

# Description

5-500HP  
P7/Bypass

P7B



The P7/Bypass package is a 3-contactor style bypass, allowing motor operation from either the drive or across the line. This facilitates drive maintenance while the motor continues to operate. The P7 and P7/Bypass have been designed for flexibility in providing the features and options commonly demanded by facility designers.

The P7 Drive is a variable torque AC drive, designed specifically for industrial applications. A new benchmark for size, cost, performance, benefits and quality, the P7 includes numerous built-in features such as Network Communications, H/O/A, PI control and energy savings functions.

The P7 has embedded communications for Modbus. An optional interface card is also available for DeviceNet, Profibus, EtherNet and LonWorks.

## Performance Features

- Input, output, and bypass contactors
- Circuit breaker disconnect (MCP), with interlocked, through-the-door operating mechanism
- Thermal motor overload relay, class 20
- 115 VAC control transformer, fused
- Drive/Bypass selector switch
- Hand/Off/Auto selector switch
- Normal/Test selector switch
- Pilot lights, 22mm LED, for Control Power, Drive Run, Drive Fault, Bypass Run, Motor OL/Safety Fault and Smoke Purge
- Switch selectable auto transfer to bypass on drive fault
- Switch selectable remote transfer to bypass via contact closure
- Switch selectable smoke purge function
- Run mode and Fault contacts
- Control and safety circuit terminal strip
- Damper circuit safety interlock

## Bypass Options

- Input reactor
- Twelve-pulse rectification with input transformer: 25 -150 HP, 208 VAC; 30-150 HP, 230/240 VAC; 40-250 HP, 480 VAC
- Communication Interface: DeviceNet, Profibus, EtherNet, LonWorks, Johnson Controls METASYS N2, and Siemens APOGEE FLN
- RFI/EMI filter
- Pressure/electrical transducer
- Multiple motor operation logic
- Speed potentiometer
- Engraved nameplates
- DriveWizard upload/download and monitoring/graphing software
- Analog outputs: 2 programmable, 4-20 mA

## Service Conditions

- Ambient Temperature: -10°C to 40°C (14°F to 104°F) NEMA 1
- Humidity: 95% RH, non-condensing
- Altitude: 3300 ft; higher by derate
- Input voltage: +10%/-15%
- Input frequency: 50/60 Hz  $\pm$  5%
- 3-phase, 3-wire, phase sequence insensitive

## Performance Features

- VT Ratings: 5-150 HP, 208 VAC  
5-150 HP, 230/240 VAC  
5-500 HP, 480 VAC
- Overload capacity: 110% for 60 sec. (150% peak)
- Starting torque: 100% at 3 Hz
- DC injection braking: at start or stop, adjustable, current limited (anti-windmilling)
- Motor preheat function
- Adjustable accel/dec: 0.1 to 6000 sec.
- Controlled speed range: 40:1
- Critical frequency rejection: 3 selectable, adjustable bands
- Torque limiting: 30-180%
- Energy Saving control
- Torque boost: full range, auto
- Power loss ride-thru: 2 sec.
- Inertia ride-thru
- Auto restart after power loss or resettable fault, selectable, programmable
- Feedback signal loss detection
- Serial communications loss detection
- "Up/Down" floating point control capability
- Stationary motor auto-tuning
- Customizable monitor display
- Sleep function
- Run permissive input
- Ramp-to-stop or coast-to-stop selection
- Runtime changes in control and display
- Project-specific parameter reinitialization

## Protective Features

- Current limited stall prevention
- Heat sink over-temperature, speed fold-back
- Cooling fan operating hours recorded
- Bi-directional start into rotating motor at synchronized speed
- DC bus charge indicator
- Current limiting DC bus fuse
- Optically-Isolated controls
- Short circuit protection: Phase-phase and phase-neutral
- Ground fault protection
- Electronic motor overload: UL
- Current and torque limit
- Fault display: last 10 faults
- Fault circuit: OC, OV, OT
- Over torque and under torque protection
- Program security code
- "Hunting" prevention logic
- Reverse prohibit selectability

## Design Features

- 32-bit microprocessor logic
- Flash upgradeable firmware
- Non-volatile memory, program retention
- Surface-mount devices
- Displacement power factor: 0.98
- Output frequency: 0.1 to 120 Hz
- Frequency resolution: 0.06 Hz
- Frequency regulation: 0.1%
- Control Terminal Board: Quick disconnect, removable
- Carrier frequency: selectable to 15 kHz
- 3% DC bus reactor: 30-150 HP, 208 VAC; 30-150 HP, 240 VAC; 40-500 HP, 480 VAC; optional on lower ratings
- Keypad Operator: built-in copy feature, 6 languages
- LCD display: 5 lines, 16 characters each
- 24 VDC control logic
- Transmitter/Option power supply
- Output contacts: One form C and two programmable form A
- Input/output terminal status
- Input terminals: 5 programmable multi-function input terminals
- Fault input: Programmable
- Diagnostic fault indication in selected language
- Timer function: Elapsed time, Delay on start, Delay on stop
- RS-422/485 port: Modbus
- Volts/hertz ratio: Preset and programmable V/Hz patterns
- Multi-speed settings: 5 available
- Remote speed command: 0-10 VDC or 4-20 mA, direct or reverse-acting
- Setpoint (PI) control with inverse or square root input, differential control via two feedback capability
- Feedback signal: low pass filter
- Speed command: bias and gain
- Analog outputs: Programmable, two, 0-10 VDC
- Meter Functions: Volt, amp, kilowatt, elapsed run time, speed command
- Output Current Transformers, qty 3
- NEMA 1 or NEMA 12 FVFF enclosure
- UL, cUL listed; CE marked; IEC 146
- MTBF: exceeds 28 years



# Description

**5-500HP  
P7/Bypass**

## Model Number Configuration & Pricing:

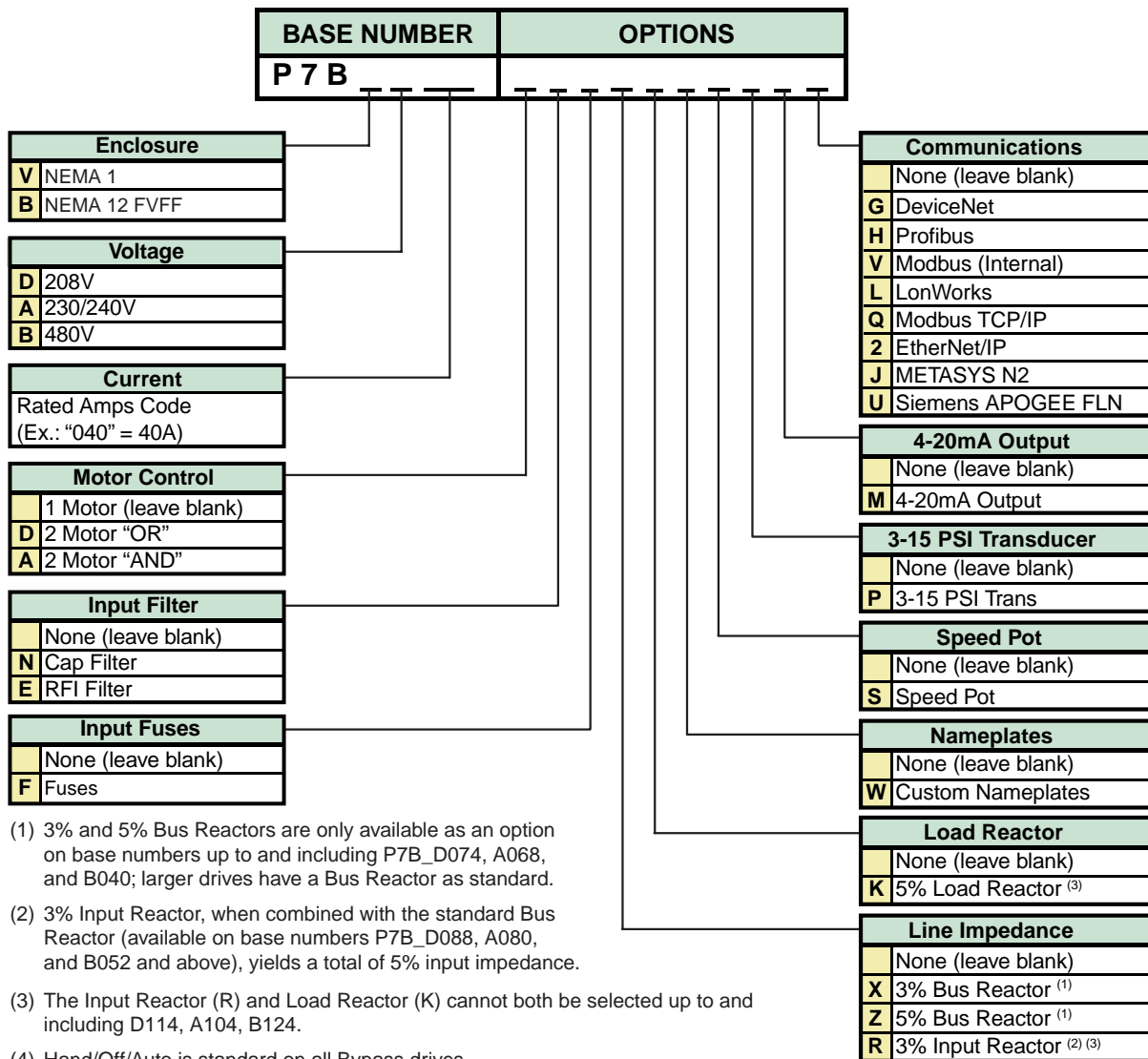
**Step 1.** First complete the Base Number for the required enclosure type, voltage and current rating.

**Step 2.** Add the Option code letter for each required option. If an option is not wanted, no character is inserted.

**Step 3.** Find the list price for the Base Number selected from the following pages. Add the list price of each selected option to this base price.

**Example:** P7 Bypass package (**P7BV**) with a 40 Amp, 480V drive (**B040**), 3% Bus reactor (**X**), door-mounted speed pot (**S**) and Profibus communication capability (**H**). Model number is:

**P7BVB040XSH**



## Bypass Option Descriptions:

**(V, B) Enclosure:** The drive and options are provided in either a NEMA Type 1 (V) ventilated or NEMA 12 FVFF (force ventilated fan filter) (B) enclosure, large enough to accommodate any or all of the package options. Enclosures for Base Numbers up to, and including, D114 (40HP, 208V), A104 (40HP, 240V), and B124 (100HP, 480V) are wall-mounted; larger drives are in floor-mount enclosures.

## Options (Power)

**(D, A) Motor Control:** The standard configuration is for single motor control. Either one of two motors can be controlled with the 'OR' configuration, option (D). Simultaneous control of two identical motors is possible with the 'AND' configuration, option (A). Total motor FLA must not exceed the package rating. This option may require an oversized enclosure - see Dimensions and Data.

**(N, E) Input Filter:** The standard configuration does not include a filter. The cap filter, option (N), is a delta-wye capacitive network, while the RFI filter (E) provides noise attenuation to help meet CE requirements. This option requires the addition of the add-on box - see Dimensions and Data.

**(F) Input Fuses:** The standard configuration does not include Drive Input Fuses. This option provides high-speed semi-conductor drive input fuses, rated for 200,000 amp RMS symmetrical interrupting capacity, that provides both drive input I<sup>2</sup>T protection and NEC approved branch circuit and short circuit protection.

**(X, Z, R) Line Impedance:** Drives above Base Numbers D074 (25HP, 208V), A068 (25HP, 240V) and B040 (30HP, 480V) include a 3% DC bus reactor in the standard package and do not provide any additional impedance. Option (X), 3% impedance, and option (Z), 5% impedance, are not available for ratings larger than these. To achieve a 5% total input impedance, select option (R) - this 3% input reactor is available only for the HP ratings greater than the HP's listed above, and combines with the drive's standard DC bus reactor. If this option is combined with a drive that includes a bus reactor, the add-on box is required - see Dimensions and Data.

**(K) Load Reactor:** No form of output impedance is normally required. A 5% load reactor, option (K), is available if additional output impedance is desired (usually for long lead-lengths or noise reduction). This option may require the add-on box for wall-mount enclosures - see Dimensions and Data.

## Options (Control and Communications)

**(W) Custom Nameplates:** Custom engraved nameplates with white lettering on black lamicaid are available with option (W), for special tagging purposes (Example: "AHU #1"). Note that this option requires the text to be specified by the customer. Leave this field blank if no special nameplates are required.

**(S) Speed Pot:** The drive's digital operator is always brought out to the front of the panel, so it is available for speed control - this is the standard configuration. A door-mounted 2.5K ohm speed potentiometer is available for manual speed control with option (S). This also includes a 2.5K ohm trim pot and is suitable for NEMA 1 and NEMA 12 installations.

**(P) 3-15 PSI Transducer:** No transducer is provided with the standard configuration. To add an optional transducer that accepts a 3-15 PSI pneumatic signal and converts it to a 4-20mA signal that is sent to the drive, specify option (P).

**(M) 4-20mA Output:** The standard Configured package provides two programmable 0-10VDC outputs. To convert these outputs to 4-20mA output signals, specify option (M).

**(G, H, L, Q, 2, V, J, U) Communications:** All configurations provide the hardware and software required for network communications, but these are not enabled in the standard configuration. Option (V) provides the programming and jumpers necessary to enable Modbus communications at no additional cost. DeviceNet option (G), Profibus option (H), Lonworks option (L), Modbus TCP/IP option (Q), and EtherNet/IP option (2) all require the addition of an optional board. Option (J) Johnson Controls METASYS N2 and option (U) Siemens APOGEE FLN require a software change, but no hardware change.

# P7B

## Bypass Drives and Options NEMA 1

**P7 Bypass Drives** - 5-500HP, 208-230/240 and 480V, 3-phase input, NEMA 1 enclosure, with factory-installed and wired options

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	NEMA 1 Bypass		Motor Control		Input Filter		Input Fuses	Line Impedance		
					D="OR" <sup>(3)</sup> A="AND" <sup>(3)</sup>		N=Cap E=RFI		F=Fuses	X=3% Bus Reactor Z=5% Bus Reactor R=3% Input Reactor		
			P7BV	Base List \$	D List \$	A List \$	N List \$	E List \$ <sup>(2)</sup>	F List \$	X List \$	Z List \$	R List \$ <sup>(2)</sup>
<b>208V</b>	16.7	5	D016									N/A
	24.2	7.5	D024									
	30.8	10	D030									
	46.2	15	D046									
	59.4	20	D059									
	74.8	25	D074									
	88	30	D088									
	114	40	D114									
	143	50	D143									
	169	60	D169									
211	75	D211										
273	100	D273										
343	125	D343										
396	150	D396										
<b>240V</b>	15.2	5	A015									N/A
	22	7.5	A022									
	28	10	A028									
	42	15	A042									
	54	20	A054									
	68	25	A068									
<b>230V</b>	80	30	A080									3% DC Bus Reactor is included as standard
	104	40	A104									
	130	50	A130									
	154	60	A154									
	192	75	A192									
248	100	A248										
312	125	A312										
360	150	A360										

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$100 list from all but one of these options
- (3) When this option is specified the enclosure may be larger than shown in the standard dimension table. Use the dimension tables for "P7/Bypass Package With OR/AND Option"



## P7 Bypass Drives (Continued)

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Load Reactor	Custom Name-plates	Speed Pot	Transducer	4-20mA Output	Communications								Uses Drive Model Number CIMR-P7U	
			K=5%	W=NP	S=Pot	P=3-15 PSI	M=4-20mA	G=DeviceNet, H=Profibus V=Modbus, L=LonWorks Q=Modbus TCP/IP, 2=EtherNet/IP, J=METASYS N2 U=APOGEE FLN									
			K List \$	W List \$	S List \$	P List \$	M List \$	G List \$	H List \$	V <sup>(3)</sup> List \$	L List \$	Q List \$	2 List \$	J List \$	U List \$		
208V	16.7	5															23P71
	24.2	7.5															27P51
	30.8	10															20111
	46.2	15															20151
	59.4	20															20181
	74.8	25															20221
	88	30															20301
	114	40															20370
	143	50															20450
	169	60															20550
211	75															20750	
273	100															20900	
343	125															21100	
396	150																
240V	15.2	5															23P71
	22	7.5															25P51
	28	10															27P51
	42	15															20111
	54	20															20151
	68	25															20181
	80	30															20221
104	40															20301	
230V	130	50															20370
	154	60															20450
	192	75															20750
	248	100															20750
	312	125															20900
360	150															20900	

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$115 list from all but one of these options
- (3) Included in the Base Price



# Bypass Drives and Options

## NEMA 1

### P7 Bypass Drives (Continued)

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	NEMA 1 Bypass		Motor Control		Input Filter		Input Fuses	Line Impedance		
					D="OR" <sup>(3)</sup> A="AND" <sup>(3)</sup>		N=Cap E=RFI		F=Fuses	X=3% Bus Reactor Z=5% Bus Reactor R=3% Input Reactor		
			P7BV	Base List \$	D List \$	A List \$	N List \$	E List \$ <sup>(2)</sup>	F List \$	X List \$	Z List \$	R List \$ <sup>(2)</sup>
480V	7.6	5	B007									N/A
	11	7.5	B011									
	14	10	B014									
	21	15	B021									
	27	20	B027									
	34	25	B034									
	40	30	B040									3% DC Bus Reactor is included as standard
	52	40	B052									
	65	50	B065									
	77	60	B077									
	96	75	B096									
	124	100	B124									
	156	125	B156									
	180	150	B180									
	240	200	B240									
	302	250	B302									
361	300	B361										
414	350	B414										
477	400	B477										
515	450	B515										
590	500	B590										

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$100 list from all but one of these options
- (3) When this option is specified the enclosure may be larger than shown in the standard dimension table. Use the dimension tables for "P7/Bypass Package With OR/AND Option"



## P7 Bypass Drives (Continued)

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Load Reactor	Custom Name-plates	Speed Pot	Transducer	4-20mA Output	Communications								Uses Drive Model Number CIMR-P7U	
			K=5%	W=NP	S=Pot	P=3-15 PSI	M=4-20mA	G=DeviceNet, H=Profibus V=Modbus, L=LonWorks Q=Modbus TCP/IP, 2=EtherNet/IP, J=METASYS N2 U=APOGEE FLN									
			K List \$	W List \$	S List \$	P List \$	M List \$	G List \$	H List \$	V <sup>(3)</sup> List \$	L List \$	Q List \$	2 List \$	J List \$	U List \$		
<b>480V</b>	7.6	5															43P71
	11	7.5															45P51
	14	10															47P51
	21	15															40111
	27	20															40111
	34	25															40151
	40	30															40181
	52	40															40301
	65	50															40301
	77	60															40371
	96	75															40451
	124	100															40551
	156	125															40750
	180	150															40900
	240	200															41100
	302	250															41600
361	300															41850	
414	350															41850	
477	400															42200	
515	450															42200	
590	500															43000	

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$100 list from all but one of these options
- (3) Included in the Base Price



# Bypass Drives and Options

## NEMA 12 FVFF

**P7 Bypass Drives** - 5-500HP, 208-230/460V, 3-phase input, NEMA 12 FVFF enclosure, with factory-installed and wired options

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	NEMA 12 FVFF Bypass		Motor Control		Input Filter		Input Fuses	Line Impedance		
					D="OR" <sup>(3)</sup> A="AND" <sup>(3)</sup>		N=Cap E=RFI		F=Fuses	X=3% Bus Reactor Z=5% Bus Reactor R=3% Input Reactor		
			P7BB	Base List \$	D List \$	A List \$	N List \$	E List \$ <sup>(2)</sup>	F List \$	X List \$	Z List \$	R List \$ <sup>(2)</sup>
208V	16.7	5	D016									N/A
	24.2	7.5	D024									
	30.8	10	D030									
	46.2	15	D046									
	59.4	20	D059									
	74.8	25	D074									
	88	30	D088									
	114	40	D114									
	143	50	D143									
	169	60	D169									
	211	75	D211									
273	100	D273										
343	125	D343										
396	150	D396										
240V	15.2	5	A015									N/A
	22	7.5	A022									
	28	10	A028									
	42	15	A042									
	54	20	A054									
	68	25	A068									
	80	30	A080									
104	40	A104										
230V	130	50	A130									3% DC Bus Reactor is included as standard
	154	60	A154									
	192	75	A192									
	248	100	A248									
	312	125	A312									
360	150	A360										

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$100 list from all but one of these options
- (3) When this option is specified the enclosure may be larger than shown in the standard dimension table. Use the dimension tables for "P7/Bypass Package With OR/AND Option"



### P7 Bypass Drives (Continued)

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Load Reactor	Custom Name-plates	Speed Pot	Transducer	4-20mA Output	Communications								Uses Drive Model CIMR-P7U	
			K=5%	W=NP	S=Pot	P=3-15 PSI	M=4-20mA	G=DeviceNet, H=Profibus V=Modbus, L=LonWorks Q=Modbus TCP/IP, 2=EtherNet/IP, J=METASYS N2 U=APOGEE FLN									
			K List \$	W List \$	S List \$	P List \$	M List \$	G List \$	H List \$	V <sup>(3)</sup> List \$	L List \$	Q List \$	2 List \$	J List \$	U List \$		
208V	16.7	5															23P71
	24.2	7.5															27P51
	30.8	10															27P51
	46.2	15															20111
	59.4	20															20151
	74.8	25															20181
	88	30															20221
	114	40															20301
	143	50															20370
	169	60															20450
211	75															20550	
273	100															20750	
343	125															20900	
396	150															21100	
240V	15.2	5															23P71
	22	7.5															25P51
	28	10															27P51
	42	15															20111
	54	20															20151
	68	25															20181
	80	30															20221
104	40															20301	
230V	130	50															20370
	154	60															20370
	192	75															20450
	248	100															20750
	312	125															20750
360	150															20900	

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$115 list from all but one of these options
- (3) Included in the Base Price



# Bypass Drives and Options

## NEMA 12 FVFF

### P7 Bypass Drives (Continued)

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	NEMA 12 FVFF Bypass		Motor Control		Input Filter		Input Fuses	Line Impedance		
					D="OR" <sup>(3)</sup> A="AND" <sup>(3)</sup>		N=Cap E=RFI		F=Fuses	X=3% Bus Reactor Z=5% Bus Reactor R=3% Input Reactor		
					P7BB	Base List \$	D List \$	A List \$	N List \$	E List \$ <sup>(2)</sup>	F List \$	X List \$
480V	7.6	5	B007									N/A
	11	7.5	B011									
	14	10	B014									
	21	15	B021									
	27	20	B027									
	34	25	B034									
	40	30	B040									3% DC Bus Reactor is included as standard
	52	40	B052									
	65	50	B065									
	77	60	B077									
	96	75	B096									
	124	100	B124									
	156	125	B156									
	180	150	B180									
	240	200	B240									
	302	250	B302									
361	300	B361										
414	350	B414										
477	400	B477										
515	450	B515										
590	500	B590										

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$100 list from all but one of these options
- (3) When this option is specified the enclosure may be larger than shown in the standard dimension table. Use the dimension tables for "P7/Bypass Package With OR/AND Option"

**P7 Bypass Drives (Continued)**

Rated Input Voltage	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Load Reactor	Custom Name-plates	Speed Pot	Transducer	4-20mA Output	Communications								Uses Drive Model Number CIMR-P7U	
			K=5%	W=NP	S=Pot	P=3-15 PSI	M=4-20mA	G=DeviceNet, H=Profibus V=Modbus, L=LonWorks Q=Modbus TCP/IP, 2=EtherNet/IP, J=METASYS N2 U=APOGEE FLN									
			K List \$	W List \$	S List \$	P List \$	M List \$	G List \$	H List \$	V <sup>(3)</sup> List \$	L List \$	Q List \$	2 List \$	J List \$	U List \$		
480V	7.6	5															43P71
	11	7.5															45P51
	14	10															47P51
	21	15															40111
	27	20															40111
	34	25															40151
	40	30															40181
	52	40															40301
	65	50															40301
	77	60															40371
	96	75															40451
	124	100															40551
	156	125															40750
	180	150															40900
	240	200															41100
	302	250															41600
361	300															41850	
414	350															41850	
477	400															42200	
515	450															42200	
590	500															43000	

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) This price includes the add-on box, when required. If more than one of the following: RFI Filter, 3% Input Reactor, and 5% Load Reactor is selected, DEDUCT \$100 list from all but one of these options
- (3) Included in the Base Price

# P7B

## Dimensions and Data <sup>(5)</sup> NEMA 1/12 FVFF

Rated Input Voltage	Configured P7BV or P7BB	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Physical Dimensions (in.)			Weight (lbs.) <sup>(2)</sup>	Dimension Drawing Number	Dimension Drawing Number (w/ Add-on Box) <sup>(3, 4)</sup>
				H	W	D			
208V	D016	16.7	5	29.50	19.00	13.66	115	DD.AFD.087.01	DD.AFD.087.01.A0
	D024	24.2	7.5				127		
	D030	30.8	10						
	D046	46.2	15	40.50	25.63	14.66	208	DD.AFD.088.01	DD.AFD.088.01.A0
	D059	59.4	20				221		
	D074	74.8	25						
	D088	88	30						
	D114	114	40	84.00	37.75	27.00	847	DD.AFD.183.06	N/A
	D143	143	50				943		
	D169	169	60				1214		
D211	211	75							
D273	273	100							
D343	343	125	84.00	73.25	27.00	1330	DD.AFD.184.08		
D396	396	150				1423			
240V	A015	15.2	5	29.50	19.00	13.66	115	DD.AFD.087.01	DD.AFD.087.01.A0
	A022	22	7.5				127		
	A028	28	10						
	A042	42	15	40.50	25.63	14.66	208	DD.AFD.088.01	DD.AFD.088.01.A0
	A054	54	20				221		
	A068	68	25						
A080	80	30	84.00	37.75	27.00	847	DD.AFD.183.06	N/A	
A104	104	40				943			
A130	130	50				1214			
A154	154	60							
230V	A192	192	75	84.00	73.25	27.00	1330	DD.AFD.184.08	
	A248	248	100				1376		
	A312	312	125						
	A360	360	150						

(1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors

(2) Data represents the total approx. weight of the drive with all possible standard options, not shipping weight.

(3) All options are available in this size enclosure except E (RFI Filter), R (3% Line Reactor), and K (5% Output Reactor). Only option E combined with either option R or option K can be installed in the add-on enclosure. Options R and K together require an increase in the size of the P7 Bypass Enclosure. Contact the factory if all three options are required.

(4) Please refer to Yaskawa's website at [www.yaskawa.com](http://www.yaskawa.com) for dimension drawings.

(5) If option D (2 Motor "OR") or A (2 Motor "AND") is supplied, use dimensions table for P7/Bypass with "OR/AND" option.

# Dimensions and Data <sup>(5)</sup>

## NEMA 1/12 FVFF



Rated Input Voltage	Configured P7BV or P7BB	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Physical Dimensions (in.)			Weight (lbs.) <sup>(2)</sup>	Dimension Drawing Number	Dimension Drawing Number (w/ Add-on Box) <sup>(3, 4)</sup>
				H	W	D			
<b>480V</b>	B007	7.6	5	29.50	19.00	13.66	115	DD.AFD.087.01	DD.AFD.087.01.A0
	B011	11	7.5				127		
	B014	14	10				142		
	B021	21	15						
	B027	27	20						
	B034	34	25	203	DD.AFD.088.01	DD.AFD.088.01.A0			
	B040	40	30						
	B052	52	40						
	B065	65	50	232					
	B077	77	60						
	B096	96	75		241				
	B124	124	100						
	B156	156	125	943		DD.AFD.183.06	N/A		
	B180	180	150						
	B240	240	200		84.00			37.75	27.00
	B302	302	250	1240					
	B361	361	300	1352					
	B414	414	350	84.00	73.25	27.00	1740	DD.AFD.184.08	N/A
B477	477	400	1800						
B515	515	450	1854						
B590	590	500	84.00	108.75	27.00	1900	TBD	N/A	
						2150			

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) Data represents the total approx. weight of the drive with all possible standard options, not shipping weight.
- (3) All options are available in this size enclosure except E (RFI Filter), R (3% Line Reactor) and K (5% Output Reactor). Only option E, combined with either option R or option K, can be installed in the add-on enclosure. Options R and K together require an increase in the size of the P7 Bypass Enclosure. Contact the factory if all three options are required.
- (4) Please refer to Yaskawa's website at [www.yaskawa.com](http://www.yaskawa.com) for dimension drawings.
- (5) If option D (2 Motor "OR") or A (2 Motor "AND") is supplied, use dimensions table for P7/Bypass with "OR/AND" option.

# P7B

## Dimensions and Data

With "OR/AND" Option  
NEMA 1/12 FVFF

Rated Input Voltage	Configured P7BV or P7BB	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Physical Dimensions (in.)			Weight (lbs.) <sup>(2)</sup>	Dimension Drawing Number <sup>(4)</sup>	Dimension Drawing Number (w/ Add-on Box) <sup>(3, 4)</sup>
				H	W	D			
208V	D016	16.7	5	29.50	19.00	13.66	115	DD.AFD.087.01	DD.AFD.087.01.AO
	D024	24.2	7.5				127		
	D030	30.8	10	40.50	25.63	14.66	208	DD.AFD.088.01	DD.AFD.088.01.AO
	D046	46.2	15				208		
	D059	59.4	20	84.00	37.75	27.00	820	DD.AFD.183.06	N/A
	D074	74.8	25				847		
	D088	88	30				943		
	D114	114	40	84.00	73.25	27.00	1343	DD.AFD.184.08	N/A
	D143	143	50				1614		
	D169	169	60	84.00	TBD	27.00	1730	TBD	N/A
D211	211	75	1823						
D273	273	100	1823						
240V	A015	15.2	5	29.50	19.00	13.66	115	DD.AFD.087.01	DD.AFD.087.01.AO
	A022	22	7.5				127		
	A028	28	10	40.50	25.63	14.66	208	DD.AFD.088.01	DD.AFD.088.01.AO
	A042	42	15				221		
	A054	54	20	84.00	37.75	27.00	847	DD.AFD.183.06	N/A
	A068	68	25				943		
	A080 "OR"	80	30				1214		
A080 "AND"	80	30	84.00	37.75	27.00	1330	DD.AFD.183.06	N/A	
A104	104	40				1376			
A130	130	50				1376			
A154	154	60				1376			
230V	A192	192	75	84.00	37.75	27.00	1376	DD.AFD.183.06	N/A
	A248	248	100				1376		
	A312	312	125				1376		
	A360	360	150				1376		

(1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors

(2) Data represents the total approx. weight of the drive with all possible standard options, not shipping weight.

(3) All options are available in this size enclosure except E (RFI Filter), R (3% Line Reactor) and K (5% Output Reactor). Only option E, combined with either option R or option K, can be installed in the add-on enclosure. Options R and K together require an increase in the size of the P7 Bypass Enclosure. Contact the factory if all three options are required.

(4) Please refer to Yaskawa's website at [www.yaskawa.com](http://www.yaskawa.com) for dimension drawings.

# Dimensions and Data

With "OR/AND" Option  
NEMA 1/12 FVFF



Rated Input Voltage	Configured P7BV or P7BB	Rated Output Current (Amps)	Nominal HP <sup>(1)</sup>	Physical Dimensions (in.)			Weight (lbs.) <sup>(2)</sup>	Dimension Drawing Number <sup>(4)</sup>	Dimension Drawing Number (w/ Add-on Box) <sup>(3, 4)</sup>
				H	W	D			
480V	B007	7.6	5	29.50	19.00	13.66	115	DD.AFD.087.01	DD.AFD.087.01.AO
	B011	11	7.5						
	B014	14	10				127		
	B021	21	15				142		
	B027	27	20				203		
	B034	34	25	40.50	25.63	14.66	232	DD.AFD.088.01	DD.AFD.088.01.AO
	B040	40	30						
	B052	52	40						
	B065	65	50	84.00	37.75	27.00	840	DD.AFD.183.06	N/A
	B077	77	60						
	B096	96	75						
	B124	124	100	84.00	73.25	27.00	943	DD.AFD.184.08	N/A
	B156	156	125						
	B180	180	150						
	B240	240	200	84.00	TBD	27.00	1640	TBD	N/A
B302	302	250	1852						
B361	361	300	TBD						
B414	414	350	84.00	TBD	27.00	TBD	TBD	N/A	
B477	477	400							
B515	515	450							
B590	590	500							

- (1) Horsepower rating is based on standard NEMA B 4-pole motor design as represented in NEC table 430.150 Full-Load Current, Three-Phase Alternating Current Motors
- (2) Data represents the total approx. weight of the drive with all possible standard options, not shipping weight.
- (3) All options are available in this size enclosure except E (RFI Filter), R (3% Line Reactor) and K (5% Output Reactor). Only option E, combined with either option R or option K, can be installed in the add-on enclosure. Options R and K together require an increase in the size of the P7 Bypass Enclosure. Contact the factory if all three options are required.
- (4) Please refer to Yaskawa's website at [www.yaskawa.com](http://www.yaskawa.com) for dimension drawings.