



IRIS106 MINI PTZ CAMERA

USER GUIDE & INSTALLATION MANUAL

Warnings & Regulatory Information

Do not use harsh chemicals or cleaning solvents to clean the device.

Do not attempt to dismantle the device.

Unauthorized modifications or attachments could damage the device and may violate regulations governing radio devices.

Any modification to the products cable tail may invalidate the product warranty.

Please contact Iris Innovations before attempting any modification to the cable.

Avoid dropping, knocking or excessively shaking the device. Rough handling can break internal circuit boards and fine mechanics.

Observe correct polarity when connecting the power and data. Failure to do so could result in damage to the unit.



This symbol on the product or its packaging indicates that it must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment.



This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designated to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception.



We hereby declare that the product is in compliance with the essential requirements and other relevant provisions of European Directive 1995/5/EC (Radio and Telecommunications terminal equipment directive).

Introduction

The IRIS106 is a fully controllable Pan, Tilt and Zoom CCTV camera with low light operation, designed specifically for use on boats as a security safety and situational awareness aid.

The Camera is designed to be a small and low-profile as possible so that it doesn't protrude too much from head linings and so that it blends into the aesthetic of the vessel. It's marine grade stainless steel bezel features a high polish finish and the mirrored dome provides enhanced privacy.

Key features include:

- Sony High Resolution Camera Module - 700TVL
- 10x Optical Zoom
- 10x Digital Zoom
- High Speed Pan and Tilt
- Proportional Control
- Auto Focus
- Automatic Day / Night Filter switches from colour during the day, to monochrome at night or in low light for enhanced image clarity
- Built-in Fan to reduce condensation in hot environments
- Compact 4" Mirror Dome
- Marine Grade 316 Stainless Steel Bezel
- IP66 Water Resistant
- RS485 Communication / Pelco D Protocol

Installation

To install the IRIS106 you will need the following tools:

- Drill with 122mm Hole Saw
- Drill Bit for Pilot Holes (2mm)
- Cross Headed Screw Driver
- Hand tools for connecting cables (unless pre-made cables are being used), including wire cutters, wire stripper.
- Appropriate tool for terminating BNC connector (unless pre-made cables are being used), such as knife to remove coax cable outer sheath and dielectric, BNC Crimp Tool, Cable Insulation Stripper.
- Marine Sealant

Before you begin the installation, please take time to consider the following important points:

- Always wear safety goggles, dust mask and ear protection when drilling, cutting or sanding. Where suitable gloves when handling fibre glass and GRP.
- Before drilling or cutting always ensure there are no obstructions, cables or equipment on the opposite side of the surface you're working on. Also ensure there is sufficient space behind the surface to accommodate the body of the camera, and cabling and ensure you can get the necessary cables to the camera position.
- Observe safe working procedures when working with electricity. Do not connect the equipment to live power sources until correct, safe termination through an appropriately rated fuse or breaker is made. Do not attempt to install this product unless you are a certified electrical installer. Failure to do so could result in injury or death.
- It is advised that before the equipment is fixed down, check that desired viewing angles can be achieved in the intended installation position, and that the equipment will not obstruct other equipment or fixtures in it's intended position (such as doors or walkways for

example). If possible, power the item up and offer the camera up in the vicinity of the desired installation position to double check suitability.

Cabling:

The camera has a 30cm cable tail which has a 2.5mm DC Barrel Jack (female) to connect power, bare stripped and tinned wires (colour coded red and black) for the RS485 serial control data) and a 75Ω BNC (female) connector for the video signal, therefore it will be almost inevitable that the power, data and video cables will need to be extended. In a typical installation, the video cable will need to be routed back to the monitor (or chart plotter), the data pair will need to be routed back to the controller or RS485 Data Distributor in larger installations and the power pair will need to be routed back to the boats distribution panel. See the illustration below:

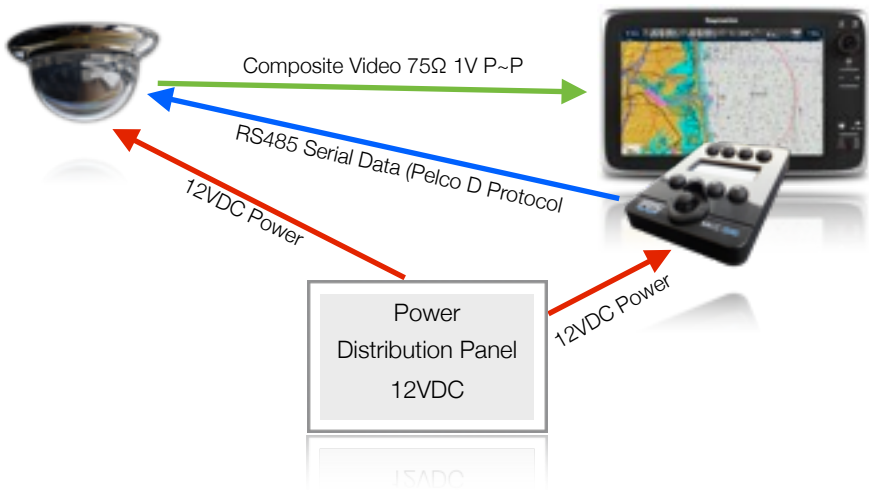


Fig:1.0. Very Basic Installation. Single camera being controller by single IRIS516 controller and video displayed on MFD.



Fig:2.0. Slightly more complex set up with 4 IRIS106 cameras being controlled and viewed at 2 separate helm positions. Data from each controller is fed into the input of the RS485 Serial Data Expander, and data to each camera is connected to the outputs. This keeps the data 'clean' and prevents data cross talk and over-runs. Video from each camera is fed into a VDA (Video Distribution Amplifier), which feeds two MFD's. Power not shown to keep diagram simple.

Cabling (continued...)

The following cable specifications apply:

Video: 75Ω Coaxial Cable such as RG59, URM70, RG174 Mini-Coax.

Data: Single Twisted Pair

Power: 2 core. Rated 12VDC - max Current 1A

Individual cables can be run for each of the above, or 'Combination' (Combi) cables can be used. Iris Innovations supply pre-made cables to length. Please contact Iris for more details.

Camera Setup:

Before you can control the camera you need to ensure the cameras protocol details are correctly set.

By default, the camera leaves the factory set up as follows:

Camera Address: 1 (User definable via Dip Switches)

Camera Protocol: Pelco D

Baud Rate: 9600 (Definable Via Dip Switches)

Iris strongly recommend that the baud rate is not changed. The IRIS516 controller will only control the camera with Pelco-D protocol and at 9600 baud.

You may however be required to change the address of the device. Each camera must have it's own unique address so that it only responds to commands destined for it.

Camera Address:

To change the cameras address, remove the camera dome and locate DIP switch bank 1. There are 10 DIP switches in the bank. Switches 1~8 set the camera address (Binary 1~255) and switches 9 and 10 set the Baud Rate. The baud rate is set to 9600bps (switch 9 = OFF / switch 10 = ON).

Camera Address (continued...)

The example below (Fig 3.0) shows the camera address set to 1, as switch 1 is set to the ON position as shown by the arrow. As the switches set the binary address, to set the cameras address to 2, set switch 1 to OFF and switch 2 to ON. To set the camera to address 3, ensure both switches 1 and 2 are set to the ON position. For address 4, switches 1 and 2 should be OFF and switch 3 should be ON. The value of each switch doubles. The value of each individual switch is listed below:

Switch 1 = 1. Switch 2 = 2. Switch 3 = 4. Switch 4 = 8. Switch 5 = 16. Switch 6 = 32. Switch 7 = 64. Switch 8 = 128

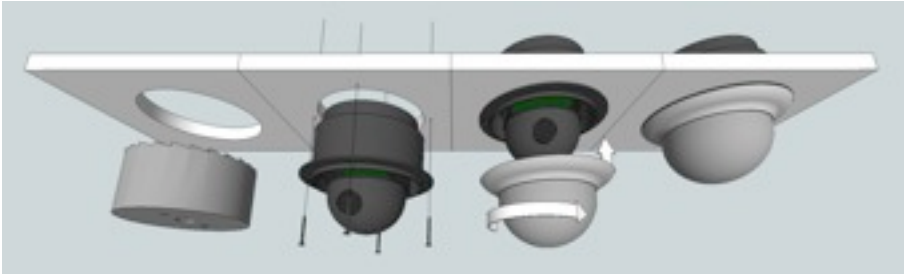


Fig.3.0: Example of Camera Address set to 1



Fig.3.1: Example of Camera Address set to 9. Switch 1 has a value of 1 and switch 4 has a value of 8, therefore $1 + 8 = 9$

Fitting the Camera:



Step 1: After you have established the desired mounting position and are happy there are no obstacles behind the surface into which you are drilling, use a 105mm hole saw to carefully create the circular recess into which the camera body will sit.

Step 2: Once the mounting hole has been cut offer the camera into place and mark off the 4 fixing holes. Remove the camera carefully and use the 2mm drill bit to create 4 pilot holes. Now, once the cables have been run and connected up, re-insert the camera body into the recess and line up the four fixing holes with the pilot holes. Fix the camera in place with the four self tapping screws supplied. It is recommended that a marine grade sealant is used to add a bead of sealant behind the flange so that a seal is formed when the camera is screwed into place.

Step 3: Power up the camera to test operation. Upon power-up, the camera will perform a short initialization routine whereby it will pan and tilt to find it's limits. On your screen will be listed the cameras physical address, protocol and baud rate and show the status of each initialization test. This should last for around thirty seconds whereafter the cameras video will be displayed and you should now be able to control the camera.

Step 4: Now carefully screw the bezel into position. Care should be taken to avoid cross threading the bezel at this stage and it is vital that the bezel is tightly screwed into position.

Operation

Now the camera is installed, powered up from a suitably rated and protected 12VDC power source and the video is hooked up to the monitoring (or switching / recording / routing) equipment, the camera can be controlled using any controller, MFD or interface that supports the widely available Pelco D protocol.

Panning:

The camera pans through 360° continuously. Simply move the controller in the desired direction of travel.

Tilting:

The camera tilts through 180° with an automatic 'Auto-Flip' feature so that the camera image is automatically flipped when the camera reaches its tilt apex (ie, points directly downwards) in order to correct the video orientation.

Zoom:

The camera features 10x optical zoom (F=4.9mm ~ 49mm). When the camera reaches the extent of it's optical zoom range it will automatically switch to digital zoom. With digital zoom, each pixel that makes up the image is multiplied in size in order to increase the overall image size.

Focus:

By default, the camera is set to Autofocus.

Preset Positions:

The camera features 256 user definable 'memory' locations, known as Presets. These can be used to save physical pan/tilt positions into memory and recalled

at the touch of a button. Refer to the documentation of the controller for details on how to save and recall preset positions.

OSD Menu (Extended Features)

The camera features many extended features and settings that are accessed via an On Screen Display (OSD) menu. OSD Menu functionality may or may not be supported depending on the control interface. The OSD Menu is accessed by calling Preset 95. To exit the OSD menu call preset 56.

Navigating OSD Menu

- Menu items with <> symbols indicate a drop down menu
- To access sub-menu, press either Near Focus or move joystick Right
- To return to the previous menu select the BACK option
- Use the joystick to navigate through menu options
- Use UP and Down to change values
- To save changes use Iris OPEN. To un-save use Iris CLOSE

Important:

Changing certain values within the OSD menu can effect the control of the camera and it's functionality. It is greatly recommended that values within the OSD are left as default. For more information contact Iris Innovations Technical Support.

Camera Address Table

This table lists the DIP switch settings to set address 1 through 75. For information on how to set addresses 76 through 254 please contact Iris Innovations Technical Support.

Address	SW pin#							
	1	2	3	4	5	6	7	8
1	on	off	off	off	off	off	off	off
2	off	on	off	off	off	off	off	off
3	on	on	off	off	off	off	off	off
4	off	off	on	off	off	off	off	off
5	on	off	on	off	off	off	off	off
6	off	on	on	off	off	off	off	off
7	on	on	on	off	off	off	off	off
8	off	off	off	on	off	off	off	off
9	on	off	off	on	off	off	off	off
10	off	on	off	on	off	off	off	off
11	on	on	off	on	off	off	off	off
12	off	off	on	on	off	off	off	off
13	on	off	on	on	off	off	off	off
14	off	on	on	on	off	off	off	off
15	on	on	on	on	off	off	off	off
16	off	off	off	off	on	off	off	off
17	on	off	off	off	on	off	off	off
18	off	on	off	off	on	off	off	off
19	on	on	off	off	on	off	off	off
20	off	off	on	off	on	off	off	off
21	on	off	on	off	on	off	off	off
22	off	on	on	on	on	off	off	off
23	on	on	on	off	on	off	off	off
24	off	off	off	on	on	off	off	off
25	on	off	off	on	on	off	off	off
26	off	on	off	on	on	off	off	off
27	on	on	off	on	on	off	off	off
28	off	off	on	on	on	off	off	off
29	on	off	on	on	on	off	off	off

Address	SW pin#							
	1	2	3	4	5	6	7	8
30	off	on	on	on	on	off	off	off
31	on	on	on	on	on	off	off	off
32	off	off	off	off	off	on	off	off
33	on	off	off	off	off	on	off	off
34	off	on	off	off	off	on	off	off
35	on	on	off	off	off	on	off	off
36	off	off	on	off	off	on	off	off
37	on	off	on	off	off	on	off	off
38	off	on	on	off	off	on	off	off
39	on	on	on	off	off	on	off	off
40	off	off	off	on	off	on	off	off
41	on	off	off	on	off	on	off	off
42	off	on	off	on	off	on	off	off
43	on	on	off	on	off	on	off	off
44	off	off	on	on	off	on	off	off
45	on	off	on	on	off	on	off	off
46	off	on	on	on	off	on	off	off
47	on	on	on	on	off	on	off	off
48	off	off	off	off	on	on	off	off
49	on	off	off	off	on	on	off	off
50	off	on	off	off	on	on	off	off
51	on	on	on	off	on	on	off	off
52	off	off	on	off	on	on	off	off
53	on	off	on	off	on	on	off	off
54	off	on	on	off	on	on	off	off
55	on	on	on	off	on	on	off	off
56	off	off	off	on	on	on	off	off
57	on	off	off	on	on	on	off	off
58	off	on	off	on	on	on	off	off
59	on	on	off	on	on	on	off	off
60	off	off	on	on	on	on	off	off
61	on	off	on	on	on	on	off	off
62	off	on	on	on	on	on	off	off
63	on	on	on	on	on	on	off	off
64	off	off	off	off	off	off	on	off
65	on	off	off	off	off	off	on	off
66	off	on	off	off	off	off	on	off
67	on	on	off	off	off	off	on	off
68	off	off	on	off	off	off	on	off
69	on	off	on	off	off	off	on	off
70	off	on	on	off	off	off	on	off
71	on	on	on	off	off	off	on	off
72	off	off	off	on	off	off	on	off
73	on	off	off	on	off	off	on	off
74	off	on	off	on	off	off	on	off
75	on	on	off	on	off	off	on	off

Limited Warranty

This Iris Innovations product is warranted to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, Iris will, at its sole option, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labour, provided that the customer shall be responsible for any transportation cost. This warranty does not apply to: (i) cosmetic damage, such as scratches, nicks and dents; (ii) consumable parts, such as batteries, unless product damage has occurred due to a defect in materials or workmanship; (iii) damage caused by accident, abuse, misuse, water, flood, fire, or other acts of nature or external causes; (iv) damage caused by service performed by anyone who is not an authorized service provider of Iris; or (v) damage to a product that has been modified or altered without the written permission of Iris. In addition, Iris reserves the right to refuse warranty claims against products or services that are obtained and/or used in contravention of the laws of any country. This product is intended to be used only as an aid and must not be used for any purpose requiring precise measurement of direction, distance, location or topography. THE WARRANTIES AND REMEDIES CONTAINED HEREIN ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESS, IMPLIED, OR STATUTORY, INCLUDING ANY LIABILITY ARISING UNDER ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE. IN NO EVENT SHALL IRIS BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, DAMAGES FOR ANY TRAFFIC FINES OR CITATIONS, WHETHER RESULTING FROM THE USE, MISUSE OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT. SOME STATES DO NOT ALLOW THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. Iris retains the exclusive right to repair or replace (with a new or newly-overhauled replacement product) the device or software or offer a full refund of the purchase price at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY. To obtain warranty service, contact your local Iris authorized dealer or call Iris Innovations Product Support for shipping instructions and an RMA tracking number. Securely pack the device and a copy of the original sales receipt, which is required as the proof of purchase for warranty repairs. Write the tracking number clearly on the outside of the package. Send the device, freight charges prepaid, to any Iris Innovations warranty service agent. An additional 12 month warranty restricted to the limitations listed above is available free of charge by registering the product upon purchase via the Iris Innovations website www.boat-cameras.com

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Iris Innovations: IRIS106 User Guide. v4.00 24-11-17