



MITSUBISHI CNC
DRIVE SYSTEM

Changes for the Better

GENERAL CATALOG

MDS-D2/DH2 Series

MDS-DM2 Series

MDS-DJ Series

BNP-A1227-C[ENG]

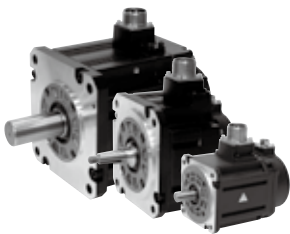
for a greener tomorrow



Servo Motors

HF Series

- Medium-inertia, high-accuracy and high-speed motors
- High-inertia machine accuracy is ensured. Suitable for machines requiring quick acceleration.
- Range: 0.5 to 9 [kW]
- Maximum speed: 4,000 or 5,000 [r/min]
- Supports three types of detectors with a resolution of 260,000, 1 million or 16 million p/rev.



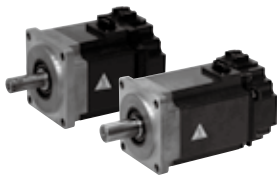
Linear Servo Motor LM-F Series

- Use in clean environments is possible since no ball screws are used and therefore contamination from grease is not an issue.
- Elimination of transmission mechanisms which include backlash, enables smooth and quiet operation even at high speeds.
- Dimensions:
Length: 290 to 1,010 [mm]
Width: 120 to 240 [mm]



HF-KP Series

- Small-capacity, low-inertia motors
- Suitable for an auxiliary axis that require high-speed positioning
- Range: 0.1 to 0.75[kW]
- Maximum speed: 6,000 [r/min]
- Supports a detector with a resolution of 260,000p/rev.



Direct Drive Servo Motor TM-RB Series

- High-torque direct-drive combined motor with a high-gain control system provides quick acceleration and positioning, which makes rotation smoother.
- Suitable for a rotary axis that drives a table or spindle head.
- Compared with a conventional rotary axis with a deceleration gear, this motor has higher accuracy and is maintenance-free, having no wear or backlash.
- Range:
Maximum torque: 36 to 1,280 [N·m]



Spindle Motors

High-performance New Type Spindle Motor SJ-D Series

- Motor energy loss has been significantly reduced by optimizing the magnetic circuit.
- High-speed-specification bearings are equipped as standard, achieving higher-speed, lower vibration and improved durability.
- Product line:
Normal SJ-D Series 3.7 to 11 [kW]
Compact & light SJ-DJ Series 5.5 to 15 [kW]



Low-inertia, High-speed New Type Spindle Motor SJ-DL Series

- Tapping machine-dedicated spindle motors have joined the new spindle motor line SJ-D Series in an effort to speed up drilling and tapping.
- Our cutting-edge design technologies have brought forth higher rigidity and lower vibration of motor despite its light weight.
- The low-inertia reduces acceleration/ deceleration time, resulting in higher productivity.
- Product line:
Low-inertia SJ-DL Series 0.75 to 7.5 [kW]



Built-in Spindle Motor

- Electricity loss is minimized by providing better efficiency during high-speed rotation.
- Stator coil-end size has been reduced, realizing a shorter overall motor length.
- As feedback communication is serial, the resolution is significantly enhanced (Max. 4 million p/rev)
- The adjustment PCB has been eliminated to achieve adjustment-free conditions. The standard gap has been reduced to 0.3mm.



High-performance Spindle Motor SJ-V Series

- A vast range of spindle motors is available, including standard, high-speed and wide-range output units, all ready to support diversified machine tool needs.
- Product line:
Normal SJ-V Series 0.75 to 55 [kW]
Wide-range constant output SJ-V Series 5.5 to 18.5 [kW]
High-speed SJ-V-Z Series 2.2 to 22 [kW]
Hollow-shaft SJ-VS Series 5.5 to 18.5 [kW]



Low-inertia, High-speed Spindle Motor SJ-VL Series

- The spindle dedicated to tapping machines requiring faster drilling and tapping.
- The low-inertia reduces acceleration/ deceleration time, resulting in higher productivity. In addition, when driven by a multi-hybrid drive (MDS-DM2 Series), this motor contributes to downsizing of the cabinet, and energy savings.
- Hollow-shaft specifications are also available.
- Product line:
Low-inertia normal SJ-VL Series 3.0 to 11 [kW]
Low-inertia hollow shaft SJ-VLS Series 3.7 to 11 [kW]



Tool Spindle Motor HF-KP/HF-SP Series

- Taking advantage of the characteristics of a servo motor such as smallness and high-output, this motor serves as a compact and high-output spindle motor which is capable of high-speed rotation (6,000r/min). This motor contributes to downsizing of spindles, such as the rotary tool spindle.
- Product line:
Small capacity HF-KP Series 0.4 to 0.9 [kW]
Medium capacity HF-SP Series 2.2 to 4 [kW]



Drive Units

High-performance Servo/Spindle Drive Units MDS-D2/DH2 Series

- With the fastest current control cycle, basic performance is drastically enhanced (high-gain control). A combination of high-speed servo motor and high-accuracy detector helps enhance overall drive performance.
- High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
- A high-efficiency fin and low-loss power module have enabled unit downsizing. A line of drive units driving a maximum of two spindles is available, contributing to a reduction in control panel size.
- STO (safe torque off) is now available. (Note)



All-in-one compact drive units MDS-DJ Series

- Ultra-compact drive units with built-in power supplies contribute to reducing control panel size. The 2-axis type is added for further downsizing.
- High-speed optical communication enables a shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
- A high-efficiency fin and low-loss power module have enabled unit downsizing, which also leads to a reduction in control panel size.
- STO (safe torque off) is now available. (Note)



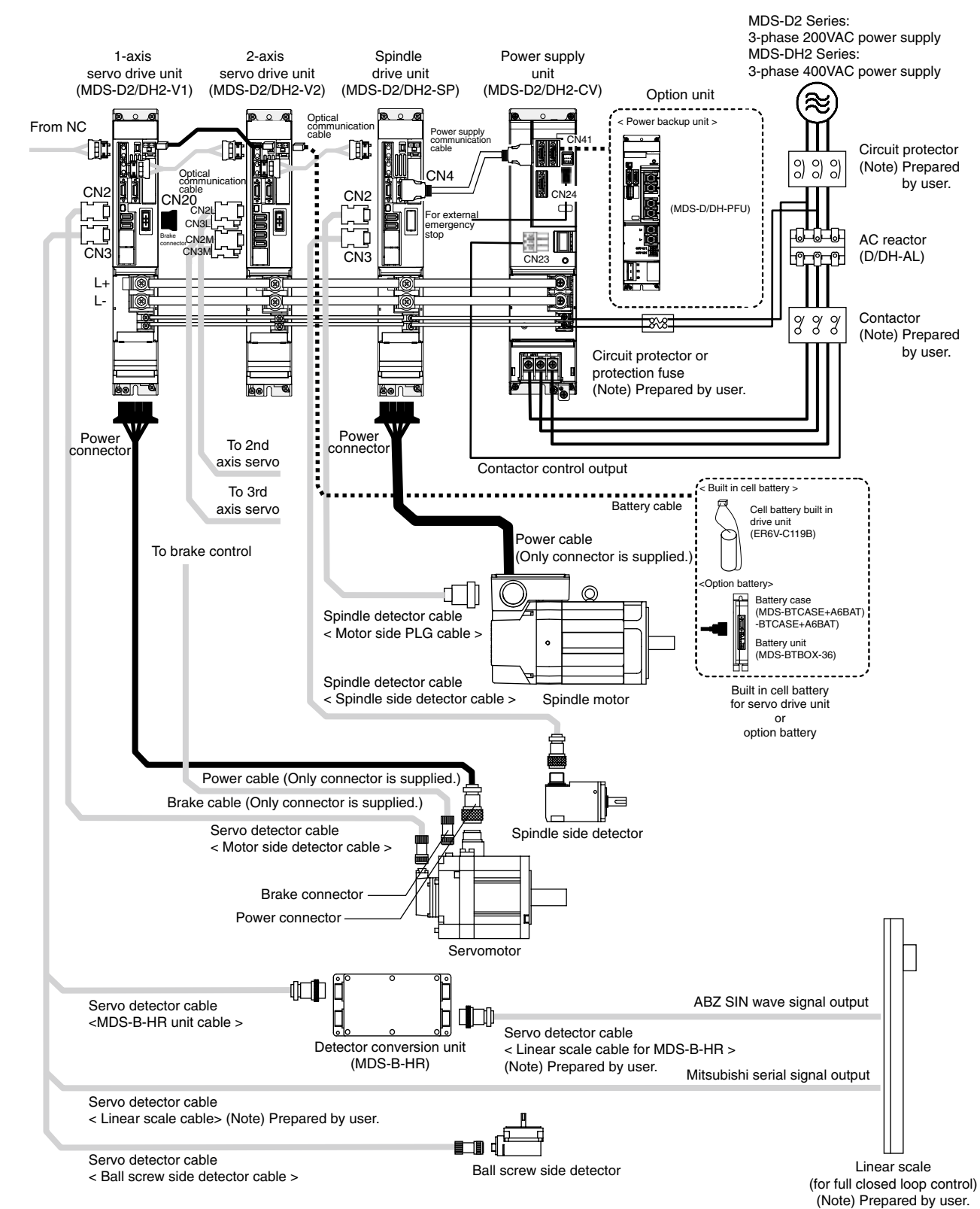
Multi-hybrid Drive Units MDS-DM2 Series

- A line of high-performance multi-hybrid drive units are available. The multi-hybrid drive unit.
- drives a maximum of three servo axes and one spindle, supporting the ownsizing of units and offering technical advantages.
- A power regeneration system that efficiently uses energy during deceleration as power contributes to highly-frequent acceleration/deceleration and energy savings.
- STO (safe torque off) is now available. (Note)

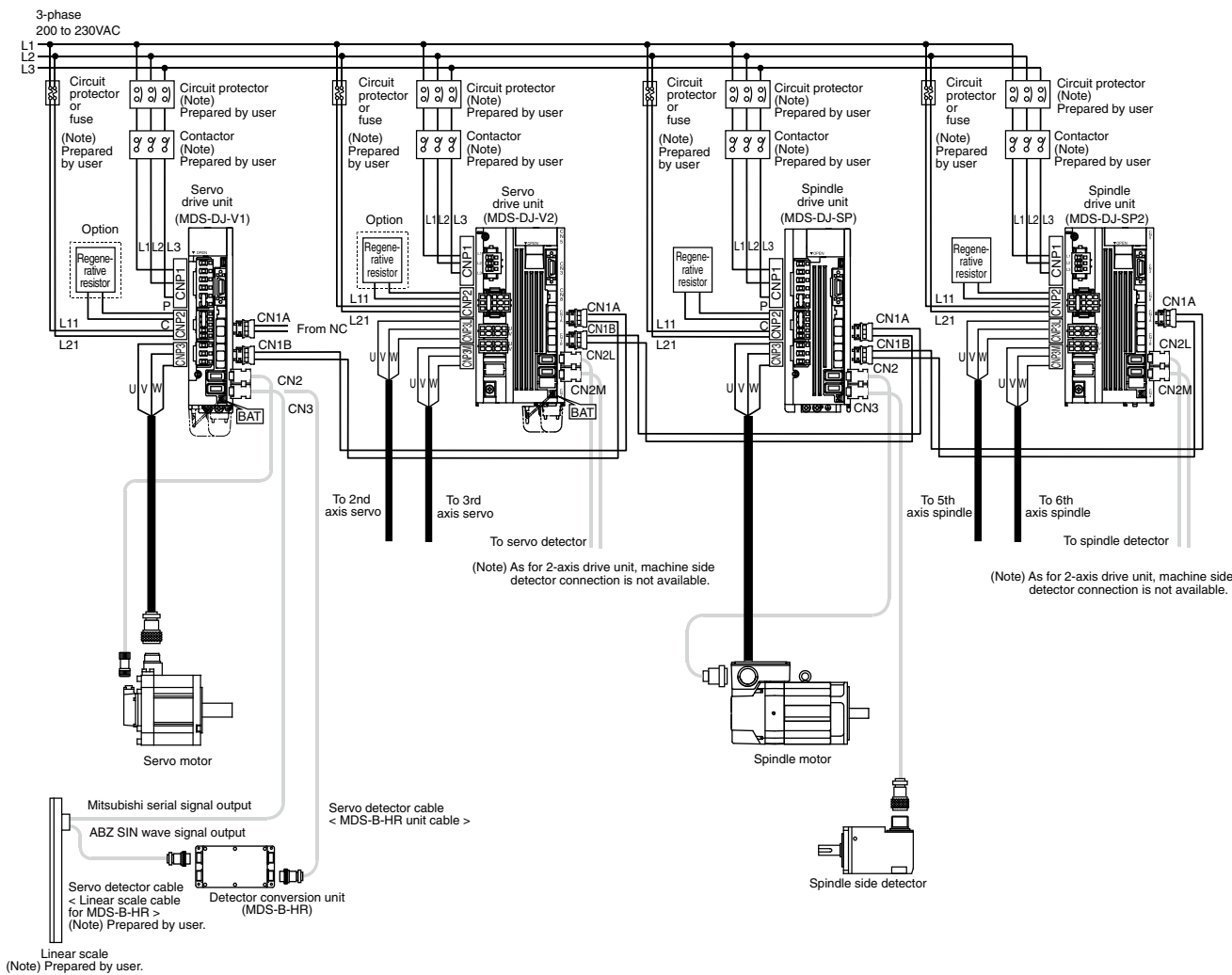


(Note) Please contact us for availability of STO as a whole system.

MDS-D2/DH2 Series



MDS-DJ Series



Servo / Spindle specifications

<Servo specification>

	Function name	MDS-D2-V1/V2/V3	MDS-DH2-V1/V2	MDS-DM2-SPV2/3, SPHV3	MDS-DJ-V1	MDS-DJ-V2
1 Base control functions	Software Version	A5	A5	A5	A5	A5
	1.1 Full closed loop control	●	●	●	●	—
	1.2 Position command synchronous control	●	●	●	●	—
	1.3 Speed command synchronous control	● (Note 2)	●	—	—	—
2 Servo control function	1.4 Distance-coded reference position control	●	●	●	●	—
	2.1 Torque limit function (stopper function)	●	●	●	●	●
	2.2 Variable speed loop gain control	●	●	●	●	●
	2.3 Gain changeover for synchronous tapping control	●	●	●	●	●
	2.4 Speed loop PID changeover control	●	●	●	●	●
	2.5 Disturbance torque observer	●	●	●	●	●
	2.6 Smooth High Gain control (SHG control)	●	●	●	●	●
	2.7 High-speed synchronous tapping control (OMR-DD control)	●	●	●	●	—
	2.8 Dual feedback control	●	●	●	●	—
	2.9 HAS control	●	●	●	●	●
3 Compensation control function	2.10 OMR-FF control	●	●	●	●	●
	3.1 Jitter compensation	●	●	●	●	●
	3.2 Notch filter	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1
	3.3 Adaptive tracking-type notch filter	●	●	●	●	●
	3.4 Overshooting compensation	●	●	●	●	●
	3.5 Machine end compensation control	●	●	●	●	●
	3.6 Lost motion compensation type 2	●	●	●	●	●
	3.7 Lost motion compensation type 3	●	●	●	●	●
4 Protection function	3.8 Lost motion compensation type 4	●	●	●	●	●
	4.1 Deceleration control at emergency stop	●	●	●	●	●
	4.2 Vertical axis drop prevention/pull-up control	●	●	●	●	●
	4.3 Earth fault detection	●	●	●	●	●
	4.4 Collision detection function	●	●	●	●	●
	4.5 SLS (Safely Limited Speed) function	●	●	●	●	●
	4.6 Fan stop detection	●	●	●	●	●
	4.9 STO (Safe Torque Off) function	●	●	●	●	●
5 Sequence function	5.2 Motor brake control function (Note 1)	●	●	●	●	●
	5.4 Specified speed output	●	●	●	—	—
	5.5 Quick READY ON sequence	●	●	●	—	—
6 Diagnosis function	6.1 Monitor output function	●	●	●	●	●
	6.2 Machine resonance frequency display function	●	●	●	●	●
	6.3 Machine inertia display function	●	●	●	●	●

(Note 1) For the multiaxis drive unit, a control by each axis is not available.
It is required to turn the servo of all axes OFF in the drive unit in order to enable a motor brake output.

(Note 2) Always set L-axis as primary axis and M-axis as secondary axis for the speed command synchronous control using MDS-D2-V3.
Other settings cause the initial parameter error alarm.

<Spindle specification>

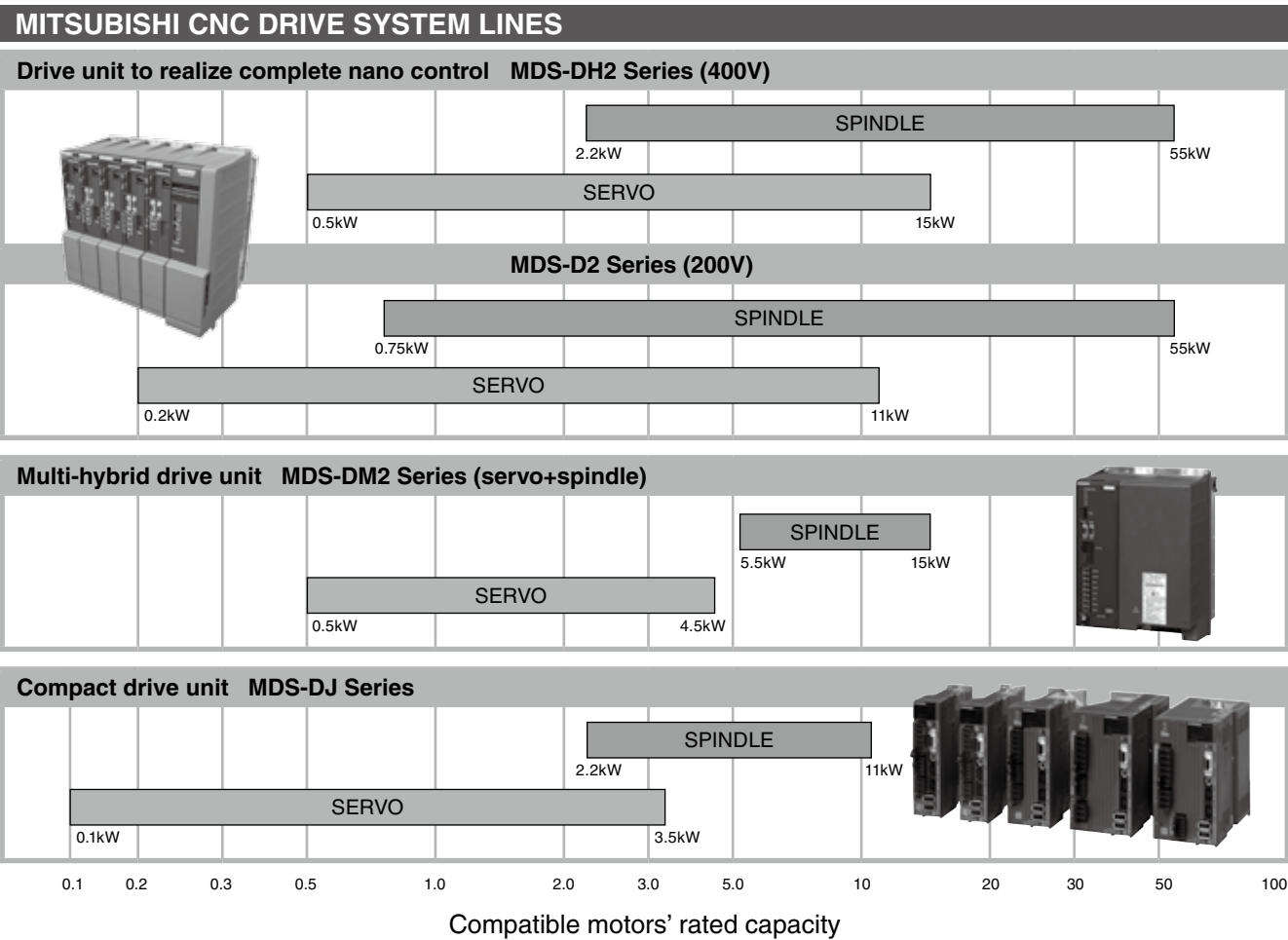
	Function name	MDS-D2-SP	MDS-DH2-SP	MDS-D2-SP2	MDS-DM2-SPV2/3, SPHV3	MDS-DJ-SP	MDS-DJ-SP2
1 Base control functions	Software Version	A4	A4	A4	A4	A4	A4
	1.1 Full closed loop control	●	●	●	●	●	—
	1.5 Spindle's continuous position loop control	●	●	●	●	●	●
	1.6 Coil changeover control	●	●	—	●	—	—
	1.7 Gear changeover control	●	●	●	●	●	●
	1.8 Orientation control	●	●	●	●	●	●
	1.9 Indexing control	●	●	●	●	●	●
	1.10 Synchronous tapping control	●	●	●	●	●	●
	1.11 Spindle synchronous control	●	●	●	●	●	●
	1.12 Spindle/C axis control	●	●	●	●	●	●
	1.13 Proximity switch orientation control	●	●	—	●	—	—
2 Spindle control functions	2.1 Torque limit function	●	●	●	●	●	●
	2.2 Variable speed loop gain control	●	●	●	●	●	●
	2.5 Disturbance torque observer	●	●	●	●	●	●
	2.6 Smooth High Gain control (SHG control)	●	●	●	●	●	●
	2.7 High-speed synchronous tapping control (OMR-DD control)	●	●	●	●	●	—
	2.8 Dual feedback control	●	●	●	●	●	—
	2.11 Control loop gain changeover	●	●	●	●	●	●
	2.12 Spindle output stabilizing control	●	●	●	●	●	●
3 Compensation control function	2.13 High-response spindle acceleration/deceleration function	●	●	●	●	●	●
	3.1 Jitter compensation	●	●	●	●	●	●
	3.2 Notch filter	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1	Variable frequency: 4 Fixed frequency: 1
	3.3 Adaptive tracking-type notch filter	●	●	●	●	●	●
4 Protection function	3.4 Overshooting compensation	●	●	●	●	●	●
	3.6 Lost motion compensation type 2	●	●	●	●	●	●
	3.9 Spindle motor temperature compensation function	●	●	●	●	●	●
	4.1 Deceleration control at emergency stop	●	●	●	●	●	●
	4.3 Earth fault detection	●	●	●	●	●	●
5 Sequence function	4.5 SLS (Safely Limited Speed) function	●	●	●	●	●	●
	4.6 Fan stop detection	●	●	●	●	●	●
	4.9 STO (Safe Torque Off) function	●	●	●	●	●	●
	5.4 Specified speed output	●	●	●	●	—	—
6 Diagnosis function	5.5 Quick READY ON sequence	●	●	●	●	—	—
	6.1 Monitor output function	●	●	●	●	●	●
	6.2 Machine resonance frequency display function	●	●	●	●	●	●
	6.3 Machine inertia display function	●	●	●	●	●	●
	6.4 Motor temperature display function	●	●	●	●	●	●
	6.5 Load monitor output function	●	●	●	●	●	●
	6.6 Open loop control function	●	●	●	●	●	●

Power Supply specification

<Power Supply specification>

	Function name	MDS-D2-CV	MDS-DH2-CV	MDS-DM2-SPV2/3,SPHV3 built-in converter	MDS-DJ-V1/V2 built-in converter	MDS-DJ-SP/SP2 built-in converter
1 Base control functions	Software Version	A3	A3	A1	A5	A4
	1.14 Power regeneration control	●	●	●	—	—
	1.15 Resistor regeneration control	—	—	—	●	●
4 Protection function	4.6 Fan stop detection	●	●	●	●	●
	4.7 Open-phase detection	●	●	●	—	—
	4.8 Contactor weld detection	●	●	●	●	●
	4.10 Deceleration and stop function at power failure (Note)	●	●	—	—	—
5 Sequence function	5.1 Contactor control function	●	●	●	●	●
	5.3 External emergency stop function	●	●	●	●	●
	5.5 High-speed ready ON sequence	●	●	●	—	—
6 Diagnosis function	6.7 Power supply diagnosis display function	●	●	●	—	—

(Note) The power backup unit and resistor unit option are required.



200V HF servo motor

<HF Series>

HF ① ② ③ - ④

① Rated output and maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size (mm)
75	0.75 kW	5000 r/min	90 SQ.
105	1.0 kW	5000 r/min	90 SQ.
54	0.5 kW	4000 r/min	130 SQ.
104	1.0 kW	4000 r/min	130 SQ.
154	1.5 kW	4000 r/min	130 SQ.
224	2.2 kW	4000 r/min	130 SQ.
204	2.0 kW	4000 r/min	176 SQ.
354	3.5 kW	4000 r/min	176 SQ.
123	1.2 kW	3000 r/min	130 SQ.
223	2.2 kW	3000 r/min	130 SQ.
303	3.0 kW	3000 r/min	176 SQ.
453	4.5 kW	3500 r/min	176 SQ.
703	7.0 kW	3000 r/min	176 SQ.
903	9.0 kW	3000 r/min	204 SQ.
142	1.4 kW	2000 r/min	130 SQ.
302	3.0 kW	2000 r/min	176 SQ.

② Magnetic brake

Symbol	Magnetic brake
None	None
B	With magnetic brake

③ Shaft end structure

Symbol	Shaft end structure
S	Straight
T	Taper

(Note) "Taper" is available for the motor whose flange size is 90 SQ. mm or 130 SQ. mm.

④ Detector

Symbol	Detection method	Detector resolution
A48	Absolute position	260,000 p/rev
A51		1,000,000 p/rev
A74/A74N		16,000,000 p/rev

* A74 falls under the Export Trade Control Ordinance and Foreign Trade Ordinance.

<HF-KP Series>

HF-KP13 ② J-S17

① Rated output and maximum rotation speed

Rated output	Max. rotation speed	Flange size (mm)
0.1 kW	6000 r/min	40 SQ.

* The motor-end detector has absolute position specifications, but is not equipped with the capacitor for data backup. Thus, absolute position is lost immediately after disconnection of the detector cable.

HF-KP ① ② JW04-S6

① Rated output and maximum rotation speed

Symbol	Rated output	Max. rotation speed	Flange size (mm)
23	0.2 kW	6000 r/min	60 SQ.
43	0.4 kW	6000 r/min	60 SQ.
73	0.75 kW	6000 r/min	80 SQ.

② Magnetic brake

Symbol	Magnetic brake
None	None
B	With magnetic brake

③ Detector

Symbol	Detection method	Detector resolution
None	Absolute position	260,000 p/rev

(Note) The detector for HF-KP Series is fixed.

200V Direct-drive motor

<TM-RB Series>

Primary side [coil side] TM-RBP ① ② ③

Secondary side [magnet side] TM-RBS ① ② ③

① Rated torque

Symbol	Rated torque
012	12 N · m
036	36 N · m
048	48 N · m
105	105 N · m
150	150 N · m
340	340 N · m
500	500 N · m

② Stator dimensions

Symbol	Dimension
C	DIA 130 mm
E	DIA 180 mm
G	DIA 230 mm
J	DIA 330 mm

③ Rated rotation speed

Symbol	Speed
10	100 r/min
20	200 r/min

200V Linear servo motor

<LM-F Series>

Primary side [coil side] LM-FP ① ② - ③ M-1WW0

Secondary side [magnet side] LM-FS ① 0- ② -1WW0

① Width

Symbol	Width (nominal)
2	120 mm
4	200 mm
5	240 mm

② Length

Symbol	Length (nominal)
B	290 mm
D	530 mm
F	770 mm
H	1010 mm

③ Rated thrust

Symbol	Rated thrust
06	600 N
12	1200 N
18	1800 N
24	2400 N
36	3600 N
48	4800 N
60	6000 N

① Width

Symbol	Width (nominal)
2	120 mm
4	200 mm
5	240 mm

② Length

Symbol	Length (nominal)
480	480 mm
576	576 mm

7

8

200V SJ-D spindle motor

<SJ-D Series (for 200V)>

SJ-D

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①Motor Series

Symbol	Motor Series
None	Normal specifications
J	Compact & lightweight specifications
L	Low-inertia specifications

②Short-time (or %ED) rated output

Symbol	Short-time rated output
	0.75 0.75 kW
	1.5 1.5 kW
	3.7 3.7 kW
	5.5 5.5 kW
	7.5 7.5 kW
	11 11 kW
	15 15 kW

③Maximum rotation speed

Indicates the hundreds place and higher order digits.

⑤Detector

Symbol	Type
None	Type 1
T	Type 2

⑥Option (Note)

Symbol	Option
None	Standard (flange type, without oil seal, without key, coil changeover unavailable, air-cooling, solid shaft)
C	With key
J	Oil seal
S	Hollow shaft
X	Reversed cooling air

(Note) If more than one option is included, the symbols are in alphabetical order.

④Specification code

Indicates a specification code (01 to 99).

200V SJ-V spindle motor

<SJ-V/VL Series>

SJ-

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 T

①Motor Series

Symbol	Motor Series
V	Medium inertia Series
VL	Low inertia Series

②Coil changeover

Symbol	Coil changeover
None	Unavailable
K	Available

③Shaft configuration

Symbol	Shaft configuration
None	Standard
S	Hollow shaft

④Short-time rated output (Normal specification)

Symbol	Short-time rated output
	0.75 0.75 kW
	1.5 1.5 kW
	2.2 2.2 kW
	3.7 3.7 kW
	5.5 5.5 kW
	7.5 7.5 kW
	11 11 kW
	15 15 kW
	18.5 18.5 kW
	22 22 kW
	26 26 kW
	37 37 kW
	45 45 kW
	55 55 kW

⑤Specification code

The SJ-V/VL Series is indicated with a specification code (01 to 99).

⑥Special specifications

Symbol	Special specifications
None	Standard
Z	High-speed bearing
FZ	High-speed bearing front-lock

200V Built-in spindle motor

<SJ-B Series>

SJ-

①

 B

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④

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①Voltage

Symbol	Voltage
2	200V
4	400V

* 400V is available by special order.

②Number of poles

Symbol	Number of poles
2	2 poles
4	4 poles
6	6 poles

③Motor size

Symbol	Stator outline
0	φ 110
1	φ 128
2	φ 160
3	φ 180
4	φ 210
5	φ 230
6	φ 255
7	φ 300
9	φ 370
A	φ 90
B	φ 115

Stator outline (frame No.) is indicated with 0 to 9, A, B.

④Specification code

Specification code (01 to 99)

⑤Overheat protection sensor

Symbol	Overheat protection sensor
T	Thermistor

⑥Coil changeover

Symbol	Coil changeover
None	Unavailable
D	Available (Δ-2//Δ)
K	Available (Λ-Δ)

<SJ-PMB Series>

SJ-

①

 PMB

②

③

④

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⑤

①Voltage

Symbol	Voltage
None	200V
4	400V

* 400V is available by special order.

②Continuous rated torque

Indicates with 3 digits.
For 1000 [N · m] or more (for 9999 [N · m] or less), the upper digit is indicated by alphabetic character and the others are indicated by the carried number.
Example) 020 : 20 [N · m] A55 : 1550 [N · m]

③Base rotation speed

Indicates the thousands and the hundreds places (the ten places are rounded off.)
Example) 03 : 250 to 349 [r/min] 15 : 1450 to 1549 [r/min]

④Overheat protection sensor

Symbol	Overheat protection sensor
T	Thermistor

⑤Design management No.

Indicates with 2 digits number or alphabetic characters
Example) 00, A1

200V Tool spindle motor

<HF-KP Series>

HF-KP

①

 J

②

 W09

①Rated output · Maximum rotation speed

Symbol	Rated output	Maximum rotation speed	Flange size (mm)
46	0.4 kW	6000 r/min	60 SQ.
56	0.5 kW	6000 r/min	60 SQ.
96	0.9 kW	6000 r/min	80 SQ.

②Option

Symbol	Option
None	Without keyway
K	With keyway (with key)

<HF-SP Series>

HF-SP

①

 J

②

 W09

①Rated output · Maximum rotation speed

Symbol	Rated output	Maximum rotation speed	Flange size (mm)
226	2.2 kW	6000 r/min	130 SQ.
406	4.0 kW	6000 r/min	130 SQ.

②Option

Symbol	Option
None	Without keyway
K	With keyway (without key)

<HF Series>

HF

①

②

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①Rated output · Maximum rotation speed

Symbol	Rated output	Maximum rotation speed	Flange size (mm)
75	0.75 kW	4000 r/min	90 SQ.
105	1.0 kW	4000 r/min	90 SQ.
54	0.5 kW	3000 r/min	130 SQ.
104	1.0 kW	3000 r/min	130 SQ.
154	1.5 kW	3000 r/min	130 SQ.
224	2.2 kW	3000 r/min	130 SQ.
204	2.0 kW	3000 r/min	176 SQ.
354	3.5 kW	3000 r/min	176 SQ.
123	1.2 kW	2000 r/min	130 SQ.
223	2.2 kW	2000 r/min	130 SQ.
303	3.0 kW	2000 r/min	176 SQ.
453	4.5 kW	3000 r/min	176 SQ.
703	7.0 kW	3000 r/min	176 SQ.
903	9.0 kW	3000 r/min	204 SQ.

②Shaft end structure

Symbol	Shaft end structure
S	Straight

③Detector

Symbol	Resolution
A48	260,000 p/rev

(Note) Detector A51 and A74N can not be used with the tool spindle motor.

(Note) This explains the model name system of a spindle motor, and all combinations of motor types listed above do not exist.

400V HF-H servo motor

<HF-H Series>

HF-H

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①Rated output・Maximum rotation speed

Symbol	Rated output	Maximum rotation speed	Flange size (mm)
75	0.75 kW	5000 r/min	90 SQ.
105	1.0 kW	5000 r/min	90 SQ.
54	0.5 kW	4000 r/min	130 SQ.
104	1.0 kW	4000 r/min	130 SQ.
154	1.5 kW	4000 r/min	130 SQ.
204	2.0 kW	4000 r/min	176 SQ.
354	3.5 kW	4000 r/min	176 SQ.
453	4.5 kW	3500 r/min	176 SQ.
703	7.0 kW	3000 r/min	176 SQ.
903	9.0 kW	3000 r/min	204 SQ.

②Magnetic brakes

Symbol	Magnetic brakes
None	None
B	With magnetic brakes

③Shaft end structure

Symbol	Shaft end structure
S	Straight
T	Taper

(Note) "Taper" is available for the motor whose flange size is 90 SQ. mm or 130 SQ. mm.

④Detector

Symbol	Detector	Resolution
A48	Absolute position	260,000 p/rev
A51		1,000,000 p/rev
A74N		16,000,000 p/rev

400V SJ-4-V spindle motor

<SJ-V Series>

SJ-4-

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3

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①Motor Series

Symbol	Motor Series
V	Medium-inertia Series

②Coil changeover

Symbol	Coil changeover
None	Unavailable

③Shaft configuration

Symbol	Axis configuration
None	Standard
S	Hollow shaft

④Short time rated output (Normal specification)

Symbol	Short time rated output
2.2	2.2 kW
3.7	3.7 kW
5.5	5.5 kW
7.5	7.5 kW
11	11 kW
15	15 kW
18.5	18.5 kW
22	22 kW
26	26 kW
37	37 kW
45	45 kW
55	55 kW

⑤Specification code

The SJ-4-V Series is indicated with a specification code (01 to 99).

⑥Special specification

Symbol	Special specification
None	Standard
Z	High-speed bearing

(Note 1) The built-in spindle motor is available by special order.
(Note 2) This explains the model name system of a spindle motor, and all combinations of motor types listed above do not exist.

HF Series

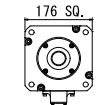
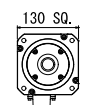
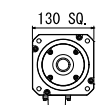
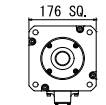
Motor type	HF-KP13□J-S17	HF-KP23□JW04-S6	HF-KP43□JW04-S6	HF-KP73□JW04-S6	HF75	HF105						
Compatible drive unit	1-axis type MDS-D2-V1-	20	20	20	20	20						
	2-axis type MDS-D2-V2-	4020 (M)	4020 (M)	4020 (M)	4020 (M)	4020 (M)						
	3-axis type MDS-D2-V3-	202020	202020	202020	202020 404040	202020 404040						
	Multi axis integrated type MDS-DM2-SPV2-SPV3-	-	-	-	-	-						
	Regenerative resistor type MDS-DJ-V1-V2-	10	10	15	30	30						
[N・m] 15												
Output Stall torque 10												
Max. torque 5												
0												
Rated output [kW] 0.1 0.2 0.4 0.75 0.75 1.0												
Maximum rotation speed [r/min] 6000 6000 6000 6000 5000 5000												
Motor inertia [kg・cm ²] 0.088 0.23 0.42 1.43 2.6 5.1												
Motor inertia with a brake [kg・cm ²] 0.090 0.31 0.50 1.63 2.8 5.3												
Degree of protection (The shaft-through portion is excluded.) IP65 IP65 IP65 IP65 IP67 IP67												
Outline dimension drawing (Without a brake, Straight shaft, A48 detector)	[mm]											
	40 SQ. 60 SQ. 60 SQ. 80 SQ. 90 SQ. 90 SQ.											
	50 SQ. 92.8 98 119.9 134.2 126.5 162.5											
(Note) The total length will be 3.5mm longer when using an A51 or A74/A74N detector.												
(Note) The detector specification for the HF-KP series is fixed.												
Flange fitting diameter [mm] φ 30 φ 50 φ 50 φ 70 φ 80 φ 80												
Shaft diameter [mm] φ 8 φ 14 φ 14 φ 19 φ 14 φ 14												
Mass (with a brake) [kg] 0.66 (0.96) 1.2 (1.8) 1.7 (2.3) 2.9 (4.1) 2.5 (3.9) 4.3 (5.7)												
Absolute position detector compatible drive unit	16,000,000 [p/rev] (A74/A74N)	-	-	-	D2	D2						
	1,000,000 [p/rev] (A51)	-	-	-	-	-						
	260,000 [p/rev] (A48)	DJ	D2, DJ	D2, DJ	D2, DJ	D2, DJ						

Motor type	HF54	HF104	HF154	HF224	HF204					
Compatible drive unit	1-axis type MDS-D2-V1-	40	40	80	80					
	2-axis type MDS-D2-V2-	4020 (L) 4040 8040 (M)	4020 (L) 4040 8040 (M)	8040 (L) 8080 16080 (M)	8040 (L) 8080 16080 (M)					
	3-axis type MDS-D2-V3-	404040	404040	404040	-					
	Multi axis integrated type MDS-DM2-SPV2-SPV3-SPV3-	xxx80*	xxx80*	xxx80*	xxx80*					
	Regenerative resistor type MDS-DJ-V1-V2-	30 3030	40 -	80 -	80 -					
[N・m] 50										
Output Stall torque 40										
Max. torque 30										
0										
Rated output [kW] 0.5 1.0 1.5 2.2 2.0										
Maximum rotation speed [r/min] 4000 4000 4000 4000 4000										
Motor inertia [kg・cm ²] 6.1 11.9 17.8 23.7 38.3										
Motor inertia with a brake [kg・cm ²] 8.3 14.1 20.0 25.9 48.0										
Degree of protection (The shaft-through portion is excluded.) IP67 IP67 IP67 IP67 IP67										
Outline dimension drawing (Without a brake, Straight shaft, A48 detector)	[mm]									
	130 SQ. 130 SQ. 130 SQ. 130 SQ. 176 SQ.									
	118.5 140.5 162.5 184.5 143.5									
(Note) The total length will be 3.5mm longer when using an A51 or A74/A74N detector.										
Flange fitting diameter [mm] φ 110 φ 110 φ 110 φ 110 φ 114.3										
Shaft diameter [mm] φ 24 φ 24 φ 24 φ 24 φ 35										
Mass (with a brake) [kg] 4.8 (6.8) 6.5 (8.5) 8.3 (10.3) 10.0 (12.0) 12.0 (18.0)										
Absolute position detector compatible drive unit	16,000,000 [p/rev] (A74/A74N)	D2	D2	D2	-					
	1,000,000 [p/rev] (A51)	D2	D2	D2	D2					
	260,000 [p/rev] (A48)	DM2, DJ	DM2, DJ	DM2, DJ	DM2					

*Refer to "MDS-DM2 Series Multi-hybrid drive" in this book for compatible drive unit type.
(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

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HF Series									
Motor type			HF354			HF123	HF223		HF303
Compatible drive unit	1-axis type	MDS-D2-V1-	—	—	160	20	—	40	80
	2-axis type	MDS-D2-V2-	—	—	16080 (L) 160160 160160W	2020 (L, M) 4020 (M)	—	4020 (L) 4040 8040 (M)	8040 (L) 8080 16080 (M)
	3-axis type	MDS-D2-V3-	—	—	—	202020 404040	404040 (M, S)	404040 (L)	—
	Multi axis integrated type	SPV2-	—	—	—	—	—	xxx80*	xxx80*
		SPV3-	—	200120	—	—	—	xxx80*	xxx80*
		SPHV3-	—	—	—	—	—	20080	20080
Regenerative resistor type	MDS-DJ-V1-	100	—	—	40	—	40	80	
Output			[N · m]						
Stall torque			80						
Max. torque			100						
			22.5 65.0			7.0 17.0			
			22.5 75.0			10.0 32.0			
			22.5 90.0			12.0 32.0			
			22.5 64.0						
Rated output			[kW]			3.5	1.2	2.1	3.0
Maximum rotation speed			[r/min]			3500	4000	3000	3000
Motor inertia			[kg · cm ²]			75.0	11.9	23.7	75.0
Motor inertia with a brake			[kg · cm ²]			84.7	14.1	25.9	84.7
Degree of protection (The shaft-through portion is excluded.)			IP67			IP67	IP67	IP67	
Outline dimension drawing (Without a brake, Straight shaft, A48 detector)			[mm]						
(Note) The total length will be 3.5mm longer when using an A51 or A74/A74N detector.									
Flange fitting diameter			[mm]			φ 114.3	φ 110	φ 110	φ 114.3
Shaft diameter			[mm]			φ 35	φ 24	φ 24	φ 35
Mass (with a brake)			[kg]			19.0 (25.0)	6.5 (8.5)	10.0 (12.0)	19.0 (25.0)
Absolute position detector compatible drive unit	16,000,000 [p/rev] (A74/A74N)		—	—	D2	D2	—	D2	D2
	1,000,000 [p/rev] (A51)		DJ	DM2		D2, DJ	D2-V3	D2 DM2, DJ	D2 DM2, DJ
	260,000 [p/rev] (A48)								

Motor type			HF453		HF703	HF903	HF142	HF302		
Compatible drive unit	1-axis type	MDS-D2-V1-	—	160	160W	320	20	—	40	
	2-axis type	MDS-D2-V2-	—	16080 (L) 160160 160160W	160160W	—	2020 4020 (M)	—	4020 (L) 4040 8040 (M)	
	3-axis type	MDS-D2-V3-	—	—	—	—	202020 404040	404040 (M, S)	404040 (L)	
	Multi axis integrated type	MDS-DM2-	SPV2-	—	—	—	—	—	xxx80*	
		SPV3-	200120	—	—	—	—	—	xxx80*	
		SPHV3-	—	—	—	—	—	—	20080	
Regenerative resistor type	MDS-DJ-V1-	—	—	—	—	40	—	40		
Output			[N · m]		200					
Stall torque					150					
					100					
Max. torque					50					
					0					
Rated output			[kW]		4.5	7.0	9.0	1.4	2.2 3.0	
Maximum rotation speed			[r/min]		3500	3000	3000	2000	2000	
Motor inertia			[kg · cm ²]		112.0	154.0	196.0	17.8	75.0	
Motor inertia with a brake			[kg · cm ²]		121.7	163.7	205.7	20.0	84.7	
Degree of protection (The shaft-through portion is excluded.)					IP67	IP67	IP67	IP67	IP67	
Outline dimension drawing (Without a brake, Straight shaft, A48 detector)			[mm]							
(Note) The total length will be 3.5mm longer when using an A51 or A74/A74N detector.										
Flange fitting diameter			[mm]		φ 114.3	φ 114.3	φ 180	φ 110	φ 114.3	
Shaft diameter			[mm]		φ 35	φ 35	φ 42	φ 24	φ 35	
Mass (with a brake)			[kg]		26.0 (32.0)	32.0 (38.0)	45.0 (51.0)	8.3 (10.3)	19.0 (25.0)	
Absolute position detector compatible drive unit	16,000,000 [p/rev] (A74/A74N)		—	D2	D2	D2	D2	D2	D2-V3	
	1,000,000 [p/rev] (A51)		DM2					D2, DJ		D2, DM2, DJ
	260,000 [p/rev] (A48)									

*Refer to "MDS-DM2 Series Multi-hybrid drive" in this book for compatible drive unit type.
(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

TM-RB Series											
Direct-drive motor type		Primary side type		TM-RBP012C20		TM-RBP036E20		TM-RBP048G20		TM-RBP105G10	
		Secondary side type		TM-RBS012C20		TM-RBS036E20		TM-RBS048G20		TM-RBS105G10	
Compatible drive unit	1-axis type	MDS-D2-V1-	40		80		80		160		
	2-axis type	MDS-D2-V2-	4020 (L) 4040 8040 (M)		8040 (L) 8080 16080 (M)		8040 (L) 8080 16080 (M)		16080 (L) 160160		
	3-axis type	MDS-D2-V3-	404040		—		—		—		
	Regenerative resistor type	MDS-DJ-V1-	40		80		80		100		
Output			[N · m]		300						
Rated torque (liquid-cooling)			250								
Max. torque			300								
Rated output			[W]		252		754		1005		
Maximum rotation speed			[r/min]		500		500		500		
Motor inertia			[kg · cm ²]		22		127		280		
Degree of protection					IP00		IP00		IP00		
Outline dimension drawing			[mm]								
Mass			[kg]		3.9		7.1		10		
			Secondary side (magnet)		1.7		3.7		5		

TM-RB Series											
Direct-drive motor type		Primary side type		TM-RBP105G20		TM-RBP150G20		TM-RBP340J20		TM-RBP500J20	
		Secondary side type		TM-RBS105G20		TM-RBS150G20		TM-RBS340J20		TM-RBS500J20	
Compatible drive unit	1-axis type	MDS-D2-V1-	160		160		320		320W		
	2-axis type	MDS-D2-V2-	16080 (L) 160160		160160		—		—		
	3-axis type	MDS-D2-V3-	—		—		—		—		
	Regenerative resistor type	MDS-DJ-V1-	—		—		—		—		
Output			[N · m]		1400						
Rated torque (liquid-cooling)			1200								
Max. torque			1400								
Rated output			[W]		2199		3141		7120		
Maximum rotation speed			[r/min]		500		500		400		
Motor inertia			[kg · cm ²]		395		510		2778		
Degree of protection					IP00		IP00		IP00		
Outline dimension drawing			[mm]								
Mass			[kg]		13		16		33		
			Secondary side (magnet)		7		9		20		

(Note 1) The detector should be procured by the user.
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

LM-F Series						
Linear servo motor type	Primary side type		LM-FP2B-06M-1WW0	LM-FP2D-12M-1WW0	LM-FP2F-18M-1WW0	LM-FP4B-12M-1WW0
	Secondary side type		LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS40-□-1WW0
Compatible drive unit	1-axis type	MDS-D2-V1-	40	80	160	80
	2-axis type	MDS-D2-V2-	4020 (L) 4040 8040 (M)	8040 (L) 8080 16080 (M)	16080 (L) 160160	8040 (L) 8080 16080 (M)
	3-axis type	MDS-D2-V3-	404040	—	—	—
	Regenerative resistor type	MDS-DJ-V1-	40	80	—	80
Thrust force Continuous (natural-cooling) Continuous (liquid-cooling) Maximum			[N] 6000 5000 4000 3000 2000 1000 0			
			Rated thrust force [N] 600120018001200			
			Maximum speed (Note 1) [m/s] 2.02.02.02.0			
			Magnetic attraction force [N] 45009000135009000			
Degree of protection			IP00IP00IP00IP00			
Outline dimension drawing			Primary sideSecondary sidePrimary sideSecondary sidePrimary sideSecondary sidePrimary sideSecondary side			
Mass	Primary side (coil)		9182714			
	Secondary side (magnet)		7.1 (480mm) 9.0 (576mm)7.1 (480mm) 9.0 (576mm)7.1 (480mm) 9.0 (576mm)13.5 (480mm) 16.0 (576mm)			

Linear servo motor type	Primary side type		LM-FP4D-24M-1WW0	LM-FP4F-36M-1WW0	LM-FP4H-48M-1WW0	LM-FP5H-60M-1WW0
	Secondary side type		LM-FS40-□-1WW0	LM-FS40-□-1WW0	LM-FS40-□-1WW0	LM-FS50-□-1WW0
Compatible drive unit	1-axis type	MDS-D2-V1-	160	320	320	200 (Note 2)
	2-axis type	MDS-D2-V2-	16080 (L) 160160	—	—	—
	3-axis type	MDS-D2-V3-	—	—	—	—
	Regenerative resistor type	MDS-DJ-V1-	—	—	—	—
Thrust force			[N] 20000			
Continuous (natural-cooling)			15000			
Continuous (liquid-cooling)			10000			
Maximum			5000			
Rated thrust force			[N]			
Maximum speed (Note 1)			[m/s]			
Magnetic attraction force			[N]			
Degree of protection			IP00			
Outline dimension drawing			[mm]			
Mass			[kg]			
Primary side (coil)			28			
Secondary side (magnet)			13.5 (480mm) 16.0 (576mm)			

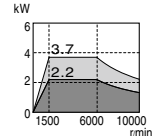
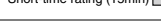
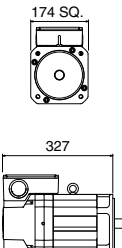
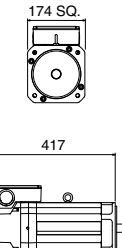
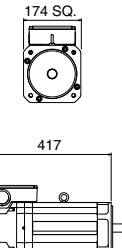
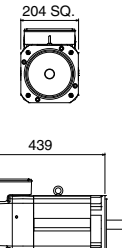
(Note 1) The maximum speed in actual use is either the linear scale's maximum speed or this specified value, whichever is smaller.
(Note 2) 400V specifications
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

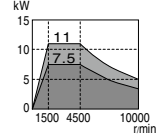
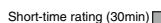
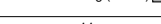
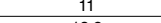
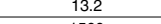
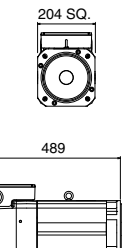
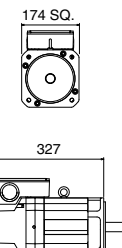
LM-F Series (One unit and two motor)					
Linear servo motor type	Primary side type		LM-FP2B-06M-1WW0	LM-FP2D-12M-1WW0	LM-FP2F-18M-1WW0
	Secondary side type		LM-FS20-□-1WW0	LM-FS20-□-1WW0	LM-FS20-□-1WW0
Compatible drive unit	1-axis type	MDS-D2-V1-	80	160	320
	2-axis type	MDS-D2-V2-	8040 (L) 8080 16080 (M)	16080 (L) 160160	—
	3-axis type	MDS-D2-V3-	—	—	—
	Regenerative resistor type	MDS-DJ-V1-	80	—	—
Thrust force			[N] 12000		
Continuous (natural-cooling)			10000		
Continuous (liquid-cooling)			8000		
Maximum			6000		
Rated thrust force			[N]		
Maximum speed (Note 1)			[m/s]		
Magnetic attraction force (per motor)			[N]		
Degree of protection			IP00		
Outline dimension drawing			[mm]		
Mass			[kg]		
Primary side (coil)			9×2		
Secondary side (magnet)			7.1 (480mm) 9.0 (576mm)		

Linear servo motor type	Primary side type		LM-FP4B-12M-1WW0	LM-FP4D-24M-1WW0
	Secondary side type		LM-FS40-□-1WW0	LM-FS40-□-1WW0
Compatible drive unit	1-axis type	MDS-D2-V1-	160	320
	2-axis type	MDS-D2-V2-	160160	—
	3-axis type	MDS-D2-V3-	—	—
	Regenerative resistor type	MDS-DJ-V1-	—	—
Thrust force			[N] 16000	
Continuous (natural-cooling)			14000	
Continuous (liquid-cooling)			10000	
Maximum			8000	
Rated thrust force			[N]	
Maximum speed (Note 1)			[m/s]	
Magnetic attraction force (per motor)			[N]	
Degree of protection			IP00	
Outline dimension drawing			[mm]	
Mass			[kg]	
Primary side (coil)			14×2	
Secondary side (magnet)			13.5 (480mm) 16.0 (576mm)	

(Note 1) The maximum speed in actual use is either the linear scale's maximum speed or this specified value, whichever is smaller.
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

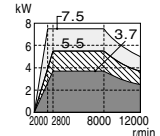
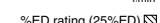
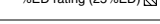
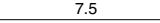
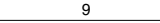
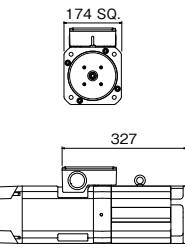
SJ-D Series (Normal specifications)

Motor type		SJ-D3.7/100-01	SJ-D5.5/100-01	SJ-D5.5/120-01	SJ-D7.5/100-01	SJ-D7.5/120-01
Compatible drive unit	1-axis type	MDS-D2-SP-	80	80	80	160
	2-axis type	MDS-D2-SP2-	8040 (L) 8080 16080S (M)	8040 (L) 8080 (L, M) 16080S (M)	8040 (L) 8080 16080S (M)	16080S (L)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	—	10080	10080	10080
	Regenerative resistor type	MDS-DJ-SP-	80	100	100	120
Output						
Short-time rating						
Continuous rating						
Standard output during acceleration/deceleration		[kW]	3.7	5.5	5.5	7.5
Actual acceleration/deceleration output (Note 2)		[kW]	4.44	6.6	6.6	9
Base rotation speed		[r/min]	1500	1500	1500	1500
Max. rotation speed in constant output range		[r/min]	6000	6000	6000	6000
Maximum rotation speed		[r/min]	10000	10000	12000	12000
Continuous rated torque		[N · m]	14.0	23.6	23.6	35.0
Motor inertia		[kg · m²]	0.0074	0.013	0.013	0.023
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54	IP54	IP54
Outline dimension drawing (flange type)		[mm]				
Flange fitting diameter		[mm]	φ 150	φ 150	φ 150	φ 180
Shaft diameter		[mm]	φ 28	φ 28	φ 28	φ 32
Mass		[kg]	26	39	39	53

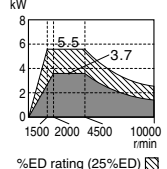
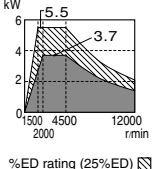
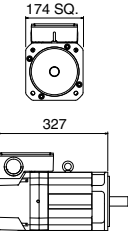
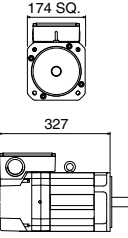
Motor type		SJ-D11/100-01	SJ-D5.5/120-02		
Compatible drive unit	1-axis type	MDS-D2-SP-	160	—	160
	2-axis type	MDS-D2-SP2-	16080S (L)	—	16080S (L)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	16080	10080	16080
	Regenerative resistor type	MDS-DJ-SP-	160	—	—
Output					
Acceleration/Deceleration					
%ED rating					
Short-time rating					
Continuous rating					
Standard output during acceleration/deceleration		[kW]	11	7.5	9.2
Actual acceleration/deceleration output (Note 2)		[kW]	13.2	9	11.04
Base rotation speed		[r/min]	1500	2800	2800
Max. rotation speed in constant output range		[r/min]	4500	8000	8000
Maximum rotation speed		[r/min]	10000	12000	12000
Continuous rated torque		[N · m]	47.7	12.6	12.6
Motor inertia		[kg · m²]	0.031	0.0074	0.0074
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54	IP54
Outline dimension drawing (flange type)		[mm]			
Flange fitting diameter		[mm]	φ 180	φ 150	
Shaft diameter		[mm]	φ 48	φ 28	
Mass		[kg]	64	26	

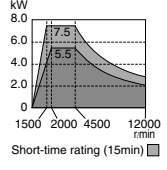
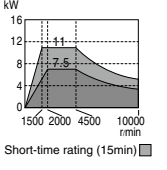
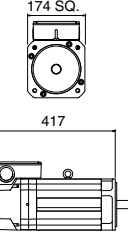
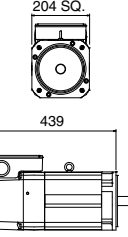
(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-D Series (Hollow shaft specifications)

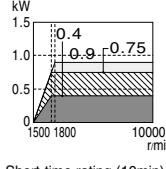
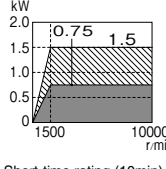
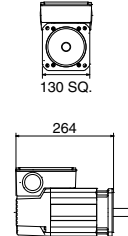
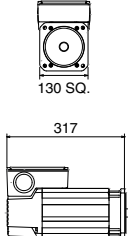
Motor type		SJ-D5.5/120-02T-S		
Compatible drive unit	1-axis type	MDS-D2-SP-	—	160
	2-axis type	MDS-D2-SP2-	—	16080S(L)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	10080	16080
	Regenerative resistor type	MDS-DJ-SP-	—	—
Output				
Acceleration/Deceleration				
%ED rating				
Short-time rating				
Continuous rating				
Standard output during acceleration/deceleration		[kW]	7.5	9.2
Actual acceleration/deceleration output (Note 2)		[kW]	9	11.04
Base rotation speed		[r/min]	2800	2800
Max. rotation speed in constant output range		[r/min]	8000	8000
Maximum rotation speed		[r/min]	12000	12000
Continuous rated torque		[N · m]	12.6	12.6
Motor inertia		[kg · m²]	0.0075	0.0075
Degree of protection (The shaft-through portion is excluded.)			IP54	IP54
Outline dimension drawing (flange type)		[mm]		
Flange fitting diameter		[mm]	φ150	
Shaft diameter		[mm]	φ28	
Mass		[kg]	24	

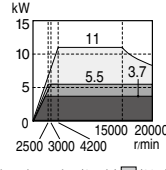
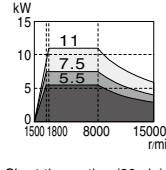
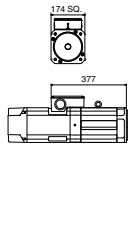
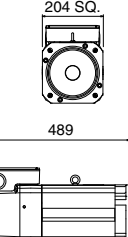
(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-DJ Series (Compact & lightweight specifications)			
Motor type		SJ-DJ5.5/100-01	SJ-DJ5.5/120-01
Compatible drive unit	1-axis type	MDS-D2-SP-	80
	2-axis type	MDS-D2-SP2-	8040 (L) 8080 (L, M) 16080S (M)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	10080
	Regenerative resistor type	MDS-DJ-SP-	100
Output			
Standard output during acceleration/deceleration [kW]		5.5	5.5
Actual acceleration/deceleration output (Note 2) [kW]		6.6	6.6
Base rotation speed	Short-time [r/min]	1500	1500
	Continuous [r/min]	2000	2000
Max. rotation speed in constant output range [r/min]		4500	4500
Maximum rotation speed [r/min]		10000	12000
Continuous rated torque [N · m]		17.7	26.3
Motor inertia [kg · m ²]		0.0074	0.0074
Degree of protection(The shaft-through portion is excluded.)		IP54	IP54
Outline dimension drawing (flange type) [mm]			
Flange fitting diameter [mm]		φ 150	φ 150
Shaft diameter [mm]		φ 28	φ 28
Mass [kg]		26	26

SJ-DJ Series (Compact & lightweight specifications)			
Motor type		SJ-DJ7.5/120-01	SJ-DJ11/100-01
Compatible drive unit	1-axis type	MDS-D2-SP-	160
	2-axis type	MDS-D2-SP2-	16080S(L)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	10080
	Regenerative resistor type	MDS-DJ-SP-	120
Output			
Standard output during acceleration/deceleration [kW]		7.5	11
Actual acceleration/deceleration output (Note 2) [kW]		9	13.2
Base rotation speed	Short-time [r/min]	1500	1500
	Continuous [r/min]	2000	2000
Max. rotation speed in constant output range [r/min]		4500	4500
Maximum rotation speed [r/min]		12000	10000
Continuous rated torque [N · m]		26.3	52.5
Motor inertia [kg · m ²]		0.013	0.023
Degree of protection(The shaft-through portion is excluded.)		IP54	IP54
Outline dimension drawing (flange type) [mm]			
Flange fitting diameter [mm]		φ 150	φ 180
Shaft diameter [mm]		φ 28	φ 32
Mass [kg]		39	53

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 3) %ED is a load time ratio of operating time relative to a 10-minute cycle time. At 25%ED, for example, the operating time is 2.5 minutes and non-operation time is 7.5 minutes of a 10-minute cycle time.

SJ-DL Series (Low-inertia specification)			
Motor type		SJ-DL0.75/100-01	SJ-DL1.5/100-01
Compatible drive unit	1-axis type	MDS-D2-SP-	20
	2-axis type	MDS-D2-SP2-	4020 (L) 4040S (M)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	16080
	Regenerative resistor type	MDS-DJ-SP-	16080
Output			
Standard output during acceleration/deceleration [kW]		0.9	1.5
Actual acceleration/deceleration output (Note 2) [kW]		1.08	1.8
Base rotation speed	Short-time [r/min]	1500	1500
	Continuous [r/min]	10000	10000
Max. rotation speed in constant output range [r/min]		10000	10000
Maximum rotation speed [r/min]		10000	10000
Continuous rated torque [N · m]		2.55	4.77
Motor inertia [kg · m ²]		0.011	0.019
Degree of protection(The shaft-through portion is excluded.)		IP54	IP54
Outline dimension drawing (flange type) [mm]			
Flange fitting diameter [mm]		φ 110	φ 110
Shaft diameter [mm]		φ 22	φ 22
Mass [kg]		10	14

SJ-DL Series (Low-inertia specification)			
Motor type		SJ-DL5.5/200-01T	SJ-DL7.5/150-01T
Compatible drive unit	1-axis type	MDS-D2-SP-	160
	2-axis type	MDS-D2-SP2-	16080S (L)
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	16080
	Regenerative resistor type	MDS-DJ-SP-	16080
Output			
Standard output during acceleration/deceleration [kW]		11	11
Actual acceleration/deceleration output (Note 2) [kW]		13.2	13.2
Base rotation speed	Short-time [r/min]	2500	1500
	Continuous [r/min]	20000	8000
Max. rotation speed in constant output range [r/min]		20000	15000
Maximum rotation speed [r/min]		20000	15000
Continuous rated torque [N · m]		14.1	35.0
Motor inertia [kg · m ²]		0.0046	0.016
Degree of protection(The shaft-through portion is excluded.)		IP54	IP54
Outline dimension drawing (flange type) [mm]			
Flange fitting diameter [mm]		φ 150	φ 180
Shaft diameter [mm]		φ 28	φ 32
Mass [kg]		30	56

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-DL Series (Hollow shaft specifications)

Motor type		SJ-DL5.5/200-01T-S	
Compatible drive unit	1-axis type	MDS-D2-SP-	160
	2-axis type	MDS-D2-SP2-	16080S(L)
	Multi axis integrated type	MDS-DM2-SPV2-	-
		MDS-DM2-SPV3-SPHV3-	-
Regenerative resistor type	MDS-DJ-SP-		-
			-
			-
			-
Output			
Acceleration/Deceleration		☐	
Short-time rating		☐	
Continuous rating		☒	
Standard output during acceleration/deceleration		[kW]	11
Actual acceleration/deceleration output (Note 2)		[kW]	13.2
Base rotation speed		[r/min]	2500
Max. rotation speed in constant output range		[r/min]	20000
Maximum rotation speed		[r/min]	20000
Continuous rated torque		[N · m]	14.1
Motor inertia		[kg · m ²]	0.0046
Degree of protection(The shaft-through portion is excluded.)		IP54	
Outline dimension drawing (flange type)			
Flange fitting diameter		[mm]	φ 150
Shaft diameter		[mm]	φ 22
Mass		[kg]	28

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-V Series (Normal specification)

Motor type		SJ-V2.2-01T	SJ-VL2.2-02ZT *1	SJ-V3.7-02ZT	SJ-V7.5-03ZT
Compatible drive unit	1-axis type	MDS-D2-SP-	40	40	80
	2-axis type	MDS-D2-SP2-	4020 (L) 4040S 8040 (M)	4020 (L) 4040S 8040 (M)	8040 (L) 8080 16080S (M)
	Multi axis integrated type	MDS-DM2-SPV2-	-	-	-
		MDS-DM2-SPV3-SPHV3-	-	-	-
Regenerative resistor type	MDS-DJ-SP-		40	80 *2	-
			-	-	-
			-	-	-
			-	-	-
Output					
Short-time rating		☐			
Continuous rating		☒			
Standard output during acceleration/deceleration		[kW]	2.2	2.2	3.7
Actual acceleration/deceleration output (Note 2)		[kW]	2.64	2.64	4.44
Base rotation speed		[r/min]	1500	3000	3000
Max. rotation speed in constant output range		[r/min]	6000	15000	12000
Maximum rotation speed		[r/min]	10000	15000	15000
Continuous rated torque		[N · m]	9.5	4.77	7.0
Motor inertia		[kg · m ²]	0.00675	0.0024	0.00675
Degree of protection		IP44			
Outline dimension drawing (Flange type)					
Flange fitting diameter		[mm]	φ 150	φ 110	φ 150
Shaft diameter		[mm]	φ 28	φ 22	φ 28
Mass		[kg]	25	20	25

*1 The maximum rotation speed is 10000r/min.

Motor type		SJ-V11-08ZT	SJ-V11-13ZT	SJ-V15-01ZT
Compatible drive unit	1-axis type	MDS-D2-SP-	200	200
	2-axis type	MDS-D2-SP2-	-	-
	Multi axis integrated type	MDS-DM2-SPV2-	-	20080
		MDS-DM2-SPV3-SPHV3-	-	20080
Regenerative resistor type	MDS-DJ-SP-		-	-
			-	-
			-	-
			-	-
Output				
Short-time rating		☐		
Continuous rating		☒		
Standard output during acceleration/deceleration		[kW]	11	11
Actual acceleration/deceleration output (Note 2)		[kW]	13.2	13.2
Base rotation speed		[r/min]	1500	1500
Max. rotation speed in constant output range		[r/min]	8000	6000
Maximum rotation speed		[r/min]	8000	8000
Continuous rated torque		[N · m]	47.7	47.7
Motor inertia		[kg · m ²]	0.03	0.03
Degree of protection		IP44		
Outline dimension drawing (Flange type)				
Flange fitting diameter		[mm]	φ 180	φ 180
Shaft diameter		[mm]	φ 48	φ 48
Mass		[kg]	70	70

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-V Series (Normal specification)					
Motor type		SJ-V15-09ZT	SJ-V18.5-01ZT	SJ-V18.5-04ZT	SJ-V22-01ZT
Compatible drive unit	1-axis type	MDS-D2-SP-	200	200	240
	2-axis type	MDS-D2-SP2-	-	-	-
	Multi axis integrated type	MDS-DM2-	SPV2-	-	-
			SPV3-	-	-
	Regenerative resistor type	MDS-DJ-SP-	20080	-	-
Output					
Short-time rating					
Continuous rating					
Standard output during acceleration/deceleration		[kW]	15	18.5	18.5
Actual acceleration/deceleration output (Note 2)		[kW]	18	22.2	22.2
Base rotation speed		[r/min]	1500	1500	1500
Max. rotation speed in constant output range		[r/min]	6000	4500	6000
Maximum rotation speed		[r/min]	8000	8000	8000
Continuous rated torque		[N · m]	70	95.5	95.5
Motor inertia		[kg · m ²]	0.0575	0.0575	0.0575
Degree of protection			IP44	IP44	IP44
Outline dimension drawing (Flange type)		[mm]			
Flange fitting diameter		[mm]	φ 230	φ 230	φ 230
Shaft diameter		[mm]	φ 48	φ 48	φ 48
Mass		[kg]	110	110	110

Motor type		SJ-V22-04ZT	SJ-V22-06ZT	SJ-V26-01ZT	SJ-V37-01ZT
Compatible drive unit	1-axis type	MDS-D2-SP-	320	240	320
	2-axis type	MDS-D2-SP2-	-	-	-
	Multi axis integrated type	MDS-DM2-	SPV2-	-	-
			SPV3-	-	-
	Regenerative resistor type	MDS-DJ-SP-	-	-	-
Output					
Short-time rating					
Continuous rating					
Standard output during acceleration/deceleration		[kW]	22	15	26
Actual acceleration/deceleration output (Note 2)		[kW]	26.4	18	31.2
Base rotation speed		[r/min]	1500	1500	1500
Max. rotation speed in constant output range		[r/min]	6000	8000	6000
Maximum rotation speed		[r/min]	8000	8000	8000
Continuous rated torque		[N · m]	118	70.0	140
Motor inertia		[kg · m ²]	0.08	0.0575	0.0925
Degree of protection			IP44	IP44	IP44
Outline dimension drawing (Flange type)		[mm]			
Flange fitting diameter		[mm]	φ 230	φ 230	φ 230
Shaft diameter		[mm]	φ 55	φ 48	φ 55
Mass		[kg]	135	110	155

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-V Series (Normal specification)			
Motor type		SJ-V45-01ZT	SJ-V55-01ZT
Compatible drive unit	1-axis type	MDS-D2-SP-	640
	2-axis type	MDS-D2-SP2-	-
	Multi axis integrated type	MDS-DM2-	-
	Regenerative resistor type	MDS-DJ-SP-	-
Output			
Short-time rating			
Continuous rating			
Standard output during acceleration/deceleration		[kW]	45
Actual acceleration/deceleration output (Note 2)		[kW]	54
Base rotation speed		[r/min]	1500
Max. rotation speed in constant output range		[r/min]	4500
Maximum rotation speed		[r/min]	6000
Continuous rated torque		[N · m]	236
Motor inertia		[kg · m ²]	0.34
Degree of protection			IP44
Outline dimension drawing (Flange type)		[mm]	
Flange fitting diameter		[mm]	φ 300
Shaft diameter		[mm]	φ 60
Mass		[kg]	300

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-V Series (Wide range constant output specification)

Motor type		SJ-V11-01T	SJ-V11-09T	SJ-V15-03T	SJ-V18.5-03T
Compatible drive unit	1-axis type	MDS-D2-SP-160	160	200	240
	2-axis type	MDS-D2-SP2-16080S (L)	16080S (L)	-	-
	Multi axis integrated type	MDS-DM2-SPV2-16080	16080	-	-
	Regenerative resistor type	MDS-DJ-SP-SPV3-16080	16080	20080	-
Output					
Standard output during acceleration/deceleration		[kW] 5.5	7.5	9	11
Actual acceleration/deceleration output (Note 2)		[kW] 6.6	9	10.8	13.2
Base rotation speed		[r/min] 750	750	750	750
Max. rotation speed in constant output range		[r/min] 6000	6000	6000	6000
Maximum rotation speed		[r/min] 6000	6000	6000	6000
Continuous rated torque		[N · m] 47.1	70.0	95.5	115
Motor inertia		[kg · m ²] 0.03	0.0575	0.0575	0.08
Degree of protection		IP44	IP44	IP44	IP44
Outline dimension drawing (Flange type)					
Flange fitting diameter		[mm] φ 180	φ 230	φ 230	φ 230
Shaft diameter		[mm] φ 48	φ 48	φ 48	φ 55
Mass		[kg] 70	110	110	135

Motor type		SJ-V22-05T	SJ-V22-09T	SJ-VK22-19ZT
Compatible drive unit	1-axis type	MDS-D2-SP-320	320	320
	2-axis type	MDS-D2-SP2-	-	-
	Multi axis integrated type	MDS-DM2-	-	-
	Regenerative resistor type	MDS-DJ-SP-	-	-
Output				
Short-time rating				
Continuous rating				
Standard output during acceleration/deceleration		[kW] 15	18.5	18.5
Actual acceleration/deceleration output (Note 2)		[kW] 18	22.2	22.2
Base rotation speed		[r/min] 750	500	330
Max. rotation speed in constant output range		[r/min] 6000	3500	750
Maximum rotation speed		[r/min] 6000	4500	750
Continuous rated torque		[N · m] 140	239	310
Motor inertia		[kg · m ²] 0.08	0.31	0.34
Degree of protection		IP44	IP44	IP44
Outline dimension drawing (Flange type)				
Flange fitting diameter		[mm] φ 230	φ 300	φ 300
Shaft diameter		[mm] φ 55	φ 60	φ 60
Mass		[kg] 135	280	300

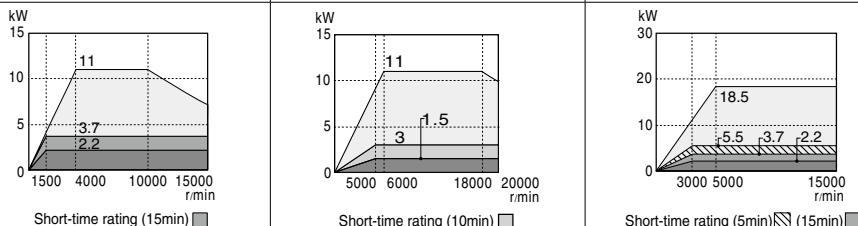
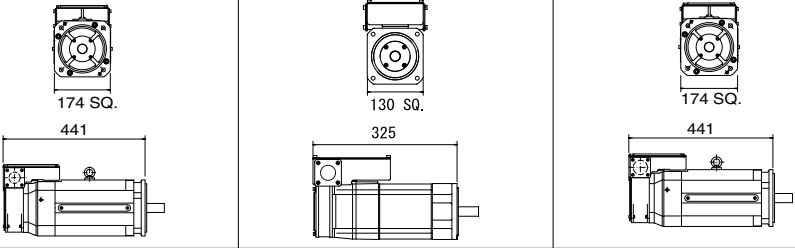
(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-V Series (Hollow shaft specifications)

Motor type		SJ-VS7.5-14FZT		SJ-VKS26-09FZT		SJ-VKS30-16FZT	
Compatible drive unit	1-axis type	MDS-D2-SP-	160	320		320	
	2-axis type	MDS-D2-SP2-	16080S(L)	-		-	
	Multi axis integrated type	MDS-DM2-	SPV2-	-		-	
	Regenerative resistor type	MDS-DJ-SP-	SPV3-	-		-	
Output							
Short-time rating							
Continuous rating							
Standard output during acceleration/deceleration [kW]			7.5	15		22	
Actual acceleration/deceleration output (Note 2) [kW]			9	18		26.4	
Base rotation speed [r/min]			1500	1500	4000	1500	3000
Max. rotation speed in constant output range [r/min]			10000	4000	15000	4500	13600
Maximum rotation speed [r/min]			15000	4000	15000	4500	15000
Continuous rated torque [N · m]			35	47.7	17.9	70	47.7
Motor inertia [kg · m ²]			0.0248	0.03		0.0575	
Degree of protection			IP44		IP44		IP44
Outline dimension drawing (Flange type)							
Flange fitting diameter [mm]			φ 180		φ 180		φ 230
Shaft diameter [mm]			φ 32		φ 38		φ 48
Mass [kg]			60		75		130

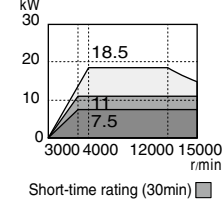
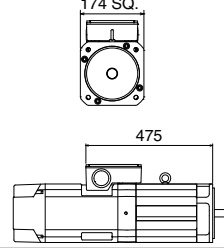
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(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-VL Series (Low-inertia specification)

Motor type		SJ-VL11-02FZT	SJ-VL11-05FZT-S01 *1	SJ-VL18.5-05FZT
Compatible drive unit	1-axis type	MDS-D2-SP-	160	240
	2-axis type	MDS-D2-SP2-	16080S (L)	—
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-	16080	—
	Regenerative resistor type	MDS-DJ-SP-	160 *3	—
Output				
Acceleration/Deceleration		□		
Short-time rating		▨ □ □		
Continuous rating		■		
Standard output during acceleration/deceleration		[kW]	11	18.5
Actual acceleration/deceleration output (Note 2)		[kW]	13.2	22.2
Base rotation speed		[r/min]	1500	3000
Max. rotation speed in constant output range		[r/min]	15000	15000
Maximum rotation speed		[r/min]	15000	15000
Continuous rated torque		[N · m]	14.0	7.0
Motor inertia		[kg · m ²]	0.003	0.00525
Degree of protection			IP44	IP44
Outline dimension drawing (Flange type)				
Flange fitting diameter		[mm]	φ 150	φ 150
Shaft diameter		[mm]	φ 28	φ 28
Mass		[kg]	42	40

*1 The acceleration/deceleration frequency is limited by the regenerative resistor.
*2 The maximum rotation speed is 15000r/min.
(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-VL Series (Hollow shaft specifications)

Motor type		SJ-VLS15-11FZT
Compatible drive unit	1-axis type	MDS-D2-SP-
	2-axis type	MDS-D2-SP2-
	Multi axis integrated type	MDS-DM2-SPV2-SPV3-
	Regenerative resistor type	MDS-DJ-SP-
Output		
Acceleration/Deceleration		□
Short-time rating		▨ □
Continuous rating		■
Standard output during acceleration/deceleration		[kW]
Actual acceleration/deceleration output (Note 2)		[kW]
Base rotation speed		[r/min]
Max. rotation speed in constant output range		[r/min]
Maximum rotation speed		[r/min]
Continuous rated torque		[N · m]
Motor inertia		[kg · m ²]
Degree of protection		IP44
Outline dimension drawing (Flange type)		
Flange fitting diameter		[mm]
Shaft diameter		[mm]
Mass		[kg]

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-B Series

Built-in spindle motor type (Note 1)		SJ-2B4A01T	SJ-2B4002T	SJ-2B4004T	SJ-2B4003T	SJ-2B4B01T
Compatible spindle drive unit	MDS-D2-SP-	80	20	40	40	160
Output						
Acceleration/Deceleration						
Short-time rating						
Continuous rating						
Standard output during acceleration/deceleration [kW]		2.2	0.75	1.5	2.2	7.5
Actual acceleration/deceleration output (Note 4) [kW]		2.64	0.9	1.8	2.64	9
Continuous base rotation speed [r/min]		5000	3000	3000	3000	5500
Maximum rotation speed [r/min]		10000	10000	15000	12000	10000
Continuous rated torque [N · m]		1.91	1.27	2.39	4.77	3.82
Rotor inertia [kg · m ²]		0.00020	0.00078	0.00078	0.00138	0.00163
Outline dimension drawing	[mm]					
Mass	Stator [kg]	1.9	2.2	2.2	3.9	3.0
	Rotor [kg]	0.5	0.9	0.9	1.7	1.5

Built-in spindle motor type (Note 1)			SJ-2B4112T	SJ-2B4111T	SJ-2B4105T	SJ-2B4102T	SJ-2B4201T
Compatible spindle drive unit		MDS-D2-SP-	40	80	80	80	40
Output	Short-time rating						
	Continuous rating						
Standard output during acceleration/deceleration [kW]			2.2	5.5	3.7	3.7	2.2
Actual acceleration/deceleration output (Note 4) [kW]			2.64	6.6	4.44	4.44	2.64
Continuous base rotation speed [r/min]			2500	6000	3000	1500	1500
Maximum rotation speed [r/min]			10000	10000	15000	15000	15000
Continuous rated torque [N · m]			5.73	5.89	7.00	7.00	9.55
Rotor inertia [kg · m ²]			0.00168	0.00168	0.003	0.00425	0.005
Outline dimension drawing		[mm]					
Mass	Stator	[kg]	4.1	4.1	7.4	10	7.1
	Rotor	[kg]	1.7	1.7	3.0	4.3	2.9

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(Note 2) These dimensions are the dimensions after machine machining.
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-B Series

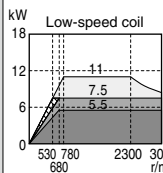
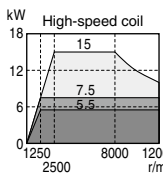
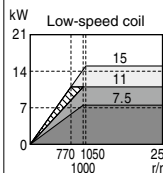
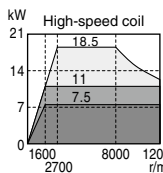
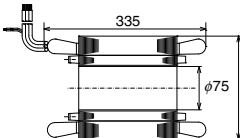
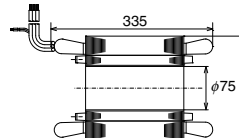
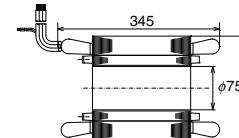
Built-in spindle motor type (Note 1)		SJ-2B4218T	SJ-2B4202T	SJ-2B4215T	SJ-2B4203T	SJ-2B4219T
Compatible spindle drive unit	MDS-D2-SP-	80	80	200	80	160
Output						
Acceleration/Deceleration						
Short-time rating						
Continuous rating						
Standard output during acceleration/deceleration [kW]		3.7	3.7	11	5.5	7.5
Actual acceleration/deceleration output (Note 4) [kW]		4.44	4.44	13.2	6.6	9
Continuous base rotation speed [r/min]		1500	1500	1500	1500	1500
Maximum rotation speed [r/min]		10000	15000	15000	15000	15000
Continuous rated torque [N · m]		9.55	14.0	23.6	23.6	23.6
Rotor inertia [kg · m ²]		0.005	0.0068	0.0085	0.0088	0.0088
Outline dimension drawing	[mm]					
Mass	Stator [kg]	7.1	10	13	13	13
	Rotor [kg]	2.9	4.1	5.1	5.2	5.2

Built-in spindle motor type (Note 1)		SJ-2B4310T	SJ-2B4310T	SJ-2B4327T	SJ-2B4340T
Compatible spindle drive unit	MDS-D2-SP-	80	160	160	200
Output					
Acceleration/Deceleration					
Short-time rating					
Continuous rating					
Standard output during acceleration/deceleration [kW]		5.5	7.5	11	11
Actual acceleration/deceleration output (Note 4) [kW]		6.6	9	13.2	13.2
Continuous base rotation speed [r/min]		1750	1100	1700	1500
Maximum rotation speed [r/min]		8000	12000	8000	8000
Continuous rated torque [N · m]		20.2	32.1	30.9	47.7
Rotor inertia [kg · m ²]		0.0128	0.0128	0.0175	0.0175
Outline dimension drawing	[mm]				
Mass					
Stator	[kg]	15	15	20	20
Rotor	[kg]	5.6	5.6	7.6	7.6

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(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

Drive system Spindle motor 200V Built-in spindle motor

SJ-B Series							
Built-in spindle motor type (Note 1)		SJ-2B4313TK		SJ-2B4323TK		SJ-2B4325TK	
Compatible spindle drive unit		MDS-D2-SP-160		200		240	
Output %ED rating Short-time rating Continuous rating							
		Short-time rating (10min) (30min)		%ED rating (25%ED) Short-time rating (15min)			
		Standard output during acceleration/deceleration [kW]		7.5		11	
		Actual acceleration/deceleration output (Note 4) [kW]		9		13.2	
Continuous base rotation speed [r/min]		1000		2000			
Maximum rotation speed [r/min]		2100		12000			
Continuous rated torque [N · m]		52.5		52.5			
Rotor inertia [kg · m ²]		0.0175		0.0175			
Outline dimension drawing [mm]							
Mass	Stator [kg]	20		20			
	Rotor [kg]	7.6		7.6			

Built-in spindle motor type (Note 1)		SJ-2B4303TK		SJ-2B4326TK		SJ-2B4311TK					
Compatible spindle drive unit		MDS-D2-SP-		200		240		320			
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating											
		%ED rating (40%ED)		%ED rating (40%ED)		%ED rating (40%ED)		%ED rating (15%ED)			
		Short-time rating (30min)		Short-time rating (30min)		Short-time rating (30min)		Short-time rating (15min)			
		Standard output during acceleration/deceleration [kW]		11		15		22		30	
		Actual acceleration/deceleration output (Note 4) [kW]		13.2		18		22.2		26.4	
Continuous base rotation speed [r/min]		680		1250		1000		1600			
Maximum rotation speed [r/min]		3000		12000		2500		12000			
Continuous rated torque [N · m]		77.2		42.0		71.6		44.8			
Rotor inertia [kg · m ²]		0.0225		0.0225		0.0225		0.0225			
Outline dimension drawing [mm]											
Mass	Stator [kg]	26		26		26					
	Rotor [kg]	9.8		9.8		9.8					

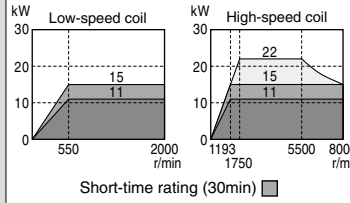
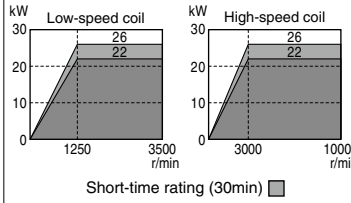
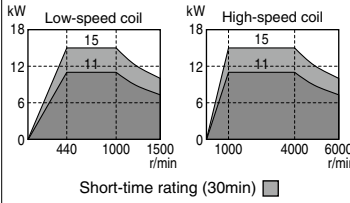
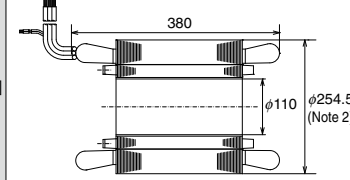
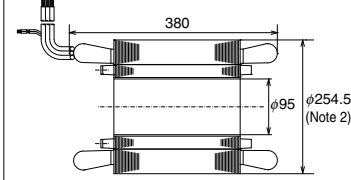
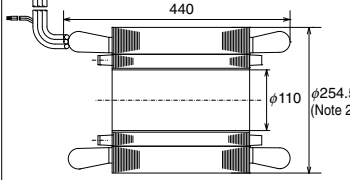
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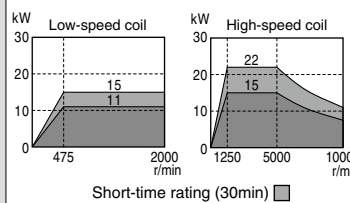
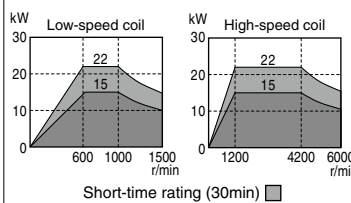
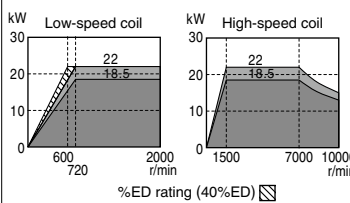
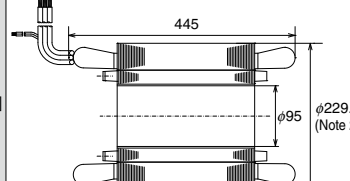
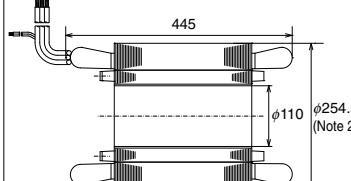
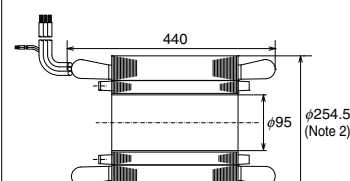
SJ-B Series											
Built-in spindle motor type (Note 1)		SJ-2B4304TK		SJ-2B4318TK		SJ-2B4412T					
Compatible spindle drive unit		MDS-D2-SP-320		320		160					
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating											
		%ED rating (25%ED)		%ED rating (25%ED)		%ED rating (25%ED)		%ED rating (25%ED)			
		Short-time rating (30min)		Short-time rating (15min)		Short-time rating (15min)		Short-time rating (30min)			
		Standard output during acceleration/deceleration [kW]		15		18.5		22		5.5	
		Actual acceleration/deceleration output (Note 4) [kW]		18		22.2		26.4		6.6	
Continuous base rotation speed [r/min]		450		1200		2500		1500			
Maximum rotation speed [r/min]		1500		3000		12000		10000			
Continuous rated torque [N · m]		117		119		70.7		23.6			
Rotor inertia [kg · m ²]		0.028		0.028				0.0193			
Outline dimension drawing [mm]											
Mass	Stator [kg]	33		33		15					
	Rotor [kg]	12		12		6.2					

Built-in spindle motor type (Note 1)		SJ-2B4501TK		SJ-2B6611TK		SJ-2B4502TK									
Compatible spindle drive unit		MDS-D2-SP-		200		200		320							
Output Acceleration/Deceleration Short-time rating Continuous rating															
		Short-time rating (30min)		Short-time rating (15min)		Short-time rating (30min)		Short-time rating (30min)							
		Standard output during acceleration/deceleration [kW]		15		11		15		22		22			
		Actual acceleration/deceleration output (Note 4) [kW]		18		18		13.2		18		26.4		26.4	
		Continuous base rotation speed [r/min]		700		1320		500		1030		525		1050	
Maximum rotation speed [r/min]		2250		10000		1500		6000		3000		10000			
Continuous rated torque [N · m]		102		54.3		143		69.5		136		68.2			
Rotor inertia [kg · m ²]		0.08		0.102		0.105									
Outline dimension drawing [mm]															
Mass	Stator [kg]	29		37		37									
	Rotor [kg]	18		19		24									

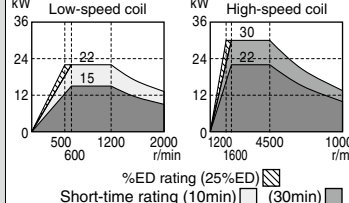
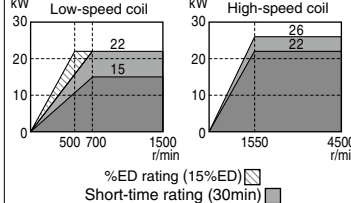
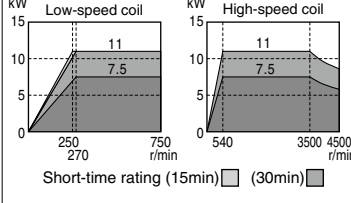
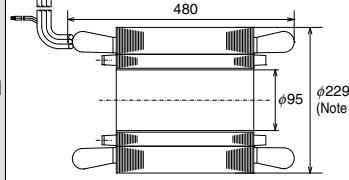
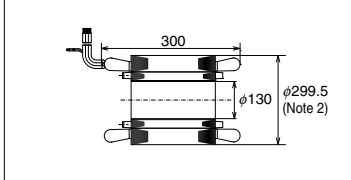
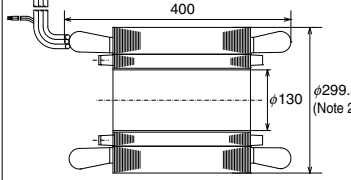
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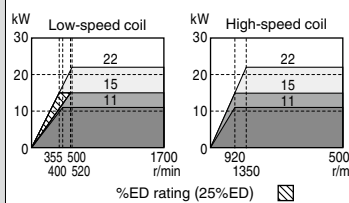
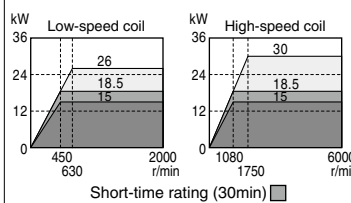
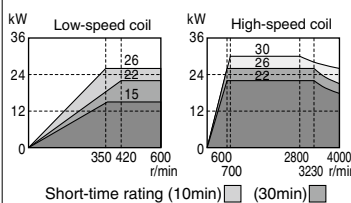
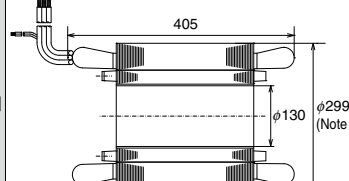
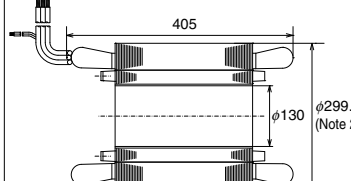
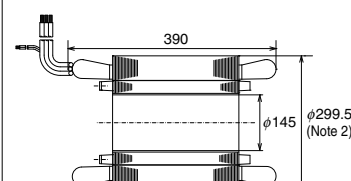
Drive system Spindle motor 200V Built-in spindle motor

SJ-B Series										
Built-in spindle motor type (Note 1)		SJ-2B6602TK			SJ-2B4601TK			SJ-2B6605TK		
Compatible spindle drive unit		MDS-D2-SP-320			320			240		
Output Acceleration/Deceleration Short-time rating Continuous rating										
		Standard output during acceleration/deceleration [kW]			26			15		
		Actual acceleration/deceleration output (Note 4) [kW]			31.2			18		
		Continuous base rotation speed [r/min]			1250			440		
Maximum rotation speed [r/min]		2000			3500			1500		
Continuous rated torque [N · m]		191			168			239		
Rotor inertia [kg · m ²]		0.133			0.105			0.173		
Outline dimension drawing [mm]										
Mass	Stator [kg]	49			55			63		
	Rotor [kg]	25			24			33		

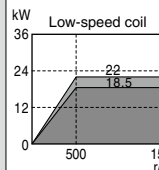
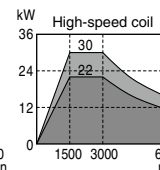
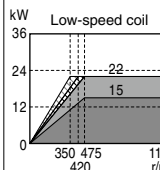
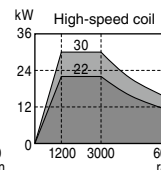
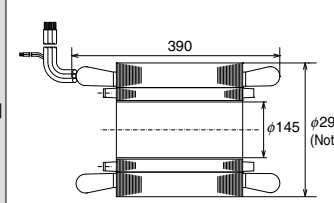
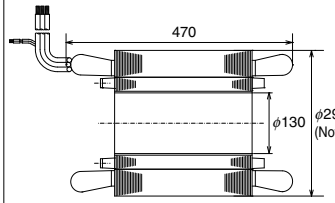
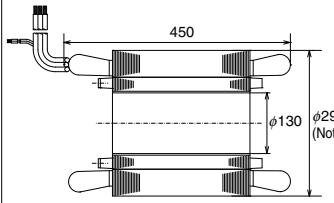
Built-in spindle motor type (Note 1)		SJ-2B4503TK		SJ-2B6603TK		SJ-2B4602TK	
Compatible spindle drive unit		MDS-D2-SP-		320		320	
Output %ED rating Short-time rating Continuous rating							
		Standard output during acceleration/deceleration [kW]		Standard output during acceleration/deceleration [kW]		Standard output during acceleration/deceleration [kW]	
		Actual acceleration/deceleration output (Note 4) [kW]		Actual acceleration/deceleration output (Note 4) [kW]		Actual acceleration/deceleration output (Note 4) [kW]	
		Continuous base rotation speed [r/min]		Continuous base rotation speed [r/min]		Continuous base rotation speed [r/min]	
Maximum rotation speed [r/min]		Maximum rotation speed [r/min]		Maximum rotation speed [r/min]			
Continuous rated torque [N · m]		Continuous rated torque [N · m]		Continuous rated torque [N · m]			
Rotor inertia [kg · m ²]		Rotor inertia [kg · m ²]		Rotor inertia [kg · m ²]			
Outline dimension drawing	[mm]						
Mass	Stator	[kg]		[kg]		[kg]	
	Rotor	[kg]		[kg]		[kg]	

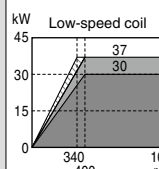
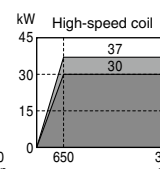
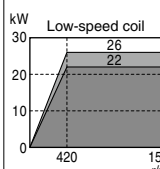
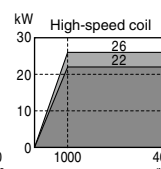
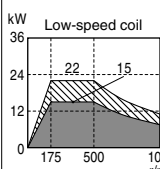
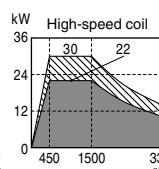
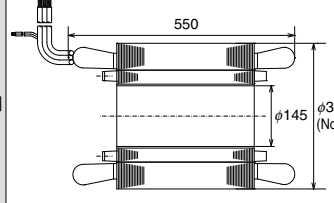
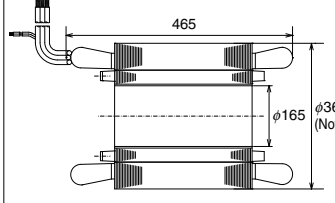
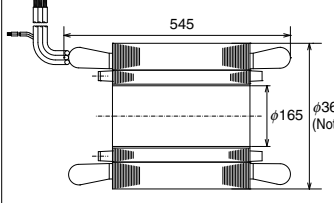
(Note 1) Please contact your Mitsubishi Electric dealer for the special products not listed above.
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(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-B Series										
Built-in spindle motor type (Note 1)		SJ-2B4511TK			SJ-2B6720TK			SJ-2B6705TK		
Compatible spindle drive unit		MDS-D2-SP-320			320			200		
Output %ED rating Short-time rating Continuous rating										
		Standard output during acceleration/deceleration [kW]			Standard output during acceleration/deceleration [kW]			Standard output during acceleration/deceleration [kW]		
		Actual acceleration/deceleration output (Note 4) [kW]			Actual acceleration/deceleration output (Note 4) [kW]			Actual acceleration/deceleration output (Note 4) [kW]		
		Continuous base rotation speed [r/min]			Continuous base rotation speed [r/min]			Continuous base rotation speed [r/min]		
Maximum rotation speed [r/min]		2000			1500			750		
Continuous rated torque [N · m]		239			205			265		
Rotor inertia [kg · m ²]		0.15			0.20			0.288		
Outline dimension drawing [mm]										
Mass	Stator [kg]	54			45			65		
	Rotor [kg]	34			26			38		

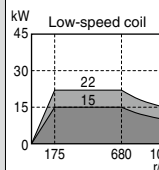
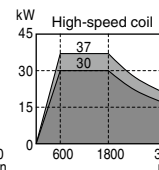
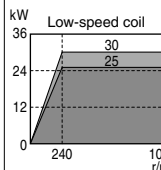
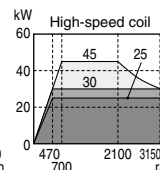
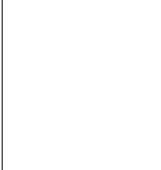
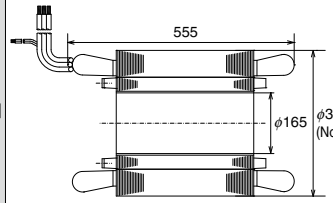
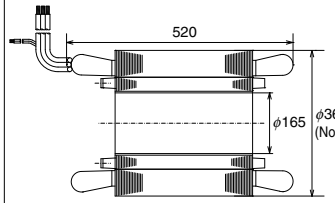
Built-in spindle motor type (Note 1)		SJ-2B6711TK		SJ-2B6706TK		SJ-2B6716TK			
Compatible spindle drive unit		MDS-D2-SP-		320		400			
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating									
		%ED rating (25%ED) 		Short-time rating (30min) 		Short-time rating (10min)  (30min) 			
		Standard output during acceleration/deceleration [kW]		22		26		30	
		Actual acceleration/deceleration output (Note 4) [kW]		26.4		31.2		36	
		Continuous base rotation speed [r/min]		400		450		350	
Maximum rotation speed [r/min]		1700		2000		600			
Continuous rated torque [N · m]		263		318		409			
Rotor inertia [kg · m ²]		0.280		0.288		0.283			
Outline dimension drawing [mm]									
Mass	Stator [kg]	65		65		70			
	Rotor [kg]	37		38		35			

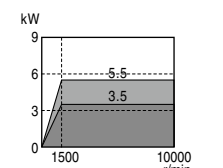
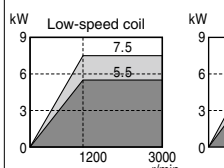
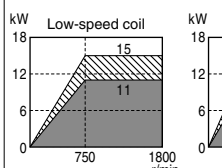
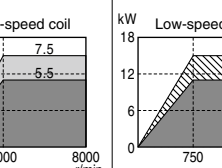
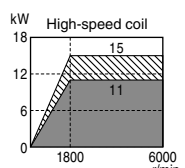
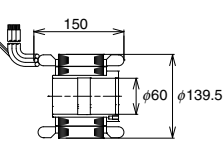
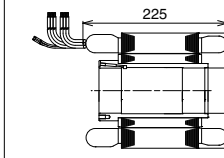
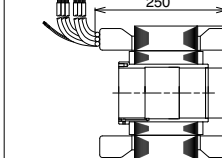
(Note 1) Please contact your Mitsubishi Electric dealer for the special products not listed above.
(Note 2) These dimensions are the dimensions after machine machining.
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(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-B Series									
Built-in spindle motor type (Note 1)		SJ-2B6721TK		SJ-2B6704TK		SJ-2B6709TK			
Compatible spindle drive unit		MDS-D2-SP-		320		400			
Output Acceleration/Deceleration %ED rating Short-time rating Continuous rating									
		Short-time rating (30min)		%ED rating (25%ED) (40%ED)		Short-time rating (30min)		%ED rating (25%ED)	
Standard output during acceleration/deceleration [kW]		22		30		22		30	
Actual acceleration/deceleration output (Note 4) [kW]		26.4		36		26.4		36	
Continuous base rotation speed [r/min]		500		475		350		1000	
Maximum rotation speed [r/min]		1500		1150		1500		6000	
Continuous rated torque [N · m]		353		302		409		210	
Rotor inertia [kg · m ²]		0.283		0.37		0.37			
Outline dimension drawing [mm]									
Mass		Stator [kg]		70		83		83	
		Rotor [kg]		35		49		49	

Built-in spindle motor type (Note 1)		SJ-2B6802TK		SJ-2B6905TK		SJ-2B6908TK					
Compatible spindle drive unit		MDS-D2-SP-		320		320					
Output %ED rating Short-time rating Continuous rating											
											
		%ED rating (25%ED) 		Short-time rating (30min) 		Short-time rating (30min) 		%ED rating (50%ED) 			
		Standard output during acceleration/deceleration [kW]		37		26		22		30	
		Actual acceleration/deceleration output (Note 4) [kW]		44.4		31.2		26.4		36	
Continuous base rotation speed [r/min]		400		420		175		450			
Maximum rotation speed [r/min]		1000		1500		1000		3300			
Continuous rated torque [N · m]		716		500		819		467			
Rotor inertia [kg · m ²]		0.675		0.853		1.105					
Outline dimension drawing [mm]											
Mass	Stator [kg]	116		110		143					
	Rotor [kg]	72		70		91					

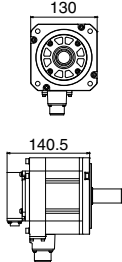
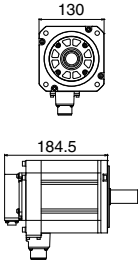
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(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

SJ-B Series					
Built-in spindle motor type (Note 1)		SJ-2B6906TK		SJ-2B6914TK	
Compatible spindle drive unit		MDS-D2-SP-400		640	
Output Acceleration/Deceleration Short-time rating Continuous rating					
					
					
Standard output during acceleration/deceleration [kW]		22		30	
Actual acceleration/deceleration output (Note 4) [kW]		26.4		36	
Continuous base rotation speed [r/min]		175		240	
Maximum rotation speed [r/min]		1000		1000	
Continuous rated torque [N · m]		819		995	
Rotor inertia [kg · m²]		1.105		1.105	
Outline dimension drawing [mm]					
Mass	Stator [kg]	143		143	
	Rotor [kg]	91		91	

SJ-PMB Series									
Built-in spindle motor type (Note 1)		SJ-PMB02215T-02		SJ-PMB04412T-B0		SJ-PMB14007T-01			
Compatible spindle drive unit		MDS-D2-SP-		240		200			
		320							
Output %ED rating Continuous rating									
									
		%ED rating (50%ED) 		%ED rating (25%ED) 		%ED rating (15%ED) 			
		Standard output during acceleration/deceleration [kW]		5.5		7.5		15	
		Actual acceleration/deceleration output (Note 4) [kW]		6.6		9		18	
Continuous base rotation speed [r/min]		1500		1200		750			
Maximum rotation speed [r/min]		10000		3000		8000			
Continuous rated torque [N · m]		22.3		43.8		17.5			
Rotor inertia [kg · m ²]		0.006		0.0162		0.0633			
Outline dimension drawing									
Mass		Stator [kg]		4.4		14.0			
		Rotor [kg]		3.7		8.0			

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(Note 2) These dimensions are the dimensions after machine machining.
(Note 3) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 4) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".

HF-KP Series (Small capacity)				
Motor type		HF-KP46J□W09	HF-KP56J□W09	HF-KP96J□W09
Compatible drive unit	1-axis type	MDS-D2-SP-20	20	20
	2-axis type (Note 2)	MDS-D2-SP2-2020	2020	2020
	Regenerative resistor type	MDS-DJ-SP-2020	2020	2020
Output		[N · m]		
Rated torque		6		
Max. torque		8		
Rated output		[kW]		
Maximum rotation speed		[r/min]		
Motor inertia		[kg · cm ²]		
Degree of protection(The shaft-through portion is excluded.)		IP67		
Outline dimension drawing		[mm]		
Flange fitting diameter		[mm]		
Shaft diameter		[mm]		
Mass		[kg]		

HF-SP Series (Medium capacity)				
Motor type		HF-SP226J□W09	HF-SP406J□W09	
Compatible drive unit	1-axis type	MDS-D2-SP-80	160	
	2-axis type (Note 2)	MDS-D2-SP2-8040 (L) 8080 16080S (M)	16080S (L)	
	Regenerative resistor type	MDS-DJ-SP-	-	
Output		[N · m]		
Rated torque		3.50	6.37	
Max. torque		22.0	50.0	
Rated output		[kW]	2.2	4.0
Maximum rotation speed		[r/min]	6000	6000
Motor inertia		[kg · cm ²]	11.9	23.7
Degree of protection (The shaft-through portion is excluded.)		IP67	IP67	
Outline dimension drawing		[mm]		
				
Flange fitting diameter		[mm]	φ 110	φ 110
Shaft diameter		[mm]	φ 24	φ 24
Mass		[kg]	6.8	10

(Note 1) This motor produces heat of about 100°C during high-speed rotation even when no load is connected. Mount the motor on a machine-side flange which has an appropriate size for sufficient heat dissipation.

(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

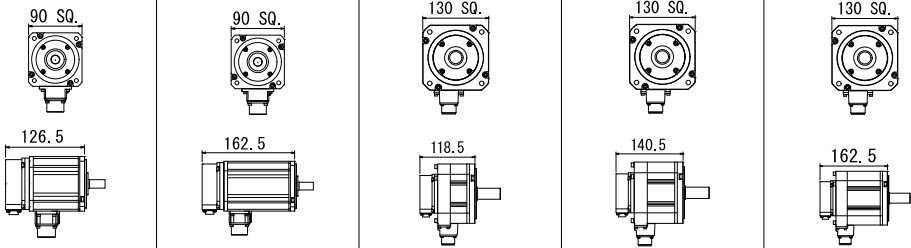
HF Series	
Tool spindle motor type	
Compatible spindle drive unit	
1-axis type	MDS-D2-SP-20
	MDS-D2-SP2-2020
	MDS-DJ-SP-2020
Output	
Rated torque	
Max. torque	
Rated output	
Rated rotation speed	
Maximum rotation speed	
Motor inertia	
Degree of protection	
Outline dimension drawing (flange type)	
Flange fitting diameter	
Shaft diameter	

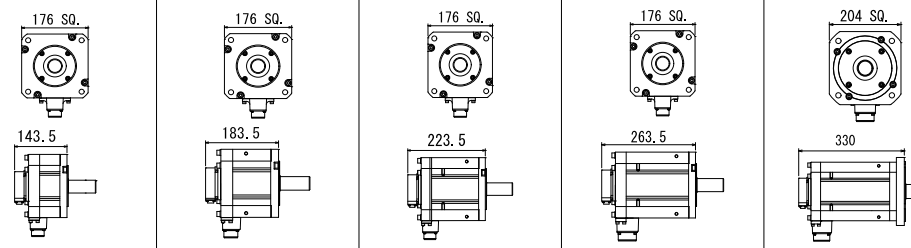
HF Series	
Tool spindle motor type	
Compatible spindle drive unit	
1-axis type	MDS-D2-SP-20
	MDS-D2-SP2-2020
	MDS-DJ-SP-2020
Output	
Rated torque	
Max. torque	
Rated output	
Rated rotation speed	
Maximum rotation speed	
Motor inertia	
Degree of protection	
Outline dimension drawing (flange type)	
Flange fitting diameter	
Shaft diameter	

(Note 1) The above characteristics values are representative values. The maximum current and maximum torque are the values when combined with the drive unit.

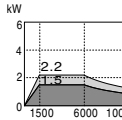
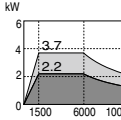
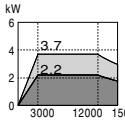
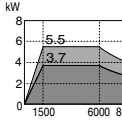
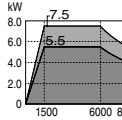
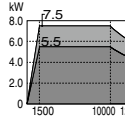
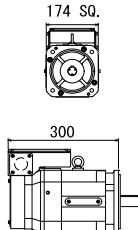
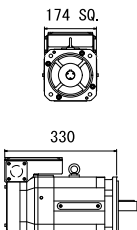
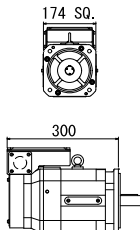
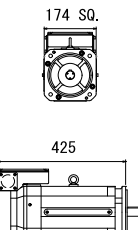
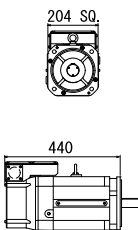
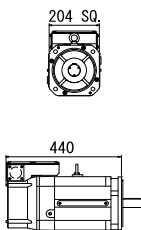
(Note 2) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

MEMO

HF-H Series						
Servo motor type		HF-H75	HF-H105	HF-H54	HF-H104	HF-H154
Compatible servo drive unit	1-axis type MDS-DH2-V1-	10	10	20	20	40
	2-axis type MDS-DH2-V2-	1010 2010 (M)	1010 2010 (M)	2010 (L) 2020 4020 (M)	2010 (L) 2020 4020 (M)	4020 (L) 4040 8040 (M)
Output Stall torque Maximum torque		[N · m]				
		50				
		40				
		30				
Rated output		[kW]				
Maximum rotation speed		[r/min]				
Motor inertia		[kg · cm ²]				
Motor inertia with brake		[kg · cm ²]				
Degree of protection		IP67 (The shaft-through portion is excluded.)				
Outline dimension drawing (flange type)		[mm]				
		(Note) The total length will be 3.5mm longer when using an A51 or A74N detector.				
						
		Flange fitting diameter				
Shaft diameter		[mm]				
Mass (with a brake)		[kg]				
Absolute position detector compatible drive unit		16,000,000 [p/rev] (A74/A74N)				
		1,000,000 [p/rev] (A51)				
		260,000 [p/rev] (A48)				

Servo motor type		HF-H204	HF-H354	HF-H453	HF-H703	HF-H903
Compatible servo drive unit	1-axis type MDS-DH2-V1-	40	80	80	80W	160
	2-axis type MDS-DH2-V2-	4020 (L) 4040 8040 (M)	8040 (L) 8080 8080W	8040 (L) 8080 8080W	8080W	—
Output Stall torque Maximum torque		[N · m]				
		210				
		180				
		150				
Rated output		[kW]				
Maximum rotation speed		[r/min]				
Motor inertia		[kg · cm ²]				
Motor inertia with brake		[kg · cm ²]				
Degree of protection		IP67 (The shaft-through portion is excluded.)				
Outline dimension drawing (flange type)		[mm]				
		(Note) The total length will be 3.5mm longer when using an A51 or A74N detector.				
						
		Flange fitting diameter				
Shaft diameter		[mm]				
Mass (with a brake)		[kg]				
Absolute position detector compatible drive unit		16,000,000 [p/rev] (A74/A74N)				
		1,000,000 [p/rev] (A51)				
		260,000 [p/rev] (A48)				

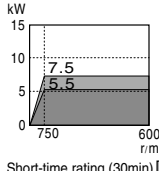
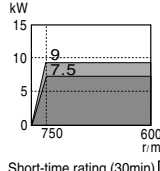
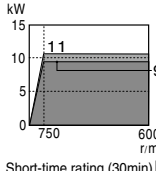
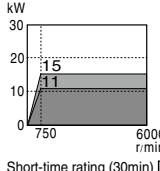
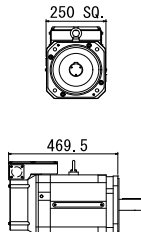
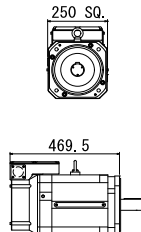
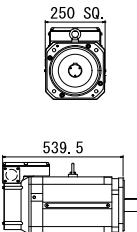
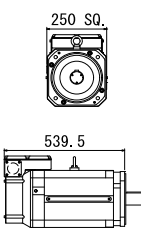
(Note) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.

SJ-4-V Series (Normal)							
Spindle motor type		SJ-4-V2.2-03T	SJ-4-V3.7-03T	SJ-4-V3.7-05ZT	SJ-4-V5.5-07T	SJ-4-V7.5-12T	SJ-4-V7.5-13ZT
Compatible spindle drive unit	MDS-DH2-SP-	20	20	20	40	40	80
Output							
Short-time rating							
Continuous rating							
Standard output during acceleration/deceleration [kW]		2.2	3.7	3.7	5.5	7.5	7.5
Actual acceleration/deceleration output (Note 2) [kW]		2.64	4.44	4.44	6.6	9	9
Base rotation speed	[r/min]	1500		3000	1500		
Maximum rotation speed	[r/min]	10000		15000	8000		
Continuous rated torque	[N · m]	9.5	14.0	7.0	23.5	35.0	35.0
Inertia	[kg · m ²]	0.007	0.009	0.007	0.015	0.025	0.025
Degree of protection		IP44	IP44	IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)	[mm]						
Flange fitting diameter	[mm]	φ 150	φ 150	φ 150	φ 150	φ 180	φ 180
Shaft diameter	[mm]	φ 28	φ 28	φ 28	φ 28	φ 32	φ 32
Mass	[kg]	25	30	25	49	60	60

Spindle motor type	SJ-4-V11-18T	SJ-4-V11-23ZT	SJ-4-V15-18T	SJ-4-V18.5-14T	SJ-4-V22-15T	SJ-4-V22-18ZT
Compatible spindle drive unit	MDS-DH2-SP-	80	100	100	160	160
Output						
Short-time rating						
Continuous rating						
Standard output during acceleration/deceleration [kW]	11	11	15	18.5	22	15
Actual acceleration/deceleration output (Note 2) [kW]	13.2	13.2	18	22.2	26.4	18
Base rotation speed [r/min]	1500	1500	1500	1500	1500	8000
Maximum rotation speed [r/min]	6000	8000	6000	6000	6000	8000
Continuous rated torque [N · m]	47.7	47.7	70.0	95.5	118	70.0
Inertia [kg · m ²]	0.03	0.03	0.06	0.06	0.08	0.06
Degree of protection	IP44	IP44	IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)						
Flange fitting diameter [mm]	φ 180	φ 180	φ 230	φ 230	φ 230	φ 230
Shaft diameter [mm]	φ 48	φ 48	φ 48	φ 48	φ 55	φ 48
Mass [kg]	70	70	110	110	135	125

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 3) The rated output is guaranteed at the rated input voltage (380 to 440VAC 50Hz / 380 to 480VAC 60Hz) to the power supply unit.
If the input voltage fluctuates and drops below 380VAC, the rated output may not be attained.

SJ-4-V Series (Normal)						
Spindle motor type		SJ-4-V26-08T	SJ-4-V30-15ZT	SJ-4-V37-04T	SJ-4-V45-02T	SJ-4-V55-03T
Compatible spindle drive unit	MDS-DH2-SP-	160	160	200	320	320
Output	Continuous rating Short-time rating					
		Short-time rating (30min)				
		Short-time rating (30min)				
Standard output during acceleration/deceleration [kW]		26	22	37	45	55
Actual acceleration/deceleration output (Note 2) [kW]		31.2	26.4	44.4	54	66
Base rotation speed [r/min]		1500		1150	1500	1150
Maximum rotation speed [r/min]		6000	8000	3450		
Continuous rated torque [N · m]		140	118	249	236	374
Inertia [kg · m ²]		0.10	0.08	0.31	0.55	0.85
Degree of protection		IP44	IP44	IP44	IP44	IP44
Outline dimension drawing (flange type)	[mm]					
Flange fitting diameter [mm]		φ 230	φ 230	φ 300	φ 300	φ 450
Shaft diameter [mm]		φ 55	φ 55	φ 60	φ 60	φ 75
Mass [kg]		155	155	280	390	450

SJ-4-V Series (Wide range constant output)					
Spindle motor type		SJ-4-V11-21T	SJ-4-V15-20T	SJ-4-V18.5-17T	SJ-4-V22-16T
Compatible spindle drive unit	MDS-DH2-SP-	80	100	160	160
Output					
Short-time rating					
Continuous rating					
Standard output during acceleration/deceleration [kW]		7.5	9	11	15
Actual acceleration/deceleration output (Note 2) [kW]		9	10.8	13.2	18
Base rotation speed [r/min]		750			
Maximum rotation speed [r/min]		6000			
Continuous rated torque [N · m]		70.0	95.5	115	140
Inertia [kg · m ²]		0.06	0.06	0.08	0.08
Degree of protection		IP44			
Outline dimension drawing (flange type)					
Flange fitting diameter [mm]		φ 230			
Shaft diameter [mm]		φ 48			
Mass [kg]		110		135	

(Note 1) Only the combination designated in this manual can be used for the motor and drive unit. Always use the designated combination.
(Note 2) Actual acceleration/deceleration output is 1.2-fold of "Standard output during acceleration/deceleration" or "Short time rated output".
(Note 3) The rated output is guaranteed at the rated input voltage (380 to 440VAC 50Hz / 380 to 480VAC 60Hz) to the power supply unit.
If the input voltage fluctuates and drops below 380VAC, the rated output may not be attained.

MDS-D2 Series								
1-axis servo drive unit								
Drive unit type		MDS-D2-V1-20	MDS-D2-V1-40	MDS-D2-V1-80	MDS-D2-V1-160	MDS-D2-V1-160W	MDS-D2-V1-320	MDS-D2-V1-320W
Drive unit category		1-axis servo						
Nominal maximum current (peak) [A]		20	40	80	160	160	320	320
Power input	Rated voltage [V]	270 to 311DC						
	Rated current [A]	7	7	14	30	35	45	55
Control power input	Voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz) Tolerable fluctuation: between +10% and -15%						
	Current [A]	MAX. 0.2						
	Frequency [Hz]	50/60 Tolerable fluctuation: between +3% and -3%						
Control method		Sine wave PWM control method						
Dynamic brakes		Built-in						External
Machine end detector		Compatible						
Cooling method		Forced wind cooling						
Mass [kg]		3.8	3.8	3.8	3.8	4.5	5.8	7.5
Unit outline dimension drawing		A1	A1	A1	A1	B1	C1	D1

2-axis servo drive unit

Drive unit type		MDS-D2-V2-2020	MDS-D2-V2-4020	MDS-D2-V2-4040	MDS-D2-V2-8040	MDS-D2-V2-8080	MDS-D2-V2-16080	MDS-D2-V2-160160	MDS-D2-V2-160160W
Drive unit category		2-axis servo							
Nominal maximum current (peak)		[A]	20/20	40/20	40/40	80/40	80/80	160/80	160/160
Power input	Rated voltage	[V]	270 to 311DC						
	Rated current	[A]	14 (7/7)	14 (7/7)	14 (7/7)	21 (14/7)	28 (14/14)	44 (30/14)	60 (30/30)
Control power input	Voltage	[V]	200AC (50Hz) / 200 to 230AC (60Hz) Tolerable fluctuation: between +10% and -15%						
	Current	[A]	MAX. 0.2						
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +3% and -3%						
Control method		Sine wave PWM control method							
Dynamic brakes		Built-in							
Machine end detector		Compatible							
Cooling method		Forced wind cooling							
Mass	[kg]	4.5	4.5	4.5	4.5	4.5	5.2	5.2	6.3
Unit outline dimension drawing		A1	A1	A1	A1	A1	B1	B1	C1

3-axis servo drive unit

Drive unit type		MDS-D2-V3-202020		MDS-D2-V3-404040	
Drive unit category		3-axis servo			
Nominal maximum current (peak)		[A]	20/20/20	40/40/40	
Power input	Rated voltage	[V]	270 to 311DC		
	Rated current	[A]	21 (7/7/7)	21 (7/7/7)	
Control power input	Voltage	[V]	200AC (50Hz) / 200 to 230AC (60Hz)		
	Current	[A]	Tolerable fluctuation: between +10% and -15%		
	Frequency	[Hz]	MAX. 0.2		
Control method			50/60	Tolerable fluctuation: between +3% and -3%	
Dynamic brakes			Sine wave PWM control method		
Machine end detector			Built-in		
Cooling method			Compatible		
Mass		[kg]	Forced wind cooling		
Unit outline dimension drawing			3.8	3.8	
			A0	A0	

MDS-D2 Series											
1-axis spindle drive unit											
Drive unit type		MDS-D2-SP-20	MDS-D2-SP-40	MDS-D2-SP-80	MDS-D2-SP-160	MDS-D2-SP-200	MDS-D2-SP-240	MDS-D2-SP-320	MDS-D2-SP-400	MDS-D2-SP-640	
Drive unit category		1-axis spindle									
Nominal maximum current (peak)		[A]	20	40	80	160	200	240	320	400	640
Power input	Rated voltage	[V]	270 to 311DC								
	Rated current	[A]	7	13	20	41	76	95	140	150	210
Control power input	Voltage	[V]	200AC (50Hz) / 200 to 230AC (60Hz) Tolerable fluctuation: between +10% and -15%								
	Current	[A]	MAX. 0.2								
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +3% and -3%								
Control method		Sine wave PWM control method									
Cooling method		Forced wind cooling									
Mass	[kg]	3.8	3.8	3.8	4.5	5.8	6.5	7.5	16.5	16.5	
Unit outline dimension drawing		A1	A1	A1	B1	C1	D1	D2	E1	F1	

2-axis spindle drive unit

Drive unit type		MDS-D2-SP2-2020	MDS-D2-SP2-4020	MDS-D2-SP2-4040S	MDS-D2-SP2-8040	MDS-D2-SP2-8080	MDS-D2-SP2-16080S
Drive unit category		2-axis spindle					
Nominal maximum current (peak) [A]		20/20	40/20	40/40	80/40	80/80	160/80
Power input	Rated voltage [V]	270 to 311DC					
	Rated current [A]	14 (7/7)	20 (13/7)	26 (13/13)	33 (20/13)	40 (20/20)	61 (41/20)
Control power input	Voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz) Tolerable fluctuation: between +10% and -15%					
	Current [A]	MAX. 0.2					
	Frequency [Hz]	50/60 Tolerable fluctuation: between +3% and -3%					
Control method		Sine wave PWM control method					
Cooling method		Forced wind cooling					
Mass [kg]		4.5	4.5	4.5	5.2	6.5	5.2
Unit outline dimension drawing		A1	A1	A1	B1	C1	B1

Power supply unit

Power supply unit type		MDS-D2-CV-37	MDS-D2-CV-75	MDS-D2-CV-110	MDS-D2-CV-185	MDS-D2-CV-300	MDS-D2-CV-370	MDS-D2-CV-450	MDS-D2-CV-550	
Rated output		under development		11.0	18.5	30.0	37.0	45.0	55.0	
Power input	Rated voltage [V]			200AC (50Hz) / 200 to 230AC (60Hz)					Tolerable fluctuation: between +10% and -15%	
	Rated current [A]			35	65	107	121	148	200	
Control power input	Voltage [V]			200AC (50Hz) / 200 to 230AC (60Hz)					Tolerable fluctuation: between +10% and -15%	
	Current [A]			MAX. 0.2						
	Frequency [Hz]			50/60		Tolerable fluctuation: between +3% and -3%				
Regeneration method				Power regeneration method						
Cooling method		Forced wind cooling								
Mass				6.0	6.0	10.0	10.0	10.0	25.5	
Unit outline dimension drawing				B1	B1	D1	D1	D2	F1	

AC reactor

AC reactor model	D-AL-7.5K	D-AL-11K	D-AL-18.5K	D-AL-30K	D-AL-37K	D-AL-45K	D-AL-55K
Compatible power supply unit type	MDS-D2-CV-	37, 75	110	185	300	370	450
Rated capacity	[kW]	7.5	11	18.5	30	37	45
Rated voltage	[V]	200AC (50Hz) / 200 to 230AC (60Hz)					
Rated current	[A]	27	40	66	110	133	162
Frequency	[Hz]	50/60 Tolerable fluctuation: between +3% and -3%					
Mass	[kg]	4.2	3.7	5.3	6.1	8.6	9.7
Unit outline dimension drawing	R1						R4

MDS-DH2 Series

[Unit : mm]

1-axis servo drive unit

Drive unit type		MDS-DH2-V1-10	MDS-DH2-V1-20	MDS-DH2-V1-40	MDS-DH2-V1-80	MDS-DH2-V1-80W	MDS-DH2-V1-160	MDS-DH2-V1-160W	MDS-DH2-V1-200
Drive unit category		1-axis servo							
Nominal maximum current (peak) [A]		10	20	40	80	80	160	160	200
Power input	Rated voltage [V]	513 to 648DC							
	Rated current [A]	0.9	1.6	2.9	6.0	8.0	11.9	16.7	39.0
Control power input	Voltage [V]	380 to 440AC (50Hz) / 380 to 480AC (60Hz) Tolerable fluctuation: between +10% and -15%							
	Current [A]	MAX. 0.1							
	Frequency [Hz]	50/60 Tolerable fluctuation: between +3% and -3%							
Control method		Sine wave PWM control method							
Dynamic brakes		Built-in						External (MDS-D-DBU)	
Degree of protection		IP20 ([over all] / IP00 [Terminal block TE1])							
Cooling method		Forced wind cooling							
Mass [kg]		3.8	3.8	3.8	3.8	4.5	5.8	7.5	16.5
Unit outline dimension drawing		A1	A1	A1	A1	B1	C1	D1	E1

2-axis servo drive unit

Drive unit type		MDS-DH2-V2-1010	MDS-DH2-V2-2010	MDS-DH2-V2-2020	MDS-DH2-V2-4020	MDS-DH2-V2-4040	MDS-DH2-V2-8040	MDS-DH2-V2-8080	MDS-DH2-V2-8080W
Drive unit category		2-axis servo							
Nominal maximum current (peak) [A]		10/10	20/10	20/20	40/20	40/40	80/40	80/80	80/80
Power input	Rated voltage [V]	513 to 648DC							
	Rated current [A]	1.8 (0.9/0.9)	2.5 (1.6/0.9)	3.2 (1.6 /1.6)	4.5 (2.9/1.6)	5.8 (2.9/2.9)	8.9 (6.0/2.9)	12 (6.0/6.0)	16 (8.0/8.0)
Control power input	Voltage [V]	380 to 440AC (50Hz) / 380 to 480AC (60Hz)				Tolerable fluctuation: between +10% and -15%			
	Current [A]	MAX. 0.1							
	Frequency [Hz]	50/60				Tolerable fluctuation: between +3% and -3%			
Control method		Sine wave PWM control method · Current control method							
Dynamic brakes		Built-in							
Degree of protection		IP20							
Cooling method		Forced wind cooling							
Mass [kg]		3.8	3.8	3.8	3.8	3.8	5.2	5.2	6.3
Unit outline dimension drawing		A1	A1	A1	A1	A1	B1	B1	C1

1-axis spindle drive unit

Drive unit type		MDS-DH2-SP-20	MDS-DH2-SP-40	MDS-DH2-SP-80	MDS-DH2-SP-100	MDS-DH2-SP-160	MDS-DH2-SP-200	MDS-DH2-SP-320	MDS-DH2-SP-480
Drive unit category		1-axis spindle							
Nominal maximum current (peak) [A]		20	40	80	100	160	200	320	480
Power input	Rated voltage [V]	513 to 648DC							
	Rated current [A]	10	15	21	38	72	82	119	150
Control power input	Voltage [V]	380 to 440AC (50Hz) / 380 to 480AC (60Hz) Tolerable fluctuation: between +10% and -15%							
	Current [A]	MAX. 0.1							
	Frequency [Hz]	50/60 Tolerable fluctuation: between +3% and -3%							
Control method		Sine wave PWM control method							
Degree of protection		IP20 ([over all] / IP00 [Terminal block TE1])							
Cooling method		Forced wind cooling							
Mass [kg]		3.8	4.5	4.5	5.8	7.5	16.5	16.5	22.5
Unit outline dimension drawing		A1	A1	B1	C1	D1	E1	E1	F1

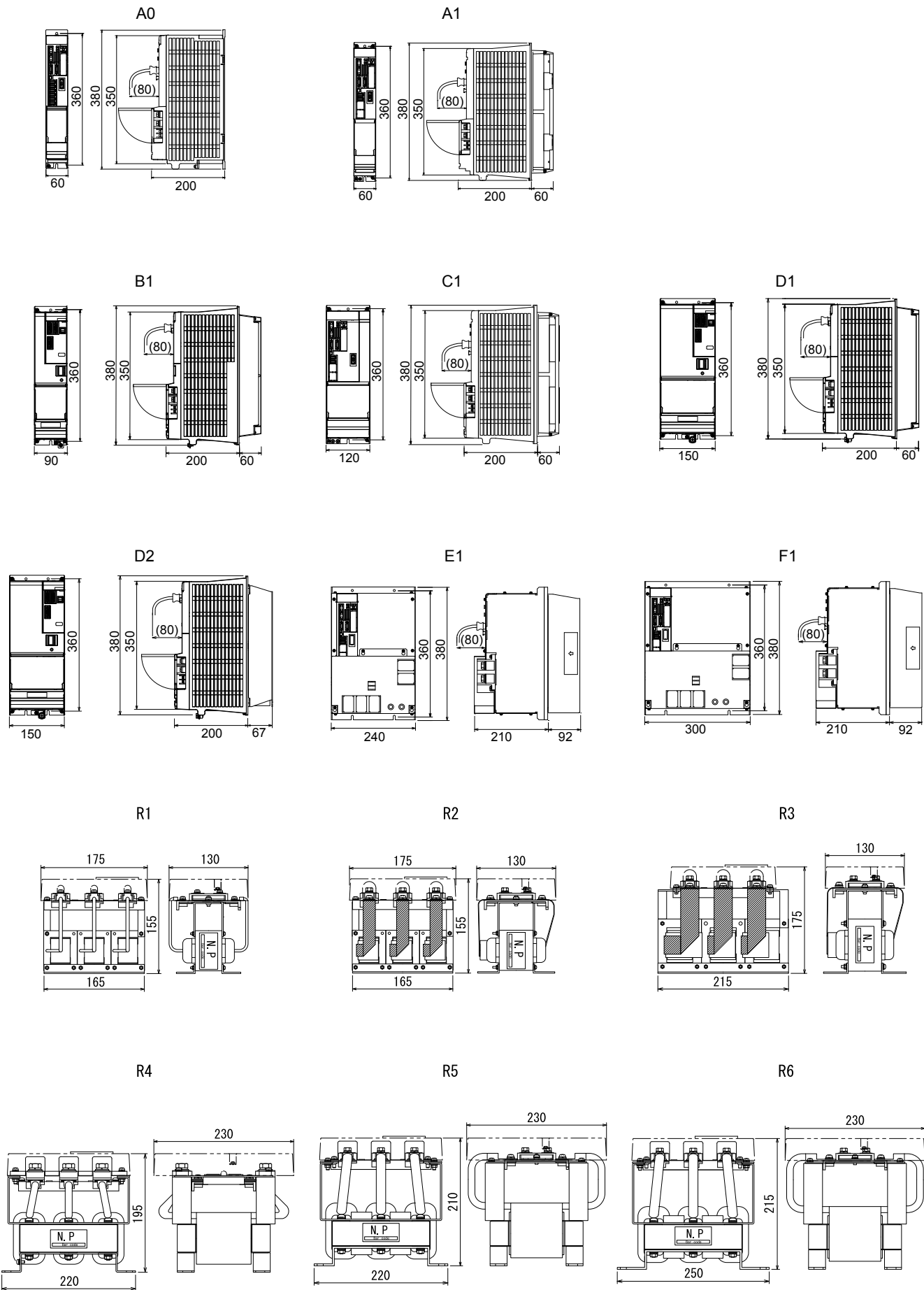
(Note) Rated output capacity and rated speed of the motor used in combination with the drive unit are as indicated when using the power supply voltage and frequency listed.
The torque drops when the voltage is less than specified.

Power supply unit

Power supply unit type		MDS-DH2-CV-37	MDS-DH2-CV-75	MDS-DH2-CV-110	MDS-DH2-CV-185	MDS-DH2-CV-300	MDS-DH2-CV-370	MDS-DH2-CV-450	MDS-DH2-CV-550	MDS-DH2-CV-750		
Rated output		[kW]	3.7	7.5	11.0	18.5	30.0	37.0	45.0	55.0	75.0	
Power input	Rated voltage	[V]	380 to 440AC (50Hz) / 380 to 480AC (60Hz)								Tolerable fluctuation: between +10% and -15%	
	Rated current	[A]	5.2	13	18	35	61	70	85	106	130	
Control power input	Voltage	[V]	380 to 440AC (50Hz) / 380 to 480AC (60Hz)								Tolerable fluctuation: between +10% and -15%	
	Current	[A]	MAX. 0.1									
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +3% and -3%									
Main circuit method		Converter with power regeneration circuit										
Cooling method		Forced wind cooling										
Mass		[kg]	6.0	6.0	6.0	6.0	10.0	10.0	10.0	25.5	25.5	
Unit outline dimension drawing			B1	B1	B1	B1	D1	D1	D1	F1	F1	

AC reactor

AC reactor model	DH-AL-7.5K	DH-AL-11K	DH-AL-18.5K	DH-AL-30K	DH-AL-37K	DH-AL-45K	DH-AL-55K	DH-AL-75K
Compatible power supply unit type	MDS-DH2-CV-	37, 75	110	185	300	370	450	550
Rated capacity [kW]	7.5	11	18.5	30	37	45	55	75
Rated voltage [V]	380 to 440AC (50Hz) / 380 to 480AC (60Hz)							
Rated current [A]	14	21	37	65	75	85	106	142
Frequency [Hz]	50/60 Tolerable fluctuation: between +3% and -3%							
Mass [kg]	4.0	3.7	5.3	6.0	8.5	9.8	10.5	13.0
Unit outline dimension drawing	R1	R1	R2	R2	R3	R3	R5	R6



MDS-DM2 Series

Multi-hybrid drive

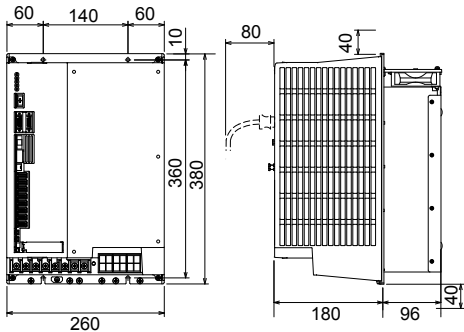
Drive unit type		MDS-DM2-SPV2-10080		MDS-DM2-SPV2-16080		MDS-DM2-SPV2-20080		
Drive unit category		2-axis servo, 1-axis spindle (with converter)						
Nominal maximum current (spindle/servo)		[A]	100/80×2		160/80×2		200/80×2	
Power input	Rated voltage	[V]	200AC (50Hz) / 200 to 230AC (60Hz)				Tolerable fluctuation: between +10% and -15%	
	Rated current	[A]	33		43		55	
Control power input	Voltage	[V]	24DC		Tolerable fluctuation: between +10% and -10%			
	Current	[A]	MAX. 4					
	Frequency	[Hz]	50/60		Tolerable fluctuation: between +3% and -3%			
Control method		Sine wave PWM control method						
Regeneration method		Power regeneration method						
Dynamic brakes (servo)		Built-in						
Machine end detector (servo)		Compatible						
Cooling method		Forced wind cooling						
Mass	[kg]	14.5		14.5		14.5		

Drive unit type		MDS-DM2-SPV3-10080	MDS-DM2-SPV3-16080	MDS-DM2-SPV3-20080	MDS-DM2-SPV3-200120	MDS-DM2-SPHV3-20080
Drive unit category		3-axis servo, 1-axis spindle (with converter)				
Nominal maximum current (spindle/servo)		[A]	100/80×3	160/80×3	200/80×3	200/120×3
Power input	Rated voltage	[V]	200AC (50Hz) / 200 to 230AC (60Hz) Tolerable fluctuation: between +10% and -15%			
	Rated current	[A]	38	48	60	65
Control power input	Voltage	[V]	24DC Tolerable fluctuation: between +10% and -10%			
	Current	[A]	MAX. 4			
	Frequency	[Hz]	50/60 Tolerable fluctuation: between +3% and -3%			
Control method		Sine wave PWM control method				
Regeneration method		Power regeneration method				
Dynamic brakes (servo)		Built-in				
Machine end detector (servo)		Compatible				
Cooling method		Forced wind cooling				
Mass	[kg]	15	15	15	15	15

Unit outline dimension drawing

Drive unit MDS-DM2-SP□V□-□

[Unit : mm]



MDS-DJ Series

All-in-one compact servo drive unit

Drive unit type		MDS-DJ-V1-10	MDS-DJ-V1-15	MDS-DJ-V1-30	MDS-DJ-V1-40	MDS-DJ-V1-80	MDS-DJ-V1-100
Drive unit category		1-axis servo (with converter)					
Nominal maximum current (peak) [A]		10	15	30	40	80	100
Power input	Rated voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)			Tolerable fluctuation: between +10% and -15%		
	Rated current [A]	1.5	2.9	3.8	5.0	10.5	16.0
Control power input	Voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)			Tolerable fluctuation: between +10% and -15%		
	Current [A]	MAX. 0.2					
	Frequency [Hz]	50/60			Tolerable fluctuation: between +5% and -5%		
Control method		Sine wave PWM control method					
Regeneration method		Power regeneration method					
Dynamic brakes		Built-in					
Machine end detector		Compatible					
Cooling method		Natural cooling			Forced wind cooling		
Mass	[kg]	0.8	1.0	1.4	2.3	2.3	2.3
Unit outline dimension drawing		J1	J2	J3	J4a	J4a	J4b

Drive unit type		MDS-DJ-V2-3030			
Drive unit category		2-axis servo (with converter)			
Nominal maximum current (peak) [A]		30/30			
Power input	Rated voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)		Tolerable fluctuation: between +10% and -15%	
	Rated current [A]	3.8/3.8			
Control power input	Voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)		Tolerable fluctuation: between +10% and -15%	
	Current [A]	50/60	Tolerable fluctuation: between +5% and -5%		
	Frequency [Hz]	MAX. 0.4			
Control method		Sine wave PWM control method			
Regeneration method		Power regeneration method			
Dynamic brakes		Built-in			
Machine end detector		Not compatible			
Cooling method		Forced wind cooling			
Mass [kg]		1.5			
Unit outline dimension drawing		JW1			

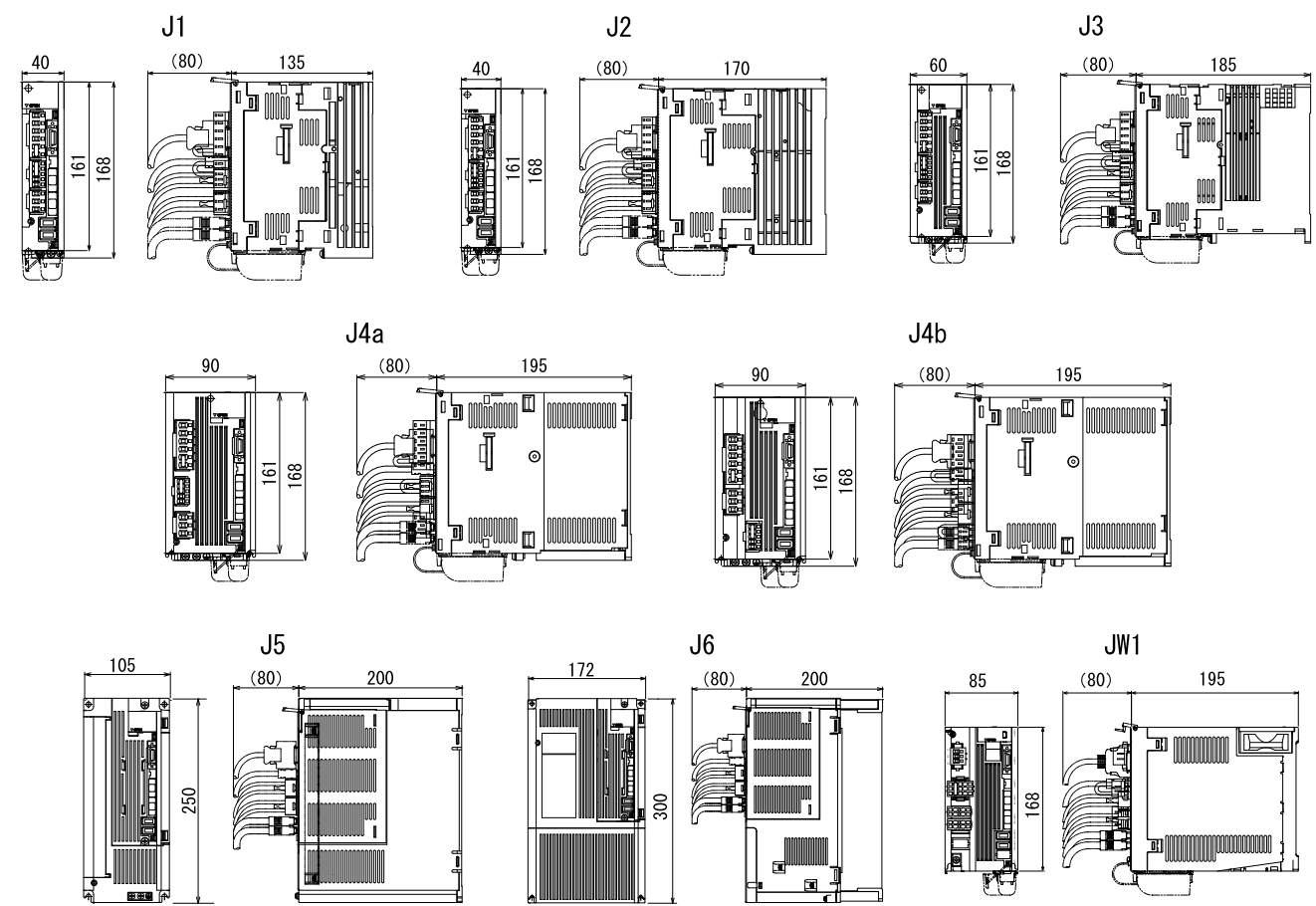
All-in-one compact spindle drive unit

Drive unit type		MDS-DJ-SP-20	MDS-DJ-SP-40	MDS-DJ-SP-80	MDS-DJ-SP-100	MDS-DJ-SP-120	MDS-DJ-SP-160
Drive unit category		1-axis spindle (with converter)					
Nominal maximum current (peak) [A]		20	40	80	100	120	160
Power input	Rated voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)			Tolerable fluctuation: between +10% and -15%		
	Rated current [A]	2.6	9.0	10.5	16.0	26.0	35.4
Control power input	Voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)			Tolerable fluctuation: between +10% and -15%		
	Current [A]	MAX. 0.2					
	Frequency [Hz]	50/60			Tolerable fluctuation: between +5% and -5%		
Control method		Sine wave PWM control method					
Regeneration method		Power regeneration method					
Cooling method		Forced wind cooling					
Mass	[kg]	1.4	2.1	2.3	4.0	4.0	6.2
Unit outline dimension drawing		J3	J4a	J4b	J5	J5	J6

Drive unit type		MDS-DJ-SP2-2020	
Drive unit category		2-axis spindle (with converter)	
Nominal maximum current (peak) [A]		20/20	
Power input	Rated voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)	Tolerable fluctuation: between +10% and -15%
	Rated current [A]	2.6/2.6	
Control power input	Voltage [V]	200AC (50Hz) / 200 to 230AC (60Hz)	Tolerable fluctuation: between +10% and -15%
	Current [A]	MAX. 0.4	
	Frequency [Hz]	50/60	Tolerable fluctuation: between +5% and -5%
Control method		Sine wave PWM control method	
Regeneration method		Power regeneration method	
Cooling method		Forced wind cooling	
Mass	[kg]	1.5	
Unit outline dimension drawing		JW1	

Unit outline dimension drawing

[Unit : mm]



Servo options

The option units are required depending on the servo system configuration. Check the option units to be required referring the following items.

System establishment in the full closed loop control

Full closed loop control for linear axis

Machine side detector to be used			Detector signal output	Interface unit	Drive unit input signal	Battery option	Remarks
Incremental detector	Rectangular wave signal output	SR74, SR84 (MAGNESCALE)	Rectangular wave signal	—	Rectangular wave signal	—	
		Various scale	Rectangular wave signal	—	Rectangular wave signal	—	
	SIN wave signal output	LS187, LS487 (HEIDENHAIN)	SIN wave signal	IBV series (HEIDENHAIN) EIB series (HEIDENHAIN)	Rectangular wave signal Mitsubishi serial signal	—	
		LS187C, LS487C (HEIDENHAIN)	SIN wave signal	MDS-B-HR-11 (P) (MITSUBISHI ELECTRIC) EIB series (HEIDENHAIN)	Mitsubishi serial signal	(Required) Note	Distance-coded reference scale (Note 2)
		Various scale	SIN wave signal	MDS-B-HR-11 (P) (MITSUBISHI ELECTRIC) EIB series (HEIDENHAIN)	Mitsubishi serial signal	(Required) Note	Distance-coded reference scale is also available (Note 2)
	Mitsubishi serial signal output	SR75, SR85 (MAGNESCALE)	Mitsubishi serial signal	—	Mitsubishi serial signal	—	
Absolute position detector	Mitsubishi serial signal output	OSA105ET2A OSA166ET2NA (MITSUBISHI ELECTRIC)	Mitsubishi serial signal	—	Mitsubishi serial signal	Required	Ball screw side detector
		SR77, SR87 (MAGNESCALE)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		LC195M, LC495M, LC215M (HEIDENHAIN)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		LC193M, LC493M (HEIDENHAIN)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		AT343, AT543, AT545, ST748 (Mitutoyo)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		SAM Series (FAGOR)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		SVAM Series (FAGOR)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		GAM Series (FAGOR)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		LAM Series (FAGOR)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		RL40N Series (Renishaw)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
	SIN wave signal output	MPS Series (MME Corp.)	SIN wave signal	ADB-20J60 (MME Corp.)	Mitsubishi serial signal	Required	

(Note 1) When using the distance-coded reference scale, it is recommended to use with distance-coded reference check function. In this case, the battery option is required.
(Note 2) Use the option of M700V Series for the distance-coded reference scale.

Full closed loop control for rotary axis

Machine side detector to be used			Detector signal output	Interface unit	Output signal	Battery option	Remarks
Incremental detector	Rectangular wave signal output	Various scale	Rectangular wave signal	—	Rectangular wave signal	—	
	SIN wave signal output	ERM280 Series (HEIDENHAIN)	SIN wave signal	EIB series (HEIDENHAIN)	Mitsubishi serial signal	—	
		Various scale	SIN wave signal	MDS-B-HR-11 (P) (MITSUBISHI ELECTRIC) EIB series (HEIDENHAIN)	Mitsubishi serial signal	(Required) Note	Distance-coded reference scale is also available (Note 2)
Absolute position detector	Mitsubishi serial signal output	MBA405W Series (MITSUBISHI ELECTRIC)	Mitsubishi serial signal	—	Mitsubishi serial signal	Required	
		RU77 (MAGNESCALE)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		RCN223M, RCN227M (HEIDENHAIN)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		RCN727M, RCN827M (HEIDENHAIN)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		RA Series (Renishaw)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
		HAM Series (FAGOR)	Mitsubishi serial signal	—	Mitsubishi serial signal	Not required	
	SIN wave signal output	MPRZ Series (MME Corp.)	SIN wave signal	ADB-20J71 (MME Corp.)	Mitsubishi serial signal	Not required	
		MPI Series (MME Corp.)	SIN wave signal	ADB-20J60 (MME Corp.)	Mitsubishi serial signal	Required	

(Note 1) When using the distance-coded reference scale, it is recommended to use with distance-coded reference check function. In this case, the battery option is required.
(Note 2) Use the option of M700V Series for the distance-coded reference scale.

System establishment in the synchronous control

Position command synchronous control

The synchronous control is all executed in the NC, and the each servo is controlled as an independent axis. Therefore, preparing special options for the synchronous control is not required on the servo side.

Speed command synchronization control

The common position control in two axes is performed by one linear scale. Basically, the multi axis integrated type drive unit (MDS-D2/DH2-V2/V3) is used, and the feedback signal is divided for two axes inside the drive unit. When the two 1-axis type drive units are used in driving the large capacity servo motor, the linear scale feedback signal must be divided outside.

<Required option in the speed command synchronous control>

Machine side detector to be used	For MDS-D2/DH2-V2/V3	For MDS-D2/DH2-V1 x 2 units	Remarks
SIN wave signal output scale	MDS-B-HR-11 (P) (Serial conversion)	MDS-B-HR-12 (P) (Serial conversion/signal division)	
Mitsubishi serial signal output scale	—	MDS-B-SD (Signal division)	Including the case that an interface unit of the scale manufacturer is used with SIN wave output scale.

(Note) The rectangular wave signal output scale speed command synchronous control is not available.

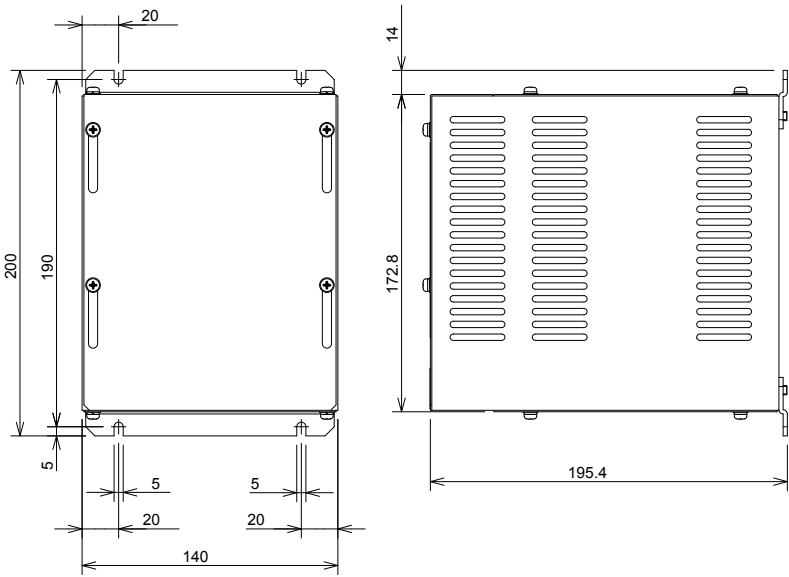
Dynamic brake unit (MDS-D-DBU)

Specifications

Type	MDS-D-DBU
Coil specifications	24VDC 160mA
Wire size	5.5mm ² or more (For IV wire)
Compatible drive unit	MDS-D2-V1-320W, MDS-DH2-V1-160W, MDS-DH2-V1-200
Mass	3kg

Outline dimension drawing

MDS-D-DBU



[Unit : mm]

■Battery option

This battery option may be required to establish absolute position system. Select a battery option from the table below depending on the servo system.

Type		ER6V-C119B	A6BAT (MR-BAT)	MDS-BTBOX-36	MR-BAT6V1SET
Installation type		Drive unit with battery holder type	Dedicated case type	Unit and battery integration type	Drive unit with battery holder type
Hazard class		Not applicable	Not applicable (24 or less)	Not applicable	Not applicable
Number of connectable axes		Up to 3 axes	Up to 8 axes (When using dedicated case)	Up to 8 axes	1 axis
Battery change		Possible	Possible	Possible	Possible
Appearance					
Compatible model	D2/DH2	○	○	○	—
	DM2	○	○	○	—
	DJ	—	—	—	○

■Cell battery (ER6V-C119B)

Specifications

Battery option type		Cell battery
		ER6V-C119B (Note 1)
Battery model name		ER6V
Nominal voltage		3.6V
Number of connectable axes		Up to 3 axes (Note 3)
Battery continuous backup time		Up to 2 axes: Approx. 10000 hours 3 axes connected: Approx. 6600 hours
Back up time from battery warning to alarm occurrence (Note 2)		Up to 2 axes: Approx. 100 hours 3 axes connected: Approx. 60 hours
Compatible model	D2/DH2	○
	DM2	○
	DJ	—

(Note 1) ER6V-C119B is a battery built in a servo drive unit. Install this battery only in the servo drive unit that executes absolute position control.
(Note 2) This time is a guideline, so does not guarantee the back up time. Replace the battery with a new battery as soon as a battery warning occurs.
(Note 3) When using ball screw side detector OSA166ET2NA/OSA105ET2A, both ball screw side detector and motor side detector need to be backed up by a battery, so the number of load shaft should be two.

■Cell battery (A6BAT)

Always use the cell battery (A6BAT) in combination with the dedicated case (MDS-BTCASE).

Specifications

Battery option type		Cell battery
		A6BAT (MR-BAT)
Battery model name		ER17330V
Nominal voltage		3.6V
Number of connectable axes		1 axis / (per 1 battery)
Data save time in battery replacement		Approx.10000 hours
Back up time from battery warning to alarm occurrence (Note)		Approx. 80 hours

(Note) This time is a guideline, so does not guarantee the back up time. Replace the battery with a new battery as soon as a battery warning occurs.

Specifications of the dedicated case MDS-BTCASE

Type		MDS-BTCASE
Number of batteries installed		Up to 8 A6BATs (MR-BATs) (Install either 2, 4, 6 or 8 A6BATs (MR-BATs))
Number of connectable axes		Max. 8 axes (It varies depending on the number of batteries installed.) When A6BAT (MR-BAT)×2, 1 to 2 axis/axes When A6BAT (MR-BAT)×4, 3 to 4 axes When A6BAT (MR-BAT)×6, 5 to 6 axes When A6BAT (MR-BAT)×8, 7 to 8 axes
Compatible model	D2/DH2	○
	DM2	○
	DJ	—

■Battery box (MDS-BTBOX-36)

Specifications

Battery option type		Battery box
		MDS-BTBOX-36
Battery model name		size-D alkaline batteries LR20×4 pieces (Note1)
Nominal voltage		3.6V (Unit output), 1.5V (Isolated battery)
Number of connectable axes		Up to 8 axes
Battery continuous backup time		Approx. 10000 hours (when 8 axes are connected, cumulative time in non-energized state) (Note2)
Back up time from battery warning to alarm occurrence		Approx. 336 hours (when 8 axes are connected) (Note2)
Compatible model	D2/DH2	○
	DM2	○
	DJ	—

(Note 1) Install commercially-available alkaline dry batteries into MDS-BTBOX-36. The batteries should be procured by customers.
(Note 2) These backup periods are estimated based on the JIS standard, assuming that the product is used at a room temperature. The actual backup period may vary depending on the batteries (type and storage period after production, etc.) and the operating environment. Thus, regard these values only as a guide.

■Converged battery option

When using the following battery options, the wiring between units which configure an absolute position system is required.

Battery option type	Installation type	Battery charge
A6BAT (MR-BAT)	Dedicated case type (built-in MDS-BTCASE)	Possible
MDS-BTBOX-36	Unit and battery integration type	Possible

■Cell battery (MR-BAT6V1SET)

Specifications

Battery option type		Cell battery
		MR-BAT6V1SET (Note 1)
Battery model name		2CR17335A
Nominal voltage		6V
Number of connectable axes		Up to 2 axes
Data save time in battery replacement		Up to 2 axes: Approx. 10000 hours
Back up time from battery warning to alarm occurrence (Note 2)		Approx. 100 hours
Compatible model	D2/DH2	—
	DM2	—
	DJ	○

(Note 1) MR-BAT6V1SET is a battery built in a servo drive unit. Install this battery only in the servo drive unit that executes absolute position control.
(Note 2) This time is a guideline, so does not guarantee the back up time. Replace the battery with a new battery as soon as a battery alarm occurs.

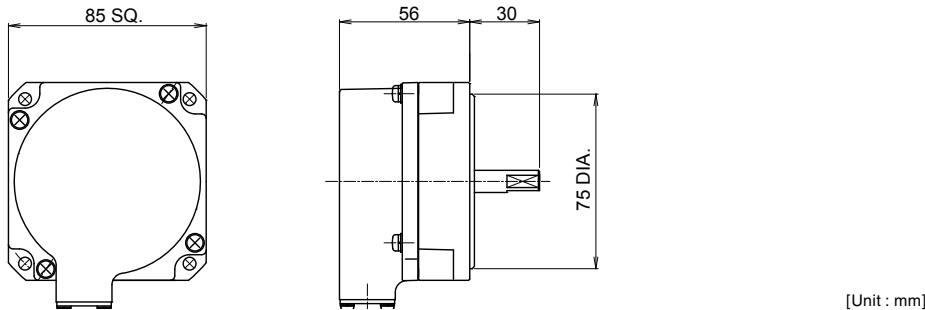
■Ball screw side detector OSA105ET2A, OSA166ET2NA

Specifications

Detector type		OSA105ET2A	OSA166ET2NA
Electrical characteristics	Detector resolution	1,000,000pulse/rev	16,000,000pulse/rev
	Detection method	Absolute position method (battery backup method)	
	Tolerable rotation speed at power off (Note)	500r/min	
	Detector output data	Serial data	
	Power consumption	0.3A	
Mechanical characteristics for rotation	Inertia	0.5×10 ⁻⁴ kgm ² or less	
	Shaft friction torque	0.1Nm or less	
	Shaft angle acceleration	4×10 ⁴ rad/s ² or less	
	Tolerable continuous rotation speed	4000r/min	
Mechanical configuration	Shaft amplitude (position 15mm from end)	0.02mm or less	
	Tolerable load (thrust direction/radial direction)	9.8N/19.8N	
	Mass	0.6kg	
	Degree of protection	IP65 (The shaft-through portion is excluded.)	
	Recommended coupling	bellows coupling	
Compatible model	D2/DH2	○	○
	DM2	○	-
	DJ	○	-

Outline dimension drawing

OSA105ET2A/OSA166ET2NA



■Twin-head magnetic detector (MBA Series)

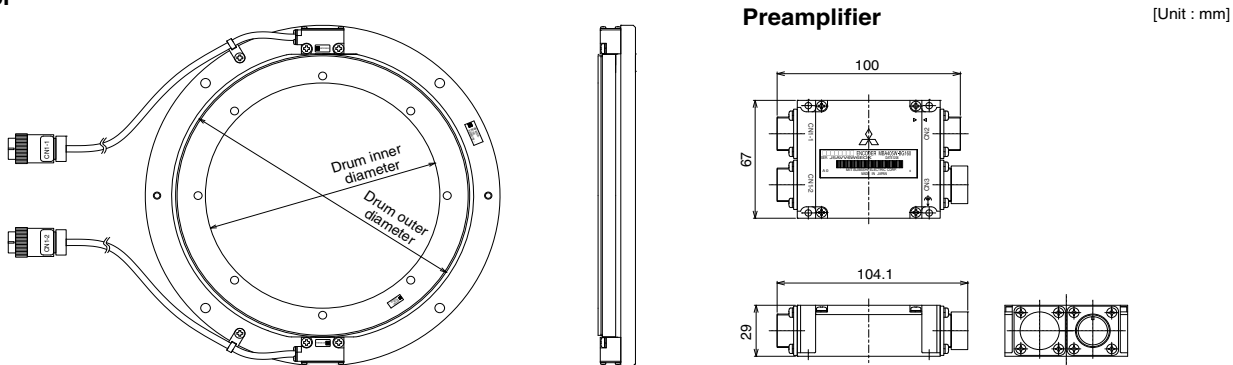
Specifications

Detector type		MBA405W-BE082	MBA405W-BF125	MBA405W-BG160
Electrical characteristics	Detector resolution	4,000,000 pulse/rev		
	Detection method	Absolute position method (battery backup method)		
	Tolerable rotation speed at power off	3000r/min	2000r/min	1500r/min
	Accuracy (*1) (*2)	±4 seconds	±3 seconds	±2 seconds
	Wave number within one rotation	512 waves	768 waves	1024 waves
	Detector output data	Serial data		
	Power consumption	0.2A or less		
Mechanical characteristics for rotation	Inertia	0.5×10 ⁻³ kg · m ²	2.4×10 ⁻³ kg · m ²	8.7×10 ⁻³ kg · m ²
	Tolerable angle acceleration (time of backup)	500rad/s ²		
	Tolerable continuous rotation speed	3000r/min	2000r/min	1500r/min
Mechanical configuration	Drum inner diameter	φ 82mm	φ 125mm	φ 160mm
	Drum outer diameter	φ 100mm	φ 150.3mm	φ 200.6mm
	Drum mass	0.2kg	0.46kg	1.0kg
	Degree of protection (*3)	IP67		
	Outline dimension	φ 140mm×21.5mm	φ 190mm×23.5mm	φ 242mm×25.5mm

(*1) The values above are typical values after the calibration with our shipping test device and are not guaranteed.
(*2) The user is requested to install the magnetic drum and installation ring in the detector within the accuracy range specified herein. Even when the accuracy of the detector when shipped and when installed by the user is both within the specified range, there is a difference in the installation position. Therefore, the accuracy at the time of our shipment may not be acquired.
(*3) It is the degree of protection when fitted with a connector.

Outline dimension drawing

Detector



Spindle options

According to the spindle control to be adopted, select the spindle side detector based on the following table.

No-variable speed control (When spindle and motor are directly coupled or coupled with a 1:1 gear ratio)

●: Control possible x: Control not possible

Spindle control item	Control specifications	Without spindle side detector	With spindle side detector
Spindle control	Normal cutting control	●	This normally is not used for novariable speed control.
	Constant surface speed control (lathe)	●	
	Thread cutting (lathe)	●	
Orientation control	1-point orientation control	●	
	Multi-point orientation control	●	
	Orientation indexing	●	
Synchronous tap control	Standard synchronous tap	●	
	Synchronous tap after zero point return	●	
Spindle synchronous control	Without phase alignment function	●	
	With phase alignment function	●	
C-axis control	C-axis control	● (Note)	●

(Note) When spindle and motor are coupled with a 1:1 gear ratio, use of a spindle side detector is recommended to assure the precision.

Variable speed control (When using V-belt, or when spindle and motor are connected with a gear ratio other than 1:1)

●: Control possible x: Control not possible

Spindle control item	Control specifications	Without spindle side detector	With spindle side detector		
			TS5690/ERM280/MPCI/MBE405W Series	OSE-1024	Proximity switch
Spindle control	Normal cutting control	●	●	●	-
	Constant surface speed control (lathe)	● (Note 1)	●	●	x
	Thread cutting (lathe)	x	●	●	x
Orientation control	1-point orientation control	x	●	●	● (Note 3)
	Multi-point orientation control	x	●	●	x
	Orientation indexing	x	●	●	x
Synchronous tap control	Standard synchronous tap	● (Note 2)	●	●	x
	Synchronous tap after zero point return	x	●	●	x
Spindle synchronous control	Without phase alignment function	● (Note 1)	●	●	x
	With phase alignment function	x	●	●	x
C-axis control	C-axis control	x	●	x	x

(Note 1) Control not possible when connected with the V-belt.
(Note 2) Control not possible when connected with other than the gears.
(Note 3) When using a proximity switch, an orientation is executed after the spindle is stopped.

Cautions for connecting the spindle end with an OSE-1024 detector

- [1] Confirm that the gear ratio (pulley ratio) of the spindle end to the detector is 1:1.
- [2] Use a timing belt when connecting by a belt.

■Spindle side ABZ pulse output detector (OSE-1024 Series)

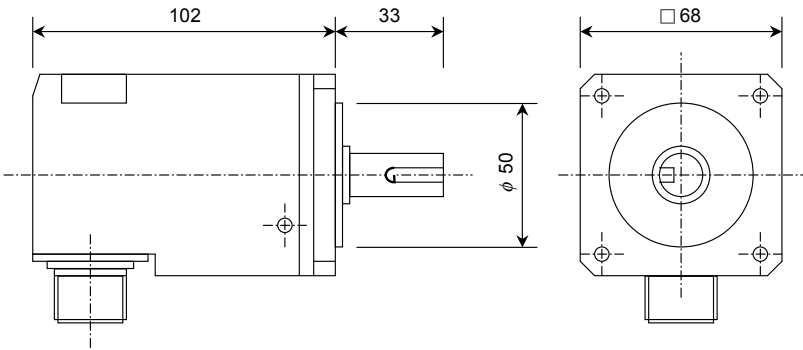
When a spindle and motor are connected with a V-belt, or connected with a gear ratio other than 1:1, use this spindle side detector to detect the position and speed of the spindle. Also use this detector when orientation control and synchronous tap control, etc are executed under the above conditions.

Specifications

Detector type		OSE-1024-3-15-68	OSE-1024-3-15-68-8
Mechanical characteristics for rotation	Inertia	0.1×10 ⁻⁴ kgm ² or less	0.1×10 ⁻⁴ kgm ² or less
	Shaft friction torque	0.98Nm or less	0.98Nm or less
	Shaft angle acceleration	10°rad/s ² or less	10°rad/s ² or less
	Tolerable continuous rotation speed	6000r/min	8000r/min
Mechanical configuration	Bearing maximum non-lubrication time	20000h/6000r/min	20000h/8000r/min
	Shaft amplitude (position 15mm from end)	0.02mm or less	0.02mm or less
	Tolerable load (thrust direction/radial direction)	10kg/20kg Half of value during operation	10kg/20kg Half of value during operation
	Mass	1.5kg	1.5kg
	Degree of protection	IP54	
	Squareness of flange to shaft	0.05mm or less	
Compatible model	Flange matching eccentricity	0.05mm or less	
	D2/DH2	○	○
	DM2	○	○
	DJ	○	○

(Note) Confirm that the gear ratio (pulley ratio) of the spindle end to the detector is 1:1.

Outline dimension drawing



Spindle side detector (OSE-1024-3-15-68, OSE-1024-3-15-68-8)

[Unit : mm]

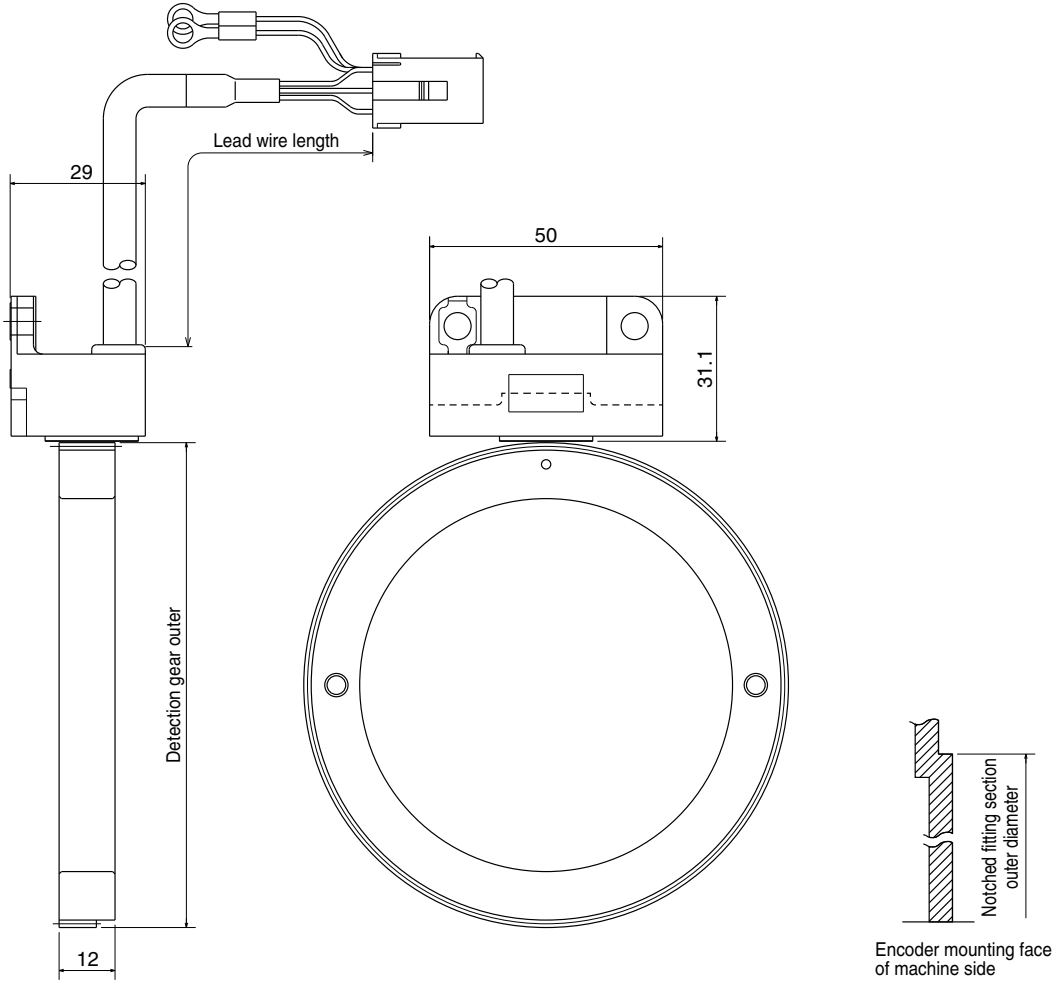
■Spindle side PLG serial output detector (TS5690, MU1606 Series)

This detector is used when a more accurate synchronous tapping control or C-axis control than OSE detector is performed to the spindle which is not directly-connected to the spindle motor.

Specifications

Sensor	Series type	TS5690N64xx					TS5690N12xx					TS5690N25xx				
	xx (The end of the type name)	10	20	30	40	60	10	20	30	40	60	10	20	30	40	60
	Length of lead [mm]	400 ±10	800 ±20	1200 ±20	1600 ±30	2000 ±30	400 ±10	800 ±20	1200 ±20	1600 ±30	2000 ±30	400 ±10	800 ±20	1200 ±20	1600 ±30	2000 ±30
Detection gear	Type	MU1606N601					MU1606N709					MU1606N805				
	The number of teeth	64					128					256				
	Outer diameter [mm]	φ52.8					φ104.0					φ206.4				
	Inner diameter [mm]	φ40H5					φ80H5					φ140H5				
	Thickness [mm]	12					12					14				
	Shrink fitting [mm]	0.020 to 0.040					0.030 to 0.055					0.050 to 0.085				
Notched fitting section	Outer diameter [mm]	φ72.0					φ122.0					φ223.6				
	Outer diameter tolerance [mm]	+0.010 to +0.060					-0.025 to +0.025					-0.025 to +0.025				
The number of output pulse	A/B phase	64					128					256				
	Z phase	1					1					1				
Detection resolution [p/rev]		2 million					4 million					8 million				
Absolute accuracy at stop		150"					100"					95"				
Tolerable speed [r/min]		40,000					20,000					10,000				
Signal output		Mitsubishi high-speed serial														
Compatible model	D2/DH2	○					○					○				
	DM2	○					○					○				
	DJ	○					○					○				

Outline dimension drawing



[Unit : mm]

■Twin-head magnetic detector (MBE Series)

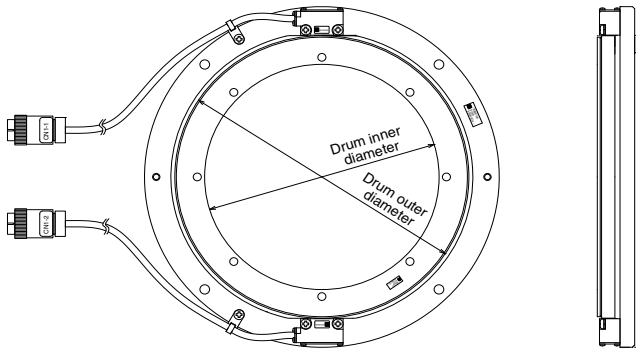
Specifications

Detector type		MBE405W-BE082	MBE405W-BF125	MBE405W-BG160
Electrical characteristics	Detector resolution	4,000,000 pulse/rev		
	Detection method	Incremental		
	Accuracy (*1) (*2)	±4 seconds	±3 seconds	±2 seconds
	Wave number within one rotation	512 waves	768 waves	1024 waves
	Detector output data	Serial data		
	Power consumption	0.2A or less		
Mechanical characteristics for rotation	Inertia	0.5×10 ⁻³ kg · m ²	2.4×10 ⁻³ kg · m ²	8.7×10 ⁻³ kg · m ²
	Tolerable continuous rotation speed	15000 r/min	10000 r/min	8000 r/min
Mechanical configuration	Drum inner diameter	φ 82mm	φ 125mm	φ 160mm
	Drum outer diameter	φ 100mm	φ 150.3mm	φ 200.6mm
	Drum mass	0.2kg	0.46kg	1.0kg
	Degree of protection (*3)	IP67		
Outline dimension		φ 140mm×21.5mm	φ 190mm×23.5mm	φ 242mm×25.5mm

(*1) The values above are typical values after the calibration with our shipping test device and are not guaranteed.
(*2) The user is requested to install the magnetic drum and installation ring in the detector within the accuracy range specified herein. Even when the accuracy of the detector when shipped and when installed by the user is both within the specified range, there is a difference in the installation position. Therefore, the accuracy at the time of our shipment may not be acquired.
(*3) It is the degree of protection when fitted with a connector.

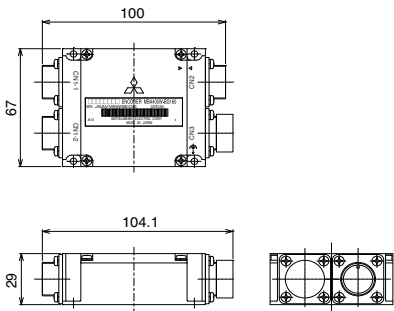
Outline dimension drawing

Detector



Preamplifier

[Unit : mm]



■Spindle side accuracy serial output detector (ERM280, MPCl Series)

C-axis control detector is used in order to perform an accurate C-axis control.

Manufacturer		HEIDENHAIN		MHI MACHINE TOOL ENGINEERING CO., LTD
Detector type		ERM280 1200	ERM280 2048	MPCl series
Interface unit type		EIB192M C4 1200	EIB192M C6 2048	ADB-20J20
		EIB392M C4 1200	EIB392M C6 2048	
Minimum detection resolution		0.0000183° (19,660,800p/rev)	0.0000107° (33,554,432p/rev)	0.00005° (7,200,000p/rev)
Tolerable maximum speed		20000r/min	11718r/min	10000r/min
Compatible model	D2/DH2	○		○
	DM2	○		○
	DJ	○		○

Detector interface unit

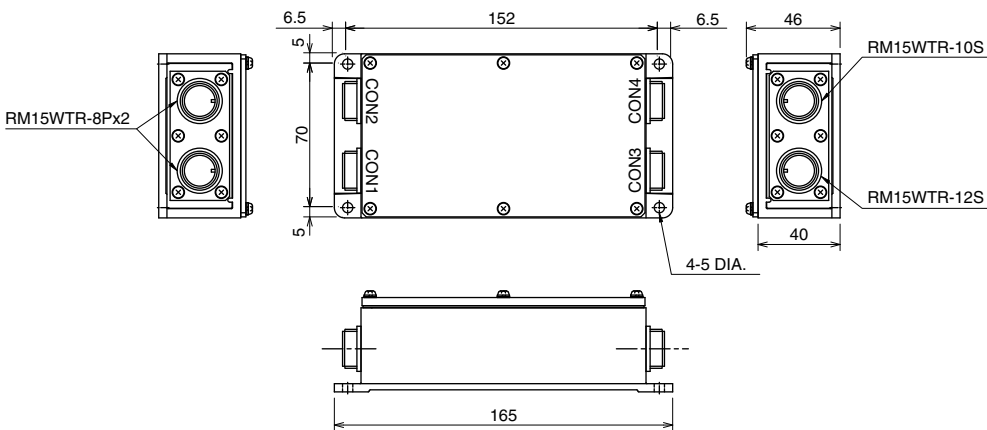
■Serial output interface unit for ABZ analog detector MDS-B-HR

This unit superimposes the scale analog output raw waves, and generates high resolution position data. Increasing the detector resolution is effective for the servo high-gain. MDS-B-HR-12 (P) is used for the synchronous control system that 1-scale 2-drive operation is possible.

Specifications

Type		MDS-B-HR-11	MDS-B-HR-12	MDS-B-HR-11P	MDS-B-HR-12P
Compatible scale (example)		LS186 / LS486/LS186C / LS486C (HEIDENHAIN)			
Signal 2-division function		×	○	×	○
Analog signal input specifications		A-phase, B-phase, Z-phase (Amplitude 1Vp-p)			
Compatible frequency		Analog raw waveform max. 200kHz			
Scale resolution		Analog raw waveform/512 division			
Input/output communication style		High-speed serial communication I/F, RS485 or equivalent			
Tolerable power voltage		5VDC±5%			
Maximum heating value		2W			
Mass		0.5kg or less			
Degree of protection		IP65		IP67	
Compatible model	D2/DH2	○	○	○	○
	DM2	○	-	○	-
	DJ	○	○	○	○

Outline dimension drawing



[Unit : mm]

■Serial signal division unit MDS-B-SD

This unit has a function to divide the position and speed signals fed back from the high-speed serial detector and high-speed serial linear scale. This unit is used to carry out synchronized control of the motor with two MDS-D2/ DH2-V1 drive units.

Specifications

Type		MDS-B-SD
Compatible servo drive unit		MDS-D2/DH2-V1-□
Input/output communication style		High-speed serial communication I/F, RS485 or equivalent
Tolerable power voltage		5VDC±10%
Maximum heating value		4W
Mass		0.5kg or less
Degree of protection		IP20
Compatible model	D2/DH2	○
	DM2	-
	DJ	○

■Serial output interface unit for ABZ analog detector EIB192M (Other manufacturer’s product)

Specifications

Type		EIB192M A4 20μm	EIB192M C4 1200	EIB192M C4 2048
Manufacturer		HEIDENHAIN		
Input signal		A-phase, B-phase: SIN wave 1Vpp, Z-phase		
Maximum input frequency		400kHz		
Output signal		Mitsubishi high-speed serial signal (MITSU02-4)		
Interpolation division number		Maximum 16384 divisions		
Compatible detector		LS187, LS487	ERM280 1200	ERM280 2048
Minimum detection resolution		0.0012μm	0.0000183° (19,660,800p/rev)	0.0000107° (33,554,432p/rev)
Degree of protection		IP65		
Outline dimension		98mm×64mm×38.5mm		
Mass		300g		
Compatible model	D2/DH2	○	○	○
	DM2	○	○	○
	DJ	○	○	○

■Serial output interface unit for ABZ analog detector EIB392M (Other manufacturer’s product)

Specifications

Type		EIB392M A4 20μm	EIB392M C4 1200	EIB392M C4 2048
Manufacturer		HEIDENHAIN		
Input signal		A-phase, B-phase: SIN wave 1Vpp, Z-phase		
Maximum input frequency		400kHz		
Output signal		Mitsubishi high-speed serial signal (MITSU02-4)		
Interpolation division number		Maximum 16384 divisions		
Compatible detector		LS187, LS487	ERM280 1200	ERM280 2048
Minimum detection resolution		0.0012μm	0.0000183° (19,660,800p/rev)	0.0000107° (33,554,432p/rev)
Degree of protection		IP40		
Outline dimension		76.5mm×43mm×16.6mm		
Mass		140g		
Compatible model	D2/DH2	○	○	○
	DM2	○	○	○
	DJ	○	○	○

■Serial output interface unit for ABZ analog detector ADB-20J Series (Other manufacturer’s product)

Specifications

Type		ADB-20J20	ADB-20J60		ADB-20J71
Manufacturer		MHI MACHINE TOOL ENGINEERING CO., LTD			
Maximum response speed		10,000r/min	3,600m/min	5,000r/min	10,000r/min
Output signal		Mitsubishi high-speed serial signal			
Compatible detector		MPCI series	MPS series	MPI series	MPRZ series
Minimum detection resolution		0.00005° (7,200,000p/rev)	0.05μm	0.000025° (1,440,000p/rev)	0.000043° (8,388,608p/rev)
Degree of protection		IP20			
Outline dimension		190mm×160mm×40mm			
Mass		0.9kg			
Compatible model	D2/DH2	○	○	○	○
	DM2	○	○	○	○
	DJ	○	○	○	○

Drive unit option

■Optical communication repeater unit (FCU7-EX022)

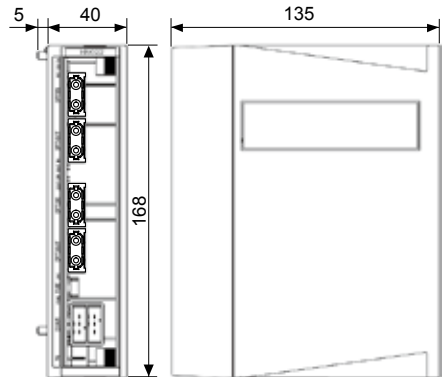
When the distance of the optical communication cable between NC control unit and drive unit is over 30m (M700V/ M70V/E70 Series: maximum 30m, M700/M70/C70 Series: maximum 20m), the communication can be performed by relaying the optical signal.

Using up to two units, relay of the total length of up to 90m can be performed.

Specifications

Type		FCU7-EX022	
DC24V input	Input voltage	24V±10% (21.6V to 26.4V)	
	Inrush current	35A	
	Power consumption	10W	
	Consumption current	0.4A	
Optical interface	Channel number	2 channels	
	Connectable number	Maximum 2	
Dimension	Dimension	(depth)135mm × (width)40mm × (height)168mm	
	Mounting method	Screw cramp with M5 2 screw cramps	
Mass		0.42kg	
Compatible model	D2/DH2	○	
	DM2	○	
	DJ	○	

Outline dimension drawing



[Unit : mm]

■DC connection bar

When connecting a large capacity drive unit with L+L- terminal of power supply unit, DC connection bar is required. In use of the following large capacity drive units, use a dedicated DC connection bar. The DC connection bar to be used depends on the connected power supply, so make a selection according to the following table.

Specifications

Series		MDS-D2		MDS-DH2		
Large capacity drive unit		MDS-D2-SP-400	MDS-D2-SP-400	MDS-DH2-SP-200	MDS-DH2-V1-200	
		MDS-D2-SP-640	MDS-D2-SP-640	MDS-DH2-SP-320	MDS-DH2-SP-200	MDS-DH2-V1-200
Power supply unit		MDS-D2-SP-480		MDS-DH2-SP-480		
		MDS-D2-CV-300	MDS-D2-CV-550	MDS-DH2-CV-550	MDS-D2-CV-300	MDS-DH2-CV-185
Required connection bar		MDS-D2-CV-370		MDS-DH2-CV-750	MDS-D2-CV-370	
		MDS-D2-CV-450			MDS-D2-CV-450	
Required connection bar		D-BAR-B1006	D-BAR-A1010 (Two-parts set)	DH-BAR-A0606 (Two-parts set)	DH-BAR-B0606	DH-BAR-C0606
Compatible model	D2/DH2	○	○	○	○	○
	DM2	—	—	—	—	—
	DJ	—	—	—	—	—

■Side protection cover (D-COVER-1)

Install the side protection cover outside the both ends of the connected units.

■Regenerative option

Confirm the regeneration resistor capacity and possibility of connecting with the drive unit.
The regenerative resistor generates heats, so wire and install the unit while taking care to safety. When using the regenerative resistor, make sure that flammable matters, such as cables, do not contact the resistor, and provide a cover on the machine so that dust or oil does not accumulate on the resistor and ignite.

Combination with servo drive unit

Corresponding servo drive unit	Standard built-in regenerative resistor	External option regenerative resistor						
		MR-RB032	MR-RB12	MR-RB32	MR-RB30	MR-RB50	MR-RB31	MR-RB51
	Parameter setting value	1200h	1300h	1400h	1500h	1600h	1700h	1800h
	Mass	0.5kg	0.8kg	2.9kg	2.9kg	5.6kg	2.9kg	5.6kg
	Unit outline dimension	168mm×30mm×119mm	168mm×40mm×149mm	150mm×100mm×318mm	150mm×100mm×318mm	350mm×128mm×200mm	150mm×100mm×318mm	350mm×128mm×200mm
		W1	W2	W3	W3	W4	W3	W4
	External option regenerative resistor	–	–	GZG200W120 OHMK x3	GZG200W39 OHMK x3	GZG300W39 OHMK x3	GZG200W20 OHMK x3	GZG300W20 OHMK x3
	Regenerative capacity	30W	100W	300W	300W	500W	300W	500W
		Resistance value	40Ω	40Ω	40Ω	13Ω	13Ω	6.7Ω
MDS-DJ-V1-10	10W	100Ω	○	○				
MDS-DJ-V1-15	10W	100Ω	○	○				
MDS-DJ-V1-30	20W	40Ω	○	○	○			
MDS-DJ-V1-40	100W	13Ω				○	○	
MDS-DJ-V1-80	100W	9Ω					○	○
MDS-DJ-V1-100	100W	9Ω					○	○
MDS-DJ-V2-3030	100W	9Ω				○	○	

Corresponding servo drive unit	Standard built-in regenerative resistor	External option regenerative resistor						
		FCUA-RB22	FCUA-RB37	FCUA-RB55	FCUA-RB75/2 (1 unit)	R-UNIT2	FCUA-RB55 2 units connected in parallel	FCUA-RB75/2 2 units connected in parallel
	Parameter setting value	2400h	2500h	2600h	2700h	2900h	2E00h	2D00h
	Mass	0.8kg	1.2kg	2.2kg	2.2kg	4.4kg	4.4kg	4.4kg
	Unit outline dimension	30mm×60mm×215mm	30mm×60mm×335mm	40mm×80mm×400mm	40mm×80mm×400mm	355mm×105mm×114mm	40mm×80mm×400mm	40mm×80mm×400mm
		W5	W5	W6	W6	W7	W6	W6
	Regenerative capacity	155W	185W	340W	340W	700W	680W	680W
	Resistance value	40Ω	25Ω	20Ω	30Ω	15Ω	10Ω	15Ω
MDS-DJ-V1-10	10W	100Ω						
MDS-DJ-V1-15	10W	100Ω						
MDS-DJ-V1-30	20W	40Ω	○					
MDS-DJ-V1-40	100W	13Ω		○	○	○		○
MDS-DJ-V1-80	100W	9Ω				○	○	○
MDS-DJ-V1-100	100W	9Ω					○	
MDS-DJ-V2-3030	100W	9Ω		○	○			

Combination with servo drive unit

 **CAUTION**

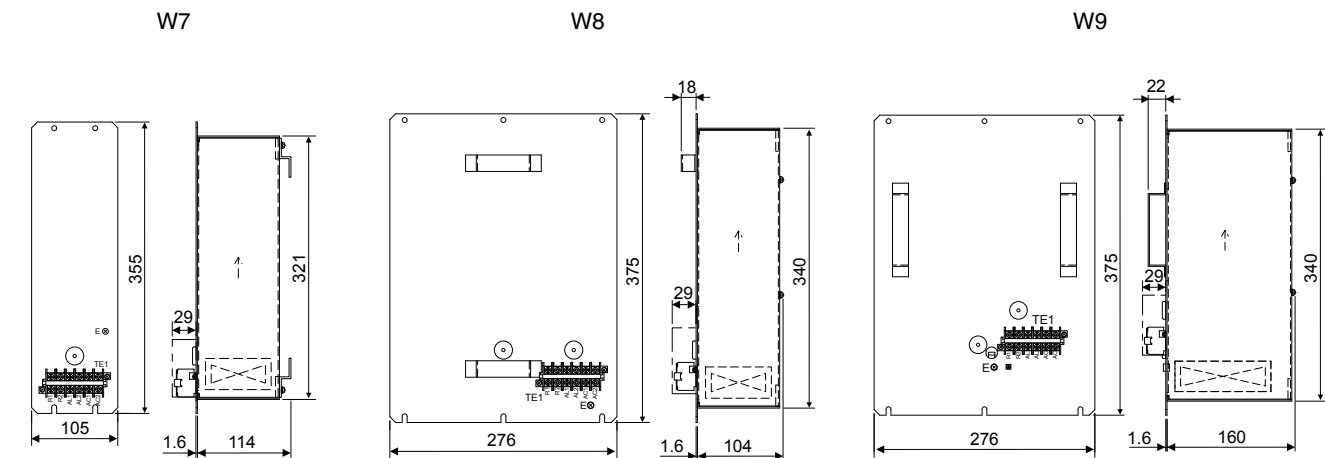
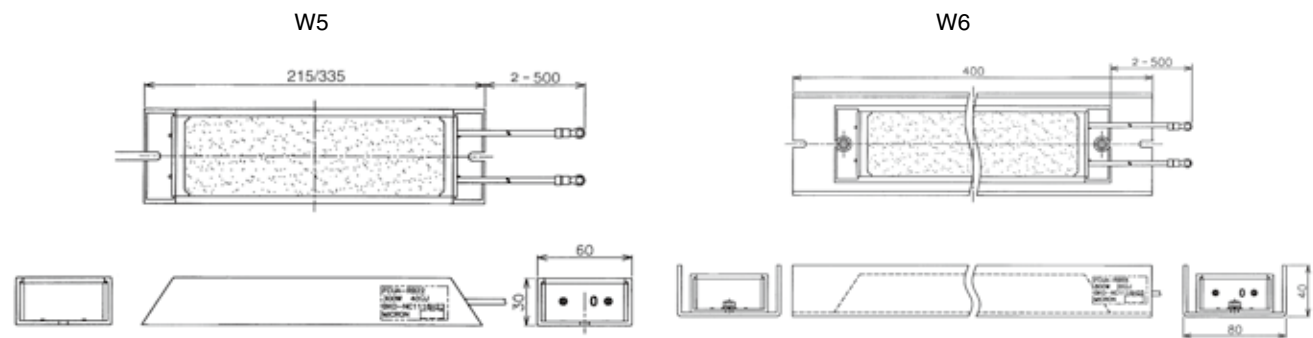
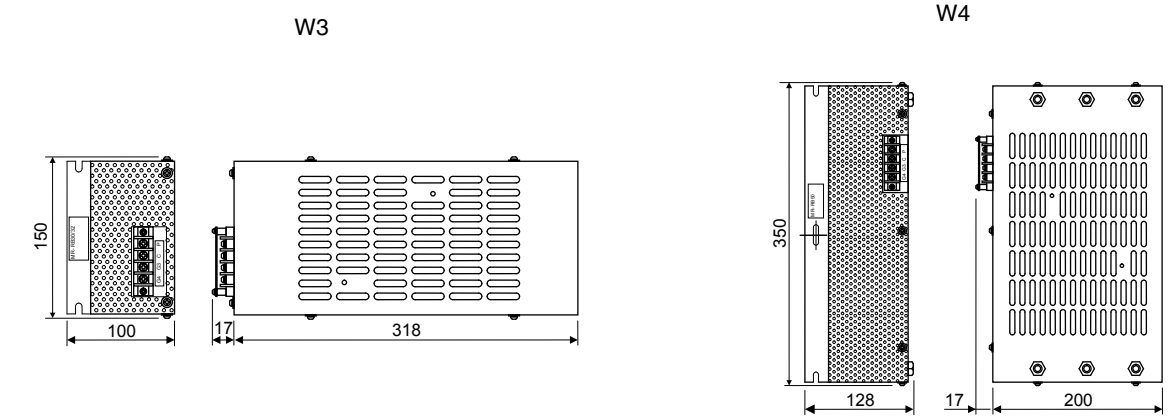
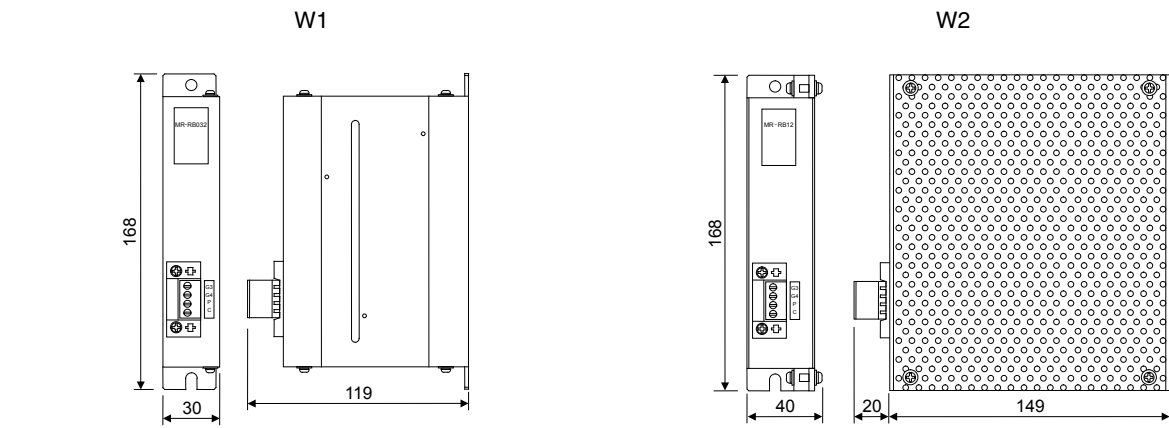
The regenerative resistor is not incorporated in the spindle drive unit.
Make sure to install the external option regenerative resistor.

Corresponding spindle drive unit		External option regenerative resistor			
		MR-RB12	MR-RB32	MR-RB30	MR-RB50
	Parameter setting value	1300h	1400h	1500h	1600h
	Mass	0.8kg	2.9kg	2.9kg	5.6kg
	Unit outline dimension	168mm×40mm×149mm	150mm×100mm×318mm	150mm×100mm×318mm	350mm×128mm×200mm
		W2	W3	W3	W4
	External option regenerative resistor	GZG200W39OHMK	GZG200W120 OHMKx3	GZG200W39 OHMKx3	GZG300W39 OHMKx3
	Regenerative capacity	100W	300W	300W	500W
	Resistance value	40Ω	40Ω	13Ω	13Ω
MDS-DJ-SP-20	–	○	○		
MDS-DJ-SP-40	–			○	○
MDS-DJ-SP-80	–			○	○
MDS-DJ-SP-100	–			○	○
MDS-DJ-SP-120	–				○
MDS-DJ-SP-160	–				
MDS-DJ-SP2-2020	–			○	○

Corresponding spindle drive unit		External option regenerative resistor			
		FCUA-RB22	FCUA-RB37	FCUA-RB55	FCUA-RB75/2 (1 unit)
	Parameter setting value	2400h	2500h	2600h	2700h
	Mass	0.8kg	1.2kg	2.2kg	2.2kg
	Unit outline dimension	30mm×60mm×215mm	30mm×60mm×335mm	40mm×80mm×400mm	40mm×80mm×400mm
		W5	W5	W6	W6
	Regenerative capacity	155W	185W	340W	340W
	Resistance value	40Ω	25Ω	20Ω	30Ω
MDS-DJ-SP-20	–	○	○		
MDS-DJ-SP-40	–	○	○	○	○
MDS-DJ-SP-80	–		○	○	○
MDS-DJ-SP-100	–			○	
MDS-DJ-SP-120	–				
MDS-DJ-SP-160	–				
MDS-DJ-SP2-2020	–	○	○	○	

Corresponding spindle drive unit		External option regenerative resistor						
		R-UNIT1	R-UNIT2	R-UNIT3	R-UNIT4	R-UNIT5	FCUA-RB55 2 units connected in parallel	FCUA-RB75/2 2 units connected in parallel
	Parameter setting value	2800h	2900h	2A00h	2B00h	2C00h	2E00h	2D00h
	Mass	4.3kg	4.4kg	10.8kg	11.0kg	15.0kg	4.4kg	4.4kg
	Unit outline dimension	355mm×105mm×114mm	355mm×105mm×114mm	375mm×276mm×104mm	375mm×276mm×104mm	375mm×276mm×160mm	40mm×80mm×400mm	40mm×80mm×400mm
		W7	W7	W8	W8	W9	W6	W6
	Regenerative capacity	700W	700W	2100W	2100W	3100W	680W	680W
	Resistance value	30Ω	15Ω	15Ω	10Ω	10Ω	10Ω	15Ω
MDS-DJ-SP-20	–							
MDS-DJ-SP-40	–	○	○	○				○
MDS-DJ-SP-80	–	○	○	○	○	○	○	○
MDS-DJ-SP-100	–		○	○	○	○	○	○
MDS-DJ-SP-120	–		○	○	○	○	○	○
MDS-DJ-SP-160	–				○	○		
MDS-DJ-SP2-2020	–							

External option regenerative resistor unit



[Unit : mm]

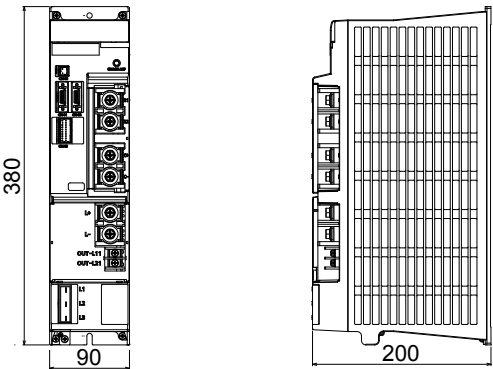
Power backup unit MDS-D/DH-PFU

Use this unit to protect machines or drive units at power failure.

Specifications

Power backup unit type		MDS-DH-PFU	MDS-D-PFU
AC Input	Rated voltage [V]	AC380 to 480 (50/60Hz) Tolerable fluctuation : between +10% and -10%	AC200 to 230 (50/60Hz) Tolerable fluctuation : between +10% and -15%
	Frequency [Hz]	50/60	Tolerable fluctuation : between +3% and -3%
	Rated current [A]	2	4
DC Input/Output	Rated voltage [V]	DC513 to 648	DC270 to 311
	Rated current [A]	Regenerative input: MAX 200A Power running output: MAX 160A	Regenerative input: MAX 300A Power running output: MAX 200A
AC output for control power backup	Voltage [V]	Single-phase 200 to 230VAC (50Hz or 60Hz) 50Hz at backup	Single-phase 380 to 480VAC (50Hz or 60Hz) 50Hz at backup
	Current [A]	MAX 2	MAX 4
	Maximum number of drive units to connect	6 units (except for the power supply unit)	
	Switching time	Within 100ms after AC input instantaneous interruption	
Degree of protection	Minimum backup time	75ms or more (AC380V input, at maximum number of drive units to connect)	75ms or more (AC200V input, at maximum number of drive units to connect)
	Cooling method	IP20 [except for the terminal block and connector area]	
Cooling method		Natural-cooling	
Mass [kg]		4	

Outline dimension drawing



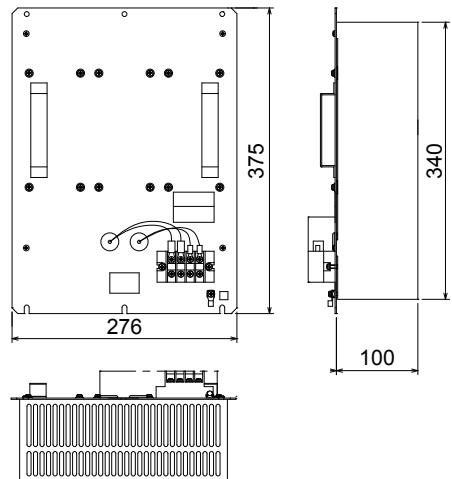
[Unit : mm]

Regenerative resistor unit for power backup unit R-UNIT-6, R-UNIT-7

Specifications

Regenerative resistor type		R-UNIT-6	R-UNIT-7
Corresponding power backup unit type		MDS-DH-PFU	MDS-D-PFU
Resistance value [Ω]		5	1.4
Instantaneous regeneration capacity [kW]		128	114
Tolerable regeneration work amount [kJ]		180	180
Cooling method		Natural-cooling	Natural-cooling
Mass [kg]		10	10

Outline dimension drawing



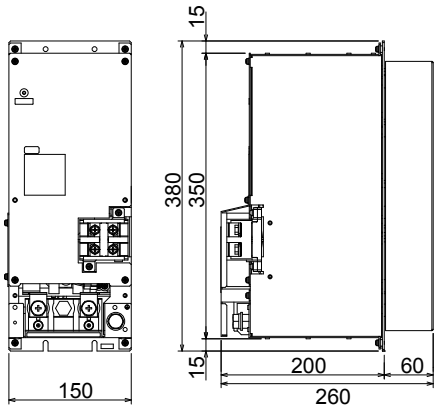
[Unit : mm]

■Capacitor unit MDS-D/DH-CU

Specifications

Capacitor unit type			MDS-DH-CU	MDS-D-CU
Compatible capacitor unit type			MDS-DH-PFU	MDS-D-PFU
Capacity		[μF]	7000	28000
DC Input/Output	Rated voltage	[V]	DC513 to 648	DC270 to 311
Cooling method			Natural-cooling	Natural-cooling
Mass			11	11

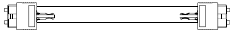
Outline dimension drawing



[Unit : mm]

MEMO

<Optical communication cable>

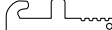
Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For CN1A/ CN1B/ OPT1A	Optical communication cable For wiring between drive units (inside panel)	G396 L0.3M	0.3		○	○	○
		G396 L0.5M	0.5				
		G396 L1M	1				
		G396 L2M	2				
		G396 L3M	3				
	Optical communication cable For wiring between drive units (outside panel)	G396 L5M	5		○	○	○
		G395 L3M	3				
		G395 L5M	5				
		G395 L7M	7				
		G395 L10M	10				
	Optical communication cable For wiring between drive units (outside panel) For optical communication repeater unit	G380 L5M	5		○	○	○
		G380 L10M	10				
		G380 L12M	12				
		G380 L15M	15				
		G380 L20M	20				
		G380 L25M	25				
		G380 L30M	30				

(Note1) For details on the optical communication cable, refer to the section "Optical communication cable specification" in Specifications Manual of each drive unit.

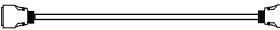
<Battery cable and connector>

Item		Model	Length (m)	Contents	Compatible model					
					D2/DH2	DM2	DJ			
For battery unit	Battery cable (For drive unit - battery unit)	DG21-0.3M	0.3		○	○	-			
		DG21-0.5M	0.5							
		DG21-1M	1							
		DG21-5M	5							
		DG23-0.3M	0.3							
	Battery cable (For drive unit -Battery box) (Note) The battery box side is connected using a bare conductor or a terminal bar.	DG23-0.5M	0.5		○	○	-			
		DG23-1M	1							
		DG23-2M	2							
		DG23-3M	3							
		DG23-5M	5							
		DG23-7M	7							
		DG23-10M	10							
		DG24-0.3M	0.3						○	○
	DG24-0.5M	0.5								
	DG24-1M	1								
	DG24-2M	2								
	DG24-3M	3								
	5V supply/DO output cable (For drive unit -Battery box) (Note) The battery box side is connected using a bare conductor or a terminal bar.	DG24-5M	5		○	○	-			
DG24-7M		7								
DG24-10M		10								
DG22-0.3M		0.3						○	○	-
DG22-0.5M		0.5								
DG22-1M	1									
DG22-2M	2									
DG22-3M	3									
DG22-5M	5									
DG22-7M	7									
DG22-10M	10									
For drive unit	Battery cable (For drive unit - drive unit) (Note) This cable is required to supply the power from the battery unit to multiple drive units.	DG22-0.3M	0.3		○	○	-			
		DG22-0.5M	0.5							
		DG22-1M	1							
		DG22-2M	2							
		DG22-3M	3							
		DG22-5M	5							
		DG22-7M	7							
		DG22-10M	10							
For CN9	Battery cable Connector set	FCUA-CS000	-		○/DH	○	-			

<Power supply communication cable and connector>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For CN4/9	Power supply communication cable	SH21	0.35		○	-	-
			0.5				
			0.7				
			1				
			1.5				
			2				
			2.5				
			3				
			3.5				
			4				
			4.5				
			5				
			6				
			7				
			8				
For CN23	Power supply communication cable connector set	FCUA-CS000	-		○	-	-
			-				
			-				
			-				
			-				
			-				
			-				
For CN23	Contact control output connector Applicable cable outline: 0.85mm ² to 3.5mm ² Finish outside diameter: to φ 4.2mm	CNU23SCV2 (AWG14) These connectors are supplied for each power supply unit.	-		○	-	-
			-		○	-	-
For CN24	External emergency stop input connector	CNU24S (AWG24)	-		○	-	-

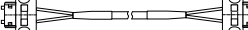
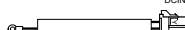
<Power backup unit connector>

Item		Model	Length (m)	Contents	Compatible model	
					D-PFU	DH-PFU
For CN41	Power supply communication cable	SH21	0.35		○	○
			0.5			
			0.7			
			1			
			1.5			
			2			
			2.5			
			3			
			3.5			
			4			
			4.5			
			5			
			6			
			7			
			8			
For CN43	Input/output connector for power backup unit	CNU43S (AWG22)	-		○	○
			-			
For TE1	Power connector for power backup unit	CNU01SPFU (AWG14)	-		○	○
			-			

<STO input connector>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For CN8	STO cable	MR-D05UDL3M-B	-		○	○	○
	STO short-circuit connector	These connectors are supplied for each drive unit.	-	 Required when not using dedicated wiring STO function.	○	○	○

<Optical communication repeater unit>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For OPT1/2	Optical communication cable For wiring between drive unit and optical communication repeater unit/ For wiring between optical communication repeater units	G380 L5M	5		○	○	○
		G380 L10M	10				
		G380 L12M	12				
		G380 L15M	15				
		G380 L20M	20				
		G380 L25M	25				
		G380 L30M	30				
		G380 L30M	30				
		G380 L30M	30				
		G380 L30M	30				
For DCIN	For optical communication repeater unit DC24V power cable	F070	0.5		○	○	○
			1.5				
			3				
			5				
			8				
			10				
			15				
			20				
			25				
			30				
For DCIN/ ACFAIL	For optical communication repeater unit/ For connecting Mitsubishi power unit PD25, PD27 DC24V power cable (power OFF detection)	F110	0.5		○	○	○
			1.5				
			3				
			5				
			8				
			10				
			15				

<Servo / tool spindle detector cable and connector>

Item			Model	Length (m)	Contents	Compatible model		
						D2/DH2	DM2	DJ
For CN2/3	For HF/HF-H, HF-KP (Tool spindle) Motor side detector cable (for A48/A51/ A74N)		CNV2E-8P-2M	2		○	○	○
			CNV2E-8P-3M	3				
			CNV2E-8P-4M	4				
			CNV2E-8P-5M	5				
			CNV2E-8P-7M	7				
			CNV2E-8P-10M	10				
			CNV2E-8P-15M	15				
			CNV2E-8P-20M	20				
			CNV2E-8P-25M	25				
			CNV2E-8P-30M	30				
			CNV2E-9P-2M	2		○	○	○
			CNV2E-9P-3M	3				
			CNV2E-9P-4M	4				
			CNV2E-9P-5M	5				
			CNV2E-9P-7M	7				
			CNV2E-9P-10M	10				
			CNV2E-9P-15M	15				
			CNV2E-9P-20M	20				
			CNV2E-9P-25M	25				
			CNV2E-9P-30M	30				
For CN2/3	Direct connection type	For HF-KP (Servo) Motor side detector cable	CNV2E-K1P-2M	2		○	-	○
		Lead out in direction of motor shaft Compatible with only IP65	CNV2E-K1P-3M	3				
			CNV2E-K1P-5M	5				
			CNV2E-K1P-7M	7				
			CNV2E-K1P-10M	10				
			CNV2E-K2P-2M	2				
	Relay type (Note)	For HF-KP (Servo) Motor side detector relay cable (motor side)	CNV2E-K2P-3M	3		○	-	○
		Lead out in opposite direction of motor shaft Compatible with only IP65	CNV2E-K2P-5M	5				
			CNV2E-K2P-7M	7				
			CNV2E-K2P-10M	10				
			CNV22J-K1P-0.3M	0.3		○	-	○
		Lead out in direction of motor shaft Compatible with only IP65						
	Relay type (Note)	For HF-KP (Servo) Motor side detector relay cable (motor side)	CNV22J-K2P-0.3M	0.3		○	-	○
		Lead out in opposite direction of motor shaft Compatible with only IP65						
			CNV2E-8P-2M	2		○	-	○
			CNV2E-8P-3M	3				
			CNV2E-8P-4M	4				
			CNV2E-8P-5M	5				
			CNV2E-8P-7M	7				
			CNV2E-8P-10M	10				
			CNV2E-8P-15M	15				
			CNV2E-8P-20M	20				
			CNV2E-8P-25M	25				
			CNV2E-8P-30M	30				
For motor detector/ Ball screw side detector	Motor side detector connector/ Ball screw side detector connector		CNE10-R10S (9)	-		○	○	○
			CNE10-R10L (9)	-		○	○	○
	Applicable cable outline φ 6.0 to 9.0mm							

(Note) When using cable of 15m or longer, use relay cable.

<Servo / tool spindle detector cable and connector>

Item			Model	Length (m)	Contents	Compatible model		
						D2/DH2	DM2	DJ
For CN2/3	MDS-B-HR unit cable		CNV2E-HP-2M	2		○	○	○
			CNV2E-HP-3M	3				
			CNV2E-HP-4M	4				
			CNV2E-HP-5M	5				
			CNV2E-HP-7M	7				
			CNV2E-HP-10M	10				
			CNV2E-HP-15M	15				
			CNV2E-HP-20M	20				
			CNV2E-HP-25M	25				
			CNV2E-HP-30M	30				
For MDS-B-HR unit	MDS-B-HR connector (For CON1,2: 1) (For CON3: 1) Applicable cable outline φ 8.5 to 11mm		CNEHRS (10)	-		○	○	○
For CN3	MDS-B-SD unit cable		CNV2E-D-2M	2		○	-	-
			CNV2E-D-3M	3				
			CNV2E-D-4M	4				
			CNV2E-D-5M	5				
			CNV2E-D-7M	7				
			CNV2E-D-10M	10				
			CNV2E-D-15M	15				
			CNV2E-D-20M	20				
			CNV2E-D-25M	25				
			CNV2E-D-30M	30				
For MDS-B-SD unit	MDS-B-SD connector (Two-piece set)		FCUA-CS000	-		○	-	-
For CN2/3	Detector connector		CNU2S (AWG18)	-		○	○	○

<Brake cable and connector>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For motor brake	Brake connector for <200V Series> HF <400V Series> HF-H brake connector	CNB10-R2S (6)	—		○	○	○
		CNB10-R2L (6)	—		○	○	○
	Applicable cable outline φ 4.0 to 6.0mm						
	Brake cable for <200V Series> HF-KP	MR-BKS1CBL 2M-A1-H	2		○	○	○
		MR-BKS1CBL 3M-A1-H	3				
		MR-BKS1CBL 5M-A1-H	5				
		MR-BKS1CBL 7M-A1-H	7				
	Lead out in direction of motor shaft	MR-BKS1CBL 10M-A1-H	10				
	Brake cable for <200V Series> HF-KP	MR-BKS1CBL 2M-A2-H	2		○	○	○
		MR-BKS1CBL 3M-A2-H	3				
MR-BKS1CBL 5M-A2-H		5					
MR-BKS1CBL 7M-A2-H		7					
Lead out in opposite direction of motor shaft	MR-BKS1CBL 10M-A2-H	10					
For CN20	Brake connector for motor brake control output	CNU20S (AWG14)	—		○	○	—

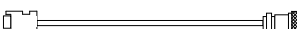
<Power cable>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For motor power	Power connector for <200V Series> HF75, 105, 54, 104, 154, 224, 123, 223, 142 <400V Series> HF-H54, 75, 104, 105, 154 Applicable cable outline ϕ 10.5 to 14mm	CNP18-10S (14)	–		○	○	○
		CNP18-10L (14)	–		○	○	○
	Power connector for <200V Series> HF204, 354, 303, 453, 302 <400V Series> HF-H204, 354, 453, 703 Applicable cable outline ϕ 12.5 to 16mm	CNP22-22S (16)	–		○	○	○
		CNP22-22L (16)	–		○	○	○
	Power connector for <200V Series> HF703, 903 <400V Series> HF-H903 Applicable cable outline ϕ 22 to 23.8mm	CNP32-17S (23)	–		○	–	–
		CNP32-17L (23)	–		○	–	–
	Power cable for <200V Series> HF-KP Lead out in direction of motor shaft	MR-PWS1CBL 2M-A1-H MR-PWS1CBL 3M-A1-H MR-PWS1CBL 5M-A1-H MR-PWS1CBL 7M-A1-H MR-PWS1CBL 10M-A1-H	2 3 5 7 10		○	–	○
	Power cable for <200V Series> HF-KP (Note) It can not be used with HF-KP13. Lead out in opposite direction of motor shaft	MR-PWS1CBL 2M-A2-H MR-PWS1CBL 3M-A2-H MR-PWS1CBL 5M-A2-H MR-PWS1CBL 7M-A2-H MR-PWS1CBL 10M-A2-H	2 3 5 7 10		○	–	○
	Power connector for MDS-D2-V1-20 to 80 MDS-D2-V2-2020 to 8080 MDS-D2-SP-20 to 40 MDS-D2-SP2-2020 to 4040 MDS-DH2-V1-10 to 80 MDS-DH2-V2-1010 to 8080 MDS-DH2-SP-20, 40 MDS-D2-V3-202020 to 404040	CNU1S (AWG14)	–		○	–	–
	Power connector for MDS-D2-V1-160 MDS-D2-V2-16080, 160160 MDS-D2-SP-80 MDS-D2-SP2-8040, 8080 MDS-DH2-V1-80, 80W MDS-DH2-V2-8080W MDS-DH2-SP-80	CNU1S (AWG10)	–		○	–	–
For CN31 L/M/S	Power connector for MDS-DM2 Series	RCN31S(AWG14, AWG16) (Note) For servo 80 RCN31M(AWG10, AWG12) (Note) For servo 120	–		–	○	–
For CN22	Control power connector for MDS-DM2 Series Applicable cable outline ϕ 1.25 to 2.2mm	RCN22	–		–	○	–

<Drive unit side main circuit connector>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For drive unit	For MDS-DJ-V1-10, 15, 30 For MDS-DJ-SP-20 Applicable cable outline: 0.8mm ² to 2.1mm ² Finish outside diameter: to ϕ 3.9mm	These connectors are supplied for each drive unit.	–		–	–	○
			–		–	–	○
			–		–	–	○
			–		–	–	○
	For MDS-DJ-V1-40, 80, 100 For MDS-DJ-SP-40, 80 Applicable cable outline: (For CNP1, for CNP3) 1.25mm ² to 5.5mm ² (For CNP2) 0.14mm ² to 2.1mm ² Finish outside diameter: (For CNP1, for CNP3) to ϕ 4.7mm (For CNP2) to ϕ 3.9mm ²	These connectors are supplied for each drive unit.	–		–	–	○
			–		–	–	○
			–		–	–	○
	For MDS-DJ-V2-3030 For MDS-DJ-SP2-2020 Applicable cable size: (For CNP1) 1.25mm ² to 2.0mm ² (For CNP2) 1.25mm ² to 2.0mm ² (For CNP3) 1.25mm ² to 2.2mm ² Cable finish outside diameter: (For CNP1) to ϕ 4.2mm (For CNP2) to ϕ 3.8mm (For CNP3) to ϕ 3.8mm	These connectors are supplied for each drive unit.	–		–	–	○
			–		–	–	○
			–		–	–	○

<Spindle detector cable and connector>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For CN2	Motor side PLG cable Spindle side accuracy detector TS5690 cable	CNP2E-1-2M	2		○	○	○
		CNP2E-1-3M	3				
		CNP2E-1-4M	4				
		CNP2E-1-5M	5				
		CNP2E-1-7M	7				
		CNP2E-1-10M	10				
		CNP2E-1-15M	15				
		CNP2E-1-20M	20				
		CNP2E-1-25M	25				
		CNP2E-1-30M	30				
		CNP3EZ-2P-2M	2				
		CNP3EZ-2P-3M	3				
For CN3	Spindle side detector OSE-1024 cable	CNP3EZ-2P-4M	4		○	○	○
		CNP3EZ-2P-5M	5				
		CNP3EZ-2P-7M	7				
		CNP3EZ-2P-10M	10				
		CNP3EZ-2P-15M	15				
		CNP3EZ-2P-20M	20				
		CNP3EZ-2P-25M	25				
		CNP3EZ-2P-30M	30				
		CNP3EZ-3P-2M	2		○	○	○
		CNP3EZ-3P-3M	3				
		CNP3EZ-3P-4M	4				
		CNP3EZ-3P-5M	5				
		CNP3EZ-3P-7M	7				
		CNP3EZ-3P-10M	10				
		CNP3EZ-3P-15M	15				
		CNP3EZ-3P-20M	20				
		CNP3EZ-3P-25M	25				
		CNP3EZ-3P-30M	30				
For spindle motor	Motor side PLG connector Spindle side accuracy detector TS5690 connector	CNEPGS	–		○	○	○
	Spindle side detector OSE-1024 cable		–		○	○	○
	Applicable cable outline ϕ 6.8 to 10mm		–		○	○	○
For CN2/3	Spindle detector drive unit side connector	CNU2S (AWG18)	–		○	○	○

<Twin-head magnetic detector (MBE405W / MBA405W) cable and connector>

Item		Model	Length (m)	Contents	Compatible model		
					D2/DH2	DM2	DJ
For CN2/3	Cable for MBE405W/MBA405W	CNV2E-MB-2M CNV2E-MB-3M CNV2E-MB-4M CNV2E-MB-5M CNV2E-MB-7M CNV2E-MB-10M CNV2E-MB-15M CNV2E-MB-20M	2 3 4 5 7 10 15 20		○	○	○
	Connector for MBE405W/MBA405W	CNEMB2S (8)	–		○	○	○
For CN3 of preamplifier	Thermistor connector for MBE405W/ MBA405W	CNEMB3S (8)	–		○	○	○



Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.

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for a greener tomorrow

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