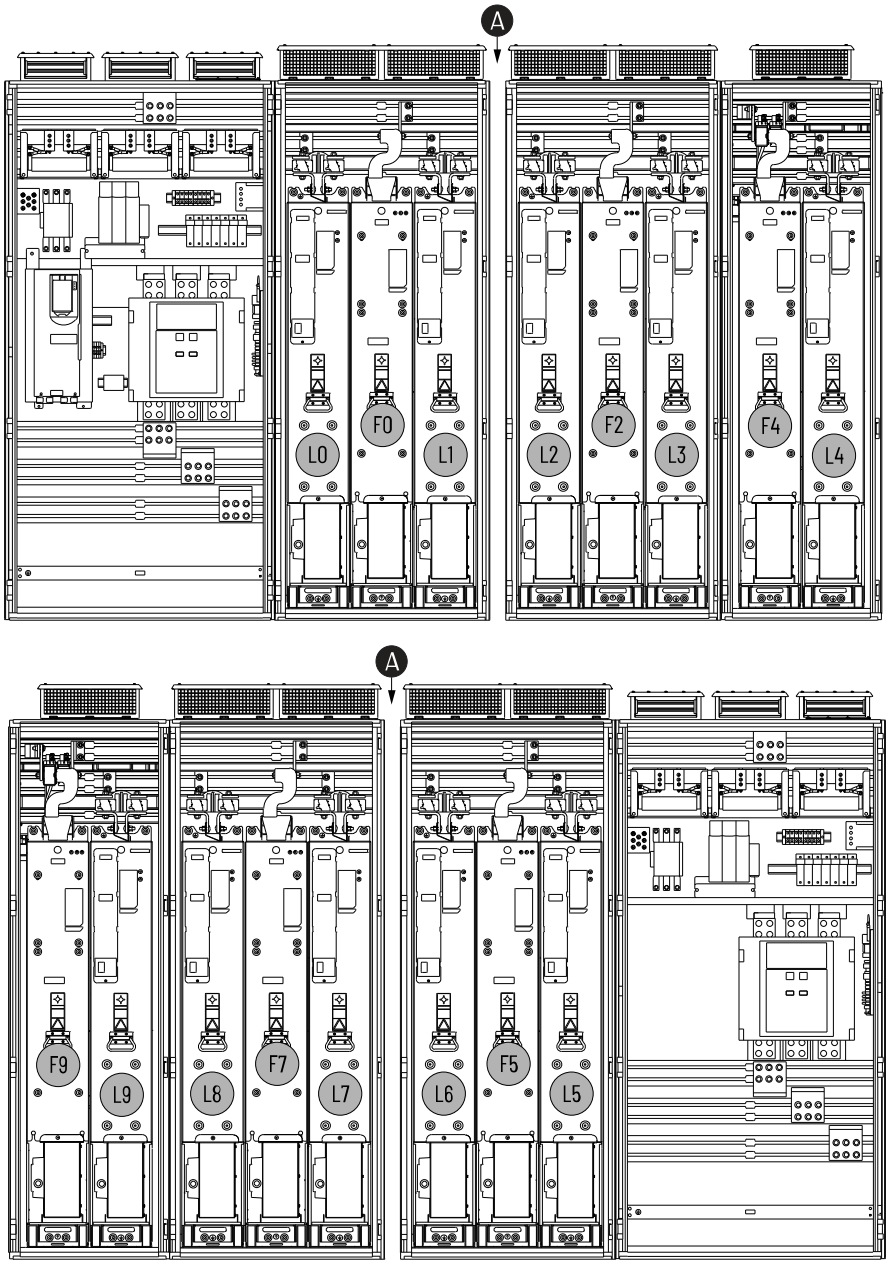


Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 2 of 6 (back-to-back left section Section 4 of 5 (in-line left section)
F0	LCL filter	
L2, L3	Line side converter	Section 3 of 6 (back-to-back right section) Section 5 of 5 (in-line right section)
F2	LCL filter	
L7, L6	Line side converter	Section 4 of 6 (back-to-back left section) Section 1 of 5 (in-line left section)
F6	LCL filter	

Remove Position No.	Module Type	Shipping Split Section
L5, L4	Line side converter	Section 5 of 6 (back-to-back right section) Section 2 of 5 (in-line right section)
F4	LCL filter	

A = Shipping split location

Figure 102. Frame 15 Bus Supply



Remove Position No.	Module Type	Shipping Split Section
L0, L1	Line side converter	Section 2 of 6 (back-to-back left section) Section 4 of 5 (in-line left section

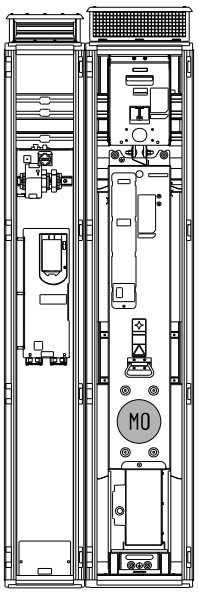
Remove Position No.	Module Type	Shipping Split Section
F0	LCL filter	
L2, L3, L4	Line side converter	Section 3 of 6 (back-to-back right section) Section 5 of 5 (in-line right section)
F2, F4	LCL filter	
F9, F7	LCL filter	Section 4 of 6 (back-to-back left section) Section 1 of 5 (in-line left section)
L9, L8, L7	Line side converter	
L6, L5	Line side converter	Section 5 of 6 (back-to-back right section) Section 2 of 5 (in-line right section)
F5	LCL filter	

A = Shipping split location

Removal of PowerFlex 755TM Common Bus Inverter Components

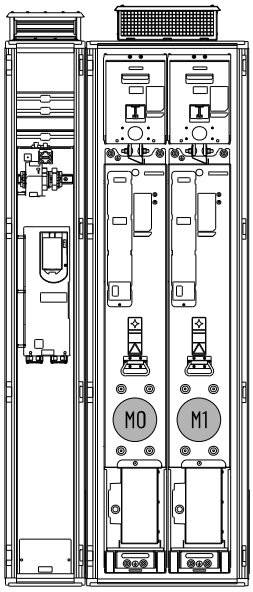
This section lists the motor side inverters that you must remove to install the product. For instructions on how to remove this component from the enclosure, see the Remove Frame 7 Power Module section.

Figure 103. Frame 8 Common Bus Inverter



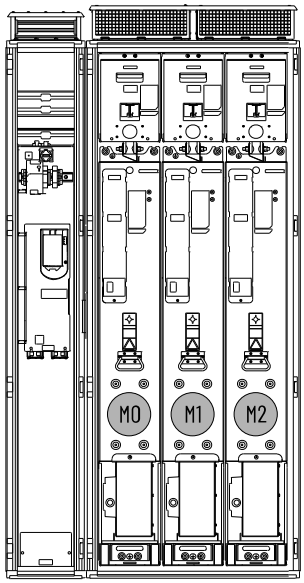
Remove Position No.	Module Type	Shipping Split Section
M0	Motor side inverter	Section 1 of 1 (in-line)

Figure 104. Frame 9 Common Bus Inverter



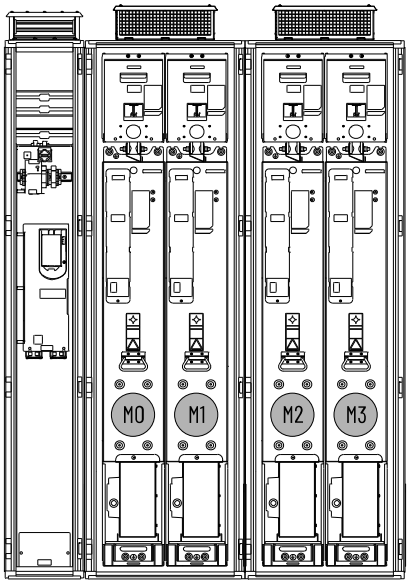
Remove Position No.	Module Type	Shipping Split Section
M0, M1	Motor side inverter	Section 1 of 1 (in-line)

Figure 105. Frame 10 Common Bus Inverter



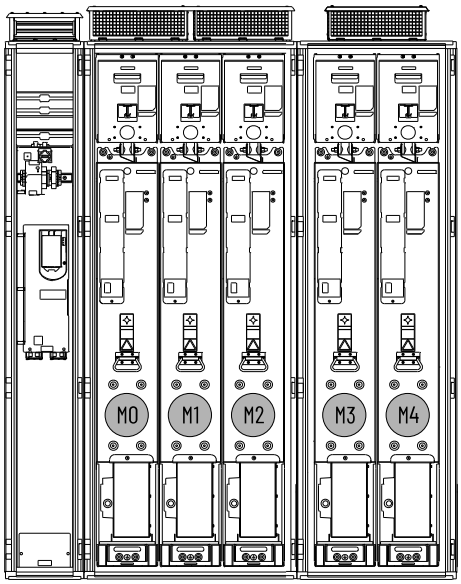
Remove Position No.	Module Type	Shipping Split Section
M0, M1, M2	Motor side inverter	Section 1 of 1 (in-line)

Figure 106. Frame 11 Common Bus Inverter



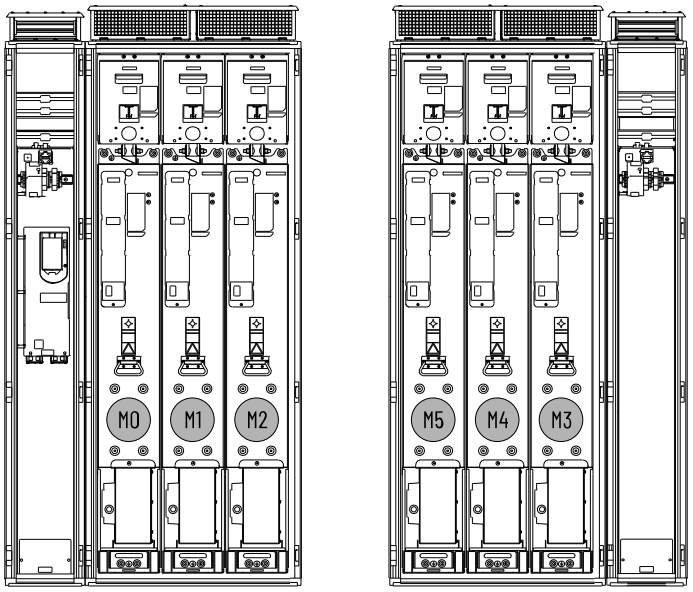
Remove Position No.	Module Type	Shipping Split Section
M0, M1, M2, M3	Motor side inverter	Section 1 of 1 (in-line)

Figure 107. Frame 12 Common Bus Inverter



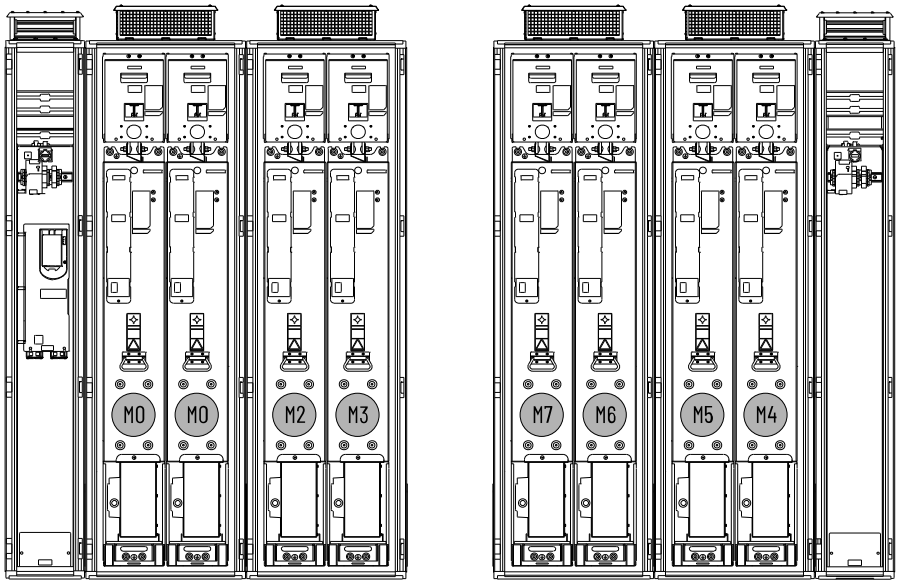
Remove Position No.	Module Type	Shipping Split Section
M0, M1, M2, M3, M4	Motor side inverter	Section 1 of 1 (in-line)

Figure 108. Frame 13 Common Bus Inverter



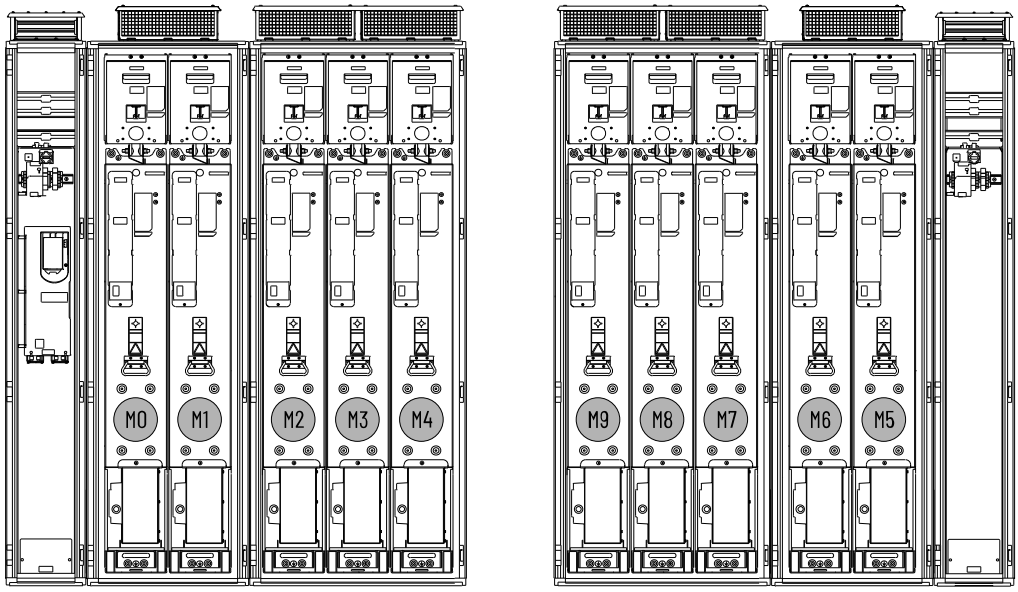
Remove Position No.	Module Type	Shipping Split Section
M0, M1, M2	Motor side inverter	Section 1 of 3 (back-to-back)
M5, M4, M3	Motor side inverter	Section 2 of 3 (back-to-back)

Figure 109. Frame 14 Common Bus Inverter



Remove Position No.	Module Type	Shipping Split Section
M0, M1, M2, M3	Motor side inverter	Section 1 of 3 (back-to-back)
M7, M6, M5, M4	Motor side inverter	Section 2 of 3 (back-to-back)

Figure 110. Frame 15 Common Bus Inverter



Remove Position No.	Module Type	Shipping Split Section
M0, M1, M2, M3, M4	Motor side inverter	Section 1 of 3 (back-to-back)
M9, M8, M7, M6, M5	Motor side inverter	Section 2 of 3 (back-to-back)

Remove Protective Touch Guards

You must remove the protective touch guards to access other components inside a product enclosure. This section covers the removal procedure for each of the enclosure types and enclosure widths. Follow the procedures to remove and replace the protective guards.

ATTENTION: Risk of injury or equipment damage exists.

Hazard of personal injury or equipment damage exists when protective touch guards are removed. Guards help to protect against accidental contact with exposed electrical connections and components. Guards can also provide electrical insulation between components. Remove guards only when access is required. Replace guards promptly. Never operate PowerFlex drive products without all guards in place.

Follow these steps to remove and replace the protective touch guards in an input bay.

1. Review the product advisories in the Before You Begin section.
2. Open the enclosure door.
3. Loosen the M5.5 screws that secure the protective touch guards. It is not necessary to remove these screws. When you reinstall the guards, tighten the screws to the torque listed.

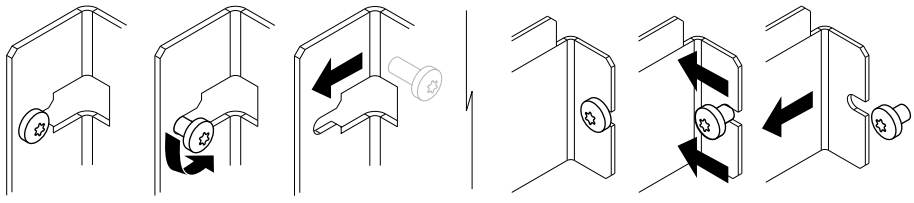
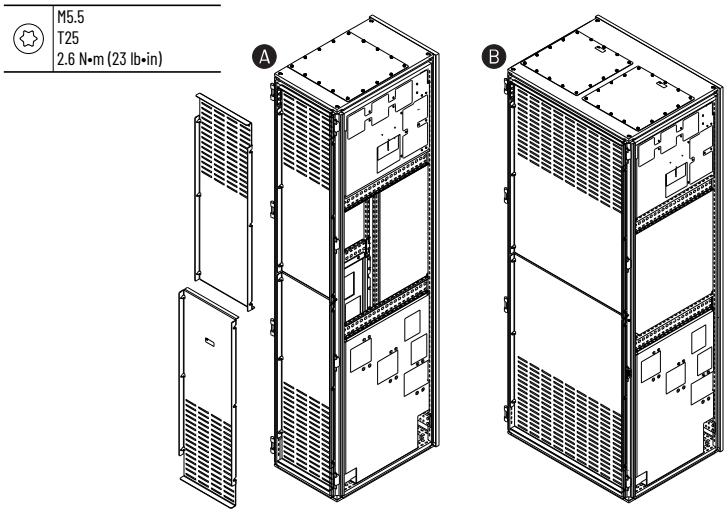
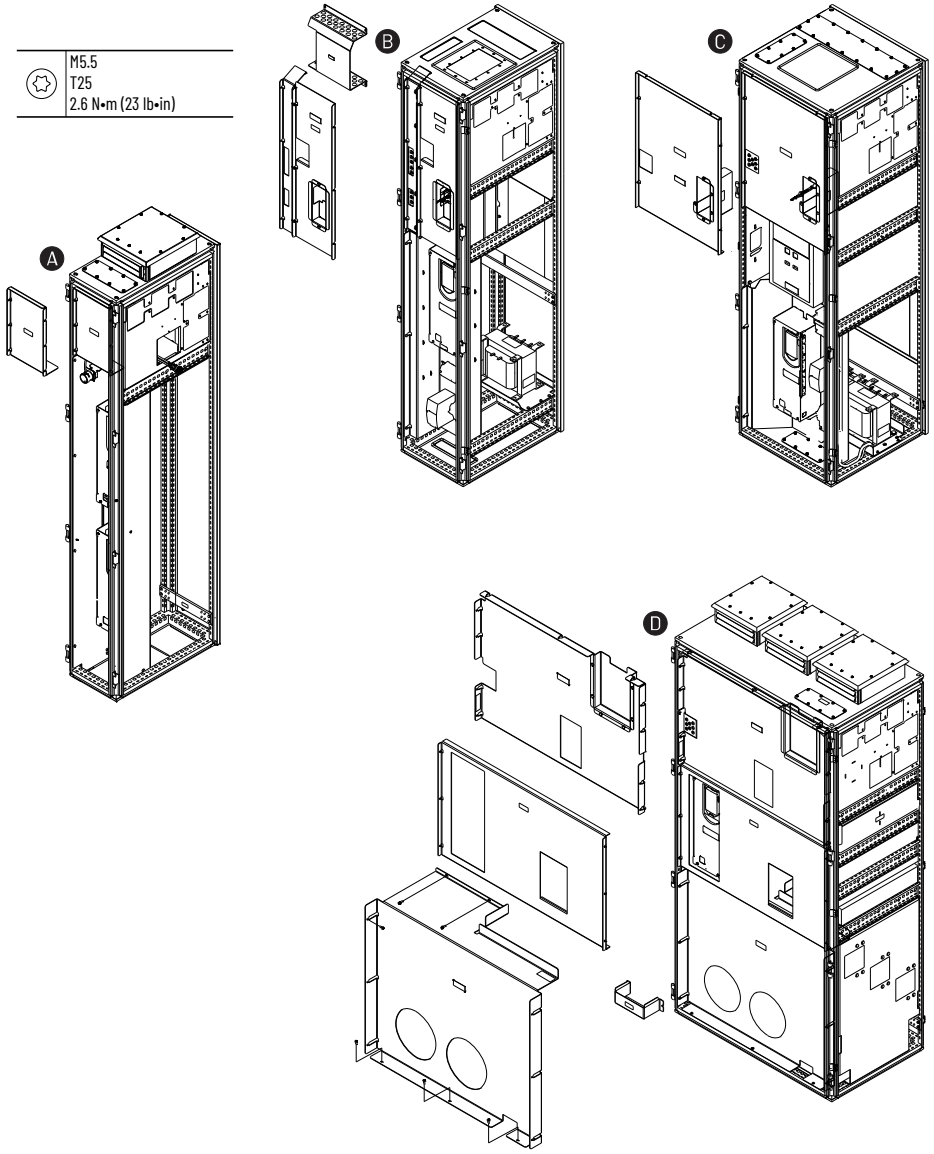


Figure 111. Wire Bay Touch Guards



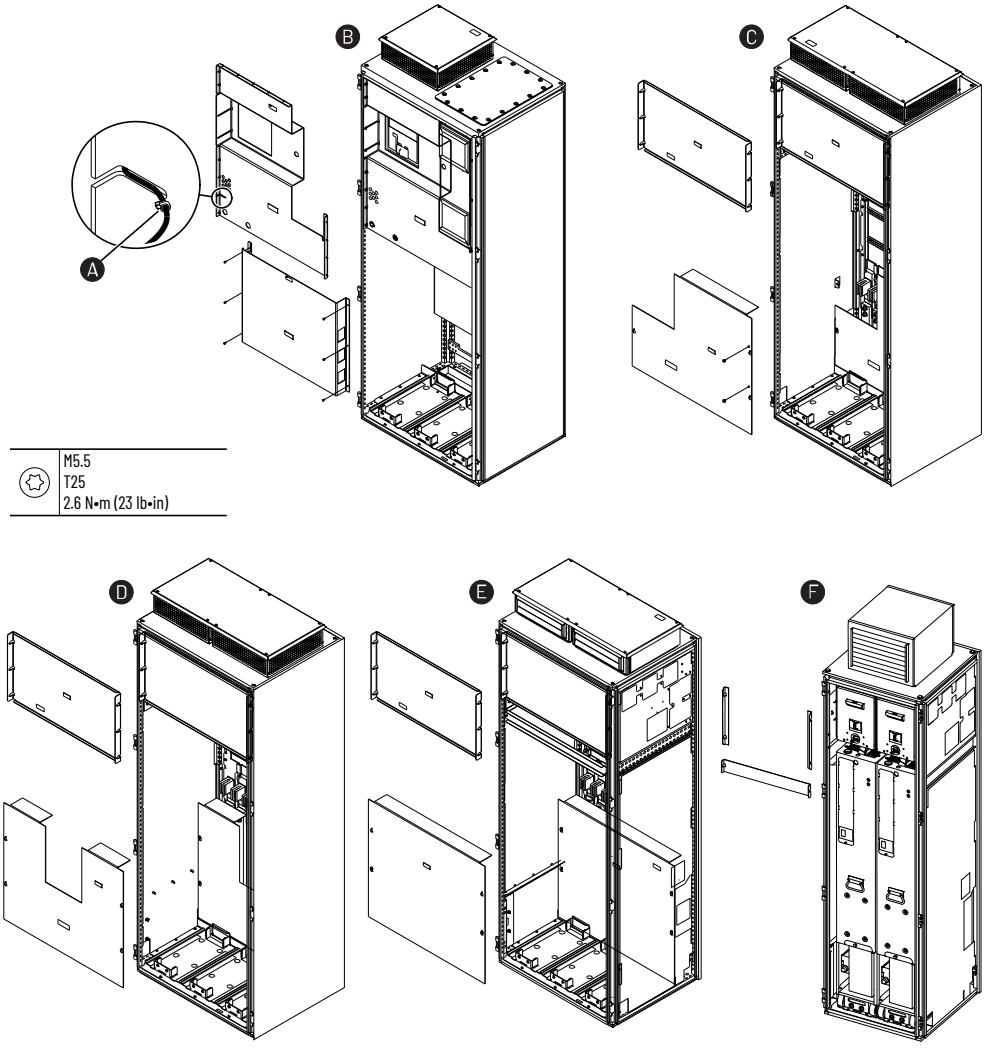
Item	Description
A	400 mm (15.7 in.) wide wire bay
B	800 mm (31.5 in.) wide wire bay

Figure 112. Control and Input Bay Touch Guards



Item	Description
A	300 mm (11.8 in.) control bay. Used with common bus inverters.
B	400 mm (15.7 in.) input bay. Used with frame 8 drives and bus supplies.
C	600 mm (23.6 in.) input bay. Used with frame 9 drives and bus supplies.
D	1000 mm (39.4 in.) input bay. Used with frame 10...15 drives and bus supplies.

Figure 113. Power Bay Touch Guards



Item	Description
A	A cable tie secures the HIM communication cable to the guard. Cut the cable tie to remove the guard. Replace the cable tie when you install the guard.
B	Frame 7 drives and bus supplies.
C	Frame 8 drives and bus supplies.
D	600 mm (23.6 in.) and 800 mm (31.5 in.) line side converter power bay. Used with fame 9…15 drives and bus supplies.
E	400 mm (15.7 in.), 600 mm (23.6 in.), and 800 mm (31.5 in.) motor side inverter power bay. Used with fame 8…15 common bus inverters.
F	Motor side inverter power bay with DC precharge.

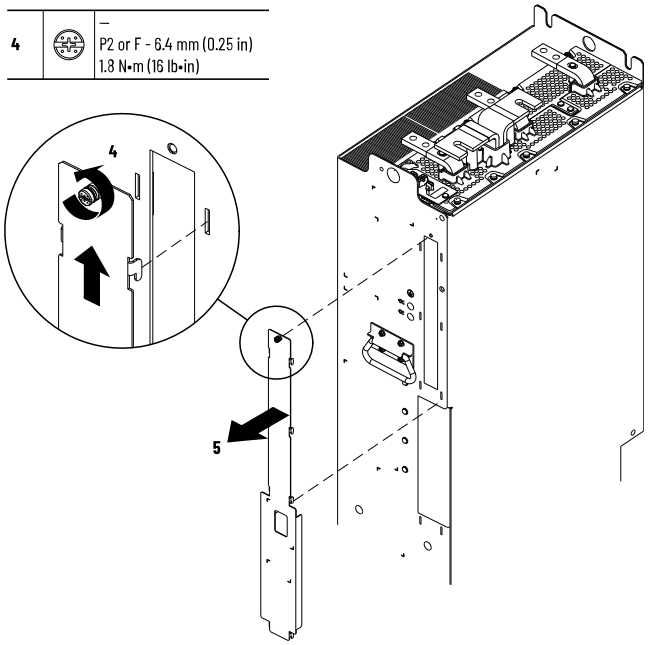
Remove Frame 7 Power Module

Follow these steps to remove the power module from the frame 7 enclosure.

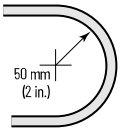
ATTENTION: Risk of injury, death, or equipment damage exists.

IGBT power and LCL filter modules have a high center of gravity and may pose a tip-over hazard. To guard against death, serious personal injury, or equipment damage, do not subject the module to high rates of acceleration or deceleration while transporting. Do not push or pull above the points that are indicated on the module.

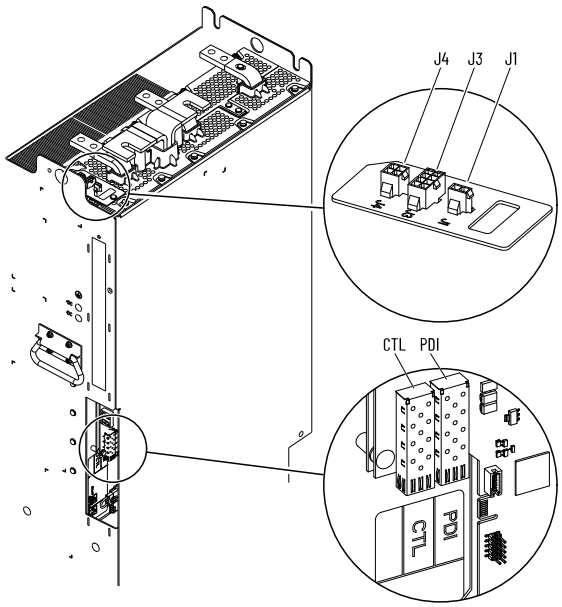
1. Review the product advisories in the Before You Begin section.
2. Open the enclosure door.
3. Remove the protective guard. See the Remove Protective Touch Guards section.
4. Loosen the thumb screw that secures the connection cover to the front of the power module.
5. Use the screw to lift the connections cover up and off the power module chassis.



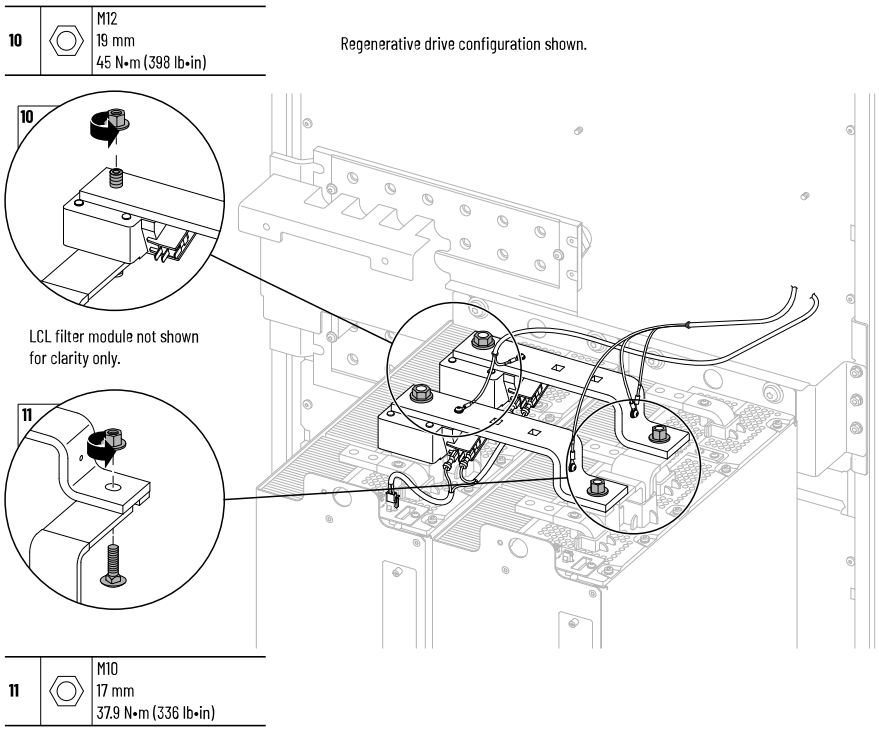
IMPORTANT: The minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.



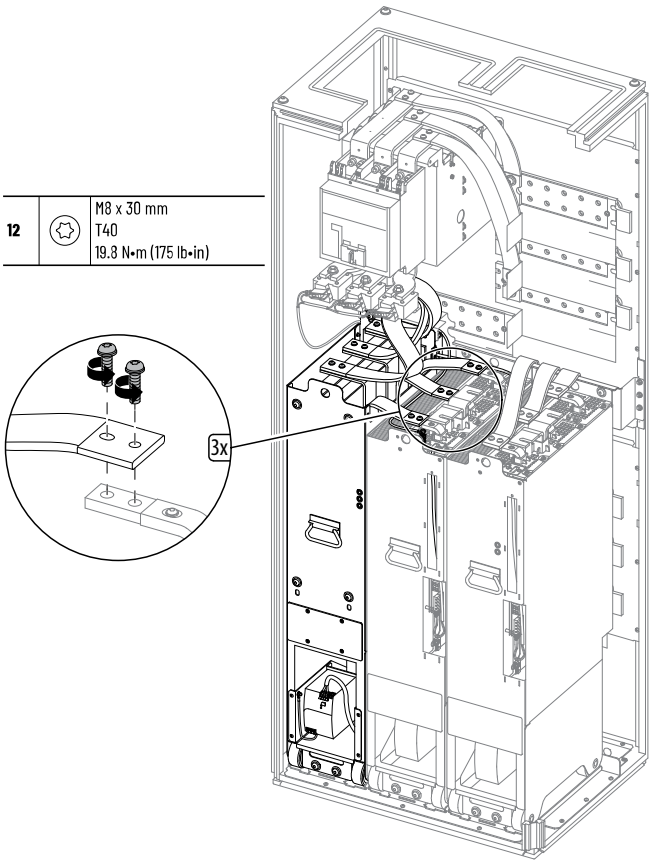
6. Remove the fiber-optic cables from the transceiver in the CTL and PDI (if present) ports on the power interface circuit board and remove the fiber-optic cables from the power module chassis.
   To help avoid damage, don't bend the fiber-optic cables to a radius less than 50 mm (2 in.).
7. For line side converter power modules, disconnect the DC fuse wire harness connector P1 from connector J1 on the I/O panel on the power module.
8. For line side converter power modules, disconnect the 24V DC signal wire harness connector P3 from J3 on the I/O panel on the power module.
9. Disconnect the 240V AC and optional 24V DC power supply wire harness connector P4 from J4 on the I/O panel on the power module.



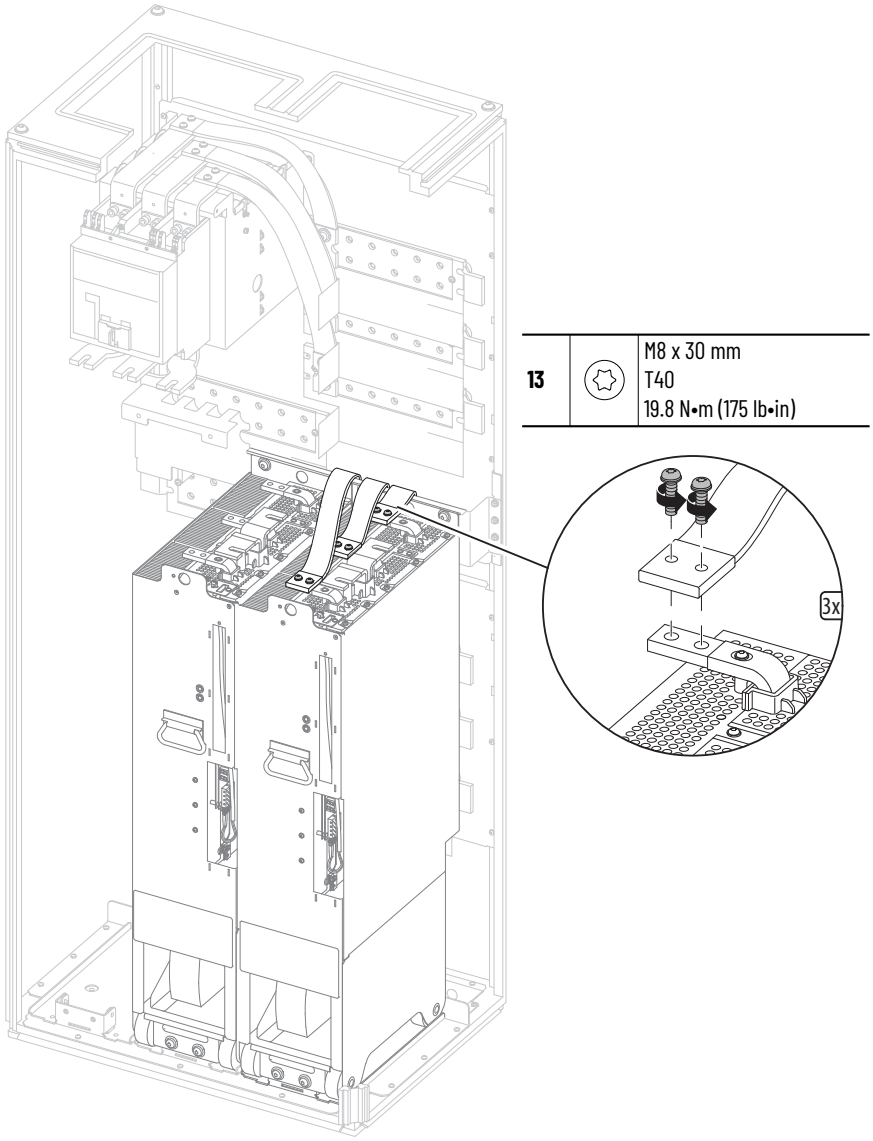
10. Remove the two M12 nuts that secure the top of the DC fuses to the DC bus terminals on the line side converter power module. For bus supplies, remove the DC link/fuses.
11. For drives only, remove the two M10 nuts that secure the DC link busbars to the DC terminals on the motor side inverter power module and remove the DC link/fuse assembly.



12. For the line side converter power module, remove the six M8 x 30 mm torx screws that secure the AC input flexible busbars to the AC input terminals on the power module, and remove the flexible busbars.

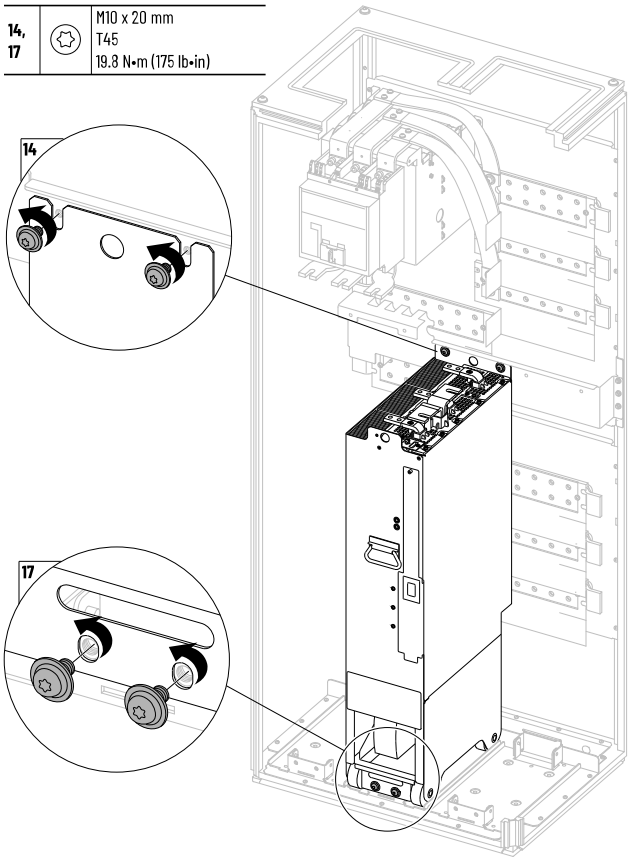


13. For the motor side inverter module, remove the six M8 x 30 mm torx screws that secure the AC output flexible busbars to the AC output terminals on the power module, and remove the flexible busbars.



14. Remove the two M10 x 20 mm torx screws that secure the upper power module chassis to the module support bracket.
15. Leave the two M10 x 20 mm screws that secure the power module chassis to the floor mounting bracket while preparing the PowerFlex® 750-Series service cart or service ramp.
16. To remove the module by using the PowerFlex®750-Series service cart, follow the detailed instructions in the PowerFlex 750-Series Service Cart and DCPC Module Lift Installation Instructions, publication 750-IN105.
    To remove the module using PowerFlex 755TM service ramp, follow the procedures that are detailed in the PowerFlex® 755T Module Service Ramp Instructions, publication 750-IN108.
17. To release the power module, remove the two remaining M10 screws.

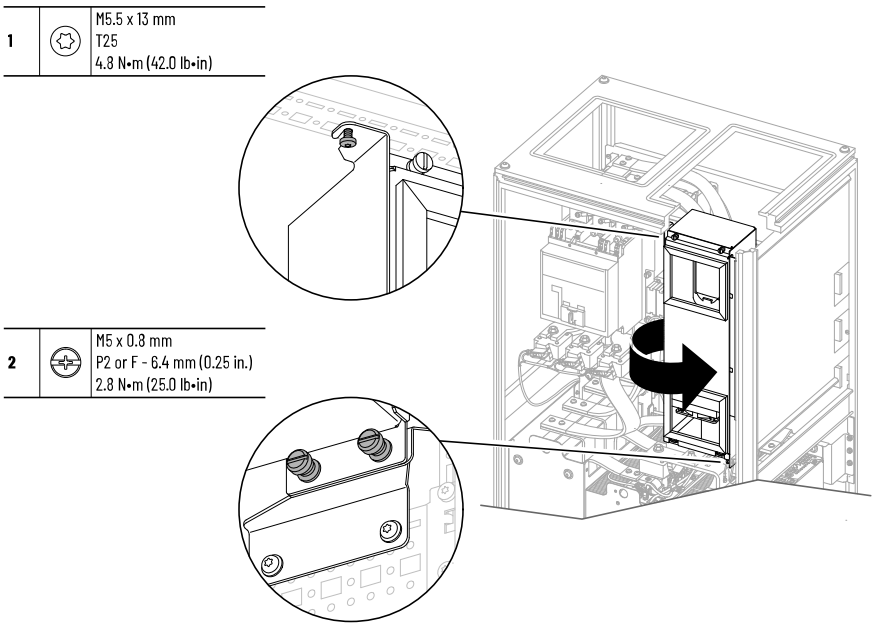
18. Remove the power module from the enclosure.



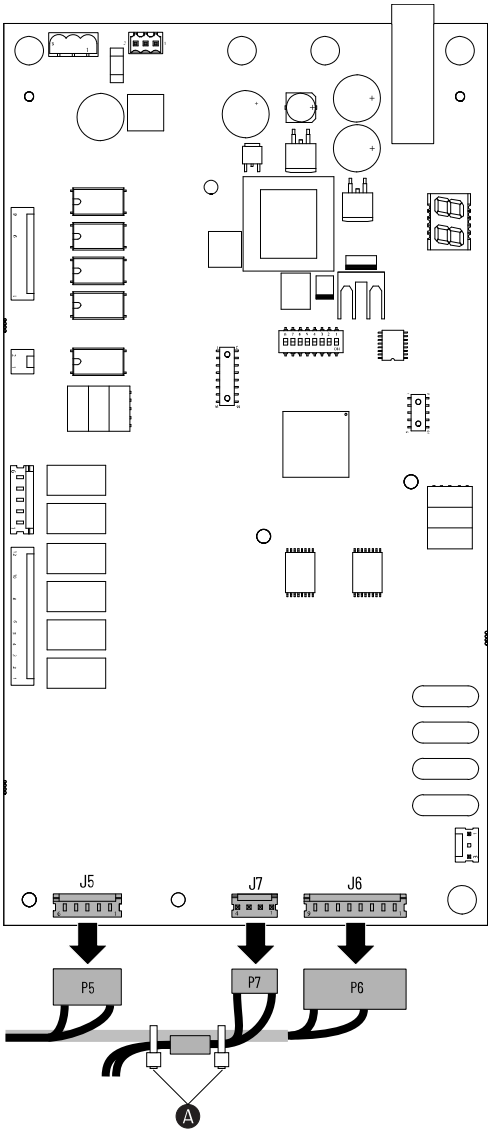
Access AC Precharge Components Panel—Frame 7

Open the AC precharge components panel to access components on the back of or behind the panel. Follow these steps to open and close the AC precharge components panel.

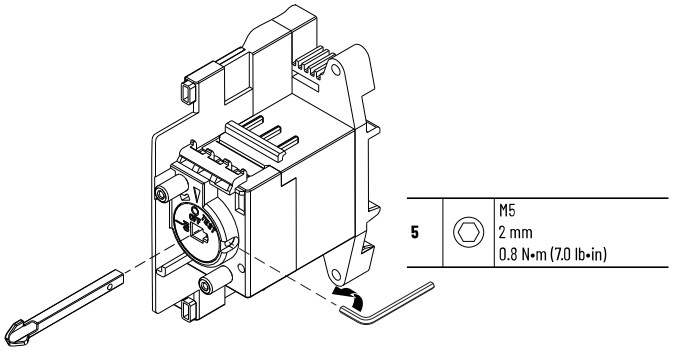
1. Loosen the M5.5 x 13 mm Torx screw that secures the control pod assembly to the enclosure frame.
2. Loosen the two M5 captive screws that secure the bottom of the control pod assembly to the side panel and rotate the control pod assembly out from the enclosure.



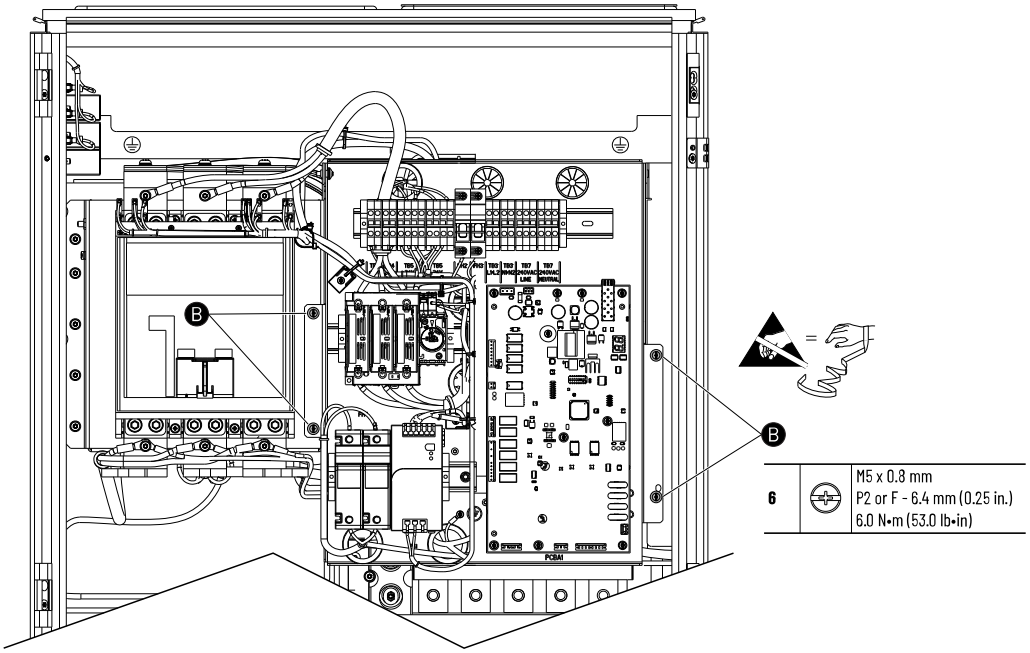
3. Disconnect these wire harness connectors from the connectors on the AC precharge control circuit board:
   - P5 from J5
   - P6 from J6
   - P7 from J7
4. Cut the cable ties (A) that secure the P6 and P7 wire harnesses together.



5. Loosen the hex screw that secures the handle to the fused disconnect switch and remove the handle.

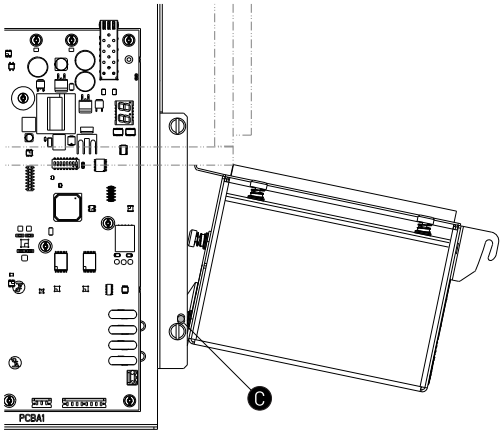


6. Loosen the four captive screws (B) that secure the AC precharge components panel to the chassis.



The control pod is not shown for clarity only.

7. Rotate the AC precharge components panel upward and secure the panel by placing the hole (C) on the side of the panel onto the pin on the control pod assembly.



This illustration shows a top view of the rotated control pod assembly with a partial view of the AC precharge components panel rotated upwards at 90°.

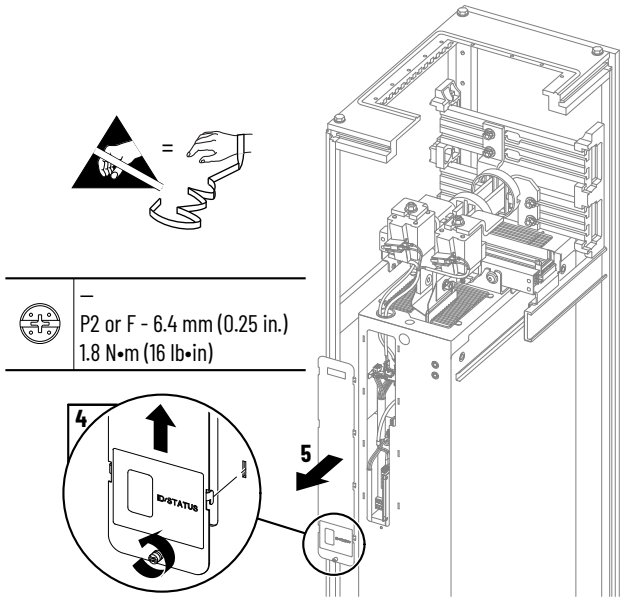
8. Close the AC precharge components panel in the reverse order.

Remove Frame 8...15 Power Module

Follow these steps to remove a power module from a frame 8...15 enclosure.

1. Review the product advisories in the Before You Begin section.
2. Open the enclosure door.
3. Remove the protective touch guards from the enclosure.

4. Loosen the thumb screw that secures the connections cover to the front of the power module.
5. Use the screw to lift the connections cover up and off the power module chassis.



6. Disconnect the PDI and CTL fiber-optic cables, if present, from the power layer interface circuit board.
7. Without bending the cables to a radius less than 50 mm (2 in.), carefully remove the cables from the power module chassis.

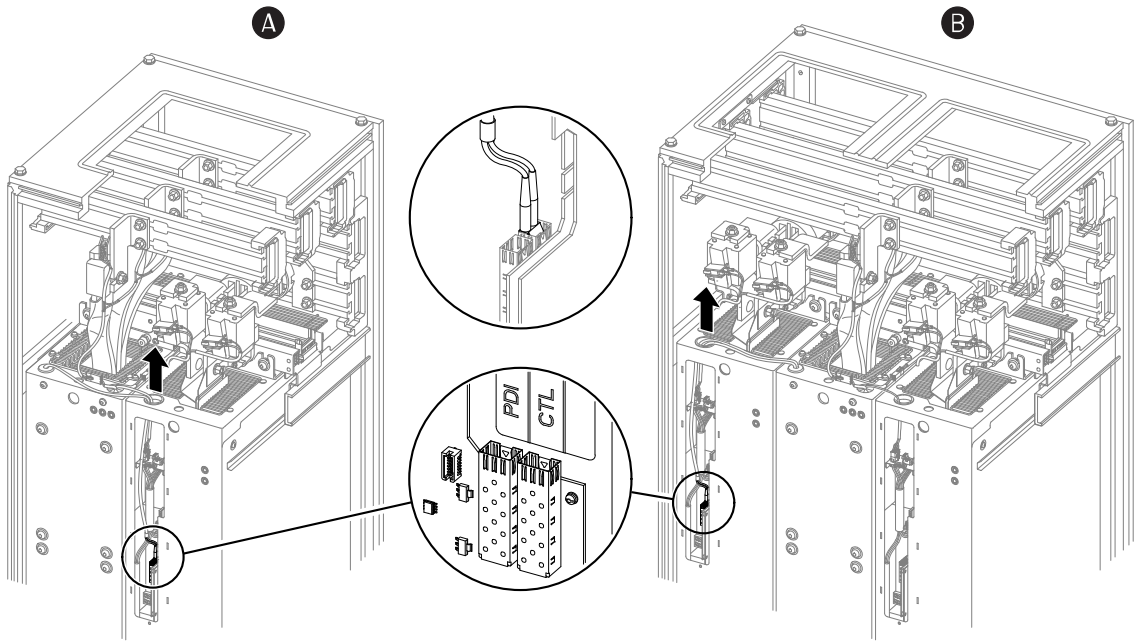
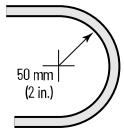


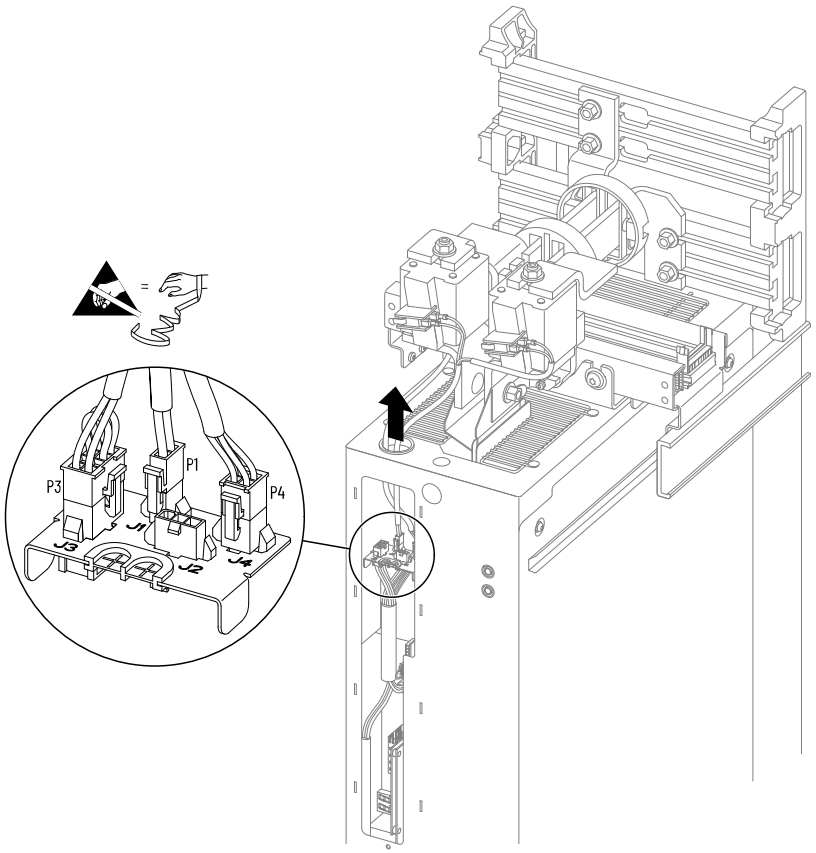
Table 57.

Item	Description
A	One line side converter with LCL filter.
B	Two line side converters with LCL filter.

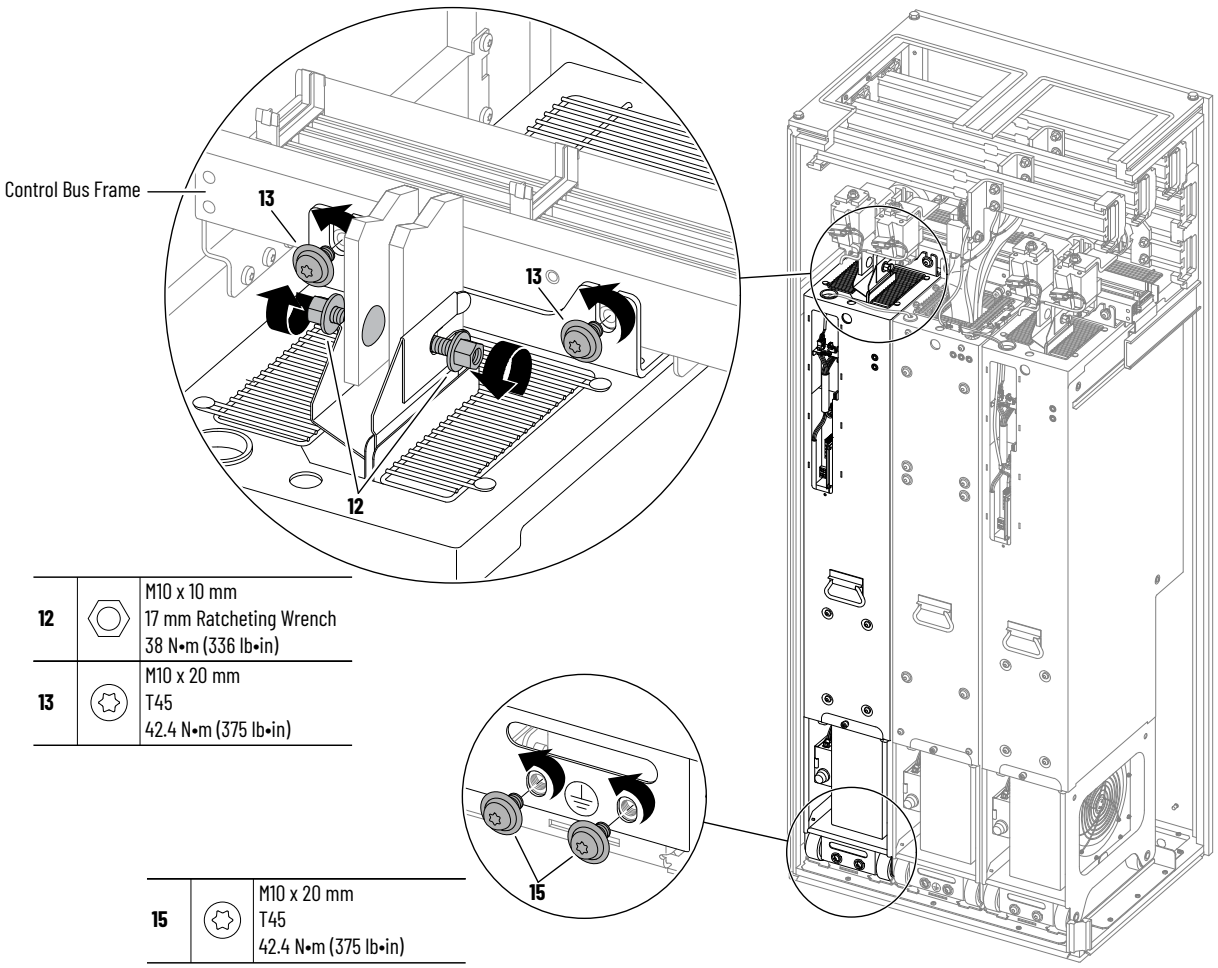
IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.



8. If present, disconnect the cable connector P1 from connector J1 on the I/O panel in the power module and remove the cable from the power module chassis.
9. If present, disconnect the cable connector P2 from connector J2 on the I/O panel in the power module remove the cable from the power module chassis.
10. Disconnect the cable connector P3 from connector J3 on the I/O panel in the power module and remove the cable from the power module chassis.
11. Disconnect the cable connector P4 from connector J4 on the I/O panel in the power module and remove the cable from the power module chassis.



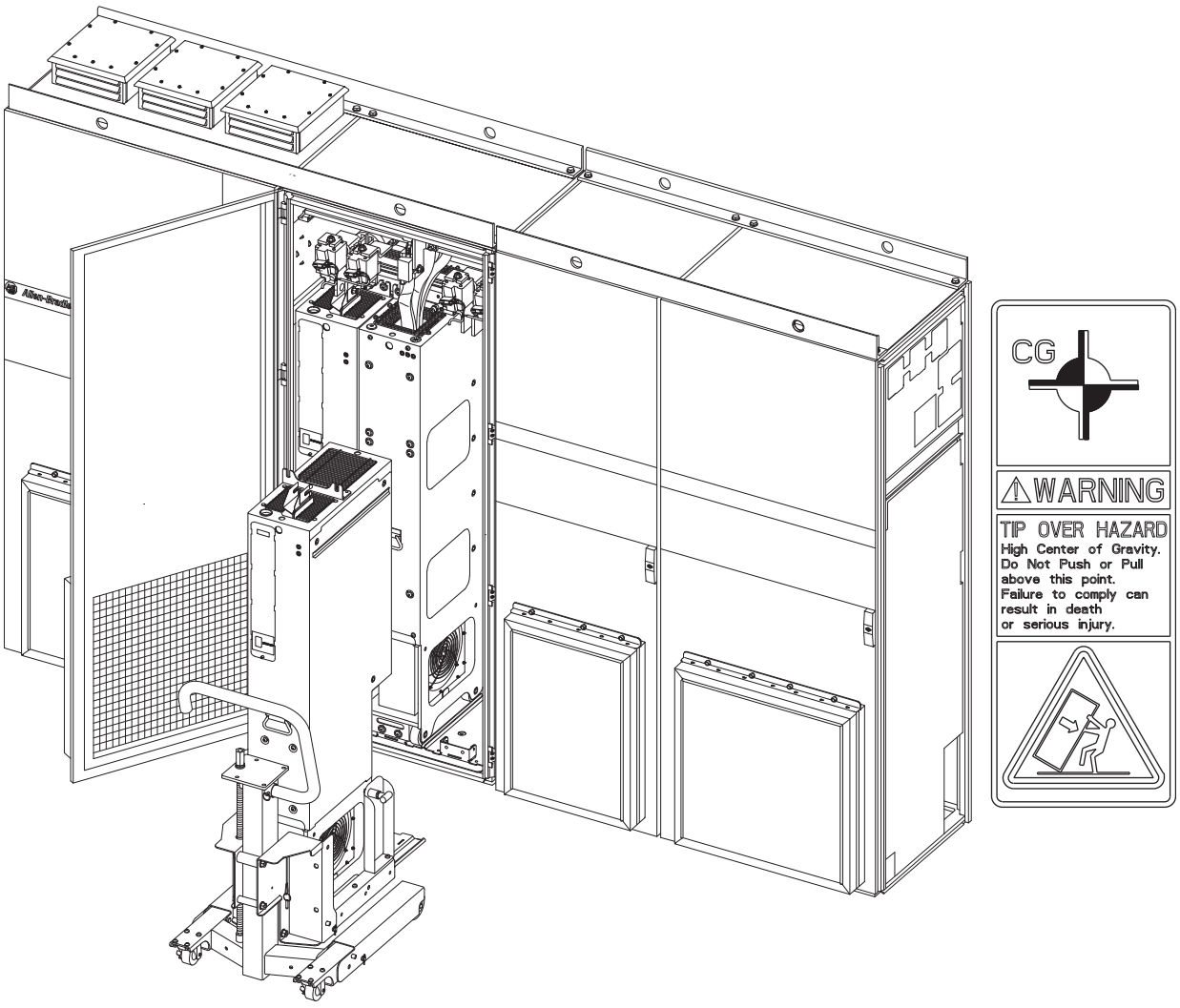
12. Loosen the two M10 x 10 mm hex nuts that secure the power input/output terminals to the DC precharge module or DC link fuse terminals. It is not necessary to remove these hex nuts. A ratcheting wrench is recommended to help access these hex nuts.
13. Remove the two M10 x 20 mm screws that secure the power module chassis to the control bus frame.



12		M10 x 10 mm 17 mm Ratcheting Wrench 38 N•m (336 lb•in)
13		M10 x 20 mm T45 42.4 N•m (375 lb•in)

15		M10 x 20 mm T45 42.4 N•m (375 lb•in)

14. Leave the two M10 x 20 mm screws that secure the power module chassis to the floor mounting bracket while preparing the PowerFlex 750-Series service cart or service ramp.
    To remove the module using the PowerFlex® 750-Series service cart, follow the procedures that are detailed in the PowerFlex 750-Series Service Cart and DCPC Module Lift Instructions, publication 750-IN105. To remove the module using PowerFlex® 755TM service ramp, follow the procedures that are detailed in the PowerFlex 755T Module Service Ramp Instructions, publication 750-IN108.
15. To release the power module, remove the two remaining M10 screws.
16. Remove the power module from the enclosure.



ATTENTION: Risk of injury, death, or equipment damage exists.

IGBT power and LCL filter modules have a high center of gravity and may pose a tip-over hazard. To guard against death, serious personal injury, or equipment damage, do not subject the module to high rates of acceleration or deceleration while transporting. Do not push or pull above the points that are indicated on the module.

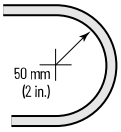
Install Power Modules in the Enclosure

Install the power modules into the enclosure in the reverse order of removal.

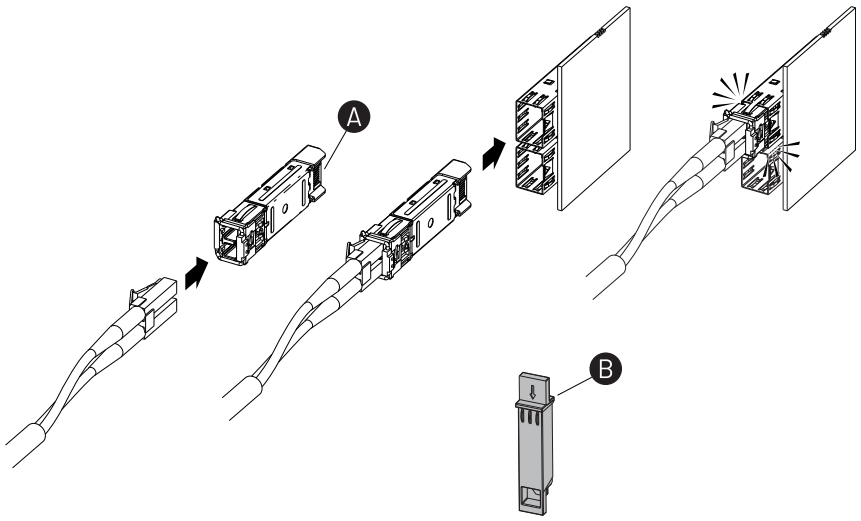
When you install the fiber optic cables:

1. Remove the transceiver from the fiber-optic connector port on the power layer interface circuit board.

IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.



2. Without bending the cable to a radius less than 50 mm (2 in.), fully insert the fiber-optic cable into the transceiver.
3. Insert the transceiver and fiber-optic cable into the connector on the board, until you hear an audible 'click.'
   Be sure that both plugs are fully engaged and seated and that the swing arm is down.



Item	Description
A	Do not touch greased connector.
B	Remove protective covers only as needed.

Remove Frame 7 LCL Filter Module

Follow these steps to remove the LCL filter module from a frame 7 enclosure.

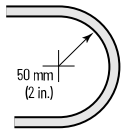
ATTENTION: Risk of injury, death, or equipment damage exists.

IGBT power and LCL filter modules have a high center of gravity and may pose a tip-over hazard. To guard against death, serious personal injury, or equipment damage, do not subject the module to high rates of acceleration or deceleration while transporting. Do not push or pull above the points that are indicated on the module.

1. Review the product advisories in the Before You Begin section.
2. Open the enclosure door.
3. Remove the protective touch guard.
4. Loosen the thumb screw that secures the connection cover to the front of the line side converter power module.

5. Use the screw to lift the connections cover up and off the power module chassis.

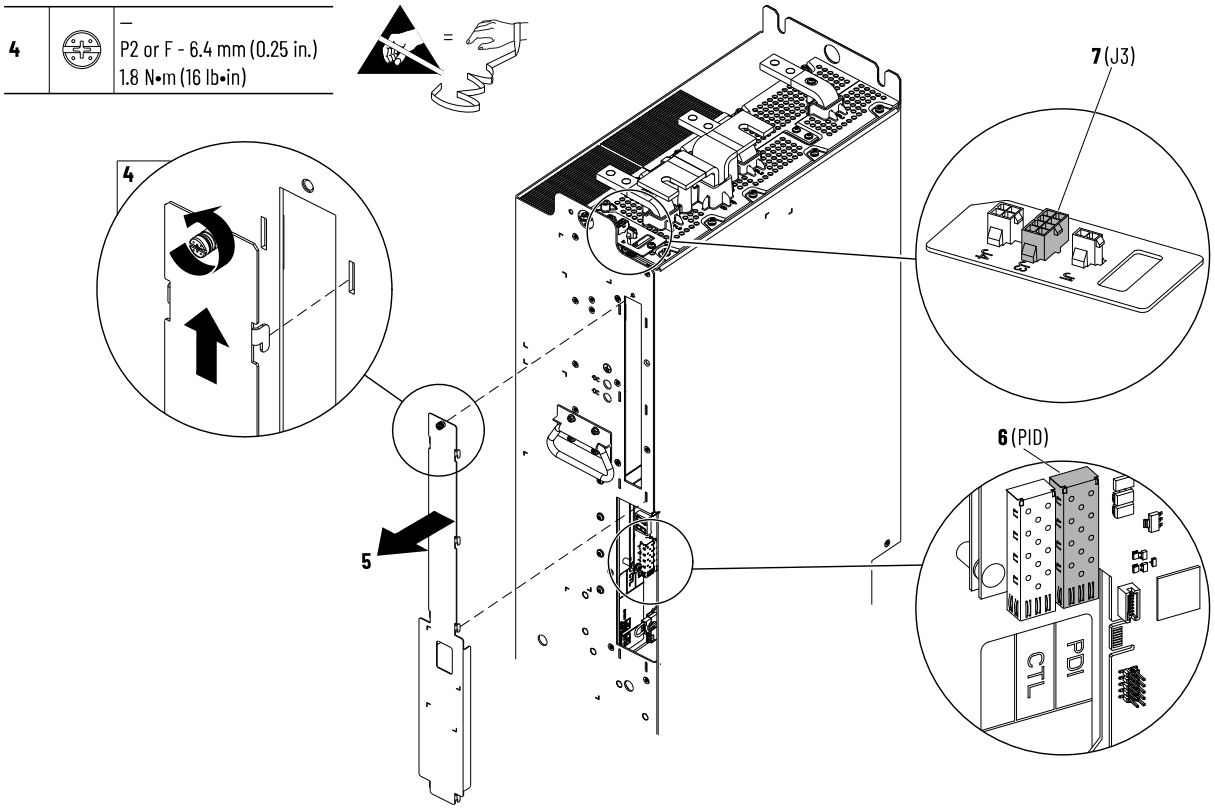
IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.



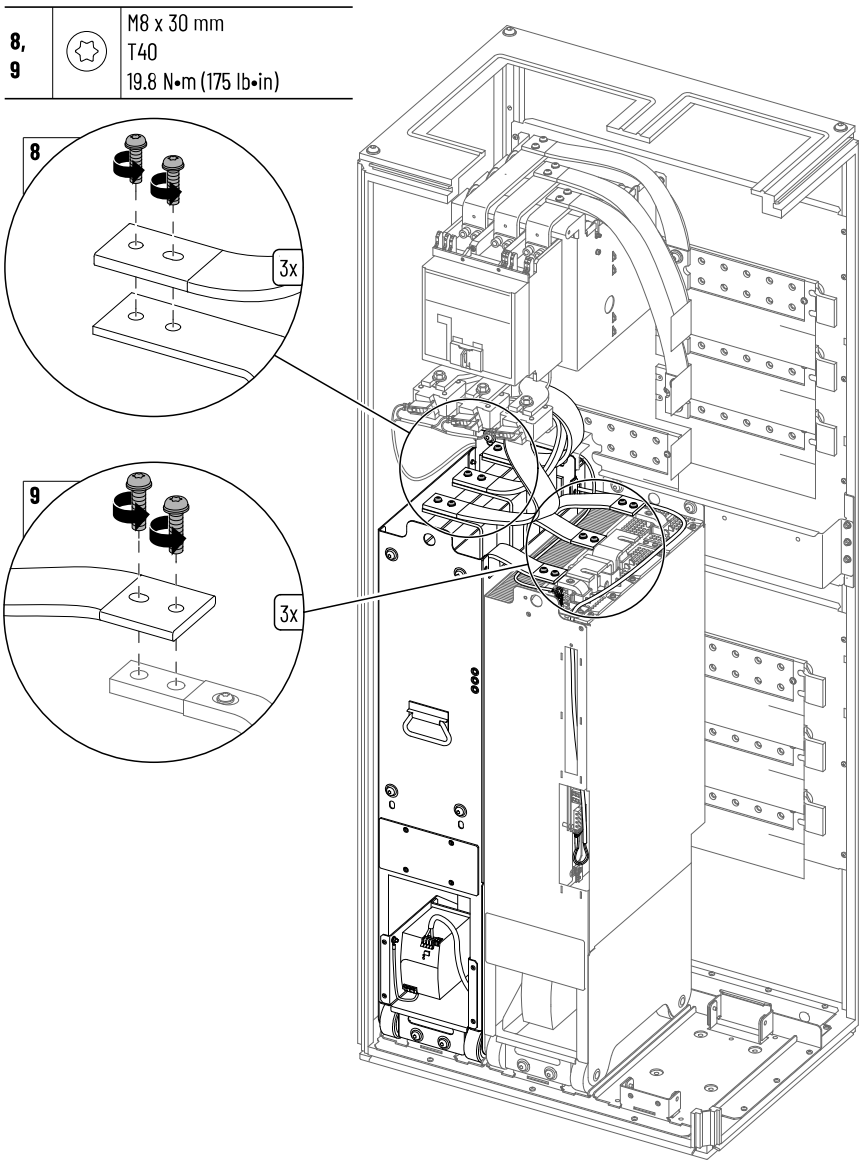
6. Without bending the cable to a radius less than 50 mm (2 in.), remove the fiber-optic cable from the transceiver in the PDI port of the power interface circuit board in the power module and remove the fiber-optic cable from the power module chassis.

IMPORTANT: Observing the minimum bend radius, carefully coil the fiber optic cable and secure it to the LCL filter module where it cannot be damaged.

7. Disconnect the 24V DC signal wire harness connector P3 from J3 on the I/O panel in the line side converter power module.



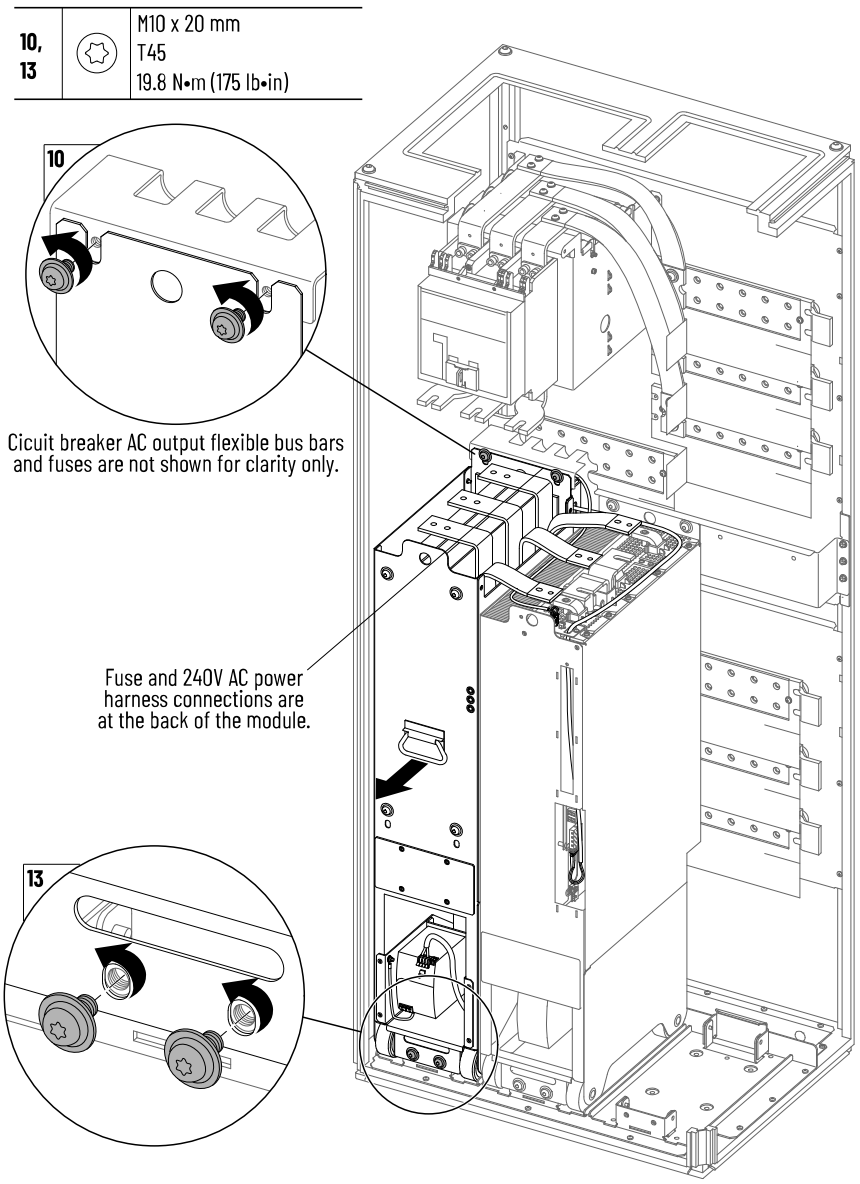
8. Remove the two M8 x 30 mm torx screws that secure the circuit breaker AC output flexible bus bars to the AC input terminals on the LCL filter and remove the bus bars.
9. Remove the two M8 x 30 mm torx screws that secure each of the LCL filter AC output flexible bus bars to the AC input terminals on the line side converter power module and remove the bus bars.



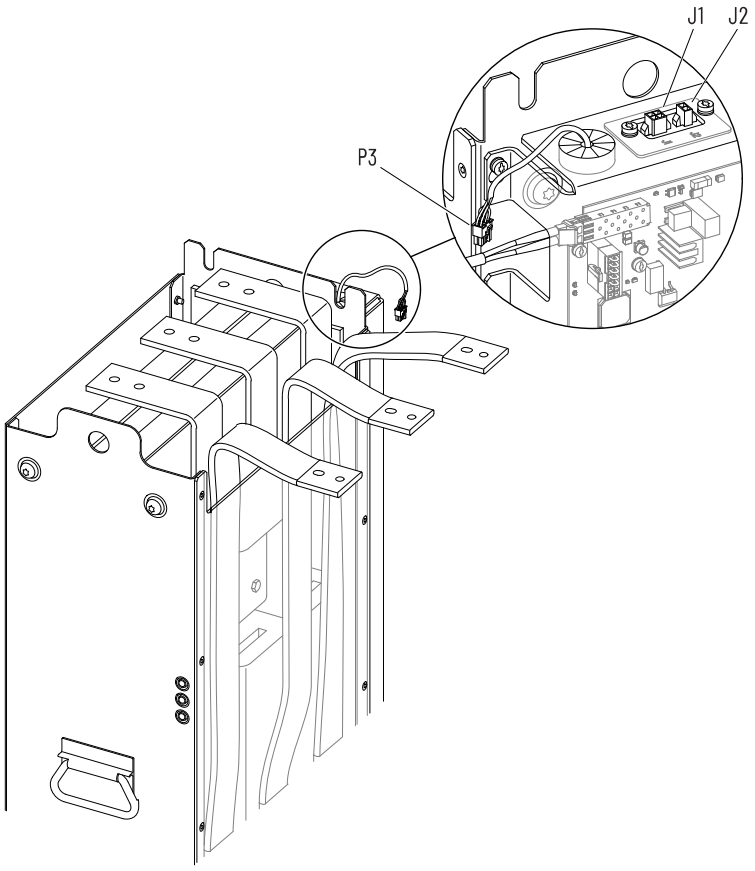
10. Remove the two M10 x 20 mm torx screws that secure the upper LCL filter module chassis to the module support bracket.
11. Leave the two M10 x 20 mm screws that secure the LCL filter chassis to the floor mounting bracket while preparing the PowerFlex 750-Series service cart.
12. To remove the module by using the service cart, follow the detailed instructions in the PowerFlex 750-Series Service Cart and DCPC Module Lift Installation Instructions, publication 750-IN105.

IMPORTANT: The AC fuse wire harness and 240V AC power wire harness connections are on the back of the LCL filter module. These connectors must be removed before you can release the module fully from the enclosure.

13. Remove the two remaining M10 screws at the bottom of the module, and pull the module out only as far as necessary to expose the connections at the back of the module.



14. Disconnect the AC fuse wire harness connector P1 from connector J1 on the LCL filter module I/O panel.
15. Disconnect the 240V AC power wire harness connector P2 from J2 on the LCL filter module I/O panel.

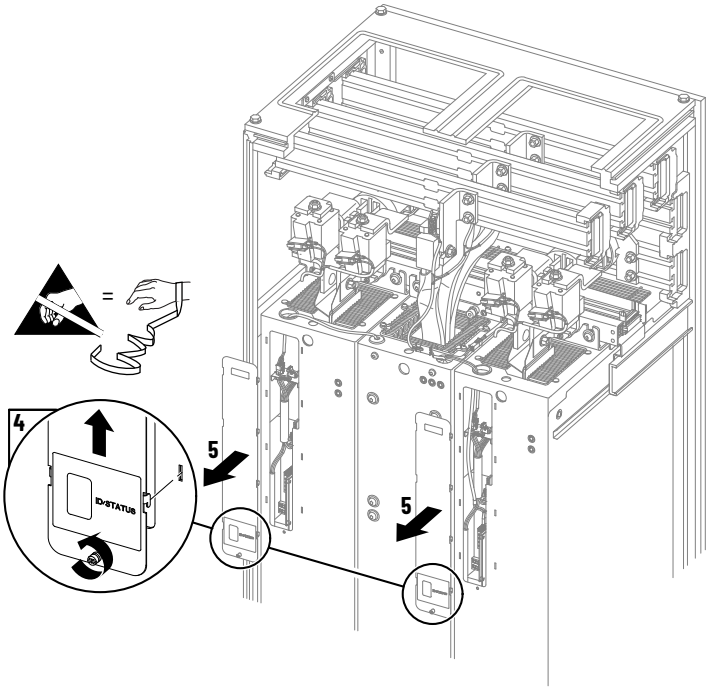


16. Remove the LCL filter module from the enclosure.

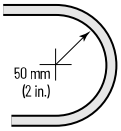
Remove Frame 8...15 LCL Filter Module

Follow this procedure to remove the LCL filter module from a frame 8...15 enclosure.
If power modules need to be removed, follow these steps to remove them.

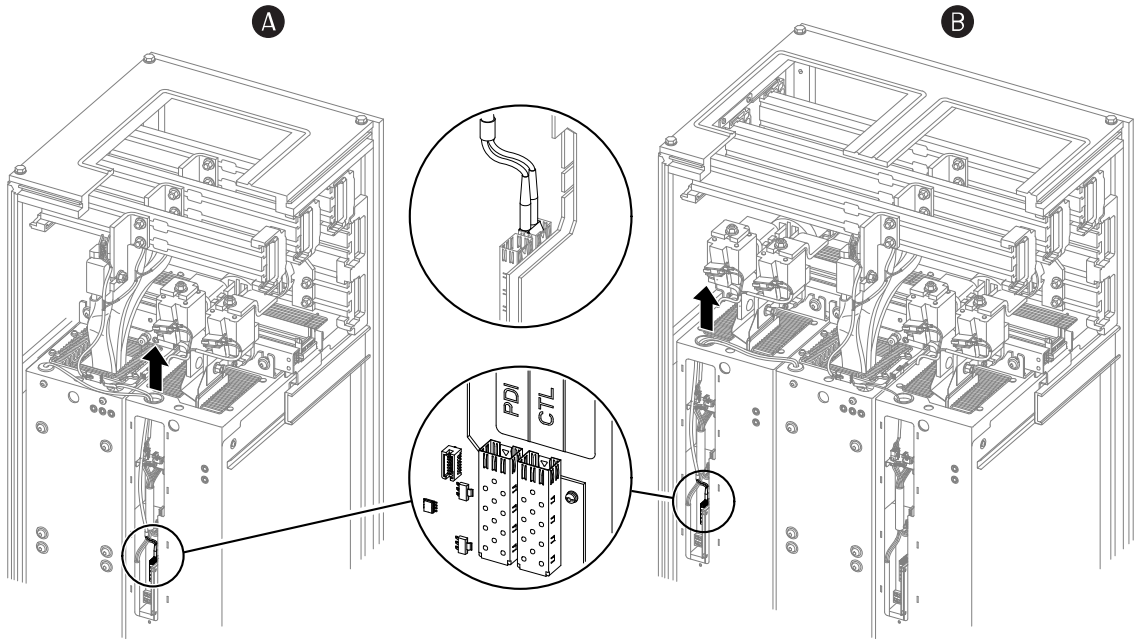
1. Review the product advisories in the Before You Begin section.
2. Open the enclosure door.
3. If present, remove the protective guards from the enclosure.
4. Loosen the screw that secures the connections cover to the front of any adjoining power module.
5. Use the screw to lift the connections cover up and off the power module chassis.



IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.

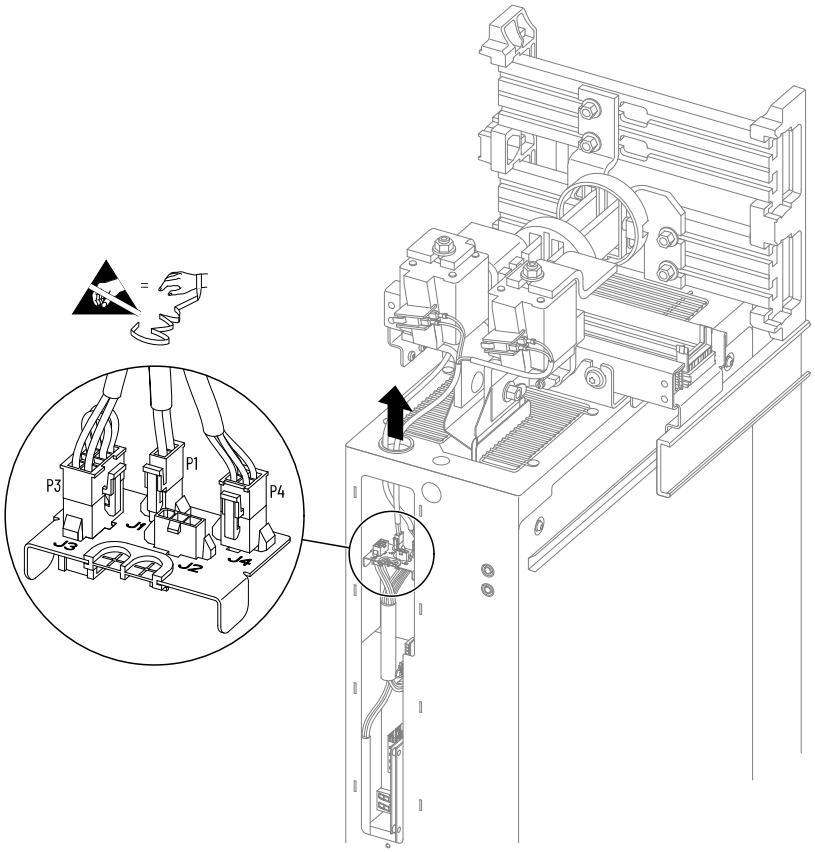


6. Disconnect the PDI and CTL fiber-optic cables, if present, from the power layer interface circuit board.



Item	Description
A	LCL filter with one line side converter.
B	LCL filter with two line side converters.

7. Without bending the cable to a radius less than 50 mm (2 in.), carefully remove the disconnected fiber-optic cables from the power module chassis.
8. Disconnect any P1 through P4 cables that are plugged into the I/O panel in the power modules.
9. Carefully remove the disconnected cables from the power module chassis.



10. On the LCL filter module, disconnect the the 240 volt connector P4 and AC input fuse wire harness connector P5 on the LCL filter module.

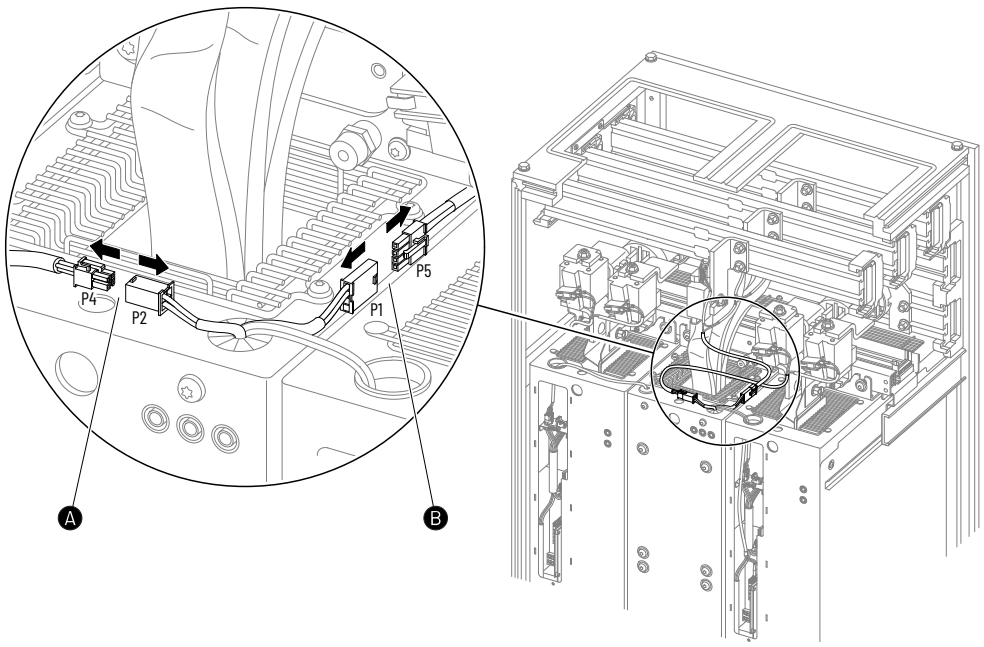
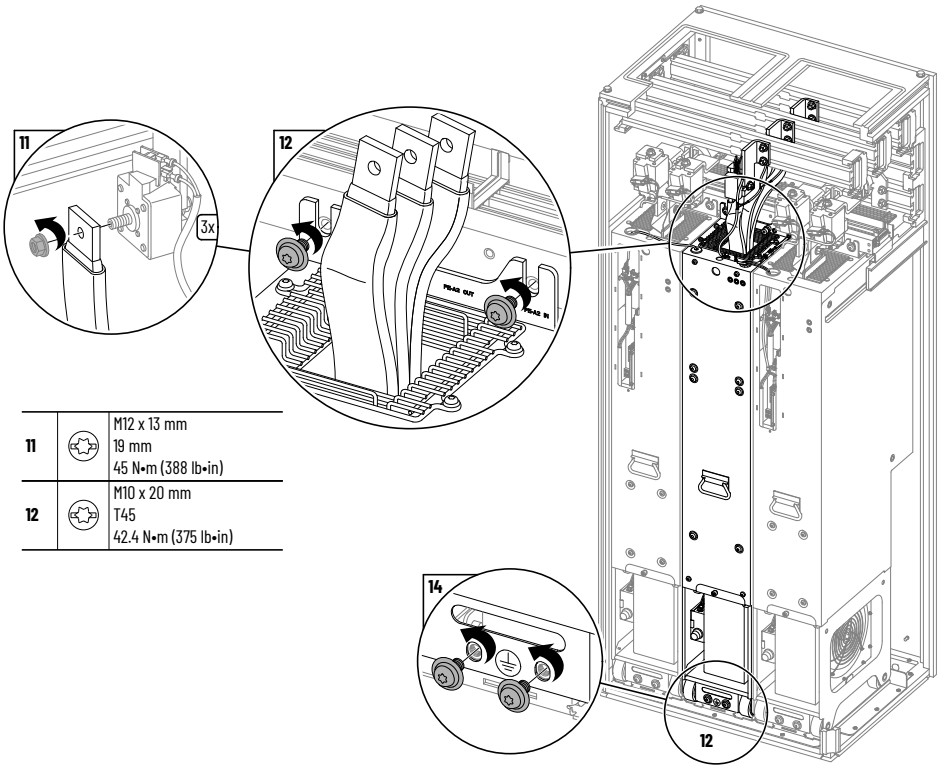


Table 58.

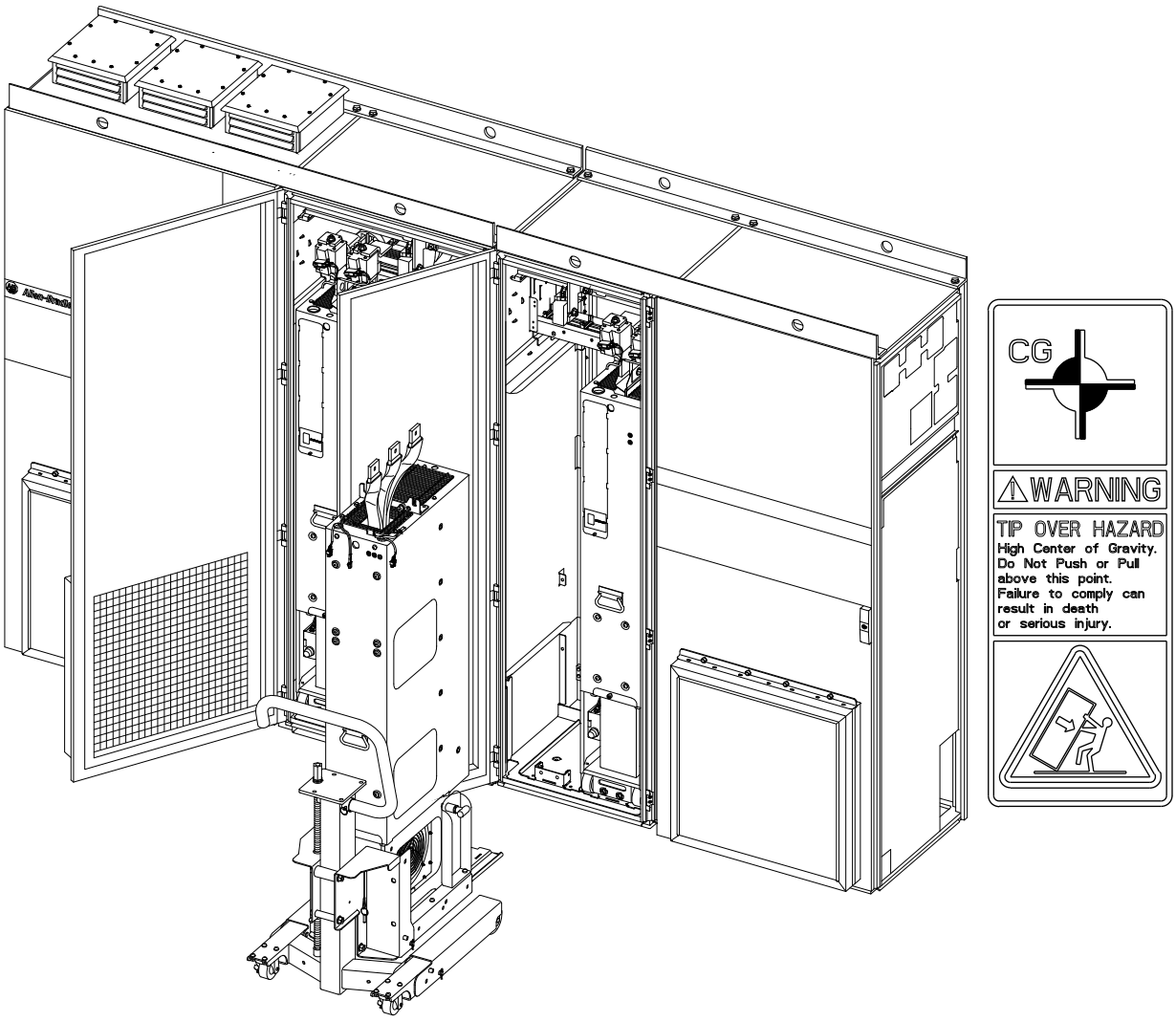
Item	Description
A	240V P4 to P2 power control bus connection.
B	AC input fuse P1 to P5 connection.

11. Remove the three M12 x 13 mm hex nuts that secure the flexbus cables to the AC input fuse terminals and remove the flexbus cables.
12. Remove the two M10 x 20 mm screws that secure the LCL filter module chassis to the control bus frame.



11		M12 x 13 mm 19 mm 45 N•m (388 lb•in)
12		M10 x 20 mm T45 42.4 N•m (375 lb•in)

13. Leave the two M10 x 20 mm screws that secure the LCL filter module chassis to the floor mounting bracket while preparing the PowerFlex® 750-Series service cart.
14. Secure the service cart to the floor mounting bracket in the enclosure. See PowerFlex 750-Series Service Cart Instructions, publication 750-IN105, for information on using the service cart.
15. To release the LCL filter module, remove the two remaining M10 screws that secure the module to the cabinet floor.
16. To remove the LCL filter module from the enclosure, use the service cart, 20-750-MCART1.



ATTENTION: Risk of injury, death, or equipment damage exists.

IGBT power and LCL filter modules have a high center of gravity and may pose a tip-over hazard. To guard against death, serious personal injury, or equipment damage, do not subject the module to high rates of acceleration or deceleration while transporting. Do not push or pull above the points that are indicated on the module.

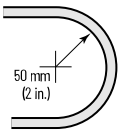
Install LCL Filter Modules in the Enclosure

Install the LCL filter modules into the enclosure in the reverse order of removal.

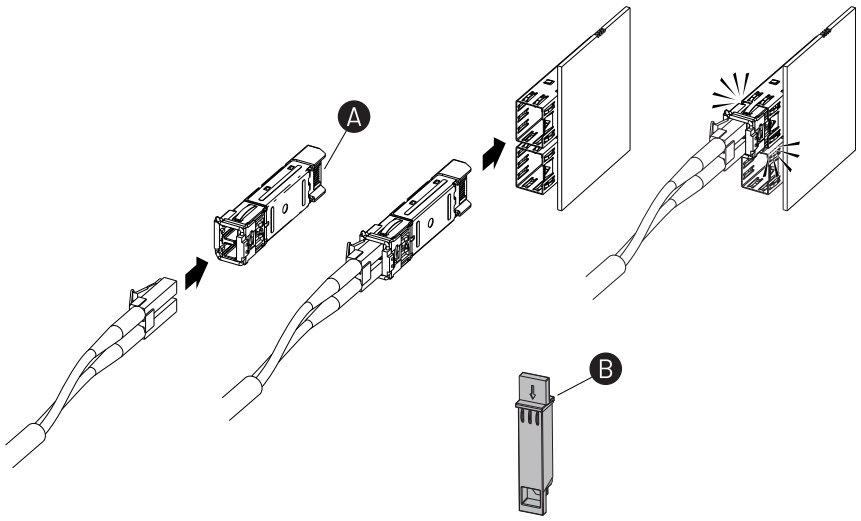
When you install the fiber optic cables:

1. Remove the transceiver from the fiber-optic connector port on the power layer interface circuit board.

IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.



2. Without bending the cable to a radius less than 50 mm (2 in.), fully insert the fiber-optic cable into the transceiver.
3. Insert the transceiver and fiber-optic cable into the connector on the board, until you hear an audible 'click.'
   Be sure that both plugs are fully engaged and seated and that the swing arm is down.



Item	Description
A	Do not touch greased connector.
B	Remove protective covers only as needed.

Join Enclosures

PowerFlex® 755T products that ship in multiple sections must be connected after the sections are in their final positions. The enclosures are connected together using the joining hardware that is provided.

Each of the three types of enclosure connections is made in the same way.

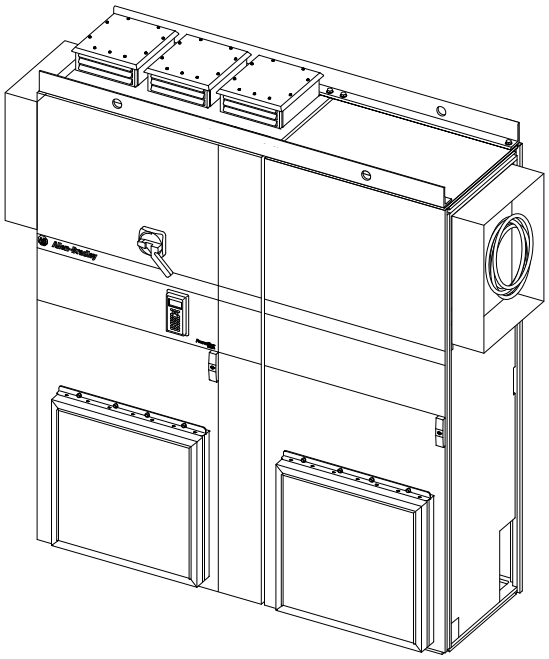
- Entry wire bay to input bay
- Power bay to power bay
- Power bay to exit wire bay

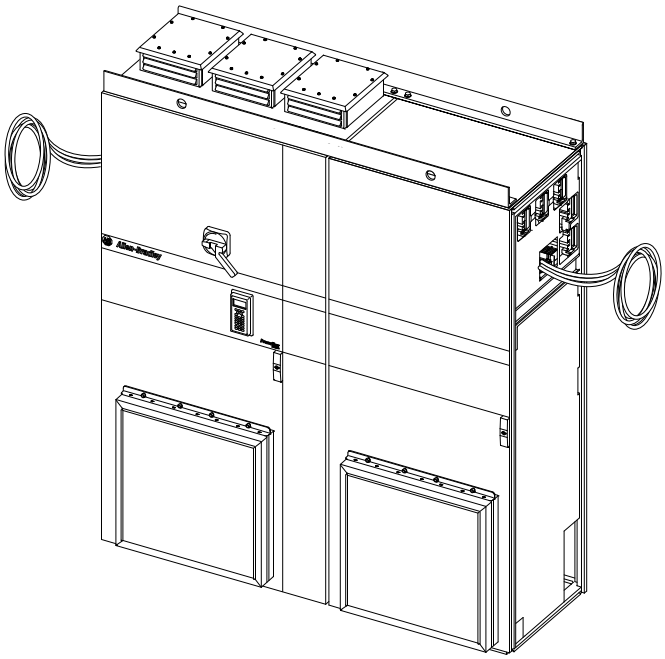
See the Release Enclosure From Shipping Skid on page 114 section for instructions on removing the hardware that secures the enclosure to the skid.

Prepare Input Bay or First Power Bay

Follow these steps for Frame 13…15 Drives and Bus Supplies.

1. Locate the box or boxes that hold coils of fiber-optic cables.



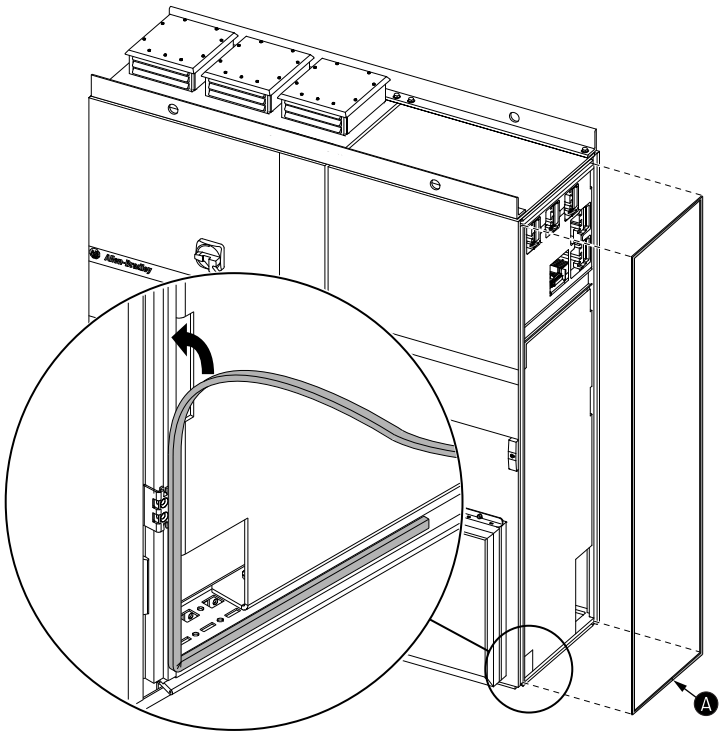


2. Remove and discard packaging.
3. Carefully uncoil the fiber-optic cables.
4. Compare the cable labels with the corresponding figure in the Fiber-optic Cable Routing by Product and Frame Size.

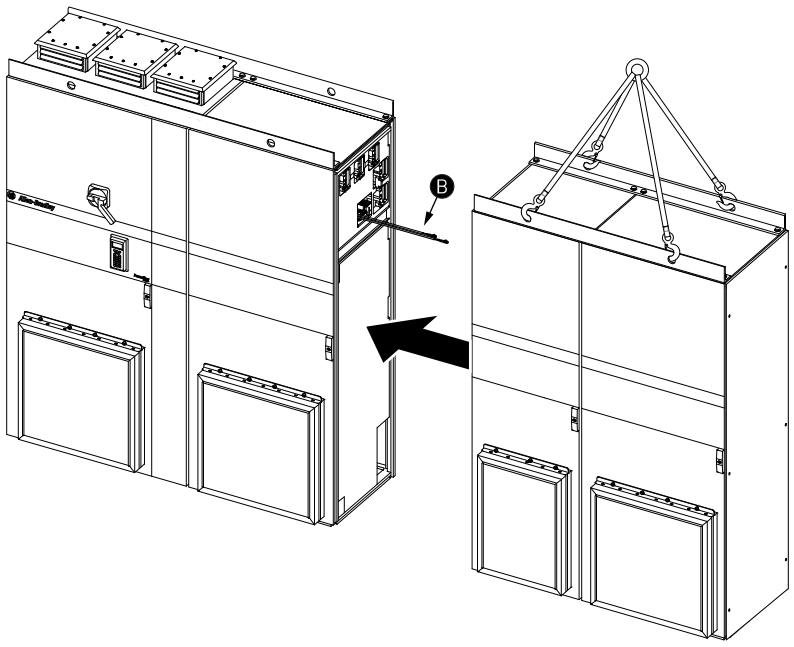
Make Cabinet-to-Cabinet Connections

Follow this sequence of steps for all cabinet-to-cabinet connections.

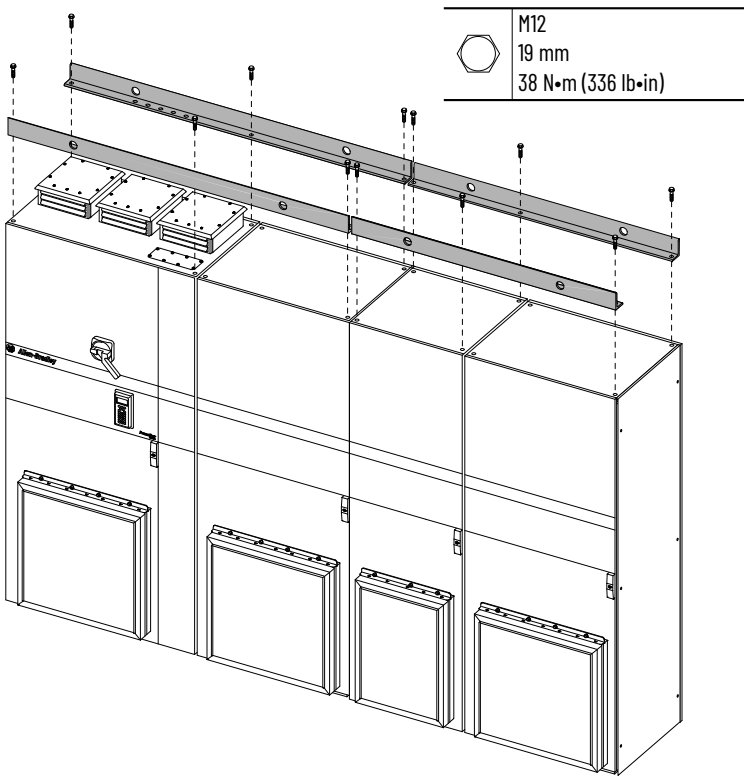
1. Apply the gasket in one continuous strip around the open end of the enclosure. Seam the gasket (A) at the approximate middle of the bottom of the enclosure.



2. Align the enclosures that are to be joined.
3. Bring the loose cabinet close to the placed cabinet.
4. Feed any fiber-optic cables (B) into the loose cabinet as you draw the cabinets together.



5. Bring the aligned enclosures tight together.
6. Remove the structural angles.

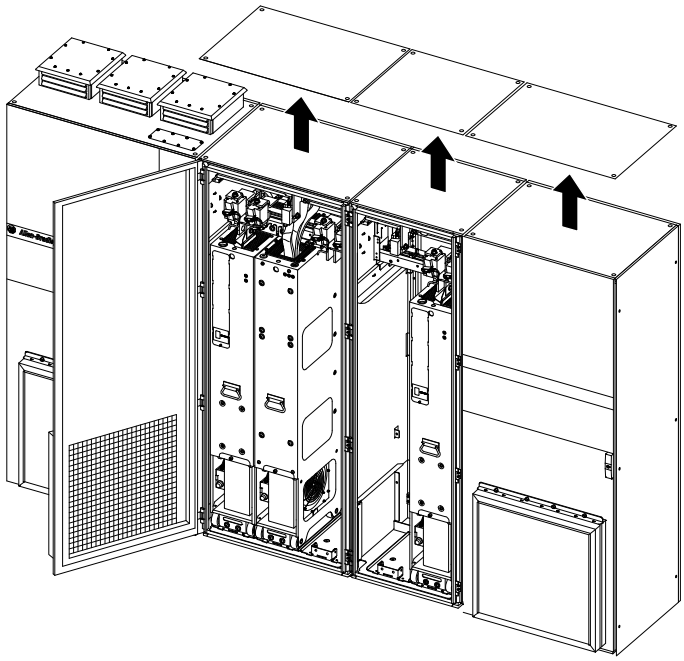


IMPORTANT: Make any final position and leveling adjustments before this step.

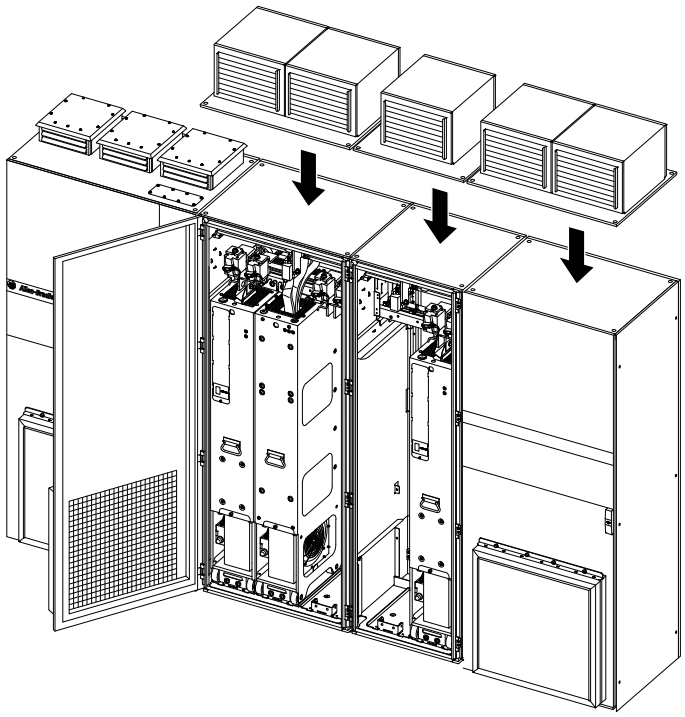
Install IP54, UL Type 12 Roof Assemblies

Install the roof assemblies on PowerFlex® 755T products with an IP54, UL Type 12 enclosure rating.

1. Remove the shipping roof panels.



2. Lower the IP54, UL Type 12 roof assemblies on to the enclosures.



IMPORTANT: Use care not to damage the roof assembly gasket material. When lifting and handling these components, follow all applicable local, national, and international codes, standards, regulations or industry guidelines for safe practices.

3. Connect the fan wiring harnesses.

4		M8 13 mm 4.8 N•m (42 lb•in)

4. To make the PE ground connection, use the M8 nut provided.

Install Joining Hardware—Standard Installation

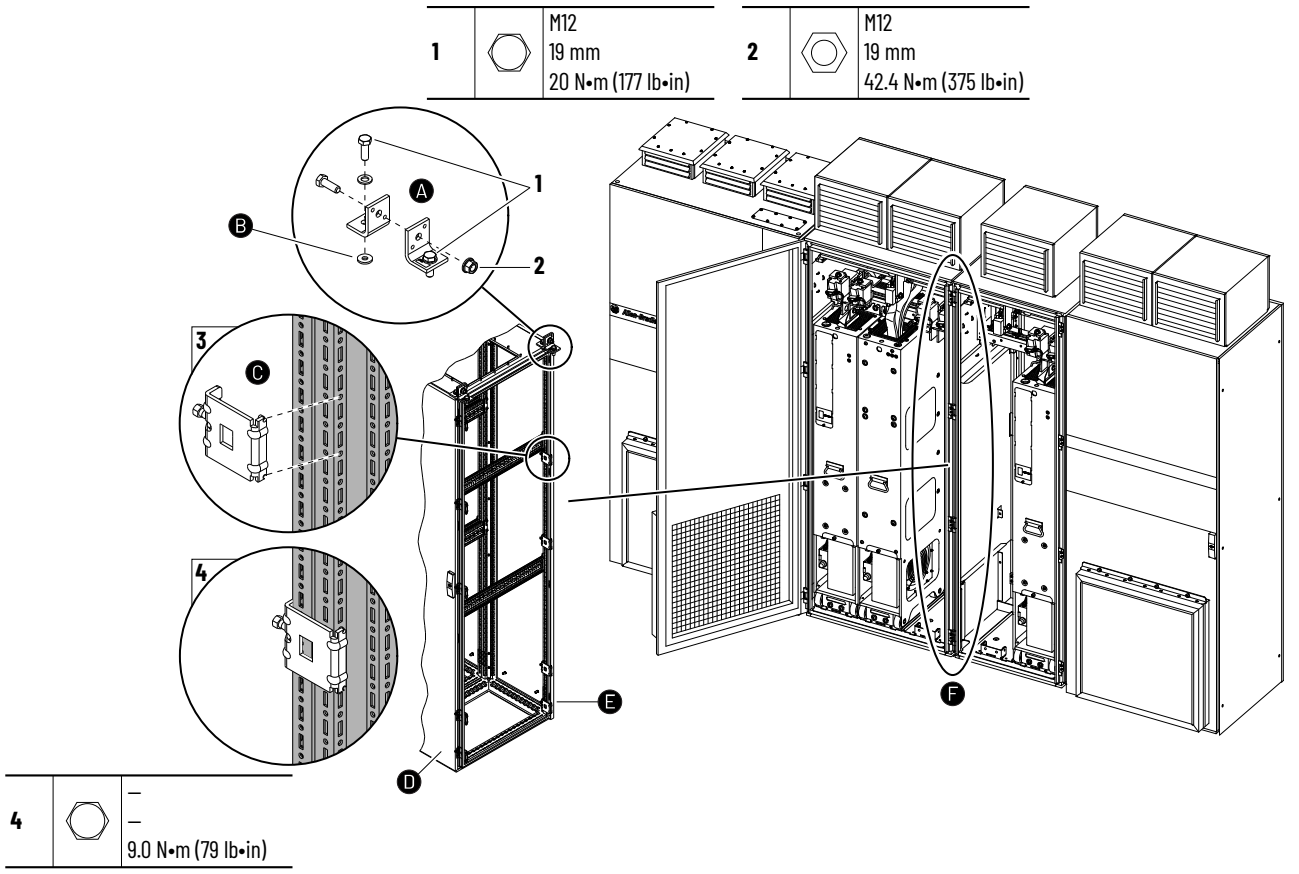
Use the joining hardware that is provided to connect the enclosures together mechanically. Nine frame clamps and two top bracket sets are provided for each split.

1. Install the top bracket sets to the cabinets.
   Verify that the cabinets are aligned, level, and pushed together tightly.

IMPORTANT: The paint-piercing rubber washers are required for both grounding purposes and to meet the enclosure rating.

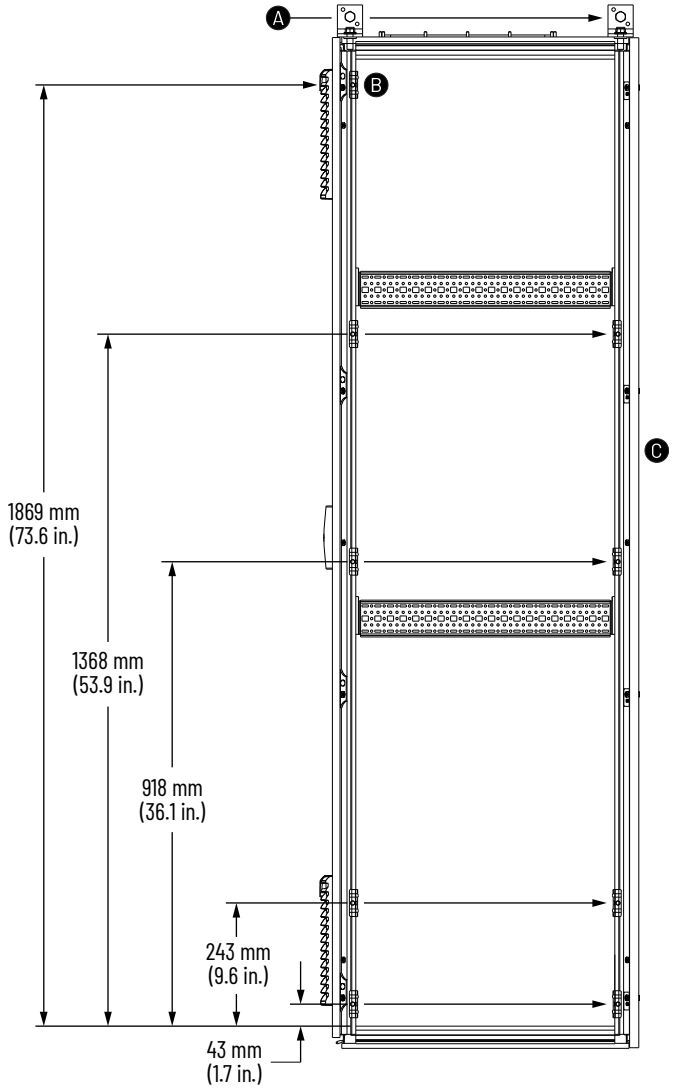
2. Install the bolts that join the two angle brackets and tighten.
3. Install the interior frame clamps.
4. Tighten the interior frame clamps.

IMPORTANT: Do not attempt to lift enclosures that are joined with this hardware.



A	Top bracket sets.
B	Paint-piercing rubber washer.
C	Frame clamps. A total of nine interior frame clamps are used to join two cabinets.
D	Cabinet front.
E	Cabinet back.
F	Cabinet-to-cabinet seam location. Enclosure door omitted for clarity.

Figure 114. Internal Frame Clamp Spacing - Standard Installation



A	Seismic top bracket sets.
B	Only install top interior fame clamp on door side of the enclosure.
C	Enclosure back side.

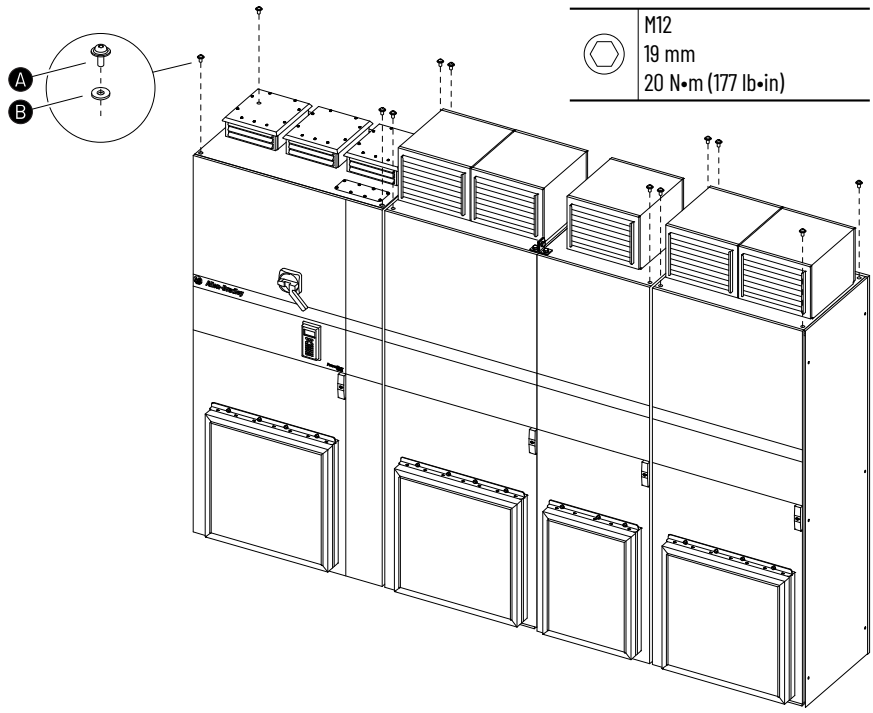
Secure and Seal Roof Panels—Standard Installation Frames 7...15

To secure and seal the roof panels, use the M12 screws with integral paint-piercing rubber washers.

Install the M12 screws with integral paint-piercing rubber washers in each open roof panel corner.

IMPORTANT: The paint-piercing rubber washers are required for both grounding purposes and to meet the enclosure rating.

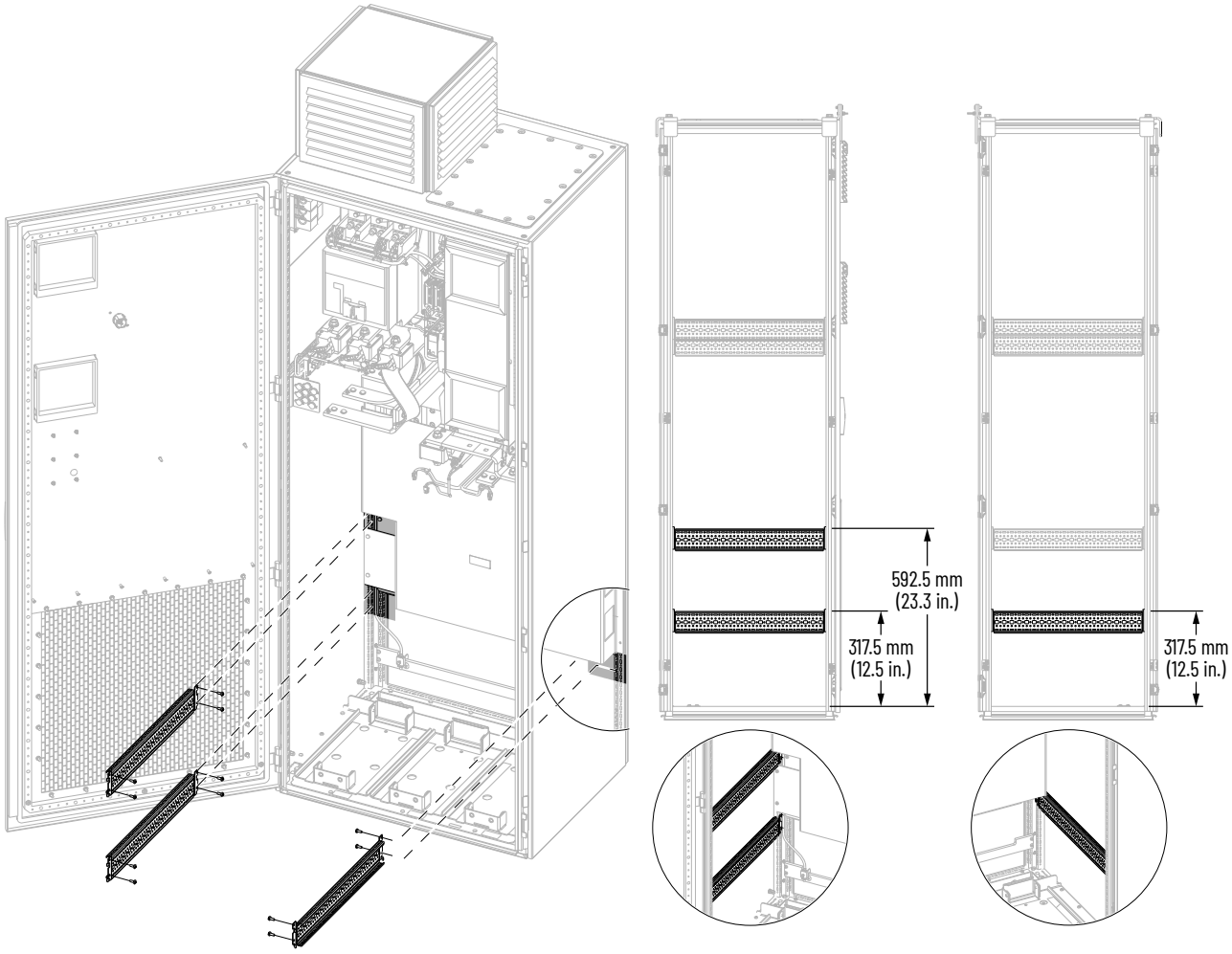
IMPORTANT: Skip this step if you intend to install a seismic kit.



A	M12 screw
B	Paint-piercing washer

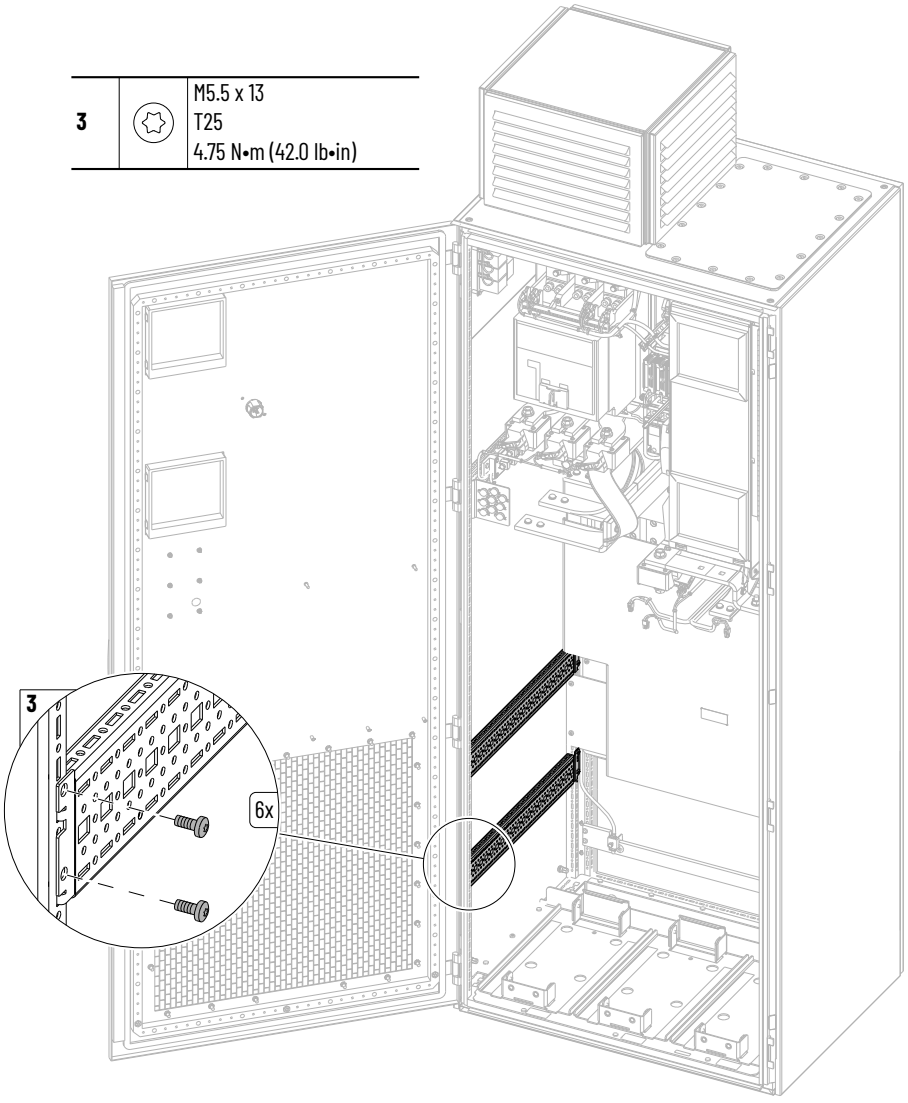
Install Reinforcement Hardware—Seismic Installation Frame 7

1. Follow the instructions for removing the LCL filter and power modules to gain access to the cabinet interior.
2. Position the reinforcement hardware as shown.



3. Secure the reinforcement hardware to the vertical enclosure rails by using 12 M5.5 x 13 mm self-tapping screws.

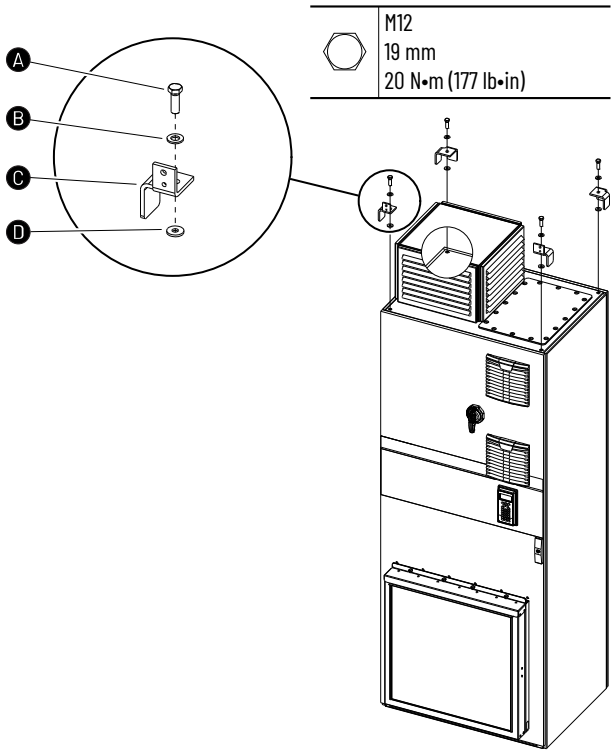
IMPORTANT: If any of the mounting holes in the vertical rails are stripped during installation, replace the fastener with a M6 x 12 mm Torx screw provided with the kit. Final torque: 4.75 N•m (42 lb•in).



Secure and Seal Roof Panel—Seismic Installation Frame 7

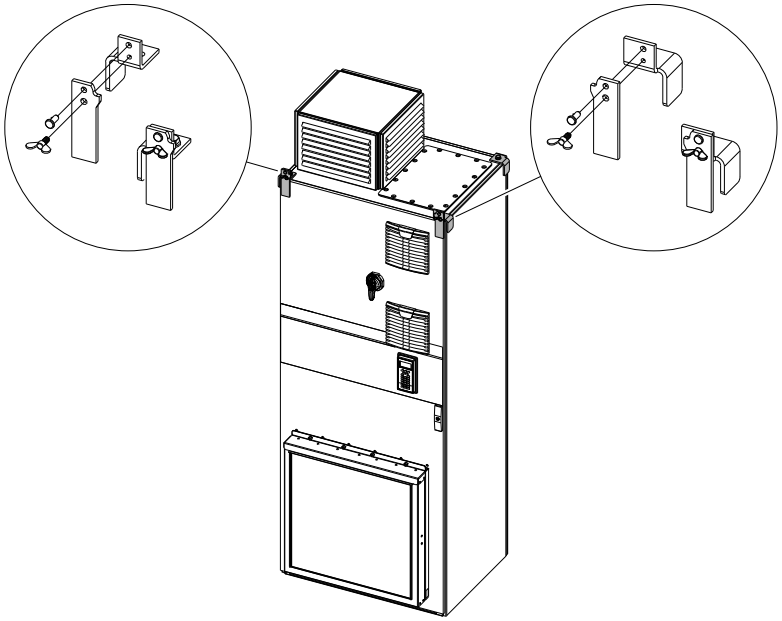
1. Use the M12 bolts, washers, and seismic brackets to secure and seal the roof panel.

IMPORTANT: The paint-piercing rubber washers are required for both grounding purposes and to meet the enclosure rating.



A	M12 bolt
B	Flat washer
C	Seismic bracket
D	Paint-piercing washer

2. To secure the door stops, insert the M8 self-locking pins and wing screws.



Install Joining Hardware—Seismic Installation Frames 10...15

If equipment is delivered in sections, use the standard frame clamps to connect the enclosures together. Discard the standard top bracket sets and install the clamps from the seismic kit. Each kit includes parts for the largest possible enclosure lineup for frame size. Therefore, in some cases, not all parts in the kit are installed.

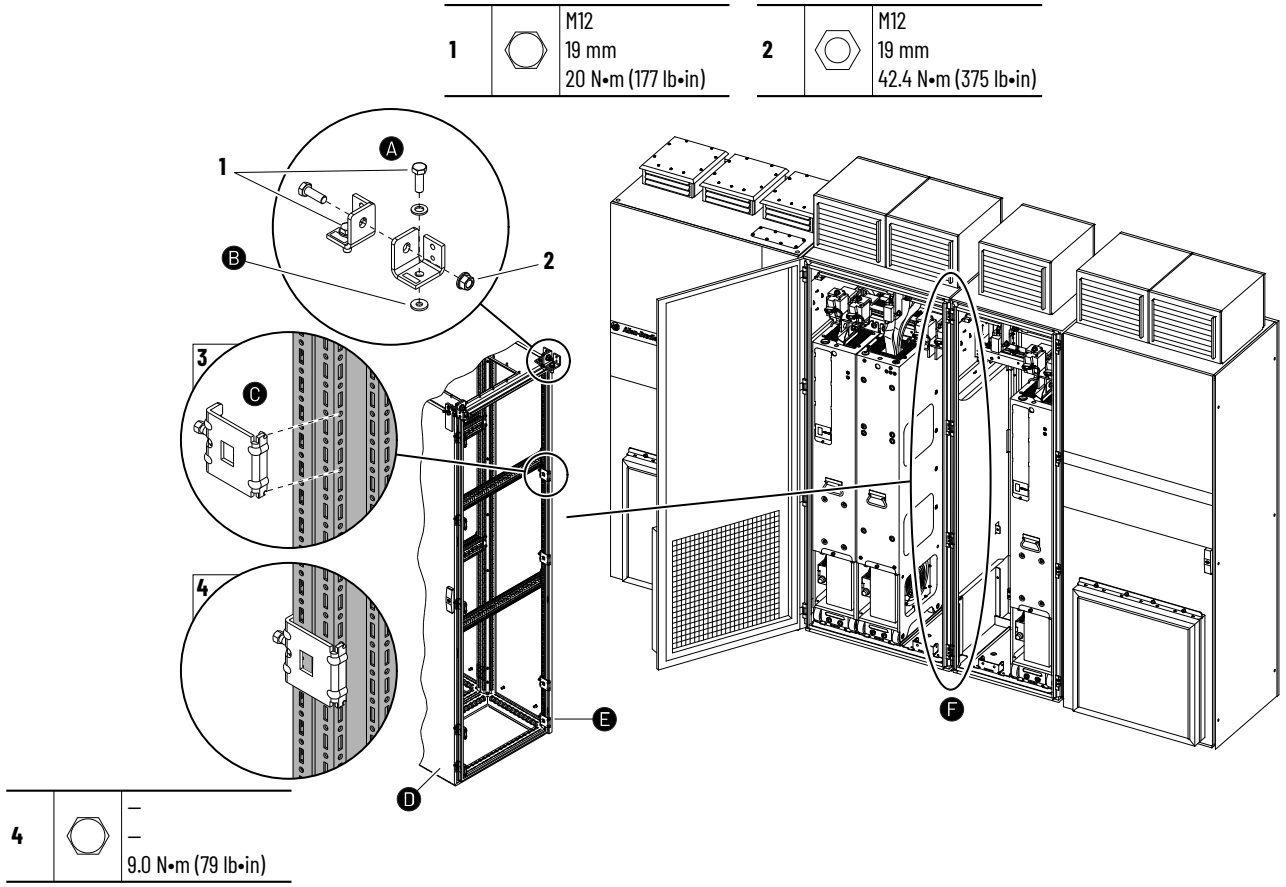
1. Install the top bracket sets to each of the cabinet seams.
   Verify that the cabinets are aligned, level, and pushed together tightly at the shipping splits.

IMPORTANT: Install top bracket sets at all cabinet seams front and back.

IMPORTANT: The paint-piercing rubber washers are required for both grounding purposes and to meet the enclosure rating.

2. Install the bolts that join the two angle brackets and tighten.
3. Install the interior frame clamps.
4. Tighten the interior frame clamps.

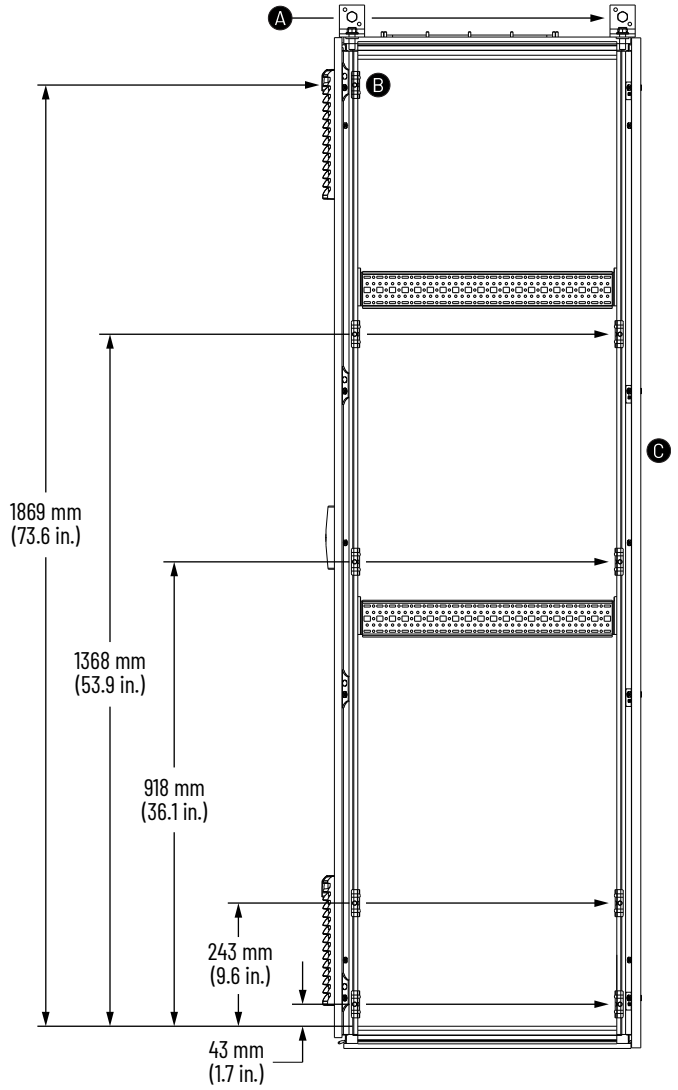
IMPORTANT: Do not attempt to lift enclosures that are joined with this hardware.



A	Top bracket sets.
B	Paint-piercing rubber washer.
C	Frame clamps. A total of nine interior frame clamps are used to join two cabinets.
D	Cabinet front.

E	Cabinet back.
F	Enclosure door omitted for clarity.

Figure 115. Internal Frame Clamp Spacing—Seismic Installation

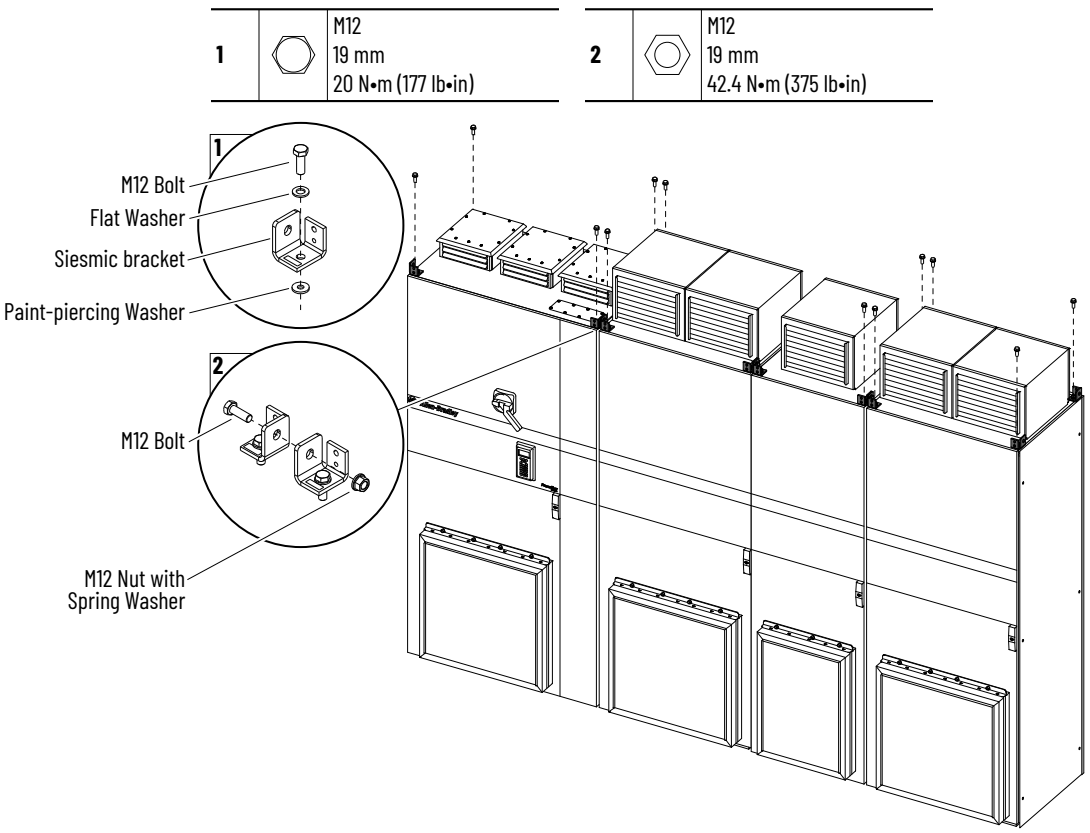


A	Seismic top bracket sets.
B	Only install top interior fame clamp on door side of the enclosure.
C	Enclosure back side.

Secure and Seal Roof Panels—Seismic Installation Frames 8...15

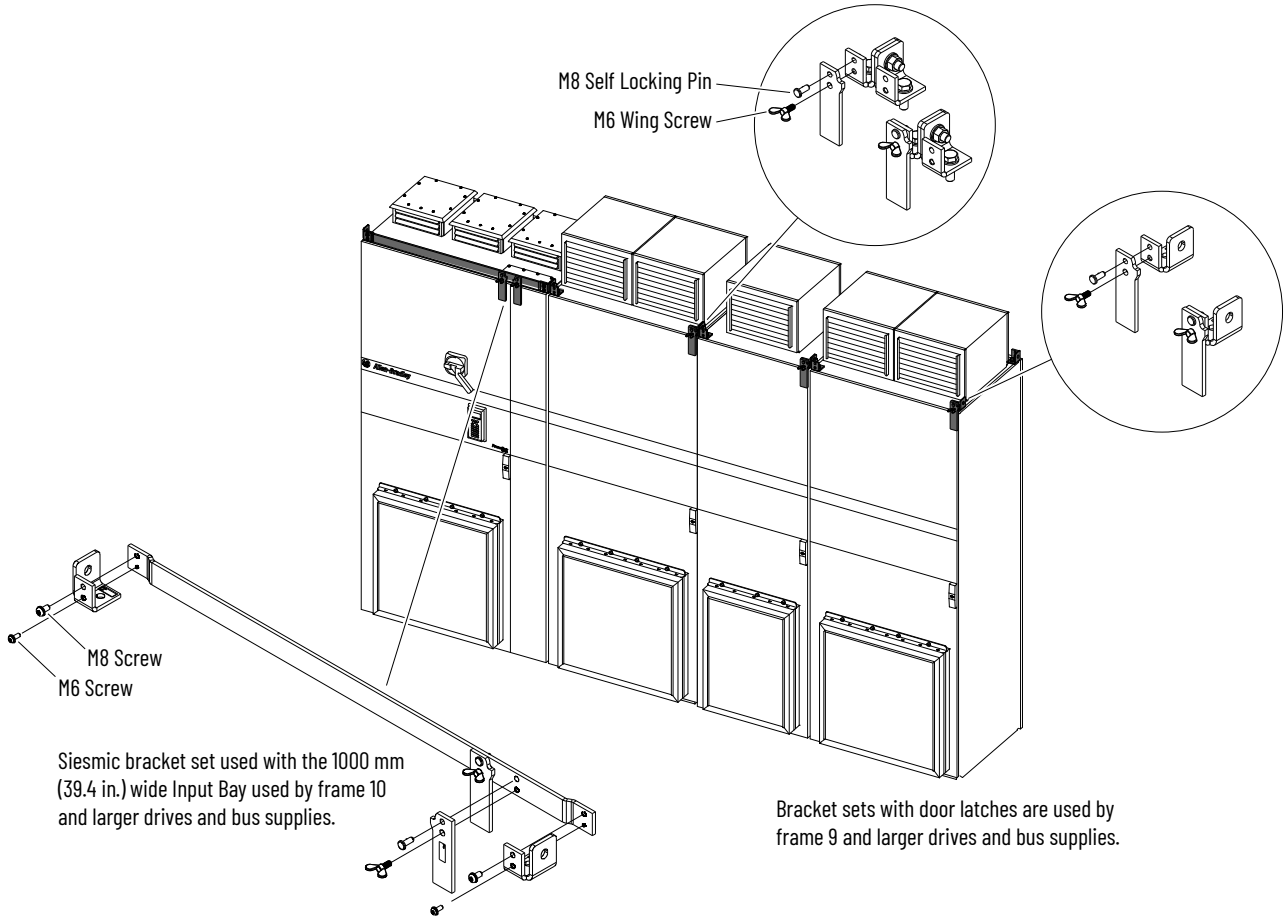
1. Use the M12 bolts, washers, and seismic brackets to secure and seal the roof panels.
2. Use the M12 bolts and nuts to join the seismic brackets.

IMPORTANT: The paint-piercing rubber washers are required for both grounding purposes and to meet the enclosure rating.



3. Use the M8 and M6 screws to fasten the span bar between the seismic brackets on the input bay.
4. To secure the door stops, insert the M8 self-locking pins and wing screws.

Seismic bracket set used with the 1000 mm (39.4 in.) wide Input Bay found on frame 10 and larger drives and bus supplies. Bracket sets with door latches are used on frame 9 and larger drives.



Affix the Enclosures to the Floor

Use one of the mounting methods that are described in Floor Mounting Options to secure the enclosures to the mounting surface.

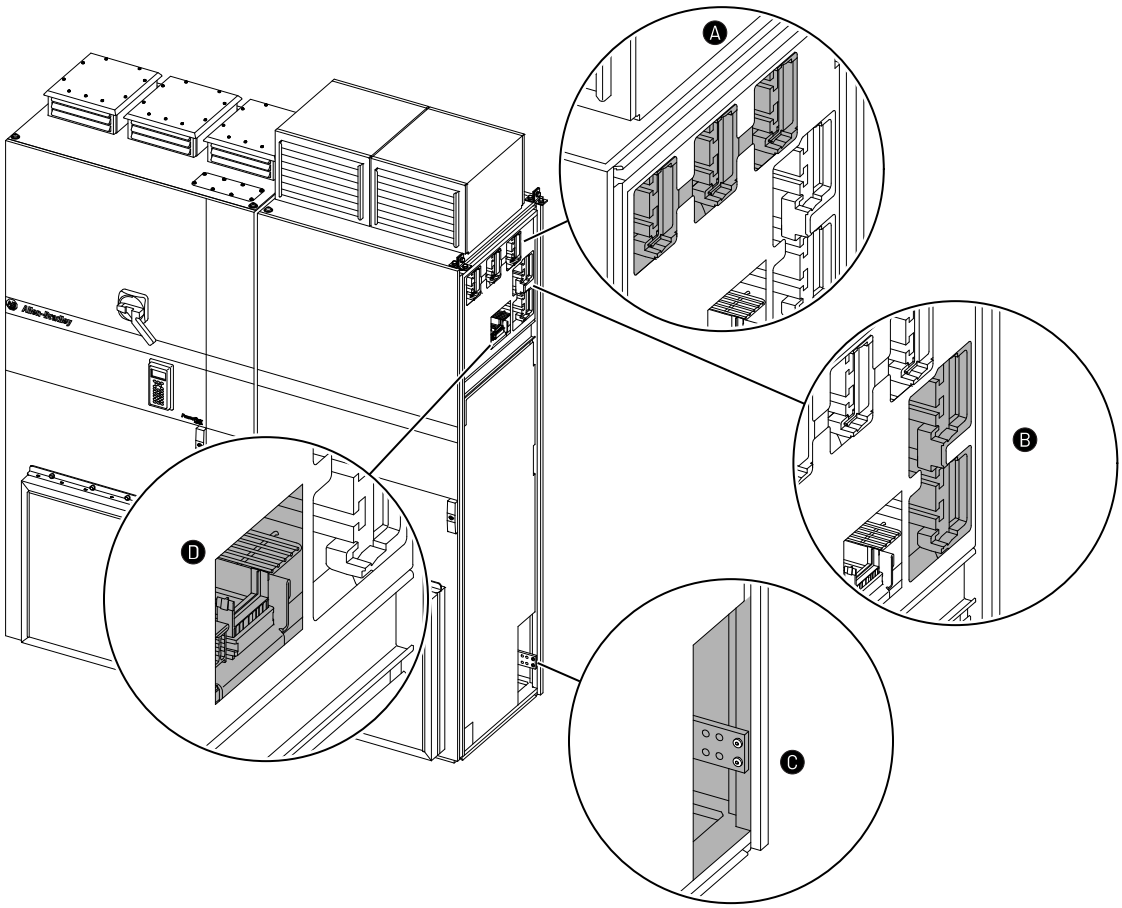
See the approximate dimensions for your product for the positions of conduit openings and mounting holes.

Electrical Interconnections

After the product enclosures are mechanically joined and properly anchored to the mounting surface, electrically connect the enclosures together. There are five electrical interconnections that are required:

- AC bus
- DC bus
- Control bus
- PE ground
- Fiber-optic connections

Figure 116. Bus Bar Locations



A	AC power supply bus bars.
B	DC bus bars.
C	PE ground bus bar.
D	Control bus bars and fiber-optic guide.

Figure 117. AC Power Supply Bus Bar Splicing Hardware

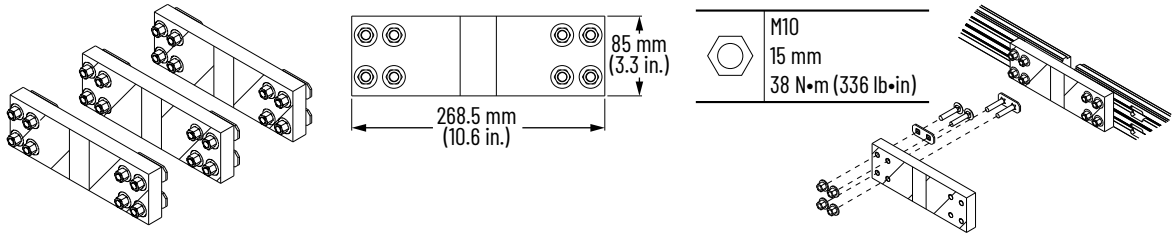


Figure 118. DC Bus Bar Splicing Hardware

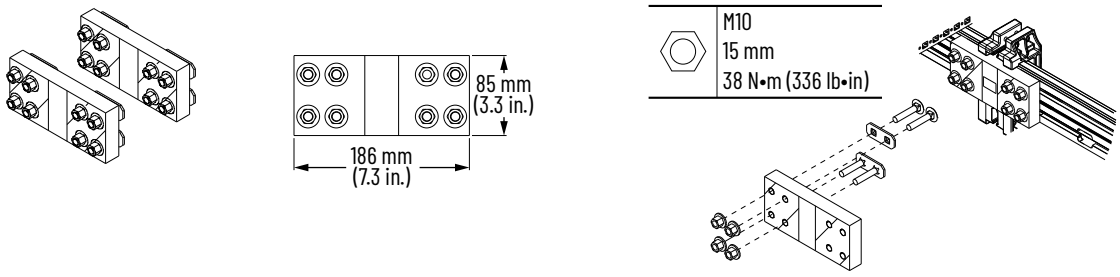


Figure 119. Control Bus Bar Splicing Hardware

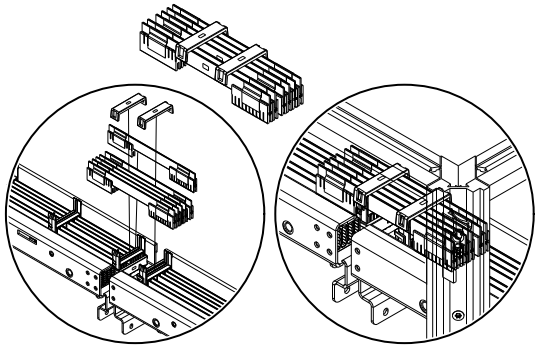
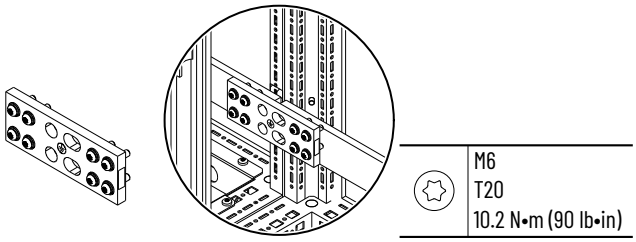


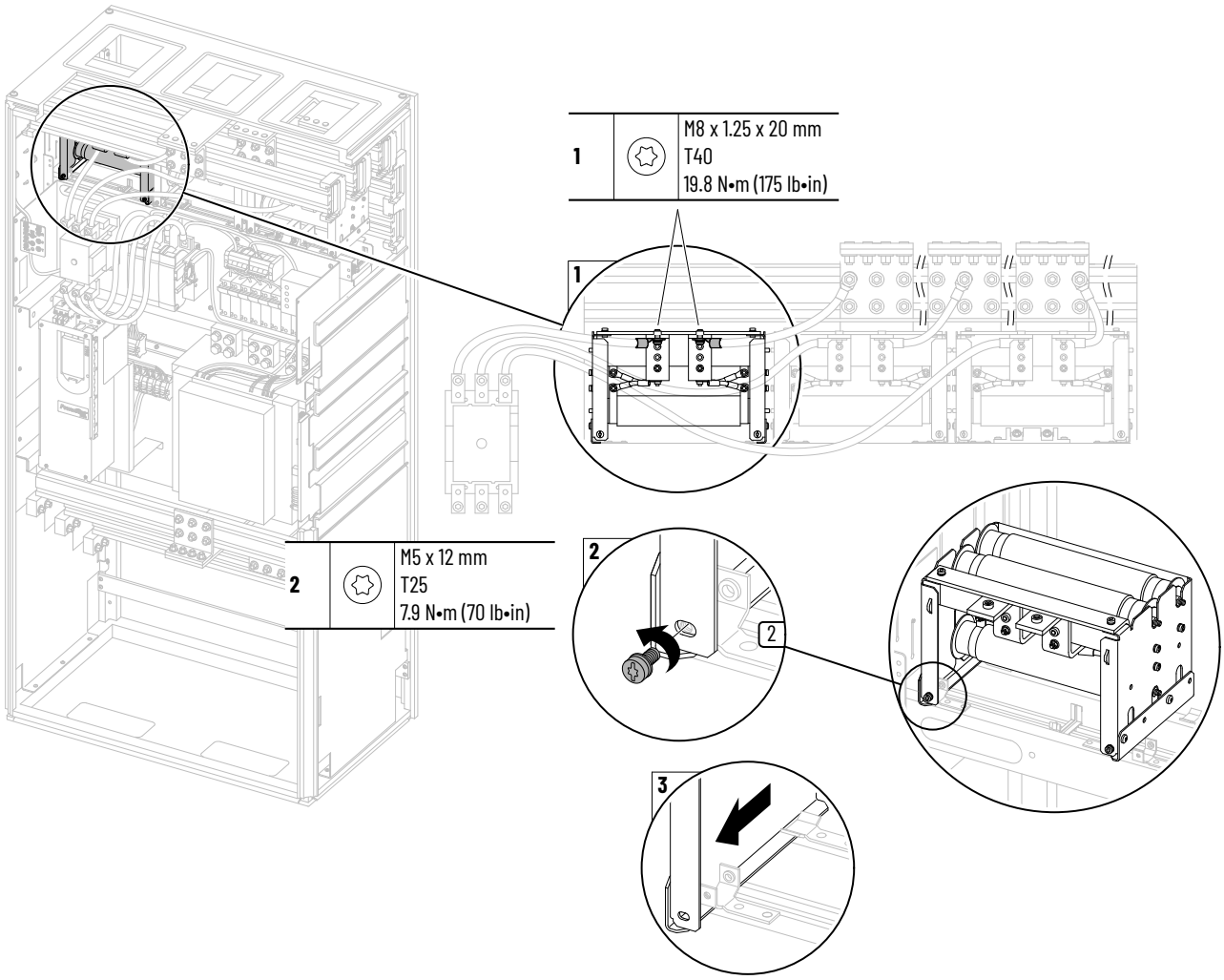
Figure 120. PE Ground Bus Bar Splicing Hardware



Right-to-Left Configurations—Special Instructions

To install a common bus inverter on the left side of a frame 10 or larger bus supply, additional steps are required. Remove the left AC precharge resistor bank to access the DC bus bar and install the DC bus bar splice hardware. Follow these steps to remove the left AC precharge resistor bank.

1. Disconnect the wires from the AC precharge resistor bank assembly.
2. Remove the anchor screws that secure the assembly to the mounting bracket.
3. Slide the assembly out of the cabinet.
   The DC bus bars are now accessible for installation of the splice hardware.

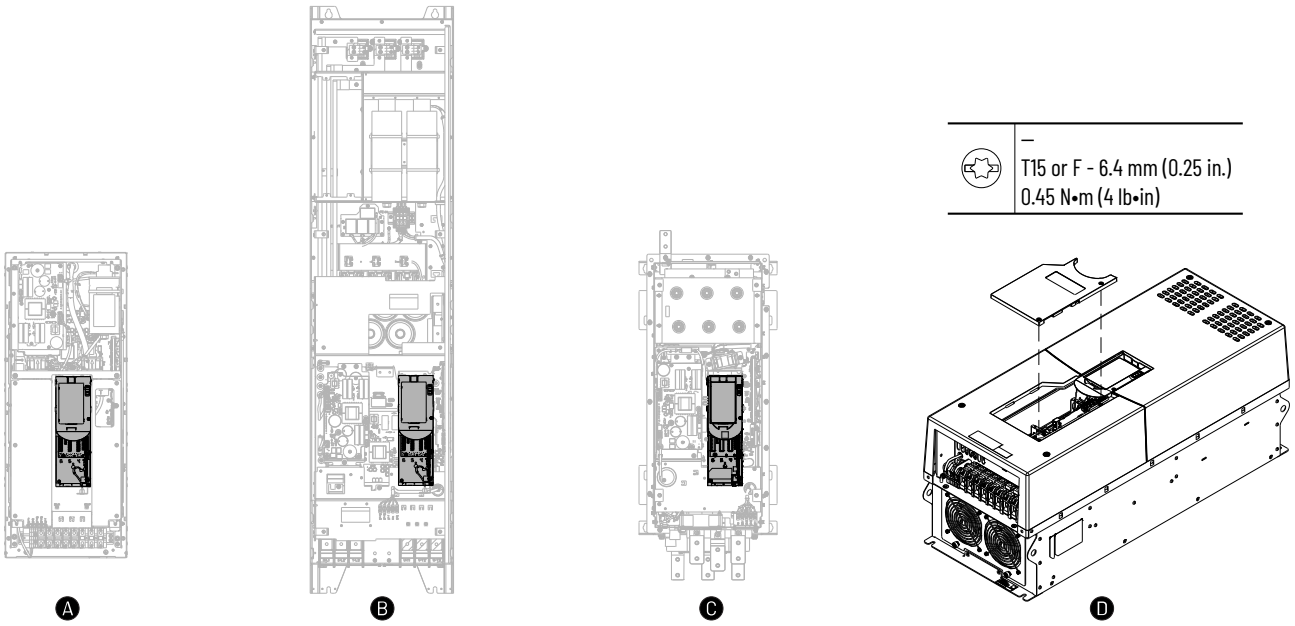


To reinstall the AC precharge resistor bank, perform steps 1...3 in reverse order.

Control Pod Access

The control pod is mounted to the chassis on frame 5, 6, and 6L drives and frame 5 and 6 bus supplies. A removable panel is provided for access to the control pod without cover removal.

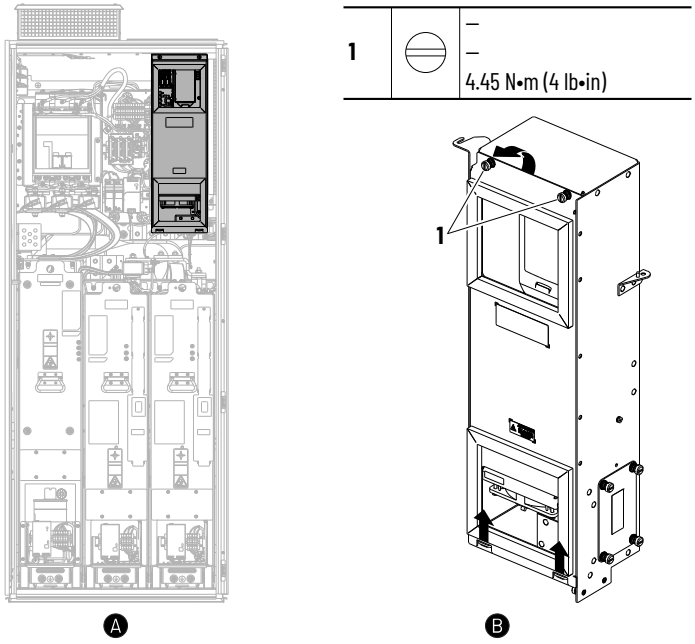
Figure 121. Frame 5, 6, and 6L Control Pod Locations



A	Frame 5 PowerFlex® 755TL and 755TR drives.
B	Frame 6 PowerFlex® 755TL, 755TR drives, and 755TM bus supplies.
C	Frame 6L PowerFlex® 755TR drives.
D	Typical control pod access for frame 5, 6, and 6L products (frame 5 shown).

The control pod is located top right front in a frame 7 cabinet.

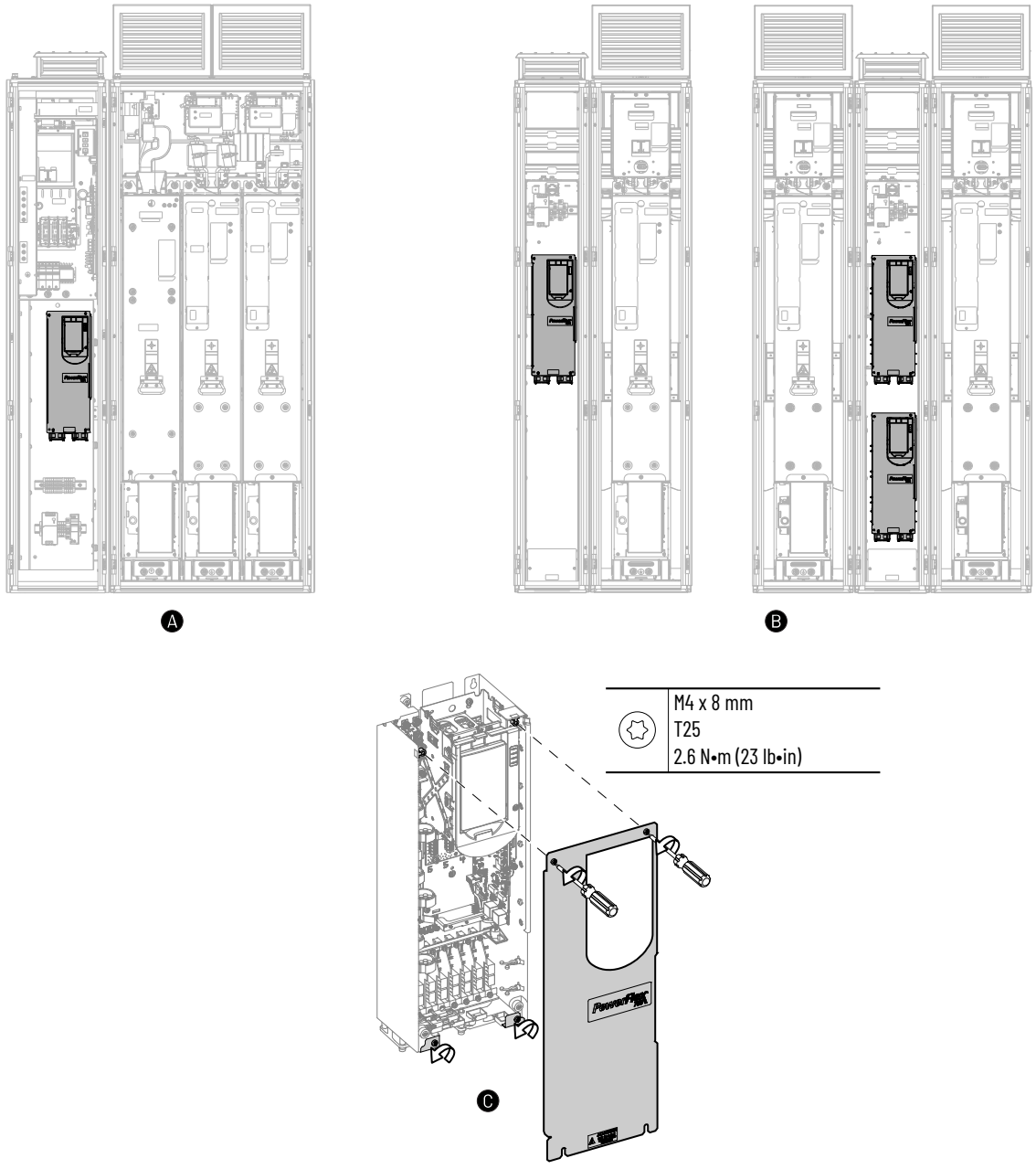
Figure 122. Frame 7 Control Pod Location



A	Frame 7 PowerFlex® 755TL, 755TR drives, and 755TM bus supplies.
B	Frame 7 control pod cover removal.

The control pod is located in the input bay of 755T drives and bus supplies and the control bay of a common bus inverter, if equipped.

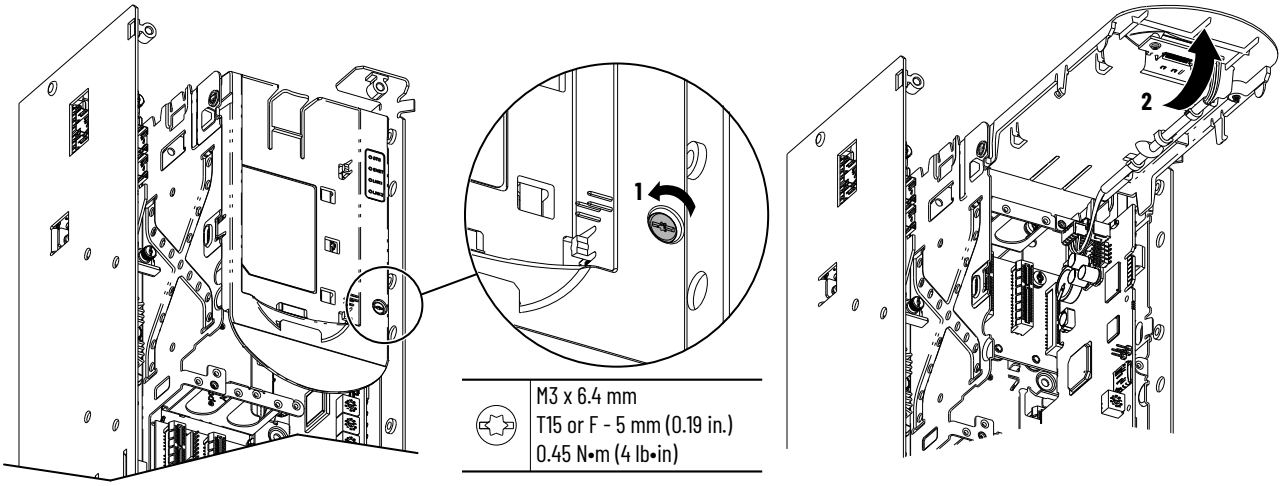
Figure 123. Frame 8...15 Control Pod Locations



A	Input bay PowerFlex® 755TL, 755TR drives, and 755TM bus supplies.
B	Control bay PowerFlex® 755TM common bus converters.
C	PowerFlex® 755T products control pod cover removal.

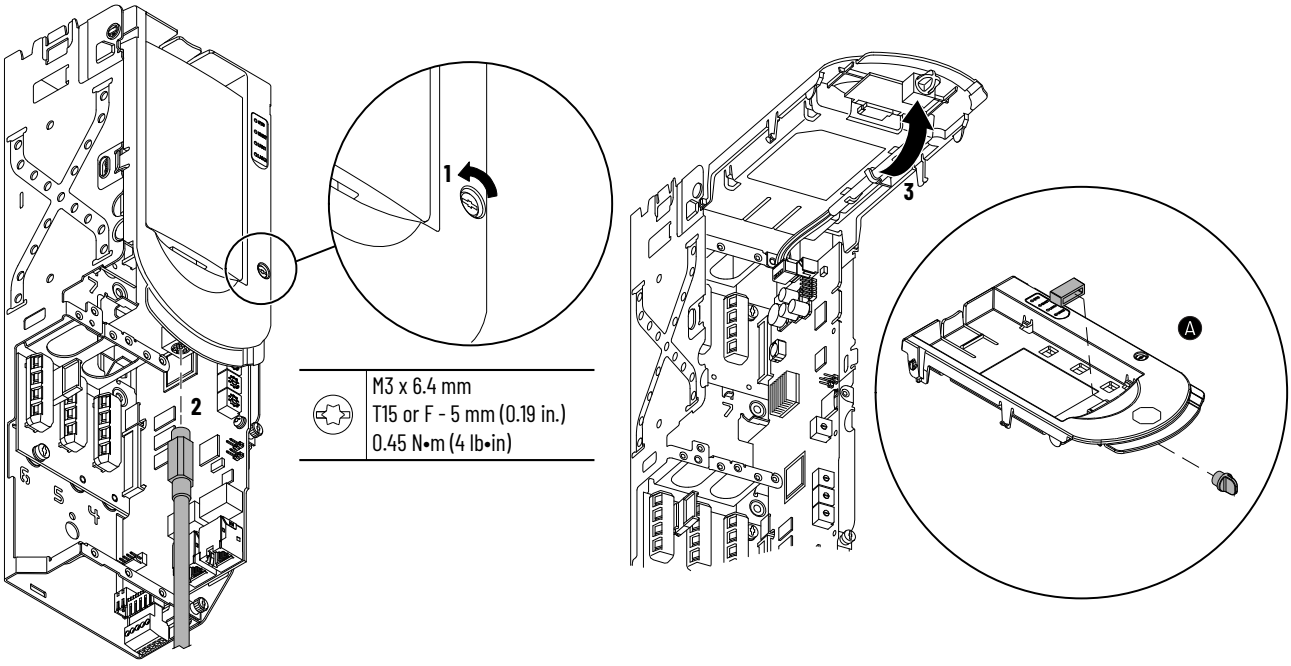
Access Control Pod HIM Cradle without DPI Connector (Standard)

1. Loosen the retention screw.
2. Lift the cradle until the latch engages.



Access Control Pod HIM Cradle with DPI Connector (XT)

1. Loosen the retention screw.
2. If used, disconnect the DPI cable from the connector on the bottom of the HIM cradle.
3. Lift the cradle until the latch engages.

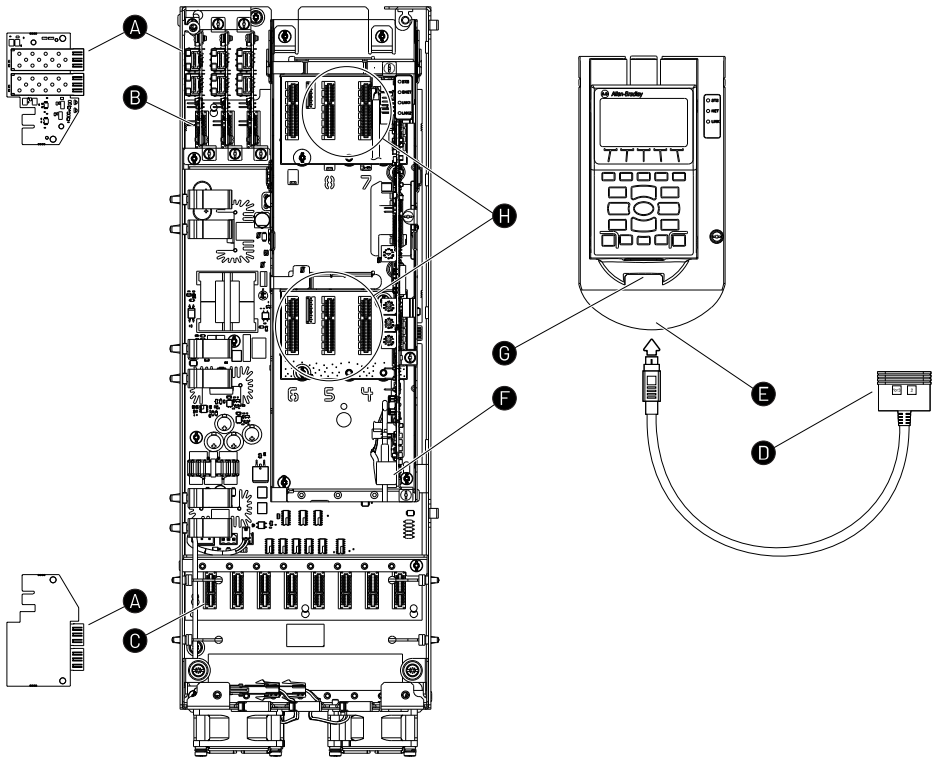


IMPORTANT: Do not remove the protective covers (A) from these connectors on the HIM cradle unless a connection is made during installation.

Hardware Connections

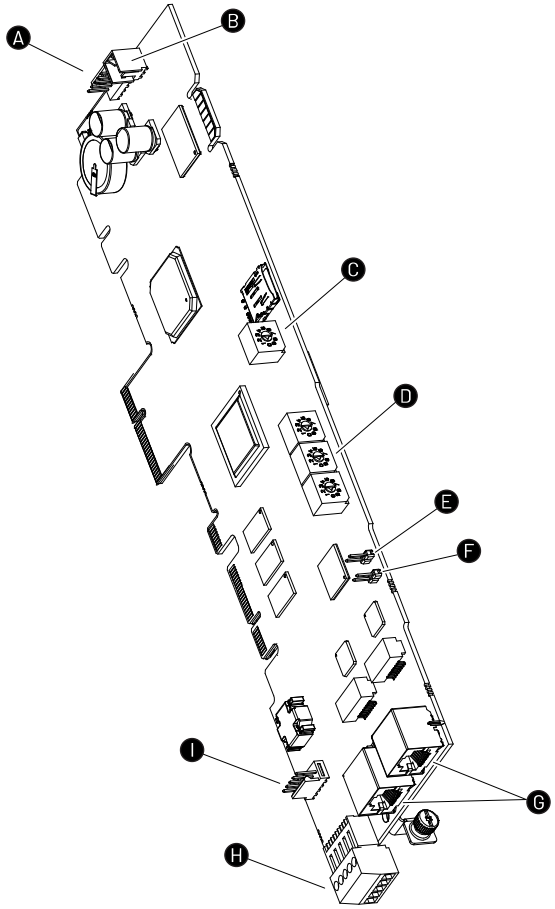
The human interface module, internal power devices, and option module hardware connections are made in the control pod. The host drive and embedded functions are assigned fixed port numbers that cannot be changed. Each option module is assigned a port number that is based on where it is installed.

Figure 124. Control Pod with Fiber Interface Board

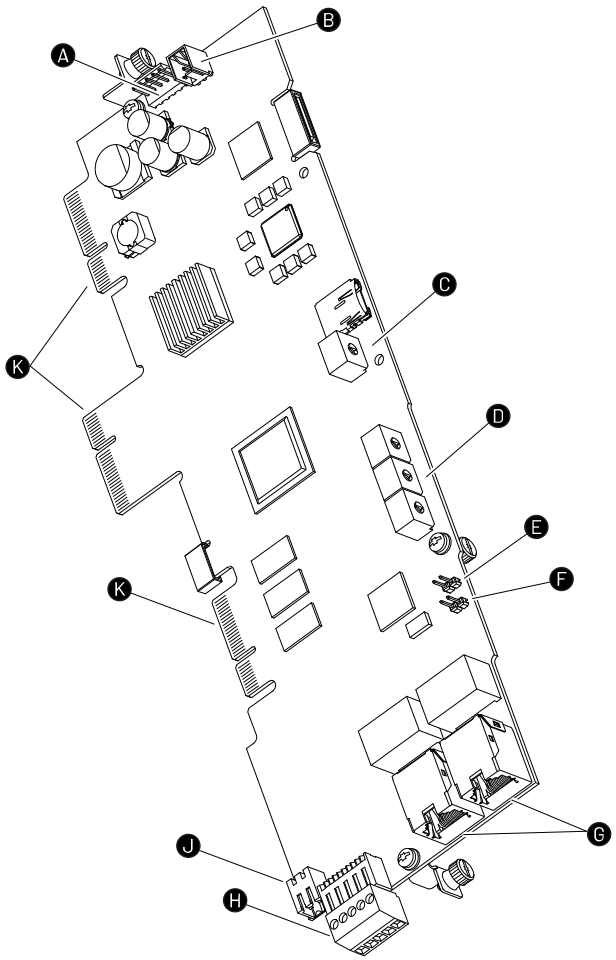


Item	Description
A	Frames 7...15 transceiver board fiber-optic cable connectors. Transceiver boards are installed on the fiber interface board.
B	Frames 7...15 transceiver board connectors for TAM/AC prechage, L0 and L1 converters, M0 and M1 inverters.
C	Frames 10...15 transceiver board connectors for L2...L9 converters and M2...M9 inverters.
D	Splitter cable.
E	DPI connector for handheld HIM, remote HIM, and splitter cable connection.
F	Embedded EtherNet/IP™ connectors.
G	HIM cradle connector.
H	Option module connectors. See the PowerFlex® 750-Series I/O, Feedback, and Power Option Modules Installation Instructions, publication750-IN111 for option module installation recommendations and requirements.

Main Control Circuit Board



SK-RM-MCB1-PF755 (Standard)



SK-RM-MCB2-PF755 (XT)

Table 59. Main Control Circuit Board Details

Item	Name	Description
A	HIM Connector	Terminal block connector for the DPI Port 1 (HIM Cradle) cable connection.
B	Fan Connector	Power supply for internal cooling fan.
C	Control Selector	Rotary switch for setting the programming mode.
D	Embedded EtherNet/IP™ Address Selector	Rotary switches for setting lowest octet of EtherNet address (forces address to 192.168.1.xxx). • For firmware revision 6.xxx and earlier, see publication 750-PM100 • For firmware revision 10.xxx and later, see publication 750-PM101
E	SAFETY Jumper	Safety enable jumper. Removed when safety option is installed.
F	ENABLE Jumper	Hardware enable jumper. TB1 becomes an Enable when this jumper is removed.
G	Built-in EtherNet/IP™ Connectors	EtherNet/IP™ network cable connections.

Table 59. Main Control Circuit Board Details (continued)

Item	Name	Description
H	TB1	I/O terminal block
I	DPI Port 2	Terminal block connector for the mini-DIN cable. The mini-DIN is used for handheld and remote HIM options.
J	Door Switch Connector	Power supply for the door switch
K	Edge Connectors	The XT main control circuit boards have PolySi PST-576 dielectric grease applied to the edge connectors. If necessary, an edge connector grease applicator kit, catalog number SK-RM-GRAPP1, is available to re-apply grease to edge connectors on circuit boards.

IMPORTANT: When handling circuit boards with grease:

- Do not touch or remove the grease
- Do not allow the grease to become contaminated

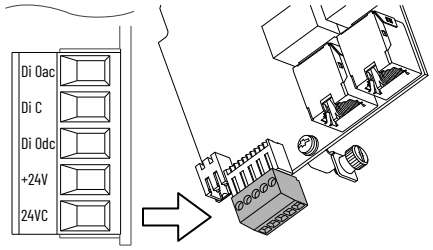


Table 60. TB1 I/O Terminal Block Designations

Terminal	Name	Description
Di 0ac	Digital Input 0 120V AC (132V AC Max.)	Connections for AC power supply. High State: 100...132V AC Low State: 0...30V AC 10 mA maximum
Di C	Digital Input Common	Digital input common
Di 0dc	Digital Input 0 24V DC (30V DC Max.)	Connections for DC power supply. High State: 20...24V DC Low State: 0...5V DC 9 mA maximum
+24V	+24 Volt Power	Connections for drive supplied 24V power. 150 mA maximum
24VC	24 Volt Common	

Table 61. TB1 I/O Terminal Block Specifications

Name	Wire Size Range		Torque		Strip Length
755T control module TB1	Maximum	Minimum	Maximum	Recommended	6 mm (0.24 in.)
	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)	

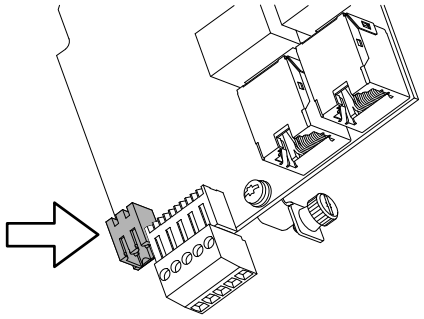


Table 62. Door Switch Specification

Name	Description
P9	Connection for door switch. 5 mA maximum

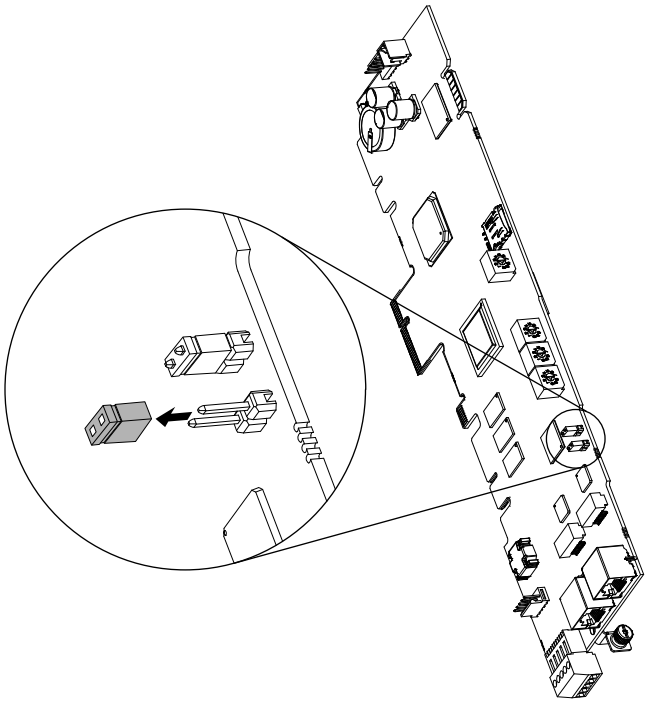
Configure Hardware Enable Circuitry

Each main control board has one digital input. Digital Input 0 can be used as a general-purpose programmable input, or by removal of a jumper, it can be configured as a dedicated hardware enable, which is unaffected by parameter settings.

- PowerFlex® 755T - Digital Input 0 is found on TB1

To configure Digital Input 0 as a dedicated hardware enable, complete the following steps.

1. Access the control pod.
2. Locate and remove ENABLE Jumper on the Main Control Board (see diagram).

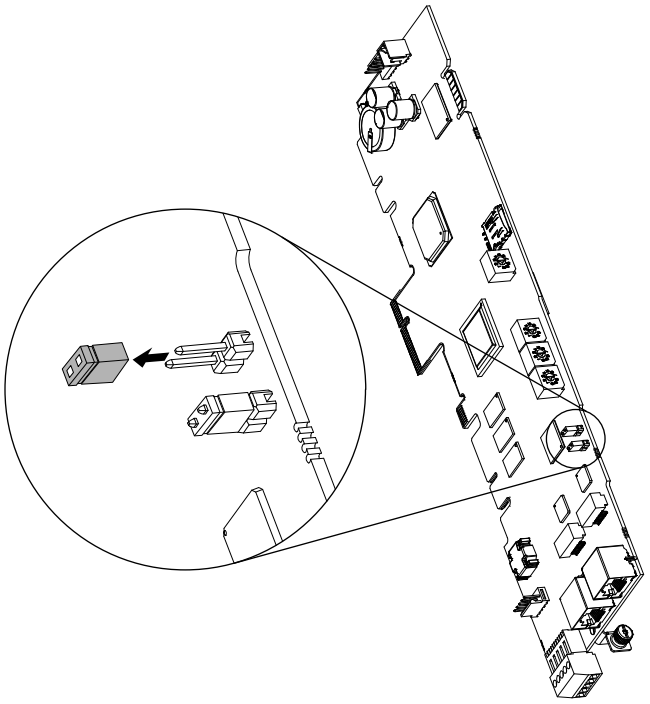


IMPORTANT: Change main control circuit board configurations only when the control pod is de-energized.

Configure Safety Enable Circuitry

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

NOTE: Failure to remove the jumper when using either safety option causes the drive to fault when a start command is issued.



IMPORTANT: Change main control circuit board configurations only when the control pod is de-energized.

Fiber-optic Cables

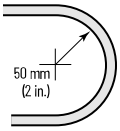
PowerFlex® 755T products use fiber-optic cables to make the communication connections between the control pod and the power modules. The integrity of these connections is essential for reliable product performance. Therefore, careful handling of the fiber-optic cables is required.

Each fiber-optic cable is connected at the factory to a transceiver board which is connect to the fiber interface board in the control pod. Each cable is labeled with the number of its corresponding power module. Each cable connects to the CTL port of its corresponding power module. The cable and power module assignments must be maintained. Fiber-optic cables are not interchangeable.

Bend Radius Limit

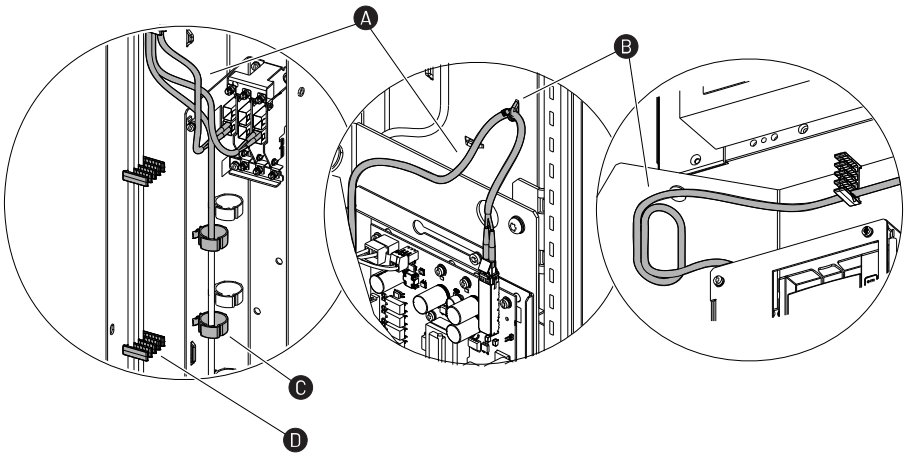
Over bending fiber-optic cables can damage them. Be sure to observe the bend radius limit when routing or coiling the cables.

IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.



Securing Cables

Careful routing of fiber-optic cables is needed to keep the cable runs neat and organized to help avoid entanglements and pinch hazards. To manage cable runs, utilize the clips and guides provided in the product as well as customer supplied cable ties.



Item	Description
A	Maintain a smooth shallow radius whenever possible.
B	Use cable ties to create strain reliefs and secure coils.
C	Clips are provided to secure bundles of cables.
D	Cable guides help to organize and separate cables.

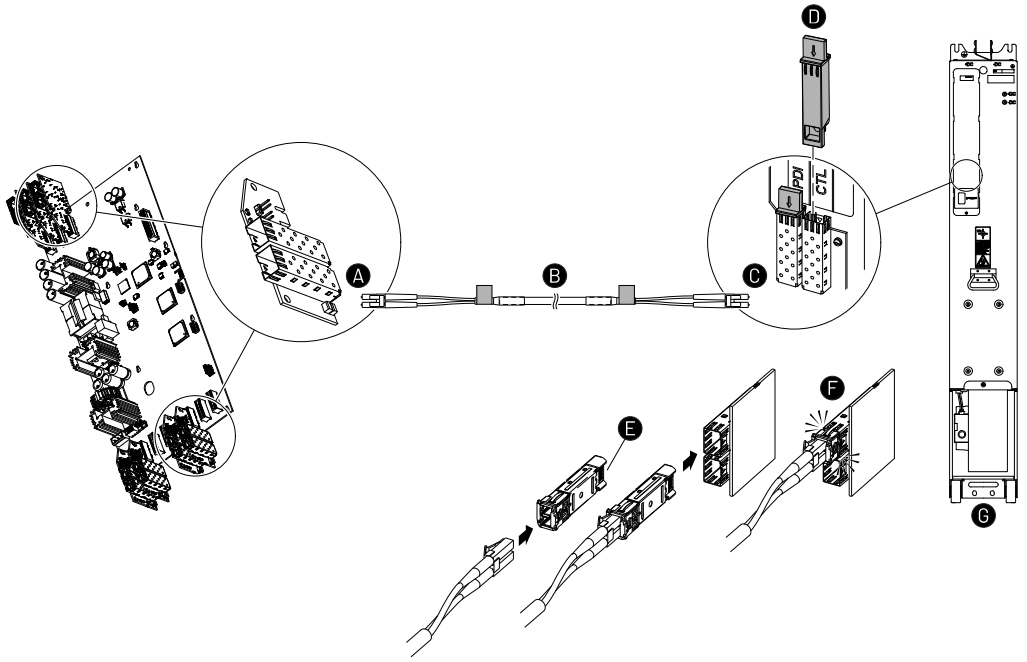
Fiber-optic Connections

Fiber-optic cables are routed and connected at the factory in frame 8 and 9 drives and frame 8...10 bus supplies. These cables connect the fiber interface circuit board to the line side converters and motor side inverters in the adjacent enclosures.

IMPORTANT: Do not remove protective covers from unused wire harnesses, circuit board connectors, terminal blocks, and fiber-optic ports. Removing a protective cover can lead to contamination.

Control Pod to Power Module Connections

Fiber-optic cables at the control pod plug into transceiver modules that are mounted to a transceiver board. Transceiver boards plug into an edge connector on the fiber interface board. Inspect these connections at installation. Re-seating these connections after shipping and handling or after extended storage is recommended.

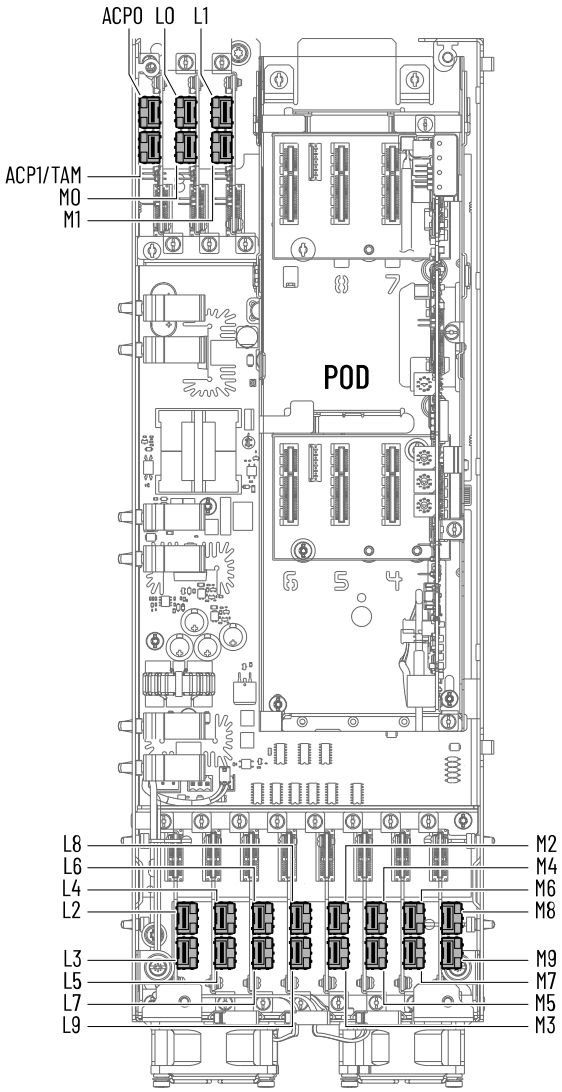


Item	Description
A	Transceiver boards plug into the fiber interface board. Verify that these connections are secure.
B	Fiber-optic cables routed from the control pod plug into the CTL transceiver cages that are mounted on the power layer interface boards located behind the power module access panel.
C	Fully insert fiber-optic cable plugs into the transceiver. Insert the transceiver into the connector cage on the power layer interface board until you hear it click into place.
D	Remove protective covers only as needed to help maintain corrosive gas protection.
E	Do not touch the greased connector to help avoid contamination.
F	Fully insert fiber-optic cable plugs into the transceiver. Insert the transceiver into the connector cage on the transceiver board until you hear it click into place.
G	Power module.

Fiber-optic Interface Board

The fiber-optic interface board holds the fiber transceiver circuit boards.

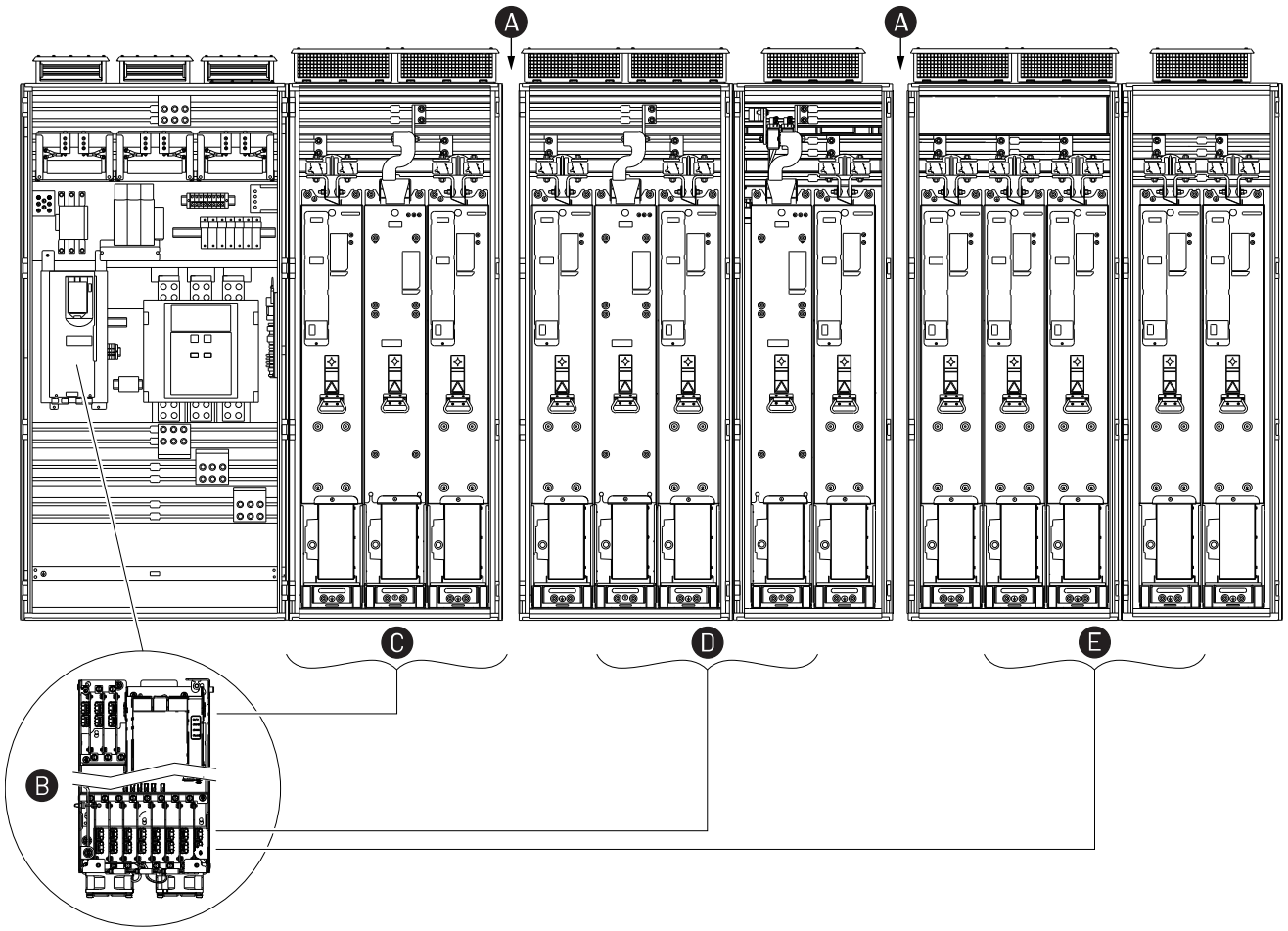
Figure 125. Fiber-optic Transceiver Circuit Board Connections



Port Name	Description
ACP0	Fiber transceiver port for the fiber-optic connection from ACP0 on the AC precharge control board.
ACP1/TAM	Fiber transceiver port for the fiber-optic connection from ACP1 (frame 13 and larger) or TAM on the torque accuracy module.
L0...L9	Fiber transceiver ports for the fiber-optic connections from CTL on the power layer interface board in power modules that are used as line side converters.
M0...M9	Fiber transceiver ports for the fiber-optic connections from CTL on the power layer interface board in power modules that are used as motor side inverters.

Each fiber-optic cable connects to its designated CTL port on the power module power layer interface circuit board.

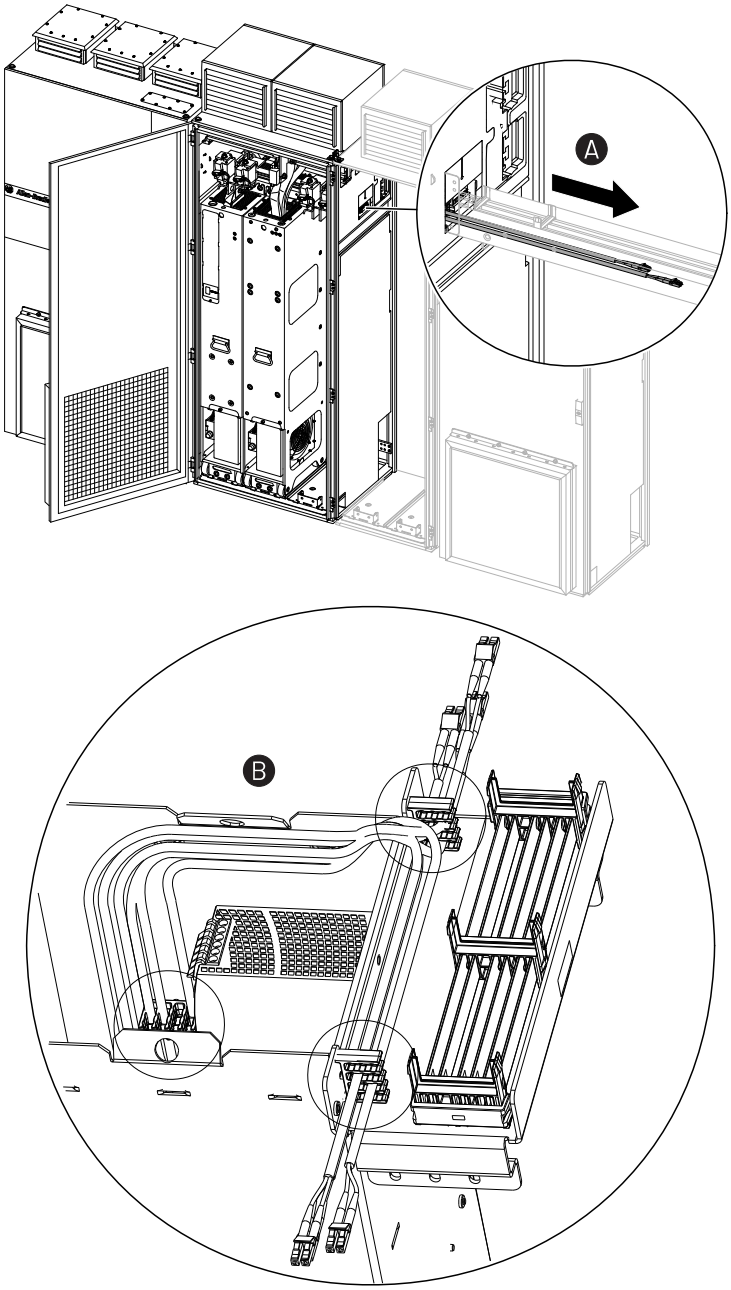
Figure 126. Fiber Interface to CTL Port Connections



Item	Description
A	Shipping split location.
B	Fiber-optic interface board connections.
C	L0-CTL and L1-CTL connections are made at the factory.
D	L2-CTL…L9-CTL connections.
E	M0-CTL…M9-CTL connections.

Fiber-optic cables are routed between cabinets through the power control channel. Cable guides are provided to help you keep the cables separated and organized.

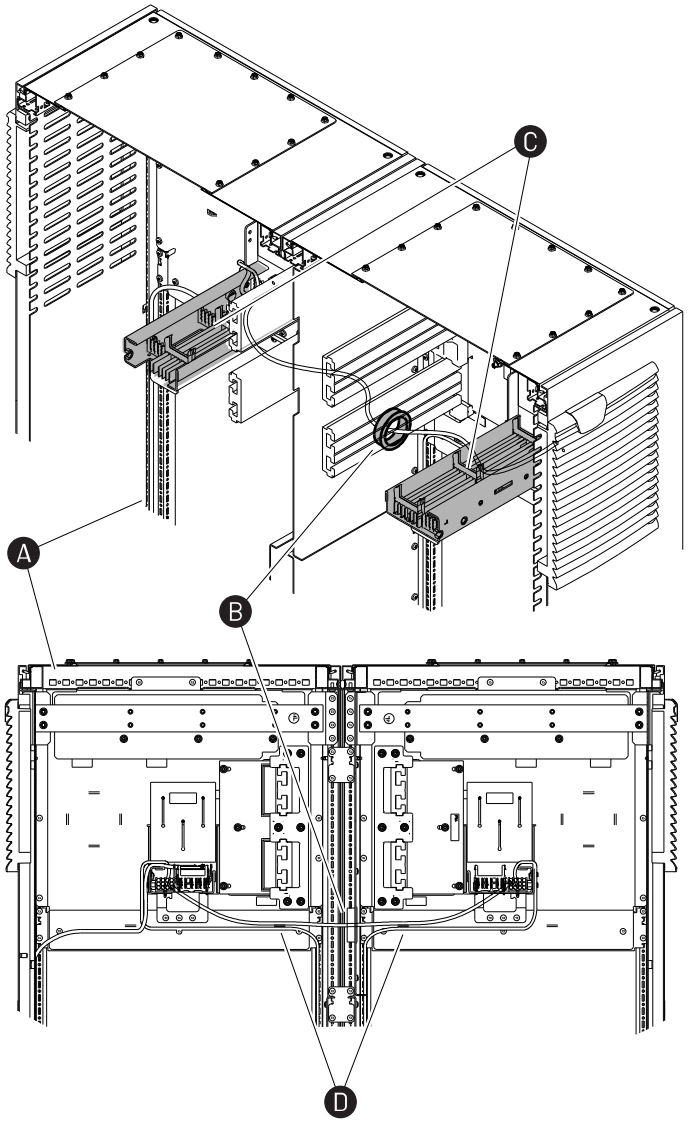
Figure 127. Power Control Channel and Cable Guides



Item	Description
A	Typical fiber-optic cable routing through the power control channel between cabinets.
B	Use cable guides to organize cable runs.

Cables are routed to the right-to-left oriented cabinets through the pass-through grommet that connects the wire bays in back-to-back configurations.

Figure 128. Fiber-optic Cable Routing Between Back-to-Back Entry Wire Bays

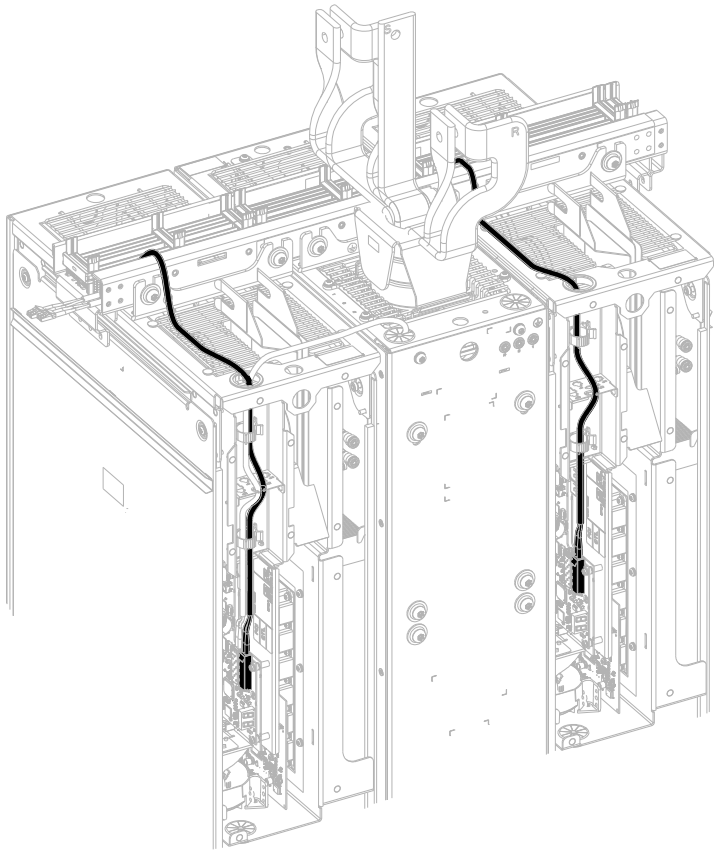


Item	Description
A	Back-to-back configured entry wire bays.
B	Pass-through grommet.
C	Power control cable channels.
D	Cable tie anchor points help to keep cables in place.

Cables are routed out of the power control channel and are plugged into the CTL transceiver port of the corresponding power module.

This image shows an 800 mm (31.5 in.) wide converter power bay. The front panels are omitted to show the proper cable path to the CTL transceiver port on the power layer interface board.

Figure 129. Power Bay Fiber-optic Cable Routing

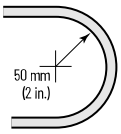


Route Fiber-optic Cables

Fiber-optic cables are routed and connected at the factory in frame 8 and 9 drives and frame 8…10 bus supplies. Follow these procedures when installing frame 10 and larger drives and frame 11 and larger bus supplies.

1. Locate and carefully uncoil the fiber-optic cables.

   IMPORTANT: Minimum inside bend radius for fiber-optic cable is 50 mm (2 in.). Any bends with a shorter inside radius can permanently damage the fiber-optic cable. Signal attenuation increases as inside bend radius is decreased.

2. Sort the cables by length.
   The longest cables will be labeled with 'Mn' motor side power module numbers. Possible motor side power module numbers are M0…M9. Route the longest cables first.
3. Working with one or two cables at a time, pull the cable down the power control channel until it reaches its corresponding power module.
   Use the cable guides provided to help organize the cables and keep them straight.
4. Route cables for the right-to-left oriented cabinets through the grommet between the entry wire bays in back-to-back configurations.
5. Route cables out of the power control channel and into the corresponding power module.

Drives and Bus Supplies Fiber-optic Cable Routing—Frame 7

Fiber-optic cables are routed through the power control channel to the line side (L*n*) converter power modules and motor side (M*n*) inverter power modules.

Frame 7 Drive Fiber-optic Cable Routing

Figure 130. Frame 7 Drive Fiber-optic Cable Routing

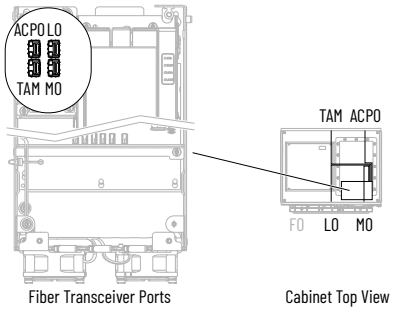


Table 63. Frame 7 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
FO to LO-PDI	1500 (59)	20-750-MFOC-1K5
ACPO to AC precharge control board	2200 (87)	20-750-MFOC-2K2
LO to LO-CTL	2000 (79)	20-750-MFOC-2K0
MO to MO-CTL	2000 (79)	20-750-MFOC-2K0
ACP1/TAM to TAM module circuit board (Optional)	2200 (87)	20-750-MFOC-2K2

Frame 7 Bus Supply Fiber-optic Cable Routing

Figure 131. Frame 7 Bus Supply Fiber-optic Cable Routing

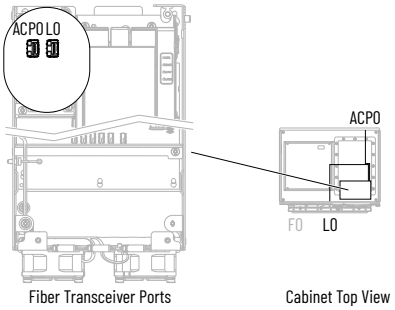


Table 64. Frame 7 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
FO to LO-PDI	1500 (59)	20-750-MFOC-1K5

Table 64. Frame 7 Bus Supply Fiber-optic Cable Routing (continued)

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
ACPO to AC precharge control board	2200 (87)	20-750-MFOC-2K2
LO to LO-CTL	2000 (79)	20-750-MFOC-2K0

Drives Fiber-optic Cable Routing–Frames 8...10

Frame 8 Drive Fiber-optic Cable Routing

Figure 132. Frame 8 Drive Fiber-optic Cable Routing

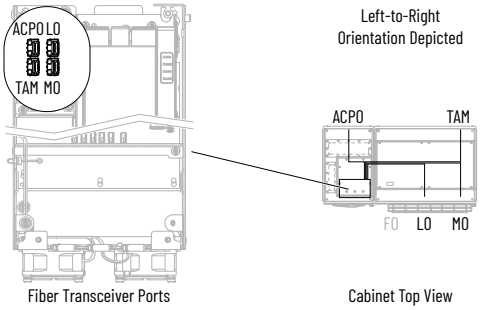


Table 65. Frame 8 Drive Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
FO to LO-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACPO to AC precharge control board	1500 (59)	20-750-MFOC-1K5	1500 (59)	20-750-MFOC-1K5
LO to LO-CTL	2200 (87)	20-750-MFOC-2K2	3200 (126)	20-750-MFOC-3K2
MO to MO-CTL	2200 (87)	20-750-MFOC-2K2	3200 (126)	20-750-MFOC-3K2
ACP1/TAM to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2	3200 (126)	20-750-MFOC-3K2

Frame 9 Drive Fiber-optic Cable Routing

Figure 133. Frame 9 Drive Fiber-optic Cable Routing

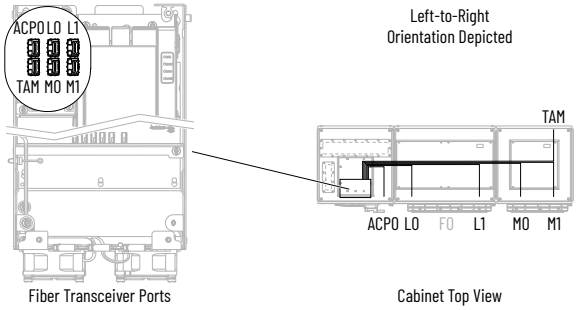


Table 66. Frame 9 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	1500 (59)	20-750-MF0C-1K5	1500 (59)	20-750-MF0C-1K5
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	3200 (126)	20-750-MF0C-3K2
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	4000 (157)	20-750-MF0C-4K0
M0 to M0-CTL	3200 (126)	20-750-MF0C-3K2	4000 (157)	20-750-MF0C-4K0
M1 to M1-CTL	3200 (126)	20-750-MF0C-3K2	5400 (213)	20-750-MF0C-5K4
ACP1/TAM to TAM module circuit board (Optional)	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0

Frame 10 Drive Fiber-optic Cable Routing

Figure 134. Frame 10 Drive Fiber-optic Cable Routing

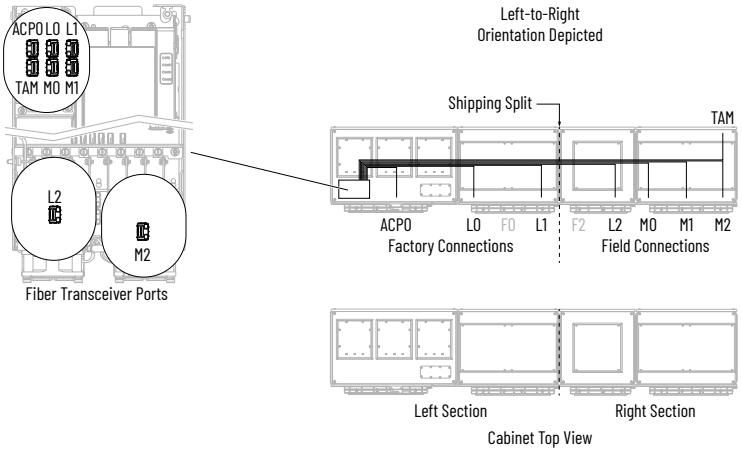


Table 67. Frame 10 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	1500 (59)	20-750-MF0C-1K5	1500 (59)	20-750-MF0C-1K5
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2000 (79)	20-750-MF0C-2K0
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	2200 (87)	20-750-MF0C-2K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	3200 (126)	20-750-MF0C-3K2
M0 to M0-CTL	4000 (157)	20-750-MF0C-4K0	3200 (126)	20-750-MF0C-3K2
M1 to M1-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
M2 to M2-CTL	5400 (213)	20-750-MF0C-5K4	4000 (157)	20-750-MF0C-4K0
ACP1/TAM to TAM module circuit board (Optional)	5400 (213)	20-750-MF0C-5K4	5400 (213)	20-750-MF0C-5K4

Drives Fiber-optic Cable Routing—Frames 11...15

Frame 11 Drive Fiber-optic Cable Routing

Figure 135. Frame 11 Drive Fiber-optic Cable Routing

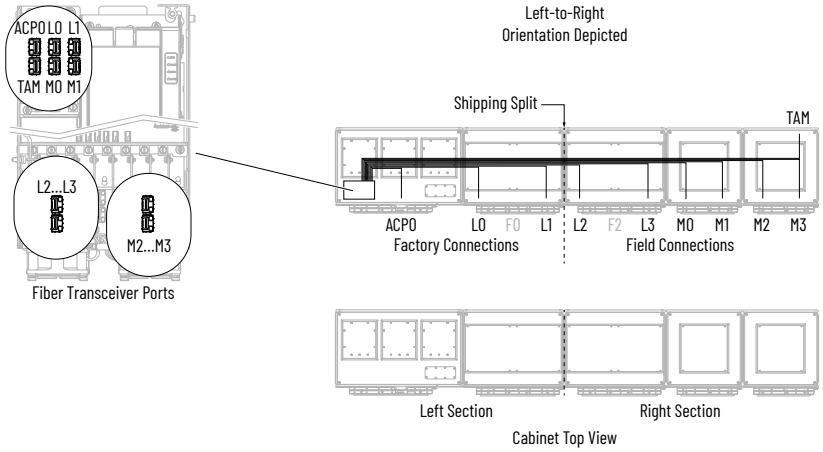


Table 68. Frame 11 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3

Table 68. Frame 11 Drive Fiber-optic Cable Routing (continued)

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
ACP0 to AC precharge control board	1500 (59)	20-750-MF0C-1K5	1500 (59)	20-750-MF0C-1K5
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2000 (79)	20-750-MF0C-2K0
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	2200 (87)	20-750-MF0C-2K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	3200 (126)	20-750-MF0C-3K2
L3 to L3-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
M0 to M0-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
M1 to M1-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
M2 to M2-CTL	5400 (213)	20-750-MF0C-5K4	5400 (213)	20-750-MF0C-5K4
M3 to M3-CTL	5400 (213)	20-750-MF0C-5K4	5400 (213)	20-750-MF0C-5K4
ACP1/TAM to TAM module circuit board (Optional)	6000 (236)	20-750-MF0C-6K0	6000 (236	20-750-MF0C-6K0

Frame 12 Drive Fiber-optic Cable Routing

Figure 136. Frame 12 Drive Fiber-optic Cable Routing

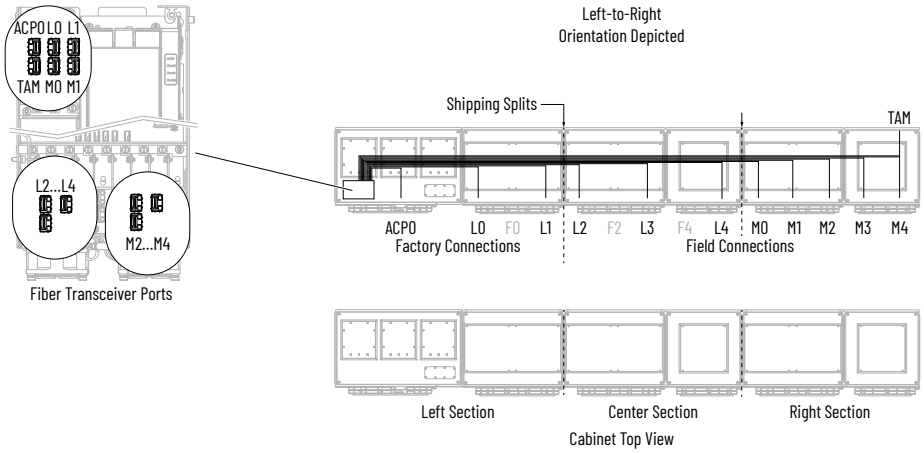


Table 69. Frame 12 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3

Table 69. Frame 12 Drive Fiber-optic Cable Routing (continued)

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F2 to L2-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
F4 to L4-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACP0 to AC precharge control board	1500 (59)	20-750-MFOC-1K5	1500 (59)	20-750-MFOC-1K5
L0 to L0-CTL	2200 (87)	20-750-MFOC-2K2	2000 (79)	20-750-MFOC-2K0
L1 to L1-CTL	3200 (126)	20-750-MFOC-3K2	2200 (87)	20-750-MFOC-2K2
L2 to L2-CTL	4000 (157)	20-750-MFOC-4K0	3200 (126)	20-750-MFOC-3K2
L3 to L3-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L4 to L4-CTL	5400 (213)	20-750-MFOC-5K4	4000 (157)	20-750-MFOC-4K0
M0 to M0-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
M1 to M1-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
M2 to M2-CTL	6000 (236)	20-750-MFOC-6K0	5400 (213)	20-750-MFOC-5K4
M3 to M3-CTL	6000 (236)	20-750-MFOC-6K0	5400 (213)	20-750-MFOC-5K4
M4 to M4-CTL	6000 (236)	20-750-MFOC-6K0	5400 (213)	20-750-MFOC-5K4
ACP1/TAM to TAM module circuit board (Optional)	6800 (268)	20-750-MFOC-6K8	6800 (268)	20-750-MFOC-6K8

Frame 13 Drive Fiber-optic Cable Routing

Figure 137. Frame 13 Drive Fiber-optic Cable Routing

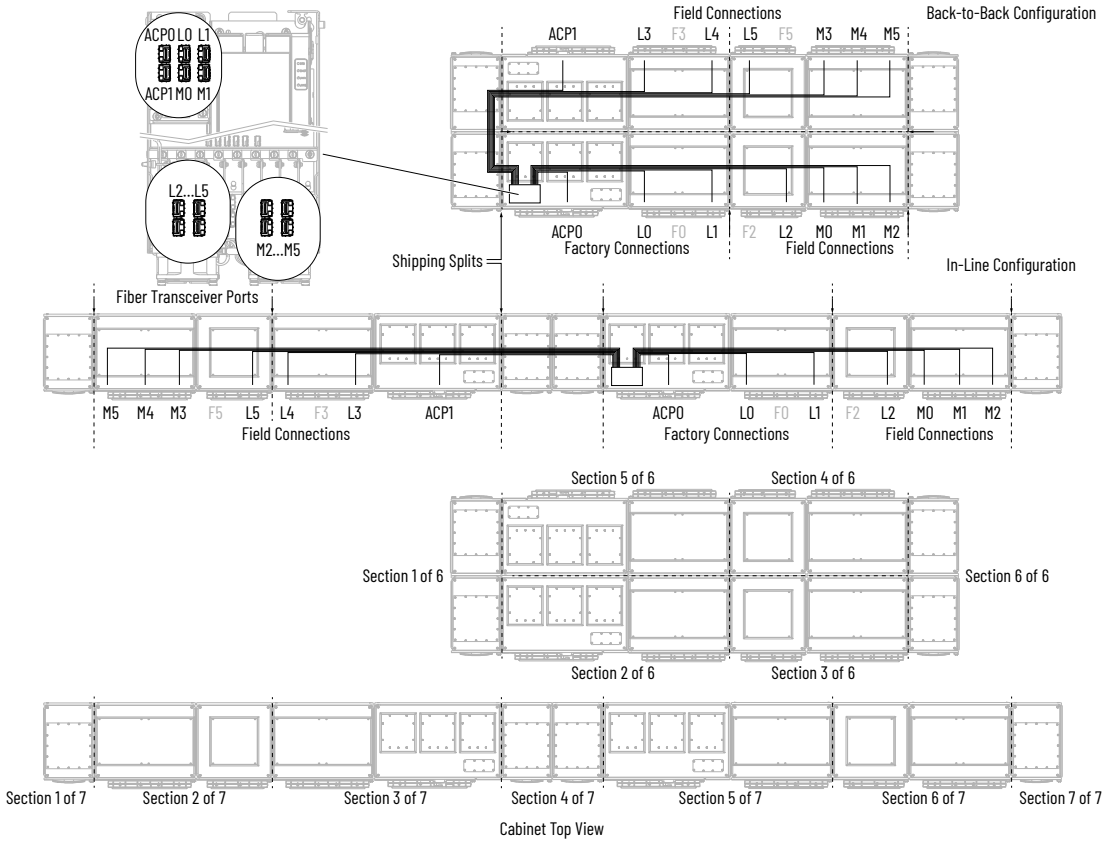


Table 70. Frame 13 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
F3 to L3-PDI, F5 to L5-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACP0 to AC precharge control board	2000 (79)	20-750-MFOC-2K0	2000 (79)	20-750-MFOC-2K0
ACP1/TAM to AC precharge control board	2700 (106)	20-750-MFOC-2K7	4000 (157)	20-750-MFOC-4K0
L0 to L0-CTL	2200 (87)	20-750-MFOC-2K2	2200 (87)	20-750-MFOC-2K2
L1 to L1-CTL	3200 (126)	20-750-MFOC-3K2	3200 (126)	20-750-MFOC-3K2
L2 to L2-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L3 to L3-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L4 to L4-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4

Table 70. Frame 13 Drive Fiber-optic Cable Routing (continued)

Connection — Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
L5 to L5-CTL	5400 (213)	20-750-MFOC-5K4	6000 (236)	20-750-MFOC-6K0
M0 to M0-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
M1 to M1-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
M2 to M2-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
M3 to M3-CTL	5400 (213)	20-750-MFOC-5K4	6800 (268)	20-750-MFOC-6K8
M4 to M4-CTL	6000 (236)	20-750-MFOC-6K0	6800 (268)	20-750-MFOC-6K8
M5 to M5-CTL	6800 (268)	20-750-MFOC-6K8	6800 (268)	20-750-MFOC-6K8

Frame 14 Drive Fiber-optic Cable Routing

Figure 138. Frame 14 Drive Fiber-optic Cable Routing

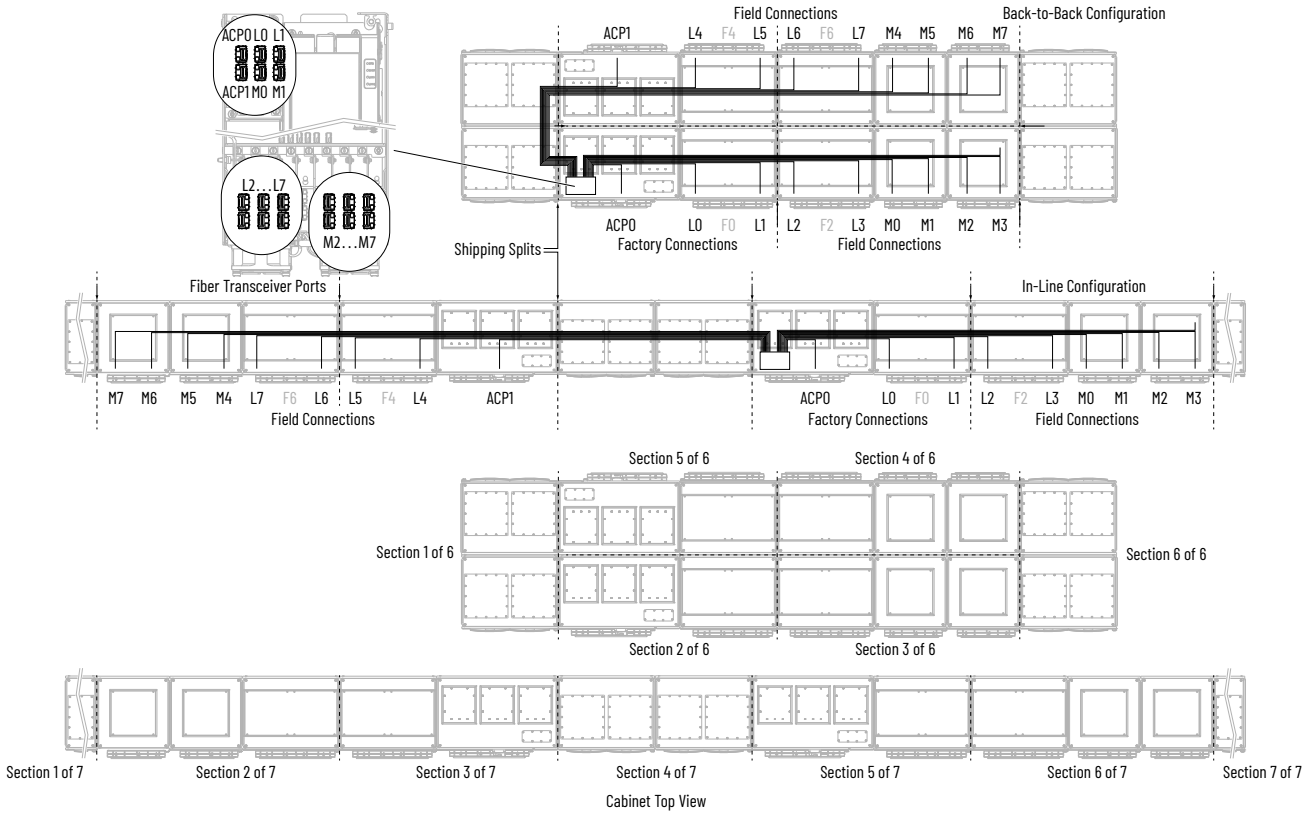


Table 71. Frame 14 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
F4 to L4-PDI, F6 to L6-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACP0 to AC precharge control board	2000 (79)	20-750-MFOC-2K0	2000 (79)	20-750-MFOC-2K0
ACP1/TAM to AC precharge control board	2700 (106)	20-750-MFOC-2K7	4000 (157)	20-750-MFOC-4K0
L0 to L0-CTL	2200 (87)	20-750-MFOC-2K2	2200 (87)	20-750-MFOC-2K2
L1 to L1-CTL	3200 (126)	20-750-MFOC-3K2	3200 (126)	20-750-MFOC-3K2
L2 to L2-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L3 to L3-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L4 to L4-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L5 to L5-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L6 to L6-CTL	5400 (213)	20-750-MFOC-5K4	6000 (236)	20-750-MFOC-6K0
L7 to L7-CTL	5400 (213)	20-750-MFOC-5K4	6800 (268)	20-750-MFOC-6K8
M0 to M0-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
M1 to M1-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
M2 to M2-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
M3 to M3-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
M4 to M4-CTL	6000 (236)	20-750-MFOC-6K0	6800 (268)	20-750-MFOC-6K8
M5 to M5-CTL	6000 (236)	20-750-MFOC-6K0	6800 (268)	20-750-MFOC-6K8
M6 to M6-CTL	6800 (268)	20-750-MFOC-6K8	7400 (291)	20-750-MFOC-7K4
M7 to M7-CTL	6800 (268)	20-750-MFOC-6K8	7800 (307)	20-750-MFOC-7K8

Frame 15 Drive Fiber-optic Cable Routing

Figure 139. Frame 15 Drive Fiber-optic Cable Routing

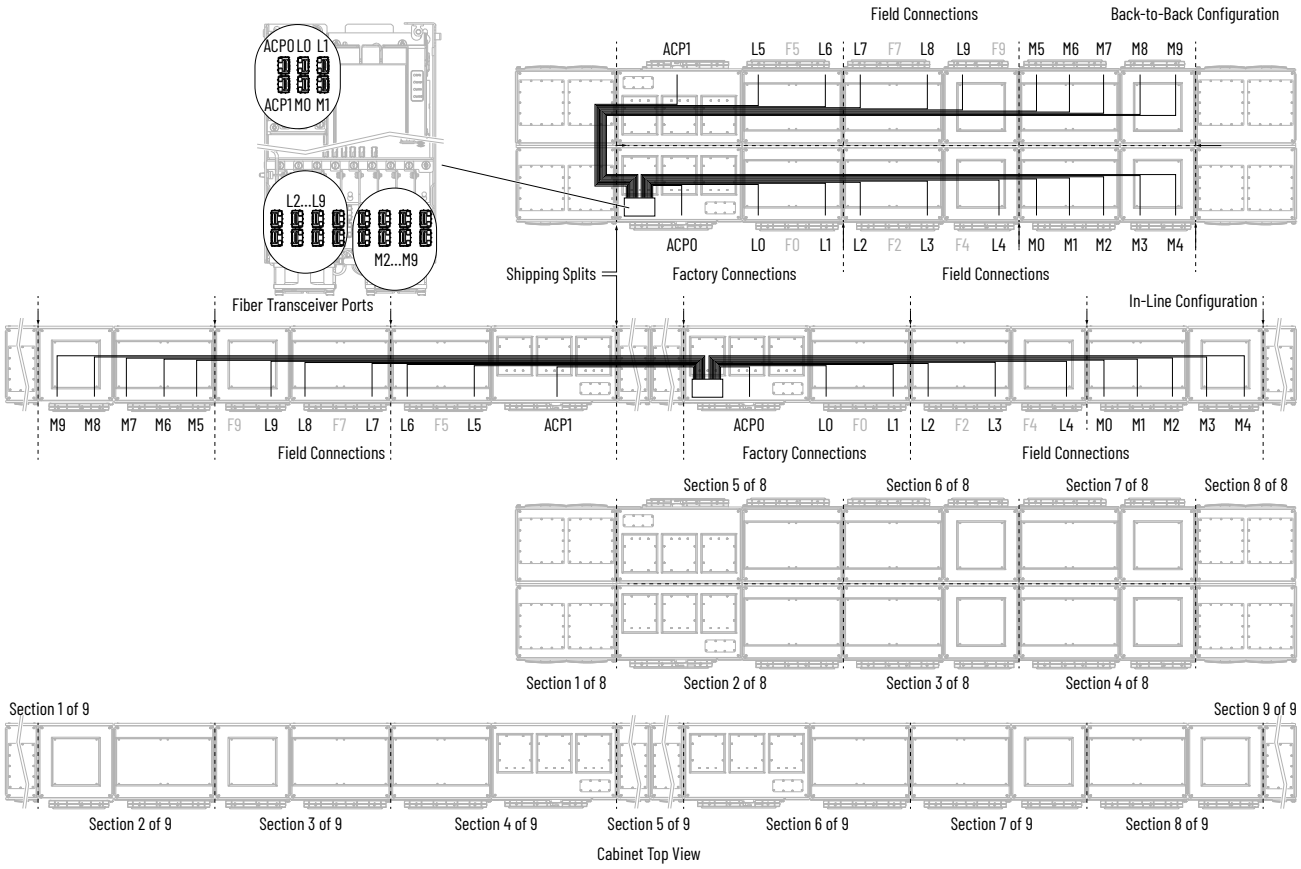


Table 72. Frame 15 Drive Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F4 to L4-PDI, F5 to L5-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F7 to L7-PDI, F9 to L9-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	2000 (79)	20-750-MF0C-2K0	2000 (79)	20-750-MF0C-2K0
ACP1/TAM to AC precharge control board	2700 (106)	20-750-MF0C-2K7	4000 (157)	20-750-MF0C-4K0
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2200 (87)	20-750-MF0C-2K2
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	3200 (126)	20-750-MF0C-3K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0

Table 72. Frame 15 Drive Fiber-optic Cable Routing (continued)

Connection — Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
L3 to L3-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L4 to L4-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
L5 to L5-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L6 to L6-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L7 to L7-CTL	5400 (213)	20-750-MFOC-5K4	6000 (236)	20-750-MFOC-6K0
L8 to L8-CTL	5400 (213)	20-750-MFOC-5K4	6800 (268)	20-750-MFOC-6K8
L9 to L9-CTL	6000 (236)	20-750-MFOC-6K0	6800 (268)	20-750-MFOC-6K8
M0 to M0-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
M1 to M1-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
M2 to M2-CTL	6000 (236)	20-750-MFOC-6K0	6000 (236)	20-750-MFOC-6K0
M3 to M3-CTL	6000 (236)	20-750-MFOC-6K0	6000 (236)	20-750-MFOC-6K0
M4 to M4-CTL	6000 (236)	20-750-MFOC-6K0	6000 (236)	20-750-MFOC-6K0
M5 to M5-CTL	6800 (268)	20-750-MFOC-6K8	7400 (291)	20-750-MFOC-7K4
M6 to M6-CTL	6800 (268)	20-750-MFOC-6K8	7400 (291)	20-750-MFOC-7K4
M7 to M7-CTL	7400 (291)	20-750-MFOC-7K4	7800 (307)	20-750-MFOC-7K8
M8 to M8-CTL	7400 (291)	20-750-MFOC-7K4	8300 (327)	20-750-MFOC-8K3
M9 to M9-CTL	7400 (291)	20-750-MFOC-7K4	8300 (327)	20-750-MFOC-8K3

Bus Supplies Fiber-optic Cable Routing—Frames 8...15

Frame 8 Bus Supply Fiber-optic Cable Routing

Figure 140. Frame 8 Bus Supply Fiber-optic Cable Routing

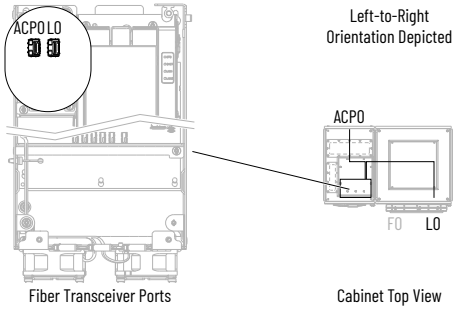


Table 73. Frame 8 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
FO to LO-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACPO to AC precharge control board	1500 (59)	20-750-MFOC-1K5	1500 (59)	20-750-MFOC-1K5
LO to LO-CTL	2000 (79)	20-750-MFOC-2K0	3200 (126)	20-750-MFOC-3K2

Frame 9 Bus Supply Fiber-optic Cable Routing

Figure 141. Frame 9 Bus Supply Fiber-optic Cable Routing

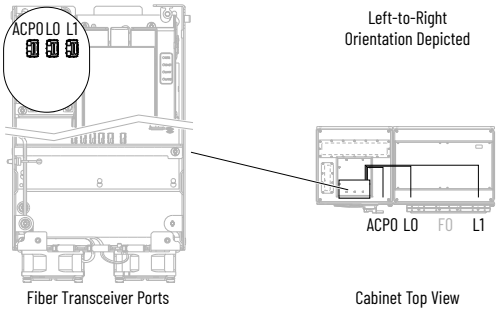


Table 74. Frame 9 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
FO to LO-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACPO to AC precharge control board	1500 (59)	20-750-MFOC-1K5	1500 (59)	20-750-MFOC-1K5
LO to LO-CTL	2200 (79)	20-750-MFOC-2K2	3200 (126)	20-750-MFOC-3K2

Table 74. Frame 9 Bus Supply Fiber-optic Cable Routing (continued)

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
L1 to L1-CTL	3200 (126)	20-750-MFOC-3K2	4000 (157)	20-750-MFOC-4K0

Frame 10 Bus Supply Fiber-optic Cable Routing

Figure 142. Frame 10 Bus Supply Fiber-optic Cable Routing

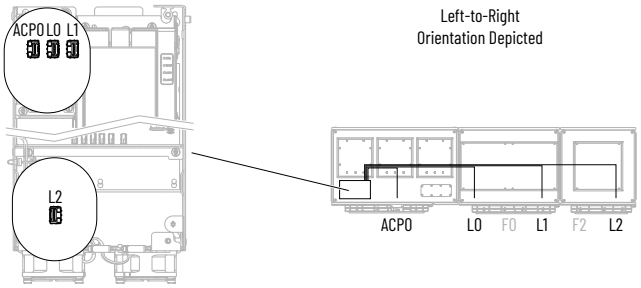


Table 75. Frame 10 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
FO to LO-PDI, F2 to L2-PDI	1300 (51)	20-750-MFOC-1K3	1300 (51)	20-750-MFOC-1K3
ACPO to AC precharge control board	1500 (59)	20-750-MFOC-1K5	1500 (59)	20-750-MFOC-1K5
LO to LO-CTL	2200 (87)	20-750-MFOC-2K2	2000 (79)	20-750-MFOC-2K0
L1 to L1-CTL	3200 (126)	20-750-MFOC-3K2	2200 (87)	20-750-MFOC-2K2
L2 to L2-CTL	4000 (157)	20-750-MFOC-4K0	3200 (126)	20-750-MFOC-3K2

Frame 11 Bus Supply Fiber-optic Cable Routing

Figure 143. Frame 11 Bus Supply Fiber-optic Cable Routing

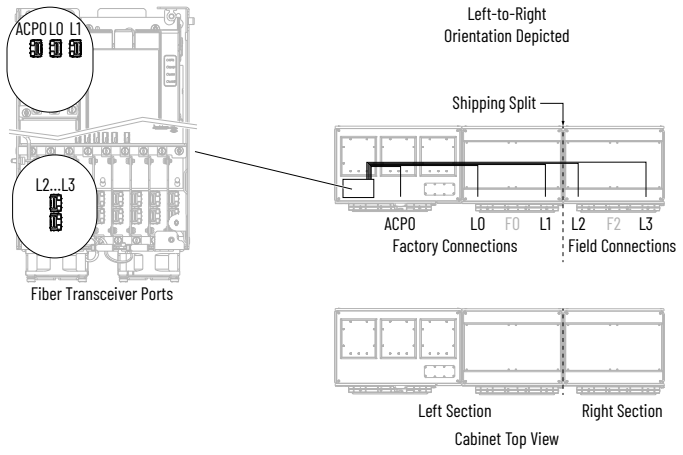


Table 76. Frame 11 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACPO to AC precharge control board	1500 (59)	20-750-MF0C-1K5	1500 (59)	20-750-MF0C-1K5
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2000 (79)	20-750-MF0C-2K0
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	2200 (87)	20-750-MF0C-2K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	3200 (126)	20-750-MF0C-3K2
L3 to L3-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0

Frame 12 Bus Supply Fiber-optic Cable Routing

Figure 144. Frame 12 Bus Supply Fiber-optic Cable Routing

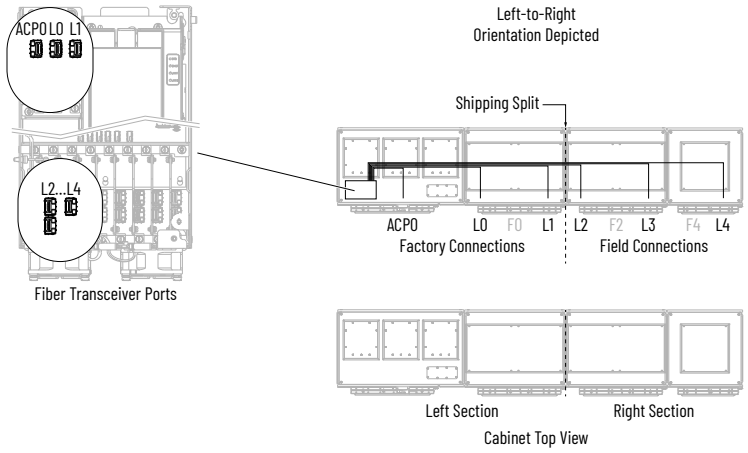


Table 77. Frame 12 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Left-to-Right Orientation		Right-to-Left Orientation	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F4 to L4-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	1500 (59)	20-750-MF0C-1K5	1500 (59)	20-750-MF0C-1K5
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2000 (79)	20-750-MF0C-2K0
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	2200 (87)	20-750-MF0C-2K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	3200 (126)	20-750-MF0C-3K2
L3 to L3-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
L4 to L4-CTL	5400 (213)	20-750-MF0C-5K4	4000 (157)	20-750-MF0C-4K0

Frame 13 Bus Supply Fiber-optic Cable Routing

Figure 145. Frame 13 Bus Supply Fiber-optic Cable Routing

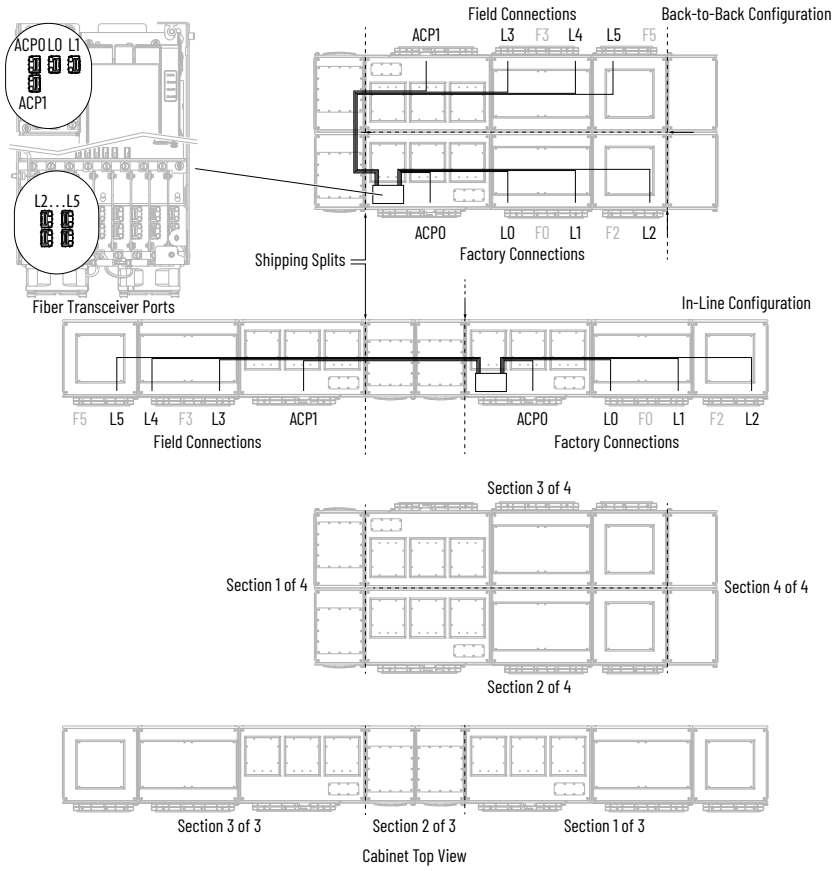


Table 78. Frame 13 Bus Supply Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F3 to L3-PDI, F5 to L5-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	2000 (79)	20-750-MF0C-2K0	2000 (79)	20-750-MF0C-2K0
ACP1/TAM to AC precharge control board	2700 (106)	20-750-MF0C-2K7	4000 (157)	20-750-MF0C-4K0
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2200 (87)	20-750-MF0C-2K2
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	3200 (126)	20-750-MF0C-3K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
L3 to L3-CTL	4600 (181)	20-750-MF0C-4K6	5400 (213)	20-750-MF0C-5K4

Table 78. Frame 13 Bus Supply Fiber-optic Cable Routing (continued)

Connection – Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
L4 to L4-CTL	4600 (181)	20-750-MF0C-4K6	5400 (213)	20-750-MF0C-5K4
L5 to L5-CTL	5400 (213)	20-750-MF0C-5K4	6000 (236)	20-750-MF0C-6K0

Frame 14 Bus Supply Fiber-optic Cable Routing

Figure 146. Frame 14 Bus Supply Fiber-optic Cable Routing

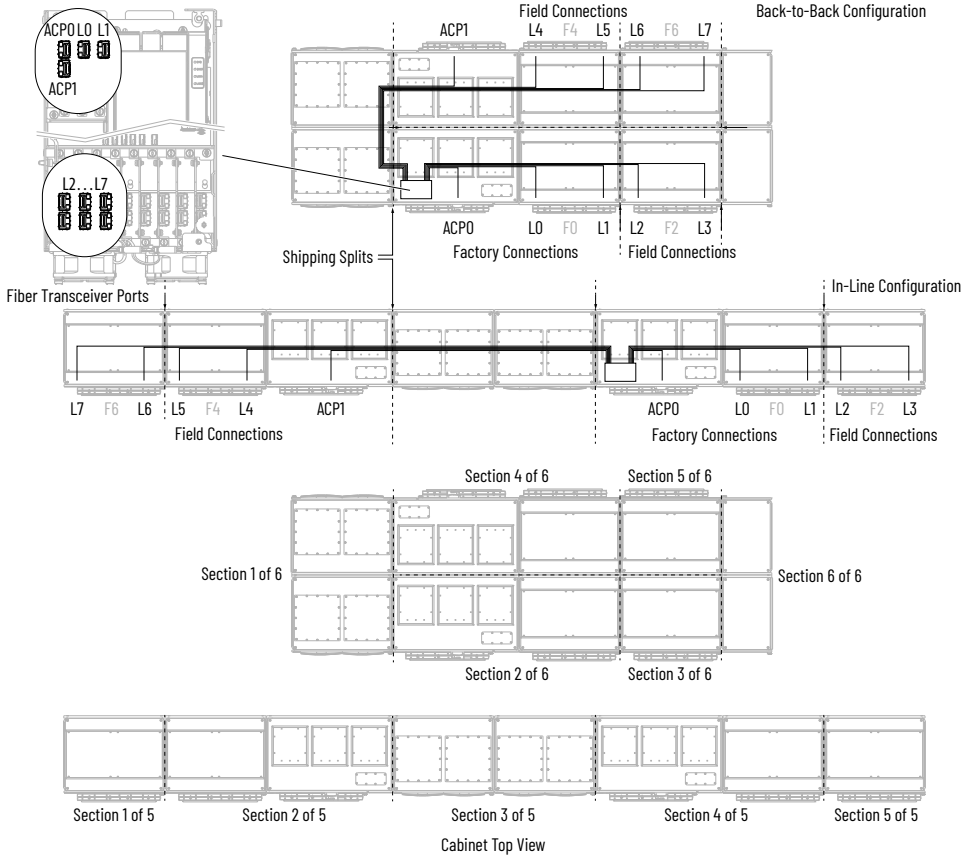


Table 79. Frame 14 Bus Supply Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F4 to L4-PDI, F6 to L6-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	2000 (79)	20-750-MF0C-2K0	2000 (79)	20-750-MF0C-2K0

Table 79. Frame 14 Bus Supply Fiber-optic Cable Routing (continued)

Connection – Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
ACP1/TAM to AC precharge control board	2700 (106)	20-750-MFOC-2K7	4000 (157)	20-750-MFOC-4K0
L0 to L0-CTL	2200 (87)	20-750-MFOC-2K2	2200 (87)	20-750-MFOC-2K2
L1 to L1-CTL	3200 (126)	20-750-MFOC-3K2	3200 (126)	20-750-MFOC-3K2
L2 to L2-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L3 to L3-CTL	4000 (157)	20-750-MFOC-4K0	4000 (157)	20-750-MFOC-4K0
L4 to L4-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L5 to L5-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L6 to L6-CTL	5400 (213)	20-750-MFOC-5K4	6000 (236)	20-750-MFOC-6K0
L7 to L7-CTL	5400 (213)	20-750-MFOC-5K4	6800 (268)	20-750-MFOC-6K8

Frame 15 Bus Supply Fiber-optic Cable Routing

Figure 147. Frame 15 Bus Supply Fiber-optic Cable Routing

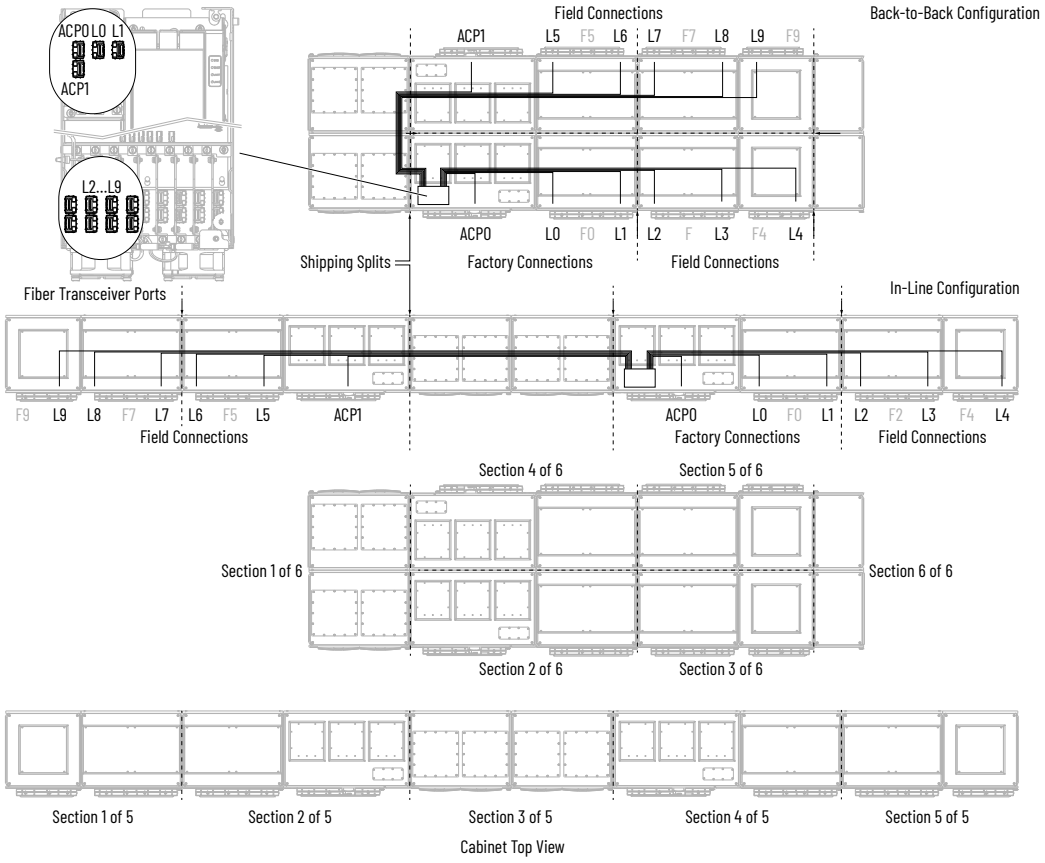


Table 80. Frame 15 Bus Supply Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
F0 to L0-PDI, F2 to L2-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F4 to L4-PDI, F5 to L5-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
F7 to L7-PDI, F9 to L9-PDI	1300 (51)	20-750-MF0C-1K3	1300 (51)	20-750-MF0C-1K3
ACP0 to AC precharge control board	2000 (79)	20-750-MF0C-2K0	2000 (79)	20-750-MF0C-2K0
ACP1/TAM to AC precharge control board	2700 (106)	20-750-MF0C-2K7	2700 (106)	20-750-MF0C-2K7
L0 to L0-CTL	2200 (87)	20-750-MF0C-2K2	2200 (87)	20-750-MF0C-2K2
L1 to L1-CTL	3200 (126)	20-750-MF0C-3K2	3200 (126)	20-750-MF0C-3K2
L2 to L2-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0
L3 to L3-CTL	4000 (157)	20-750-MF0C-4K0	4000 (157)	20-750-MF0C-4K0

Table 80. Frame 15 Bus Supply Fiber-optic Cable Routing (continued)

Connection – Fiber Transceiver Port to Device	Back-to-back Configuration		In-line Configuration	
	Cable Length [mm (in.)]	Cat. No.	Cable Length [mm (in.)]	Cat. No.
L4 to L4-CTL	5400 (213)	20-750-MFOC-5K4	5400 (213)	20-750-MFOC-5K4
L5 to L5-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L6 to L6-CTL	4600 (181)	20-750-MFOC-4K6	5400 (213)	20-750-MFOC-5K4
L7 to L7-CTL	5400 (213)	20-750-MFOC-5K4	6000 (236)	20-750-MFOC-6K0
L8 to L8-CTL	5400 (213)	20-750-MFOC-5K4	6800 (268)	20-750-MFOC-6K8
L9 to L9-CTL	6000 (236)	20-750-MFOC-6K0	6800 (268)	20-750-MFOC-6K8

Common Bus Inverters Fiber-optic Cable Routing—Frames 8...15

Frame 8 Common Bus Inverter Fiber-optic Cable Routing

Figure 148. Frame 8 Common Bus Inverter Fiber-optic Cable Routing

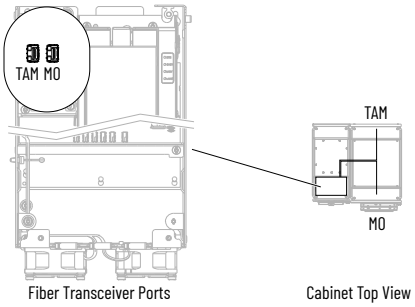


Table 81. Frame 8 Common Bus Inverter Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 (First control pod) to M0-CTL	2200 (87)	20-750-MFOC-2K2
M0 (Second control pod) to M0-CTL	3200 (126)	20-750-MFOC-3K2
ACP1/TAM (First control pod) to TAM module circuit board (Optional)	2200 (87)	20-750-MFOC-2K2
ACP1/TAM (Second control pod) to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2

Frame 9 Common Bus Inverter Fiber-optic Cable Routing

Figure 149. Frame 9 Common Bus Inverter Fiber-optic Cable Routing

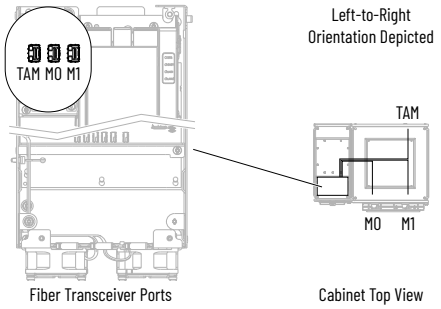


Table 82. Frame 9 Common Bus Inverter Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 (First control pod) to M0-CTL	2200 (87)	20-750-MFOC-2K2
M0 (Second control pod) to M0-CTL	3200 (126)	20-750-MFOC-3K2
M1 (First control pod) to M1-CTL	2200 (87)	20-750-MFOC-2K2
M1 (Second control pod) to M1-CTL	3200 (126)	20-750-MFOC-3K2
ACP1/TAM (First control pod) to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2
ACP1/TAM (Second control pod) to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2

Frame 10 Common Bus Inverter Fiber-optic Cable Routing

Figure 150. Frame 10 Common Bus Inverter Fiber-optic Cable Routing

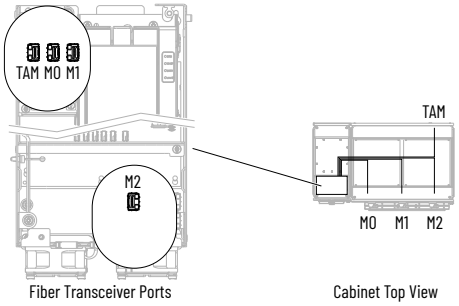


Table 83. Frame 10 Common Bus Inverter Fiber-optic Cable Routing

Connection — Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 (First control pod) to M0-CTL	2200 (87)	20-750-MFOC-2K2
M0 (Second control pod to M0-CTL	3200 (126)	20-750-MFOC-3K2

Table 83. Frame 10 Common Bus Inverter Fiber-optic Cable Routing (continued)

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M1 (First control pod) to M1-CTL	2200 (87)	20-750-MFOC-2K2
M1 (Second control pod to M1-CTL	3200 (126)	20-750-MFOC-3K2
M2 (First control pod) to M2-CTL	2200 (87)	20-750-MFOC-2K2
M2 (Second control pod) to M2-CTL	4000 (157)	20-750-MFOC-4K0
ACP1/TAM (First control pod) to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2
ACP1/TAM (Second control pod) to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2

Frame 11 Common Bus Inverter Fiber-optic Cable Routing

Figure 151. Frame 11 Common Bus Inverter Fiber-optic Cable Routing

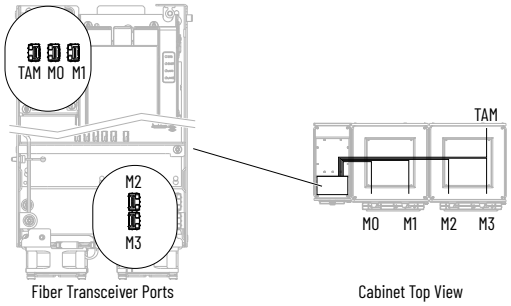


Table 84. Frame 11 Common Bus Inverter Fiber-optic Cables

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 (First control pod) to M0-CTL	2200 (87)	20-750-MFOC-2K2
M0 (Second control pod) to M0-CTL	3200 (126)	20-750-MFOC-3K2
M1 (First control pod) to M1-CTL	2200 (87)	20-750-MFOC-2K2
M1 (Second control pod) to M1-CTL	3200 (126)	20-750-MFOC-3K2
M2 (First control pod) to M2-CTL	3200 (126)	20-750-MFOC-3K2
M2 (Second control pod) to M2-CTL	4000 (157)	20-750-MFOC-4K0
M3 (First control pod) to M3-CTL	3200 (126)	20-750-MFOC-3K2
M3 (Second control pod) to M3-CTL	4000 (157)	20-750-MFOC-4K0
ACP1/TAM (First control pod) to TAM module circuit board (Optional)	4000 (157)	20-750-MFOC-4K0

Table 84. Frame 11 Common Bus Inverter Fiber-optic Cables (continued)

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
ACP1/TAM (Second control pod) to TAM module circuit board (Optional)	4000 (157)	20-750-MFOC-4K0

Frame 12 Common Bus Inverter Fiber-optic Cable Routing

Figure 152. Frame 12 Common Bus Inverter Fiber-optic Cable Routing

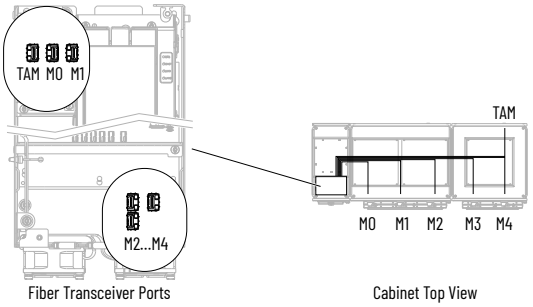


Table 85. Frame 12 Common Bus Inverter Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 (First control pod) to M0-CTL	2200 (87)	20-750-MFOC-2K2
M1 (First control pod) to M1-CTL	2200 (87)	20-750-MFOC-2K2
M2 (First control pod) to M2-CTL	2200 (87)	20-750-MFOC-2K2
M3 (First control pod) to M3-CTL	3200 (126)	20-750-MFOC-3K2
M4 (First control pod) to M4-CTL	3200 (126)	20-750-MFOC-3K2
M0 (Second control pod) to M0-CTL	3200 (126)	20-750-MFOC-3K2
M1 (Second control pod) to M1-CTL	3200 (126)	20-750-MFOC-3K2
M2 (Second control pod) to M2-CTL	4000 (157)	20-750-MFOC-4K0
M3 (Second control pod) to M3-CTL	4000 (157)	20-750-MFOC-4K0
M4 (Second control pod) to M4-CTL	4000 (157)	20-750-MFOC-4K0
ACP1/TAM (First control pod) to TAM module circuit board (Optional)	4000 (157)	20-750-MFOC-4K0
ACP1/TAM (Second control pod) to TAM module circuit board (Optional)	4000 (157)	20-750-MFOC-4K0

Frame 13 Common Bus Inverter Fiber-optic Cable Routing

Figure 153. Frame 13 Common Bus Inverter Fiber-optic Cable Routing

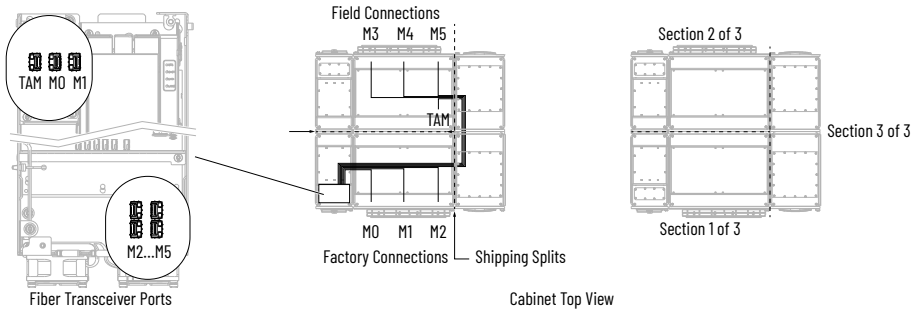


Table 86. Frame 13 Common Bus Inverter Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 to M0-CTL	2200 (87)	20-750-MFOC-2K2
M1 to M1-CTL	2200 (87)	20-750-MFOC-2K2
M2 to M2-CTL	2200 (87)	20-750-MFOC-2K2
M3 to M3-CTL	4000 (157)	20-750-MFOC-4K0
M4 to M4-CTL	4600 (181)	20-750-MFOC-4K6
M5 to M5-CTL	4600 (181)	20-750-MFOC-4K6
ACP1/TAM to TAM module circuit board (Optional)	3200 (126)	20-750-MFOC-3K2

Frame 14 Common Bus Inverter Fiber-optic Cable Routing

Figure 154. Frame 14 Common Bus Inverter Fiber-optic Cable Routing

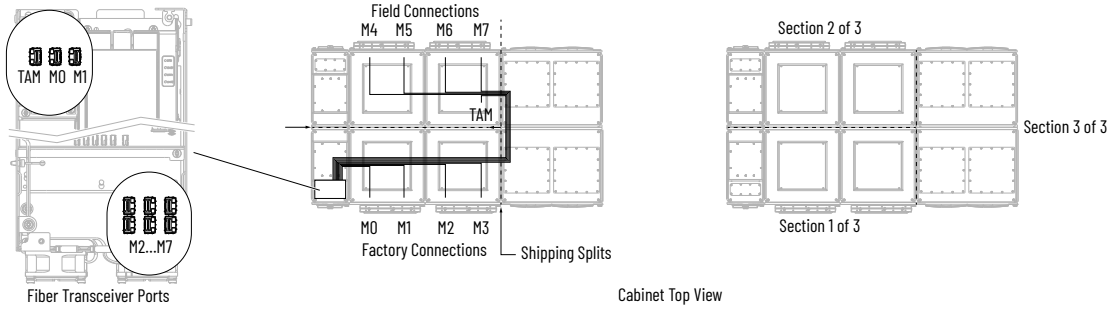


Table 87. Frame 14 Common Bus Inverter Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 to M0-CTL	2200 (87)	20-750-MFOC-2K2
M1 to M1-CTL	2200 (87)	20-750-MFOC-2K2

Table 87. Frame 14 Common Bus Inverter Fiber-optic Cable Routing (continued)

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M2 to M2-CTL	3200 (126)	20-750-MFOC-3K2
M3 to M3-CTL	3200 (126)	20-750-MFOC-3K2
M4 to M4-CTL	5400 (213)	20-750-MFOC-5K4
M5 to M5-CTL	5400 (213)	20-750-MFOC-5K4
M6 to M6-CTL	4600 (181)	20-750-MFOC-4K6
M7 to M7-CTL	4600 (181)	20-750-MFOC-4K6
ACP1/TAM to TAM module circuit board (Optional)	4000 (157)	20-750-MFOC-4K0

Frame 15 Common Bus Inverter Fiber-optic Cable Routing

Figure 155. Frame 15 Common Bus Inverter Fiber-optic Cable Routing

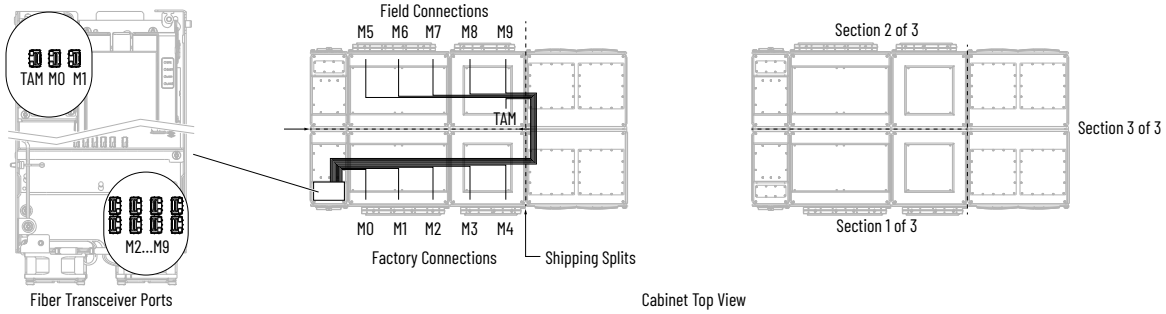


Table 88. Frame 15 Common Bus Inverter Fiber-optic Cable Routing

Connection – Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M0 to M0-CTL	2200 (87)	20-750-MFOC-2K2
M1 to M1-CTL	2200 (87)	20-750-MFOC-2K2
M2 to M2-CTL	2200 (87)	20-750-MFOC-2K2
M3 to M3-CTL	3200 (126)	20-750-MFOC-3K2
M4 to M4-CTL	3200 (126)	20-750-MFOC-3K2
M5 to M5-CTL	4600 (181)	20-750-MFOC-4K6
M6 to M6-CTL	4600 (181)	20-750-MFOC-4K6
M7 to M7-CTL	5400 (213)	20-750-MFOC-5K4
M8 to M8-CTL	5400 (213)	20-750-MFOC-5K4

Table 88. Frame 15 Common Bus Inverter Fiber-optic Cable Routing (continued)

Connection — Fiber Transceiver Port to Device	Cable Length [mm (in.)]	Cat. No.
M9 to M9-CTL	5400 (213)	20-750-MFOC-5K4
ACP1/TAM to TAM module circuit board (Optional)	4000 (157)	20-750-MFOC-4K0

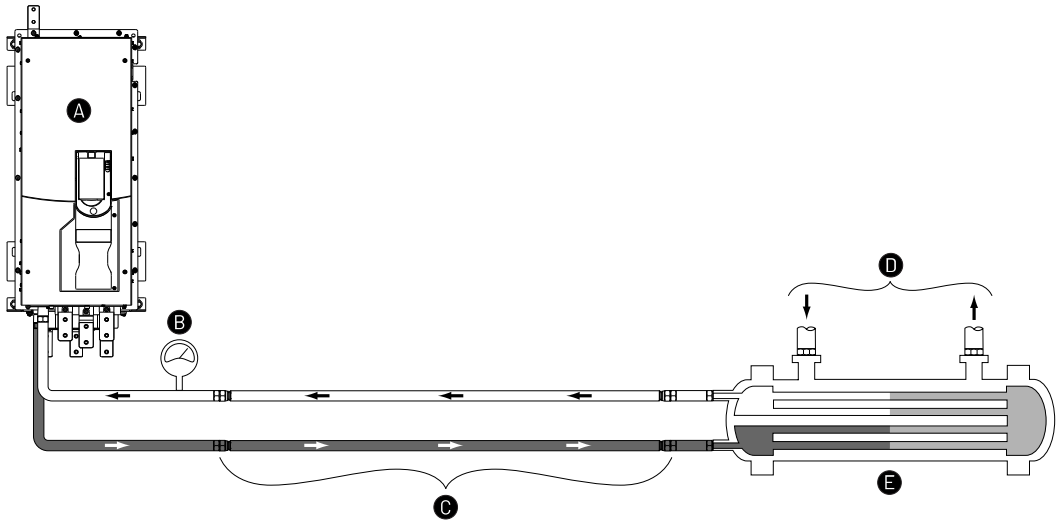
Liquid Cooling System Requirements

Proper cooling is critical to liquid-cooled drive operation and reliability. This section provides an overview of the types of drive cooling loops, drive coolant requirements, and cooling loop connections for the PowerFlex® 755TR liquid-cooled drive power structure.

Liquid-to-Liquid Heat Exchanger Cooling Loop

The liquid-to-liquid heat exchanger uses a heat transfer plate to transfer heat from one liquid to another. This method requires a stable water supply from the user.

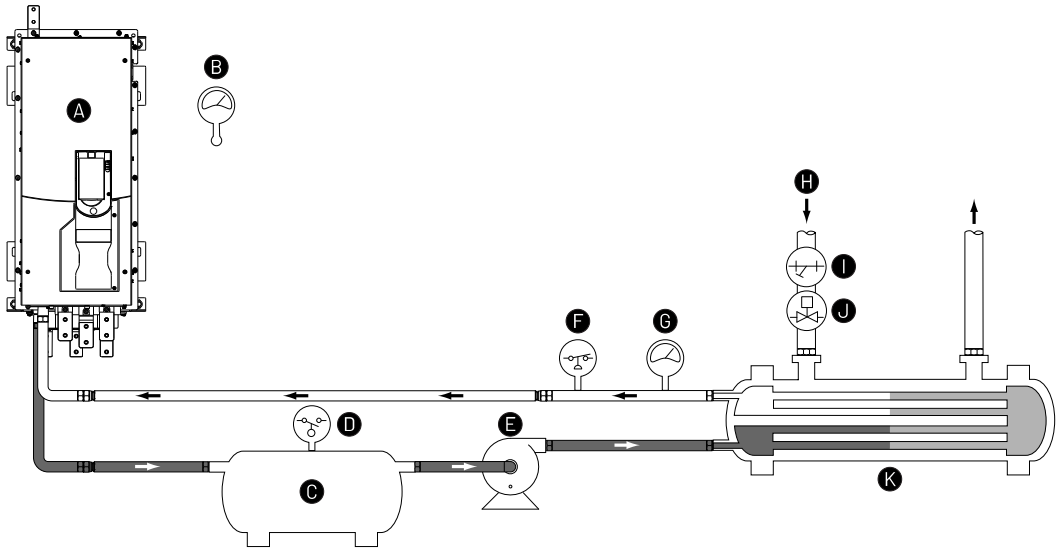
Figure 156. Drive and Liquid-to-Liquid Heat Exchanger Plumbing Arrangement



A	PowerFlex® 755TR liquid-cooled drive (frame 6L shown).
B	Flow indicator.
C	Hose kit.
D	Customer connections to facility water supply.
E	Liquid-to-liquid heat exchanger.

The following figure shows a cooling loop diagram for a typical liquid-to-liquid heat exchanger.

Figure 157. Liquid-to-Liquid Heat Exchanger Plumbing Diagram



A	PowerFlex® 755TR liquid-cooled drive (frame 6L shown).
B	Ambient temperature sensor.
C	Reservoir.
D	Level switch.
E	Pump.
F	Flow switch.
G	Coolant temperature sensor.
H	Facility water supply.
I	Strainer.
J	Control valve.
K	Liquid-to-liquid heat exchanger.

This is a list of the main components of the liquid-to-liquid heat exchanger cooling loop.

Part Name	**Description**
Ambient sensor	Senses the ambient temperature used for the dew point control.
Control valve	Controls the supply loop water flow.
Drive coolant flow switch	Measures the drive coolant flow rate.
Drive coolant temperature sensor	Senses the drive coolant temperature used for the dew point control.
Heat exchanger plate	Transfers heat from the drive loop to the supply loop.

Part Name	Description
Level switch	Senses the level of coolant in the reservoir.
Pump and motor	Circulates drive coolant.
Reservoir	Stores drive coolant.
Strainer	Filters particles from the supply water.

Cooling Loop Application Guidelines

ATTENTION: Risk of equipment damage exists.

Do not use ferrous and plated ferrous materials for pipe-treated water to the power modules and drive. Use of ferrous materials degrades the performance of the power module chillplate.

This section is intended to provide guidelines for applying the cooling loops.

- The allowable drive coolant temperature range for frame 6L drives is 0…50 °C (32…122 °F). When using coolant at a temperature below the dew point of the surrounding air, condensation can accumulate on the drive heatsink and/or circuit boards, which can damage the drive. In this situation, install a coolant flow regulating device and tube/hose insulation. A flow regulating device modulates the coolant flow rate to a level that permits the drive heatsink temperature to rise above the dew point. Insulation for customer side tube or hose can be closed-cell foam insulation with a minimum 12.7 mm (0.50 in.) wall thickness.
- Include a flow switch in the cooling loop on the connection to the drive inlet to turn off the drive if coolant flow drops below the minimum flow required by the drive.
- Circulate coolant through the drive only when the drive is also powered. Failure to do this can result in condensation accumulating on the drive heatsink and/or circuit boards, which could damage the drive.
- Use an interlock from the cooling loop to stop the drive when the cooling loop is faulted.
- For applications requiring a closed loop coolant system, vent the system to remove air that can otherwise degrade the performance of the drive heatsink.
- Install a flow measuring device at the inlet of each complete drive.
- We recommend the following types of pipe for cooling loop connections: brass, type L copper, 300 series stainless steel.

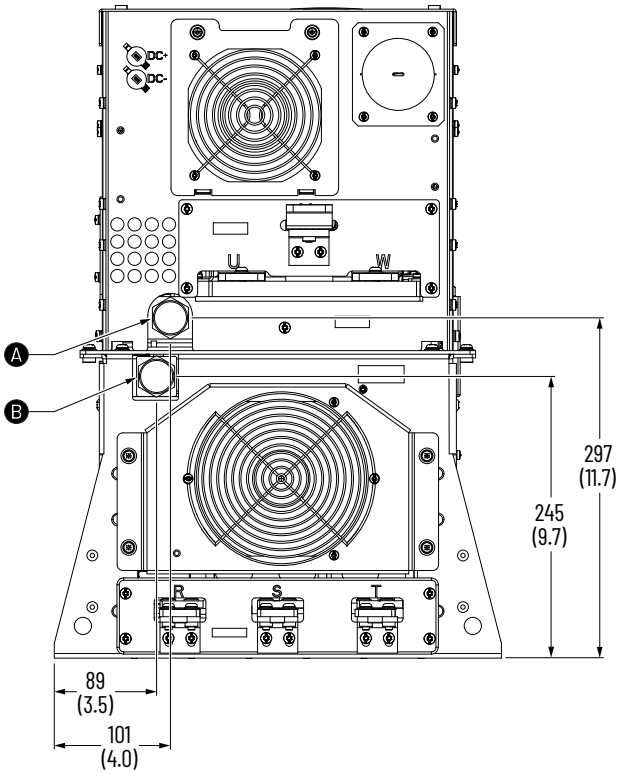
  IMPORTANT: Do not use galvanized pipe.

- Provide a method in the cooling loop for draining and replacing the coolant.

Drive Coolant Connections

The following figure shows the locations of the coolant inlet and outlet connections on PowerFlex® 755TR frame 6L drives.

Figure 158. Frame 6L Drives Coolant Connection Locations



A	Coolant inlet
B	Coolant outlet

The rated working pressure of the frame 6L drive is 6.89 bar (100 psi). Size the coolant supply and return lines for 76 LPM (20 gpm) / 6.89 bar (100 psi) service with a maximum operating temperature of 50 °C (122 °F). The required operating flow rate and pressure drop is specified in table ?.

Coolant connections for frame 6L drives are made using 37° flare fittings which have a:

- 3/4-inch nominal size
- '-12' SAE dash size
- 1-1/16-12 UN/UNF-2B external thread size

Depending on the location of the heat exchanger to the drive, the following drive cooling loop hose kits are available.

Table 89. Drive Cooling Loop Hose Kits

Hose Length	Hoses in Kit	Drive Side Coupling Size	Heat Exchanger Side Coupling Size	Used With	Hose Kit Cat. No.
3 mm (10 ft)	2	0.75 in.	0.75 in.	Frame 6L	20L-GH10-B1
9.1 mm (30 ft)	2	0.75 in.	0.75 in.	Frame 6L	20L-GH30-B1

All drive side hose kit fittings are 37° flare.

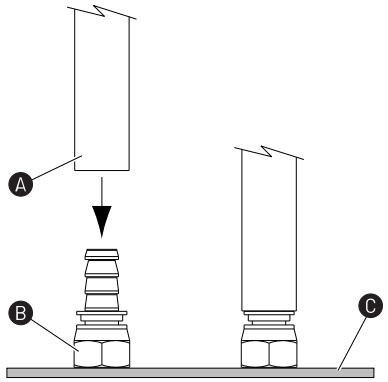
Each hose kit contains 2 hoses and appropriate connectors.

IMPORTANT: Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

Attach a Coupling to a Hose

To connect the hoses between drive and heat exchanger, follow these steps.

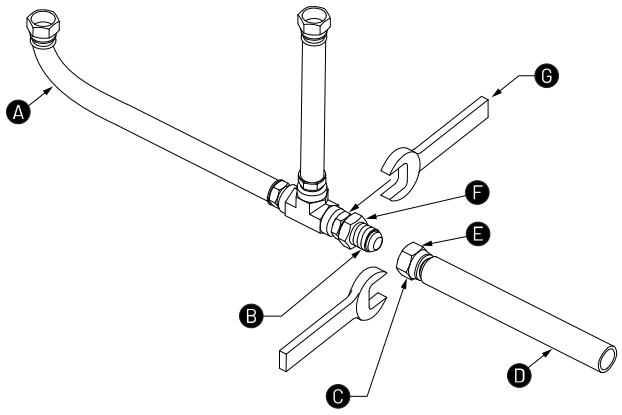
1. Lubricate the inside of the hose end with a small amount of liquid soap.
2. Set the coupling down on a solid surface and push the hose onto the coupling - in one firm push - until the hose end is flush against the plastic bushing. Stopping before the hose is fully on may make it difficult to push the hose completely onto the coupling.



A	Hose end
B	Coupling
C	Solid surface

Connect the Drive Side Hose

1. Assemble hose fittings with swivel nut (C) to each drive fluid fitting, and tighten to wrench resistance or 3.3 N•m (30 lb•in.).
2. Using a backup wrench on the drive loop or drive fitting, tighten the swivel nut fitting by either of the following two methods:
   - Hex flats from wrench resistance method (recommended): one (1) hex flat from wrench resistance.
   - Torque method: 103…109 N•m (or 76…81 lb•ft.).



A	Drive side inlet or outlet hose.

B	37° flare fitting
C	Swivel nut
D	Hose to heat exchanger.
E	1-1/2 in. wrench flats
F	1-5/8 in. wrench flats
G	Backup wrench. Use to prevent twisting during swivel nut tightening. Do not use backup wrench on fitting locknut.

Connect the Heat Exchanger Side Hose

PowerFlex® 755TR frame 6L drives use a customer-supplied heat exchanger. To connect a heat exchanger side hose, see the heat exchanger documentation for installation information.

Drive Coolant Requirements

IMPORTANT: Because coolant performance slowly degrades over time, we recommend replacing the drive loop coolant every 2 years and whenever the loop is drained for servicing.

For the drive coolant, we recommend that you use a 50/50 pre-mix of either ethylene or propylene glycol and water with a corrosion inhibitor for the wet drive loop materials. The levels of corrosion inhibitor need to be maintained according to the manufacturer's instructions.

If a pre-mix is not used, the drive coolant must be 50/50 mix of ethylene or propylene glycol mix to distilled water with an appropriate corrosion inhibitor for the wet drive loop materials. Deionized water is prohibited. The water must have less than 50 ppm concentrations of these chemical compounds:

- Sulfate and chloride
- Hard water ions such as Mg++ and Ca++

Use of common silicate-containing, automotive-type ethylene glycol solutions are prohibited as they can damage the heat exchanger and drive and cooling module equipment.

ATTENTION: The pH level, maintenance interval, and adjustment level must be followed according to the coolant and inhibitor manufacturer's recommendation. A pH level outside the range of 4...8 can cause significant damage to wetted aluminum surfaces.

Regardless of whether you use pre-mixed or not, the drive coolant and corrosion inhibitor must be compatible with the following materials:

- Copper
- Brass
- Aluminum
- Arimid fiber gasket with nitrile binder (Garlock, Inc. Blue-Gard Style 3000) (Blue-Gard is a registered trademark of Garlock, Inc.)
- Synthetic rubber hose (Parker Hannifan Corp 801 general purpose hose)
- Viton seal (only complete drive)

Biocide

A biocide may be needed to control biological growth. Use of a biocide is permitted. For specific recommendations, consult a reputable water treatment company.

IMPORTANT: Do not mix different brands or types of coolants. The coolant, corrosion inhibitor, and any biocide used must be compatible.

Drive Cooling Loop Specifications

Inhibited ethylene glycol or propylene glycol must contain a corrosion inhibitor compatible with the cooling loop material. Recommended drive loop coolants, see are listed in this table.

Table 90. Coolant Requirements for One Drive

Drive Frame Size	Coolant Temperature Range	Minimum Coolant Flow Rate	Maximum Coolant Flow Rate	Pressure Drop From Drive Inlet to Drive Outlet at Minimum Coolant Flow Rate	Coolant Type
6L	0…50 °C (32…122 °F)	30.3 LPM (8 gpm)	45.4 LPM (12 gpm)	1.58 bar (23 psi)	WEG50 or WPG50
7L	0…40 °C (32…104 °F)	30.3 LPM (8 gpm)	45.4 LPM (12 gpm)	0.35 bar (5 psi)	WEG50 or WPG50

Frame 7L liquid cooled drives are available as an IP00 Open Type kits solution only.

Each frame 6L hose kit contains two hoses and the appropriate connectors.

WEG50 equals good quality or distilled water with approved inhibited* ethylene glycol, 50% glycol by volume.

WPG50 equals good quality or distilled water with approved inhibited* propylene glycol, 50% glycol by volume.

This table lists the estimated amount of coolant that is needed for one drive cooling loop for the drive frame size listed.

Table 91. Estimated Coolant Volume for the Drive Cooling Loop

Drive Frame Size	Estimated Amount of Coolant
6L	15.1 L (4 gal)
7L	19.0 L (5 gal)

Frame 7L liquid cooled drives are available as an IP00 Open Type kits solution only.

For frame 6L drives, the estimated amount of coolant is based on the heat exchanger that uses 1.2 m (4 ft) hoses. Longer hoses require more coolant. The maximum hose length of 9.1 m (30 ft) requires up to an additional 2.8 L (3/4 gal).

Final Inspection

Before initial drive operation, inspect the charged coolant system for any external leaks. Tighten any fittings as necessary to make sure that no coolant is leaking from the system during drive operation.

Power Wiring and Grounding—All Frames

Most start-up difficulties are the result of incorrect wiring. Every precaution must be taken to assure that the wiring is done as instructed. All items must be read and understood before the actual installation begins.

ATTENTION: Risk of injury or equipment damage exists.

The examples in this publication are intended solely for purposes of example. There are many variables and requirements with any application. Rockwell Automation® does not assume responsibility or liability (to include intellectual property liability) for actual use of the examples shown in this publication.

Fuse and Circuit Breaker Selection

See the PowerFlex 755T Products with TotalFORCE Control Input Protection Devices Reference Data, publication 750-RD103, to select the recommended fuses and circuit breakers for your application needs. This publication provides specifications for the recommended input protection devices for PowerFlex 755TL, 755TR, and 755TM products with TotalFORCE®control.

IMPORTANT: Rockwell Automation recommends the use of external fuses for branch circuit protection. External fusing helps protect the drive in the event of an internal short caused by an industrial accident while the drive is energized. Circuit breakers can be used in series with fuses as means for disconnection.

AC Supply Source Considerations

PowerFlex® drive products and bus supplies are suitable for use on a circuit capable of delivering up to a maximum of 100,000 rms symmetrical amperes at 400/480V and 65,000 rms symmetrical amperes at 600/690V.

PowerFlex® drive products and bus supplies must not be used on undersized or high-impedance supply systems. The supply system kVA must be equal to or greater than the product-related kW, and the system impedance must be less than 10%. Operation outside these limits can cause instability and product shutdown.

System Impedance = (kVA ÷ Transformer kVA) x Transformer % Impedance

You must account for the kVA of all PowerFlex® drive products and bus supplies on the distribution system and the system impedance of upstream transformers.

ATTENTION: Risk of injury or equipment damage exists.

To guard against personal injury and/or equipment damage that is caused by improper fusing or circuit breaker selection, use only the recommended line fuses/circuit breakers.

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

Power Considerations

Intermittent Overload

Light Duty	110% Overload capability for up to 1 minute out of 10 minutes
Normal Duty	110% Overload capability for up to 1 minute out of 10 minutes 150% Overload capability for up to 3 seconds out of 60 seconds
Heavy Duty	150% Overload capability for up to 1 minute out of 10 minutes 180% Overload capability for up to 3 seconds out of 60 seconds

Motor Overload Protection

Electronic Motor Overload Protection	over-temperature protection according to NEC article 430.126 (A)(2). UL61800-5-1 File E59272.

Short Circuit Current Rating

Maximum Short Circuit Rating	Frames 5...15: Suitable for use on a circuit capable of delivering not more than 100 kA rms symmetrical amperes, up to 600V maximum.
	Frames 6...15: Suitable for use on a circuit capable of delivering not more than 65 kA rms symmetrical amperes at 690V maximum.
	Frame 5: Suitable for use on a circuit capable of delivering not more than 25 kA rms symmetrical amperes at 690V maximum.
	Frame 6L: Suitable for use on a circuit capable of delivering not more than 100 kA rms symmetrical amperes at 480V maximum.
Actual Short Circuit Rating	Can be further limited by AIC rating of customer supplied branch circuit fuse/circuit breaker. The lowest rated device in the circuit determines the branch short circuit rating. If the fuses providing powers to the drive are lower than 100 kA rms, the branch short circuit protection is the short circuit rating of the fuses. If the fuses have rating higher than 100 kA rms, the branch circuit protection is 100 kA rms.

Apply and Remove Power

The procedures for applying and removing power will vary depending on the type of PowerFlex® 755T product and whether 24V auxiliary power is used.

See the PowerFlex 750-Series AC Drives with TotalFORCE Control Quick Start, publication 750-QS100, for more information.

Input Contactor Precautions

ATTENTION: Risk of equipment damage exists.

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 every three minutes or drive damage will occur.

ATTENTION: Risk of injury or death exists.

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.

Output Contactor Precaution

ATTENTION: Risk of equipment damage exists.

To guard against drive damage when using output contactors, the following information must be read and understood. One or more output contactors may be installed between the drive and motor(s) for the purpose of disconnecting or isolating certain motors/loads. If a contactor is opened while the drive is operating, power will be removed from the respective motor, but the drive will continue to produce voltage at the output terminals. In addition, reconnecting a motor to an active drive (by closing the contactor) could produce excessive current that may cause the drive to fault. If any of these conditions are determined to be undesirable or unsafe, an auxiliary contact on the output contactor should be wired to a drive digital input that is programmed as "Enable." This will cause the drive to execute a coast-to-stop (cease output) whenever an output contactor is opened.

Bypass Contactor Precaution

ATTENTION: Risk of equipment damage exists.

An incorrectly applied or installed bypass system can result in component damage or reduction in product life. The most common causes are:

- Wiring AC line to drive output or control terminals.
- Improper bypass or output circuits not approved by Rockwell Automation.
- Output circuits which do not connect directly to the motor.

Contact Rockwell Automation for assistance with application or wiring.

Grounding Requirements

The safety ground-PE must be connected to system ground. Ground impedance must conform to the requirements of national and local industrial safety regulations and/or electrical codes. The integrity of all ground connections should be periodically checked.

Shield Termination—SHLD

The shield terminal provides a grounding point for the motor cable shield. The motor cable shield terminal must be connected to an earth ground by a separate continuous lead. Connect the motor cable shield to this terminal on the drive end and the motor frame (motor end). Use a shield terminating or EMI clamp to connect shield to this terminal.

Radio Frequency Interference (RFI) Filter Grounding

Using an optional RFI filters can result in relatively high ground leakage currents. Therefore, the filter must only be used in installations with grounded AC supply systems and be permanently installed and solidly grounded (bonded) to the building power distribution ground. Be sure that the incoming supply neutral is solidly connected (bonded) to the same building power distribution ground. Grounding must not rely on flexible cables and must exclude any form of plug or socket that would permit inadvertent disconnection. Some local codes can require redundant ground connections. Periodically check the integrity of all connections. See the instructions that are supplied with the filter.

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.

Power Cable Specifications

A variety of cable types are acceptable for drive installations. For an in-depth discussion of cable types, including a table of maximum motor cable lengths, see the Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001.

Power Cable Types Acceptable for 400...690 Volt Installations

ATTENTION: Risk of injury or equipment damage exists.

National codes and standards (NEC, BSI, and so forth) 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 can result in personal injury and/or equipment damage.

Table 92. Power Cable Recommendations

Type	Cable Description	Min. Insulation Rating
Input Power, Standard	All frame sizes: • Three tinned copper conductors with XLPE insulation. • Copper braid/aluminum foil combination shield and tinned copper drain wire, three drain wires per cable assembly. • PVC jacket. Frame 5: • Maximum 35.0 mm^2 (2 AWG) conductors. Frame 6: • Maximum 350 MCM conductors. Frame 7: • Maximum 350 MCM dual conductor per phase. • Maximum 500 MCM single conductor per phase. Frames 8...15: • Maximum 500 MCM conductors.	600V, 75 °C (167 °F)
Motor, Standard		400...600V systems: 600V, 75 °C (167 °F) 690V systems: 2000V, 90 °C (194 °F)

- Signal wires should be separated from power wires by at least 0.3 meters (1 foot).
- The use of shielded wire for AC input power may not be necessary but is always recommended.
- The minimum insulation rating for input power wire must be at least equal to the nominal system voltage rating.

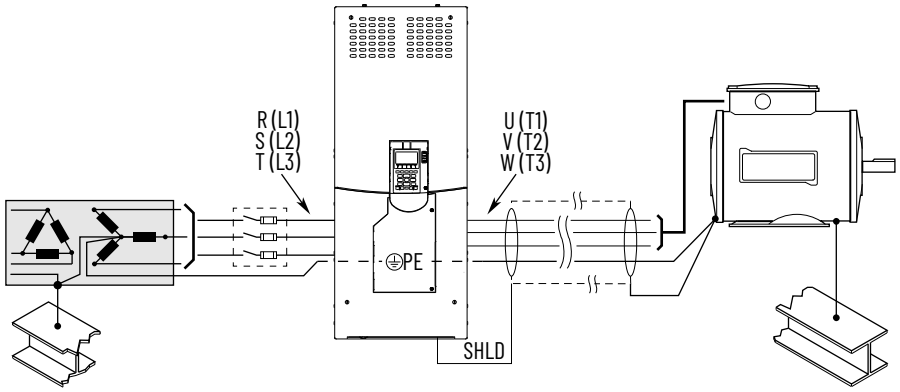
Power Wiring and Grounding—Frames 5, 6, and 6L

The safety ground-PE must be connected to system ground. Ground impedance must conform to the requirements of national and local industrial safety regulations and/or electrical codes. The integrity of all ground connections should be periodically checked.

This diagram shows products connected to a solid ground single point (PE only) power source. Some applications may require alternate grounding schemes, see Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001, for more information. These applications include installations with long distances between drives or drive line-ups, which could cause large potential differences between the drive or line-up grounds.

For installations within a cabinet, a single safety ground point or ground bus bar connected directly to building steel should be used. All circuits including the AC input ground conductor should be grounded independently and directly to this point/bar.

Figure 159. Typical Grounding—Frames 5, 6, and 6L



Power Cable Connections—Frames 5, 6, and 6L

Observe the specifications listed in this section for AC line input power and output motor cable connections.

Table 93. Frame 5 Power Cable Connections

Wire Size Range		Strip Length	Recommended Torque	Recommended Tool
Maximum: 35 mm^2 (2 AWG)	Minimum: 2.5 mm^2 (14 AWG)	18.0 (0.7 in.)	5.0 N•m (44.3 lb•in)	0.35 in. Flat Screwdriver

- The wire size ranges are the maximum and minimum that the terminal block will accept - these are not recommendations.
- Terminal blocks are designed to accept a single wire.

Table 94. Frame 6 Power Cable Connections

Maximum Lug Width	Recommended Torque	Terminal Bolt Size	Recommended Tool
34.6 mm (1.36 in.)	11.3 N•m (100 lb•in)	M8 x 1.25	13 mm hex socket

- Lugs are not supplied.

Table 95. Frame 6L Recommended Power Cable Connection Hardware

Terminal Bolt	Bolt Length	Material	Quantity Required	Recommended Tool
M8 x 1.25 with spring washer	30…35 mm (1.2…1.4 in.)	Steel	12	T40 hexalobular

Table 96. Frames 5, 6, and 6L PE Grounding Stud Connections

Frame	Recommended Torque	Terminal Bolt/Screw Size	Recommended Tool
5	3.4 N•m (30 lb•in)	M6	10 mm hex socket
6	11.3 N•m (100 lb•in)	M8	13 mm hex socket
6L	11.3 N•m (100 lb•in)		13 mm hex socket

Frame 6L UL Listed Barrel Lugs for UL Compliant Installations

Use the following UL Listed barrel lug to make AC line input power and output motor connections to the frame 6L bus bars.

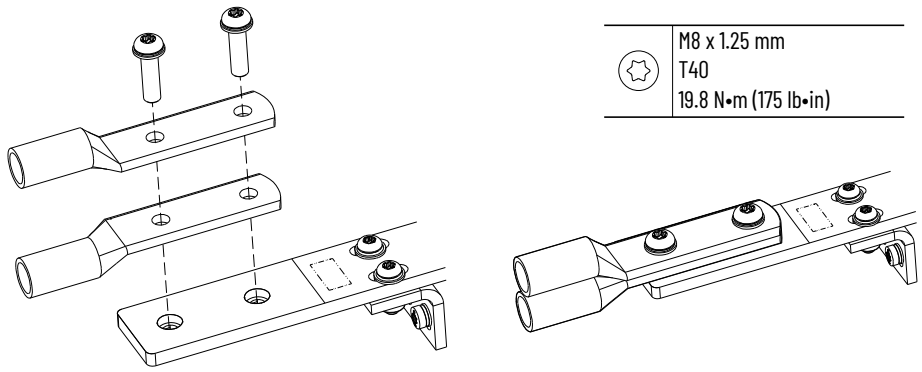
Item	Manufacturer	Part Number	Quantity Required	Wire Size
Barrel lug	Raychem	RLLB-120 2E-8	12	4/0

- UL Listed barrel lugs are customer-supplied.
- Use the manufacturer-recommended tooling to fasten crimp type terminals to cabling.

Frame 6L UL Compliant Bus Bar Connections

AC line input power and output motor cables with UL Listed barrel lugs are connected directly to frame 6L bus bars. Use the recommended connection hardware as described.

Figure 160. Barrel Lug Connection Details

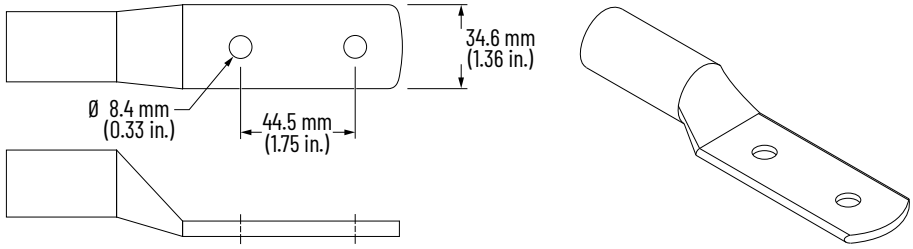


Barrel Lugs for Non-UL Installations

- Barrel lugs are customer-supplied.
- Use only copper barrel lugs with tin or zinc plating.
- Barrel lugs can be either crimp or mechanical type.
- Use the vendor-recommended tooling to fasten crimp type terminals to cabling.

- Torque mechanical type terminals according to vendor instructions.
- Barrel lugs must have the dimensions in the following graphic.

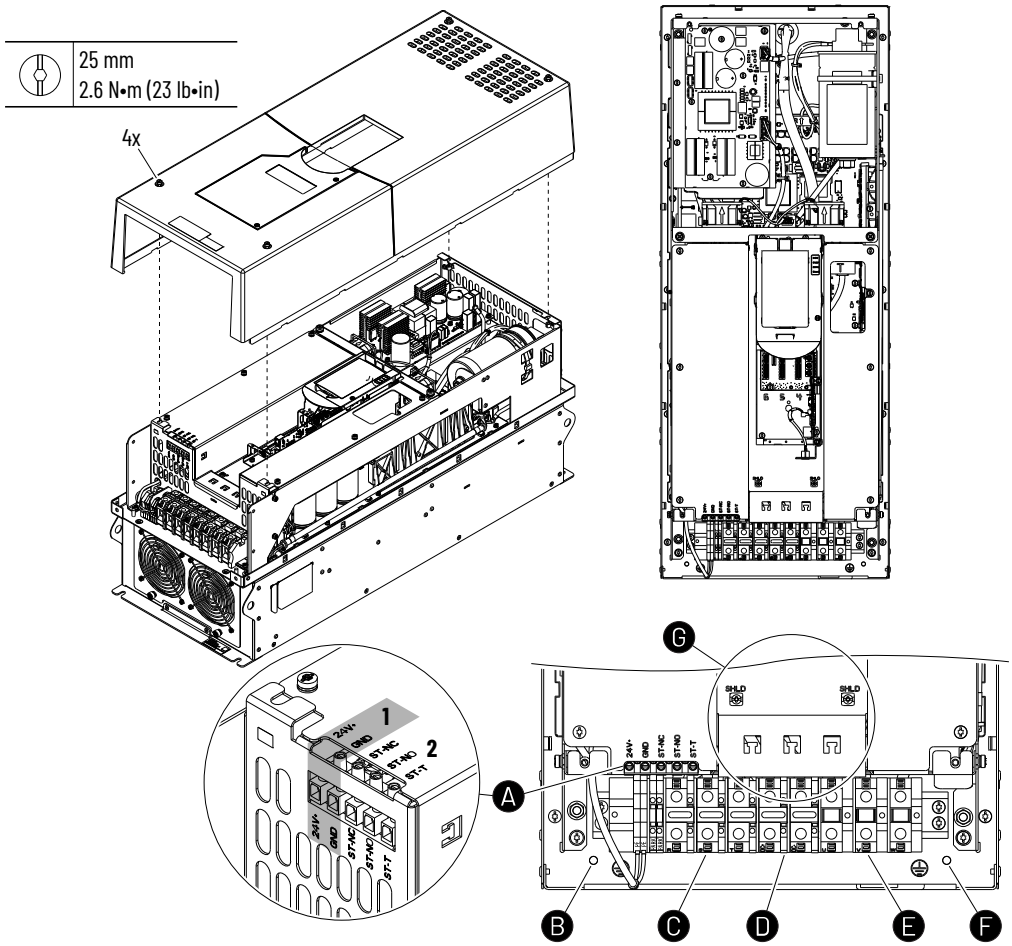
Figure 161. Barrel Lug Dimensions



Power Terminal and Bus Bar Locations—Frames 5, 6, and 6L

AC line input power and output motor cables are connected to a terminal block on frame 5 drives and with appropriate barrel lugs that are connected directly to bus bars on frames 6 and 6L drives. The following illustrations show the locations of these connection points.

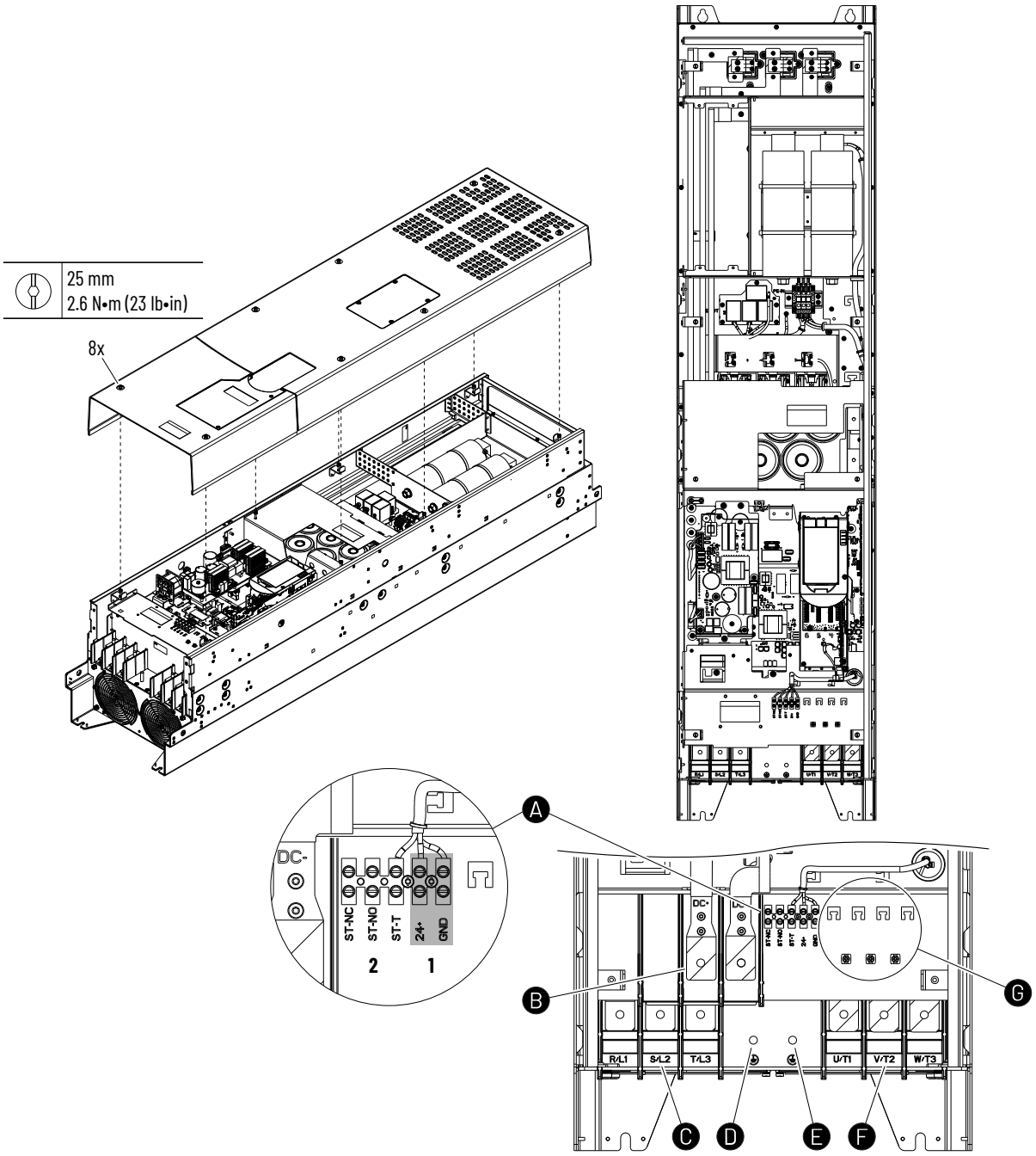
Figure 162. Frame 5 Drives Power Terminal Locations



Item	Name	Description
A, 1	24V+, GND	24V input terminals

Item	Name	Description
A, 2	ST-NC, ST-NO, ST-T	Shunt trip terminals
B	PE grounding stud	Termination point to chassis ground for AC line shield
C	R/L1, S/L2, T/L3	AC line input power terminals
D	DC+, DC-	DC bus terminals
E	U/T1, V/T2, W/T3	AC output motor terminals
F	PE grounding stud	Termination point to chassis ground for motor shield
G	SHLD	Termination points for control wire shields and drain wires

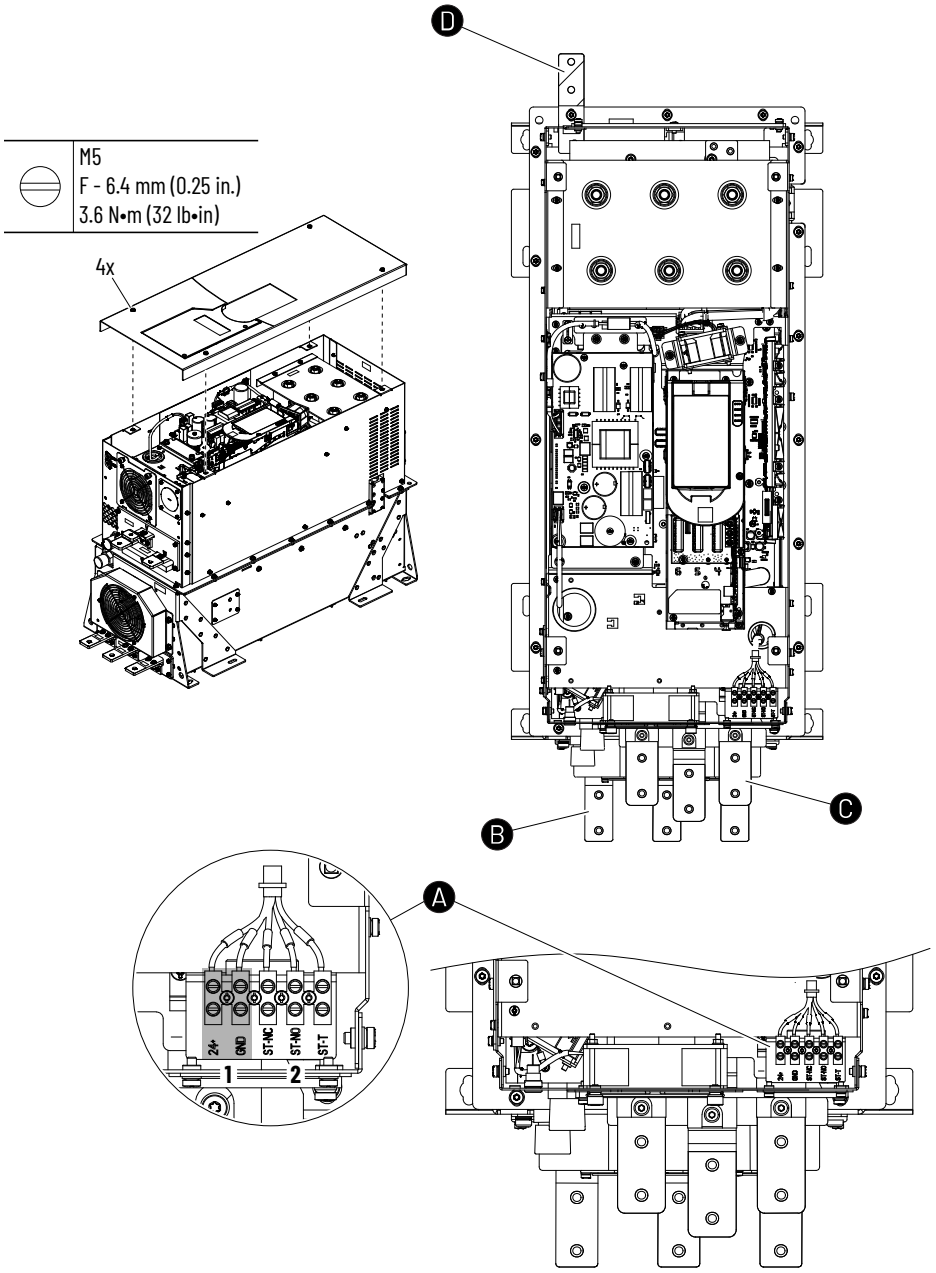
Figure 163. Frame 6 Drives Power Terminal Locations



Item	Name	Description
A, 1	24V+, GND	24V input terminals
A, 2	ST-NC, ST-NO, ST-T	Shunt trip terminals
B	DC+, DC-	DC bus terminals
C	R/L1, S/L2, T/L3	AC line input power terminals
D	PE grounding stud	Termination point to chassis ground for AC line shield

Item	Name	Description
E	PE grounding stud	Termination point to chassis ground for motor shield
F	U/T1, V/T2, W/T3	AC output motor terminals
G	SHLD	Termination points for control wire shields and drain wires

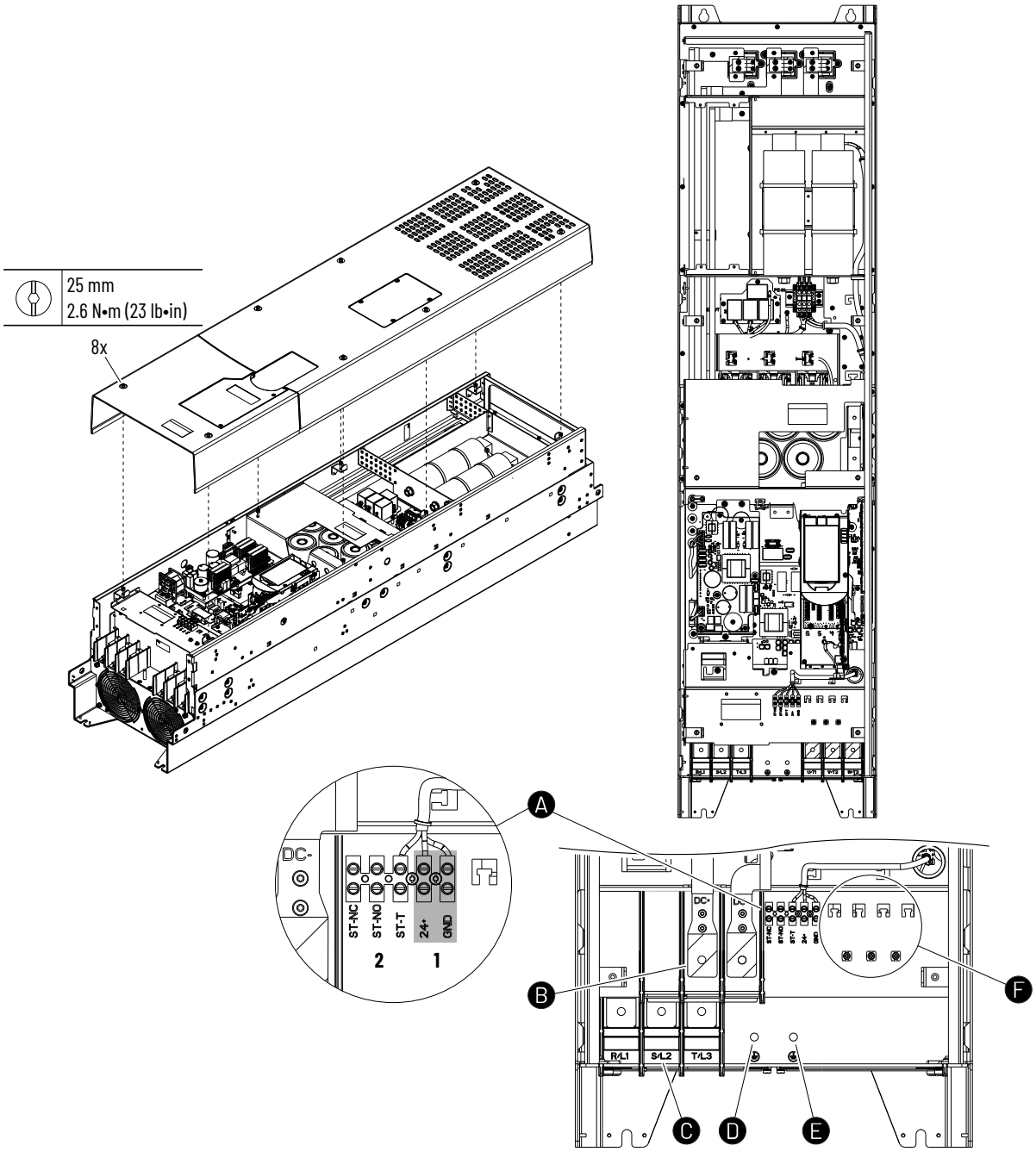
Figure 164. Frame 6L Drives Power Terminal Locations



Item	Name	Description
A, 1	24V+, GND	24V input terminals

Item	Name	Description
A, 2	ST-NC, ST-NO, ST-T	Shunt trip terminals
B	R/L1, S/L2, T/L3	AC line input power terminals
C	U/T1, V/T2, W/T3	AC output motor terminals
D	PE ground bus bar	Termination point to chassis ground

Figure 165. Frame 6 Bus Supplies Power Terminal Locations



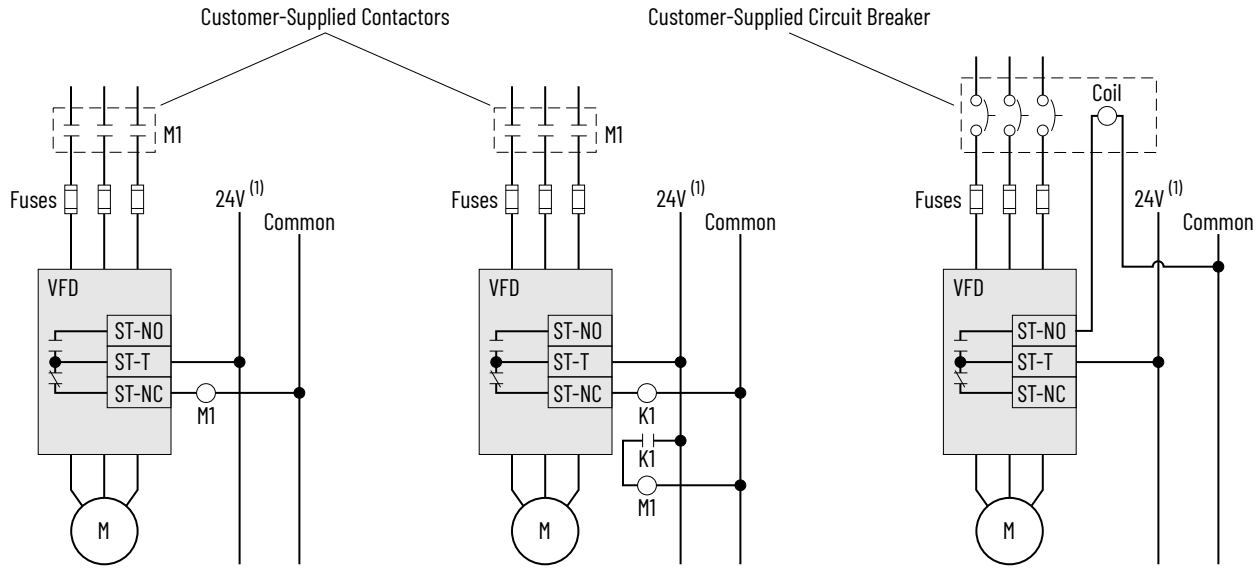
Item	Name	Description
A, 1	24V+, GND	24V input terminals
A, 2	ST-NC, ST-NO, ST-T	Shunt trip terminals
B	DC+, DC-	DC bus terminals
C	R/L1, S/L2, T/L3	AC line input power terminals
D	PE grounding stud	Termination point to chassis ground for AC line shield
E	PE grounding stud	Termination point to chassis ground for motor shield
F	SHLD	Termination points for control wire shields and drain wires

Shunt Trip Wiring—Frames 5, 6, and 6L

Because frame 5, 6, and 6L drives and frame 5 and 6 bus supplies do not have main input power control, a shunt trip feature is provided. An LCL capacitor failure triggers a code 14112 'Capacitor Fault' and the shunt trip relay output on the power feedback board closes. This action trips the upstream main supply contactor or circuit breaker and removes the failed capacitor from the main AC input.

IMPORTANT: It is recommended that frame 5 and 6 drive and bus supply installations include the shunt trip circuit.

Figure 166. Shunt Trip Wiring Examples



(1) Customer-supplied 24V power for optional external devices.

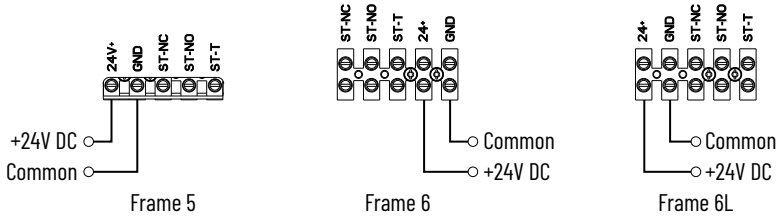
Customer Supplied Control Bus Power—Frames 5, 6, and 6L

Customer connections to provide the control bus with 240V AC and 24V DC power are provided in the input bay and control bay of applicable 755T products.

24V DC Power and Shunt Trip Terminal Block Connections—Frames 5, 6, and 6L

Use the terminal block to connect an external 24V DC power source. Use the terminal block to connect to a shunt trip circuit.

This 24V DC power source provides auxiliary power to the control pod and other control circuits when main power has been removed.



Terminal Block	Frame [IP00]	Wire Size	Strip Length	Recommended Torque
24V DC	5, 6, and 6L	6 mm^2 (22...8 AWG)	12 mm (0.47 in.)	1.2 N•m (10 lb•in)
Shunt Trip	5, 6, and 6L	6 mm^2 (22...8 AWG)	12 mm (0.47 in.)	1.2 N•m (10 lb•in)

Table 97. Product 24V DC Power Requirements for Frames 5, 6, and 6L

Product	Frame	Maximum Power Requirements [Watts]
755TL and 755TR drives	5, 6, and 6L	240

Power Jumper Configuration—Frames 5, 6, and 6L

PowerFlex 755T products contain protective MOVs, common mode capacitors, and discharge resistors. To guard against drive damage and/or operational problems, these devices must be properly configured according to the tables in this section.

Common Mode Capacitor, MOV, AC EMI Capacitor, and Discharge Resistor Circuits

The following power jumpers are discussed in this section.

Frame 5

- PE – Common mode capacitors on the power interface circuit board
- PE-MOV – MOV and AC EMI capacitors on the power circuit board
- DR – DC bus conditioner capacitor discharge resistor

Frames 6 and 6L

- PE-A – Common mode capacitors on the common mode filter circuit board
- PE-A (MOV & EMI) – MOV and AC EMI capacitors on the power circuit board
- DR – DC bus conditioner capacitor discharge resistor

Figure 167. Common Mode Capacitor, MOV, AC EMI Capacitor, and Discharge Resistor Circuits—Frames 5, 6, and 6L

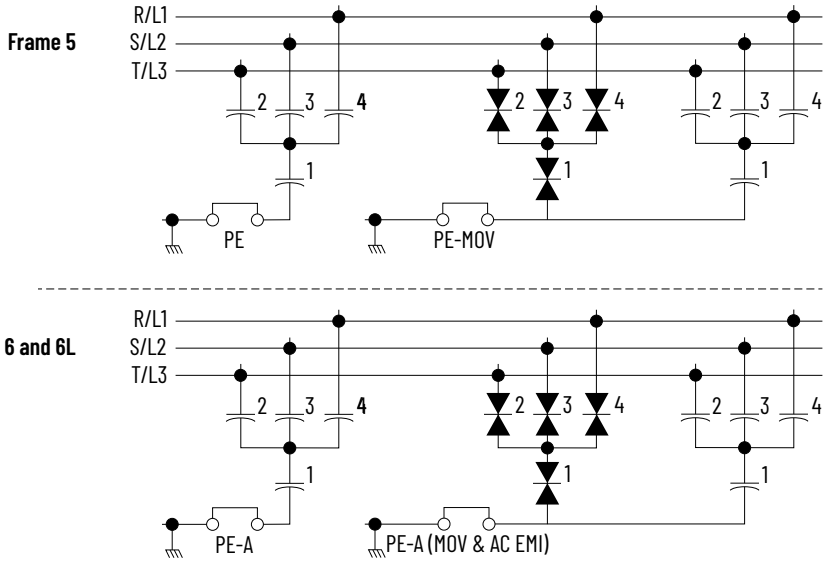
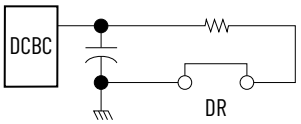


Figure 168. DC Bus Conditioner Discharge Resistor—Frames 5, 6, and 6L



IMPORTANT: The default power jumper settings are:

- All power jumpers are installed in the connected (IN) position.
- All power jumpers are installed in the disconnected (OUT) position when the bus conditioner for marine applications (-P51) is selected.

ATTENTION: Risk of equipment damage exists.

The drive power source type must be accurately determined. The power jumpers must be configured for the power source type according to the recommendations in the PowerFlex 755T Input Product RF Emission Compliance and Installation Requirements.

ATTENTION: Risk of equipment damage exists.

Hazard of equipment damage exists if jumpers are not properly disconnected or are set differently between power and LCL filter modules. Secure a disconnected jumper in the socket or on the insulated spacer that is provided and verify that all modules are configured identically.

Table 98. PowerFlex 755TL/TR Power Jumpers—Frame 5

Grounding Scheme	EMC Option	PE	PE-MOV	DR
		Common Mode Caps on the Power Circuit Board	MOV and AC EMI on the Power Circuit Board	Discharge Resistor on the Power Circuit Board
Factory Default	C3	Connected (In)	Connected (In)	Connected (In)
Grounded	C2	Connected (In)	Connected (In)	Connected (In)
Grounded	C3	Connected (In)	Connected (In)	Connected (In)

Table 98. PowerFlex 755TL/TR Power Jumpers—Frame 5 (continued)

Grounding Scheme	EMC Option	PE	PE-MOV	DR
		Common Mode Caps on the Power Circuit Board	MOV and AC EMI on the Power Circuit Board	Discharge Resistor on the Power Circuit Board
Ungrounded/High-resistance Ground AC fed ungrounded Impedance grounded B phase ground	—	Disconnected (Out)	Disconnected (Out)	Connected (In)
Marine Ungrounded / High Resistance Ground	—	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)

The EMC C2 option listed meets EN61800-3 Category C2 for conducted emissions.

Ungrounded and high-resistance ground systems do not meet the EMC Directive due to the disconnected jumper positions.

Table 99. PowerFlex 755TL/TR Power Jumpers—Frames 6 and 6L

Grounding Scheme	EMC Option	PE-A	PE-A (MOV & AC EMI)	DR
		Common Mode Caps on the AC Common Mode Filter Circuit Board	MOV and AC EMI on the Power Circuit Board	Discharge Resistor on the Power Circuit Board
Factory Default	C3	Connected (In)	Connected (In)	Connected (In)
Grounded	C2	Connected (In)	Connected (In)	Connected (In)
Grounded	C3	Connected (In)	Connected (In)	Connected (In)
Ungrounded/High-resistance Ground AC fed ungrounded Impedance grounded B phase ground	—	Disconnected (Out)	Disconnected (Out)	Connected (In)
Marine Ungrounded / High Resistance Ground	—	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)

The EMC C2 option listed meets EN61800-3 Category C2 for conducted emissions.

Ungrounded and high-resistance ground systems do not meet the EMC Directive due to the disconnected jumper positions.

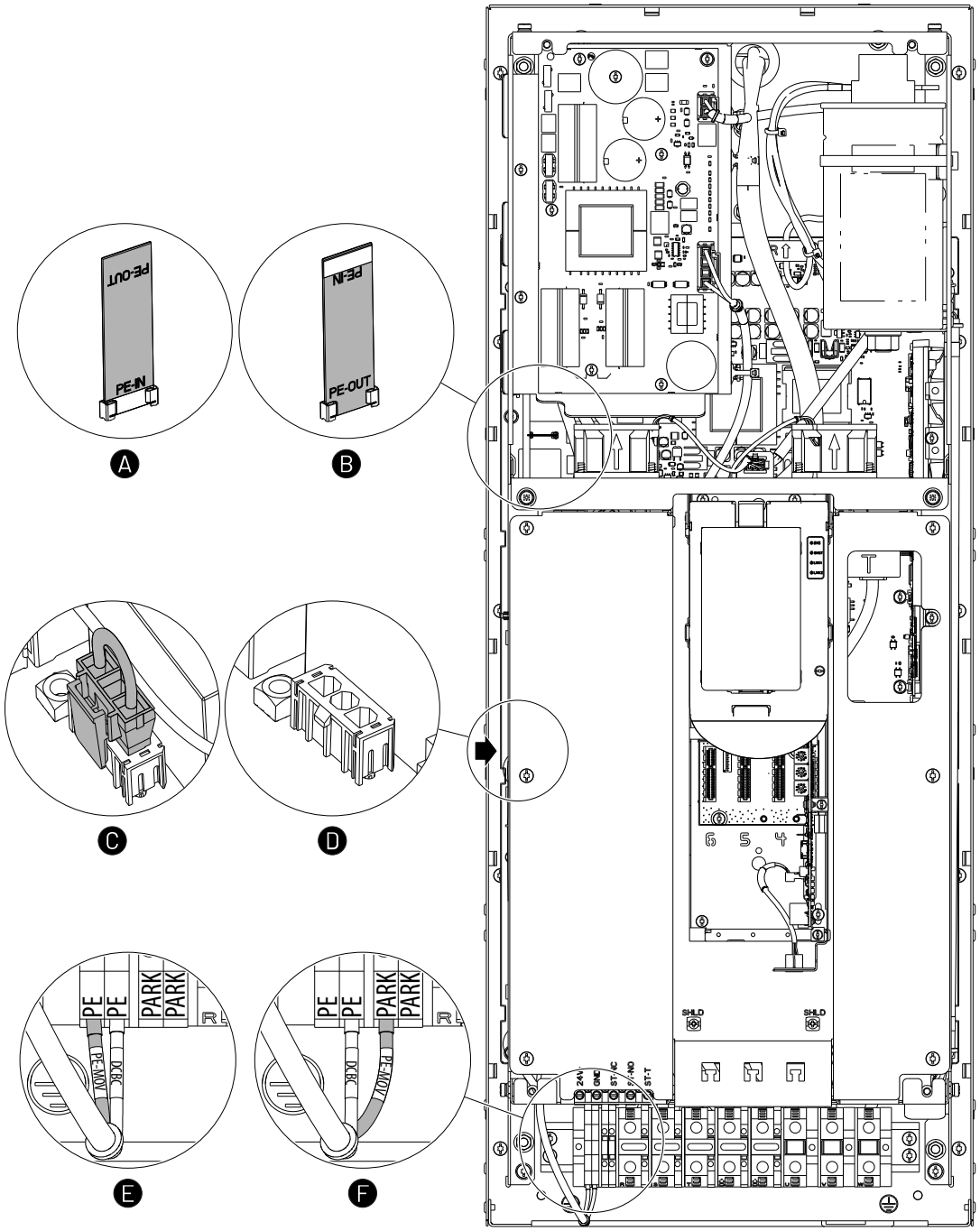
Power Jumper Location and Configuration—Frame 5

The PE power jumper is connected to the power interface circuit board.

The DR power jumper is connected to the DC bus conditioner capacitor discharge resistor.

The PE-MOV power jumper is connected to the MOV and AC EMI capacitors on the power circuit board.

Figure 169. Frame 5 Power Jumper Configurations



Item	Description
A	PE jumper connected (In)
B	PE jumper disconnected (Out)
C	DR jumper connected (In)

Item	Description
D	DR jumper disconnected (Out)
E	PE-MOV jumper connected (In)
F	PE-MOV jumper disconnected (Out) Important: Do not disconnect the DCBC wire from the PE terminal block.

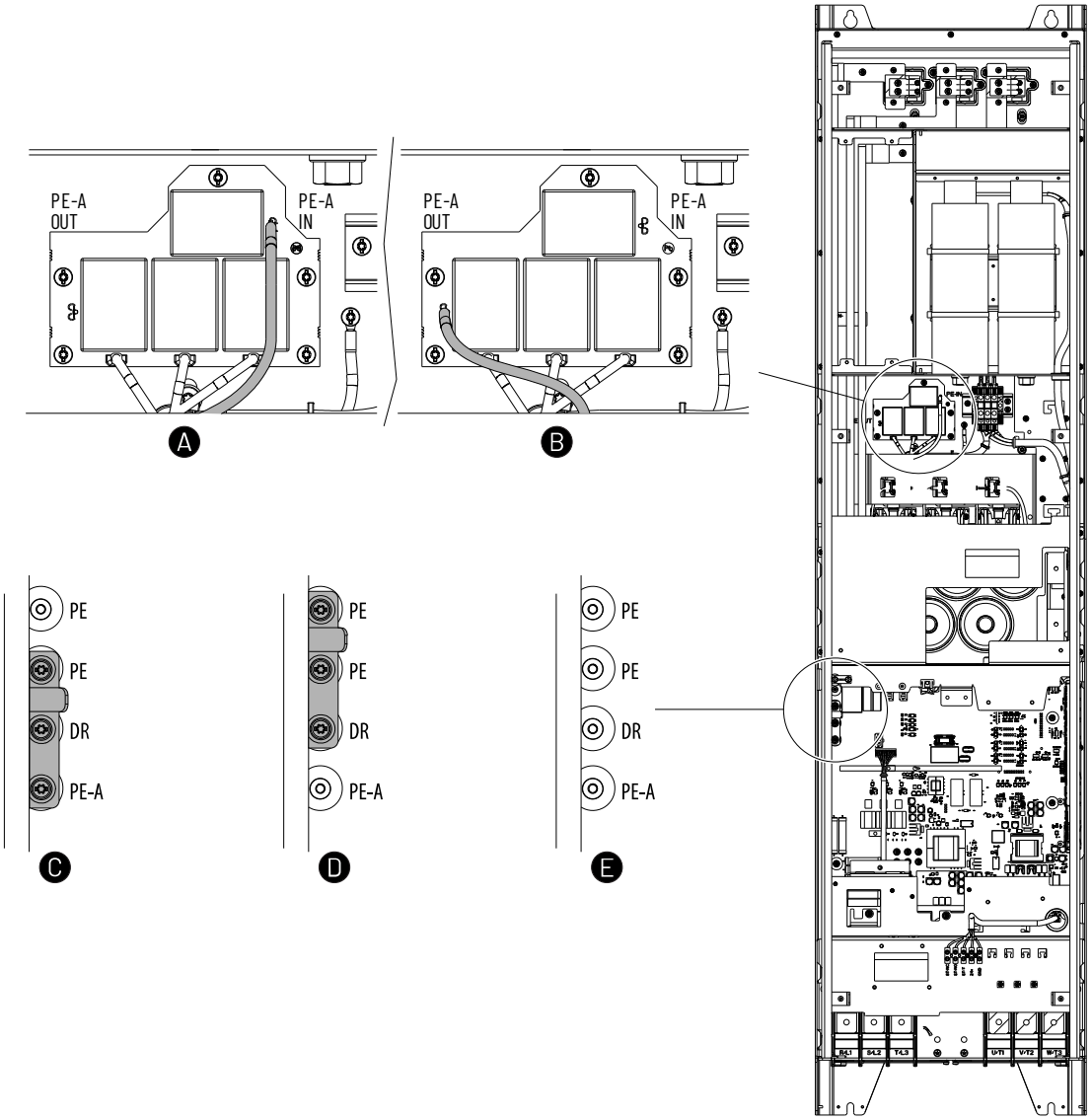
Power Jumper Location and Configuration—Frame 6

The PE-A power jumper is connected to the common mode filter circuit board.

The PE-A (MOV & AC EMI) power jumpers are connected to the power circuit board.

The DR power jumper is connected to the DC bus conditioner capacitor discharge resistor.

Figure 170. Frame 6 Power Jumper Configurations



Item	Description
A	PE-A jumper connected (In)
B	PE-A jumper disconnected (Out)
C	• DR jumper connected (In) • PE-A (MOV & AC EMI) jumper connected (In)
D	• DR jumper connected (In) • PE-A (MOV & AC EMI) jumper disconnected (Out)
E	• DR jumper disconnected (Out) • PE-A (MOV & AC EMI) jumper disconnected (Out)

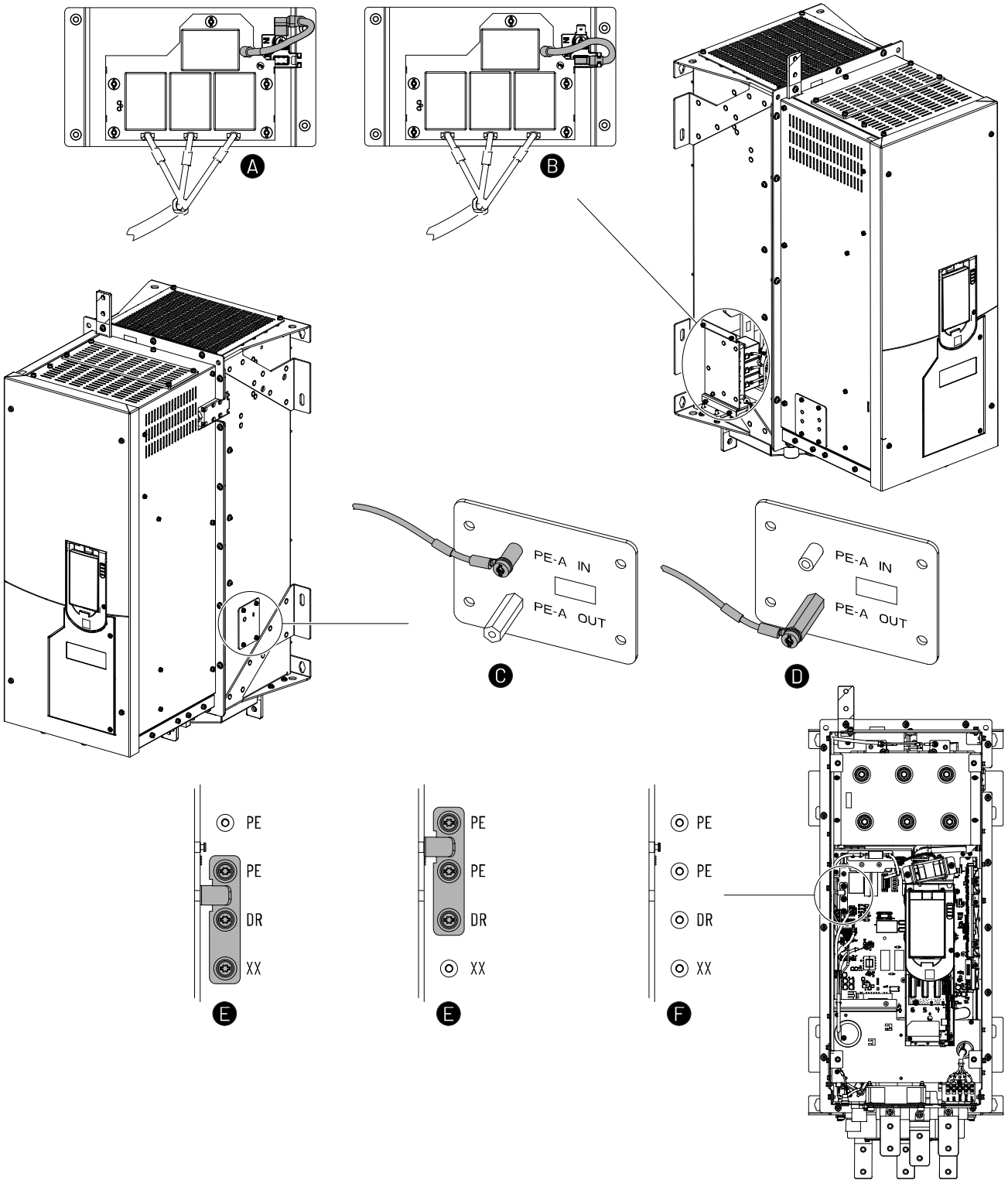
Power Jumper Location and Configuration—Frame 6L

The PE-A power jumper is connected to the common mode filter circuit board.

The PE-A (MOV & AC EMI) power jumpers are connected to the SCR circuit board.

The DR power jumper is connected to the DC bus conditioner capacitor discharge resistor.

Figure 171. Frame 6L Power Jumper Configurations



Item	Description
A	PE-A jumper connected (In)
B	PE-A jumper disconnected (Out)

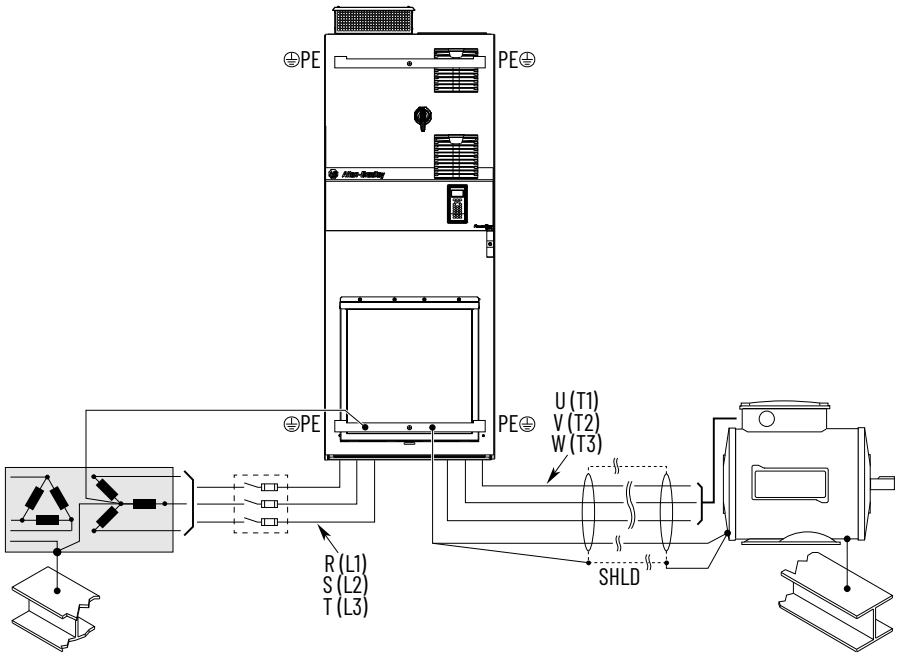
Item	Description
C	PE-A (MOV & AC EMI) jumper connected (In)
D	PE-A (MOV & AC EMI) jumper disconnected (Out)
E	DR jumper connected (In)
F	DR jumper disconnected (Out)

Power Wiring and Grounding—Frame 7

This diagram shows products connected to a solid ground single point (PE only) power source. Some applications may require alternate grounding schemes, see DRIVES-IN001 for more information. These applications include installations with long distances between drives or drive line-ups, which could cause large potential differences between the drive or line-up grounds.

For installations within a cabinet, a single safety ground point or ground bus bar connected directly to building steel should be used. All circuits including the AC input ground conductor should be grounded independently and directly to this point/bar.

Figure 172. Typical Grounding—Frame 7



Power Cable Connections—Frame 7

A variety of cable types are acceptable for drive installations. See DRIVES-IN001 for more information. AC line and motor cables fitted with barrel lugs connect directly to the bus bar as indicated in this table.

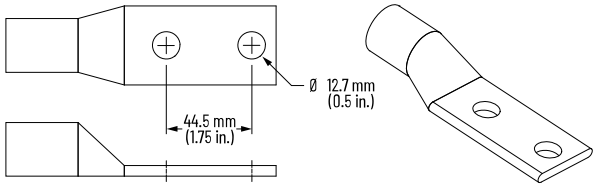
Connection Type	Cabinet	Frame	L-brackets Included
AC Line Input	Input Bay	7	No

UL Listed Barrel Lugs—Frame 7

Use UL Listed barrel lugs to make AC line input power and output motor connections to busbars and L-brackets.

- Barrel lugs are customer-supplied.
- Use only copper barrel lugs with tin or zinc plating.
- Barrel lugs can be either crimp or mechanical type.
- Use the vendor-recommended tooling to fasten crimp type terminals to cabling.
- Torque mechanical type terminals according to vendor instructions.

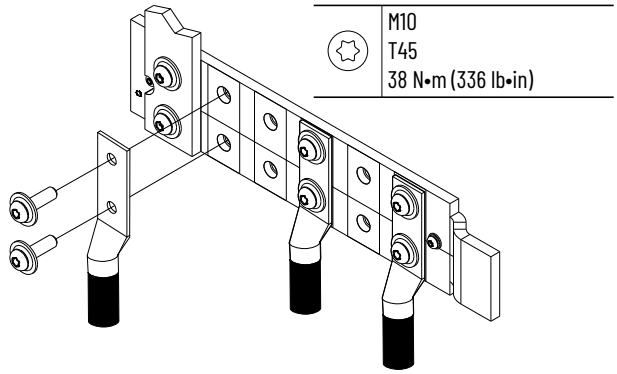
Figure 173. Barrel Lug Dimensions



Item	Dimension
A	⌀ 12.7 mm (0.5 in.)
B	44.5 mm (1.75 in.)

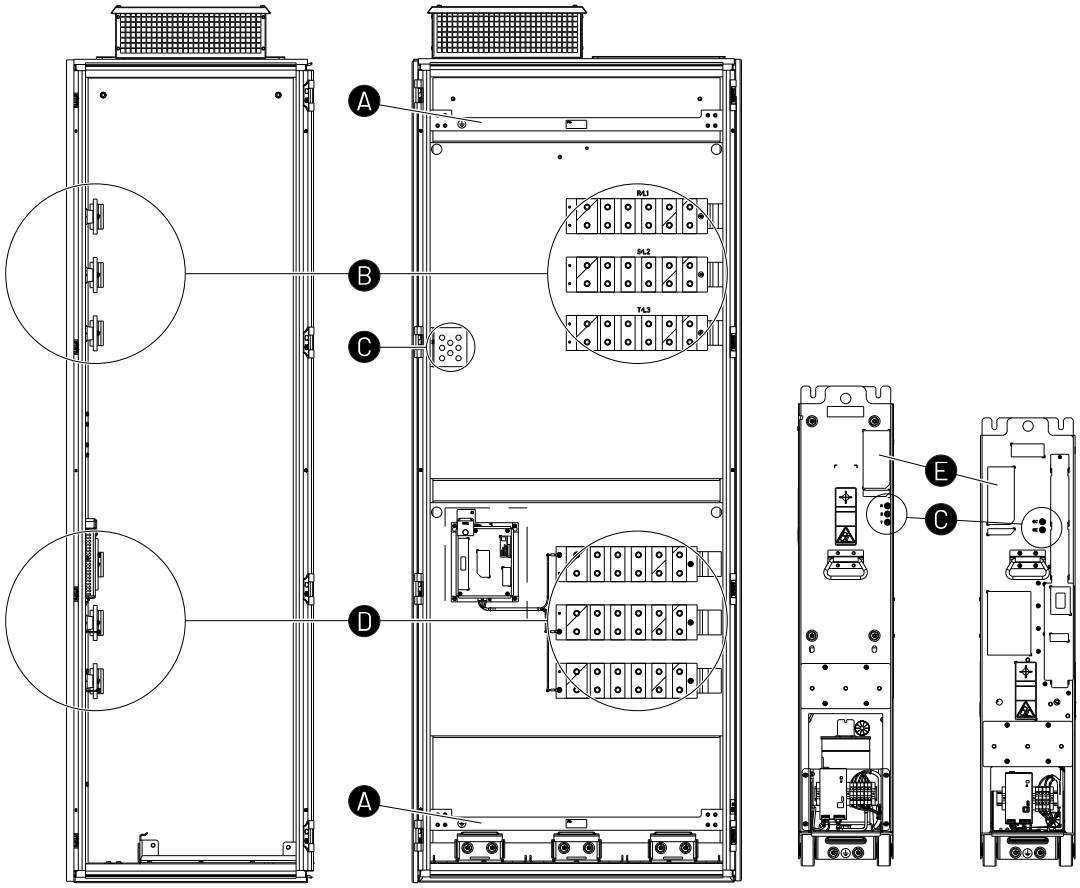
Bus Bar Connections—Frame 7

AC line input power and output motor cables with appropriate barrel lugs that are connected directly to bus bars use the fastening hardware provided.



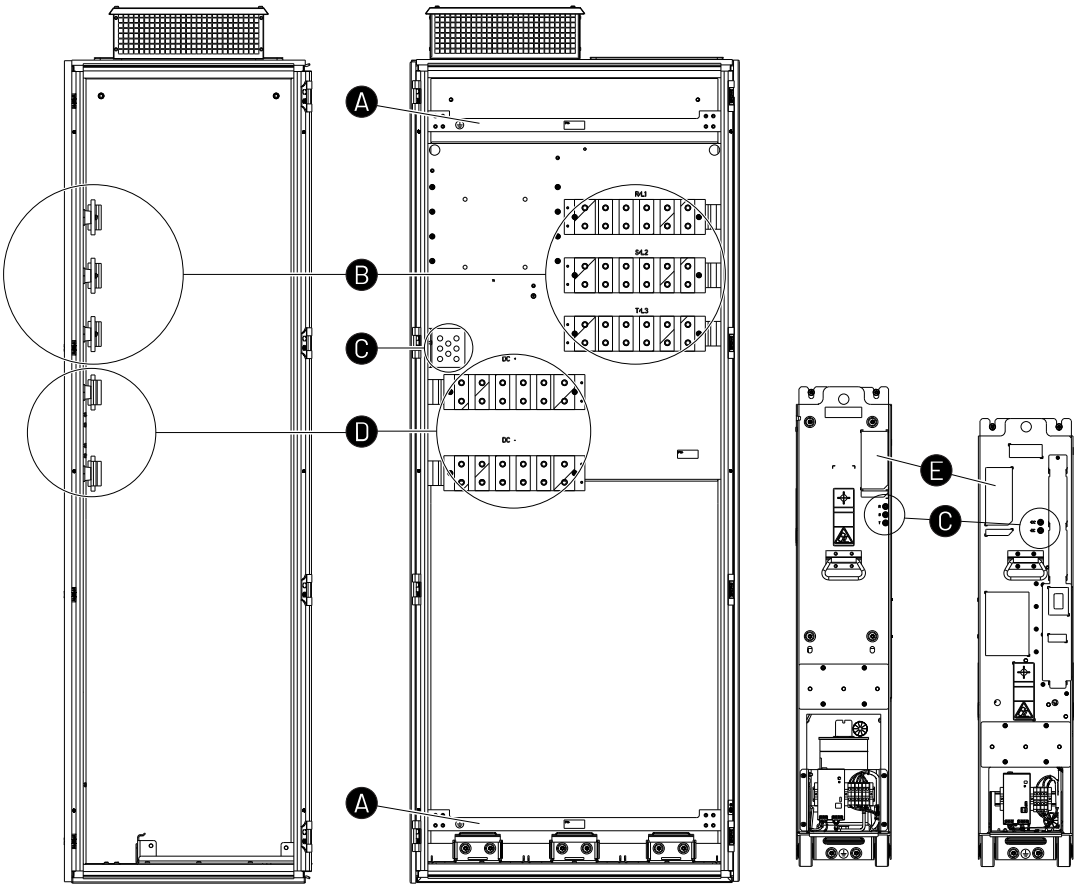
Power Terminal and Bus Bar Locations—Frame 7

Figure 174. Frame 7 Drives



Item	Name	Description
A	PE grounding bar	Terminating point to chassis ground for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-nn, are available.
B	Power bus	R/L1, S/L2, T/L3 AC line input power connections.
C	Testpoints	DC+, DC- and R/L1, S/L2, T/L3 voltage testpoint sockets. Always replace the protective caps on the testpoints if present.
D	Power bus	U/T1, V/T2, W/T3 motor connections.
E	Nameplate	Power module and LCL filter module nameplates.

Figure 175. Frame 7 Bus Supplies



Item	Name	Description
A	PE grounding bar	Terminating point to chassis ground for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-nn, are available.
B	Power bus	R/L1, S/L2, T/L3 AC line input power connections.
C	Testpoints	DC+, DC- and R/L1, S/L2, T/L3 voltage testpoint sockets. Always replace the protective caps on the testpoints if present.
D	DC bus	DC+, DC-
E	Nameplate	Power module and LCL filter module nameplate locations.

Customer Supplied Control Bus Power—Frame 7

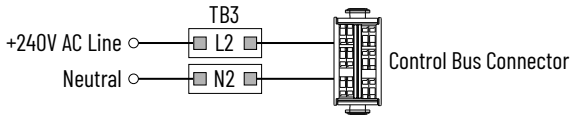
Customer connections to provide the control bus with 240V AC and 24V DC power are provided in the power bay of PowerFlex 755T frame 7 product.

240V AC Terminal Block and Control Bus Connections—Frame 7

Use terminal block TB3 to connect an external 240V AC power source to PowerFlex® 755TM bus supplies that do not have the internal C1 control transformer option.

IMPORTANT: Do not connect an external 240V AC control power source to 755TM bus supplies that are equipped with the internal C1 control transformer option. See the system nameplate for 240V AC input requirements to verify that an external control power supply is required.

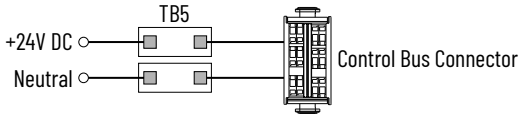
PowerFlex 755TL and 755TR drive products come equipped with the C1 control transformer. An external control power supply is not required for these products.



Terminal Block	Frame [IP21 and IP54]	Wire Size	Strip Length	Recommended Torque
TB3	7	6 mm^2 (22...8 AWG)	12 mm (0.47 in.)	1.6 N•m (14.2 lb•in)
Control bus	7	2 mm^2 (26...14 AWG)	12 mm (0.47 in.)	— (spring type)

24V DC Terminal Block and Control Bus Connections—Frame 7

Use terminal block TB5 to connect an external 24V DC power source. This source provides auxiliary power to the control pod and other control circuits when main power has been removed.



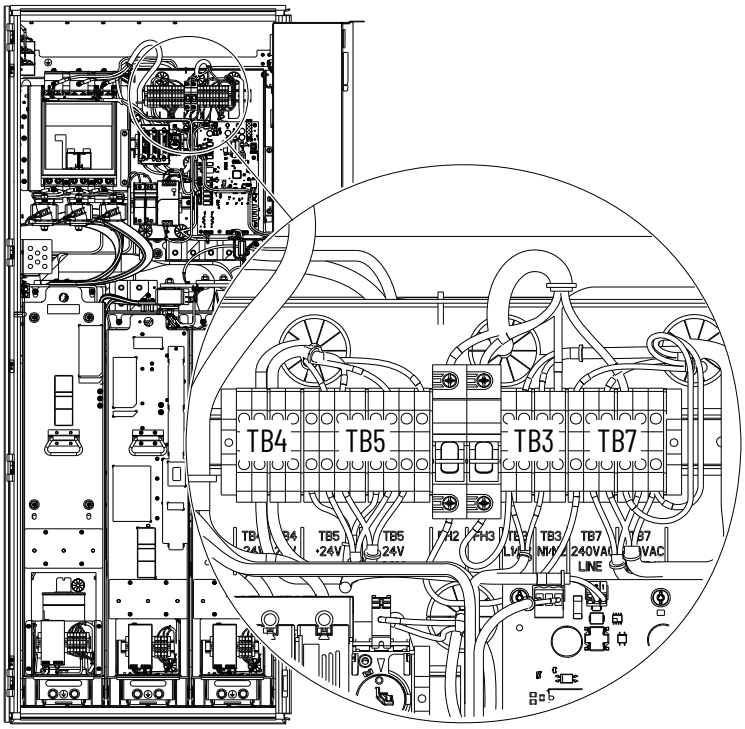
Terminal Block	Frame [IP21 and IP54]	Wire Size	Strip Length	Recommended Torque
TB5	7	6 mm^2 (22...8 AWG)	12 mm (0.47 in.)	1.6 N•m (14.2 lb•in)
Control bus	7	2 mm^2 (26...14 AWG)	12 mm (0.47 in.)	— (spring type)

Table 100. Product 24V DC Power Requirements for Frame 7

Product	Frame	Maximum Power Requirements [Watts]
755TL and 755TR drives	7	240
755TM bus supplies	7	209

TB3 and TB5 Terminal Block Locations—Frame 7

Figure 176. Frame 7 Power Bay Terminal Block Location



Power Jumper Configuration—Frame 7

PowerFlex 755T products contain protective MOVs, common mode capacitors, and discharge resistors. To guard against drive damage and/or operational problems, these devices must be properly configured according to the tables in this section.

Common Mode Capacitor, MOV, AC EMI Capacitor, and Discharge Resistor Circuits

The following frame 7 power jumpers are discussed in this section.

- PE-A – MOV on the AC precharge control circuit board
- PE-A1 – MOV on the TVSS module
- PE-A1 – MOV on the TVSS module PE-A2 – Common mode capacitors on the AC common mode filter circuit board
- DR – DC bus conditioner capacitor discharge resistor

Figure 177. Common Mode Capacitor, MOV, AC EMI Capacitor, and Discharge Resistor Circuits—Frame 7

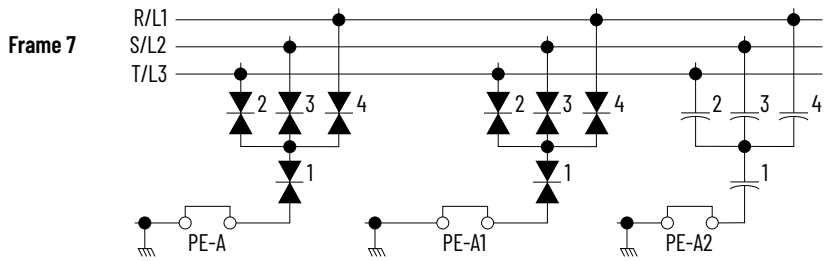
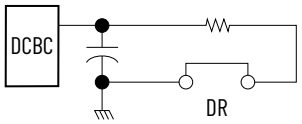


Figure 178. DC Bus Conditioner Discharge Resistor—Frame 7



IMPORTANT: The default power jumper settings are:

- All power jumpers are installed in the connected (IN) position.
- All power jumpers are installed in the disconnected (OUT) position when the bus conditioner for marine applications (-P51) is selected.

ATTENTION: Risk of equipment damage exists.

The drive power source type must be accurately determined. The power jumpers must be configured for the power source type according to the recommendations in the PowerFlex 755T Input Product RF Emission Compliance and Installation Requirements.

ATTENTION: Risk of equipment damage exists.

Hazard of equipment damage exists if jumpers are not properly disconnected or are set differently between power and LCL filter modules. Secure a disconnected jumper in the socket or on the insulated spacer that is provided and verify that all modules are configured identically.

Table 101. PowerFlex 755TL/TR Power Jumpers—Frame 7

Grounding Scheme	EMC Option	PE-A	PE-A1	PE-A2	DR
		MOV on the AC Precharge Control Circuit Board	MOV in the TVSS Module	Common Mode Caps on the AC Common Mode Filter Circuit Board	Discharge Resistor on the DC Bus Conditioner
Factory Default	C3	Connected (In)	Connected (In)	Connected (In)	Connected (In)
Grounded	C2	Connected (In)	Connected (In)	Connected (In)	Connected (In)
Grounded	C3	Connected (In)	Connected (In)	Connected (In)	Connected (In)
Ungrounded/High-resistance Ground AC fed ungrounded Impedance grounded B phase ground	–	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Connected (In)
Marine Ungrounded / High Resistance Ground	–	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)

The EMC C2 option listed meets EN61800-3 Category C2 for conducted emissions.

Ungrounded and high-resistance ground systems do not meet the EMC Directive due to the disconnected jumper positions.

PE-A Power Jumper Location and Configuration—Frame 7

The PE-A power jumper (connector P8) connects to J8 on the AC precharge control circuit board (cat. no. 20-750-MACPC1-xx).

Figure 179. Frame 7 PE-A Power Jumper Configurations

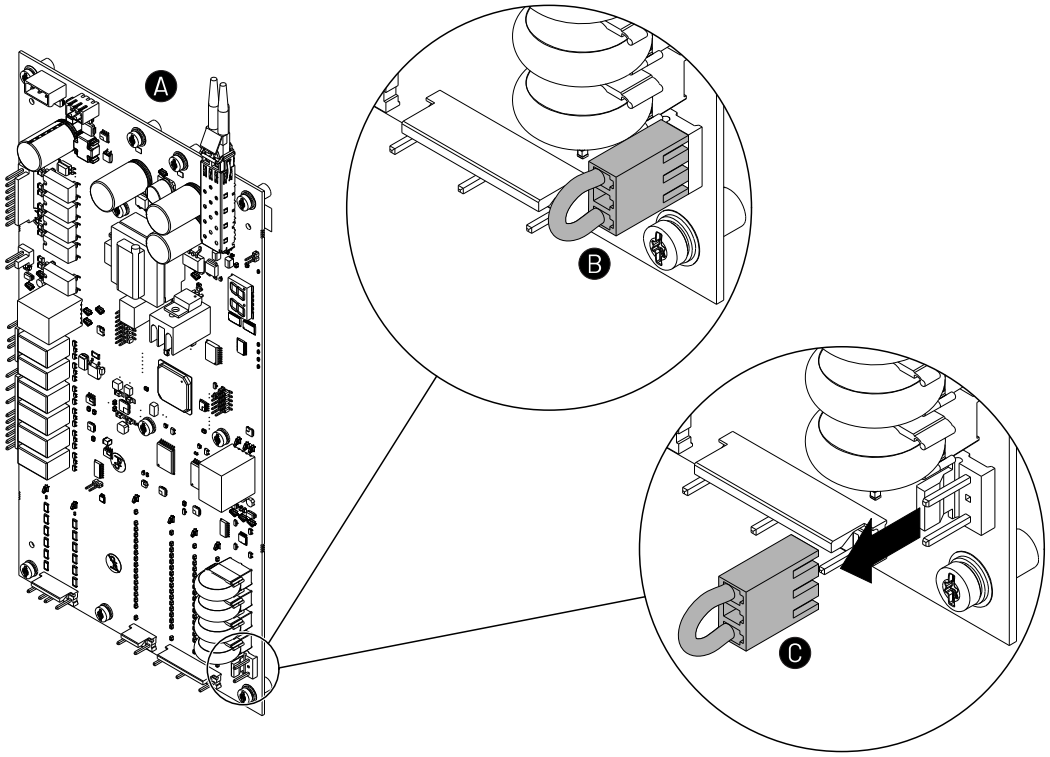


Table 102. Frame 7 PE-A Power Jumper Configurations

Item	Description
A	AC precharge control circuit board
B	PE-A jumper connected (IN)
C	PE-A jumper disconnected (OUT)

PE-A1 Power Jumper Location and Configuration—Frame 7

The PE-A1 power jumper is connected to the TVSS module (cat. no. 20-750-MACP-xx-TVSS). The frame 7 AC precharge panel includes an insulated spacer and hardware for the PE-A1 jumper OUT position and hardware for the PE-A1 jumper IN position.

Figure 180. Frame 7 PE-A1 Power Jumper Configurations

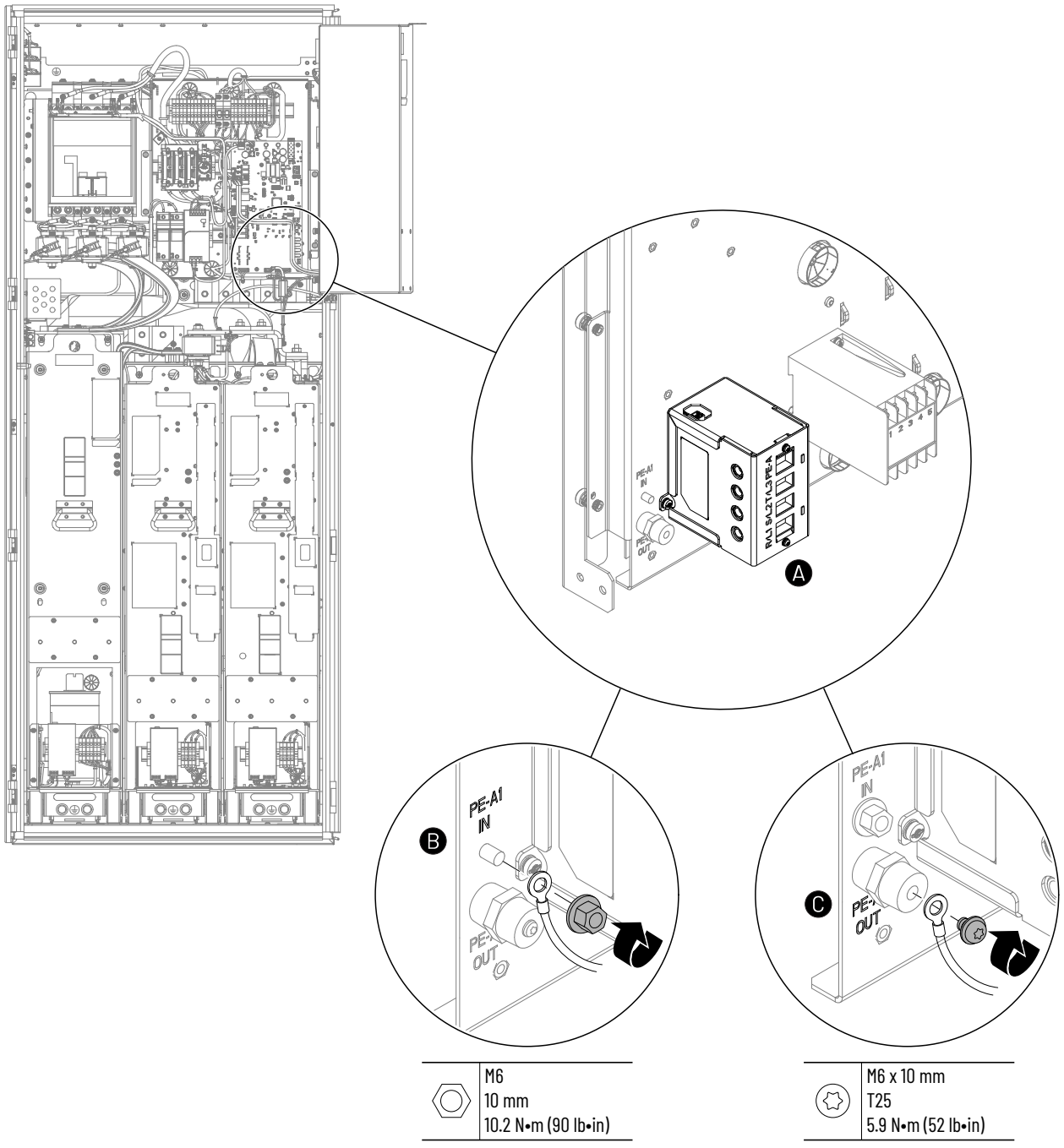


Table 103. Frame 7 PE-A1 Power Jumper Configurations

Item	Description
A	The TVSS Module is located on the back side of the accessories components panel.
B	PE-A1 jumper connected (IN)
C	PE-A1 jumper disconnect (OUT)

PE-A2 Power Jumper Location and Configuration—Frame 7

The PE-A2 power jumper on frame 7 products is connected to the AC common mode filter circuit board. A typical installation location is shown here.

Figure 181. Frame 7 PE-A2 Power Jumper Configurations

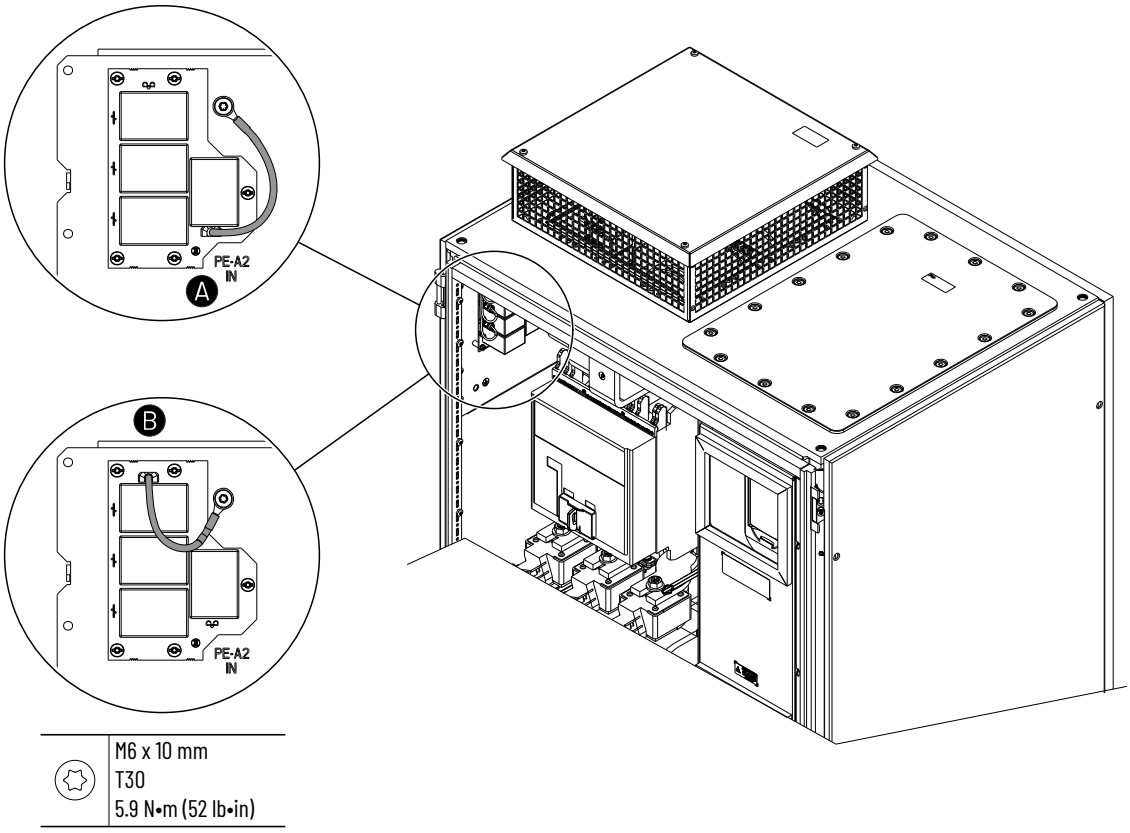


Table 104. Frame 7 PE-A2 Power Jumper Configurations

Item	Description
A	PE-A2 jumper connected (IN)
B	PE-A2 jumper disconnected (OUT)

DR Power Jumper Location and Configuration—Frame 7

The DR jumper on frame 7 power modules is connected to the discharge resistor on the DC bus conditioner.

Figure 182. Frame 7 DR Power Jumper Configurations

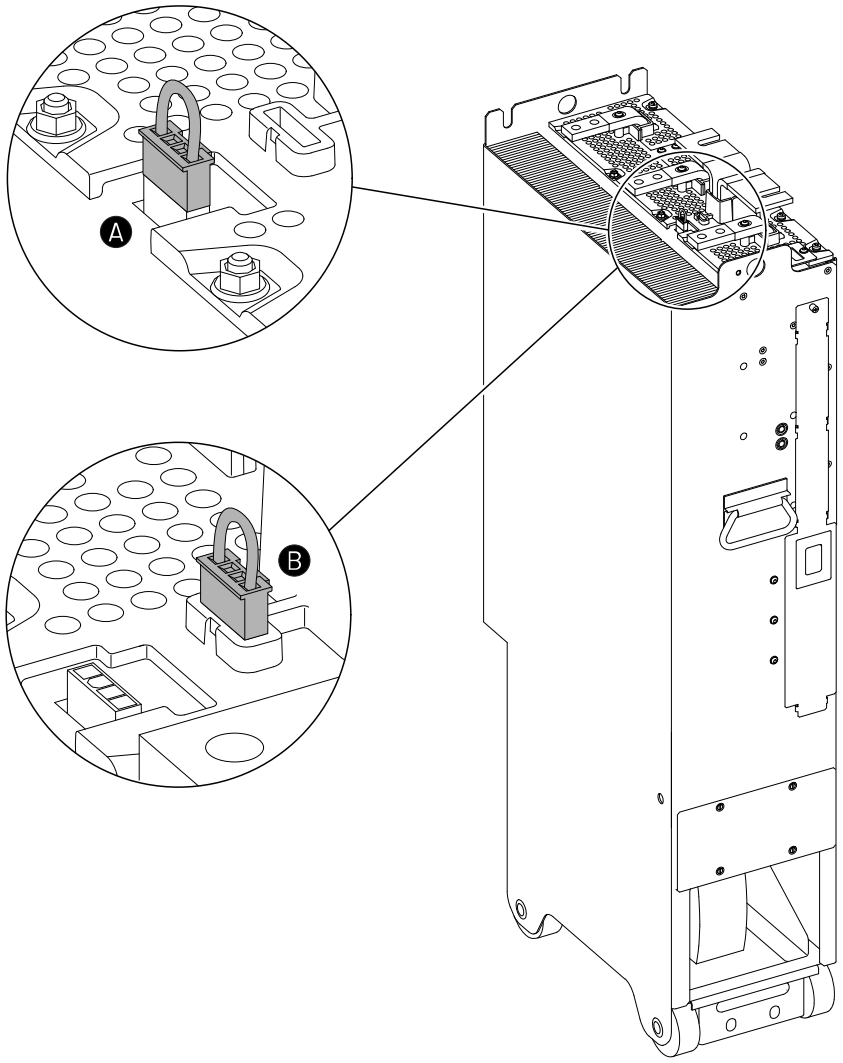


Table 105. Frame 7 DR Power Jumper Configurations

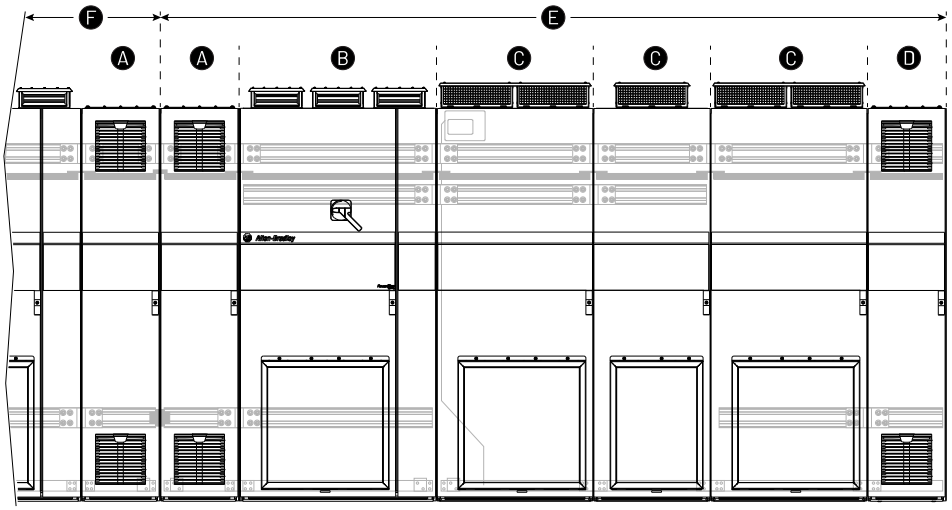
Item	Description
A	DR jumper connected (IN)
B	DR jumper disconnected (OUT)

Power Wiring and Grounding—Frames 8...15

These diagrams show products connected to a solid ground single point (PE only) power source. Some applications may require alternate grounding schemes, see DRIVES-IN001 for more information. These applications include installations with long distances between drives or drive line-ups, which could cause large potential differences between the drive or line-up grounds.

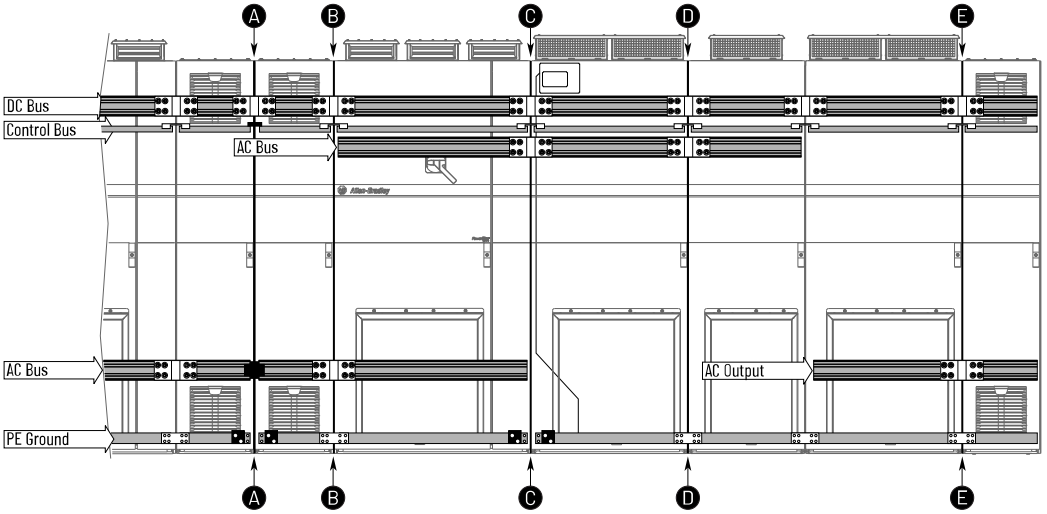
For installations within a cabinet, a single safety ground point or ground bus bar connected directly to building steel should be used. All circuits including the AC input ground conductor should be grounded independently and directly to this point/bar.

Figure 183. Typical Cabinet Lineup—Frames 8...15



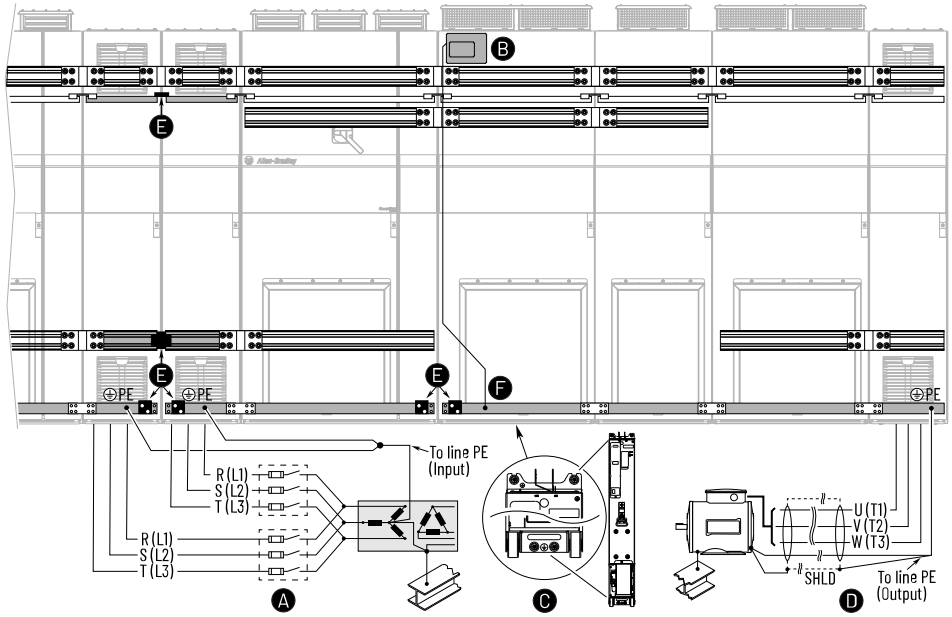
Item	Description
A	Entry wire bay
B	Input bay
C	Power bay
D	Exit wire bay and DC voltage balance bay
E	Cabinet lineup, left-to-right orientation.
F	Cabinet lineup, right-to-left orientation, frame 13...15 in-line configurations

Figure 184. Cabinet Seam Locations—Frames 8...15



(A) Frames 13...15	(B) Frames 10...15	(C) Frames 8...15	(D) Frames 10...15	(E) Frames 8...15
In-line Configuration: • Joined at factory • DC bus is spliced • Control bus is not spliced • AC input bus bar is not spliced • PE ground bar is not spliced **Back-to-Back Configuration:** • Joined at factory • DC bus is not spliced • Control bus is not spliced • AC input bus bar is not spliced • PE ground bar is not spliced **Important:** All required electrical connections between the entry wire bays are made at the factory. No additional connections are to be made at installation. Do not remove any factory-installed bus bar components that are designed to help prevent such connections.	(Entry wire bay is optional for frames 10...12.) **Entry Wire Bay to Input Bay** **In-line Configuration:** • Joined at installation • AC bus is not spliced • DC bus is spliced • Control bus is spliced • AC input bus bar is spliced • PE ground bar is spliced **Back-to-Back Configuration:** • Joined at installation • AC bus is not spliced • DC bus is spliced • Control bus is spliced • AC input bus bar is spliced • PE ground bar is spliced	**Input Bay to Power Bay** **All Configurations:** • Joined at factory • AC bus bar is spliced • DC bus bar is spliced • Control bus is spliced • AC input bus bars are not spliced • PE ground bar is not spliced **Important:** An electrical connection between the PE ground bus bars in these cabinets is not allowed. Do not remove the factory-installed bus bar components that are designed to help prevent such a connection. PE ground integrity is maintained between the input bay and power bay by the factory-installed hardware that is used to join the cabinets.	**Power Bay to Power Bay** **All Configurations:** • Joined at installation • • AC bus bar is spliced • DC bus bar is spliced • Control bus is spliced • AC input or AC output bus bar is not present • PE ground bar is spliced	**Power Bay to Exit Wire Bay** **In-line Configuration:** • Joined at installation • AC bus bar is not present • DC bus bar is spliced • Control bus is spliced • AC output bus bar is spliced • PE ground bar is spliced **Power Bay to Exit Wire Bay and DC Voltage Balance Bay** **Back-to-Back Configuration:** • Joined at installation • AC bus bar is not present • DC bus bar is spliced • Control bus is spliced • AC output bus bar is spliced • PE ground bar is spliced

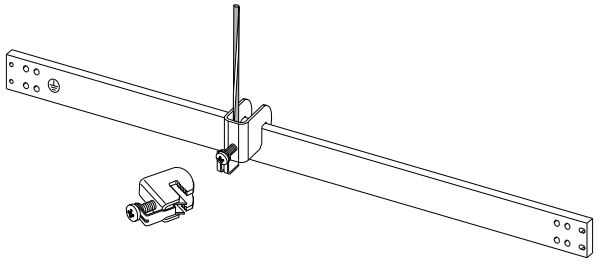
Figure 185. Typical Grounding—Frames 8...15



Item	Description
A	Branch circuit devices and remote disconnect as required by local electrical codes.
B	DC bus conditioners are connected to the PE ground bar with a single ground wire and clamp. The number of DC bus conditioners that are installed depends on input voltage class, any selected power option (-P50 or -P51), and the AC supply ground scheme.
C	LCL filter module and power module PE ground connections are made via the chassis-to-support bracket connections.
D	Motor lead connections
E	Do Not Remove Factory installed bus bar components indicate make no electrical connections at these points.
F	Grounding clamp connections

Grounding Clamps

The grounding clamp kits listed can be used to secure round copper ground conductors to 9.5 mm (0.37 in.) thick ground bus bars.



Kit Catalog Number	Conductor cross-sections		
	ISO (mm^2)	AWG/MCM	Tightening Torque [N•m (lb•in)]
SK-RM-GRNDCLMP-16	2.5...16	14...6 AWG	3 (27)
SK-RM-GRNDCLMP-50	16...50	6...0 AWG	8 (71)
SK-RM-GRNDCLMP-75	35...75	2...00 AWG	12 (106)
SK-RM-GRNDCLMP-185	70...185	00 AWG ...350 MCM	15 (133)

The final assembly Safety Ground-PE must be connected to system ground. Ground impedance must conform to the requirements of national and local industrial safety regulations and/or electrical codes. Periodically check the integrity of all ground connections.

For more information on grounding requirements, see PowerFlex 755TM IP00/Open Type Kits Installation Instructions, 750-IN101, and Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, DRIVES-IN001.

Power Cable Connections—Frames 8...15

A variety of cable types are acceptable for drive installations. See DRIVES-IN001 for more information. AC line and motor cables fitted with barrel lugs connect directly to the bus bar or to L-brackets as indicated in this table.

If an application requires additional L-brackets, kit number 20-750-MLBRKT-F8M is available. Each kit contains three L-brackets and mounting hardware.

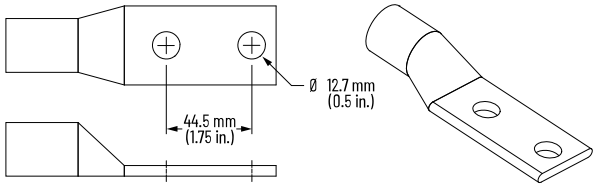
Connection Type	Cabinet	Frame	L-brackets Included
AC Line Input	Input Bay	8...12	No
	Entry Wire Bay	10...12 (P16 option)	Yes
		13...15 (included)	Yes
Motor Output	Power Bay	8...12	No
	Exit Wire Bay	8 (P15 option)	No
		9...12 (P15 option)	Yes
		13...15 (in-line)	Yes
	Voltage Balance Bay	13...15 (back-to-back)	Yes

UL Listed Barrel Lugs—Frames 8...15

Use UL Listed barrel lugs to make AC line input power and output motor connections to busbars and L-brackets.

- Barrel lugs are customer-supplied.
- Use only copper barrel lugs with tin or zinc plating.
- Barrel lugs can be either crimp or mechanical type.
- Use the vendor-recommended tooling to fasten crimp type terminals to cabling.
- Torque mechanical type terminals according to vendor instructions.

Figure 186. UL-listed Lug Dimensions

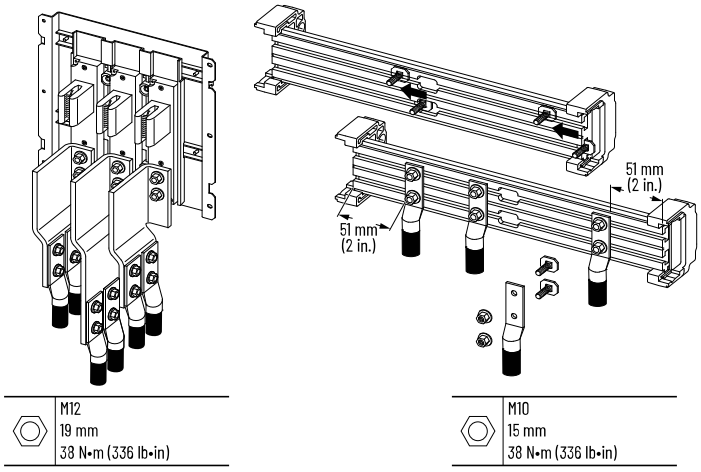


Bus Bar Connections—Frames 8...15

AC line input power and output motor cables with appropriate barrel lugs that are connected directly to bus bars use the fastening hardware provided. Keep the wire connections at least 51 mm (2 in.) away from the ends of the slotted bus bar.

Fastening hardware can be inserted into the channel of slotted bus bar through the notched area in the center of the bus bar, if provided, or at the end of the bus bar.

(A) Insert the supplied fastening hardware into the bus bar channel at the center notch, if accessible, or at the end of the bus bar.

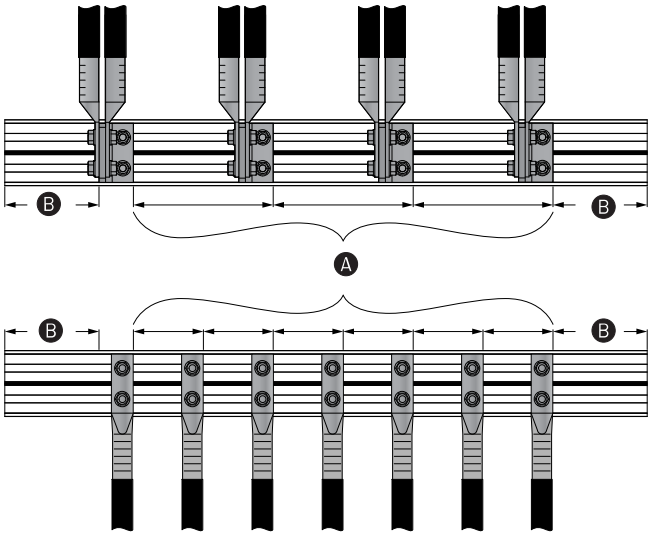


Recommended Cable Spacing

PowerFlex® 755T products require multiple conductors in parallel. Wire size and number of conductors must be determined by the customer based on drive rated current, local codes, operating conditions, and specific application needs. When using multiple conductors per phase, symmetrical spacing of the input and output power cabling over the span of the bus bar for each phase is required.

When using multiple conductors per phase, wires must be arranged so that each conduit, bundle, or cable contains equal numbers of conductors from all three phases.

Figure 187. Spacing Examples



A	Evenly space conductors along the length of the bus bar
B	5.1 mm (2.0 in.

Figure 188. Recommended Cable Spacing Example—1000 mm (39.4 in.) Wire Input Bay

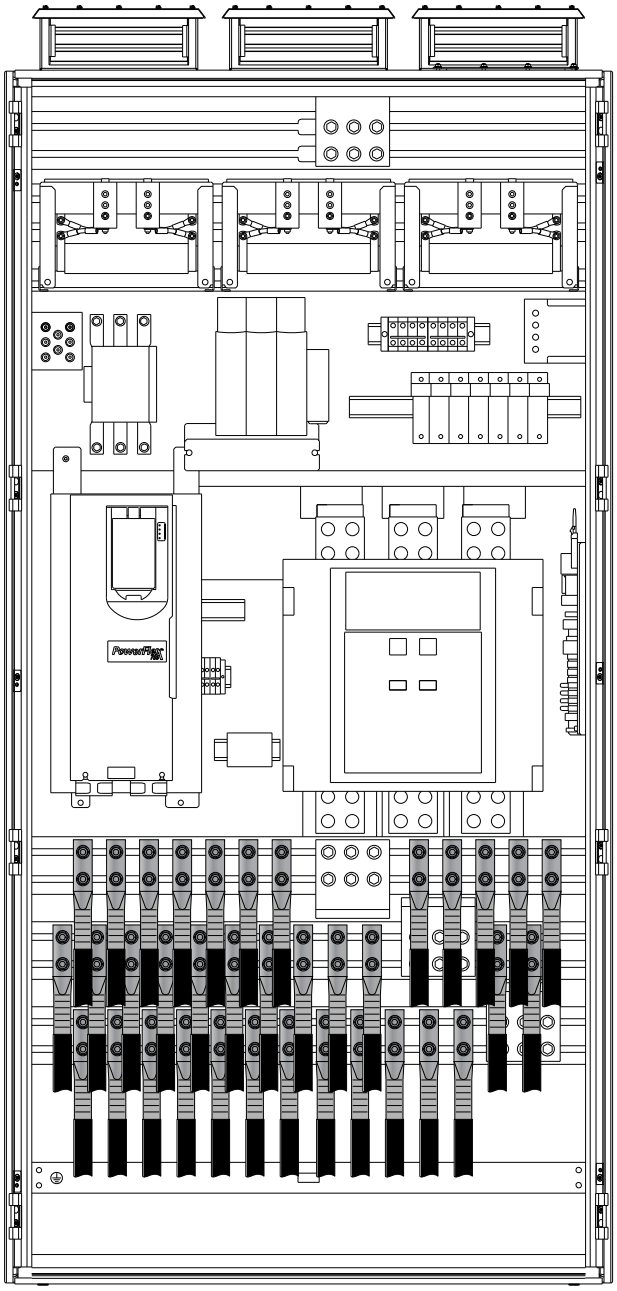
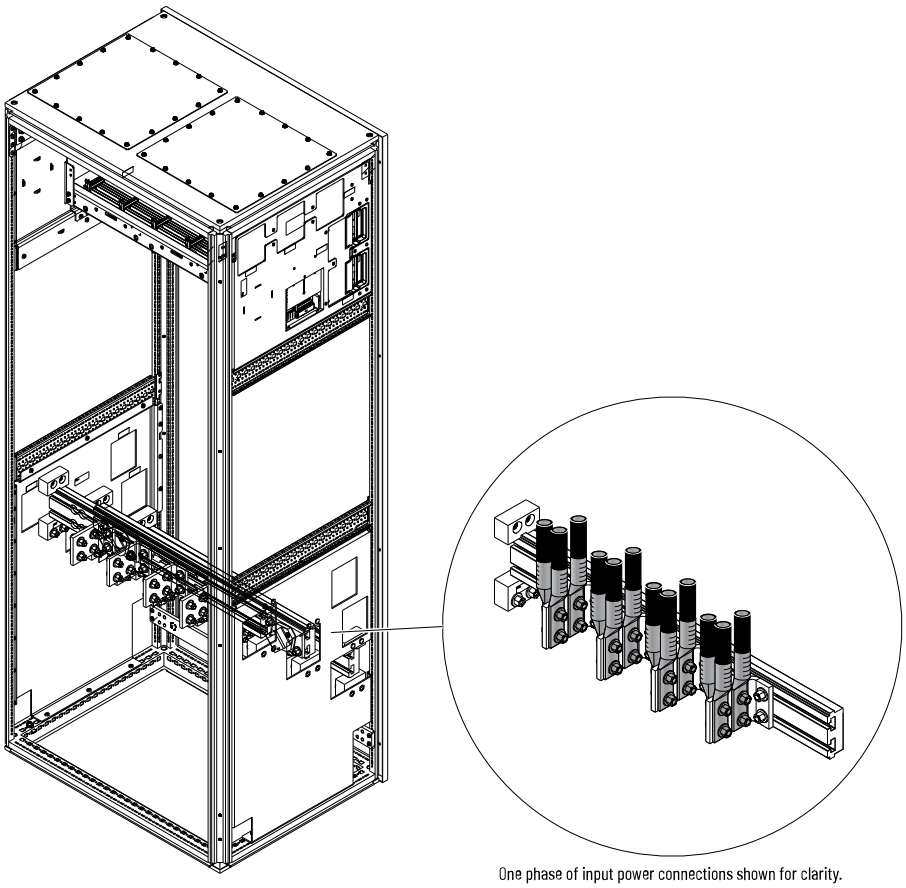


Figure 189. Recommended L-bracket Spacing Example - 800 mm (31.5 in.) Wire Bay



Power Terminal and Bus Bar Locations—Frames 8...15

Figure 190. Power Terminal Bus Bar Locations—Frames 8 and 9 (Frame 8 shown)

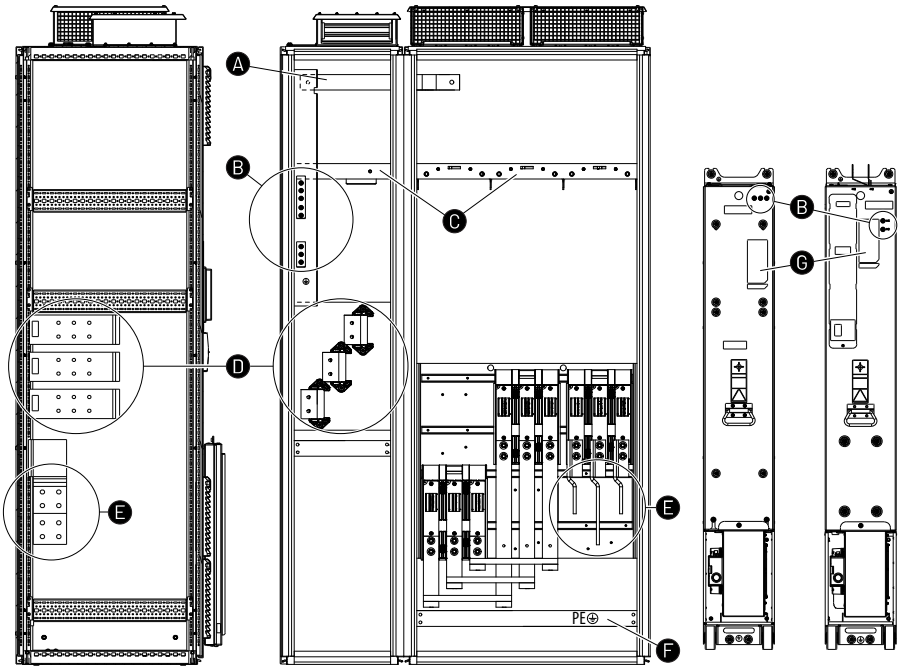
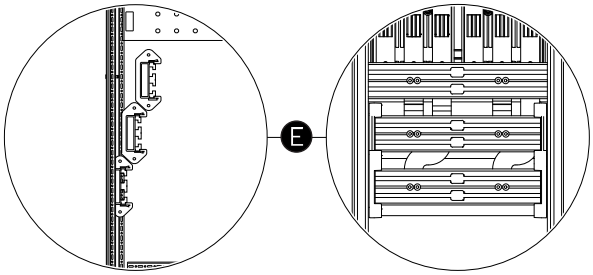
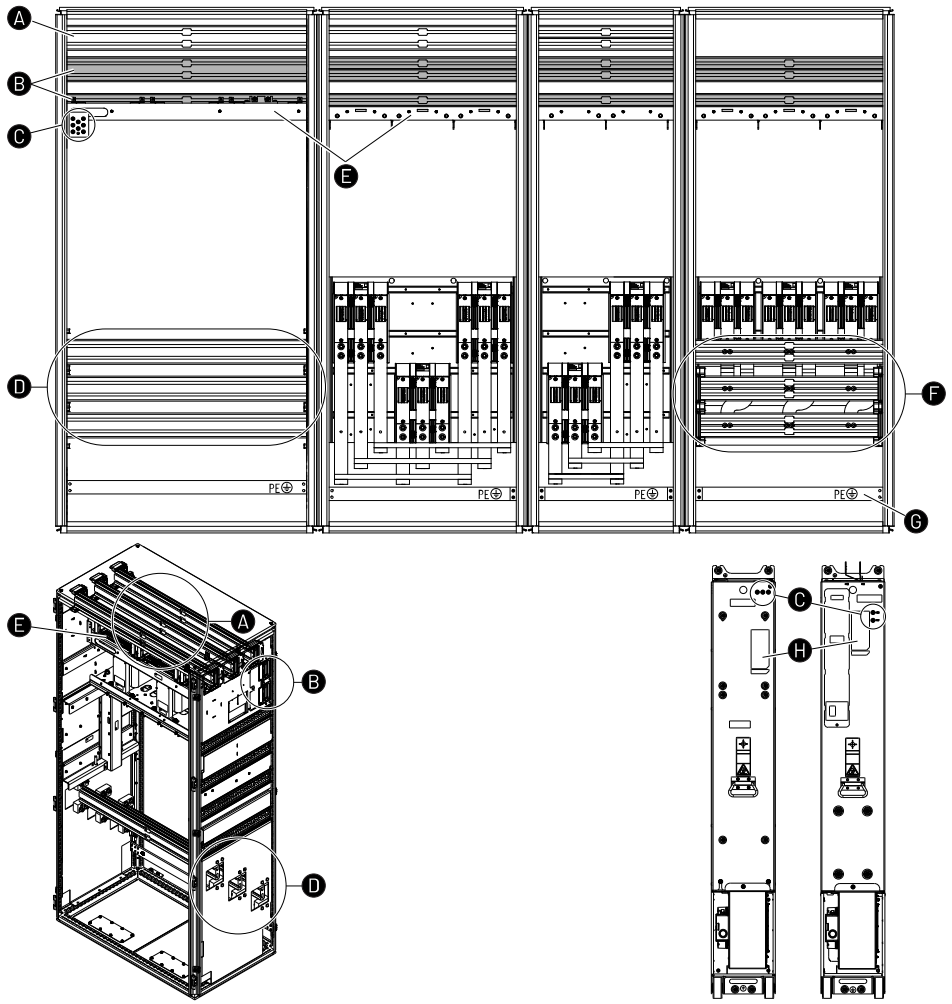


Figure 191. Power Terminal and Bus Bar Locations—Frame 9



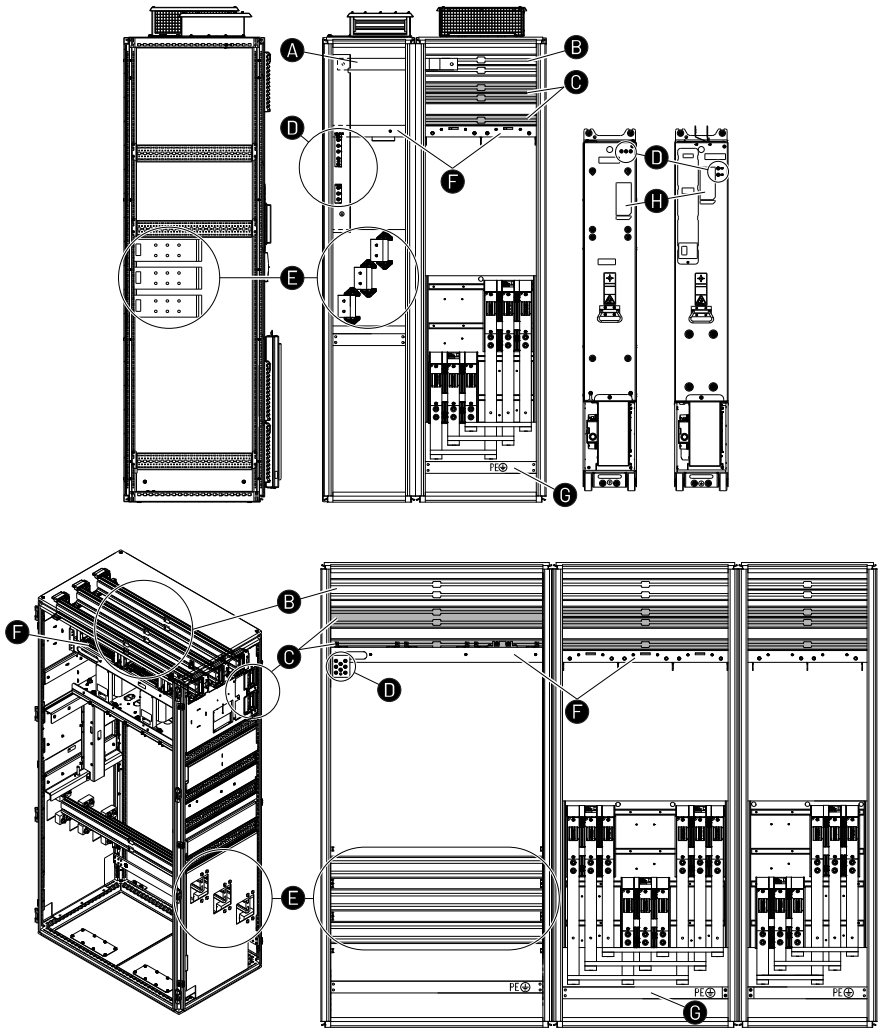
Item	Name	Description
A	AC Link	Connects AC circuit breaker to LCL fuse assembly
B	Testpoints	DC+, DC- and R/L1, S/L2, T/L3 voltage testpoint sockets. Always replace the protective caps on the testpoints if present.
C	Control bus	120/240V and 24V AC control power supply connections
D	Input power bus	R/L1, S/L2, T/L3 AC line input power connections
E	Motor power bus	U/T1, V/T2, W/T3 motor connections
F	PE grounding bar	Chassis ground termination point for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-nn, are available to make these connections.
G	Nameplate	Power module and LCL filter module nameplate locations

Figure 192. Power Terminal Bus Bar Locations—Frames 10...15



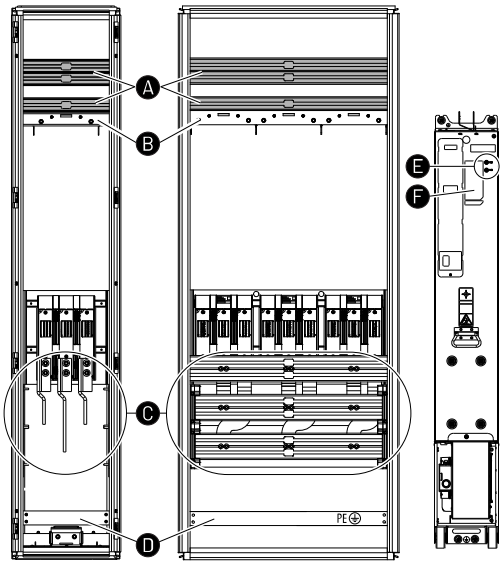
Item	Name	Description
A	AC bus	AC power supply
B	DC bus	DC+, DC-
C	Testpoints	DC+, DC- and R/L1, S/L2, T/L3 voltage testpoint sockets. Always replace the protective caps on the testpoints if present.
D	Power bus	R/L1, S/L2, T/L3 AC line input power connections
E	Control bus	120/240V and 24V AC control power supply connections
F	Power bus	U/T1, V/T2, W/T3 motor connections
G	PE grounding bar	Chassis ground termination point for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-nn, are available to make these connections. Optional entry wiring bay comes with hardware to splice together the PE grounding bars between the wiring bay and input bay.
H	Nameplate	Power module and LCL filter module nameplate locations

Figure 193. Power Terminal and Bus Bar Locations, Frames 8...15 Bus Supplies (Frames 8 and 10 shown)



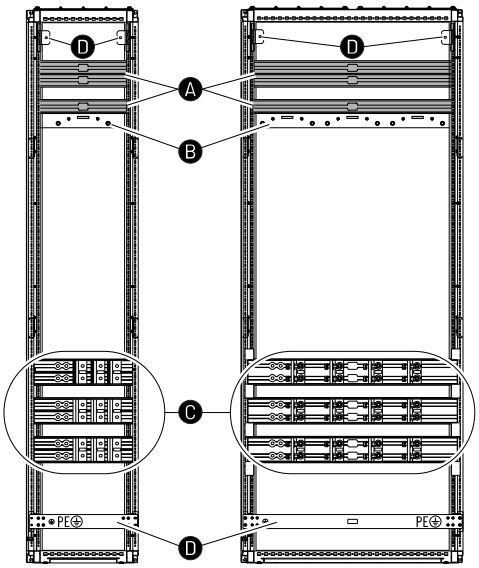
Item	Name	Description
A	AC link	Connects AC circuit breaker to LCL fuse assembly
B	AC bus	AC power supply
C	DC bus	DC+, DC-
D	Testpoints	DC+, DC- and R/L1, S/L2, T/L3 voltage testpoint sockets. Always replace the protective caps on the testpoints if present.
E	Power bus	R/L1, S/L2, T/L3 AC line input power connections
F	Control bus	120/240V and 24V AC control power supply connections
G	PE grounding bar	Chassis ground termination point for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-nn, are available. Optional entry wiring bay comes with hardware to splice together the PE grounding bars between the wiring bay and input bay.
H	Nameplate	Power module and LCL filter module nameplate locations

Figure 194. Power Terminal and Bus Bar Locations, Frames 8...15 Common Bus Inverters (Frames 8 and 10 shown)



Item	Name	Description
A	DC bus	DC power supply
B	Control bus	Control power supply
C	Power bus	U/T1, V/T2, W/T3 motor connections
D	PE grounding bar	Termination point to chassis ground for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-nn, are available.
E	Testpoints	DC+, DC- and R/L1, S/L2, T/L3 voltage testpoint sockets. Always replace the protective caps on the testpoints if present.
F	Nameplate	Power module and LCL filter module nameplate locations

Figure 195. Power Terminal and Bus Bar Locations, Optional Entry and Exit Wire Bays



Item	Name	Description
A	DC bus	DC power supply
B	Control bus	Control power supply
C	Power bus	R/L1, S/L2, T/L3 AC line input power connections (entry wire bay) or U/T1, V/T2, W/T3 motor connections (exit wire bay)
D	PE grounding bar	Termination point to chassis ground for incoming AC line and motor shield. PE ground bar clamps, kit number SK-RM-GRNDCLMP-*nn*, are available.

Dual Input and Dual Output Wiring Applications—Frames 13...15

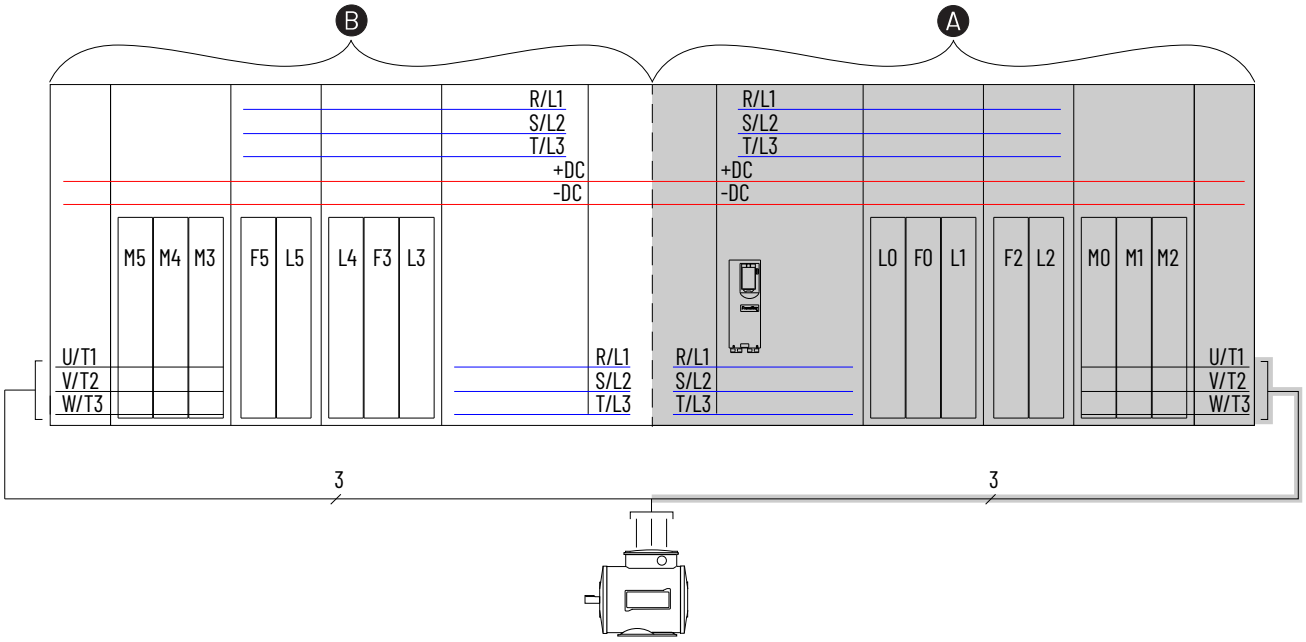
Table 106. Frames 13...15 Drives Power Wiring Requirements

Power Source	Configuration	
AC Input	In-line or back-to-back	Two entry wiring bays (WB) must be used for independent three-phase AC input power connections (AC Input-1 and AC Input-2).
		AC Input-1 and AC Input-2 must have the same power source and phase sequence.
		The cable length and impedance from the AC power source to AC Input-1 and AC Input-2 must be the same.
DC Bus	In-line	Must be continuous.
	Back-to-back	A single balance connection must be provided at the motor end of the shared DC bus.

Table 106. Frames 13...15 Drives Power Wiring Requirements (continued)

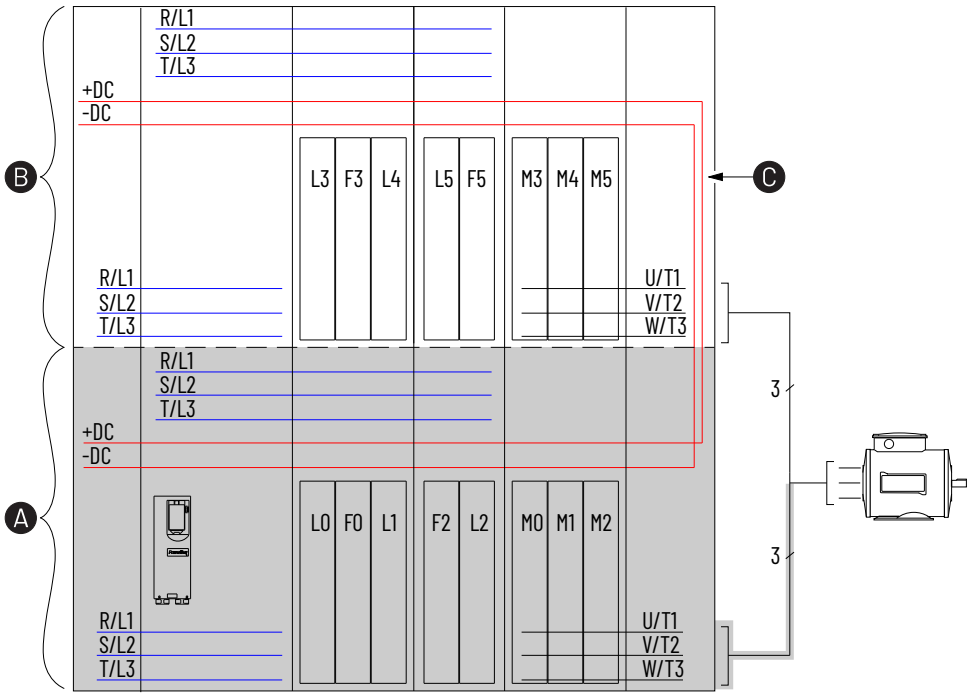
Power Source	Configuration	
AC Output	In-line or back-to-back	Two exit wiring bays (WB) or one DC voltage balance bay (DCVBB) must be used for independent three-phase AC output power connections (AC Output-1 and AC Output-2).
		Motor cables (Motor Cable-1 and Motor Cable-2) from the AC output connections (AC Output-1 and AC Output-2), respectively, to the motor must be the same length and impedance.
		Both sets of motor cables (Motor Cable-1 and Motor Cable-2) must be connected to a single motor only.

Figure 196. Frame 13...15 Drive, In-Line Configuration Power Wiring Diagram



Item	Description
A	3-phase AC Input 1 and Motor Output 1
B	3-phase AC Input 2 and Motor Output 2

Figure 197. Frame 13...15 Drive, Back-to-Back Configuration Power Wiring Diagram



Item	Description
A	3-phase AC Input 1 and Motor Output 1
B	3-phase AC Input 2 and Motor Output 2
C	DC Voltage Balance

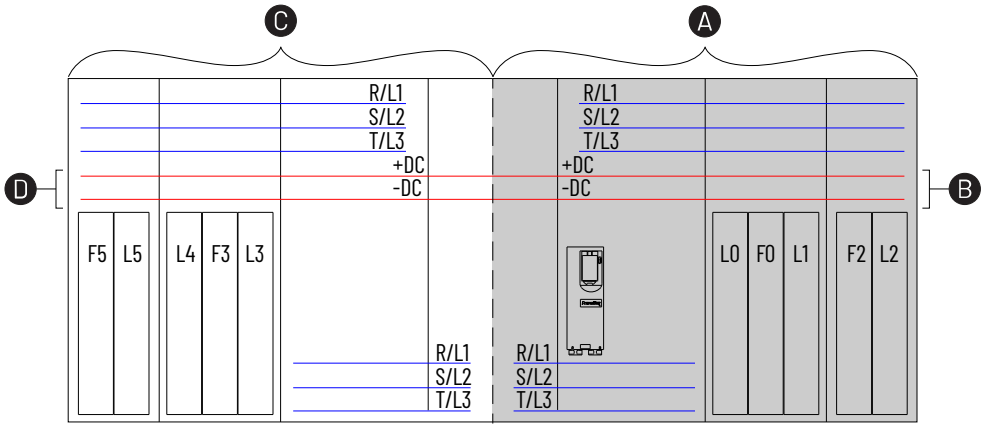
Table 107. Frames 13...15 Bus Supply Power Wiring Requirements

Power Source	Configuration	Rule
AC Input	In-Line or Back-to-Back	Two entry wiring bays (WB) must be used for independent three-phase AC input power connections (AC Input-1 and AC Input-2).
		AC Input-1 and AC Input-2 must have the same power source and phase sequence.
		The cable length and impedance from the AC power source to AC Input-1 and AC Input-2 must be the same.
DC Bus	In-Line	Must be continuous.
	Back-to-Back	A single balance connection must be provided at the motor end of the shared DC bus. This balance connection must be removed from the bus supply DC bus output when a DC balance connection is used at the motor end of a common bus inverter running a single motor.
DC Output	Back-to-Back	A DC voltage balance bay (DCBVBB) must be used.
	In-Line or Back-to-Back	The DC bus bar or cable length and impedance from the DC bus output (DC Output-1 and DC Output-2) to the common bus inverter DC input (where applicable) must be the same.

Table 107. Frames 13...15 Bus Supply Power Wiring Requirements (continued)

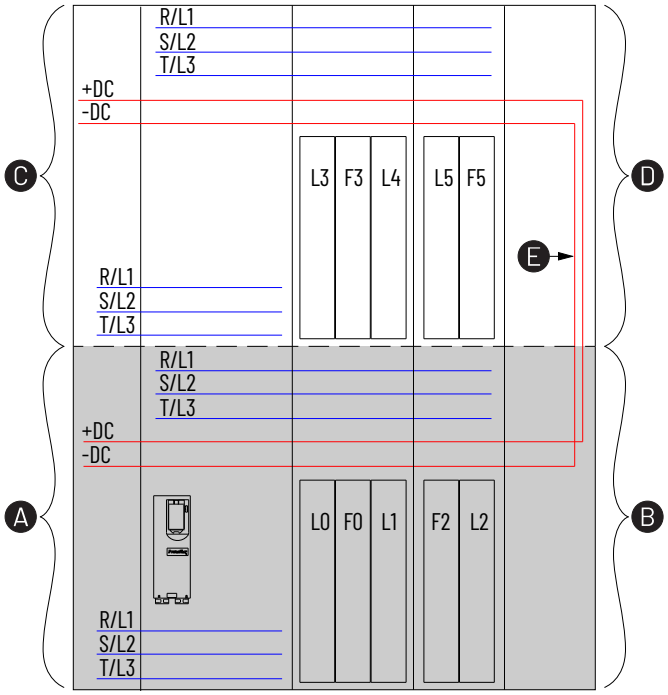
Power Source	Configuration	Rule
		All connected common bus inverters must have a common DC bus.
		The load on DC Output-1 or DC Output-2 must not exceed 55% of the total bus supply rating.
		The total load must not exceed 100% of the bus supply rating.

Figure 198. Frame 13...15 Bus Supply, In-Line Configuration Power Wiring Diagram



Item	Description
A	3-phase AC Input 1
B	DC Output 1 to Common Bus inverter
C	3-phase AC Input 2
D	DC Output 2 to Common Bus Inverter

Figure 199. Frame 13...15 Bus Supply, Back-to-Back Configuration Power Wiring Diagram

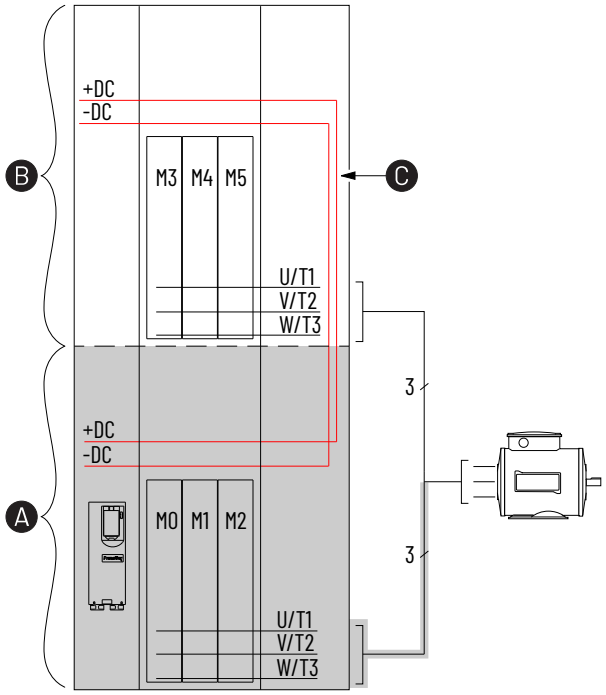


Item	Description
A	3-phase AC Input 1
B	DC Output 1 to Common Bus
C	3-phase AC Input 2
D	DC Output 2 to Common Bus
E	DC Voltage Balance

Table 108. Frames 13...15 Common Bus Inverter Power Wiring Requirements—Back-to-Back Configuration

Power Source	Rule
DC Input	Two control bays (CB) must be used for DC input power connections (DC Input-1 and DC Input-2).
	The DC bus bar or cable length and impedance from the DC output power source to the common bus inverter DC Input-1 and DC Input-2 must be the same.
DC Bus	A single balance connection must be provided at the motor end of the shared DC bus. This balance connection must be removed from the common bus inverter DC bus when a DC balance connection is used at the motor end of a bus supply.
AC Output	A DC voltage balance bay (DCVBB) must be used.
	Motor cables (Motor Cable-1 and Motor Cable-2) from the AC output connections (AC Output-1 and AC Output-2), respectively, to the motor must be the same length and impedance.
	Both sets of motor cables (Motor Cable-1 and Motor Cable-2) must be connected to a single motor only.

Figure 200. Frame 13...15 Common Bus Inverter, Back-to-Back Configuration Power Wiring Diagram



Item	Description
A	DC Input 1 and AC Output 1
B	DC Input 2 and AC Output 2
C	DC Voltage Balance

Customer Supplied Control Bus Power—Frames 8...15

Customer connections to provide the control bus with 240V AC and 24V DC power are provided in the input bay and control bay of applicable PowerFlex®drive products.

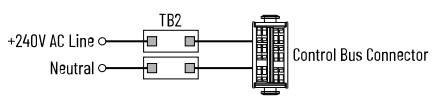
240V AC Terminal Block and Control Bus Connections—Frames 8...15

Customer connections to provide the control bus with 240V AC and 24V DC power are provided in the input bay and control bay of applicable PowerFlex®drive products.

Use terminal block TB2 to connect an external 240V AC power source to PowerFlex® 755TM bus supplies that do not have the internal C1 control transformer option.

IMPORTANT: Do not connect an external 240V AC control power source to 755TM bus supplies that are equipped with the internal C1 control transformer option. See the system nameplate for 240V AC input requirements to verify that an external control power supply is required.

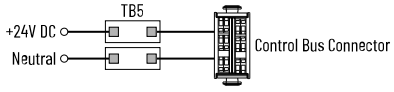
PowerFlex® 755TL and 755TR drive products come equipped with the C1 control transformer. An external control power supply is not required for these products.



Terminal Block	Frame		Wire Size	Strip Length	Recommended Torque
	IP21	IP54			
TB2	8...11	8...9	6mm^2 (22...8 AWG)	12 mm (0.47 in.)	1.6 N•m (14.2 lb•in)
TB2	12	10	10mm ^{2} (18...6 AWG)	12 mm (0.47 in.)	2.3 N•m (20.4 lb•in)
TB2	—	11	16mm^2 (18...4 AWG)	16 mm (0.63 in.)	4 N•m (35 lb•in)
TB2	—	12	35mm^2 (12...1/0 AWG)	18 mm (0.70 in.)	5.8 N•m (51 lb•in)
Control bus	8...12	8...12	2mm^2 (26...14 AWG)	12 mm (0.47 in.)	— (spring type)

24V DC Terminal Block and Control Bus Connections—Frames 8...15

Use terminal block TB5 to connect an external 24V DC power source. This source provides auxiliary power to the control pod and other control circuits when main power has been removed.



Terminal Block	Frame		Wire Size	Strip Length	Recommended Torque
	IP20	IP54			
TB5	8...12	8...12	6mm^2 (22...8 AWG)	12 mm (0.47 in.)	1.6 N•m (14.2 lb•in)
Control bus	8...12	8...12	6mm^2 (26...14 AWG)	12 mm (0.47 in.)	— (spring type

Table 109. Product 24V DC Power Requirements

Product	Frame	Maximum Power Requirements (Watts)
755TL and 755TR drives	8	213
	9	276
	10	339
	11	402
	12	465
	13	528
	14	654
	15	780
755TM bus supplies	8	182
	9	213

Table 109. Product 24V DC Power Requirements (continued)

Product	Frame	Maximum Power Requirements (Watts)
	10	245
	11	276
	12	308
	13	339
	14	402
	15	465
755TM bus supplies with one 755TM common bus inverter	8	157
	9	188
	10	220
	11	251
	12	283
	13	314
	14	377
	15	440
755TM bus supplies with two 755TM common bus inverters	8	313
	9	376
	10	439

TB2 and TB5 Terminal Block Locations—Frames 8...15

Figure 201. Control Bay TB2 Terminal Block Location

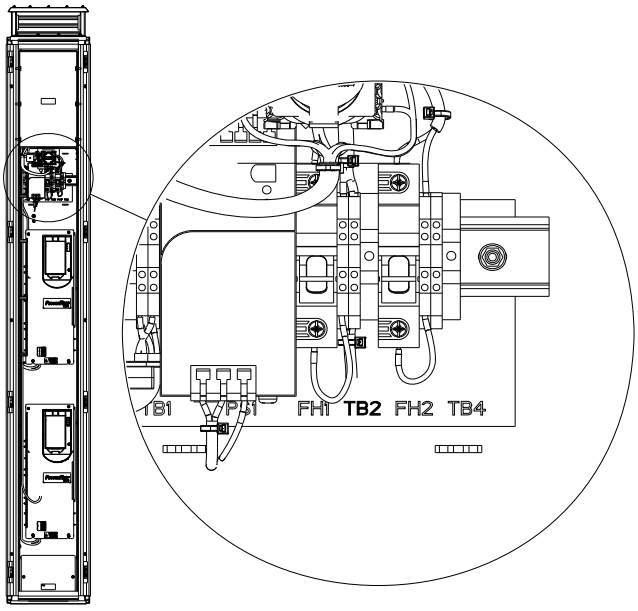


Figure 202. Frame 8 Input Bay TB2 and TB5 Terminal Block Locations

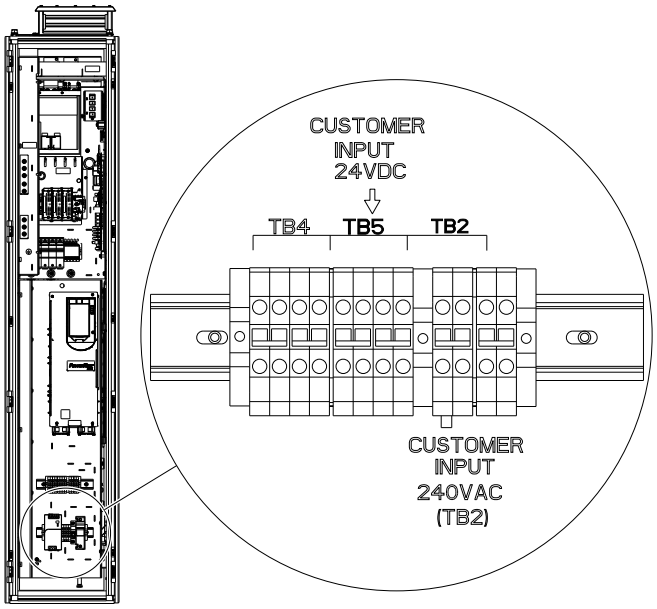


Figure 203. Frame 9 Input Bay TB2 and TB5 Terminal Block Locations

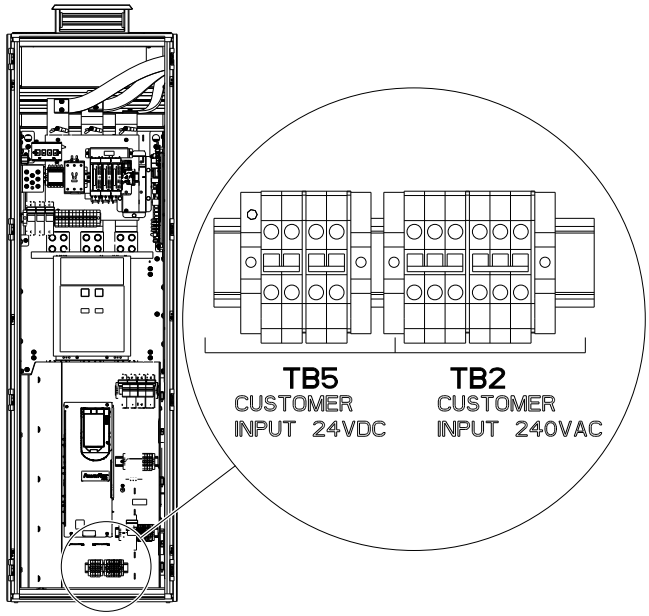


Figure 204. Frame 10, 11, 13, and 14 Input Bay TB2 and TB5 Terminal Block Locations

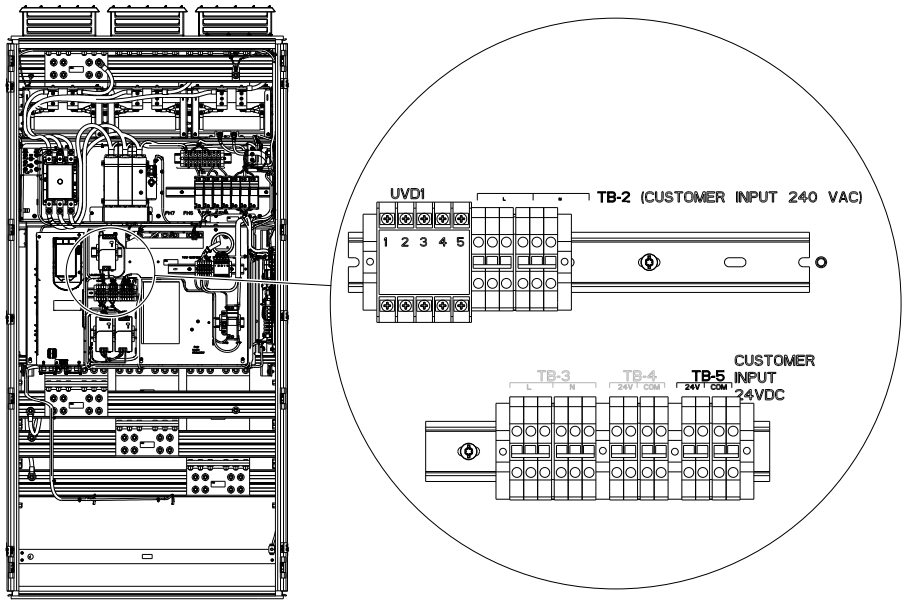


Figure 205. Frame 12 and 15, 400/480V, Input Bay TB2 and TB5 Terminal Block Locations

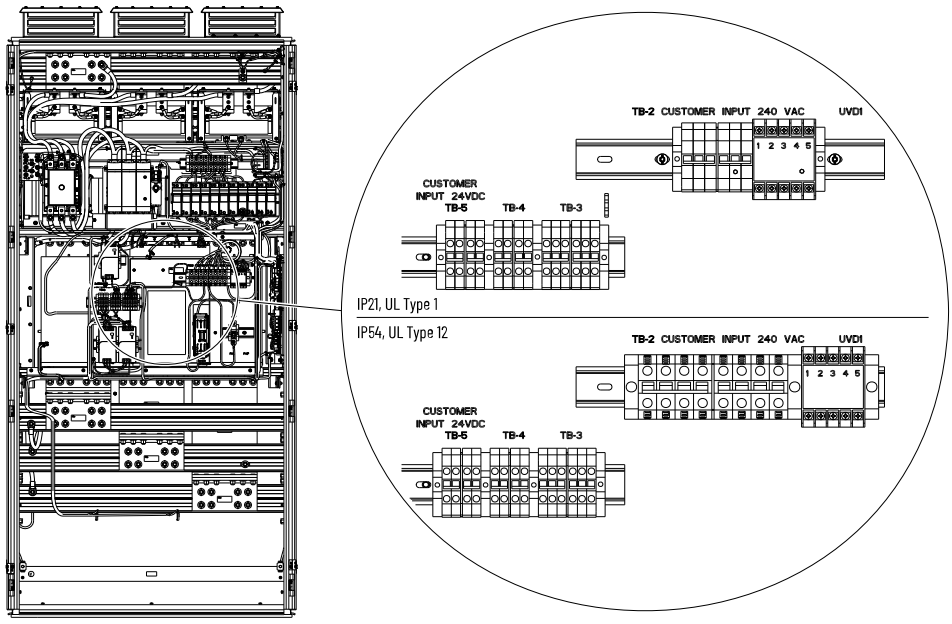
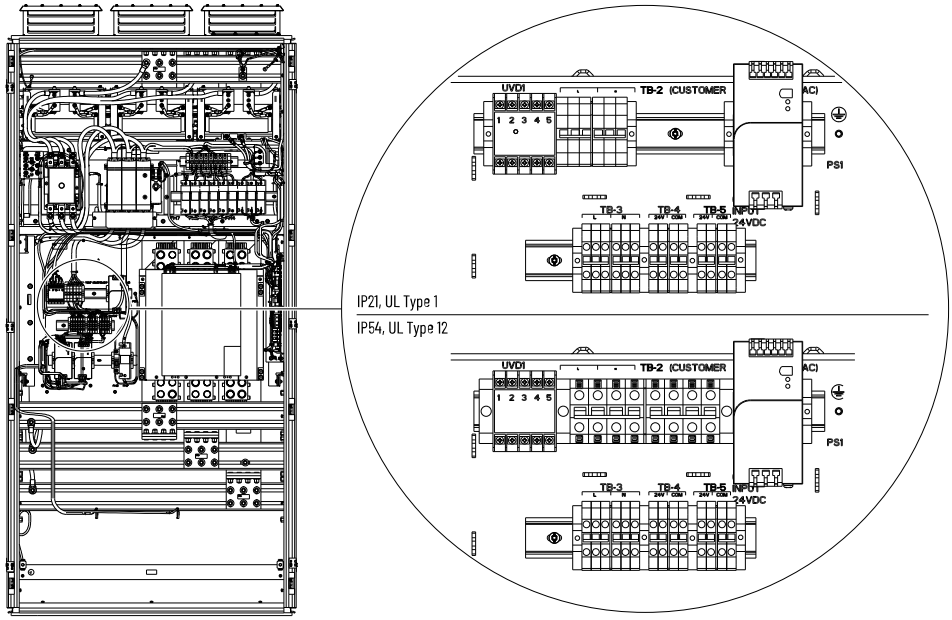


Figure 206. Frame 12 and 15, 600/690V, Input Bay TB2 and TB5 Terminal Block Locations



Power Jumper Configurations—Frames 8...15

PowerFlex 755T products contain protective MOVs, common mode capacitors, and discharge resistors. To guard against drive damage and/or operational problems, these devices must be properly configured according to the tables in this section.

MOV, AC EMI Capacitor, and Common Mode Capacitor Circuits

The following power jumpers are discussed in this section:

- PE-A – MOV on the AC precharge circuit board
- PE-A1 – MOV on the TVSS module

- PE-A2 – Common mode capacitors on the AC common mode filter circuit board
- PE-B1 – Common mode capacitors on the line side and motor side power interface circuit boards

The PE-A, PE-A1, and PE-A2 jumpers are not used with PowerFlex 755TM common bus inverters.

Figure 207. MOV and AC EMI Capacitor, and Common Mode Capacitor—Frames 8...15

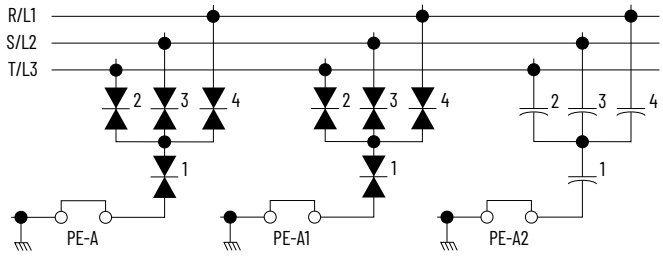
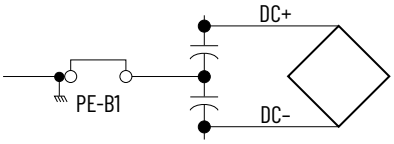


Figure 208. DC Common Mode Capacitor—Frames 8...15



IMPORTANT: The default power jumper settings are:

- PE-A, PE-A1, and PE-A2 power jumpers are installed in the connected (IN) position.
- PE-A, PE-A1, and PE-A2 power jumpers are installed in the disconnected (OUT) position when the bus conditioner for marine applications (-P51) is selected.
- PE-B1 jumper is installed in the disconnected (OUT) position. If necessary, reconfigure this jumper as determined by the power source type available.

ATTENTION: Risk of equipment damage exists.

The drive power source type must be accurately determined. The power jumpers must be configured for the power source type according to the recommendations in the PowerFlex 755T Input Product RF Emission Compliance and Installation Requirements.

ATTENTION: Risk of equipment damage exists.

Hazard of equipment damage exists if jumpers are not properly disconnected or are set differently between power and LCL filter modules. Secure a disconnected jumper in the socket or on the insulated spacer that is provided and verify that all modules are configured identically.

Table 110. PowerFlex 755TL/TR Drive Jumpers—Frames 8...15

Grounding Scheme	EMC Option	PE-A	PE-A1	PE-A2	PE-B1	
		MOV on the AC Precharge Control Circuit Board	MOV in the TVSS Module	Common Mode Caps on All AC Common Mode Filter Circuit Boards	Y-Caps on Line Side Converter Power Interface Circuit Boards	Y-Caps on Motor Side Inverter Power Interface Circuit Boards
Factory Default	C3	Connected (In)	Connected (In)	Connected (In)	Disconnected (Out)	Disconnected (Out)
Grounded	C2 [3]	Connected (In)	Connected (In)	Connected (In)	Disconnected (Out)	Disconnected (Out)

3. Ungrounded and high-resistance ground systems do not meet the EMC Directive due to the disconnected jumper positions.

Table 110. PowerFlex 755TL/TR Drive Jumpers—Frames 8...15 (continued)

Grounding Scheme	EMC Option	PE-A	PE-A1	PE-A2	PE-B1	
		MOV on the AC Precharge Control Circuit Board	MOV in the TVSS Module	Common Mode Caps on All AC Common Mode Filter Circuit Boards	Y-Caps on Line Side Converter Power Interface Circuit Boards	Y-Caps on Motor Side Inverter Power Interface Circuit Boards
	C3	Connected (In)	Connected (In)	Connected (In)	Disconnected (Out)	Disconnected (Out)
Ungrounded/High-resistance Ground AC fed ungrounded Impedance grounded B phase ground	–	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)
Marine Ungrounded / High-resistance Ground [4]	–	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)

Table 111. PowerFlex 755TM Regenerative Bus Supplies Jumpers—Frames 8...15

Grounding Scheme	EMC Option	PE-A	PE-A1	PE-A2	PE-B1	
		MOV on the AC Precharge Control Circuit Board	MOV in the TVSS Module	Common Mode Caps on All AC Common Mode Filter Circuit Boards	Y-Caps on Line Side Converter Power Interface Circuit Boards	Y-Caps on Motor Side Inverter Power Interface Circuit Boards
Factory Default	C3	Connected (In)	Connected (In)	Connected (In)	Disconnected (Out)	
Grounded	C2 [5]	Connected (In)	Connected (In)	Connected (In)	Disconnected (Out)	–
	C3	Connected (In)	Connected (In)	Connected (In)	Disconnected (Out)	
Ungrounded/High-resistance Ground AC fed ungrounded Impedance grounded B phase ground	–	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	–
Marine Ungrounded / High-resistance Ground [6]	–	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	Disconnected (Out)	–

4. Meets EN61800-3 Category C2 for conducted emissions.
5. Ungrounded and high-resistance ground systems do not meet the EMC Directive due to the disconnected jumper positions.
6. Meets EN61800-3 Category C2 for conducted emissions.

Table 112. PowerFlex 755TM Common Bus Inverter Jumpers—Frames 8...15

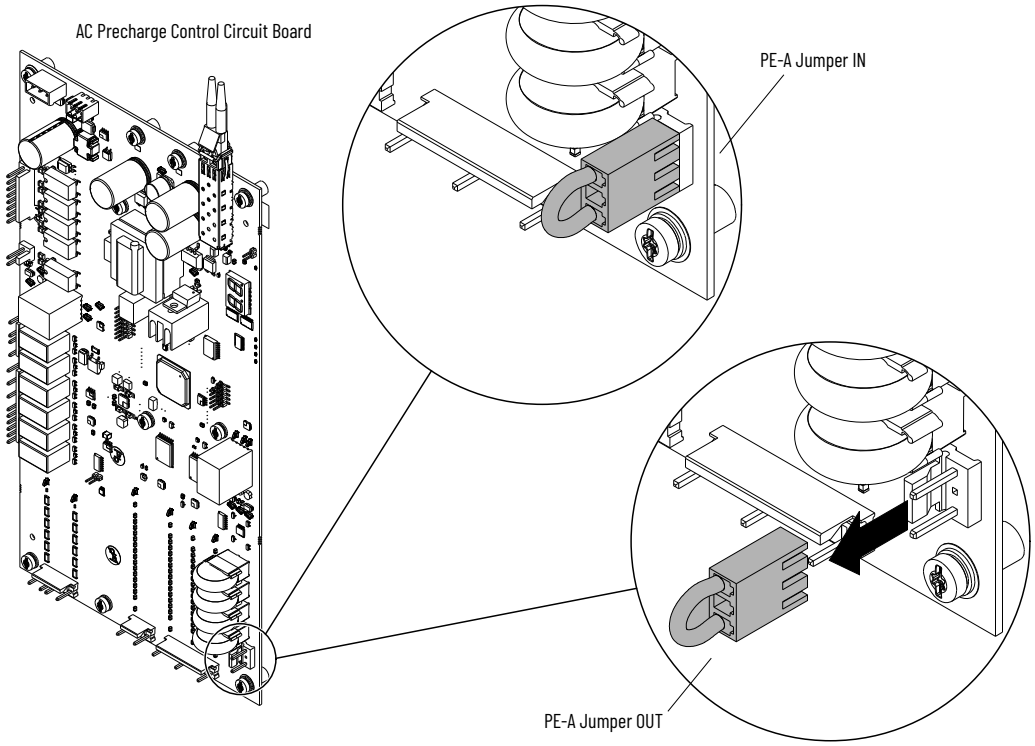
Supply Source Type	Grounding Scheme	EMC Option	PE-A	PE-A1	PE-A2	PE-B1	
			MOV on the AC Precharge Control Circuit Board	MOV in the TVSS Module	Common Mode Caps on All AC Common Mode Filter Circuit Boards	Y-Caps on Line Side Converter Power Interface Circuit Boards	Y-Caps on Motor Side Inverter Power Interface Circuit Boards
Regenerative	Factory Default	C3	–	–	–	–	Disconnected (Out)
	Grounded	C2	–	–	–	–	Disconnected (Out)
		C3	–	–	–	–	Disconnected (Out)
	Ungrounded/High-resistance Ground	–	–	–	–	–	Disconnected (Out)
	Marine Ungrounded / High-resistance Ground [8]	–	–	–	–	–	Disconnected (Out)
Non-Regenerative (third-party)	Factory Default	C3	–	–	–	–	Disconnected (Out)
	Grounded	C2 [7]	–	–	–	–	Disconnected (Out)
		C3	–	–	–	–	Disconnected (Out)
	Ungrounded/High-resistance Ground[8]	–	–	–	–	–	Disconnected (Out)
	Marine Ungrounded / High-resistance Ground[8]	–	–	–	–	–	Disconnected (Out)

PE-A Jumper Location and Configuration—Frames 8...15

The PE-A power jumper (connector P8) connects to J8 on the AC precharge control circuit board (Cat. No. 20-750-MACPC1-xx).

7. Full compliance requires an optional EMC solution that is mounted in a dedicated enclosure. Meets EN61800-3 Category C2 for conducted emissions.
8. Ungrounded and high-resistance ground systems do not meet the EMC Directive due to the disconnected jumper positions.

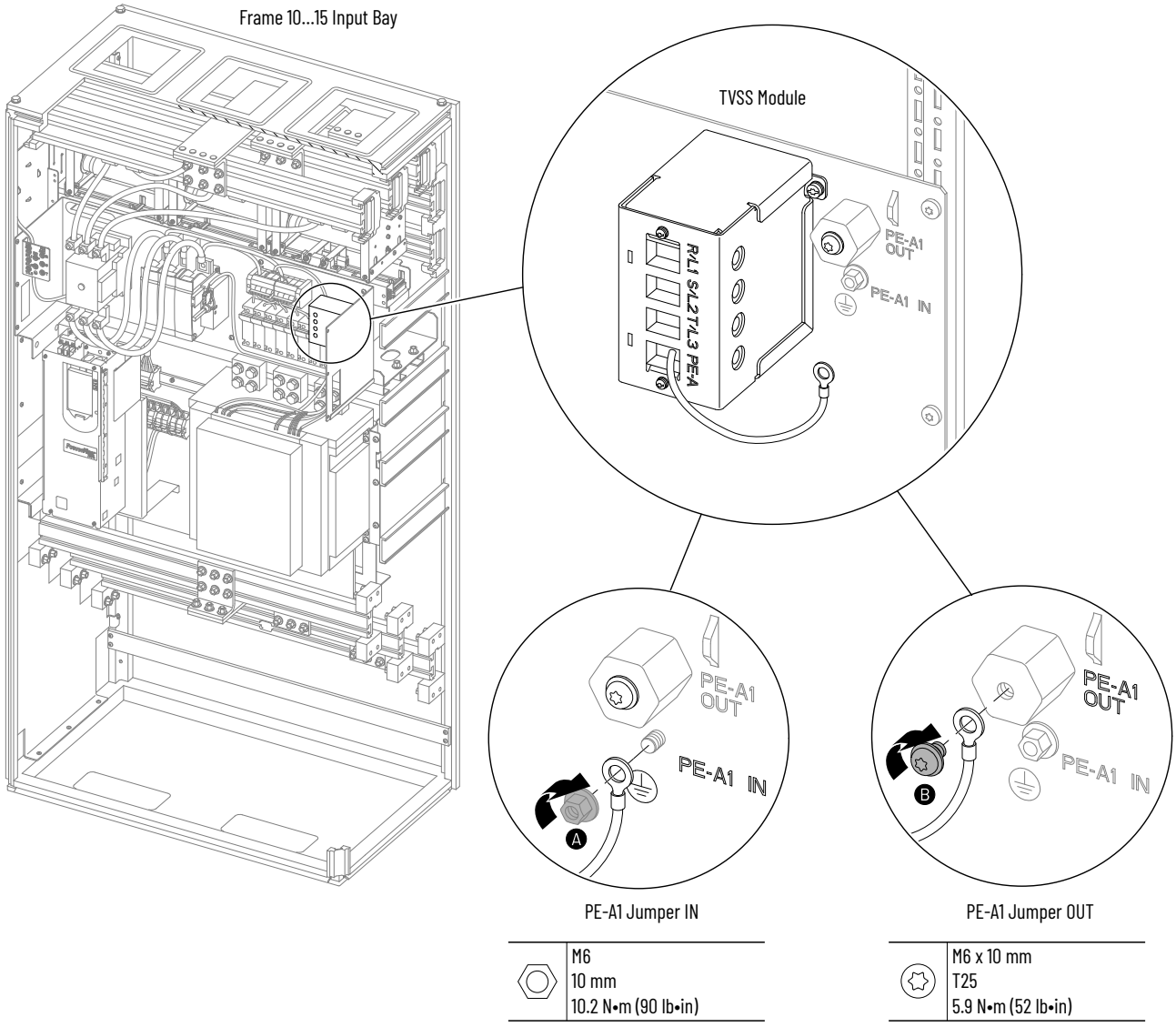
Figure 209. PE-A Power Jumper Configurations—Frame 8...15



PE-A1 Jumper Location and Configuration—Frames 8...15

The PE-A1 power jumper is connected to the TVSS module (Cat. No. 20-750-MACP-xx-TVSS). Frame 8...15 AC precharge modules include an insulated spacer and hardware for the PE-A1 jumper OUT position and hardware for the PE-A1 jumper IN position.

Figure 210. PE-A1 Power Jumper Configurations—Frames 8...15



PE-A1 Jumper IN

	M6 10 mm 10.2 N•m (90 lb•in)

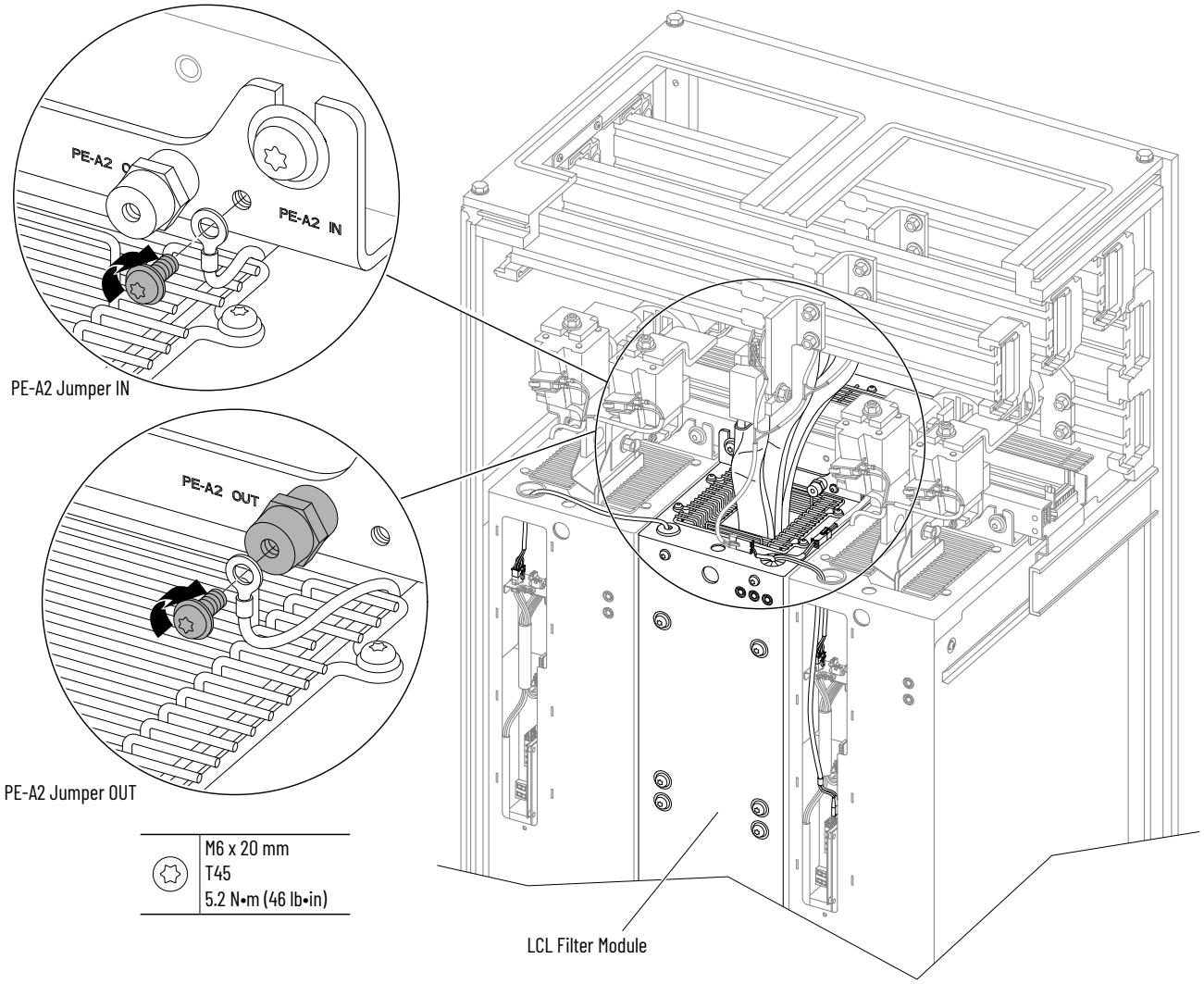
PE-A1 Jumper OUT

	M6 x 10 mm T25 5.9 N•m (52 lb•in)

PE-A2 Jumper Location and Configuration—Frames 8...15

The PE-A2 power jumper on frame 8...15 products is connected to the AC common mode filter circuit board in the LCL filter modules.

Figure 211. PE-A2 Power Jumper Configurations—Frames 8...15

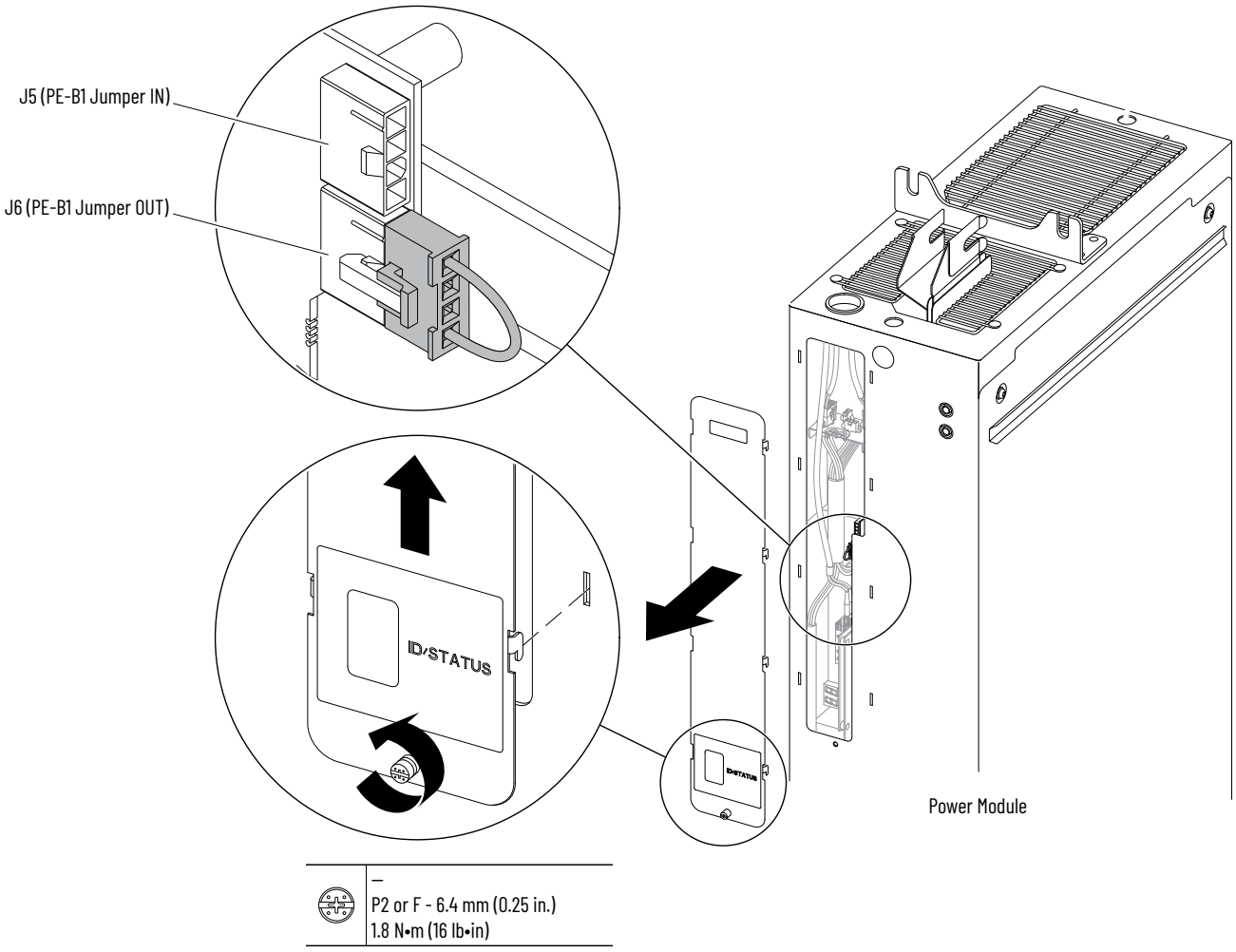


PE-B1 Jumper Location and Configuration—Frames 8...15

The PE-B1 power jumper on frame 8...15 products is connected to the power interface circuit board in the power modules.

IMPORTANT: Jumper is shown in the default installation location.

Figure 212. PE-B1 Power Jumper Configurations—Frame 8...15



ATTENTION: Risk of equipment damage exists.

The PE-B1 power jumper is not applicable to frame 7 power modules. Do not install a jumper in either of the PE-B1 positions.

Rockwell Automation Support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

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Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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