

Intrinsically Safe Camera Series

Model: CC03-IP2MZ30-E

Operation Manual



About This Document

Before installing and using this unit, please read this manual carefully. Be sure keep it handy for later reference.

Safety Notices Used in This Manual

Caution! - Indicates a potential hazard that can damage the product.

Important! - Indicates a hazard that can seriously impair operation.

Do not proceed beyond any of the above notice until you have fully understood the implications.

Important Safety Rules

⚠ WARNING: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

⚠ WARNING: DO NOT OPEN WHEN ENERGIZED

⚠ The manufacturer declines all responsibility for any damage caused by an improper use of the appliances mentioned in this manual. Furthermore, the manufacturer reserves the right to modify its contents without any prior notice. The documentation contained in this manual has been collected with great care, the manufacturer, however, cannot take any liability for its use. The same thing can be said for any person or company involved in the creation and production of this manual.

- Ex db IIC T6 Gb
- Ex tb IIIC T85 °C Db
- IECEx KTL 17.0013X
- INERIS 18ATEX0035X
(Not applicable for models with last model code FN, TN, FP, TP)
- IEC 60079-0: 2011
- IEC 60079-1: 2014
- IEC 60079-31: 2013
- EN 60079-0 : 2012/A11 : 2013
- EN 60079-1 : 2014
- EN 60079-31:2014
- Degree of Protection: IP66/68
The verification of the protection degree IPX8 corresponds to an immersion under 1.2 meters of waters during 30 minutes.
- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- To reduce the risk of ignition of hazardous atmospheres, disconnect the equipment from the supply circuit before opening. Keep the product tightly closed when in operation.
- Choose an installation surface that is strong enough to sustain the weight of the device, also bearing in mind particular environmental aspects, such as exposure to strong winds.
- Since the user is responsible for choosing the surface to which the unit is to be anchored, we do not supply the fixing devices for attaching the unit firmly to the particular surface. The installer is responsible for choosing fixing devices suitable for the specific purpose on hand. Use methods and materials capable of supporting at least 4 times the weight of the device.

- For technical services, consult only and exclusively authorized technicians.
- A power disconnect device must be included in the electrical installation, and it must be very quickly recognizable and operated if needed.
- The equipment is certified for use in ambient temperatures from -40° C to +60° .
- This device is remotely controlled and may change position at any time. It should be installed so that no one can be hit by moving parts. It should be installed so that moving parts cannot hit other objects and create hazardous situations.
- The dimensions of flameproof joints are different from the values specified in the tables of the IEC 60079-1 or EN 60079-1 standard.
- The flameproof joints are not intended to be repaired.

Legal Considerations

Camera and audio surveillance can be prohibited by laws that vary from country to country. Check the laws in your local region before using the product for surveillance purposes.

Electromagnetic Compatibility

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: Re-orient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment to an outlet on a different circuit to the receiver. Consult your dealer or an experienced radio/TV technician for help. Shielded (STP) network cables must be used with this unit to ensure compliance with EMC standards.

Liability

Every care has been taken in the preparation of this manual; please inform your local OPTICOM office of any inaccuracies or omissions. OPTICOM INTERNATIONAL INC. cannot be held responsible for any technical or typographical errors and reserves the right to make changes to the product and manuals without prior notice. OPTICOM INTERNATIONAL INC. makes no warranty of any kind with regard to the material contained within this document, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. OPTICOM INTERNATIONAL INC. shall not be liable nor responsible for incidental or consequential damages in connection with the furnishing, performance or use of this material.

Technical Support and Service Contact Information

Support Services

Should you require any technical assistance, please contact your OPTICOM INTERNATIONAL INC. reseller. If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response. If you are connected to the Internet, you can:

- Report problems to OPTICOM support staff by calling 1-855-569-3240 or emailing service@opticomintl.com

DOCUMENT No: OPT-OM-1912-01

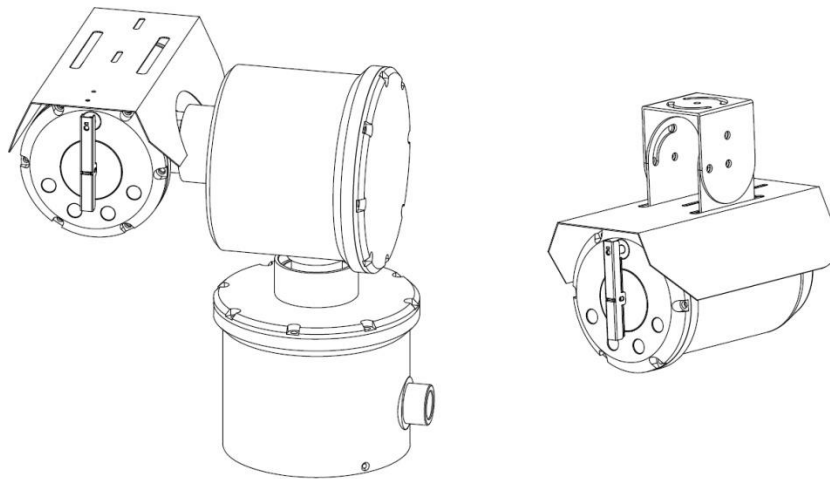
VER 1.1: Dec. 21 2019

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Overview

The CC03-IP2MZ30-E Camera series is a high-performance, explosion proof video device designed to allow the movement both horizontally and vertically of the built-in camera and IR modules. It is certified for installation in industrial environments where there may be an explosive atmosphere due to gas, vapors, mists, or air or powder mixtures.



Key Features

- 1/2.8" 2.4(2.2)Mpx 60fps Exmor(-R) CMOS sensor * () High sensitivity camera
- 1080p@60fps / 30fps, 1080i@60fps, 720p@60fps
- HD-SDI, CVBS, IP Network(Optional) video output
- X30 Optical Zoom with X12 Digital Zoom
- High Sensitivity Camera(0.0008 lux)
- Built in High Power Infrared High Power LED
- Dome window with anti-fog and hydrophilic coating
- Wide dynamic Range(WDR), High Light Correction(HLC)
- Digital Noise Reduction(2D+3D)
- Image Stabilizer
- Privacy Mask Function
- Live zoom PIP, Motion Detection Alarm
- For Use in a Variety of Harsh and Hazardous Environments including Marine Environments
- IP66/68, SUS 316 Housing

Certifications

Certificate of Conformity: **Certificate No.: 18438-1S-ML**

Products:

- Description: Explosion Proof Camera
- Model No.: CC03-IP2MZ3x*-E (* where 'x' may be 0 or 6 for 30X or 36X Zoom Module)
- Ratings:
 - Rated Voltage: 24 Vac (50/60Hz) or 24 Vdc
 - Rated Current: 6 A
 - Ex db IIC T6 Gb -40 °C ≤ Ta ≤ 60 °C
 - Ex tb IIIC T85 °C Db -40 °C ≤ Ta ≤ 60 °C
 - Class I Zone 1 AEx db IIC T6 Gb -40 °C ≤ Ta ≤ 60 °C
 - Class II Zone 21 AEx tb IIIC T85 °C Db -40 °C ≤ Ta ≤ 60 °C
 - IP66/IP68

Applicable requirements:

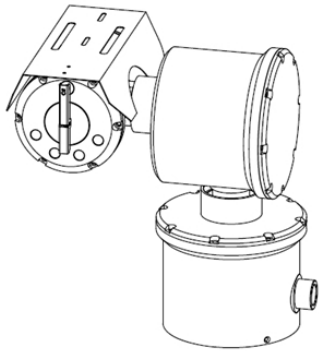
- CSA C22.2 No 60079-0:2019 / UL 60079-0 Edition 7
- CSA C22.2 No 60079-1:16 / UL 60079-1 Edition 7
- CSA C22.2 No. 60079-31:15 / UL 60079-31 Edition 2
- CSA-C22.2 No.: 62368-1-14/UL 62368-1 Edition 1

Conditions of acceptability:

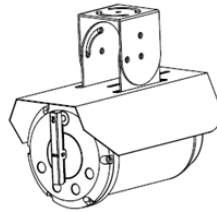
- Special fasteners with yield stress of at least 238 MPa shall be used.



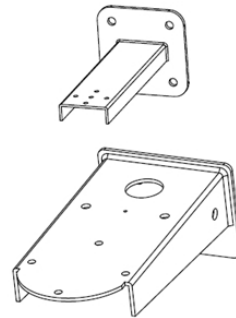
■ System and Optional Components



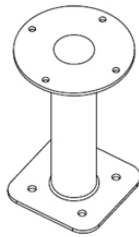
PTZ CAMERA



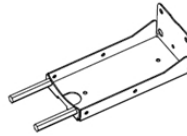
FIXED CAMERA



**WALL BRACKET
(OPTION)**



**CEILING BRACKET
(PTZ TYPE, OPTION)**

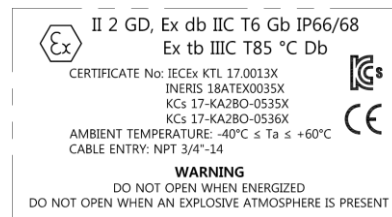
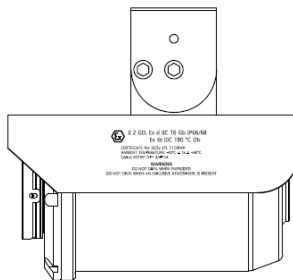
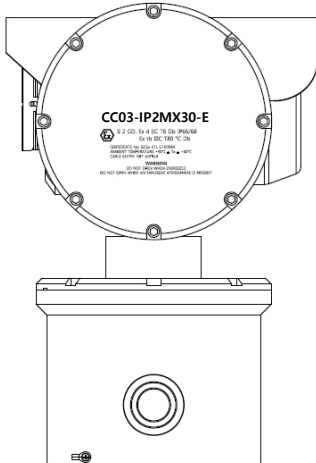


**STANDING BRACKET
(FIXED TYPE, OPTION)**



**CABLE GLAND
(HPS/FBS TYPE)**

Product Markings(Ex Type)



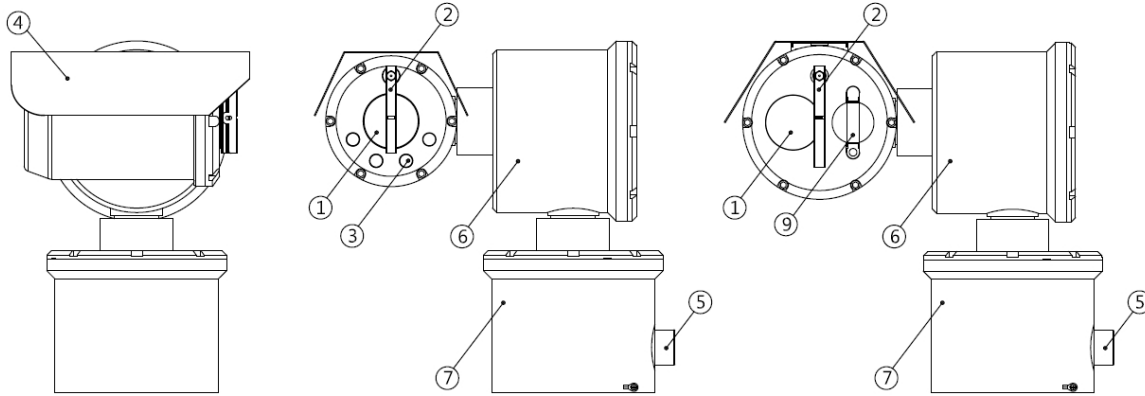
Safety Precautions before Use

Following precautions must be taken to prevent potential danger and physical damage. (Ex Type)

1. Do not open when an explosive atmosphere is present.
2. The Ex Dome Camera may be installed in zones 1, 2, 21 or 22.
3. Protect Camera against applying power above the specified rating and voltage surge. Install with an approved surge protection device.
4. Carefully read this manual before use the device.
5. Before energizing this device, make sure the power source supports 24VAC, 6A, 50/60Hz.
6. Double check all the wiring connections are correct before energizing.
7. Power must be disconnected before cleaning the device. Only a neutral detergent can be used when cleaning.
8. Certified cable gland (or sealed fitting) must be installed to the cable entry.
9. Do not install on environment where ambient temperature will exceed the specified operating temperature.
10. Before switching on the Camera the mechanical connection points and electrical connections of each component must be checked.
11. The national regulations for installation and assembly apply. (e.g. IEC 60079-17)

Product Description

Description and Function



CC03-IP2MZ30-E SERIES

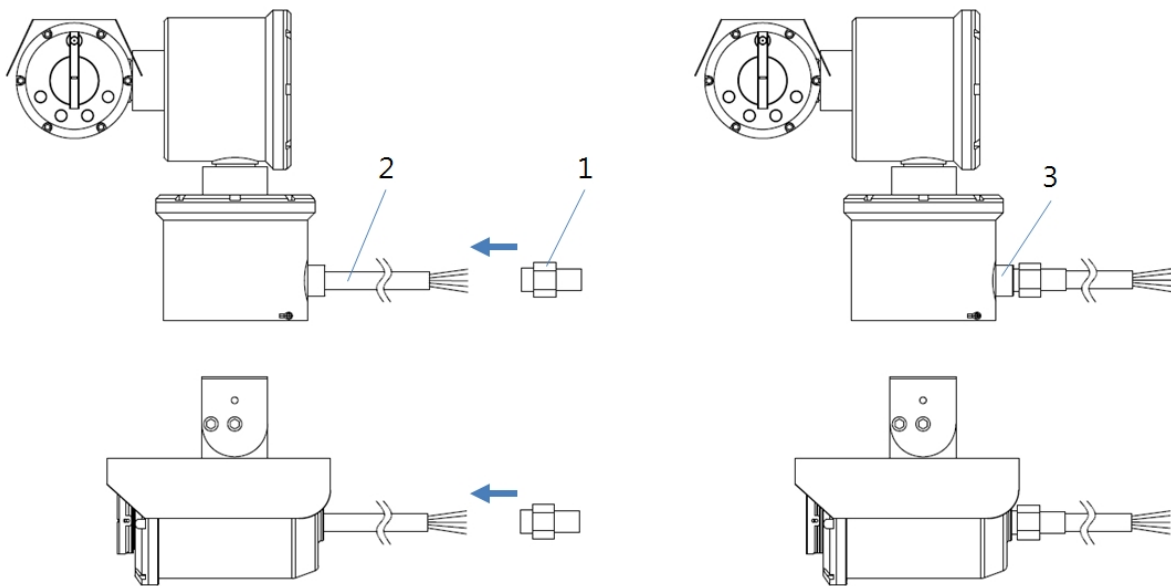
1. **Window** - A transparent tempered glass to protect the camera.
2. **Wiper** - This is a device that removes contamination on the surface of the window.
It can be effectively used in combination with a washer fluid.
3. **IR LED** – By providing an infrared light source, it is possible to collect images even at night time without light.
4. **Sunshield** - Protects the camera housing against direct sunlight.
5. **Cable Entry** – Attaching cable gland or sealing fitting.(NPT 3/4"-14)
6. **Main housing** - Vertical rotation drive parts and main board are built in.
7. **Base housing** - Horizontal rotation drive part, power board and video board are built in.
8. **Position control bracket** - The shooting position of the camera can be fixed manually.

Camera Install Guide

This device can be installed using the following references. For any alternative installation please contact the manufacturer for safety recommendations.

Caution: We strongly recommend use of anti-slip gloves when handling the unit.

Installing cable gland (NPT 3/4"-14) at Cable Entry (Ex Type)



Important: To install this device, you must follow following instructions.

1. The cable gland (1) is passed through the cable (2).

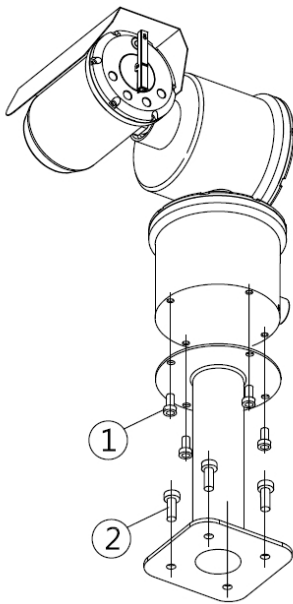
Note: If the cable's connector is difficult to pass due to the sealing rubber of the cable gland, disassemble the cable gland and insert it onto the cable.

2. Assembling cable gland (1) to the cable entry (3).

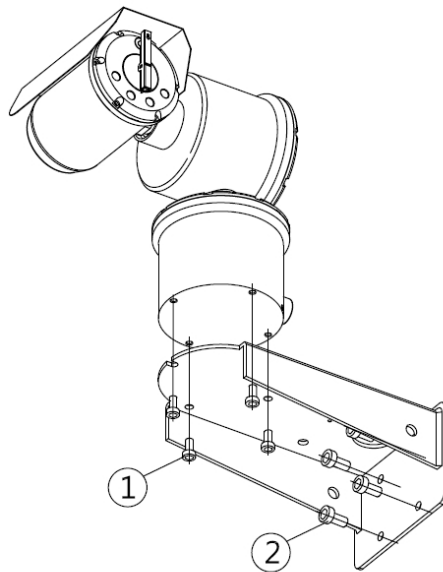
Note: Teflon thread seal tape recommended to apply thread of cable gland

Important: A certified cable gland must be used.

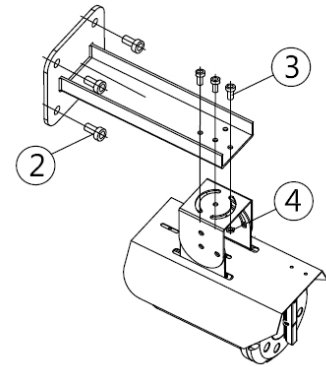
Installing Device with Bracket



**Ceiling Bracket
(PTZ Type)**



**Wall Bracket
(PTZ Type)**

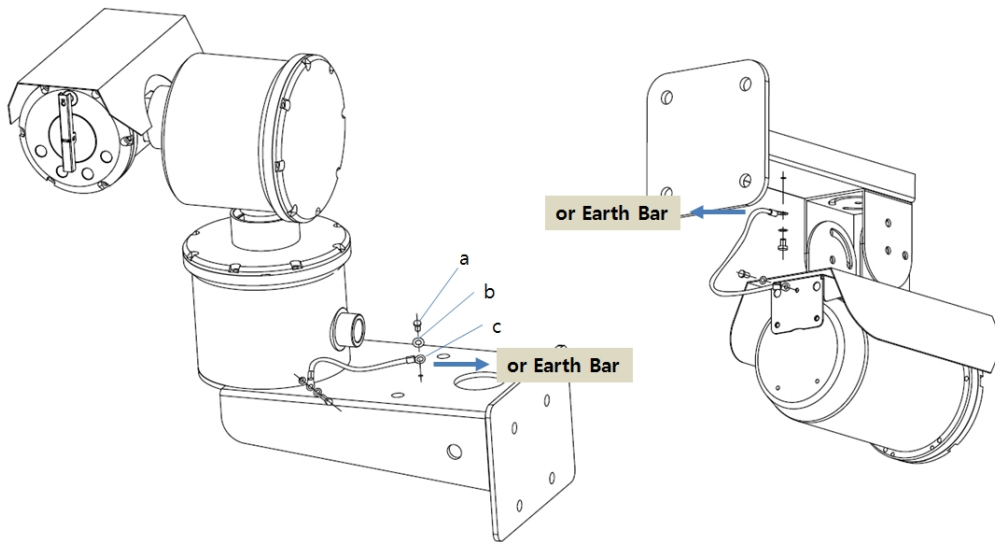


**Wall Bracket
(Fixed Type)**

Important: To install this device, you must follow following instructions.

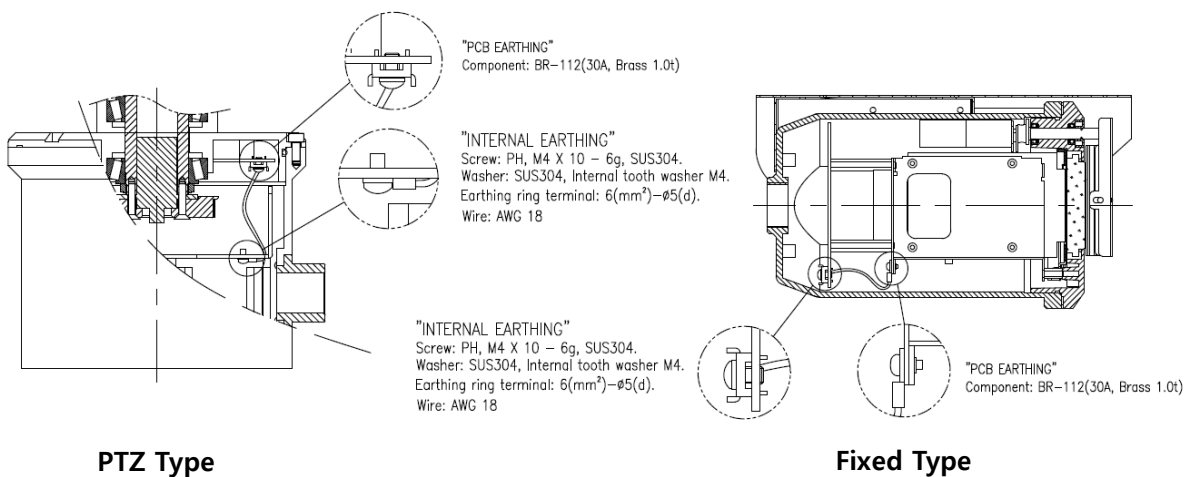
1. Use the four M10 bolts (2) supplied to fasten the bracket to the wall, ceiling or column in the direction of the arrow, then insert the camera into the bracket.
Note: In case of installing the wall bracket on concrete, M10 anchor bolt must be used.
2. Use the four M8 bolts (1) supplied to fasten the camera to the bracket the direction of the arrow.
3. Use the three M5 bolts (3) and M5 nut (4) supplied to fasten the camera to the bracket the direction of the arrow.

External Earth Wiring Connection



1. Earth wiring component
 - a. Screw: PH, M5 X 8 – 6g, SUS304, A2-50
 - b. Washer: SUS304, Internal tooth M5
 - c. Earth cable connected earth terminals(6-Ø5)
2. Connecting earth cable to external earth bar or wall bracket as figure.

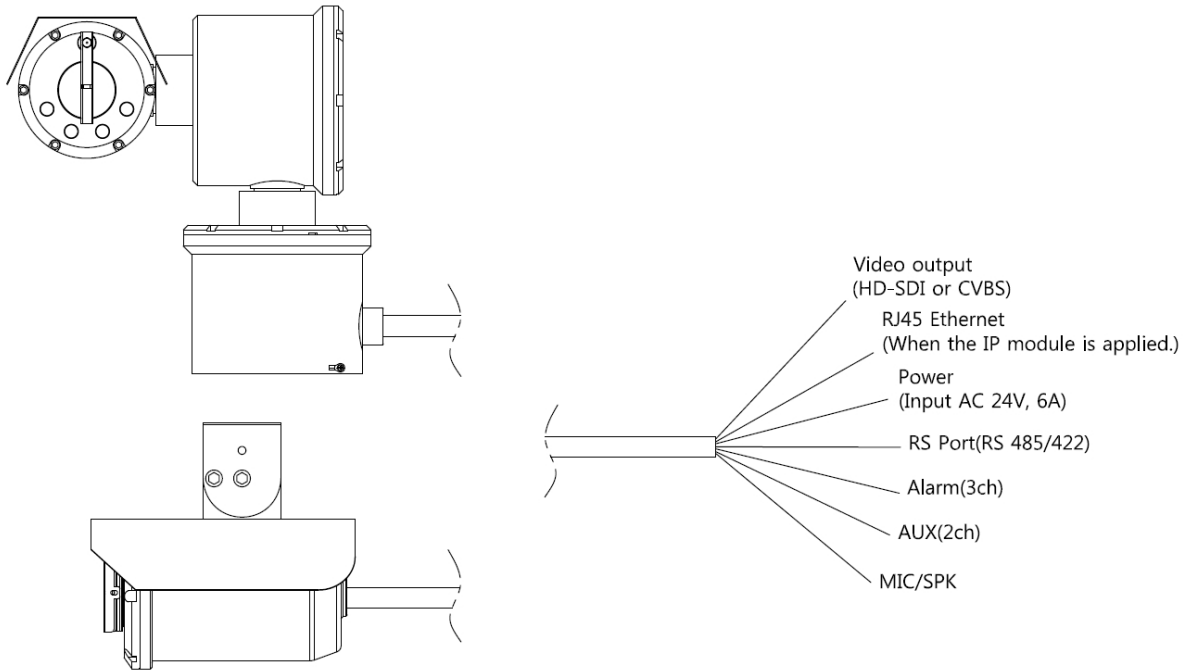
Internal Earth Wiring Connection



- **Minimum cross-sectional area of PE (Protective earthing) conductors**

| Cross-sectional area of phase conductors, S (mm ²) | Minimum Cross-sectional area of the corresponding PE conductors, Sp (mm ²) |
|--|--|
| S ≤ 16 | S |
| 16 < S ≤ 35 | 16 |
| S > 35 | 0.5 S |

■ **Connection to device**

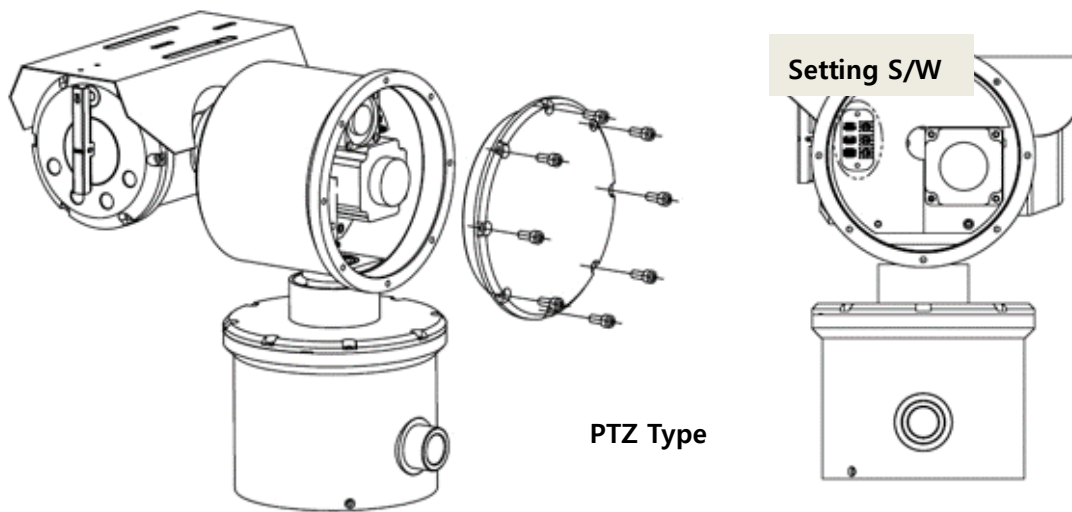


Configuration of the dip-switches

Removing the housing cover to access Camera Settings.

Please open the main cover to access configuration dip-switches as shown below.

- ⚠ Ex WARNING: : DO NOT OPEN WHEN ENERGIZED
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
POTENTIAL ELECTROSTATIC CHARGING HAZARD



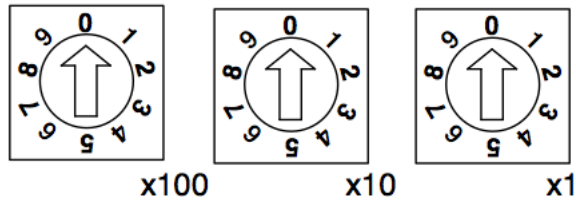
1. The setting switch can be checked by unscrewing the wrench bolt and removing the housing as shown above.

Note: Each housing cover has a gap for separation on both sides. It can be easily removed by using two flat-head Screwdrivers.

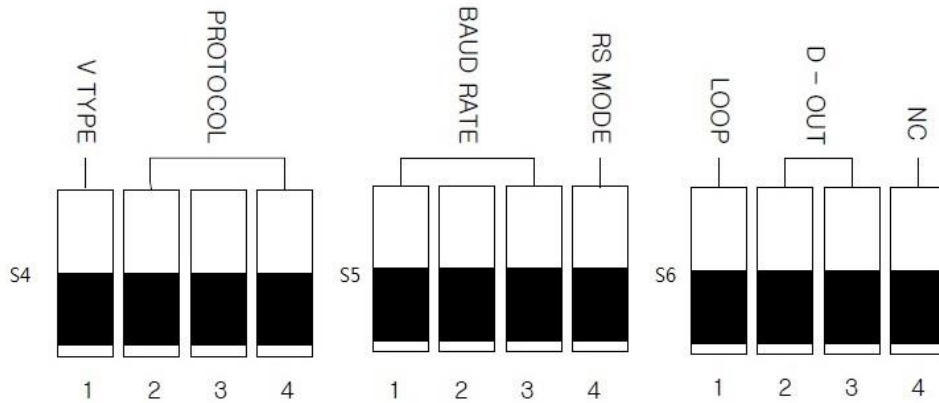
2. When reassembling, be sure the O-ring is correctly positioned.

Unit Address Setting

Unit address can be set using rotary switch as shown below. Maximum address value is 255.



Communication Protocol, Baud Rate, and RS mode Setting



1. Video mode settings as below. [V OUT switch / **S4**-1]

| | |
|---|--------|
| 1 | V TYPE |
| 0 | NTSC |
| 1 | PAL |

2. Protocol settings as below. [PROTOCOL switch / **S4**-2,3,4]

| | | | |
|---|---|---|----------|
| 2 | 3 | 4 | PROTOCOL |
| 0 | 0 | 0 | AUTO PRO |
| 0 | 0 | 1 | PELCO D |
| 0 | 1 | 0 | PELCO P |
| 0 | 1 | 1 | INSIGHT |
| 1 | 0 | 0 | NC |
| 1 | 0 | 1 | NC |
| 1 | 1 | 0 | NC |
| 1 | 1 | 1 | NC |

3. Baud rate settings as below. [BAUD RATE switch / **S5**-1,2,3]

| 1 | 2 | 3 | BAUDRATE |
|---|---|---|----------|
| 0 | 0 | 0 | 2400 |
| 0 | 0 | 1 | 4800 |
| 0 | 1 | 0 | 9600 |
| 0 | 1 | 1 | 19200 |
| 1 | 0 | 0 | 38400 |
| 1 | 0 | 1 | 57600 |
| 1 | 1 | 0 | 115200 |
| 1 | 1 | 1 | NC |

4. RS mode settings as below. [RS MODE switch / **S5**-4]

| | |
|---|---------|
| 4 | RS MODE |
| 0 | RS 422 |
| 1 | RS 485 |

5. RS-4xx communication loop mode settings as below. [LOOP switch / **S6**-1]

| | |
|---|------|
| 1 | LOOP |
| 0 | OFF |
| 1 | ON |

Video mode and IP mode Setting

1. IP mode settings as below. [IPSEL switch / **S6**-2]

| | |
|---|------|
| 1 | LOOP |
| 0 | OFF |
| 1 | ON |

2. Resolution settings as below.[D-OUT switch / **S6**-2,3]

| 2 | 3 | RESOLUTION |
|---|---|------------|
| 0 | 0 | 1080p30 |
| 0 | 1 | 1080i60 |
| 1 | 0 | 720p60 |
| 1 | 1 | 1080p60 |

Troubleshooting

Please check the following items before calling customer service. This section describes symptoms, possible causes and remedial actions.

| Symptoms | Remedial Actions | Reference |
|---------------------------|---|-------------|
| No video | Check the power source. Make sure the power supply termination. | |
| | Check the video cable termination. | |
| Cannot control the device | Check the power source. Make sure the power supply termination. | |
| | Check the communication cable termination. | |
| | Check the protocol and baud rate settings both on keyboard controller and device. | User Manual |

Maintenance

Associated equipment is subject to maintenance, service and testing according to guidelines IEC 60079-19 and EN 60079-17. Because the transmission of the devices remains reliable and stable over long periods of time, regular adjustments are not required. Repairs may only be done by the manufacturer exclusively. System maintenance should focus on the following:

- a. Seal wear
- b. Non metallic parts damage
- c. All screws are securely tightened
- d. All cables and lines are properly connected and undamaged

Service

In accordance with IEC 60079-19 and EN 60079-17, operators of electric plants in hazardous areas are obliged to have them serviced by qualified electricians.

The warranty period is one year after purchase.

Specifications

| Specifications | CC03-IP2MZ30-E |
|----------------------|---|
| Image Sensor | 1/2.8" 2.38 Megapixel SONY Exmor CMOS Sensor |
| | Total Pixels: 2140K Pixels |
| Video Encoding | H.264/MPEG-4/MPEG Formats |
| Resolution | 1080P at 30 FPS (Adjustable) |
| Minimum Illumination | 0 Lux IR On / 0.5 Lux Color (1/30s) |
| S/N Ration | More than 50dB |
| Video Output | Network & CVBS |
| Zoom Ratio | 30X Optical / 32X Digital |
| Focal Length | f = 4.3mm~129.0mm |
| Image Controls | Auto D/N, WDR, DIS, DSS, DNR, ACE, Defog, Privacy Mask |
| Control Interface | RS-422, RS-485, IP Network |
| PTZ Functions | 255 Presets, 8 Tours, 16 Areas, 3 Alarms, 8 Groups |
| PTZ Pan | 0° ~ 360° Endless Rotation (0.1° ~ 80°/s) |
| PTZ Tilt | -90° ~ 90° Rotation (0.1° ~ 60°/s) |
| External Interface | RJ-45 10/100-Base-T Ethernet |
| Protocols | TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP, RTSP, NTP, HTTP, HTTPS, SSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS |
| Audio | Input/Output / G.711 |
| IR Function | Auto IR On / Range: 328 Feet, 100M |
| Housing | Stainless Steel (SS316L) |
| Power | AC24V or DC27V, 6A, 50/60Hz, Max. 72W |
| Dimensions (H x W) | 11.7 x 12.5 inches / 297 x 317 mm |
| Weight | 33.0 lbs (15.0 kg) |
| Operation Temp. | -40°C ~ 60°C / -40°F ~ 140°F (0~90% RH) |

Dimensions

CC03-IP2MZ30-E

