Rotary servomotor with Built-in Encoder, 13mm diameter frame, double stack-length and standard shaft configuration.

MDS-3012



Nippon Pulse

has provided a wide array of motion control solutions, including industry leading stepper motors, the innovative Linear Shaft Motor, controllers, drivers and networks.

A wide range of product offerings and expertise in application engineering makes NPM a discerning partner in motion control technology and implementation

Miniature AC servomotor with high torque and high-resolution

Delivering a lineup with a wide range of application options of compact high-performance next-generation servo motors with built in encoders.

the servo motor has high acceleration and positioning,suitable in using as gearless.

The motor has characterristics of low speed and high torque (compared to general servo motors) because this motor is assumed that it will drive directry without using a gear(a deceleration mechanism).

- silent: since it has no vibraition sound.
- High precision: positioning by eliminating a machanical error due to backlash.
- Weight and space saving
- Improving acceleration
- feedback for master-slave control.
- that can be generally obtained by using a gearless structure

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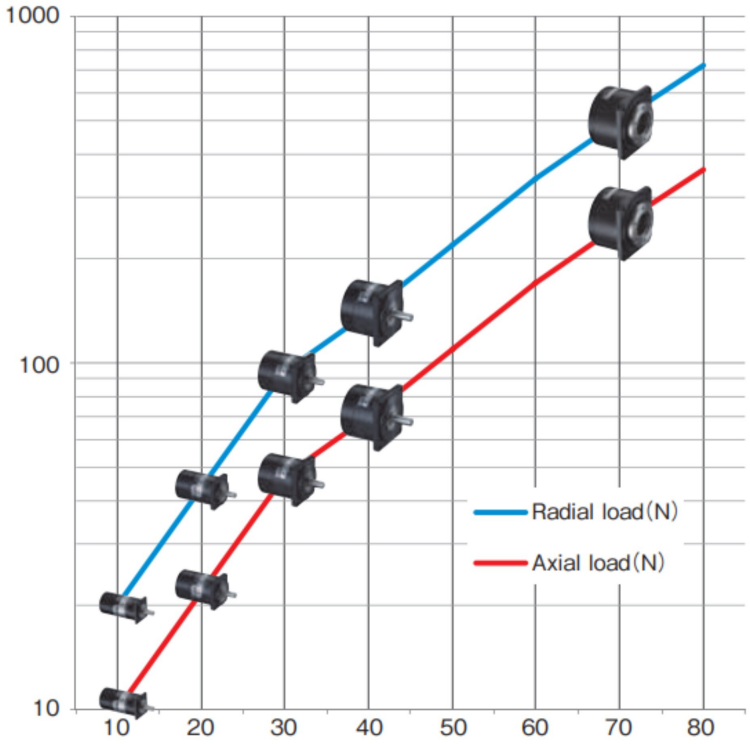
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De Rijn 12
5684 PJ Best
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Dynetics GmbH
Klostergasse 6
D-41334 Nettetal-Kaldenkirchen
Germany

The world's smallest servo motor of all hollow-shaft type.

It is ideal for end effectors (hand, gripper, Zθ unit) and also small robot hands with a combination of low reduction ratio gears.



Example specifications

- Built-in absolute encoder (11 to 21 bits)
- Built-in electromagnetic encoder
- Hollow shaft structure
- Design with customized speed and torque characteristics
- Ripple reducing design (torque/speed)
- Clean room ready

Application examples

- Gearless structures
- High precision positioning applications
- Robot arms
- Small scalar robots
- Bilateral master/slave control

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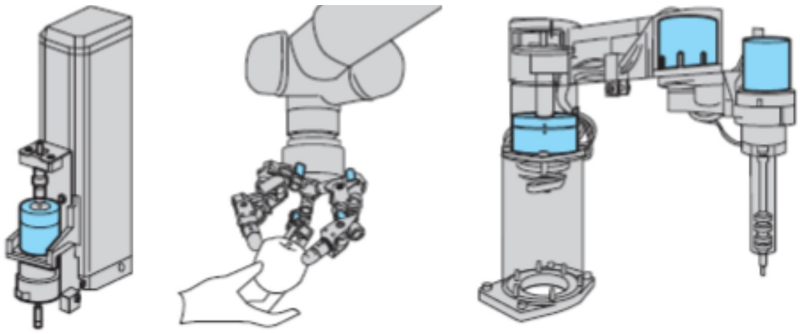
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MDH-30 series

- Built-in high-performance encoder that enables direct fine positioning from resolutions of 1 arc/sec.
- Delivers high torque using high-performance magnets and high-density winding technology.
- Small size with motor and encoder as a single unit.
- Able to bear large loads directly due to high stiffness bearing.
- Able to support hollow-shaft structures.
- Body diameter: 30 mm
- Body available in 3 stack lenghts: 31,5 / 37,5 / 43,5 mm
- Max torque: 140 / 280 / 420 mN?m
- Max speed: 1000 rpm
- Max resolution: Incremental: 432,000 (Multiplication by 4) / Absolute: 524,288 (19 bit) P/R
- Hollow diameter: 4mm (MDH type)

video:

- See the video on YOUTUBE: a Gimbal application; image inspection system; a robot hand; reproduce the feel of an object
- And another VIDEO of the Micro Direct Drive Motor Miniature AC servomotor in a scalar robot with the repeatability of ±1µm

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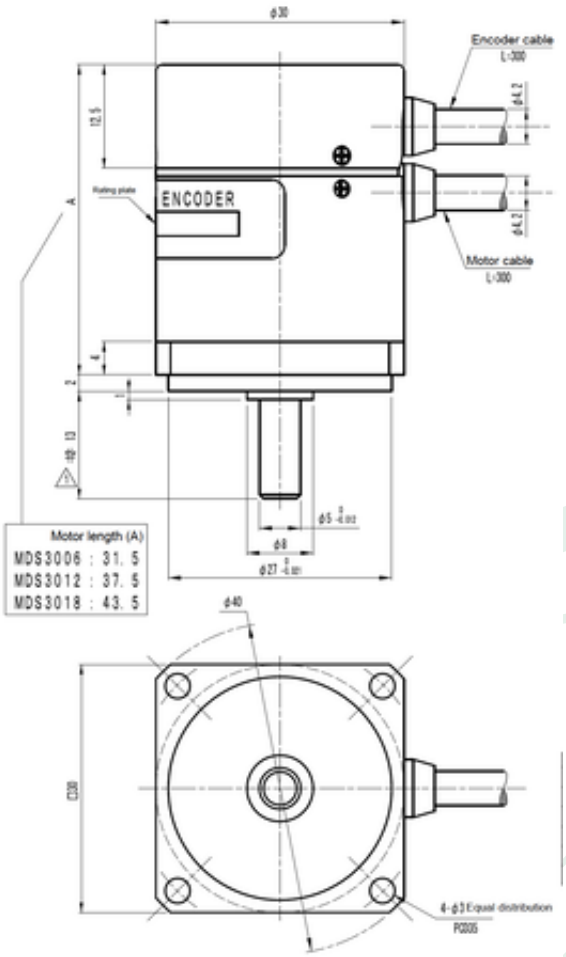
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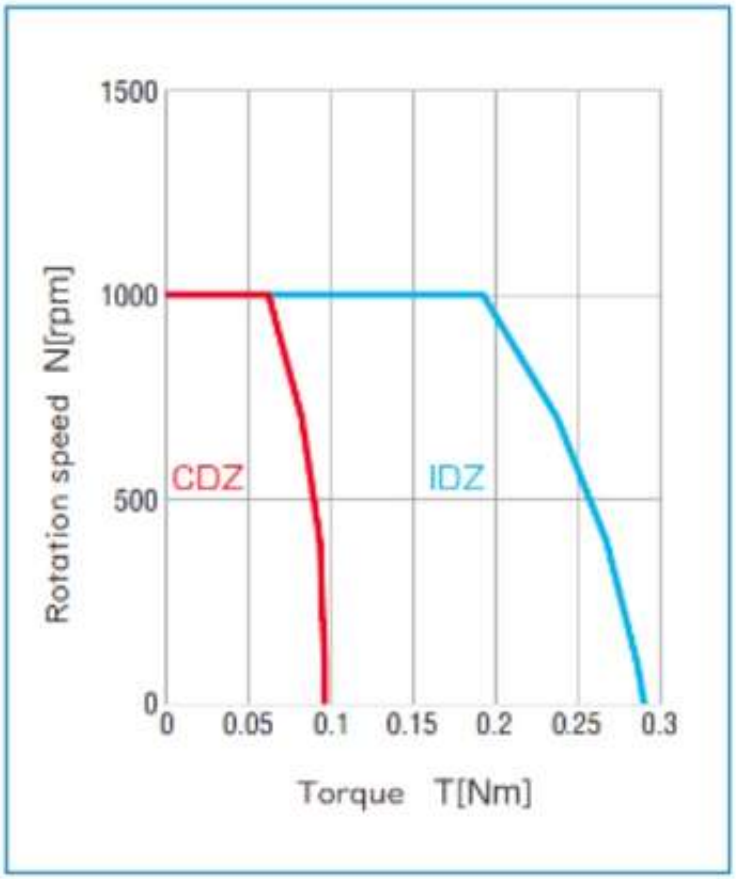
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MDS/H-3012



Encoder Options	Base Resolution	Interpolation Factors	Max. Resolution (post quad)
Incremental	3375	2, 4, 5, 8, 10, 16, 20, 32	432,000
Absolute (single turn)	19-bit	BiSS-C format	524,288

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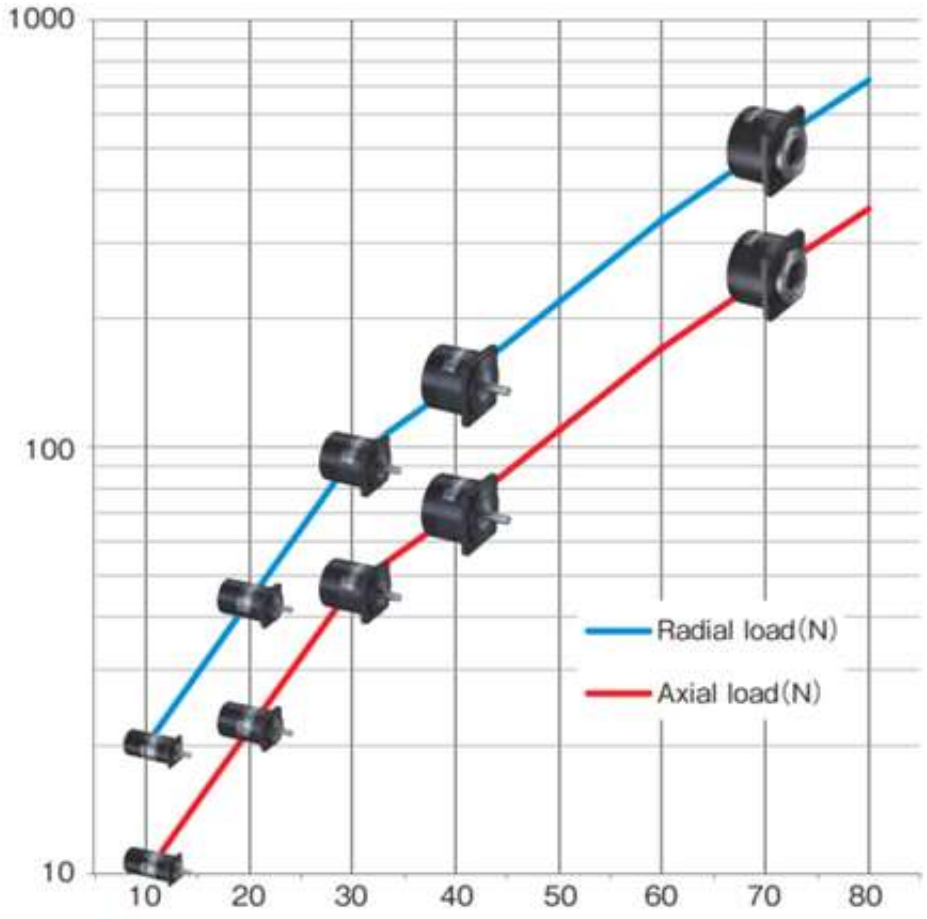
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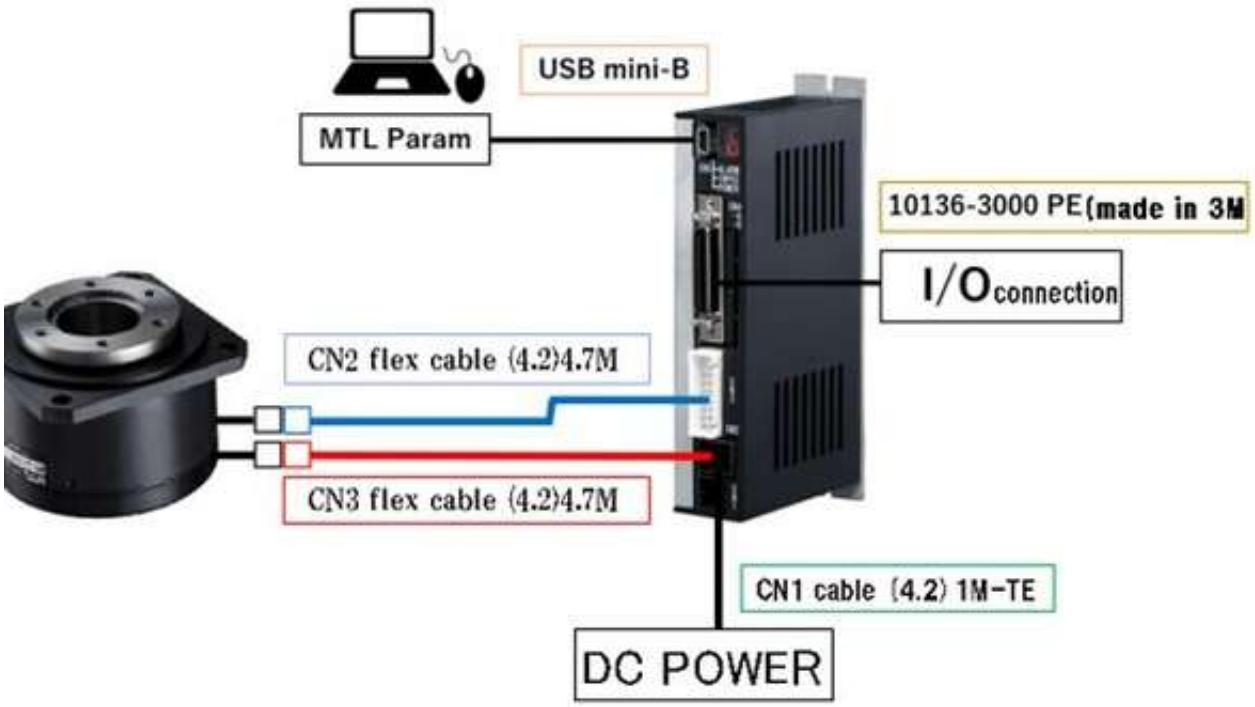
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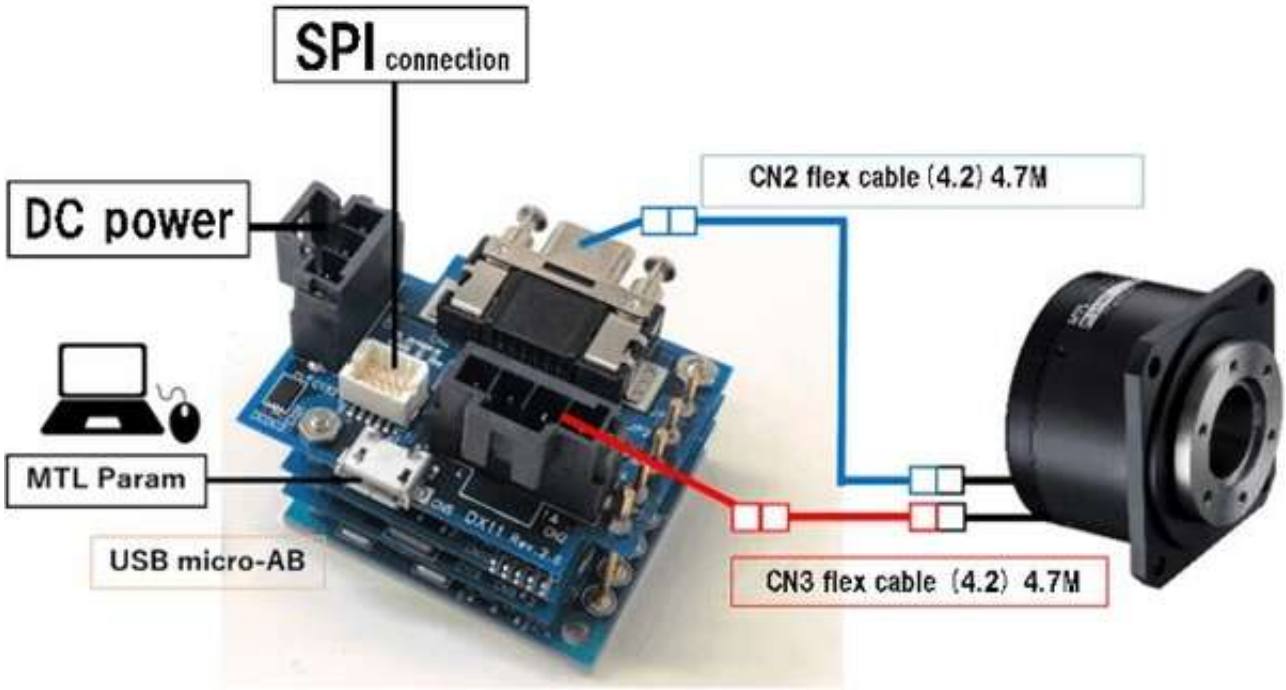
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Details

MDS-3012 Rotary servomotor with Built-in Encoder, 13mm diameter frame, double stack-length and standard shaft configuration.

- CDZ = Continuous Duty Zone,
- IDZ = Intermittent Duty Zone
- Performance curve based on MCC Drive, 48VDC input power

	MDS-3012
Body diameter	30 mm

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Body length	37.5 mm
Max torque	0.28 Nm
Rated torque	0.068 Nm
Continuous stall torque	0.095 Nm
Max speed	1000 rpm
Rated speed	1000 rpm
Max encoder resolution	Incremental: 432,000 (Multiplication by 4) / Absolute: 524,288 (19 bit) P/R

Input power	48 VDC
Peak power	20 W
Peak power rate	71 kW/s
Peak armature current	5.6 Arms
Rated armature current	1.8 Arms
Voltage constant	4.5 V/krpm
Torque constant	0.043 Nm/Arms
Line armature resistance	2.3 ohms
Line armature inductance	1.3 mH
Rotor poles	16 P
Moment of inertia	11.2 g/cm2
Permissible radial load	94 N
Permissible axial load	47 N
Load reference point distance	38 mm
Mass	0.16 kg
Standard heatsink	120 x 120 x 8 Aluminum

* Rated current is the value measured with the standard heatsink attached to the motor at an ambient temperature of 40°C

notes:

1. In case you use with 24V, please contact us since peak torque would change.
2. Please contact us if there is a speed you prefer.
3. Rated armature current is the value measured with the standard heat sink attaxhed to the motor at an ambient temperature of 40℃ .
4. Please ask if there is a particular resolution you prefer

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Options:

suitable drivers

- MC-200-7220 (box version) click for more details
- MC-200C-6018D (Ultra-small OEM servo driver) click for more detals
- Synapticon (click for more details)

examples of use:

- MC-200-7220A

- MC-200-7220D

- MC-200C-6018D

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Specifications

Product type	Micro Direct Drive Motor	**Diameter/ sq size**	30 mm	**Body Length**	37.5 mm
Peak Torque	0.28 N·m	**Rated torque**	95 mNm	**Continuous Rated Torque(mNm)**	68 mN·m
Max Speed	1000 rpm	**Speed**	1000 rpm	**Max Encoder Resolution**	Incremental: 432,000 (Multiplication by 4) / Absolute: 524,288 (19 bit) P/R P/R
Input Voltage (driver input)	48 DCV	**Peak Power**	20 W	**Peak Current (Arms)**	5.6 Arms
Rated Current	1800 Arms	**Rotor Poles**	16 P	**Permissible Radial Load(Fr)**	94 N
Permissible Axial Load(Fa)	47 N	**Integrated**	BLDC with integrated encoder	**Supplier**	NPM

This PDF-document has been generated from a selection of the available details from the manufacturer. In case the contents of the PDF-file is incomplete or difficult to read, we apologize for the inconvenience and ask you to contact us (info@dynetics.eu)

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