

PowerFlex 750-Series Power Jumpers

Catalog Numbers 20F, 20G, 21G

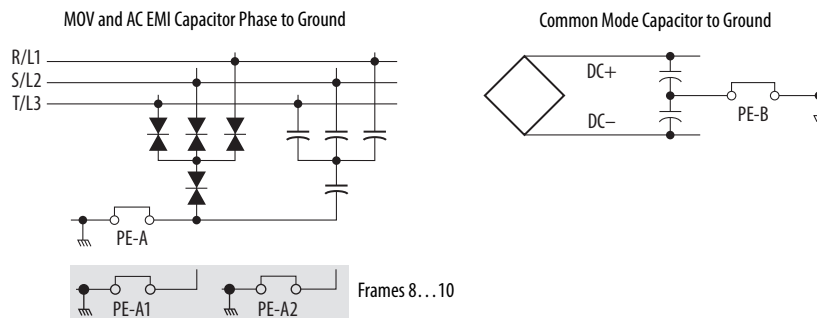
| Topic | Page |
|---|------|
| Summary of Changes | 1 |
| Precautions | 2 |
| Power Jumper Configuration | 2 |
| Jumper Installation, Removal, and Storage | 4 |
| Jumper Locations and Settings | 5 |

Summary of Changes

This publication contains new and updated information as indicated in the following table.

| Topic | Page |
|---|------|
| Added voltage code B to the Jumper Locations and Settings table | 5, 6 |

PowerFlex® 750-Series drives contain protective MOVs (metal-oxide varistors) and Common Mode Capacitors referenced to ground. To guard against unstable operation and/or damage, **the drive must be properly configured** as shown in the tables on [page 3](#).



ATTENTION: The following information is merely a guide for proper installation. Rockwell Automation cannot assume responsibility for the compliance or the noncompliance to any code, national, local or otherwise for the proper installation of this drive or associated equipment. A hazard of personal injury and/or equipment damage exists if codes are ignored.

Precautions

Before proceeding, verify that all power to the drive has been removed.

Qualified Personnel



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

Personal Safety



ATTENTION: To avoid an electric shock hazard, verify that the voltage on the bus capacitors has discharged completely before removing/installing jumpers.

Frames 1...7

Measure the DC bus voltage at the following points (see the PowerFlex 750-Series AC Drive Installation Instructions, publication [750-IN001](#) for locations):

- Measure the DC bus voltage at the power terminal block by measuring between the +DC and -DC terminals or between the +DC and -DC test point sockets if equipped.
- Also measure between the +DC terminal or test point and the chassis, and between the -DC terminal or test point and the chassis.

The voltage must be zero for all three measurements.

Frames 8...10

Measure the DC bus voltage at the DC+ and DC- TESTPOINT sockets on the front of the power module (see Installation Instructions for location).

Product Safety



ATTENTION: This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when installing, testing, servicing or repairing this assembly. Component damage can result if ESD control procedures are not followed. If you are not familiar with static control procedures, reference an applicable ESD protection guide.

Power Jumper Configuration



ATTENTION: Risk of equipment damage exists. The drive power source type must be accurately determined. Jumpers PE-A, PE-A1, PE-A2, and PE-B must be configured for the power source type according to the recommendations shown in the following table.

Recommended Power Jumper Configurations – Frames 1...7

| Power Source Type | Jumper PE-A ⁽¹⁾⁽²⁾ (MOV / Input Filter Caps) | Jumper PE-B (DC Bus Common Mode Caps) | Benefits of Correct Configuration on Power Source Type |
|--|--|--|---|
| Non-solid Ground <ul style="list-style-type: none"> AC fed ungrounded Impedance grounded B phase ground DC fed from an active converter | Disconnected | Disconnected | Helps avoid severe equipment damage when ground fault occurs. |
| Solid Ground <ul style="list-style-type: none"> AC fed solidly grounded DC fed from passive rectifier, which has a solidly grounded AC source | Connected | Connected | Reduced electrical noise, most stable operation, EMC compliance, reduced voltage stress on components and motor bearings. |

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

(2) Frame 5...7 Common DC Input drives do not have the PE-A jumper.

Recommended Power Jumper Configurations – Frames 8...10

| Power Source Type | Jumper PE-A1 ⁽¹⁾ (MOV) | Jumper PE-A2 (Input Filter Caps) | Jumper PE-B (DC Bus Common Mode Caps) | Benefits of Correct Configuration on Power Source Type |
|--|--------------------------------------|-------------------------------------|--|---|
| Non-solid Ground <ul style="list-style-type: none"> AC fed ungrounded Impedance grounded B phase ground DC fed from an active converter | Disconnected | Disconnected | Disconnected | Helps avoid severe equipment damage when ground fault occurs. |
| Solid Ground <ul style="list-style-type: none"> AC fed solidly grounded DC fed from passive rectifier, which has a solidly grounded AC source | Connected | Connected | Connected | Reduced electrical noise, most stable operation, EMC compliance, reduced voltage stress on components and motor bearings. |

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

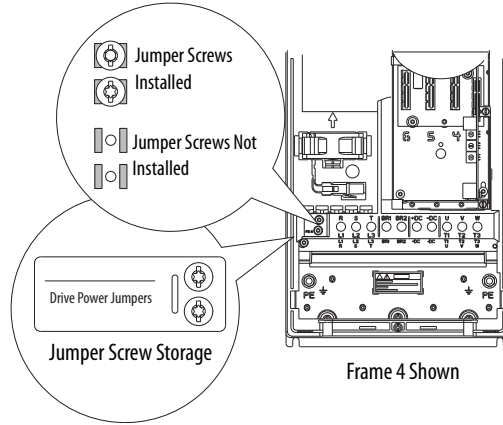
To connect or disconnect these devices, refer to pages [5...7](#).

IMPORTANT Common mode capacitors are used to conform with the EMC Directives. Removing these devices can withdraw the associated directive.

In addition, on an ungrounded distribution system where the line-to-ground voltages on any phase could exceed 125% of the nominal line-to-line voltage, install an isolation transformer. See Wiring and Grounding Guidelines for PWM AC Drives, publication [DRIVES-IN001](#), for more information on impedance grounded and ungrounded systems.

Jumper Installation, Removal, and Storage

Jumper screws (Frames 2...5), wires (Frames 1, 6 & 7), or plugs (Frames 8...10) are used to complete an electrical connection when installed/connected. When power jumper screws are not used, they are stored on the left interior chassis wall as shown.



ATTENTION: Hazard of equipment damage exists if jumpers are not properly disconnected.

For Frames 2...5, completely remove the jumper screw from the circuit board.

Frames 1, 6 & 7, secure the disconnected jumper wire to the standoff provided.

Frames 8...10 drive assemblies, secure the disconnected jumper plug in the socket that is provided and verify that all drive assemblies are identically configured.

When installing a jumper screw or wire, note the recommended torque listed.

Recommended Torque Values

| Frames | Recommended Torque | Recommended Screwdriver/Socket |
|--------|---|---|
| 1 | Not Applicable | Not Applicable |
| 2...5 | 1.36 N•m (12.0 lb•in) ±0.14 N•m (1.2 lb•in) | 6.4 mm (0.25 in.) flat or T15 Hexalobular |
| 6...7 | 1.36 N•m (12.0 lb•in) | 7 mm socket or T20 Hexalobular |

Drive Identification

Voltage Code Default Power Jumper Configuration

| | | | |
|---|--------------------------|---------------|--|
| Nameplate Specifications and Custom Catalog Number representing options installed at factory. See Nameplate 2 (located behind HIM) for equivalent base catalog number and separate options. | | | |
| Cat No. 20G11 ND011 A0NNNNN | | Series: A | |
| UL Open Type I/FP20 - without Debris Hood and Conduit Plate | | | |
| UL Type 1 - only with Debris Hood and Conduit Plate | | | |
| Power ND (HD) | 400V Class | 480V Class | |
| | 5.5 HP (4 HP) | 7.5 HP (5 HP) | |
| Input: 3 Phase, 47-63Hz | | | |
| AC Voltage Range | 342-440 | 432-528 | |
| Amps ND (HD) | xxx xxx | xxx xxx | |
| Output: 3 Phase, 0-400 Hz | | | |
| AC Voltage Range | 0-400 | 0-460 | |
| Base Frequency (default) | 50 Hz | 60 Hz | |
| Continuous Amps ND (HD) | xxx xxx | xxx xxx | |
| 60Sec Ovid Amps ND (HD) | xxx xxx | xxx xxx | |
| 3 Sec Ovid Amps ND (HD) | xxx xxx | xxx xxx | |
| Mfd. in 2009 on Jan. 19 | Original Firmware: x.xxx | | |
| Allen-Bradley | | | |
| Made in the U.S.A. Flac1C | Serial Number: xxxxxxxx | | |
| | | | |
| | | | |

The 'Voltage Code' and 'Default Power Jumper Configuration' are on the drive nameplate. Use this information to perform the proper procedure in the following tables.

Jumper Locations and Settings

The following pages show jumper locations and settings.

Jumper Locations and Settings

| Frame | Voltage Code | Factory Default Jumper Settings | | Power Source Type | |
|-------|------------------|---|--|--|--|
| | | Catalog Code 'A' | Catalog Code 'J' | | |
| 1 | B C D | PE-A jumper wire connected to ground. PE-B jumper wire insulated/disconnected from ground. | PE-A jumper wire and PE-B jumper wire connected to ground. | <p>Solid Ground Connect the MOV/Input Filter Cap jumper wire (PE-A) and the CM Cap jumper wire (PE-B) to ground.</p> <p>Non-Solid Ground Insulate the MOV/Input Filter Cap jumper wire (PE-A) and the CM Cap jumper wire (PE-B) from ground.</p> | |
| 2 | B C D | PE-A Installed PE-B Not Installed | PE-A Installed PE-B Installed | <p>Solid Ground Install jumper screws at 'PE-A' (MOV/Input Filter Cap) and 'PE-B' (CM Cap). See page 4 for recommended torque.</p> <p>Non-Solid Ground Remove both jumper screws.</p> | |
| 3 | B C D E | PE-A Installed PE-B Not Installed | PE-A Installed PE-B Installed | <p>Solid Ground Install jumper screws at 'PE-A' (MOV/Input Filter Cap) and 'PE-B' (CM Cap). See page 4 for recommended torque.</p> <p>Non-Solid Ground Remove both jumper screws.</p> | |
| 4 | B C D E | PE-A Installed PE-B Not Installed | PE-A Installed PE-B Installed | <p>Solid Ground Install Jumper screws at 'PE-A' (MOV/Input Filter Cap) and 'PE-B' (CM Cap). See page 4 for recommended torque.</p> <p>Non-Solid Ground Remove both jumper screws.</p> | |

Jumper Locations and Settings (Continued)

| Frame | Voltage Code | Factory Default Jumper Settings | | Power Source Type | |
|-------|-----------------------|---|--|---|--|
| | | Catalog Code 'A' | Catalog Code 'J' | | |
| 5 | B C D E | PE-A Installed PE-B Not Installed | PE-A Installed PE-B Installed | <p>Solid Ground Install jumper screws at 'PE-A' (MOV/Input Filter Cap) and 'PE-B' (CM Cap). See page 4 for recommended torque.</p> <p>Non-Solid Ground Remove both jumper screws.</p> | |
| 6 | B C D E F | PE-A jumper wire connected to ground. PE-B jumper wire insulated/disconnected from ground. | PE-A jumper wire and PE-B jumper wire connected to ground. | <p>Solid Ground Connect the MOV/Input Filter Cap jumper wire (PE-A) and the CM Cap jumper wire (PE-B) to ground. See page 4 for recommended torque.</p> <p>Non-Solid Ground Insulate the MOV/Input Filter Cap jumper wire (PE-A) and the CM Cap jumper wire (PE-B) from ground.</p> | |
| 7 | B C D E F | PE-A jumper wire connected to ground. PE-B jumper wire insulated/disconnected from ground. | PE-A jumper wire and PE-B jumper wire connected to ground. | <p>Solid Ground Connect the MOV/Input Filter Cap jumper wire (PE-A) and the CM Cap jumper wire (PE-B) to ground. See page 4 for recommended torque.</p> <p>Non-Solid Ground Insulate the MOV/Input Filter Cap jumper wire (PE-A) and the CM Cap jumper wire (PE-B) from ground.</p> | |

Jumper Locations and Settings (Continued)

| Frame | Voltage Code | Factory Default Jumper Settings | | Power Source Type |
|--------|------------------|--|---|--|
| | | Catalog Code 'A' | Catalog Code 'J' | |
| 8...10 | C D E F | PE-A1 & PE-A2 connected to ground. PE-B jumper plug insulated/disconnected from ground. | PE-A1, PE-A2, and PE-B connected to ground. | <p>Solid Ground Connect the MOV jumper wire (PE-A1), Input Filter Cap jumper plug (PE-A2), and the CM Cap jumper plug (PE-B) to ground. See page 4 for recommended torque.</p> <p>Non-Solid Ground Insulate/disconnect the MOV jumper wire (PE-A1), Input Filter Cap jumper plug (PE-A2), and the CM Cap jumper plug (PE-B) from ground.</p> <p>PE-A1 and GND positions on early production drives.</p> <p>1.86 N·m (16.0 lb-in)</p> |

Rockwell Automation Support

Use the following resources to access support information.

| | | |
|---|---|---|
| Technical Support Center | Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates. | https://rockwellautomation.custhelp.com/ |
| Local Technical Support Phone Numbers | Locate the phone number for your country. | http://www.rockwellautomation.com/global/support/get-support-now.page |
| Direct Dial Codes | Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer. | http://www.rockwellautomation.com/global/support/direct-dial.page |
| Literature Library | Installation Instructions, Manuals, Brochures, and Technical Data. | http://www.rockwellautomation.com/global/literature-library/overview.page |
| Product Compatibility and Download Center (PCDC) | Get help determining how products interact, check features and capabilities, and find associated firmware. | http://www.rockwellautomation.com/global/support/pcdc.page |

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete the How Are We Doing? form at http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002_-en-e.pdf.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

| Resource | Description |
|--|--|
| PowerFlex 750-Series AC Drive Installation Instructions, 750-IN001 . | Provides the basic steps that are required to install a PowerFlex 750-Series AC drive. |
| Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 . | Provides basic information to properly wire, help protect, and ground pulse-width modulated (PWM) AC drives. |
| Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control, publication SGI-1.1 . | Provides general guidelines for the application, installation, and maintenance of solid-state control. |
| Product Certifications website, http://www.ab.com . | Provides declarations of conformity, certificates, and other certification details. |

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846



PN-448244