

L7NHF Series



Servo Drive Designation

L7	NHF	A	010	U	AA
Communication	Input Power Supply	Capacity	Encoder Type	Option	
All-in-One Type EtherCAT Type+ Full-Closed Type	A:200VAC	010 : 1kW 035 : 3.5kW 050 : 5kW 075 : 7.5kW	U:Universal	Exclusive Option Code	

All-in-One EtherCAT, Full-Closed System Control **L7NHF**

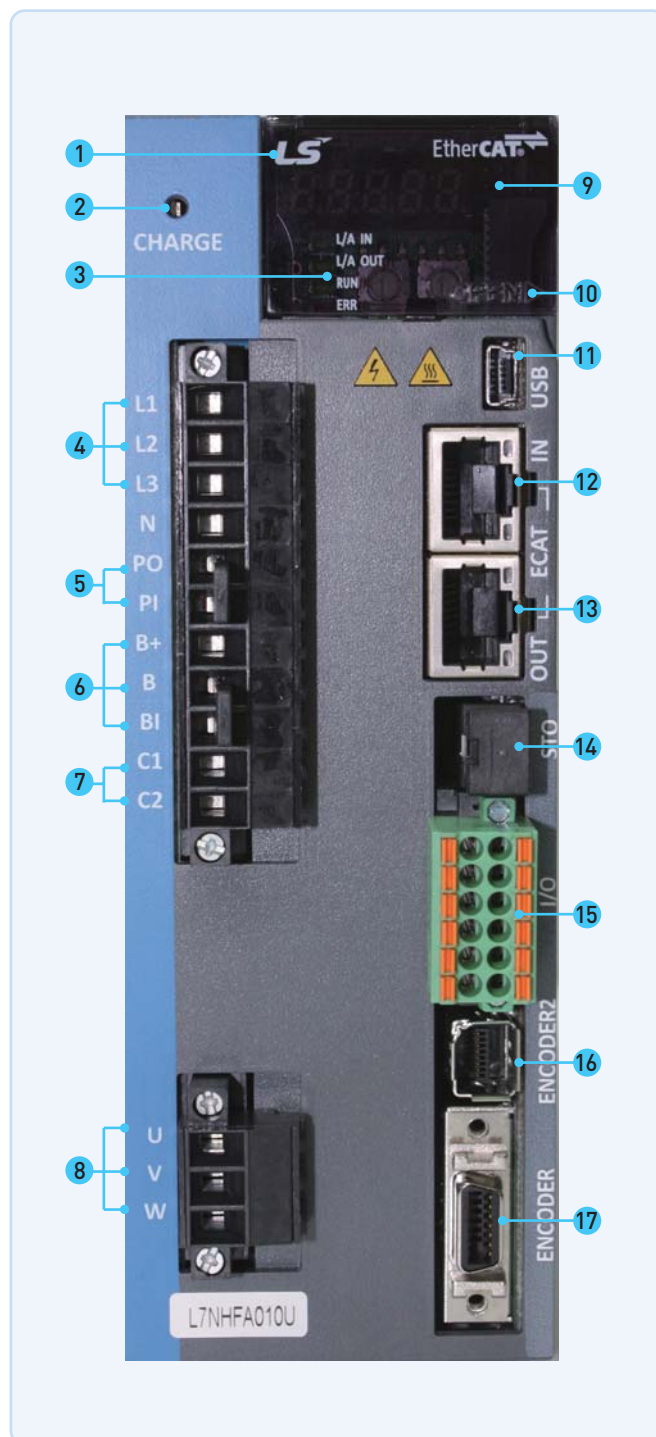
Real-time control through EtherCAT

- High speed, Real-time capability and Synchronization mechanism
- Supporting CoE, EoE and FoE
- Improved Speed Response(≒1kHz) Frequency
- Improved communication speed by applying 16bit-bus
 - Improved Chip communication speed
 - Improved EtherCAT communication speed

Fully-Closed Loop Control

- Switch among Semi-Closed Loop Control, Fully-Closed Loop Control and Dual Feedback Control
- Fully-Closed Loop Control provides quick response with internal and external encoder position values
- Fully-Closed Loop Control ensures high-Precision control during machine operation

- 1 Display
- 2 Charge Lamp
- 3 Status LED
- 4 Main Power Connector (L1, L2, L3)
- 5 DC Reactor Connector (PO, PI)
- 6 Regenerative Resistance Connector (B+, B, BI)
- 7 Control Power Connector (C1, C2)
- 8 Servo Motor Connecting Terminal (U,V,W)
- 9 Connector for Analog Monitor
- 10 Switch for node address setting
- 11 USB Connector
- 12 EtherCAT Communication Port (IN)
- 13 EtherCAT Communication Port (OUT)
- 14 Safety Connector (STO)
- 15 Input / Output signal Connector
- 16 Encoder2 Connector (ENCODER2)
- 17 Encoder Connector (ENCODER)



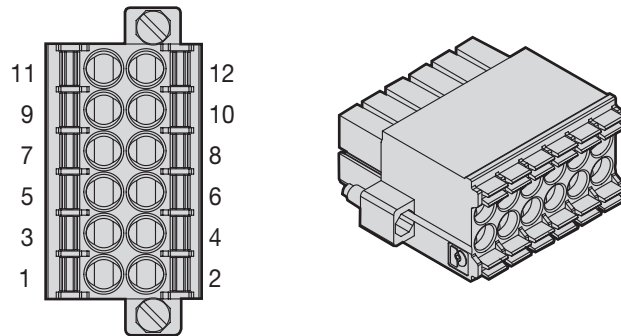
L7NHFA Drive

Item		Type Name	L7NHFA010U	L7NHA035U	L7NHA050U	L7NHA075U
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]			6.75	16.7	32	39.4
Peak Current[A]			20.25	50.1	90.88	98.5
1st Encoder Encoder A			Quadrature (Incremental) BiSS-B, BiSS-C (Absolute, Incremental) Tamagawa Serial (Absolute, Incremental) EnDat 2.2, Sinusoidal, Analog Hall			
2nd Encoder Encoder B			Quadrature (Incremental), SSI Sinusoidal, Analog Hall (Analog to BiSS converter)			
Control Performance	Speed Control Range		Maximum 1: 5000			
	Frequency Response		Maximum 1[kHz] or above(When the 19-bit Serial Encoder is applied)			
	Speed Variation Ratio		±0.01[%] or lower(When the load changes between 0 and 100%) ±0.1[%] or less(Temperature of 25°C[± 10])			
	Torque Control Repetition Accuracy		Within ±1%			
	Input Frequency		4[Mpps], Lind Drive			
	Input Pulse Method		Symbol + Pulse series, CW+CCW, Phase A/B			
EtherCAT Communication Specifications	Communication Standard		FoE (Firmware download) EoE (Parameter setting by UDP, Tuning, Secondary function, Parameter copy) CoE (IEC 61158 Type12, IEC 61800-7 CIA 402 Drive profile)			
	Physical Layer		100BASE-TX(IEEE802.3)			
	Connector		RJ45 x 2			
	Communication distance		Within connection between nodes 100[m]			
	DC(Distributed Clock)		By DC mode synchronism. minimum DC cycle: 250[us]			
	LED Display		LinkAct IN, LinkAct OUT, RUN, ERR			
	Cia402 Drive Profile		Profile Position Mode, Profile Velocity Mode, Profile Torque Mode, Cyclic Synchronous Position Mode Cyclic Synchronous Velocity Mode, Cyclic Synchronous Torque Mode, Homing Mode			
Digital Input / Output	Digital Input		Input Voltage range : DC12[V] ~ DC 24[V] Total 6 input channels(allocable) Above 15 functions can be used selectively for assignment. (*POT, *NOT, *HOME, *STOP, *PCON, *GAIN2, *P_CL, *N_CL, PROBE1, PROBE2, EMG, A_RST, SV_ON, LVSF, LVSF2) * Default signal			
	Digital Output		Total 3 input channels (allocable) Total 11 output can be used selectively for assignment. (*BRAKE±, *ALARM±, *READY±, *ZSPD±, INPOS±, TLMT±, VLMT±, INSPD±, WARN±, TGO±, INPOS2±) * Default signal			
	Analog Output		Total 2 channels (allocable) Total 25 output can be used selectively for assignment.			
Safety Function			2 Input Channels (STO1, STO2)			
USB Communication	Function		Firmware download, Parameter setting, Tuning, Secondary function, Parameter copy			
	Communication Standard		USB 2.0 Full Speed (applies standard)			
	Connect		PC or USB storing medium			
Internal Function	Dynamic Braking		Standard built-in brake (activated when the servo alarm goes off or when the servo is off).			
	Regenerative Braking		Default built-in(excluding 15kW), external installation possible			
	Display Function		7 segments(5DIGIT)			
	Self-setting Function		The [MODE] key changes the content displayed in 7 segments			
	Additional Function		Auto gain tuning function			
Protection Function			Overcurrent, overload, overvoltage, insufficient voltage, overspeed, overheat(power module overheat, abnormal drive operation's temp), encoder problem, position tracking problem, current sensing problem			
Operation Environment	Operating Temperature / Storage Temperature		0 ~ 50[°C] / -20 ~ 70[°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.			

XDL-L7NHF Series I/O & Encoder2 PIN MAP

I/O Connector

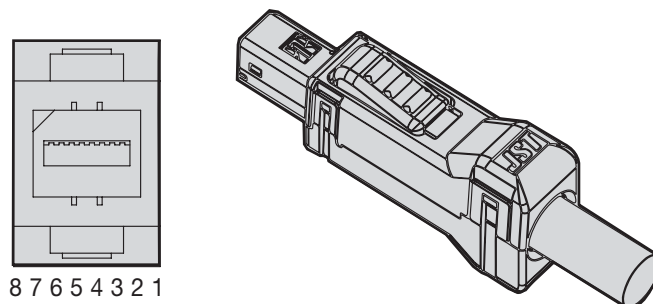
DFMC 1.5/6-STF-3.5 (PHOENIX)



PIN No.	Signal	PIN No.	Signal
1	DICOM	7	DI6
2	FG	8	DI5
3	D2	9	D02
4	DI1	10	D01
5	DI4	11	DOCOM
6	DI5	12	D03

Encoder2 Connector

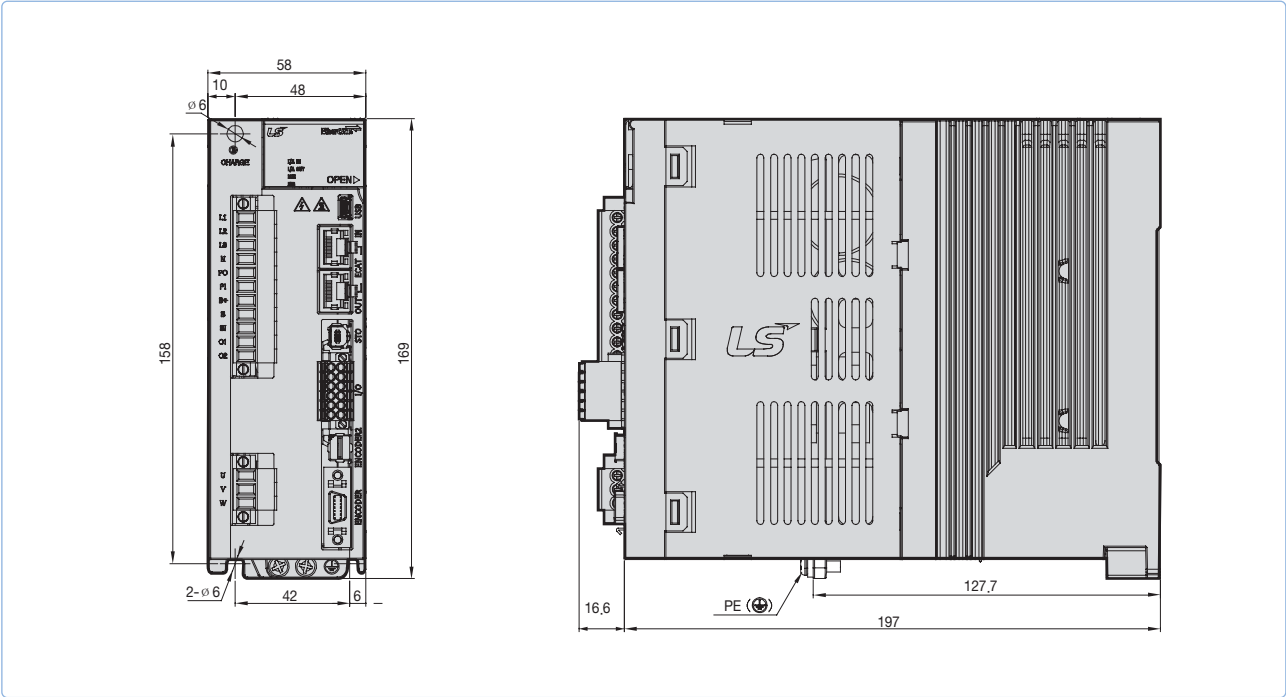
MUF-PK8K-X (JST)



PIN No.	Signal(Quadrature)	Signal(SSI)	PIN No.	Signal(Quadrature)	Signal(SSI)
1	5V	5V	5	B	CLK
2	GND	GND	6	/B	/CLK
3	A	DATA	7	Z	Z
4	/A	/DATA	8	/Z	/Z

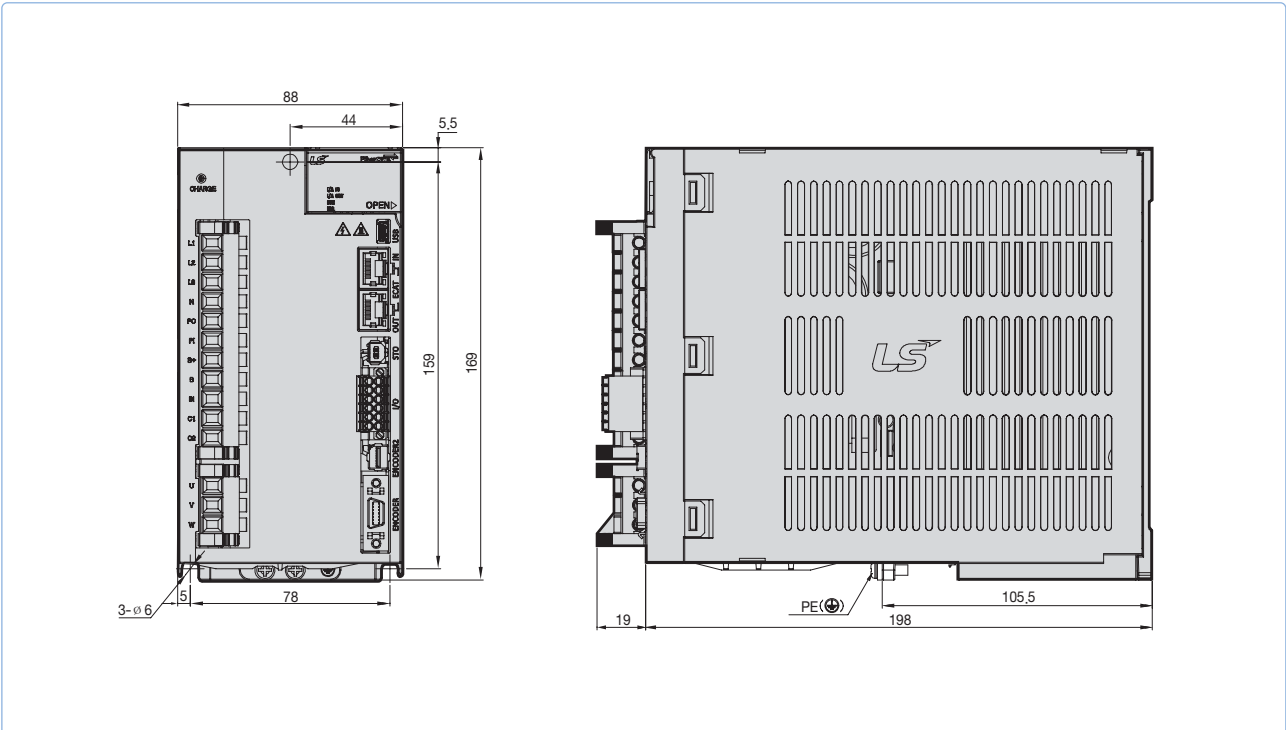
L7NHFA010U [Weight : 1.5kg(Fan-Cooling included)]

*Unit [mm]



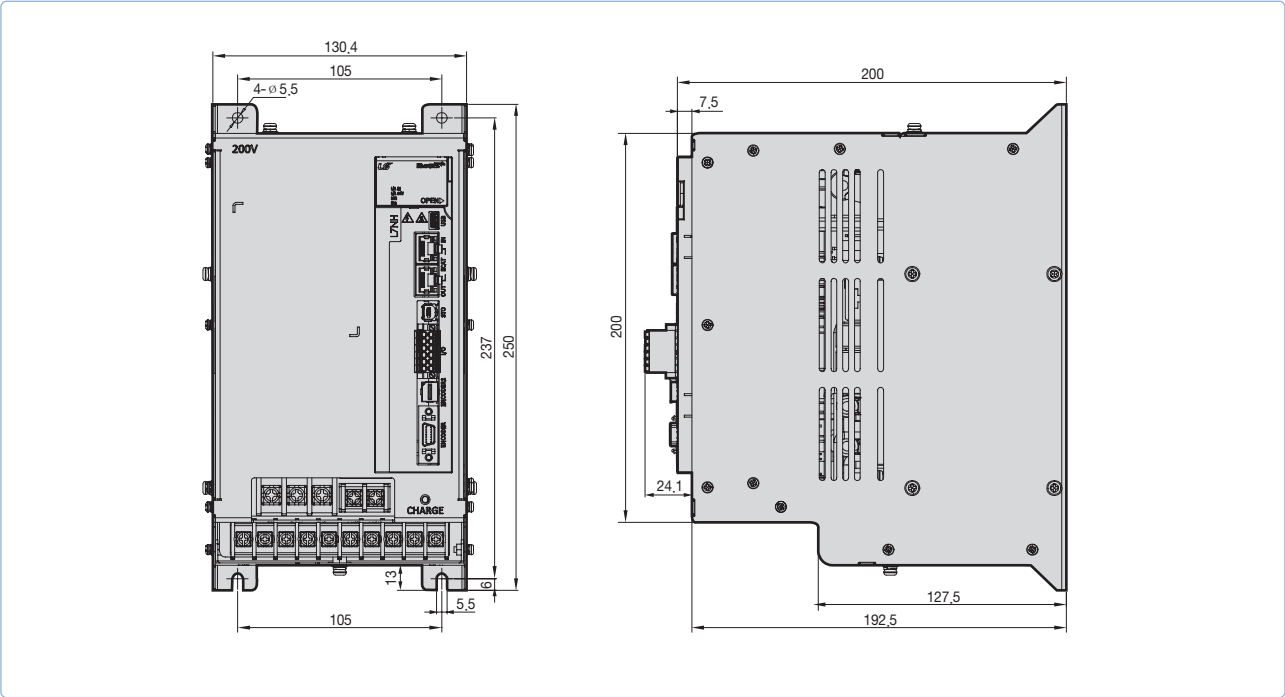
L7NHFA035U [Weight : 2.5kg(Fan-Cooling included)]

*Unit [mm]



L7NHFA050U [Weight : 1.5kg(Fan-Cooling included)]

*Unit [mm]



L7NHFA075U [Weight : 2.5kg(Fan-Cooling included)]

*Unit [mm]

