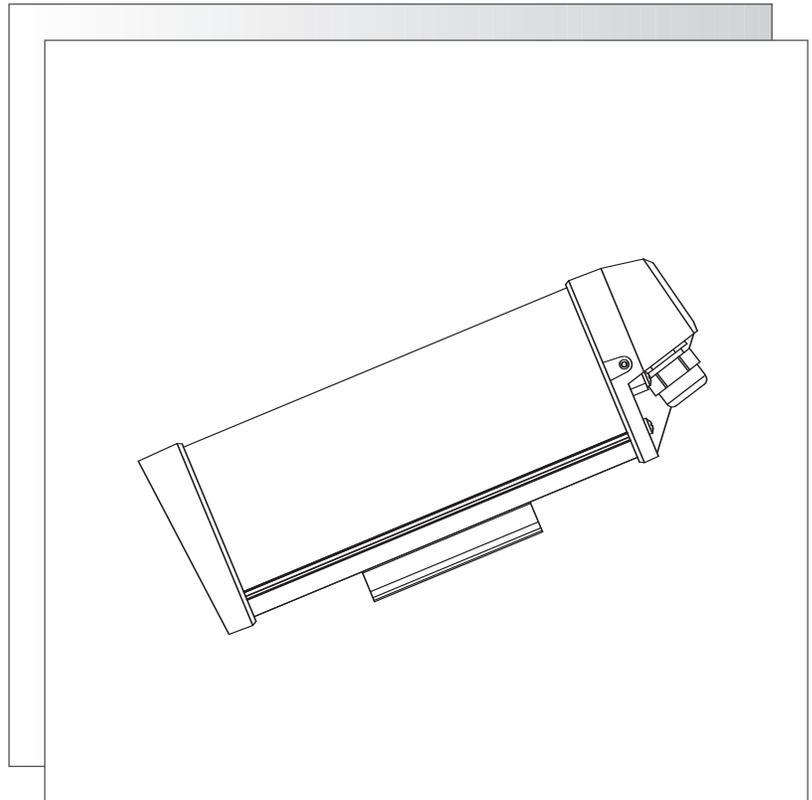


DESIGNER SERIES HOUSINGS



HS948X SERIES

IMPORTANT SAFEGUARDS

1. Read Instructions - All the safety and operating instructions should be read before the unit is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the unit and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only with a stand, tripod, bracket, or mount recommended by the manufacturer or sold with the product. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.



An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

8. Ventilation - Openings in the enclosure, if any, are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
9. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company. For units intended to operate from battery power or other sources, refer to the operating instructions.
10. Grounding or Polarization - This unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternatively, this unit may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
11. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
12. Power Lines - An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.
13. Overloading - Do not overload outlets and extension cords as this can result in a fire or electric shock.
14. Object and Liquid Entry - Never push objects of any kind into this unit through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
15. Servicing - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
16. Damage Requiring Service - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power supply cord or plug is damaged.
 - b. If liquid has been spilled or objects have fallen into the unit.
 - c. If the unit has been exposed to rain or water.
 - d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
 - e. If the unit has been dropped or the cabinet has been damaged.
 - f. When the unit exhibits a distinct change in performance--this indicates a need for service.
17. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
18. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
19. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
20. Lightning - For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

SAFETY PRECAUTIONS

	CAUTION RISK OF ELECTRIC SHOCK. DO NOT OPEN!	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICE-ABLE PARTS ARE INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

This label may appear on the bottom of the unit due to space limitations.



The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SECURITE

	ATTENTION RISQUE D'ÉLECTROCUTION. NE PAS OUVRIR	
<p>Danger: Pour éviter tout risque d'électrocution, ne pas ouvrir le boîtier. Il n'y a pas de pièces remplaçables à l'intérieur. Pour toute révision, s'adresser à un technicien spécialisé.</p>		

En raison de limitation de place, cette étiquette peut être placée sur le dessous de l'appareil.



L'éclair fléché dans un triangle équilatéral, avertit l'utilisateur de la présence d'une "tension dangereuse" non isolée à l'intérieur de l'appareil et d'une valeur suffisante pour constituer un risque d'électrocution.



Le point d'exclamation contenu dans un triangle équilatéral, avertit l'utilisateur de la présence, dans la documentation qui accompagne l'appareil, de consignes d'utilisation et de maintenance importantes.

SICHERHEITSVORKEHRUNGEN

	VORSICHT STROMSCHLAGGEFAHR! BITTE NICHT ÖFFNEN!	
<p>VORSICHT: UM EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, ABDECKUNG NICHT ENTFERNEN. WARTUNGEN ALLER ART QUALIFIZIERTEM PERSONAL ÜBERLASSEN.</p>		

Aus Platzgründen kann diese Warnung auf der Unterseite des Gerätes angebracht sein.



Das Blitzsymbol im gleichseitigen Dreieck soll den Benutzer auf nicht isolierte "Hochspannung" im Gehäuse aufmerksam machen, die eventuell stark genug ist, um einen elektrischen Schlag zu verursachen.



Das Ausrufezeichen im gleichseitigen Dreieck soll den Benutzer auf wichtige Bedienungs- und Wartungsanleitungen in der dem Gerät beige-fügten Literatur aufmerksam machen.

PRECAUCIONES DE SEGURIDAD

	PRECAUCION RIESGO DE CHOQUE ELÉCTRICO. ¡NO ABRIR!	
<p>Precaucion: Para Reducir El Riesgo De Choque Eléctrico, Favor No Abrir La Cubierta. Este Equipo No Consta De Piezas O Partes Que Requieren Servicio O Mantenimiento. Para Reparaciones Favor Referirse A Un Técnico Calificado.</p>		

Debido a limitaciones de espacio, esta etiqueta puede aparecer en la parte inferior de la unidad.



El símbolo representado por un relámpago con punta de flecha dentro de un triángulo equilátero, se muestra con el objetivo de alertar al usuario que existen "voltajes peligrosos" sin aislamiento, dentro de la cubierta de la unidad. Dichos voltajes pueden ser de tal magnitud que constituyen un riesgo de choque eléctrico a personas.



El símbolo de exclamación dentro de un triángulo equilátero, se muestra con el objetivo de alertar al usuario de que instrucciones de operación y mantenimiento importantes acompañan al equipo.

1 UNPACKING

Unpack carefully. This is mechanical equipment and should be handled with care.

Check for the following:

- Housing (with correct model number).
- Hardware Kit - HS9480 & HS9483 Series Models:
 - 1 1/4-20 x 3/8-in Button Head Screw
 - 2 1/4-20 x 1/2-in Button Head Screw
 - 2 1/4-in Spring Washers
 - 1 5/16-in Flat Washer
 - 2 Fittings 3/8-in NPT.
 - 2 Rubber Plugs 1/2-in NPT
 - 2 Fittings 1/2-in NPT
 - 2 Nuts 1/2-in NPT
- Hardware Kit - HS9484 & HS9488 Series Models:
 - 1 1/4-20 x 3/8-in Button Head Screw
 - 3 1/4-20 x 1/2-in Button Head Screws
 - 1 1/4-20 x 5/8-in Button Head Screw
 - 1 1/4-20 x 7/8-in Button Head Screw
 - 2 1/4-in Spring Washers
 - 1 5/16-in Flat Washer
 - 2 Fittings 3/8-in NPT
 - 2 Rubber Plugs 1/2-in NPT
 - 1 Rubber Plugs 3/8-in NPT
 - 1 Nut 3/8-in NPT
 - 2 Fittings 1/2-in NPT
 - 2 Nuts 1/2-in NPT
 - 4 Spacers 1/64-in
 - 3 Spacers 1/8-in
 - 1 Supplemental Hardware Kit labeled "C" - HS9484 & HS9488 Series Models:
 - 1 1/4-20 x 3/4-in Button Head Screw
 - 1 1/16-in Spacer
 - 1 1/8-in Spacer
 - 1 3/8-in Spacer
- Hardware Kit - HS9484-2HBIP and HS9484-2HBIPC
 - 1 1/4-20 x 3/8-in Button Head Screw
 - 2 1/4-20 x 1/2-in Button Head Screws
 - 1 4 Pin Power Connector Quick Connect
 - 2 1/4-inch Spiral Lock Washers
 - 2 2mm x 0.4 x 10 mm Philips Pan Head Screw

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify Aigis Mechtronics.

The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

2 ACCESSORIES

2.1 Sunshields

Provide protection from the direct rays of sun and promote cooling to reduce internal housing temperatures. Strongly recommended for housing to be used outdoors.

HS9480SS: For HS9480 Series Housings.

HS9483SS: For HS9483 Series Housings.

HS9484SS: For HS9484 Series Housings.

HS9488SS: For HS9488 Series Housings.

2.2 Tamperproof Kit

Contains tamper resistant screws and bit key to tamperproof up to five housings.

HS9480TK: For all HS948x Series Housings.

3 SERVICE

If the unit ever needs repair service or parts, the customer should contact Aigis Mechtronics.

4 CARE AND MAINTENANCE

Regularly scheduled maintenance will help prolong the operation life of this unit. Clean the viewing window as needed with a mild, nonabrasive detergent in water and a soft cloth.

5 DESCRIPTION

The HS948x Series Housings are smart stylized housings for indoor and outdoor use. These housings meet customers' demands for an attractive housing that is both cost competitive and easy to install. They are available in multiple sizes to fit a wide range of cameras and lenses.

6 INSTALLATION

This installation should be made by qualified service personnel and conform to the National Electrical Code and applicable local codes.

6.1 Model Designation

Model No.	Preinstalled Components ^{1,2}	Voltage/Power V/W ³	Use with Camera Models with These Voltage Ratings
Indoor/Outdoor Units			
HS9480	---	---	24
HS9483	---	---	24, 115, 230
HS9484	---	---	24, 115, 230
HS9484IP	RJ45	---	24, 115, 230
HS9484TS	---	---	24, 115, 230
HS9488	---	---	24, 115, 230
HS9484-12	---	24	12
Outdoor Units			
HS9480-2H	Heater	24/15	24
HS9483-2H	Heater	24/23	24
HS9483-2HB	Heater/Blower	24/25	24
HS9483-5H	Heater	230/23	230
HS9483-6H	Heater	115/23	115
HS9483-6HB	Heater/Blower	115/28	115
HS9484-2H	Heater	24/23	24
HS9484-2HB	Heater/Blower	24/25	24
HS9484-2HBIP	Heater/Blower/ RJ45	24/25	24
HS9484-2HBIPC	Heater/Blower/ RJ45/Power Conn	24/25	24
HS9484-2HB-12	Heater/Blower	24/25	12
HS9484-5H	Heater	230/23	230
HS9484-6H	Heater	115/23	115
HS9484-6HBTS	Heater/Blower Tamper Switch	115/23	115

6.1 Model Designation Continued)

Model No.	Preinstalled Components ^{1,2}	Voltage/Power V/W ³	Use with Camera Models with These Voltage Ratings
Outdoor Units (cont.)			
HS9484-6HB	Heater/Blower	115/28	115
HS9488-2H	Heater	24/40	24
HS9488-2HB	Heater/Blower	24/42	24
HS9488-5H	Heater	230/40	230
HS9488-6H	Heater	115/40	115
HS9488-6HB	Heater/Blower	115/45	115
HS9484-6HBTS	Extreme Heater/Blower w/Tamper Switch	115/45	115

- The heaters and blowers for all models operate at 50/60 Hz.
- RJ45 = RJ45 Connector, Power Conn = 4-pin power connector.
- Wattage listed reflects the power required to operate the housing only. Camera wattage must be added to the housing wattage to determine power requirements for the housing and camera combination.
(W_{Total} = W_{Housing} + W_{Camera})



Do Not Exceed 30 VAC Input on 24 VAC models. Operation above 30 VAC violates low voltage operation (Class 2 Specifications). Normal operation is 24 VAC.

TUV Approved 24 VAC Models



Caution: Use an approved power supply incorporating reinforced insulation from primary to secondary to isolate unit from Mains.

6.2 Maximum Camera/Lens Size

HS9480:	68 W x 54 H x 197 L mm (2.68 x 2.1 x 7.75 in)
HS9480-2H:	68 W x 54 H x 197 L mm (2.68 x 2.1 x 7.75 in) ¹
HS9483:	68 W x 54 H x 267 L mm (2.68 x 2.1 x 10.5 in)
HS9483-2H:	68 W x 54 H x 267 L mm (2.68 x 2.1 x 10.5 in) ¹
HS9483-5H:	68 W x 54 H x 267 L mm (2.68 x 2.1 x 10.5 in) ¹
HS9483-6H:	68 W x 54 H x 267 L mm (2.68 x 2.1 x 10.5 in) ¹
HS9483-2HB:	68 W x 54 H x 216 L mm (2.68 x 2.1 x 8.5 in) ²
HS9483-6HB:	68 W x 54 H x 216 L mm (2.68 x 2.1 x 8.5 in) ²
HS9484:	71 W x 71 H x 279 L mm (2.8 x 2.8 x 11 in)
HS9484-IP:	71 W x 71 H x 279 L mm (2.8 x 2.8 x 11 in)
HS9484-12:	71 W x 55 H x 279 L mm (2.8 x 2.16 x 10.96 in)
HS9484-2H:	71 W x 71 H x 279 L mm (2.8 x 2.8 x 11 in) ¹
HS9484-2HB:	71 W x 71 H x 229 L mm (2.8 x 2.8 x 9 in) ²
HS9484-2HB-12:	71 W x 52 H x 229 L mm (2.8 x 2.05 x 9 in) ²
HS9484-2HBIP:	71 W x 71 H x 229 L mm (2.8 x 2.8 x 9 in) ²
HS9484-2HBIPC:	71 W x 71 H x 229 L mm (2.8 x 2.8 x 9 in) ²
HS9484-5H:	71 W x 71 H x 279 L mm (2.8 x 2.8 x 11 in) ¹
HS9484-6H:	71 W x 71 H x 279 L mm (2.8 x 2.8 x 11 in) ¹
HS9484-6HB:	71 W x 71 H x 229 L mm (2.8 x 2.8 x 9 in) ²
HS9488:	71 W x 71 H x 356 L mm (2.8 x 2.8 x 14.0 in)
HS9488-2H:	71 W x 71 H x 356 L mm (2.8 x 2.8 x 14.0 in) ¹
HS9488-5H:	71 W x 71 H x 356 L mm (2.8 x 2.8 x 14.0 in) ¹
HS9488-6H:	71 W x 71 H x 356 L mm (2.8 x 2.8 x 14.0 in) ¹
HS9488-2HB:	71 W x 71 H x 318 L mm (2.8 x 2.8 x 12.5 in) ²
HS9488-6HB:	71 W x 71 H x 318 L mm (2.8 x 2.8 x 12.5 in) ²

- With heater.
- With heater and blower,

Note: The tamper switch accessory will not affect the maximum camera and lens size.

6.3 Tools Required

- Small flat blade screwdriver.
- Phillips screwdriver (P2).
- Adjustable wrench.
- Wire cutter/stripper/crimper tool.
- 5/32-in (or 4 mm) hex wrench.

6.4 Cable Requirements

Video Transmission (Coaxial)

Cable Type:	RG-59/U for runs < 300 m (1000 ft). RG-11/U for runs < 600 m (2000 ft).
Cable Size:	Outside diameter between 4.6 mm (0.181-in)–7.9 mm (0.312-in).
Cable Shape:	Round.
Shield:	≥ 93% Braided copper shield.
Center Conductor:	Stranded copper center.
DC Resistance:	≤ 15 Ohms/1000 (RG-59/U). ≤ 6 Ohms/1000 (RG-11/U).
Cable Impedance:	75 Ohm.
Agency Rating:	UL.
Environmental:	Outdoor rated.
Temperature Rating:	≥ 80 °C.
Sources:	Belden 9259. Belden 9238.

Input Power Cord - North American

Cable Type:	SJTOW-A rated.
Cable Size:	Outside diameter between 4.3 mm (0.170 in)–11.9 mm (0.470 in).
Cable Shape:	Round.
Conductors:	3 conductor version and 2 conductor version.
Agency Rating:	UL/C.S.A., UL VW-I.
Environmental:	Outdoor rated.
Temperature Rating:	105 °C.
Voltage Rating:	300 V.
Sources:	Belden 19506. Belden 19509. Northwire 573939.

Input Power Cord - European

Cable Type:	H05RN-F3G0.75 and H05RN-F3G1.00.
Cable Size:	Outside diameter between 4.3 mm (0.170 in)–11.9 mm (0.470 in).
Cable Shape:	Round.
Conductors:	3 conductor version and 2 conductor version.
Agency Rating:	VDE.
Environmental:	Outdoor rated.
Sources:	Olflex 1600252. Olflex 1600253.

Lens Control Cable

Cable Type:	Jacketed multiconductor cable.
Cable Size:	Outside diameter between 4.3 mm (0.170 in)–11.9 mm (0.470 in).
Cable Shape:	Round.
Shield:	Overall shielding.
Conductors:	Stranded 20 to 16 AWG wire.
No. of Conductors:	4 and 8.
Conductor	
Insulation:	Color coded.
Sources:	Belden 9552 Belden 9554..

6.5 Housing Mounting

1. Use the two 1/4-20 x 1/2-inch screws and a 1/4-inch spring washers provided in the hardware kit to mount the housing to a mount or a pan/tilt. The spring washers must be used for the screws to thread properly.
2. The outermost set of 1/4-20 threaded holes are for mounting to feed-through mounts and the innermost 1/4-20 holes are for mounting to all other mounts and pan/tilts.

6.6 Cover Removal

1. Loosen the top two screws on the rear of the housing. These screws are captive and will not come out all the way. **Do not** remove the bottom two screws. See **Figure 1**.

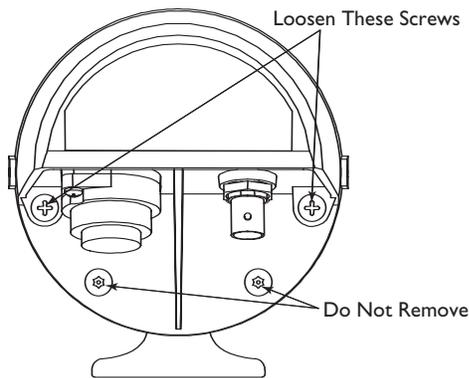


Figure 1: Loosening Captive Screws

2. Grasp the housing's front cap and pull forward. Do not squeeze the cover itself. This will make it difficult to slide off the cover. See **Figure 2**.

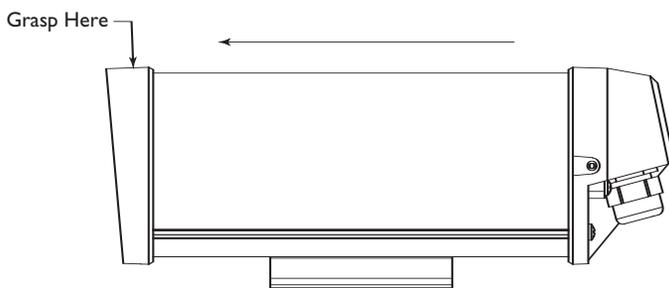


Figure 2: Removing the Cover

3. The cover is attached to the base. Allow the cover to dangle from the base.

6.7 Camera/Lens Installation

1. Loosen the two screws holding the camera bracket to the base. It is not necessary to remove them completely. See **Figure 3**.

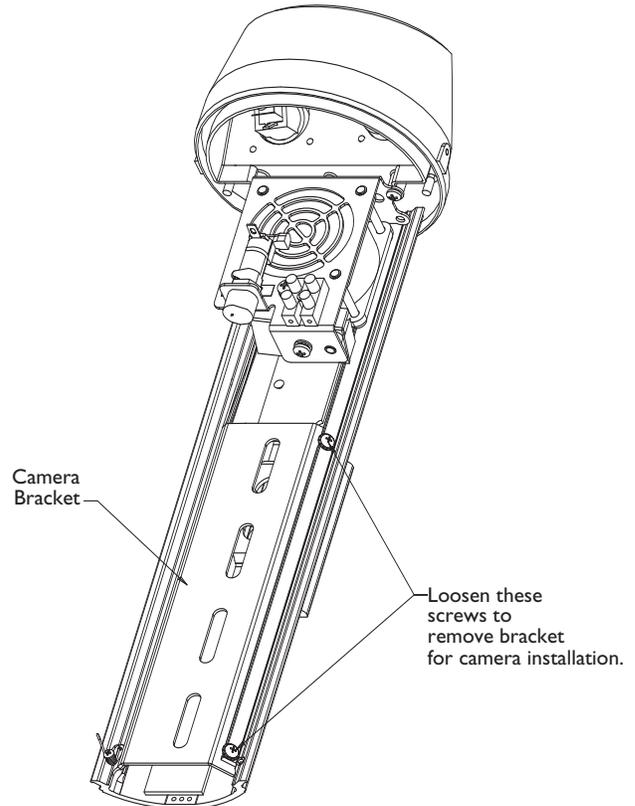


Figure 3: Removing the Camera Bracket

2. Remove the camera bracket from the base. If you are using the feed-through feature, refer to **Section 6.8.4** at this time.

6.7.1 Mounting fixed lens cameras in Housings

- 3a. Attach the lens to the camera.
- 3b. Use the 1/4-20 x 3/8-inch screw to mount the camera to the camera bracket. The lens should extend approximately 6 mm (0.25-inch) from the front of the camera bracket. See **Figure 4**.

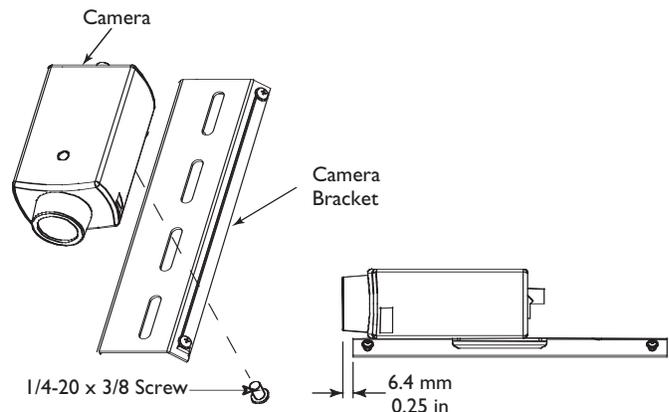


Figure 4: Attaching the Camera

6.7.2 For installation of zoom lens cameras mounted in HS9484 Series & HS9488 Series Housings:

- 3c. Attach the lens to the camera.
- 3d. Use the various 1/4-20 screws and spacers provided to mount the camera and the lens to the camera bracket.

6.8 Camera/Lens Wiring



WARNING: Only use the cables specified under "INSTALLATION, Cable Requirements" for wiring of all cameras and lenses.

6.8.1 Fittings, Models HS9484-IP, HS9484-2HBIP & HS9484-2HBIPC

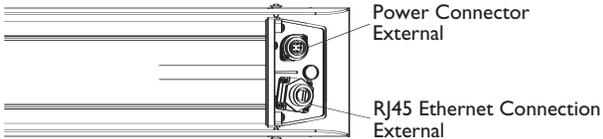


Figure 5: Power and Ethernet Connections
Quick Connect fittings removed.

1. These housings include two 1/2-inch Quick Connect fittings located in the rear cap that are specifically designed to be one-step connections for both the power and the RJ45 (Ethernet) connections.

NOTE: These models are not capable of Feed-Through Wiring as discussed in section 6.8.4.

2. RJ45 (Ethernet) Connection
 - a. Remove the external portion of the fitting with a 1/4 turn counter clockwise.

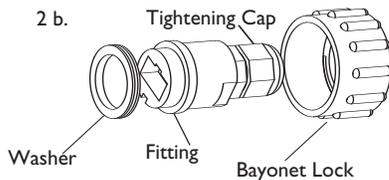


Figure 6: Ethernet Connector
External Connection Kit

- b. Loosen the tightening cap of the connector until the Cat 5/5e cable will feed through the connector. Leave the tightening cap loose.
- c. Splice the Cat 5/5e cable to the RJ45 plug and insert the plug into the RJ45 Connector on the rear end cap.
- d. Slide the bayonet lock and fitting up the wire and connect to the fitting on the housing with a 1/4 turn clockwise. Slide the tightening cap up the wire and tighten onto the connector.

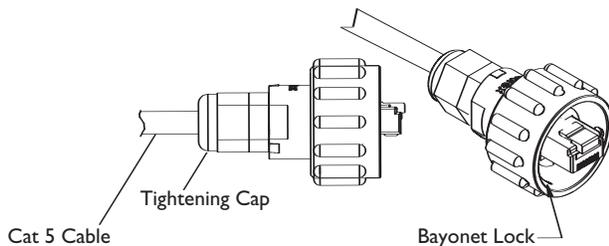


Figure 7: RJ45 External Quick Connector Assembled

- e. Tighten the fitting to 4.0 N. 35 in lb to 40 in lb). This torque rating is approximately 1 to 1-1/2 turns past the point where the fitting starts to grip the wire. Failure to do so will result in water damage to all electronic parts.



Be sure to securely tighten all fittings to ensure a tight seal. Failure to do so could allow water to enter the housing and damage the camera and lens.

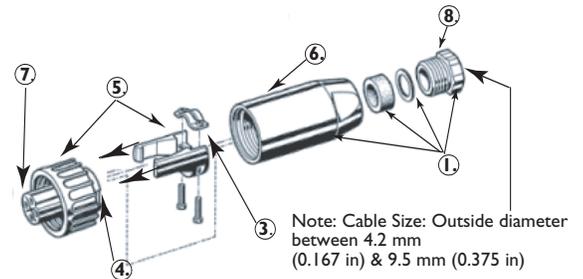
If a sealant is to be used, be sure it is a neutral cure type. Sealants that release acetic acid may harm camera electronics.



Use of "drip loops" is recommended on the wiring outside of the rear end cap.

6.8.2 Power Connections External: Models HS9484-IP, HS9484-2HBIP & HS9484-2HBIPC

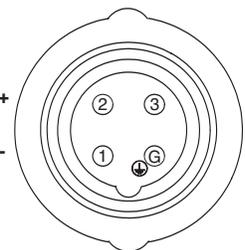
1. Use the Power Connector Kit (included) to route the power into the housing. See **Steps 1-8** to assemble Power Connection Kit.
2. See **Detail A** for the wiring configuration.



- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. Assemble these 4 parts first. Then slide onto Power Cable. Do not Tighten. 2. Strip outer jacket of Power Cable 1/2". Strip the individual wires 3/8". 3. Slide stripped wires through harness. Attach bracket with two screws as shown. Do not tighten. 4. Insert stripped wires to Connector Plug. See Detail A for wiring configuration. | <ol style="list-style-type: none"> 5. Snap these two pieces together tighten bracket over wires. 6. Attach this assembled end by sliding along cable and connecting to plug. 7. Connect the assembled kit to the mating power connector plug located on the housing cradle. 8. Tighten around power cable to prevent slipping. Do this last. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Detail A Connector Plug

Position 1 - 24VAC/12VDC+
Position 2 - Not Used
Position 3 - 24VAC/12VDC-
Position 4 - Ground



3. Tighten Power Connection Kit (after assembly to housing) around power cable to prevent slipping.
4. Skip to **Section 6.11** to continue with installation.

6.8.3 Conduit

These housings are designed to allow conduit to be directly connected.

1. Remove the rear fittings and attach the conduit and conduit fittings directly to the housing rear cap. The holes accept 1/2-inch conduit fittings and PG 13.5 conduit fittings. Any unused holes can be covered using the plugs provided in the hardware kit.

6.8.4 Feed-through Wiring

These housings have the capability of having the cabling feed through the foot of the housing. This requires the use of feed-through mounts like the MT9215, MT9215S, MT9219 or the MT9217.

1. Prior to mounting the camera, remove the two dome plugs located inside the housing. See **Figure 8**.
2. Screw the two 3/8-inch NPT fittings into the foot of the housing.
3. Pull the cabling through the fittings and into the housing. Tighten the fitting to 4.0 N·m to 4.5 N·m (35 in·lb to 40 in·lb). This torque rating is approximately 1 to 1-1/2 turns past the point where the fitting starts to grip the wire. Failure to do so will result in water damage to all electronic parts
4. Attach the foot to the top bracket of the mount.
5. Cover the holes in the rear cap with the rubber plugs provided. Push in until flush and then release.

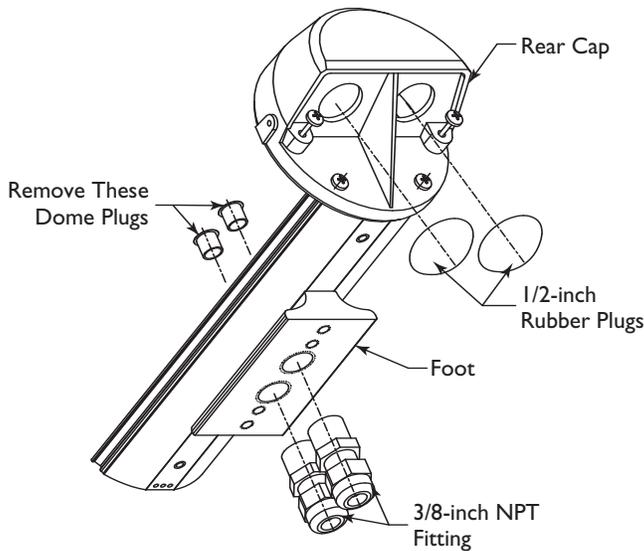


Figure 8: Feed-through Wiring

6.8.5 Power Connections

Power connection into the housings is to be supplied through a minimum type UL Standard "SJ" cord acceptable for outdoor use. Installation must conform to acceptable NEC and local codes. For 24 volt cameras, use the chart below for selecting the proper wire size.

Recommended Maximum Cable Lengths for Housings Equipped with 24 Volt Cameras, Heaters, and Blowers

Wire Size		Housing meters	Distance feet
mm ²	AWG		
0.5	20	41.1	135
1	18	67.0	220
1.5	16	106.7	350
2.5	14	170.7	560
4	12	274.3	900
6	10	438.9	1440
10	8	685.8	2250

NOTE: The use of wire sizes larger than 1.5 mm² (16 AWG) will require a splice in order to accommodate the terminal block. The above figures are based on a 24VAC and a 21.6 VAC minimum voltage to the device.

1. Install one of the large 1/2-inch NPT fittings into one of the holes in the rear cap. The terminal block side is preferable. If you are using the feed-through option, ignore this step.
2. Route the power cable through the fitting in the rear cap or one of the feed-through fittings in the foot.
3. There are two different terminal blocks provided on the HS948x Series units. While some accept wire ranging from 22 to 14 AWG or 1.5 mm² others accept wire ranging from 18 to 12 AWG or 2.5 mm². When using larger wire sizes, splice to a smaller size wire at the terminal block end. The splice may need to be enclosed in a junction box if it does not pass through the fittings.
4. A screw/terminal lug is provided for securing a safety ground. To attach the safety grounding wire (green | 15 volt, green/yellow 230 volt), first unscrew the terminal lug and strip and crimp the grounding wire into the lug. Attach the terminal lug to the bracket using the M4 x 10 screw provided (HS9480 models use an M4 Nut to screw the lug to the base). See **Figure 9**.

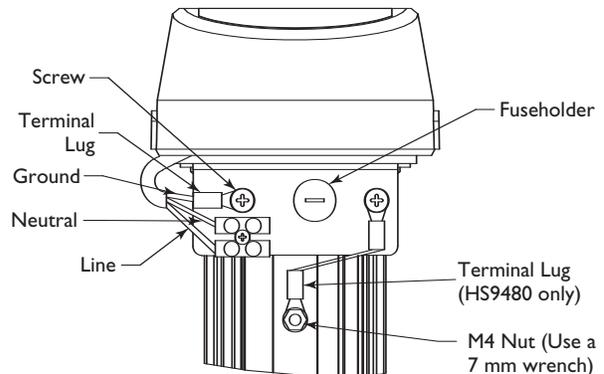


Figure 9: Power Connections - Nonfan Units

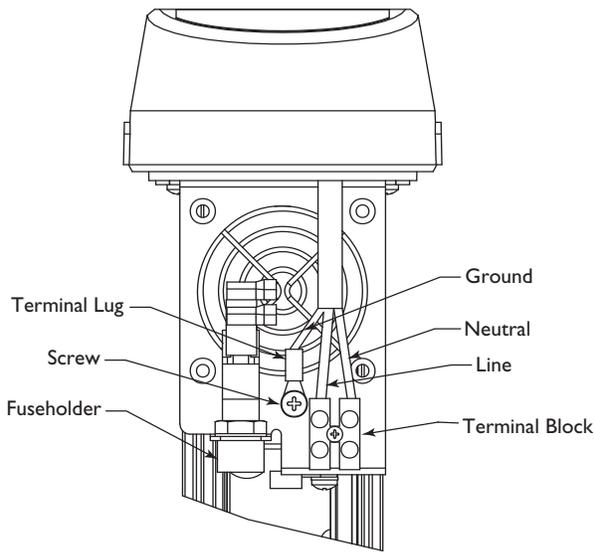


Figure 10: Power Connections - Fan Units

5. Pull any excess wire out of the housing and tighten the fitting to 8.5 N·m to 9.0 N·m (75 in·lb to 80 in·lb). This torque rating is approximately 1 to 1-1/2 turns past the point where the fitting starts to grip the wire. Failure to do so will allow water to enter and damage all electronic parts.

 **Be sure to securely tighten all fittings to ensure a liquid-tight seal. Failure to do so could allow water to enter the housing and damage the camera and lens.**

6. Connect the supply power wires to the left side or the top side of the terminal block provided. Strip no less than 6 mm (0.25-inch) and no more than 8 mm (0.31-inch) of insulation away from the wire. Be sure not to nick the wires. See **Figure 10**.
7. Cut the camera power cord, leaving enough cable to allow connection to the terminal block. Strip no less than 6 mm (0.25-inch) and no more than 8 mm (0.31-inch) of insulation away from the wire. Be sure not to nick the wires. Connect these wires to the left side or the top side of the terminal block.
8. On heater and heater/blower units, make sure the heater and fan wires stay connected to the terminal block.

6.9 Video Coax Connection

 **WARNING: Only use the cables specified under "INSTALLATION, Cable Requirements" for wiring of the video coax connection.**

1. For HS9483 and HS9480 versions, install a 1/2-inch NPT fitting into the remaining hole in the rear cap. For HS9484 and HS9488 versions, install a 3/8-inch NPT fitting through the center small hole of the rear cap.
2. Route the video coax cable through one of the fittings installed in step 1 or one of the feed-through fittings in the base.

3. Attach BNC connector to the coax and connect it to the camera. Pull any excess wire out of the housing and tighten the fitting to 8.5 N·m to 9.0 N·m (75 in·lb to 80 in·lb). This torque rating is approximately 1 to 1-1/2 turns past the point where the fitting starts to grip the wire. Failure to do so will result in water damage to all electronic parts.

 **Be sure to securely tighten all fittings to ensure a liquid-tight seal. Failure to do so could allow water to enter the housing and damage the camera and lens.**

 **Use of "drip loops" is recommended on the wiring outside of the rear end cap.**

6.10 Lens Wiring

 **WARNING: Only use the cables specified under "INSTALLATION, Cable Requirements" for wiring of the lens.**

1. Install the last 1/2-inch NPT fitting into the remaining hole in the rear cap. Zoom lenses can only be installed into HS9484 and HS9488 housings.
2. **If installing a zoom lens**, insert the lens control cable through the last fitting at the rear of the housing. Attach the lens wiring to the lens mating connector and connect it to the lens. If mating connector is not available, connect directly to the lens cable. Pull any excess wire out of the housing and tighten the fitting to 8.5 N·m to 9.0 N·m (75 in·lb to 80 in·lb). This torque rating is approximately 1 to 1-1/2 turns past the point where the fitting starts to grip the wire. Failure to do so will result in water damage to all electronic parts.

NOTE: See specification on lens cord for correct plug connection.

 **Be sure to securely tighten all fittings to ensure a liquid-tight seal. Failure to do so could allow water to enter the housing and damage the camera and lens.**

3. **If using a pan/tilt with a feed-through cable**, insert the camera/lens function cable in through the left fitting at the rear of the cradle. Wire the functions as described above or as needed.

 **Use of "drip loops" is recommended on the wiring outside of the rear end cap.**

6.11 Camera/Lens Adjustment

Verify camera and lens operation before final assembly of the cradle into the housing. Adjust the camera focus and iris as necessary. See individual camera instructions.

6.12 Final Assembly

1. Use the plugs or fittings provided to plug any remaining holes in the rear cap.
2. Reinstall the cover. Align the bottom of the cover ribs with the top of the base. Slide the cover onto the base. Make sure the seal is not folded over or torn. Use silicone grease to lubricate the seals if necessary. See **Figure 11**.

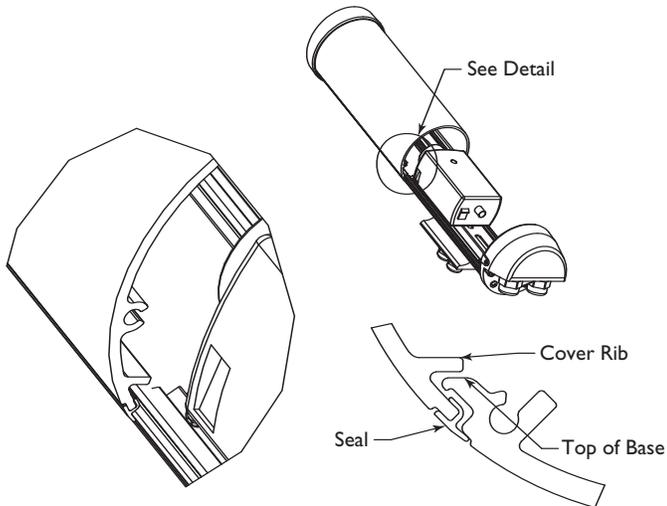


Figure 11: Reinstalling the Cover

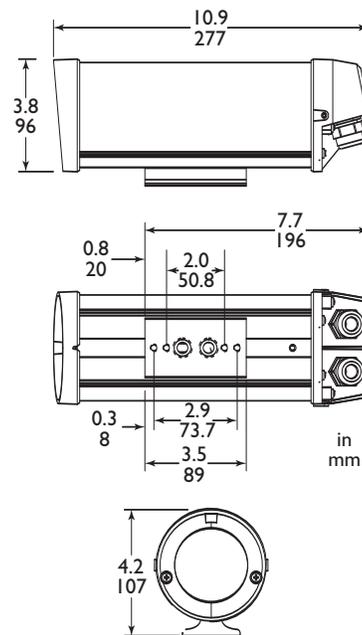
3. As the cover nears the rear cap, make sure the captive screws in the back are not blocking the cover from engaging into the rear cap.
4. Screw the two rear captive screws into the housing.

6.13 Fuse Replacement

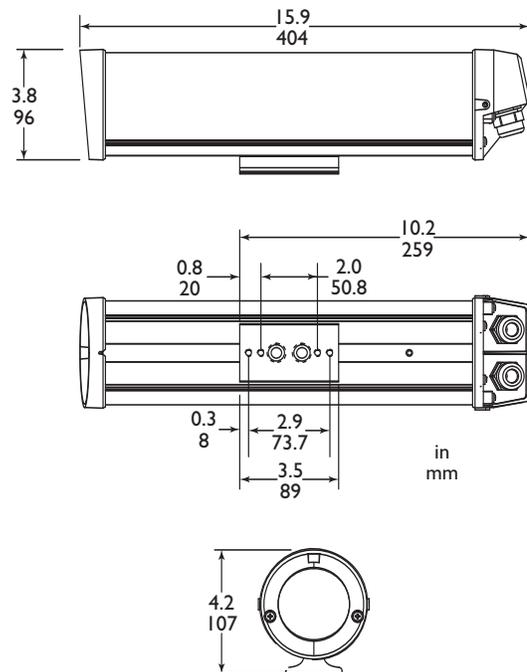
1. To replace a fuse, take a flat blade screwdriver and twist the top of the fuseholder counterclockwise about a quarter of a turn. The fuse is spring loaded so it will eject.
2. Replace the fuse with a fuse that has the same current rating. The fuse is a 5x20 mm slow blow cartridge type fuse. Little fuse Series 218 are recommended.

Dimensional Outlines

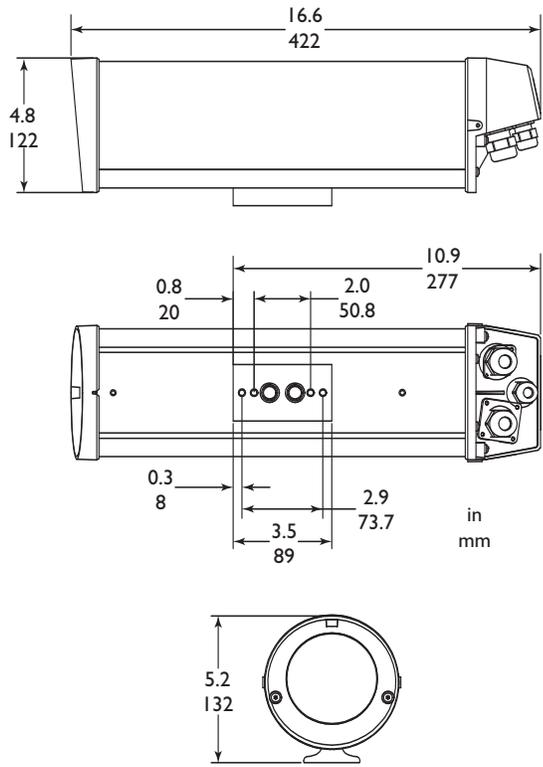
HS9480



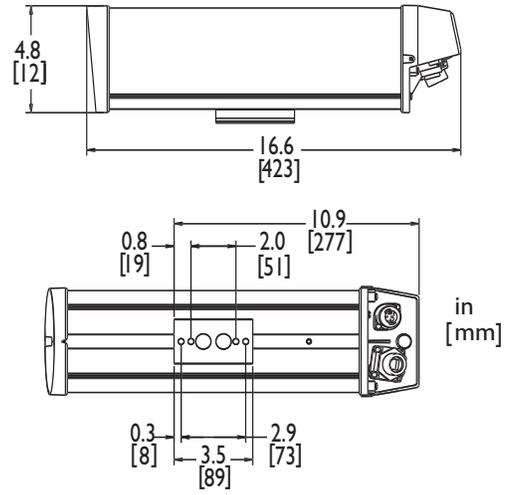
HS9483



HS9484



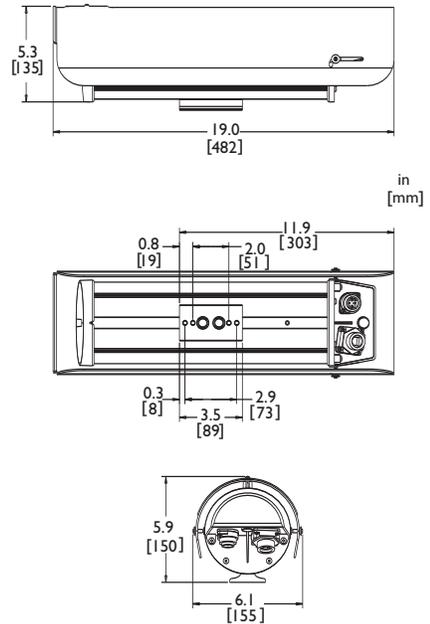
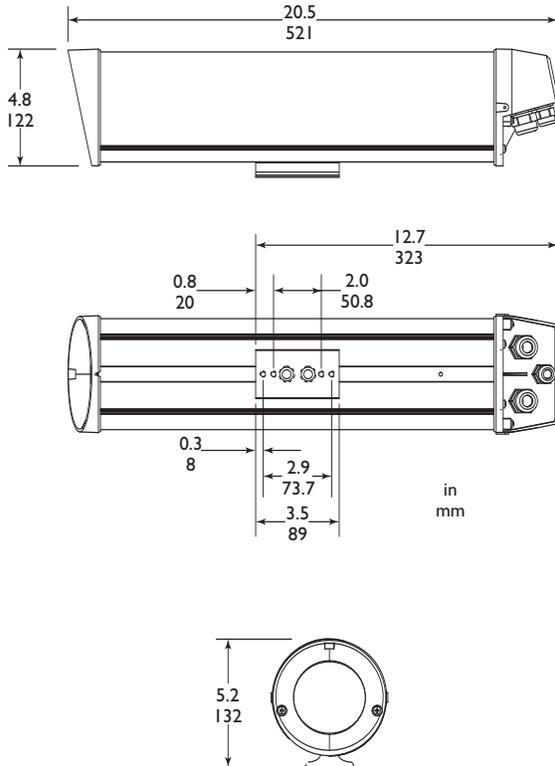
HS9484-IP



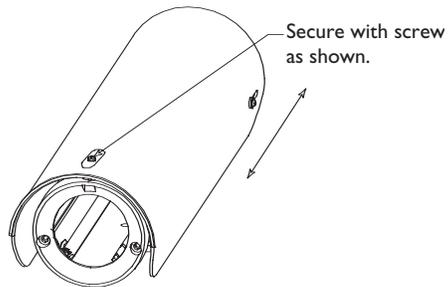
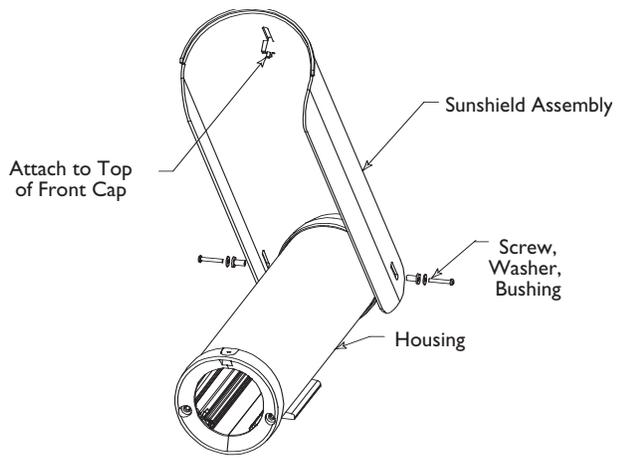
Outdoor rated Ethernet connector
 Outdoor rated 4-pin power connector for Model HS9484-2HBIPC shown.
 (Liquid tight fitting used on Models: HS9484-IP & HS9484-2HBIP)

Model Shown:
 HS9484-2HBIPC with Sunshield

HS9488



Sunshield Accessory



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