

## Powermec

## SPECIFICATION

Title	Combi type	XBA620A-□	XBA620B-□	XBA620U-□	XBA840A-□	XBA840B-□	XBA840U-□	XBA975A-□	XBA975B-□	XBA975U-□
	Gear type	XBM620G			XBM840G			XBM975G		
	D-Cut type	XBM620D			XBM840D			XBM975D		
Rated Output (continuous) W		20			40			75		
Power Input	Voltage V	Single Phase 100-120	Single Phase 200-230	Three Phase 200-230	Single Phase 100-120	Single Phase 200-230	Three Phase 200-230	Single Phase 100-120	Single Phase 200-230	Three Phase 200-230
	Frequency Hz	50/60			50/60			50/60		
	Rated Input Current A	0.70	0.40	0.27	1.10	0.66	0.43	1.80	1.00	0.75
	Maximum Input Current A	1.30	0.90	0.50	2.00	1.30	0.88	2.60	2.00	1.20
Rated Torque N·m(kgf·cm) (lb·in)		0.066(0.66) (0.57)			0.133(1.33) (1.15)			0.25(2.5) (2.17)		
Starting Torque N·m(kgf·cm) (lb·in)		0.08(0.8) (0.69)			0.16(1.6) (1.39)			0.32(3.2) (2.78)		
Permissible Load Inertia Moment J kg·m <sup>2</sup> (oz·in <sup>2</sup> )		1.25x10 <sup>-4</sup> (6.8)			2.5x10 <sup>-4</sup> (13.7)			3.75x10 <sup>-4</sup> (20.5)		
Rated Speed r/min		3,000								
Speed Control Range r/min		200 to 3,000 (Speed Ratio 1:15)								
Speed Regulation	Load	Less than ±1% (0 ~ rated torque, at rated speed)								
	Voltage	Less than ±1% (supply voltage ±10%, at rated speed with no load)								
	Temperature	Less than ±1% (0 to +40°C (+32 to +104°F), at rated speed with no load)								

※ For permissible load inertia in the geared motor, refer to 32 page.

※ Enter the ratio in the box(□) model number.

※ The values for each item is for the motor only.



# Powermec

## SPECIFICATION

		Combi type	XBA9120A-□	XBA9120B-□	XBA9120U-□	XBA9150A-□	XBA9150B-□	XBA9150U-□
Title	Gear type	XBM9120G			XBM9150G			
	D-Cut type	XBM9120D			XBM9150D			
	Rated Output (continuous) W	120			150			
Power Input	Voltage V	Single Phase 100-120	Single Phase 200-230	Three Phase 200-230	Single Phase 100-120	Single Phase 200-230	Three Phase 200-230	
	Frequency Hz	50/60			50/60			
	Rated Input Current A	2.50	1.50	1.00	3.00	1.80	1.15	
	Maximum Input Current A	3.80	2.70	1.60	4.64	3.23	1.96	
Rated Torque	N·m(kgf·cm) (lb·in)	0.4(4.0) (3.47)			0.5(5.0) (4.34)			
Starting Torque	N·m(kgf·cm) (lb·in)	0.5(5.0) (4.34)			0.63(6.3) (5.47)			
Permissible Load Inertia Moment	J kg·m <sup>2</sup> (oz·in <sup>2</sup> )	6.0x10 <sup>-4</sup> (32.8)			6.0x10 <sup>-4</sup> (32.8)			
Rated Speed	r/min	3,000						
Speed Control Range	r/min	200 to 3,000 (Speed Ratio 1:15)						
Speed Regulation	Load	Less than ±1% (0 ~ rated torque, at rated speed)						
	Voltage	Less than ±1% (supply voltage ±10%, at rated speed with no load)						
	Temperature	Less than ±1% (0 to +40°C (+32 to +104°F), at rated speed with no load)						

※ For permissible load inertia in the geared motor, refer to 32 page.

※ Enter the ratio in the box(□) model number.

※ The values for each item is for the motor only.



# Powermec

## SPECIFICATIONS

		Combi type	XBA10200B-□	XBA10200U-□	XBA10400U-□
Title	Combi type		XBA10200B-□	XBA10200U-□	XBA10400U-□
	Gear type		XBM10200G		XBM10400G
	D-Cut type		XBM10200D		XBM10400D
Rated Output (continuous) W			200		400
Power Input	Voltage V		Single Phase 200-230	Three Phase 200-230	Three Phase 200-300
	Frequency Hz		50/60		50/60
	Rated Input Current A		2.10	1.75	2.30
	Maximum Input Current A		3.36	2.80	3.68
Rated Torque	N·m(kgf·cm) (lb·in)		0.65(6.5) (5.75)		1.3(13) (11.5)
Starting Torque	N·m(kgf·cm) (lb·in)		0.81(8.1) (7.17)		1.6(16) (14.16)
Motor Permissible Load Inertia	J kg·m <sup>2</sup> (oz·in <sup>2</sup> )		8.75×10 <sup>-4</sup> (47.84)		15×10 <sup>-4</sup> (82.01)
Rated Speed	r/min		3,000		
Speed Control Range	r/min		200~3,000 (Speed Ratio 1:15)		
Speed Regulation	Load		Less than ±1% (0 ~ rated torque, at rated speed)		
	Voltage		Less than ±1% (supply voltage ±10%, at rated speed with no load)		
	Temperature		Less than ±1% (0 to +40°C (+32 to +104°F), at rated speed with no load)		

- ※ For permissible load inertia in the geared motor, refer to 32 page.
- ※ Enter the ratio in the box(□) model number.
- ※ The values for each item is for the motor only.



# Powermec

## COMMONALITIES

Category	Specifications
SLOW RUN / SLOW STOP	0.5 to 15 seconds (Applicable for both Slow Run and Slow Stop)
Speed Control Method	1. Built-in Potentiometer 2. External Potentiometer (20K $\Omega$ 1/4W) 3. External DC Voltage(0~5 Volt)
Input Signal	Photocoupler input method, input resistance: 2K $\Omega$ , operates at DC 12V $\pm$ 10%, common for EXT, CW, and CCW
Output Signal	Opencollector output, external use conditions: Less than 26.4V 10mA, common for Speed Out and Alarm Out.
Protection Functions	If following protection functions are operated, control unit alarm signal is output and motor will come to stop. <ul style="list-style-type: none"> <li>● Protection for machine overload : When an overload that exceeds the motor's rate torque has been continued for more than 5 seconds</li> <li>● Protection for overvoltage : When the voltage permitted for the control unit has exceed specified voltage</li> <li>● Protection guard for image formation : When malfunction occurs in the motor feedback signals due to cables disconnection and connector disconnection.</li> <li>● Protection for undervoltage : When the voltage permitted at the control unit has shortage of more than specified voltage</li> <li>● Protection for over speeding : When the speed of the motor exceed 3800r/min</li> </ul>
Motor Insulation Class	Class B (130 $^{\circ}$ C)
Rating	Continuous

## GENERAL SPECIFICATIONS

Item	Motor	Control Unit
Dielectric Strength	If applying 60Hz 1,500V between the coil and the case for 1 minute after continuous operating under normal temperature and humidity conditions, any fault is not occurred.	Sufficient to withstand 3,0kV at 50Hz applied between power supply terminal (I/O terminal) and I/O terminals for 1 minute, and 1.5kV at 50Hz applied between protective earth terminal and power supply terminals.
Insulation Resistance	After continuous operating under normal temperature and humidity conditions, if measured the resistance value between the coil and the case using DC500V Mega Tester, should be over 100M $\Omega$ .	If the resistance value between protection ground terminal and power input is measured using DC500V Mega Tester, should be over 100M $\Omega$ .
Ambient Temperature	0 $^{\circ}$ C to +40 $^{\circ}$ C(+32 $^{\circ}$ F to +104 $^{\circ}$ F) (nonfreezing)	0 $^{\circ}$ C to +50 $^{\circ}$ C(+32 $^{\circ}$ F to +122 $^{\circ}$ F) (nonfreezing)
Ambient Humidity	Less than 85% (non condensing)	
Atmosphere	No corrosive gas or dust.	
Degree of Protection	IP65 (excluding the output shaft side)	IP10

**Caution** Use it, ensuring that surface temperature of motor does not exceed over 90 $^{\circ}$ C.

## PERMISSIBLE TORQUE - GEARED MOTOR

Item	Speed Control Range [r/min] Gear Ratio	N · m / [kgf·cm](lb · in)							
		60~600	30~300	20~200	15~150	10~100	6~60	3~30	1.5~15
XBA620( )-□K	5	0.29	0.59	0.88	1.2	1.7	2.8	5.6	6.0
		2.9(2.57)	5.9(5.22)	8.8(7.79)	12(10.62)	17(15.05)	28(24.78)	56(49.56)	60(54.10)
XBA840( )-□K	5	0.59	1.2	1.8	2.3	3.4	5.6	11.2	16.0
		5.9(5.22)	12(10.62)	18(15.93)	23(20.36)	34(30.09)	56(49.56)	112(99.13)	160(141.61)
XBA975( )-□K	5	1.1	2.3	3.4	4.5	6.5	10.8	21.5	30
		11(9.74)	23(20.36)	34(30.09)	45(39.83)	65(57.53)	108(95.59)	215(190.29)	300(265.52)
XBA9120( )-□K	5	1.8	3.6	5.4	7.2	10.3	17.2	30	30
		18(15.93)	36(31.86)	54(47.79)	72(63.73)	103(91.16)	172(152.23)	300(265.52)	300(265.52)
XBA9150( )-□K	5	2.7	5.4	8.1	10.8	15.4	25.8	30	30
		27(23.90)	54(47.79)	81(71.69)	108(95.59)	154(136.30)	258(228.35)	300(265.52)	300(265.52)
XBA10200( )-□K	5	2.9	5.9	8.8	11.7	16.8	28.0	52.7	70
		29(25.67)	59(52.22)	88(77.89)	117(103.55)	168(148.69)	280(247.82)	527(466.43)	700(619.55)
XBA10400U-□K	5	5.9	11.7	17.6	23.4	33.5	55.9	70	70
		59(52.22)	117(103.55)	176(155.77)	237(207.11)	335(296.50)	559(494.76)	700(619.55)	700(619.55)

※ ( ) of item name represents voltage specification

※ □ of item name represents the reduction ratio.

※ Rotation direction is the same direction of additional motor marked in the □, others is reverse direction.



## Powermec

## PERMISSIBLE LOAD INERTIA ( J )-GEARED MOTOR

 $J \times 10^{-4} (\text{oz} \cdot \text{in}^2)$  $J \times 10^{-4} \text{ kgf} \cdot \text{m}^2 (\text{GD}^2 \text{ kgf} \cdot \text{cm}^2)$ 

Model	Gear Ratio	5	10	15	20	30	50	100	200
XBA620( )-□K		(8.5)	(33.9)	(76.5)	(135.6)	(305.1)	(847.5)	(847.5)	(847.5)
		1.55	6.2	14	24.8	55.8	155	155	155
		(6.2)	(24.8)	(56.0)	(99.2)	(223.2)	(620.0)	(620.0)	(620.0)
XBA840( )-□K		(30.1)	(120.3)	(270.6)	(481.1)	(1083)	(3007)	(3007)	(3007)
		5.5	22	49.5	88	198	550	550	550
		(22.5)	(88.0)	(198.0)	(352.0)	(792.0)	(2200)	(2200)	(2200)
XBA975( )-□K		(109.3)	(426.5)	(984.1)	(1422)	(3937)	(10935)	(10935)	(10935)
		20	78	180	260	720	2000	2000	2000
		(80.2)	(312.0)	(720.0)	(1040)	(2880)	(8000)	(8000)	(8000)
XBA9120( )-□K		(136.7)	(546.7)	(1230)	(2187)	(4921)	(13669)	(13669)	(13669)
		25	100	225	400	900	2500	2500	2500
		(100.0)	(400.0)	(900.0)	(1600)	(3600)	(10000)	(10000)	(10000)
XBA9150( )-□K		(136.7)	(546.7)	(1230)	(2187)	(4921)	(13669)	(13669)	(13669)
		25	100	225	400	900	2500	2500	2500
		(100.0)	(400.0)	(900.0)	(1600)	(3600)	(10000)	(10000)	(10000)
XBA10200( )-□K		(205)	(820.1)	(1848)	(3280)	(7381)	(20503)	(20503)	(20503)
		37.5	150	338	600	1350	3750	3750	3750
		(150)	(600)	(1352)	(2400)	(5400)	(15000)	(15000)	(15000)
XBA10400U-□K		(205)	(820.1)	(1848)	(3280)	(7381)	(20503)	(20503)	(20503)
		37.5	150	338	600	1350	3750	3750	3750
		(150)	(600)	(1352)	(2400)	(5400)	(15000)	(15000)	(15000)

※ ( ) indicates voltage specification.

※ □ indicates deceleration ratio.

## PERMISSIBLE OVERHANG LOAD AND PERMISSIBLE THRUST LOAD

Model	Gear Ratio	Permissible Overhang Load				Permissible Thrust Load		
		10mm(0.3937in) from end of the output shaft.		20mm(0.7874in) from end of the output shaft.		N	kgf(lbs)	
		N	kgf(lbs)	N	kgf(lbs)			
Geared Motor	XBA620( )-□K	5	100	10(22.05)	150	15(33.07)	40	4(8.82)
		10~20	150	15(33.07)	200	20(44.09)		
		30~200	200	20(44.09)	300	30(66.14)		
	XBA840( )-□K	5	200	20(44.09)	250	25(55.12)	100	10(22.05)
		10~20	300	30(66.14)	350	35(77.16)		
		30~200	450	45(99.21)	550	55(121.25)		
	XBA975( )-□K	5	300	30(66.14)	400	40(88.18)	150	15(33.07)
		10~20	400	40(88.18)	500	50(110.23)		
		30~200	500	50(110.23)	650	65(143.30)		
XBA9120( )-□K	5	300	30(66.14)	400	40(88.18)	150	15(33.07)	
	10~20	400	40(88.18)	500	50(110.23)			
	30~200	500	50(110.23)	650	65(143.30)			
XBA9150( )-□K	5	300	30(66.14)	400	40(88.18)	150	15(33.07)	
	10~20	400	40(88.18)	500	50(110.23)			
	30~200	500	50(110.23)	650	65(143.30)			



# Powermec

Model		Deceleration Ratio	Permissible Overhang Load				Permissible Thrust Load	
			10mm(0.3937in) from end of the output shaft.		20mm(0.7874in) from end of the output shaft.		N	kgf(lbs)
			N	kgf(lbs)	N	kgf(lbs)		
Geared Motor	XBA10200( )-□K	5~20	550	55(121.25)	800	80(176.37)	200	20(44.09)
		30~50	1000	100(220.46)	1250	125(275.58)	300	30(66.14)
		100~200	1400	140(308.65)	1700	170(374.79)	400	40(88.18)
	XBA10400U-□K	5~20	550	55(121.25)	800	80(176.37)	200	20(44.09)
		30~50	1000	100(220.46)	1250	125(275.58)	300	30(66.14)
		100~200	1400	140(308.65)	1700	170(374.79)	400	40(88.18)
Motor	XBM620D		87.2	8.72(19.22)	107	10.7(23.59)	• Do not engage the thrust load. If unavoidable, engage below 50% of motor weight.	
	XBM840D		117	11.7(25.79)	137	13.7(30.20)		
	XBM975D		156	15.6(34.39)	176	17.6(38.80)		
	XBM9120D		156	15.6(34.39)	176	17.6(38.80)		
	XBM9150D		156	15.6(34.39)	176	17.6(38.80)		
	XBM10200D		197	19.7(43.43)	221	22.1(48.72)		
	XBM10400D		197	19.7(43.43)	221	22.1(48.72)		

※ ( ) indicates voltage specification.  
 ※ □ indicates deceleration ratio.



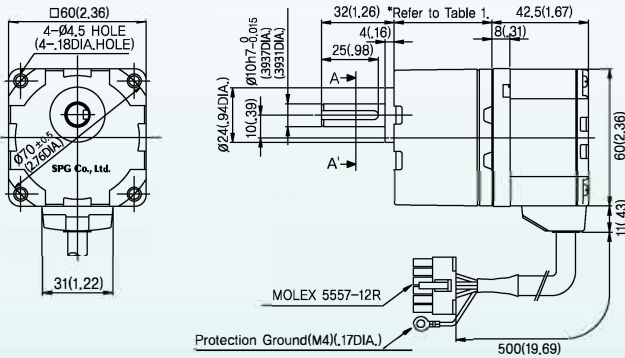
# Powermec

## GEARED MOTOR

### Model : XBA620( )-□□

[Unit : mm(inch)]

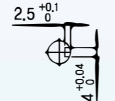
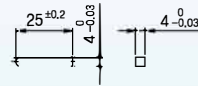
- Motor : XBM620G
- Gear Head : XTG65K~XTG6200K
- Control Unit : XBD20( )



- ※ ( ) of item name represents voltage specification
- ※ □ indicates deceleration ratio.
- ※ Geared motor includes the bolt set for installing. (for specification, refer to 40 page).

### Key(accessories)

### Key Groove



SECTION A-A'

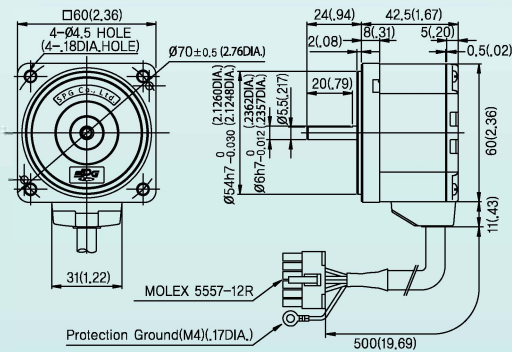
※ Table 1

Gear Ratio	Size:mm(inch)
XTG65K~XTG620K	34(1.34)
XTG630K~ XTG6100K	38(1.50)
XTG6200K	43(1.69)

## MOTOR

### Model : XBM620D

[Unit : mm(inch)]



※ Table 2-Weight

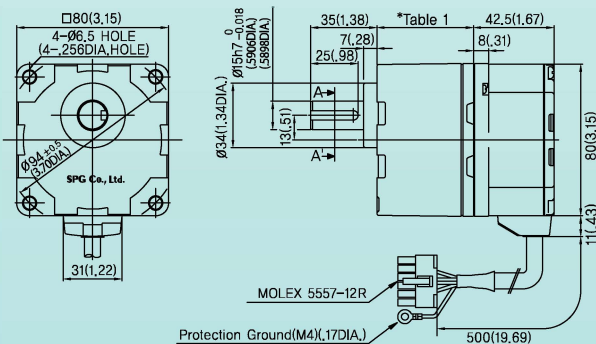
Part	Weight:kg.(lbs)	
Motor	0.48(1.06)	
Gear Head	XTG65K~XTG620K	0.28(0.62)
	XTG630K~ XTG6100K	0.33(0.73)
	XTG6200K	0.37(0.82)

## GEARED MOTOR

### Model : XBA840( )-□□

[Unit : mm(inch)]

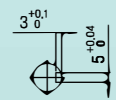
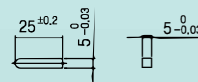
- Motor : XBM840G
- Gear Head : XTG85K~XTG8200K
- Control Unit : XBD40( )



- ※ ( ) of item name represents voltage specification
- ※ □ indicates deceleration ratio.
- ※ Geared motor includes the bolt set for installing. (for specification, refer to 40 page).

### Key(accessories)

### Key Groove



SECTION A-A'

※ Table 1

Gear Ratio	Size:mm(inch)
XTG85K~XTG820K	41(1.61)
XTG830K~ XTG8100K	46(1.81)
XTG8200K	51(2.01)

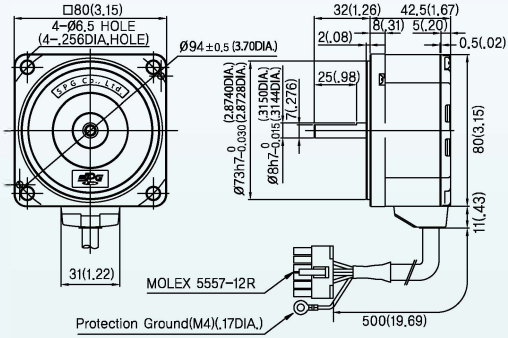


# Powermec

## MOTOR

Model : XBM840D

[Unit : mm(inch)]



※ Table 2-Weight

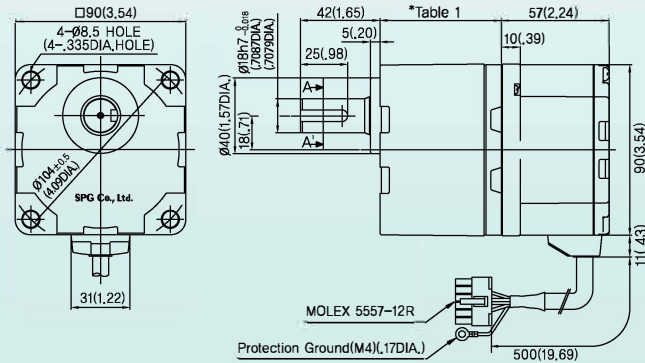
Part		Weight:kg.(lbs)
Motor		0.75(1.65)
Gear Head	XTG85K~XTG820K	0.61(1.34)
	XTG830K~ XTG8100K	0.72(1.59)
	XTG8200K	0.80(1.76)

## GEARED MOTOR

Model : XBA975( )-□K

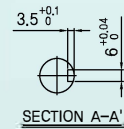
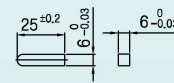
[Unit : mm(inch)]

- Motor : XBM975G
- Gear Head : XTG95K~XTG9200K
- Control Unit : XBD75( )



■ Key(accessories)

■ Key Groove



※ Table 1

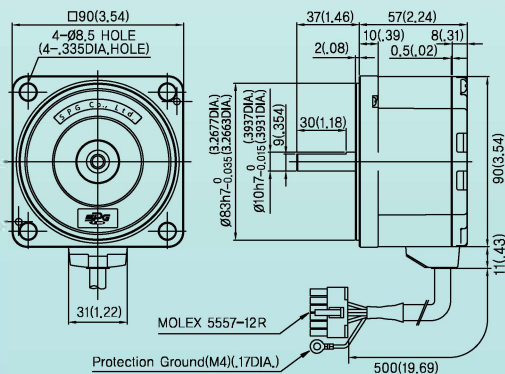
Gear Ratio	Size:mm(inch)
XTG95K~XTG920K	45(1.77)
XTG930K~ XTG9100K	58(2.28)
XTG9200K	64(2.52)

- ※ ( ) of item name represents voltage specification
- ※ □ indicates deceleration ratio.
- ※ Geared motor includes the bolt set for installing. (for specification, refer to 40 page).

## MOTOR

Model : XBM975D

[Unit : mm(inch)]



※ Table 2-Weight

Part		Weight:kg.(lbs)
Motor		1.34(2.95)
Gear Head	XTG95K~XTG920K	0.85(1.87)
	XTG930K~ XTG9100K	1.15(2.54)
	XTG9200K	1.30(2.87)





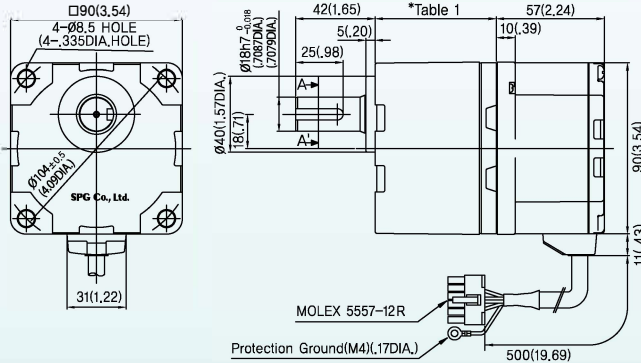
# Powermec

## GEARED MOTOR

■ Model : XBA9120( )-□K

[Unit : mm(inch)]

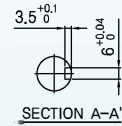
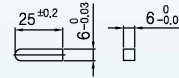
- Motor : XBM9120G
- Gear Head : XTG95K~XTG9200K
- Control Unit : XBD120( )



- ※ ( ) of item name represents voltage specification
- ※ □ indicates deceleration ratio.
- ※ Geared motor includes the bolt set for installing. (for specification, refer to 40 page).

■ Key(accessories)

■ Key Groove



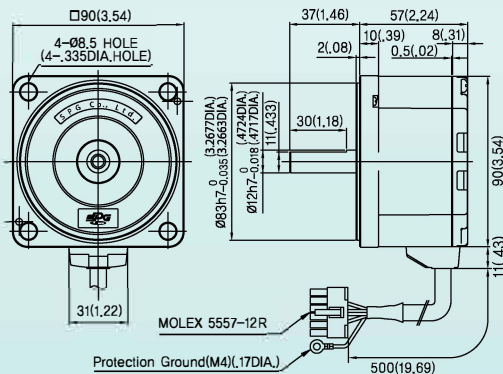
※ Table 1

Gear Ratio	Size:mm(inch)
XTG95K~XTG920K	45(1.77)
XTG930K~ XTG9100K	58(2.28)
XTG9200K	64(2.52)

## MOTOR

■ Model : XBM9120D

[Unit : mm(inch)]



※ Table 2-Weight

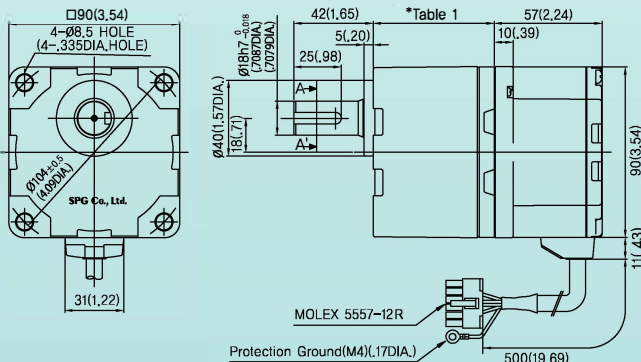
Part	Weight:kg.(lbs)	
Motor	1,34(2.95)	
Gear Head	XTG95K~XTG920K	0,85(1.87)
	XTG930K~ XTG9100K	1,15(2.54)
	XTG9200K	1,30(2.87)

## GEARED MOTOR

■ Model : XBA9150( )-□K

[Unit : mm(inch)]

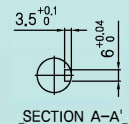
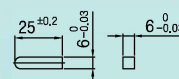
- Motor : XBM9150G
- Gear Head : XTG95K~XTG9200K
- Control Unit : XBD150( )



- ※ ( ) of item name represents voltage specification
- ※ □ indicates deceleration ratio.
- ※ Geared motor includes the bolt set for installing. (for specification, refer to 40 page).

■ Key(accessories)

■ Key Groove



※ Table 1

Gear Ratio	Size:mm(inch)
XTG95K~XTG920K	45(1.77)
XTG930K~ XTG9100K	58(2.28)
XTG9200K	64(2.52)



# Powermec

## MOTOR

Model : XBM9150D

[Unit : mm(inch)]

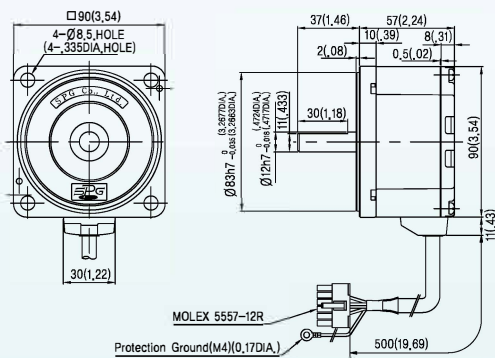


Table 2-Weight

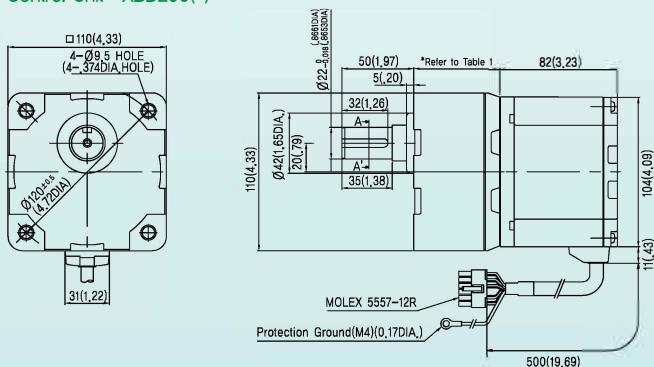
Part	Weight(kg)(lbs)	
Motor	1.34(2.95)	
Gear Head	XTG95K~XTG920K	0.85(1.87)
	XTG930K~ XTG9100K	1.15(2.54)
	XTG9200K	1.30(2.87)

## GEARED MOTOR

Model : XBA10200( )-□K

[Unit : mm(inch)]

- Motor : XBM10200G
- Gear Head : XTG105K~XTG10200K
- Control Unit : XBD200( )



Key(accessories)

Key Groove

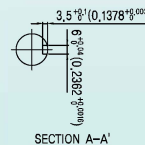
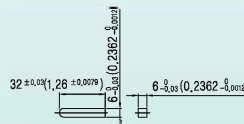


Table 1

Gear Ratio	Size(mm)(in)
XTG105K~XTG1020K	60(2.36)
XTG1030K~ XTG1050K	72(2.83)
XTG10100K~XTG10200K	86(3.39)

- ( ) indicates voltage specification.
- indicates deceleration ratio.
- ※ Gear head motor is enclosed with a bolt set (refer to P40 for specifications).

## MOTOR

Model : XBM10200D

[Unit : mm(inch)]

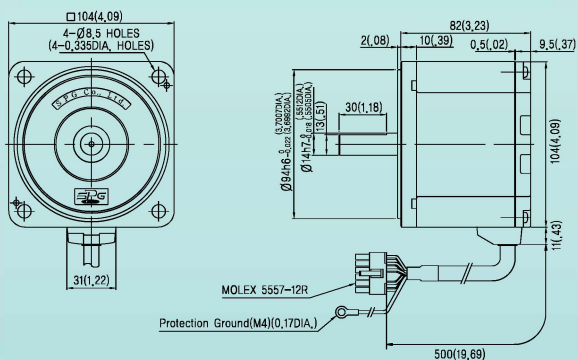


Table 2-Weight

Part	Weight(kg)(lbs)	
Motor	2.45(5.29)	
Gear Head	XTG105K~XTG1020K	
	XTG1030K~ XTG1050K	3.0(6.61)
	XTG10100K~XTG10200K	



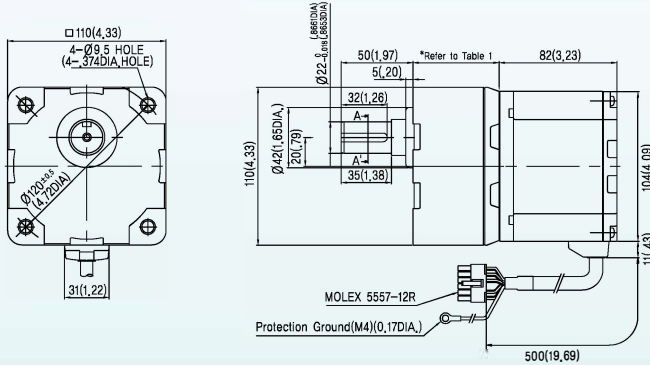
# Powermec

## GEARED MOTOR

■ Model : XBA10400U-□K

[Unit : mm(inch)]

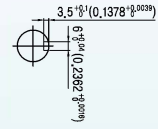
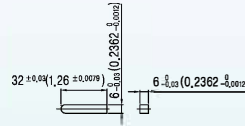
- Motor : XBM10400G
- Gear Head : XTG105K~XTG10200K
- Control Unit : XBD400U



- ※ ( ) indicates voltage specification.
- ※ □ indicates deceleration ratio.
- ※ Gear head motor is enclosed with a bolt set (refer to P40 for specifications).

■ Key(accessories)

■ Key Groove



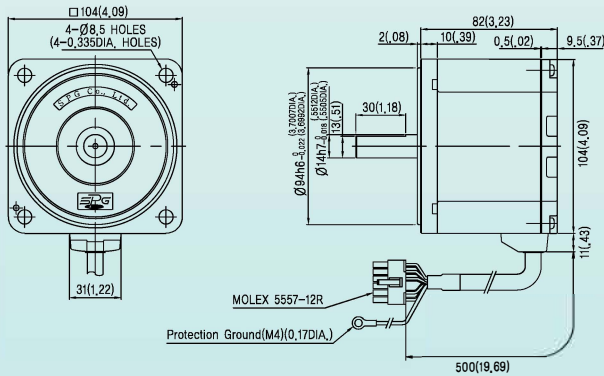
※ Table 1

Gear Ratio	Size(mm(in))
XTG105K~XTG1020K	60(2.36)
XTG1030K~ XTG1050K	72(2.83)
XTG10100K~XTG10200K	86(3.39)

## MOTOR

■ Model : XBM10400D

[Unit : mm(inch)]



※ Table 2-Weight

Part	Weight(kg)(lbs)	
Motor	2.4(5.29)	
Gear Head	XTG105K~XTG1020K	3.0(6.61)
	XTG1030K~ XTG1050K	
	XTG10100K~XTG10200K	

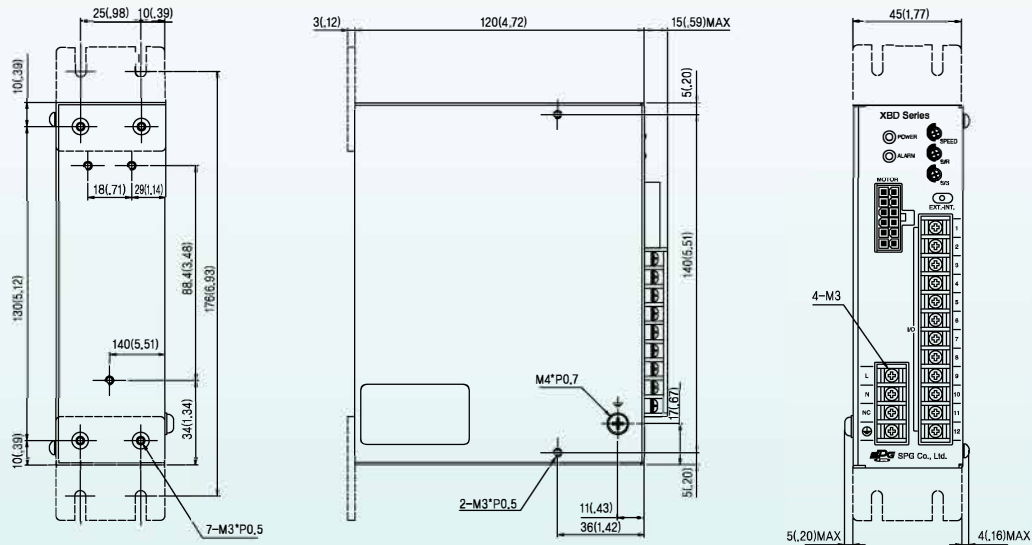


# Powermec

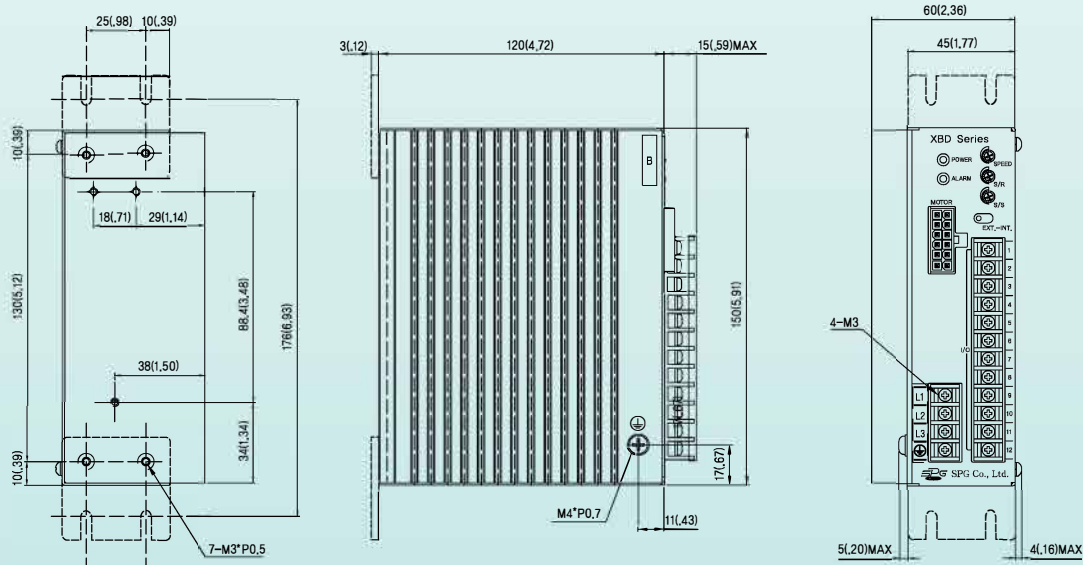
## CONTROL UNIT

■ Model : XBD20( ), XBD40( ), XBD75( ), XBD120( ), XBD150( ) (Weight : 0.7kg)

[Unit : mm(inch)]



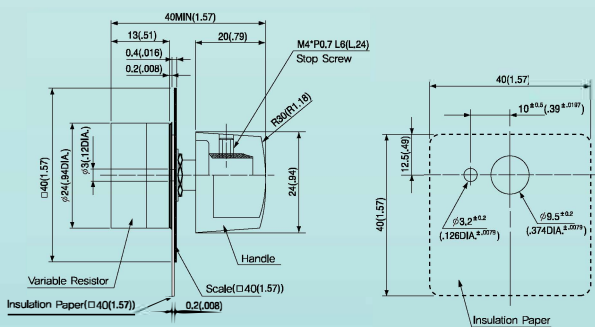
■ Model : XBD200( ), XBD400U (Weight : 1.0kg)



### EXTERNAL SPEED DIAL

■ Dimension

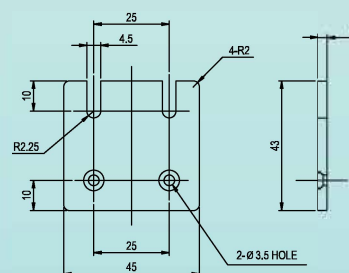
[Unit : mm(inch)]



### MOUNTING PLATE [1set (2EA)]

■ Dimension

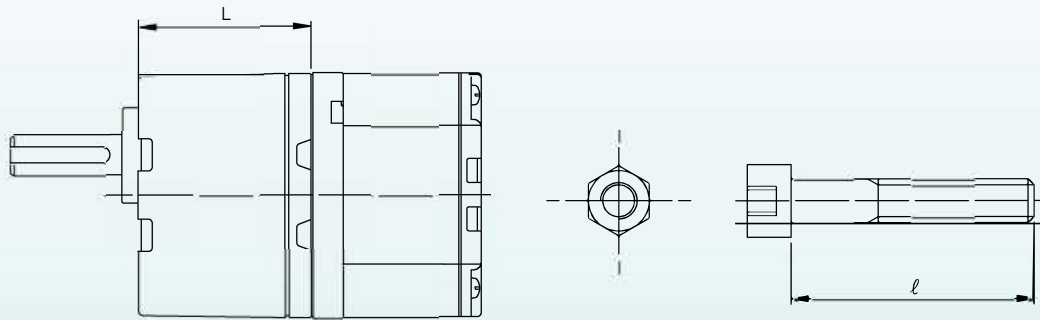
[Unit : mm(inch)]



# Powermec

## CONTROL UNIT

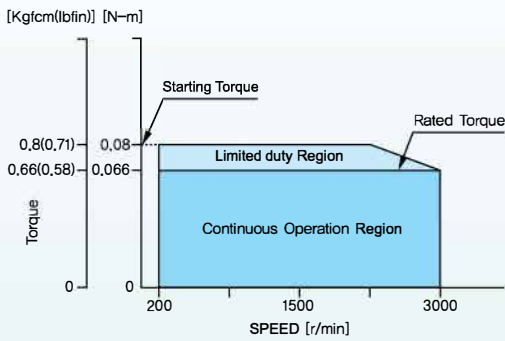
- Assembled bolt is attached to gear head or geared motor.



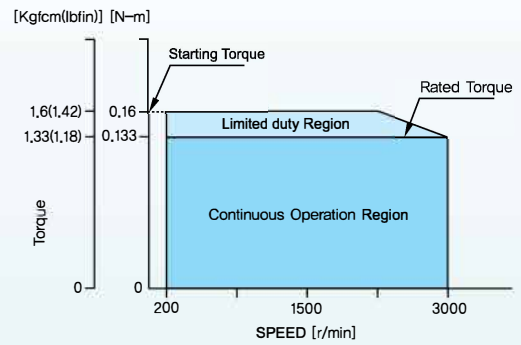
Model	Accessory Bolts (Flat W/S, Spring W/S, hexagonal nut×4)		
	L(mm)(in)	ℓ (mm)(in)	Bolt Names
XTG65K~XTG620K	34(1.34)	50(1.97)	M4 P0.7
XTG630K~ XTG6100K	38(1.50)	55(2.17)	
XTG6200K	43(1.69)	60(2.36)	
XTG85K~XTG820K	41(1.61)	65(2.56)	M6 P1.0
XTG830K~XTG8100K	46(1.81)	70(2.76)	
XTG8200K	51(2.01)	75(2.95)	
XTG95K~XTG920K	45(1.77)	75(2.95)	M8 P1.25
XTG930K~XTG9100K	58(2.28)	90(3.54)	
XTG9200K	64(2.52)	95(3.74)	
XTG105K~XTG10200K	70(2.76)	95(3.74)	M8 P1.25
XTG1030K~XTG10500K	82(3.23)	110(4.33)	
XTG10100K~XTG10200K	96(3.78)	120(4.72)	

# Powermec

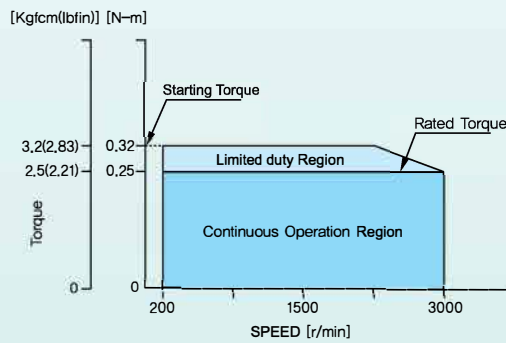
## XBU620G( )/XBU620D( )



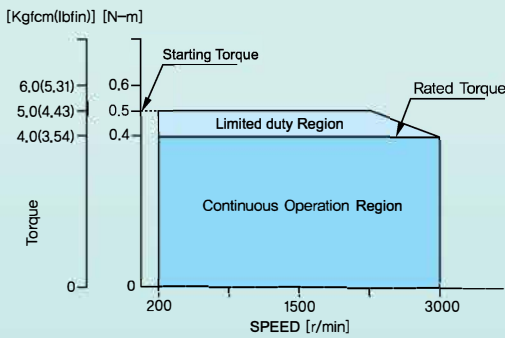
## XBU840G( )/XBU840D( )



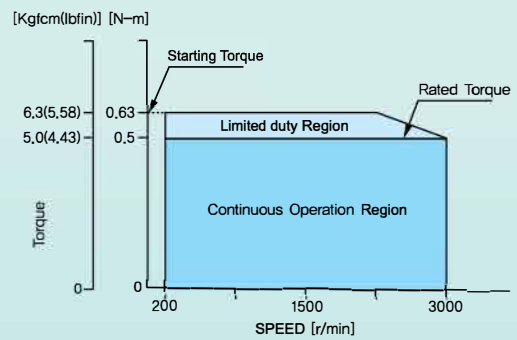
## XBU975G( )/XBU975D( )



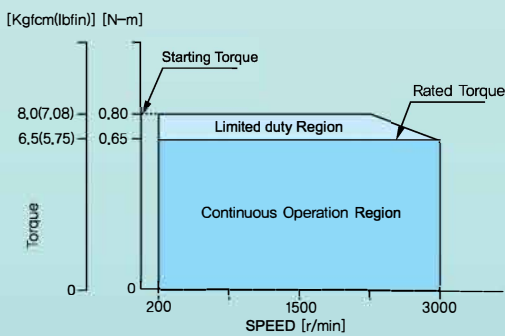
## XBU9120G( )/XBU9120D( )



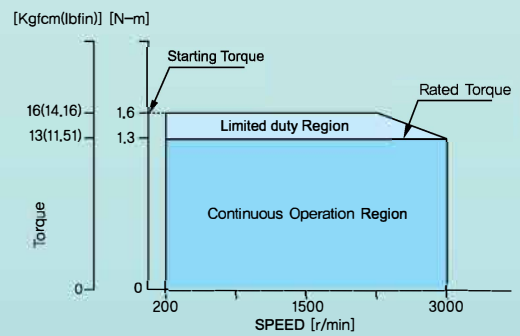
## XBU9150G( )/XBU9150D( )



## XBU10200G( )/XBU10200D( )



## XBU10400GU/XBU10400DU



# Powermec

## 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

Terminal for power input



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

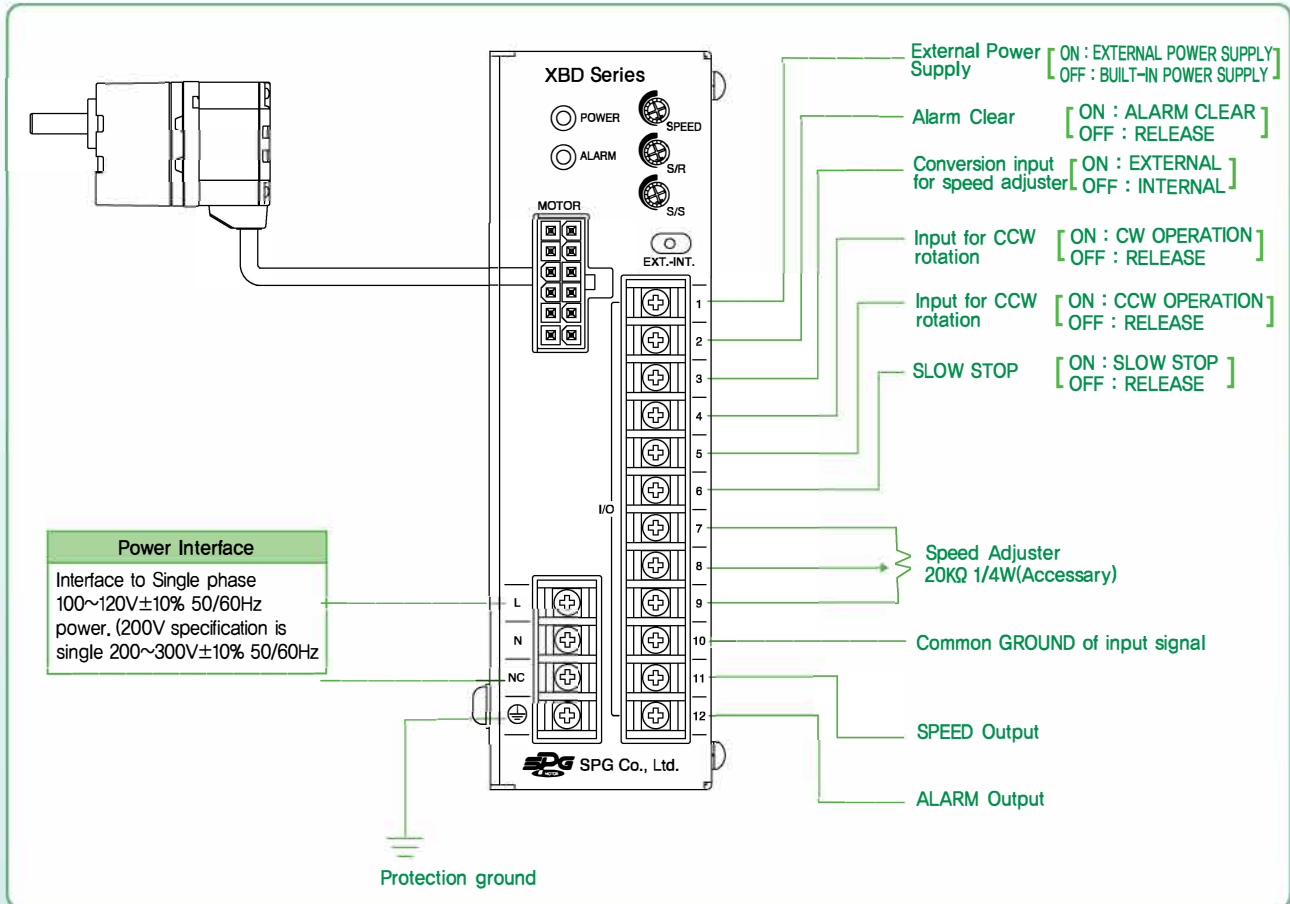
I/O power supply switch

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 POTENTIOMETER SELECTION INPUT	Selection input signal of internal and external potentiometer
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
COM	COMMON	Common ground terminal for input/output Signals
SPEED. OUT	SPEED OUTPUT (OPEN COLLECTOR OUTPUT)	When rotation speed for motor is monitored, use it.
ALARM. OUT	ALARM OUTPUT (OPEN COLLECTOR OUTPUT)	when protection is operated



# Powermec

## INTERFACE DIAGRAM



- 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).

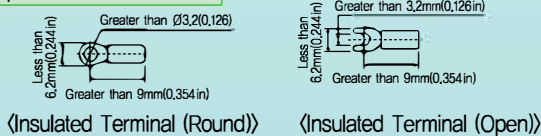
### Caution

- 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.

### Applied Pressure Terminal



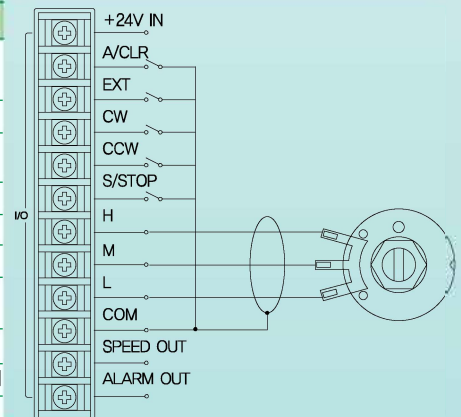
### Grounding

- Use a AWG 18 or higher cable to ground.

### Wiring the Signal I/O Terminal

- Signal I/O Terminal

Designation	Function
+24V IN	I/O power supply switch (UL 24Vdc class II)
A/CLR	ALARM CLEAR input terminal
EXT	Input terminal for internal/external speed adjuster selection
CW	CW signal input terminal
CCW	CCW signal input terminal
S/STOP	SLOW STOP input terminal
H / M / L	External speed adjuster / input terminal for external DC power
COM	Input / output signal common GND
SPEED OUT	SPEED signal output terminal
ALARM OUT	ALARM signal output terminal

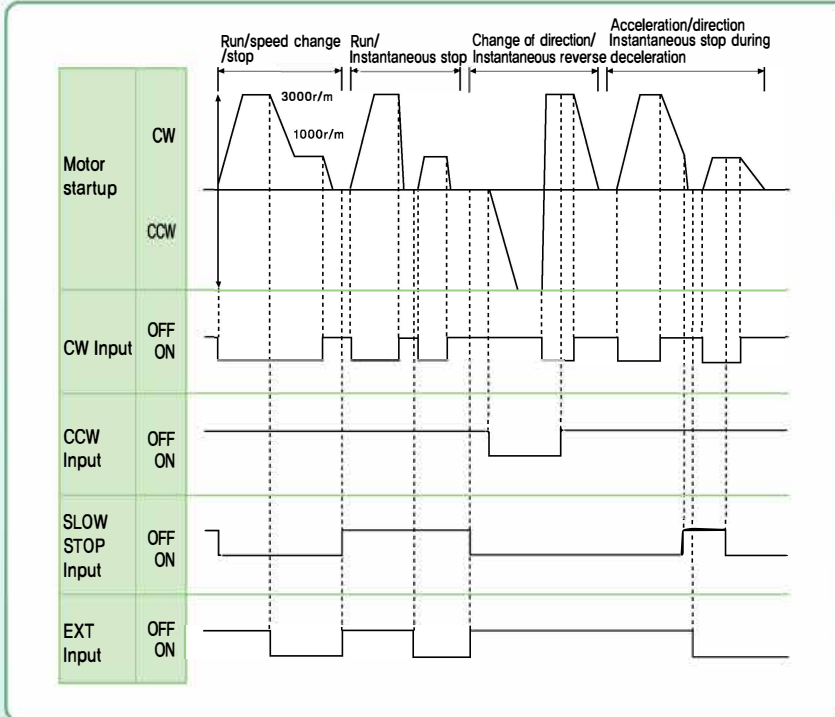




# Powermec

## OPERATION

### Example of a run timing chart



- \* 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.

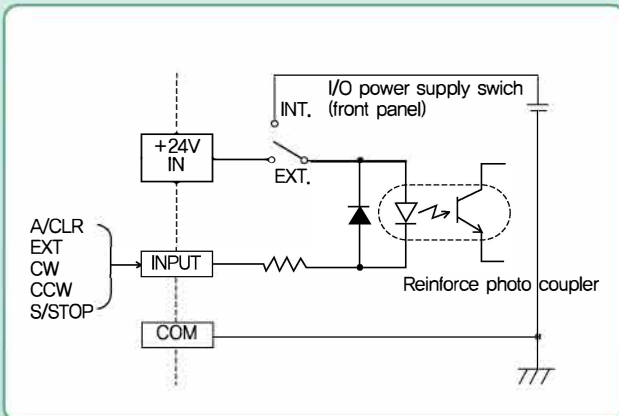
- If control unit is operated as single item.**
- Operation condition is determined by interface condition on the front of control unit.
  - If interfaced in the CW-COM, it operates in the CW and if CCW-COM is switched on, it operates in the CCW.

- If it is operated by external signal.**
- For interface, refer to "signal input circuit".

- 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.

## 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). Input circuit is insulated 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 ⇒ Control Unit ON  
Power OFF : Control Unit OFF ⇒ 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).

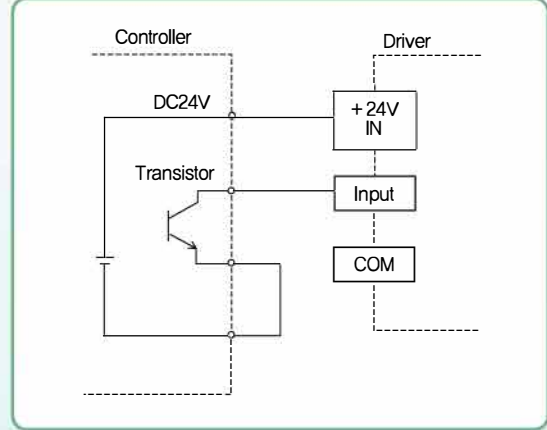
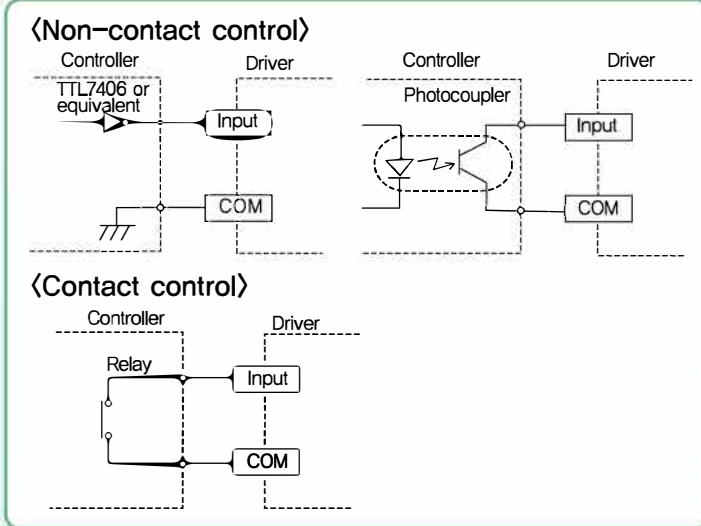
# Powermec

### ■ When using the driver's built-in power supply

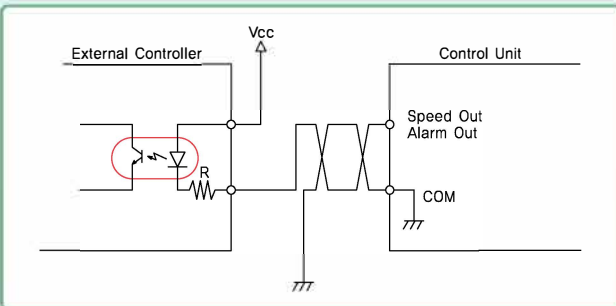
Flip the I/O power supply switch to "INT." Signals will not be input if it is set to "EXT."

### ■ When using an external DC power supply

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



## 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.

Type of protection function	Action
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 operated in short cycles of stopping/starting or CW/CCW rotation.
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).
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 control 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.

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

$$\text{Speed Out Output Frequency [Hz]} = \frac{1}{T}$$

Model	□60/20W	□80/40W	□90/75W, 120W, 150W
K (Pulse)	12	15	15

- 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(78.74in) 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).

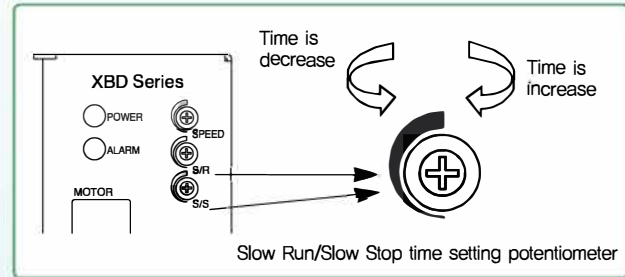


# Powermec

## 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).

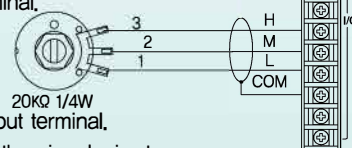
**Caution** When SLOW STOP function is set, should be set the S/STOP signal of signal input terminal to On.



## SETTING WITH EXTERNAL SPEED ADJUSTER

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

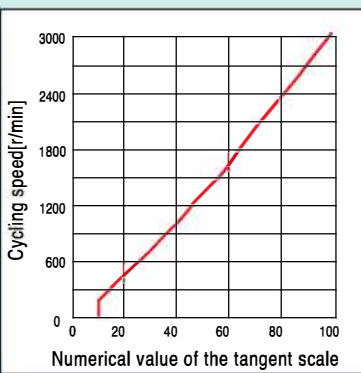
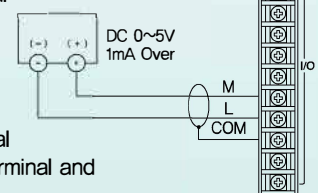
1. Among signal wires for the external speed adjuster (referred as signal wire from now on), connect the lead wire to the terminal 3 of the external speed adjuster and H input terminal.
2. Connect the lead wire of the signal wire to the terminal 2 of the external speed adjuster and M input terminal.
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.)



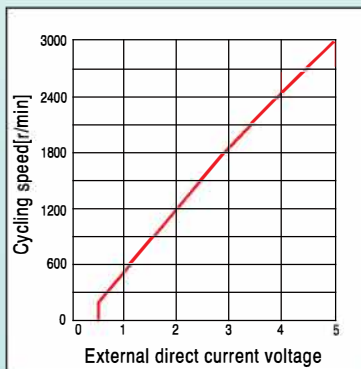
### Connecting External Direct Current Power

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.



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.



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 0V, the motor will stop. (Please have direct current of with capacity of over 1mA prepared)



# Powermec

## INSTALLATION

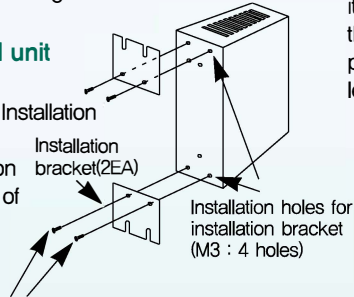
Please install the control unit on a flat, metal panel that has strong endurance to vibration and is high in heat conduction

### ■ Installation by using the control unit installation bracket

1. By using the provided "Control Unit Installation Bracket Screws", install control unit installation bracket into the installation holes(4 holes), which is in the back of the control unit.

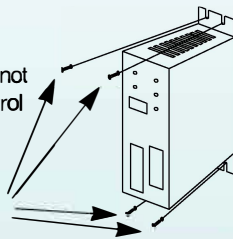
※Fastening torque : 0.5~0.6 Nm  
(71~85 oz.in)

Screws for installation bracket



2. Fixate the control unit with 4 screws (M4, not included) and the installation holes in control unit installation bracket so that the steel plates won't create any space in between them.

M4 (not included)



- [Important]
- The Installation holes in the back of the installation bracket should not be used for purposes other than fixation.
  - During the fixation of the control unit's installation, provided screws must only be used

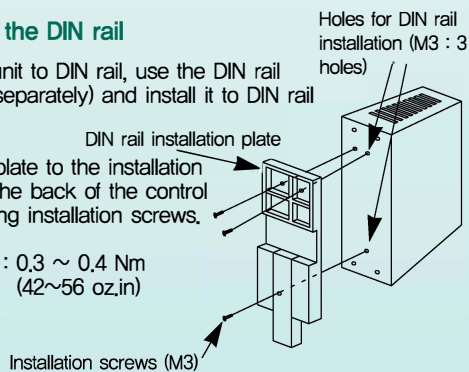
### ■ Installation using the DIN rail

To install the control unit to DIN rail, use the DIN rail installation plate(sold separately) and install it to DIN rail with 35mm width.

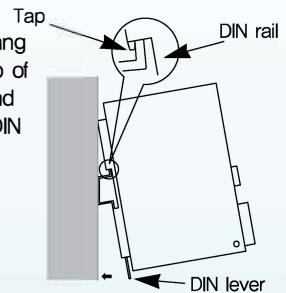
1. Install the DIN rail plate to the installation holes (Which is in the back of the control unit-3 holes)by using installation screws.

※Fastening torque : 0.3 ~ 0.4 Nm  
(42~56 oz.in)

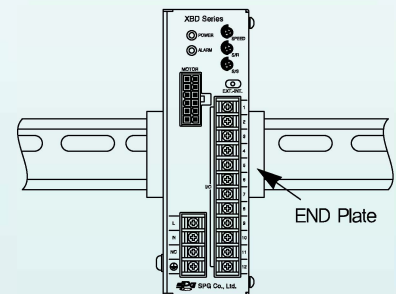
Installation screws (M3)



Pull the DIN lever down and hang it to the tap (Which is in the top of the DIN rail installation plate) and push the control unit until the DIN lever is full fixated.

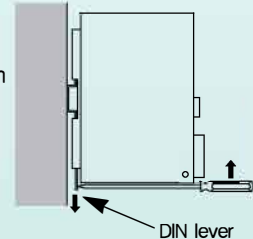


Fixate the control unit with the end plate  
(Not included)



### ■ Dissembling from the DIN rail

You may dissemble it by pulling the DIN lever with screw driver and push up the control unit from below. When pulling the lever down, do so with the strength of 10N~20N (2.2~4.5lb). Excessive force may damage the DIN lever



#### [Important]

- The Installation holes in the back of the control unit should not be used for purposes other than fixing DIN rail installation plate.
- The included screws must only be used for fixing the DIN rail installation plate. Using screws that goes in deeper than 3mm(0.1181 in) from the surface of the control unit may damage the control unit.