

SILENT SENTINEL ARE SPECIALISTS IN LONG RANGE
OPTICAL SENSORS INCLUDING BOTH COOLED AND
UNCOOLED THERMAL CAMERAS

Silent Sentinel Osiris Mechanical Installation Guide

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This manual is used as a guide. The photos, graphics, diagrams, and illustrations provided in the manual are only used for explanation, which may be different from the specific product. Please refer to the actual product. We try our best to make sure all the contents in this manual are accurate. We do not provide any representations or warranties in this manual.

If you need the latest version of this manual, please contact us. Silent Sentinel recommends that you use this manual under the guidance of professionals.

Version Control

| Version | Author | Approver | Date |
|----------------|--------------------|--------------------|-------------|
| 0.1 | James Carlton-Long | James Carlton-Long | 10/08/2021 |
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Contents

| | |
|---------------------------------------|----|
| System Overview | 5 |
| Overview | 5 |
| Power / Interface Requirements | 5 |
| System Orientation | 6 |
| Mechanical Installation..... | 7 |
| Overview | 7 |
| Fixtures and Fittings;..... | 7 |
| Mounting the Jaeger PTU | 8 |
| Attaching the Side Payloads | 10 |
| Wiper Assembly Installation | 12 |
| Overview | 12 |
| Fixtures and Fittings..... | 12 |
| Boresight Guide..... | 15 |
| Overview | 15 |
| Horizontal Adjustment..... | 15 |
| Vertical Adjustment | 16 |
| ANNEX 1 - Cable Information..... | 17 |
| Cable Overview | 18 |
| Cable Pin Out | 18 |
| ANNEX 2 - Physical Connectors..... | 19 |
| Osiris Base Connector | 19 |
| Side Payload Mounting Connector. | 20 |

INSTALLATION SHOULD BE CARRIED OUT BY QUALIFIED PERSONNEL ONLY IN ACCORDANCE WITH THE APPLICABLE LOCAL CODES.

THE MANUFACTURER CAN ACCEPT NO LIABILITY FOR ANY DAMAGES OR LOSSES CAUSED DUE TO INCORRECT OR IMPROPER INSTALLATION.

Safety Information

Before installing the equipment, please read this guide carefully.

Installation of this product should only be carried out by a competent and suitably qualified engineer. If you are in doubt, you should refer the installation to a suitably qualified person.

To prevent electrical shock hazards, disconnect the power from electrical sources **before** working on the equipment.

Make all connections with the power turned off. Do not make or remove connections when the power is turned on. Before using the product ensure that all cables are correctly connected and that the power cables are not damaged.

Ensure that the product is secured correctly in all situations. Do not place the equipment on to a trolley, table desk or other platform that is not stable; to avoid the product from falling over.

Ensure that the power supply to be used is correct for the equipment and the correct input voltage for your region. If unsure, contact your local power supply company. If the power supply or cables are broken, do not use them. Contact a qualified electrical services technician or your retailer.

1. Do not use any equipment that appears damaged or incomplete. If you detect damage, contact your dealer immediately.
2. Do not allow connectors to be exposed to long-term water immersion.
3. Do not allow electrical contacts or leads to be exposed to dust, humidity or moisture. Do not allow electrical contacts or cable-ends to become wet.
4. The equipment must be firmly secured using appropriate fixings and fastening as appropriate to the mounting surface that the unit is being affixed to.

Notes:

1. Do not open the camera unit, doing so invalidates the unit's warranty.
2. Do not back-drive the pan or tilt axis of the camera. To do so will damage the motor drive mechanism and will invalidate the warranty.
3. Do not use caustic or abrasive cleaning products on the unit.
4. In situations where there could be a risk of injury should any part of the assembly become detached for any reason and fall, normal safety precautions should be employed.
5. Use only the power source types indicated in this user guide or provided with the unit.
6. All power supplies should be appropriately fused.
7. Take extra care lifting or moving units due to their weight.
8. The central PT unit should be installed by itself with no payloads attached. The camera/sensor and Radar payloads fitted individually, after it has been secured.
9. Take care to allow space around the unit for Pan and Tilt motion.
10. Take care to avoid striking persons or objects when the camera is in motion.
11. Not fitting the provided sun shields will invalidate the systems warranty.
12. This guide only concerns itself with the Mechanical Installation of the System.

System Overview

Overview

The Osiris PT system generally comprises of;

1. The Osiris PT Unit
2. QTY1 EO (Daylight Camera)
3. QTY1 Ti (Thermal Camera)

However, as the Osiris is a highly modular platform the number and nature of payloads may vary from unit to unit. This Installation Documentation only considers the standard system as noted above. If there is ANY uncertainty brought about by other combinations of payloads then Silent Sentinel should be consulted prior to any installation efforts.

Power / Interface Requirements

| | | |
|----------------|-------|------------------------------------|
| Input voltages | 28VDC | (26-32 VDC) |
| Power | 70W | (150W peak) Standard payloads. |
| | 100W | (150W peak) Large / Dual payloads. |

These figures do not include the requirements of any large payloads, optional heating or cooling devices added within the camera enclosures, nor optional infra-red lighting systems.

System Orientation



Figure 1

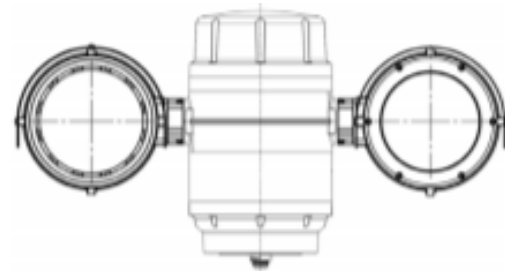


Figure 2



Figure 4

The Osiris is a 360 Degree PT unit but it does have a front indicated by the sticker shown in Figure 4. The sticker also displays the correct side connectors for the daylight and thermal payloads.

Mechanical Installation

Overview

The system should be installed in the following order;

1. Pan / Tilt securely mounted to the Mast / Installation Location
2. Side Payloads
3. Cable / PSU

Note: The system should not be powered on when any of the payloads are attached.

Fixtures and Fittings;

The followings fittings are providing with the Jaeger System.



Figure 3 Jaeger Fittings

1. Sun Shield Fixings;
 - a. QTY4 – M4x10
 - b. QTY4 – M4 Nylon Washers
2. Side Payload Fittings;
 - a. QTY8 – M5x10
 - i. QTY3 for each Payload
3. Main Osiris Fittings
 - a. QTY4 – M8x20
 - b. QTY4 – Spring Washers
4. Duralac
 - a. To be used on all threads

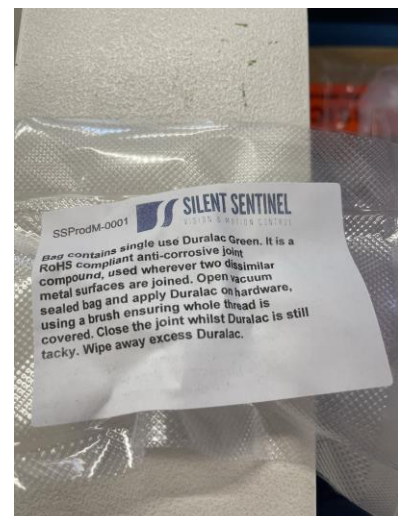
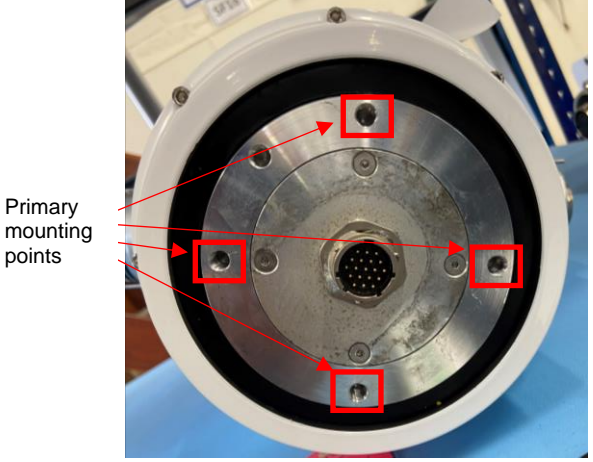



Figure 4 - Duralac

Mounting the Jaeger PTU



| Step | Detail | |
|------|---|---|
| 1 | The image on the right shows the Osiris mounting points. |  <p>Primary mounting points</p> |
| 2 | Line up the Osiris base with the mast. Insert bolts through mast and line up with holes in Osiris base. |  |

3 Insert all bolts and tighten until spring washer is flat.



Attaching the Side Payloads

Note: please ensure you are attaching the payloads to the correct side. Please refer to the System Overview section for further information.

| Step | Detail | |
|------|---|--|
| 1 | <p>Protective caps are fitted to the ends of the shafts to prevent moisture and impact damage to the electrical connections.</p> <p>Remove the three securing screws from the tilt cover cap and remove the cap from the tilt shaft.</p> <p>Note: The IP67 protection of the unit is compromised whilst this cap is removed and the payload is unattached.</p> |  |
| 2 | <p>Securely hold the tube and offer it up so that the alignment holes engage on the ends of the rods.</p> <p>Level the tube so that the connector faces are parallel with no leaning in any direction. Push the tube inwards, along the alignment rods such that the connector assembly engages.</p> <p>Care should be taken to keep the tube level so as to reduce the risk of damage to the electrical plug assembly.</p> |  |

3 Once the tube is fully located on the shaft the top securing screw should be inserted and partially tightened – not all the way.

The remaining two screws should be inserted in to their respective holes and, once in place, all three tightened fully.



Wiper Assembly Installation


Overview





This guide details the steps involved to install the wiper assembly onto a RHT camera housing.


Fixtures and Fittings



1. Wiper Assembly
2. Wiper Blade
3. O-Ring
4. Fixings

| Step | Detail | |
|------|--|---|
| 1 | Power down the camera unit and remove the bottom cover at the front of the camera housing. |  |

| | | |
|---|---|---|
| 2 | Insert the supplied O-Ring into the groove on the wiper box. |  |
| 3 | Align the wiper assembly holes with camera house jack plug holes |  |
| 3 | Screw the supplied M4x 50 screws into the QTY4 fixing holes. Ensure that the O'ring is seated properly when screwing together |  |
| 3 | Insert the spring into the wiper assembly shaft. |  |

| | | |
|---|--|---|
| 3 | <p>Fit the wiper onto the shaft, locate the wiper at the desired park position and tighten.</p> <p>Note: the wiper 'wipes' anti-clockwise as you look at the face of the tube. Therefore, the park position should be to the right of the window and outside of the FOV of the camera.</p> |  |
|---|--|---|

Boresight Guide




Overview

As standard Silent Sentinel factory boresights the cameras 'parallel' at full tele. Therefore, the separate between FOV should never be any greater than the separation of the payloads. However, should it be desired the boresight position can be adjusted externally as detailed below.




Please note, boresight adjustment is carried out on the Daylight camera. The Thermal is fixed relative to the cameras housing.

It is recommended that the boresight adjustment is carried out at full zoom (full tele).

Horizontal Adjustment

| Step | Detail | |
|------|--|--|
| 1 | <p>Remove the cover plate from the rear (Horizontal) adjustment mechanism to reveal the adjustment wheel and locking screws.</p> <p>The cover is secured by four screws requiring an M3 Allen key tool.</p> |  |
| 2 | <p>Using an M2.5 Allen key, loosen (do not remove) the two locking grub screws that are located in the recess holes either side of the adjustment wheel.</p> |  |
| 3 | <p>The horizontal action can now be made by turning the adjustment wheel using a chisel-tip (slot) screw driver.</p> <p>Turn the wheel until the centre-line of the picture corresponds to the centre of the target.</p> |  |

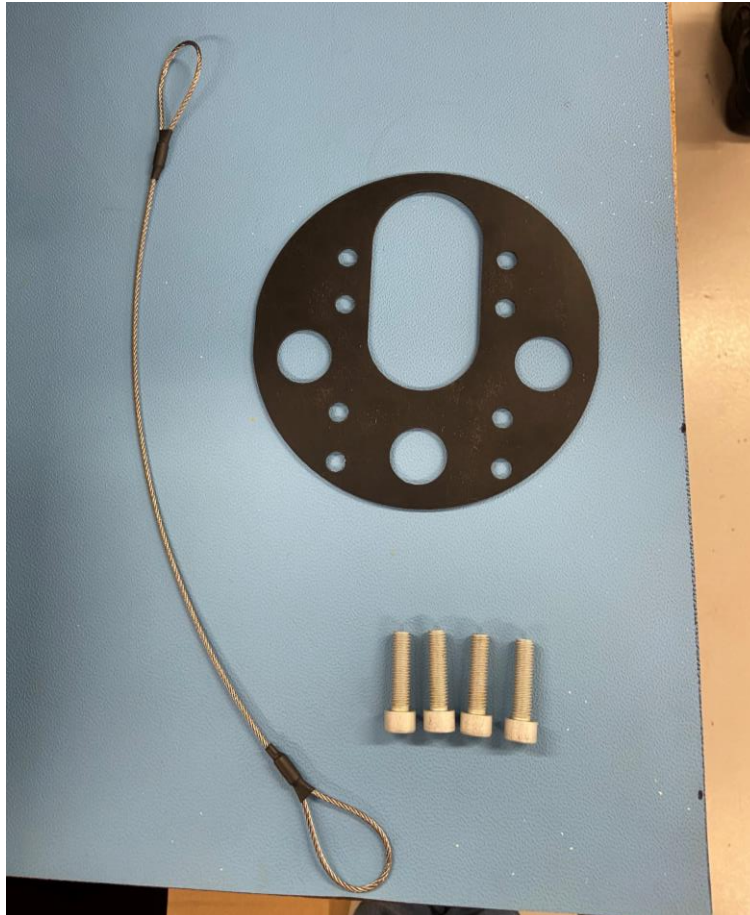
Vertical Adjustment

| Step | Detail | |
|------|--|---|
| 1 | The cover is secured by four screws requiring an M3 Allen key tool. |  |
| 2 | Using an M3 Allen key, loosen (do not remove) the locking screw that is located beside the adjustment wheel. |  |
| 3 | The vertical action can now be made by turning the adjustment wheel using a chisel-tip (slot) screw driver. Turn the wheel until the centre-line of the picture corresponds to the centre of the target. |  |

ANNEX 1 – Galvanic Kit

Galvanic Kit

Provided with the Galvanic Kit:



1. 4 x M8x20 aluminium bolts
2. Rubber matting for underneath base
3. Aluminium lanyard

The galvanic kit prevents galvanic corrosion from happening on the base on the unit. It isolates the metal of the unit from the metal of the mast or platform it's secured on.

ANNEX 2 - Cable Information

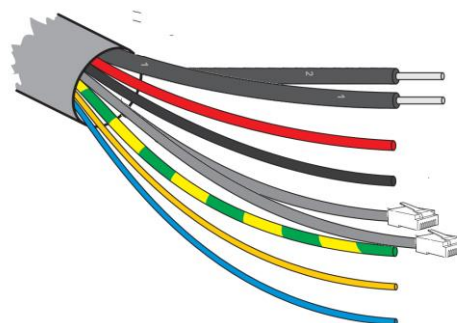
Cable Overview

The UCM cable supplied with the Osiris can come in various lengths (up to 50m) and in two different formats;

1. Double ended;
 - a. Each end of the Aeron cable is terminated with a UTS6JC14E19S Connector
 - i. This is typically the case if a pre-terminated PSU is purchased.
2. Bare Ended
 - a. The Aeron end is terminated with UTS6JC14E19S the Connector
 - b. The PSU end of the Cable is left as 'flying leads' with only the RJ45 and BNC conductors terminated.

Cable Pin Out

| | |
|--|-----------------|
| Network connection leads. | |
| Cat5/8P8C pinout configuration – 10/100BASET (TIA568B) | |
| Network connectors. | |
| Pin | Function |
| 1 | Tx D+ |
| 2 | Tx D - |
| 3 | Rx D+ |

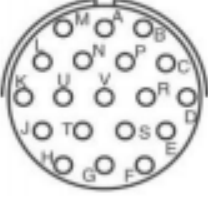


Multway Cable Conductor Assignments.

| Conductor | Function | | Conductor | Function | |
|--------------|------------------------------|--------------------------|-------------------|---|--------------------------|
| Red | PTZ Power + (Pos) [26-32VDC] | <input type="checkbox"/> | Green/Yellow | Earth (Chassis) | <input type="checkbox"/> |
| Black | PTZ Power - (Neg) | <input type="checkbox"/> | Grey (Drain wire) | Cable screen – overall multicore shield. | <input type="checkbox"/> |
| | | <input type="checkbox"/> | Orange | Aux / Washer Relay Pos – (Specific models only) | <input type="checkbox"/> |
| Coaxial 1 | Composite Video 1 - miniRG59 | <input type="checkbox"/> | White | Aux / Washer Relay Neg – (Specific models only) | <input type="checkbox"/> |
| Coaxial 2 | Composite Video 2 - miniRG59 | <input type="checkbox"/> | Brown | Pass-through Power Pos | <input type="checkbox"/> |
| | | <input type="checkbox"/> | Blue | Pass-through Power Neg | <input type="checkbox"/> |
| Yellow (UTP) | UTP - RS485 (Data +) | <input type="checkbox"/> | Cat5e - Grey | Net 1 (A) – Ethernet network – PTZ/Side camera payloads | <input type="checkbox"/> |
| Blue (UTP) | UTP - RS485 (Data -) | <input type="checkbox"/> | Cat5e - Blue | Net 2 (B) – Ethernet network – Passthrough to top payload | <input type="checkbox"/> |

ANNEX 2 - Physical Connectors

Osiris Base Connector

| | |
|---|---|
| <p>Rear View of Connector</p>  <p>View of the socket face.</p> | <p>EATON</p> <p>Base Socket: U14EN (UCM)</p> <p>Cable Connector: UTS6JC14E19S</p> <p>Contact arrangement: 21-29. Contacts No.20 and No.25 are Coaxial types for Video transmission.</p> |
|---|---|

Installation cable - Contact assignments and conductors (CA-UCM cable).

Configuration Scheme U14CN [RED]

| Conn A (UTS) | Conn B (RJ45) | Conn C (RJ45) | Function | Type | Conductor (VCM4D) | Equivalent | |
|--------------|---------------|---------------|-------------|------------|---------------------|------------|---|
| 1 | A | - | Power Pos | Power 5A | Red | | |
| 2 | B | - | Power Neg | Power 5A | Black | | |
| 3 | C | - | CVBS 1 Sig | Video | Coax 1 Core | | |
| 4 | D | - | CVBS 1 Gnd | Video | Coax 1 Screen | | |
| 5 | E | - | Aux 1 | Power 1A | Orange | | |
| 6 | F | - | Aux 2 | Power 1A | White | | |
| 7 | G | - | Telem A | RS-485 (+) | Yellow (opt. Green) | | |
| 8 | H | - | Telem B | RS-485 (-) | Blue | | |
| 9 | J | - | Earth | Power 5A | Green/Yellow | | |
| 10 | K | - | CVBS 2 Sig | Video | Coax 2 Core | | |
| 11 | L | - | CVBS 2 Gnd | Video | Coax 2 Screen | | |
| 12 | M | 6 | Eth2 TX D2- | Ethernet | Cat5 Brown | Gm | 8 |
| 13 | N | 3 | Eth2 TX D2+ | Ethernet | Cat5 White/Brown | W/Gm | 7 |
| 14 | P | 6 | Eth1 RX D2- | Ethernet | Cat5 Green | | |
| 15 | R | 3 | Eth1 RX D2+ | Ethernet | Cat5 White/Green | | |
| 16 | S | 1 | Eth2 TX D1+ | Ethernet | Cat5 Blue | W/Org | 4 |
| 17 | T | 2 | Eth1 TX D1- | Ethernet | Cat5 Orange | | |
| 18 | U | 1 | Eth1 TX D1+ | Ethernet | Cat5 White/Orange | | |
| 19 | V | 2 | Eth2 TX D | Ethernet | Cat5 White/Blue | Org | 5 |
| - | - | | | | | | |

MIL-DTL-26482

Conductors to be individually heatshrink covered where entering solder buckets.
Cable insulating sheath to be sealed (IP68) to connector.

Side Payload Mounting Connector.

| | |
|---|--|
| <p>MIL-D38999 G39</p> <p>View in to Socket face.</p> | <p>Amphenol D38999 Series-III / TV.</p> <p>PTZ Hub Socket: Amphenol D38999/20FG39SN</p> <p>(Connector on payload: Amphenol D38999/26FG39PN – For attached equipment)</p> <p>Contact arrangement: G39 / 21-99 - [G39T]. Contact “r” is a Coaxial type for Video transmission on HD-SDI models. (available on limited pan models only).</p> <p style="text-align: right;">Block 2</p> |
|---|--|

| Pin (G39A) | Function | Note | Pin | Function | Note |
|------------|-------------------------|--------------------------------|-----|---------------------|---|
| A | Power Positive | 12VDC (4A) | c | Ethernet 1 (Rx-) | TIA-568B Gn 6 |
| B | Power Negative / Ground | 0V (4A) | d | Ethernet 2 (Rx+) | TIA-568B W/Gn 3 |
| C | Serial 1 (D-) (INV) | Ti side Camera (RS485) (P1) | g | Ethernet 3 (Tx-) | TIA-568B Or 2 |
| D | Serial 1 (D+) (NON) | Ti side Camera (RS485) (P1) | h | Ethernet 4 (Tx+) | TIA-568B W/Or 1 |
| K | Serial 4 (D+) | Aux Comms (IP RS485 +) | i | P2 Comm switcher | (Not Fitted) |
| L | Serial 4 (D-) | Aux Comms (IP RS485 -) | j | Return-video Signal | For IP encoder cameras |
| S | Serial 2 (TMU Rx) | Day side Lens/Cam (RS232) (P2) | k | Return-video Ground | For IP encoder cameras |
| T | Serial 2 (TMU Tx) | Day side Lens/Cam (RS232) (P2) | n | Video CVBS Signal | |
| X | Serial 3 (TMU Rx) | Ti side Lens (RS232) (P0) | p | Wiper Trigger | |
| Y | Serial 3 (TMU Tx) | Ti side Lens (RS232) (P0) | q | Video CVBS Ground | |
| | | | r* | Video HD-SDi | Coaxial contact (Not Fitted to all types) |

Contact identity letters are case sensitive.

(* Wide/Coaxial contact)

