Moving towards tomorrow

LS MECAPION
DD MOTOR
SERIES

LS Mecapion

Products Collection Vol. 1.1

Direct drive motor reduces the number of mechanical components, and provide a stiff mechanical system for highly dynamic applications. It allows manufactures to develop efficient and cost-effective production method.

Contents

DD MOTOR SYSTEM

Characteristics

Mecapion Direct-Drive Motor Feature

□ Reduced cogging torque and optimized torque design

- Select optimized permanent magnet, coil and slot ratio with analysis of Electromagnet
- Realize balanced rotation with bath of torque in high speed.
- Reduced torque ripple and cogging with sufficient No. of permanent magnet
- Improve spacing ratio with reformed winding method.
- Adopt high power Neodymium(Nd-Fe-B) permanent magnet

□ High resolution of Rotary Encoder with Biss C protocol

- Using high performance optical encoder with Biss C protocol
- Providing 1,048,576 CPR of resolution (Single turn Absolute)
- Improve flexibility with our own encoder technology
- Deduced cost and delivery time for encoder

□ New AC Servo Drive(L7 Series)

- Motor can be operated with our own AC servo drive (3phase AC 220V)
- I/O type and Network (EtherCAT) type is available
- Optimized Design for our Direct Drive Rotary Motor

□ Wide Range of Line Up with hollow shaft type design

- Enlarged Diameter of motor to support big load and torque
- Extended bore for the various application and customer's convenience.
- Stable design with reduced height (we reduced the space with our own built in type encoder)
- Minimize inline load during rotation

□ Customized Line Up

- Power (63W ~ 2.5KW), Rated Torque (3.0Nm ~ 160Nm), Rated Speed(150RPM ~ 200RPM)
- Frame size (Diameter) : 135mm, 175mm, 230mm, 290mm, 360mm (13 models)

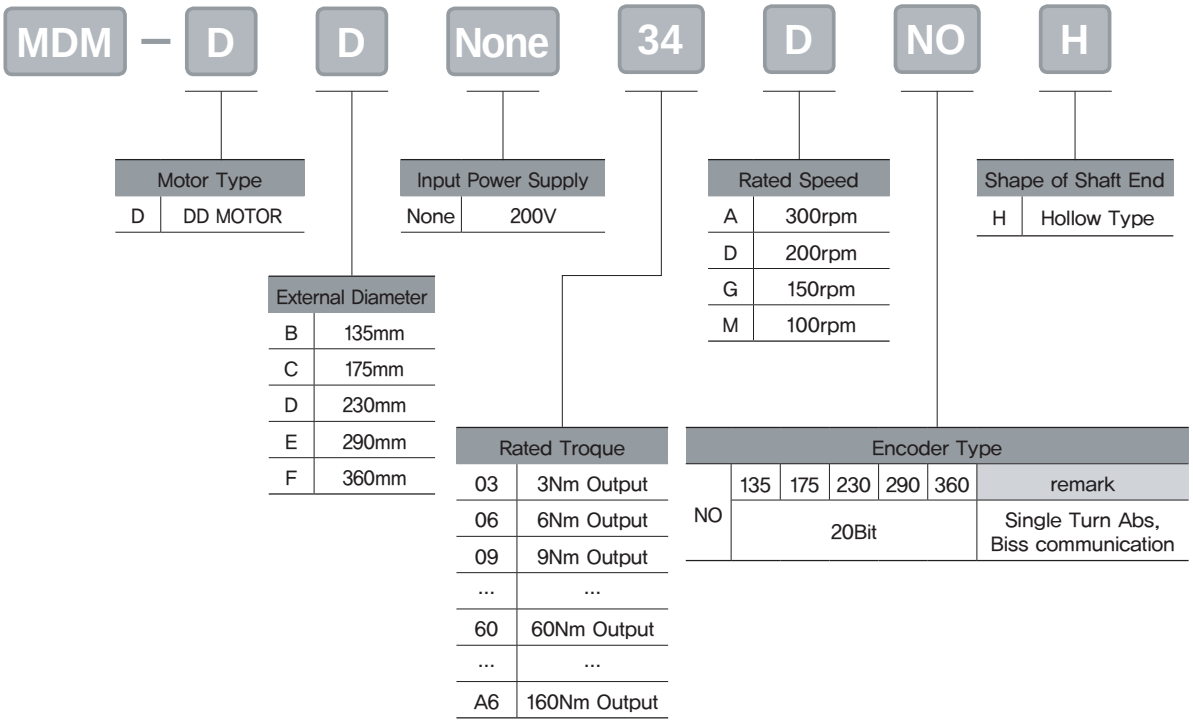
Characteristics

Ratings and Specifications

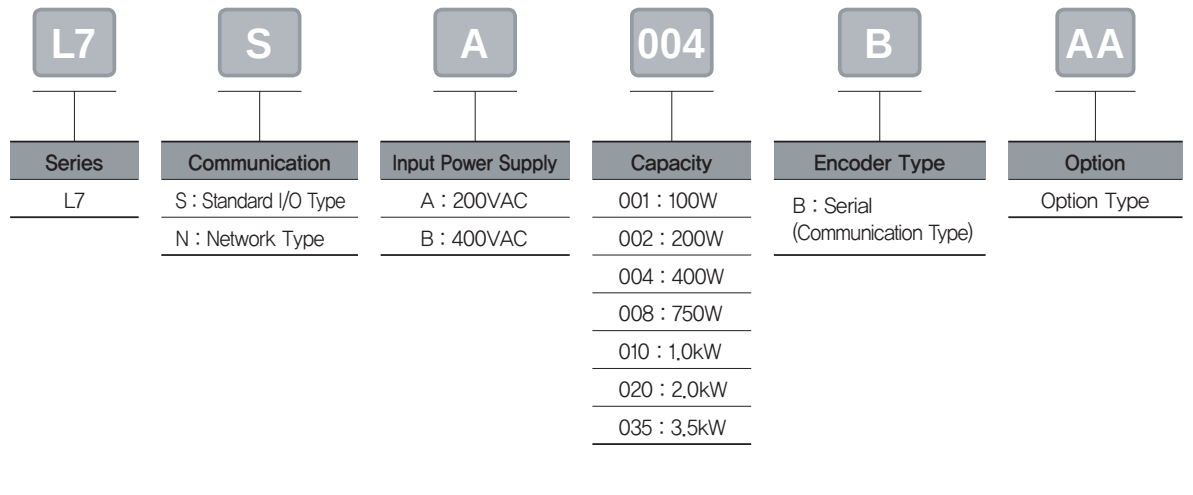
- Insulation class: class B
- Protection level: IP 40
- Protection method: Fully enclosed self-cooling
- Vibration grade: V15
- Insulation resistance: 500VDC, over 10[10MΩ]
- AC withstanding voltage: 1800 VAC, 1 secon
- Input power supply: 200VAC

Direct-Drive motor & Servo Drive Designations

Direct-Drive Designation



Servo Drive Designation



Motor designation

Applicable drive to motor

Rated Speed (RPM)	Maximum Speed (RPM)	External Diameter of Motor (Φ)	Applicable Motor	Applicable Drive	encoder type
200	500	Φ135	DB03D	L7□A001B	20 bit single turn serial encoder (Biss/Absolute)
		Φ135	DB06D	L7□A002B	
		Φ135	DB09D	L7□A004B	
	500	Φ175	DC06D	L7□A002B	
		Φ175	DC12D	L7□A004B	
	400	Φ175	DC18D	L7□A004B	
	500	Φ230	DD12D	L7□A004B	
	400	Φ230	DD22D	L7□A008B	
	400	Φ230	DD34D	L7□A010B	
	300	Φ290	DE40D	L7□A010B	
	300	Φ290	DE60D	L7□A020B	
150	250	Φ360	DFA1G	L7□A020B	
		Φ360	DFA6G	L7□A035B	

Appearances of Motor

MDM-DB06DNOH

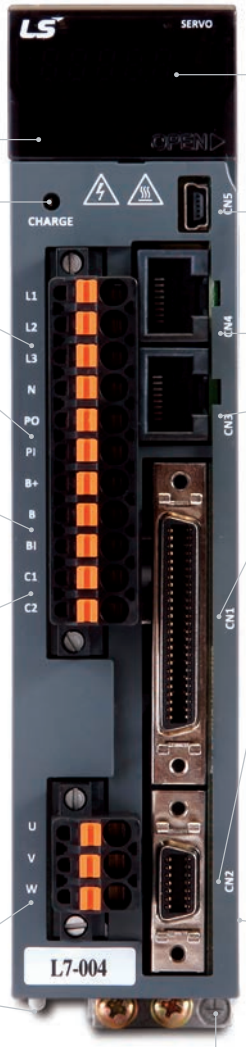
MDM-DC12DNOH

MDM-DD22DNOH

MDM-DE40DNOH

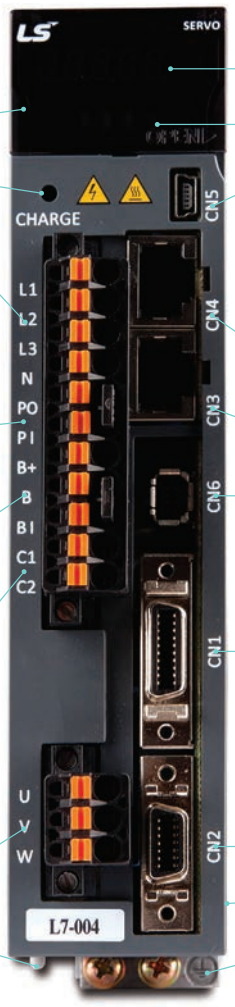
Identifying the Parts of L7

[L7S]



- Operation Key (Mode, Up, Down, Set)
- Charge Lamp
- Main Power Connectors (L1, L2, L3)
- DC Reactor Connectors(PO, PI) Short-Circuit when not used
- Regenerative Resistor Connectors (B+, B, BI)
  - Short-Circuit B, BI terminals when standard type
  - Use B+, B terminals when using external resistor
- Control Power Connectors (C1, C2)
- Motor Power Cable Connectors (U, V, W)
- Heat Sink
- Ground
- Display
- CN5 : USB Connector
- CN4 : RS-422 Communication Connector
- CN3 : RS-422 Communication Connector
- CN1 : Control Signal Connectors
- CN2 : Encoder Signal Connectors
- Front cover

[L7N]



- Operation Key (Mode)
- Charge Lamp
- Main Power Connectors (L1, L2, L3)
- DC Reactor Connectors(PO, PI) Short-Circuit when not used
- Regenerative Resistor Connectors (B+, B, BI)
  - Short-Circuit B, BI terminals when standard type
  - Use B+, B terminals when using external resistor
- Control Power Connectors (C1, C2)
- Motor Power Connector (U, V, W)
- Heat Sink
- Display
- Status LED
- CN5 : USB Connector
- CN4 : EtherCAT Communication Port(Input)
- CN3 : EtherCAT Communication Port(Output)
- CN6 : STO Connector
- CN1 : Control Signal Connectors
- CN2 : Encoder Signal Connectors
- Front cover
- Ground

Product Features

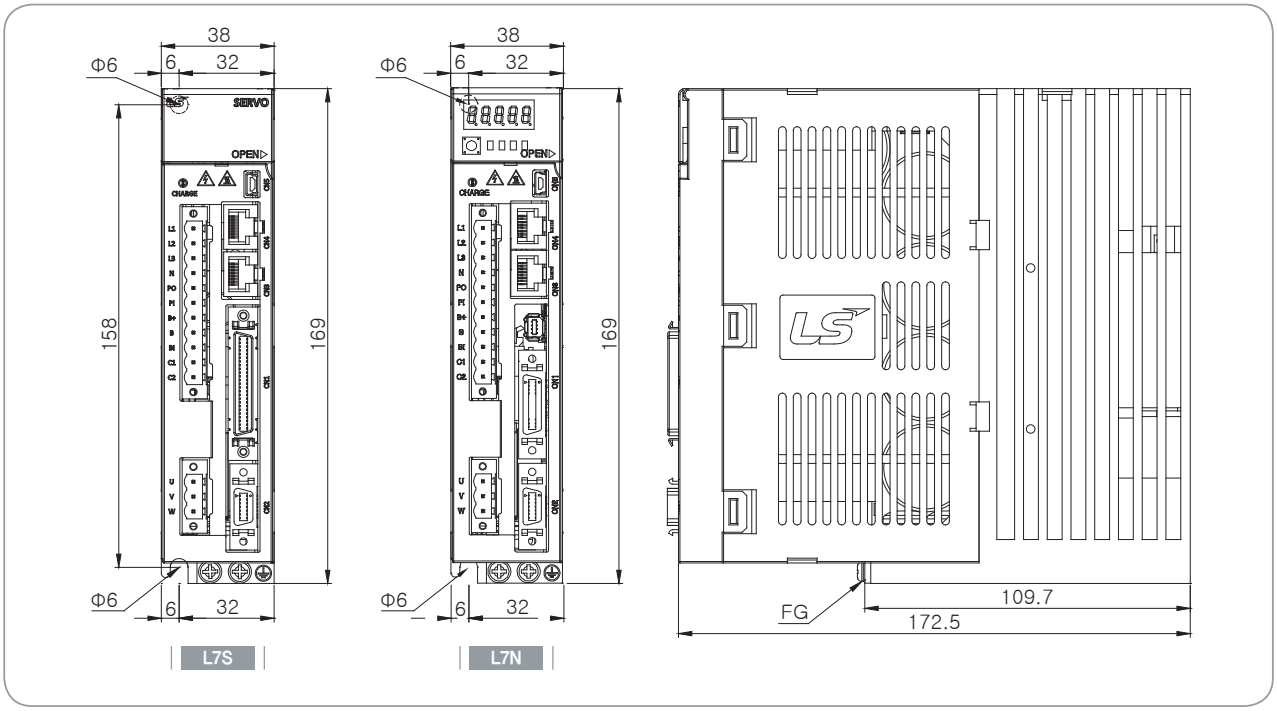
Item \ Model			L7SA001□	L7SA002□	L7SA004□	L7SA008□	L7SA010□	L7SA020□	L7SA035□
Input Power	Main Power Supply		3 Phase AC200 ~ 230[V](−15 ~ +10[%]), 50 ~ 60[Hz]						
	Control Power Supply		Single Phase AC200 ~ 230[V](−15 ~ +10[%]), 50 ~ 60[Hz]						
Rated Current[A]			1.4	1.7	3.0	5.2	6.75	13.5	16.7
Peak Current[A]			4.2	5.1	9.0	15.6	20.25	40.5	50.1
Encoder Type			Quad. Type Incremental Line Driver Max 10000[P/R] Serial Type 19Bit						
Performance	Speed Control	Speed Control Range	Max. 1 : 5000						
		Frequency Response	Max. 1[kHz] or above (When using 19bit Serial Encoder)						
		Speed Command	DC−10[V]~+10[V] (Reverse rotation in case of − voltage)						
		Accel/Decel Time	Linear or S−Shape Accel/Decel. (0~10,000[ms], Setting 1[ms] is possible)						
		Speed Variation Ratio	±0.01[%] or less [at Load variation 0 ~ 100%] ±0.1[%] or less [at Temp. 25±10℃]						
	Position Control	Input Frequency	1[Mpps], Line Driver / 200[kpps], Open Collector						
		Input Pulse Type	+Pulse, CW+CCW, A/B Phase						
		Electric Gear Ratio	Setting and selecting 4 digital electric gear ratio, Precise adjustment is possible						
	Torque Control	Torque Command	DC −10 ~ +10[V] (Reverse rotation in case of − voltage)						
		Speed Limit	DC 0 ~ +10[V], within ±1[%] of internal speed command						
		Repeatability	±1[%] or less						
Input/ Output Signal	Analog Input	Input Range	DC −10 ~ +10[V]						
		Resolution	12[bit]						
	Digital Input		Total 10 Input Channels (assignment available) SVON, SPD1, SPD2, SPD3, ALMRST, DIR, CCWLIM, CWLIM, EMG, STOP, EGEAR1, EGEAR2, PCON, GAIN2, P_CLR, T_LMT, MODE, ABS_RQ, ZCLAMP Above 19 functions can be inputted selectively for assignment Signal can be set as positive logic or negative logic						
	Digital Output		Total 5 Channels (assignment available), 3 Channels (set as alarm code) ALARM, READY, ZSPD, BRAKE, INPOS, TLMT, VLMT, INSPD, WARN Above 9 outputs can be inputted selectively for assignment Signal can be set as positive logic or negative logic						
Communi-cation	RS422		PC Software and RS422 Server are available						
	USB		Status monitoring, JOG operation, parameter upload/download are available with PC Software						
Encoder			Compatible with Serial BiSS encoder, Quadrature encoder						
Encoder Output Type			Random pre−scale output by FPGA (Max. 6.4Mpps)						
Built−in Function	Dynamic Braking		Built−in type (operates when Servo alarm or Servo off)						
	Regenerative Braking		Built−in type, and also external connection is available						
	Display		7 segments (5DIGIT)						
	Setting Function		Loader ([SET], [MODE], [UP], [DOWN] key)						
	Additional Function		Automatic gain tuning function, Z−phase detection, manual JOG operation, program JOG operation, analog−input auto Calibration function						
	Protective Function		Overcurrent, overload, overvoltage, insufficient voltage, main power input problem, contorl power input problem, overspeed, motor cable, overheat(power module overheat, abnormal drive operation's temp), encoder problem, over−regenerative, sensor problem, communication problem						
Operation Environment	Temperature		0 ~ 50[℃]						
	Humidity		Below 90[%]RH (avoid dew−condensation)						
	Ambient Environment		Indoor, Avoid corrosive, inflammable gas or liquid, and electrically conductive dust.						

Product Features

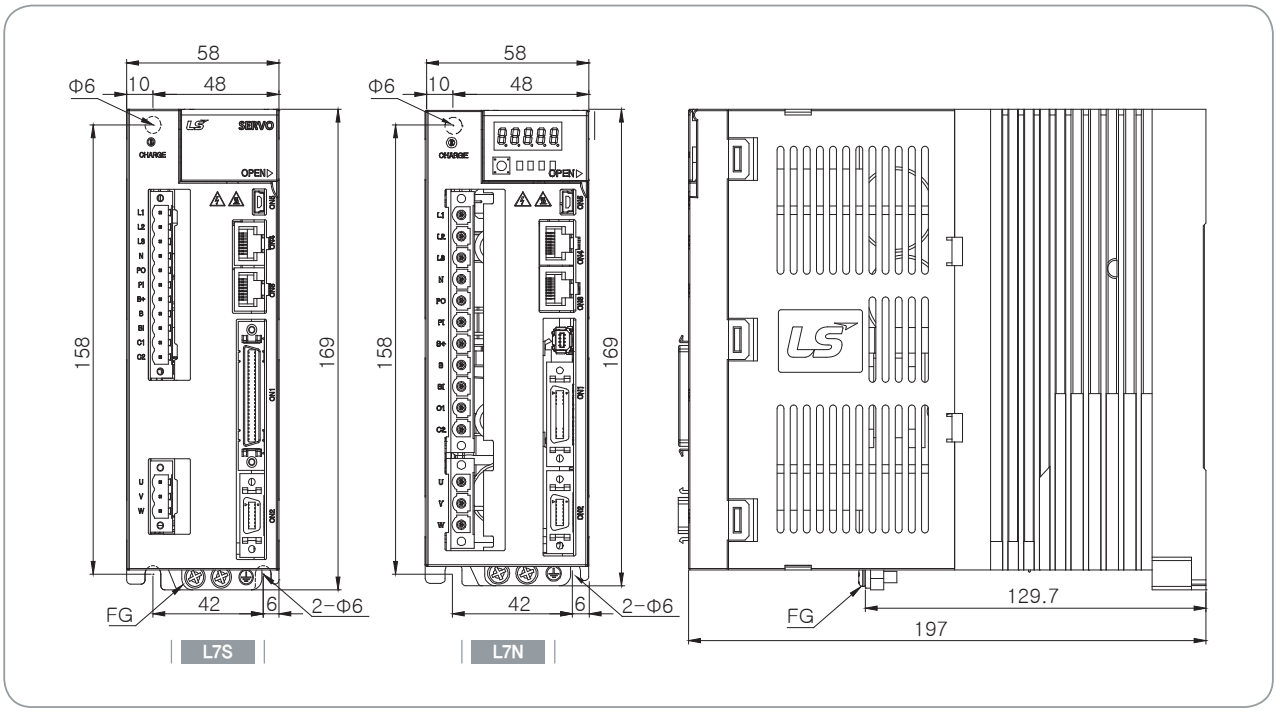
Item \ Name			L7NA001B	L7NA002B	L7NA004B	L7NA008B	L7NA010B	L7NA020B	L7NA035B
Input power	Main power		3–phase AC200 ~ 230[V](–15 ~ +10[%]), 50 ~ 60[Hz]						
	Control power		Single–phase AC200 ~ 230[V](–15 ~ +10[%]), 50 ~ 60[Hz]						
Reated current[A]			1.4	1.7	3.0	5.2	6.75	13.5	16.7
Peak current[A]			4.2	5.1	9.0	15.6	20.25	40.5	50.1
Encoder Type			Serial 17bit / 19bit / 21bit						
Control performance		Speed Con–trol Range	Maximum 1 : 5000						
		Frequency response	Maximum 1kHz or more(when the 19–bit serial encoder is applied)						
		Speed change rate	±0.01[%] or lower(when the load changes between 0 and 100%) ±0.1[%] or less(temperature of 25℃[±10])						
		Torque control repetition accuracy	Within ±1%						
Supported drive modes (CiA402)			Profile Position Mode Profile Velocity Mode Profile Torque Mode Interpolated Position Mode Cyclic Synchronous Position Mode Cyclic Synchronous Velocity Mode Cyclic Synchronous Torque Mode Homing Mode						
Digital input / output	Digital input		A total of 6 input channels(allocable) PCON, GAIN2, ALMRST, HOME, P–OT, N–OT You can selectively allocate a total of 6 functions. You can set the positive / negative logic of the selected signal.						
	Touch Probe input		There are 2 input channels. Provides rising and falling edge detection functions for each channel.						
	Digital output		A total of 4 input channels(allocable) ALARM, READY, ZSPD, BRAKE, INPOS, INSPD, WARN You can selectively allocate a total of 7 output types. You can set the positive / negative logic of the selected signal.						
Additional communication	USB		You can download programs through the USB connection.						
Built–in functions	Dynamic braking		Standard built–in brake(activated when the servo alarm goes off or when the servo is off).						
	Regenerative braking		Both the default built–in brake and an externally installed brake are possible.						
	Display function		Seven segments(5 DIGIT)						
	Self–setting function		The [Mode] key changes the content displayed in the 7 segments.						
	Additional function		Auto gain tuning function						
	Protection function		Overcurrent, overload, overvoltage, low voltage, main power input error, control power input error, overspeed, motor cable, heating error(power module heating, drive temperature error), encoder error, excessive regeneration, sensor error, communication error						
Environment		Temperature	0 ~ 50[℃]						
		Humidity	90[%]RH or less (no condensation)						
		Environment	Indoors in an area free from corrosive or combustible gases, liquids, or dust.						

External Dimensisons of Servo Drive

L7□A001□ ~ L7□A004□ [Weight : 1.2kg]

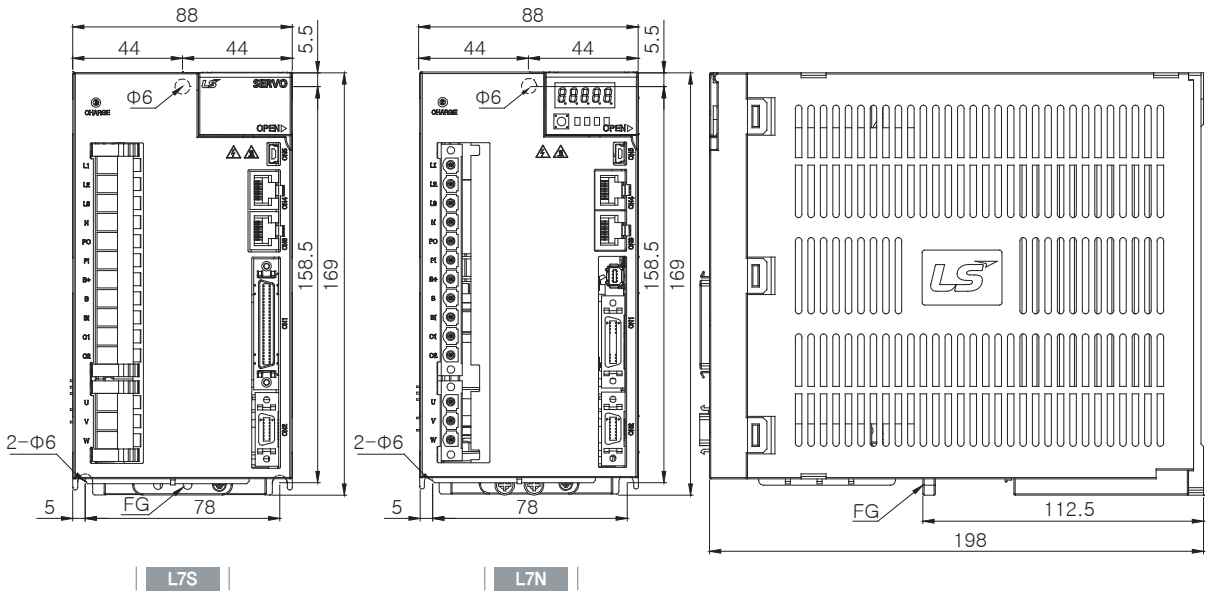


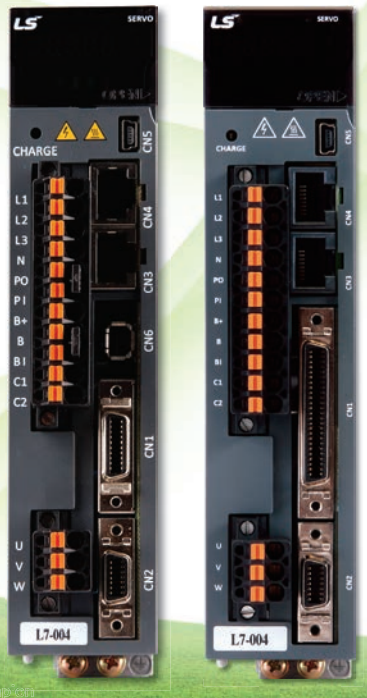
L7□A008□ ~ L7□A010□ [Weight : 1.5kg(Fan-Cooling included)]



External Dimensisons of Servo Drive

■ L7□A020□ ~ L7□A035□ [Weight : 2.5kg(Fan-Cooling included)]



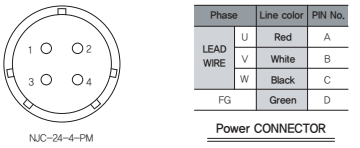


LS Mecapion

L7 Series - Servo Drive

External dimension of Direct-Drive Rotary Motor

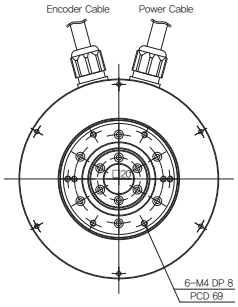
MDM-DB03D, MDM-DB06D, MDM-DB09D

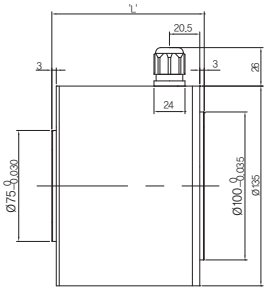


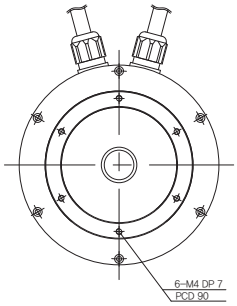
NJC-24-4-PM

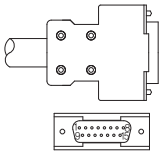
Phase		Line color	PIN No.
LEAD WIRE	U	Red	A
	V	White	B
	W	Black	C
FG		Green	D

Power CONNECTOR









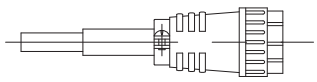
D-Sub Connector (15pin)

D.D SERVO ENCODER CABLE			
No.	Encoder Phase	No.	Encoder Phase
1	MA	9	+5V
2	SLO	10	–
3	–	11	–
4	0V	12	–
5	Shield	13	–
6	MA	14	–
7	SLO	15	–
8	–		

ENCODER CONNECTOR

Motor Series	External Dimensions L	Weight(kg)
MDM-DB03D	78	6.3
MDM-DB06D	100	7.2
MDM-DB09D	124	9.2

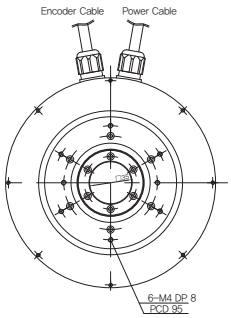
MDM-DC06D, MDM-DC12D, MDM-DC18D

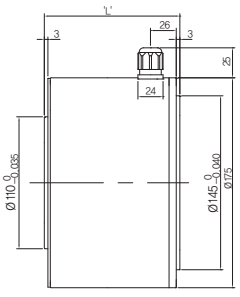


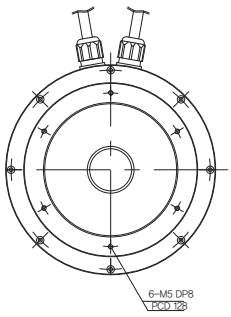
NJC-24-4-PM

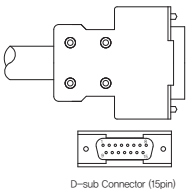
Phase		Line color	PIN NO.
LEAD WIRE	U	Red	A
	V	White	B
	W	Black	C
FG		Green	D

Power CONNECTOR









D-sub Connector (15pin)

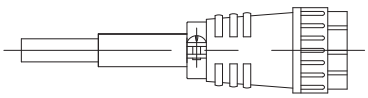
D.D SERVO ENCODER CABLE			
No.	Encoder Phase	No.	Encoder Phase
1	MA	9	+5V
2	SLO	10	–
3	–	11	–
4	0V	12	–
5	Shield	13	–
6	MA	14	–
7	SLO	15	–
8	–		

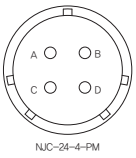
ENCODER CONNECTOR

Motor Series	External Dimensions L	Weight(kg)
MDM-DC06D	77	8.7
MDM-DC12D	95	10.6
MDM-DC18D	113	12.6

External dimension of Direct-Drive Rotary Motor

MDM-DD12D, MDM-DD22D, MDM-DD34D

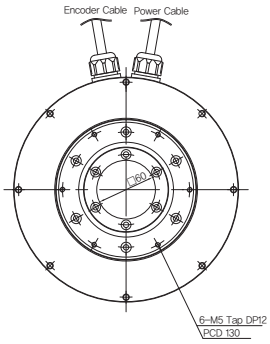


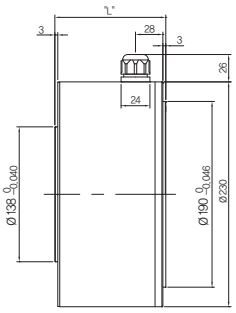


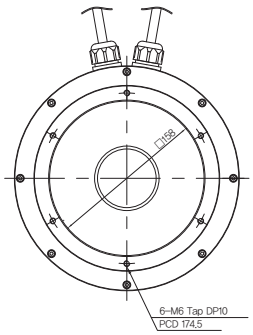
NJC-24-4-PM

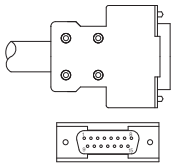
Phase		Line color	PIN NO.
LEAD WIRE	U	Red	A
	V	White	B
	W	Black	C
FG		Green	D

Power CONNECTOR









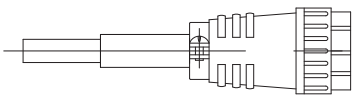
D-Sub Connector (15pin)

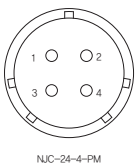
D.D SERVO ENCODER CABLE			
No.	Encoder Phase	No.	Encoder Phase
1	MA	9	+5V
2	SLO	10	–
3	–	11	–
4	0V	12	–
5	Shield	13	–
6	MA	14	–
7	SLO	15	–
8	–		

ENCODER CONNECTOR

Motor Series	External Dimensions	Weight(kg)
	L	
MDM-DD12D	82.5	17.3
MDM-DD22D	100.5	19.6
MDM-DD34D	118.5	21.9

MDM-DE40D, MDM-DE60D

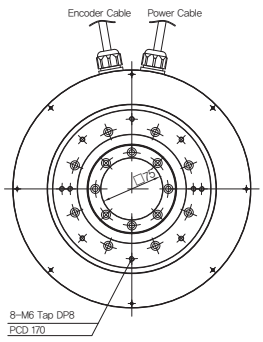


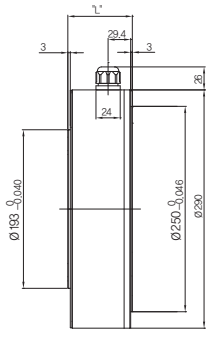


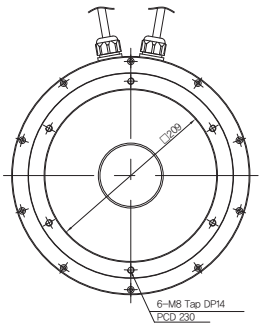
NJC-24-4-PM

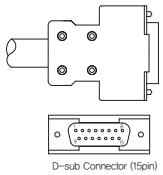
Phase		Line color	PIN NO.
LEAD WIRE	U	Red	A
	V	White	B
	W	Black	C
FG		Green	D

Power CONNECTOR









D-sub Connector (15pin)

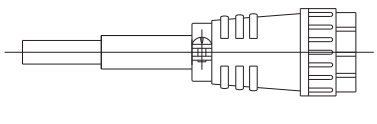
D.D SERVO ENCODER CABLE			
No.	Encoder Phase	No.	Encoder Phase
1	MA	9	+5V
2	SLO	10	–
3	–	11	–
4	0V	12	–
5	Shield	13	–
6	MA	14	–
7	SLO	15	–
8	–		

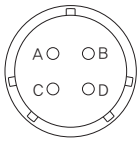
ENCODER CONNECTOR

Motor Series	External Dimensions	Weight(kg)
	L	
MDM-DE40D	95.4	28.2
MDM-DE60D	113.4	35

External dimension of Direct-Drive Rotary Motor

MDM-DFA1G, MDM-DFA6G

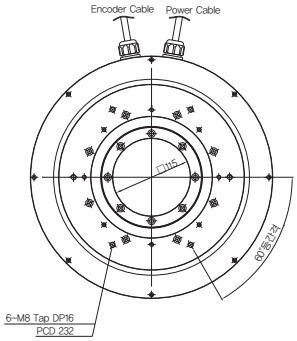


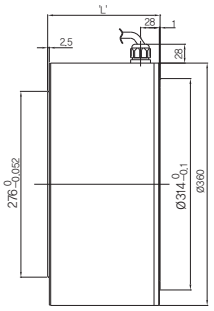


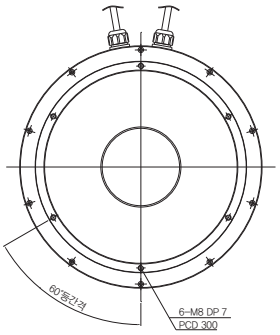
Nanaboshi Electronic
NJC-24-4-PM

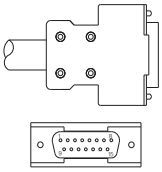
Phase		Line color	PIN NO.
LEAD WIRE	U	Red	A
	V	White	B
	W	Black	C
FG		Green	D

Power CONNECTOR









D-sub Connector (15pin)

D.D SERVO ENCODER CABLE			
No.	Encoder Phase	No.	Encoder Phase
1	MA	9	+5V
2	SLO	10	–
3	–	11	–
4	0V	12	–
5	Shield	13	–
6	MA	14	–
7	SLO	15	–
8	–		

ENCODER CONNECTOR

Motor Series	External Dimensions	Weight(kg)
	L	
MDM-DFA1G	131	43.6
MDM-DFA6G	167	48.5

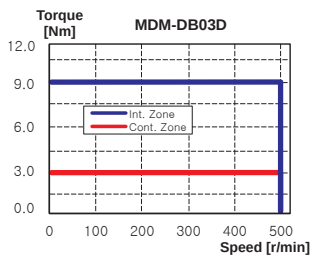
LS Mecapion

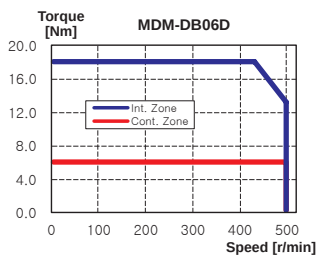
DD Motor Series_

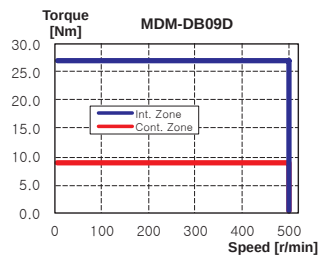
Feature of Direct Drive Motor

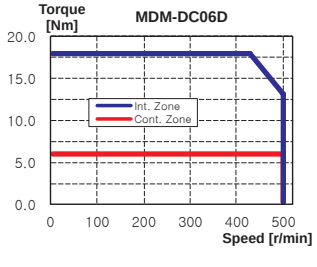
Motor Designation		MDM-DB□□D□H			MDM-DC□□D□H		
		03	06	09	06	12	18
Applicable Motor (L7□-A□□□□)		001B	002B	004B	002B	004B	004B
Flange Size	mm	Φ135			Φ175		
Rated Output	W	63	126	188	126	251	377
Rated Torque	N-m	3	6	9	6	12	18
Max Torque	N-m	9	18	27	18	36	54
Rated Current	Arms	1.12	1.46	2.6	1.5	2.4	3
Max Current	Arms	3.36	4.38	7.8	4.5	7.2	9
Rated Speed	rpm	200			200		
Max Speed	rpm	500	500	500	500	500	400
Constant of Torque	N-m/Arms	2.76	4.25	3.57	4.18	5.13	6.12
Inertia	kg-m^2×10^{-4}	5.74	8.67	11.5	27.32	38.9	50.48
Rated Power Rate	kW/s	15.68	42.35	70.43	13.18	52.71	118.59
Angular acceleration	rad/s^2	191.2	141.6	127.7	455.03	323.9	280.3
positioning accuracy	arc-sec	±30					
positioning repeatability	arc-sec	±2					
Axial run-out	mm	0.05					
Radial run-out	mm	0.05					
Allowable Thrust Load	N	1500			3300		
Max. Instantaneous	N-m	40			70		
Encoder Type		20-bit single turn serial encoder (Biss/Absolute)					
Weight (Approx.)	kg	6.3	7.2	9.2	8.7	10.6	12.6
Working Environment	Ambient Temp	operating : 0~40[℃] / storage : -20~60[℃]					
	Ambient Humidity	20~80[%] RH (avoid dew-condenation)					
	Atmosphere	Avoid direct sunlight, No corrosive gas, Inflammable gas, Oil mist, or Dust					

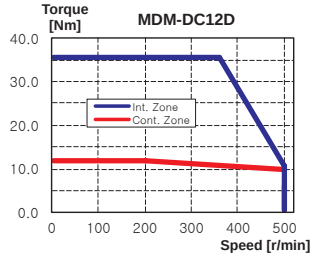
Speed-Torque Characteristics

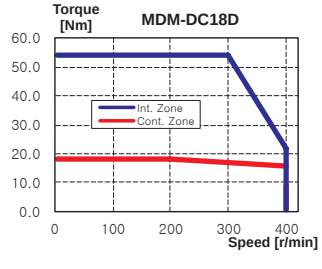








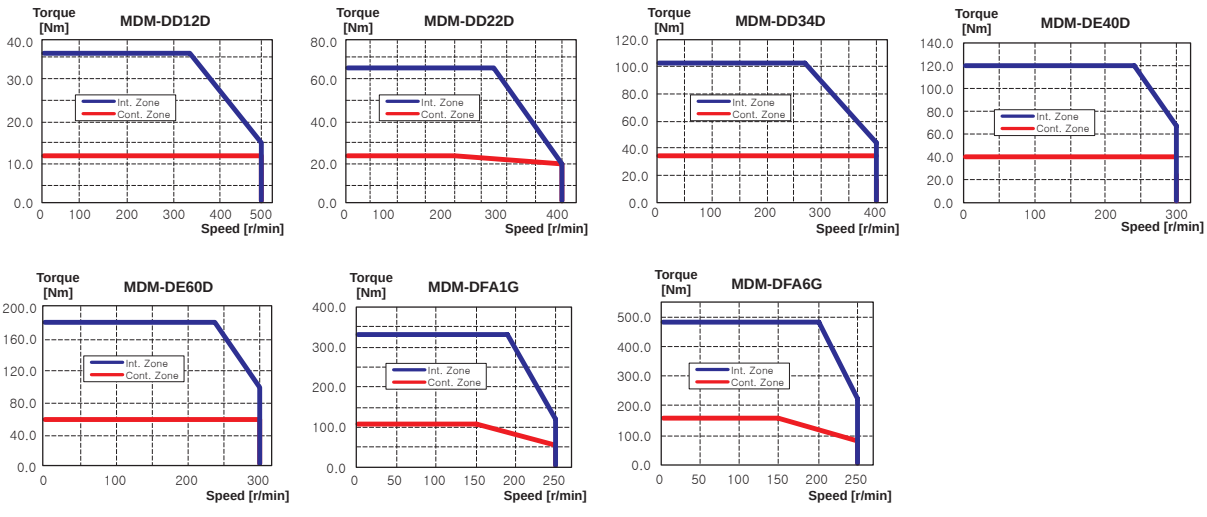




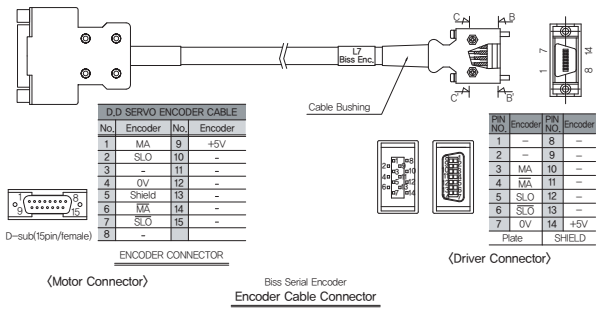
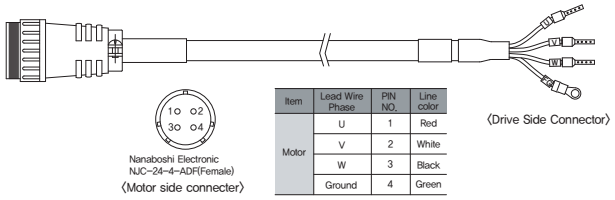
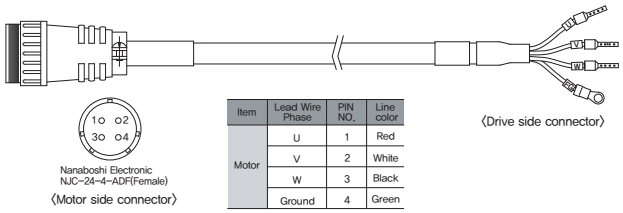
Feature of Direct Drive Motor

Motor Designation		MDM-DD□□D□H			MDM-DE□□D□H		MDM-DF□□G□H	
		12	22	34	40	60	A1	A6
Applicable Motor (L7□-A□□□□)		004B	008B	010B	010B	020B	020B	035B
Flange Size	mm	Φ230			Φ290		Φ360	
Rated Output	W	251	461	712	838	1,257	1,728	2,513
Rated Torque	N-m	12	22	34	40	60	110	160
Max Torque	N-m	36	66	102	120	180	330	480
Rated Current	Arms	2.6	3.3	5.7	5.3	8.3	11.1	16.4
Max Current	Arms	7.8	9.9	17.1	15.9	24.9	33.3	49.2
Rated Speed	rpm	200			200		150	
Max Speed	rpm	500	400	400	300	300	250	250
Constant of Torque	N-m/Arms	4.8	6.81	6.13	7.77	7.42	10.24	9.53
Inertia	kg-m^2×10^{-4}	54.14	68.15	82.16	311.55	371.71	1410.2	1763.4
Rated Power Rate	kW/s	26.6	71.02	140.7	51.36	96.68	85.9	145.4
Angular acceleration	rad/s^2	450.9	309.6	241.5	778.35	619.1	1281.13	1101.4
positioning accuracy	arc-sec	±30						
positioning repeatability	arc-sec	±2						
Axial run-out	mm	0.05						
Radial run-out	mm	0.05						
Allowable Thrust Load	N	4000			11000		15000	
Max. Instantaneous	N-m	93			250		350	
Encoder Type		20-bit single turn serial encoder (Biss/Absolute)						
Weight (Approx.)	kg	17.3	19.6	21.9	28.2	35	43.6	48.5
Working Environment	Ambient Temp	operating : 0~40[℃] / storage : -20~60[℃]						
	Ambient Humidity	20~80[%] RH (avoid dew-condenation)						
	Atmosphere	Avoid direct sunlight, No corrosive gas, Inflammable gas, Oil mist, or Dust						

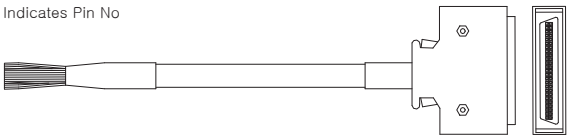
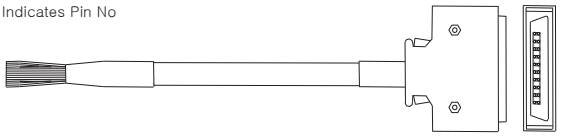
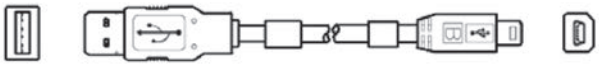
Speed-Torque Characteristics



Specifications for Options

Type	Product type	Model Name	Applicable Motor	Specifications
For Signal	L7 Encoder Cable	APCS-E□□□ZS	All models of DD motor	 D-D SERVO ENCODER CABLE No. / Encoder / No. / Encoder 1 MA 9 +5V 2 SLO 10 - 3 - 11 - 4 0V 12 - 5 Shield 13 - 6 MA 14 - 7 SLO 15 - 8 - - PIN NO. / Encoder / PIN NO. / Encoder 1 - 8 - 2 - 9 - 3 MA 10 - 4 MA 11 - 5 SLO 12 - 6 SLO 13 - 7 0V 14 +5V Plate SHIELD 1. Motor Side Connector a. CONNECTOR(D-SUB): DA-15PF-N(Female) b. CONNECTOR CASE(D-SUB): SK-15H-1A 2. Drive Side Connector a. CASE Spec: 10314-52A0-008(3M) b. CONNECTOR Spec: 10114-3000VE(3M) 3. Cable Spec : 3P x 0.2SQ
For Power	L7 Power Cable	APCS-PN□□YS	DB03D/06D/09D DC06D/12D/18D DD12D/22D/34D DE40D	 Item / Lead Wire Phase / PIN NO. / Line color Motor: U 1 Red; V 2 White; W 3 Black; Ground 4 Green 1. Motor Side Connector a. PLUG Spec: NJC-24-4-ADF(Female) 2. Drive Side Connector a. u.v.w spec: UA-F2012 b. FG spec: 1.5 x 4 3. Cable Spec : 4C x 4SQ, LAPP Cable (P/N: 00257001)
For Power	L7 Power Cable	APCS-PN□□ZS	DE60D DFA1G DFA6G	 Item / Lead Wire Phase / PIN NO. / Line color Motor: U 1 Red; V 2 White; W 3 Black; Ground 4 Green 1. Motor Side Connector a. PLUG spec: NJC-24-4-ADF(Female) 2. Drive Side Connector a. u.v.w spec: UA-F2012 b. FG spec: 4 x 4 3. Cable Spec : 4C x 4SQ, LAPP Cable (P/N: 00257021)

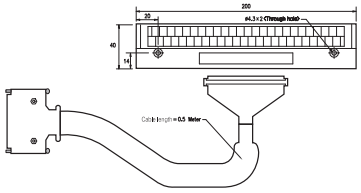
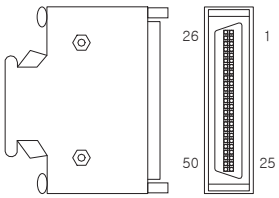
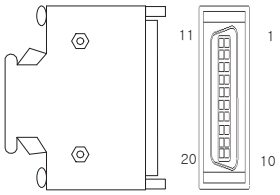
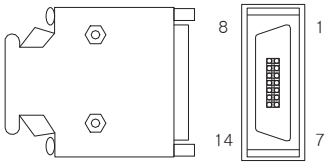
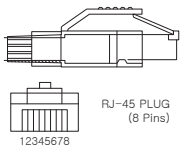
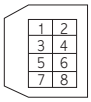
Specifications for Options [Signal Cable]

Type	Product type	Model Name	Applicable Motor	Specifications
For Signal	CN1 Cable	APC-CN1□□A	L7S SERIES	[Upper Controller] [Drive Connection Side CN1]  1. Drive Connection Side CN1 a. Case Spec : 10350-52A0-008(3M) b. Connector Spec : 10150-3000VE(3M) c. Cable Spec : 20276-SB 25P(AWG28)
For Power	CN1 Cable	APCS-CN1□□A	L7N SERIES	[Upper Controller] [Drive Connection Side CN1]  1. Drive Connection Side CN1 a. Case Spec : 10320-52A0-008(3M) b. Connector Spec : 10120-3000VE(3M)
For Power	Communication Cable	APCS-CN5L7U	L7 SERIES	[PC - USB Port] [Servo Drive - CN5]  1. PC Connection Side : USB A Plug 2. Drive Connection Side(CN5) : Mini USB 5P Plug 3. Electric Requirements : Double Shielded, Twisted Pair, EMI-filter attached type (Ex : SANWA KU-AMB518)

Note1) □□□ of Model Name indicates the Kind and length of cable And the declaration is as below.

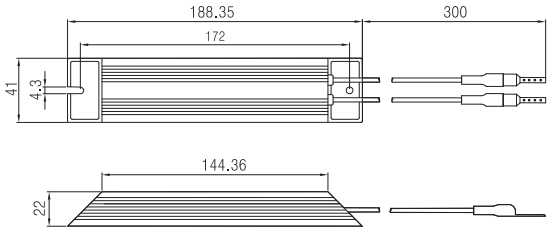
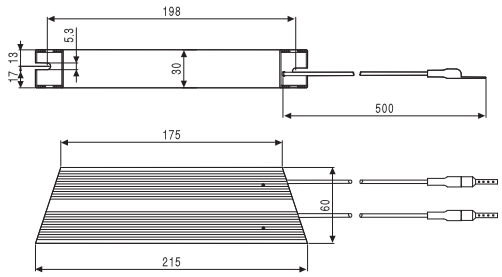
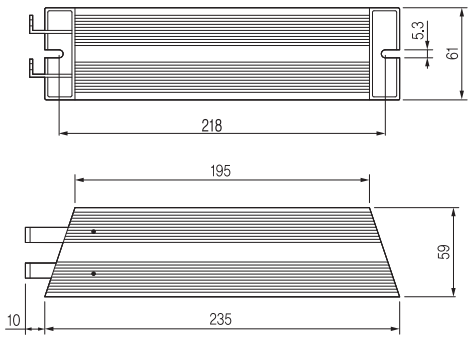
Cable Length(m)	1	2	3	5
Declaration	01	02	03	05

Specifications for Options [Connectors]

Type	Product type	Model Name	Applicable Motor	Specifications
T/B	CN1 T/B	APC-VSCN1T	L7S SERIES	 1. APC-VSCN1T : CN1 T/B FOR APD-VS 2. Cable length can be changed upon request 3. Standard Cable Length : 0.5[m]
CN	CN1 Connector	APC-CN1NNA	L7S SERIES	 1. CASE Spec : 10350-52A0-008(3M) 2. CONNECTOR Spec : 10150-3000VE(3M)
CN	CN1 Connector	APC-CN2NNA	L7N SERIES	 1. Case Spec : 10320-52A0-008(3M) 2. Connector Spec : 10120-3000VE(3M)
CN	CN2 Connector	APC-CN3NNA	All models of L7 Series	 1. Case Spec : 10314-52A0-008(3M) 2. Connector Spec : 10114-3000VE(3M)
CN	CN3 CN4 EtherCAT Connector	APCS-CN4NNA	L7N SERIES	  Note) EtherCAT uses only 4 wires(1,2,3,6)
CN	CN6 Connector	APCS-CN6J	L7N SERIES	  1. Spec : 2040008-1(TE)

Specifications for Options [Braking Resistance]

□ Options

Type	Product type	Model Name	Applicable Motor	Specifications
Resist–ance	Braking Resistance	APCS–140R50	L7□A001□ L7□A002□ L7□A004□	 IRH 140W 50ohm
Resist–ance	Braking Resistance	APCS–300R30	L7□A008□ L7□A010□	 IRV 300W 30ohm
Resist–ance	Braking Resistance	APC–600R30	L7□A020□ L7□A035□	 IRV 600S 30ohm * L7□A020□ – Connects 2 pcs of resistance in parallel L7□A030□ – Connects 3 pcs of resistance in parallel

□ Specifications of built–in braking resistance

Type / Drive	L7□A001	L7□A002	L7□A004	L7□A010	L7□A035
Braking Resistance	100[Ω]	100[Ω]	100[Ω]	40[Ω]	23[Ω]
Capacity	50[W]	50[W]	50[W]	100[W]	300[W]

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www.lsmecapion.com

Safety Instructions

- For your safety, please read user's manual thoroughly before operating.
- Contact the nearest authorized service facility for examination, repair, or adjustment.
- Please contact qualified service technician when you need maintenance.
  Do not disassemble or repair by yourself!
- Any maintenance and inspection shall be performed by the personnel having expertise concerned.

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2012. 11 ※The content and specifications are subject to be changed without prior notice.