

# LTC 9385 Series



Security Systems

EN | Instruction Manual  
Outdoor Housings

# BOSCH

## Important Safeguards

1. **Read, Follow, and Retain Instructions** - All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.
2. **Heed Warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Attachments** - Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.
4. **Installation Cautions** - 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 manufacturer-recommended accessories, or those sold with the product. Mount the unit per the manufacturer's instructions. Appliance and cart combination should be moved with care. Quick stops, excessive force, or uneven surfaces may cause the appliance and cart combination to overturn.
5. **Cleaning** - Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a damp cloth for cleaning is sufficient. Do not use liquid cleaners or aerosol cleaners.
6. **Servicing** - Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
7. **Damage Requiring Service** - Unplug the unit from the main AC power source and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged.
  - If liquid has been spilled or an object has fallen into the unit.
  - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
  - If the unit does not operate normally, when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
  - If the unit has been dropped or the cabinet damaged.
  - If the unit exhibits a distinct change in performance, this indicates that service is needed.
8. **Replacement Parts** - When replacement parts are required, the service technician should use replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electrical shock or other hazards.
9. **Safety Check** - Upon completion of servicing or repairs to the unit, ask the service technician to perform safety checks to ensure proper operating condition.
10. **Power Sources** - Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer or local power company.
  - For units intended to operate from battery power, refer to the operating instructions.
  - For units intended to operate **with External Power Supplies**, use only the recommended approved power supplies.
  - For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.
  - For units intended to operate at 24VAC, normal input voltage is **24VAC**. Voltage applied to the unit's power input should not exceed 30VAC. User-supplied wiring, from the 24VAC supply to unit, must be in compliance with electrical codes (Class 2 power levels). Do not ground the 24VAC supply at the terminals or at the unit's power supply terminals.
11. **Coax Grounding** - If an outside cable system is connected to the unit, ensure that the cable system is grounded. U.S.A. models only - Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding 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.
12. **Grounding or Polarization** - This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternately, this unit may be equipped with a 3-wire grounding plug (a plug with a third pin, for grounding). This safety feature allows the plug to fit into a grounding power outlet only. If unable to insert the plug into the outlet, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the grounding plug.
13. **Lightning** - For added protection during a lightning storm, or when this unit is left unattended and unused for long periods of time, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

### For Indoor Product

1. **Water and Moisture** - Do not use this unit near water - for example, in a wet basement, in an unprotected outdoor installation or in any area classified as a wet location.
2. **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 electrical shock. Never spill liquid of any kind on the unit.
3. **Power Cord and Power Cord Protection** - For units intended to operate with 230VAC, 50Hz, the input and output power cord must comply with the latest versions of IEC Publication 227 or IEC Publication 245.  
Power supply cords should be routed so they are not likely to be walked on or pinched. Pay particular attention to location of cords and plugs, convenience receptacles, and the point of exit from the appliance.
4. **Overloading** - Do not overload outlets and extension cords; this can result in a risk of fire or electrical shock.

### For Outdoor Product

**Power Lines** - An outdoor system should not be located in the vicinity of overhead power lines, electric lights or power circuits, or where it may contact such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching power lines or circuits, as this contact might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.

### For Rack-mount Product

1. **Ventilation** - This unit should not be placed in a built-in installation or rack, unless proper ventilation is provided, or the manufacturer's instructions have been adhered to. The equipment must not exceed its maximum operating temperature requirements.
2. **Mechanical Loading** - Mounting of the equipment in a rack shall be such that a hazardous condition is not achieved due to uneven mechanical loading.

## Safety Precautions



**CAUTION**  
RISK OF ELECTRIC SHOCK. DO NOT OPEN!



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**



This symbol indicates the presence of uninsulated "dangerous voltage" within the product's enclosure. This may constitute a risk of electric shock.



The user should consult the operating and maintenance (servicing) instructions in the literature accompanying the appliance.









Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.









**Power Disconnect.** Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all units.







## Sicherheitshinweise

|   |  |   |
|---|--|---|
|    | <b>VORSICHT</b><br>ELEKTRISCHE SPANNUNG.<br>NICHT ÖFFNEN!  |  |
| <p><b>VORSICHT: UM EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, IST DIE ABDECKUNG (ODER RÜCKSEITE) NICHT ZU ENTFERNEN. ES BEFINDEN SICH KEINE TEILE IN DIESEM BEREICH, DIE VOM BENUTZER GEWARTET WERDEN KÖNNEN. LASSEN SIE WARTUNGSARBEITEN NUR VON QUALIFIZIERTEM WARTUNGSPERSONAL AUSFÜHREN.</b></p> |  |   |
|    | Das Symbol macht auf nicht isolierte „gefährliche Spannung“ im Gehäuse aufmerksam. Dies kann zu einem elektrischen Schlag führen.  |   |
|    | Der Benutzer sollte sich ausführlich über Anweisungen für die Bedienung und Instandhaltung (Wartung) in den begleitenden Unterlagen informieren.   |   |
|    | Achtung! Die Installation sollte nur von qualifiziertem Kundendienstpersonal gemäß jeweils zutreffender Elektrovorschriften ausgeführt werden.   |   |
|    | Unterbrechung des Netzanschlusses. Geräte mit oder ohne Netzschalter haben Spannung am Gerät anliegen, sobald der Netzstecker in die Steckdose gesteckt wird. Das Gerät ist jedoch nur betriebsbereit, wenn der Netzschalter (EIN/AUS) auf EIN steht. Wenn das Netzkabel aus der Steckdose gezogen wird, ist die Spannungszuführung zum Gerät vollkommen unterbrochen. |   |

## Precauciones de Seguridad

|  |  |   |
|--|--|---|
|   | <b>ATTENZIONE</b><br>PERICOLO DI SCOSSA ELETTRICA.<br>NON APRIRE.  |  |
| <p><b>PRECAUCIÓN: PARA DISMINUIR EL RIESGO DE DESCARGA ELÉCTRICA, NO RETIRE LA CUBIERTA (NI LA PARTE POSTERIOR). NO EXISTEN PIEZAS DE RECAMBIO EN EL INTERIOR DEL EQUIPO. EL PERSONAL DE SERVICIO CUALIFICADO SE ENCARGA DE REALIZAR LAS REPARACIONES.</b></p> |  |   |
|   | Este símbolo indica que existen puntos de tensión peligrosos sin aislamiento dentro de la cubierta de la unidad. Estos puntos pueden constituir un riesgo de descarga eléctrica.   |   |
|   | El usuario debe consultar las instrucciones de funcionamiento y mantenimiento (reparación) en la documentación que se suministra con el aparato.   |   |
|   | Atención: la instalación la debe realizar únicamente personal cualificado de conformidad con el National Electric Code o las normas aplicables en su país.   |   |
|   | Desconexión de la alimentación. Las unidades con o sin interruptores de encendido/apagado reciben alimentación eléctrica siempre que el cable de alimentación esté conectado a la fuente de alimentación. Sin embargo, la unidad sólo funciona cuando el interruptor está en la posición de encendido. El cable de alimentación es la principal fuente de desconexión de todas las unidades. |   |

## Sécurité

|  |   |   |
|--|---|---|
|   | <b>ATTENTION</b><br>RISQUE D'ÉLECTROCUTION.<br>NE PAS OUVRIR!   |  |
| <p><b>ATTENTION : POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION, N'ESSAYEZ PAS DE RETIRER LE CAPOT (OU LE PANNEAU ARRIÈRE). CET APPAREIL NE CONTIENT AUCUN COMPOSANT SUSCEPTIBLE D'ÊTRE RÉPARÉ PAR L'UTILISATEUR. CONFIEZ LA RÉPARATION DE L'APPAREIL À DU PERSONNEL QUALIFIÉ.</b></p> |   |   |
|   | Ce symbole signale que le produit renferme une « tension potentiellement dangereuse » non isolée susceptible de provoquer une électrocution.  |   |
|   | Ce symbole invite l'utilisateur à consulter les instructions d'utilisation et d'entretien (dépannage) reprises dans la documentation qui accompagne l'appareil.   |   |
|   | Attention : l'installation doit exclusivement être réalisée par du personnel qualifié, conformément au code national d'électricité américain (NEC) ou au code d'électricité local en vigueur.   |   |
|   | Coupeure de l'alimentation. Qu'ils soient pourvus ou non d'un commutateur ON/OFF, tous les appareils reçoivent de l'énergie une fois le cordon branché sur la source d'alimentation. Toutefois, l'appareil ne fonctionne réellement que lorsque le commutateur est réglé sur ON. Le débranchement du cordon d'alimentation permet de couper l'alimentation des appareils. |   |

## Veiligheidsmaatregelen

|  |   |   |
|--|---|---|
|   | <b>VOORZICHTIG</b><br>GEVAAR VOOR ELEKTRISCHE SCHOK.<br>NIET OPENEN!  |  |
| <p><b>VOORZICHTIG: OPEN DE BEHUIZING OF DE ACHTERKANT VAN HET APPARAAT NIET. ZO VERMINDERT U HET RISICO OP ELEKTRISCHE SCHOKKEN. IN HET APPARAAT BEVINDEN ZICH GEEN ONDERDELEN DIE U ZELF KUNT REPAREREN. LAAT SERVICE EN ONDERHOUD UITVOEREN DOOR GEKWALIFICEERD PERSONEEL.</b></p> |   |   |
|   | Dit symbool geeft aan dat er binnen in het apparaat ongeïsoleerde, gevaarlijke spanning aanwezig is die mogelijk elektrische schokken kan veroorzaken.  |   |
|   | De gebruiker dient de bedienings- en onderhoudsvorschriften te raadplegen in de documentatie die werd meegeleverd met het apparaat.   |   |
|   | Attentie: het apparaat mag alleen door gekwalificeerd personeel worden geïnstalleerd. De installatie dient in overeenstemming met de nationale elektrische richtlijnen of de van toepassing zijnde lokale richtlijnen te worden uitgevoerd.   |   |
|   | Spanning uitschakelen. Apparaat met of zonder aan-uitschakelaar staat onder spanning zolang de stekker is aangesloten op de wandcontactdoos. De apparatuur is uitsluitend in werking als de aan-uitschakelaar aan staat. Het netsnoer is de "hoofdschakelaar" voor alle apparatuur. |   |

## Medidas de Segurança

|  |  |   |
|--|--|---|
|   | <b>CUIDADO</b><br>RISCO DE CHOQUE ELÉCTRICO.<br>NÃO ABRIR!   |  |
| <p><b>CUIDADO: PARA REDUZIR O RISCO DE CHOQUE ELÉCTRICO, NÃO RETIRE A TAMPA (OU A PARTE POSTERIOR). NO INTERIOR, NÃO EXISTEM PEÇAS QUE POSSAM SER REPARADAS PELO UTILIZADOR. REMETA A ASSISTÊNCIA PARA OS TÉCNICOS QUALIFICADOS.</b></p> |  |   |
|   | <p>Este símbolo indica a presença de "tensão perigosa" não isolada dentro da estrutura do produto, o que pode constituir risco de choque eléctrico.</p>  |   |
|   | <p>O utilizador deve consultar as instruções de funcionamento e manutenção (assistência) nos documentos que acompanham o aparelho.</p>   |   |
|   | <p>Atenção: a instalação deve ser executada apenas por técnicos qualificados da assistência, de acordo com o código eléctrico nacional ou os códigos locais aplicáveis.</p>  |   |
|   | <p>Corte de corrente. As unidades com ou sem interruptores ON-OFF (ligar/desligar) recebem corrente sempre que o fio de alimentação está introduzido na fonte de alimentação; contudo, a unidade apenas está operacional quando o interruptor ON-OFF está na posição ON. O fio de alimentação destina-se a desligar a corrente em todas as unidades.</p> |   |

## Sicurezza

|  |  |   |
|--|--|---|
|   | <b>ATTENZIONE</b><br>PERICOLO DI SCOSSA ELETTRICA.<br>NON ABRIRE.  |  |
| <p><b>ATTENZIONE: PER RIDURRE IL RISCHIO DI SCOSSE ELETTRICHE NON RIMUOVERE LA COPERTURA (O IL PANNELLO POSTERIORE). L'UNITÀ NON CONTIENE COMPONENTI INTERNI RIPARABILI DALL'UTENTE. PER QUALSIASI INTERVENTO, RIVOLGERSI A PERSONALE TECNICO QUALIFICATO.</b></p> |  |   |
|   | <p>Questo simbolo indica la presenza di "tensione pericolosa" non isolata all'interno del contenitore del prodotto. Ciò comporta un potenziale rischio di scosse elettriche.</p>   |   |
|   | <p>Si consiglia di consultare le istruzioni operative e di manutenzione (interventi tecnici) contenute nella documentazione fornita con il dispositivo.</p>  |   |
|   | <p>Attenzione: l'installazione deve essere effettuata esclusivamente da personale tecnico qualificato in conformità con il National Electrical Code o con le normative locali vigenti.</p>   |   |
|   | <p>Scollegamento dell'alimentazione. Le unità dotate o sprovviste di interruttori ON-OFF vengono alimentate quando si inserisce il cavo nella presa dell'alimentazione. L'unità è tuttavia in funzione solo quando l'interruttore ON-OFF si trova nella posizione ON. Il cavo di alimentazione costituisce il dispositivo di scollegamento dell'alimentazione principale per tutte le unità.</p> |   |

## 安全预防措施

|   |   |   |
|---|---|---|
|  | <b>CAUTION</b><br>RISK OF ELECTRIC<br>SHOCK. DO NOT OPEN!   |  |
| <p><b>注意：为避免受到电击，不要拆除机盖（或后盖）。用户不得擅自维修里面的部件。有关维修事项，请咨询合格的维修人员。</b></p>               |   |   |
|  | <p>此符号表示产品机壳内存在未绝缘的“危险电压”。这可能导致电击。</p>  |   |
|  | <p>用户应参照设备附带的操作和维护（维修）说明。</p>   |   |
|  | <p><b>注意：安装须由合格的维修人员遵照美国国家电工标准或相关电气规则进行。</b></p>  |   |
|  | <p>断开电源。在电源线插入电源时，配备或未配备 ON-OFF 开关的设备都已通电；但设备只有在 ON-OFF 开关处于 ON 位置时才能工作。对于所有设备，电源线是断开电源的主要方式。</p> |   |

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## 1.0 UNPACKING

This electronic equipment should be unpacked and handled carefully.

Check for the following items:

| Quantity | Part Description                             |
|----------|--|
| 1        | 1/4-20 x 3/8in. BHCS (Button Head Cap Screw) |
| 1        | 1/4-20 x 1/2in. BHCS                         |
| 1        | 1/4-20 x 5/8in. BHCS                         |
| 1        | 1/4-20 x 3/4in. BHCS                         |
| 1        | 1/4-20 x 7/8in. BHCS                         |
| 4        | 3.2mm (0.125in.) plastic spacer              |
| 4        | 0.4mm (0.016in.) plastic spacer              |
| 2        | Nylon bushings                               |
| 1        | 3/8in. NPT plug                              |
| 1        | Small flex fitting                           |
| 2        | Pull Seals                                   |
| 2        | Large flex fitting                           |
| 3        | Cable ties                                   |

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 Bosch 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.

## 2.0 SERVICE

If the unit ever needs repair service, the customer should contact the nearest Bosch Security Systems, Inc. Service Center for return authorization and shipping instructions.

### Service Centers

#### USA

Phone: 800-366-2283 or 717-735-6638  
 fax: 800-366-1329 or 717-735-6639

#### CCTV Spare Parts

Phone: 800-894-5215 or 408-956-3853 or 3854  
 fax: 408-957-3198  
 e-mail: BoschCCTVparts@ca.slr.com

#### Canada

Phone: 514-738-2434

#### Europe, Middle East & Asia Pacific Region

Phone: 32-1-440-0711

For additional information, see [www.boschsecurity.com](http://www.boschsecurity.com).

## 3.0 CARE AND MAINTENANCE

There are no moving parts in this unit. Regularly scheduled maintenance will help prolong the operational life of this unit. Clean the viewing window as needed with a mild, nonabrasive detergent in water and a soft cloth.

## 4.0 DESCRIPTION

The LTC 9385 Series of environmental housings are attractive aluminum enclosures designed for outdoor CCD camera installations.

### 4.1 Enclosure Rating

#### 4.1.1 NEMA-3R and IP54

The LTC 9385 Series housings include a *breather* hole in the front face plate. The *breather* hole prevents the accumulation of moisture inside the housing when installed in areas of high humidity. With the *breather* hole open, the LTC 9385 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.

## 5.0 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     | Range        | Power Consumption <sup>1</sup> |
|-------------|-----------------|--------------|--------------------------------|
| LTC 9385/60 | 115VAC, 50/60Hz | 108 to 132   | 50W                            |
| LTC 9385/20 | 24VAC, 50/60Hz  | 21.6 to 26.4 | 50W                            |
| LTC 9385/50 | 230VAC, 50/60Hz | 207 to 253   | 50W                            |

<sup>1</sup>Heater requires 40 watts.

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

Maximum Camera/Lens Size: Accepts cameras up to 102W x 71H mm (4.0 x 2.8in.), lenses up to 102W x 92H mm (4.0 x 3.6in.), and camera/lens combinations up to 345L mm (13.6in.).



## 5.2 Tools Required

- Flat blade screwdriver
- Phillips head screwdriver
- M7 (7mm) hex wrench or socket
- M3 (3mm) hex wrench
- M4 (4mm or 5/32in.) hex wrench
- M8 (8mm or 5/16in.) hex wrench
- Adjustable wrench
- Wire cutter/stripper/crimper tool

## 5.3 Hardware Required

- M6 screws (X3) or 1/4in. screws (X3)
- M6 nuts (X3) or 1/4in. nuts (X3)
- M6 lock washers (X3) or 1/4in. lock washers (X3)

## 5.4 Cable Requirements

| Video Transmission (Coaxial) |  |
|------------------------------|--|
| Cable Type                   | RG-59/U (Runs < 1000ft)<br>RG-11/U (Runs < 2000ft)               |
| Cable Size                   | Outside diameter between 4.6mm and 7.9mm (0.181in. and 0.312in.) |
| Cable Shape                  | Round  |
| Shield                       | ≥ 93% Braided Copper Shield                                      |
| Center Conductor             | Stranded Copper Center   |
| DC Resistance                | ≥ 15Ω/1000ft (RG-59/U)<br>≥ 6Ω/1000ft (RG-11/U)                  |
| Cable Impedance              | 75Ω  |
| Agency Rating                | UL   |
| Environmental                | Outdoor rated  |
| Temperature Rating           | ≥ 80 °C (176 °F)   |
| Sources                      | Belden 9259<br>Belden 9238                                       |

| Input Power Cord - North American |   |
|-----------------------------------|---|
| Cable Type                        | SJTOW-A Rated   |
| Cable Size                        | Outside diameter between 4.3mm and 11.9mm (0.170in. and 0.470in.) |
| Cable Shape                       | Round   |
| Conductors                        | 3 conductor version and<br>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<br>Belden 19509<br>Northwire 573939                  |

| Input Power Cord - European |   |
|-----------------------------|---|
| Cable Type                  | H05RN-F3G0.75 and<br>H05RN-F3G1.00                                |
| Cable Size                  | Outside diameter between 4.3mm and 11.9mm (0.170in. and 0.470in.) |
| Cable Shape                 | Round   |
| Conductors                  | 3 conductor version and<br>2 conductor version                    |
| Agency Rating               | VDE   |
| Environmental               | Outdoor rated   |
| Sources                     | Olflex 1600252<br>Olflex 1600253                                  |

| Lens Control Cable   |   |
|----------------------|---|
| Cable Type           | Jacketed Multiconductor Cable                                     |
| Cable Size           | Outside diameter between 4.3mm and 11.9mm (0.170in. and 0.470in.) |
| 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<br>Belden 9554  |

## 5.5 Disassembly and Mounting

1. Detach the hardware kit from the housing.
2. Use a M7 hex wrench or socket to remove the two M4 screws from the housing cover. Save all hardware, which will be needed in reassembly. See FIGURE 1.

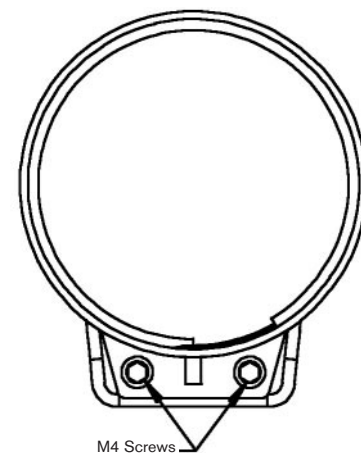


FIGURE 1 Removing the M4 Cover Screws



- Remove the cover from the base assembly by grasping the cover and gently pulling forward. Do not remove the safety cable from the cover or the base assembly. See FIGURE 2.

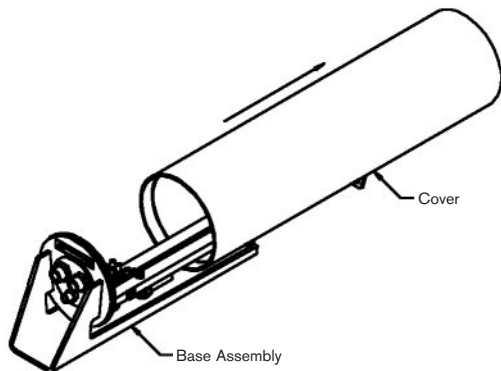


FIGURE 2 Removing the Cover

- Attach the housing to an appropriate mount or pan/tilt. Use the instructions provided with the mount or pan/tilt. The base assembly has three clearance holes for mounting. Use three M6 screws and nuts or three 1/4in. screws and nuts (not provided). Lock washers are required (not provided). Rotating the rail assembly will allow access to the mounting holes. This can be accomplished by loosening the three M4 screws. See also *Camera/Lens Orientation*. It will be easier to mount the base before installing the camera, but it may be mounted anytime during the installation process. See FIGURE 3.

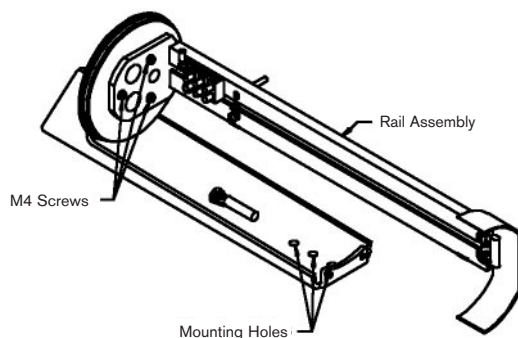


FIGURE 3 Mounting the Base Assembly

## 5.6 Camera/Lens Installation

Place the camera/lens combination onto the rail assembly.

**Fixed Lens Cameras:** Position the camera/lens so that the lens is positioned over the heater but not past it. Secure the camera to the rail assembly with the 1/4-20 x 3/8in. BHC screw, a nylon bushing, and a 0.4mm (0.016in.) plastic spacer. Place the nylon bushing over the screw and slide both between the rails through the front cut-out section. Slide the spacer over the screw so it is positioned in-between the rails and the camera. See FIGURE 4.

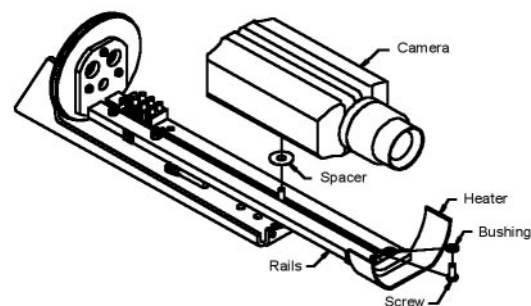


FIGURE 4 Mounting a Fixed Lens Camera

**Zoom Lens Cameras:** Position the camera/lens so that the lens is positioned over the heater but not past it. The camera/lens combination will determine the screws and spacers that will be needed. Secure the camera and lens to the rail assembly with 1/4-20 BHC screws, nylon bushings, and plastic spacers. Place the nylon bushings over the screws and slide both between the rails through the front cut-out section. Slide the spacer over the screw so it is positioned in-between the rails and the camera. There are four large spacers (3.2mm) and four small spacers (0.4mm) provided. See FIGURE 5.

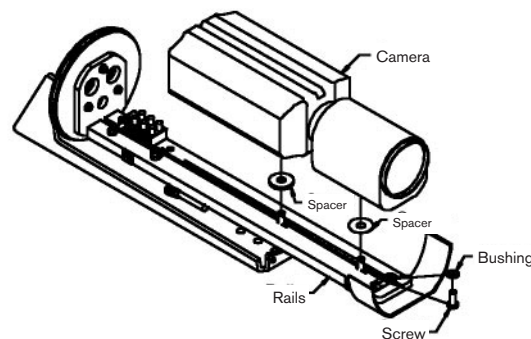


FIGURE 5 Mounting a Zoom Lens Camera

## 5.7 Camera/Lens Wiring



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

### 5.7.1 Liquid-Tight Fittings

The dual-male threaded portion of the two 1/2in. NPT and one 3/8in. NPT liquid-tight fittings are preinstalled in the rear of the base assembly. If possible, do not remove or loosen these parts. They have been installed to a specified torque to prevent water damage. The small 3/8in. NPT fitting will accept cables with diameters from 4.6mm (0.181in.) to 7.9mm (0.31in.). The two large 1/2in. NPT fittings will accept cables with diameters from 4.3mm (0.170in.) to 11.9mm (0.470in.). See FIGURE 6.



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

If a sealant will 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 TC9385PG kit is available. The TC9385PG kit contains a wire grip with two PG11 and one PG7 tapped holes. The NPT wire grip is removed and replaced with the PG version.

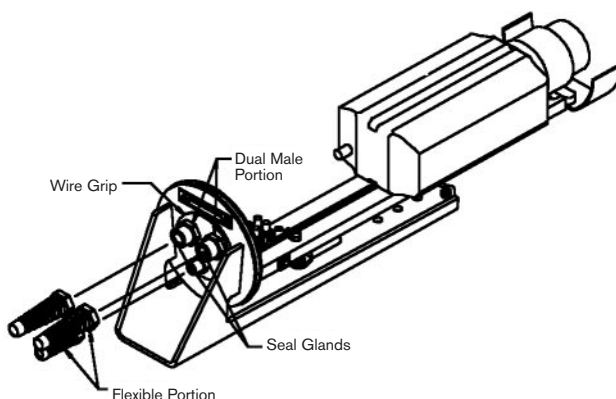


FIGURE 6 Liquid-tight Fitting Assembly

## 5.8 Plug Insertion

If no lens control or feed-through wiring will be used, install the 3/8in. NPT plug provided. Remove the liquid-tight fitting and insert the plug in the small bottom center 3/8in. NPT hole. Use a 8mm or a 5/16in. hex wrench to tighten securely. Failure to do so will result in water damage to all electronic parts. See FIGURE 7.

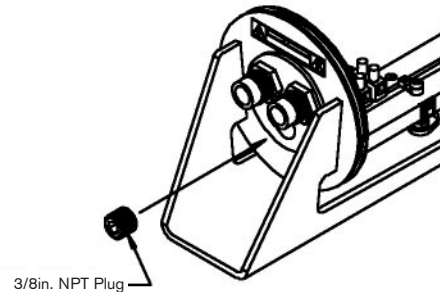


FIGURE 7 3/8in. NPT Plug Insertion

### 5.8.1 Supply Power Connections

The LTC 9385 Series housings offer the user one of three voltage configurations. The suffix to the housing model number will determine the supply voltage required.

Any camera installed in the LTC 9385 Series housings must be of the same voltage type as the housing. The integral heater/defogger also requires the same voltage as the housing. These housings do not contain step down or isolation transformers. See the **Model Designation** chart for suffixes and supply voltages required.

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 applicable NEC and local codes. Use the **Recommended Maximum Cable Lengths** chart below for proper wire size selection.

**Recommended Maximum Cable Lengths**

| Models       | Wire Size       |     | Distance |       |
|--------------|-----------------|-----|----------|-------|
|              | mm <sup>2</sup> | AWG | meters   | feet  |
| -1 (115 VAC) | 1.5             | 16  | 1000     | 3280  |
|              | 2.5             | 14  | 1600     | 5250  |
|              | 4               | 12  | 2500     | 8200  |
| -2 (24 VAC)  | 0.5             | 22  | 10       | 30    |
|              | 0.5             | 20  | 15       | 50    |
|              | 1               | 18  | 25       | 80    |
|              | 1.5             | 16  | 40       | 120   |
|              | 2.5             | 14  | 70       | 210   |
| -4 (230 VAC) | 1.5             | 16  | 4000     | 13000 |
|              | 2.5             | 14  | 6400     | 21000 |
|              | 4               | 12  | 10000    | 32800 |

1. Use the liquid-tight fitting on the left of the housing to route the power supply cord into the housing.
2. Allow enough cord for connection to the terminal block; approximately, 130mm (5in.). Strip no less than 6mm (0.24in.) and no more than 8mm (0.31in.) of insulation away from the wires making sure not to nick the wires.
3. A screw/terminal lug is provided for securing a safety ground. To attach the safety grounding wire of the power cord (green 115volt, green/yellow 230volt), first unscrew the terminal lug and strip and crimp the grounding wire into the lug. Next, reattach the terminal lug to the rail assembly using the M4 x 10 screw and lock washer provided. See FIGURE 8.

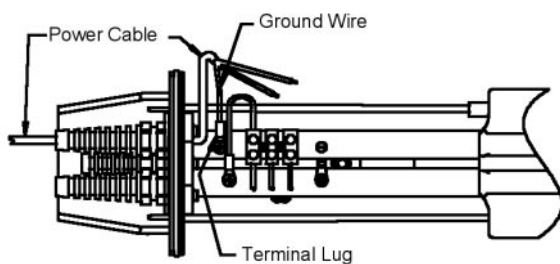


FIGURE 8 Securing the Ground Wire

4. Connect both the line and neutral wires of the power cord to the terminal block. Make sure the line and neutral wires are connected to the correct positions on the terminal block that are across from the appropriate colored wire. See FIGURE 9.

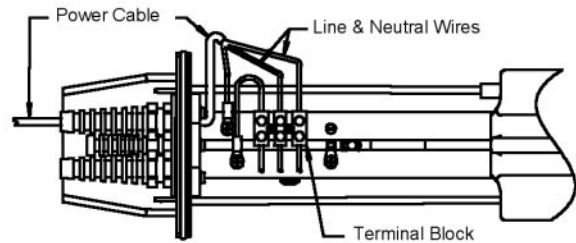


FIGURE 9 Attaching Line and Neutral Wires

5. Pull any excess cord through the liquid-tight fitting and tighten the flex fitting to 8.5N-m to 9.0N-m (75in. lb to 80in. lb). This torque rating is approximately 1 to 1 1/2 turns past the point that the fitting starts to grip the cord. Failure to do so will result in water damage to all electronic parts. Use a tie wrap (included) to provide strain relief on the power cord at the exit point (inside the unit).



Securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

### 5.8.2 Camera Power Connections LTC 9385/60 Housings

These housings are to be connected to 115VAC, and are designed for use where site power is 115volts. The LTC 9385/60 housings should only be used with 115volt cameras. The integral heater/defogger requires 115volts. The housing is shipped with the heater/defogger connected to the terminal block.

**Installing a 115 volt camera** into the LTC 9385/60 housing simply requires the camera's line cord to be plugged into the NEMA 5-15R receptacle provided. See FIGURE 10.

### LTC 9385/20 Housings

These housings are to be connected to 24VAC, and are designed for use where site power is 24volts. The LTC 9385/20 housings should only be used with 24volt cameras. The integral heater/defogger requires 24volts. The housing is shipped with the heater/defogger connected to the terminal block.

**Installing a 24 volt camera** into the LTC 9385/20 housing simply requires the two flying leads be attached to the camera's terminal block. See FIGURE 10.

### LTC 9385/50 Housings

These housings are to be connected to 230VAC, and are designed for use where site power is 230volts. The LTC 9385/50 housings should only be used with 230volt cameras. The integral heater/defogger requires 230volts. The housing is shipped with the heater/defogger connected to the terminal block.

**Installing a 230 volt camera** into the LTC 9385/50 housing simply requires the camera's line cord to be plugged into the *Schuko* inline receptacle provided. See FIGURE 10.

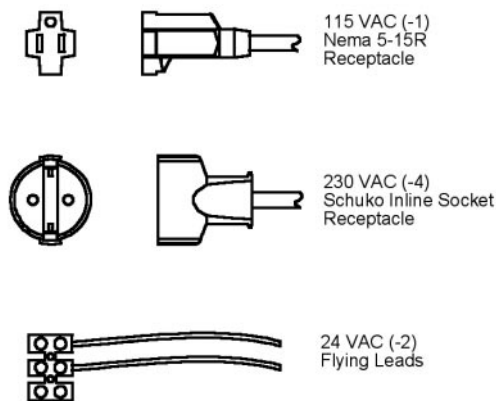


FIGURE 10 Camera Connections

## 5.9 Video Coax Connection



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

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 base assembly. The fitting will accept cables with diameters from 4.6mm (0.181in.) to 7.9mm (0.312in.). See FIGURE 11.
2. Attach a BNC connector to the coax and connect it to the camera. Pull any excess cable through the liquid-tight fitting and tighten the flex fitting to 4.0N-m to 4.5N-m (35in. lb to 40in. lb). This torque rating is approximately 1 to 1 1/2 turns past the point that the fitting starts to grip the cable. 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 the unit).



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

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

1. Install the long flexible portion of a large liquid-tight fitting on the video coax cable and pull the cable through the large right fitting on the rear end of the base assembly. Refer to FIGURES 11 and 12.
2. Attach a BNC connector to the coax and connect it to the camera. Pull any excess cable through the liquid tight fitting and tighten the flex fitting to 8.5N-m to 9.0N-m (75in. lb to 80in. lb). This torque rating is approximately 1 to 1 1/2 turns past the point that 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 the unit).



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

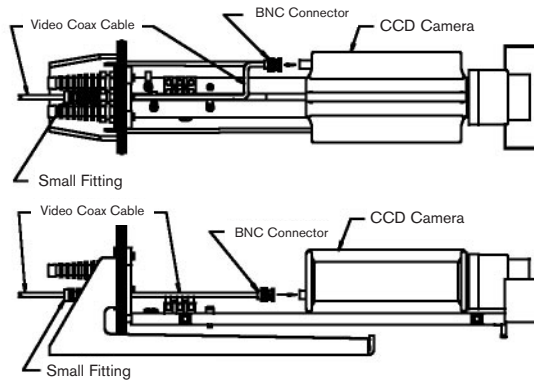


FIGURE 11 Video Coax Connection

### 5.10 Lens Wiring



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

**If installing a zoom lens,** insert the lens control cable with installed flexible fitting in through the fitting on the right rear of the base assembly. 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 cable through the liquid-tight fitting and tighten the flex fitting to 8.5N-m to 9.0N-m (75in. lb to 80in. lb). This torque rating is approximately 1 to 1 1/2 turns past finger-tight, depending on the size of 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 the unit). See FIGURE 12.

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



Be sure to securely tighten all fittings to ensure a liquid-tight seal. Not doing so could damage the camera, the housing, or both.

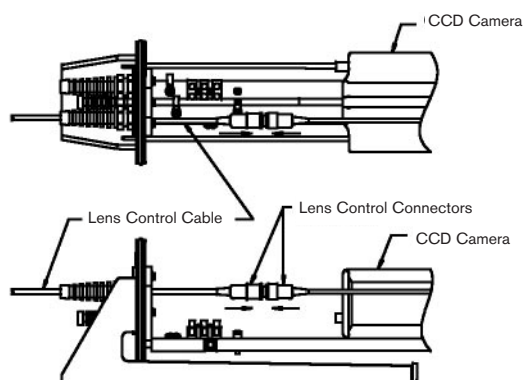


FIGURE 12 Lens Control Cable Wiring

**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.

### 5.11 Camera/Lens Orientation

A unique feature of the LTC 9385 Series housing is the ability to rotate the mounting base 360° around the rail assembly.

Simply loosen the three M4 screws with a M3 hex wrench. Rotate the base assembly around the rail assembly to any position and tighten the M4 screws. It is preferable to keep the rail assembly under the camera, not over it. See FIGURE 13.

**NOTE:** Make sure the breather hole is located at the bottom of the housing. If it is not, remove both front retaining rings and the face plate. Orient them so the breather hole is located at the bottom and the gaps in the retaining rings are centered over the breather hole. See FIGURE 20.

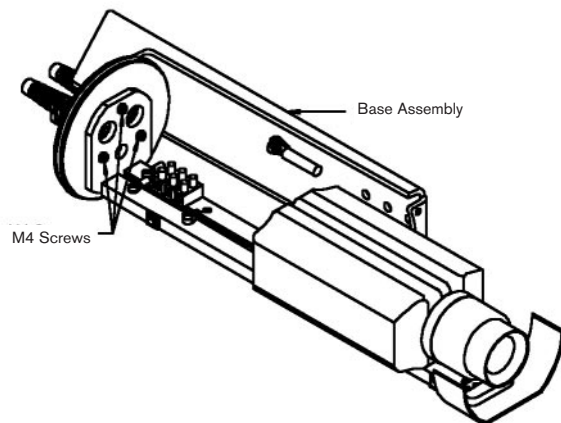


FIGURE 13 Base Assembly Rotation

### 5.12 Camera/Lens Adjustment

Before final assembly of the cover over the rest of housing, verify camera and lens operation. Adjust camera/lens as necessary. See individual camera instructions.



## 5.13 Final Assembly

### 5.13.1 Pull Seal Installation



If the *breather* hole is open, do NOT mount the housing in a position where the front face plate 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 face plate. It is recommended that the pull seal be installed in a cool, dry environment to prevent trapping moisture inside the housing. See FIGURE 14.

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

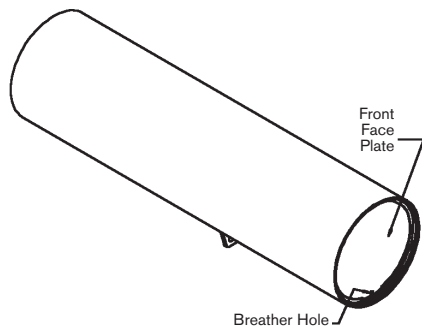


FIGURE 14 Breather Hole

Proper installation of the pull seal is as follows:

1. If the housing assembly is not already removed from the base assembly, do so now; see the *Disassembly and Mounting* section at the beginning of these instructions.
2. Obtain a rubber pull seal from the hardware kit (Part Number 315 2569 001). An extra pull seal is also provided. See FIGURE 15.

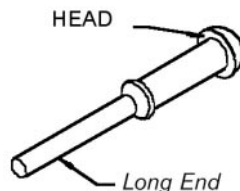


FIGURE 15 Pull Seal

3. Insert the *long end* of the pull seal into the breather hole starting from the front side of the face plate. See FIGURE 16.

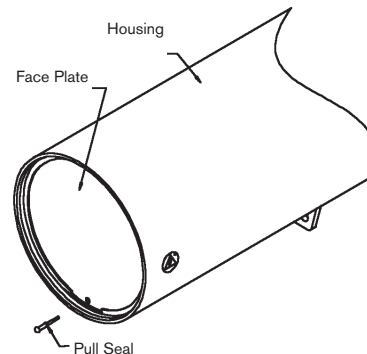


FIGURE 16 Inserting the Pull Seal

4. Reach into the housing and grip the pull seal's *long end* from the back of the front face plate. Steadily pull the *long end* until the head of the pull seal is flat against the front of the end cap. See FIGURE 17.

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

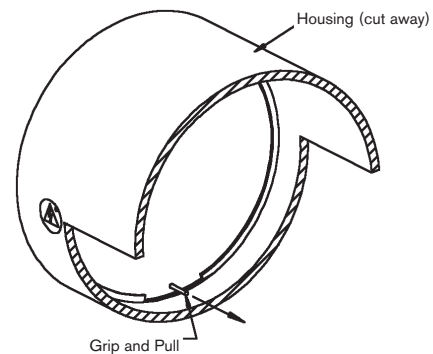


FIGURE 17 Installing the Pull Seal

### 5.13.2 Housing Assembly

1. The lens support screw is provided to support the rail assembly. Adjustment will only be necessary if the rail assembly is rotated at angle other than horizontal. If the screw head is not touching the cover when the cover is installed, loosen the screw until it does. See FIGURE 18.

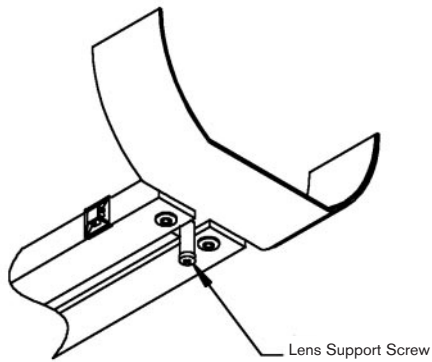


FIGURE 18 Support Screw Adjustment

2. Replace the cover onto the base assembly by grasping the cover and gently pushing it over the end cap and o-ring. Make sure the o-ring is not pinched. The safety cable can be routed between the cover and the base. See FIGURE 19.

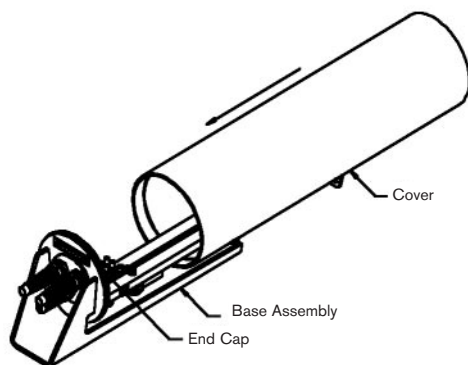


FIGURE 19 Replacing the Cover

3. Align the cover holes with the base assembly holes and replace the two M4 screws and washers. This secures the cover onto the rest of the housing.

NOTE: Make sure the breather hole is located at the bottom of the housing. If it is not, remove both front retaining rings and the face plate. Orient them so the breather hole is located at the bottom and the gaps in the retaining rings are centered over the breather hole. See FIGURE 20.

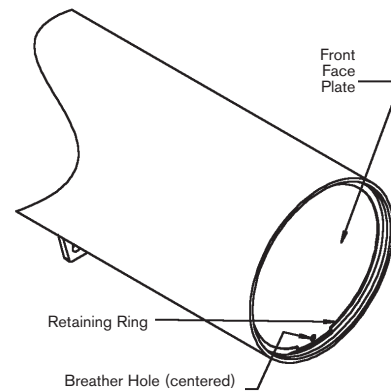


FIGURE 20 Location of the Breather Hole



## 6.0 EXPLODED VIEW

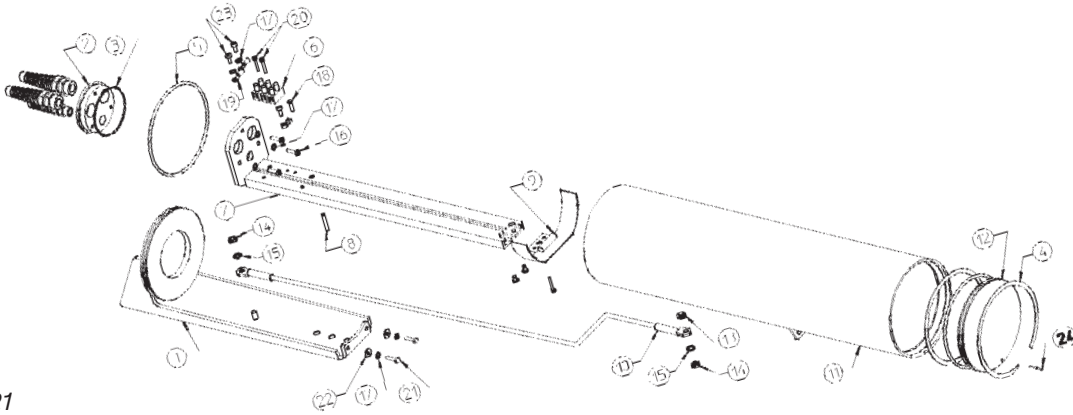


FIGURE 21

## 7.0 PARTS LIST

| Ref No.  | Drawing No.  | Qty. | Part Description                     | Ref No.  | Drawing No.  | Qty. | Part Description                  |
|--|--------------|------|--------------------------------------|--|--------------|------|-----------------------------------|
| <b>Mounting Base Assembly Kit - 315 2805 001</b> |              |      |                                      | <b>115VAC Heater-Bracket Assembly Kit - 315 2809 001</b> |              |      |                                   |
| 1  | -            | 1    | Mounting Base Assembly               | 9  | -            | 1    | 115VAC Heater - Bracket Assembly  |
| 2  | -            | 1    | Wire Grip Cap                        | --   | -            | 1    | M3 x 20 Screw                     |
| 3  | 315 2298 900 | 1    | EP O-ring 037                        | --   | -            | 2    | Rivet, 5/32in. x 0.415in.         |
| 5  | 315 2327 900 | 2    | EP O-ring 248                        | <b>24VAC Heater-Bracket Assembly Kit - 315 2810 001</b>  |              |      |                                   |
| 17   | -            | 7    | M4 Internal Star Lock Washer         | 9  | -            | 1    | 24VAC Heater - Bracket Assembly   |
| 21   | -            | 3    | M4 Hex Head Cap Screw                | --   | -            | 1    | M3 x 20 Screw                     |
| 22   | -            | 3    | M4 Fender Washer                     | --   | -            | 2    | Rivet, 5/32in. x 0.415in.         |
| <b>115VAC Rail Assembly Kit - 315 2806 001</b>   |              |      |                                      | <b>230VAC Heater-Bracket Assembly Kit - 315 2811 001</b> |              |      |                                   |
| 6  | -            | 1    | Terminal Block                       | 9  | -            | 1    | 230VAC Heater - Bracket Assembly  |
| 7  | -            | 1    | Rail-back Weldment                   | --   | -            | 1    | M3 x 20 Screw                     |
| 8  | -            | 1    | Ground Spring                        | --   | -            | 2    | Rivet, 5/32in. x 0.415in.         |
| 16   | -            | 3    | M4 x 16 Low Socket Cap Screw         | <b>Two-Eye Cable Assembly Kit - 315 2812 001</b>         |              |      |                                   |
| 17   | -            | 7    | M4 Internal Star Lock Washer         | 10   | -            | 1    | 2 Eye Cable Assembly              |
| 18   | -            | 1    | #6-32 x 5/8in. Bosch Flat Head Screw | 13   | -            | 1    | M6 Flat Washer                    |
| 19   | -            | 2    | #8 Ring Tongue Terminal              | 14   | -            | 2    | M6 Thin Hex Nut                   |
| 20   | -            | 3    | M3 Philips Pan Head Screw            | 15   | -            | 2    | M6 Serrated Lock Washer           |
| 23   | -            | 3    | M4 Philips Pan Head Screw            | <b>Faceplate Kit - 315 2813 001</b>                      |              |      |                                   |
| --   | -            | 1    | 115 VAC NEMA 5-15R Receptacle        | 4  | 315 2300 900 | 2    | Retaining Ring 500                |
| <b>24VAC Rail Assembly Kit - 315 2807 001</b>    |              |      |                                      | 5  | 315 2327 900 | 1    | EP O-ring 248                     |
| 6  | -            | 1    | Terminal Block                       | 12   | -            | 1    | Faceplate                         |
| 7  | -            | 1    | Rail-back Weldment                   | 24   | -            | 2    | Rubber Pull Seal                  |
| 8  | -            | 1    | Ground Spring                        | <b>Housing Assembly - 315 2814 001</b>                   |              |      |                                   |
| 16   | -            | 3    | M4 x 16 Low Socket Cap Screw         | 4  | 315 2300 900 | 2    | Retaining Ring 500                |
| 17   | -            | 7    | M4 Internal Star Lock Washer         | 11   | -            | 1    | Housing Assembly                  |
| 18   | -            | 1    | #6-32 x 5/8in. Bosch Flat Head Screw | <b>Hardware Kit - 315 2348 001</b>                       |              |      |                                   |
| 19   | -            | 2    | #8 Ring Tongue Terminal              | --   | -            | 3    | Cable Tie                         |
| 20   | -            | 3    | M3 Philips Pan Head Screw            | --   | -            | 4    | 3.2mm Plastic Spacer              |
| 23   | -            | 3    | M4 Philips Pan Head Screw            | --   | -            | 4    | 0.4mm Plastic Spacer              |
| <b>230VAC Rail Assembly Kit - 315 2808 001</b>   |              |      |                                      | --   | -            | 1    | 1/4-20 x 3/8in. Button Head Screw |
| 6  | -            | 1    | Terminal Block                       | --   | -            | 1    | 1/4-20 x 1/2in. Button Head Screw |
| 7  | -            | 1    | Rail-back Weldment                   | --   | -            | 1    | 1/4-20 x 5/8in. Button Head Screw |
| 8  | -            | 1    | Ground Spring                        | --   | -            | 1    | 1/4-20 x 3/4in. Button Head Screw |
| 16   | -            | 3    | M4 x 16 Low Socket Cap Screw         | --   | -            | 1    | 1/4-20 x 7/8in. Button Head Screw |
| 17   | -            | 7    | M4 Internal Star Lock Washer         | --   | -            | 1    | 3/8in. NPT Plug                   |
| 18   | -            | 1    | #6-32 x 5/8in. Bosch Flat Head Screw | --   | -            | 1    | Small Flex Fitting                |
| 19   | -            | 2    | #8 Ring Tongue Terminal              | --   | -            | 2    | Large Flex Fitting                |
| 20   | -            | 3    | M3 Philips Pan Head Screw            | 24   | -            | 2    | Pull Seal                         |
| 23   | -            | 3    | M4 Philips Pan Head Screw            | --   | -            | 2    | Nylon Bushing                     |
| --   | -            | 1    | 230VAC Schuko In-Line Receptacle     |  |              |      |                                   |

Americas  
Bosch Security Systems  
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Phone: +1 (585) 223 4060  
Fax: +1 (585) 223 9180  
E-mail: security.sales@us.bosch.com  
www.boschsecurity.us

Europe, Middle East, Africa  
Bosch Security Systems B.V.  
P.O. Box 80002  
5600 JB Eindhoven, The Netherlands  
E-mail: ema.securitysystems@bosch.com  
http://www.boschsecurity.com

Asia-Pacific  
Bosch Security Systems Pte Ltd  
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