

Motor Specifications and Ratings 200V MDMA

1.0kW to 1.5kW Low inertia, Medium Capacity

		AC200V					
Motor model		MDMA		102P1 □	102S1 □	152P1 □	152S1 □
Applicable driver	Model No.	A4 series	MDDDT3530		MDDDT5540		
		A4F series	MDDDT3530F		MDDDT5540F		
		A4P series	MDDDT3530P		MDDDT5540P		
	Frame symbol		Frame D				
Power supply capacity (kVA)		1.8			2.3		
Rated output (W)		1000			1500		
Rated torque (N · m)		4.8			7.15		
Momentary Max. peak torque (N · m)		14.4			21.5		
Rated current (Arms)		5.6			9.4		
Max. current (Ao-p)		24			40		
Regenerative brake frequency (times/min) Note1	Without option	No limit		Note2			
	DV0P4284	No limit		Note2			
Rated rotational speed (r/min)		2000					
Max. rotational speed (r/min)		3000					
Moment of inertia of rotor (x10 ⁻⁴ kg · m ²)	Without brake	6.17			11.2		
	With brake	6.79			12.3		
Recommended moment of inertia ratio of the load and the rotor Note3		10 times or less					
Rotary encoder specifications		2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental		
		Resolution per single turn	10000	131072	10000	131072	
Protective enclosure rating		IP65 (except rotating portion of output shaft and lead wire end)					
Environment	Ambient temperature	0 to 40°C (free from freezing), Storage : -20 to +65°C (Max.temperature guarantee 80°C for 72 hours <Nomal temperature>)					
	Ambient humidity	85%RH or lower (free from condensing)					
	Installation location	Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust					
	Altitude	1000m or lower					
	Vibration resistance	49m/s ² or less					
Mass (kg), () represents holding brake type		6.8 (8.7)			8.5 (10.1)		

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)		
Static friction torque (N · m)	4.9	13.7
Engaging time (ms)	80	100
Releasing time (ms) Note4	70 (200)	50 (130)
Exciting current (DC) (A)	0.59	0.79
Releasing voltage	DC2V or more	
Exciting voltage	DC 24 V ±10%	

Permissible load		
During assembly	Radial load P-direction (N)	980
	Thrust load A-direction (N)	588
	Thrust load B-direction (N)	686
During operation	Radial load P-direction (N)	490
	Thrust load A-direction (N)	196
	Thrust load B-direction (N)	196

For motor dimensions, refer to page A4-121, and for the diver, refer to pages A4-23, 49 and 74.

Model designation MDMA series, 1.0kW to 1.5kW

e.g.)

M D M A 1 0 2 S 1 G

Symbol	Type
MDMA	Middle inertia (1.0kW-1.5kW)

Voltage specifications	
Symbol	Specifications
2	200V

Design order
1 : Standard

Motor structure

Symbol	Shaft		Holding brake		Oil seal	
	Round	Key-way	without	with	without	with
C	●		●			●
D	●			●		●
G		●	●			●
H		●		●		●

Products are standard stock items or build to order items. See index (page F31).

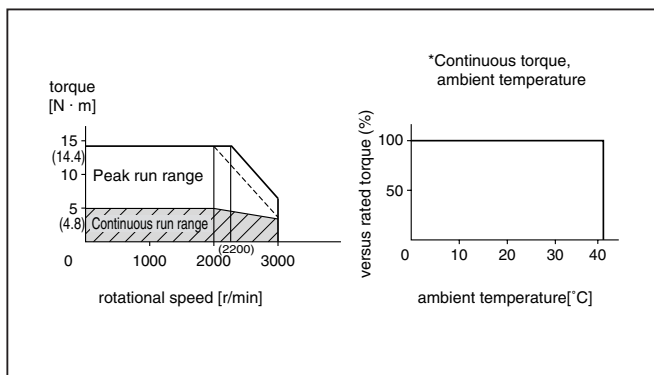
Motor rated output	
Symbol	Rated output
10	1.0kW
15	1.5kW

Rotary encoder specifications				
Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5
S	Absolute/Incremental	17-bit	131072	7

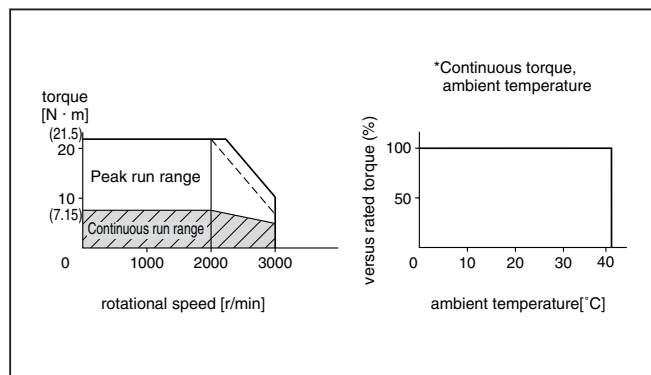
Torque characteristics at AC200V of power voltage

(Dotted line represents the torque at 10% less supply voltage.)

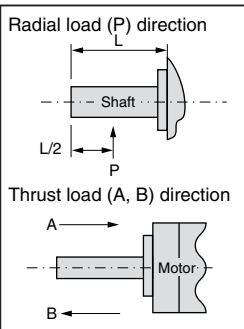
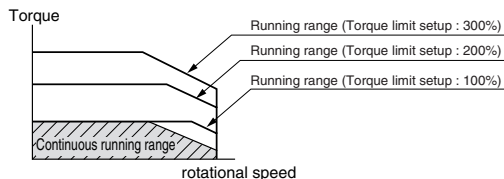
MDMA102□1□



MDMA152□1□



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



- Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.
- If the load is connected, frequency will be defined as $1/(m+1)$, where m =load moment of inertia/rotor moment of inertia.
 - When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
 - Power supply voltage is AC230V (at 200V of the main voltage).
If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
 - When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
2. If the effective torque is within the rated torque, there is no limit in generative brake.
3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by Ishizuka Electronic or equivalent).
() represents the actually measured value using a diode (200V, 1A or equivalent)

Motor Specifications and Ratings 200V MDMA

2.0kW to 3.0kW Middle inertia, Medium Capacity

		AC200V				
Motor model		MDMA	202P1□	202S1□	302P1□	302S1□
Applicable driver	Model No.	A4 series	MEDDT7364		MFDDTA390	
		A4F series	MEDDT7364F		MFDDTA390F	
		A4P series	MEDDT7364P		MFDDTA390P	
	Frame symbol		Frame E		Frame F	
Power supply capacity (kVA)		3.3		4.5		
Rated output (W)		2000		3000		
Rated torque (N · m)		9.54		14.3		
Momentary Max. peak torque (N · m)		28.5		42.9		
Rated current (Arms)		12.3		17.8		
Max. current (Ao-p)		52		76		
Regenerative brake frequency (times/min) Note)1	Without option	No limit		Note)2		
	DV0P4285 x 2	No limit		Note)2		
Rated rotational speed (r/min)		2000				
Max. rotational speed (r/min)		3000				
Moment of inertia of rotor (x10 ⁻⁴ kg · m ²)	Without brake	15.2		22.3		
	With brake	16.7		24.6		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less				
Rotary encoder specifications		2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental	
Resolution per single turn		10000	131072	10000	131072	
Protective enclosure rating		IP65 (except rotating portion of output shaft and lead wire end)				
Environment	Ambient temperature	0 to 40°C (free from freezing), Storage : -20 to +65°C (Max.temperature guarantee 80°C for 72 hours <Nomal temperature>)				
	Ambient humidity	85%RH or lower (free from condensing)				
	Installation location	Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust				
	Altitude	1000m or lower				
	Vibration resistance	49m/s ² or less				
Mass (kg), () represents holding brake type		10.6 (12.5)		14.6 (16.5)		

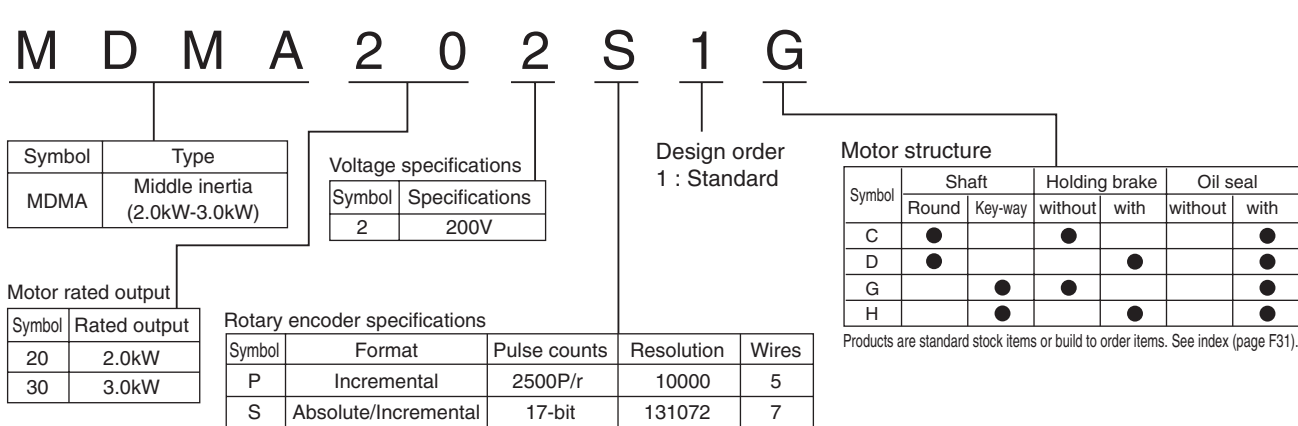
Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)		
Static friction torque (N · m)	13.7	
Engaging time (ms)	100	
Releasing time (ms) Note)4	50 (130)	
Exciting current (DC) (A)	0.79	
Releasing voltage	DC2V or more	
Exciting voltage	DC 24 V ±10%	

Permissible load			
During assembly	Radial load P-direction (N)	980	980
	Thrust load A-direction (N)	588	588
	Thrust load B-direction (N)	686	686
During operation	Radial load P-direction (N)	490	784
	Thrust load A-direction (N)	196	343
	Thrust load B-direction (N)	196	343

For motor dimensions, refer to page A4-122, and for the diver, refer to pages A4-24, 50 and 75.

Model designation MDMA series, 2.0kW to 3.0kW

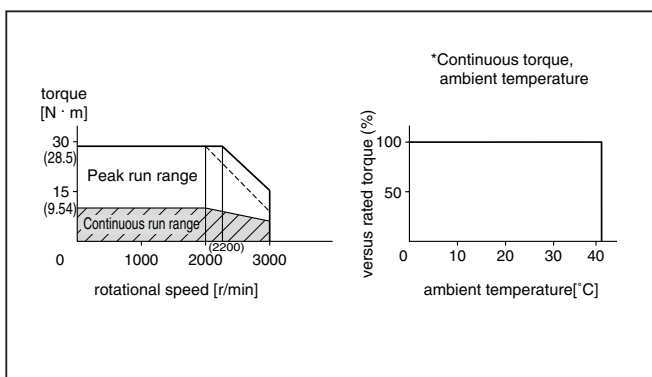
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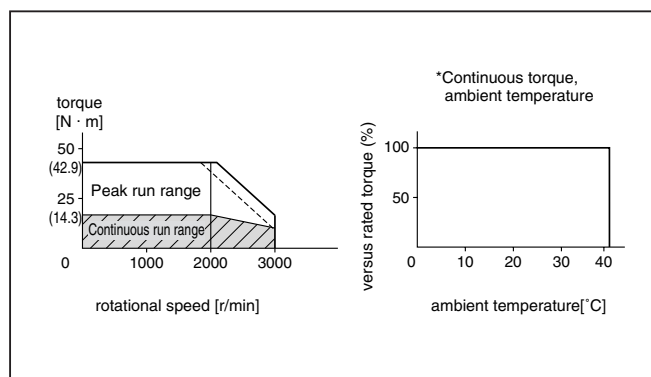
Torque characteristics at AC200V of power voltage

(Dotted line represents the torque at 10% less supply voltage.)

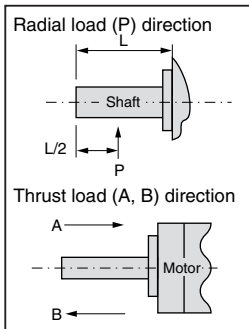
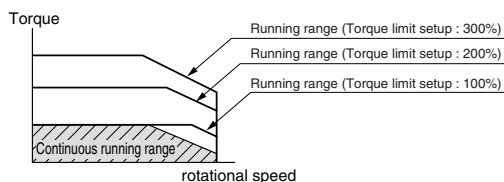
MDMA202□1□



MDMA302□1□



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defines as $1/(m+1)$, where m =load moment of inertia/rotor moment of inertia.
 - When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
 - Power supply voltage is AC230V (at 200V of the main voltage).
If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
 - When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
2. If the effective torque is within the rated torque, there is no limit in generative brake.
 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by Ishizuka Electronic or equivalent).
() represents the actually measured value using a diode (200V, 1A or equivalent)

Motor Specifications and Ratings 200V MDMA

4.0kW to 7.5kW Middle inertia, Medium Capacity

		AC200V							
Motor model		MDMA		402P1 □	402S1 □	502P1 □	502S1 □	752P1 □	752S1 □
Applicable driver	Model No.	A4 series	MFDDTB3A2				MGDDTC3B4		
		A4F series	MFDDTB3A2F				MGDDTC3B4F		
		A4P series	MFDDTB3A2P				—		
	Frame symbol	Frame F				Frame G			
Power supply capacity (kVA)		6.0			7.5		11		
Rated output (W)		4000			5000		7500		
Rated torque (N · m)		18.8			23.8		48		
Momentary Max. peak torque (N · m)		56.4			71.4		119		
Rated current (Arms)		23.4			28.0		46.6		
Max. current (Ao-p)		100.0			120.0		165.0		
Regenerative brake frequency (times/min) Note)1	Without option	250			94		No limit Note)2		
	DV0P4285 x 2	No limit			Note)2		—		
	DV0P4285 x 4	—			—		No limit Note)2		
Rated rotational speed (r/min)		2000				1500			
Max. rotational speed (r/min)		3000				3000			
Moment of inertia of rotor (x10 ⁻⁴ kg · m ²)	Without brake	42.5			60.7		99.0		
	With brake	46.8			66.7		105.0		
Recommended moment of inertia ratio of the load and the rotor Note)3		10 times or less							
Rotary encoder specifications		2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental	2500P/r Incremental	17-bit Absolute/ Incremental		
		Resolution per single turn	10000	131072	10000	131072	10000	131072	
Protective enclosure rating		IP65 (except rotating portion of output shaft and lead wire end)							
Environment	Ambient temperature	0 to 40°C (free from freezing), Storage : -20 to +65°C (Max.temperature guarantee 80°C for 72 hours <Nomal temperature>)							
	Ambient humidity	85%RH or lower (free from condensing)							
	Installation location	Indoors (no direct sunlight), free from corrosive gas, inflammable gas, oil mist and dust							
	Altitude	1000m or lower							
	Vibration resistance	49m/s ² or less				24m/s ² or less			
Mass (kg), () represents holding brake type		18.8 (21.3)			25.0 (28.5)		41.0 (45.0)		

Brake specifications (This brake will be released when it is energized. Do not use this for braking the motor in motion.)				
Static friction torque (N · m)		21.5	24.5	58.8
Engaging time (ms)		90	80	150
Releasing time (ms) Note)4		35 (150)	25 (200)	50 (130)
Exciting current (DC) (A)		1.10	1.30	1.40
Releasing voltage		DC2V or more		
Exciting voltage		DC 24 V ±10%		

Permissible load				
During assembly	Radial load P-direction (N)	1666		2058
	Thrust load A-direction (N)	784		980
	Thrust load B-direction (N)	980		1176
During operation	Radial load P-direction (N)	784		1176
	Thrust load A-direction (N)	343		490
	Thrust load B-direction (N)	343		490

For motor dimensions, refer to page A4-123, and for the diver, refer to pages A4-24, 25, 50, 51 and 75.

Model designation MDMA series, 4.0kW to 7.5kW

e.g.)

M D M A 4 0 2 S 1 G

Symbol	Type
MDMA	Middle inertia (4.0kW-7.5kW)

Voltage specifications	
Symbol	Specifications
2	200V

Design order 1 : Standard

Motor structure

Symbol	Shaft		Holding brake		Oil seal	
	Round	Key-way	without	with	without	with
C	●		●			●
D	●			●		●
G		●	●			●
H		●		●		●

Products are standard stock items or build to order items. See index (page F31).

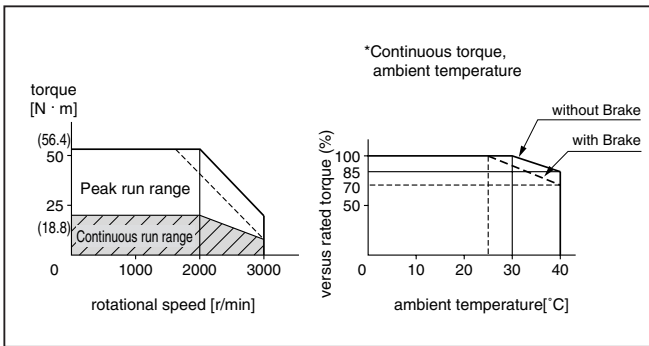
Motor rated output	
Symbol	Rated output
40	4.0kW
50	5.0kW
75	7.5kW

Rotary encoder specifications				
Symbol	Format	Pulse counts	Resolution	Wires
P	Incremental	2500P/r	10000	5
S	Absolute/Incremental	17-bit	131072	7

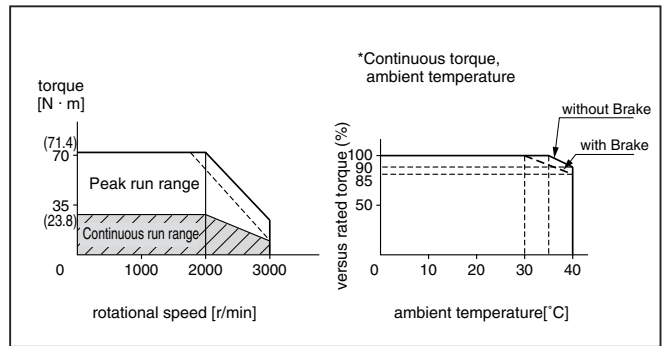
Torque characteristics at AC200V of power voltage

(Dotted line represents the torque at 10% less supply voltage.)

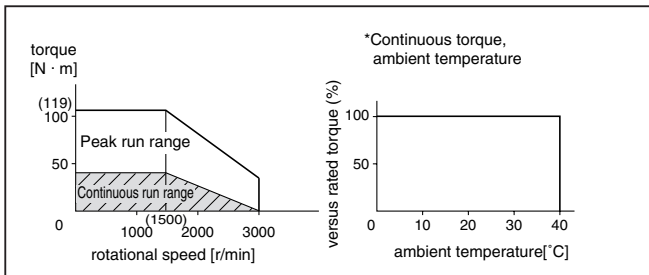
MDMA402□1□



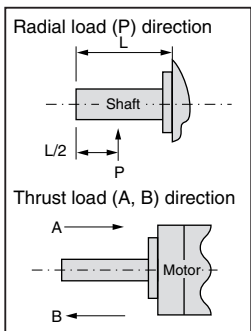
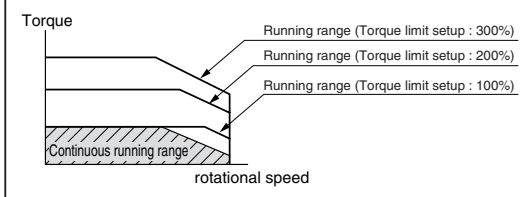
MDMA502□1□



MDMA752□1□



*When you lower the torque limit setup (Pr5E and 5F), running range at high speed might be lowered as well.



Note) 1. Regenerative brake frequency represents the frequency of the motor's stops from the rated speed with deceleration without load.

- If the load is connected, frequency will be defined as $1/(m+1)$, where m =load moment of inertia/rotor moment of inertia.
 - When the motor speed exceeds the rated speed, regenerative brake frequency is in inverse proportion to the square of (running speed/rated speed).
 - Power supply voltage is AC230V (at 200V of the main voltage). If the supply voltage fluctuates, frequency is in inverse proportion to the square of (Running supply voltage/230) relative to the value in the table.
 - When regeneration occurs continuously such cases as running speed frequently changes or vertical feeding, consult us or a dealer.
2. If the effective torque is within the rated torque, there is no limit in generative brake.
 3. Consult us or a dealer if the load moment of inertia exceeds the specified value.
 4. Specified releasing time is obtained with the use of surge absorber for brake (Z15D151 by Ishizuka Electronic or equivalent). () represents the actually measured value using a diode (200V, 1A or equivalent)