



# Iris Innovations

IM-PTZ-16 Micro-PTZ Camera

# Thanks for choosing the PTZ-16!

## When You Open The Box...

- Check that the packaging and the contents are not visibly damaged.
- Contact your supplier immediately if any of the parts listed below are missing or damaged

### Package Contents

Item	Code	Donec quis nunc	Quantity
1	IM-PTZ-16	Pan / Tilt / Zoom camera	1
3	Screw	Fixing Screw - Plate to Camera	3
4	Screw	Fixing Screw - Plate to Boat	3
5	Screwdriver	Security Driver	1
6	IM-PTZ-UCAB	Umbilical Cable	1
7	PTZ User Guide	Installation / Operating Manual	1

*The information contained in the document is subject to change without notice. The most up to date versions of all manuals can be found online at [www.boat-cameras.com](http://www.boat-cameras.com)*

## Safety Notes!



The following important notes must be followed carefully to run the camera and respective accessories such as keypad controllers etc. The camera and accessories are referred to as 'video system' hereafter in this document.

- Before installing the camera, please read this manual carefully. During installation follow the instructions indicated in this manual. Please keep this manual safe for future reference. In the event of the manual becoming lost please download an up to date copy from [www.boat-cameras.com](http://www.boat-cameras.com)
- The installation of the video system including this camera and any associated accessories should be carried out by qualified service personnel or system installers in accordance with local rules.
- Before powering the camera please check the supply voltage and ensure the power supply is safely isolated using an appropriately rated fuse or circuit breaker.
- Please ensure the power, video and data umbilical are stowed safely and that terminations to third party hardware or extension cables are properly shielded from moisture.
- Do not operate the camera beyond the specified temperature and humidity limits.
- To prevent electric shock, never remove the screws or the cover of the camera. There are no user serviceable parts within the camera housing. Refer to qualified and approved Iris service personnel for servicing.
- Never aim the camera at the sun or other extremely bright objects.
- Do not manually move the camera.

## Introducing the IM-PTZ-16

The IM-PTZ-16 micro pan tilt zoom camera has been especially designed for practical and extreme applications such as marine, military and emergency service vehicles.

In addition to its remarkably compact and sleek design, the PTZ is water-resistant and has anti-vibration and anti-corrosion properties.

### Features:

- Full weather proof, anti vibration and anti-corrosion. IP66 certified.
- Compact integrated design with remote controllable telemetry.
- Random scan, cruise and pattern scan.
- Continuous 360 degree pan, 180 degree tilt (90 degree with another 90 degree auto-flip).
- 100 user definable preset positions.
- Auto focus, white balance and back light compensation.
- Proportional Pan / Tilt speed in accordance with degree of zoom.

### Functions:

#### Day / Night Function

The PTZ-16 features a true mechanical Day / Night filter that switches the camera from colour to monochrome in low light conditions for added clarity. The camera can produce clear pictures even in extremely low-light conditions, as low as 0.01 Lux.

#### Proportional Pan

Proportional pan automatically reduces or increases the pan and tilt speeds in proportion to the degree of zoom. When zoomed in (telephoto) the pan and tilt speeds will be significantly slower for a given amount of joystick movement than at wide zoom position. This prevents the image from moving too fast on the monitor when zoomed in.

#### Save / Call Preset

The PTZ-16 has the facility to learn 100 positions (including zoom and focus values). Users can then send the camera automatically to a position by simply selecting the desired preset position number, or by hitting a dedicated key. Please note, presets are not available on the KBD-16 v1.

#### Lens Control

Users can adjust zoom wide and zoom telephoto to a ratio of 26 times zoom. Focus is set to auto-focus as standard. Autofocus can be overridden with certain control interfaces. Similarly, the camera Iris defaults to automatically but can be overridden with certain control interfaces.

### **Lens Control (continued...)**

The following factors may affect autofocus:

- Target not central within field of view.
- Multiple targets are near and far simultaneously in the field of view.
- Target object extremely bright and causes lens flare.
- Target moving too fast.
- Target is behind glass which has water droplets or dust contamination
- Target is too dark or vague.

### **Auto White Balance**

The PTZ-16 automatically adjusts white balance (WB) according to the amount of background light to provide a true colour representation of the field of view.

### **Back Lighting Compensation (BLC)**

If the field of view has a bright background the target subject may appear dark or as a silhouette as the iris struggles with the variance of light. Backlight compensation enhances the target objects in the center of the picture. The camera processor uses the center of the picture as a focal point from which to adjust the Iris.

### **Auto Cruise**

The camera has the facility to store 39 preset positions into a 'cruise list' which when actioned will cycle through each position in the list.

### **Auto, Random and Frame Scan**

- Auto scan - The camera scans 90 degrees in either direction automatically through a 180 degree sweep.
- Random scan - when activated the camera will scan to random positions throughout it's 360 degree sweep.
- Frame scan - scans the camera 45 degree left and 45 degree right through a 90 degree sweep.

### **Image Flip**

In the majority of installations the PTZ-16 will be installed in a hanging position (upside down), in which case it is necessary to flip the image. This is achieved via a dip-switch setting or by calling preset position 88 which is reserved for the flip function.

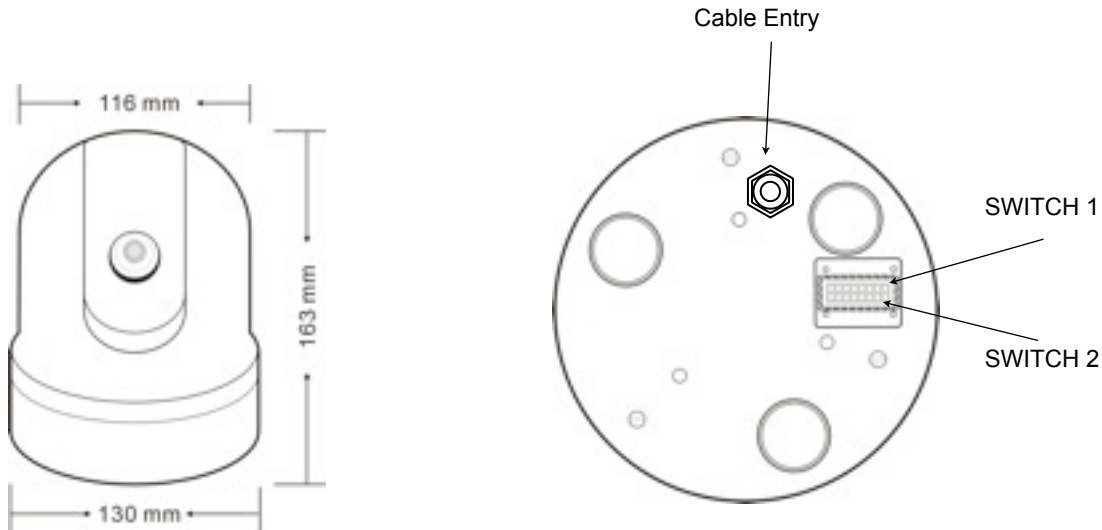
## Technical Data

	IM-PTZ-16
IP Protection	IP66
Image Sensor	1/4" SONY Colour CCD
Horizontal Resolution	480 TVL
Video Signal	1.0 V P~P Composite 75ohm impedance +/- 0.2 V P~P
Pan Tilt Speed	PAN 0.05 ~ 240 degrees per second / TILT 0.03 ~ 160 degrees per second
Signal Noise Ratio	50 db
Automatic Gain Control	Auto / Manual
Back Light Compensation	Auto / Manual
Sensitivity	0.01lux
IR Cut Filter	YES
Lens	F1.6~F3.8, f=3.5-91mm
Optical Zoom	26 x
Digital Zoom	12 x
Auto Cruise	Auto switch from 1 to 39 preset positions sequentially
Pattern Scan	4 Routes of pattern scan
Presets	100
Communication	RS485
Baud Rate	1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps
Address Range	0~255
Working Temperature	-25C ~ 75C
Power	12vdc 10W

## Installation

This section contains detailed instructions for installing the camera. These instructions assume that the installer has a good knowledge of installation techniques and is capable of adopting safe installation methods.

### Dimensions and Views



### Fixing Plate

Use the fixing plate as a drilling template before fixing to the base of the camera using fixing screws ( Item 3 ).

### **IMPORTANT!**

Before drilling any holes take care to ensure there are no cables, conduits, pipes etc behind the drilling surface.

Be sure to site your camera so that it covers all desired areas and does not foul any doorways or become a hazard in walkways etc.

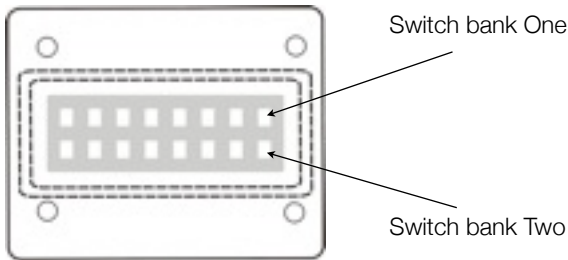
Allow sufficient space behind the drilling surface for the umbilical cable and it's connector.

To extend the cables back to the monitor (or switcher, or recorder), joystick and power source please use the following cables:

- Power: IM-POW-xx from Iris Innovations, from Iris Innovations, where xx is the length of cable in meters in multiples of 5.
- Video: IM-BNC-xx from Iris Innovations, from Iris Innovations, where xx is the length of cable in meters in multiples of 5.
- Data: IM-JOY-xx from Iris Innovations, from Iris Innovations, where xx is the length of cable in meters in multiples of 5.
- Combined Cable: IM-COMB-PTZ-xx from Iris Innovations, where xx is the length of cable in meters in multiples of 5.

**Dip Switch Settings**

Before the camera is fixed into place and operated, set the appropriate camera address, protocol and baud rate. This is done via a bank of dip-switches located underneath a removable cover plate on the under side of the camera (see drawing on page 5 above and illustration below).



**SWITCH BANK ONE: Camera Address Settings**

Camera Address	SW1							
	1	2	3	4	5	6	7	8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
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
...	...	...	...	...	...	...	...	...
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

**SWITCH BANK TWO: Baud Rate, Protocol and Fixed Image Flip (Upside Down Mode)**

SW2								
SW Position	1	2	3	4				
Protocol	ON	OFF	OFF	OFF	User			
	OFF	ON	OFF	OFF	PELCO-P			
	ON	ON	OFF	OFF	PELCO-D			
	OFF	OFF	ON	OFF	Reserved			
	ON	OFF	ON	OFF	Reserved			
	OFF	ON	ON	OFF	Reserved			
SW Position					5	6	7	8
Baud Rate (BPS)	1200				ON	OFF	OFF	-
	2400				OFF	ON	OFF	-
	4800				ON	ON	OFF	-
	9600				OFF	OFF	ON	-
	19200				ON	OFF	ON	-
	Reserved				OFF	ON	ON	-
Image Flip	Desktop Installation				-	-	-	OFF
	Reverse Installation				-	-	-	ON

**Dip Switch Settings (continued...)**

For example, to set the camera's baud rate to 9600bps, Pelco-P protocol and standard image (not flipped), refer to the settings shown for Switch Bank 2 in the table below.

SW2								
SW Pos	1	2	3	4	5	6	7	8
	ON	OFF	OFF	OFF	ON	ON	OFF	OFF

 **Reboot Camera After Changing Any Dip-Switch Settings.**

**Connections**

The camera is fitted with a 2 meter connection cable which supplies power and data and delivers the composite video signal. This cable is fitted with a 6 pin screw locking connector. The pin outs are detailed below.



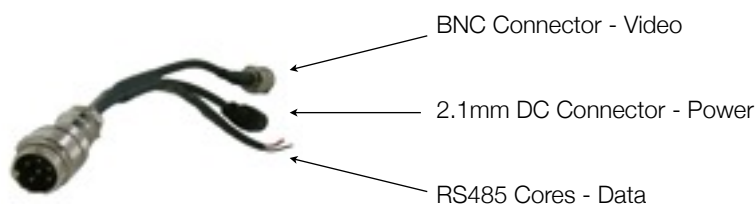
Pin No.	Function
1	Video Signal
2	Ground (POWER)
3	+12VDC (POWER)
4	RS485 Data B-
5	RS485 Data A+
6	Video Ground

 **Observe Extreme Care When Connecting Camera. Avoid Incorrect Polarity Which Could Cause Irreparable Damage To Camera.**

TIP! If there is no movement from the camera try swapping over the RS485 data wires.

The camera is also shipped with an extension cable pre-made with standardized power and video connectors (Item.6 - Umbilical Cable). The two data wires are coloured red (RS485 A+) and black (RS485 B-).

 **Do Not Confuse the Red and Black Data Wires on the Umbilical For 12VDC Supply!**



IM-PTZ-UCAB - Umbilical Cable (Item.6)



## Power-Up

Upon powering up the PTZ-16, the camera will perform a short self-test sequence during which the camera will pan, tilt and zoom to it's 'mid-pot' positions. After this sequence is complete the camera is ready to use.

The camera can now be controlled using any suitable PTZ controller that features the supported protocols, the Iris IM-KBD-16 external controller or a touch screen system. For more information contact Iris Innovations directly or view the website [www.boat-cameras.com](http://www.boat-cameras.com).



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