

**Enclosed 18-Pulse Drives****Contents**

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**CPX Enclosed 18-Pulse Drives****Product Description**

Eaton's enclosed 18-pulse drives use advanced 18-pulse technology that significantly reduces line harmonics at the drive input terminals, resulting in one of the purest sinusoidal waveforms available.

The enclosed 18-pulse drive also delivers True Power Factor—in addition to reducing harmonic distortion, the enclosed 18-pulse drive prevents upstream transformer overheating and overloading of breakers and feeders, enabling the application of adjustable frequency drives on generators and other high impedance power systems.

**Features and Benefits**

Enclosed 18-pulse drive features include:

- Space optimized enclosure
- Simple layout for power options
- NEMA Type 1, Type 1 filtered and gasketed, Type 3R
- Input voltage: 480 V, 208 V, 575 V
- Complete range of control, network and power options
- Horsepower range:
  - 480 V, 25–800 hp (consult factory for larger sizes)
  - 208/230 V, 25–200 hp
  - 575 V, 25–800 hp (consult factory for larger sizes)
- Over 15 years of 18-pulse clean power experience
- 65 kAIC Standard at 480 V and 208 V
- 100 kAIC optional

**Standards and Certifications**

UL 508C



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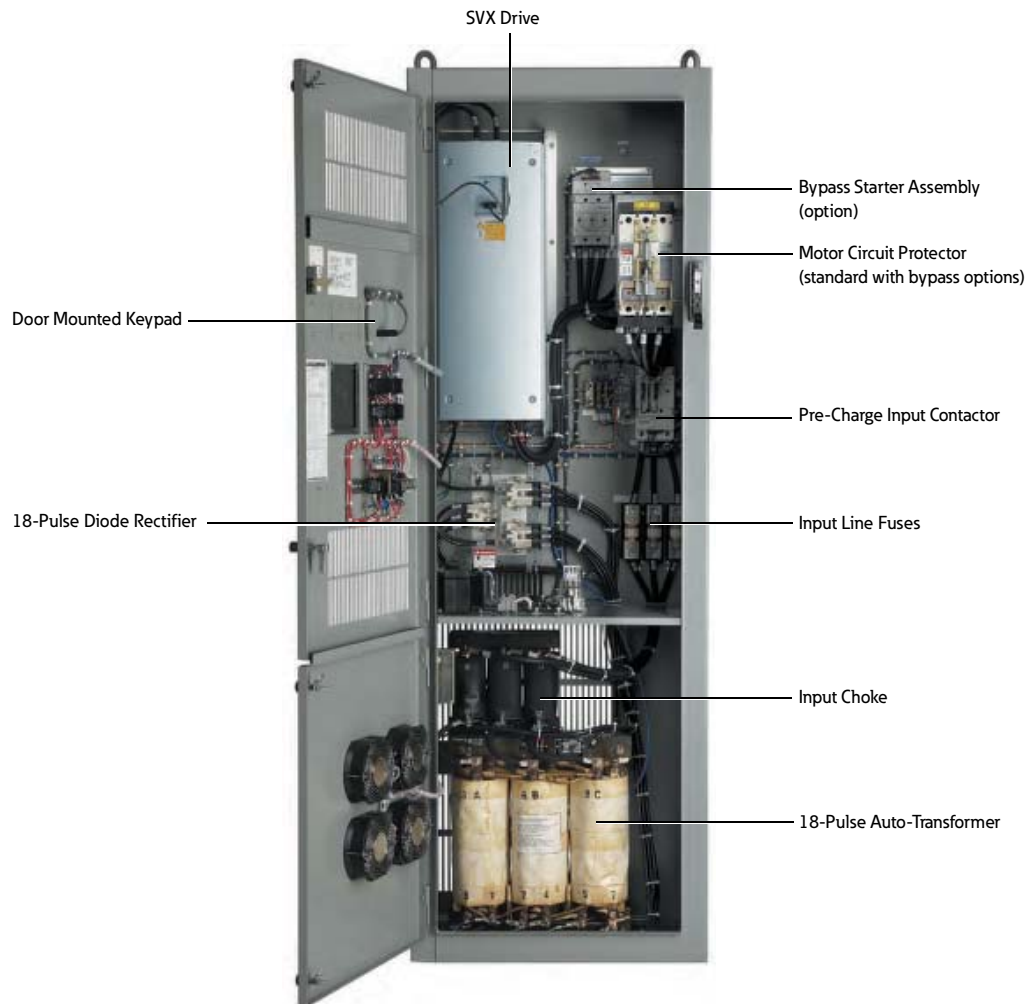
## Adjustable Frequency Drives

Clean Power Drives

### Product Identification

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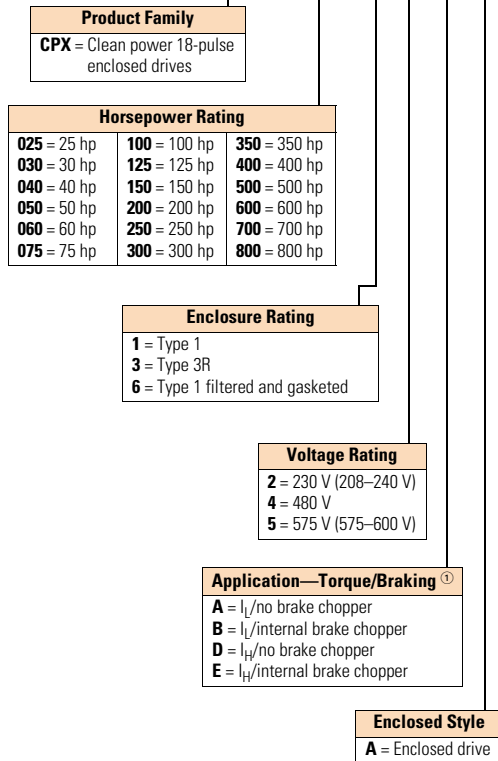
Type 1, 25–150 hp (30 x 90 x 21.50)



## Catalog Number Selection

## Enclosed 18-Pulse Drive

CPX 100 1 4 A A



Build options alphabetically and numerically.

Enclosed Options <sup>②③④</sup>		Type
<b>K1</b>	Door-mounted speed potentiometer <sup>⑤</sup>	Control
<b>K2</b>	Door-mounted speed potentiometer with HOA selector switch <sup>⑤</sup>	Control
<b>K4</b>	HAND/OFF/AUTO switch 0.87-inch (22 mm)	Control
<b>K5</b>	MANUAL/AUTO reference switch 0.87-inch (22 mm)	Control
<b>K6</b>	START/STOP pushbuttons 0.87-inch (22 mm)	Control
<b>KF</b>	Bypass test switch for RA	Addl. bypass
<b>K0</b>	Standard elapsed time meter	Control
<b>L1</b>	Power, RUN and fault pilot lights	Light
<b>L2</b>	Bypass pilot lights for RA, RB, bypass options	Addl. bypass
<b>LE</b>	Red RUN light	Light
<b>P1</b>	Input disconnect	Input
<b>P8</b>	Surge protective device	Input
<b>PE</b>	Output contactor	Output
<b>PF</b>	Output filter	Output
<b>PG</b>	MotoRx (up to 600 ft [182.9 m]) 1000 V/μS dV/dt filter	Output
<b>PH</b>	Single overload relay	Output
<b>PI</b>	Dual overload relays	Output
<b>PN</b>	Dual overloads for bypass	Addl. bypass
<b>RA</b>	Manual HOA bypass controller	Bypass
<b>RC</b>	Auto transfer HOA bypass controller	Bypass
<b>RG</b>	Reduced voltage starter for bypass	Bypass
<b>S7</b>	10.00-inch (254.0 mm) expansion	Enclosure
<b>S8</b>	20.00-inch (508.0 mm) expansion	Enclosure
<b>S9</b>	Space heater	Enclosure

Communication Options <sup>⑥</sup>	
<b>C2</b> = Modbus <sup>®</sup>	<b>CA</b> = Johnson Controls N2
<b>C3</b> = PROFIBUS <sup>®</sup> DP	<b>CI</b> = Modbus TCP
<b>C4</b> = LonWorks <sup>®</sup>	<b>CJ</b> = BACnet
<b>C5</b> = PROFIBUS DP (D9 connector)	<b>CO</b> = EtherNet/IP
<b>C6</b> = CANopen (slave)	<b>D3</b> = RS-232 with D9 connection
<b>C7</b> = DeviceNet <sup>™</sup>	
<b>C8</b> = Modbus (D9 Type connector)	

Control Options
<b>B1</b> = 6 DI, 1 ext +24 Vdc/ext +24 Vdc
<b>B2</b> = 1 RO (NC/NO), 1 RO (NO), 1 therm
<b>B4</b> = 1 AI (mA isolated), 2 AO (mA isolated), 1 ext +24 Vdc/EXT +24 Vdc
<b>B5</b> = 3 RO (NO)
<b>B8</b> = 1 ext +24 Vdc/ext +24 Vdc, 3 Pt100
<b>B9</b> = 1 RO (NO), 5 DI 42–240 Vac input

Engineered Options
<b>VB</b>   Varnished boards

## Notes

- ① Brake chopper is standard in drives up to 30 hp I<sub>H</sub> or 40 hp I<sub>L</sub> at 480 V. It is optional in larger drives.
- ② Local/remote keypad is included as the standard control panel.
- ③ Some options are voltage and/or horsepower specific. Consult your Eaton representative for details.
- ④ See **Pages V6-T2-368 and V6-T2-369** for complete descriptions.
- ⑤ Includes local/remote speed reference switch.
- ⑥ See **Pages V6-T2-366 and V6-T2-367** for complete descriptions.

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## Adjustable Frequency Drives

### Clean Power Drives

#### Product Selection

##### When Ordering

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- Select a base catalog number that meets the application requirements—nominal horsepower, voltage and enclosure rating. (The enclosed drive's continuous output amp rating should be equal to or greater than the motor's full load amp rating.) The base-enclosed package includes a standard drive, door-mounted alphanumeric panel and enclosure.

##### Ambient Temperature Ratings

Frame Size	I <sub>H</sub>	I <sub>L</sub>
FR4–FR9	50 °C	50 °C
FR10 and above	40 °C	40 °C

- If dynamic brake chopper or control/communication option is desired, change the appropriate code in the base catalog number.
- All of the programming is exactly the same as the standard SVX drive.
- Select enclosed options. Add the codes as suffixes to the base catalog number in alphabetical and numeric order.

#### 208 V Drives

##### Enclosed 18-Pulse Drive



##### Enclosed 18-Pulse Base Drive Type 1

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	75	FR7	<b>CPX02512AA</b>
	30	88	FR7	<b>CPX03012AA</b>
	40	114	FR7	<b>CPX04012AA</b>
	50	143	FR8	<b>CPX05012AA</b>
	60	169	FR8	<b>CPX06012AA</b>
	75	211	FR8	<b>CPX07512AA</b>
8	100	273	FR9	<b>CPX10012AA</b>
9	125	343	FR8T	<b>CPX12512AA</b>
	150	396	FR8T	<b>CPX15012AA</b>
10	200	480	FR9T	<b>CPX20012AA</b>
<b>High Overload Drive</b>				
7	25	75	FR7	<b>CPX02512DA</b>
	30	88	FR7	<b>CPX03012DA</b>
	40	114	FR8	<b>CPX04012DA</b>
	50	143	FR8	<b>CPX05012DA</b>
	60	169	FR8	<b>CPX06012DA</b>
	75	211	FR9	<b>CPX07512DA</b>
8	100	273	FR8T	<b>CPX10012DA</b>
9	125	343	FR8T	<b>CPX12512DA</b>
	150	396	FR9T	<b>CPX15012DA</b>
10	200	480	FR9T	<b>CPX20012DA</b>

##### Notes

- ① See enclosure dimensions beginning on **Page V6-T2-374**.
- ② hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.
- ③ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.

## Enclosed 18-Pulse Drive



## Enclosed 18-Pulse Base Drive NEMA 12 Filtered

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	75	FR7	CPX02562AA
	30	88	FR7	CPX03062AA
	40	114	FR7	CPX04062AA
	50	143	FR8	CPX05062AA
	60	169	FR8	CPX06062AA
	75	211	FR8	CPX07562AA
8	100	273	FR9	CPX10062AA
9	125	343	FR8T	CPX12562AA
	150	396	FR8T	CPX15052AA
10	200	480	FR9T	CPX20062AA
<b>High Overload Drive</b>				
7	25	75	FR7	CPX02562DA
	30	88	FR7	CPX03062DA
	40	114	FR8	CPX04062DA
	50	143	FR8	CPX05062DA
	60	169	FR8	CPX06062DA
	75	211	FR8	CPX07562DA
8	100	273	FR9	CPX10062DA
9	125	343	FR8T	CPX12562DA
	150	396	FR8T	CPX15062DA
10	200	480	FR9T	CPX20062DA

Enclosed 18-Pulse Base Drive Type 3R <sup>④</sup>

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	75	FR7	CPX02532AA
	30	88	FR7	CPX03032AA
	40	114	FR7	CPX04032AA
	50	143	FR8	CPX05032AA
	60	169	FR8	CPX06032AA
	75	211	FR8	CPX07532AA
8	100	273	FR9	CPX10032AA
9	125	343	FR8T	CPX12532AA
<b>High Overload Drive</b>				
7	25	75	FR7	CPX02532DA
	30	88	FR7	CPX03032DA
	40	114	FR8	CPX04032DA
	50	143	FR8	CPX05032DA
	60	169	FR8	CPX06032DA
	75	211	FR8	CPX07532DA
8	100	273	FR9	CPX10032DA
9	125	343	FR8T	CPX12532DA

**Notes**

- ① See enclosure dimensions beginning on **Page V6-T2-374**.
- ② hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.
- ③ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.
- ④ All Type 3R drives use the Size F enclosure.

## 480 V Drives

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## Enclosed 18-Pulse Drive



## Enclosed 18-Pulse Base Drive Type 1

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	34	FR6	<b>CPX02514BA</b>
	30	40	FR6	<b>CPX03014BA</b>
	40	52	FR6	<b>CPX04014BA</b>
	50	65	FR7	<b>CPX05014AA</b>
	60	77	FR7	<b>CPX06014AA</b>
	75	96	FR7	<b>CPX07514AA</b>
	100	124	FR8	<b>CPX10014AA</b>
	125	156	FR8	<b>CPX12514AA</b>
	150	180	FR8	<b>CPX15014AA</b>
8	200	240	FR9	<b>CPX20014AA</b>
	250	300	FR9	<b>CPX25014AA</b>
9	300	361	FR10	<b>CPX30014AA</b>
	350	414	FR10	<b>CPX35014AA</b>
	400	477	FR10	<b>CPX40014AA</b>
10	500	590	FR11	<b>CPX50014AA</b>
	550	650	FR11	<b>CPX55014AA</b>
	600	730	FR11	<b>CPX60014AA</b>
11	650	820	FR12	<b>CPX65014AA</b>
	700	920	FR12	<b>CPX70014AA</b>
	800	1030	FR12	<b>CPX80014AA</b>
<b>High Overload Drive</b>				
7	25	34	FR6	<b>CPX02514EA</b>
	30	40	FR6	<b>CPX03014EA</b>
	40	52	FR7	<b>CPX04014DA</b>
	50	65	FR7	<b>CPX05014DA</b>
	60	77	FR7	<b>CPX06014DA</b>
	75	96	FR8	<b>CPX07514DA</b>
	100	124	FR8	<b>CPX10014DA</b>
	125	156	FR8	<b>CPX12514DA</b>
	8	150	180	FR9
200		240	FR9	<b>CPX20014DA</b>
9	250	302	FR10	<b>CPX25014DA</b>
	300	361	FR10	<b>CPX30014DA</b>
	350	414	FR10	<b>CPX35014DA</b>
10	400	477	FR11	<b>CPX40014DA</b>
	500	590	FR11	<b>CPX50014DA</b>
	550	650	FR11	<b>CPX55014DA</b>
11	600	730	FR12	<b>CPX60014DA</b>
	650	820	FR12	<b>CPX65014DA</b>
	700	920	FR12	<b>CPX70014DA</b>

**Notes**

① See enclosure dimensions beginning on **Page V6-T2-374**.

② hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.

③ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.

## Enclosed 18-Pulse Drive



## Enclosed 18-Pulse Base Drive NEMA 12 Filtered

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	34	FR6	CPX02564BA
	30	40	FR6	CPX03064BA
	40	52	FR6	CPX04064BA
	50	65	FR7	CPX05064AA
	60	77	FR7	CPX06064AA
	75	96	FR7	CPX07564AA
	100	124	FR8	CPX10064AA
	125	156	FR8	CPX12564AA
8	200	240	FR9	CPX20064AA
	250	300	FR9	CPX25064AA
9	300	361	FR10	CPX30064AA
	350	414	FR10	CPX35064AA
	400	477	FR10	CPX40064AA
10	500	590	FR11	CPX50064AA
	550	650	FR11	CPX55064AA
	600	730	FR11	CPX60064AA
11	650	820	FR11	CPX65064AA
	700	920	FR12	CPX70064AA
	800	1030	FR12	CPX80064AA
<b>High Overload Drive</b>				
7	25	34	FR6	CPX02564EA
	30	40	FR6	CPX03064EA
	40	52	FR7	CPX04064DA
	50	65	FR7	CPX05064DA
	60	77	FR7	CPX06064DA
	75	96	FR8	CPX07564DA
	100	124	FR8	CPX10064DA
	125	156	FR8	CPX12564DA
8	150	180	FR9	CPX15064DA
	200	240	FR9	CPX20064DA
9	250	302	FR10	CPX25064DA
	300	361	FR10	CPX30064DA
	350	414	FR10	CPX35014DA
10	400	477	FR11	CPX40064DA
	500	590	FR11	CPX50064DA
	550	650	FR11	CPX55064DA
11	600	730	FR12	CPX60064DA
	650	820	FR12	CPX65064DA
	700	920	FR12	CPX70064DA

**Notes**

① See enclosure dimensions beginning on **Page V6-T2-374**.

② hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.

③ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.

Enclosed 18-Pulse Drive



#### Enclosed 18-Pulse Base Drive Type 3R ①

Enclosure Size ②	hp ③	Current (A)	Chassis Frame	Base Catalog Number ④
<b>Low Overload Drive</b>				
7	25	34	FR6	<b>CPX02534AA</b>
	30	40	FR6	<b>CPX03034AA</b>
	40	52	FR6	<b>CPX04034AA</b>
	50	65	FR7	<b>CPX05034AA</b>
	60	77	FR7	<b>CPX06034AA</b>
	75	96	FR7	<b>CPX07534AA</b>
	100	124	FR8	<b>CPX10034AA</b>
	125	156	FR8	<b>CPX12534AA</b>
	150	180	FR8	<b>CPX15034AA</b>
8	200	240	FR9	<b>CPX20034AA</b>
	250	300	FR9	<b>CPX25034AA</b>
<b>High Overload Drive</b>				
7	25	34	FR6	<b>CPX02534DA</b>
	30	40	FR6	<b>CPX03034DA</b>
	40	52	FR7	<b>CPX04034DA</b>
	50	65	FR7	<b>CPX05034DA</b>
	60	77	FR7	<b>CPX06034DA</b>
	75	96	FR8	<b>CPX07534DA</b>
	100	124	FR8	<b>CPX10034DA</b>
	125	156	FR8	<b>CPX12534DA</b>
	150	180	FR8	<b>CPX15034DA</b>
8	200	240	FR9	<b>CPX20034DA</b>
	250	300	FR9	<b>CPX25034DA</b>

**Notes**

- ① All Type 3R drives use the Size F enclosure.
- ② See enclosure dimensions beginning on **Page V6-T2-374**.
- ③ hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.
- ④ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.



## 575 V Drives

## Enclosed 18-Pulse Drive



## Enclosed 18-Pulse Base Drive Type 1

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	27	FR6	CPX02515AA
	30	32	FR6	CPX03015AA
	40	41	FR7	CPX04015AA
	50	52	FR7	CPX05015AA
	60	62	FR8	CPX06015AA
	75	77	FR8	CPX07515AA
	100	99	FR8	CPX10015AA
8	125	125	FR9	CPX12515AA
	150	144	FR9	CPX15015AA
	200	192	FR9	CPX20015AA
9	250	242	FR10	CPX25015AA
	300	289	FR10	CPX30015AA
	400	382	FR10	CPX40015AA
10	500	472	FR11	CPX50015AA
	600	730	FR11	CPX60015AA
11	650	820	FR12	CPX65015AA
	700	920	FR12	CPX70015AA
	800	1030	FR12	CPX80015AA
<b>High Overload Drive</b>				
7	25	27	FR6	CPX02515DA
	30	32	FR7	CPX03015DA
	40	41	FR7	CPX04015DA
	50	52	FR8	CPX05015DA
	60	62	FR8	CPX06015DA
	75	77	FR8	CPX07515DA
8	100	99	FR9	CPX10015DA
	125	125	FR9	CPX12515DA
	150	144	FR9	CPX15015DA
9	200	192	FR10	CPX20015DA
	250	242	FR10	CPX25015DA
	300	289	FR10	CPX30015DA
10	400	382	FR11	CPX40015DA
	450	472	FR11	CPX45015DA
	500	730	FR11	CPX50015DA
11	600	820	FR12	CPX60015DA
	650	920	FR12	CPX65015DA
	700	1030	FR12	CPX70015DA

**Notes**

① See enclosure dimensions beginning on **Page V6-T2-374**.

② hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.

③ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.

## Enclosed 18-Pulse Drive

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## Enclosed 18-Pulse Base Drive NEMA 12 Filtered

Enclosure Size <sup>①</sup>	hp <sup>②</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>③</sup>
<b>Low Overload Drive</b>				
7	25	27	FR6	CPX02565AA
	30	32	FR6	CPX03065AA
	40	41	FR7	CPX04065AA
	50	52	FR7	CPX05065AA
	60	62	FR8	CPX06065AA
	75	77	FR8	CPX07565AA
	100	99	FR8	CPX10065AA
8	125	125	FR9	CPX12565AA
	150	144	FR9	CPX15065AA
	200	192	FR9	CPX20065AA
9	250	242	FR10	CPX25065AA
	300	289	FR10	CPX30065AA
	400	382	FR10	CPX40065AA
10	500	472	FR11	CPX50065AA
	600	730	FR11	CPX60065AA
11	650	820	FR12	CPX65065AA
	700	920	FR12	CPX70065AA
	800	1030	FR12	CPX80065AA
<b>High Overload Drive</b>				
7	25	27	FR6	CPX02565DA
	30	32	FR7	CPX03065DA
	40	41	FR7	CPX04065DA
	50	52	FR8	CPX05065DA
	60	62	FR8	CPX06065DA
	75	77	FR8	CPX07565DA
	8	100	99	FR9
125		125	FR9	CPX12565DA
150		144	FR9	CPX15065DA
9	200	192	FR10	CPX20065DA
	250	242	FR10	CPX25065DA
	300	289	FR10	CPX30065DA
10	400	382	FR11	CPX40065DA
	450	472	FR11	CPX45065DA
	500	730	FR11	CPX50065DA
11	600	820	FR12	CPX60065DA
	650	920	FR12	CPX65065DA
	700	1030	FR12	CPX70065DA

**Notes**

- ① See enclosure dimensions beginning on **Page V6-T2-374**.  
 ② hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.  
 ③ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.

Enclosed 18-Pulse  
DriveEnclosed 18-Pulse Base Drive Type 3R <sup>①</sup>

Enclosure Size <sup>②</sup>	hp <sup>③</sup>	Current (A)	Chassis Frame	Base Catalog Number <sup>④</sup>
<b>Low Overload Drive</b>				
7	25	27	FR6	<b>CPX02535AA</b>
	30	32	FR6	<b>CPX03035AA</b>
	40	41	FR7	<b>CPX04035AA</b>
	50	52	FR7	<b>CPX05035AA</b>
	60	62	FR8	<b>CPX06035AA</b>
	75	77	FR8	<b>CPX07535AA</b>
	100	99	FR8	<b>CPX10035AA</b>
8	125	125	FR9	<b>CPX12535AA</b>
	150	144	FR9	<b>CPX15035AA</b>
	200	192	FR9	<b>CPX20035AA</b>
<b>High Overload Drive</b>				
7	25	27	FR6	<b>CPX02535DA</b>
	30	32	FR7	<b>CPX03035DA</b>
	40	41	FR7	<b>CPX04035DA</b>
	50	52	FR8	<b>CPX05035DA</b>
	60	62	FR8	<b>CPX06035DA</b>
	75	77	FR8	<b>CPX07535DA</b>
8	100	99	FR9	<b>CPX10035DA</b>
	125	125	FR9	<b>CPX12535DA</b>
	150	144	FR9	<b>CPX15035DA</b>

**Notes**

- ① All Type 3R drives use the Size F enclosure.
- ② See enclosure dimensions beginning on **Page V6-T2-374**.
- ③ hp ratings are provided as a guideline. Drives should be sized per motor nameplate FLA.
- ④ The 18-pulse clean power assembly includes a standard drive, door-mounted local/remote keypad and enclosure.

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## Adjustable Frequency Drives

### Clean Power Drives

#### Options

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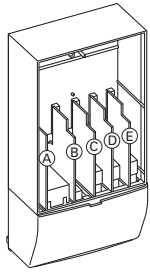
#### Enclosed 18-Pulse Drive Option Board Kits

The enclosed 18-pulse drives can accommodate a wide selection of expander and adapter option boards to customize the drive for your application needs. The drive's control unit is designed to accept a total of five option boards (see figure below).

The enclosed 18-pulse drives factory-installed standard board configuration includes an A9 I/O board and an A2 relay output board, which are installed in slots A and B.

#### SVX Series Option Board Kits

##### Option Boards



##### Option Board Kits

Option Kit Description <sup>①</sup>	Allowed Slot Locations <sup>②</sup>	Field Installed Catalog Number	Factory Installed Option Designator	SVX Ready Programs						
				Basic	Local/Remote	Standard	MSS	PID	Multi-P.	PFC
<b>Standard I/O Cards</b>										
2 RO (NC/NO)	B	<b>OPTA2</b>	—	■	■	■	■	■	■	■
6 DI, 1 DO, 2 AI, 1 AO, 1 +10 Vdc ref, 2 ext +24 Vdc/ext +24 Vdc	A	<b>OPTA9</b>	—	■	■	■	■	■	■	■
<b>Extended I/O Cards</b>										
6 DI	B, C, D, E	<b>OPTB1</b>	<b>B1</b>	—	—	—	—	—	■	■
1 RO (NC/NO), 1 RO (NO), 1 therm	B, C, D, E	<b>OPTB2</b>	<b>B2</b>	—	—	—	—	—	■	■
1 AI (mA isolated), 2 AO (mA isolated)	B, C, D, E	<b>OPTB4</b>	<b>B4</b>	■	■	■	■	■	■	■
3 RO (NO)	B, C, D, E	<b>OPTB5</b>	<b>B5</b>	—	—	—	—	—	■	■
3 Pt100 RTD board	B, C, D, E	<b>OPTB8</b>	<b>B8</b>	—	—	—	—	—	■	—
1 RO (NO), 5 DI 42–240 Vac input	B, C, D, E	<b>OPTB9</b>	<b>B9</b>	—	—	—	—	—	■	■
<b>Communication Cards <sup>③</sup></b>										
Modbus	D, E	<b>OPTC2</b>	<b>C2</b>	■	■	■	■	■	■	■
Modbus TCP	D, E	<b>OPTCI</b>	<b>CI</b>	■	■	■	■	■	■	■
BACnet	D, E	<b>OPTCJ</b>	<b>CJ</b>	■	■	■	■	■	■	■
EtherNet/IP	D, E	<b>OPTCQ</b>	<b>CQ</b>	■	■	■	■	■	■	■
Johnson Controls N2	D, E	<b>OPTC2</b>	<b>CA</b>	■	■	■	■	■	■	■
PROFIBUS DP	D, E	<b>OPTC3</b>	<b>C3</b>	■	■	■	■	■	■	■
LonWorks	D, E	<b>OPTC4</b>	<b>C4</b>	■	■	■	■	■	■	■
PROFIBUS DP (D9 connector)	D, E	<b>OPTC5</b>	<b>C5</b>	■	■	■	■	■	■	■
CANopen (slave)	D, E	<b>OPTC6</b>	<b>C6</b>	■	■	■	■	■	■	■
DeviceNet	D, E	<b>OPTC7</b>	<b>C7</b>	■	■	■	■	■	■	■
Modbus (D9 type connector)	D, E	<b>OPTC8</b>	<b>C8</b>	■	■	■	■	■	■	■
RS-232 with D9 connection	D, E	<b>OPTD3</b>	<b>D3</b>	■	■	■	■	■	■	■

##### Notes

- ① AI = Analog Input; AO = Analog Output, DI = Digital Input, DO = Digital Output, RO = Relay Output
- ② Option card must be installed in one of the slots listed for that card. Slot indicated in bold is the preferred location.
- ③ OPTC2 is a multi-protocol option card.

**Modbus RTU Network Communications**

The Modbus Network Card OPTC2 is used for connecting the SVX Drive as a slave on a Modbus network. The interface is connected by a 9-pin DSUB connector (female) and the baud rate ranges from 300 to 19,200 baud. Other communication parameters include an address range from 1 to 247; a parity of None, Odd or Even; and the stop bit is 1.

**PROFIBUS Network Communications**

The PROFIBUS Network Card OPTC3 is used for connecting the SVX Drive as a slave on a PROFIBUS-DP network. The interface is connected by a 9-pin DSUB connector (female). The baud rates range from 9.6 Kbaud to 12 Mbaud, and the addresses range from 1 to 127.

**LonWorks Network Communications**

The LonWorks Network Card OPTC4 is used for connecting the SVX Drive on a LonWorks network. This interface uses Standard Network Variable Types (SNVT) as data types. The channel connection is achieved using a FTT-10 A Free Topology transceiver via a single twisted transfer cable. The communication speed with LonWorks is 78 kBits/s.

**CANopen (Slave) Communications**

The CANopen (Slave) Network Card OPTC6 is used for connecting the SVX Drive to a host system. According to ISO11898 standard cables to be chosen for CANbus should have a nominal impedance of 120 ohms, and specific line delay of nominal 5 nS/m. 120 ohm line termination resistors required for installation.

**DeviceNet Network Communications**

The DeviceNet Network Card OPTC7 is used for connecting the SVX Drive on a DeviceNet Network. It includes a 5.08 mm pluggable connector. Transfer method is via CAN using a two-wire twisted shielded cable with two-wire bus power cable and drain. The baud rates used for communication include 125 Kbaud, 250 Kbaud and 500 Kbaud.

**Johnson Controls Metasys N2 Network Communications**

The OPTC2 fieldbus board provides communication between the SVX Drive and a Johnson Controls Metasys™ N2 network. With this connection, the drive can be controlled, monitored and programmed from the Metasys system. The N2 fieldbus is available as a factory-installed option and as a field-installable kit.

**Modbus/TCP Network Communications**

The Modbus/TCP Network Card OPTC1 is used for connecting the SVX Drive to Ethernet networks using Modbus protocol. It includes an RJ-45 pluggable connector. This interface provides a selection of standard and custom register values to communicate drive parameters. The board supports 10 Mbps and 100 Mbps communication speeds. The IP address of the board is configurable over Ethernet using a supplied software tool.

**BACnet Network Communications**

The BACnet Network Card OPTCJ is used for connecting the SVX Drive to BACnet networks. It includes a 5.08 mm pluggable connector. Data transfer is Master-Slave/Token Passing (MS/TP) RS-485. This interface uses a collection of 30 Binary Value Objects (BVOs) and 35 Analog Value Objects (AVOs) to communicate drive parameters. The card supports 9.6, 19.2 and 38.4 Kbaud communication speeds and supports network addresses 1 to 127.

**EtherNet/IP Network Communications**

The EtherNet/IP Network Card OPTCK is used for connecting the SVX Drive to Ethernet/Industrial Protocol networks. It includes an RJ-45 pluggable connector. The interface uses CIP objects to communicate drive parameters (CIP is "Common Industrial Protocol," the same protocol used by DeviceNet). The board supports 10 Mbps and 100 Mbps communication speeds. The IP address of the board is configurable by Static, BOOTP and DHCP methods.

## Control/Communication Option Descriptions

For availability, see Product Selection for base drive voltage required.

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## Available Control/Communications Options

Option	Description	Option Type
K1	<b>Door-Mounted Speed Potentiometer</b> —Provides the enclosed 18-pulse drive with the ability to adjust the frequency reference using a door-mounted potentiometer. This option uses the 10 Vdc reference to generate a 0–10 V signal at the analog voltage input signal terminal. When the HOA bypass option is added, the speed is controlled when the HOA switch is in the HAND position. Without the HOA bypass option, a two-position switch (labeled local/remote) is provided on the keypad to select speed reference from the speed potentiometer or a remote speed signal.	Control
K2	<b>Door-Mounted Speed Potentiometer with HOA Selector Switch</b> —Provides the enclosed 18-pulse drive with the ability to start/stop and adjust the speed reference from door-mounted control devices or remotely from customer-supplied inputs. In HAND position, the drive will start and the speed is controlled by the door-mounted speed potentiometer. The drive will be disabled in the OFF position. When AUTO is selected, the drive run and speed control commands are via user-supplied dry contact and 4–20 mA signal.	Control
K4	<b>HAND/OFF/AUTO Switch for Non-Bypass Configurations</b> —Provides a three-position selector switch that allows the user to select either a HAND or AUTO mode of operation. HAND mode is defaulted to keypad operation, and AUTO mode is defaulted to control from an external terminal source. These modes of operation can be configured via drive programming to allow for alternate combinations of start and speed sources. Start and speed sources include Keypad, I/O and fieldbus.	Control
K5	<b>MANUAL/AUTO Speed Reference Switch</b> —Provides door-mounted selector switch for MANUAL/AUTO speed reference.	Control
K6	<b>START/STOP Pushbuttons</b> —Provide door-mounted START and STOP pushbuttons for either bypass or non-bypass configurations.	Control
KF	<b>Bypass Test Switch for RA</b> —Allows the user to energize the AF drive for testing while operating the motor on the bypass controller. The Test Switch is mounted on the inside of the enclosure door.	Addl. bypass
K0	<b>Standard Elapsed Time Meter</b> —Provides a door-mounted elapsed run-time meter.	Control
L1	<b>Power On and Fault Power Lights</b> —Provide a white Power On light that indicates power to the enclosed cabinet and a red fault light that indicates a drive fault has occurred.	Light
L2	<b>Bypass Pilot Lights for RA Bypass Options</b> —A green light indicates when the motor is running in Inverter mode and an amber light indicates when the motor is running in Bypass mode. The lights are mounted on the enclosure door, above the switches.	Addl. bypass
LE	<b>Red Run Pilot Light 0.87-Inch (22 mm)</b> —Provides a red Run pilot light that indicates the drive is running.	Light
P1	<b>Input Circuit Breaker</b> —High interrupting circuit breaker that provides a means of short-circuit protection for the power cables between it and the enclosed 18-pulse drive, and protection from high-level ground faults on the power cable. Allows a convenient means of disconnecting the enclosed 18-pulse drive from the line, and the operating mechanism can be padlocked in the OFF position. This is factory mounted in the enclosure. Standard rating is 65 kAIC at 208/480 V. 100 kAIC is available as an option.	Input
PE	<b>Output Contactor</b> —Provides a means for positive disconnection of the drive output from the motor terminals. The contactor coil is controlled by the drive's run or permissive logic. NC and NO auxiliary contacts rated at 10 A, 600 Vac are provided for customer use. Bypass options <b>RB</b> and <b>RA</b> include an output contactor as standard. This option includes a low VA 115 Vac fused control power transformer and is factory mounted in the enclosure.	Output
PF	<b>Output Filter</b> —Used to reduce the transient voltage (dV/dt) at the motor terminals. The output filter is recommended for cable lengths exceeding 100 ft (30.5 m) with a drive of 3 hp and above, for cable lengths of 33 ft (10.1 m) with a drive of 2 hp and below, or for a drive rated at 525–690 V. This option is mounted in the enclosure.	Output
PG	<b>MotoRx (300–600 Ft) 1000 V/μs dV/dt Filter</b> —Used to reduce transient voltage (dV/dt) and peak voltages at the motor terminals. This option is comprised of a 0.5% line reactor, followed by capacitive filtering and an energy recovery/clamping circuit. Unlike the output filter (see option PF), the MotoRx recovers most of the energy from the voltage peaks, resulting in a lower voltage drop to the motor, and therefore conserving power. This option is used when the distance between a single motor and the drive is 300–600 ft (91.4–182.9 m).	Output
PH	<b>Single Overload Relay</b> —Uses a bimetallic overload relay to provide additional overload current protection to the motor on configurations without bypass options. It is included with the bypass configurations for overload current protection in the bypass mode. The overload relay is mounted within the enclosure, and is manually resettable. Heater pack included.	Output
PI	<b>Dual Overload Relays</b> —This option is recommended when a single drive is operating two motors and overload current protection is needed for each of the motors. The standard configuration includes two bimetallic overload relays, each sized to protect a motor with 50% of the drive hp rating. For example, a 100 hp drive would include two overload relays sized to protect two 50 hp motors. The relays are mounted within the enclosure, and are manually resettable. Heater packs not included.	Output
PN	<b>Dual Overloads for Bypass</b> —This option is recommended when a single drive is operating two motors in the Bypass mode and overload current protection is needed for each of the motors. The standard configuration includes two bimetallic overload relays, each sized to protect a motor with 50% of the drive hp rating. For example, a 100 hp drive would include two overload relays sized to protect two 50 hp motors. The relays are mounted within the enclosure, and are manually resettable.	Addl. bypass
RA	<b>Manual HOA Bypass Controller</b> —The manual HAND/OFF/AUTO (HOA)—three-contactor—bypass option provides a means of bypassing the enclosed 18-pulse drive, allowing the AC motor to be operated at full speed directly from the AC supply line. This option consists of an input HMCP, a fused control power transformer, and a full voltage bypass starter with a door-mounted HOA selector switch and an INVERTER/BYPASS switch. The HOA switch provides the ability to start and stop the drive in the inverter mode. IEC type input, bypass and input contactors are provided. The contactors are mechanically and electrically interlocked (see wiring diagram on <a href="#">Page V6-T2-373</a> ).	Bypass
RC	<b>Auto Transfer HOA Bypass Controller</b> —The manual HAND/OFF/AUTO (HOA)—three-contactor—bypass option provides a means of bypassing the enclosed 18-pulse drive, allowing the AC motor to be operated at full speed directly from the AC supply line. The circuitry provides an automatic transfer of the load to “across the line” operation after a drive trip. This option consists of an input HMCP, a fused control power transformer, and a full voltage bypass starter with a door-mounted HOA selector switch and an INVERTER/BYPASS switch. The HOA switch provides the ability to start and stop the drive in either mode. IEC type input, bypass and input contactors are provided. The contactors are mechanically and electrically interlocked (see wiring diagram on <a href="#">Page V6-T2-373</a> ). Door-mounted pilot lights are provided that indicate bypass or inverter operation. A green light indicates when the motor is running in inverter mode and an amber light indicates when the motor is running in bypass mode. <b>WARNING:</b> The motor may restart when the overcurrent relay is reset when operating in bypass, unless the IOB selector switch is turned to the OFF position.	Bypass
RG	<b>Reduced Voltage Starter for Bypass</b> —Used in conjunction with bypass option RA or RC. This option adds reduced voltage soft starter to bypass assembly for soft starting in bypass mode.	Bypass

For availability, see Product Selection for base drive voltage required.

### Available Control/Communications Options, continued

Option	Description	Option Type
<b>S7</b>	<b>10.00-Inch (254.0 mm) Expansion</b> —Expansion cabinet allows for special components, customer-supplied components or oversized cables. <b>NOTE:</b> Enclosure expansion rated Type 1 only.	Enclosure
<b>S8</b>	<b>20.00-Inch (508.0 mm) Expansion</b> —Expansion cabinet allows for special components, customer-supplied components or oversized cables. <b>NOTE:</b> Enclosure expansion rated Type 1 only.	Enclosure
<b>S9</b>	<b>Space Heater</b> —Prevents condensation from forming in the enclosure when the drive is inactive or in storage. Includes a thermostat for variable temperature control. The heater requires a customer-supplied 115 V remote supply source.	Enclosure

### Dissipated Watt Losses

Horsepower	40	50	60	75	100	125	150	200	250	300	350	400	450	500	600	700	800
<b>Watts</b>	1844	2170	2540	3040	4011	4940	5730	8020	9383	11600	13600	15700	16250	17976	20393	27200	31400

### Conformal (Varnished) Coating <sup>①</sup>

Chassis Frame	Delivery Code	Chassis Frame	Delivery Code
FR6	FP	FR9	FP
FR7	FP	FR10	FP
FR8	FP	FR11	FP
—	—	FR12	FP

### 480 V Input Disconnect Selection <sup>②</sup>

Horsepower	P1 Input Breaker	Bypass Motor Circuit Protector (RA, RB, RC, RD)
25	HFD3050	HMCP050K2C
30	HFD3060	HMCP100R3C
40	HFD3080	HMCP100R3C
50	HFD3100	HMCP100R3C
60	HFD3100	HMCP150T4C
75	HFD3125	HMCP150T4C
100	HFD3150	HMCP150U4C
125	HFD3200	HMCP250W5C
150	HFD3225	HMCP250W5C
200	HKD3300	HMCP400X5C
250	HKD3400	HMCP400X5C
300–400	HLD3600	HMCP600L6W
500–600	NGH308033E	HMCP800X7W
650–800	NGH312033E	<sup>③</sup>

### Enclosed Drive Options

#### Light Options

Description	Catalog Number Suffix
Power on, run, fault LED lights (22 mm)	<b>L1</b>
Power on, fault LED lights (22 mm)	<b>L3</b>
Green LED run light (22 mm)	<b>LA</b>
Green LED stop light (22 mm)	<b>LD</b>
Red LED run light (22 mm)	<b>LE</b>
Red LED stop light (22 mm)	<b>LF</b>
Red LED fault light (22 mm)	<b>LG</b>
Power on white LED light (22 mm)	<b>LJ</b>
Miscellaneous LED light (22 mm)	<b>LU</b>

#### Control Options

Description	Catalog Number Suffix
Door-mounted speed potentiometer	<b>K1</b>
Door-mounted speed potentiometer with HOA selector switch	<b>K2</b>
HOA selector switch	<b>K4</b>
MANUAL/AUTO reference switch	<b>K5</b>
START-STOP pushbuttons	<b>K6</b>
Type D2 control relay	<b>SD</b>
On-delay relay	<b>SE</b>
Off-delay relay	<b>SF</b>
Additional terminal blocks per 4 points	<b>SD</b>

#### Notes

- <sup>①</sup> See catalog number description to order.
- <sup>②</sup> Contact factory for 208 V and 575 V applications.
- <sup>③</sup> Contact factory.

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## Adjustable Frequency Drives

### Clean Power Drives

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#### Bypass Control Options

Description	Catalog Number Suffix
Bypass test switch used with RA	KF
Inverter/bypass pilot lights	L2

#### Meter Options

Description	Catalog Number Suffix
Standard elapsed time meter	K0
Frequency meter	KS
MP-3000 relay with URTD	KV
MP-3000 relay with URTD and CTs	KU

#### Enclosure Options

Enclosure Size	Catalog Number Suffix
<b>10.00 Inch (254.0 mm) Expansion</b>	
7	S7
8	S7
9	S7
10	S7
11	S7
<b>20.00 Inch (508.0 mm) Expansion</b>	
7	S8
8	S8
9	S8
10	S8
11	S8
<b>Space Heater <sup>①</sup></b>	
7	S9
8	S9
9	S9
10	S9
11	S9
<b>Plastic Nameplate</b>	
7	SN
8	SN
9	SN
10	SN
11	SN

#### 208 and 230 V Power Options, 25–200 hp

Description	Catalog Number Suffix
Input breaker	P1
Output contactor	PE
Single overload relay	PH
Dual overload relays	P1
MOV	P7
50 kA surge protective device	P8
100 kA surge protective device	PA

#### 480 and 575 V Power Options, 25–800 hp

Description	Catalog Number Suffix
Input breaker	P1
Output contactor	PE
Output filter	PF
MotoRx (300–600 Ft) dV/dt filter	PG
Single overload relay	PH
Dual overload relays	P1
Input MOV	P7
50 kA surge protective device	P8
100 kA surge protective device	PA

#### 208 and 230 V Bypass Options, 25–200 hp

Description	Catalog Number Suffix
Manual HOA bypass controller	RA
Auto transfer HOA bypass controller	RC
Reduced voltage starter for bypass	RG
Dual overloads for bypass	PN

#### 480 and 575 V Bypass Options, 25–800 hp

Description	Catalog Number Suffix
Manual HOA bypass controller	RA
Auto transfer HOA bypass controller	RC
Reduced voltage starter for bypass	RG
Dual overloads for bypass	PN

#### Note

<sup>①</sup> Requires customer-supplied 115 Vac supply.



## Technical Data and Specifications

### Enclosed 18-Pulse Drives

Description	Specification
<b>Primary Design Features</b>	
45–66 Hz input frequency	Standard
Output: AC volts maximum	Input voltage base
Output frequency range	0–320 Hz
Initial output current ( $I_H$ )	250% for 2 seconds
Overload (1 minute [ $I_H/I_L$ ])	150%/110%
Enclosure space heater	Optional
Oversize enclosure	Standard
Output contactor	Optional
Bypass motor starter	Optional
Listings	UL, cUL, 508C
<b>Protection Features</b>	
Incoming line fuses	Standard 200 kAIC rating
AC input circuit disconnect	Optional
Phase rotation insensitive	Standard
EMI filter	Standard FR6 thru FR9 <sup>①</sup>
Input phase loss protection	Standard
Input overvoltage protection	Standard
Line surge protection	Standard
Output short-circuit protection	Standard
Output ground fault protection	Standard
Output phase protection	Standard
Overtemperature protection	Standard
DC overvoltage protection	Standard
Drive overload protection	Standard
Motor overload protection	Standard
Programmer software	Optional
Local/remote keypad	Standard
Keypad lockout	Standard
Fault alarm output	Standard
Built-in diagnostics	Standard
Surge protective device	Optional

Description	Specification
<b>Input/Output Interface Features</b>	
Setup adjustment provisions	
Remote keypad/display	Standard
Personal computer	Standard
Operator control provisions	
Drive mounted keypad/display	Standard
Remote keypad/display	Standard
Conventional control elements	Standard
Serial communications	Optional
115 Vac control circuit	Optional
Speed setting inputs	
Keypad	Standard
0–10 Vdc potentiometer/voltage signal	Standard
4–20 mA isolated	Configurable
4–20 mA differential	Configurable
3–15 psig	Optional
Analog outputs	
Speed/frequency	Standard
Torque/load/current	Programmable
Motor voltage	Programmable
Kilowatts	Programmable
0–10 Vdc signals	Configurable w/jumpers
4–20 mA DC signals	Standard
Isolated signals	Standard
Discrete outputs	
Fault alarm	Standard
Drive running	Standard
Drive at set speed	Programmable
Optional parameters	14
Dry contacts	2 Form C contacts available
Additional discrete outputs	Optional
<b>Communications</b>	
RS-232	Standard
RS-422/485	Optional
DeviceNet™	Optional
Modbus RTU	Optional
CANopen (slave)	Optional
PROFIBUS-DP	Optional
LonWorks	Optional
Johnson Controls Metasys N2	Optional
EtherNet/IP/Modbus TCP	Optional
BACnet	Optional

#### Note

<sup>①</sup> The EMI filter is optional in FR10 and larger.

## Enclosed 18-Pulse Drives

Description	Specification
<b>Performance Features</b>	
Sensorless vector control	Standard
Volts/hertz control	Standard
IR and slip compensation	Standard
Electronic reversing	Standard
Dynamic braking	Optional
DC braking	Standard
PID set point controller	Programmable
Critical speed lockout	Standard
Current (torque) limit	Standard
Adjustable acceleration/deceleration	Standard
Linear or S curve accel/decel	Standard
Jog at preset speed	Standard
Thread/preset speeds	7
Automatic restart	Selectable
Coasting motor start	Standard
Coast or ramp stop selection	Standard
Elapsed time meter	Optional
Carrier frequency adjustment	1–16 kHz
<b>Standard Conditions for Application and Service</b>	
Maximum operating ambient temperature	0–50 °C up to FR9 0–40 °C FR10 and larger, consult factory for 50 °C rating above FR9
Storage temperature	–40 to 60 °C
Humidity (maximum), noncondensing	95%
Altitude (maximum without derate)	3300 ft (1000 m)
Line voltage variation	+10/–15%
Line frequency variation	45–66 Hz
Efficiency	>95%
Power factor (displacement)	0.99+
Power factor (apparent)	0.99

## Standard I/O Specifications

Description	Specification
Six–digital input programmable	24 V: “0” ≤10 V, “1” ≥18V, R <sub>i</sub> >5 kohms
Two–analog input configurable w/jumpers	Voltage: 0–±10 V, R <sub>i</sub> >200 kohms Current: 0 (4)–20 mA, R <sub>i</sub> = 250 ohms
Two–digital output programmable	Form C relays 250 Vac 30 Vdc 2 amp resistive
One–analog output programmable configurable w/jumper	0–20 mA, R <sub>L</sub> max. 500 ohms 10 bits ±2%

## I/O Specifications for Control/Communication Options

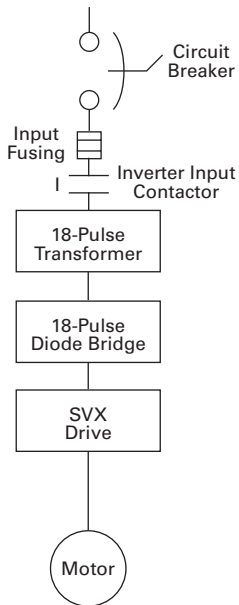
Description	Specification
Analog voltage, input	0–±10 V, R <sub>i</sub> ≥200 kilohms
Analog current, input	0 (4)–20 mA, R <sub>i</sub> = 250 ohms
Digital input	24 V: “0” ≤10 V, “1” ≥18V, R <sub>i</sub> >5 kilohms
Auxiliary voltage	24 V (±20%), max. 50 mA
Reference voltage	10 V ±3%, max. 10 mA
Analog current, output	0 (4)–20 mA, R <sub>L</sub> = 500 kilohms, resolution 10 bit, accuracy ≤±2%
Analog voltage, output	0 (2)–10 V, R <sub>L</sub> ≥1 kilohm, resolution 10 bit, accuracy ≤±2%
Relay output max. switching voltage	300 Vdc, 250 Vac
Relay output max. switching load	3 A/24 Vdc, 300 Vdc, 250 Vac ①
Relay output max. continuous load	2 A rms
Thermistor input	R <sub>trip</sub> = 4.7 kohms

**Note**

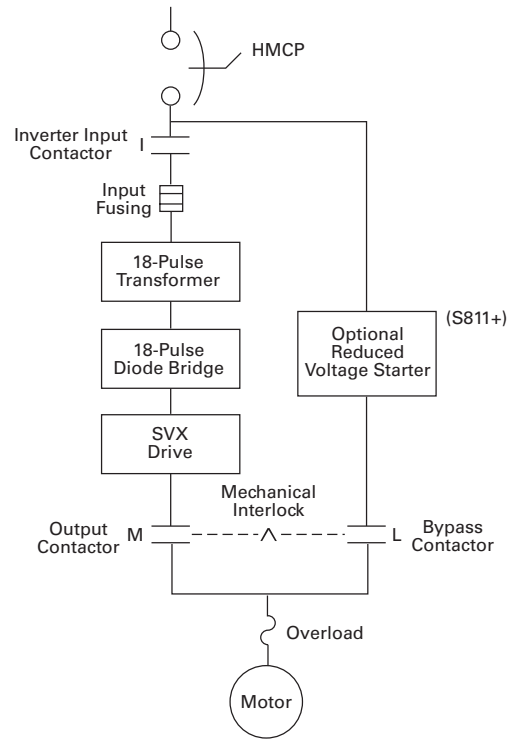
① For applications above 3 A consult instruction manual.

### Wiring Diagrams

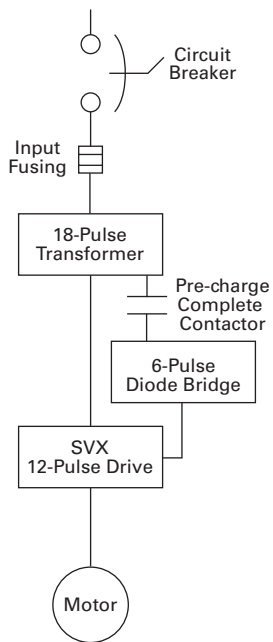
Power Diagram Up to FR9



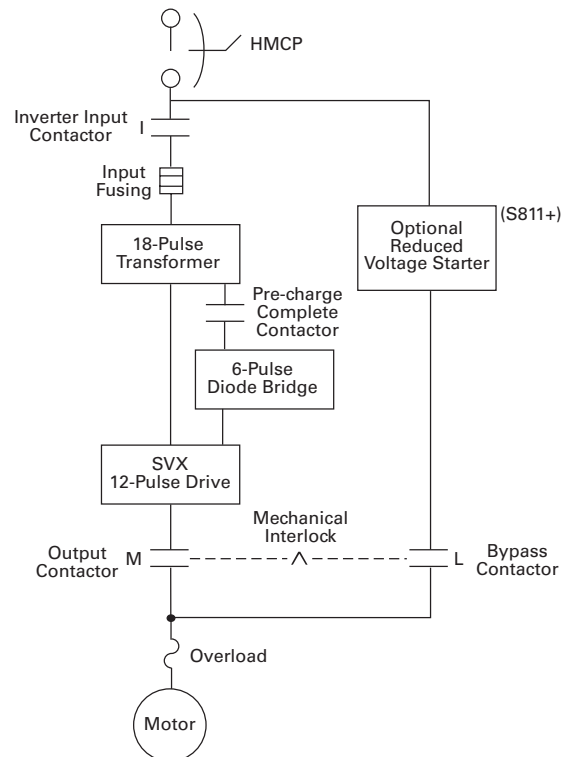
Power Diagram Up to FR9 with Bypass



Power Diagram FR10 and Larger



Power Diagram FR10 and Larger with Bypass



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## Adjustable Frequency Drives

### Clean Power Drives

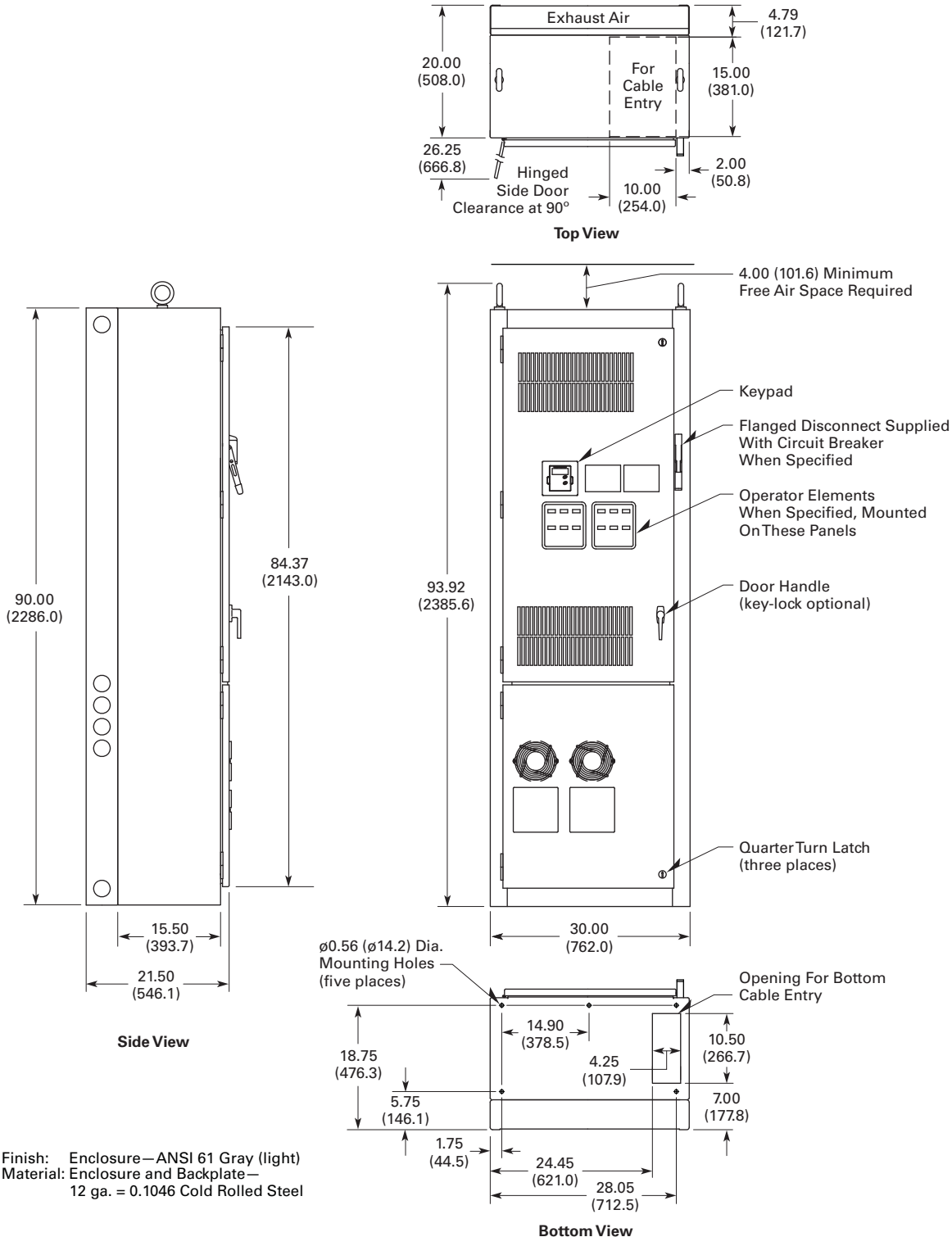
#### Dimensions

Approximate Dimensions in Inches (mm)

2

#### Enclosure Size 7

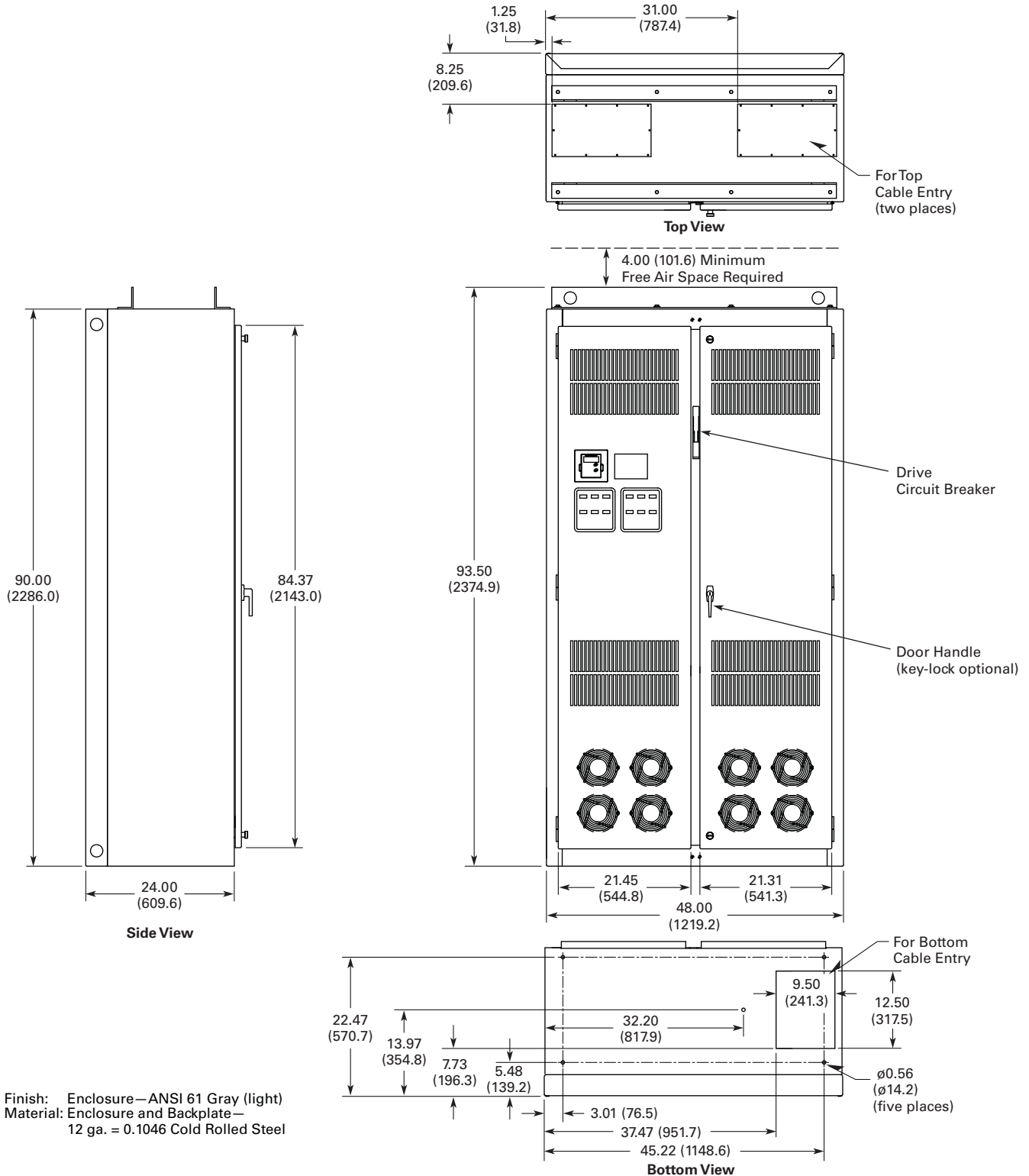
25–150 hp  $I_L$  and 25–125 hp  $I_H$  480 V—25–100 hp  $I_L$  and 25–75 hp  $I_H$  575 V



Approximate Dimensions in Inches (mm)

### Enclosure Size 8

200–250 hp I<sub>L</sub> and 150–200 hp I<sub>H</sub> 480 V — 125–200 hp I<sub>L</sub> and 100–150 hp I<sub>H</sub> 575 V



Finish: Enclosure—ANSI 61 Gray (light)  
 Material: Enclosure and Backplate—  
 12 ga. = 0.1046 Cold Rolled Steel

# 2.11

## Adjustable Frequency Drives

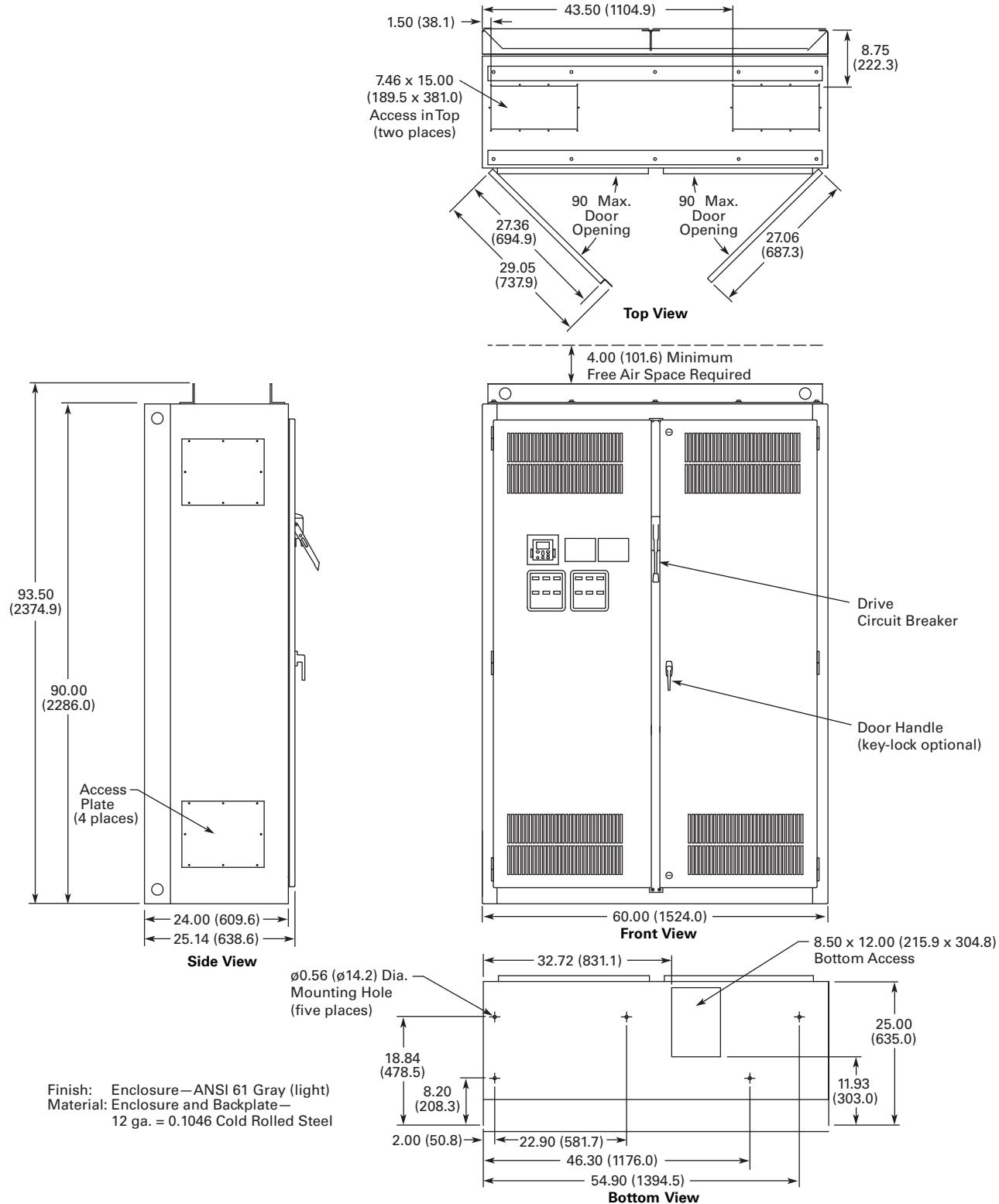
### Clean Power Drives

Approximate Dimensions in Inches (mm)

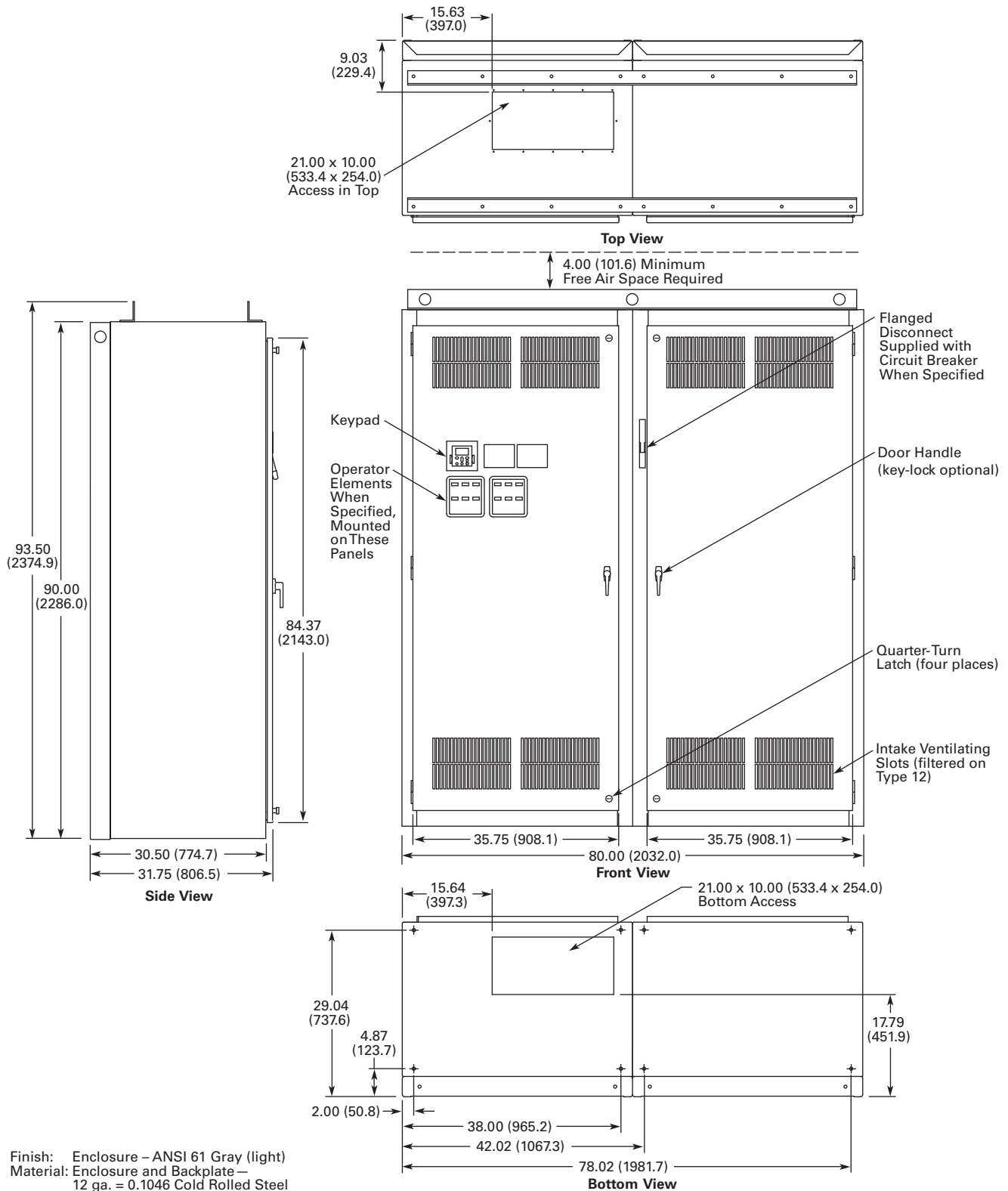
#### Enclosure Size 9

2

300–400 hp I<sub>L</sub> and 250–350 hp I<sub>H</sub> 480 V—250–400 hp I<sub>L</sub> and 200–300 hp I<sub>H</sub> 575 V



Approximate Dimensions in Inches (mm)

**Enclosure Size 10**500–600 hp I<sub>L</sub> and 400–500 hp I<sub>H</sub> 480 V—500–600 hp I<sub>L</sub> and 400–500 hp I<sub>H</sub> 575 V

# 2.11

## Adjustable Frequency Drives

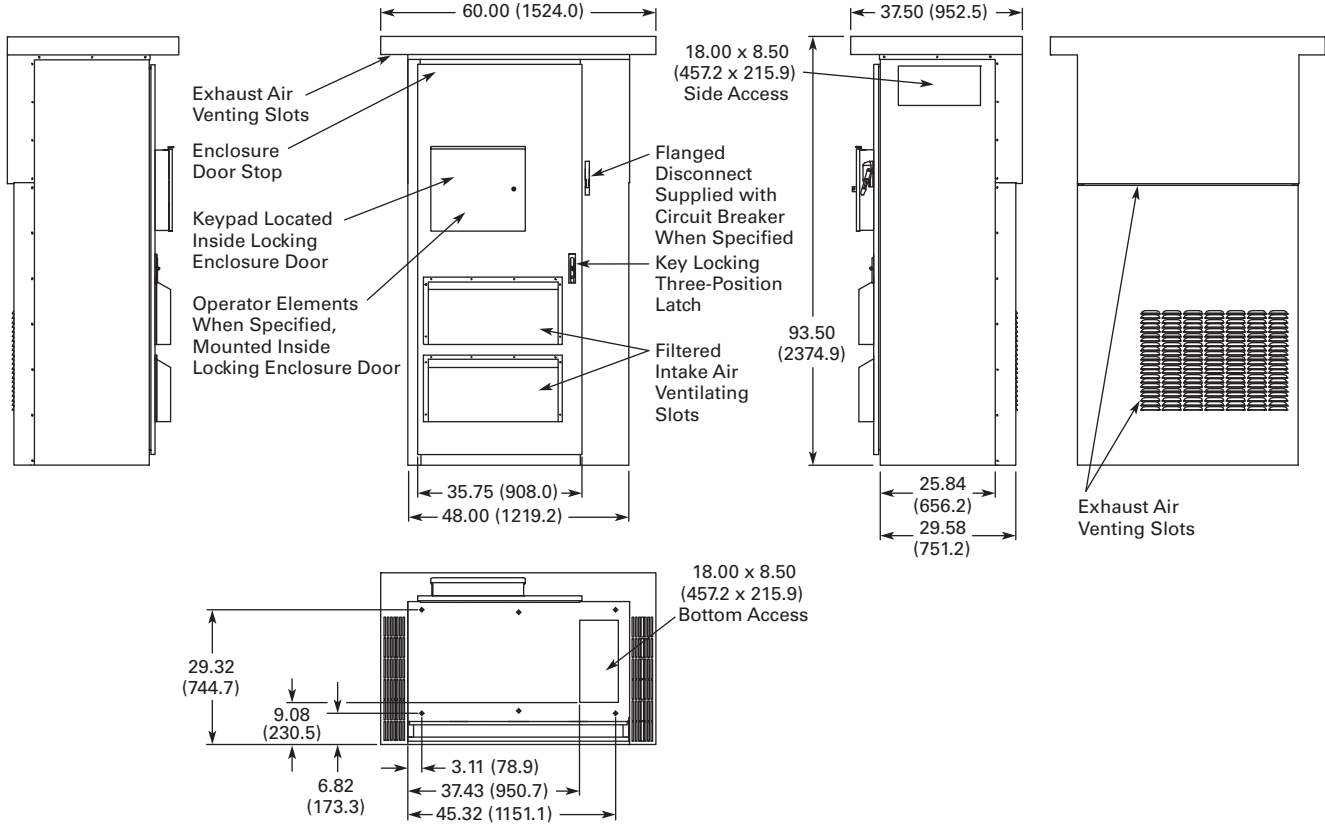
### Clean Power Drives

Approximate Dimensions in Inches (mm)

#### Enclosure Size F Type 3R Drives

2

#### 25–250 hp I<sub>L</sub> and 25–200 hp I<sub>H</sub> 480 V – 25–200 hp I<sub>L</sub> and 25–150 hp I<sub>H</sub> 575 V Type 3R Drives



#### Enclosed 18-Pulse Drive Enclosure Dimensions

Enclosure Size <sup>①</sup>	Width	Height	Depth	Approx. Shipping Weight in Lbs (kg)
7	30.00 (762.0)	90.00 (2286.0)	21.50 (546.1)	1000 (454)
8	48.00 (1219.2)	90.00 (2286.0)	26.14 (664.0)	1400 (636)
9	60.00 (1524.0)	90.00 (2286.0)	25.74 (653.8)	1800 (817)
10	80.00 (2032.0)	90.00 (2286.0)	31.75 (806.5)	2100 (953)
11 <sup>②③</sup>	120.00 (3048.0)	90.00 (2286.0)	25.74 (653.8)	2500 (1,135)
F <sup>④</sup>	60.00 (1524.0)	93.50 (2374.9)	37.50 (952.5)	2500 (1,135)

#### Notes

- ① Enclosure sizes accommodate drive and options, including bypass and disconnect. For other power options, consult your Eaton representative.
- ② Consult factory. Limited power options available.
- ③ Enclosure size 11 consists of two of the enclosure size 9.
- ④ All Type 3R drives use the Size F enclosure.