

ADJUST THE LENS

A number of adjustments may be needed to the lens when connected to a monitor to ensure the best quality video image:

1. DC drive auto iris lens – Adjust the DC level by turning the LEVEL adjustment knob (on back of the camera) to get the best video image.
2. Video drive auto iris lens – Adjust the level on the lens itself to get the best video image.
3. Back focus adjustment (fig. 8) – If it is necessary to adjust the back focus:
 - a. Remove the lens and the C-mount adapter ring (if used).
 - b. Use the L-wrench to loosen the two back focus screws (one on top of the case, one on bottom).
 - c. First, mark the position of the lens mount ring notch using a small piece of masking tape or other removable writing surface. This lets you return to the original position if needed.
 - d. Use the back focus adjustment tool to turn the lens mount ring. Mark the new notch position.
 - e. Re-mount the lens and the C-mount adapter ring (if used), then test the video image again.
 - f. Repeat as needed. Number the different test positions on the masking tape.
 - g. Once the back focus is satisfactory, tighten the two back focus hex screws.

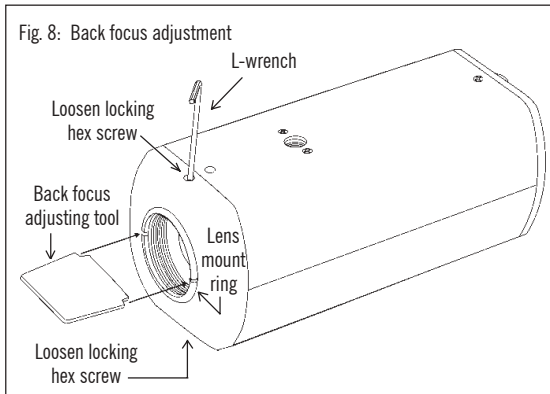


Fig. 8: Back focus adjustment

- NOTE:** For fixed focus lenses with manual iris – Before adjusting back focus, open the aperture to its fullest setting, and set the focus ring to “infinity.”
- NOTE:** For fixed focus lenses with auto iris – Before adjusting back focus, aim the camera at a relatively dark object in order to open the aperture.
- NOTE:** For zoom lenses – Open the aperture (see the above two points). Set the lens to its maximum wide-angle position and adjust the back focus. Then set the lens to its maximum telephoto position and adjust the back focus. Repeat until the difference between the wide-angle and telephoto positions is the smallest.

TROUBLE SHOOTING

| | |
|------------------------------------|--|
| The screen is blank | <ul style="list-style-type: none"> • Check that the CCTV camera is powered up. • Check that the monitor is powered up. • Check that the video cable connecting the camera to the monitor is connected properly. • Check that the 4-pin lens socket is connected properly. • Check that the AI DRIVER switch is in the correct position. |
| The screen image is dim | <ul style="list-style-type: none"> • Clean the lens (using a soft, clean cloth). • Check that the light source is adequate. • If the backlight control (BLC) switch is set to OFF, try setting it to ON. |
| The screen image is dark | <ul style="list-style-type: none"> • If a manual iris lens is used, check that the automatic electronic switch (AES) is turned ON. • If an auto iris lens is used, check that the automatic electronic switch (AES) is turned OFF. |
| The screen image has poor contrast | <ul style="list-style-type: none"> • Adjust the monitor’s contrast knob. • Change the position of the camera. |
| The screen image flickers | <ul style="list-style-type: none"> • Make sure the AI DRIVER switch is in the correct position. • Change the position of the camera. |
| The screen image is distorted | <ul style="list-style-type: none"> • Adjust the V-Phase knob for linelock. • Change the position of the camera. |
| The camera case is hot | <ul style="list-style-type: none"> • Check that the correct power supply is in use. |

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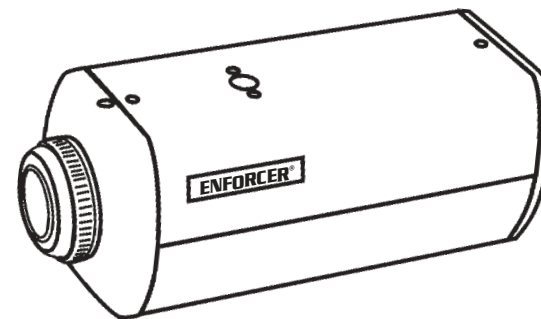
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ENFORCER® VIDEO

MANUAL

EV-1123C24 & EV-1133C24 (NTSC)
1/3" CCD Color Cameras

EV-1123B24 & EV-1133B24 (EIA)
1/3" CCD B/W Cameras



SLI®
SECO-LARM® U.S.A., INC.

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FCC COMPLIANCE STATEMENT

INFORMATION TO THE USER: THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

IMPORTANT

Users and installers of this product are responsible for ensuring this product complies with all national, state, and local laws and statutes related to monitoring and recording audio and video signals. **SECO-LARM** will not be held responsible for the use of this product in violation of any current laws or statutes.

WARNING

This product was designed for indoor use only. Mounting outdoors or exposure to rain or moisture could cause a dangerous electric shock, damage the device, and void the warranty. Do not open the case of this device, as there are no field-serviceable components inside.

WARRANTY

All **SECO-LARM** products are warranted against defects in material and workmanship while used in normal service for a period of two (2) years from the date of sale to the original consumer customer. Our obligation is limited to the repair or replacement of any defective part if the unit is returned, transportation prepaid, to **SECO-LARM**. For complete details regarding the **SECO-LARM** warrantee, please contact **SECO-LARM**.

NOTICE

The information and specifications printed in this manual are current at the time of publication. However, the **SECO-LARM** policy is one of continual development and improvement. For this reason, **SECO-LARM** reserves the right to change specifications without notice. **SECO-LARM** is also not responsible for misprints or typographical errors.

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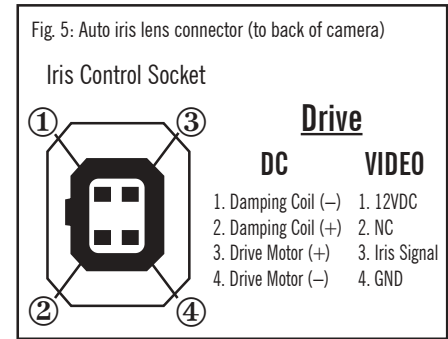
PREPARE THE 4-PIN PLUG FOR AUTO IRIS LENS (Auto iris lenses only)

The 4-pin plug should be connected to the 4-wire cable of the lens, depending on the type of iris (DC drive or video drive) used. Use the included 4-pin plug if needed. See fig. 5.

MOUNT AND CONNECT THE LENS

1. Mount or remove the C-mount adapter ring as needed.
2. Screw the lens into the CCTV camera.
3. Plug in the lens connector.

Caution: Not all iris control plugs are configured the same. Check the manual for your lens to verify that the pinouts match the camera socket pins. If they do not, the plug must be rewired, or you may use the supplied adapter plug to properly assign the leads to the correct pins as shown in fig. 5.



PROGRAM THE DIP SWITCHES (Fig. 6)

1. **Backlight compensation (BLC)** – If the object to be protected has a strong light source such as a spotlight or a window behind it, that object may be very dim on the video image. In this case, turn **BLC ON**.

2. **Automatic electronic shutter (AES)** – The shutter speed of the CCTV camera can automatically adjust itself from 1/50 of a second to 1/100,000 of a second, depending on the light conditions. Turn **AES ON** when fixed or manual iris lenses are used. Turn **AES OFF** when auto iris lenses are used.

NOTE: If illumination levels exceed 10,000 lux, AES may not work properly. In such a case, it may be necessary to use an auto iris lens. However, be sure to turn **AES OFF** if using auto-iris. If both functions are on at the same time, unpredictable oscillations or fluctuations in picture brightness may result, as the two functions - AES and auto-iris - will be competing to achieve the same result.

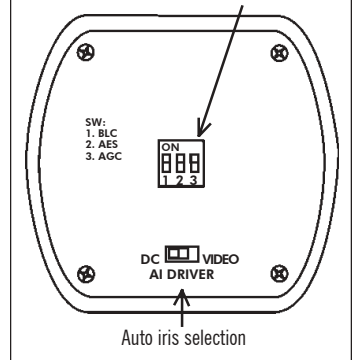
3. **Automatic gain control (AGC)** – If the light level of the protected area is low while under observation by the CCTV camera, turn **AGC ON** to increase sensitivity.

NOTE: AGC does not add any information to the original signal, and the resulting image may have a relatively high noise level. For a better image, improve the lighting and/or use a lens with a higher F-stop.

4. **Auto iris selection** – Set to **DC** for DC drive lenses. Set to **VIDEO** for video drive lenses.

Fig. 6: Programming the DIP switches

| SW | Function | ON | OFF |
|----|----------|------|--------|
| 1 | BLC | Yes | No |
| 2 | AES | Yes | No |
| 3 | AGC | High | Normal |



CONNECT POWER (Fig. 7)

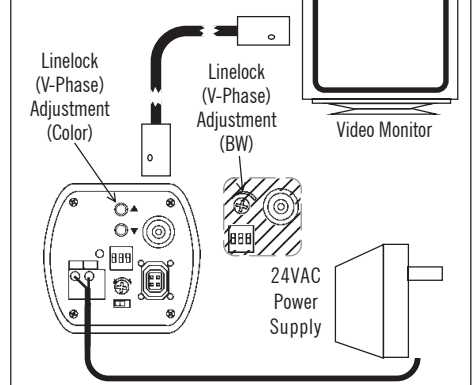
Connect a 24VAC transformer to the connector on the back of the camera. The camera can now be turned on and final adjustments made.

ADJUST LINELOCK V PHASE

The **SECO-LARM** CCTV camera includes linelock synchronization. With linelock, two or more CCTV cameras can be connected in a multi-camera system without the camera video signals interfering with each other. The linelock function uses the phase of the main power supply (60Hz only) to synchronize the video signals.

If needed, adjust the linelock video phase signal by turning the V-Phase adjustment knob on the back of the camera (B/W) or pushing the two buttons (Color).

Fig. 7: Basic connection



INSTALLATION

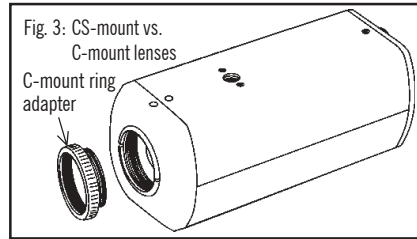
NOTE – SECO-LARM CCTV cameras come with the C-mount adapter ring and the lens mount cap already installed.

CHOOSE THE TYPE OF LENS

No lens is included with this SECO-LARM CCTV camera. However, the camera works with a wide range of lenses. Choose the right lens based on the following:

1. CS-mount vs. C-mount – CS-mount lenses screw directly into the CCTV camera. However, the included C-mount ring adapter must be used when mounting C-mount lenses. See fig. 3.
2. Type of iris – This camera can use lenses with any type of iris, but in general auto iris lenses offer the most flexibility:
 - a. Fixed iris – This is the least expensive type of lens. Allows a fixed amount of light to reach the CCD element. Generally useful only when the amount of light illuminating the protected space is known prior to installation and does not vary while the video monitoring system is in operation.
 - b. Manual iris – The amount of light which reaches the CCD element can be adjusted manually, so this is acceptable where the amount of light illuminating the protected space is not known prior to installation, but which does not vary while when the video monitoring system is in operation.

WARNING – Do not connect power to the CCTV camera until you are ready for testing.



- c. Automatic iris – The amount of light which reaches the CCD element is automatically adjusted by the CCTV camera. SECO-LARM CCTV cameras can operate both DC drive auto iris lenses and video driver auto iris lenses.

NOTE – In general, a higher quality lens improves the quality of the video image, especially under low-light conditions.

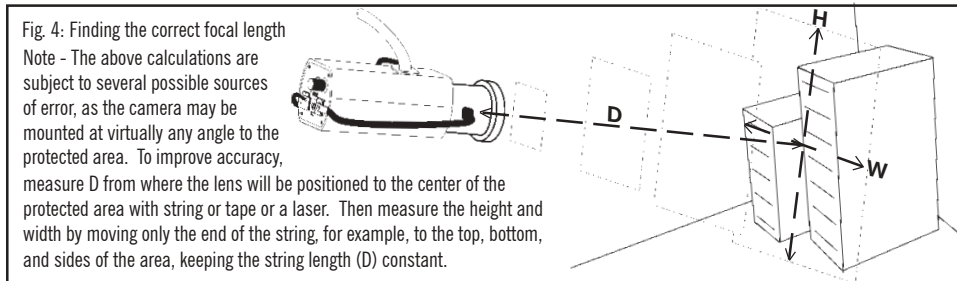
NOTE – Use color lenses for color cameras and B/W lenses for B/W cameras. The wrong lens may reduce the quality of the video image, especially under bright light conditions.

CHOOSING THE RIGHT FOCAL LENGTH OF THE LENS FOR A GIVEN FIELD OF VIEW

The focal length of the lens determines the height and width of the area to be protected which is clearly seen by the CCTV camera.

To find the correct focal length:

1. Measure the distance (D) in meters between the CCTV camera and the spot or object at which the CCTV camera is to be focused.
2. Measure the height (H) and/or the width (W) in meters of the area to be protected at the spot at which the CCTV camera is to be focused. See fig. 4.
3. To calculate the approximate focal length (FL) of the lens:
 - a. If the height of the protected area is priority, $FL = D \times 3.6 \div H$
 - b. If the width of the protected area is priority, $FL = D \times 4.8 \div W$
4. If you already have a lens with a known focal length (FL), calculate the approximate height and width of the protected area as follows:
 - a. Calculate the height (H) of the protected area: $H = D \times 3.6 \div FL$
 - b. Calculate the width (W) of the protected area: $W = D \times 4.8 \div FL$



MOUNT THE CCTV CAMERA

IMPORTANT – To protect the highly sensitive CCD element, do not remove the lens mount cap until you are ready to mount the lens.

1. Location – Find a suitable location where:
 - a. The CCTV camera is not exposed to the elements.
 - b. It is convenient to run a video cable from the CCTV camera to the monitor or other video device.
2. Connect the CCTV camera to a mounting bracket via the mounting hole on the top or the bottom of the camera case.
3. Connect the video cable to the BNC connector on the back of the CCTV camera case.

c. The camera has an unobstructed view of the area to be protected.

PARTS LIST

- A. Lens mount cap – Protects the CCD when a lens is not mounted on the camera.
- B. C-mount adapter ring – Use to mount a C-mount lens. Do not use if a CS-mount lens is used.
- C. L-wrench – Use with the back-focus hex screw to adjust the back-focus.
- D. Back focus hex screw – One on top, and one on bottom. Loosen both to adjust the back focus if needed, then tighten when finished.
- E. Back focus adjusting tool.
- F. Mounting bracket screw hole.
- G. Snap-together 4-pin adapter plug for auto iris lens.
- H. Manual.

Fig. 1: Parts list

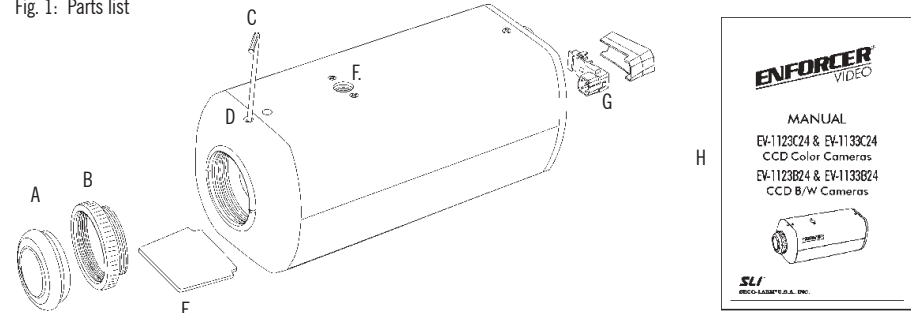
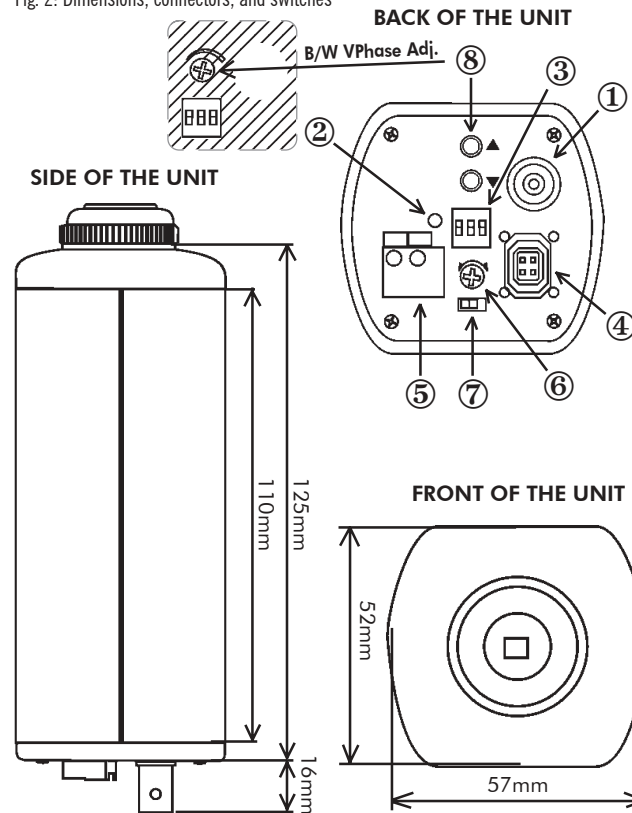


Fig. 2: Dimensions, connectors, and switches



1. VIDEO OUT – BNC (female) jack – Connect to the cable which goes to the video output device (monitor, splitter, etc.). 75-ohm output.
2. Power indicator LED – Lights red to show power is connected.
3. DIP switch block – Three DIP switches for programming backlight compensation, automatic electronic shutter (AES), and automatic gain control (AGC). See page 7 for details.
4. AUTO IRIS – 4-pin socket for auto iris or DC driver lens (4-pin plug included).
5. Power supply connector. Connect to 24VAC transformer.
6. LEVEL – Adjusts the DC drive level to determine the brightness of the video output (for DC drive auto iris lens).
7. AI DRIVER – Automatic iris driver DIP switch. Allows choice of DC drive level auto iris lens or video drive auto iris lens.
8. V-Phase – Linelock synchronization video phase adjustment. See page 7 for details.

BEFORE STARTING

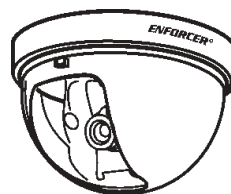
1. Read this manual completely before starting installation and before using the CCTV camera. This manual includes important installation and user information.
 2. Do not mount the CCTV camera where it is exposed to rain or other moisture, or in humid or dusty places.
 3. Do not point the CCTV camera at the sun. Heat could damage the camera, even when not in use.
 4. Do not mount the CCTV camera in areas exposed to radiation, strong magnetic fields, or strong electrical signals.*
 5. Do not open or disassemble the camera. There are no user-serviceable parts inside.
 6. Do not drop the camera or subject it to strong vibrations.
- * Note: Many video monitors produce strong electromagnetic fields close to the display CRT, especially when the monitor is turned on or during de-Gaussing, which occurs automatically with many monitors when the monitor is turned on.

SPECIFICATIONS

The ENFORCER CCTV cameras offer the cost-effective way to make the latest video technology part of a complete security installation. These general purpose and high-resolution color and B/W cameras work with a wide range of lenses for use in nearly any security situation. Line-lock synchronization and full programmability allow for fast, easy installation.

| | EV-1123C24 (NTSC) General purpose color camera | EV-1133C24 (NTSC) High-resolution color camera |
|-------------------------------|--|--|
| Chip | Sony | Sony |
| Resolution | 330 TV lines | 460 TV lines |
| Pickup elements | 1/3" CCD 510 x 492 pixels | 1/3" CCD 768 x 492 pixels |
| Scanning system | 2:1 interlace V: 60Hz, H: 15.734KHz (NTSC) | 2:1 interlace V: 60Hz, H: 15.734KHz (NTSC) |
| Sync | Line-lock, V-phase adjustment, 0°-270° | Line-lock, V-phase adjustment, 0°-270° |
| Video output | 1Vpp composite output, 75 ohms | 1Vpp composite output, 75 ohms |
| Lens mount | CS- or C-mount | CS- or C-mount |
| Minimum illumination | 0.5 lux (F1.2) | 1.5 lux (F1.2) |
| Gamma correction | 0.45 | 0.45 |
| S/N ratio | Over 46dB (with AGC turned off) | Over 46dB (with AGC turned off) |
| Iris control | Video out / DC iris for Galvano lens | Video out / DC iris for Galvano lens |
| Shutter control | Programmable automatic/manual 1/60~1/100,000 sec. | Programmable automatic/manual 1/60~1/100,000 sec. |
| Backlight compensation | On/Off programmable | On/Off programmable |
| Gain control | On/Off programmable | On/Off programmable |
| Power source | 24VAC | 24VAC |
| Power consumption | 5.0W (max.) | 5.0W (max.) |
| Ambient temperature | 14°~122° F (-10°~50° C) | 14°~122° F (-10°~50° C) |
| Relative humidity | 30~90% | 30~90% |
| Dimensions | 5 ⁹ / ₁₆ " x 2 ¹ / ₄ " x 2 ¹ / ₁₆ " (141 x 57 x 52 mm) | 5 ⁹ / ₁₆ " x 2 ¹ / ₄ " x 2 ¹ / ₁₆ " (141 x 57 x 52 mm) |
| Weight | 16oz. (450g) | 16oz. (450g) |

ALSO AVAILABLE: DOME CAMERAS



| | EV-1223B12 (EIA) | EV-1224C12 (NTSC) |
|-----------------------------|------------------------------|------------------------------|
| Type | Black & White | Color |
| Chip | Sharp | Panasonic |
| Resolution | 400 TV lines | 330 TV lines |
| Pickup elements | 1/3" CCD 512 x 492 pixels | 1/4" CCD 510 x 492 pixels |
| Minimum illumination | 0.08 lux | 5 lux |

| | EV-1123B24 (EIA) General purpose B/W camera | EV-1133B24 (EIA) High-resolution B/W camera |
|-------------------------------|--|--|
| Chip | Sony | Sony |
| Resolution | 400 TV lines | 580 TV lines |
| Pickup elements | 1/3" CCD 510 x 492 pixels | 1/3" CCD 768 x 492 pixels |
| Scanning system | 2:1 interlace V: 60Hz, H: 15.734KHz | 2:1 interlace V: 60Hz, H: 15.734KHz |
| Sync | Line-lock, V-phase adjustment, 0°-270° | Line-lock, V-phase adjustment, 0°-270° |
| Video output | 1Vpp composite output, 75 ohms | 1Vpp composite output, 75 ohms |
| Lens mount | CS- or C-mount | CS- or C-mount |
| Minimum illumination | 0.1 lux (F1.2) | 1.0 lux (F1.2) |
| Gamma correction | 0.45 | 0.45 |
| S/N ratio | Over 46dB (with AGC turned off) | Over 46dB (with AGC turned off) |
| Iris control | Video out / DC iris for Galvano lens | Video out / DC iris for Galvano lens |
| Shutter control | Programmable automatic/manual 1/60~1/100,000 sec. (EIA) | Programmable automatic/manual 1/60~1/100,000 sec. (EIA) |
| Backlight compensation | On/Off programmable | On/Off programmable |
| Gain control | On/Off programmable | On/Off programmable |
| Power source | 24VAC | 24VAC |
| Power consumption | 3.5W (max.) | 3.5W (max.) |
| Ambient temperature | 14°~122° F (-10°~50° C) | 14°~122° F (-10°~50° C) |
| Relative humidity | 30~90% | 30~90% |
| Dimensions | 5 ⁹ / ₁₆ " x 2 ¹ / ₄ " x 2 ¹ / ₁₆ " (141 x 57 x 52 mm) | 5 ⁹ / ₁₆ " x 2 ¹ / ₄ " x 2 ¹ / ₁₆ " (141 x 57 x 52 mm) |
| Weight | 16oz. (450g) | 16oz. (450g) |