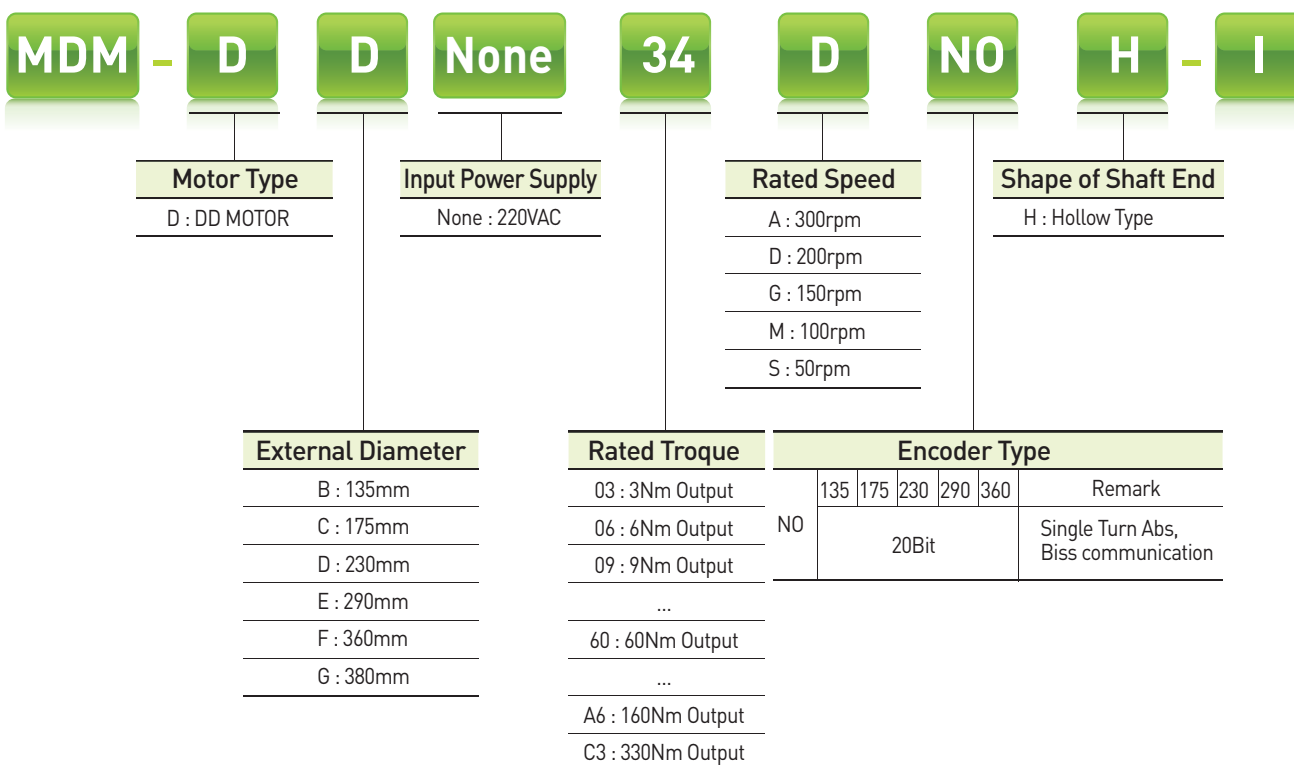


DD Motor Designation



Using the own technologies to produce motors, drives and encoders domestically

Optimized for low-speed, high-torque and high-precision operation

- Providing Power connection for the connection of DC-Link Terminal
- Compact Size and Easy Wiring (Compared with 3 phase AC Reactor)
- Providing Connection for DC Input (PI, NI)

Reduced cogging torque and optimized torque design

- Optimal ratio of the permanent magnet and coil/ slot selected through electromagnetic analysis
- Using multiple permanent magnets to reduce torque ripple and to maximize torque
- Using a permanent magnet of high-energy rare earth elements (Nd-Fe-B)

Using the high-performance rotary optical encoder that adopts the Biss protocol

- Resolution of 1,048,576 CPR [20bit Single turn]
- Using our own encoder technology to reduce the cost and shorten the delivery time

Compatible with our L7 Series AC Servo Drive (3phase AC 220V)

- Both standard I/O type (serial communication supported) and network type (EtherCAT) applicable

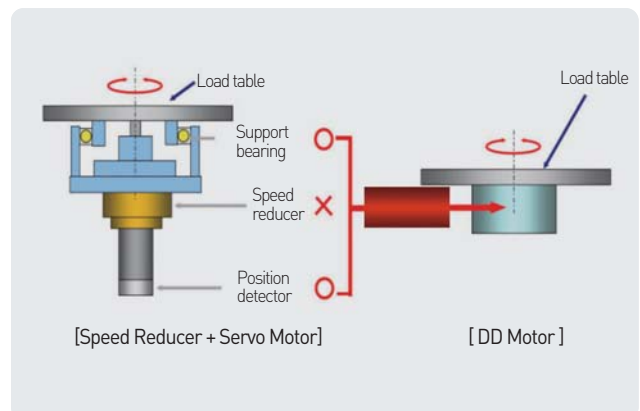
Direct Drive Structure

- No backlash impact
- High-precision operation and shortened installation time
- Smooth rotary motion
- Reduced noise

Hollow type that is efficient for wiring and piping

A wide range of products

- Rated output: 63W-25kW
- Rated torque: 3.0N.m-160N.m (the instantaneous maximum torque should be 3 times the rated torque)
- Rated speed: 150RPM-200RPM
- Frame diameter: 135mm, 175mm, 230mm, 290mm, and 360mm (13 models)



DD Motor Specifications

Ratings and Specifications

- Insulation class : Class B
- Protection class : IP 40
- Cooling type : Fully enclosed self-cooling
- Vibration class : V15
- Insulation resistance : 500 VDC, 10[MΩ] or higher
- Insulation internal voltage: 1800 VAC, 1 second
- Operating voltage: 200 VAC
- Operating temperature : 0 - 40[°C] / Storage temperature: -10~60[°C]
- Ambient humidity : 20 - 80% RH (no condensation)
- Installation location : Place with no toxic substances, such as corrosive and combustible gasses, cutting oil, metal dust, grease or direct sunlight

Line-up Table

Maximum Torque[Nm]			9	18	27	36	54	66	102	120	180	330	480
Rated speed 200[rpm]	Maximum speed 500[rpm]	Ø135	DB03D  DB06D  DB09D 										
		Ø175		DC06D 		DC12D 							
		Ø230				DD12D 							
	Maximum speed 400[rpm]	Ø175					DC18D 						
		Ø230					DD22D  DD34D 						
	Maximum speed 300[rpm]	Ø290								DE40D  DE60D 			
Rated speed 150[rpm]	Maximum speed 250[rpm]	Ø360										DFA1G  DFA6G 	

Applicable Drive to Motor

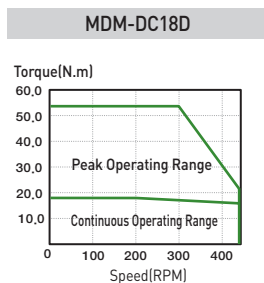
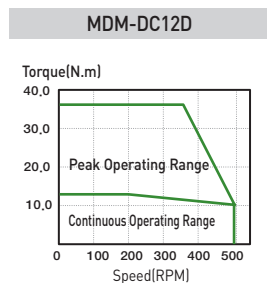
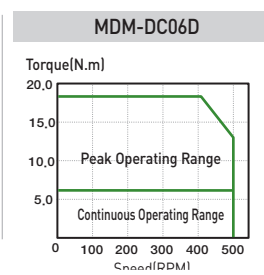
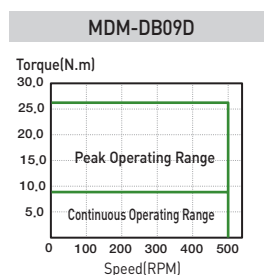
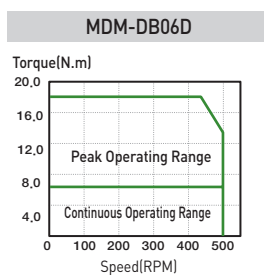
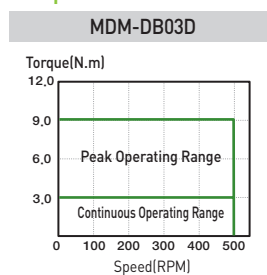
Rated Speed [RPM]	Maximum Speed [RPM]	External Diameter of Motor{ø}	Applicable Motor	Drive	Standard Encoders	Encoders Cable [Serial]	Power Cable (Power)
200	500	135	DB03D	L7 □A001 □	* 20Bit Serial	APCS-E □ □ □ ZS	APCS-PN □ □ YS
			DB06D	L7 □A002 □			
			DB09D	L7 □A004 □			
	400	175	DC06D	L7 □A002 □			
			DC12D	L7 □A004 □			
			DC18D	L7 □A008 □			
	500	230	DD12D	L7 □A004 □			
	400		DD22D	L7 □A008 □			
			DD34D	L7 □A010 □			
	300	290	DE40D	L7 □A010 □			
			DE60D	L7 □A020 □			
150	250	360	DFA1G	L7 □A020 □	APCS-PN □ □ YS		
			DFA6G	L7 □A035 □			

Appearances of Motor



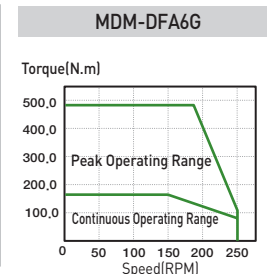
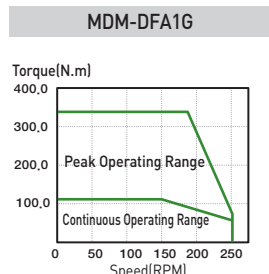
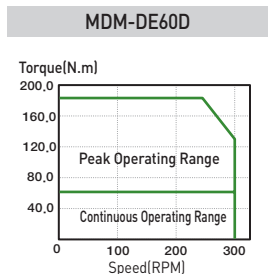
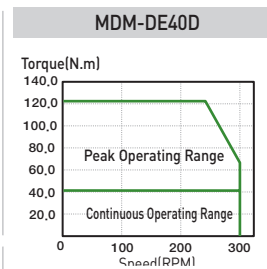
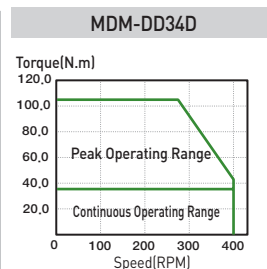
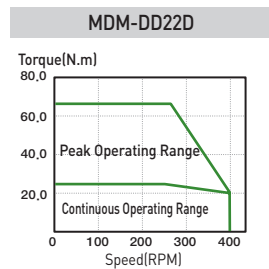
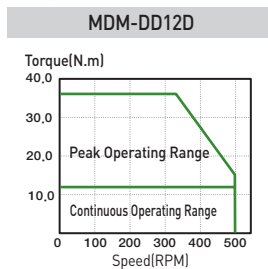
Motor Designation		MDM-DB□□D□□H-I			MDM-DC□□D□□H-I		
		03	06	09	06	12	18
Applicable Drive		L7□A001□	L7□A002□	L7□A004□	L7□A002□	L7□A004□	L7□A008□
Flange Size	mm	ø135			ø175		
Rated Output	W	63	126	188	126	251	377
Rated Torque	N-m	3	6	9	6	12	18
Max Torque	N-m	9	18	27	18	36	54
Rated Current	Arms	1.12	1.46	2.63	1.48	2.41	3.0
Max Current	Arms	3.36	4.38	7.89	4.44	7.23	9.0
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	11.56	18.42	26.02	45.83	70.37	94.91
Allowable Load Inertia Ratio		30 times of motor inertia			15 times of motor inertia		
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	±1.3					
Axial run-out	mm	0.015					
Radial run-out	mm	0.03					
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	Ambient temperature: 0~40[°C] / storage : -20~60[°C]					
	Ambient Humidity	20~80[%] RH(avoid dew-condensation)					
	Atmosphere	Avoid direct sunlight, No corrosive gas, Inflammable gas, Oil mist, or Dust					

Speed-Torque Characteristics

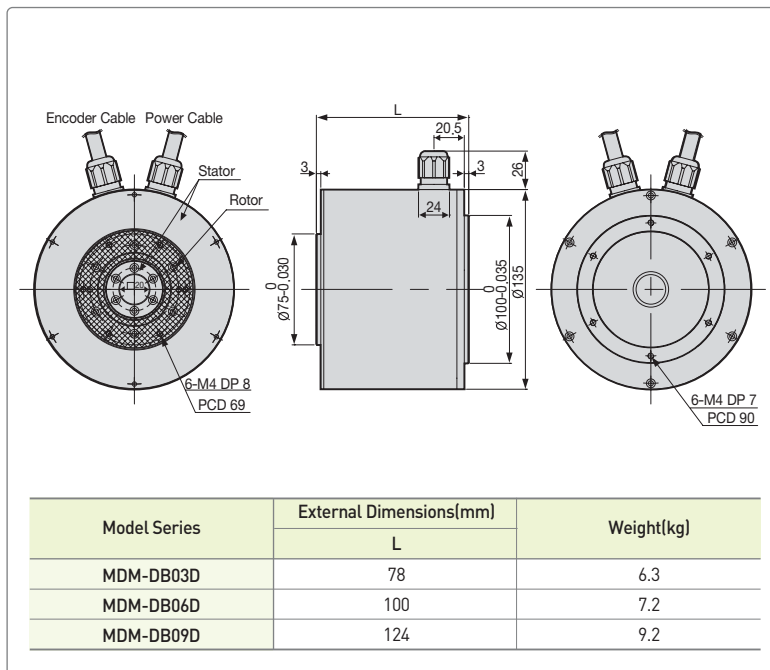
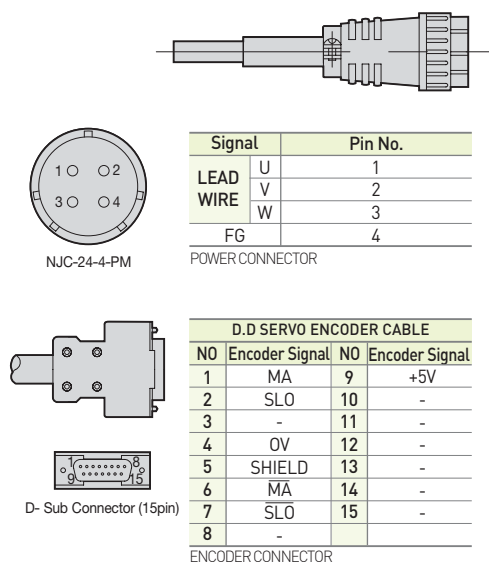


Motor Designation		MDM-DD□□D□□H-I			MDM-DE□□D□□H-I		MDM-DF□□G□□H-I		MDM-DG□□S□□H
		12	22	34	40	60	A1	A6	C3
Applicable Drive		L7□A004□	L7□A008□	L7□A010□	L7□A010□	L7□A020□	L7□A020□	L7□A035□	L7□A020□
Flange Size	mm	ø230			ø290		ø360		ø380
Rated Output	W	251	461	712	838	1,257	1,728	2,513	1,728
Rated Torque	N-m	12	22	34	40	60	110	160	330
Max Torque	N-m	36	66	102	120	180	330	480	1,000
Rated Current	Arms	2.58	3.33	5.72	5.3	8.33	9.48	14.6	12.0
Max Current	Arms	7.74	9.99	17.16	15.9	24.99	28.44	43.8	36.0
Rated Speed	rpm	200			200		150		50
Max Speed	rpm	500	400	400	300	300	250	250	100
Constant of Torque	N-m/Arms	4.8	6.81	6.13	7.77	7.42	11.95	11.29	-
Inertia	kg-m ² ×10 ⁻⁴	94.70	141.10	190.70	427.2	587.9	2507.0	3457.0	6449.0
Allowable Load Inertia Ratio		15 times of motor inertia			3 times of motor inertia				
Power Rate	kW/S	26.6	71.02	140.7	51.36	96.68	85.9	145.4	169.1
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	±1.3							
Axial run-out	mm	0.015							
Radial run-out	mm	0.03							
Allowable Thrust Load	N	4,000			1,100		15,000		21,000
Max. Instantaneous	N-m	93			250		350		450
Encoder Type		20-bit single turn serial encoder (Biss/Absolute)							
Weight(Approx.)	kg	17.3	19.6	21.9	28.2	35	54	70.3	162
Working Environment	Ambient Temp	Ambient temperature: 0~40[°C] / storage : -20~60[°C]							
	Ambient Humidity	20~80[%] RH(avoid dew-condensation)							
	Atmosphere	Avoid direct sunlight, No corrosive gas, Inflammable gas, Oil mist, or Dust							

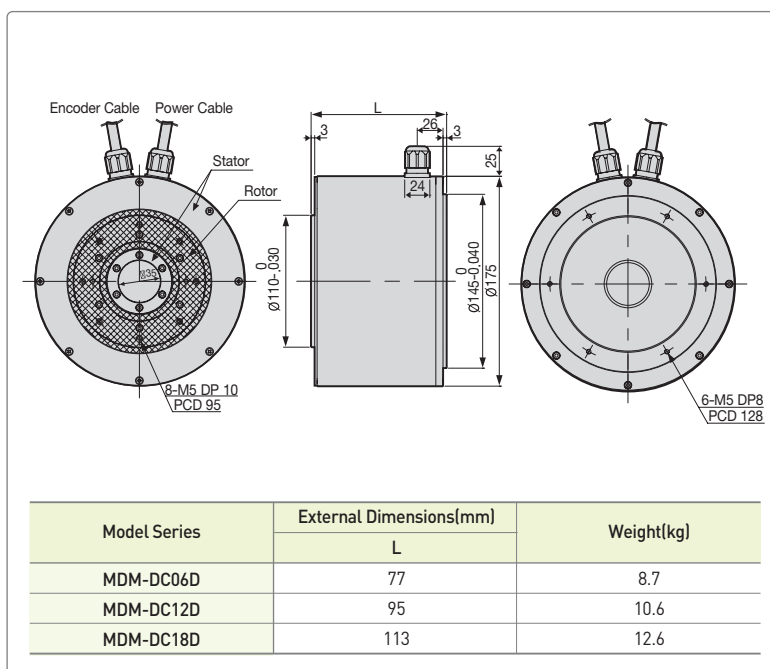
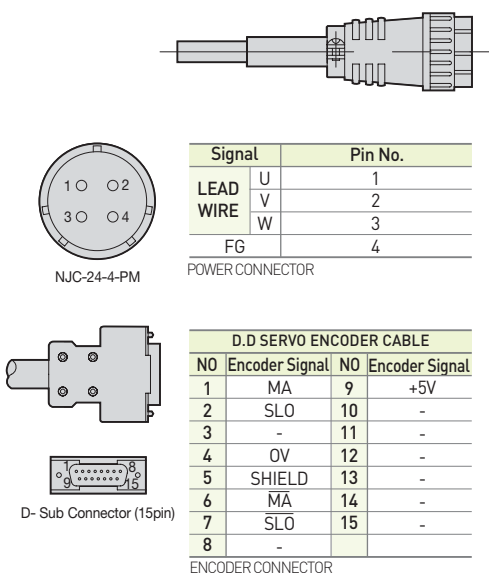
Speed-Torque Characteristics



MDM-DB03D, MDM-DB06D, MDM-DB09D

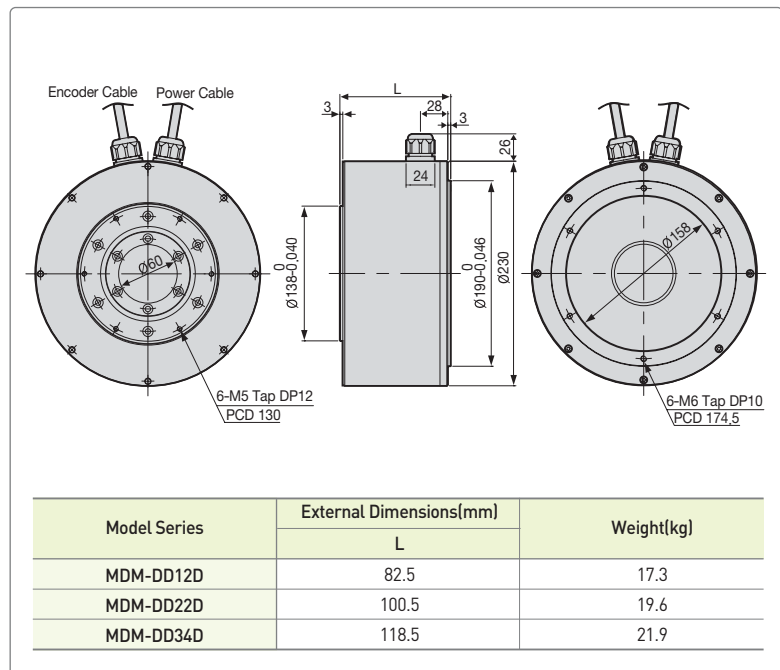
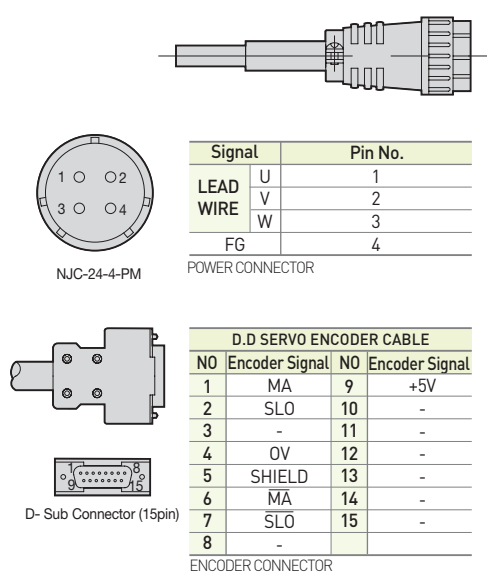


MDM-DC06D, MDM-DC12D, MDM-DC18D

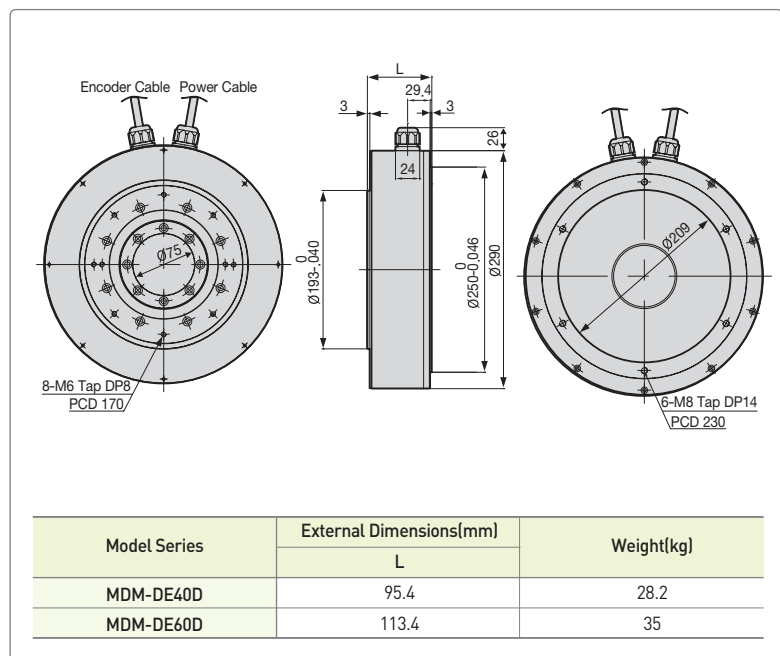
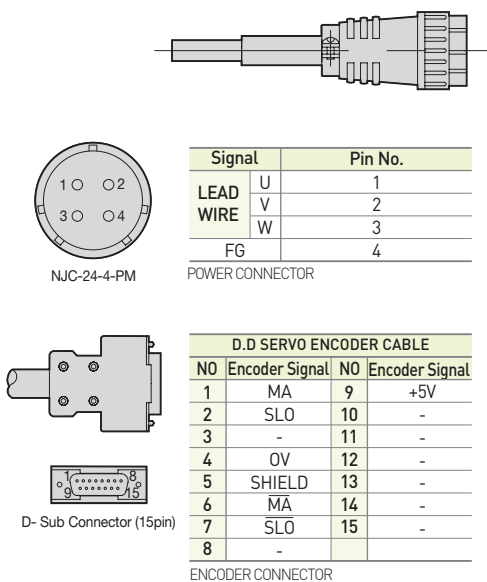


External Dimensions

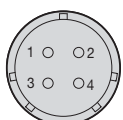
MDM-DD12D, MDM-DD22D, MDM-DD34D



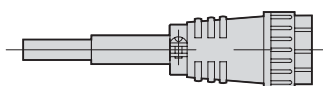
MDM-DE40D, MDM-DE60D



MDM-DFA1G, MDM-DFA6G

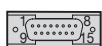
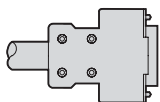


Nanaboshi Electronic
NJC-24-4-PM



Signal		Pin No.
LEAD WIRE	U	A
	V	B
	W	C
FG		D

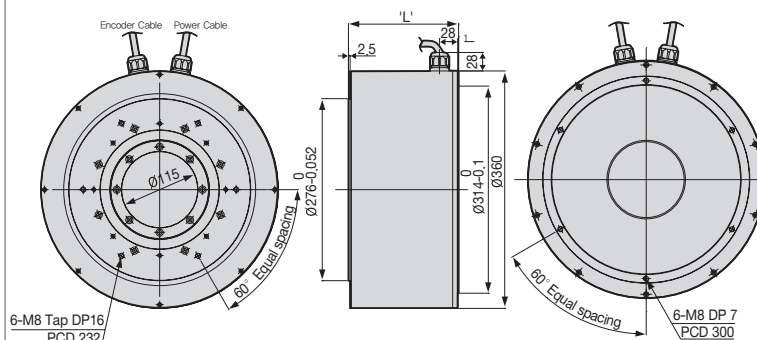
POWER CONNECTOR



D- Sub Connector (15pin)

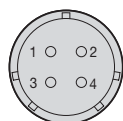
D.D SERVO ENCODER CABLE			
NO	Encoder Signal	NO	Encoder Signal
1	MA	9	+5V
2	SLO	10	-
3	-	11	-
4	OV	12	-
5	SHIELD	13	-
6	MA	14	-
7	SLO	15	-
8	-		

ENCODER CONNECTOR

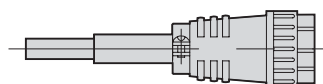


Model Series	External Dimensions(mm)	Weight(kg)
	L	
MDM-DFA1G	131	54
MDM-DFA6G	167	70.3

MDM-DGC3SNOH

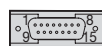
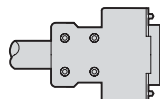


Nanaboshi Electronic
NJC-24-4-PM



Signal		Pin No.
LEAD WIRE	U	1
	V	2
	W	3
FG		4

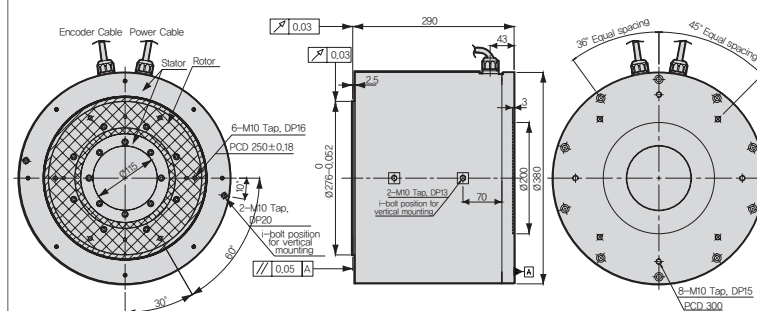
POWER CONNECTOR



D- Sub Connector (15pin)

D.D SERVO ENCODER CABLE			
NO	Encoder Signal	NO	Encoder Signal
1	MA	9	+5V
2	SLO	10	-
3	-	11	-
4	OV	12	-
5	SHIELD	13	-
6	MA	14	-
7	SLO	15	-
8	-		

ENCODER CONNECTOR



Model Series	External Dimensions(mm)	Weight(kg)
	L	
MDM-DGC3SN0H	290	162