SLD-4

1. Application

1-1 This product is designed for the automatic hinge of intelligent toilet lids and seats, enabling full automation of opening and closing. This configuration manual provides instructions on the performance and usage conditions of the electric damper.

1-2 Quantity of Application: One unit is used for each toilet lid/seat.

2. Specification

Item	Spec.	Remark
Rated Voltage	DC12V	
Power Consumption	12W Max	
Operating Temperature	0° C~40° C	Ice free& Dew Free
Storage Temperature	-10° C~50° C	Ice free& Dew Free
Operating Humidity	45~85%RH	Ice free& Dew Free
Operating Angle	0° ~120°	
Rotation Direction	CW	R: CLOSE, L:OPEN DIRECTION
Load Reversal Direction	CCW	From the output shaft direction
Output Torque (Rated Load)	3.6N • m Min	CCW
Mechanical Strength (strength of output shaft and mounting components)	The output shaft and mounting components must not be subjected to external forces exceeding 5 N • m	CCW
Motor Type	DC MOTOR	

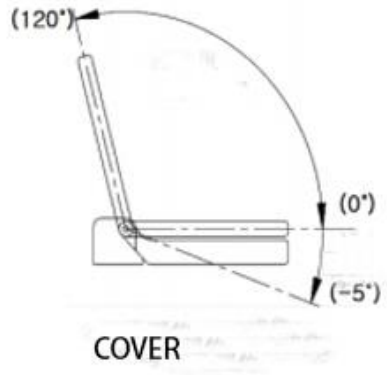
3. Basic Performance

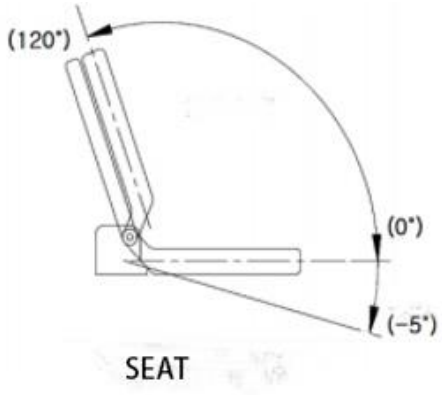
Item	Spec.	Remark
Insulation Class	Class A	
Driving Voltage	DC12V±20%	
Operating Current	2.2A Max	Max Current of Motor
No-load Rotation Speed	24.5RPM	

<table>
<tr><td>Open Time</td><td colspan="3">3.5sec Max</td><td>Rated Load, CCW、Duty100%</td></tr>
<tr><td>Close Time</td><td colspan="3">1sec Min</td><td>meet the combined SET control conditions</td></tr>
<tr><td>Signal Part Voltage</td><td colspan="3">DC5V±5%</td><td></td></tr>
<tr><td>Signal Output Circuit</td><td colspan="3">Extracted through voltage division with a variable resistor</td><td>Total resistance of the variable resistor 10kQ±30%</td></tr>
<tr><td rowspan="6">Driving Circuit</td><td>No</td><td>Color</td><td>Wiring</td><td rowspan="6">SET Necessary conditions for control program:
1.Detection of abnormal load: Power should be cut off if abnormal torque (TORQUE) is detected after the switch is turned on.
2.Drive speed control: Implement deceleration before full opening to prevent impact noise."</td></tr>
<tr><td>1</td><td>Red</td><td>MOTOR(-)</td></tr>
<tr><td>2</td><td>Black</td><td>MOTOR(+)</td></tr>
<tr><td>3</td><td>Blue</td><td>GND</td></tr>
<tr><td>4</td><td>White</td><td>OUTPUT</td></tr>
<tr><td>5</td><td>Yellow</td><td>Vcc:DC5V</td></tr>
<tr><td>Output Signal</td><td colspan="3">Closed Position 0°:0.5±0.5V</td><td>DC5V, including gear mesh clearance</td></tr>
</table>

4. Mechanical Performance

Item	R30 Cover	L30 Seat	Remark
Open/Close Angle	0° ~120°		Refer to the diagram for [] excess angle
Operating Direction	Close- CW	Open-CW	Rated Voltage
Torque (Open)	30Kgf.cm Max	30 Kgf.cm Max	
Noise	50dB Max		50 dB(A) or less at the position of 1m in front and 1m above
Gear Clutch TORQ	50~100 kgf.cm		Power Shaft





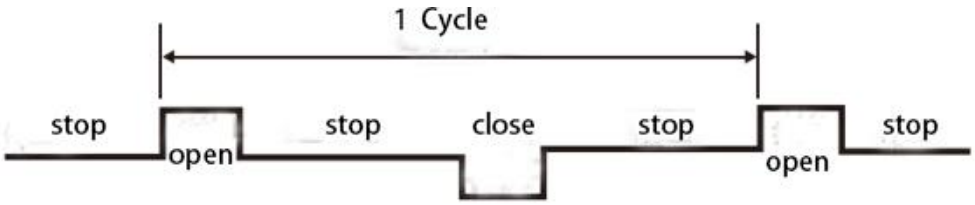
5. Environmental Performance

Item	Instruction	Test Result	Remark
Heat Resistance	After a unit is left for 96 hours in 50° C,then it takes out at	Normal Operation when no accessories damaged	Measurements within 1-2h after

Test	the normal temperature and it left for 2 hours.		reaching normal temperature
Cold Resistance Test	After a unit is left for 96 hours in-10° C,then it takes out at the normal temperature and it left for 2 hours.	Normal Operation when no accessories damaged	Measurements within 1-2h after reaching normal temperature
Humidity Test	After a unit is left for 48 hours in 40'C and95 %RH then it takes out at the normal temperature and it left for 2 hours.	Normal Operation when no accessories damaged	Measurements within 1-2h after reaching normal temperature
Temperature Cycle Test	(-10°C for 1 hour, -50°C for 1 hour) After 20 temperature cycles as one loop, confirm by placing at room temperature for 2 hours.	Normal Operation when no accessories damaged	Measurements within 1-2h after reaching normal temperature

6. Life Performance

Item	Instruction	Test Result	Remark
Electric opening and closing life	It opens and closes with specification and the drive circuits by using Terminal voltageDC12V(Load torque:3.2N· m){ close→stop for 28 seconds→open→stop for 29 seconds→close }This is assumed to be one cycle, and it does 50,000 cycles.	Normal operation, no damage to appearance.	Open: 2 times/minuter
Manual opening and closing life	After applying voltage to the control circuit, manually perform 1,000 open-close cycles (at a speed of 70 ° /s). The basic performance requirements should be met	Normal operation, no damage to appearance.	Please refer to the test cycle diagram below
Forced opening and closing life	Under standard test conditions, after applying the rated load (3N • m) using a dedicated fixture, drive the product with a special drive circuit. Manually force it to close 10 times at a speed of 0.5 seconds when flipped open to 60 degrees	It should operate normally without any jamming or improper flipping	



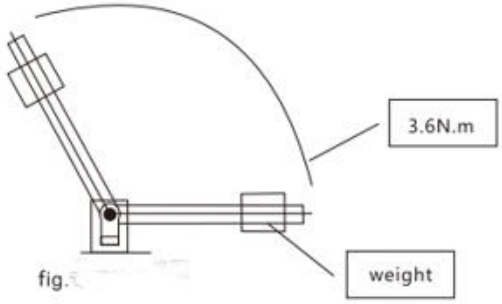
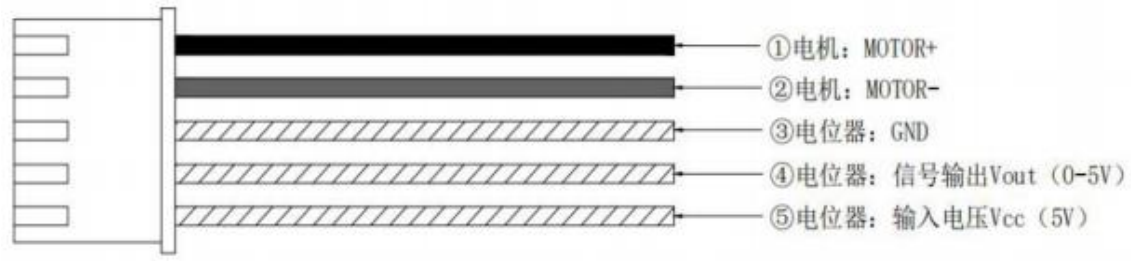


fig.

7. Wire Plug Instruction

No	Color	Item
1	Red	MOTOR(-)
2	Black	MOTOR(+)
3	Blue	GND
4	White	Vout(0~5V)
5	Yellow	GNDvcc(5V)



8. Notes and Operating Instructions

(1) There is a risk of motor blockage and product burning caused by external loads. Be sure to set up a protective circuit.

(2) Do not immerse the product in water. This product is not waterproof.

(3) Do not insert wires and motor terminals into household sockets to avoid the risk of electric shock. After the product is powered on, do not touch the terminals and other conductive parts to avoid the risk of electric shock.

(4) After the product is powered on, do not touch the rotating parts, including accessories, to avoid the risk of injury.

(5) The operating conditions of the product (installation status, load, environmental temperature) can cause the motor to heat up. Be careful of burns.

(6) Do not disassemble the product.

(7) Do not drop the product. Do not use the product after it has fallen.

(8) Set up a protective circuit to avoid risks when exceeding the maximum load.
(9) Continuous operation can cause the motor to heat up. Set an appropriate stop time.
(10) The product's output shaft can operate within the internal mechanical stop point range (0° -120°), but there is a possibility of damage to the contacting parts when the output shaft contacts the mechanical stop point. Use within the operating range.
(11) Do not pull wires and connectors with a force exceeding 10N.
(12) Pay attention to the correct wiring of terminals.