

Additional Resources

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

| Resource | Description |
|---|---|
| PowerFlex 700 Adjustable Frequency AC Drive Installation Instructions – Frames 0...6, publication 20B-IN0019 | Provides detailed information about installation and start-up. |
| PowerFlex 700 Adjustable Frequency AC Drive Installation Instructions – Frames 7...10, publication 20B-IN0014 | |
| PowerFlex 700 Standard Control User Manual, publication 20B-UM001 | Provides detailed information on: <ul style="list-style-type: none"> Parameters and programming Faults, alarms, and troubleshooting |
| PowerFlex 700 Vector Control User Manual (v4.001 & up), publication 20B-UM002 | |
| PowerFlex 70 and PowerFlex 700 Reference Manual, publication PFLEX-RM001 | Provides detailed application specific information for programming and configuring the PowerFlex 700 drive. |
| PowerFlex 70 Enhanced Control and PowerFlex 700 Vector Control Reference Manual, publication PFLEX-RM004 | |
| Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives, publication DRIVES-IN001 | Provides basic information needed to properly wire and ground 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. |
| Preventive Maintenance of Industrial Control and Drive System Equipment, publication DRIVES-TD001 | Provides a guide to performing preventive maintenance. |
| Guarding Against Electrostatic Damage, publication 8000-4.5.2 | Provides practices for guarding against electrostatic damage (ESD). |
| Product Certifications website, http://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.

Product Overview

The PowerFlex 700 AC drive offers outstanding performance in an easy-to-use drive that you have come to expect from Rockwell Automation. This world-class performance comes in a small and competitively priced package. The PowerFlex 700 AC drive is designed to control three-phase induction motors in applications with requirements ranging from the simplest speed control to the most demanding torque control. The drive has volts per hertz, sensorless vector and vector control. Vector control includes Allen-Bradley's patented Force™ Technology which provides world class motor control.



Flexible Packaging and Mounting

- **IP20, NEMA / UL Type 1** – For conventional mounting inside or outside a control cabinet. Conduit plate is removable for easy installation and replacement without disturbing conduit.
- **IP54, NEMA / UL Type 12** – Stand-alone, wall mount drives are available for dust tight applications with power ratings from 75 to 200 Hp (Frames 5 & 6).
- **IP54, NEMA / UL Type 12** – Flange mount drives with an IP00, NEMA / UL Type Open front. These can be installed in a user supplied cabinet to meet IP54, NEMA / UL Type 12. This allows the majority of heat to be exhausted out the back of the cabinet while keeping the cabinet protected. Power ratings range from 75 to 700 Hp (Frames 5...10).
- **Zero Stacking™** – Frame 0...6 drives can be mounted next to each other with no reduction of surrounding air temperature rating (50°C). This unique bookshelf design also allows access to one drive without disturbing another.

Catalog Number Explanation

20B **D** **2P1** **A** **3** **A** **Y** **N** **A** **E** **C** **0** **NN** **AD**
a *b* *c1...c5* *d* *e* *f* *g* *h* *i* *j* *k* *l* *m* *n*

a

| Drive | |
|-------|---------------|
| Code | Type |
| 20B | PowerFlex 700 |

b

| Voltage Rating | | | | |
|----------------|---------|-----|---------|-----------|
| Code | Voltage | Ph. | Prechg. | Frames |
| B | 240V AC | 3 | - | 0...6 |
| C | 400V AC | 3 | - | 0...10 |
| D | 480V AC | 3 | - | 0...10 |
| E | 600V AC | 3 | - | 0...6 |
| F | 690V AC | 3 | - | 5...6 |
| H | 540V DC | - | N | 5...6, 10 |
| J | 650V DC | - | N | 5...6, 10 |
| N | 325V DC | - | Y | 5...6 |
| P | 540V DC | - | Y | 5...9 |
| R | 650V DC | - | Y | 5...9 |
| T | 810V DC | - | Y | 5...6 |
| W | 932V DC | - | Y | 5...6 |

c1

| ND Rating | | | | |
|-----------------------|-----------|-----------|-----|-------|
| 208/240V, 60 Hz Input | | | | |
| Code | 208V Amps | 240V Amps | Hp | Frame |
| 2P2 | 2.5 | 2.2 | 0.5 | 0 |
| 4P2 | 4.8 | 4.2 | 1.0 | 0 |
| 6P8 | 7.8 | 6.8 | 2.0 | 1 |
| 9P6 | 11 | 9.6 | 3.0 | 1 |
| 015 | 17.5 | 15.3 | 5.0 | 1 |
| 022 | 25.3 | 22 | 7.5 | 1 |
| 028 | 32.2 | 28 | 10 | 2 |
| 042 | 48.3 | 42 | 15 | 3 |
| 052 | 56 | 52 | 20 | 3 |
| 070 | 78.2 | 70 | 25 | 4 |
| 080 | 92 | 80 | 30 | 4 |
| 104 | 120 | 104 | 40 | 5 |
| 130 | 130 | 130 | 50 | 5 |
| 154 | 177 | 154 | 60 | 6 |
| 192 | 221 | 192 | 75 | 6 |
| 260 | 260 | 260 | 100 | 6 |

c2

| ND Rating | | | |
|-------------------|------|------|-------|
| 400V, 50 Hz Input | | | |
| Code | Amps | kW | Frame |
| 1P3 | 1.3 | 0.37 | 0 |
| 2P1 | 2.1 | 0.75 | 0 |
| 3P5 | 3.5 | 1.5 | 0 |
| 5P0 | 5.0 | 2.2 | 0 |
| 8P7 | 8.7 | 4.0 | 0 |
| 011 | 11.5 | 5.5 | 0 |
| 015 | 15.4 | 7.5 | 1 |
| 022 | 22 | 11 | 1 |
| 030 | 30 | 15 | 2 |
| 037 | 37 | 18.5 | 2 |
| 043 | 43 | 22 | 3 |
| 056 | 56 | 30 | 3 |
| 072 | 72 | 37 | 3 |
| 085 | 85 | 45 | 4 |
| 105 | 105 | 55 | 5 |
| 125 | 125 | 55 | 5 |
| 140 | 140 | 75 | 5 |
| 170 | 170 | 90 | 6 |
| 205 | 205 | 110 | 6 |
| 260 | 260 | 132 | 6 |
| 292 | 292 | 160 | 7 |
| 325 | 325 | 180 | 7 |
| 365 | 365 | 200 | 8 |
| 415 | 415 | 240 | 8 |
| 481 | 481 | 280 | 8 |
| 535 | 535 | 300 | 8 |
| 600 | 600 | 350 | 8 |
| 730 | 730 | 400 | 9 |
| 875 | 875 | 500 | 10 |

c3

| ND Rating | | | |
|-------------------|------|-----|-------|
| 480V, 60 Hz Input | | | |
| Code | Amps | Hp | Frame |
| 1P1 | 1.1 | 0.5 | 0 |
| 2P1 | 2.1 | 1.0 | 0 |
| 3P4 | 3.4 | 2.0 | 0 |
| 5P0 | 5.0 | 3.0 | 0 |
| 8P0 | 8.0 | 5.0 | 0 |
| 011 | 11 | 7.5 | 0 |
| 014 | 14 | 10 | 1 |
| 022 | 22 | 15 | 1 |
| 027 | 27 | 20 | 2 |
| 034 | 34 | 25 | 2 |
| 040 | 40 | 30 | 3 |
| 052 | 52 | 40 | 3 |
| 065 | 65 | 50 | 3 |
| 077 | 77 | 60 | 4 |
| 096 | 96 | 75 | 5 |
| 125 | 125 | 100 | 5 |
| 156 | 156 | 125 | 6 |
| 180 | 180 | 150 | 6 |
| 248 | 248 | 200 | 6 |
| 292 | 292 | 250 | 7 |
| 325 | 325 | 250 | 7 |
| 365 | 365 | 300 | 8 |
| 415 | 415 | 350 | 8 |
| 481 | 481 | 400 | 8 |
| 535 | 535 | 450 | 8 |
| 600 | 600 | 500 | 8 |
| 730 | 730 | 600 | 9 |
| 875 | 875 | 700 | 10 |

c4

| ND Rating | | | |
|-------------------|------|-----|-------|
| 600V, 60 Hz Input | | | |
| Code | Amps | Hp | Frame |
| 1P7 | 1.7 | 1.0 | 0 |
| 2P7 | 2.7 | 2.0 | 0 |
| 3P9 | 3.9 | 3.0 | 0 |
| 6P1 | 6.1 | 5.0 | 0 |
| 9P0 | 9.0 | 7.5 | 0 |
| 011 | 11 | 10 | 1 |
| 017 | 17 | 15 | 1 |
| 022 | 22 | 20 | 2 |
| 027 | 27 | 25 | 2 |
| 032 | 32 | 30 | 3 |
| 041 | 41 | 40 | 3 |
| 052 | 52 | 50 | 3 |
| 062 | 62 | 60 | 4 |
| 077 | 77 | 75 | 5 |
| 099 | 99 | 100 | 5 |
| 125 | 125 | 125 | 6 |
| 144 | 144 | 150 | 6 |

Certifications and Specifications

Certifications

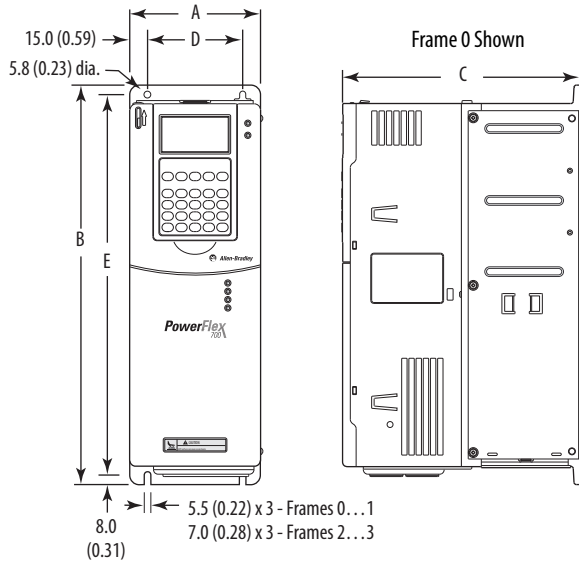
| Certification ⁽¹⁾ | Description | Frames | | | |
|---|---|------------|------|-------|------------------|
| | | 0...4 | | 5...6 | 7...10 |
| | | 230...480V | 600V | | |
| ABS | American Bureau of Shipping MA Certificate 08-HS303172B-3-PDA for auxiliary services on AB Classed vessels and offshore platforms | ✓ | | ✓ | |
| CE | Certified by Rockwell Automation to be in conformity with the essential requirements of the applicable European Directives and the standards referenced below have been applied: | | | | |
| | 2006/95/EC (Low Voltage Directive) EN 50178 Electronic Equipment for use in Power Installations | ✓ | ✓ | ✓ | ✓ |
| | 2004/108/EC (EMC Directive) EN 61800-3 Adjustable Speed electrical power drive systems - Part 3: EMC requirements and specific test methods. | ✓ | | ✓ | ✓ ⁽²⁾ |
| RCM | Certified by Rockwell Automation to be in conformity with the requirements of the applicable Australian legislation and the standards referenced: IEC 61800-3. | ✓ | | ✓ | ✓ |
| c-UL-us | Listed to UL508C and C22.2 No. 14. Packaged drives may be listed to UL508A. | ✓ | ✓ | ✓ | ✓ |
| EAC | Low Voltage TR CU 004/2011 EMC TR CU 020/2011 | ✓ | ✓ | ✓ | ✓ |
| EPRI /SEMIF47 | EPRI Quality Star Certificates SEMIF47.115 and SEMIF47.127 for SEMI F47 compliance, only 480V units tested | ✓ | | ✓ | |
| Functional Safety | EC-Type-Examination Certificate TUV 05 ATEX 7153 for directive 94/9/EC: Safe turn off of certified ATEX motors used in Group II Category (2) GD potentially explosive atmospheres. | ✓ | ✓ | ✓ | ✓ |
| Korean KC Registration | KCC-REM-RAA-20B Refer to the certificate of registration for specific drive catalog numbers that have this certification. | ✓ | ✓ | ✓ | ✓ |
| Lloyd's Register | Lloyd's Register Type Approval Certificate 08-HS303172B-3-PDA (marine certification) | ✓ | | ✓ | |
| Trentec | Tested by Trentec to be compliant with AC156 Acceptance Criteria for Seismic Qualification Testing of Nonstructural Components and 2003 International Building Code for worst-case seismic level for USA excluding site class F | ✓ | ✓ | ✓ | |
| Designed to Meet Applicable Requirements | CMAA Specification #70 (Crane Manufacturers of America Assoc.) | ✓ | ✓ | ✓ | ✓ |
| | NFPA 70 – US National Electrical Code | ✓ | ✓ | ✓ | ✓ |
| | NEMA ICS 7.1 – Safety Standards for Construction and Guide for Selection, Installation, and Operation of Adjustable Speed Drive Systems | ✓ | ✓ | ✓ | ✓ |
| | IEC 61800-2 – Adjustable Speed Electrical Power Drive Systems - Part 2: General Requirements - Rating specifications for low voltage adjustable frequency AC power drive systems. | ✓ | ✓ | ✓ | ✓ |

(1) See the product certifications website, <http://www.rockwellautomation.com/products/certification> for declarations of conformity, certificates, and other certification details.

(2) Frames 7...10 provided as IP00 or NEMA / UL Open style must be installed in a supplementary enclosure which provides adequate attenuation of radiated emissions in order to be compliant with EN 61800-3.

Dimensions and Weights

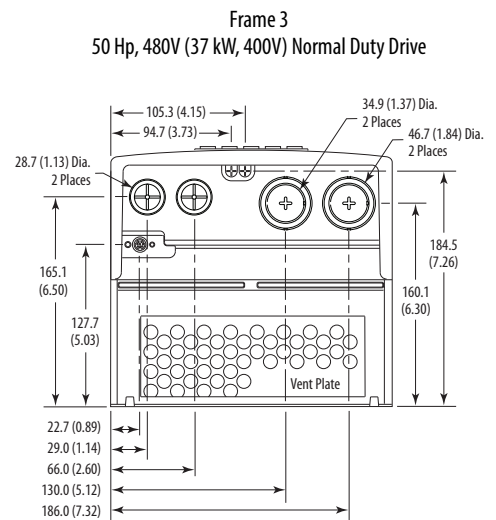
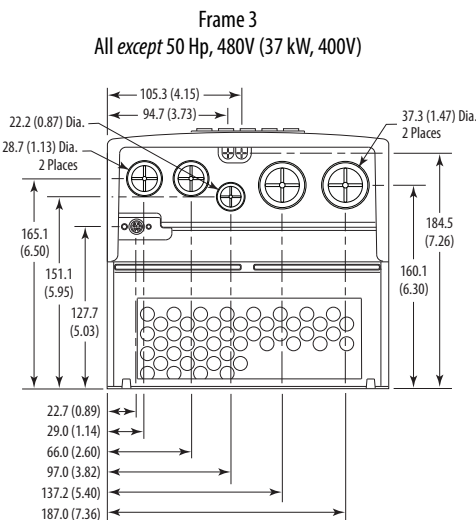
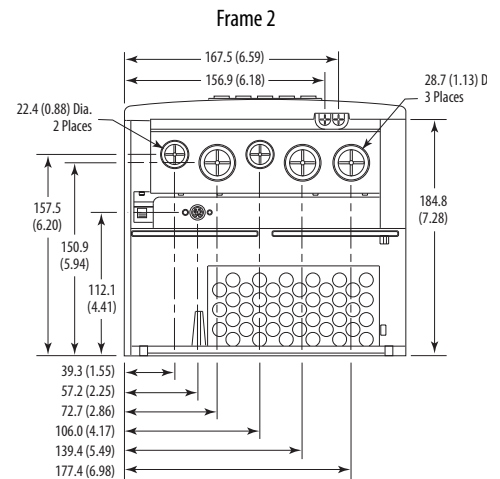
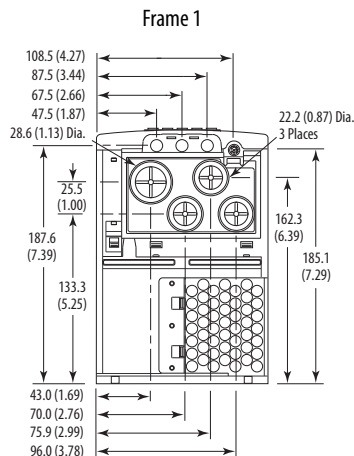
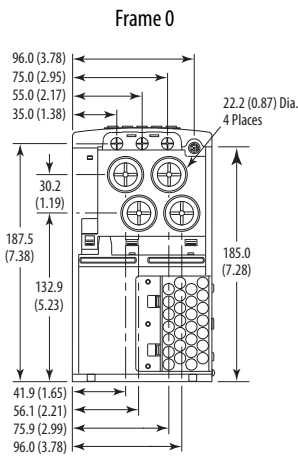
Frames 0...3 – IP20, NEMA / UL Type 1



| Frame | A | B | C | D | E | Weight ⁽¹⁾ kg (lbs.) | |
|-------|--------------|---------------|--------------|--------------|---------------|---------------------------------|-------------------|
| | | | | | | Drive | Drive & Packaging |
| 0 | 110.0 (4.33) | 336.0 (13.23) | 200.0 (7.87) | 80.0 (3.15) | 320.0 (12.60) | 5.22 (11.5) | 8.16 (18) |
| 1 | 135.0 (5.31) | 336.0 (13.23) | 200.0 (7.87) | 105.0 (4.13) | 320.0 (12.60) | 7.03 (15.5) | 9.98 (22) |
| 2 | 222.0 (8.74) | 342.5 (13.48) | 200.0 (7.87) | 192.0 (7.56) | 320.0 (12.60) | 12.52 (27.6) | 15.20 (33.5) |
| 3 | 222.0 (8.74) | 517.5 (20.37) | 200.0 (7.87) | 192.0 (7.56) | 495.0 (19.49) | 18.55 (40.9) | 22.68 (50) |

(1) Weights include HIM and Standard I/O.

Dimensions are in millimeters and (inches)



Drive Options

Human Interface Modules



| Description | Cat. No. |
|---|------------|
| No HIM (Blank Plate), Handheld/Local (Drive Mount) | 20-HIM-A0 |
| LCD Display, Full Numeric Keypad, Handheld/Local (Drive Mount) | 20-HIM-A3 |
| Enhanced, LCD, Full Numeric Keypad, Handheld/Local (Drive Mount) | 20-HIM-A6 |
| Remote (Panel Mount) LCD Display, Full Numeric Keypad ⁽¹⁾⁽²⁾ | 20-HIM-C3S |
| Enhanced, LCD, Full Numeric Keypad ?‡ | 20-HIM-C6S |

- (1) IP66, NEMA Type 4X/12 - For indoor use only.
- (2) Includes a 1202-C30 interface cable (3 meters) for connection to drive.

Human Interface Module Accessories

| Description | Cat. No. |
|--|-------------------|
| Bezel Kit for LCD HIMs, NEMA Type 1 ⁽¹⁾ | 20-HIM-B1 |
| PowerFlex HIM Interface Cable, 1 m (39 in) ⁽²⁾ | 20-HIM-H10 |
| Comm Option Cable Kit (Male-Male) | |
| 0.33 Meters (1.1 Feet) | 1202-C03 |
| 1 Meter (3.3 Feet) | 1202-C10 |
| 3 Meter (9.8 Feet) | 1202-C30 |
| 9 Meter (29.5 Feet) | 1202-C90 |
| Cable Kit (Male-Female) ⁽³⁾ | |
| 0.33 Meters (1.1 Feet) | 1202-H03 |
| 1 Meter (3.3 Feet) | 1202-H10 |
| 3 Meter (9.8 Feet) | 1202-H30 |
| 9 Meter (29.5 Feet) | 1202-H90 |
| DPI Cable Kit with Connectors, Tools and 100 m (328 ft.) Cable | 1202-CBL-KIT-100M |
| DPI Cable Connector Kit | 1202-TB-KIT-SET |
| DPI/SCANport™ One to Two Port Splitter Cable | 1203-S03 |

- (1) Includes a 1202-C30 interface cable (3 meters) for connection to drive.
- (2) Required only when HIM is used as handheld or remote.
- (3) Required in addition to 20-HIM-H10 for distances up to a total maximum of 10 Meters (32.8 Feet).