



BLDC GEARED MOTOR **X-TOR**

Compact, High Power X-TOR series



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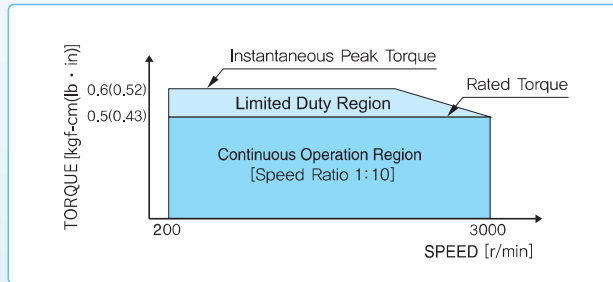
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FEATURES OF BRUSHLESS MOTOR

EXCELLENT SPEED STABILITY, CONSTANT TORQUE

By comparing the feedback signal and the setting speed reference in the motor, This allows stable operate from low speed to high speed while the load torque changes. Additionally, in the full torque range from no-load to rated torque, it is possible to control the speed in the wide range.



COMPACT, HIGH POWER, REDUCED POWER LOSS

Due to the permanent magnet Rotor, the BLDC motor cuts down power loss by 50% in compared with AC induction motor. Thanks to this, the motor becomes smaller in size while generating the same amount of output, 42.5mm(1.67in) [□60(□2.36), □80(□3.15)], 57mm(2.24in)[□90(□3.54)].

EASY CONNECTION

Motor can operate simply by connecting the motor connector to control unit.

EXTERNAL CONTROL

Run/Stop, Change of rotation direction and instantaneous stop can be controlled with external signals(Sequencer or relay switch).

HIGH STRENGTH, LONG LIFE GEAR HEAD

Optimal gear design, strengthened case and advanced bearing design improved life of the gear head 2 times longer(10,000hrs) than that of AC Motor gear head. Also, 300kgf-cm[260.15(lb · in)], permissible torque has been achieved in identical size to the AC Motor gear head.



LOW NOISE

Achieved low-noise using new structure, design and processing technique of motor.

COMBINED MOTOR AND GEAR HEAD DESIGN

Features a simply configuration design where the motor and the gear head can be assembled easily using an exclusive bolt for safe, damage free assembly of the two units. This two units may also be purchased separately as replacement parts.

VARIOUS FUNCTIONS

SLOW RUN/SLOW STOP functions are included. Various protection functions are also included.

OTHERS

- The motor is designed as IP65, making it be safe against intermittent exposure to water. (cannot be used in places where water is constantly present).

MOTOR

RATED RPM

Motor RPM at rated output.

RATED TORQUE

Is maximum torque that motor can continuously generate.

STARTING (INSTANTANEOUS PEAK) TORQUE

Generates up to 120% of the rated torque for approximately five seconds. Effective for accelerating under inertia load, etc.

PERMISSIBLE INERTIA LOAD(GD²)

Commonly expressed in multiples of rotor inertial moment.

RATE OF SPEED FLUCTUATION

Indicate percentile value of the motor speed fluctuation with respect to load change, temperature change and voltage fluctuation.

CONTINUOUS OPERATION REGION

A region where the motor can continuously operate against the load in N-T graph.

LIMITED DUTY REGION

A region where the motor can operate for approximately 5 seconds. This region is correspond to the case of accelerating inertia load.

OVERLOAD PROTECTION

Automatically blocks motor input if the motor torque exceeds the rated level for longer than five seconds, preventing damages to the motor and diver.

SPEED SIGNAL OUTPUT

Generates a pulsewave signal the frequency of that is proportion to the motor speed by an Opencollector method. The user is then able to monitor motor speed with this signal.

ALARM SIGNAL OUTPUT

Activated when the protection function works. Once activated, the red LED turns on and the motor comes to a halt.

GEAR HEAD**■ REDUCTION RATIO**

Ratio of the gear head reducing the motor speed, RPM of gear head output shaft becomes (1/reduction ratio) of motor RPM.

■ MAXIMUM PERMISSIBLE TORQUE

This value is determined depending on reduction ration and the gear head type.

■ SERVICE FACTOR

This factor was determined from experienced factors as types of load, surface temperature and other application conditions.

■ TRANSFER EFFICIENCY

Efficiency of gear head amplifying torque. This value is dependent on bearing, gear friction and viscosity of lubricant.

■ OVERHANG LOAD

Load at a right angle to the gear head output shaft. Maximum load that the gear head can bear is called permissible overhang load, which is dependent on type fo the gear head and distance form end of the output shaft. Forms of the load include belt tension, etc.

■ THRUST LOAD

Load along the gear head output shaft. Maximum load that the gear head can bear is called permissible thrust load, which is dependent of type of the gear head.



CAUTION FOR USING

Before using, make sure to use it after reading the Instruction Manual closely. For the suggestions on using, they are classified as caution and warning



CAUTION

- Use only according to the specification of speed controller. If not, there will be dangerous fire, electric shock, injury and damage of the unit.
- Do not put the fingers or things into the outlet of the unit. There may be the electric shock, injury or danger of fire.
- Do not operate with the wet hands. The electric shock may occur.
- In case of moving, do not catch the output shaft, connecting part or the lead wire. There may be the injury by the drop.
- Make sure to check whether the things are what you ordered. If you install the other thing, there may occur the injury and the fire.
- The motor should be used after it is fixed tightly. If not, there may occur the injury and the damage of the unit.
- Make sure to install the cover not to touch the rotatory part. If not, there will be injury.
- Make sure to check the rotatory direction before connecting the machine. If not, there may occur the injury and the damage of the unit.
- Do not touch the side of the motor output shaft (key way, cutting part) with the naked hands. If not, there may occur the injury.
- Make sure to install the overload device, for the protection device is not attached to the motor.
It is desirable to install the protection device leakage shorter electricity except the overload protection device.
If not, the fire may occur.
- In case of putting out power plug, do not draw with grasping the plug for the electric shock and fire may occur.
- The motor and the controlling unit should be used only by the designated compounding. If not, the fire may occur.
- Before connecting with the machine and beginning to operate, make sure to install the parameter for the machine. If not, the damage may take place.
- In case of connecting with the machine and beginning to operate, do in the state of emergency stop anytime.
If not, the damage will occur.
- If there are abnormal cases, turn off the power at once. If not, there will be the electric shock, injury and the damage.
- In operating, do not touch the rotor(output shaft). If not, the damage will take place because of winding.
- In operating and right after the operation, do not touch the controlling device by your hands or body. The fire will occur.



WARNING

- Never put around the explosive atmosphere, gas to be burnt, corrosive air, the location to be wet and combustibles. If not, there may occur the electric shock and the fire.
- In case of movement, connection and checking of motor, please turn off the electric power.
- Make sure to connect motor and speed controller based on the specification. If not, there may occur the electric shock and the fire.
- The power cable and the lead line should not be bent, pulled and inserted by force. If not, the electric shock and the fire may occur.
- In case the motor and controlling unit are attached to the machine, never touch by hand or connect with the earth.
If not, the electric shock may take place.
- Never operate in the state of exposing the flowing current. If not, the electric shock may take place.
- In case of interruption of electric power and working the protection of overheat, please turn off the power.
When motors are working continuously, there may be injury and damage of the unit.
- For the 30 seconds after the power off, do not touch the output terminal of the controlling unit.
If not, the electric shock may occur because of the residual volts.

