CODING SYSTEM

XBA SERIES

EXTLEPIOD DEVENTING REATURE CONNECTION AND O

GEARED MOTOR [Unit:mm] ■ Model: XBA10400U-□K • Motor : XBM10400G Gear Head : XTG105K~XTG10200K Control Unit : XBD400U Key(accessories) Key Groove 82 □110 M6^{*}P1<u>0</u>TAP 깊이12 Ø22-3.5 10 0 35 4XØ8.5 HOLE 0 Ø Ħ 025 20 104.5 SECTION A-A P.C.D0120 X Table 1 (11.5) MOLEX 5557-12R Ц) 31 Gear Ratio Size(mm) 500 ±2 pul 보호접지(M4) XTG105K~XTG1020K 60

 $\boldsymbol{\times}$ () indicates voltage specification.

Indicates deceleration ratio,
Gear head motor is enclosed with a bolt set (refer to P30 for specifications),

MOTOR Model : XBM10400D [Unit : mm]

SPECIFICATION

2-Ø3.5 HOLE



* Table 2-Weight

XTG1030K~ XTG1050K

XTG10100K~XTG10200K

	Part		Weight(kg)	
		Motor	2.4	
	0	XTG105K~XTG1020K		
	Gear Head	XTG1030K~ XTG1050K	3.0	
		XTG10100K~XTG10200K		

72

86

21C, for World geared motor

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SPECIFICATION

EXILERIOR DRAWING RPM-TORQUE FEATURE CONNECTION AND OPERATIO



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CONTROL UNIT

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RPM-TORQUE FEATURE CONNECTION AND OPERATION

Assembled bolt is attached to gear head or geared motor.

SPECIFICATION



Model	Accessory Bolts (Flat W/S, Spring W/S, hexagonal nut×4)		
Gear Head	L(mm)	l (mm)	Bolt Names
XTG65K~XTG620K	34	50	
XTG630K~ XTG6100K	38	55	M4 P0.7
XTG6200K	43	60	
XTG85K~XTG820K	41	65	
XTG830K~XTG8100K	46	70	M6 P1.0
XTG8200K	51	75	
XTG95K~XTG920K	45	75	
XTG930K~XTG9100K	58	90	M8 P1.25
XTG9200K	64	95	
XTG105K~XTG10200K	70	95	
XTG1030K~XTG10500K	82	110	M8 P1.25
XTG10100K~XTG10200K	96	120	

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NAME AND FUNCTION FOR DRIVER' S EACH PART

INTERFACE AND OPERATION			
DISPLAY	FUNCTION	LIGHTING CONDITION	
POWER	POWER Indicator	When power is supplied	-
ALARM	ALARM Indicator	When protection circuit is operated.	

For motor Connector





	INTERNAL ADJUSTER		
DISPLAY	Function		
SPEED	Built-in Speed Potentiometer		
S/R	SLOW RUN Potentiometer		
S/S	SLOW STOP Potentiometer		

CONNECTION AN

I/O power supply switch

Conn	Connector for input and output signal		
DISPLAY	Signal	Function and Operation	
+24V IN	External Power Supply	I/O power supply switch (UL 24Vdc class II)	
A/CLR	ALARM RELEASE INPUT	After alarm occurs, input the release signal, however, use over-current and overload ALARM after resetting the input power.	
EXT	SPEED POTEN- TIOMETER SELECTION INPUT	Selection input signal of internal and external potentionmeter	
CW	CLOCKWISE ROTATION INPUT	Clockwise rotation	
CCW	COUNTER- CLOCKWISE ROTATION INPUT	Counterclockwise rotation	
S/STOP	SLOW STOP	Input it, if SLOW STOP function uses.	
H M L	SPEED SETTING INPUT	Common ground for input and output signal	
СОМ	COMMON	Common ground terminal for input/output Signals	
SPEED. OUT	SPEED OUT- PUT(OPEN COLLECTOR OUTPUT)	When rotation speed for motor is monitored, use it.	
ALARM. OUT	ALARM OUT- PUT (OPEN COLLECTOR OUTPUT)	when protection is operated	

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- When motor cable is extended, use below 10.5m(413.39 in) cable. 0.5m(19.685 in) connector attached cable is fitted, but if it is further extended, use the cable(option) for extension.
- Should be separated the instrument or power wiring of noise source from the wiring, motor cable for signal.

Motor Interface

- Connect motor cable's connector to the connector for connecting the motor of control unit,
- If the motor and the control unit are extended, extension cable (purchase separately) can be extended up to 10.5 m(413.39in).

Caution • Do not machine or modify the motor cable, extension cable, If another product is installed, may result in person's injury and fire,

 Do not remove cable coating or ground/touch the shield wire. May result in electrical shock.

Power Supply

- · Connect the power cable to the power terminal of control unit.
- When power cable is used, use the AWG 22 or higher cable.



Grounding

- Use a AWG 18 or higher cable to ground.
- Wiring the Signal I/O Terminal
- wining the Signal



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OPERATION





If control unit is operated as single item.

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- Operation condition is determined by interface condition on the front of control unit.
- If interfaced in the CW–COM, it operates in the CW and if CCW–COM is switched on, it operates in the CCW.

If it is operated by external signal.

• For interface, refer to ^rsignal input circuit_a.

Cautions

- Maintain 20 ms or higher time for CW and CCW input signal.
- Use the motor, with motor case's temperature is below 90°C or radiation panel's temperature is below 80°C.
- In applications where the motor shaft rotates the load side, such as winding down load operation etc, as primary inverter voltage exceeds the allowable value and activates the protection circuit, it can be used.

* If CW input and CCW input are ON simultaneously, CW input has priority.

After momentarily stopping, If operation signal for reverse rotation is provided for 0.5 second, motor would be operated.

SIGNAL INPUT CIRCUIT (Common for CW, CCW, COM, and EXT.)

Interface Example



The input circuits function by means of photocoupler input, as shown in the diagram at left. The input photocoupler can be driven by either the internal power supply or by an external DC power supply (DC24V class to)Input circuit is insurated dangerous voltages by the reinforce photo couplers.

- If CW input is on, motor rotates in the CW. If CW input is off, the motor stops.
- If CCW input is on, motor rotates in the CCW. If CCW input is off, the motor stops.
- If EXT input is on, speed is set by external volume or DC power.
- If CW input and CCW input is on, CW input has priority. Momentary normal and reverse operation is impossible.
- Caution Ensure 20ms or higher for CW signal input and CCW signal input.
 - Do not use the SSR(Solid State Relay) in the power ON/OFF. This may result in damage to motor or control unit,
 - When controller equipped in the clamp diode is used, Pay attention to the power ON/OFF sequence.

Power ON : Controller ON \Rightarrow Control Unit ON Power OFF : Control Unit OFF \Rightarrow Controller OFF

If sequence gets exchange, this may result in motor's mis-operation.

• COM terminal is not used in common with F.G. (Frame ground).

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When using the driver's built-in power supply

Flip the I/O power supply switch to "INT." Signals will not be input if it is set to "EXT."



When using an external DC power supply

Flip the I/O power supply switch to "EXT." (set at time of shipment)

CONNECTIO



SIGNAL OUTPUT CIRCUIT



▲ Caution • Signal input uses the open collector method.

• Use DC26.4V or below as the power supply and wire a resistor (R) to prevent output current from exceeding 10mA.

Alarm Out

 If following is applied, the protection function is operated, Alarm Out function comes to On(L-level), motor stops. For this case, as LED is flashed and illuminated, verify the status of protection function.
When power is applied, this is normal that LED is illuminated momentarily.

Action

Type of protection function

	Overload protection	Activated when a load exceeding the rated torque (load torque or motor current of 130% max, of rated load or rated motor current) is applied to the motor for 5 seconds or more or when the motor is oper- ated in short cycles of stopping/starting or CW/CCW rotation.
Alarm Signal	Overvoltage protection	Protects the driver against damage when the motor is driving an inertial load exceeding the permissible inertial load, or when the motor shaft is turned by the load (during lowering operation).
Output	Under voltage protection	Activated when a input voltage to the driver is less than specified voltage,
	Open-Phase protection	Prevents motor malfunction when the sensor cable within the motor cable is disconnected during motor operation, (An alarm signal will not be output while the motor is at a standstill,)
	Overspeed Protection	Activated when the speed of the motor exceed 4000r/min or when it shows abnormal speed.

 If Alarm Out is connected such as above condition, it is at H-level when the control unit is normal(off) and at L-level when the alarm is on, When Alarm Out is On(L-level), Switch off the power of con trol unit after stopping.

If fault is not found in the motor cable, Re-check that operation condition(load torque, operation pattern, power voltage, etc). After removing the cause of protection function occurrence, apply power again and then reset the ALARM OUT.

Speed Out

 Synchronize motor operation to output pulse signal per 1 rotation in the motor output shaft. Rotation speed of motor can be calculated by measuring the output frequency for Speed Out.

Motor Speed [RPM] =
$$\frac{\text{Speed Out Output Frequency [Hz]}}{K(Pulse)} \times 60$$



- If display for rotation speed of the motor output shaft or the speed reducer output shaft is required, use the digital speed indicator SID250(purchase separately).
 - Caution When I/O signal cable is wired, shortly install within 2m(78,74 in) of a wire.
 - After I/O signal cable is disconnected to power cable or motor cable, install it.
 - COM terminal is not used in common with F.G. (Frame ground).

EXTERIOR DRAWING RPM-TORQUE FEATUR SPECIFICATION XBA SERIES CODING SYSTEM

SLOW RUN/SLOW STOP TIME SETTING

- . When motor is driven, start to run slowly and then when it is stopped, can be stopped slowly.
- Time for SLOW RUN and SLOW STOP can be set within 0.5~15 seconds (when 3000 r/min),

Caution When SLOW STOP function is set, should be set the S/STOP signal of signal input terminal to On.



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SETTING WITH EXTERNAL SPEED ADJUSTER

M

COM

When connecting an external speed adjuster, use the enclosed external speed adjuster and the signal wire exclusively designed for the external speed adjuster. Ð

- 1. Among signal wires for the external speed adjuster (referred as signal wire from now on), connect the lead wire to the terminal 3 of the external speed adjuster and H input terminal
- 2. Connect the lead wire of the signal wire to the terminal 2 of the external 20KQ 1/4W speed adjuster and M input terminal.
- 3. Connect the lead wire of the signal wire to the terminal 1 of the external speed adjuster and L input terminal,
- 4. Connect the shield wire of the signal wire to the terminal of COM. (Make sure that the shield wire of the external speed adjuster does not touch other terminals.)



When the external speed controller is connected to the control unit terminal, the speed can be selected through the range of 200~3000 r/min. To stop the motor, adjust the potentiometer counter clock-wise.

Connecting External Direct Current Power

Use a direct current power(DC0~5V) of which primary and secondary are highly insulated to be used for an external direct current.

1. Connect the lead wire of the signal wire intended for the external speed adjuster (signal wire) to the external direct current's +terminal and M input terminal.



- 2. Connect the lead wire of the signal wire to external direct current's-terminal and L input terminal.
- 3. Connect the shield wire of the signal wire to the terminal of COM.(Make sure that the shield wire of the external speed adjuster does not touch other terminals.) L input is connected to GND inside CONTROL UNIT.



With an external direct current of 0~5V, the speed of the motor can be changed through the range of 200~3000r/min. When

the direct current hits OV, the motor will stop. (Please have direct current of with capacity of over 1mA prepared)

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