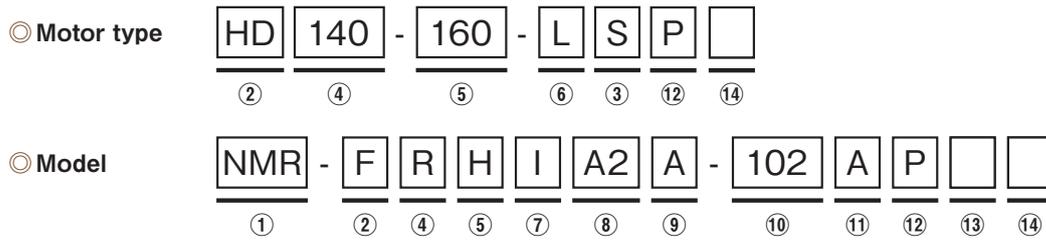


τ DISC HD-s Series Model and motor type description



①	NMR...Direct drive motor Series		
②	Middle product classification (1)	Motor type	HD...HD-s Series
		Model	F...HD-s Series
③	Middle product classification (2)	S...ND-s Series/ ND-s HS Series/ DD-s Series/ HD-s Series	
④	Nominal diameter *1	Flange less	
		R...140 (Actual range 140 to 149 mm)	
		S...180 (Actual range 180 to 189 mm)	
⑤	Nominal height *1	Flange less	
		H...160 (Actual range 150 to 169 mm)	
		I...185 (Actual range 170 to 199 mm)	
		J...200 (Actual range 200 to 219 mm)	
⑥	Motor flange	L...Flange less	
⑦	Encoder type	I...Incremental encoder	
⑧	Power supply voltage	A2...200 VAC	
⑨	Order of design	A→B→C...Starting from A	
⑩	Rated output *2	Example) 102 ... 10 $\frac{2}{2} = 10 \times 10^2 = 1000W$ <div style="margin-left: 100px;"> Exponential part of powers of 10 Significant figures </div>	
⑪	Brake (with or without)	A...Without brake	
⑫	Table surface rotation accuracy	Without...Standard specification	P...High accuracy type (option)
⑬	Motor structure	Without...Standard specification	
⑭	Special model symbol	Without...Standard specification	
		-R + sequential number...Quasi standard specification	-S + sequential number...Special model specification

*1 The motor type is represented by a numerical value. Nominal dimensions may be different from actual dimensions. For details, refer to the dimensions.
 *2 Approximate value.

* Dimensions are subject to change without prior notice to improve the product. Before designing, download the latest dimensions from our website.

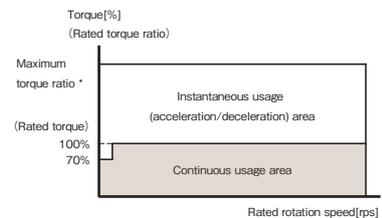
About the encoder type

The encoder type of the HD-s Series is the incremental encoder only.

Common specifications

Ambient operating temperature	0 to 40°C
Ambient operating humidity	85%RH or less; no condensation
Installation location	Do not install in a harmful atmosphere containing corrosive gas, grinding oil, metal dust, oil, etc. Install in an indoor place not exposed to direct sunlight.
Installation direction	Horizontal with the rotor facing upward. * When the installation direction is not horizontal with the rotor facing upward, consult with our sales staff.
Cooling method	Natural air cooling
Insulation class	Class F
Withstand voltage	1,500 VAC, 1 minute
Protection class	IP42
Height above sea level	1,000 m or less
Vibration resistance	1G (3 directions, 2 hours each)
Shock resistance	30G (3 directions, 2 times each)

Torque characteristics



If the locking operation or an equivalent operation (ultra low speed rotation or reciprocation within a very small range of angles) is performed continuously, the electronic thermal value may be reduced for motor protection. When you plan to perform the above operation, contact our sales staff.

Individual specifications

Motor type *1	HD140-160-LS(P)		HD140-185-LS(P)		HD180-200-LS(P)	
Model *1	NMR-FRHIA2A-102A(P)		FRHIA2A-122A(P)		FSJIA2A-252A(P)	
Flange type	Flange less		Flange less		Flange less	
Power supply used	ACV 200		200		200	
Outside diameter	mm 140		140		180	
Height *2	mm 160(159.8)		185(184.8)		200(199.8)	
Rated torque *3	N·m 27		36		68	
Max torque *3	N·m 67.5		100		145	
Rated rotation speed *3	rps 6		5.5		6	
Rated output *3	W 1,017		1,244		2,563	
Rated current *3	A 6.8		9.6		15.7	
Encoder type	Incremental		Incremental		Incremental	
Detection pulse	ppr 3,360,000		3,360,000		3,360,000	
Detection resolution	arcsec 0.386		0.386		0.386	
Allowable moment load *4	N·m 31.9		31.9		31.9	
Allowable axial load *4	kN 3.2		3.2		3.2	
Table surface rotation accuracy *5	Radial run out(no load)	μm 50(Standard) / 10(High accuracy type)				
	Axial run out(no load)	μm 50(Standard) / 10(High accuracy type)				
Absolute Positioning accuracy *6	arcsec ±15(When the absolute position compensation function option is used)					
Repeated Positioning accuracy(when reciprocating)	arcsec ±1					
Rotor moment of inertia	kg·m ² 0.0027		0.0033		0.012	
Weight	kg 10		12		19	
Magnetic pole detection method	Automatic magnetic pole sensing		Automatic magnetic pole sensing		Selection of magnetic pole sensor detection or automatic magnetic pole detection	
Paired servo driver	VPH Series	NCR-H□	2801A-A-□□□		2152A-A-□□□	
			2152A-A-□□□		2222A-A-□□□	

*1 Shown in parentheses are the motor type and model of the high accuracy type(option).

*2 Shown in parentheses is the value of the high accuracy type(option).

*3 The specification values are those obtained when the τ DISC is mounted on a heat sink(aluminum plate) of one of the following sizes and operated at the ambient operating temperature.

- HD140 Type 640 mm×450 mm×50 mm
- HD180 Type 640 mm×450 mm×50 mm

*4 The life of the bearing and the run out accuracy differ depending on the load. For the points to note with regard to the allowable loads, refer to "About the allowable loads of τ DISC" on p.44.

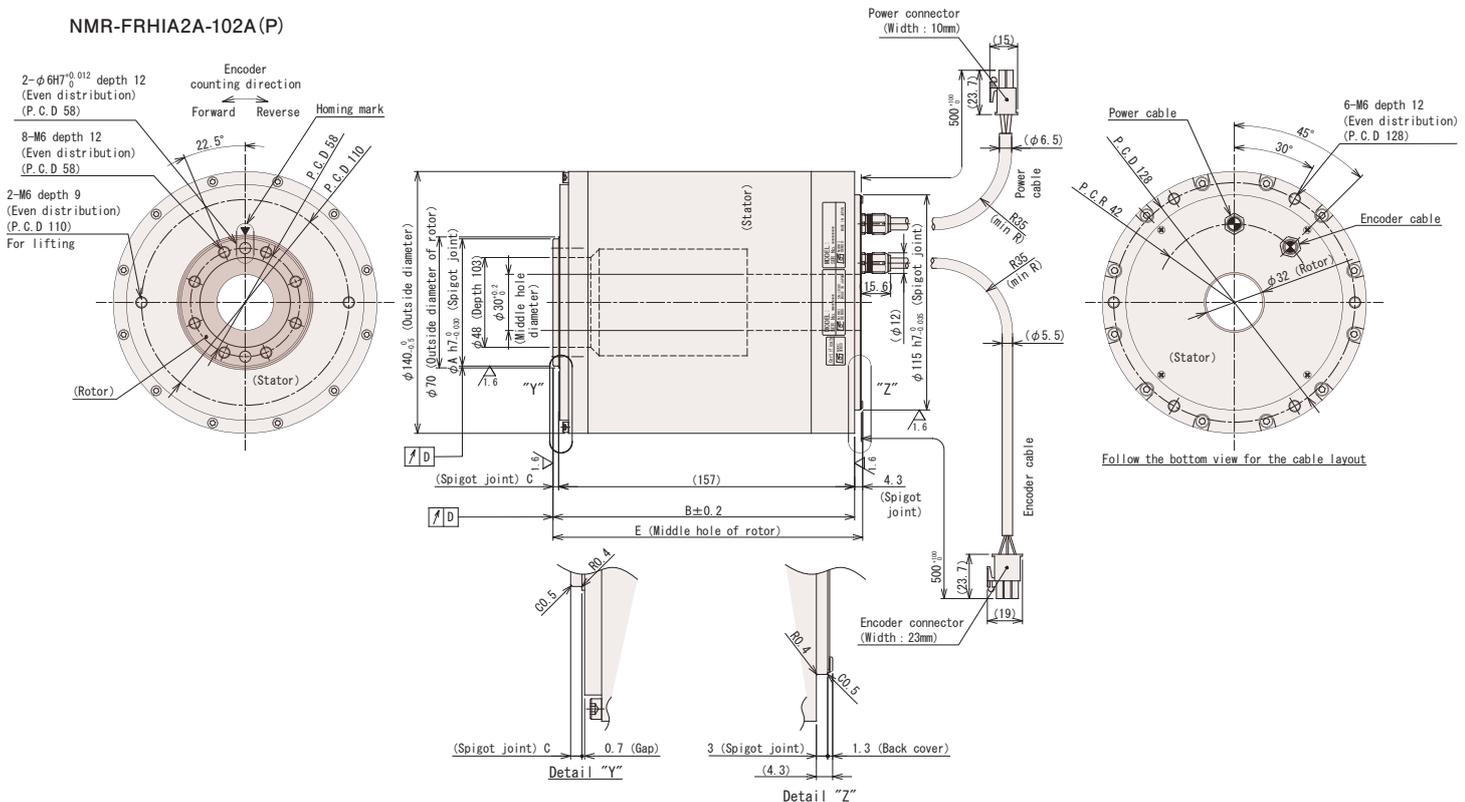
*5 For details, refer to "High accuracy type option for τ DISC table surface rotation accuracy" on p.43.

*6 For details, refer to "τ DISC Absolute position compensation function option" on p.42.

τ DISC HD-s Series Dimensions

HD140-160-LS(P)

NMR-FRHIA2A-102A(P)



Motor type	A	B	C	D	E	F
HD140-160-LS	68	160	3	0.05	164.3	103
HD140-160-LSP	67.8	159.8	2.8	0.01	164.1	102.8

