

Xmotion

Servo System L7P

L7P Series



Indexer Function Type **L7P**

Providing Program Function built-in single axis position determination module

- Supporting position control mode by pulse input
- Position control mode
- Possible to use without upper controller
- Modbus RTU Protocol (RS-422)

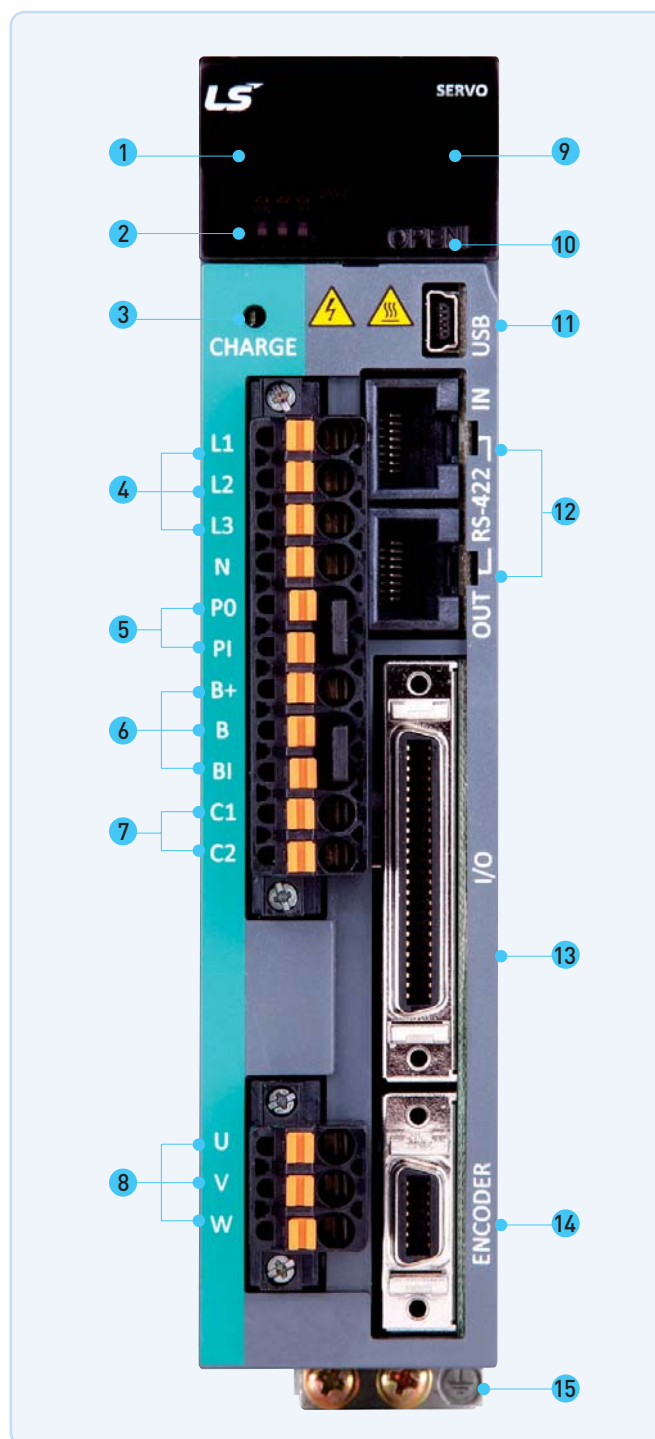
Support various motor and Encoder drive

- Supporting Rotary, DD and Motor drive (supporting 3rd party motor)
- Quadrature, BiSS-C, Tamagawa serial abs, EnDat 2.2, Resolver

Improved Control Performance

- Improved Control bandwidth
- Providing 4-step Notch-Filter
- Vibration control by Real-time FET
- Real-time gain tuning function

- 1 Display
- 2 Status LED
- 3 Charge Lamp
- 4 Main Power Connector (L1, L2, L3)
- 5 DC Reactor Connector (PO, PI) Short-Circuit When Not used
- 6 Regenerative Resistor Connector (B+, B, BI)
 - Short-Circuit B, BI terminals when standard type
 - Use B+, B terminals when using external resistor
- 7 Control Power connector (C1, C2)
- 8 Motor power connector (U, V, W)
- 9 Connector for analogue monitor
- 10 Switch for nod address setting
- 11 USB connector (USB)
- 12 RS-422 communication connector (CN3, CN4)
- 13 Control signal connector (I/O)
- 14 Encoder Connector (ENCODER)
- 15 Ground



L7PA Serial Type

Rated Speed (rpm)	Maximum Speed (rpm)	Flange Size	Applicable Motor	Applicable Drive	Standard Encoder Type	Encoder Cable		Power Cable				
					Serial Type	Serial	Abs	For power	Power + Brake	Brake		
3,000	5,000	□40	FALR5A	L7PA001U	* 18Bit Serial Absolute	APCS-E □ □ □ ES	APCS-E □ □ □ ES1	APCS-P □ □ □ LS	-	APCS-P □ □ □ QS		
		□40	FAL01A	L7PA001U								
		□40	FAL015A	L7PA004U								
		□60	FBL01A	L7PA001U								
		□60	FBL02A	L7PA002U								
		□60	FBL04A	L7PA004U								
		□80	FCL04A	L7PA004U								
		□80	FCL06A	L7PA008U								
		□80	FCL08A	L7PA008U								
		□80	FCL10A	L7PA010U								
		□60	FB01A	L7PA001U								
		□60	FB02A	L7PA002U								
		□60	FB04A	L7PA004U								
		□80	FC04A	L7PA004U								
		□80	FC06A	L7PA008U								
		□80	FC08A	L7PA008U								
		□80	FC10A	L7PA010U								
		□130	FE09A	L7PA010U								
		□130	FE15A	L7PA020U								
		□130	FE22A	L7PA020U								
		□130	FE30A	L7PA035U								
		□180	FF30A	L7PA035U								
		□180	FF50A	L7PA050U								
		2,000	3,000	□80				FCL03D	L7PA004U	* 19Bit Serial Absolute	APCS-E □ □ □ ES	APCS-E □ □ □ ES1
□80	FCL05D			L7PA008U								
□80	FCL06D			L7PA008U								
□80	FCL07D			L7PA008U								
□80	FC03D			L7PA004U								
□80	FC05D			L7PA008U								
□80	FC06D			L7PA008U								
□80	FC07D			L7PA008U								
□130	FE06D			L7PA008U								
□130	FE11D			L7PA010U								
□130	FE16D			L7PA020U								
□130	FE22D			L7PA020U								
□180	FF22D		L7PA020U									
□180	FF35D		L7PA035U									
□180	FF55D		L7PA050U									
2,500	□180		FF75D	L7PA075U								
3,000	□220		FG22D	L7PA020U								
	□220		FG35D	L7PA035U								
	□220		FG55D	L7PA050U								
	2,500		□220	FG75D	L7PA075U							
			□220	FG110D	L7PA150U							
	1,500		3,000	□130	FE05G	L7PA008U	APCS-E □ □ □ DS	APCS-E □ □ □ DS1	APCS-P □ □ □ HS		APCS-P □ □ □ NB	-
□130				FE09G	L7PA010U							
□130				FE13G	L7PA020U							
□130		FE17G		L7PA020U								
2,700		□180	FF20G	L7PA020U								
		□180	FF30G	L7PA035U								
3,000		□180	FF44G	L7PA050U								
		□180	FF60G	L7PA075U								
2,000		□180	FF75G	L7PA075U								
		□220	FG20G	L7PA020U								
2,700		□220	FG30G	L7PA035U								
		□220	FG44G	L7PA050U								
3,000	□220	FG60G	L7PA075U									
	□220	FG85G	L7PA150U									
	□220	FG110G	L7PA150U									
	□220	FG150G	L7PA150U									
1,000	2,000	□130	FE03M	L7PA004U	APCS-E □ □ □ DS	APCS-E □ □ □ DS1	APCS-P □ □ □ HS	APCS-P □ □ □ NB	-	-		
		□130	FE06M	L7PA008U								
		□130	FE09M	L7PA010U								
		□130	FE12M	L7PA020U								
		□180	FF12M	L7PA020U								
		□180	FF20M	L7PA020U								
	1,700	□180	FF30M	L7PA035U								
		□180	FF44M	L7PA050U								
	2,000	□220	FG12M	L7PA020U								
		□220	FG20M	L7PA020U								
	1,700	□220	FG30M	L7PA035U								
		□220	FF44M	L7PA050U								
2,000	□220	FF60M	L7PA075U									
	□220	FF60M	L7PA075U									

L7PB Serial Type

Rated Speed (rpm)	Maximum Speed (rpm)	Flange Size	Applicable Motor	Applicable Drive	Standard Encoder Type	Encoder Cable		Power Cable		
					Serial Type	Serial	Abs	For power	Power + Brake	Brake
3,000	5,000	□130	FEP09A	L7PB010U	* 19Bit Serial Absolute	APCS-E □ □ □ DS	APCS-E □ □ □ DS1	APCF-P □ □ □ HS	APCF-P □ □ □ NB	-
		□130	FEP15A	L7PB020U						
		□130	FEP22A	L7PB035U						
		□130	FEP30A	L7PB035U						
		□180	FFP30A	L7PB035U						
		□180	FFP50A	L7PB050U						
2,000	3,000	□130	FEP06D	L7PB010U						
		□130	FEP11D	L7PB010U						
		□130	FEP16D	L7PB020U						
		□180	FFP22D	L7PB020U						
		□180	FFP35D	L7PB035U						
		□180	FFP55D	L7PB050U						
	2,500	□180	FFP75D	L7PB075U						
	3,000	□220	FGP22D	L7PB020U						
	2,700	□220	FGP35D	L7PB035U						
	3,000	□220	FGP55D	L7PB050U						
	2,500	□220	FGP75D	L7PB075U						
□220		FGP110D	L7PB150U							
1,500	3,000	□130	FEP05G	L7PB010U						
		□130	FEP09G	L7PB010U						
		□130	FEP13G	L7PB020U						
		□130	FEP17G	L7PB020U						
		□180	FFP20G	L7PB020U						
	2,700	□180	FFP30G	L7PB035U						
	3,000	□180	FFP44G	L7PB050U						
	2,500	□180	FFP60G	L7PB075U						
	2,200	□180	FFP75G	L7PB075U						
	3,000	□220	FGP20G	L7PB020U						
	2,700	□220	FGP30G	L7PB035U						
	3,000	□220	FGP44G	L7PB050U						
	2,500	□220	FGP60G	L7PB075U						
		□220	FGP85G	L7PB150U						
2,000	□220	FGP110G	L7PB150U							
	□220	FGP150G	L7PB150U							
1,000	2,000	□130	FEP03M	L7PB010U						
		□130	FEP06M	L7PB010U						
		□130	FEP09M	L7PB010U						
		□130	FEP12M	L7PB020U						
		□180	FFP12M	L7PB020U						
		□180	FFP20M	L7PB020U						
	1,700	□180	FFP30M	L7PB035U						
		□180	FFP44M	L7PB050U						
	2,000	□220	FGP12M	L7PB020U						
		□220	FGP20M	L7PB020U						
	1,700	□220	FGP30M	L7PB035U						
	2,000	□220	FGP44M	L7PB050U						
		□220	FGP60M	L7PB150U						

Servo Drive

L7PA Drive

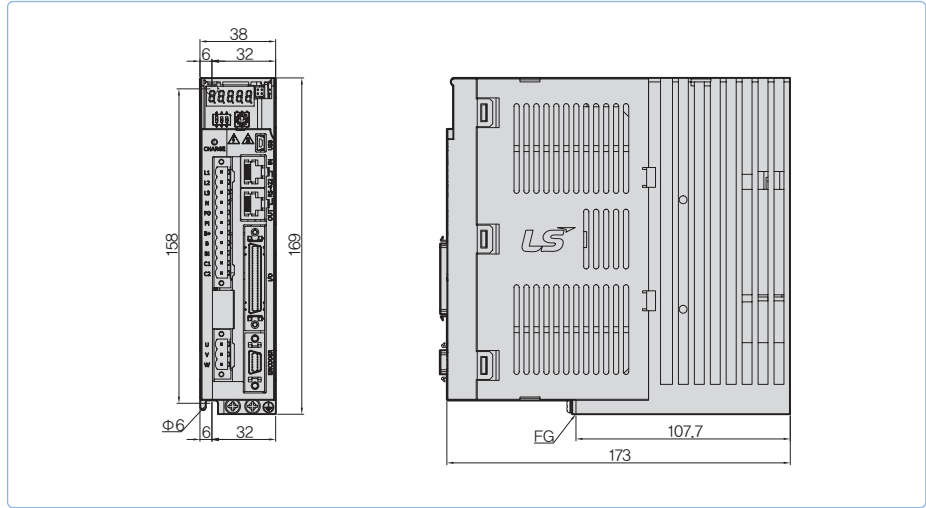
Item		Type Name	L7PA001U	L7PA002U	L7PA004U	L7PA008U	L7PA010U	L7PA020U	L7PA035U	L7PA050U	L7PA075U	L7PA150U
Input Power	Main Power Supply	3 Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]										
	Control Power Supply	Single Phase AC200 ~ 230[V](-15 ~ +10[%]), 50 ~ 60[Hz]										
Rated Current[A]			1.4	1.7	3.0	5.2	6.75	13.5	16.7	32	39.4	76
Peak Current[A]			4.2	5.1	9.0	15.6	20.25	40.5	50.1	90.88	98.5	190
Encoder Type		Quadrature(Incremental) BiSS-B, BiSS-C(Absolute, Incremental) Tamagawa Serial(Absolute, Incremental) EnDat 2.2 Sinusoidal Analog Hall										
Control Performance	Speed Control Range	Maximum 1: 5000										
	Frequency Response	Maximum 1 [kHz] or above (When using 19bit Serial Encoder)										
	Speed Variation Ratio	±0.01 [%] or lower [when load changes between 0 and 100%] ±0.1[%] or lower [temperature 25 ±10°C]										
	Accel/Decel Time	Straight or S-curve acceleration/deceleration [0~10,000[ms], 0~1,000[ms] Unit configurable]										
	Input Frequency	1[Mpps], line drive / 200[kpps], Open Collector										
	Input Pulse Type	Symbol + Pulse Series, CW+CCW, A/B Phase										
RS422 Communication Specifications	Communication Specifications	ANSI/TIA/EIA-422 Standard Specifications										
	Communication Protocol	MODBUS-RTU										
	Connector	RJ45 x 2										
	Synchro Method	Asynchronous										
	Transmission Speed	9600 /19200/38400/57600 [bps] Can be configured at [0x3002]										
	Transmission Distance	Maximum 200 [m]										
	Power Consumption	100[mA]										
	Terminating Resistance	Dip S/W(On/Off), Built-In 120 Ω										
Input / Output Signal	Digital Input	Input voltage range: DC 12[V] ~ DC 24[V] Total 16 input channel (allocatable) 32 function inputs can be selectively allocated (*SV_ON, *POT, *NOT, *A-RST, *START, *STOP, *REGT, *EMG, *HOME, *HSTART, *ISEL0, *ISEL1, *ISEL2, *ISEL3, *ISEL4, *ISEL5, PCON, GAIN2, P_CL, N_CL, MODE, PAUSE, ABSRQ, JSTART, JDIR, PCLR, AOV, SPD1/LVSF1, SPD2/LVSF2, SPD3, PROBE1, PROBE2)										
	Digital Output	Use rating: DC 24[V] ±10%, 120[mA] Total 8 input channel (allocatable) 19 function inputs can be selectively allocated (*ALARM±, *READY±, *BRAKE±, *INPOS1±, *ORG±, *EOS±, *TGO±, *TLMT±, VLMT±, INSPD±, ZSPD±, WARN±, INPOS2±, IOUT0±, IOUT1±, IOUT2±, IOUT3±, IOUT4±, IOUT5±)										
Analog Input / output	Analog input	Total 2 channels analog speed override input(-10[V] ~ +10[V]) analog torque command input(-10[V] ~ +10[V])										
	Analog output	Total 2 channels 15 function inputs can be selectively allocated										
USB Communication	Protection	Firmware download, parameter setting, tuning, auxiliary function, parameter copy										
	Communication Specifications	Complies with USB 2.0 Full Speed Specifications										
	Connection Device	PC or USB storage media										
Built-in functions	Dynamic Braking	Standard built-in(activated by servo alarm or servo OFF)										
	Regenerative Braking	Default built-in(excluding 15kW), external installation possible										
	Display	7 Segment(5 DIGIT)										
	Setting Function	Drive node address can be set using rotary switch										
	Additional Function	Gain tuning, alarm history, JOG operation, origin search										
	Protective Function	Excessive current, overload, excessive current limit, overheating, excessive voltage, low voltage, excessive speed, encoder fail, position following fail, current sensing fail										
Operation Environment	Operating Temperature / Storage Temperature	0 ~ 50[°C] / -20 ~ 70[°C]										
	Operating Humidity / Storage Humidity	Below80[%]RH / Below 90[%]RH(avoid dew-condensation)										
	Environment	Indoor, Avoid corrosive, inflammable gas or liquid, and electrically conductive dust.										

L7PB Drive

Item		Type Name	L7PB010U	L7PB020U	L7PB035U	L7PB050U	L7PB075U	L7PB150U
Input Power	Main Power Supply	3 Phase AC380 ~480[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
	Control Power Supply	Single Phase AC380 ~ 480[V](-15 ~ +10[%]), 50 ~ 60[Hz]						
Rated Current[A]			3.7	8	10.1	17.5	22.8	39
Peak Current[A]			11.1	24	30.3	47.25	57	97.5
Encoder Type		Universal Encoder Feedback Quadrature(Incremental) BiSS-B, BiSS-C(Absolute, Incremental) Tamagawa Serial(Absolute, Incremental) EnDat 2.2 Sinusoidal Analog Hall						
Control Performance	Speed Control Range	Maximum 1: 5000						
	Frequency Response	Maximum 1 [kHz] or above (When using 19bit Serial Encoder)						
	Speed Variation Ratio	± 0.01 [%] or lower [when load changes between 0 and 100%] ± 0.1 [%] or lower [temperature 25 $\pm 10^{\circ}\text{C}$]						
	Accel/Decel Time	Straight or S-curve acceleration/deceleration [0~10,000[ms], 0~1,000[ms] Unit configurable]						
	Input Frequency	1[Mpps], line drive / 200[kpps], Open Collector						
	Input Pulse Type	Symbol + Pulse Series, CW+CCW, A/B Phase						
RS422 Communication Specifications	Communication Specifications	ANSI/TIA/EIA-422 Standard Specifications						
	Communication Protocol	MODBUS-RTU						
	Connector	RJ45 x 2						
	Synchro Method	Asynchronous						
	Transmission Speed	9600 /19200/38400/57600 [bps] Can be configured at [0x3002]						
	Transmission Distance	Maximum 200 [m]						
	Power Consumption	100[mA]						
	Terminating Resistance	Dip S/W(On/Off), Built-In 120 Ω						
Input / Output Signal	Digital Input	Input voltage range: DC 12[V] ~ DC 24[V] Total 16 input channel (allocatable) 30 function inputs can be selectively allocated (*SV_ON, *POT, *NOT, *A-RST, *START, *STOP, *REGT, *EMG, *HOME, *HSTART, *ISEL0, *ISEL1, *ISEL2, *ISEL3, *ISEL4, *ISEL5, PCON, GAIN2, P_CL, N_CL, PAUSE, ABSRQ, JSTART, JDIR, PCLR, SPD1/LVSF1, SPD2/LVSF2, SPD3, AOVR, MODE,)						
	Digital Output	Use rating: DC 24[V] $\pm 10\%$, 120[mA] Total 8 input channel (allocatable) 19 function inputs can be selectively allocated (*ALARM \pm , *READY \pm , *BRAKE \pm , *INPOS1 \pm , *ORG \pm , *EOS \pm , *TGON \pm , *TLMT \pm , VLMT \pm , INSPD \pm , ZSPD \pm , WARN \pm , INPOS2 \pm , IOUT0 \pm , IOUT1 \pm , IOUT2 \pm , IOUT3 \pm , IOUT4 \pm , IOUT5 \pm)						
Analog Input / output	Analog input	Total 2 channels analog speed override input(-10[V] ~ +10[V]) analog torque command input(-10[V] ~ +10[V])						
	Analog output	Total 2 channels 15 function inputs can be selectively allocated						
USB Communication	Protection	Firmware download, parameter setting, tuning, auxiliary function, parameter copy						
	Communication Specifications	Complies with USB 2.0 Full Speed Specifications						
	Connection Device	PC or USB storage media						
Built-in functions	Dynamic Braking	Standard built-in(activated by servo alarm or servo OFF)						
	Regenerative Braking	Default built-in(excluding 15kW), external installation possible						
	Display	7 Segment(5 DIGIT)						
	Setting Function	Drive node address can be set using rotary switch						
	Additional Function	Gain tuning, alarm history, JOG operation, origin search						
	Protective Function	Excessive current, overload, excessive current limit, overheating, excessive voltage, low voltage, excessive speed, encoder fail, position following fail, current sensing fail						
Operation Environment	Operating Temperature / Storage Temperature	0 ~ 50[$^{\circ}\text{C}$] / -20 ~ 70[$^{\circ}\text{C}$]						
	Operating Humidity / Storage Humidity	Below 80[%]RH / Below 90[%]RH(avoid dew-condensation)						
	Environment	Indoor, Avoid corrosive, inflammable gas or liquid, and electrically conductive dust.						

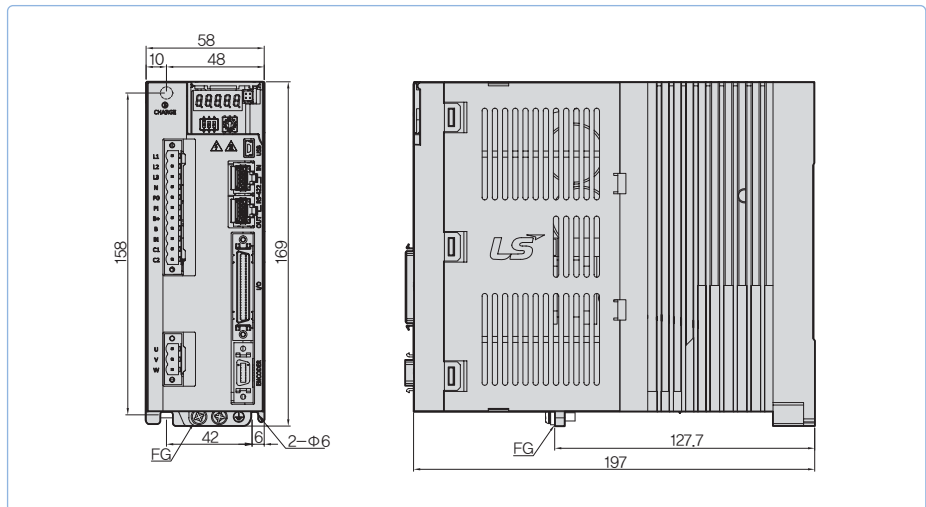
L7PA001U ~ L7PA004U

*Unit [mm]



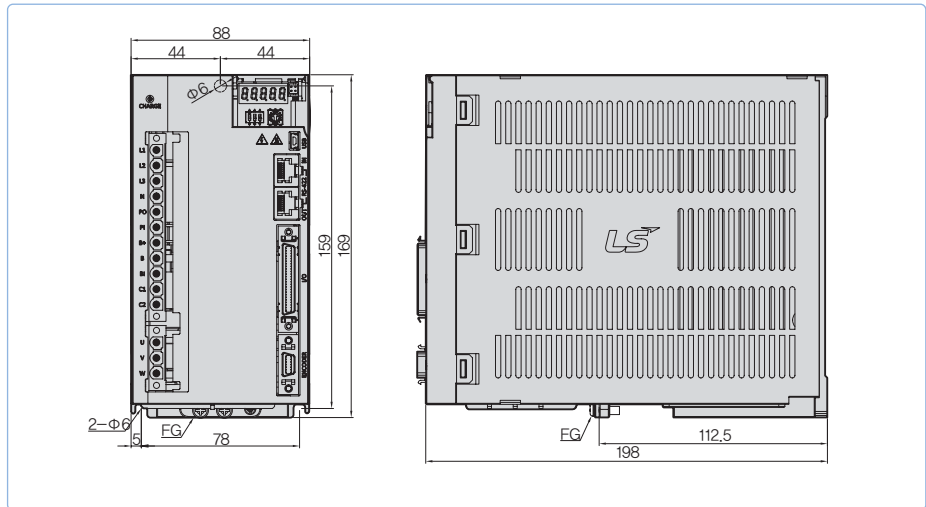
L7PA008U / L7PA010U
[Weight : 1.5kg
(Fan-Cooling included)]

*Unit [mm]



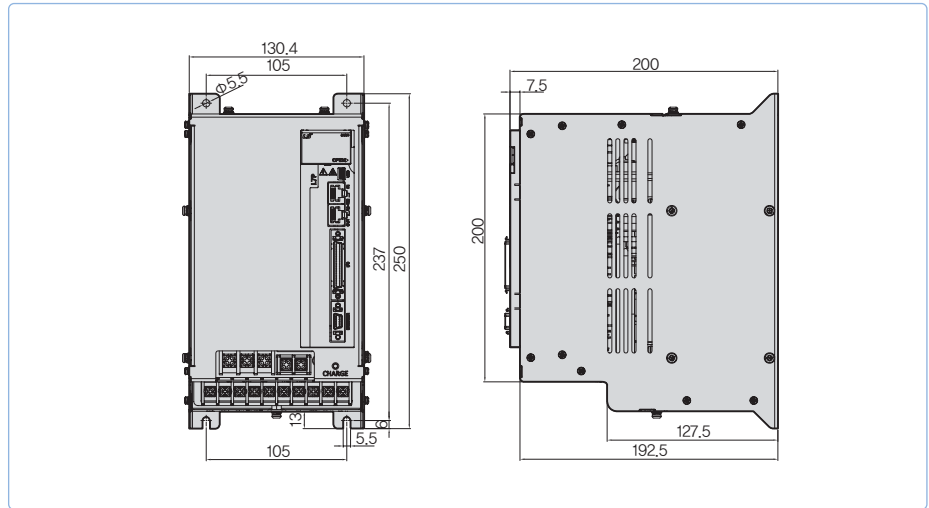
L7PA020U / L7PA035U
[Weight : 2.5kg
(Fan-Cooling included)]

*Unit [mm]



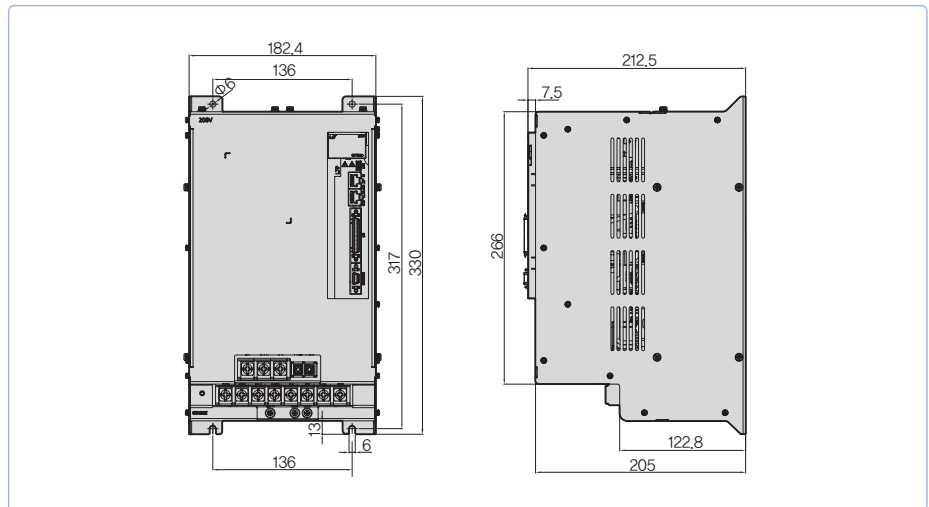
L7PA050U [Weight : 5.5kg
(Fan-Cooling included)]

*Unit [mm]



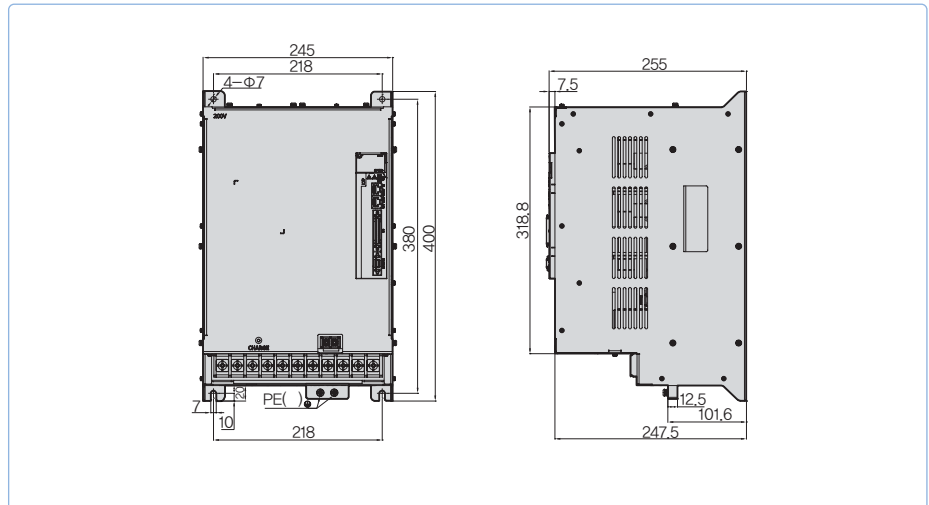
L7PA075U [Weight : 8.5kg
(Fan-Cooling included)]

*Unit [mm]



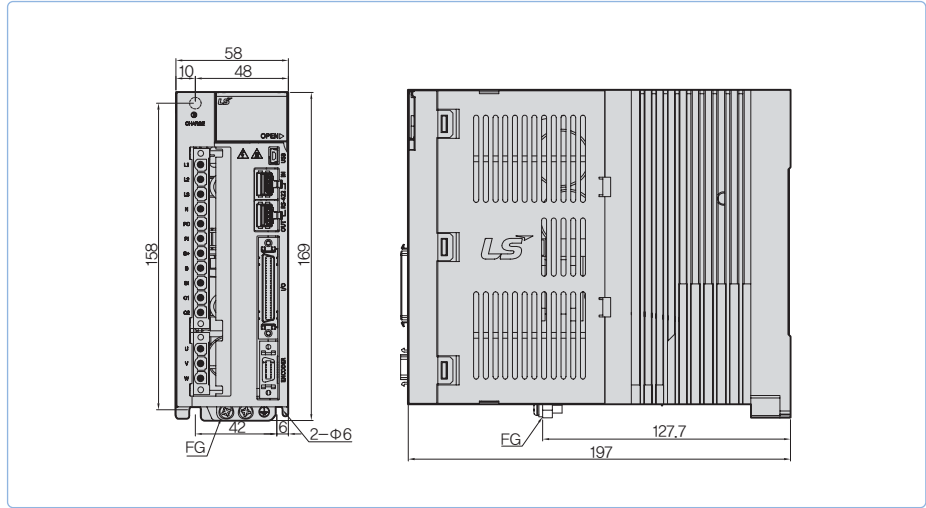
L7PA150U [Weight : 16.2kg
(Fan-Cooling included)]

*Unit [mm]



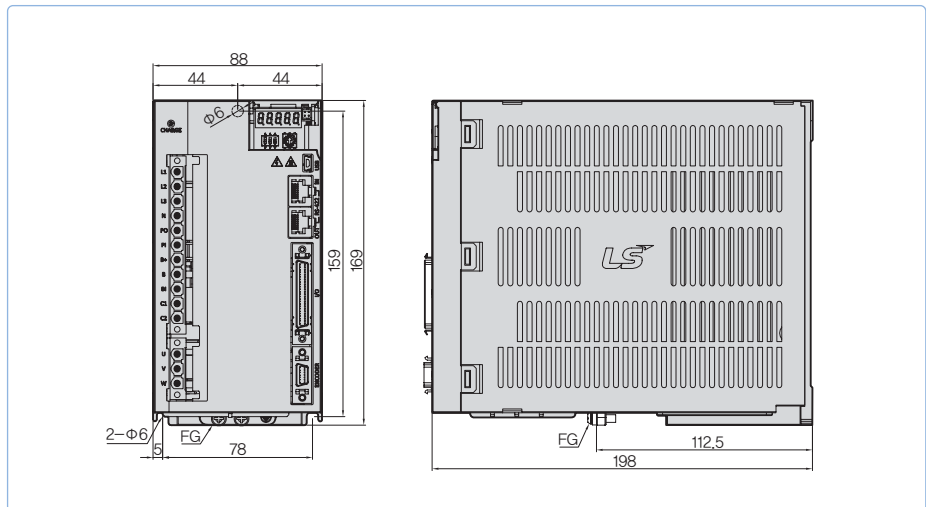
L7PB010U [Weight : 1.5kg
(Fan-Cooling included)]

*Unit [mm]



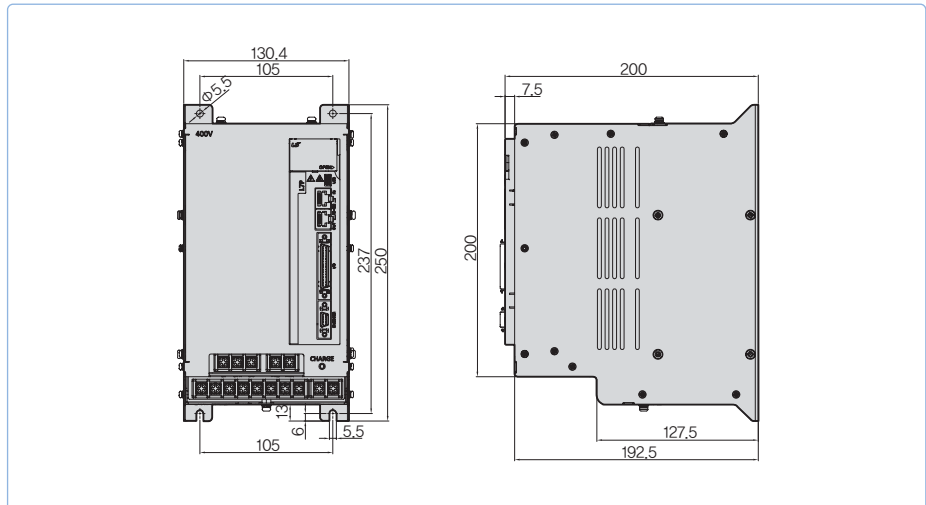
L7PB020U / L7PB035U
[Weight : 2.5kg
(Fan-Cooling included)]

*Unit [mm]



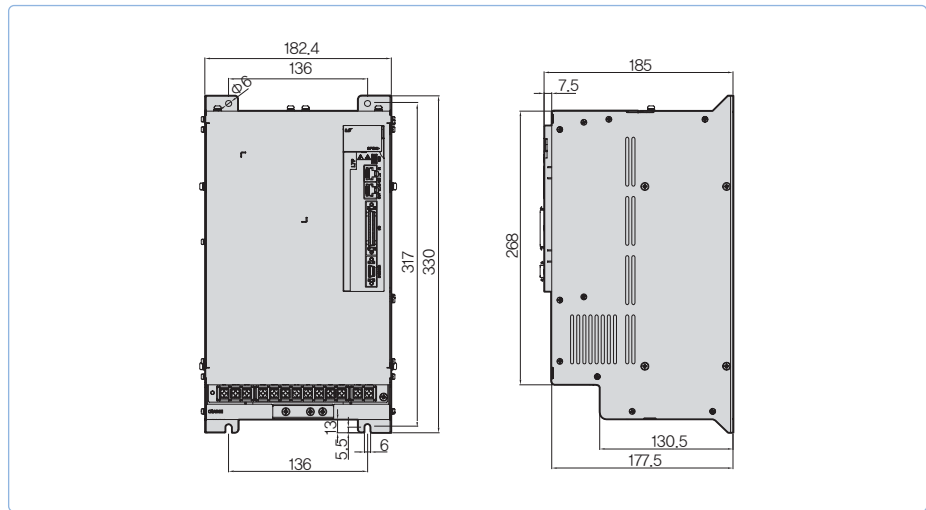
L7PB050U [Weight : 5.5kg
(Fan-Cooling included)]

*Unit [mm]



L7PB075U [Weight : 8.5kg
(Fan-Cooling included)]

*Unit [mm]



L7PB150U [Weight : 15.5kg
(Fan-Cooling included)]

*Unit [mm]

