



EC-SERVO MOTORS

with brushless drive

EC 60 TM 200W 48V



- brushless
- small & compact
- maintenance-free
- Protection IP65

ORDERING DATA

EC 60 TM 200W 48V
Part no. 474201 0048

EC 60 TM 200W 48V with brake
Part no. 474201 1048

CHARACTERISTICS

- permanently energized 3-phase synchronous motor
- incremental position encoder / encoder integrated in the motor - supply 5VDC, RS422, tracks A, / A, B, / B, Z, / Z,
- integrated commutator signals U, V, W - 5V PUSH / PULL
- applications: positioning controls, CNC controls
- optionally with holding brake
- recommended control electronics: single axis controller MC 1-20 and drive controller IMD 20

BASIC INDEX

Working time	continue
Thermal endurance class	class F
Dielectric voltage withstand	AC1500V 1min
Insulation resistance	DC500V 100M Ω
Ambient temperature	0 ~ +40°C
Ambient humidity	20 ~ 80% without condensation
Vibration class	V15
Connection way	direct connection
Motor mounting	flange
Excitation way	permanent magnet
Degree of protection	whole sealing, self cooling, IP 65 (except the pass-through parts of the axle)
Direction of rotation	anticlockwise rotation from the side of axle stretch end

TEST CONDITION

1. The motor is installed on a 200 x 200 x 20 mm aluminium panel horizontally, with a 25°C and free-flowing air environment.
2. Adopt interference fitting, unlimited inertia loading are imposed on the extension part of the motor axle.
3. Typical error of the standard value is less than 10%.

BASIC PARAMETERS

	without brake	with brake
Rated power [W]		200
Pole number		8
Rated voltage [V AC]		48
Rated speed [rpm]		3000
Max. speed [rpm]		5000
Rated torque [N.m]		0.637
Peak torque [N.m]		1.9
Rated current [A]		6.5
Peak current [A]		27.3
Line counter EMF coefficient [mV / rpm]		6.2
Torque coefficient [N.m / A]		0.101
Moment of inertia of the rotor [kg.m ² .10 ⁻⁴]		0.189
Line resistance [Ω]		0.35 @ 25°C
Line inductance [mH]		1.14 @ 1 kHz, 1 V
Rated voltage of the brake [V]	n/a	24
Rated power of the brake [W]	n/a	7.5
Holding torque of the brake [N.m]	n/a	0.8
Moment of inertia of the brake [kg.m ² .10 ⁻⁴]	n/a	0.0117
Weight [kg]	1.1	1.8

Measuring system	sensor	Incremental, ABZ+uvw, 2500 PPR
	supply voltage	5V DC +/- 5%
	current consumption	I max = 110 mA

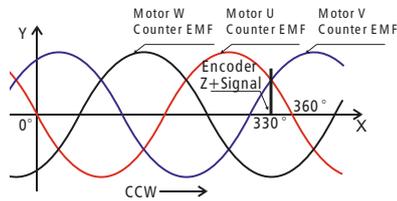
PIN ASSIGNMENT

Power Line					with brake	
Color	yellow-green	red	blue	black	brown	white
Signal	FG	U	V	W	Br+	Br-

Encoder Line												
PIN No.	1	2	3	4	5	6	7	8	9	10	11	12
Signal	Shield	Gnd	Vcc 5V	A+	A-	B+	B-	Z+	Z-	Hall U	Hall V	Hall W
Connector: JST PHR-12, PH-Serie												

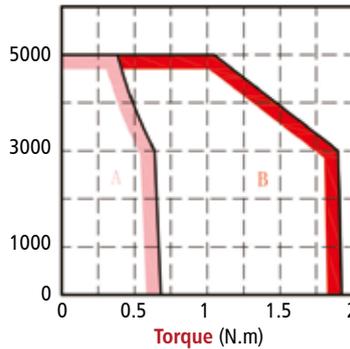
CHARACTERISTICS CURVES

RELATIONSHIP between Encoder Zero and Motor Phase Position:



TORQUE – SPEED:

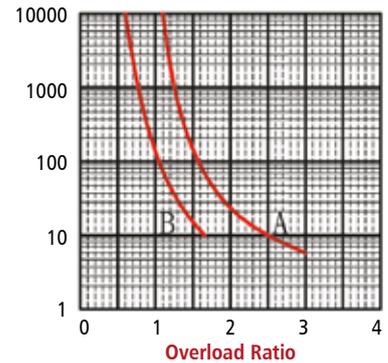
Speed (rpm)



A: Continuous Duty Zone, B: Intermittent Duty Zone

OVERLOAD:

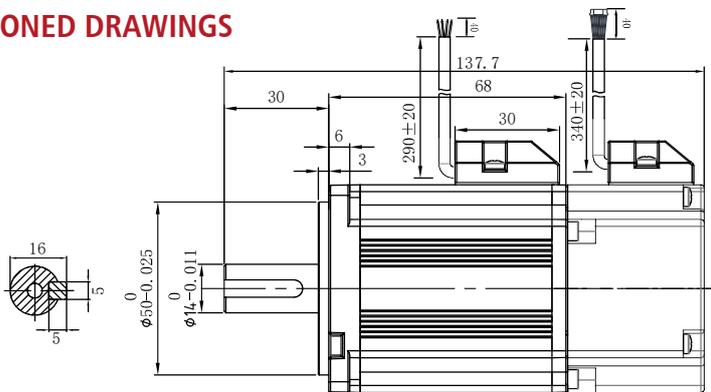
Time (seconds)



A: 3000 rpm, B: 5000 rpm

DIMENSIONED DRAWINGS

Motor without brake



Motor with brake

