

oneA Co.,Ltd.
Instruction Manual
PMP
Picking Mistake Prevention

PMP Shutter Series
STEP7 / For both NPN and PNP specifications
 Single-arm support: APG-7UL, APG-7UB
 Edition No.7 June. 27, 2023 AIM0005-E00

Thank you for purchasing this "PMP Shutter."
 Please read this instruction manual carefully before using the shutter and use the product correctly.
 Store the instruction manual carefully after reading it.

Safety Precautions

<p>The indications below are used to classify the level of harm and damage that may arise if the items written are ignored and the product is used incorrectly.</p>		<p>The types of details to be observed are classified as below.</p>	
	There is a risk of serious injury or death if these items are not obeyed.		These are "warning" items for which care should be taken.
	There is a risk of minor injury or damage to property if these items are not obeyed.		These are "prohibited" items that must not be done.
			These are "compulsory" items that must be implemented.
			This indication instructs the user to turn off the power supply.

<p>When abnormalities occur</p> <p> If there is any smoke emission or unusual smell or sound generated, switch off the power supply.</p> <p> If water or foreign matter gets inside the product or if the main body of the product has been damaged, stop using the product and switch off the power supply.</p> <p> It is dangerous for the customer to repair the product. The customer should never make repairs.</p> <p>Regarding the tough rubber cable</p> <p> Insert the connector firmly as far as it will go and ensure that there is no looseness. Contact failure may result in heat generation or electric shock.</p> <p> Be careful that the tough rubber cable does not become trapped or entwined in machinery or equipment. This may cause a breaking of the wire or a rip in the cable covering and cause electric shock or fire.</p>		<p>Regarding installation</p> <p> When installing the product, read the "Installation method" written in this instruction manual carefully and install it correctly. If there is a problem with the installation, there is a risk of injury due to the product falling, etc.</p> <p>Regarding the use of the product</p> <p> Always check that the power source is 24 VDC before supplying the power. If a power supply other than 24 VDC is connected, there is a risk that this may cause damage to the main body of the product and cause fire or electric shock.</p> <p> Be sure work out countermeasures so that the shutter won't hit human while opening and closing, to prevent injury.</p> <p> Do not touch the metal surfaces such as the circuit board or the terminals.</p> <p> There is a risk of burns or electric shock.</p> <p> Do not use our products for the protection of the human body.</p>	
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1. Outline

This is a tool to support "zero" careless mistakes in the picking work performed in various fields in both manufacturing and logistics, something that was not possible with the conventional indicator lamps.

Careless mistakes are prevented by physically blocking the opening for insertion or retrieval.

This is an I/O support type product, so it can be used on any type of component picking system. Also, an answerback output is returned from the lever switch or push switch on the main body of the product (both non-contact magnetic types) to the upper level to communicate that the work has finished.

2. Cautions for use

- Carefully check the wiring before supplying power to the main body of the product.
- If the shutter is moved by hand whilst the power supply is switched off, always return it to its original position. If it is not returned, there is a risk that this may cause malfunction.
- Do not apply excessive shock to the shutter or repeatedly open and close manually. The load on the internal mechanism may cause damage to the drive parts or rotation failure.
- Do not use detergent, etc., to clean the main body of the product. Gently wipe off the dirt, for example, with a soft cloth that has been wet and then firmly wrung.

3. This is a product for industrial use, not for household use. Do not use it at home.

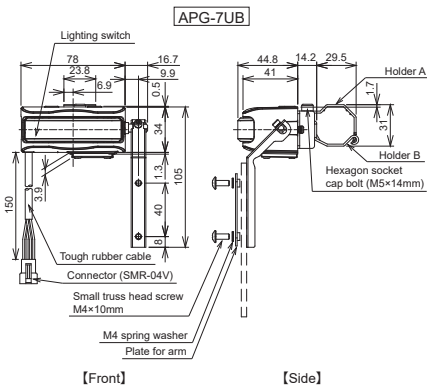
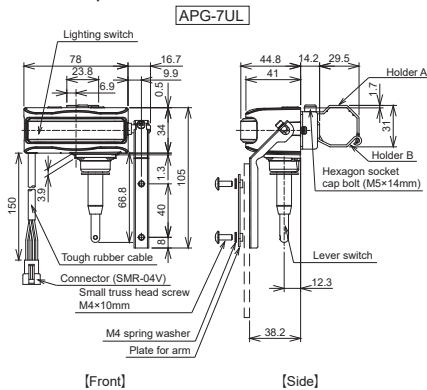
3. Specifications

Type	Lever switch	APG-7UL
	Push switch	APG-7UB
Rated voltage		DC24V
Operating voltage range		20.0V to 26.4V
Current consumption		0.4A or less (During opening/closing movement) 50mA or less (while not moving)
Rush current at start up		0.6A or less
Signal input circuit		Compatible with contact input or open collector (NPN/PNP)
Signal input		Incoming current: 5mA, ON voltage: 0.5V or less
Output specification	Output form	Open drain output (Corresponds to open collector.)
	Pulse width	100ms
	Maximum current	100mA
Lamp action	Default	Blink
	Changeable with remote controller	Blink/light/light out/double blink/triple blink
Lamp color	Default	Green
	Changeable with remote controller	Green/blue/red/yellow/purple/cyan
Error lamp		Blink red

Open/shut position	Default	Close position : 0, open position (outward) : 180(°)
	Changeable with remote controller	Outward opening: 180/165/150/135/120/105/90(°) Inward opening: -90/-75(°) Close: 0/15/30/45(°)
Delay time	Default	1(sec)
	Changeable with remote controller	0/0.5/1/2/3/4/5/7/10(sec)
Ambient temperature during use		0 to 50°C (However, there should be no condensation.)
Ambient humidity during use		30 to 85%RH
Ambient temperature during storage		-20 to 70°C (However, there should be no condensation.)
Ambient humidity during storage		30 to 85%RH
Shutter torque		8.2N*cm
Material	Main body	Upper cover: PC-GF10, Body: SPCC (ZAM)
	Arm	SPCC (triatomic chromate)
	Drive shaft	SUS303
	Holder	Holder A: SUS304 CSP 1/2H, Holder B: SUS304 2B
	Connector	VCTF 0.3mm×4 core cable SMR-04V (JST) With yellow
Product weight		APG-7UL: 230g, APG-7UB: 220g

•An exclusive remote controller (APG-RM1) is required to change the settings

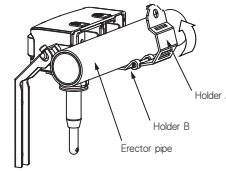
4. Part description



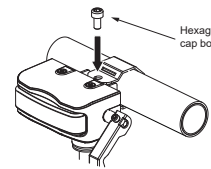
5. Installation method

5-1. Fixing to the erector pipes

(1) Place the attachment holder B that is on the back of the main body of the product to the erector pipe.

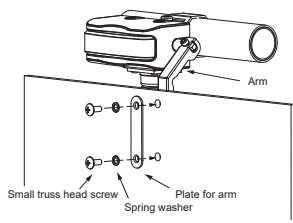


(2) Trap the pipe with holder A and then fix the product at the screw holes with the hexagon socket cap bolts (M5×14) supplied with the product. (recommended tightening torque 2N*m)

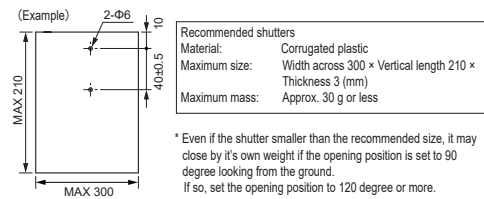


5-2. Shutter installation method

Attach a shutter (corrugated plastic, etc.) to the arms fitted to both sides of the main body of the product. Set the shutter in place and then fix it with the small truss head screws (M4×10) supplied with the product. Firmly fix the screws at the 2 screw holes.



5-3. Shutter dimensions



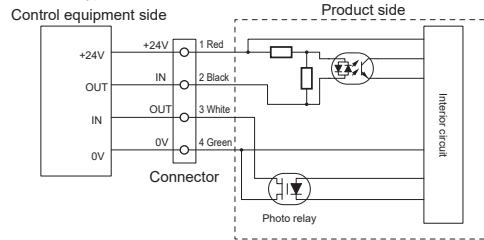
6. Connection

Connect the tough rubber cable coming out from the main body of the product to the control device. Junction connector : SMP-04V type (JST)

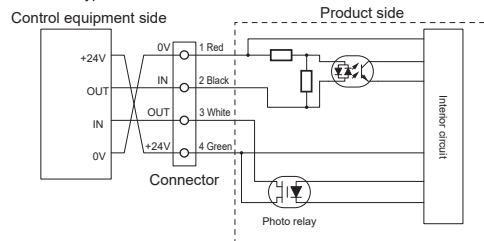
<about signal>

The terminal pin 2 inputs a door open signal
 The terminal pin 3 outputs an output signal(100ms)

6-1. NPN type



6-2. PNP type

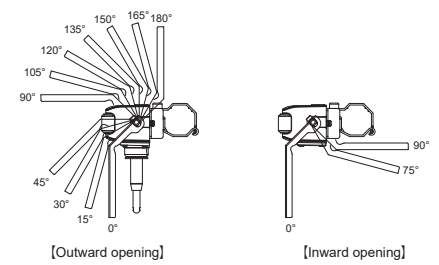


<<Caution>>

Connect in reverse polarity of the power supply in case that control system of the product is PNP type.(Refer to the above-mentioned figure.)

7. Setting

7-1. Angle of opening/closing



7-2. Plant shipping settings

All of the settings are set as default when shipped out from the factory. If the setting is not changed, the shutter's open/close position is set from 0° to 180° and will shut in 1sec after the input signal is turned off.

(Setting contents)

Shutter open position	180°	Delay time	1sec
Shutter close position	0°	Push switch	☆
Lamp action	Blink	Answer back mode	OFF
Lamp color	Green	Error output	OFF
Lamp color at error	Red	Shutter opening direction	Outward

☆: The default setting is shown below.
 Lever switch type : Disable
 Push switch type : Enable

8. Operation

LED lamp indications

- <When operating>
- Light off State when there is no signal input
- Green blinking State when there is a signal input
- Note) The lamp will be OFF from the point the input signal if OFF until the shutter is closed.
- <Abnormal states>
- Red blinking. The shutter has hit an obstruction and stopped at an intermediate position
- Note 1) When the stopping due to an obstruction is while the shutter is opening:
 Alternate green and red blinking will start at the stop position.
- Note 2) When the stopping is while the shutter is closing, there will be red blinking at the stop position.

9. Guarantee period

The period of the guarantee is 1 year from the customer's purchase.

•If any breakdown or defect of our product that is the responsibility of our company is found during the period of the guarantee, we will either provide a substitute product or the components that must be replaced, or else we will repair our company product free of charge if it is returned to us.
 However, the breakdown or defect shall be excluded from the scope of this guarantee in the following cases.

- Breakdown or failure due to the specification, standard or handling method, etc., instructed by the customer.
- When the cause is modification of the structure, performance or specification, etc., that has been carried out without our involvement after the purchase or after the delivery of the product.
- Breakdown or failure arising from a phenomenon that could not have been foreseen with the technologies in practical use after the purchase or at the time of the contract.
- When the product has been used outside of the range of conditions and environments stated in the catalog and specification documents.
- When our product is incorporated into the customer's device for use and it would have been possible to avoid the damage if the customer's device had included the functions or structures, etc., that are commonplace in the industry.
- Breakdown or failure arising from natural disaster or force majeure.
- Breakdown or failure triggered by the failure of a product not from our company.

Furthermore, the guarantee written here only applies to the single product from our company that was purchased by or delivered to the customer. Damage resulting from the breakdown or failure of our product is excluded.

10. The extent of service

•The price of our products does not include the costs for services such as the dispatching of engineers.
 Please inquire with our sales contact if these are required.

Inquiries

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