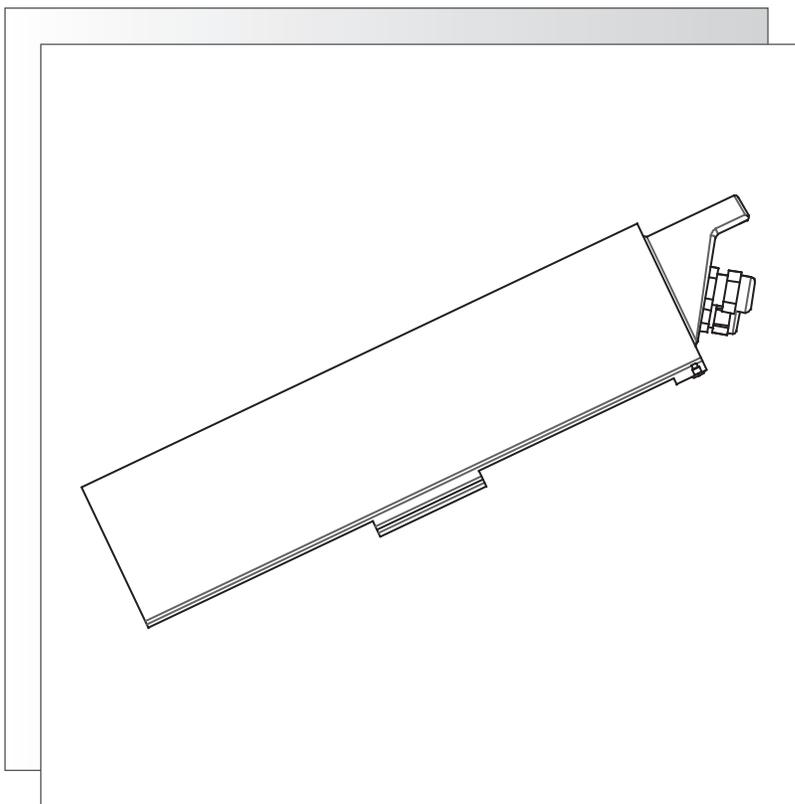


OUTDOOR CAMERA HOUSINGS



HS9384 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 dealer or local power company. For units intended to operate from battery power or other sources, refer to the operating instructions. This equipment is to be isolated from the mains supply by a limited power source as specified in EN60950:1992 Clause 2.11.
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. Alternately, 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 risk of 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 water and/or inclement weather (rain, snow, etc.).
 - 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



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.

1 UNPACKING

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

Check for the following items:

- Verify the unit model number.
- Verify that parts listed as follows have been included. See **INSTALLATION**.

Hardware Kit

Quantity	Part Description
3	Cable Tie
2	BHCS, ¼-20 x ¼-inch
1	BHCS, ¼-20 x ⅝-inch
1	BHCS, ¼-20 x ¾-inch
3	BHCS, ¼-20 x ½-inch
1	BHCS, ¼-20 x ⅝-inch
1	BHCS, ¼-20 x 1¼-inch
1	0.4 mm (0.016-inch) Plastic Spacer
1	1.65 mm (0.065-inch) Plastic Spacer
1	3.9 mm (0.154-inch) Plastic Spacer
1	7.4 mm (0.292-inch) Plastic Spacer
1	9.8 mm (0.385-inch) Plastic Spacer
1	⅝-inch NPT Plug
2	Pull Seals

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 SERVICE

If the unit ever needs repair service, the customer should contact Aigis Mechtronics for return authorization and shipping instructions.

3 CARE AND MAINTENANCE

Clean the viewing window as needed with a mild, nonabrasive detergent in water and a soft cloth.

4 DESCRIPTION

The HS9384 Series of environmental housings are attractive aluminum enclosures designed for outdoor CCTV camera installations.

4.1 Enclosure Rating

4.1.1 NEMA-3R and IP54

The HS9384 Series housings include a "breather" hole in the front end cap. The "breather" hole prevents the accumulation of moisture inside the housing when installed in areas of high humidity. With the "breather" hole open, the HS9384 Series housings meet the enclosure rating requirements of NEMA-3R and IP54.

4.1.2 NEMA-6P and IP68

For installations requiring an enclosure rating of NEMA-6P or IP68, the *breather* hole must be plugged using the *pull seal* provided in the hardware kit. Refer to Final Assembly under **INSTALLATION** for proper installation.

5 INSTALLATION

This installation should be made by a qualified service person and conform to all local codes.

5.1 Model Designation

Model No.	Rated Input	Voltage Range	Voltage Output	Nominal Power ²
HS9384-2H	24 VAC, 50/60 Hz	21.6 to 26.4	—	30 W
HS9384-2H-9	24 VAC, 50/60 Hz	21.6 to 26.4	—	30 W
HS9384-5H ¹	230 VAC, 50/60 Hz	207 to 253	24 VAC, 50/60 Hz	30 W
HS9384-6H ¹	115 VAC, 50/60 Hz	108 to 132	24 VAC, 50/60 Hz	30 W

1. The power transformers included with these housings are used to provide heater power and can be used to provide isolated camera power.
2. Heater requires 10 watts.

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.

Maximum Camera/Lens Size:

HS9384-2H: Accepts cameras up to 64 W x 54 H mm (2.5 x 2.1 in), lenses up to 67 W x 75 H mm (2.6 x 2.9 in), and camera/lens combinations up to 355 mm (14.0 in).

HS9384-2H-9: Accepts cameras up to 64 W x 54 H mm (2.5 x 2.1 in), lenses up to 67 W x 75 H mm (2.6 x 2.9 in), and camera/lens combinations up to 146 mm (5.75 in).

HS9384-5H & HS9384-6H: Accept cameras up to 64 W x 54 H mm (2.5 x 2.1 in), lenses up to 67 W x 75 H mm (2.6 x 2.9 in), and camera/lens combinations up to 292 mm

5.2 Tools Required

- Flat blade screwdriver
- Phillips head screwdriver
- ½-inch (or 4 mm) hex wrench
- ⅝-inch (or 8 mm) hex wrench
- Adjustable wrench
- Wire cutter/stripper/crimper tool

5.3 Cable Requirements

Video Transmission (Coaxial)

Cable Type:	RG-59/U (Runs < 1000 ft) RG-11/U (Runs < 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 ft (RG-59/U) ≤ 6 Ohms/1000 ft (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-1
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

5.4 Cradle Removal

1. Remove the cradle from the housing by lowering the retaining screw completely on the bottom rear of the housing (see **Figure 1**).

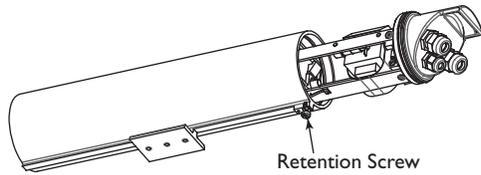


Figure 1 Removing Cradle Assembly

2. Remove the cradle assembly by simultaneously grasping the rear handle and housing shell, and then pulling the cradle assembly out of the housing. Be sure to keep the edges of the end caps clean and free of scratches.

Note: Do not push against the front glass to remove the cradle.

5.5 Camera/Lens Installation

With the cradle removed from the housing, follow all of the steps below.

1. Place the camera/lens combination into the cradle assembly.
 - 1.1 Fixed Lens Cameras: Position the camera/lens 1 mm (0.04-inch) away from the faceplate. The camera/lens is secured to the cradle with a 1/4-20 button head cap screw (BHCS) and the appropriate plastic spacer (see **Figure 2**).

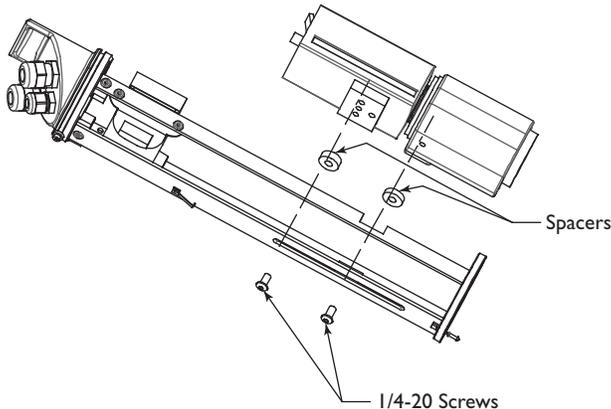


Figure 2 Mounting Camera and Lens

- 1.2 Zoom Lens Cameras: Allow 3/16-inch (5 mm) clearance from the front face of the lens to the front faceplate of the cradle during the camera/lens assembly. This clearance provides the necessary space for the lens to extend outward when zooming. Secure both the camera and the lens to the cradle with the 1/4-20 BHCS and appropriate plastic spacer.

5.6 Camera/Lens Wiring



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

5.6.1 General

1. The dual male threaded portion of the three liquid tight fittings, two NPT 1/2-inch, and one NPT 3/8-inch, located in the rear of the cradle, are provided preinstalled. Do not remove or loosen these parts. They have been installed to a specified torque to prevent entrance of water. The two large fittings are supplied with seal glands for cables with diameters from 4.3 mm (0.17-inch) to 11.9 mm (0.47-inch). The small fitting will accept cables with diameters from 4.6 mm (0.181-inch) to 7.9 mm (0.312-inch) (see **Figure 3**).



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.

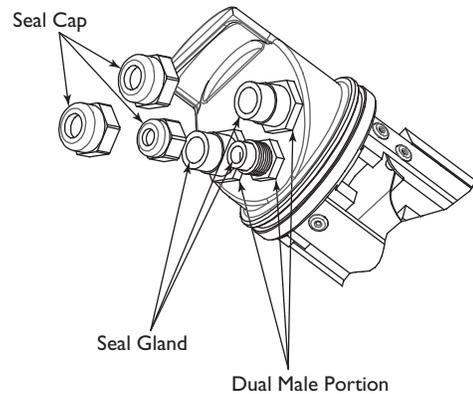


Figure 3 Liquid Tight Fitting Assembly

If a sealant is to be used, be sure it is a neutral cure type. Sealants that release acetic acid may harm camera electronics. If it is necessary to use a PG type conduit, an NPT to PG conversion kit (HS9384NPT) can be purchased separately.

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

5.6.2 Plug Insertion

If no lens control or feed-through wiring will be used, remove the preinstalled 3/8-inch liquid-tight fitting from the small bottom center hole and install the 3/8-inch NPT plug provided. Use a 5/16-inch (or 8 mm) hex wrench to tighten. Failure to do so will allow water to enter and cause damage to all electronic parts (see **Figure 4**).

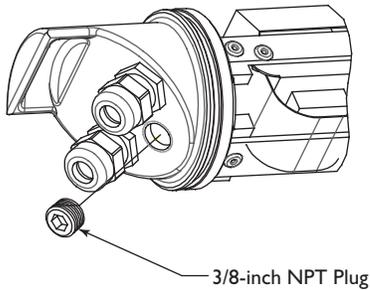


Figure 4 3/8-inch NPT Plug Insertion

5.6.3 Power Connections

The HS9384-5H, and the HS9384-6H housings allow the use of 24 VAC cameras, regardless of the supply voltage to the housing. This is achieved through the use of a transformer in the housing. The transformer's primary supply power will vary, depending on the model of housing, see **Section 5.1 Model Designation**. In the 115 volt and 230 volt models, the transformer also supplies 24 VAC power to the integral window heater/defogger.

Refer to the following model housing sections for your model's wiring procedure.

1. Use the **left** liquid-tight fitting of the housing to route the power wire into the housing (see **Figure 5**).

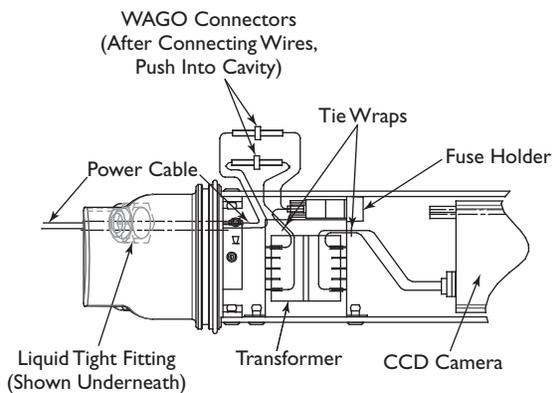


Figure 5 Power Connections

2. A screw/terminal lug is provided for securing a safety ground. Attach the terminal lug to the cradle using the M4 x 10 screw provided (see **Figure 6**).

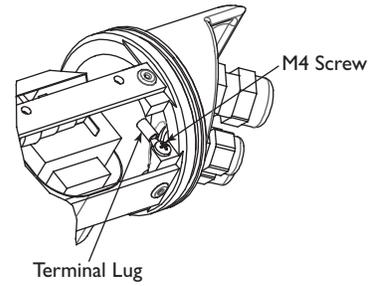


Figure 6 Securing Ground Wire

3. Pull any excess wire out of the cradle assembly 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. Use a tie wrap (included) to provide strain relief on the power cord at the exit point (inside unit).

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.

5.6.4 HS9384-6H Housings

The HS9384-6H housings can easily be used with either 115 volt or 24 volt cameras.

The internal transformer provides 24 VAC for both the heater/defogger and 24 volt camera power (see **Figure 5**).

For 115 volt cameras:

1. Installing a 115 volt camera into the HS9384-6H housing requires inserting both the field supply wires (115 VAC) and a section of hook-up wire (not included, minimum 20 AWG wire) into the unused side of the Wago connectors (provided), then connecting the other end of the hook-up wire to the camera's 110 VAC input. Repeat for pins 1 and 6 (see **Figure 7**).
2. The secondary flying leads (white/black striped) will not be used in this application and should be taped to prevent shorting. See wiring diagram **Figure 7** for clarification and **Figure 5** for power connection drawings.

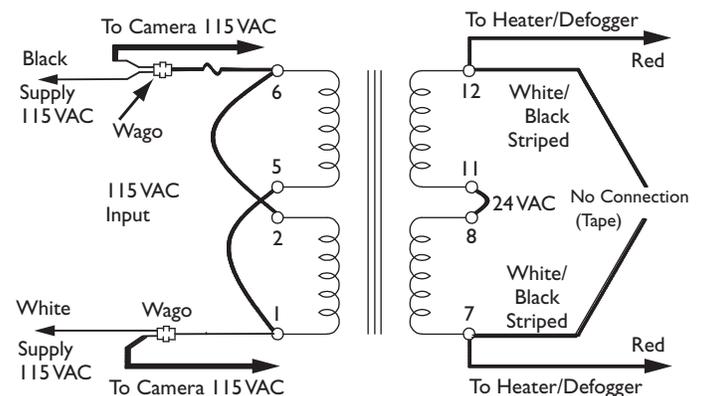
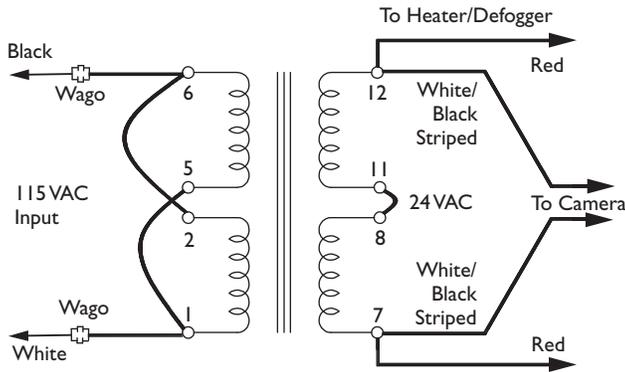


Figure 7 HS9384-6H Transformer Wired for 115 Volt Camera

For 24 volt cameras:

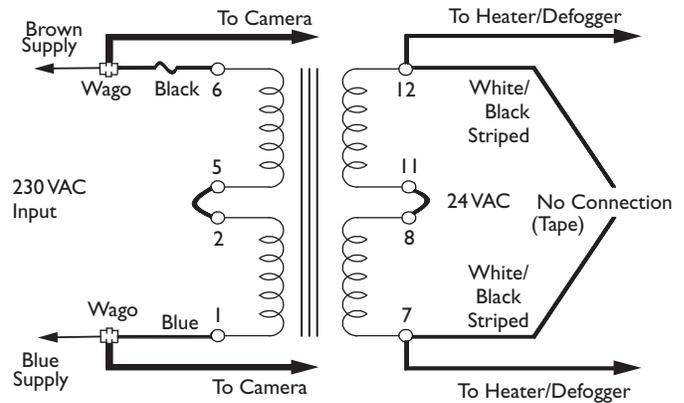
1. Installing a 24 volt camera into the HS9384-6H housing utilizes the internal transformer for camera power.
2. Connect the supply (115 VAC) to the primary flying leads of the transformer (white wire/pin 1, black wire/pin 6). Use the wago connectors provided for this connection.
3. Connect the secondary flying leads (white/black striped wires/pins 7 and 12) to the camera's 24 volt input. See wiring diagram **Figure 8** for clarification and **Figure 5** for power connection drawings.



**Figure 8 HS9384-6H Transformer
Wired for 24 Volt Camera**

For 230 volt cameras:

1. Installing a 230 volt camera into the HS9384-5H housing requires inserting both the field supply wire (115 VAC) and a section of hook-up wire (not included, minimum 20 AWG wire) into the unused side of the Wago connectors (provided), then connecting the other end of the hook-up wire to the camera's 230 VAC input. Repeat for pins 1 and 6. (see **Figure 9**).
2. The secondary flying leads (white/black striped) will not be used in this application and should be taped to prevent shorting. See wiring diagram **Figure 9** for clarification and **Figure 5** for power connection drawings.



**Figure 9 HS9384-5H Transformer
Wired for 230 Volt Camera**

5.6.5 HS9384-2H Housings

These housings are to be connected to 24 VAC only and are designed to be used where site power is 24 volts.

The HS9384-2H housings are designed to be used with 24 volt cameras only.

1. Connect the supply (24 VAC) to the unoccupied sides of the gray Wago connectors.
2. Connect the flying leads (white and black) to the camera's 24 volt input.

5.6.6 HS9384-5H Housings

These housings require connection to 230 VAC and are designed to be used where site power is 230 volts.

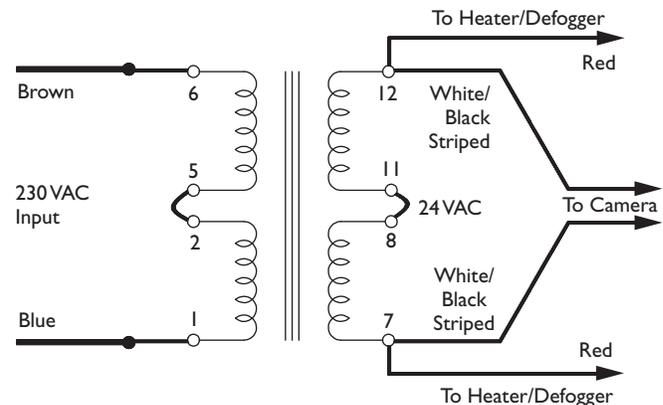
The HS9384-5H housings can easily be used with either 230 volt or 24 volt cameras.

The internal transformer provides 24 VAC for both the heater and 24 volt camera power.

Do not remove the transformer insulator. No user serviceable parts are underneath.

For 24 volt cameras:

1. Installing a 24 volt camera into the HS9384-5H housing utilizes the internal transformer for camera power (see **Figure 10**).
2. Connect the supply (230 VAC) to the Wago connectors (provided).
3. Connect the secondary flying leads (white/black) to the camera's 24 volt input. Refer to the wiring diagram for clarification.



**Figure 10 HS9384-5H Transformer
Wired for 24 Volt Camera**

5.7 Video Coax Connection



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

1. Install the seal cap portion of the large liquid tight fitting on the video coax cable and pull the cable through the **right fitting** on the rear end of the cradle.
2. Attach the BNC connector to the coax and connect it to the camera. Pull any excess wire out of the cradle assembly and tighten approximately 1 to 1½ 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. Use a tie wrap (included) to provide strain relief on the video cable at the exit point (inside unit).
3. If lens control is used, pull cable through the small bottom fitting. If lens control is not used, install the ⅜-inch NPT plug provided in the unused, small center NPT hole.



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 all electronics.

5.8 Lens Wiring



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

1. **If installing a zoom lens**, insert the lens control cable with the installed seal cap in through the **bottom** fitting at the rear of the cradle. Attach the lens wiring to the lens mating connector and connect it to the lens. If the mating connector is not available, connect directly to the lens cable.

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.

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



Use of **drip loops** is not recommended on the wiring outside of the rear end cap.

5.9 Final Assembly

5.9.1 Pull Seal Installation



If the **breather** hole is open, do NOT mount the housing in a position where the front end cap is pointed upward.

To maintain enclosure protection ratings of NEMA-6P and IP68, the pull seal (provided in the hardware kit) must be installed in the front end cap. It is recommended that the pull seal be installed in a cool, dry environment to prevent trapping moisture inside the housing (see **Figure 11**).

NOTE: Pull seal installation allows the housing's front end cap to be pointed upward.

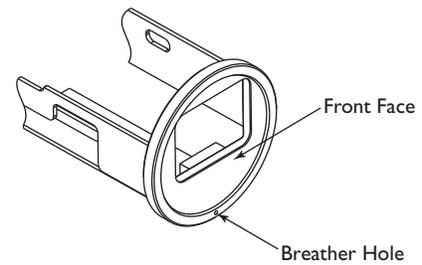


Figure 11 Breather Hole

Proper installation of the pull seal is as follows:

1. Remove the cradle assembly from the housing.
2. Obtain a rubber pull seal from the hardware kit. An extra pull seal is provided (see **Figure 12**).

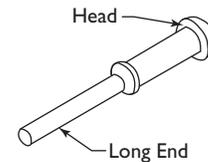


Figure 12 Pull Seal

3. Insert the *long end* of the pull seal into the breather hole starting from the front side of the endcap (see **Figure 13**).

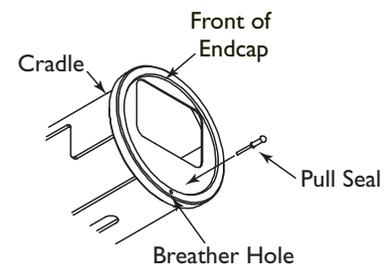


Figure 13 Inserting the Pull Seal

4. Grip the pull seal's *long end* from the back of the front endcap. Steadily pull the *long end* until the head of the pull seal is flat against the front of the endcap (see **Figure 14**).

NOTE: The Pull Seal's *long end* will stretch when pulled through the breather hole.

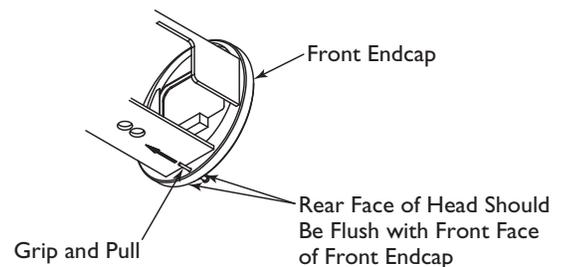


Figure 14 Installing the Pull Seal

5.9.2 Cradle Assembly

1. Position the housing vertically and replace the cradle assembly by applying pressure onto the rear cap until the retaining ring stops against the housing. (see **Figure 15**).

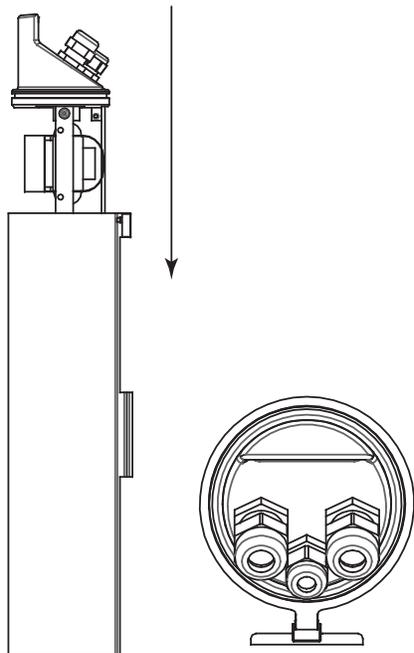


Figure 15 Inserting Cradle Assembly



CAUTION: If a pull seal is installed in the breather hole, be careful not to pinch the head of the pull seal. Damage to the pull seal may allow water to enter the housing, causing damage to the camera and lens.

2. Tighten the retention screw, making sure it is seated into the rear cap groove. If the housing needs to be tamper-resistant, the HS9380TK (purchased separately) should be installed at this time.
3. Attach the housing to the appropriate mount or pan/tilt using the instructions provided. According to the orientation of the housing, the cradle assembly may need to be rotated. To rotate the cradle assembly (while mounted), grasp the rear handle and rotate to the desired position. View the monitor while rotating.



mechtronics

©2010 Aigis Mechtronics

1124 Louise Road, Winston-Salem, NC 27107-5450

Tel: 336.785.7740 Fax: 336.785.7744

Data subject to change without notice

I00 0023 002 AIG 1/10

Printed in U.S.A.