

DDI / DDE Series

Torque Motor



CONTENTS

High Positioning Accuracy

Positioning accuracy before compensation: up to ± 15 arcsec

Positioning accuracy after compensation: up to ± 5 arcsec

External Rotor Motor

DDE112

Continuous current(N.m): 3~6
Peak current(N.m): 9~18

DDE140

Continuous current(N.m): 6~10.5
Peak current(N.m): 16~28

DDE224

Continuous current(N.m): 14.1~35
Peak current(N.m): 42.2~105

DDE118

Continuous current(N.m): 3
Peak current(N.m): 9

DDE163

Continuous current(N.m): 11.7
Peak current(N.m): 35

DDE263

Continuous current(N.m): 45~250
Peak current(N.m): 135~500

DDE120

Continuous current(N.m): 3.5
Peak current(N.m): 10.5

DDE170

Continuous current(N.m): 23.8~41.8
Peak current(N.m): 71~125

DDE325

Continuous current(N.m): 30
Peak current(N.m): 90

Internal Rotor Motor

DDI062

Continuous current(N.m): 0.5
Peak current(N.m): 1.5

DDI120

Continuous current(N.m): 3.5
Peak current(N.m): 11.3

DDI224

Continuous current(N.m): 9.9
Peak current(N.m): 19.8

DDI080

Continuous current(N.m): 0.9~1
Peak current(N.m): 2.7~3

DDI170

Continuous current(N.m): 5.4~17.4
Peak current(N.m): 16~52

DDI263

Continuous current(N.m): 50
Peak current(N.m): 150

DDI100

Continuous current(N.m): 1
Peak current(N.m): 3

DDI180

Continuous current(N.m): 14~40.1
Peak current(N.m): 42~120

DDI375

Continuous current(N.m): 250~375
Peak current(N.m): 670~1000

Smooth Operation, Precise Stopping

Repeatability of ± 0.5 arcsec and absolute positioning accuracy of ± 2 arcsec. With 67,108,864 pulses per revolution, this equates to an accuracy of $0.5 \mu\text{m}$ at the end of a 1000 mm long arm.

Energy Efficient, Low Heat Generation

The hybrid magnetic circuit utilizes a bias magnetization method to generate high torque at low current, thereby reducing heat generation and saving energy.

Capable of Withstanding Sudden External Forces

I-PD control provides high rigidity, enabling the system to withstand sudden external forces.



A direct-mount structure



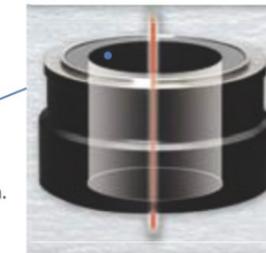
Load mounting surface

Rotary section
The outer part serves as the rotating component.

This ensures consistent positioning accuracy across workstations. The direct-mount design also saves energy, as there is no energy loss caused by gears.

Motor with a conveniently large center through-hole

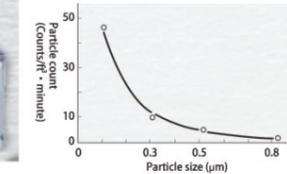
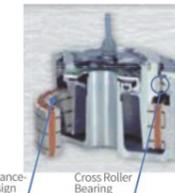
Large center through-hole
The large center through-hole allows cables, shafts, lasers, etc., to pass through.



Large center through-hole $\varnothing 150 \text{ mm}$

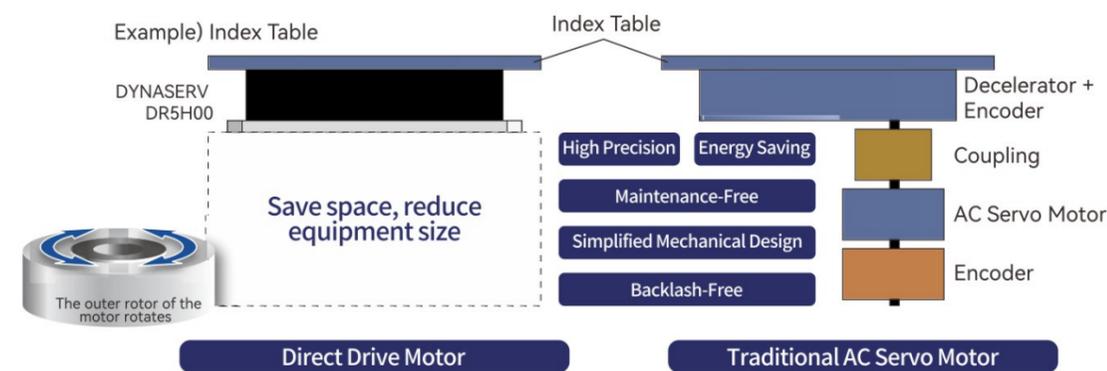
Motor with Contamination-Free and Maintenance-Free Structure

Cross roller bearings generate no dust or oil leakage. As a result, they achieve Class 10 cleanliness (where there are no more than 10 particles $\geq 0.5 \mu\text{m}$ in size per cubic foot of air). This makes them suitable for cleanrooms. Furthermore, the bearings are fully sealed and require absolutely no lubrication grease, thereby preventing contamination.



Why Use a Direct Drive Motor?

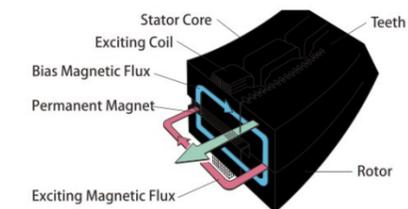
(Comparison with Traditional AC Servo Motors)



The integrated structure allows the load to be directly mounted on the installation surface of the DD motor, eliminating any accuracy loss from the motor to the worktable. This enhances the overall precision of the equipment. Since there is no mechanical structure like a gear reducer, there is no energy loss as seen with traditional AC servo systems. The direct drive method also makes it easy to change workstations through programming.

High-efficiency and energy-saving motor

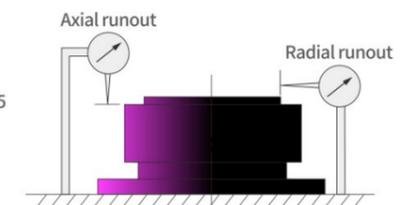
The hybrid magnetic circuit can generate high torque under low current conditions. Low heat generation is a key feature, which reduces cooling time and shortens the production cycle.



Low Axial and Radial Runout

Axial and radial runout can be selected as low as 5 micrometers.

Measuring the mechanical accuracy of the load mounting surface:



Reasons for Wide Adoption

High Precision
Absolute Accuracy: ± 0.5 arcsec
Repeatability: ± 2 arcsec

High Resolution
Encoder Resolution: 67,108,864 pulses/rev

High Rigidity
I-PD Control

- The motor always stops at the same position.
- High encoder resolution.
- The control method ensures both accuracy and rigidity.

High precision, high resolution, high rigidity

The hybrid magnetic circuit delivers high efficiency and energy-saving performance. It features low heat emission, which helps reduce cycle times and enables sustained high-speed operation. Additionally, the I-PD control loop provides shorter settling times compared to competitors. These advantages contribute to improved productivity and higher product quality, which is why it is widely adopted in the semiconductor industry.

Efficient motors enhance productivity.

High-rigidity cross roller bearings offer high load-bearing capacity. During operation, they can withstand fluctuations in load (without the need for a supporting structure design).

Motor directly carries the load

Can withstand high loads

From a mechanical perspective, as there is no gear structure, the motion position can be easily adjusted through programming. In contrast, changing the position in a conventional gear structure requires altering the gear ratio.

Allows for flexible design mechanically

The built-in absolute encoder provides absolute positioning.

Absolute Encoder Type

The drive enhances motor control and operability. It features an auto-tuning function that automatically matches the moment of inertia and parameters. It also enables compatibility with field networks.

High-Performance Drive

Provides Positioning for Advanced Machines

High Precision High Resolution Type
High Precision: Absolute Accuracy ± 2 arc-sec
High Resolution: 67,108,864

Flat Type
Minimum Height: 35mm

Large Center Through-Hole, High-Speed High Torque Type
Maximum Speed: 600 rpm
Maximum Torque: 3700 Nm

Absolute Encoder
Custom 32-bit Absolute Encoder

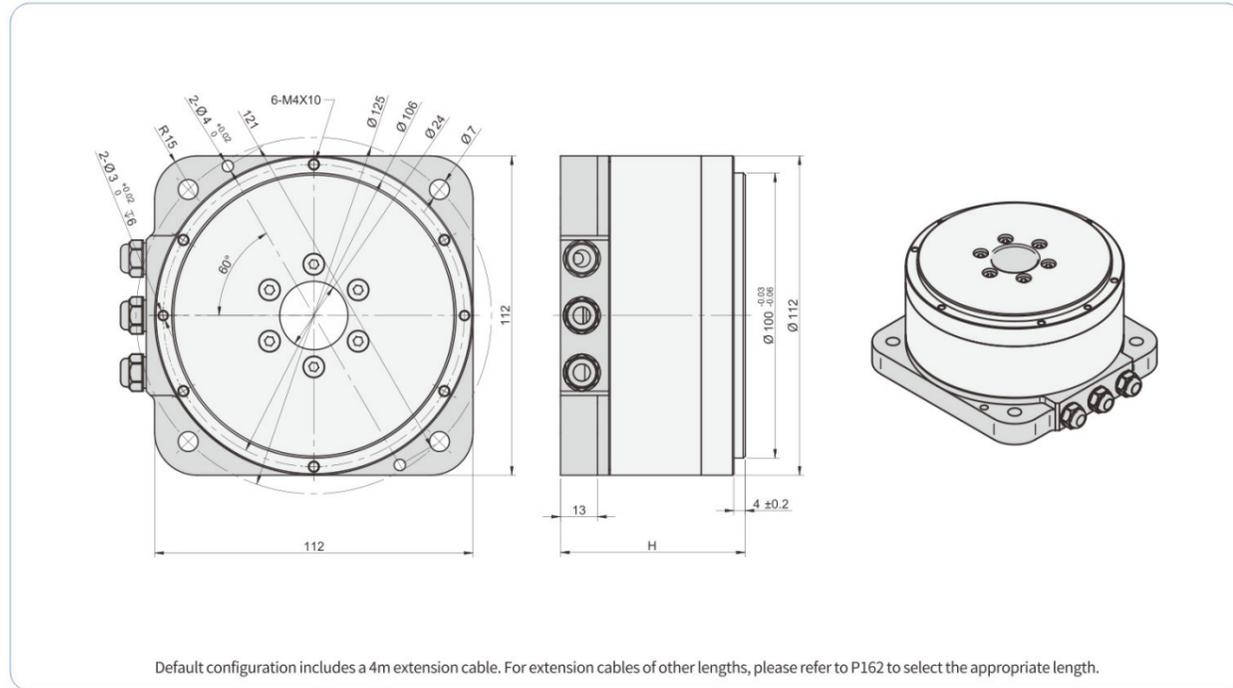
Professional Testing Equipment Advanced Production Equipment 10+ Years of Technical Experience 100% Quality Full Inspection CE Certification Top-grade Core Components

Ordering Method

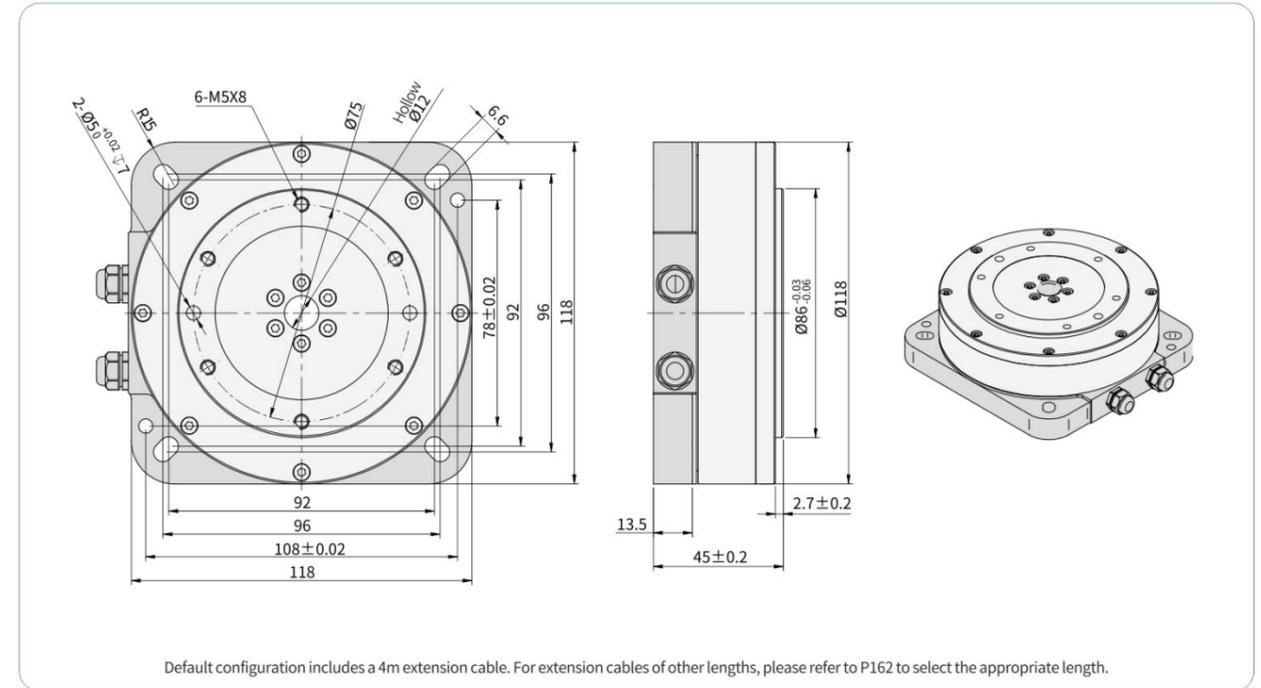
DDI External Rotor Motor DDE Internal Rotor Motor	DDI	XXX	XXX	Special Order No.	Direct lead length of rotor
DD Motor Diameter					Default Configuration: 4m Extension Cable Encoder Extension Cable: DF-ONSD1-A (indicates the cable length in numbers) Power Extension Cable: DP-05Q1-A (indicates the cable length in numbers)
					DD Motor Height

- 1.AKD defaults to using Renishaw grating encoders. For other requirements, please contact our engineers for customization.
- 2.Motor dimensions, wiring methods, and flange materials can be customized according to requirements.
- 3.For external cooling systems or braking systems, please contact our engineers for customization.

Dimensional Installation Drawing



Dimensional Installation Drawing



Parameter Table

Parameter	Unit	DDE-112065	DDE-112095
Continuous torque	N.m	3.0	6.0
Continuous current	Arms	2.5	2.5
Peak torque	N.m	9	18
Peak current	Arms	7.5	7.5
Torque constant	Nm/Arms	1.2	2.4
Ohms	Ω(25°C)	2.2	4.2
mH	mH(25°C)	1.8	3.7
Poles		28	28
Constant of reverse electromotive force	Vrms/rad/s	1.0	2.0
Rated power	W(25°C)	26.3	50.1
Motor constant	Nm/√W	0.6	0.8
Rotational inertia	kg.m²	0.0026	0.0035
Motor weight	Kg	3.2	4.60
Rated speed	rpm	350	250
Positioning Accuracy	Arc sec	±20	±20
Repeatability	Arc sec	±1.5	±1.5
Resolution	sin/cos	819200	819200
Max. bus voltage	N	2500	2500
Max. radial load	N.m	20	20
Axial Runout	mm	0.005	0.005
Radial Runout	mm	0.005	0.005
Motor Height (H)	mm	65	95

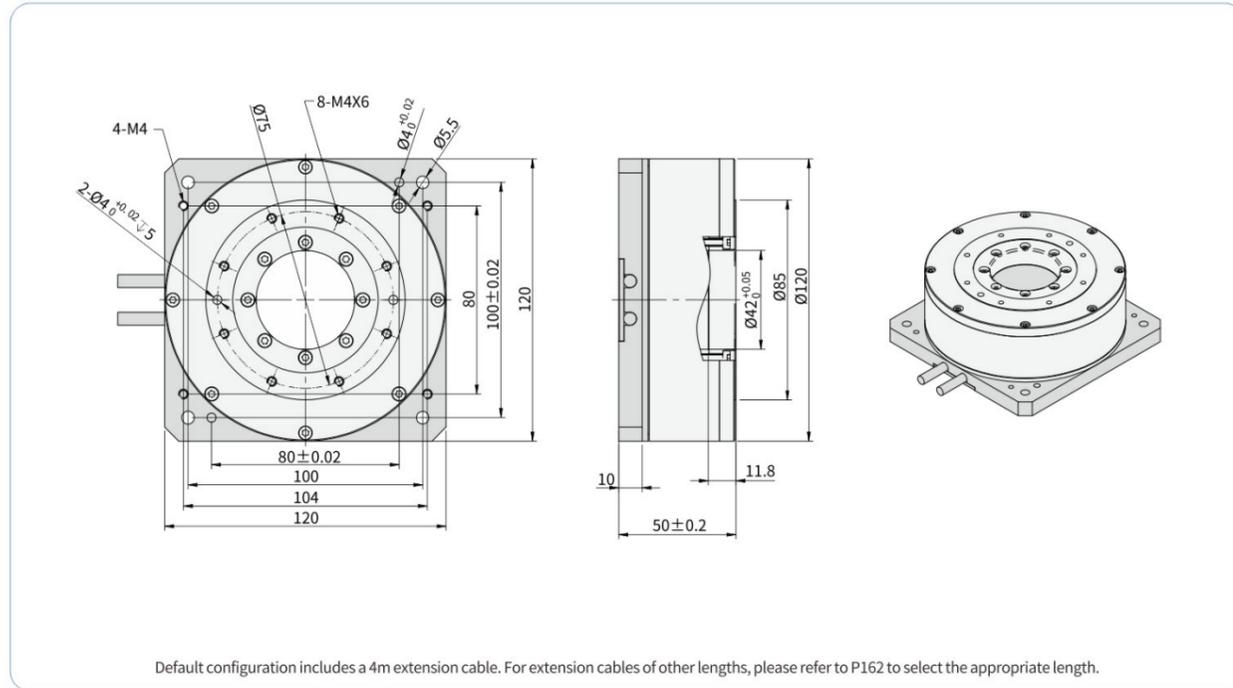
Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10MΩ (500V DC).

Parameter Table

Parameter	Unit	DDE-118045
Continuous torque	N.m	3
Continuous current	Arms	2.5
Peak torque	N.m	9
Peak current	Arms	7.5
Torque constant	Nm/Arms	1.20
Ohms	Ω(25°C)	2.2
mH	mH(25°C)	1.8
Poles		28
Constant of reverse electromotive force	Vrms/rad/s	1
Rated power	W(25°C)	26.3
Motor constant	Nm/√W	0.60
Rotational inertia	kg.m²	0.0026
Motor weight	Kg	3.20
Rated speed	rpm	350
Positioning Accuracy	Arc sec	±25
Repeatability	Arc sec	±2.5
Resolution	sin/cos	500000
Max. bus voltage	N	1500
Max. radial load	N.m	5
Axial Runout	mm	0.005
Radial Runout	mm	0.005
Motor Height (H)	mm	45

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10MΩ (500V DC).

Dimensional Installation Drawing

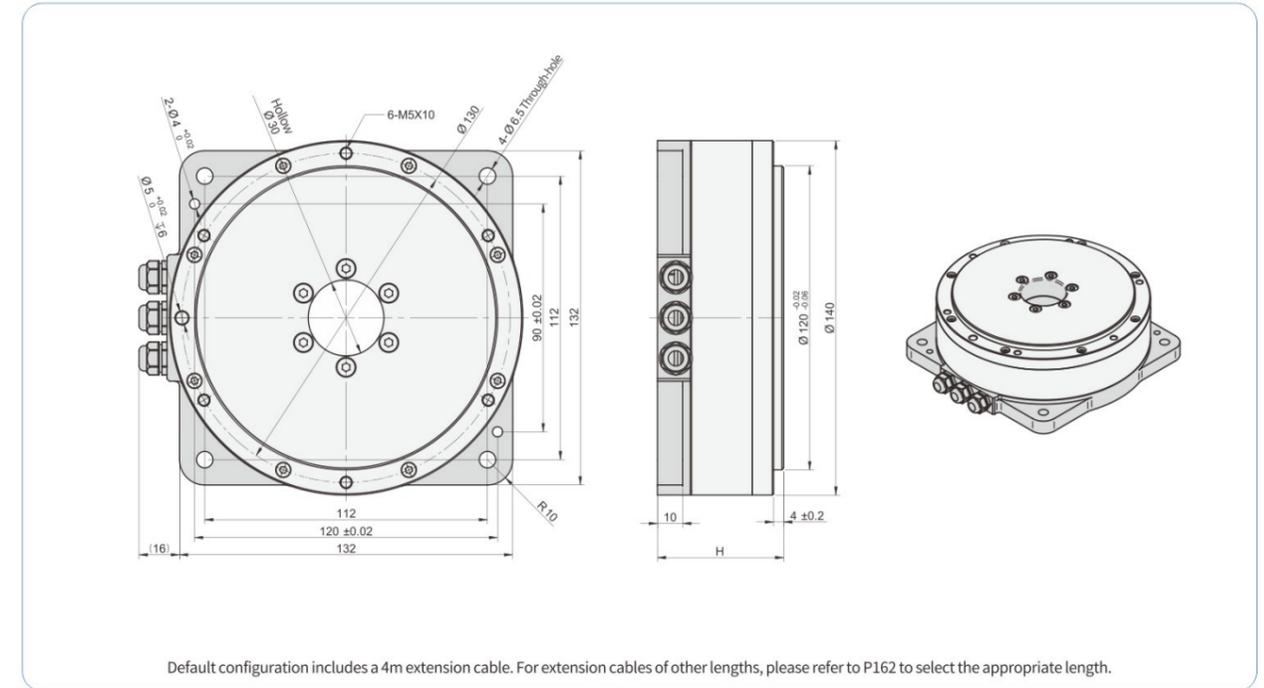


Parameter Table

Parameter	Unit	DDE-120050
Continuous torque	N.m	3.5
Continuous current	Arms	2
Peak torque	N.m	10.5
Peak current	Arms	6
Torque constant	Nm/Arms	1.70
Ohms	$\Omega(25^\circ\text{C})$	8.6
mH	mH(25°C)	4.1
Poles		28
Constant of reverse electromotive force	Vrms/rad/s	1.40
Rated power	W(25°C)	69.0
Motor constant	Nm/ \sqrt{W}	0.40
Rotational inertia	kg.m ²	0.002
Motor weight	Kg	1.80
Rated speed	rpm	350
Positioning Accuracy	Arc sec	±20
Repeatability	Arc sec	±1.5
Resolution	sin/cos	1174000
Max. bus voltage	N	500
Max. radial load	N.m	10
Axial Runout	mm	0.005
Radial Runout	mm	0.005
Motor Height (H)	mm	50

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

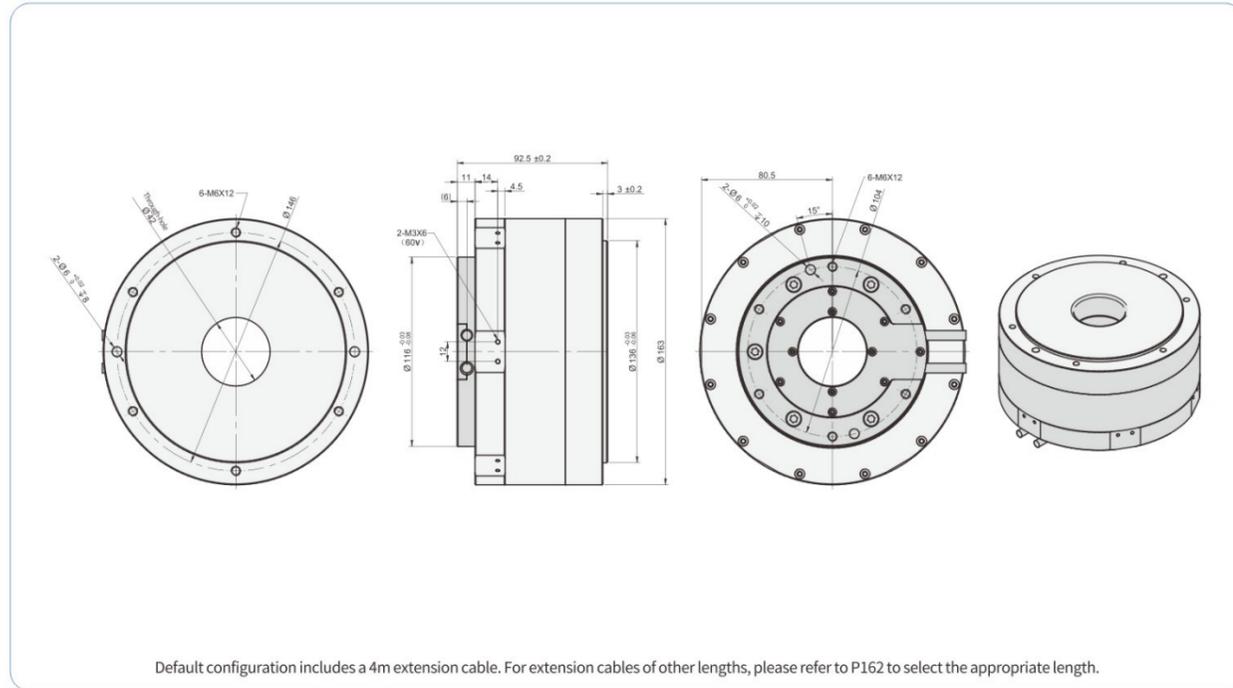


Parameter Table

Parameter	Unit	DDE-140050	DDE-140080
Continuous torque	N.m	6.0	10.5
Continuous current	Arms	2.5	2.5
Peak torque	N.m	16	28
Peak current	Arms	7	7
Torque constant	Nm/Arms	2.4	4.2
Ohms	$\Omega(25^\circ\text{C})$	3.7	5.9
mH	mH(25°C)	3.8	6
Poles		28	28
Constant of reverse electromotive force	Vrms/rad/s	2.0	3.4
Rated power	W(25°C)	44.2	70.4
Motor constant	Nm/ \sqrt{W}	0.9	1.3
Rotational inertia	kg.m ²	0.0045	0.0076
Motor weight	Kg	3.4	5.6
Rated speed	rpm	600	350
Positioning Accuracy	Arc sec	±20	±20
Repeatability	Arc sec	±1.5	±1.5
Resolution	sin/cos	819200	819200
Max. bus voltage	N	2500	2500
Max. radial load	N.m	20	20
Axial Runout	mm	0.005	0.005
Radial Runout	mm	0.005	0.005
Motor Height (H)	mm	50	80

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

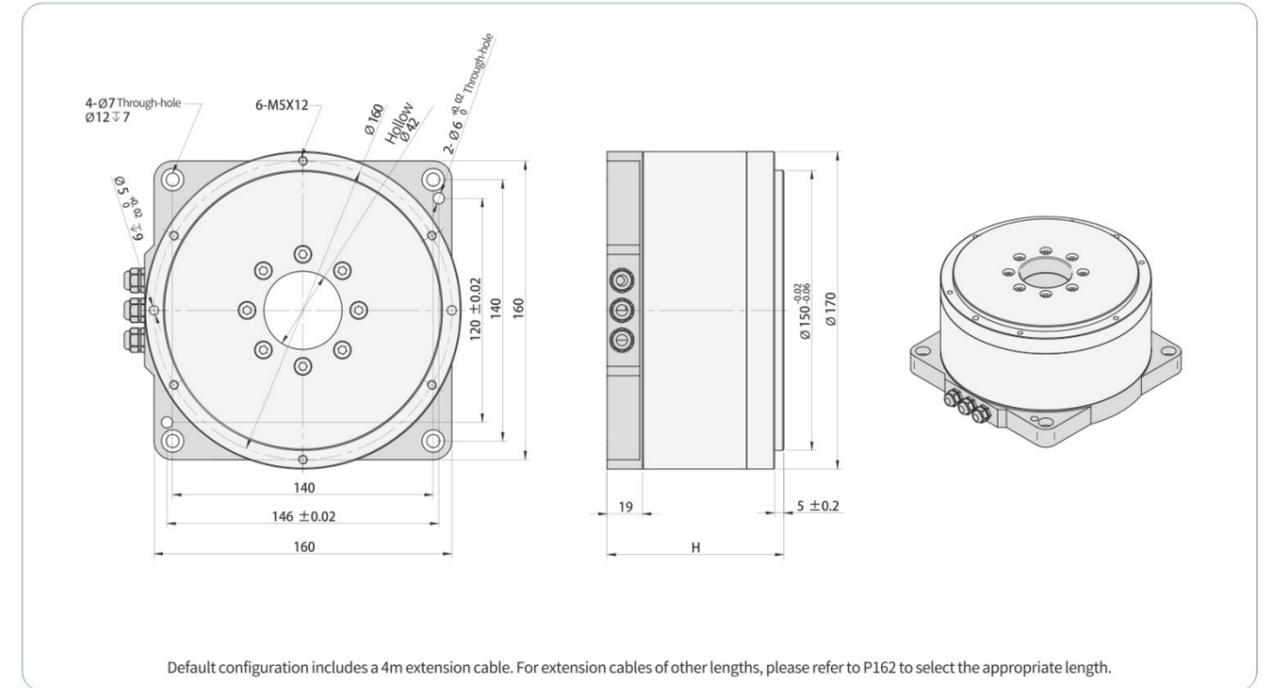


Parameter Table

Parameter	Unit	DDE-163092
Continuous torque	N.m	11.7
Continuous current	Arms	3
Peak torque	N.m	35
Peak current	Arms	9
Torque constant	Nm/Arms	3.9
Ohms	$\Omega(25^\circ\text{C})$	4.1
mH	mH(25°C)	5.0
Poles		40
Constant of reverse electromotive force	Vrms/rad/s	3.2
Rated power	W(25°C)	70.5
Motor constant	Nm/ \sqrt{W}	1.4
Rotational inertia	kg.m ²	0.016
Motor weight	Kg	7.1
Rated speed	rpm	200
Positioning Accuracy	Arc sec	±20
Repeatability	Arc sec	±1.5
Resolution	sin/cos	1174000
Max. bus voltage	N	6000
Max. radial load	N.m	60
Axial Runout	mm	0.002
Radial Runout	mm	0.002
Motor Height (H)	mm	92

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

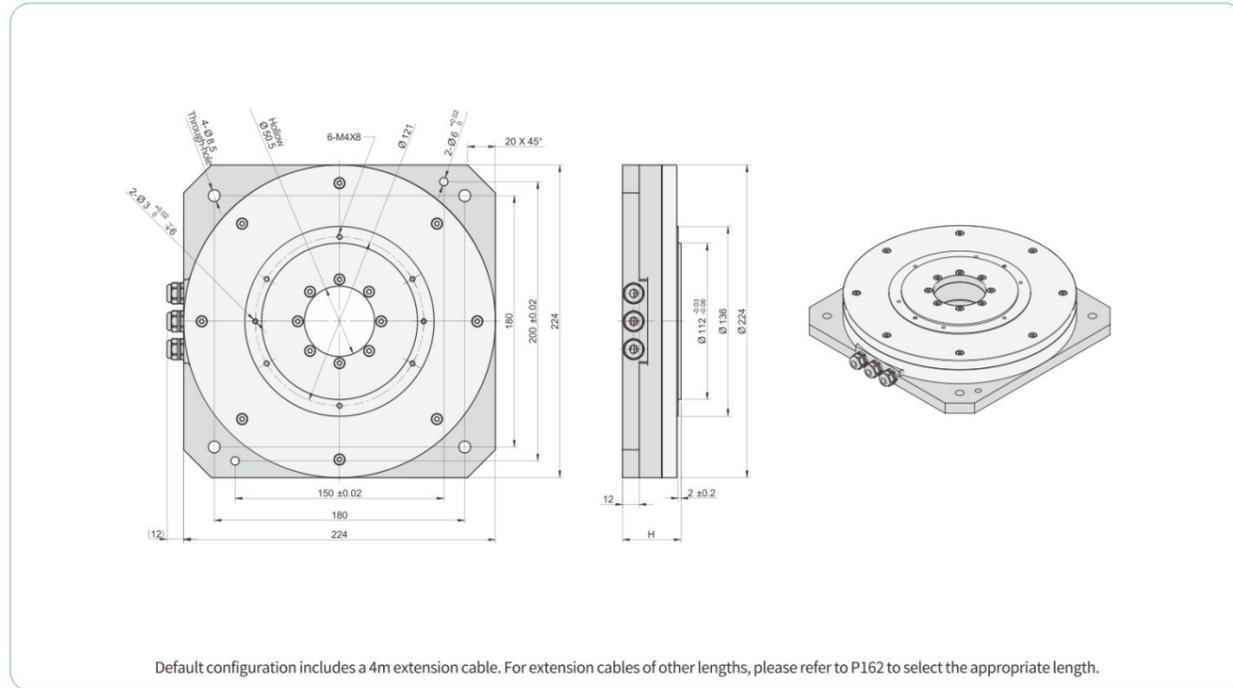


Parameter Table

Parameter	Unit	DDE-170095	DDE-170125
Continuous torque	N.m	23.8	41.8
Continuous current	Arms	2.5	2.5
Peak torque	N.m	71	125
Peak current	Arms	7.5	7.5
Torque constant	Nm/Arms	9.5	16.7
Ohms	$\Omega(25^\circ\text{C})$	9.4	14.4
mH	mH(25°C)	17.9	34.7
Poles		30	30
Constant of reverse electromotive force	Vrms/rad/s	7.8	13.6
Rated power	W(25°C)	112.2	171.9
Motor constant	Nm/ \sqrt{W}	2.2	3.2
Rotational inertia	kg.m ²	0.023	0.032
Motor weight	Kg	10.1	13.9
Rated speed	rpm	190	150
Positioning Accuracy	Arc sec	±20	±20
Repeatability	Arc sec	±1.5	±1.5
Resolution	sin/cos	1174000	1174000
Max. bus voltage	N	15000	15000
Max. radial load	N.m	150	150
Axial Runout	mm	0.005	0.005
Radial Runout	mm	0.005	0.005
Motor Height (H)	mm	95	125

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

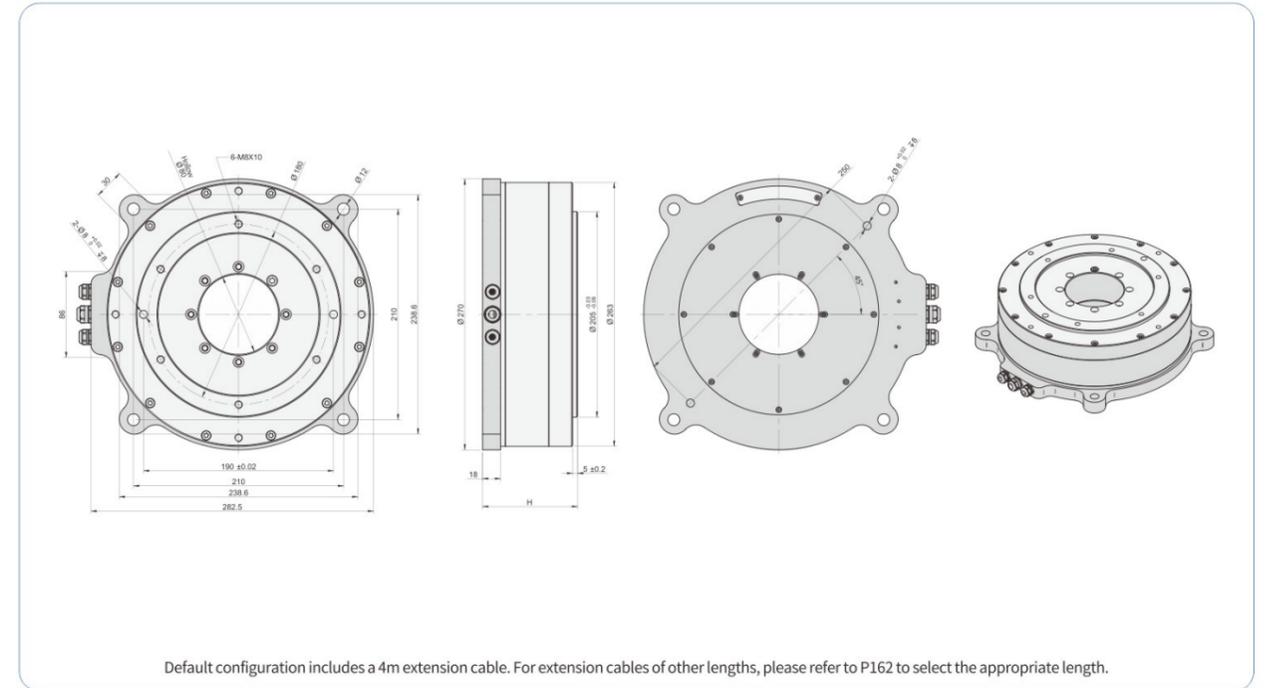


Parameter Table

Parameter	Unit	DDE-224042	DDE-224062
Continuous torque	N.m	14.1	35.0
Continuous current	Arms	2.2	2.2
Peak torque	N.m	42.2	105.0
Peak current	Arms	6.6	6.6
Torque constant	Nm/Arms	6.4	15.7
Ohms	$\Omega(25^\circ\text{C})$	7.5	13.8
mH	mH(25°C)	17.1	40.0
Poles		40	40
Constant of reverse electromotive force	Vrms/rad/s	5.2	12.8
Rated power	W(25°C)	69.3	127.5
Motor constant	Nm/ \sqrt{W}	2.6	5.6
Rotational inertia	kg.m ²	0.012	0.03
Motor weight	Kg	5.40	9.2
Rated speed	rpm	380	200
Positioning Accuracy	Arc sec	±20	±20
Repeatability	Arc sec	±1.5	±1.5
Resolution	sin/cos	1174000	1638400
Max. bus voltage	N	8000	10000
Max. radial load	N.m	80	100
Axial Runout	mm	0.005	0.005
Radial Runout	mm	0.005	0.005
Motor Height (H)	mm	42	62

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

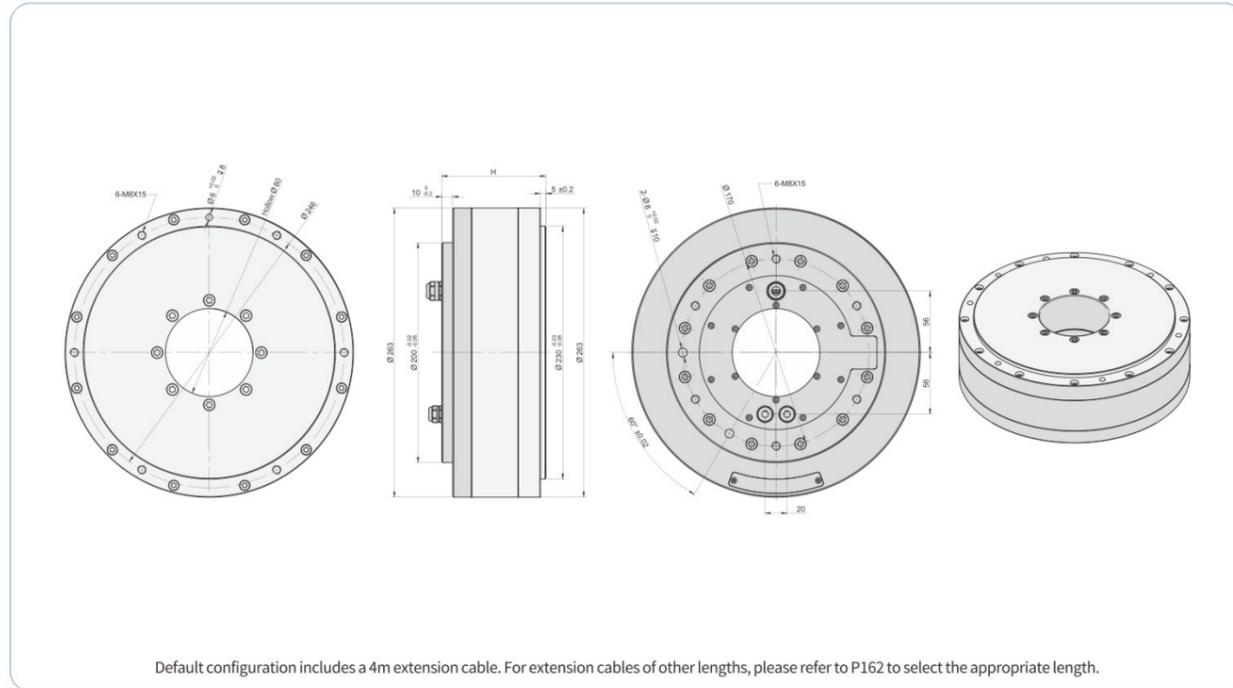


Parameter Table

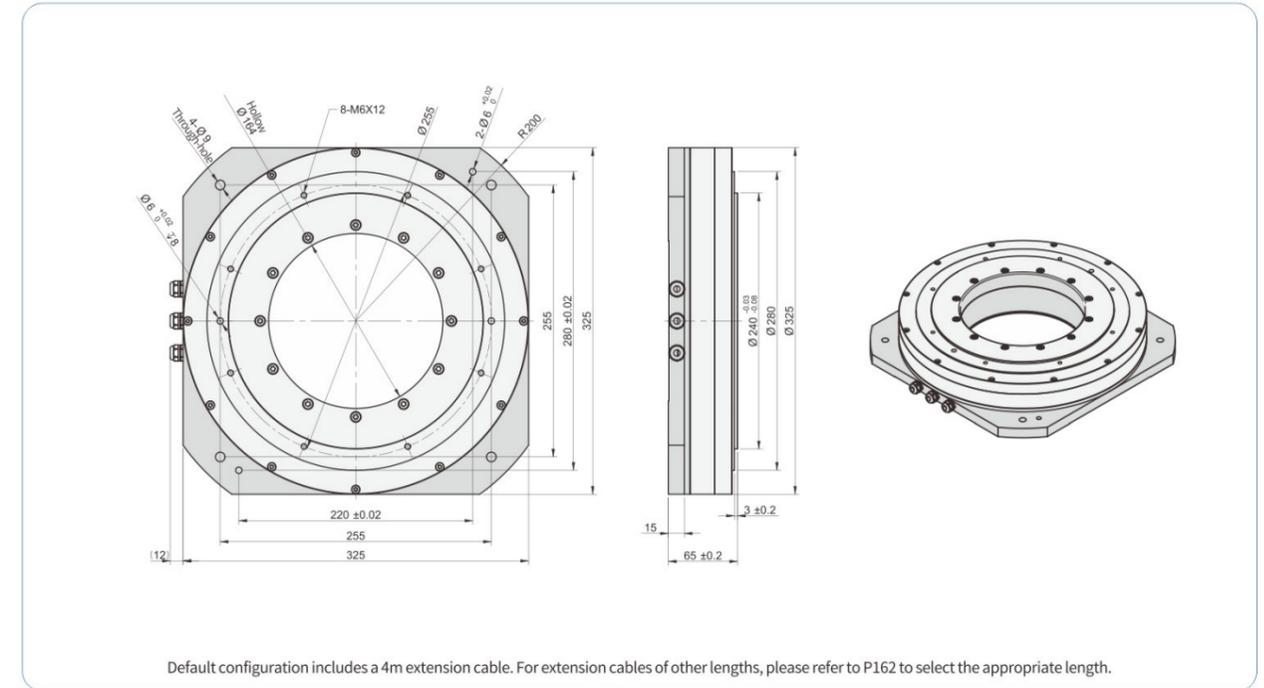
Parameter	Unit	DDE-263095	DDE-263109	DDE-263112
Continuous torque	N.m	45.0	95.0	95.0
Continuous current	Arms	7.1	7.1	7.1
Peak torque	N.m	135	190.0	190
Peak current	Arms	21.3	14.2	14.2
Torque constant	Nm/Arms	6.3	13.40	13.4
Ohms	$\Omega(25^\circ\text{C})$	1.7	2.7	2.7
mH	mH(25°C)	5.0	8.3	8.3
Poles		40	40	40
Constant of reverse electromotive force	Vrms/rad/s	5.2	10.90	10.9
Rated power	W(25°C)	163.6	259.9	259.9
Motor constant	Nm/ \sqrt{W}	7.9	3.00	3.0
Rotational inertia	kg.m ²	0.079	0.1	0.13
Motor weight	Kg	19.3	24.40	33.50
Rated speed	rpm	200	150	150
Positioning Accuracy	Arc sec	±20	±20	±20
Repeatability	Arc sec	±1.5	±1.5	±1.5
Resolution	sin/cos	1638400	1638400	1638400
Max. bus voltage	N	40000	40000	40000
Max. radial load	N.m	400	400	400
Axial Runout	mm	0.005	0.005	0.005
Motor Height (H)	mm	95	109	112

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing



Dimensional Installation Drawing



Parameter Table

Parameter	Unit	DDE-263134	DDE-263138	DDE-263188
Continuous torque	N.m	150.0	150.0	250.0
Continuous current	Arms	7.1	7.1	7.1
Peak torque	N.m	300.0	300.0	500
Peak current	Arms	14.2	14.2	14.2
Torque constant	Nm/Arms	21.9	21.9	35.2
Ohms	$\Omega(25^\circ\text{C})$	3.9	3.9	6.7
mH	mH(25°C)	13.4	13.4	22.8
Poles		40	40	40
Constant of reverse electromotive force	Vrms/rad/s	17.9	17.9	28.7
Rated power	W(25°C)	375.4	375.4	644.9
Motor constant	Nm/ \sqrt{W}	7.9	7.9	7.9
Rotational inertia	kg.m ²	0.15	0.15	0.21
Motor weight	Kg	32	32.50	49.10
Rated speed	rpm	120	120	100
Positioning Accuracy	Arc sec	±20	±20	±20
Repeatability	Arc sec	±1.5	±1.5	±1.5
Resolution	sin/cos	1638400	1638400	1638400
Max. bus voltage	N	40000	40000	40000
Max. radial load	N.m	400	400	400
Axial Runout	mm	0.005	0.005	0.005
Radial Runout	mm	0.005	0.005	0.005
Motor Height (H)	mm	134	138	188

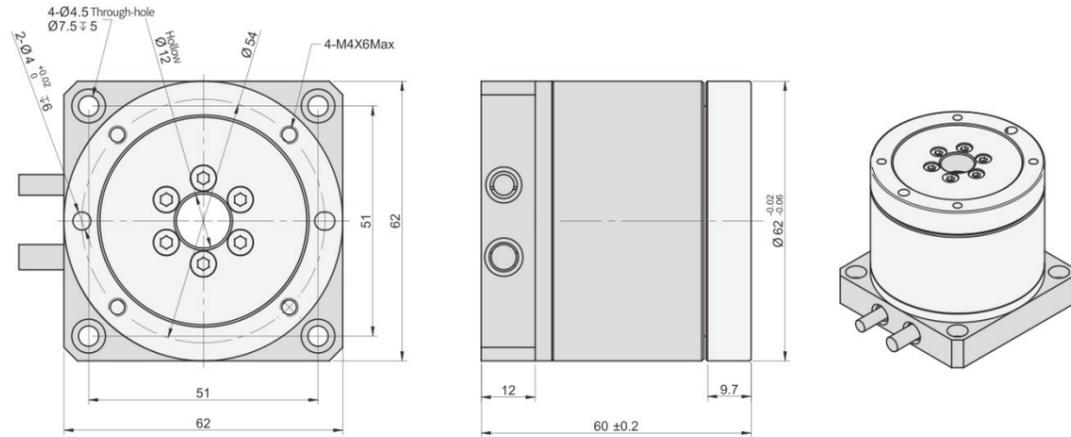
Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Parameter Table

Parameter	Unit	DDE-325065
Continuous torque	N.m	30.0
Continuous current	Arms	1.1
Peak torque	N.m	90.0
Peak current	Arms	3.4
Torque constant	Nm/Arms	27.3
Ohms	$\Omega(25^\circ\text{C})$	18.6
mH	mH(25°C)	42.4
Poles		50
Constant of reverse electromotive force	Vrms/rad/s	22.3
Rated power	W(25°C)	43.0
Motor constant	Nm/ \sqrt{W}	4.6
Rotational inertia	kg.m ²	0.12
Motor weight	Kg	15.50
Rated speed	rpm	120
Positioning Accuracy	Arc sec	±20
Repeatability	Arc sec	±1.5
Resolution	sin/cos	1638400
Max. bus voltage	N	50000
Max. radial load	N.m	300
Axial Runout	mm	0.008
Radial Runout	mm	0.008
Motor Height (H)	mm	65

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing



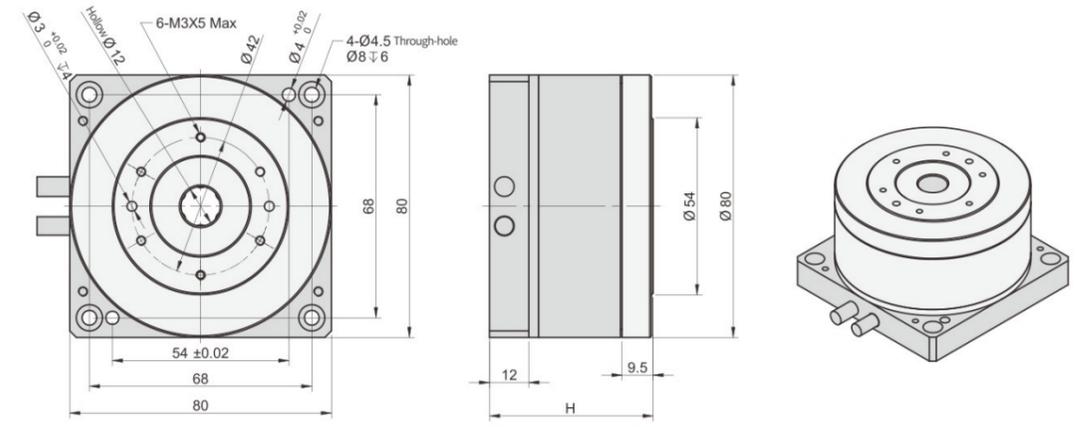
Default configuration includes a 4m extension cable. For extension cables of other lengths, please refer to P162 to select the appropriate length.

Parameter Table

Parameter	Unit	DDI-062060
Continuous torque	N.m	0.5
Continuous current	Arms	2
Peak torque	N.m	1.5
Peak current	Arms	6
Torque constant	Nm/Arms	0.25
Ohms	$\Omega(25^\circ\text{C})$	2.6
mH	mH(25°C)	1.7
Poles		14
Constant of reverse electromotive force	Vrms/rad/s	0.2
Rated power	W(25°C)	19.9
Motor constant	Nm/ \sqrt{W}	0.1
Rotational inertia	kg.m ²	6.5x10 ⁻⁵
Motor weight	Kg	0.65
Rated speed	rpm	600
Positioning Accuracy	Arc sec	±30
Repeatability	Arc sec	±1.5
Resolution	sin/cos	500000
Max. bus voltage	N	50
Max. radial load	N.m	/
Axial Runout	mm	0.03

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing



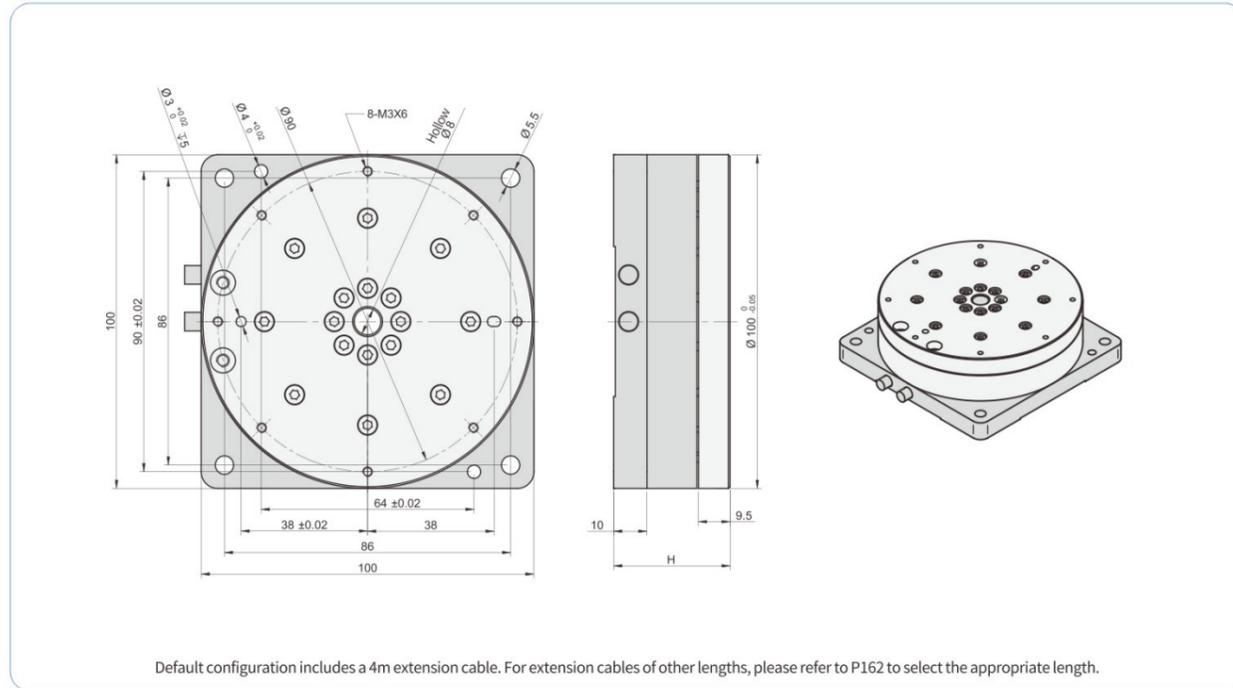
Default configuration includes a 4m extension cable. For extension cables of other lengths, please refer to P162 to select the appropriate length.

Parameter Table

Parameter	Unit	DDI-080050	DDI-080067
Continuous torque	N.m	0.9	1
Continuous current	Arms	3.2	3.2
Peak torque	N.m	2.7	3
Peak current	Arms	9.6	9.6
Torque constant	Nm/Arms	0.28	0.31
Ohms	$\Omega(25^\circ\text{C})$	1.3	1.5
mH	mH(25°C)	1.7	1.8
Poles		10	10
Constant of reverse electromotive force	Vrms/rad/s	0.2	0.26
Rated power	W(25°C)	25.4	29.3
Motor constant	Nm/ \sqrt{W}	0.2	0.21
Rotational inertia	kg.m ²	1.5x10 ⁻⁴	2.2x10 ⁻⁴
Motor weight	Kg	1.5	1.8
Rated speed	rpm	600	450
Positioning Accuracy	Arc sec	±50	±30
Repeatability	Arc sec	±2.5	±1.5
Resolution	sin/cos	500000	500000
Max. bus voltage	N	50	150
Max. radial load	N.m	/	10
Axial Runout	mm	0.01	0.01
Radial Runout	mm	0.01	0.01
Motor Height (H)	mm	50	67

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

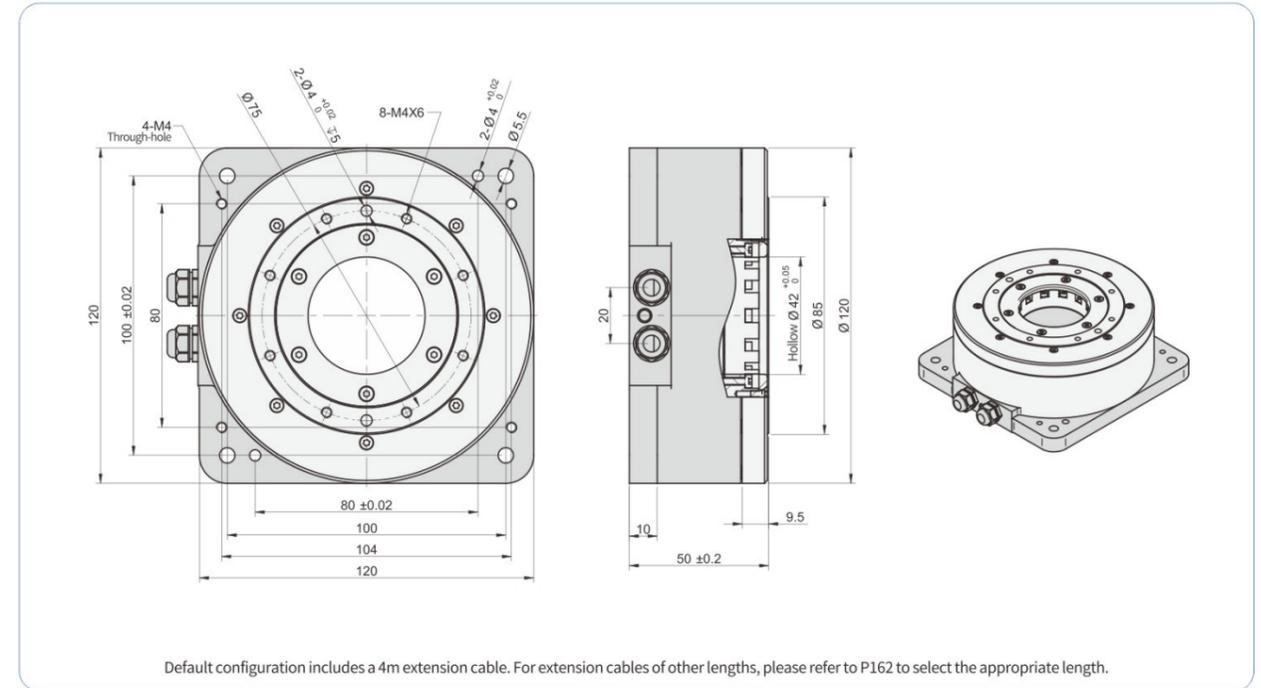


Parameter Table

Parameter	Unit	DDI-100035
Continuous torque	N.m	1.0
Continuous current	Arms	1.5
Peak torque	N.m	3
Peak current	Arms	4.5
Torque constant	Nm/Arms	0.67
Ohms	$\Omega(25^\circ\text{C})$	6.7
mH	mH(25°C)	5.2
Poles		20
Constant of reverse electromotive force	Vrms/rad/s	0.55
Rated power	W(25°C)	28.8
Motor constant	Nm/ \sqrt{W}	0.2
Rotational inertia	kg.m ²	4
Motor weight	Kg	1.1
Rated speed	rpm	350
Positioning Accuracy	Arc sec	± 30
Repeatability	Arc sec	± 1.5
Resolution	sin/cos	500000
Max. bus voltage	N	50
Max. radial load	N.m	/
Axial Runout	mm	0.02
Radial Runout	mm	0.02
Motor Height (H)	mm	35

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

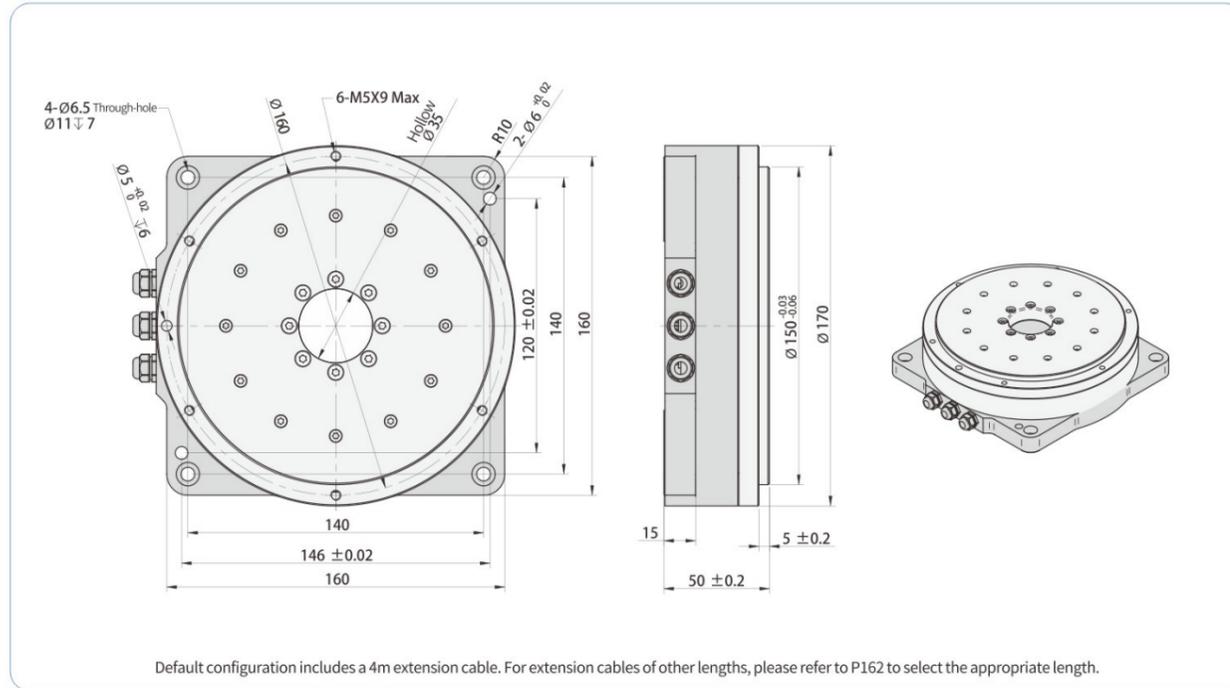


Parameter Table

Parameter	Unit	DDI-120050
Continuous torque	N.m	3.5
Continuous current	Arms	1.3
Peak torque	N.m	11.3
Peak current	Arms	4.2
Torque constant	Nm/Arms	2.70
Ohms	$\Omega(25^\circ\text{C})$	10.9
mH	mH(25°C)	8.4
Poles		20
Constant of reverse electromotive force	Vrms/rad/s	2.20
Rated power	W(25°C)	35.2
Motor constant	Nm/ \sqrt{W}	0.60
Rotational inertia	kg.m ²	0.0016
Motor weight	Kg	2.30
Rated speed	rpm	350
Positioning Accuracy	Arc sec	± 25
Repeatability	Arc sec	± 1.5
Resolution	sin/cos	1174000
Max. bus voltage	N	500
Max. radial load	N.m	10
Axial Runout	mm	0.005

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing

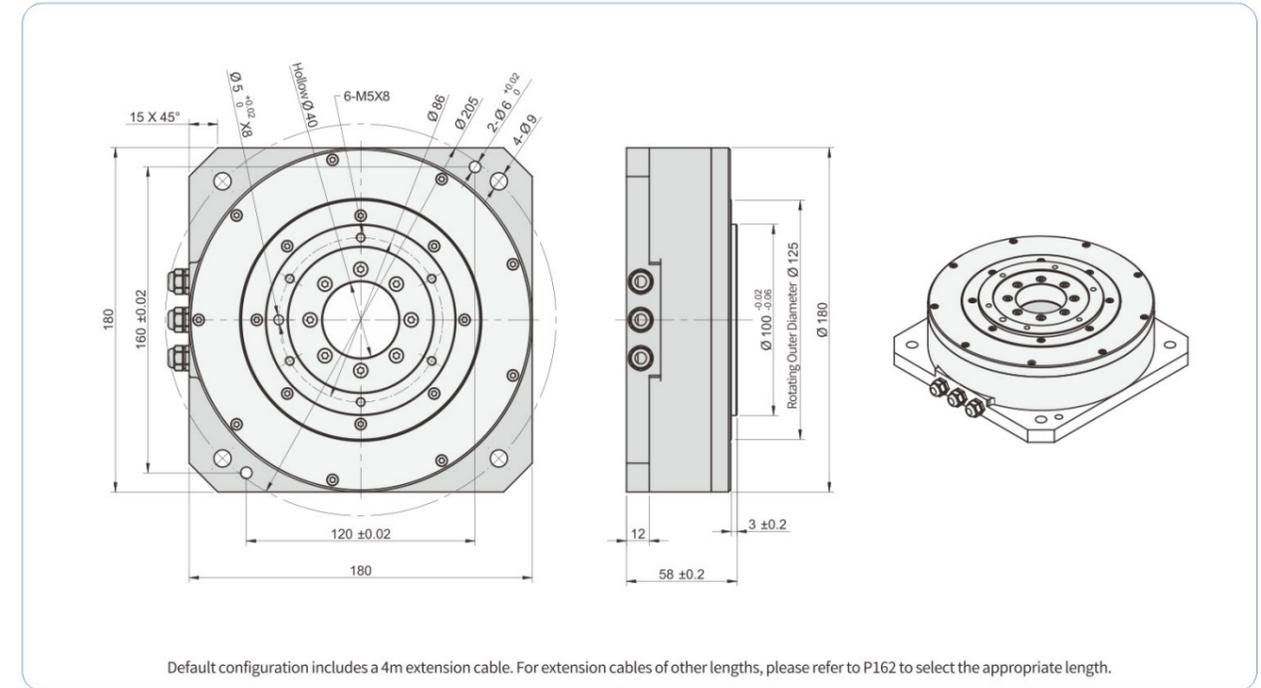


Parameter Table

Parameter	Unit	DDI-170050	DDI-170095
Continuous torque	N.m	5.4	17.4
Continuous current	Arms	3	3
Peak torque	N.m	16	52
Peak current	Arms	9	9
Torque constant	Nm/Arms	1.8	5.80
Ohms	$\Omega(25^\circ\text{C})$	6.9	9.7
mH	mH(25°C)	8.3	22.7
Poles		40	20
Constant of reverse electromotive force	Vrms/rad/s	1.5	4.70
Rated power	W(25°C)	118.6	166.7
Motor constant	Nm/ \sqrt{W}	0.5	1.30
Rotational inertia	kg.m ²	0.004	0.0062
Motor weight	Kg	3.9	6.80
Rated speed	rpm	500	120
Positioning Accuracy	Arc sec	± 20	± 20
Repeatability	Arc sec	± 1.5	± 1.5
Resolution	sin/cos	117400	819200
Max. bus voltage	N	2500	1500
Max. radial load	N.m	20	20
Axial Runout	mm	0.005	0.005
Radial Runout	mm	0.005	0.005
Motor Height (H)	mm	50	95

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing



Parameter Table

Parameter	Unit	DDI-180055
Continuous torque	N.m	14.0
Continuous current	Arms	4.5
Peak torque	N.m	42
Peak current	Arms	13.5
Torque constant	Nm/Arms	3.1
Ohms	$\Omega(25^\circ\text{C})$	3.5
mH	mH(25°C)	5.7
Poles		32
Constant of reverse electromotive force	Vrms/rad/s	2.5
Rated power	W(25°C)	135.3
Motor constant	Nm/ \sqrt{W}	1.20
Rotational inertia	kg.m ²	0.004
Motor weight	Kg	5.4
Rated speed	rpm	250
Positioning Accuracy	Arc sec	± 20
Repeatability	Arc sec	± 1.5
Resolution	sin/cos	1174000
Max. bus voltage	N	2500
Max. radial load	N.m	20
Axial Runout	mm	0.005
Radial Runout	mm	0.005
Motor Height (H)	mm	55

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

DDI180

Torque Motor

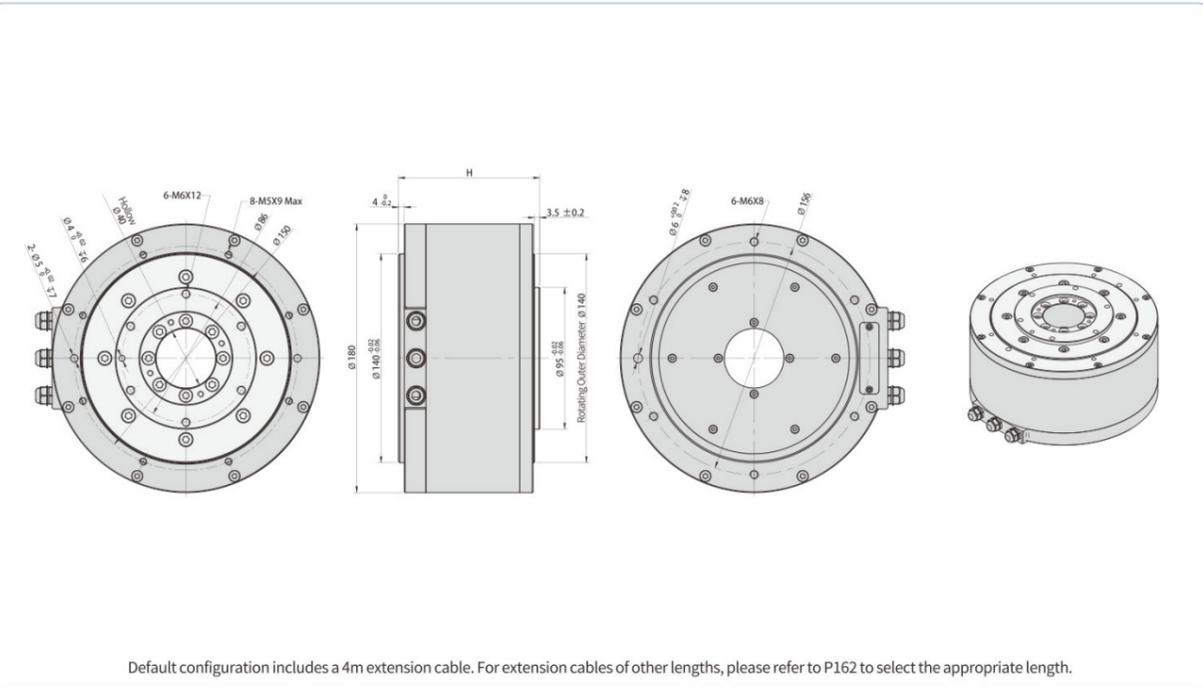
Internal Rotor Motor

DDI224

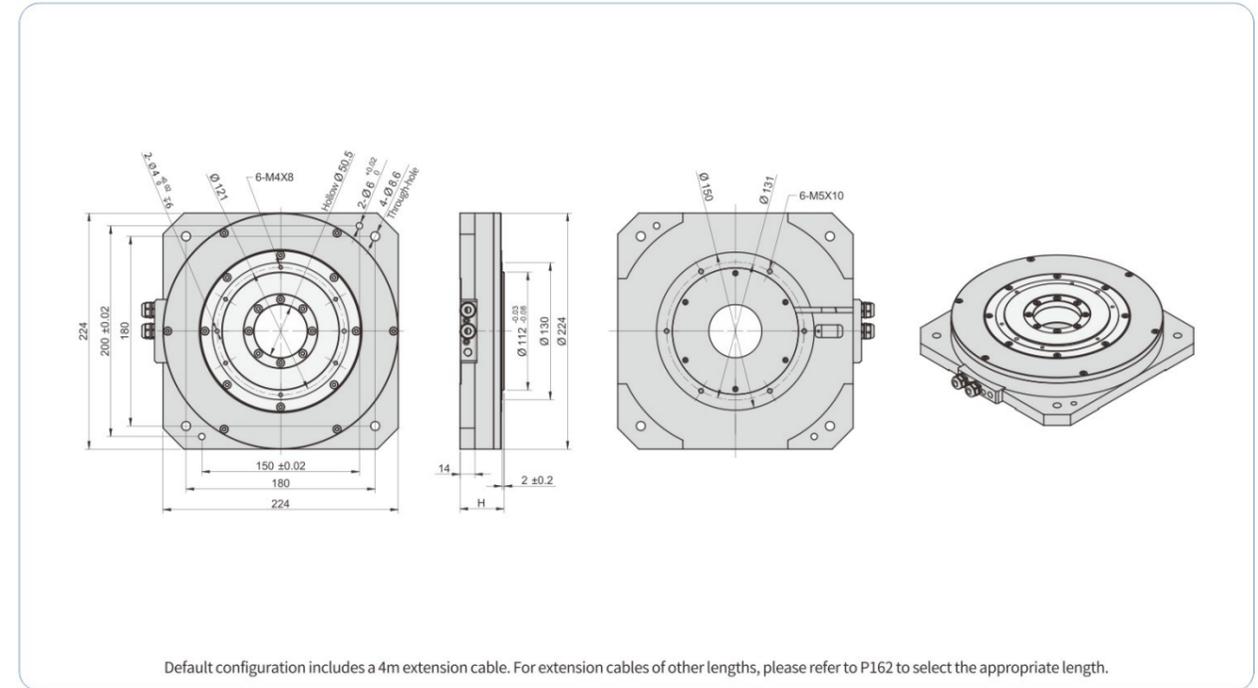
Torque Motor

Internal Rotor Motor

Dimensional Installation Drawing



Dimensional Installation Drawing



Parameter Table

Parameter	Unit	DDI-180095	DDI-180125
Continuous torque	N.m	25.2	40.1
Continuous current	Arms	4.5	4.5
Peak torque	N.m	76	120
Peak current	Arms	13.5	13.5
Torque constant	Nm/Arms	5.6	8.9
Ohms	Ω(25°C)	1.5	8
mH	mH(25°C)	2.6	15.8
Poles		32	32
Constant of reverse electromotive force	Vrms/rad/s	4.6	7.3
Rated power	W(25°C)	58.0	309.3
Motor constant	Nm/√W	3.3	2.3
Rotational inertia	kg.m ²	0.0067	0.01
Motor weight	Kg	9.1	13
Rated speed	rpm	300	250
Positioning Accuracy	Arc sec	±20	±20
Repeatability	Arc sec	±1.5	±1.5
Resolution	sin/cos	1174000	1174000
Max. bus voltage	N	4000	2500
Max. radial load	N.m	40	20
Axial Runout	mm	0.005	0.005
Motor Height (H)	mm	95	128

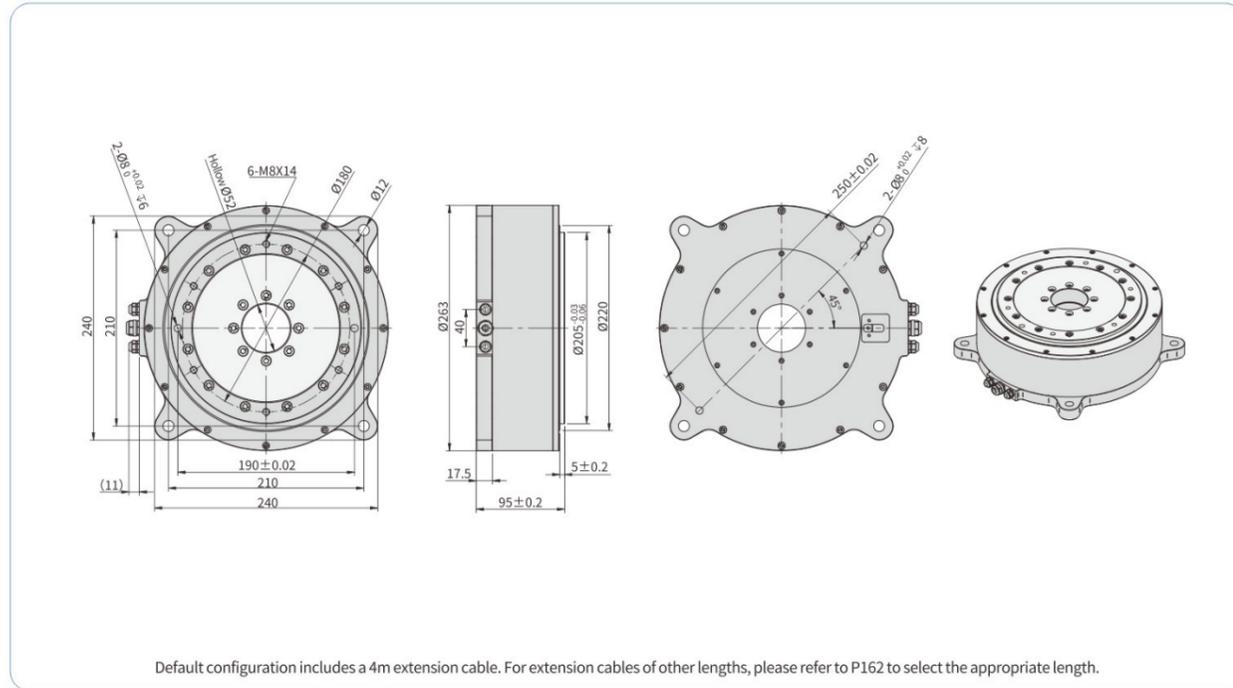
Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10MΩ (500V DC).

Parameter Table

Parameter	Unit	DDI-224042	DDI-224065
Continuous torque	N.m	9.9	19.8
Continuous current	Arms	2.3	2.3
Peak torque	N.m	30	60
Peak current	Arms	7	7
Torque constant	Nm/Arms	4.3	8.6
Ohms	Ω(25°C)	17.5	26.3
mH	mH(25°C)	50.4	78.8
Poles		40	40
Constant of reverse electromotive force	Vrms/rad/s	3.5	7.0
Rated power	W(25°C)	176.8	265.7
Motor constant	Nm/√W	0.7	1.2
Rotational inertia	kg.m ²	0.0076	0.018
Motor weight	Kg	6.50	11.5
Rated speed	rpm	250	150
Positioning Accuracy	Arc sec	±20	±20
Repeatability	Arc sec	±1.5	±1.5
Resolution	sin/cos	1174000	1638400
Max. bus voltage	N	2500	2500
Max. radial load	N.m	20	20
Axial Runout	mm	0.005	0.005
Motor Height (H)	mm	42	65

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10MΩ (500V DC).

Dimensional Installation Drawing



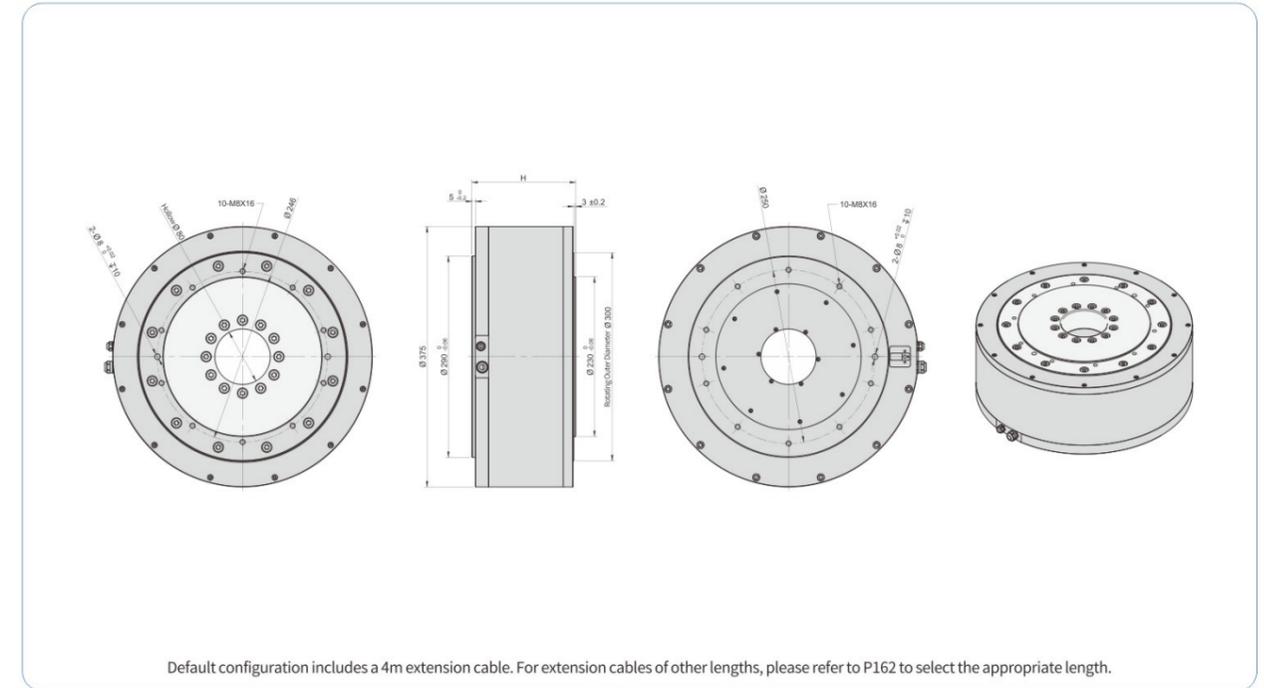
Default configuration includes a 4m extension cable. For extension cables of other lengths, please refer to P162 to select the appropriate length.

Parameter Table

Parameter	Unit	DDI-263095
Continuous torque	N.m	50
Continuous current	Arms	6
Peak torque	N.m	150
Peak current	Arms	18
Torque constant	Nm/Arms	8.30
Ohms	$\Omega(25^\circ\text{C})$	7.1
mH	mH(25°C)	22.9
Poles		32
Constant of reverse electromotive force	Vrms/rad/s	6.80
Rated power	W(25°C)	488.1
Motor constant	Nm/ \sqrt{W}	2.30
Rotational inertia	kg.m ²	0.037
Motor weight	Kg	28.50
Rated speed	rpm	150
Positioning Accuracy	Arc sec	±15
Repeatability	Arc sec	±1.5
Resolution	sin/cos	1174000
Max. bus voltage	N	10000
Max. radial load	N.m	100
Axial Runout	mm	0.005
Radial Runout	mm	0.005
Motor Height (H)	mm	95

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).

Dimensional Installation Drawing



Default configuration includes a 4m extension cable. For extension cables of other lengths, please refer to P162 to select the appropriate length.

Parameter Table

Parameter	Unit	DDI-375150	DDI-375200
Continuous torque	N.m	250.0	375.0
Continuous current	Arms	5	5
Peak torque	N.m	670	1000
Peak current	Arms	15	15
Torque constant	Nm/Arms	50.0	75.0
Ohms	$\Omega(25^\circ\text{C})$	7.7	11.5
mH	mH(25°C)	47	70.5
Poles		30	30
Constant of reverse electromotive force	Vrms/rad/s	40.8	61.2
Rated power	W(25°C)	367.6	549.0
Motor constant	Nm/ \sqrt{W}	13.0	16.0
Rotational inertia	kg.m ²	0.3	0.45
Motor weight	Kg	69	85
Rated speed	rpm	80	50
Positioning Accuracy	Arc sec	±30	±25
Repeatability	Arc sec	±2.5	±1.5
Resolution	sin/cos	1638400	1638400
Max. bus voltage	N	50	50
Max. radial load	N.m	2000	2000
Axial Runout	mm	0.01	0.01
Radial Runout	mm	0.01	0.01
Motor Height (H)	mm	150	200

Note: (General Specifications) Motor winding; insulation class: Class F; insulation withstand voltage: 60s @1500V; insulation resistance: >10M Ω (500V DC).