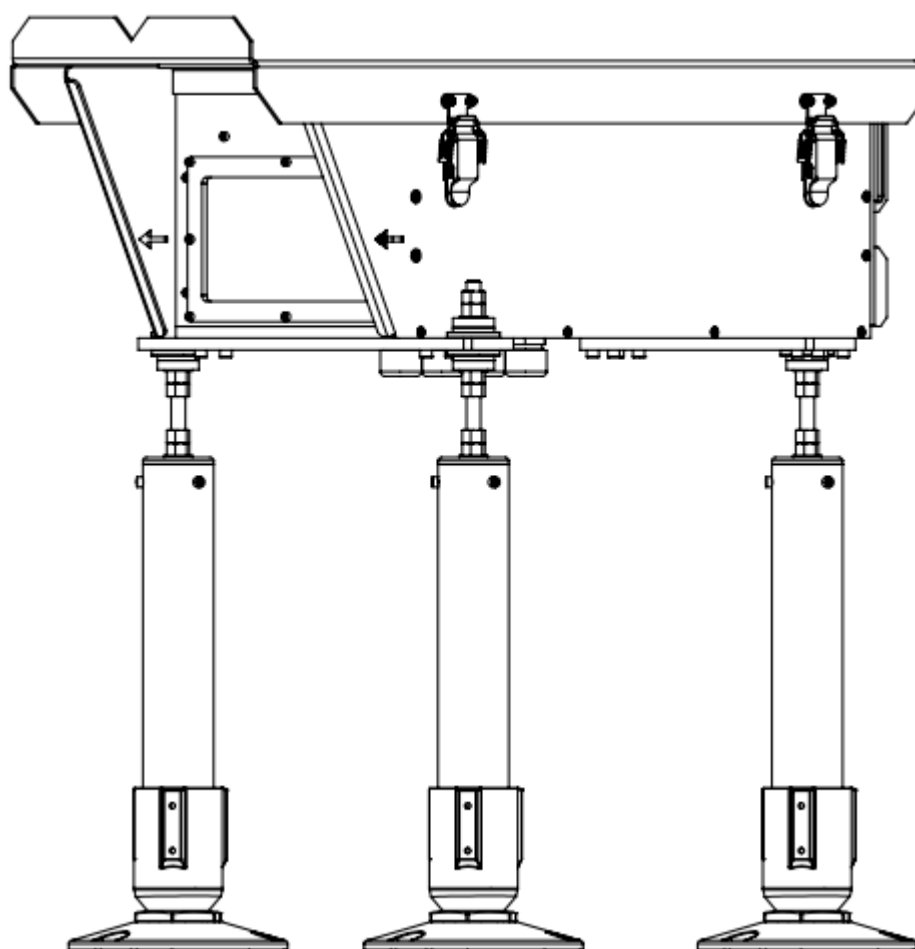


LED AIRFIELD LIGHTING



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Disclaimer/Standard Warranty

All products manufactured by Hangdakang mechanical & electrical technology (Wuhan) co. LTD, hereinafter referred to as HDK, meet the requirements of CAAC, ICAO and IEC. All warranties provided by HDK exclude all cases of gross negligence and handling of all products.

In case of avoidable defects or failure caused by mechanical, electrical or physical defects, the company will provide the necessary spare parts for repair.

The replacement and delivery of spare parts shall meet the requirements of proper storage, installation, and maintenance of the products, and shall submit the spare parts requirements to the Company in writing.

Hangdakang mechanical & electrical technology (Wuhan) co. LTD reserves the right to inspect the avoidable defective or damaged products in its own company facilities.

The obligations of Hangdakang Mechanical & Electrical technology (Wuhan) Co. LTD are limited to the labor cost required for disassembly and assembly of the product and the delivery of the corresponding products.

Hangdakang Mechanical & Electrical technology (Wuhan) co. LTD assumes no liability for injury or damage resulting from any incorrect use of the equipment. All products and their equipment are explicitly designed for their intended use only. Any other use outside the scope of the instructions is considered incorrect and excluded from the warranty.

Included are:

- ✓ Use HDK products outside of their intended operating use.
- ✓ Any changes or modifications to products that are not explicitly approved.
- ✓ Use of unauthorized, incompatible or unapproved tools by HDK or local regulations.

Local regulations on labour safety must always be followed in addition to those of HDK.

HDK reserves the right of interpretation within the scope permitted by law.

1. Safety

Airfield Ground Lighting is installed in high voltage series circuits, where the primary voltage is usually from several hundred to thousand volts and can be fatal if operated improperly. International or national standards referring to the electrical safety and safety of electrical operations should be strictly implemented during the operation and at any stage where powered lighting products are handled or maintained. Correct safety code must be followed during any operation in lighting circuit On and Off state conditions.

Pay attention to all safety instructions in this user manual. Negligence in following safety practices and instructions can result in serious injury, accident, or death. Safety instructions are categorized following the IEC standard and accompanied by an icon accordingly. Safety instructions and icons are listed and explained below:

DANGER:

Risk of electrical shock or flashover. Before any operations disconnect the equipment from line voltage, never connect or disconnect live circuits. Failure to observe "Danger" may result in severe injury, death, or equipment damage.

WARNING:

Failure to observe "Warning" may result in personal injury, death or equipment damage.

CAUTION:

Ignoring or violating "Caution" may cause damage to equipment.

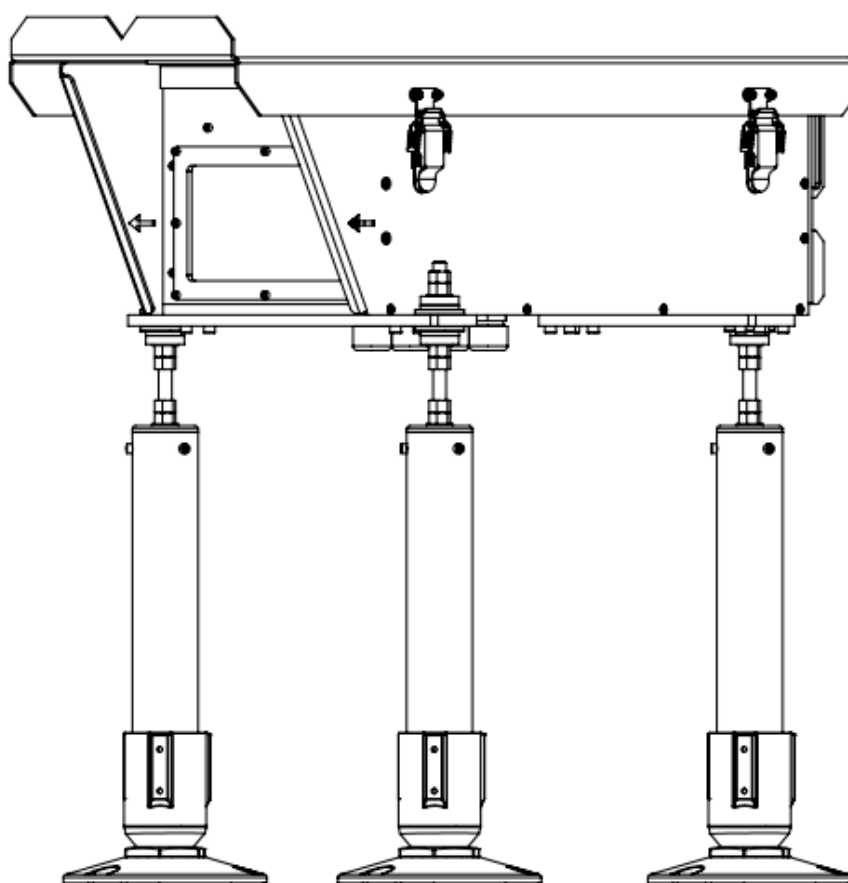
Note:

Explanations and supplements to parts of the description.

2. Introduction

The Precision Approach Path Indicator produced by HDK adopts a single channel structure design, with three adjustable mounting legs to ensure the elevation Angle of beam can be easily adjusted. It has advantages of strong durable structure , compact size, and simple replacement of light source. The product is designed to meet the requirements and guidelines of ICAO, FAA, IEC and CAAC.

Figure 1 - Precision Approach Path Indicator



2.1. Models & Variants

This manual presents essential information for handling, installation and maintenance operations of the precision approach path indicator. The series can be divided into different models according to the number of luminous units and power supply type of the system. All models are shown in Table 1:

Table 1 – List of the Light Series

Application	Model	Power supply/ units	CAAC Type	ICAO Type	FAA Type
PAPI	ELG-PAPI-V(L)	Constant voltage power supply / 4	L-880A	A2-23	L-880 Style A
PAPI	ELG-PAPI-C(L)	Constant current power supply / 4	L-880B	A2-23	L-880 Style B
APAPI	ELG-APAPI-V(L)	Constant voltage power supply / 2	L-881A	A2-23	L-881 Style A
APAPI	ELG-APAPI-C(L)	Constant current power supply / 2	L-881B	A2-23	L-881 Style B

2.2. Product Features

The series of lights use a high precision optical system, the red and white light boundary is straight and clear. Built-in high precision electronic inclinometer with resolution up to 0.01°.

The entire light includes: light Chamber, light source system, control module, tilt angle display module, adjustable mounting legs and so on. The front cover is made of high-strength scratch-proof glass, all fasteners are made of type 316 stainless steel having a superior corrosion resistance and the silicone rubber sealing has an outstanding resistance against temperatures and aging.

The light source is imported brand with original package. This series of LED PAPI system can be used on the existing AC series circuit. A dimming control of 5 light intensity levels can also be performed with the equipped isolation transformer in corresponding power.

The performance parameters of the light fixture meet the following standards:

(current version)

- ICAO Annex 14, Volume 1, & Aerodrome Design Manual
- EASA CS-ADR-DSN

2.3. Electrical Properties

Input Current

- 2.8A-6.6A_{eff AC}

Sinusoidal CCR

- $I_{\text{peak max}} = 9.88\text{A}$

Thyristor CCR

- $I_{\text{peak max}} = 12.60\text{A}$, $j_{\text{min}} = 45^\circ$

Inclinometer

- Range : $-9.99^\circ \sim +10^\circ$, Resolution: 0.01° , Precision: $\pm 0.02^\circ$

CAUTION: Inputting electrical parameters beyond the specified range above is highly likely to damage the fixture.

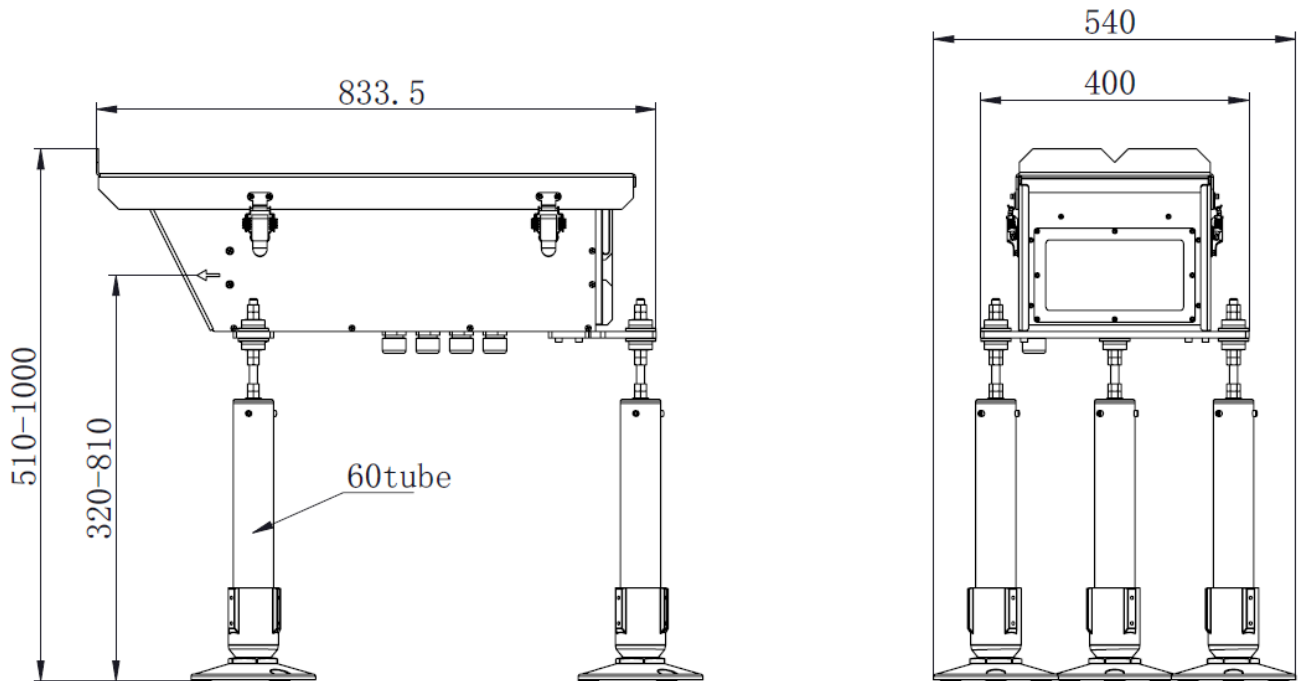


Table 2 - Requirements for Specification of Isolation Transformer

Application	Model	Suggested Transformer Specs (w)
PAPI Single light emitting unit	ELG-PAPI-C(L)	100W
PAPI master control light emitting unit	ELG-PAPI-C(L)	100W
APAPI Single light emitting unit	ELG-APAPI-C(L)	100W
APAPI master control light emitting unit	ELG-APAPI-C(L)	100W

2.4. Mechanical Properties

Figure 2 – Major Dimensions of the Light Fixture



Degree of Protection

- IP65 (IEC60598-1)

Operating Temperature

- -55°C ~ +55°C

Storage Temperature

- -55°C ~ +85°C

Weight

- Net Weight: 32 kg

Package Dimensions

- 1100mmx650mmx500mm; Weight 41kg

2.5. Main Components

HDK Precision Approach Path Indicator light is equipped with the following main components:

Light Chamber

- Light outside cover
- Rear plate
- Stainless steel fastener

Optical Component

- Optical Chamber
- LED light source module
- Front windshield glass (Heated glass is optional)

Electronic Module

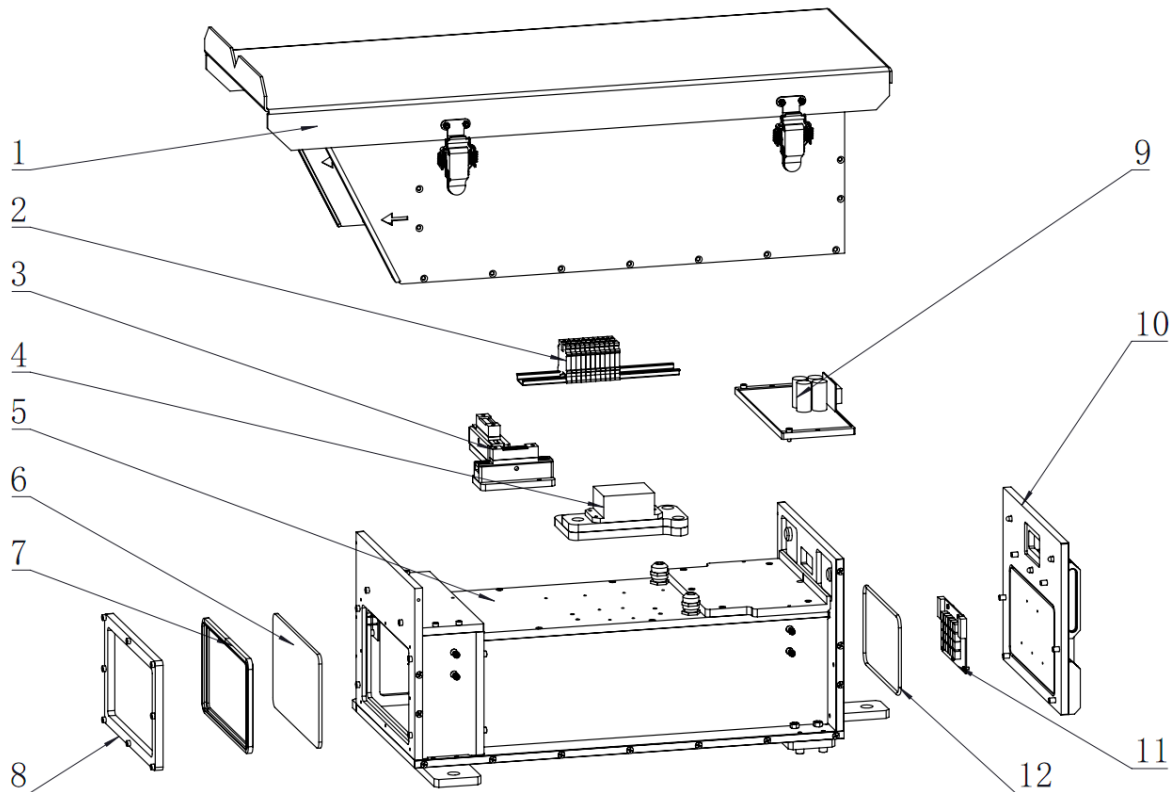
- Inclinator
- Driver module

Adjustable Mounting Legs

- Flange
- Breakable coupling
- Height-adjusting parts

Others

- Sealing ring
- Fastener - Anti-corrosion 316 stainless steel

Figure 3 – Exploded View of the Light Structure


1 Light outside cover

2 Wiring terminal

3 Bubble level

4 Inclinometer

5 Optical chamber

6 Front glass

7 Front sealing ring

8 Glass locking frame

9 Driver module

10 Rear plate

11 LED light source module

12 Rear sealing ring

2.6. Nameplate

Precision Approach Path Indicator (PAPI) System

Type: A2-23(ICA0) L-880 Style B(FAA)

U-26(BASA)

Model: ELG-PAPI-C(L)

Input: AC 2.8A-6.6A

Color: White/Red

Power: 55W

S/N: 3EK1103

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3.Installation

WARNING: Before any operations, make sure that circuit is disconnected from the voltage supply, switch off the Constant Current Regulator to power off the circuit and never connect or disconnect live circuits.



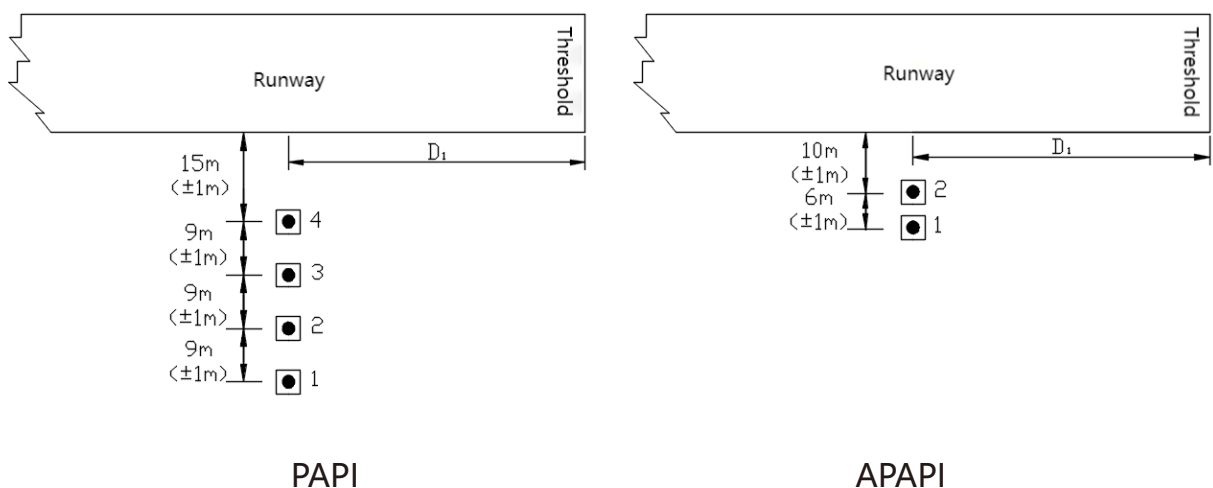
The PAPI or APAPI system should be installed on the left side of the runway looking from the pilot on approach, but on the right side of the runway when it is not practicable. The PAPI system consists of four lights, while the APAPI system includes two lights. The projection of the optical axis of each light on the horizontal plane should be parallel to the center line of the runway and toward the approaching aircraft. The distance between PAPI and the runway threshold (D_1) is determined by the largest aircraft that can take off and land on the runway, the height of aircraft wheels above the threshold, possible obstacles in the approach area, and the cooperation with ILS instrument landing system.

Refer to ICAO 《Airport Design Manual》 Part IV, Chapter 8.3 for more details on calculations.

Note: The numbers 1, 2, 3, and 4 in the illustration below correspond respectively to the letters A, B, C, and D in ICAO Annex 14, Volume I, Figure5-19.



Figure 4 – Installation Position of the PAPI System



The light is mounted on three legs, and each consisting of a flange base, a breakable coupling and an aluminum tube, the length of which is determined at site installation. The final length of the aluminum tube depends on the required height of each PAPI light unit, and the height of the light unit is based on the ground installation conditions on site, etc. There is an arrow mark in the center of each PAPI unit light both sides to show the center point of light emitting which can be used to determine that all units are at the same horizontal height. Note that PAPI units should be installed as low as possible.

The standard size of aluminum tube is 60mm in diameter and 360mm in length.

The installation on site can be carried out by cutting the aluminum tube to the required length based on the elevation of the PAPI light core. The actual length of the aluminum tube needed (L) can be calculated using the formula:

Light core elevation **H**(mm)–Fixed height **260** mm=Actual length of aluminum tube needed **L**(mm)

For example, at a certain airport, the actual elevation of the #4 PAPI light core was measured to be 385 mm. According to the principle mentioned above, the calculation is as follows:

Actual length of aluminum tube needed **L**(mm)=385mm–260mm=**125**mm

Note:  When installing aluminum tubes, 162mm of aluminum tubes are installed in breakable coupling, which must be taken into account when calculating the required length.

3.1. Tools Required

Following tools and materials are recommended for installation:

- Open-end Wrench: 10mm, 19mm, 55mm
- Socket Wrench: 17mm
- Allen wrench: Metric 3mm, 5mm&10mm
- Small flat-head screwdriver
- Cable seam sealing material and insulating tape

- Impact electric drill and accessories
- Expansion Anchor: M10×120mm
- Clean cloth
- Gradiometer
- Inclinator
- Calibration platform

3.2. Unpacking Unit

Please carefully check whether the package is in good condition. If the product or accessories are damaged during delivery, demand compensation from the carrier immediately.

Upon receipt of delivery, please confirm and check that the information in the delivery documents is inline with the project requirements and construction design. Check that quantity, type, specification, color and other characteristics of the light fixtures are consistent with the actual delivery. If you have any doubts, please contact the supplier as soon as possible.

CAUTION:



The packaging of this product can be used for various purposes such as future maintenance, uninstallation and transportation of the light fixture. Please keep the product packaging properly after receiving the cargo.

3.3. Installation

A concrete base is required for each light fixture and dimensions are suggested as shown in Figure 6.

3 sets of 3 bolts with M10 threads (1 set for each flange) shall be prefabricated in the concrete base before hardened. Another method is using expansion bolts. Use the drilling auxiliary positioning fixture shown in Figure 5 to locate and drill holes in the concrete foundation. Embedded elbow pipes are recommended to use in concrete base for secondary circuit wiring.

Note: Before installation, confirm the following:



- (1) Verify that the Angle of the chassis conforms to the design requirements and construction specifications;
- (2) Confirm that the breakable couplings meet the lighting installation requirements.

Figure 5 – Drilling Positioning Aid

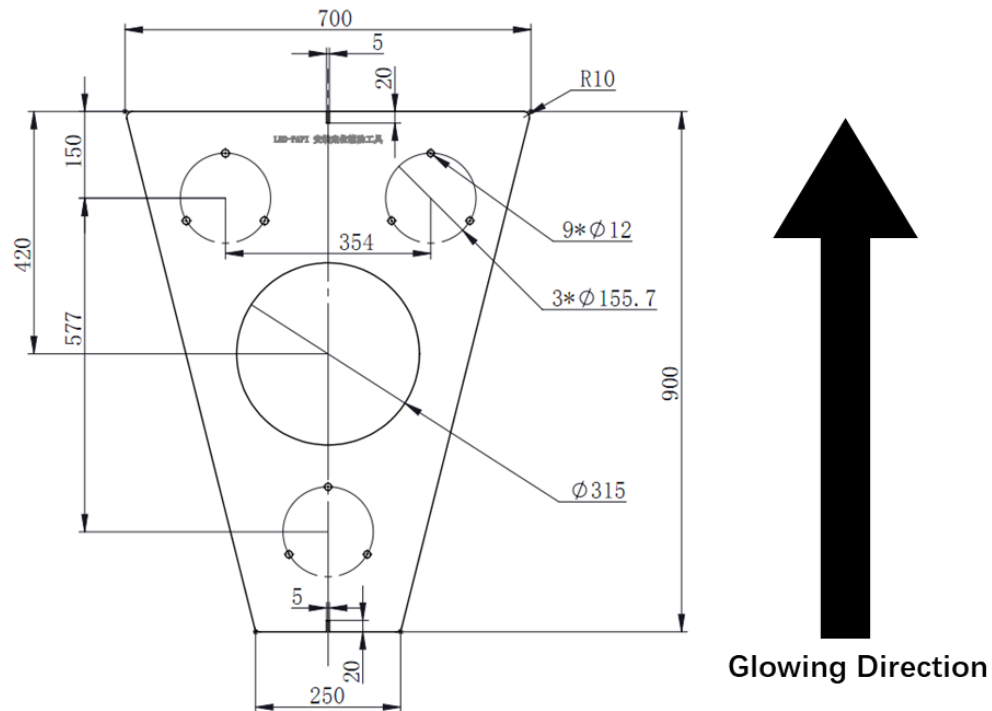
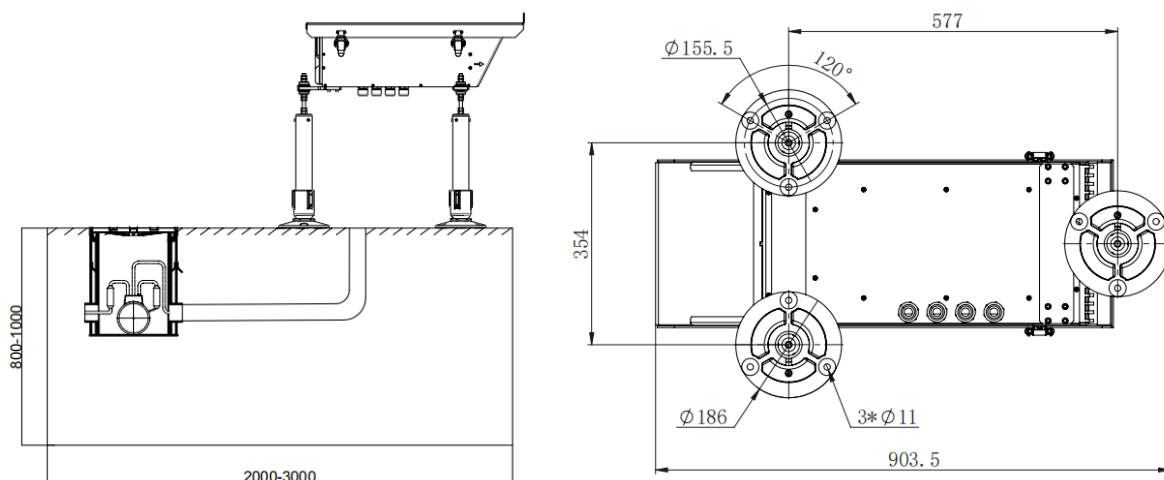
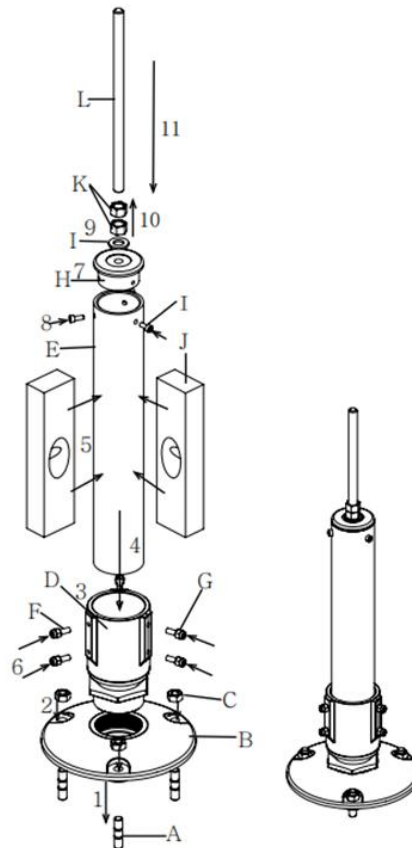


Figure 6 – PAPI Installation



3.4. Installation Mounting Legs

Figure 7 – Installation and Removal of Mounting Legs



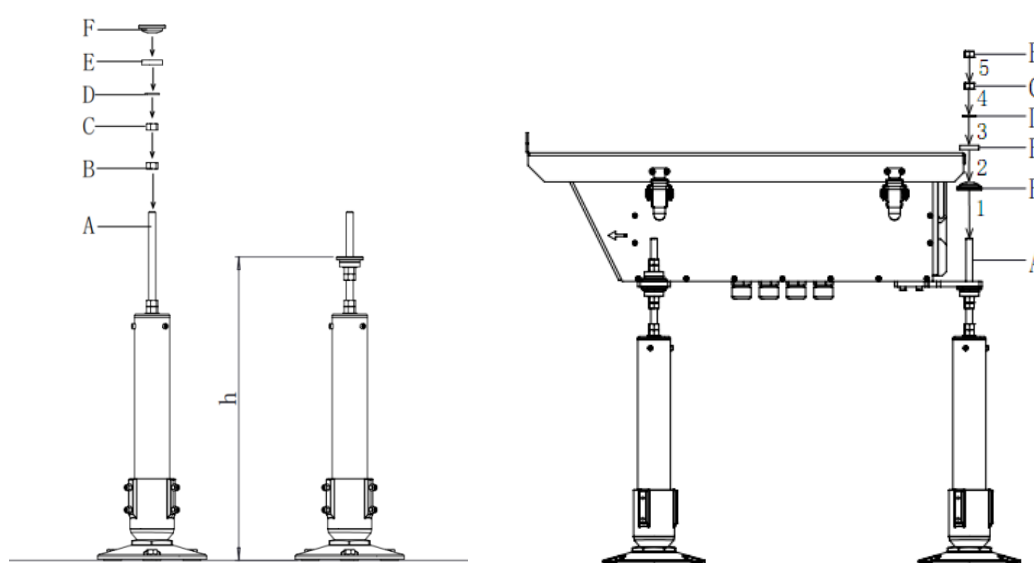
Steps for Mounting legs installation:

- a) Install flange B on prefabricated bolt A;
- b) Tighten the three M10 nuts C on the prefabricated bolt A with a 17mm wrench to fix flange B;
- c) Fix the breakable coupling D to flange B with an 55mm open wrench.
- d) Install the aluminum tube E on the breakable coupling D (the length of the aluminum tube should be cut in accordance with the required height). The maximum distance of screw L adjustment is 55mm;
- e) Using a level J and a 10mm wrench, adjust the 6 fastening screws F to adjust the verticality and fixation so that the aluminum tube E is vertically installed in the breakable coupling D.
- f) Tighten the 6 locking nuts G with a No.5 inner hexagon wrench;

- g) Install threaded head H on aluminum tube E and fix it with 3 fastening bolts I;
- h) Two locking nuts K and gasket I are installed on the screw L;
- i) Screw the screw L into the threaded head H, at least 25mm;
- j) Tighten the lock nut K when the screw L is properly screwed in;
- k) Other Mounting legs are installed in the same way

3.5. Light Fixture Installed On Mounting Legs

Figure 8/9– Light Fixture Installed On Mounting Legs



Steps for installation on mounting legs:

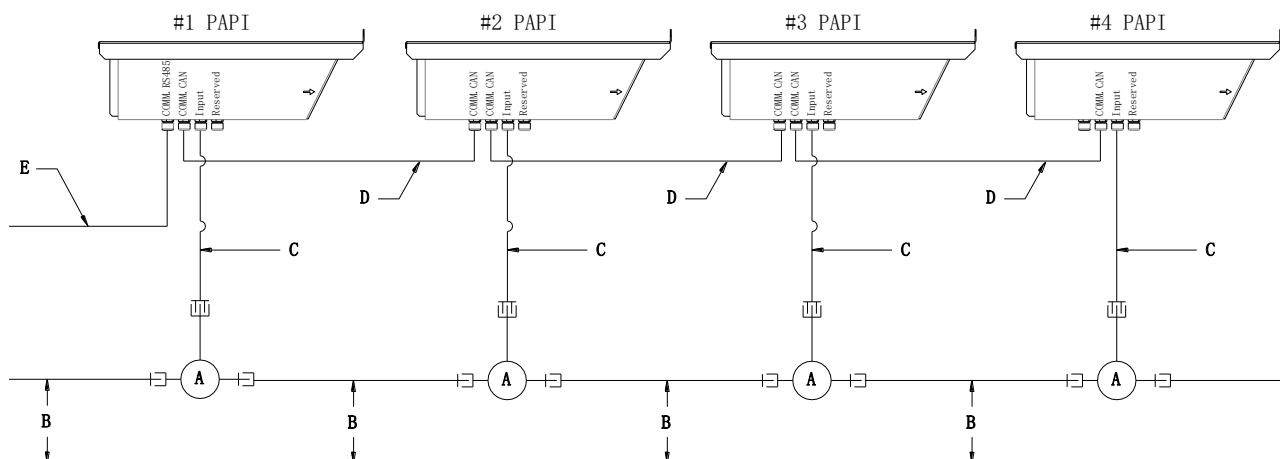
- a) Install nut B to screw A;
- b) Install fastening nut C to screw A as well;
- c) Place the bottom washer D on the screw A;
- d) Attach bottom connector-bend E to screw A;
- e) Attach bottom connector-bend F to screw A;
- f) Install the light chamber on the mounting legs;
- g) Connect upper connector-bend F to the screw A;
- h) Attach upper connector-bend E to screw A;
- i) Place upper washer D on screw A;
- j) Attach fastening nut C to screw A;
- k) Attach fastening nut B to screw A as well;
- l) Adjust the nuts to the height required for light fixture.

3.6. Circuit Connection of Light Fixture

WARNING: Before starting circuit connection of the light fixture, confirm that the primary circuit of the light is disconnected, i.e. turn off the power supply of CCR.

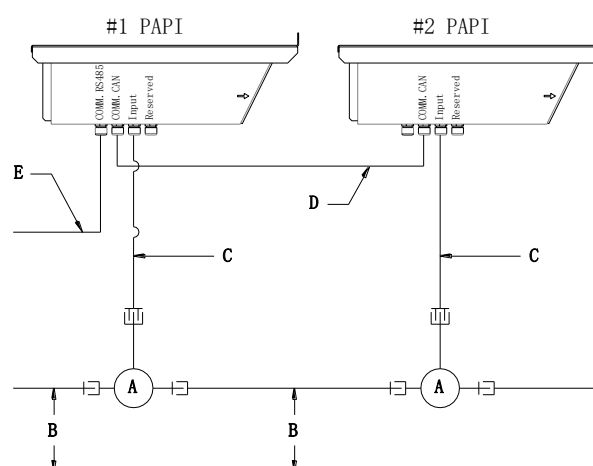


Figure 10 – Diagram of PAPI system circuit connection



- A. Isolation transformer: 100W B. Primary Cable (Regular)
 C. Secondary cable (regular) D. Communication cable (4×1.5mm² shielded pair)
 E. Alarm feedback cable (2×2×2.5mm² shielded twisted pair)

Figure 11 - Diagram of APAPI system circuit connection



- A. Isolation transformer: 100W B. Primary Cable (Regular)
 C. Secondary cable (regular) D. Communication cable (4×1.5mm² shielded pair)
 E. Alarm feedback cable (2×2×2.5mm² shielded twisted pair)

Open the top cover of the light fixture, then pass the secondary cable and communication cable through the cable gland at the bottom of the light fixture in turn. Connect the secondary cable and communication cable according to Figure 10 and Figure 11, and keep the sequence of CAN communication cables in one by one correspondence. Figure 12 is the diagram of terminals wiring of the #2 and #3 light fixture units in the PAPI system. Figure 13 shows the diagram of terminals wiring of #1 and #4 light fixture units in PAPI system. An $R_a=120\Omega$ resistor needs to be added to the terminals of CAN wires of #1 and #4 light fixture units.

Figure 12- Diagram of #2 (left) and #3(right) light fixture units terminals wiring in PAPI system

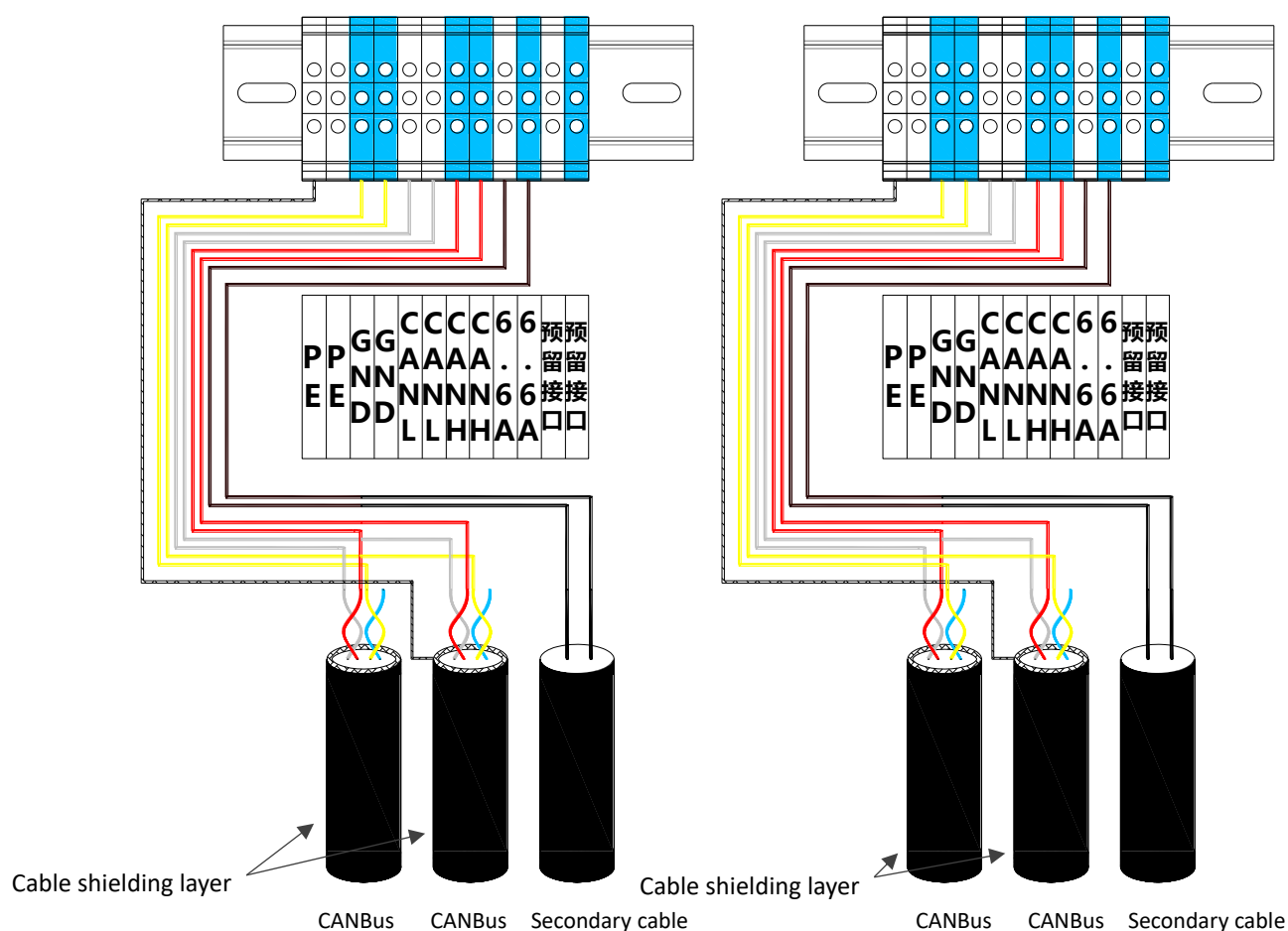
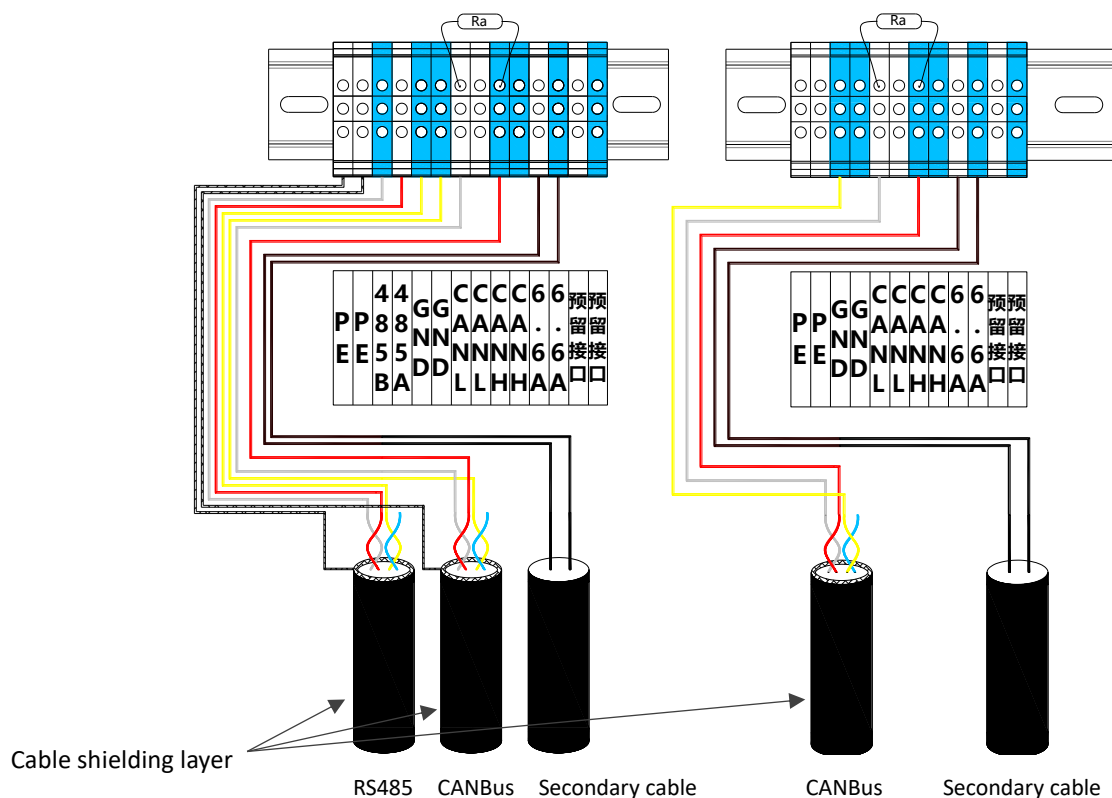


Figure 13- Diagram of #1(left) and #4(right) light fixture units terminals wiring in PAPI system



3.7. Adjustment of horizontal and inclination angle

Please refer to Chapter 4 in this manual to perform following steps:

- Loosen the upper & bottom connector-bend parts on the three mounting legs, Open the four fixed locks on the enclosure and remove the cover plate.
- After turning on the power supply, turn the code switch of the light fixture driver module SW1-1 to the "ON" position (See 4.1). At this time, the light fixture will display 5 seconds "XX.XX"(local inclination angle value, 2 seconds "└ X.XX"(setting inclination angle value) and 2 seconds "1---"(disable "inclination Angle Failure" alarm). Pressing the

horizontal/vertical button on the driver module, the horizontal angle value will be displayed. (See 4.3)

- C) Adjust the upper & bottom connector-bend parts on the left front leg to make the horizontal angle value become zero. Pressing the horizontal/vertical switch on the driver module, $0.00^{\circ} \pm 0.02^{\circ}$ will be displayed.
- D) Tighten the upper & bottom connector-bend parts at the same time.
- E) The pitch angle is set by adjusting the upper and bottom connector-bend parts of the back leg.
- F) After adjusting the horizontal and pitch angle, tighten the hexagon nuts above and below the connector-bend parts on the mounting leg.

3.8. Save inclination angle settings

- A) After all adjustments are completed, Press the "save setting angle button" key on the lamp drive panel for more than 20 seconds to save the setting angle value (see 4.3.2). Turn the dip switch SW1-1 on the driver module to the "OFF" position and wait for at least 30 seconds, at which time the LED will display the 5-second "XX.XX" inclination angle value and 2-second "└ X.XX" setting angle value in turn.
- B) Repeat the above procedure for each light fixture unit

3.9. Level Bubble Adjustment

- A) When the PAPI or APAPI has been adjusted and the pitch angle value has been finally confirmed through airport flight calibration, the level bubble needs to be adjusted.
- B) Use a 3mm hex key to adjust the level angle and pitch angle level bubble fixing screws

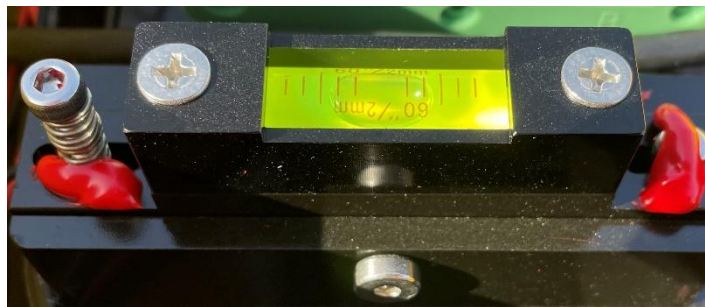
until the bubble is centered. Figures 14 and 15.

Figure 14/15-Level Bubble Adjustment



C) After the screw adjustment is completed, use screw marking adhesive to secure the screws, Figure 16.

Figure 16- Marking adhesive fixed



CAUTION:



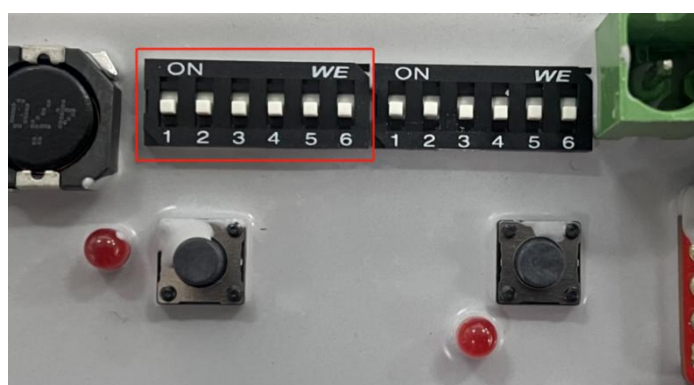
The marking adhesive is used to secure the level bubble screws to monitor any ground settlement or other force majeure events that may cause the displacement of PAPI light fixtures and lead to other failures. It is strictly prohibited to adjust the screws again after installation.

4. Operation

4.1. Light fixture mode and address bit settings

The ID and mode of the driver module are set according to the different needs of the position and debugging content. The position of the dip switch on the driver module is shown in Figure 17.

Figure 17-Dip switch



SW1-The functions of 1~4 dip switches are shown in Table 3

Table 3 The functions of 1~4 dip switches

Dip Switch No.	"ON"Position	"OFF"Position	Default value
SW1-1	Disable "inclination Angle	Enable "inclination	OFF
	Failure" alarm	Angle Failure" alarm	
SW1-2	Disable "Communication	Enable "Communication	OFF
	Failure" alarm	Failure" alarm	
SW1-3	Disable Local light source	Enable Local light source	OFF
	failure alarm	failure alarm	
SW1-4	Disable remote failure alarm	Enable remote failure	OFF
		alarm	

The configuration of SW1-5~6 DIP switch address bits are shown in Table 4

Table 4 Dip switch address bit setting

No. Of light fixture	SW1-5	SW1-6
#1	OFF	OFF
#2	OFF	ON
#3	ON	OFF
#4	ON	ON

Host Settings:

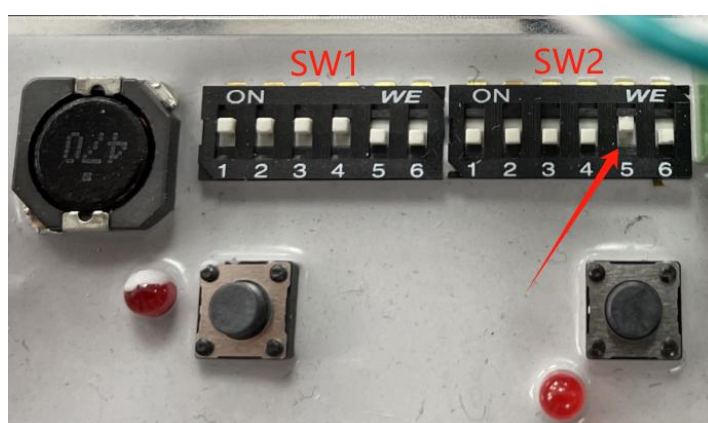
Before operating the device, you need to set up the host (usually #1). Simply move the SW2-5 switch to the "ON" position and set all other switches to the "OFF" position (near the numbers), Figure 18.

#2~#4 all switches must be set to the "OFF" position (near the numbers).

Note: If the PAPI front glass is equipped with a heating function, set SW2-1 on units 1#~4# to the "ON" position to enable heating.



Figure 18 - Dip switch set up host



4.2. LED Digital Tube Display

The 4-digit LED digital tubes on the display board will display angle information or light status in working conditions.

- The value of the angle displayed by the LED ranges from -9.99° to 10.00° . When the pitch angle is between -9.99° and -1.00° , the LED display 5 seconds angle value and 2 seconds error code "Er: 05" in turn..
- The LED displays a step value of 0.01° .
- The angle accuracy of LED display is $\pm 0.02^{\circ}$.

Figure 19 - LED Digital Display



Note:



During the adjustment process, if the digital display shows the error code "Er.05," this indicates that the unit is in a downward tilt state (the beam is directed below the horizontal plane). Adjusting the upward angle above the horizontal will eliminate the alarm.

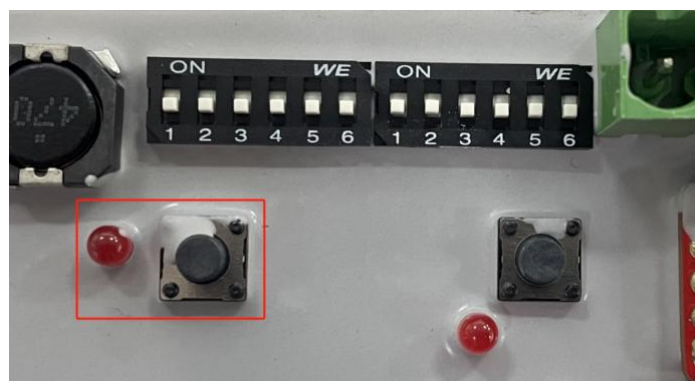
4.3. Buttons on the Driver Module

4.3.1 Horizontal/Vertical Button

Holding the Horizontal/Pitch button on the driver module will display the horizontal angle of the light.

Release the Horizontal/Vertical button on the driver module will display the pitch angle.

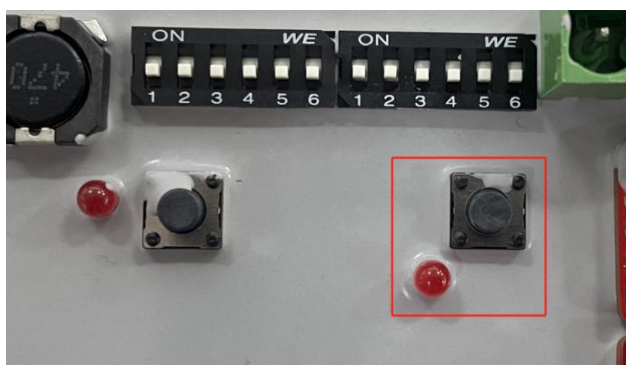
Figure 20 - Horizontal/Vertical Angle Button



4.3.2 Save Setting Angle Value Button

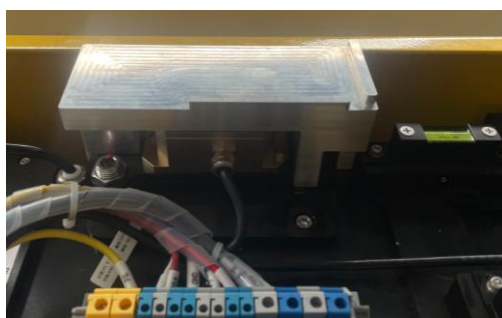
After adjusting the inclination angle of the lamp unit to the calibration Angle value, Press the save setting angle value button (Figure 21) on the lamp driver module for more than 20 seconds to saving the setting angle value. After pressing the button, the indicator light next to the button flashes for 20 seconds, and then turns to normal on. After releasing the button, the indicator light goes off. At this time, the "┤ x.xx" in the digital tube display rotation becomes the same value as the "xx.xx" in the rotation (the current inclination angle value of the unit), after this the inclination angle value was saved successfully.

Figure 21-save setting angle button



4.4. Usage of The External Inclinomometer

- 1) Release the LED PAPI latch and open the PAPI top cover.
- 2) Place the calibration platform on the inclinometer base of the PAPI, pay attention to the orientation, and lock the bayonet into place, as shown in Figure a.



(a)



(b)

- 3) Using the inclinometer HDK-DI-15105 as an example: power on the inclinometer, press the “ABS” button to switch to absolute-zero mode, then place it at the retaining edge limit of the calibration platform. After the reading stabilizes, record the value displayed in degrees. As illustrated in Figure b, the X-axis indicates the horizontal angle and the Y-axis indicates the pitch angle (note: X/Y axis definitions may vary by brand/model; consult the inclinometer manual).

Note:  **For detailed operation and setup instructions regarding the external inclinometer, please refer to the user manual for the corresponding HDK inclinometer.**

- 4) Remove the inclinometer and calibration platform and store them in the equipment's dedicated carrying case.
- 5) Close the cover and secure the latch.

CAUTION:  **Handle the calibration platform and external inclinometer with care. Do not drop or bump them, as this will affect measurement accuracy.**

5. Maintenance

5.1. Basic Maintenance Program

Suggested basic maintenance program is presented in table 5. The program follows requirements and regulations of CCAR-140-R1 , MH/T 5083 , ICAO, Airport Services Manual Part 9, Airport Maintenance Practice and FAA AC 150/5340-26, Maintenance of airport visual aids facilities.

Table 5 - Basic Maintenance Program of PAPI System

Maintenance	Maintenance Task
Daily	Check the light emission of each PAPI light fixture.
Monthly	Inspect the elevation angle and horizontal installation angle of each PAPI light fixture. Check internal and external components of each PAPI light fixture for integrity.
quarterly	Inspect the effectiveness of the PAPI fault power-off and alarm functions (if applicable). Inspect of the sealing performance of the light fixtures and outdoor supporting electrical equipment, as well as the integrity of the electrical components.
Annual/Biennial	Check if there is any damage to the light fixture Chamber. Check the integrity of the surface coating of each PAPI light fixture. Check the fixing condition and the bolt torque of the light fixture. Clean the optical component (If necessary).

5.2. Maintenance Procedures

Following maintenance procedures can be performed:

Table 6 - Maintenance Items for Light Fixture

Maintenance Items	Method/Steps
Check the light emission	Visual inspection
Check for any cracks in the red color filter	Visual inspection
Inspect the elevation angle and horizontal installation angle of each PAPI light fixture	External inclinometer
Check for contamination of the internal optical components of the light fixture	Visual inspection
Check for any damage or displacement inside the light fixture	Visual inspection
Clean the dirt and condensation from the light-emitting window	Use a clean cloth or brush
Inspect the base flange, Breakable Couplings, and connecting parts of the light fixture for any damage	Visual inspection
Inspect the sealing performance of the light fixture and outdoor supporting electrical equipment, as well as the integrity of the electrical components	Visual inspection
Check for any signs of burning, cracking, or corrosion on the electrical components, and replace	Visual inspection

any damaged parts

Check the light fixture's mounting foundation for

Visual inspection

any damage, subsidence, or displacement

Examine the integrity of the light fixture's surface

Visual inspection

coating

Check the fixed state of the light fixture installation

Visual inspection

Inspect the bolt torque

Using torque wrench to
confirm

CAUTION:



When cleaning the dirt on the surface of the light fixture, do not use a rag covered with dirt and sand, or a hard brush to rub the surface of the shade, so as not to scratch the surface of the shade and reduce the light-emitting performance. The glass surface should be gently wiped with a clean soft rag, and optical lens cleaner can be used if necessary. When the elevated light fixture are not in use, should be stored in a dry, clean indoor environment, and keep the storage temperature in line with the requirements.

5.3. Trouble Shooting

Table 7 - Trouble Shooting

Error Code	Problems	Solutions
Er: 01	Local inclination angle failure	Inclination Angle beyond the threshold range of a preset value, check the preset value, or reconfigure the preset value
Er: 02	Local CAN communication failure	Check whether the local CAN line is connected properly.
Er: 03	Local light source failure	Check that LED light source is connected properly; Check the light source performance is normally
Er: 04	Local inclination angle exceeds the limit	Effective monitoring range of inclination angle: -9.99° to $+10.00^{\circ}$ Lamp overturned or foundation severely subsided Tilt sensor anomaly
Er: 05	Local inclination angle is less than -1°	The actual angle range of the light fixture is $2^{\circ}\sim 8^{\circ}$. ; Check whether the Angle needs to be adjusted
Er: 07	The communication between	Check whether the cable between the driver

	the local driver module and inclinometer fails	module and inclinometer is connected properly . If the connection is connected properly, replace the inclinometer or driver module.
Er: 08	A group of local light sources failed	Check that LED light source is connected properly; Check the light source performance is normally
Er: 09	Window heater failure (units with window-heating function)	Check that the 2-pin connector between the control board and the heater is firmly seated, and verify good contact between the window-heating glass and the spring contacts on the adapter board.
Er: 1x	Remote light failure, Light number x	Check remote light fixture, Light number x
Er: 2x	Remote light CAN communication failure, Light number x	Check CAN wire of the remote lights is connected properly, Light number x

6. Support

6.1. Customer Service

If you need after-sales service, please contact us through the after-sales service hotline or sales consultant.

After-sales service hotline

+86-27-63498449

Please prepare the following information in advance in order to get the service quickly:

- Product name and serial number
- Airport code or company name
- Your phone and email address

6.2. Recycling

Improper disposal of scrapped electronic equipment may have a negative impact on the environment and human health. Regarding the recycling of electronic products, please follow the local laws and regulations.

6.3. About HDK

Handakang Electrical & Mechanical Technology Corp. Ltd., established in 2003 in Wuhan/China is an already professional known provider of Airfield Lighting, Navigation Aids, Frangible Mast Systems and Heavy Duty Support Equipment. In 2017 HDK started to create a new LED Airfield Lighting Portfolio supported by known capacities from Europe, to become the supplier for Airfield Customers in China, Asia, Europe and all over the World for reliable, efficient and innovative Airfield Lighting Products at highest quality.

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