

A full-featured industrial AC drive suitable for panel, machine, flange and washdown mounted installations



SP600 Drives from 0.5 to 50 HP (6SP Series) SP600 Drives from 20 to 200 HP (6SB Series)



The benchmark for value in AC Drives, the SP600 provides the benefits of more expensive full-featured drives in a compact, versatile, and cost effective design. Multiple enclosure/packaging options with drive mounted LCD keypad and embedded braking circuitry make this drive very versatile. The wide range of network options available for this product will allow you to maximize data acquisition, control and application flexibility.

STANDARD FEATURES

The SP600 AC drive offers versatility and simple intelligence, setting the standard by which drives in this class are measured.

For customers who rely on the simplicity of the SP500, the SP600 provides the “user friendliness” expected by our customers with the advanced features and functionality of a leading edge drive.

The default configuration of the SP600 limits the customer’s exposure to a Basic access level of parameters.

But for those who require broader application flexibility, the full access level of parameters gives the user complete access to all of the drive parameters.

Every SP600 is software selectable for either:

- Volts/Hertz
- Sensorless Vector Control (SVC)

Each method is capable of operating single or multiple motors from one AC Drive⁽¹⁾.

Input Voltages/Power Ratings:

- 200, 208, 240 (0.5 to 25 HP)
- 380, 400, 415, 480 (0.5 to 200 HP)
- 600 (0.5 to 150 HP)

Enclosures/Mounting:

- Wall or Machine Mount NEMA 1 (IP20)
- Wall or Machine Mount NEMA 4X/12 (IP66)
- Flange Mount NEMA 1 (IP20)
- Zero clearance stacking, side by side cabinet mounting with 50°C rating (IP20)

Switching Frequency:

- 4 - 10 kHz carrier frequency
- Increase up to 10 kHz for quiet motor operation. See manual for de-rating.

Detachable Operator Interface:

- Multi-line, 6-language LCD OIM for local or remote operation. Allows drive configuration, control, monitoring and diagnostics.

Terminal Strip Control:

- 24 V Digital Inputs (qty. 6), configurable
 - 8 programmable pre-set speed selections possible
- Analog Inputs, 10 bit resolution⁽²⁾
 - Input #1 (0 to +10 VDC⁽²⁾ or 4-20 mA)
 - Input #2 (-10 to 10 VDC, or 4-20 mA)
- Analog Outputs, 10 bit resolution⁽²⁾
 - 0 - 10 VDC 6SP models
 - 0 - ±10 VDC or 4 - 20 mA 6SB models
- Relay Outputs (qty 2), Form C

Braking Transistor Built-in

- Optional Drive-mounted or externally mounted braking resistor required
- Braking Modes: Extended ramp, DC injection, DB

Typical OIM Operator Functions:

- Start/Stop
- Forward/Reverse
- Jog
- Auto/Manual
- Clear Fault

Other Features

- Configuration and monitoring of single or multiple drives when using optional V*S Utilities PC Software.
- Intelligent Thermal Management (ITM™) system can reduce carrier frequency or shut the drive off in case of an over-temperature condition.
- UL and NEC approved electronic motor overload protection.
- Adjustable Auto Restart.
- Frequency avoidance bands to lock out mechanical resonance points.
- “S” curve acceleration and deceleration for smooth speed transitions.
- Line-to-Line and Line-to-Ground output short circuit protection.
- Fault memory logs that display time stamped drive faults.
- Built-in PI process control functionality.

(1) SVC mode is limited to identical motors coupled mechanically.
(2) 11 Bit resolution and 0 - ±10 VDC on 6SB models.

QUIET MOTOR OPERATION UP TO 600 FT

- The SP600 controller uses IGBT transistors switched at frequencies up to 10 kHz to reduce PWM induced motor audible noise. This technology limits the increase of audible motor to not more than 3dba when compared to sine wave operation.
- Unique transistor control circuits also allow drive to operate at motor distances of up to 600 feet, with proper cable type, before output filtering considerations must be applied.
- Tested to ensure that the waveform at the motor conduit box will not exceed the limits specified in NEMA MG1 31.40.4.2. at lead lengths of 200 ft.

SERVICE CONDITIONS

- Elevation to 3300 ft (1000 meters)
 - De-rate 3% for every 1000 ft. above 3300 ft.
- Operating temperature ranges:
 - NEMA 1 Enclosures: 0°C to 40°C
 - IP20 Enclosures: 0°C to 50°C
 - NEMA 4X/12 Enclosures: 0°C to 40°C
- Atmosphere:
 - Non-condensing relative humidity: 5% to 95%
- AC line voltage variation: rated input voltage $\pm 10\%$
- AC line frequency variation (50/60 Hz): 48 - 62 Hz.
- Storage temperature: -40°C to 65°C (-40°F to 149°F)

RATINGS⁽¹⁾

- 110% OL: 110% of rated horsepower for 1 minute, 150% of rated horsepower for 3 seconds
- 150% OL: 150% of rated horsepower for 1 minute, 200% of rated horsepower for 3 seconds

NOTE: Single-phase operation requires 50% de-rating of drive output current.

⁽¹⁾ See horsepower rating chart

APPLICATION DATA

- Pulse width modulation (PWM): sensorless vector control or volts per hertz control
- Displacement power factor: 0.96
- Frequency stability long term: 0.01% of base speed with digital keypad 0.5% of base speed with analog speed reference
- Linearity (speed reference to output frequency): $\pm 1.0\%$

SP600 BRAKE RESISTOR SPECIFICATIONS

The SP600 has various combinations of internal braking transistors and either internal or external braking resistors. The minimum resistance that may be used that prohibits damaging this internal transistor as well as the recommended resistance by motor voltage and horsepower is specified on page D-41.

The average power dissipation of the braking mode must be estimated and the power rating of the Dynamic Brake Resistor chosen to be greater than the average regenerative power dissipation of the drive.

SP600 Drives are included in the Modified Standard Drives Program. Please see page D-48

SP600 SPECIFICATIONS

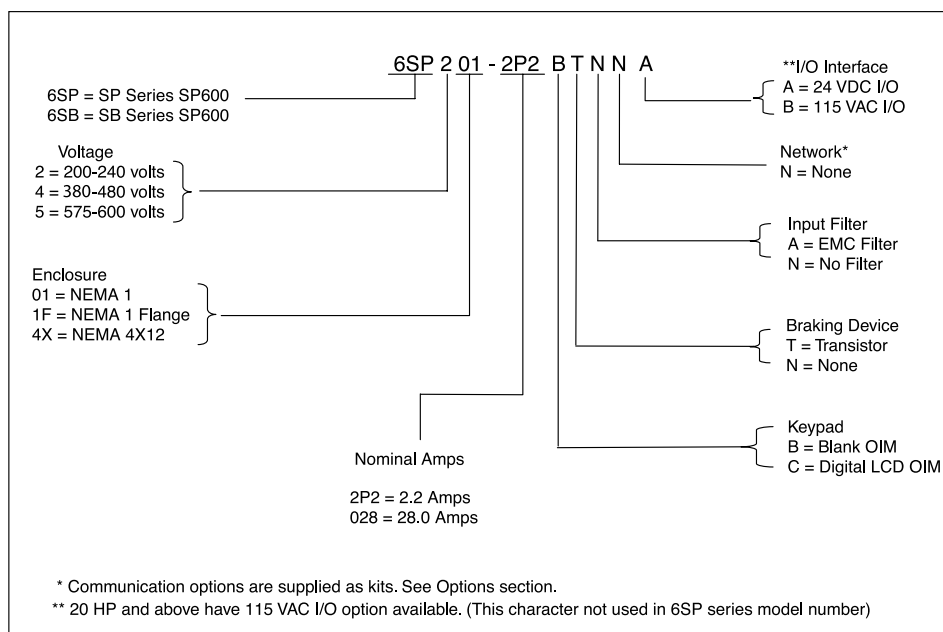
The specifications below are applicable over a constant torque range.

| Specification | Fan/Pump and Custom V/Hz | SVC |
|---|--------------------------|-------------------------|
| Speed regulation/accuracy (with slip compensation) | 0.5% (40:1 speed range) | 0.5% (80:1 speed range) |
| Operating speed range (with slip compensation) | 40:1 | 80:1 |
| Dynamic speed accuracy (speed response to a 95% step load change) | 0.5% base speed | 0.5% base speed |
| Velocity bandwidth (with slip compensation) | 10 rad/s | 20 rad/s |
| Minimum settability of velocity bandwidth/slip compensation | 0.1 rad/s | 0.1 rad/s |

DIMENSIONS

| Frame | Overall Height | Mount C-C Height ⁽¹⁾ | Overall Width | Mount C-C Width ⁽¹⁾ | Depth | Weight |
|-------------------|----------------|---------------------------------|---------------|--------------------------------|---------------|--------------|
| A | 8.89 (225.8) | 8.33 (211.6) | 4.82 (122.4) | 3.71 (94.2) | 7.08 (179.8) | 5.97 (2.71) |
| B | 9.24 (234.6) | 8.67 (220.2) | 6.76 (171.7) | 4.83 (122.7) | 7.08 (179.8) | 7.93 (3.60) |
| B4 | 9.44 (240.0) | 8.67 (220.2) | 6.76 (171.7) | 4.83 (122.7) | 8.0 (203.0) | 7.95 (3.61) |
| C | 11.81 (300.0) | 11.25 (285.6) | 7.28 (185.0) | 5.42 (137.6) | 7.08 (179.8) | 15.18 (6.89) |
| D | 13.78 (350.0) | 13.21 (335.6) | 8.66 (219.9) | 6.65 (169.0) | 7.08 (179.8) | 20.4 (9.25) |
| D4 | 13.78 (350.0) | 13.21 (335.6) | 8.66 (219.9) | 6.65 (169.0) | 8.3 (211.0) | 20.12 (9.13) |
| E | 21.88 (555.8) | 19.33 (491.0) | 11.04 (280.3) | 7.87 (200.0) | 8.15 (207.1) | 41.0 (18.6) |
| E4 | 21.88 (555.8) | 19.33 (491.0) | 11.04 (280.3) | 7.87 (200.0) | 8.65 (219.8) | 41.0 (18.6) |
| 2 | 13.48 (342.0) | 12.6 (320.0) | 8.74 (222.0) | 7.56 (192.0) | 7.87 (200.0) | 27.6 (12.5) |
| 3 | 20.37 (517.0) | 19.7 (500.0) | 8.74 (222.0) | 7.56 (192.0) | 7.87 (200.0) | 40.9 (18.55) |
| 4 | 29.9 (759.0) | 29.1 (738.2) | 8.74 (222.0) | 7.56 (192.0) | 7.94 (201.7) | 54.0 (24.5) |
| 5 | 25.4 (644.0) | 24.6 (625.0) | 12.2 (309.0) | 8.86 (225.0) | 10.9 (275.0) | 82.0 (37.2) |
| 6 (125 to 150 HP) | 38.43 (976.0) | 32.48 (825.0) | 15.90 (404.0) | 11.81 (300.0) | 10.85 (276.0) | 157.5 (71.4) |
| 6 (200 HP) | 38.43 (976.0) | 32.48 (825.0) | 15.90 (404.0) | 11.81 (300.0) | 10.85 (276.0) | 165.5 (75.1) |

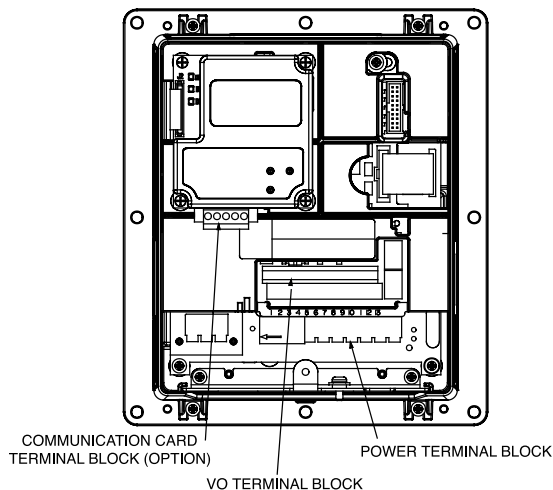
(1) C-C - center hole to center hold
inches (mm)
lbs (kg)



Instruction Manuals

| | | | |
|---------|---|-------------|---------------------|
| D2-3485 | 6SP Series (ratings from 0.5 HP to 50 HP) | D2-3488 | V*S Utilities |
| D2-3501 | 6SB Series (ratings from 20 HP to 200 HP) | D2-3485-1ES | Spanish Manual/User |
| D2-3487 | Operator Interface (Local) | D2-3477 | Serial Converter |
| D2-3516 | Door Mount OIM Bezel Kit | D2-3478 | DeviceNet |
| D2-3490 | Operator Interface (NEMA 4 - Large) | D2-3479 | Profibus |
| D2-3525 | Operator Interface (NEMA 4 - Small) | D2-3480 | Interbus-S |
| D2-3493 | Dynamic Braking Kit | D2-3497 | ControlNet |
| D2-3489 | Dynamic Braking Selection Guide | D2-3510 | EtherNet/IP |
| D2-3500 | RF filter Kit | | |

6SP MODEL – TERMINAL ASSIGNMENTS



Output Ratings: 200 - 240 VAC Three-phase Ratings

| Model Number | Output Amps | | | | | | Nominal Power Ratings | | | | |
|--------------|---------------|--------|--------|---------------|--------|--------|-----------------------|------|--------------|------|------|
| | 240 VAC Input | | | 208 VAC Input | | | 110% OL Duty | | 150% OL Duty | | |
| | Cont. | 1 Min. | 3 Sec. | Cont. | 1 Min. | 3 Sec. | kW | HP | kW | HP | |
| 6SP2xx | -2P2 | 2.2 | 2.4 | 3.3 | 2.5 | 2.7 | 3.7 | 0.37 | 0.5 | 0.25 | 0.33 |
| | -4P2 | 4.2 | 4.8 | 6.4 | 4.8 | 5.5 | 7.4 | 0.75 | 1 | 0.55 | 0.75 |
| | -6P8 | 6.8 | 9 | 12 | 7.8 | 10.3 | 13.8 | 1.5 | 2 | 1.1 | 1.5 |
| | -9P6 | 9.6 | 10.6 | 14.4 | 11 | 12.1 | 16.5 | 2.2 | 3 | 1.5 | 2 |
| | -015 | 15.3 | 17.4 | 23.2 | 17.5 | 19.2 | 26.2 | 4 | 5 | 3 | 3 |
| | -022 | 22 | 24.2 | 33 | 25.3 | 27.8 | 37.9 | 5.5 | 7.5 | 4 | 5 |
| | -028 | 28 | 33 | 44 | 32.2 | 37.9 | 50.6 | 7.5 | 10 | 5.5 | 7.5 |
| | -042 | 42 | 46.2 | 63 | 43 | 55.5 | 74 | 11 | 15 | 7.5 | 10 |
| | -054 | 54 | 63 | 84 | 62.1 | 72.4 | 96.6 | 15 | 20 | 11 | 15 |
| | -070 | 70 | 81 | 108 | 78.2 | 93.1 | 124 | 18.5 | 25 | 15 | 20 |

Control Terminals

| Terminal | Signal Name | Default Functions |
|----------|-----------------------------------|--------------------------------|
| 1 | Digital In 1 | Stop/Clear Fault |
| 2 | Digital In 2 | Start |
| 3 | Digital In 3 | Function Loss |
| 4 | Digital In 4 | Jog |
| 5 | Digital In 5 | Auto/Manual |
| 6 | Digital In 6 | Speed Select 1 |
| 7 | 24 V Int. Com | Power Supply Common |
| 8 | Digital In Ext.Com | Logic Common |
| 9 | +24 VDC Int. | Internal 24 V logic supply |
| 10 | +10 VDC Ref. Out | Internal 10 V reference supply |
| 11 | Digital Out1 - NO | Fault |
| 12 | Digital Out1 - C | |
| 13 | Digital Out1 - NC | |
| | Analog Input 1 | Default = 4-20 mA |
| 14 | Analog Volts In1 (-) | See Param. 320 |
| 15 | Analog Volts In1 (+) | Non-isolated |
| 16 | Analog Current In1 (-) | |
| 17 | Analog Current In1 (+) | |
| | Analog Input 2 | Default = 0 to 10 VDC |
| 18 | Analog Volts In2 (-) | See Param. 320 |
| 19 | Analog Volts In2 (+) | Isolated |
| 20 | Analog Current In2 (-) | |
| 21 | Analog Current In2 (+) | |
| 22 | Analog Out (-) & Reference Common | |
| 23 | Analog Volts Out (+) | Drive Output Frequency |
| 24 | Digital Out2 - NO | Running |
| 25 | Digital Out2 - C | |
| 26 | Digital Out2 - NC | |

Power Terminals

| Terminal | Signal Name | Function |
|----------|--------------|----------------------------|
| R | R/L1 | AC line input |
| S | S/L2 | AC line input |
| T | T/L3 | AC line input |
| +DC/BR1 | DC Brake (+) | DB (+) resistor connection |
| +BRK/BR2 | DC Brake (-) | DB (-) resistor connection |
| U | U/T1 | Motor output |
| V | V/T2 | Motor output |
| W | W/T3 | Motor output |
| PE | PE Ground | Protective Earth |
| PE | PE Ground | Protective Earth |

380 - 480 VAC Three-phase Ratings

| Model Number | Output Amps | | | | | | Nominal Power Ratings | | | | |
|--------------|---------------|--------|--------|---------------|--------|--------|-----------------------|------|--------------|------|------|
| | 480 VAC Input | | | 400 VAC Input | | | 110% OL Duty | | 150% OL Duty | | |
| | Cont. | 1 Min. | 3 Sec. | Cont. | 1 Min. | 3 Sec. | kW | HP | kW | HP | |
| 6SP4xx | -1P1 | 1.1 | 1.2 | 1.6 | 1.3 | 1.4 | 1.9 | 0.37 | 0.5 | 0.25 | 0.33 |
| | -2P1 | 2 | 2.4 | 3.2 | 2.1 | 2.4 | 3.2 | 0.75 | 1 | 0.55 | 0.75 |
| | -3P4 | 3.4 | 4.5 | 6 | 3.5 | 4.5 | 6 | 1.5 | 2 | 1.1 | 1.5 |
| | -005 | 5 | 5.5 | 7.5 | 5 | 5.5 | 7.5 | 2.2 | 3 | 1.5 | 2 |
| | -008 | 8 | 8.8 | 12 | 8.7 | 9.9 | 13.2 | 4 | 5 | 3 | 3 |
| | -011 | 11 | 12.1 | 16.5 | 11.5 | 13 | 17.4 | 5.5 | 7.5 | 4 | 5 |
| | -014 | 14 | 16.5 | 22 | 15.4 | 17.2 | 23.1 | 7.5 | 10 | 5.5 | 7.5 |
| | -022 | 22 | 24.2 | 33 | 22 | 24.2 | 33 | 11 | 15 | 7.5 | 10 |
| | -027 | 27 | 33 | 44 | 30 | 33 | 45 | 15 | 20 | 11 | 15 |
| | -034 | 34 | 40.5 | 54 | 37 | 40.5 | 54 | 18.5 | 25 | 15 | 20 |
| | -040 | 40 | 51 | 68 | 43 | 51 | 68 | 22 | 30 | 18.5 | 25 |
| | -052 | 52 | 60 | 80 | 60 | 66 | 90 | 30 | 40 | 22 | 30 |
| | -065 | 65 | 78 | 104 | 72 | 90 | 120 | 37 | 50 | 30 | 40 |

600 VAC Three-phase Ratings

| Model Number | Output Amps | | | Nominal Power Ratings | | | | |
|--------------|---------------------|--------|--------|-----------------------|------|--------------|------|------|
| | 575 - 600 VAC Input | | | 110% OL Duty | | 150% OL Duty | | |
| | Cont. | 1 Min. | 3 Sec. | kW | HP | kW | HP | |
| 6SP5xx | -0P9 | 0.9 | 1 | 1.4 | 0.37 | 0.5 | 0.25 | 0.33 |
| | -1P7 | 1.7 | 2 | 2.6 | 0.75 | 1 | 0.5 | 0.75 |
| | -2P7 | 2.7 | 3.6 | 4.8 | 1.5 | 2 | 1 | 1.5 |
| | -3P9 | 3.9 | 4.3 | 5.8 | 2.2 | 3 | 1.5 | 2 |
| | -6P1 | 6.1 | 6.7 | 9.1 | 4 | 5 | 2 | 3 |
| | -9P0 | 9 | 9.9 | 13.5 | 5.5 | 7.5 | 3.75 | 5 |
| | -011 | 11 | 13.5 | 18 | 7.5 | 10 | 5.5 | 7.5 |
| | -017 | 17 | 18.8 | 25.5 | 11 | 15 | 7.5 | 10 |
| | -022 | 22 | 25.5 | 34 | 15 | 20 | 11 | 15 |
| | -027 | 27 | 33 | 44 | 18.5 | 25 | 15 | 20 |
| -032 | 32 | 40.5 | 54 | 22 | 30 | 18.5 | 25 | |
| -041 | 41 | 48 | 64 | 30 | 40 | 22 | 30 | |
| -052 | 52 | 61.5 | 82 | 37 | 50 | 30 | 40 | |

6SB Model 24 V I/O Terminal Assignments

Control Terminals⁽¹⁾

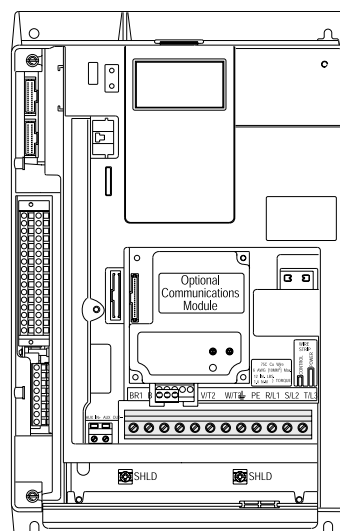
| Terminal | Signal Name | Default Function |
|--|-------------------------|----------------------------|
| Analog Input 1 Default = 4-20 mA | | |
| 1 | Analog Volts In1 (-) | See Param. 320 |
| 2 | Analog Volts In1 (+) | Term. 17 & 18 |
| Analog Input 2 Default = volts | | |
| 3 | Analog Volts In2 (-) | See Param. 320 |
| 4 | Analog Volts In2 (+) | Term. 19 & 20 |
| 5 | Reference Common | |
| Analog Output 1 Default = volts | | |
| 6 | Analog Volts Out1 (-) | Drive Output Frequency |
| 7 | Analog Volts Out1 (+) | See Param. 342 |
| 8 | Analog Current Out1 (-) | |
| 9 | Analog Current Out1 (+) | |
| 10 | Reserved | |
| Digital Output 1 Default = Fault | | |
| 11 | Digital Out1 - NO | Fault |
| 12 | Digital Out1 - C | |
| 13 | Digital Out1 - NC | |
| Digital Output 2 Default = Running | | |
| 14 | Digital Out2 - NO | Running |
| 15 | Digital Out2 - C | |
| 16 | Digital Out2 - NC | |
| Analog Current Input Default = See Param. 320 | | |
| 17 | Analog Current In1 (-) | See Param. 320 |
| 18 | Analog Current In1 (+) | |
| 19 | Analog Current In2 (-) | |
| 20 | Analog Current In2 (+) | |
| Reference Voltage | | |
| 21 | -10 VDC Ref. Out | |
| 22 | +10 VDC Ref. Out | |
| 23 | Reserved | |
| 24 | +24 VDC Int. | Internal 24 V logic supply |
| 25 | Digital In Ext.Com | Logic Common |
| 26 | 24V Int. Com | Power Supply Common |
| Digital Input | | |
| 27 | Digital In 1 | Stop/Clear Fault |
| 28 | Digital In 2 | Start |
| 29 | Digital In 3 | Function Loss |
| 30 | Digital In 4 | Jog |
| 31 | Digital In 5 | Auto/Manual |
| 32 | Digital In 6 | Speed Select 1 |

Typical Power Terminals

| Terminal | Description | |
|----------|--------------|----------------------------|
| BR1 | DC Brake (+) | DB (-) resistor connection |
| BR2 | DC Brake (-) | DB (-) resistor connection |
| DC+ | DC Bus (+) | |
| DC- | DC Bus (-) | |
| | Motor Ground | Frame 2 only |
| PE | PE Ground | Frame 2 only |
| U | U/T1 | Motor output |
| V | V/T2 | Motor output |
| W | W/T3 | Motor output |
| R | R/L1 | AC line input |
| S | S/L2 | AC line input |
| T | T/L3 | AC line input |

(1) Terminal chart defines the 24 V interface I/O configuration.

Note: 115 VAC I/O card defined separately.



400-480 VAC Three-phase Ratings

| Model Number | Output Amps | | | | | | Nominal Power Ratings | | | | |
|--------------|---------------|--------|--------|---------------|--------|--------|-----------------------|------|--------------|------|-----|
| | 480 VAC Input | | | 400 VAC Input | | | 110% OL Duty | | 150% OL Duty | | |
| | Cont. | 1 Min. | 3 Sec. | Cont. | 1 Min. | 3 Sec. | kW | HP | kW | HP | |
| 6SB401 | -027 | 27 | 33 | 44 | 30 | 33 | 45 | 15 | 20 | 11 | 15 |
| | -034 | 34 | 40.5 | 54 | 37 | 45 | 60 | 18.5 | 25 | 15 | 20 |
| | -040 | 40 | 51 | 68 | 43 | 56 | 74 | 22 | 30 | 18.5 | 25 |
| | -052 | 52 | 60 | 80 | 56 | 64 | 86 | 30 | 40 | 22 | 30 |
| | -065 | 65 | 78 | 104 | 72 | 84 | 112 | 37 | 50 | 30 | 40 |
| | -077 | 77 | 97 | 130 | 85 | 128 | 170 | 45 | 60 | 37 | 50 |
| | -096 | 95 | 106 | 144 | 105 | 115 | 158 | 55 | 75 | 45 | 60 |
| | -125 | 125 | 138 | 163 | 125 | 138 | 163 | 55 | 100 | 45 | 75 |
| | -156 | 156 | 172 | 234 | 170 | 187 | 255 | 93 | 125 | 75 | 100 |
| | -180 | 180 | 198 | 270 | 205 | 220 | 300 | 110 | 150 | 100 | 125 |
| -248 | 248 | 273 | 372 | 260 | 286 | 390 | 132 | 200 | 110 | 150 | |

575-600 VAC Three-phase Ratings

| Model Number | Output Amps | | | | Nominal Power Ratings | | | |
|--------------|---------------|--------|--------|-----|-----------------------|-----|--------------|-----|
| | 600 VAC Input | | | | 110% OL Duty | | 150% OL Duty | |
| | Cont. | 1 Min. | 3 Sec. | kW | HP | kW | HP | |
| 6SB501 | -022 | 22 | 25.5 | 34 | 15 | 20 | 11 | 15 |
| | -027 | 27 | 33 | 44 | 18.5 | 25 | 15 | 20 |
| | -032 | 32 | 40.5 | 54 | 22 | 30 | 18.5 | 25 |
| | -041 | 41 | 48 | 64 | 30 | 40 | 22 | 30 |
| | -052 | 52 | 61.5 | 82 | 37 | 50 | 30 | 40 |
| | -062 | 62 | 78 | 104 | 45 | 60 | 37 | 50 |
| | -077 | 77 | 85 | 116 | 55 | 75 | 45 | 60 |
| | -099 | 99 | 109 | 126 | 75 | 100 | 55 | 75 |
| | -125 | 125 | 138 | 188 | 90 | 125 | 75 | 100 |
| | -144 | 144 | 158 | 216 | 110 | 150 | 90 | 125 |

WALL MOUNT DRIVES (SP MODELS)



- Motor Power Rating: 0.5 to 25 HP (0.33 to 18.5 kW)
- Input Voltage: 200-208, 240 VAC, 50/60 Hz
- Enclosure: NEMA 1 Ventilated/IP20
- Mounting: Wall/Machine – Panel Mount as IP20
- Models available with LCD OIM keypad
- Models available with internal EMC filter
- Zero clearance side by side mounting



SP600 Shown with LCD OIM

200 - 240 VAC, 50/60 Hz Input: Ratings 0.5 to 25 HP

| NEMA 1/IP20 Model Number | Frame Size | With OIM | With Filter | Horsepower Rating | | Drive Amps @ 240 V ⁽³⁾ | | | List |
|--------------------------|------------|----------|-------------|-------------------|------------------------|-----------------------------------|--------|--------|-------|
| | | | | 110% OL | 150% OL ⁽¹⁾ | Continuous ⁽²⁾ | 1 Min. | 3 Sec. | |
| | | | | VT Applications | CT Applications | | | | |
| -2P2BTNN | A | | | | | | | | \$707 |
| -2P2BTAN | B | | • | | | | | | 795 |
| * -2P2CTNN | A | • | | 0.5 | 0.33 | 2.2 | 2.4 | 3.3 | 889 |
| -2P2CTAN | B | • | • | | | | | | 977 |
| -4P2BTNN | A | | | | | | | | 796 |
| -4P2BTAN | B | | • | | | | | | 884 |
| * -4P2CTNN | A | • | | 1 | 0.75 | 4.2 | 4.8 | 6.4 | 978 |
| -4P2CTAN | B | • | • | | | | | | 1,066 |
| -6P8BTNN | | | | | | | | | 884 |
| -6P8BTAN | | | • | | | | | | 972 |
| * -6P8CTNN | B | • | | 2 | 1.5 | 6.8 | 9 | 12 | 1,066 |
| -6P8CTAN | | • | • | | | | | | 1,154 |
| -9P6BTNN | | | | | | | | | 993 |
| -9P6BTAN | | | • | | | | | | 1,081 |
| * -9P6CTNN | B | • | | 3 | 2 | 9.6 | 10.6 | 14.4 | 1,179 |
| -9P6CTAN | | • | • | | | | | | 1,263 |
| -015BTAN | | | • | | | | | | 1,232 |
| * -015CTAN | C | • | • | 5 | 3 | 15.3 | 17.4 | 23.2 | 1,414 |
| -022BTAN | | | • | | | | | | 1,550 |
| * -022CTAN | D | • | • | 7.5 | 5 | 22 | 24.2 | 33 | 1,732 |
| -028BTAN | | | • | | | | | | 1,940 |
| * -028CTAN | D | • | • | 10 | 7.5 | 28 | 33 | 44 | 2,122 |
| -042BTAN | | | • | | | | | | 2,489 |
| * -042CTAN | D | • | • | 15 | 10 | 42 | 46.2 | 63 | 2,673 |
| -054BTAN | | | • | | | | | | 3,115 |
| * -054CTAN | E | • | • | 20 | 15 | 54 | 63 | 84 | 3,349 |
| -070BTAN | | | • | | | | | | 3,874 |
| * -070CTAN | E | • | • | 25 | 20 | 70 | 81 | 108 | 4,108 |

(1) Overload of 150% of rated current for 1 minute dependant on actual motor full load amps versus drive continuous amp rating.

(2) Rated for 240 VAC input and 4 kHz switching frequency.

(3) See amp rating chart for currents @ 208 VAC.

Model Numbers 6SP201- xxxBxxx are without OIM. OIM option available. See page D-40 for information.

Model Numbers 6SP201- xxxCxxx are with OIM.

Model Numbers 6SP201- xxxCxAx are with OIM and internal EMC filter.

All models are 24VDC Inputs. See option AK-M9-115VAC-1 on page D-39 for 115VAC Inputs.

* Normally carried in stock

DISCOUNT VS-1AC

SP600 AC Drives

WALL MOUNT Drives (SP MODELS)



- Motor Power Rating: 0.5 to 50 HP (0.33 to 37 kW)
- Input Voltage: 380-415, 460-480 VAC, 50/60 Hz
- Enclosure: NEMA 1 Ventilated/IP20
- Mounting: Wall/Machine – Panel Mount as IP20
- Models available with LCD OIM keypad
- Models available with internal EMC filter
- Zero clearance side by side mounting

380 - 480 VAC, 50/60 Hz Input: Ratings 0.5 to 50 HP

| NEMA 1/IP20 Model Number | Frame Size | With OIM | With Filter | Horsepower Rating | | Drive Amps @ 480 V ⁽³⁾ | | | List |
|--------------------------|------------|----------|-------------|----------------------------|---|-----------------------------------|--------|--------|-------|
| | | | | 110% OL VT Applications | 150% OL ⁽¹⁾ CT Applications | Continuous ⁽²⁾ | 1 Min. | 3 Sec. | |
| -1P1BTNN | A | | | 0.5 | 0.33 | 1.1 | 1.2 | 1.6 | \$926 |
| -1P1BTAN | B | | * | | | | | | 1,014 |
| *-1P1CTNN | A | • | | 1 | 0.75 | 2.1 | 2.4 | 3.2 | 1,108 |
| -1P1CTAN | B | • | * | | | | | | 1,196 |
| -2P1BTNN | A | | | 2 | 1.5 | 3.4 | 4.5 | 6 | 978 |
| -2P1BTAN | B | | * | | | | | | 1,066 |
| *-2P1CTNN | A | • | | 3 | 2 | 5 | 5.5 | 7.5 | 1,160 |
| -2P1CTAN | B | • | * | | | | | | 1,248 |
| -3P4BTNN | A | | | 5 | 3 | 8 | 8.8 | 12 | 1,035 |
| -3P4BTAN | B | | * | | | | | | 1,128 |
| *-3P4CTNN | A | • | | 7.5 | 5 | 11 | 12.1 | 16.5 | 1,217 |
| -3P4CTAN | B | • | * | | | | | | 1,305 |
| -005BTNN | | | | 10 | 7.5 | 14 | 16.5 | 22 | 1,139 |
| -005BTAN | B | | * | | | | | | 1,227 |
| *-005CTNN | | • | | 15 | 10 | 22 | 24.2 | 33 | 1,321 |
| -005CTAN | | • | * | | | | | | 1,409 |
| -008BTNN | | | | 20 | 15 | 27 | 33 | 44 | 1,331 |
| -008BTAN | B | | * | | | | | | 1,419 |
| *-008CTNN | | • | | 25 | 20 | 34 | 40.5 | 54 | 1,513 |
| -008CTAN | | • | * | | | | | | 1,601 |
| -011BTAN | C | | | 30 | 25 | 40 | 51 | 68 | 1,674 |
| *-011CTAN | | • | * | | | | | | 1,896 |
| -014BTAN | C | | | 40 | 30 | 52 | 60 | 80 | 1,825 |
| *-014CTAN | | • | * | | | | | | 2,007 |
| -022BTAN | D | | | 50 | 40 | 65 | 78 | 104 | 2,402 |
| *-022CTAN | | • | * | | | | | | 2,584 |
| -027BTAN | D | | | | | | | | 2,917 |
| *-027CTAN | | • | * | | | | | | 3,099 |
| -034BTAN | D | | | | | | | | 3,664 |
| *-034CTAN | | • | * | | | | | | 3,848 |
| -040BTAN | D | | | | | | | | 4,602 |
| *-040CTAN | | • | * | | | | | | 4,784 |
| -052BTAN | E | | | | | | | | 5,538 |
| *-052CTAN | | • | * | | | | | | 5,720 |
| -065BTAN | E | | | | | | | | 6,994 |
| *-065CTAN | | • | * | | | | | | 7,176 |

(1) Overload of 150% of rated current for 1 minute dependant on actual motor full load amps versus drive continuous amp rating.
 (2) Rated for 240 VAC input and 4 kHz switching frequency.
 (3) See amp rating chart for currents @ 208 VAC.

Model Numbers 6SP201- xxxBxxx are without OIM. OIM option available. See page D-40 for information.
 Model Numbers 6SP201- xxxCxxx are with OIM.
 Model Numbers 6SP201- xxxCxAx are with OIM and internal EMC filter.
 All models are 24VDC Inputs. See option AK-M9-115VAC-1 on page D-39 for 115VAC Inputs.

* Normally carried in stock

DISCOUNT VS-1AC

SP600 AC Drives

WALL MOUNT drives (SB MODELS)



- Motor Power Rating: 20 to 200 HP (15 to 132 kW)
- Input Voltage: 380-415, 480 VAC, 50/60 Hz
- Enclosure NEMA 1 Ventilated/IP20
- Mounting: Panel mount zero clearance stackable
- Models available with LCD OIM keypad
- Models available with 24 VDC or 120 VAC I/O

380 - 480 VAC, 50/60 Hz Input: Rating 20 to 200 HP

| NEMA 1/IP20 Model Number | Frame Size | With OIM | With Brake | With Filter | Horsepower Rating | | Drive Amps @ 480 V ⁽³⁾ | | | List |
|--------------------------|------------|----------|------------|-------------|-------------------|------------------------|-----------------------------------|--------|--------|---------|
| | | | | | 110% OL | 150% OL ⁽¹⁾ | Continuous ⁽²⁾ | 1 Min. | 3 Sec. | |
| | | | | | VT Applications | CT Applications | | | | |
| -027BTANA | 2 | • | • | • | 20 | 15 | 27 | 33 | 44 | \$3,229 |
| * -027CTANA | | | | | | | | | | 3,411 |
| -034BTANA | 2 | • | • | • | 25 | 20 | 34 | 40.5 | 54 | 3,983 |
| * -034CTANA | | | | | | | | | | 4,165 |
| -040BTANA | 3 | • | • | • | 30 | 25 | 40 | 51 | 68 | 4,914 |
| * -040CTANA | | | | | | | | | | 5,096 |
| -052BTANA | 3 | • | • | • | 40 | 30 | 52 | 60 | 80 | 5,902 |
| * -052CTANA | | | | | | | | | | 6,084 |
| -065BTANA | 3 | • | • | • | 50 | 40 | 65 | 78 | 104 | 7,446 |
| * -065CTANA | | | | | | | | | | 7,628 |
| -077CNANA | 4 | • | • | • | 60 | 50 | 77 | 97.5 | 130 | 8,388 |
| * -077CTANA | | | | | | | | | | 8,798 |
| -096CNANA | 5 | • | • | • | 75 | 60 | 96 | 106 | 144 | 9,386 |
| * -096CTANA | | | | | | | | | | 10,109 |
| -125CNANA | 5 | • | • | • | 100 | 75 | 125 | 138 | 163 | 11,367 |
| * -125CTANA | | | | | | | | | | 12,090 |
| -156CNANA | 6 | • | • | • | 125 | 100 | 156 | 172 | 234 | 12,641 |
| * -156CTANA | | | | | | | | | | 13,468 |
| -180CNANA | 6 | • | • | • | 150 | 125 | 180 | 198 | 270 | 13,692 |
| * -180CTANA | | | | | | | | | | 14,789 |
| -248CNANA | 6 | • | • | • | 200 | 150 | 248 | 273 | 372 | 19,068 |
| * -248CTANA | | | | | | | | | | 19,895 |

(1) Overload of 150% of rated current for 1 minute dependant on actual motor full load amps versus drive continuous amp rating.

(2) Rated for 480 VAC input and 4 kHz switching frequency (248 Amp Model @ 2KHz Switching Frequency)

(3) See amp rating chart for currents @ 400 VAC.

Model Numbers 6SB401- xxxBTANA are 24VDC Inputs without OIM. OIM option available. See page D-40 for information.

Model Numbers 6SB401- xxxCTANA are 24VDC Inputs with OIM.

Model Numbers for 115 VAC Inputs are non-stock. Consult factory.

* Normally carried in stock

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