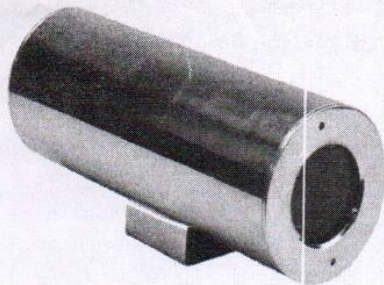


# Instruction Book

## SHF801

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**Explosion-proof Camera Housing  
(Flameproof / Dust-ignition-proof)**



### **WARNING**

- ◆ Read the instruction book carefully, understand the content, so as to guarantee correct installation, electric connection, operation and maintenance, etc..
- ◆ The instruction book should be kept by users.
- ◆ The instruction book should be kept till the enclosure deposed.
- ◆ The technical specification subject to change without notice.



## Preface

Welcome to buy our explosion-proof camera housing SHF801, (called enclosure for short) produced by Changzhou Shenghe electronics Co., Ltd..



This product is designed and manufactured on the basis of national standard of GB3836-2000 《explosive gas environment-used electric equipment》 and GB12476-2000 《combustible dust environment-used electric equipment》. Our product can protect the cassette mechanism of camera and lens to be used in the environment filled with explosive gas and combustible dust. Our product can control the video power, aperture, zoom, focus, etc. by the controlling signal of decoder. Please read and comprehend the instruction book carefully to ensure the proper use. Any improper use may result in the abnormal running or failure and decrease the service life of the product.

After reading the instruction book, do keep it well with the enclosure for any instant use.

## SAFETY NOTICE

Do read the instruction book carefully before installation, circuit connecting, operation and maintenance checking to ensure proper use. When using the enclosure you should know something about the running status and everything concerning safety notice.

In the instruction book, the safety notice can be classified into the following two aspects:

 <b>DANGER</b>	When serious mistake happens during installation, people could be badly wounded even to death.
 <b>NOTICE</b>	When common faults happen during installation, people could get hurt or flesh wounded, however It can result in the product breakage. Cases in "Attention" may also result in bad result.

Sometimes, cases in "Attention" may also result in bad result or even serious result if you don't abide by the safety notice. Thus important matter stated by this instruction book should be strictly abide by.

### About usage:

#### **DANGER**

- The explosion-proof camera housing is applicable to the environment with "Exd II CT6" gases and "DIP A20 TA" flammable dusts. It can be controlled by decoder but can't be used in the places that don't conform to explosion-proof standard, or else accidents may occur.
- The explosion-proof camera housing cannot be simply used on personal safety occasion.
- This product is produced under strict quality management. However, safety device must be installed in case that the failure in the prediction device.



### About installation:



#### DANGER

- Install the wire correctly through outlet conforming to the instruction book. Screw down gland nut in case of explosion after the current is switched on.
- Screw down front and rear caps in case of explosion after the current is switched on.



#### NOTICE

- The explosion-proof camera housing can never be used in the environment with heavy dust (protection level is required more than IP68) and high temperature, otherwise breakage of appliance and machine may occur.
- Avoid opening the enclosure in the environment of heavy humidity, or else this may cause rust in the components, line faults so as to result in short circuit or malfunction.
- Avoid the sweepings falling into the equipment or this may result in short circuit or malfunction.
- When installing the enclosure, make sure that the mounting frame is steady or else this may cause damage or badly accident if the enclosure falls.
- Never mount and operate the enclosure if it is broken or with defective parts or else accidents may occur.

### About wiring:



#### DANGER

- Breaker or earth leakage circuit breaker should be installed at the power side of enclosure or else fire alarm may occur.
- It must be well earthed or this may cause electric shock.
- Wiring work should be conducted by a qualified person or this may cause electric shock.
- Explosion-proof enclosure must be wired after it is installed or else electric shock or injury accidents may occur.
- When installing and wiring, do cut off the external power and then carry out the work or else electricity attack or product breakage may occur.



#### NOTICE

- Make sure the rated voltage and current of the enclosure comply with the nominal value, or this may cause equipment breakage.
- Make sure if the output wires are connected to the right equipment, or this may cause damage in the equipment.
- Wiring will produce disturbance, make sure no mistake made in the enclosure or else accidents may occur.



**About operation:**



**DANGER**

- Switch on the power supply only when the installation work is finished, cap is forbidden to be opened after power supply is switched on or else this may cause accident.
- Switch can't be touched by wet hands, or this may cause electric shock.
- When the fuse burnt, find out the reason and then switch on the power supply, or this may cause accident.



**NOTICE**

- Don't operate the cradle head of explosion-proof enclosure by switching on & off the power supply of main circuit, or else accidents may occur.

**About Maintenance and parts change:**



**DANGER**

- The enclosure belongs to monitoring product used in the special environment. The warning plate of shell is marked with "electrification opening forbidden, which means cutting off power before enclosure is open, or else accidents may occur.
- Maintenance and changing work must be conducted by qualified persons, (put off metallic things such as watch and ring, etc)(using insulation tools) otherwise electric shock or injury accident may occur.
- When maintaining the enclosure, do pay attention to the protection of flameproof flange, or else this may damage flameproof flange even influence flameproof performance.

**Others:**



**DANGER**

- Reconstruction is forbidden, or else equipment accidents may occur.

**GENERAL NOTICE**

- As for illustration in the instruction book, some are well depicted when board or the safety partition is removed. However, the product should be put into use only when the front/back cap is well equipped in compliance with instruction book.



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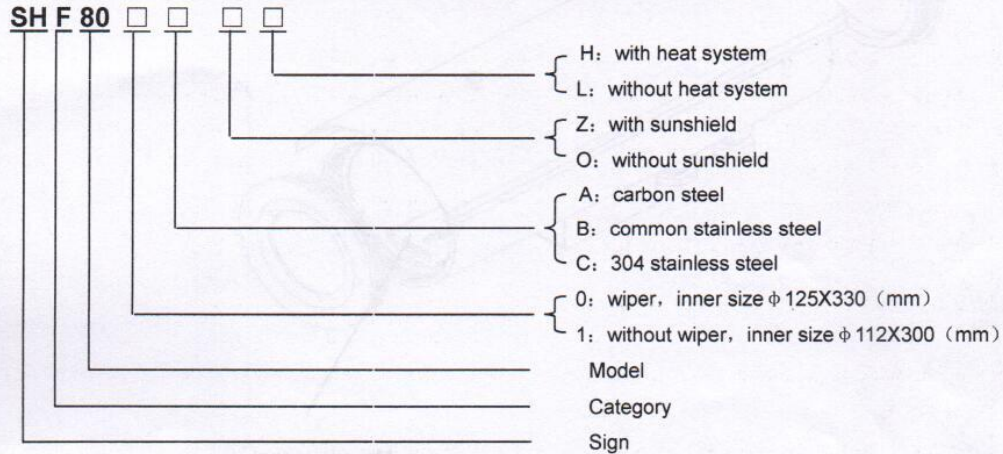
## 1. Relative items before operation

### 1-1 Arriving goods check

After receiving the equipments of your order, please open a box of each item with following check, if you find the product with problems or does not go with the specification of your order, please contact with the agent or the neighborhood office.

① Check the nameplate to confirm the specification of the Enclosure.

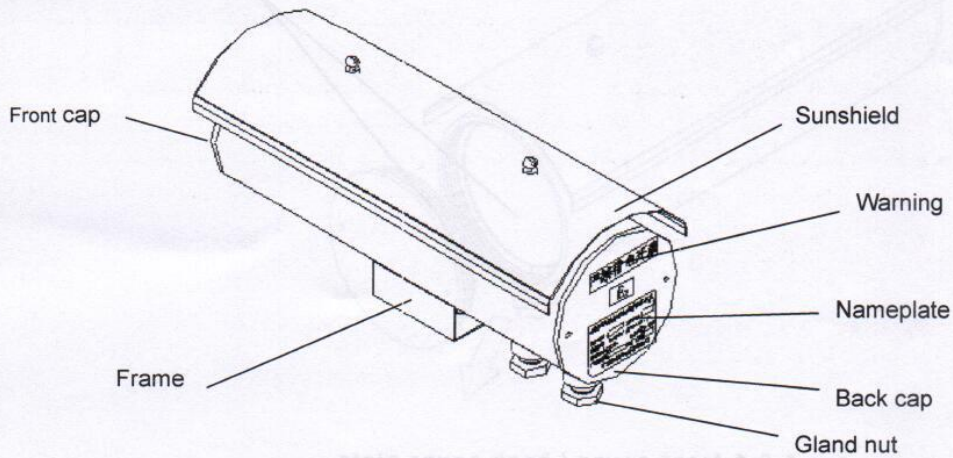
Model: Explosion-proof camera housing (flameproof / dust-ignition-proof).



② Check if any damage in the external appearance during the transportation eg. Breakage of the outer shell and the machine body, or machine parts etc.

③ Exclude the enclosure and manual, the product should go with the product qualified certification, packing list, the explosion-proof qualified certification copies and the attachment

### 1-2 Product appearance



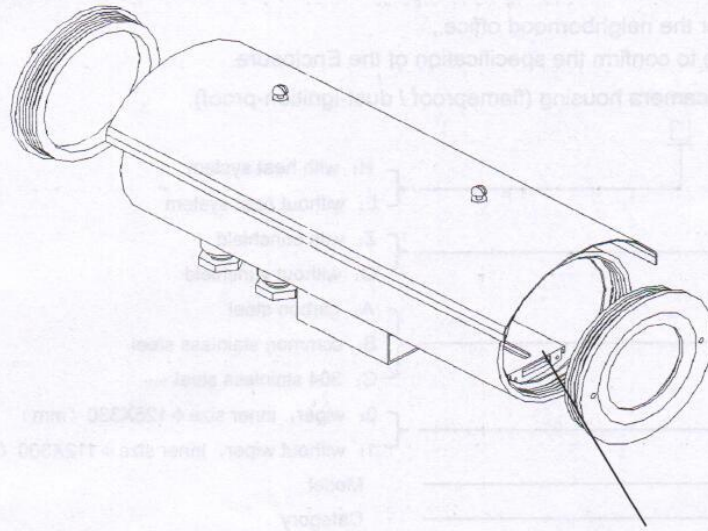
**Warning contents in English: Forbidden to open the cap when the power is switched on.**



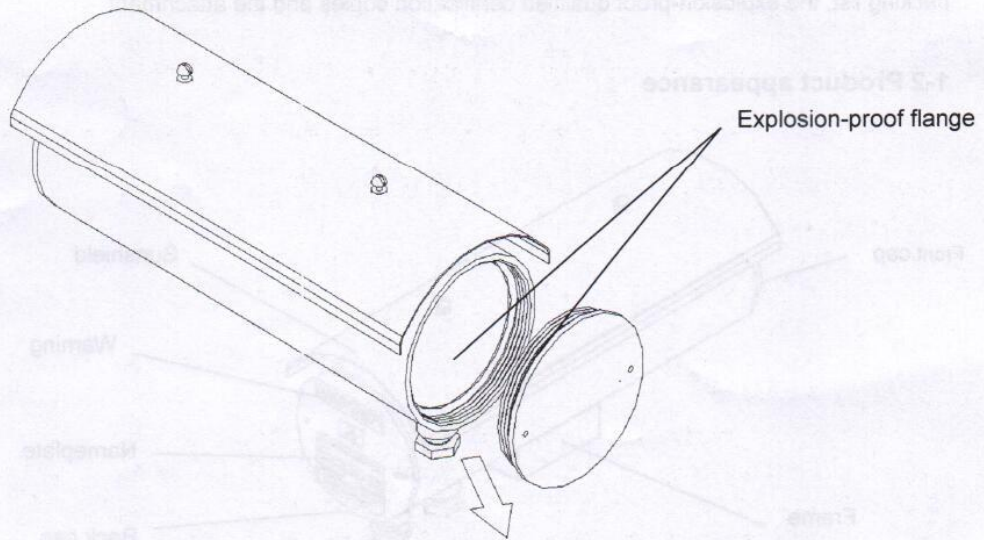
### 1-3 product conduct

#### (1) Unpack the back cover

Loosen the front / back cap anticlockwise; see the chart below 1-3-1:



Mounting panel



Explosion-proof flange

1-3-1 front cover / back cover plate



## 1-4 Transit

You should take the front-cap and back-cap of enclosure cavity-body , don't withdraw other parts , otherwise may result in the damage or human body injury.

## 1-5 storage

### Short-term Storing

Sheet 1-5-1 Short-term storing Environment

Sheet 1-5-1 Storing Environment

Item	Specification	
Preservation temperature	-10~+50℃	Don't put it in the place where temperature changes rapidly and frozen place.
Keeping temperature Note 1	-25~+65℃	
Relative humidity	5~95% Note 2	
Environment	Free of steam, condensed water or vibrating place, and avoid the salty environment at the same time.	

Note 1: Preservation temperature means short-term enduring temperature during transit.

Note 2: Such places should also be avoided even if the requirements for humidity are satisfied, or the temperature changes rapidly to form dew and frost.

- ① It should be placed on the appropriate bracket rather than on the ground directly.
- ② If surrounding environment is bad, it should be stored by the package of plastic film.
- ③ If there is damp influence, drier (silica gel etc.) should be put in packing bag of item②.

### Long-term storing

Preservation method for long-term shelf, follow the steps:

① First, Satisfy short-term storing requirement:

While exceeding 3 months' storing term, the surroundings temperature should be lower than 30℃, because its performance will change if capacitor is stored in the environment without electricity or of high temperature.

② Free of damp influence, it should be packed in a seal bag, while drier is to be put in to keep the temperature below 70℃.

③ When explosion-proof enclosure is for long-term shelf, particularly in the damp building, it should be dismantled and put in the proper environment meeting the above storing requirement.

④ Capacitor' s performance will be deteriorated if it is cold for long. If the storage term is above one year, it must be switched on electricity aging for at least once a year.



## 2. Installation and connection

### 2-1 Operation environment

Installation environment requirements as Sheet 2-1-1

Sheet 2-1-1 Operation Environment

Item	Specification
Air pressure	86Kpa ~ 106Kpa
Ambient temperature	-25℃ ~ +40℃
Relative humidity	≤ 95% (+25℃)
Environment	Applicable to the environment with corrosive, explosive flame, oil gases. Free of steam, condensed water or vibrating place, and avoid the salty environment. Free of frozen places where temperature changes rapidly
Vibration	<5.9m/s <sup>2</sup> ( 0.6G )

### 2-2 Installation method

- ①The Enclosure should be installed on the mobile bracket of the fixed bracket or side frame of pan/tilt vertically and avoid inclined installation. The earthing screw of enclosure should be put to earth stably.
- ②The installation of enclosure should level with install hole of side frame of explosion-proof cradle head, see chart 2-2-1.

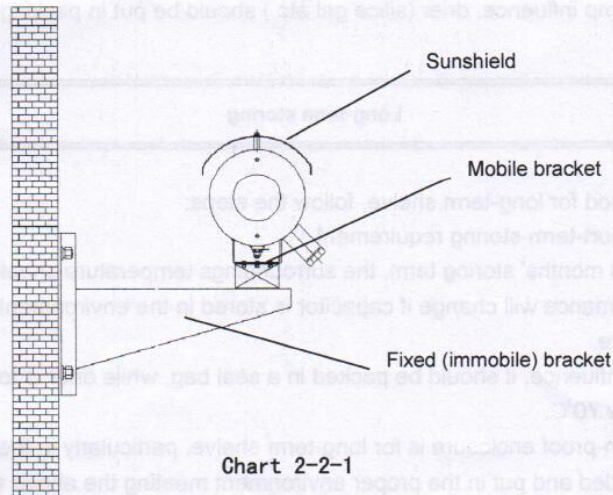



Chart 2-2-1

 <b>DANGER</b>	To be installed on the install hole of side frame of cradle head or that of mounting bracket, or else serious accident may occur.
--	---



## 2-3 connection


### 2-3-1 Basic connection

Installation of camera (CCD for short) and lens

- a. Screwing out the front cap and back cap of enclosure, withdraw bottom plate, and fix the CCD on bottom plate.
- b. link the power and control line of CCD.
- c. Adjust the CCD front and back focus to make sure the scenery on the monitor without dead angle within the max scope of lens change.
- d. Screw on back and front caps
- e. Install the sunshield (only for Enclosure with sunshield),


Attention to the following instructions, do not connect the wrong wire.

- ① The power supply must be connected to the power port of L, N. if a bad connection occurs, other equipments may be damaged. Besides, the grant voltage scope should be confirmed according to the nameplate and power supply requirements of inner equipment should also be confirmed
- ② The earth terminal should be well earthed to avoid electricity attack and fire alarm accident.
- ③ use the compression terminal and conduct wire to ensure the reliability of connection.
- ④ After finishing the connection, check the following aspects:
  - a. Are all the connections correct?
  - b. Are there any wires leaked to be connected?
  - c. Does short circuit or line-to-ground short circuit occur between terminals and connecting line?
- ⑤ Change to connect line after connecting power supply, cut off power supply first. Moreover, as residual voltage remains in the system, there may be electric sparks when short circuit occurs, thus it's best to do connection work after system power supply is cut off.

 <b>DANGER</b>	<ul style="list-style-type: none"><li>● Ground wire must be connected, otherwise electric shock or fire alarm may occur.</li><li>● Power supply connection work should be done by professional staff.</li><li>● Make sure to begin connection work when power supply is off, otherwise electric shock may occur.</li></ul>
--	--


### 2-3-2 Main circuit and connection of earth terminal

1. power input: AC220V, separately connected on L、N. Earth wire should be connected on the earthing screw.
2. Heater (optional fittings): heater working temperature in the enclosure below -5°C, power supply is AC220V.

Enclosure earth terminal (  G ), enclosure should be well earthed to avoid electric shock and fire alarm. Metal shell and frame of electric equipment should be earthed to the requirements of national electric regulation. Earth wire should be wide and short, Enclosure system should be



connected to special earth electrode.

 <b>NOTICE</b>	Make sure the consistence of the magnitude of input voltage, current and enclosure.
--	---

### 3. Operation


#### 3-1 Check and preparation before operation

Check the following before operation:

- ① To check If the connection is right.

Especially check whether the output terminal of enclosure could be connected to the power supply and if it is well earthed.

- ② Confirm no short circuit or ground short circuit either among ports or electric nude parts
- ③ Confirm the ports connection, and no loose with insert linker and bolts.
- ④ Before switching on the power supply, make sure that all switches are cut off and no abnormal action with the enclosure when power supply is switched on.
- ⑤ After power supply is switched on, check if there's any noise in the rotating structure of the inner machine.

 <b>DANGER</b>	<ul style="list-style-type: none"><li>● Switch on the power only when the flameproof lower cap is well installed .</li></ul> <p>The flameproof lower cap can never be taken off when the power is on.</p> <ul style="list-style-type: none"><li>● Avoid electric shock. Wet hands are forbidden to touch the switch in case of electric shock.</li></ul>
--	--

#### 3-2 Operating method

Various operating methods, carried out by cooperating with controller.

### 4. Maintenance check

Daily and Periodic check should be carried out to ensure the continuous running of the ex-proof enclosure in case of future accident. As usual, check the following items:

#### 4-1 Daily check

Don't remove the back cap when the power is still on & in operation,

Eyes-checking the operation of the enclosure through the outside, make sure no abnormality usually check the following items


- ① Running capability is up to standard criterion
- ② Surrounding environment is up to standard criterion
- ③ No noise and vibration in the inner parts of ex-proof enclosure



- ④ No abnormal conditions such as overheating

#### 4-2 Periodic check

Stop running, cut off the power and remove the back cover during Periodic check

 <b>DANGER</b>	<ul style="list-style-type: none"> <li>● Maintenance check and parts changing work can be carried out only by qualified person (put off metallic things such as watch, ring before work, and use insulation tools when working).</li> <li>● Never allow the transformation of ex-proof enclosure.</li> <li>● Prevent electric shock and equipment accident.</li> </ul>
--	--

Sheet4-2-1 list items of Periodic check

Check parts		Check items	Check methods	Judge standards
Surrounding environment		1) Confirm the surrounding, humidity, vibration and condensed water etc. 2) No tools and dangerous things around	1) By eyes and instruments 2) By eyes	1) Up to the technical requirements
Voltage		Control voltage is normal or not	By eyes and instruments	Up to the technical requirements
Structures such as framework and base plate		1) no abnormal voice & vibration? 2) no loose with bolts? 3) no deformation?	1) by eyes& ears. 2) screw down 3) Eyes-check	1) 、 2) 、 3) no abnormality
Output electric circuit	Public	1) no conduct overheated smell crack in insulation? 2) no wire break-off?	1) screw down 2) by eyes	1) 、 2) no abnormality
	The conductor cables	1) no conduct overheated and deformation? 2) no crack and color change?	1).2) Eyes-checking	1) 、 2) No abnormality.
	Terminal strip	Not broken?	Eyes-checking	no abnormality
Signal electric circuit	The electric appliance conjunction parts	1) no loose with screw and conjunction? 2) no strange smell and color change? 3) no crack, damage,	1) screw down 2) by smell, eyes 3) by eyes. 4) by eyes and judgment service	1) 、 2) 、 3) 4) no abnormality..



		deformation, rust eclipse? 4) No overheating and deformation mark with power module	life according to the maintenance information.	
--	--	--	--	--

### 4-3 Insulation test

The ex-proof enclosure has been processed insulation test before leaving factory, so it doesn't need to be carried out such test again. If it must do the insulation test, do strictly conform to the following steps, or it may damage the enclosure.

Endure voltage test is as same as the insulation test; it will damage the enclosure if you go against the test regulation. When the endure voltage test is done, please contact with Changzhou Shenghe electronics Co., Ltd.

#### 1) The insulation test of signal circuit

- ① Using 500VDC Mega-Ohm meter, do the test on condition that outside connection was made.
- ② Cut off all connection with outside signal circuit, as to prevent test power entering signal circuit of the back pale
- ③ Signal port connected by public wire; see the chart 4-3-1 shown below:

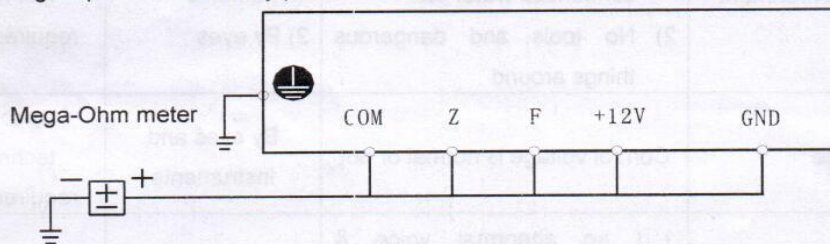


Chart 4-3-1

- ④ Voltage of Mega-Ohm meter only presses between connection wire and its shell.
- ⑤ Indicated value of Mega-Ohm meter  $\geq 100M\Omega$  are normal and qualified. (flameproof enclosure unit measured value)

#### (2) Power circuit insulation test (connection way see chart 4-3-2)

Don't make insulation test and endure voltage test; or it will damage the circuit unit, you can make the continuous test by using high resistance value of multi-meter.

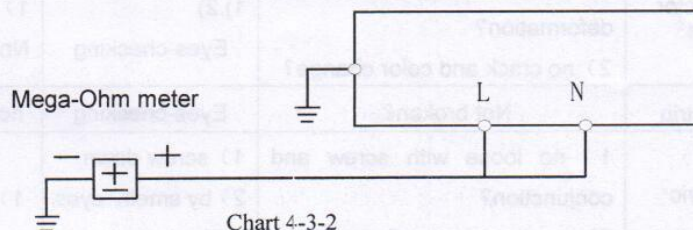


Chart 4-3-2

- ① Cut off all power circuit ports with outside connection.
- ② Continuous test can be made between power circuit ports and outside shell. Indicated values of Mega-Ohm meter  $\geq 100M\Omega$  are normal and qualified



**(3) Power circuit and signal insulation (connection way see chart 4-3-3)**

- ① Cut off enclosure with outside connection to ensure the test voltage wont press on the enclosure
- ② Continuous test can be made between power ports and back ports. Indicated values of Mega-Ohm meter  $\geq 100M\Omega$  are normal and qualified

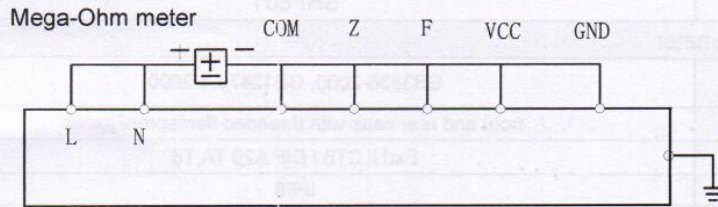


Chart 4-3-3

**4-4 Parts changing**

Different parts enjoy different service life. Moreover, parts service life changes according to the change of surrounding environment. The changing period see the chart below:

Sheet 4-4-1parts changing

Parts Name	Suggested changing time	Changing way
Power connector	8 years	Change new one (up to check)
Connection terminal	—	up to check
Heating parts	—	up to check
Motor	5 years	Change new one
O-ring seal	-	up to check

**4-5 Product inquiry and guarantee**

**(1) Product inquiry**

If there's some damaged point, unclear points or failure in our products, please contact with the agent or the office neighborhood.

- a) Ex-proof enclosure model
- b) SER NO
- c) Purchasing date
- d) Content that needs contact (eg. Damaged point and status, unclear points or failure)

**(2) Guarantee period**

Guarantee period is 12 months but less than 24 months after the manufactured date on nameplate. Repair fee for the fault caused by the following reasons should be paid even if the products are in guarantee period

- ① Misuse, voluntarily repair or transformation without permission etc.



- ② To use beyond the standard criterion
- ① Damage after purchase or during transportation.
- ② earthquake, fire, tornado, abnormal voltage, other natural disasters and twice disasters.

## 5. Technical criterion

### 5-1 Technical data

Model	SHF801
Certification Parameter	
Manufacturers Standard	GB3836-2000, GB12476.1-2000
Configuration Mode	front and rear caps with threaded flameproof joints
Ex-proof Mark	Exd II CT6 / DIP A20 TA,T6
IP	IP68
Operating Temperature (°C)	-25-60 <sub>± note</sub>
Cable Entries	2×G1/2" Ex-proof cable entries, Dia. of inner hole Φ12
Mechanical Features	
Material	Carbon steel / Stainless steel (304/316/316L)
Sight Glass Dimensions (mm)	Φ67
Outside Dimensions	350×150×165
Inside Dimensions (mm)	Φ112×300
Weight (Kg)	6
Power Supply	
Voltage (V)	12VDC/24VDC/220VAC
Current (A)	1 / 0.5 / 0.1
Others	
Optional	Sunshield, power supply module, Inner heating
Cable requirement	Power supply: 2X1.0 mm <sup>2</sup> (24V AC) / 2×0.75 mm <sup>2</sup> (220V AC) Communication: Shield 2X0.75 mm <sup>2</sup> Video: 75Ω

Note1: Minimum temperature reaches -45°C after heater is used.

Actual index is in accordance with instruction book. Products design and specifications subject to change without notice.



## 5-2 Outline dimension

- Outline dimension shown in 5-2-a

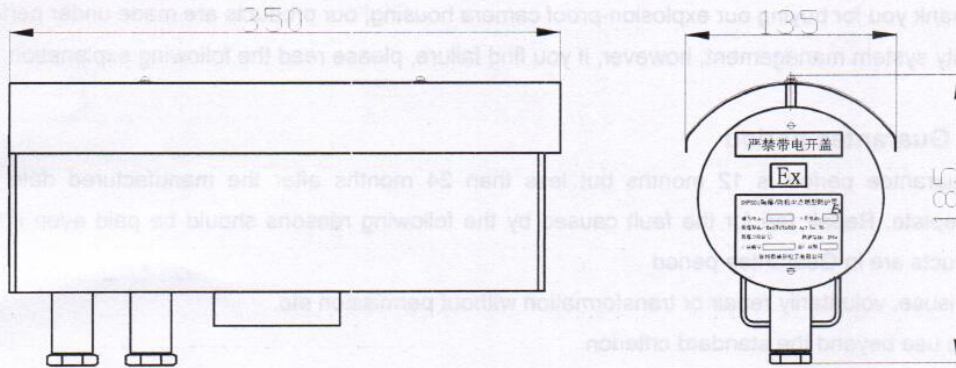


Chart 5-2-a

- Mounting dimension shown in 5-2-b

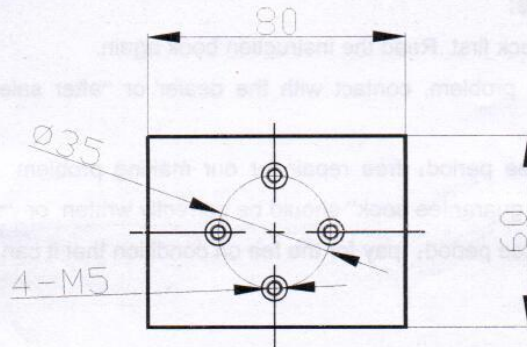


Chart 5-2-b

- Inside dimension:  $\phi 112 \times 300$  mm



## 6. Appendixes

### About Guarantee period and after sale service

Thank you for buying our explosion-proof camera housing, our products are made under perfect quality system management, however, if you find failure, please read the following explanation:

#### 1、 Guarantee period

Guarantee period is 12 months but less than 24 months after the manufactured date on nameplate. Repair fee for the fault caused by the following reasons should be paid even if the products are in Guarantee period

- 1) Misuse, voluntarily repair or transformation without permission etc.
- 2) To use beyond the standard criterion
- 3) Damage after purchase or during transportation.
- 4) Earthquake, fire, tornado, abnormal voltage, other natural disasters and twice disasters.

#### 2、 After sale service:

- 1) when out of order, check first .Read the instruction book again.
- 2) have you any failure problem, contact with the dealer or “after sale service window、 our company office”.
- 3) repair within guarantee period: free repair for our making problem. However , “Shenghe ex-proof camera housing guarantee book” should be correctly written, or you should pay for it.
- 4) repair exceed guarantee period: pay for the fee on condition that it can maintain function after repair.



### Guarantee book of Explosion-proof camera housing

Customer		principal		Tel	
Add				Fax	
Type		Factory No			
Shop name		Date	Y	M	D
Add		Failure date	Y	M	D

**- Failure status -**

usage					
Occur time	Continuous running	when switch on	other (                      )		
state					
Reset running					
Working time				Install place	
Power cut	Yes	No	Others abnormal	Yes	No
				Former fault	Yes ( time ) No

**- Detailed technical data -**

1	Power Voltage		6	Surround temp/indoor temp	℃ / ℃
2	Power capacity		7	vibration	Yes No
3	Distance to cotrl chamber		8	Earthing work	Yes No
4	Install seat size		9	Other company failure	Yes No
5	signal wire of cotrl circuit		10	other	