Parameters and characteristics of OM2 series motor

1. Low inertia of OMS2101/OMS2201/OMS2401/OMS2751/OMS2951

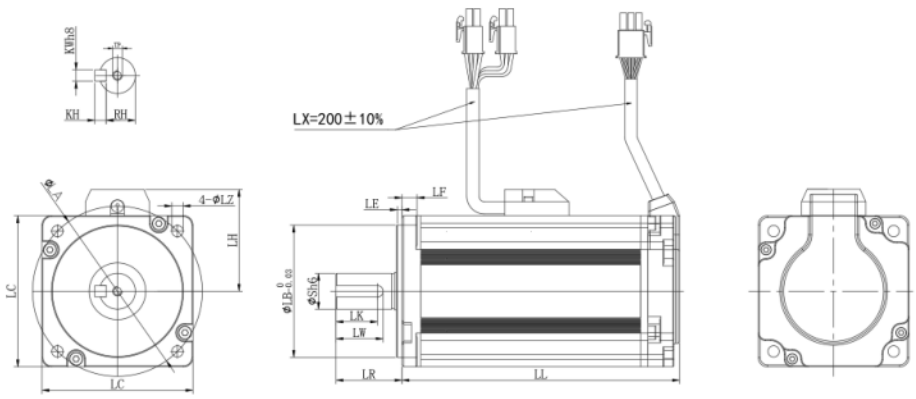
Parameter list

Items	Unit	Specifications				
Motor model		OMS2101	OMS2201	OMS2401	OMS2751	OMS2951
Rated power	W	100	200	400	750	1000
Voltage	V(AC)	220	220	220	220	220
Rated torque	N m	0.32	0.64	1.27	2.39	3.18
Maximum torque	N m	0.96	1.92	3.8	7.2	9.54
Rated speed	r/min	3000	3000	3000	3000	3000
Maximum speed	r/min	6000	6000	6000	6000	4500
Rated current	A	1.4	2.1	3.2	4.8	4.9
Maximum current	A	4.2	6.3	9.6	13.4	14.7
Torque constant	N m/A	0.23	0.304	0.396	0.498	0.649
Reverse potential constant	mV/(r/min)	10.1	12.7	15.5	20.2	25.0
Rotational inertia						
Without brake	$\times10^{-4}$kg •m^2	0.048	0.15	0.27	0.9	1.0
With brake	$\times10^{-4}$kg •m^2	0.05	0.17	0.29	1.0	1.1

Outline dimension

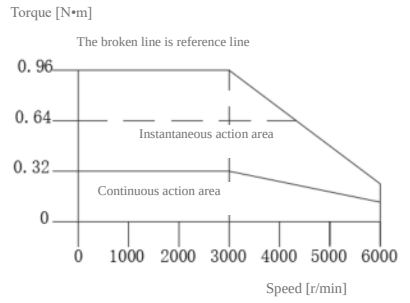
Unit: mm

Motor model	OMS2101	OMS2201	OMS2401	OMS2751	OMS2951
LC	40	60	60	80	80
LL					
Without brake	98.1	91.5	111.5	120.5	145.5
With brake	137.2	134.5	154.5	161.5	186.5
LR	25	30	30	35	35
S	8	14	14	19	19
LA	46	70	70	90	90
LB	30	50	50	70	70
LE	2.5	3	3	2.5	2.5
LF	5	6.5	6.5	8	8
LX	200	200	200	200	200
LH	44.2	44	44	54	54
LZ	4.5	5	5	6	6
Shaft end with keys					
LK	12.5	22.5	22.5	22	22
LW	14	25	25	25	25
KW	3	5	5	6	6
KH	3	5	5	6	6
RH	6.2	11	11	15.5	15.5
TP	M3 depth 6	M5 depth 10	M5 depth 10	M5 depth 10	M5 depth 10

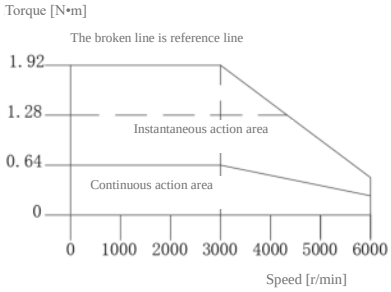


Torque characteristics

OMS2101



OMS2201



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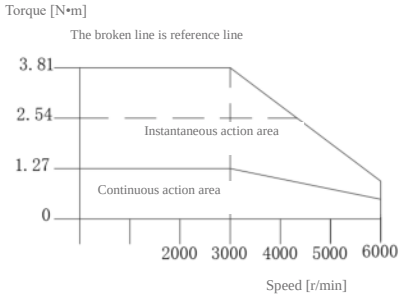
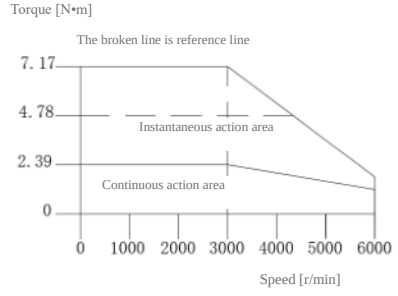
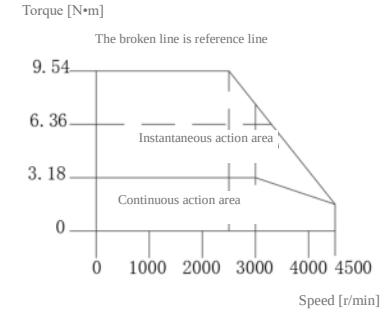


OMS2751



OMS2951



2. Medium inertia of OMM2102/OMM2152/OMM2202/OMM2302

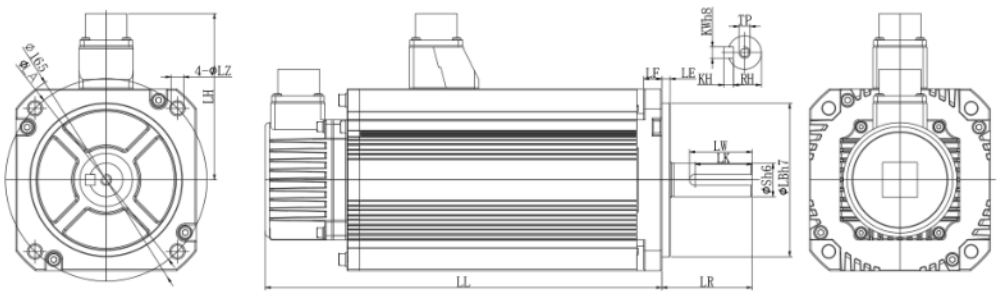
Parameter list

Items	Unit	Specifications			
Motor model		OMM2102	OMM2152	OMM2202	OMM2302
Rated power	kW	1.0	1.5	2.0	3.0
Voltage	V(AC)	220	220	220	220
Rated torque	N·m	4.77	7.16	9.55	14.3
Maximum torque	N·m	14.3	21.48	28.65	42.9
Rated speed	r/min	2000	2000	2000	2000
Maximum speed	r/min	3000	3000	3000	3000
Rated current	A	6.0	8.2	10.0	13.8
Maximum current	A	18.0	24.6	31.5	41.4
Torque constant	N·m/A	0.795	0.873	0.905	1.04
Reverse potential constant	mV/(r/min)	29.5	31.7	35.2	37.5
Rotational inertia					
Without brake	$\times10^{-4}$kg·m^2	4.6	6.7	8.7	15.1
With brake	$\times10^{-4}$kg·m^2	6.6	8.7	10.7	17.1

Outline dimension

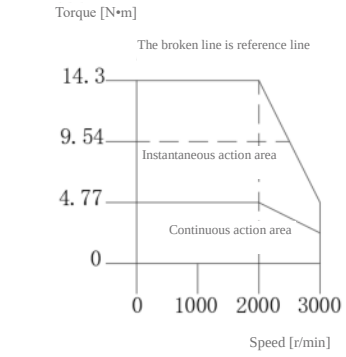
Unit: mm

Motor model	OMM2102	OMM2152	OMM2202	OMM2302
LC	130	130	130	130
LL				
Without brake	163.5	181	198.5	251.5
With brake	197.5	215	232.5	285.5
LR	55	55	55	65
S	22	22	22	24
LA	145	145	145	145
LB	110	110	110	110
LE	6	6	6	6
LF	13	13	13	13
LH	119	119	119	118
LZ	9	9	9	9
Shaft end with keys				
LK	41	41	41	41
LW	45	45	45	45
KW	8	8	8	8
KH	7	7	7	7
RH	18	18	18	20
TP	M8 depth 15	M8 depth 15	M8 depth 15	M8 depth 15

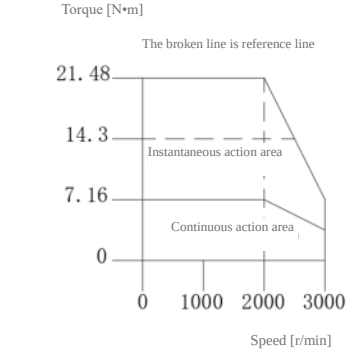


Torque characteristics

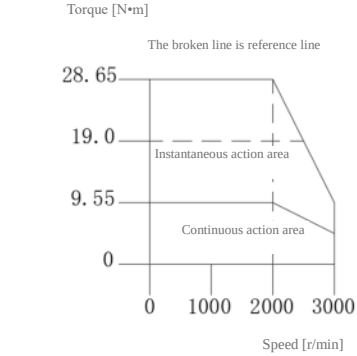
OMM2102



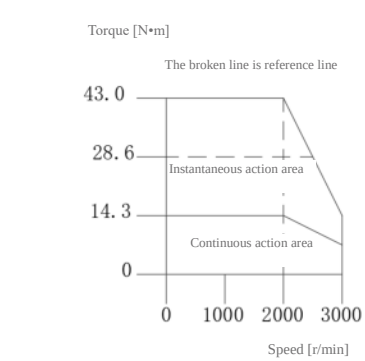
OMM2152



OMM2202



OMM2302



3. High inertia of OMG2851/OMG2132/OMG2182

Parameter list

Items	Unit	Specifications		
Motor model		OMG2851	OMG2132	OMG2182
Rated power	kW	0.85	1.3	1.8
Voltage	V(AC)	220	220	220
Rated torque	N·m	5.39	8.6	11.5
Maximum torque	N·m	14.3	21.48	28.65
Rated speed	r/min	1500	1500	1500
Maximum speed	r/min	3000	2500	3000
Rated current	A	7.0	7.6	12.2
Maximum current	A	19.0	19.0	31.5
Torque constant	N·m/A	0.77	1.13	0.905
Reverse potential constant	mV/(r/min)	29.5	38.3	35.2
Rotational inertia				
Without brake	$\times 10^{-4}$kg · m^2	13.9	20	26
With brake	$\times 10^{-4}$kg · m^2	15.9	22	28

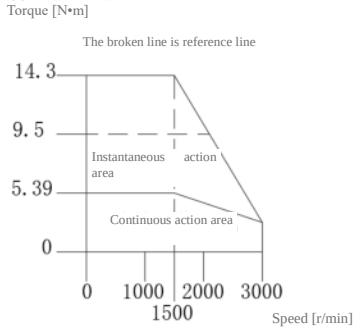
Outline dimension

Unit: mm

Motor model	OMG2851	OMG2132	OMG2182
LC	130	030	130
LL			
Without brake	181	198.5	216
With brake	215	232.5	250
LR	55	55	55
S	19	22	22
LA	145	145	145
LB	110	110	110
LE	6	6	6
LF	13	13	13
LH	119	119	119
LZ	9	9	9
Shaft end with keys			
LK	22.5	41	41
LW	25	45	45
KW	5	8	8
KH	5	7	7
RH	16	18	18
TP	M5 depth 10	M8 depth 15	M8 depth 15

Torque characteristics

OMG2851



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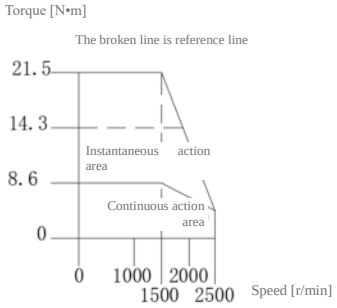

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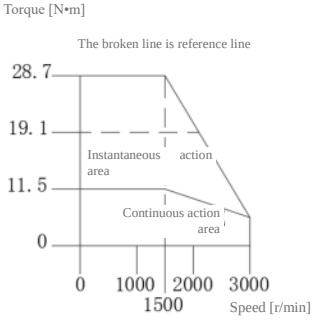
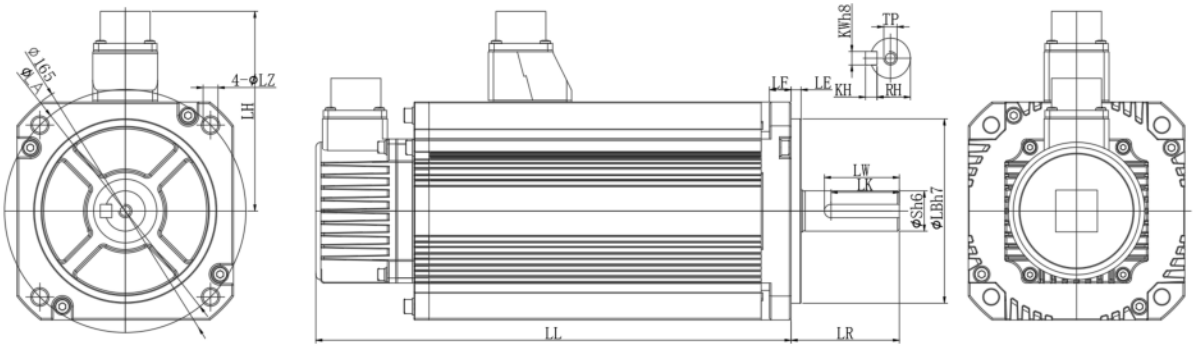




4. High inertia of OMH2201/OMH2401/OMH2751/OMH2951

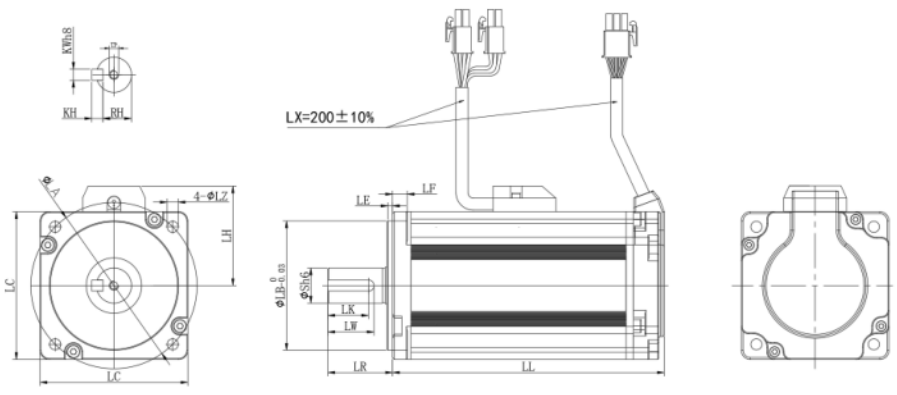
Parameter list

Items	Unit	Specifications			
Motor model		OMH2201	OMH2401	OMH2751	OMH2951
Rated power	W	200	400	750	1000
Voltage	V(AC)	220	220	220	220
Rated torque	N·m	0.64	1.27	2.39	3.18
Maximum torque	N·m	1.92	3.8	7.2	9.54
Rated speed	r/min	3000	3000	3000	3000
Maximum speed	r/min	5000	5000	5000	4500
Rated current	A	1.90	2.8	4.0	4.9
Maximum current	A	5.70	8.4	12.0	14.7
Torque constant	N·m/A	0.337	0.453	0.597	0.649
Reverse potential constant	mV/(r/min)	13.2	16.9	22.9	25.0
Rotational inertia					
Without brake	$\times10^{-4}$kg · m^2	0.57	0.67	1.5	2.38
With brake	$\times10^{-4}$kg · m^2	0.59	0.69	1.6	2.48

Outline dimension

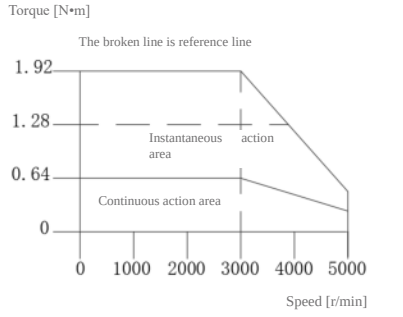
Unit: mm

Motor model	OMH2201	OMH2401	OMH2751	OMH2951
LC	60	60	80	80
LL				
Without brake	105.5	130.5	140.5	145.5
With brake	148.5	173.5	181.5	186.5
LR	30	30	35	35
S	14	14	19	19
LA	70	70	90	90
LB	50	50	70	70
LE	3	3	2.5	2.5
LF	6.5	6.5	8	8
LX	200	200	200	200
LH	44	44	54	54
LZ	5	5	6	6
Shaft end with keys				
LK	22.5	22.5	22	22
LW	25	25	25	25
KW	5	5	6	6
KH	5	5	6	6
RH	11	11	15.5	15.5
TP	M5 depth 10	M5 depth 10	M5 depth 10	M5 depth 10

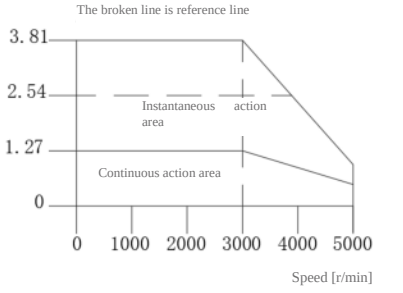


Torque characteristics

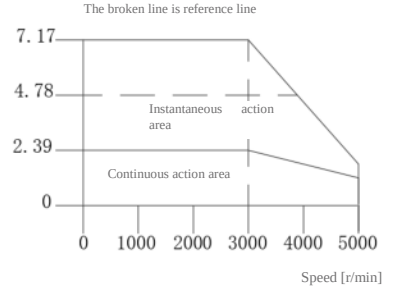
OMH2201



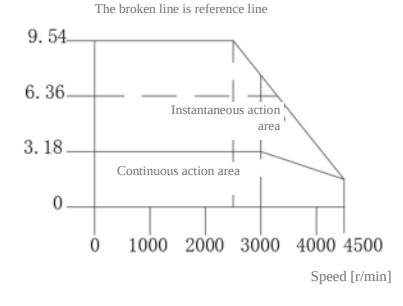
OMH2401



OMH2751



OMH2951



5. High inertia of OMH2102/OMH2152/OMH2202/OMH2302

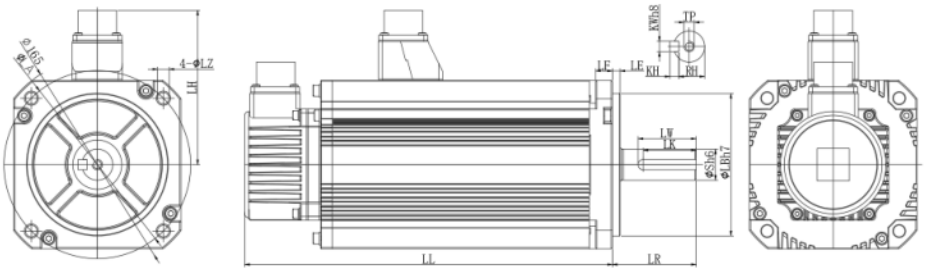
Parameter list

Items	Unit	Specifications			
Motor model		OMH2102	OMH2152	OMH2202	OMH2302
Rated power	kW	1.0	1.5	2.0	3.0
Voltage	V(AC)	220	220	220	220
Rated torque	N m	4.77	7.16	9.55	14.3
Maximum torque	N m	14.3	21.48	28.65	42.9
Rated speed	r/min	2000	2000	2000	2000
Maximum speed	r/min	3000	3000	3000	3000
Rated current	A	6.0	8.2	10.0	13.8
Maximum current	A	18.0	24.6	31.5	41.4
Torque constant	N m/A	0.795	0.873	0.905	1.04
Reverse potential constant	mV/(r/min)	29.5	31.7	35.2	37.5
Rotational inertia					
Without brake	$\times10^{-4}$kg · m2	13.9	20	26	32.4
With brake	$\times10^{-4}$kg · m2	15.9	22	28	34.4

Outline dimension

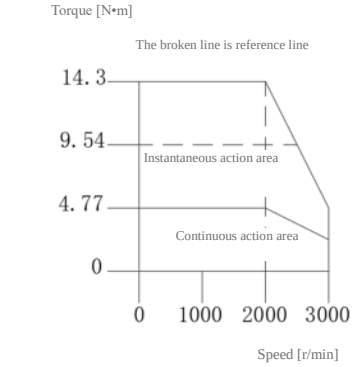
Unit: mm

Motor model	OMH2102	OMH2152	OMH2202	OMH2302
LC	130	130	130	130
LL				
Without brake	181	198.5	216.5	269
With brake	215	232.5	250	303
LR	55	55	55	65
S	22	22	22	24
LA	145	145	145	145
LB	110	110	110	110
LE	6	6	6	6
LF	13	13	13	13
LH	119	119	119	118
LZ	9	9	9	9
Shaft end with keys				
LK	41	41	41	41
LW	45	45	45	45
KW	8	8	8	8
KH	7	7	7	7
RH	18	18	18	20
TP	M8 depth 15	M8 depth 15	M8 depth 15	M8 depth 15

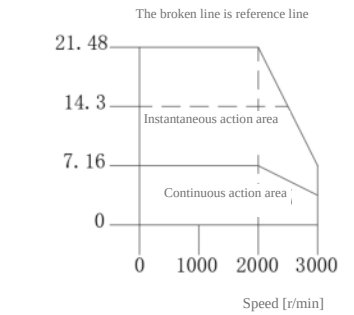


Torque characteristics

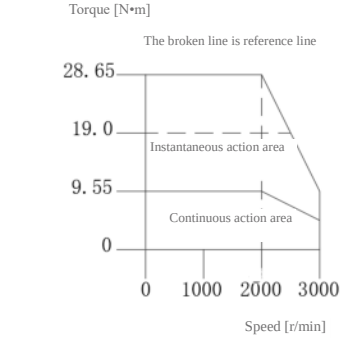
OMH2102



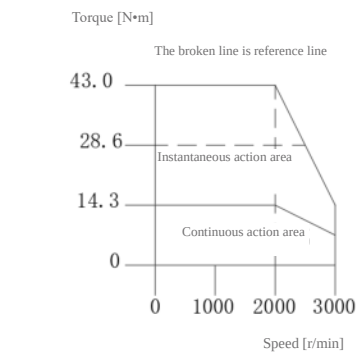
OMH2152



OMH2202



OMH2302

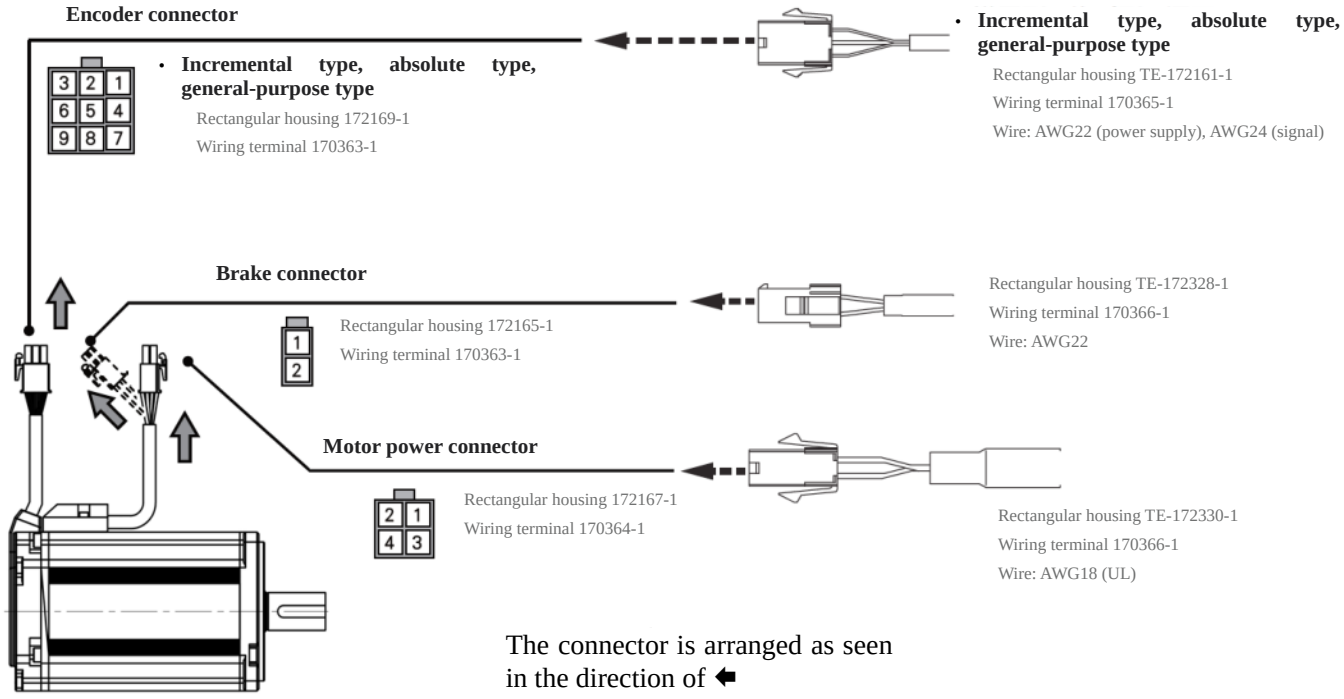


OM2 motor brake specifications

Motor series	Motor power	Purpose	Rated voltage (V)	Power (W)	Static friction torque (N·m)	Pull up time (ms)	Release time (ms)	Release voltage (V)
OMS2 OMM2	100W	For holding	24	6	0.64	35	20	DC1V
	200W、400W	For holding	24	7	1.3	50	15	DC1V
	750W	For holding	24	12	3.2	70	20	DC1V
	1.0kW	For holding	24	20	15	110	50	Above DC2V
	1.0kW~3.0kW	For holding	24	20	15	110	50	Above DC2V
OMG2	0.85KW~1.8kW	For holding	24	20	15	110	50	Above DC2V
	200W、400W	For holding	24	7	1.3	50	15	DC1V

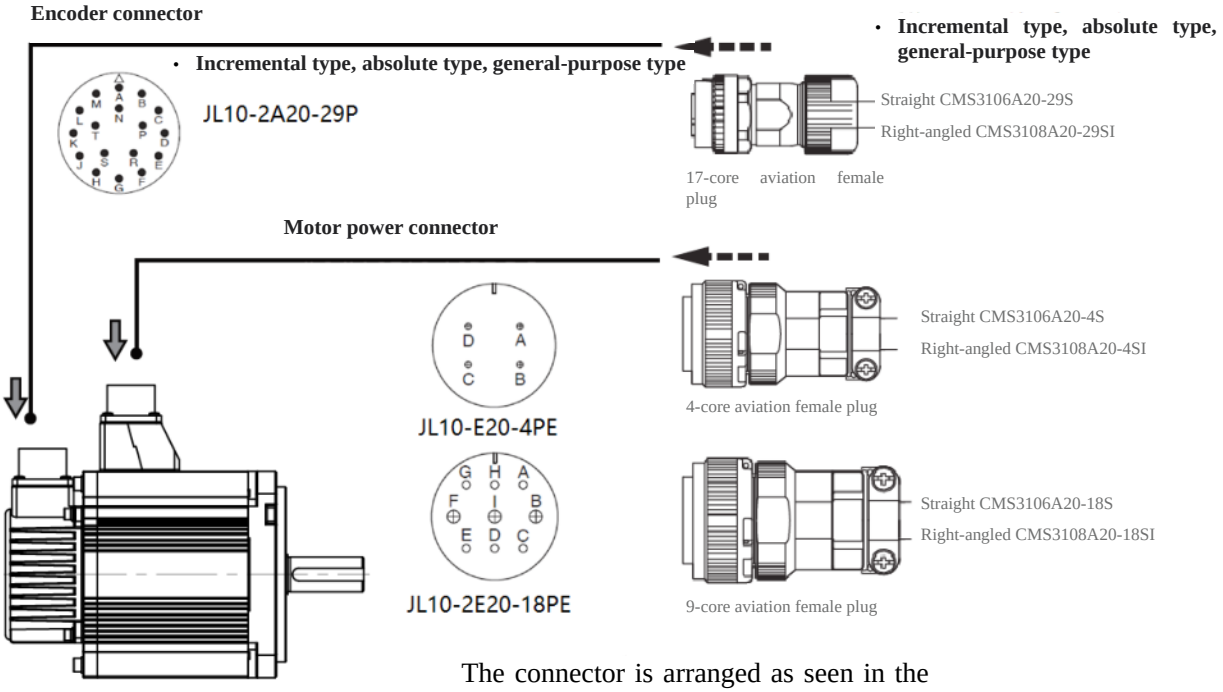
OM2 motor wiring diagram

1. 100W~1.0kW (□ 80), excluding 850W



Name	Pin NO.	Signal Name	Contents
Motor power connector	1	U	Phase U of motor power
	2	V	Phase V of motor power
	3	W	Phase W of motor power
	4	地线	Motor housing grounding
Brake connector	1	BRK+	Brake power supply DC24V
	2	BRK-	Brake power supply GND
Encoder connector	1	BAT+	Battery BAT+
	2	BAT-	Battery BAT-
	3	FG (shielded)	Shielding
	4	PS	Encoder signal data +
	5	PS	Encoder signal data -
	6	NC	Do not connect any device
	7	E5V	Encoder power source +5V
	8	E0V	Encoder power source
	9	NC	Do not connect any device

2. 850W~3.0kW (□ 80), excluding 1.0kW(□ 80)



The connector is arranged as seen in the

Name	Pin NO.	Signal Name	Contents
Motor power connector (4-core)	A	U	Phase U of motor power
	B	V	Phase V of motor power
	C	W	Phase W of motor power
	D	Ground wire	Motor housing grounding
Motor power connector (9-core)	G	BRK+	Brake power supply DC24V
	H	BRK-	Brake power supply GND
	A	NC	Do not connect any device
	F	U	Phase U of motor power
	I	V	Phase V of motor power
	B	W	Phase W of motor power
	E	Ground wire	Motor housing grounding
	D	Ground wire	Motor housing grounding
	C	NC	Do not connect any device
Encoder connector	A	NC	Do not connect any device
	B	NC	Do not connect any device
	C	NC	Do not connect any device
	D	NC	Do not connect any device
	E	NC	Do not connect any device
	F	NC	Do not connect any device
	G	E0V	Encoder power source
	H	E5V	Encoder power source +5V
	J	FG (shielded)	Shielding
	K	PS	Encoder signal data +
	L	PS	Encoder signal data -
	M	NC	Do not connect any device
	N	NC	Do not connect any device
	P	NC	Do not connect any device
	R	NC	Do not connect any device
	S	BAT-	Battery BAT-
	T	BAT+	Battery BAT+

Table of comparison for model selection

1. Matching components of OM1 series motor and driver

Power supply	Motor type	Rated speed	Model	Flange size	Rated power	Driver model
Single-phase 220V	OMS1 low inertia	3000r/min	OMS1201	□ 60	200W	ODSA □ 6A201 □ B
			OMS1401	□ 60	400W	ODSA □ 6A401 □ B
Single/three-phase 220V	OMS1 low inertia	3000r/min	OMS1751	□ 80	750W	ODSA □ 6A751 □ B
			OMS1951	□ 80	1.0kW	ODSA □ 6A102 □ B
			OMS1102	□ 100	1.0kW	ODSA □ 6A102 □ B
			OMS1152	□ 100	1.5kW	ODSA □ 6A152 □ B
			OMS1202	□ 100	2.0kW	ODSA □ 6A202 □ B
Single-phase 220V	OMM1 medium inertia	3000r/min	OMM1500	□ 40	50W	ODSA □ 6A201 □ B
			OMM1101	□ 40	100W	ODSA □ 6A201 □ B
Single/three-phase 220V	OMM1 medium inertia	2000r/min	OMM1102	□ 130	1.0kW	ODSA □ 6A102 □ B
			OMM1152	□ 130	1.5kW	ODSA □ 6A152 □ B
			OMM1202	□ 130	2.0kW	ODSA □ 6A202 □ B
Single-phase 220V	OMD1 medium inertia	3000r/min	OMD1500	□ 40	50W	ODSA □ 6A201 □ B
			OMD1101	□ 40	100W	ODSA □ 6A201 □ B
			OMD1201	□ 60	200W	ODSA □ 6A201 □ B
			OMD1401	□ 60	400W	ODSA □ 6A401 □ B
Single/three-phase 220V	OMG1 high inertia	1500r/min	OMG1851	□ 130	850W	ODSA □ 6A102 □ B
			OMG1132	□ 130	1.3W	ODSA □ 6A152 □ B
Single-phase 220V	OMH1 high inertia	3000r/min	OMH1201	□ 60	200W	ODSA □ 6A201 □ B
			OMH1401	□ 60	400W	ODSA □ 6A401 □ B
Single-phase 220V	OMH1 high inertia	3000r/min	OMH1751	□ 80	750W	ODSA □ 6A751 □ B
Single/three-phase 220V	OMH1 high inertia	2000r/min	OMH1102	□ 130	1.0kW	ODSA □ 6A102 □ B
			OMH1152	□ 130	1.5kW	ODSA □ 6A152 □ B

2. Matching components of OM2 series motor and driver

Power supply	Motor type	Rated speed	Model	Flange size	Rated power	Driver model
Single-phase 220V	OMS2 low inertia	3000r/min	OMS2101	□ 40	100W	ODSA □ 6A201 □ B
			OMS2201	□ 60	200W	ODSA □ 6A201 □ B
			OMS2401	□ 60	400W	ODSA □ 6A401 □ B
Single/three-phase 220V	OMS2 low inertia	3000r/min	OMS2751	□ 80	750W	ODSA □ 6A751 □ B
			OMS2951	□ 80	1.0kW	ODSA □ 6A102 □ B
Single/three-phase 220V	OMM2 medium inertia	2000r/min	OMM2102	□ 130	1.0kW	ODSA □ 6A102 □ B
			OMM2152	□ 130	1.5kW	ODSA □ 6A152 □ B
			OMM2202	□ 130	2.0kW	ODSA □ 6A202 □ B
			OMM2302	□ 130	3.0kW	ODSA □ 6A302 □ B
Single/three-phase 220V	OMG2 high inertia	1500r/min	OMG2851	□ 130	850W	ODSA □ 6A102 □ B
			OMG2132	□ 130	1.3kW	ODSA □ 6A152 □ B
			OMG2182	□ 130	1.8kW	ODSA □ 6A202 □ B
Single-phase 220V	OMH2 high inertia	3000r/min	OMH2201	□ 60	200W	ODSA □ 6A201 □ B
			OMH2401	□ 60	400W	ODSA □ 6A401 □ B
Single/three-phase 220V	OMH2 high inertia	3000r/min	OMH2751	□ 80	750W	ODSA □ 6A751 □ B
			OMH2951	□ 80	1.0kW	ODSA □ 6A102 □ B
Single/three-phase 220V	OMH2 high inertia	2000r/min	OMH2102	□ 130	1.0kW	ODSA □ 6A102 □ B
			OMH2152	□ 130	1.5kW	ODSA □ 6A152 □ B
			OMH2202	□ 130	2.0kW	ODSA □ 6A202 □ B
			OMH2302	□ 130	3.0kW	ODSA □ 6A302 □ B