Outdoor Camera Housings

Instructions for Use

LTC 9380 Series

Philips
Communication &
Security Systems

PHILIPS

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 and 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 the 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.

    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 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!

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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.

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1 UNPACKING

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

Check for the following items:

-- Verify the unit model number.

-- Verify that parts shown below have been included. See **INSTALLATION**.

Hardware Kit

Quantity	Part Description
1	1/4-20 x 3/8-inch BHCS (Button Head Cap Screw)
3	1/4-20 x 1/2-inch BHCS (Button Head Cap Screw)
1	1/4-20 x 5/8-inch BHCS (Button Head Cap Screw)
1	1/4-20 x 3/4-inch BHCS (Button Head Cap Screw)
1	1/4-20 x 1 1/4-inch BHCS (Button Head Cap Screw)
1	9.8 mm (0.385 in) Plastic Spacer
2	7.4 mm (0.292 in) Plastic Spacer
1	3.9 mm (0.154 in) Plastic Spacer
1	0.4 mm (0.016 in) Plastic Spacer
2	5/16 Flat Washers
2	Nylon Bushings
1	3/8-inch NPT Plug
1	Small Flex Fitting
2	Large Flex Fitting
3	Cable Ties
2	Wire Nuts (-1 and -2 units only)
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 your Philips Communication & Security Systems Inc. Sales Representative or Customer Service.

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 the nearest Philips Communication & Security Systems Inc. Service Center for authorization to return and shipping instructions.

Service Centers

U.S.A. & Canada: 800-366-2283
Mexico & Central America: 52-5-564-2726
Europe & Middle East: 44-1932-765666
South America: 54-1-956-0837
Australia: 61-2-888-9000
New Zealand: 64-4-237-7297

3 CARE AND MAINTENANCE

There are no moving parts in this unit. 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.

4 DESCRIPTION

The LTC 9380 Series of environmental housings are attractive aluminum enclosures designed for outdoor CCD camera installations. Slim and compact, the LTC 9380 Series are available in two lengths.

4.1 Enclosure Rating

4.1.1 NEMA-3R and IP54

The LTC 9380 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 TC9380 Series housings meet the enclosure rating requirements of NEMA-3R and IP54.

4.1.2 NEMA-4 and IP65

For installations requiring an enclosure rating of NEMA-4 or IP65, the "breather" hole must be plugged using the "pull seal" (Part No. 315 2569 001) 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.	Power Transformer[1] Rated Input	Range	Voltage Output	Power Output[2]
LTC 9383/60	115 VAC, 50/60 Hz	108 to 132	24 VAC, 50/60 Hz	30 W
LTC 9383/20	24 VAC, 50/60 Hz	21.6 to 26.6	24 VAC, 50/60 Hz	30 W
LTC 9383/10	24 VAC, 50 Hz	21.6 to 26.6	24 VAC, 50 Hz	30 W
LTC 9383/50	230 VAC, 50/60 Hz	207 to 253	24 VAC, 50/60 Hz	30 W
LTC 9388/60	115 VAC, 50/60 Hz	108 to 132	24 VAC, 50/60 Hz	30 W
LTC 9388/20	24 VAC, 50/60 Hz	21.6 to 26.6	24 VAC, 50/60 Hz	30 W
LTC 9388/10	24 VAC, 50 Hz	21.6 to 26.6	24 VAC, 50 Hz	30 W
LTC 9388/50	230 VAC, 50/60 Hz	207 to 253	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.

TUV Approved 24 VAC Models
Caution: Use an approved power supply incorporating reinforced insulation from primary to secondary to isolate unit from Mains.

Maximum Camera/Lens Size
LTC 9383: Accepts cameras up to 64 W x 53 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 252 L (9.9 in).

LTC 9388: Accepts cameras up to 64 W x 53 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 353 L (13.9 in).

5.2 Tools Required

-- Flat blade screwdriver
-- Phillips head screwdriver
-- 5/32-inch (or 4 mm) hex wrench
-- 5/16-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") & 7.9 mm (0.312").
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 Impedence:	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") & 11.9 mm (0.470").
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") & 11.9 mm (0.470").
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") & 11.9 mm (0.470").
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 removing the rear retaining ring from the rear cap with the flat blade screwdriver. Place the screwdriver underneath the relieved portion of the retaining ring and gently pry outward. See **Figure 1**.

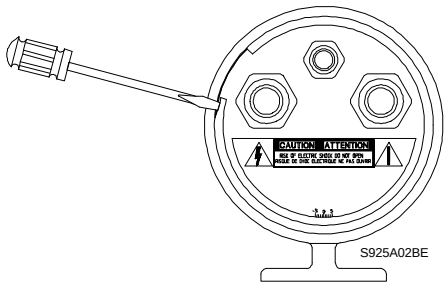


Figure 1: Removing Rear Retaining Ring

2. Remove the cradle assembly by pushing gently on the metal part of front cap and simultaneously grasping the fittings and pulling the cradle assembly out of the housing. Be sure to keep the edges of the end caps clean and free of scratches. See **Figure 2**.

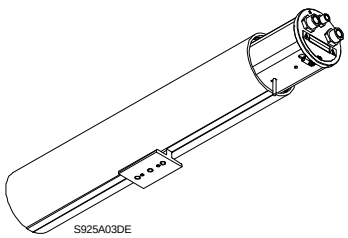


Figure 2: Removing Cradle Assembly

5.5 Camera/Lens Installation

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

1. Detach the hardware kit from the inside of the cradle.
2. Place the camera/lens combination into the cradle assembly.

   Fixed Lens Cameras: Position the camera/lens 1 mm (0.04 in) away from the faceplate. For TC Series camers, secure the camera/lens to the cradle with 1/4-20 x 3/4-inch BHCS, nylon bushing, 5/16-inch flatwasher, and the 9.8 mm (0.385 in) plastic spacer. For LTC 0240 and LTC 0140 Series cameras, use 1/4-20 x 1 1/4 inch BHCS, nylon bushing, 5/16-inch flat washer, and 9.8 mm (0.385 inch) plastic spacer, 7.4 mm (0.292 inch) plastic spacer, and 3.9 mm (0.154 inch) plastic spacer. For LTC 0430 and LTC 0450 Series cameras, use 1/4-20 x 1 1/4 inch BHCS, nylon bushing, 5/16-inch flat washer, and 9.8 mm (0.385 inch) plastic spacer and 7.4 mm (0.292 inch) plastic spacer. See **Figure 3**.

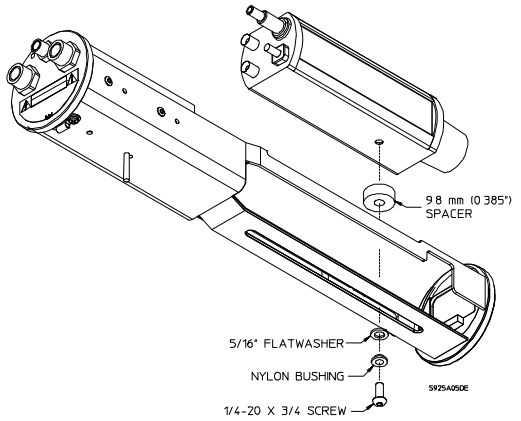


Figure 3: Mounting a Fixed Lens Camera

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 the camera/lens to the cradle with appropriate hardware listed in the fixed lens camera section. Secure the lens to the cradle with 1/4-20 BHCS, nylon bushing, 5/16-inch flatwasher, and a plastic spacer. See the table below for specific screw and spacer. See **Figure 4**.

Lens	1/4-20 Screw	Plastic Spacer
TC1848B	3/8-inch long	Not Required
TC9948	5/8-inch long	7.4 mm (0.292 in)
TC9958	1/2-inch long	3.9 mm (0.154 in)
TC9970A	3/8-inch long	0.4 mm (0.016 in)

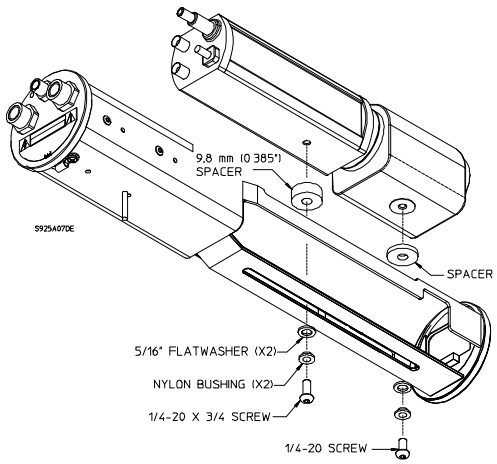


Figure 4: Mounting a Zoom Lens Camera

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 pre-installed. 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 in) to 11.9 mm (0.47 in). The small fitting will accept cables with diameters from 4.6 mm (0.181 in) to 7.9 mm (0.312 in). See **Figure 5** and **6**.

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.

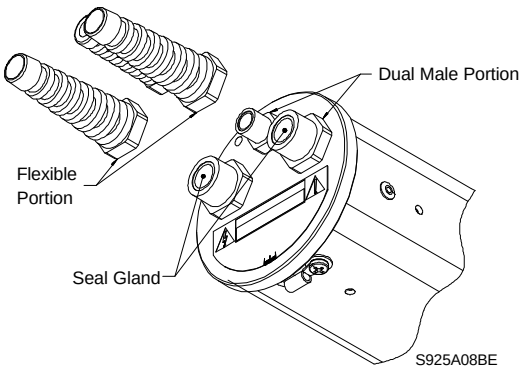


Figure 5: Liquid Tight Fitting Assembly

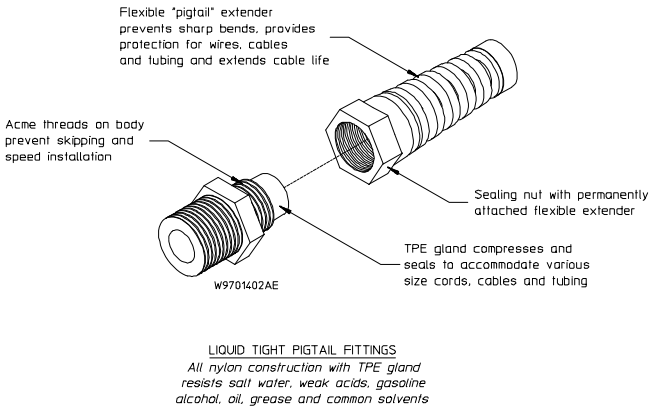


Figure 6: Liquid Tight Fitting Detail

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 PG type conduit, a NPT to PG conversion kit (TC9380PG) can be purchased separately.

Use of "drip loops" is recommended on the wiring outside of the rear end cap. See Figure 7.

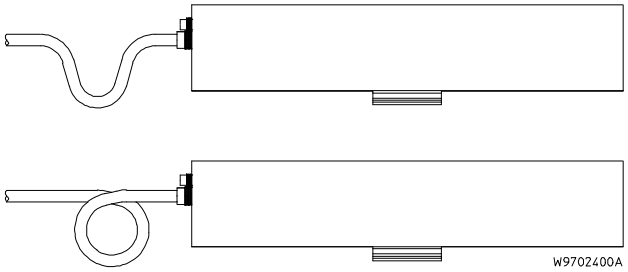


Figure 7: Examples of Drip Loops

5.6.2 Plug Insertion

If no lens control or feed-through wiring will be used, remove the pre-installed 3/8-inch liquid-tight fitting from the small top 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 8**.

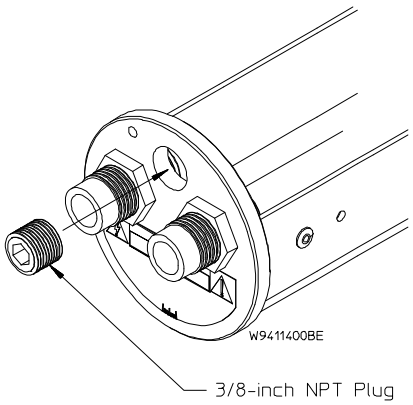


Figure 8: 3/8-inch NPT Plug Insertion

5.6.3 Power Connections

The LTC 9380 Series housings offer the user one of three transformer voltage configurations. The suffix to the housing model number will determine the type of transformer and supply voltage required.

The LTC 9380 Series 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. Each transformer provides a 24 VAC supply for the camera power from its secondary. The transformer's primary supply power will vary dependent upon the model housing, see **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 wiring procedure.

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. Use the **Recommended Maximum Cable Lengths** chart for selecting the proper wire size used.

Recommended Maximum Cable Lengths

Models	Wire Size		Distance	
	mm^2	AWG	meters	feet
-1 (115 VAC)	1.5	16	1200	4000
	2.5	14	1700	5700
	4	12	3000	10,000
-2 (24 VAC)	0.5	22	45	150
-2X (24 VAC)	0.5	20	75	250
	1	18	120	400
	1.5	16	200	700
	2,5	14	330	1100
-4 (230 VAC)	1.5	16	2000	6600
	2.5	14	3200	10,500
	4	12	5280	17,350

1. Use the **left** liquid-tight fitting of the housing to route the power wire into the housing. See **Figure 9**.

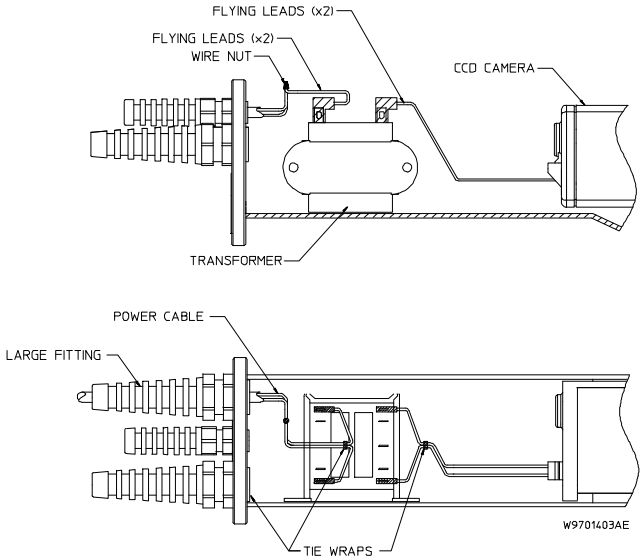


Figure 9: Liquid-Tight Fittings and Power Connector (Side & Top Views)

2. A screw/terminal lug is provided for securing a safety ground. To attach the safety grounding wire (green 115 volt, green/yellow 230 volt), first unscrew the terminal lug and strip and crimp the grounding wire into the lug. Next pull the grounding wire through the larger rear hole and attach the terminal lug to the cradle using the M4 x 10 screw provided. See **Figure 10**.

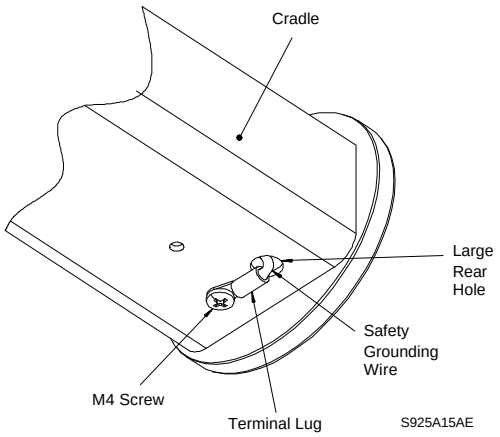


Figure 10: Securing Ground Wire

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 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). See **Figures 17** and **18** for an example.

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 LTC 9383/60, LTC 9388/60 Housings

These housings require connection to 115 VAC, and are designed to be used where site power is 115 volts.

The LTC 9383/60 and LTC 9388/60 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. The transformer will provide flying leads for connection to the primary (white wire/pin 1, black wire/pin 6) and the secondary (white/black striped wires-pins 7 and 12). **The housing is shipped with the heater/defogger connected to the secondary. No installer interface is required.** See **Figure 9**.

Installing a 115 volt camera into the LTC 9383/60 or LTC 9388/60 housing requires the camera's line cord to be cut and connected with the transformer primary leads and the power supply line. See **Figure 11**.

1. Cut the power cord leaving enough cable to allow connection to the primary (approximately 5 inches). Strip no less than 6 mm (0.25 in) and no more than 8 mm (0.31 in) of insulation away from the wire, be sure not to nick the wires. Connect the supply line to the camera power cord and transformer primary leads. Use the wire nuts provided for this connection.
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 11** for clarification and **Figure 9** for power connection drawings.

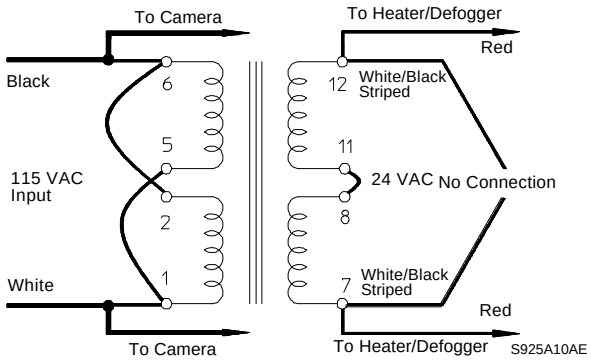


Figure 11: LTC 9383/60/LTC 9388/60 Transformer Wired for 115 Volt Camera

Installing a 24 volt camera into the LTC 9383/601 or LTC 9388/60 housing utilizes the internal transformer for camera power. See **Figure 11.**

1. Connect the supply (115 VAC) to the primary flying leads of the transformer (white wire/pin 1, black wire/pin 6). Use the wire nuts provided for this connection.
2. Connect the secondary flying leads (white/black striped wires-pins 7 and 12) to the camera's 24 volt input. See wiring diagram **Figure 12** for clarification and **Figure 9** for power connection drawings.

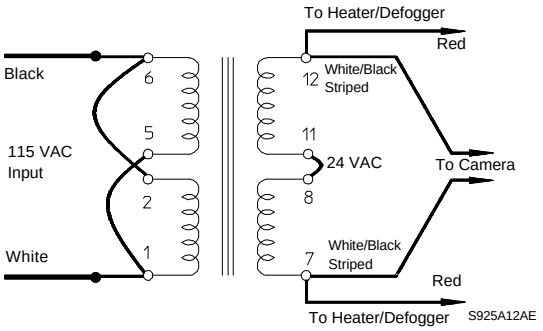


Figure 12: LTC 9383/60/LTC 9388/60 Transformer Wired for 24 Volt Camera

5.6.5 LTC 9383/20 and L TC 9388/20 Housings

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

Use only where IEC (CE) approval is <u>NOT</u> required. If IEC approval is required use /10 or /50 versions.

The LTC 9383/20 and LTC 9388/20 are designed to be used with 24 volt cameras only.

Connection of these housings to supply voltage in excess of a nominal 24 VAC source will cause damage.

The internal isolation transformer provides 24 VAC for camera power. The transformer provides flying leads for connection to the primary (white wire/pin 1, black wire/pin 6) and the secondary (white/black striped wires-pins 7 and 12). **The housing is shipped with the heater/defogger connected to the primary. No installer interface is required.** See **Figure 13**.

1. Connect the supply (24 VAC) to the primary flying leads of the transformer. Use the wire nuts provided for this connection. See **Figure 13**.
2. Connect the secondary flying leads to the camera's 24 volt input. See wiring diagram **Figure 13** for clarification and **Figure 9** for power connection drawings.

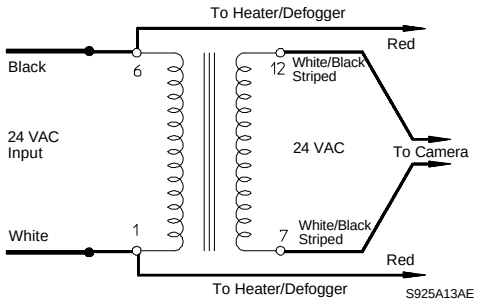


Figure 13: LTC 9383/20/LTC 9388/20 Transformer Wired for 24 Volt Camera

5.6.6 LTC 9383/10 and LTC 9388/10 Housings

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

Use where IEC (CE) approval is required.

The LTC 9383/10 and LTC 9388/10 are designed to be used with 24 volt, 50 Hz cameras only.

Connection of these housings to supply voltage in excess of 30 VAC source will cause damage.

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

The internal isolation transformer provides 24 VAC for camera power. A terminal block provides connection to the transformer via leads to the primary (blue wire/blue terminal/pin 1, black/fuse/grey terminal/pin 6). The transformer secondary is white/black striped wires on pins 7 and 12. **The housing is shipped with the heater/defogger connected to the secondary. No installer interface is required.** See **Figure 14**.

1. Connect the supply (24 VAC) to the terminal blocks. Use only the terminal block provided for this connection. See **Figure 14**.
2. Connect the secondary flying leads to the camera's 24 volt input. See wiring diagram **Figure 14** for clarification and **Figure 9** for power connection drawings.

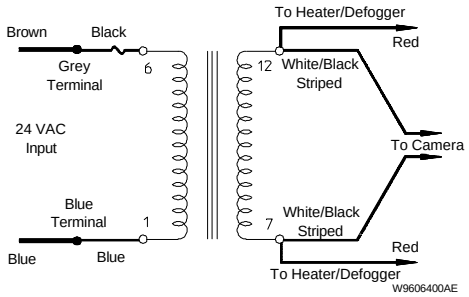


Figure 14: LTC 9383/10/LTC 9388/20 Transformer Wired for 24 Volt Camera

5.6.7 LTC 9383/50,L TC9388/50 Housings

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

The LTC 9383/50 and LTC 9388/50 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. A terminal block provides connection to the transformer via leads to the transformer primary (blue wire/blue terminal/pin 1, black/fuse/grey terminal/pin 6). The transformer secondary is white/black striped wires on pins 7 and 12. **The housing is shipped with the heater/defogger connected to the secondary. No installer interface is required.**

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

Installing a 230 volt camera into the LTC 9383/50 or LTC 9388/50 housing requires the camera's line cord to be cut and connected with the transformer's primary wiring and the power supply line. See **Figure 15**.

1. Cut the power cord leaving enough cable to allow connection to the primary (approximately 5 inches). Strip no less than 6 mm (0.25 in) and no more than 8 mm (0.31 in) of insulation away from the wire, be sure not to nick the wires. Connect the supply line to the camera power cord and transformer primary leads. Use only the terminal block provided for this connection.
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 15** for clarification and **Figure 9** for power connection drawings.

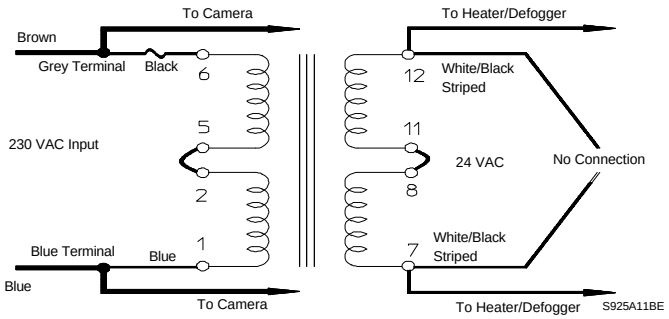


Figure 15: LTC 9383/50/LTC 9388/50 Transformer Wired for 230 Volt Camera

Installing a 24 volt camera into the LTC 9383/50 or LTC 9388/50 housing utilizes the internal transformer for camera power. See **Figure 16**.

1. Connect the supply (230 VAC) to the terminal block. Use only the terminal block provided for this connection.
2. Connect the secondary flying leads to the camera's 24 volt input. Refer to the wiring diagram for clarification.

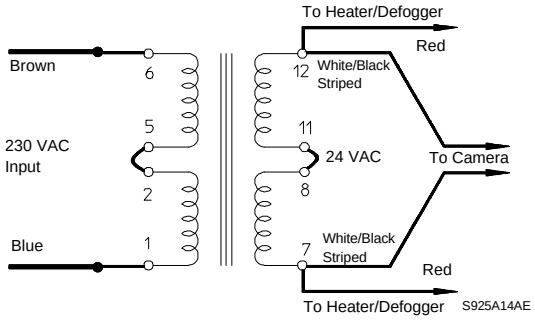


Figure 16: LTC 9383/50/LTC 9388/50 Transformer Wired for 24 Volt Camera

5.7 Video Coax Connection

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

If no lens control or feed-through wires will be used:

1. Install the long flexible 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. Refer to **Figure 17**.
2. Attach BNC connector to the coax and connect it to the camera. 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 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. Install the 3/8-inch NPT plug provided in the unused, small top center NPT hole. Refer back to **Figure 7**.

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. See Figure 7.

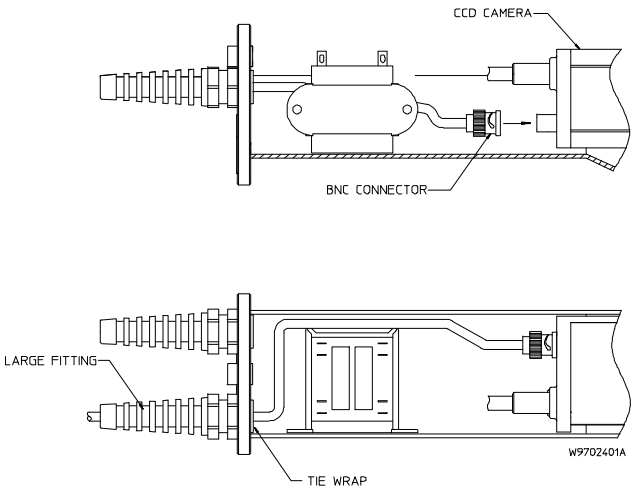


Figure 17: Video Coax Connection For No Lens Control Applications (Side & Top Views)

If lens control or feed-through wires will be used:

1. Install the long flexible portion of the small liquid tight fitting on the video coax cable and pull the cable through the **small fitting** on the rear end of the cradle. See **Figure 18**.
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 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 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).

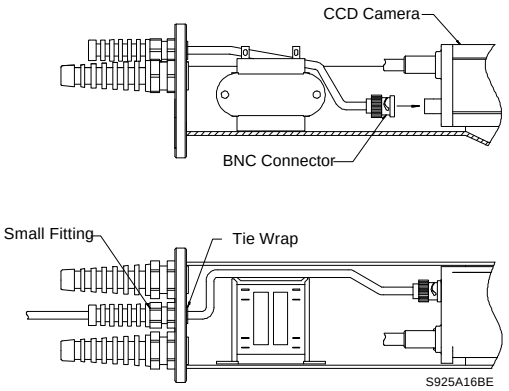


Figure 18: Video Coax Connection For Lens Control Applications (Side & Top Views)

5.8 Lens Wiring

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

1. **If installing a zoom lens**, insert the lens control cable with installed flexible fitting in through the **right** fitting at the rear of the cradle. 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 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 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 lens control cable at the exit point (inside unit). See **Figure 19**.

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.

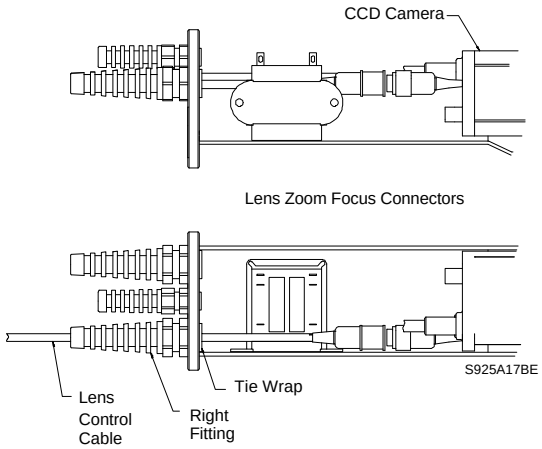


Figure 19: Lens Control Cable Wiring (Side & Top Views)

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 recommended on the wiring outside of the rear end cap. See Figure 7.

5.9 Camera/Lens Adjustment

1. 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.
2. If the camera includes an unused synchronization circuit, install a 75 ohm BNC termination resistor on camera "SYNC IN" terminal. See **Figure 20**.

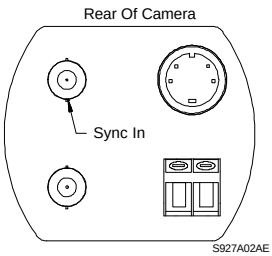


Figure 20: Sync Connection

5.10 Final Assembly

5.10.1 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-4 and IP65, 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 21**.

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

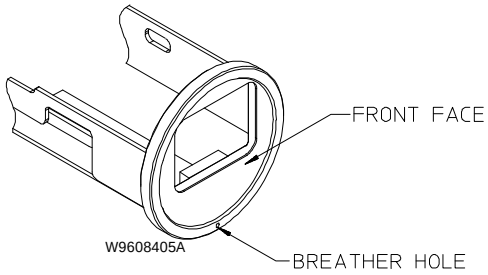


Figure 21: Breather Hole

Proper installation of the pull seal is as follows:

1. With the cradle assembly removed from the housing, remove the front retaining ring.
2. Obtain a rubber pull seal from the hardware kit (Part Number 315 2569 001). An extra pull seal is also provided. See **Figure 22**.

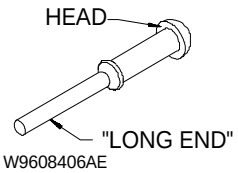


Figure 22: Pull Seal

3. Insert the "long end" of the pull seal into the breather hole starting from the front side of the endcap. See **Figure 23**.

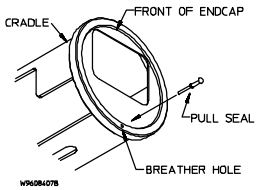


Figure 23: Inserting the Pull Seal

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 24**.

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

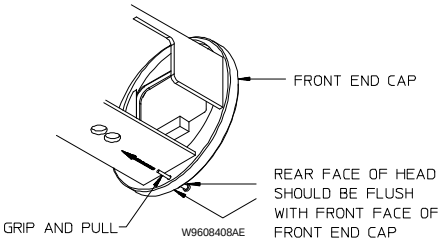


Figure 24: Installing the Pull Seal

5.10.2 Cradle Assembly

1. Position the housing vertically and replace the cradle assembly by applying pressure onto the rear cap until the end of the cradle is securely closed. **Make sure the index marks** are aligned with the etch mark on the housing. See **Figure 25**.

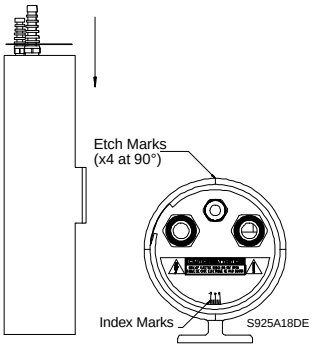


Figure 25: Inserting Cradle Assembly

⚠ **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.**

If the **pull seal was installed** as described under **Pull Seal Installation**, continue with step 2.

If the pull seal was not installed, skip to step 3.

2. Install the front retaining ring so the pull seal is centered in the retaining ring gap. See **Figure 26**.

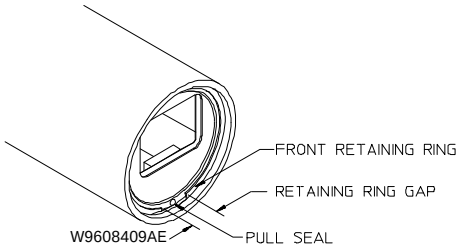


Figure 26: Positioning the Front Retaining Ring

3. Replace the rear retaining ring by inserting it into the housing groove. This secures the cradle assembly in the housing. If the housing needs to be tamper resistant, the TC9380TK (purchased separately) should be installed at this time.
4. Attach the housing to the appropriate mount or pan/tilt using instructions provided. According to the orientation of the housing, the cradle assembly may need rotating. To rotate the cradle assembly (while mounted), grasp the fittings and rotate to the desired position using the index marks as reference. View the monitor while rotating. See **Figure 27**.

WARNING: If the cradle is rotated, the front retaining ring must also be rotated. Position the front retaining ring so the breather hole is centered in the retaining ring gap.

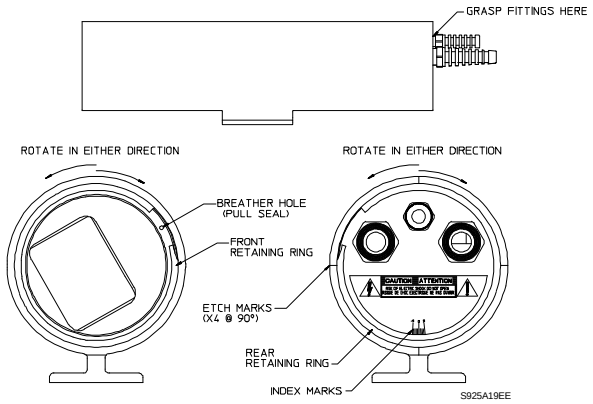


Figure 27: Rotating Cradle Assembly

⚠ **CAUTION: If a pull seal is installed in the breather hole, do not 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.**

6 RECOMMENDED APPLICATIONS

6.1 LTC 9383/60 and LTC 9388/60 Housings

The LTC 9383/60 and LTC 9388/60 housings are UL Listed to Standard 2044. Only the following cameras can be used in these housings to maintain the UL Listing. These housings require a 115 VAC, 60 Hz power supply.

Camera Models	Suggested Lenses	
	LTC 9383/60	**LTC 9388/60**
LTC 0142/20, LTC 0142/60	with 3mm fixed iris lens	3mm fixed iris lens
LTC 0143/20, LTC 0143/60	with 6mm fixed iris lens	6mm fixed iris lens.
LTC 0242/20, LTC 0242/60	with 3mm fixed iris lens	3mm fixed iris lens
LTC 0243/20, LTC 0243/60	with 6mm fixed iris lens	6mm fixed iris lens.
LTC 0330/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0350/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0430/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0450/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC351A, TC352A	Fixed	Fixed, TC9948A, TC1848B[1], TC9970A
TC361, TC362	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC371, TC372	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC381, TC382	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC391, TC392	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC551A	Fixed	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC552A	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC591, TC592	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC651B, TC652BT	Fixed	Fixed, TC9948A, TC1848B[1], TC9970A
TC652B	Fixed, TC9948A[1], TC1848B[1]	Fixed , TC9948A, TC1848B[1], TC9970A
TC952, TC972	Fixed (manual iris only)	Fixed (manual iris only)

1. Also applies to models with pre-position option denoted by a suffix "P".

6.2 LTC 9383/20 and LTC 9388/20 Housings

The LTC 9383/20 and LTC 9388/20 Housings are UL Listed to Standard 2044. Only the following cameras can be used in these housings to maintain the UL Listing. These Housings require a 24 VAC, 60 Hz power supply.

Camera Models	Suggested Lenses	
	LTC 9383/20	**LTC 9388/20**
LTC 0142/20	with 3mm fixed iris lens	3mm fixed iris lens
LTC 0143/20	with 6mm fixed iris lens	6mm fixed iris lens.
LTC 0242/20	with 3mm fixed iris lens	3mm fixed iris lens
LTC 0243/20	with 6mm fixed iris lens	6mm fixed iris lens.
LTC 0330/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0350/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0430/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0450/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC352A, TC652BT	Fixed	Fixed, TC9948A, TC1848B[1], TC9970A
TC362, TC382	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC372, TC392	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC552A, TC592	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC652B	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC952, TC972	Fixed (manual iris only)	Fixed (manual iris only)

1. Also applies to models with pre-position option denoted by a suffix "P".

6.3 LTC 9383/10 and LTC 9388/10 Housings

The LTC 9383/10 and LTC 9388/10 housings will accommodate the following cameras. These Housings require a 24 VAC, 50 Hz power supply. They are not UL Listed.

Camera Models	Suggested Lenses	
	LTC 9383/20	**LTC 9388/10**
LTC 0142/10	with 3mm fixed iris lens	3mm fixed iris lens
LTC 0143/10	with 6mm fixed iris lens	6mm fixed iris lens.
LTC 0242/10	with 3mm fixed iris lens	3mm fixed iris lens
LTC 0243/10	with 6mm fixed iris lens	6mm fixed iris lens.
LTC 0330/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0350/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0430/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0450/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC352AX, TC652BTX	Fixed	Fixed, TC9948A, TC1848B[1], TC9970A
TC362X, TC382X	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC372X, TC392X	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC552AX, TC592X	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC652BX	Fixed , TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC952X, TC972X	Fixed (manual iris only)	Fixed (manual iris only)

1. Also applies to models with pre-position option denoted by a suffix "P".

6.4 LTC 9383/50 and LTC 9388/50 Housings

The LTC 9383/50 and LTC 9388/50 housings will accommodate the following cameras. These Housings require a 230 VAC, 50 Hz power supply. They are not UL Listed.

Camera Models	Suggested Lenses	
	LTC 9383/50	**LTC 9388/50**
LTC 0142/10, LTC 0142/50	3mm fixed iris lens	3mm fixed iris lens
LTC 0143/10, LTC 0143/50	6mm fixed iris lens	6mm fixed iris lens.
LTC 0242/10, LTC 0242/50	3mm fixed iris lens	3mm fixed iris lens
LTC 0243/10, LTC 0243/50	6mm fixed iris lens	6mm fixed iris lens.
LTC 0330/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0350/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0430/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
LTC 0450/20	Fixed, TC9938, TC9948	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC352AX, TC652BTX	Fixed	Fixed, TC9948A, TC1848B[1], TC9970A
TC354AX, TC654BX	Fixed	Fixed, TC9948A, TC1848B[1], TC9970A
TC362X, TC382X	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC364X, TC384X	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC372X, TC392X	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC374X, TC394X	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC552AX, TC592X	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC554AX	Fixed	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC594X	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1]	Fixed, TC9938, TC9948A, TC1848B[1], TC9958[1], TC9970A
TC652BX	Fixed, TC9948A[1], TC1848B[1]	Fixed, TC9948A, TC1848B[1], TC9970A
TC952X, TC972X	Fixed (manual iris only)	Fixed (manual iris only)

1. Also applies to models with pre-position option denoted by a suffix "P".

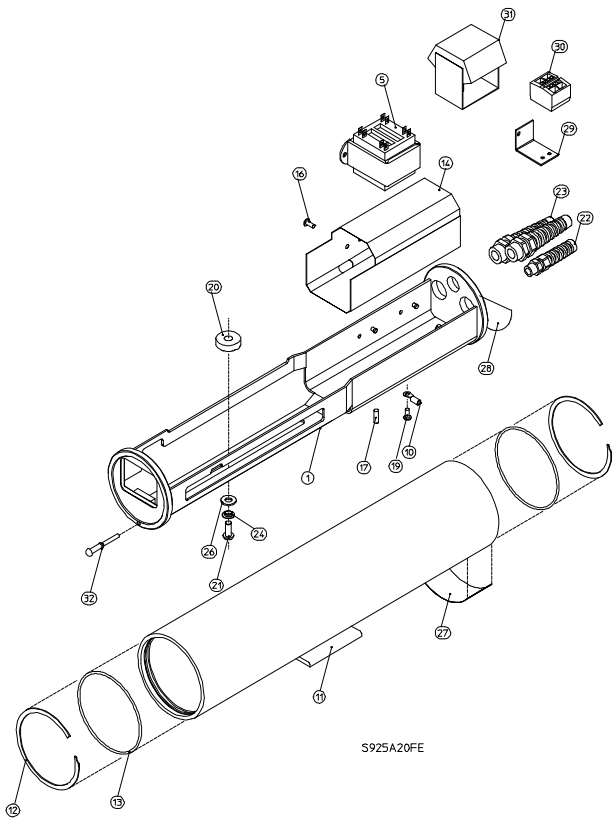
Suggested CS-Mount, Fixed, Auto-Iris, and Zoom Lenses (1/2-inch and 1/3-inch cameras, except TC952 and TC972 Series)

TC9902: 1/3-inch 2.8 mm, f/1.2, fixed
TC9904: 1/3-inch 4 mm, f/1.2, fixed
TC9908: 1/3-inch 8 mm, f/1.2, fixed
TC9903A: 1/2-inch 3.7 mm, f/1.6, fixed
TC9906A: 1/2-inch 6 mm, f/1.4, fixed
TC9907A: 1/2-inch 7 mm, f/1.4, fixed
TC9912A: 1/2-inch 12 mm, f/1.4, fixed
TC9913A: 1/2-inch 12 mm, f/1.4, fixed
TC9921A: 1/2-inch 3.8 mm, f/0.8, fixed
TC9922A: 1/2-inch 6 mm, f/0.75, fixed
TC9923A: 1/2-inch 12 mm, f/0.8, fixed
TC9938: 1/3-inch 3.8-38 mm, f/1.2, 10X zoom
TC9958[1]: 1/3-inch 5.8-58 mm, f/1.2, 10X zoom
TC9948A: 1/2-inch 8-48 mm, f/1.4, 6X zoom
TC1848B[1]: 1/2-inch 8-48 mm, f/1.0, 6X zoom
TC9970A: 1/2-inch 7.5-75 mm, f/1.4, 10X zoom

Suggested CS-Mount, Manual Iris, Fixed Lenses (1/3-inch cameras)

TC9702: 1/3-inch 2.8 mm, f/1.3
TC9704: 1/3-inch 4 mm, f/1.2
TC9708: 1/3-inch 8 mm, f/1.2
TC9712: 1/2-inch 12 mm, f/1.4

7 EXPLODED VIEW



8 PARTS LIST

Ref No.	Drawing Number	Qty.	Part Description
15-inch Cradle Assembly Kit - 315 2798 001			
1	-	1	15-inch Cradle-Heater Assembly
10	-	1	Ring Tongue Terminal
14	-	1	15-inch Plastic Sheild
17	-	1	Ground Spring
19	-	1	M4 x 10 Phillips Head Screw
28	-	1	Caution Label
19-inch Cradle Assembly Kit - 315 2799 001			
1	-	1	19-inch Cradle-Heater Assembly
10	-	1	Ring Tongue Terminal
14	-	1	19-inch Plastic Sheild
17	-	1	Ground Spring
19	-	1	M4 x 10 Phillips Head Screw
28	-	1	Caution Label
115 VAC PreWired Transformer Kit - 315 2800 001			
5	-	1	115 VAC Prewired Transformer
16	-	2-3	Rivet, 5/16-inch
24 VAC Prewired Transformer Kit - 315 2801 001			
5	-	1	24 VAC Prewired Transformer Kit
16	-	2-3	Rivet, 5/16-inch
29	-	1	Bracket (-/10, -/50 models only)
30	-	1	Connector (-/10, -/50 models only)
31	-	1	Transformer Insulator (-/10, -/50 models only)
230 VAC Prewired Transformer Kit - 315 2802-001			
5	-	1	230 VAC Prewired Transformer Kit
16	-	2-3	Rivet, 5/16-inch
29	-	1	Bracket (-/10, -/50 models only)
30	-	1	Connector (-/10, -/50 models only)
31	-	1	Transformer Insulator (-/10, -/50 models only)
15-inch Housing Kit - 315 2803 001			
11	-	1	15-inch Housing
12	315 1556 900	2	Retaining Ring
13	315 1557 903	2	Silicone O-Ring
27	-	1	ID Label
19-inch Housing Kit - 315 2804 001			
11	-	1	19-inch Housing
12	315 1556 900	2	Retaining Ring
13	315 1557 903	2	Silicone O-Ring
27	-	1	ID Label

HARDWARE KITS

Ref No.	Drawing Number	Qty.	Part Description
Hardware Kit - 315 1514 001 (-/10, -/50 models only)			
-	-	3	Cable Tie
20	-	1	9.8 mm Plastic Spacer
20	-	2	7.4 mm Plastic Spacer
20	-	1	3.9 mm Plastic Spacer
20	-	1	0.4 mm Plastic Spacer
21	-	1	1/4-20 x 3/8-inch Button Head Screw
21	-	3	1/4-20 x 1/2-inch Button Head Screw
21	-	1	1/4-20 x 5/8-inch Button Head Screw
21	-	1	1/4-20 x 3/4-inch Button Head Screw
21	-	1	1/4-20 x 1 1/4-inch Button Head Screw
-	-	1	3/8-inch NPT Plug
22	-	1	Small Flex Fitting
23	-	2	Large Flex Fitting
24	-	2	Nylon Bushing
26	-	2	5/16-inch Flat Washer
32	-	2	Rubber Pull Seal
Hardware Kit - 315 1514 002 (-/60, -/20 models only)			
-	-	3	Cable Tie
20	-	1	9.8 mm Plastic Spacer
20	-	2	7.4 mm Plastic Spacer
20	-	1	3.9 mm Plastic Spacer
20	-	1	0.4 mm Plastic Spacer
21	-	1	1/4-20 x 3/8-inch Button Head Screw
21	-	3	1/4-20 x 1/2-inch Button Head Screw
21	-	1	1/4-20 x 5/8-inch Button Head Screw
21	-	1	1/4-20 x 3/4-inch Button Head Screw
21	-	1	1/4-20 x 1 1/4-inch Button Head Screw
-	-	2	Wire Nut
-	-	1	3/8-inch NPT Plug
22	-	1	Small Flex Fitting
23	-	2	Large Flex Fitting
24	-	2	Nylon Bushing
26	-	2	5/16-inch Flat Washer
32	-	2	Rubber Pull Seal

9380 Series
Outdoor Camera Housings
Addendum

Installation Instructions

Philips
Communication &
Security Systems

PHILIPS

ADDENDUM

This Addendum applies to all language versions of the LTC 9380 Series Instructions (3935 890 06581 and 3935 890 06591-CH).

5 INSTALLATION

5.1 Model Designation

Change the voltage ranges for the LTC 9383/60 and LTC 9388/60 at the 115 VAC Rated Input:
FROM: 108 to 132.
TO: 104 to 127.

5.5 Camera/Lens Installation

Add to step3:
For the: LTC 0330/x1,LTC 0350/x1,LTC 0430/x1,LTC 0450/x1 cameras, use 1/4-20 x 5/8-inch screw and a 7.4 mm (0.292 in) plastic spacer, and nylon bushing, 5/16-inch flat washer.

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