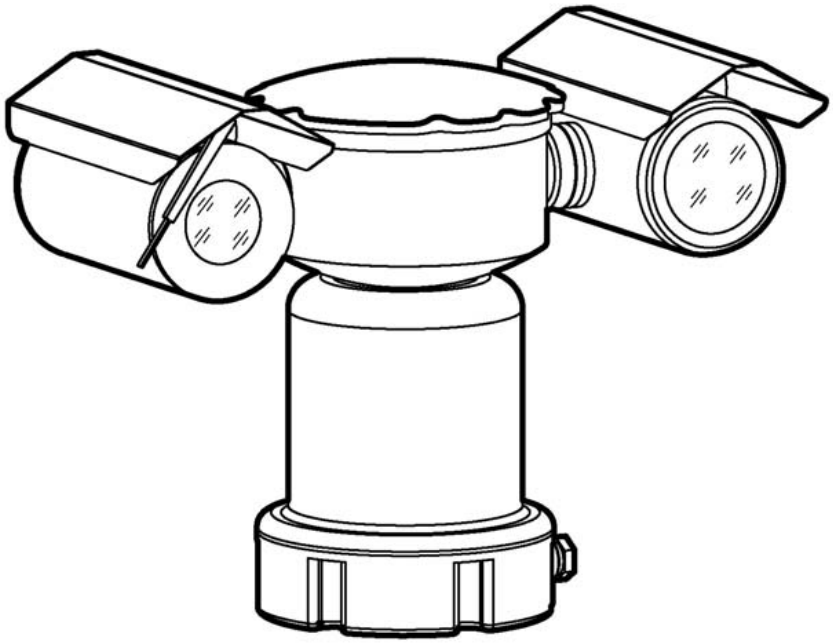
VEILUX®
The Art of Surveillance

SVEX-HIR7

Explosion Proof PTZ Camera
User Manual



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SVEX-HIR7 Explosion Proof PTZ Camera

USER MANUAL

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Safety Guarantee

The running of equipment will be in accord with the following two demands

- The running of the equipment won"t result in any disturbance.
- The running of the equipment won"t be affected by exterior conditions, even from bad influence.

Notice

- The customer can"t take apart the equipment, such as disassemble the top cover or screws. It may leads to leak of water or electricity. Please operate the equipment under the demand of the manual book.
- Please use the equipment under the demand of air pressure, environment temperature, and humidity range in chapter 1.7.
- Make sure use the power in accord with the nameplate of the equipment.
- Inner and outer ground connection should be reliable.
- Make sure the installation position is steady to avoid camera damage.

Thank you for choosing Veilux Ex-proof products.

Please read the manual book before installation and application. Make sure to obey the warning and keep the manual book well.

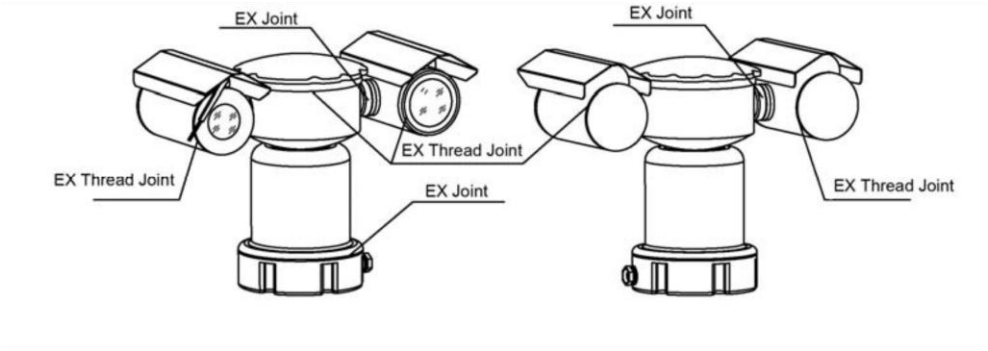
Safety Instruction

The safety instruction of these series products

„ Ensure supply power same as nameplate marked before equipment being powered
„ Ensure supply a series long time, stable working power.
„ A 3 meters control cable is equipped when leaving factory. The ex-proof flexibility tube will be used when the cable is connected with EX junction box.
„ All ex-proof parts are stable and complete enough for structure
„ Inside and outside ground connections are reliable.
„ Please tear off the plug if the product is not used for a long time.
„ Please communicate with technical person before maintaining the products.
„ Please shut off before maintenance and repair
„ Take care of products package for future shipment if necessary.

Ex-proof Structure Instruction

- When we design the products, we have taken fully consideration of the situation that the explosive air getting into ex-proof structure. The inner electric parts‟ working won't lead to explosion in outside atmosphere. Key points such as housing intension, the joint surface length of components and the Max. Surface temperature is all considered to guarantee the explosion proof performance.
- Enclosure shall burden water pressure testing for 1.5Mpa for 10~12 seconds without leakage or shape change, which follows the requirement in GB3836.2-2000.
- Max. PTZ surface temperature shall not be over 80℃ while it is working.
- Tempered glass is used for window to burden impact and heat change testing.
- The protection of housing is IP68.
- Tightened nut is used for cable input to make cable tight and stable.



Content

1. BRIEF

As new monitoring equipment, SVEX-HIR7 explosion proof PTZ camera adopts advanced production techniques and matured quality management system to make its quality, performance and appearance a leading position in explosion proof monitoring products. It can be used in flammable and explosive environment to realize monitoring purpose.
Strictly according to Standards of GB3836.1-2000 GB3836.1—2000 Electrical apparatus for explosive atmosphere: General requirements, GB3836.2-2000 Electrical apparatus for explosive atmosphere: Flameproof „d" and GB12476.1-2000 Electrical apparatus for explosive dust: Using enclosure and limiting surface temperature for protecting electrical apparatus Chapter 1: Technical requirements, this camera owns advantage of small volume, light weight and easy installation features and could be used in petroleum, chemical industry, jetty, port, mine, space, army and foodstuff area.

1.1 Specification

Model	SVEX-HIR7
IP level	IP68
Ex-marking	Exd Ⅱ CT6 / DIP A20 TA, T6
Camera model	Sony

1.2 Feature

SVEX-HIR7 adopts advanced color camera, speed pan/tilt and decoder. It is integrated with multiple communication protocol and baud rate. It will play an important role in several types of safety system.
SVEX-HIR7 has wide voltage scope; it can automatically detect several kinds of camera. It has power, signal, and video trebling lightning protection, safer and reliable.
SVEX-HIR7 adopts integrated structure design. There is no cable connected between pan/tilt and camera. The pan rotation is 360° continuous, tilt rotation is .±90°. They are equipped with sunshield, wiper and auto heat equipment.

1.3 Scope of application

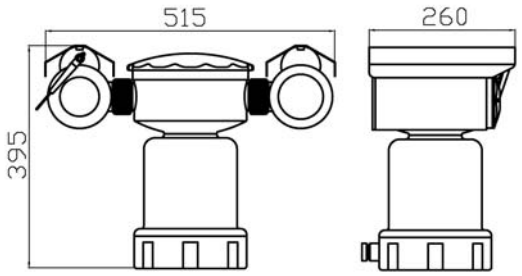
It could be widely used in zone Ⅰ, Ⅱ for gas area and A20～A22 dust area.

1.4 Technical specification

Pan speed	0.1°～40°/S smooth variable speed
Tilt speed	0.1°～40°/S smooth variable speed
Preset speed	60°/S
Preset quantity	128
Preset position error	≤0.1 °
Surge protection	signal/video/power surge protection module integrated
Auto- heater	work while under -10℃

1.5 Mechanical

Material	Stainless steel 304
Pan rotation	360° continuous
Tilt rotation	+90°～ -90°
Unit weight	29Kg（net weight）
Shipment weight	32Kg（gross weight）
Mounting	Base, ceiling mounting



P 1.5.1.1 Product Dimension

1.6 Working condition

Input voltage	100 ～ 240 VAC
Max current	≤1A
Power	≤100W
Electrical connection	3 meters composite cable
Communication type	RS-485
Baud rate	1200、2400、4800、9600bps， 4800bps as default

Communication protocol	PELCO-P、PELCO-D， PELCO-D as default	
Address code	1~255，1 as default	

1.7 Environmental

Air pressure	86 ～ 106 KPa	
Environment temperature	-40℃ ～ +60℃	
Relative Humidity	U95 %RH （+25℃）	
Environment Min. illumination	Sony FCB-EX480CP	0.7Lux（C）/ 0.01Lux（B/W）

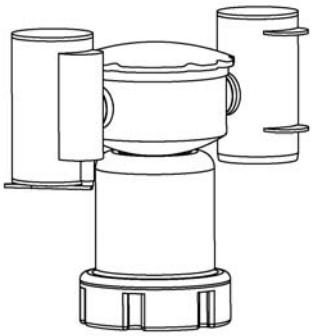
1.8 Electric safety (under standard air pressure)

Insulating resistance： Over 100 MΩ resistance between power input terminal and housing; Power frequency withstand voltage： power input terminal and housing can bear 50Hz, 2000V voltage power frequency voltage for one minute without breakdown or flashover.

2. INSTALLATION AND DEBUGGING

2.1 Notice before installing SVEX-HIR7

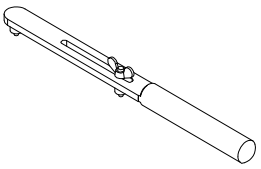
Check all parts in packing before installation



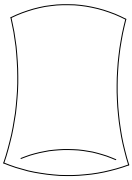
SVEX-HIR7 PTZ，1 unit

Sunshield ，2 units

Hexagonal bolt	**M16×30,**	**3 pcs**
Brass screw	**1/4"×6,**	**1 pc**
Brass screw	**1/4"×12,**	**1 pc**
Flat gasket	**Ø16,**	**3 pcs**
Spring washer	**Ø16,**	**3 pcs**



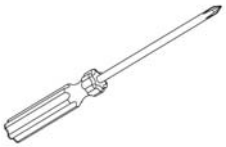
Special wrench, 1 pc



Desiccant, 1 pc

Teco521 special grease, 1 unit

The tools and other parts which will be used



Cross screwdriver 6×150, 1 unit

External hexogen wrench 300×36, 1unit

Notice before installation and application

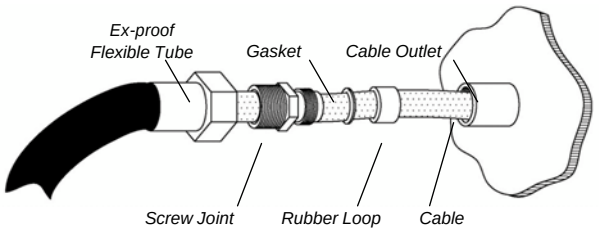
„ Customer can't disassemble product without permit. Follow the demand of manual book.
„ Power supply must be in accord with chapter 1.4.
„ Make sure to operate the equipment under the specified conditions in chapter 1.5.
„ Debug the products first if possible before on-site installation.

2.2 Installation

2.2.1 Cable treatment

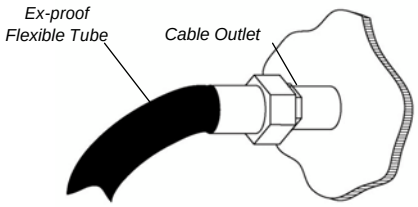
2.2.1.1 Use ex-proof flexibility tube

■ As P2.2.1.1, put on the Ex-proof flexibility part to cable, remove the tighten nut, keep the original gasket and rubber loop (or use the spare parts).



P 2.2.1.1

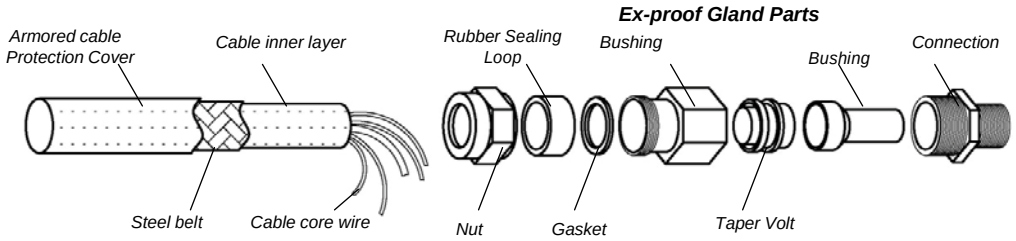
■ As P2.2.1.2, firstly turn tight the screw connection head and then tight the EX-proof flexibility tube.



P 2.2.1.2

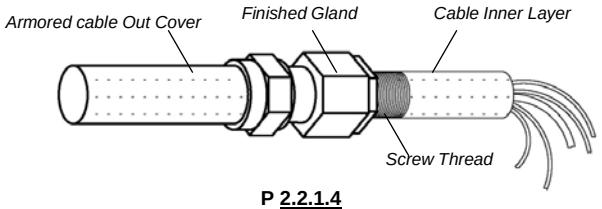
2.2.1.2 Use armored cable

■ As P 2.2.1.3, remove proper length cable protection cover and cut off not used part.



P 2.2.1.3

■ As P2.2.1.4, install Ex-proof Gland to Armored Cable

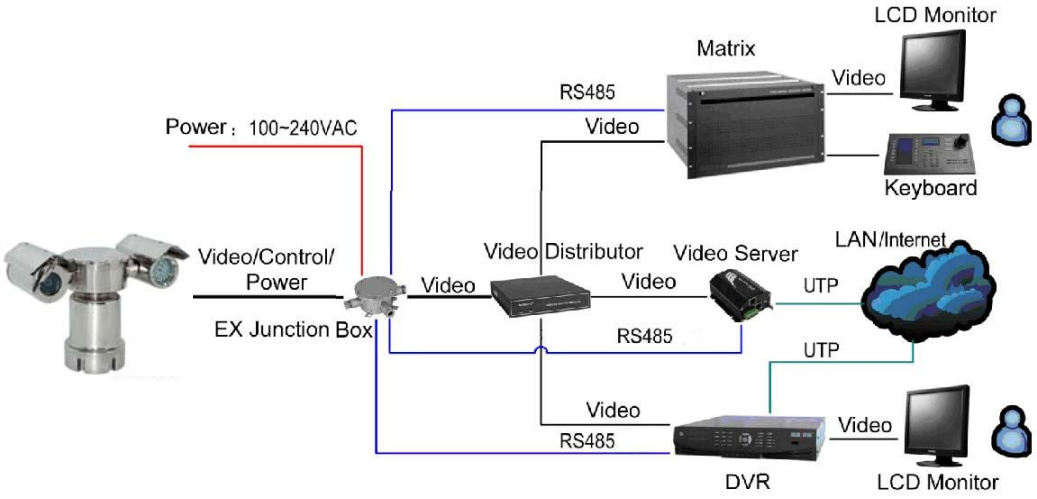


P 2.2.1.4

■ Armored cable with ex-proof Gland could connect with any ex-proof equipment directly.

2.3 Application

2.3.1 System connection



P 2.3.1.1 **System Connection**

Video Signal could connect with multiple equipment"s, such as monitor for display, DVR for

record or video server for network transmission or matrix for switch and management. Video distributor can distribute and amplify the video signal.

All control equipment could control this Camera under the same control protocol. Some Matrix may need protocol converter; some DVR may need RS232-RS485 level converter. Normally one RS485 Bus only permits one host controller. So if several host controllers want to control simultaneously, users" authority can be used.

2.3.2 Cable definition

While camera leaves factory, we supply a Composite Cable* with camera, the cable goes out from Camera bottom with length at least 2 meters. So while connecting the system, just connect the cable with junction box.

(*Composite Cable: A special cable, one Composite Cable includes one group power, one group control and one group video, it is generally used in Industrial CCTV system.)

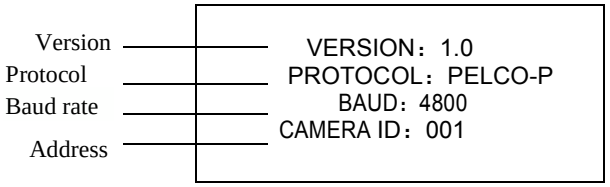
T 2.3.2.1 Cable Definition

	Composite Cable					
Name	Power cable			Control（shielded)		Video cable
Function	L wire	N wire	Earth wire	RS485-A	RS485-B	SYV-75-2 coaxial cable
Color	Brown	Grey	*Yellow/Green*	Red	Blue	

2.3.3 Parameter set

Parameter setting method: open top cover with special wrench and set the address, baud rate, communication protocol by dip switch K1、K2、K3、K4、K5. Re power on if the setup is changed.

The version number, control protocol, baud rate and address of camera will be displayed each time when energized as following:



2.3.3.1 Camera address set

Camera address adopts decimal system. Normally address has been set down before camera leaving factory, K1、K2、K3 should be set by address. K1 stands for unit digit, K2 for tens place, K3 for hundreds place.

For example: if the camera address is 1, K1 is 1, K2 is 0 and K3 is 0.

Dip switch	Hundred place	Tens place	Unit place
	K3	K2	K1
Address No	0	0	1

For example: if the camera address is 118, K1 is 8, K2 is 1 and K3 is 1.

Dip switch	Hundred place	Tens place	Unit place
	K3	K2	K1
Address No	1	1	8

2.3.3.2 Baud rate set

Please set correct baud rate as follow:

T 2.3.3.1 Baud rate set

K4 value	Baud rate
0	Remote communication setting
1	1200
2	2400
3	4800
4	9600

2.3.3.3 Communication protocol set

Ensure the communication protocol of the controller. Set K5 as following table.

T 2.3.3.2 Communication protocol set

K5 value	Protocol
1	PELCO-P
2	PELCO-D

2.3.3.4 Remote communication set

When K4 sets 0, we can remotely set equipment address, control protocol and baud rate. (Right now the default baud rate is used, which is displayed when system is power on). At this time, all setting with K1, K2, K3 and K5 cannot work. The On-screen-display menu can be reached by following procedure: run No.95 Preset, press “MAIN MENU” → “CONTROL” → “RS485”.

2.3.4 Menu function

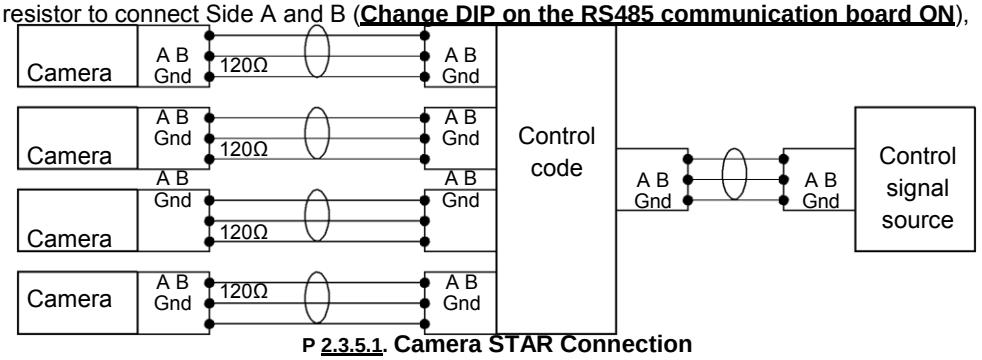
The camera has the menu function. Enter the menu model: invoke main menu by running No. 95 preset when the system is ready. After menu displays, pan/tilt up, down, left, right, aperture OPEN, CLOSE become menu control key. At this time, the other key can't work. All "<>"mark means there is submenu. The present page menu is selected by up, down key. The parameter is controlled by left and right key. "OPEN" means "OK". Press "OPEN" key to enter next menu. If the menu item is selected, the menu will glitter.

If the system is scanning model, left down corner will display "RETURN：CLOSE". Please press "aperture close" to exit, then the camera can be controlled.

2.3.5 Control Signal Connection

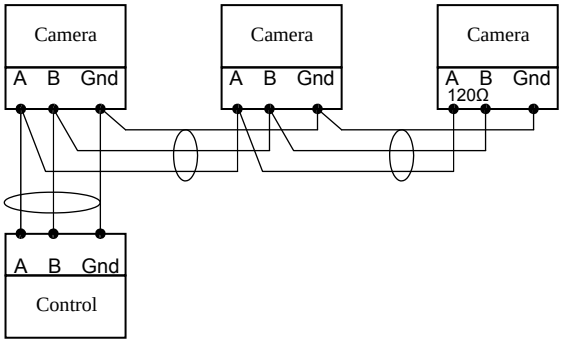
While this system works at industrial site, it must go with explosion proof Junction box, in which we can make the connection of cables of video, control and power.

■ While the control signal and camera goes as STAR type connection, we shall use control code distributor, at this time each communication board of camera shall use a 120Ohm resistor to connect Side A and B (**Change DIP on the RS485 communication board ON**),



P 2.3.5.1. Camera STAR Connection

■ While Control Signal Source connection with Camera as Chrysanthemum type, just to ada120Ohm resistor to the end of camera Side A and B.(to get rid of others JMP1 on communication board)



P 2.3.5.2. Camera Connection of Chrysanthemum

2.3.6 Preparation and examination before power on

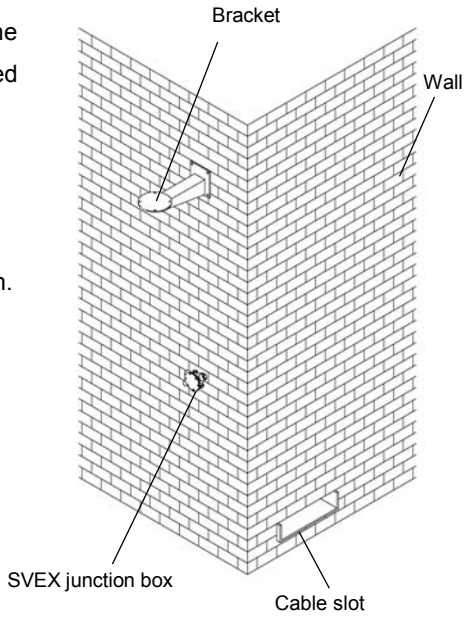
Check if power, RS485 control and video cable are connected correctly. Check the dip switch settings.

2.4 Supporting bracket preparation before installation

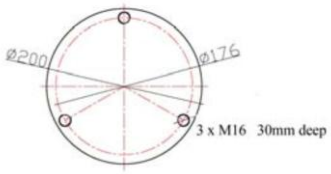
2.4.1 Wall mounting installation (P 2.4.1.1)

Make a mount hole at proper level and fix the bracket with screw. Junction Box shall be installed for easy operation and maintenance. Cable gets through the cable slot and connects the junction box.

See P2.4.1.2 for the mounting base specification.



P 2.4.1.1 Bracket and junction installation



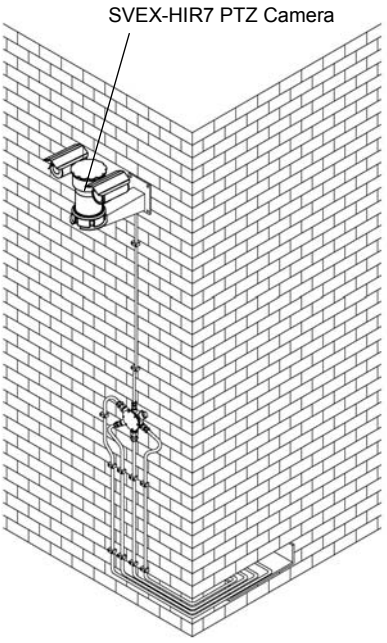
P 2.4.1.2 Bracket foundation mounting specification size

2.5 On site installation

Because of the particularity of the ex-proof product, test and debug the camera first if possible before on site installation.

2.5.1 Bracket mode installation (P2.5.1.1)

Refer to P2.4.1.2 for camera mounting holes, and make the camera cable go through cable hole on the bracket until reaching Junction Box. Use ex-proof flexibility tube for protection or armored cable. The cable which connects junction box with control room must be metal tube or armored cable



P 2.5.1.1 SVEX-HIR7 bracket installation

3. TROUBLE SHOOTING

Problems	Reason	Method
No action or no image after power on	Power off	Make sure the power is ok
	Power line without good connection	Check the power line
	Inner power damage	Contact the factory and replace
Self-check is ok, but no image	Coaxial-cable wrong connection	Check coaxial cable
	Coaxial-cable in bad connection	Check coaxial cable
	Camera damage	Contact the factory and replace
Sometimes no image	Video cable in bad connection	Check the Video Cable
Self-check is ok, but control error	Bad connection of Signal cable	Check Signal Cable connection
	Not correct Address	Re-set refer to Manual book
	Not correct Protocol	
	Not correct Baud rate	
Control error	Self-check error	Power on again
	Control signal line in bad connection	Check control line connection
	Loading too much	Add control code distributor
	Too long communication distance	Add repeaters to make communication distance longer

4. SHIPMENT AND STORAGE

4.1 Shipment notice

Without rain or snow falling directly to product, packed product can be shipped by any way.

4.2 Storage demand, period and notice

It can be stored for one year under 0℃~+40℃ and less than 90% humidity.

5. ATTACHED LIST

5.1 Camera/Optic data

The two following integrated cameras are typical. The other types can be used after Veilux confirmation.

Brand	SONY
Mode	PAL / NTSC
CCD	1/4″ Exview HAD CCD
Line/Frame scan	15.625 KHz/ 50Hz
Lens	High performance /18X optic zoom / auto focus / F1.4~3.0, f=4.1～73.8mm /12 digital zoom
Min focus	0.29m (wide）/ 0.8m（tel）
View angle	48°（wide）/ 2.8°（tel）
Min Lux	0.7Lux（color）/ 0.01Lux（b/w）
SNR	> 50dB
Video output	BNC / 1.0Vp-p / 75Ω

6. GUARANTEE

For any camera produced by VEILUX, INC, we promise one year warranty.

During warranty, we supply free service except following situations:

- ■ User does not operate as manual book requires

- User un-install the whole product by themselves
- Lightning or Act of God

If there are additional agreements between VEILUX, INC and buyer, then agreements shall be strictly done.

7. STATEMENT

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