

# P1 SJ Series

Variable Frequency Drive

**HITACHI**  
Inspire the Next

At the point where **ease of use** meets **high performance**.



## High Performance

- » High torque at low speed resulting in a smoother operation
  - Sensorless vector control with ND rating
- » High speed rotation – up to 590 Hz
- » Trip reduction during acceleration and deceleration



## Flexible

- » Multimode Operation – Induction & PM Motor control
- » Customizable with “Slot-In” option cassettes
- » Certified “Functional Safety” (certification in process)
  - Complies with IEC61508, IEC/EN61800-5-2 SIL3 STO
- » EZSQ text editor
  - Allows users to develop custom solutions



## Easy to Use

- » Color TFT Display
- » Easily Monitor, Set, or Review operational data & parameters
- » Effortless data transfer
- » Error in spoken language



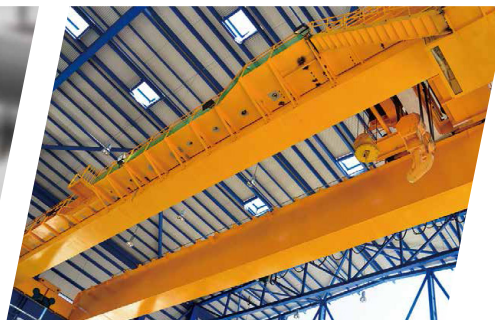
Add a new level of control to your applications with a Hitachi SJ-P1



Fan & Pump



Hydraulic Pump



Crane, Lift,  
Automated Warehouse



Injection Molding Machine



Winder



Grinder

## 200V Class Specifications

Model name (P1- ___ -L)		00044	00080	00104	00156	00228	00330	00460	00600	00800	00930	01240	01530	01850	02290	02950								
Applicable motor capacity (4 poles) (kW) (*1)	VLD	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75								
	LD	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75								
	ND	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55								
Rated output current (A)	VLD	4.4	8.0	10.4	15.6	22.8	33.0	46.0	60.0	80.0	93.0	124	153	185	229	295								
	LD	3.7	6.3	9.4	12.0	19.6	30.0	40.0	56.0	73.0	85.0	113	140	169	210	270								
	ND	3.2	5.0	8.0	11.0	17.5	25.0	32.0	46.0	64.0	76.0	95.0	122	146	182	220								
Overload current rating (*2)	VLD	110% 60sec / 120% 3sec																						
	LD	120% 60sec / 150% 3sec																						
	ND	150% 60sec / 200% 3sec																						
Output	Rated output voltage	3-phase (3-wire) 200 to 240V (corresponding to input voltage)																						
Rated capacity (kVA)	200V	VLD	1.5	2.8	3.6	5.4	7.9	11.4	15.9	20.8	27.7	32.2	43.0	53.0	64.1	79.3	102.2							
		LD	1.3	2.2	3.3	4.2	6.8	10.4	13.9	19.4	25.3	29.4	39.1	48.5	58.5	72.7	93.5							
		ND	1.1	1.7	2.8	3.8	6.1	8.7	11.1	15.9	22.2	26.3	32.9	42.3	50.6	63.0	76.2							
	240V	VLD	1.8	3.3	4.3	6.5	9.5	13.7	19.1	24.9	33.3	38.7	51.5	63.6	76.9	95.2	122.6							
		LD	1.5	2.6	3.9	5.0	8.1	12.5	16.6	23.3	30.3	35.3	47.0	58.2	70.3	87.3	112.2							
		ND	1.3	2.1	3.3	4.6	7.3	10.4	13.3	19.1	26.6	31.6	39.5	50.7	60.7	75.7	91.5							
Input	Rated input AC voltage (*3)	Main circuit power supply: 3-phase 200 to 240V 50/60 Hz, Control power supply: 1-phase 200 to 240V 50/60 Hz																						
	Permissible AC voltage/ Frequency fluctuation	AC voltage : 170 to 264V 50/60 Hz, Frequency : ± 5%																						
	Power supply capacity (kVA) (*4)	VLD	2.0	3.6	4.7	7.1	10.3	15.0	20.9	27.2	36.3	42.2	56.3	69.4	83.9	103.9	133.8							
Carrier frequency range (*5)	VLD	0.5 to 10.0kHz																						
	LD	0.5 to 12.0kHz																						
	ND	0.5 to 16.0kHz																						
Starting torque (*6)	200% / 0.3Hz																							
Braking	Regenerative Braking	Internal BRD circuit (external discharge resistor)											Ext. regen. braking unit											
	Minimum resistance value (Ω)	50	50	35	35	35	16	10	10	7.5	7.5	5	-	-	-	-								
Protective structure	IP20 – UL Open Type																							
Aprox. weight (kg)	4		4		4		4		7		7		16		16		22		30		30		43	

## 400V Class Specifications

Model name (P1- ___ -H)		00041	00054	00083	00126	00175	00250	00310	00400	00470	00620	00770	00930	001160	01470	01760	02130	02520	03160											
Applicable motor capacity (4 poles) (kW) (*1)	VLD	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160											
	LD	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160											
	ND	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132											
Rated output current (A)	VLD	4.1	5.4	8.3	12.6	17.5	25.0	31.0	40.0	47.0	62.0	77.0	93.0	116	147	176	213	252	316											
	LD	3.1	4.8	6.7	11.1	16.0	22.0	29.0	37.0	43.0	57.0	70.0	85.0	105	135	160	195	230	290											
	ND	2.5	4.0	5.5	9.2	14.8	19.0	25.0	32.0	39.0	48.0	61.0	75.0	91.0	112	150	182	217	260											
Overload current rating (*2)	VLD	110% 60sec / 120% 3sec																												
	LD	120% 60sec / 150% 3sec																												
	ND	150% 60sec / 200% 3sec																												
Output	Rated output voltage	3-phase (3-wire) 380 to 500V (corresponding to input voltage)																												
Rated capacity (kVA)	400V	VLD	2.8	3.7	5.8	8.7	12.1	17.3	21.5	27.7	32.6	43.0	53.3	64.4	80.4	101.8	121.9	147.6	174.6	218.9										
		LD	2.1	3.3	4.6	7.7	11.1	15.2	20.1	25.6	29.8	39.5	48.5	58.9	72.7	93.5	110.9	135.1	159.3	200.9										
		ND	1.7	2.8	3.8	6.4	10.3	13.2	17.3	22.2	27.0	33.3	42.3	52.0	63.0	77.6	103.9	124.7	150.3	180.1										
	500V	VLD	3.6	4.7	7.2	10.9	15.2	21.7	26.8	34.6	40.7	53.7	66.7	80.5	100.5	127.3	152.4	184.5	218.2	273.7										
		LD	2.7	4.2	5.8	9.6	13.9	19.1	25.1	32.0	37.2	49.4	60.6	73.6	90.9	116.9	138.6	168.9	199.2	251.1										
		ND	2.2	3.5	4.8	8.0	12.8	16.5	21.7	27.7	33.8	41.6	52.8	65.0	78.8	97.0	129.9	155.9	187.9	225.2										
Input	Rated input AC voltage (*3)	Main circuit power supply: 3-phase 380 to 500V 50/60 Hz, Control power supply: 1-phase 380 to 500V 50/60 Hz																												
	Permissible AC voltage/ Frequency fluctuation	AC voltage : 323 to 550V 50/60 Hz, Frequency : ± 5%																												
	Power supply capacity (kVA) (*4)	VLD	3.7	4.9	7.5	11.4	15.9	22.7	28.1	36.3	42.6	56.3	69.9	84.4	105.2	133.4	159.7	193.2	228.6	286.7										
Carrier frequency range (*5)	VLD	0.5 to 10.0kHz															0.5 to 8.0kHz													
	LD	0.5 to 12.0kHz															0.5 to 8.0kHz													
	ND	0.5 to 16.0kHz															0.5 to 10.0kHz													
Starting torque (*6)	200% / 0.3Hz															180% / 0.3Hz														
Braking	Regenerative Braking	Internal BRD circuit (external discharge resistor)											(*7)		Ext. regen. Braking unit															
	Minimum resistance value (Ω)	100	100	100	70	35	35	24	24	20	15	15	10	10	-	-	-	-												
Protective structure	IP20 – UL Open Type															IP00														
Aprox. weight (kg)	4		4		4		7		7		16		16		22		30		30		30		55		55		70		70	

### Notes:

\*1: The applicable motor refers to Hitachi standard 3-phase motor (4-pole). To use other motors, be sure to prevent the rated motor current (50Hz) from exceeding the rated output current of the inverter.  
\*2: Electronic thermal protection is valid in accordance to derating. \*3: In order to comply with the Low Voltage Directive (LVD), it must be connected to a neutral grounding supply. 200V class: -Pollution degree 2 -Overvoltage category 3. 400V class: -Pollution degree 2 -Overvoltage category 3 (In the case the input supply is 380 to 460Vac) -Overvoltage category 2 (If the input supply is 460Vac or more). \*4: The power supply capacity is the value of the output rated current at 220V / 440V. The impedance at the supply side may be affected by the wiring, breaker, input reactor, etc. \*5: Carrier frequency may be limited in the range according to the use of drive. \*6: The values for the sensorless vector control are assigned according to the values in the ND rating in the Hitachi standard motor table. Torque characteristics may vary by the control system and the motor in use. \*7: Usually, an external regenerative braking is necessary. By your order it is possible to include the built-in braking circuit. By attaching the braking resistor the regenerative braking unit is no longer required.