

MDS-E/EH Series Drive Units

MDS-E Series Drives and Motors

MDS-E Series 1-Axis Servo Drive Unit

Model Number	MDS-E-V1-20	MDS-E-V1-40	MDS-E-V1-80	MDS-E-V1-160	MDS-E-V1-160W	MDS-E-V1-320	MDS-E-V1-320W
Stocked Item	-	-	S	S	-	-	-
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 324DC						
	Rated Current (A) 7 7 14 30 35 45 55						
Control Power Input	Voltage (V) 200 to 240AC 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						
Dynamic Brakes	Built-in						External (MDS-D-DBU)
Machine End Encoder	Compatible						
Degree of Protection	IP20 (excluding terminal block)						
Cooling Method	Forced air cooling						
Weight (kg)	3.8	3.8	3.8	3.8	4.5	5.8	7.5

MDS-E Series 2-Axis Servo Drive Unit

Model Number	MDS-E-V2-20	MDS-E-V2-40	MDS-E-V2-80	MDS-E-V2-160	MDS-E-V2-160W
Stocked Item	-	-	-	S	-
Drive Unit Category	2-axis servo				
Nominal Maximum Current (Peak) (A)	20/20	40/40	80/80	160/160	160/160
Power Input	Rated Voltage (V) 270 to 324DC				
	Rated Current (A) 14 (7/7) 14 (7/7) 28 (14/14) 60 (30/30) 70 (35/35)				
Control Power Input	Voltage (V) 200 to 240AC 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				
Dynamic Brakes	Built-in				
Machine End Encoder	Compatible				
Degree of Protection	IP20 (excluding terminal block)				
Cooling Method	Forced air cooling				
Weight (kg)	3.8	3.8	3.8	5.2	6.3

MDS-E Series 1-Axis Spindle Drive Unit

Model Number	MDS-E-SP-20	MDS-E-SP-40	MDS-E-SP-80	MDS-E-SP-160	MDS-E-SP-200	MDS-E-SP-240	MDS-E-SP-320	MDS-E-SP-400	MDS-E-SP-640	
Stocked Item	-	-	-	-	S	-	-	S	S	
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 324DC								
	Rated Current (A)	7	13	20	41	76	95	140	150	210
Control Power Input	Voltage (V)	200 to 240AC 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									
Degree of Protection	IP20 (excluding terminal block)									
Cooling Method	Forced air cooling									
Weight (kg)	3.8	3.8	3.8	4.5	5.8	6.5	7.5	16.5	16.5	

MDS-E Series 2-Axis Spindle Drive Unit

Model Number	MDS-E-SP2-20	MDS-E-SP2-40	MDS-E-SP2-80	MDS-E-SP2-16080
Stocked Item	-	-	-	-
Drive Unit Category	2-axis spindle			
Nominal Maximum Current (Peak) (A)	20/20	40/40	80/80	160/80
Power Input	Rated Voltage (V)	270 to 324DC		
	Rated Current (A)	14 (7/7)	26 (13/13)	40 (20/20)
Control Power Input	Voltage (V)	200 to 240AC 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			
Degree of Protection	IP20 (excluding terminal block)			
Cooling Method	Forced air cooling			
Weight (kg)	4.5	4.5	6.5	5.2

Power Supply Unit

Model Number	MDS-E-CV-37	MDS-E-CV-75	MDS-E-CV-110	MDS-E-CV-185	MDS-E-CV-300	MDS-E-CV-370	MDS-E-CV-450	MDS-E-CV-550
Stocked Item	-	-	-	-	S	S	S	S
30-Minute Rated Output (kW)	3.7	7.5	11.0	18.5	30.0	37.0	45.0	55.0
Continuous Rated Output (kW)	2.2	5.5	7.5	15.0	26.0	30.0	37.0	45.0
Power Input	Rated Voltage (V)	200 to 240AC Tolerable fluctuation: between +10% and -15%						
	Rated Current (A)	15	26	35	65	107	121	148
Control Power Input	Voltage (V)	200 to 240AC Tolerable fluctuation: between +10% and -15%						
	Current (A)	MAX. 0.2						
	Frequency (Hz)	50/60 Tolerable fluctuation: between +5% and -5%						
Regeneration Method	IP20 (excluding terminal block)							
Degree of Protection	Power regeneration method							
Cooling Method	IP20 (excluding terminal block)							
Weight (kg)	4.0	4.0	6.0	6.0	10.0	10.0	10.0	25.5

AC Reactor

Model Number	D-AL-7.5K	D-AL-11K	D-AL-18.5K	D-AL-30K	D-AL-37K	D-AL-45K	D-AL-55K
Stocked Item	S	S	S	S	S	S	S
Compatible Power Supply Unit Type	MDS-E-CV-						
Rated Capacity (kW)	37, 75	110	185	300	370	450	550
Rated Voltage (V)	7.5	11	18.5	30	37	45	55
Rated Current (A)	200 to 240AC Tolerable fluctuation: between +10% and -15%						
Rated Current (A)	27	40	66	110	133	162	200
Frequency (Hz)	50/60 Tolerable fluctuation: between +5% and -5%						
Weight (kg)	4.2	3.7	5.3	6.1	8.6	9.7	11.5

Drive System Selection of the Power Supply Unit

For the power supply unit, calculate the spindle motor output and servo motor output each, and select the capacity satisfying the required rated capacity and the maximum momentary output.

Calculation of Spindle Output

The spindle rated output and spindle maximum momentary rated output are calculated.

(1) Calculation of spindle rated output

The spindle rated output is calculated according to the following procedure.

(a) Spindle motor rated output

The spindle motor rated output is calculated from the following expression.

Spindle motor rated output =

MAX (continuous rated output, short-time rated output × short-time rated output coefficient α , %ED rated output × %ED rated output coefficient β)

(Note 1) For the spindle motor rated output, use the maximum value of “continuous rated output”, “shorttime rated output × short-time rated output coefficient α ”, and “%ED rated output × %ED rated output coefficient β ”.

(Note 2) Select the maximum value for the spindle motor with multiple %ED rated output characteristics.

For the spindle short-time rated output coefficient α , use the value in the following table.

List of short-time rated output time and short-time rated output coefficient

Short-Time Rated Output Time	Short-Time Rated Output Coefficient α	Short-Time Rated Output Time	Short-Time Rated Output Coefficient α
1 minute	0.2	5 minutes	0.7
2 minute	0.4	6~7 minutes	0.8
3 minute	0.5	8~9 minutes	0.9
4 minute	0.6	10 minutes or more	1.0

Notes:

- Select the set time for the short-time rated output of your spindle motor from the list. E.g.) When the set time for the short-time rated output is “1/12h”, it means “5 minutes”.
- For the motor with coil changeover specification, select the set time for the short-time rated output of the high-speed coil.

For the %ED rated output coefficient β , use the value in the following table.

List of %ED rated output time and %ED rated output coefficient

%ED rated output time	%ED rated output coefficient β
More than or equal to 10% but less than 20%	0.7
More than or equal to 20% but less than 30%	0.9
More than or equal to 30%	1.0

(b) Spindle rated output

The spindle rated output is calculated from the following expression.

Spindle rated output

= Spindle motor rated output × motor output coefficient γ of the combined spindle drive unit

For the spindle motor rated output of the above expression, use the value calculated in (a).

For the motor output coefficient of the combined spindle drive unit, use the value corresponding to the used spindle drive unit in the in the following table.

Motor Output Coefficient List of Combined Spindle Drive Unit MDS-E Series

Spindle Motor Rated Output	Combined Spindle Drive Unit MDS-E-SP-								
	20	40	80	160	200	240	320	400	640
to 1.5kW	1.00	1.15	1.25	-	-	-	-	-	-
to 2.2kW	-	1.00	1.15	1.30	-	-	-	-	-
to 3.7kW	-	1.00	1.05	1.20	-	-	-	-	-
to 5.5kW	-	-	1.00	1.10	1.20	-	-	-	-
to 7.5kW	-	-	-	1.00	1.15	1.20	-	-	-
to 11.0kW	-	-	-	1.00	1.05	1.10	1.15	-	-
to 15.0kW	-	-	-	-	1.00	1.05	1.10	-	-
to 18.5kW	-	-	-	-	1.00	1.00	1.05	1.10	-
to 22kW	-	-	-	-	-	1.00	1.00	1.05	1.15
to 26kW	-	-	-	-	-	-	1.00 1	.00	1.10
to 30kW	-	-	-	-	-	-	1.00	1.00	1.05
to 37kW	-	-	-	-	-	-	-	1.00	1.05
to 45kW	-	-	-	-	-	-	-	-	1.0
to 55kW	-	-	-	-	-	-	-	-	1.0

Motor Output Coefficient List of Combined Spindle Drive Unit MDS-EH Series

Spindle Motor Rated Output	Combined Spindle Drive Unit								
	MDS-EH-SP-20	MDS-EH-SP-40	MDS-EH-SP-80	MDS-EH-SP-100	MDS-EH-SP-160	MDS-EH-SP-200	MDS-EH-SP-320	MDS-EH-SP-480	MDS-EH-SP-600
to 2.2kW	1.00	1.15	1.30	-	-	-	-	-	-
to 3.7kW	1.00	1.05	1.20	-	-	-	-	-	-
to 5.5kW	-	1.00	1.10	1.20	-	-	-	-	-
to 7.5kW	-	-	1.00	1.15	-	-	-	-	-
to 11.0kW	-	-	1.00	1.05	1.15	-	-	-	-
to 15.0kW	-	-	-	1.00	1.10	-	-	-	-
to 18.5kW	-	-	-	1.00	1.05	1.10	-	-	-
to 22kW	-	-	-	-	1.00	1.05	1.15	-	-
to 26kW	-	-	-	-	1.00	1.00	1.10	1.20	-
to 30kW	-	-	-	-	1.00	1.00	1.05	1.15	-
to 37kW	-	-	-	-	-	1.00	1.05	1.10	1.10
to 45kW	-	-	-	-	-	-	1.00	1.05	1.05
to 55kW	-	-	-	-	-	-	1.00	1.00	1.00
to 75kW	-	-	-	-	-	-	-	1.00	1.00

Notes:

1. When the spindle motor applies to the wide range constant output specification or the high-torque specification, the spindle rated output may become large.
2. The spindle rated output is calculated from the motor output coefficient of the spindle drive unit used in combination with the spindle motor.

(2) Calculation of spindle maximum momentary output

The spindle maximum momentary output is calculated from the following expression.

Spindle maximum momentary output

= MAX (short-time rated output x 1.2, output at acceleration/deceleration x 1.2, %ED rated output x 1.2)

(Note) For the spindle rated output, use the largest one among “short-time rated output x 1.2”, “output at acceleration/ deceleration x 1.2” and “%ED rated output x 1.2”.

Calculation of Servo Motor Output

- (1) Selection with rated output
- (2) Selection with maximum momentary output

For the rated output and maximum momentary output of the servo motor, use the value corresponding to the servo motor in the following table.

Data for Servo Motor Output Selection

200V Series

Motor	HG75	HG105	HG54	HG104	HG154	HG224	HG204	HG354
Rated Output (kW)	0.75	1.0	0.5	1.0	1.5	2.2	2.0	3.5
Maximum Momentary Output (kW)	2.6	3.6	2.3	5.0	9.0	12.3	8.0	18.0

Motor HG	HG123	HG223	HG303	HG453	HG703	HG903	HG142	HG302
Rated Output (kW)	1.2	2.2	3.0	4.5	7.0	9.0	1.4	3.0
Maximum Momentary Output (kW)	4.0	7.5	12.0	22.0	28.0	41.0	3.8	7.4

400V Series

Motor	HG75	HG105	HG54	HG104	HG154	HG204	HG354	HG453	HG703	HG903
Rated Output (kW)	0.75	1.0	0.5	1.0	1.5	2.0	3.5	4.5	7.0	9.0
Maximum Momentary Output (kW)	2.6	3.6	2.3	5.0	9.0	8.0	18.0	22.0	28.0	41.0

Motor HG	HG903	HG1103
Rated Output (kW)	9.0	11.0
Maximum Momentary Output (kW)	33.0	50.0

Note: The maximum momentary output in this table is reference data for selecting the power supply unit and is not data which guarantees the maximum output.

Selection of the Power Supply Unit

Select the power supply unit from the total sum of the rate output and the maximum momentary output.

(1) Calculation of required rated output

Power supply unit rated capacity $> \Sigma$ (Spindle rated output) + 0.3 Σ (Servo motor rated output)

Substitute the output calculated from (1) of "Calculation of spindle output" and (1) of "Calculation of servo motor output" to the above expression, and calculate the total sum of the spindle rated output and servo motor rated output.

According to this, select the power supply unit satisfying the rated capacity from the following table.

(2) Calculation of required maximum momentary output

Maximum momentary rated capacity of power supply unit \geq

Σ (Spindle maximum momentary output) + Σ (Maximum momentary output of servomotor accelerating/ decelerating simultaneously + Maximum momentary output of direct drive motor accelerating/ decelerating simultaneously)

Substitute the output calculated from (2) of "Calculation of spindle output" and (2) of "Calculation of servo motor output" to the above expression, and calculate the total sum of the "spindle maximum momentary output" and "output of servo motor accelerating/decelerating simultaneously". According to this, select the power supply unit satisfying the maximum momentary rated capacity from the following table.

(3) Selection of power supply unit

Select the power supply unit of which the capacity is larger than that selected in the item (1) and (2).

Power Supply Unit Rated Capacity and Maximum Momentary Rated Capacity

MDS-E Series

Model Number	MDS-E-CV-37	MDS-E-CV-75	MDS-E-CV-110	MDS-E-CV-185	MDS-E-CV-300	MDS-E-CV-370	MDS-E-CV-450	MDS-E-CV-550
Rated Capacity (kW)	4.2	8	11.5	19	31	38	46	56
Maximum Momentary Rated Capacity (kW)	16	23	39	60	92	101	125	175

Model Number	MDS-EH-CV-37	MDS-EH-CV-75	MDS-EH-CV-110	MDS-EH-CV-185	MDS-EH-CV-300	MDS-EH-CV-370	MDS-EH-CV-450	MDS-EH-CV-550	MDS-EH-CV-750
Rated Capacity (kW)	4.2	8	11.5	19	31	38	46	56	76
Maximum Momentary Rated Capacity (kW)	16	23	39	60	92	101	125	175	180

Caution:

When reducing the time constant replacing the conventional motor with the HG or HG-H Series motor, the power supply capacity may rise because the motor maximum momentary output increases more than the conventional motor. Therefore, make sure to check the selection with maximum momentary rated capacity.

When the large capacity drive unit (MDS-E-SP-400/640, MDS-EH-SP-200/320/480, MDSEH-V1-200) is connected to the power supply unit, always install the drive unit proximally in the left side of the power supply unit and connect PN terminal with the dedicated DC connection bar.

When using two large capacity drive units or more, the power supply unit is required for each drive unit.

Required Capacity of Power Supply

For the power supply capacity, calculate the required spindle rated output and servo motor rated output each, and select the power supply capacity satisfying them.

(1) Spindle rate output required for power supply

The spindle rate output required for power supply is calculated from the following expression.

Spindle rate output required for power supply =

MAX (Spindle motor continuous rated output, Spindle motor output at accelerating/decelerating,

Spindle motor short-time output) \times motor output coefficient γ of combined spindle drive unit

(Note) For the spindle rate output required for the power supply, multiply the largest one of "spindle motor continuous rate output", "spindle motor output at acceleration/deceleration" and "spindle motor short-time output" by the motor output coefficient γ of the combined spindle drive unit.

For the motor output coefficient of the combined spindle drive unit, use the value corresponding to the used spindle drive unit in "Motor output coefficient list of combined spindle drive unit" on (1)-(b) of "Calculation of spindle output"

(2) Servo motor rate output required for power supply

For the servo motor rate output required for power supply, use the value calculated in (1) of "Calculation of servo motor output"

(3) Calculation of rate output required for power supply

Rated capacity required for power supply =

Σ (Spindle rate output required for power supply) + 0.3 Σ (servo motor rate output required for power supply)

Substitute the output calculated from the item (1) and (2) to the above expression, and calculate the rated capacity required for the power supply.

(4) Calculation of required power supply

Power supply capacity (kVA) = Σ {(Required rated capacity calculated in the item (3) (kW) /

Capacity of selected power supply unit (kW)} \times Power supply capacity base value (kVA)}

The power supply capacity base value corresponding to the capacity of the selected power supply unit is as the following table.

MDS-E Series

Model Number	MDS-E-CV-37	MDS-E-CV-75	MDS-E-CV-110	MDS-E-CV-185	MDS-E-CV-300	MDS-E-CV-370	MDS-E-CV-450	MDS-E-CV-550
Power Supply Capacity Base Value (kVA)	5.3	11.0	16.0	27.0	43.0	53.0	64.0	78.0

MDS-EH Series

Model Number	MDS-EH-CV-37	MDS-EH-CV-75	MDS-EH-CV-110	MDS-EH-CV-185	MDS-EH-CV-300	MDS-EH-CV-370	MDS-EH-CV-450	MDS-EH-CV-550	MDS-EH-CV-750
Power Supply Capacity Base Value (kVA)	5.3	11.0	16.0	27.0	43.0	53.0	64.0	78.0	107.0

Selection of Regenerative Resistor for Power Backup Unit (R-UNIT-6,7) and Capacitor Unit for Power Backup Unit (MDS-D/DH-CU)

When using the retraction function at power failure with MDS-D/DH-PFU, select to satisfy the stop operation for the regenerative resistor and the continuous rated output of the spindle motor for the capacitor unit.

(1) Selection of regenerative resistor for power backup unit

When using the retraction function at power failure, a resistor unit is required to make the spindle deceleration and stop after the retraction is completed.

Caution:

When not using a resistor unit, control to coast the spindle motor after the retraction operation is completed. Only the designated combination can be used for the power backup unit and the regenerative resistor.

(2) Selection of capacitor unit for power backup unit

When using the retraction function at power failure, the required number of capacitor units is decided by the continuous rated output (kW) of the spindle motor. Select according to the following specifications.

List of Spindle Continuous Rated Output and Number of Capacitor Unit

Spindle Continuous Rated Output	Number of Capacitor Unit
3.7kW or less	1
5.5kW or less	2
7.5kW or less	3
11kW or less	4
15kW or less	5
22kW or less	6

Options

Battery

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

Model Number	MDS-BAT6V1SET	MDSBTBOX-LR2060	MR-BAT6V1SET
Stocked Item	S	-	S
Installation Type	Drive unit with battery holder type	Unit and battery integration type	Drive unit with battery holder type
Hazard Class	Not applicable	Not applicable	Not applicable
Number of Connectable Axes	Up to 3 axes	Up to 8 axes	1 axis
Battery Change	Possible	Possible	Possible
Compatible Model	E/EH	X	-
	EM	-	X
	EJ/EJH	-	X

Ball Screw Side Encoder

Model Number	OSA105ET2A	OSA166ET2NA
Stocked Item	-	-
Electrical Characteristics	Encoder Resolution 1,000,000 Pulse/Rev	16,000,000pulse/rev
	Detection Method	Absolute position method (battery backup method)
	Tolerable Rotation Speed at Power Off (*1)	500r/min ²
	Encoder 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 x 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/19.6N
	Weight (kg)	0.6
	Degree of Protection	IP65 (The shaft-through portion is excluded)
	Recommended Coupling	Bellows coupling
Compatible Model	E/EH	X
	EM	-
	EJ/EJH	-

Twin-Head Magnetic Encoder (MBA Series)

Model Number	MBA405W-BE082	MBA405W-BF125	MBA405W-BG160	
Stocked Item	-	-	-	
Electrical Characteristics	Encoder 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
	Encoder Output Data	Serial data		
Mechanical Characteristics For Rotation	Power Consumption	0.2A or less		
	Inertia	0.5x10 ⁻³ kg • m ²	2.4x10 ⁻³ kg • m ²	8.7x10 ⁻³ kg • m ²
	Tolerable Angle Acceleration (Time of Backup)	500rad/s ²		
Mechanical Configuration	Tolerable Continuous Rotation Speed	3000r/min	2000r/min	1500r/min
	Drum Inner Diameter (mm)	ø82	ø125	ø160
	Drum Outer Diameter (mm)	ø100	ø150.3	ø200.6
	Drum Weight (kg)	0.2	0.46	1.0
	Degree Of Protection (*3)	IP67		
Outline Dimension (mm)	ø140 x 21.5	ø190 x 23.5	ø242 x 25.5	

- Notes:
- The values above are typical values after the calibration with our shipping test device and are not guaranteed.
 - The user is requested to install the magnetic drum and installation ring in the encoder within the accuracy range specified herein. Even when the accuracy of the encoder 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.
 - It is the degree of protection when fitted with a connector.

No-Variable Speed Control (When Spindle and Motor are Directly Coupled or Coupled With a 1:1 Gear Ratio)

Spindle Control Item	Control Specifications	Without Spindle Side Encoder	With Spindle Side Encoder
Spindle Control	Normal cutting control	X	This normally is not used for non-variable speed control.
	Constant surface speed control (lathe)	X	
	Thread cutting (lathe)	X	
Orientation Control	1-point orientation control	X	
	Multi-point orientation control	X	
	Orientation indexing	X	
Synchronous Tap Control	Standard synchronous tap	X	
	Synchronous tap after zero point return	X	
Spindle Synchronous Control	Without phase alignment function	X	
	With phase alignment function	X	
	C-axis control C-axis control	X	X (*2)

- Notes:
- X = control possible
 - When spindle and motor are coupled with a 1:1 gear ratio, use of a spindle side encoder 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)

Spindle Control item	Control Specifications	Without Spindle Side Encoder	With Spindle Side Encoder		
			TS5690/ERM280/MPCI/MBE405W Series	OSE-1024 (*5, *6)	Proximity switch
Spindle Control	Normal Cutting Control	X	X	X	X
	Constant Surface Speed Control (Lathe)	X (*2)	X	X	X (*2)
	Thread Cutting (Lathe)	0	X	X	0
Orientation Control	1-Point Orientation Control	0	X	X	X (*4)
	Multi-Point Orientation Control	0	X	X	0
	Orientation Indexing	0	X	X	0
Synchronous Tap Control	Standard Synchronous Tap	X (*3)	X	X	X (*3)
	Synchronous Tap After Zero Point Return	0	X	X	0
Spindle Synchronous Control	Without Phase Alignment Function	X (*2)	X	X	X (*2)
	With Phase Alignment Function	0	X	X	0
C-Axis Control	C-Axis Control	0	X	0	0

- Notes:
- X = Control possible; 0 = Control not possible
 - Control not possible when connected with the V-belt.
 - Control not possible when connected with other than the gears.
 - When using a proximity switch, an orientation is executed after the spindle is stopped. As for 2-axis spindle drive unit, setting is available only for one of the axes.
 - Confirm that the gear ratio (pulley ratio) of the spindle end to the encoder is 1:1.
 - Use a timing belt when connecting by a belt.

MDS-E Series Detector Cable and Connector for Spindle Motor Selection List

Spindle Motor Type		Drive Unit Type MDS-EM- SPV3	Power Cable		Connecting to a Spindle Motor
			Drive Side	Motor Side	Motor Side PLG Cable
SJ-D Series (Normal)	SJ-D5.5/100-01	10040 10080	Terminal Block Connection	Terminal Block Connection	CNP2E-1_M (_ = 5, 10, 15, 20)
	SJ-D5.5/120-01				
	SJ-D7.5/100-01				
	SJ-D7.5/120-01				
	SJ-D5.5/120-02	10040 10080 16080 20080			
SJ-D11/100-01		16080			
SJ-D Series (Hollow Shaft)	SJ-D5.5/120-02T-S	10040 10080 16080 20080			
SJ-DG Series (High Output)	SJ-DG3.7/120-03T	16080			
	SJ-DG5.5/120-04T				
	SJ-DG7.5/120-05T	200120			
	SJ-DG11/100-03T				
SJ-DJ Series (Compact & Lightweight)	SJ-DJ5.5/100-01	10040 10080			
	SJ-DJ5.5/120-01				
	SJ-DJ7.5/100-01	16080			
	SJ-DJ7.5/120-01				
	SJ-DJ11/100-01				
SJ-DJ15/80-01	20080				
SJ-DL Series (Low-Inertia)	SJ-DL5.5/150-01T	16080			
	SJ-DL7.5/150-01T				
SJ-V Series (Normal)	SJ-V7.5-03ZT	20080			
	SJ-V11-08ZT				
	SJ-V11-13ZT				
	SJ-V15-01ZT				
	SJ-V15-09ZT				
SJ-V Series (Wide Range Constant Output)	SJ-V18.5-01ZT				
	SJ-V11-01T	16080			
	SJ-V11-09T				
SJ-V Series (Hollow Shaft)	SJ-V15-03T	20080			
	SJ-VL11-02FZT	16080			
	SJ-VL11-05FZT-S01				