



Centurion Installation/Configuration Manual



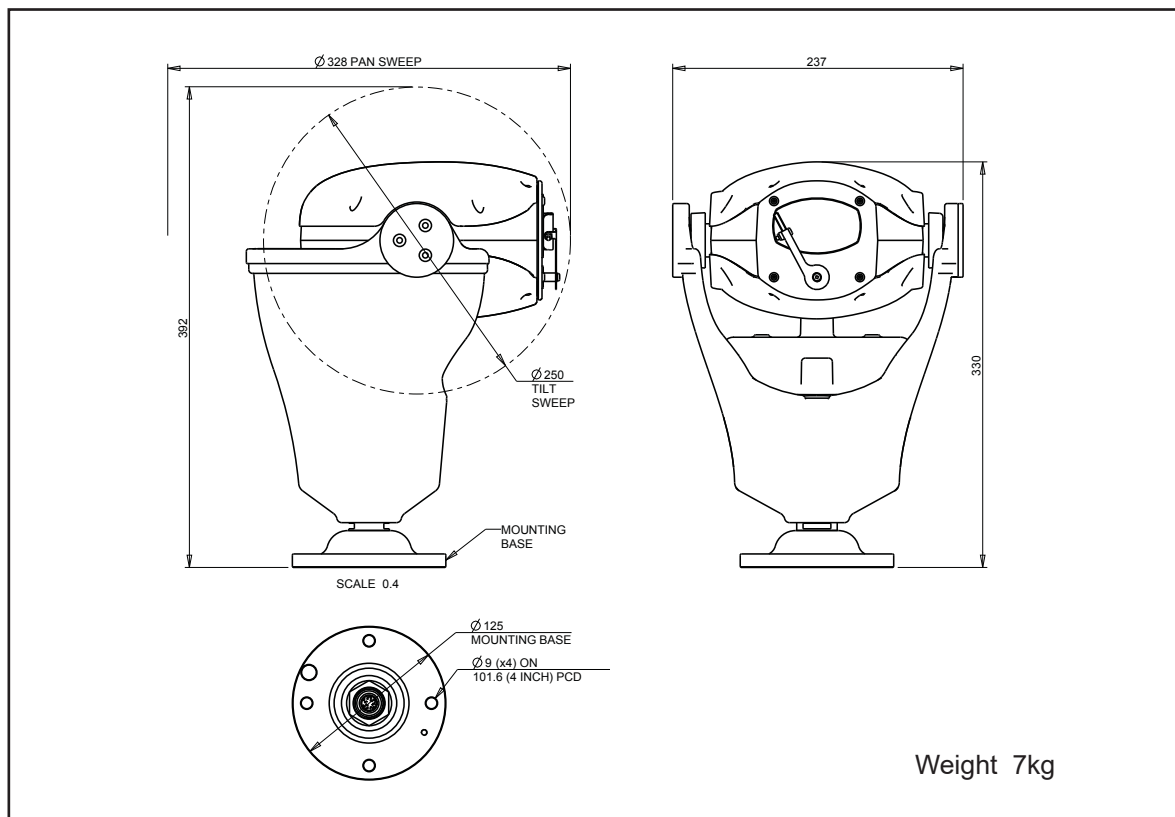
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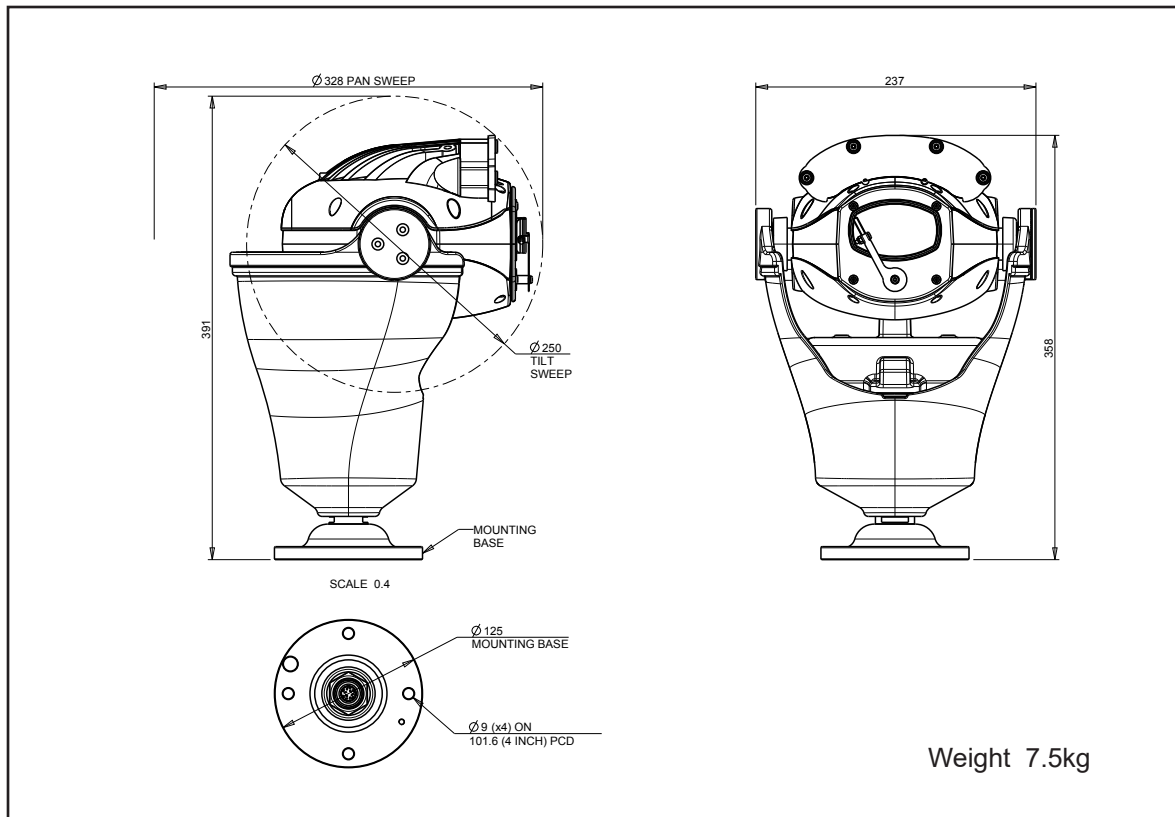
1 Safety and Precautions

1. Please read these notes before attempting to operate the 360 Vision Centurion, and keep for future reference.
2. DO NOT disassemble or remove covers. This will break the water seals and invalidate the warranty.
3. All servicing and repairs must be handled by 360 Vision Technology.
4. Avoid pointing the camera directly towards a bright light source (sunlight), or expose the camera to intensive light situations as this may damage the camera pick-up device.
5. Installation should be carried out by suitably qualified personnel, in accordance with local codes of practice and regulations.
6. 360 Vision Technology Limited accept no liability for any damage caused by incorrect or improper installation.
7. To prevent risk of injury caused by the Centurion or mounting options becoming detached, fit a suitable safety chain or lanyard.
8. Connection of data signals and power should only be made using a pre-made Centurion Composite cables.
9. Use only 360 Vision Centurion power supplies. These have suitable terminals for all the wires in the Centurion composite cable.
10. Please handle the Centurion with care, as improper handling may cause damage within this unit.

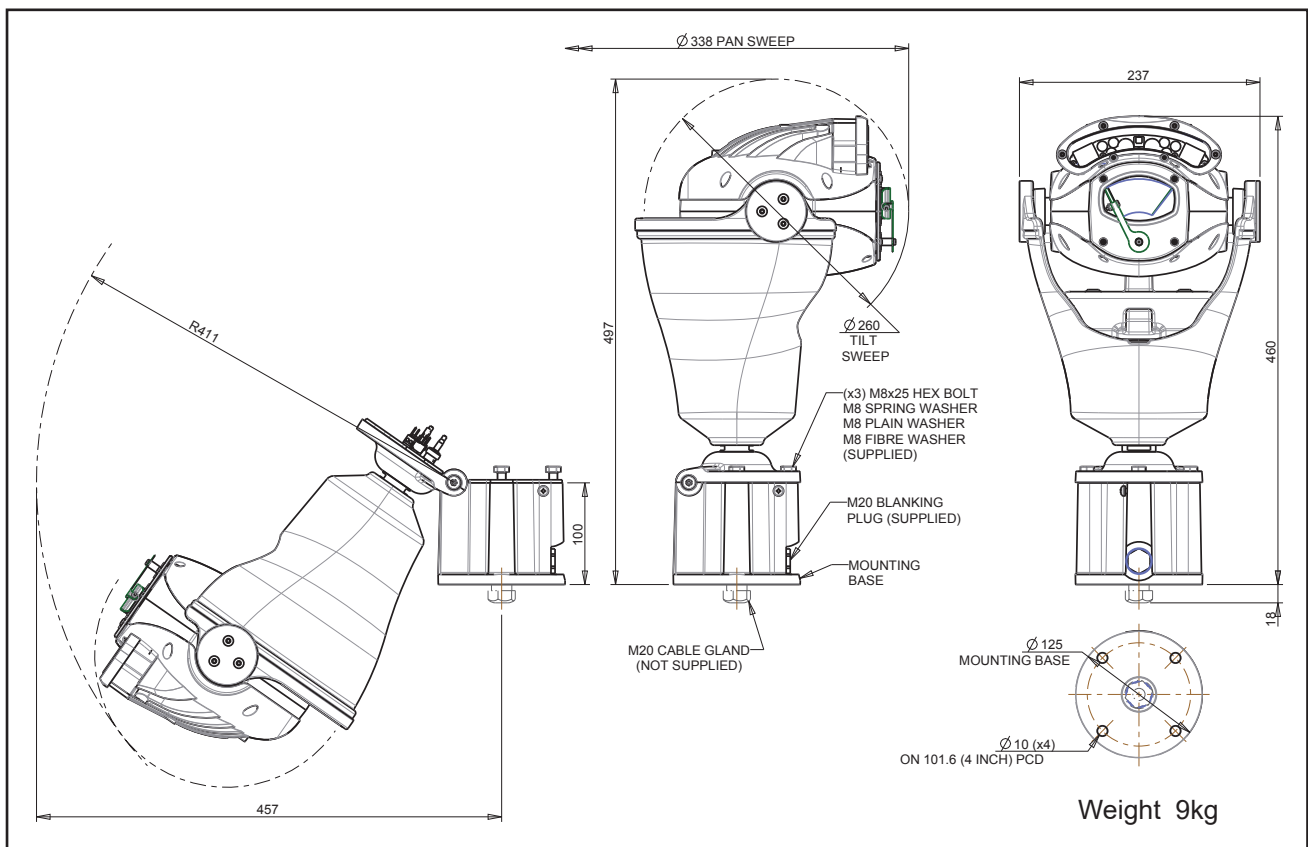
2 Housing Dimensional Drawing



Centurion No Lamps

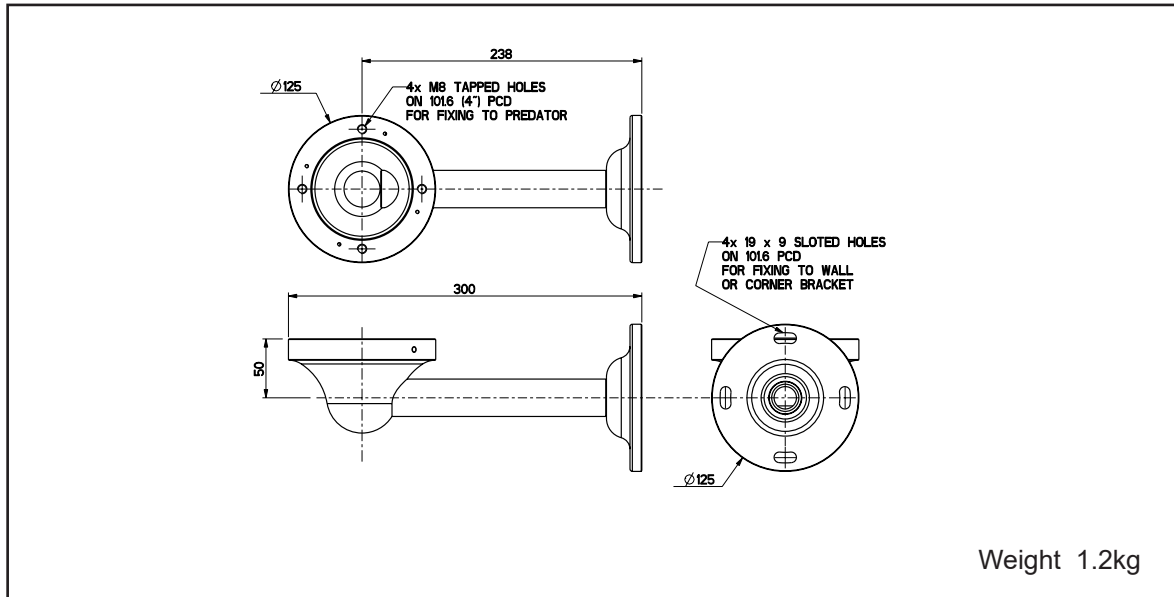


Centurion Single LED Array - Covers IR80, or IR110WL versions.

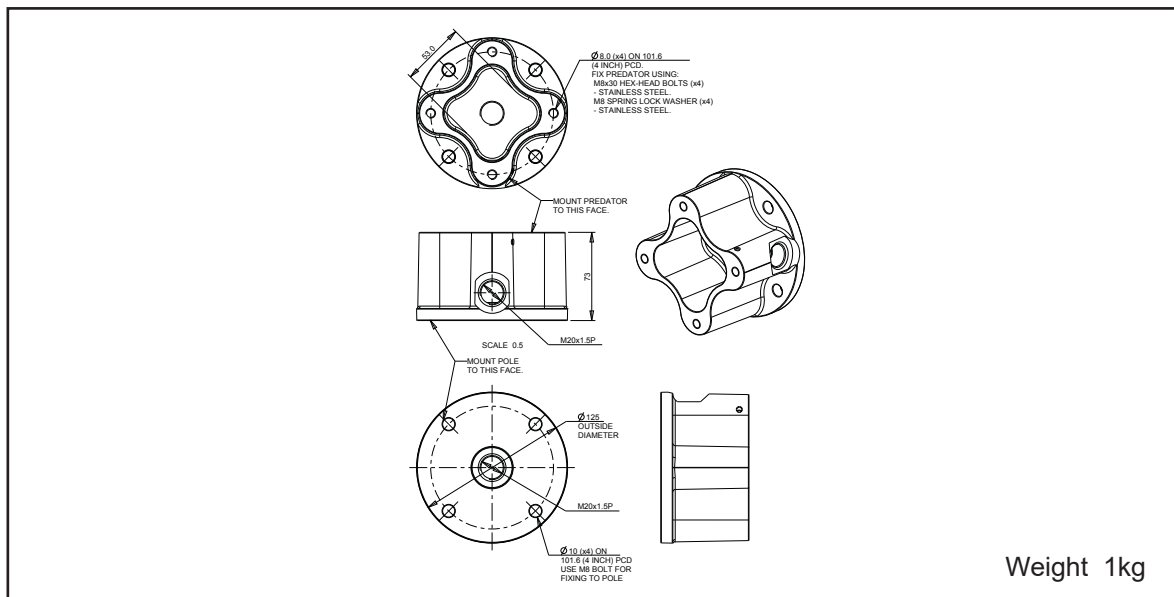


Centurion HMA with LED Array

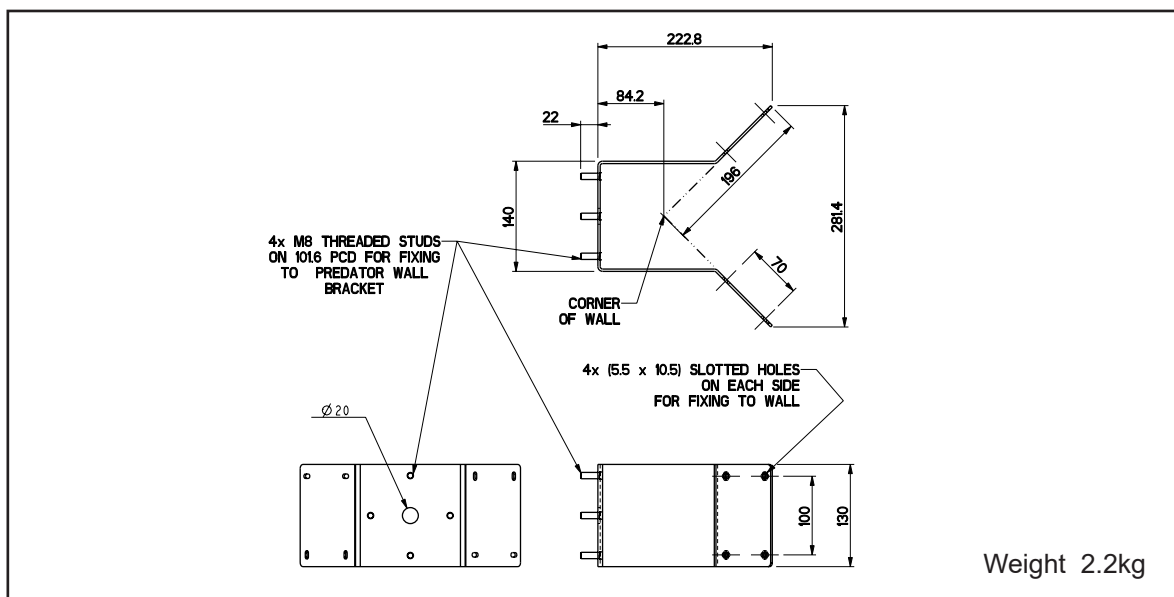
3 Bracket Dimensional Drawing



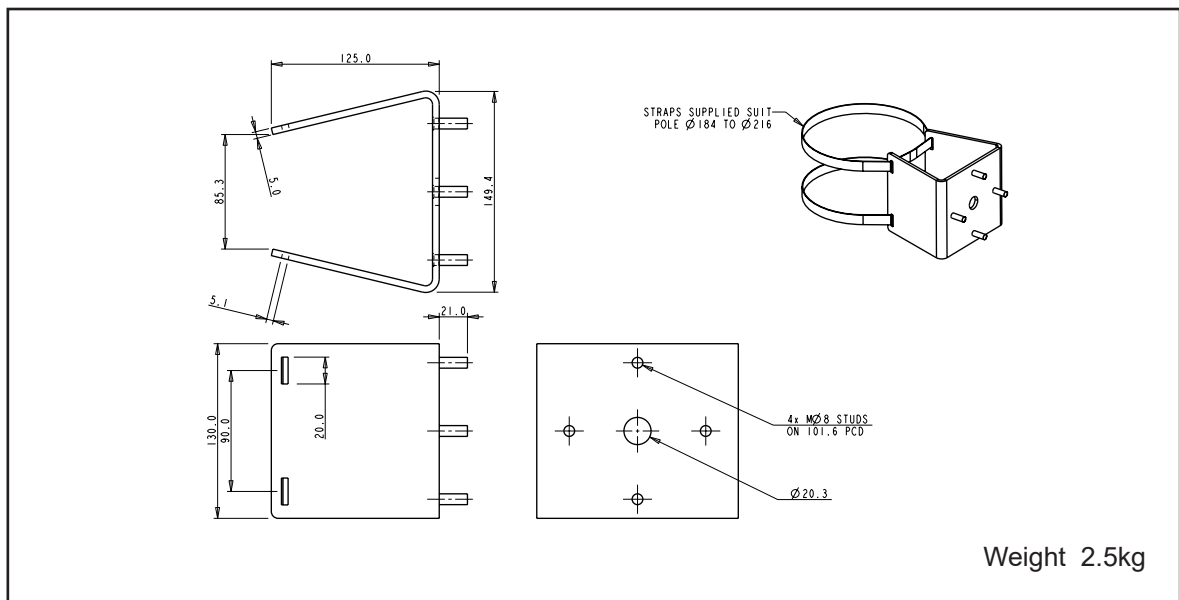
Centurion Wall Bracket



Centurion PMA Bracket



Centurion Corner Bracket



Centurion PMB Bracket

Please use the appropriate fixings to suit the weight of the camera housing used.

4 Connections

Centurion Composite Cable

This pre-made Centurion Composite Cable is available in 3m, 10m, 25m and 40m lengths. It contains video coax, power and data cables. One end is fitted with the IP68 12-way connector for direct connection to the Centurion, the other is supplied with all cables stripped and tined ready to be connected to the two-part connectors which are supplied with the Centurion power supply.

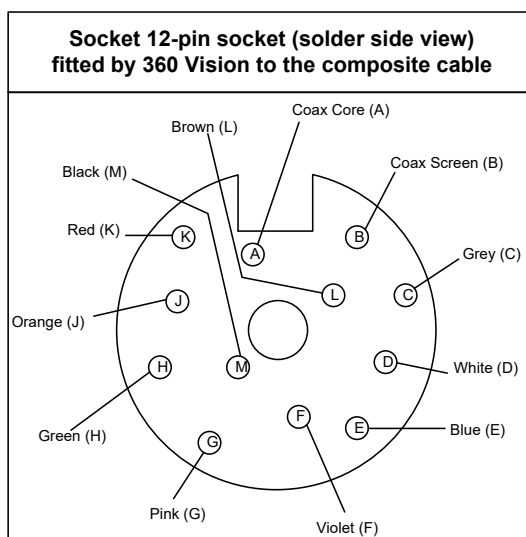
Connecting the composite cable to the Centurion

Route the cable through the brackets and cable glands before connecting it to the Centurion. Ensure that the pins and sockets are lined up correctly, insert the connector and tighten the locking ring to make the connector water tight.

It is important that the water should not be allowed to pool around the connector, as this will increase the risk of contamination and corrosion which may cause poor connections.

The connector on the base of the Centurion is rated IP68, when it is correctly connected and the locking ring is tight.

Centurion 12-way connector pin-out.

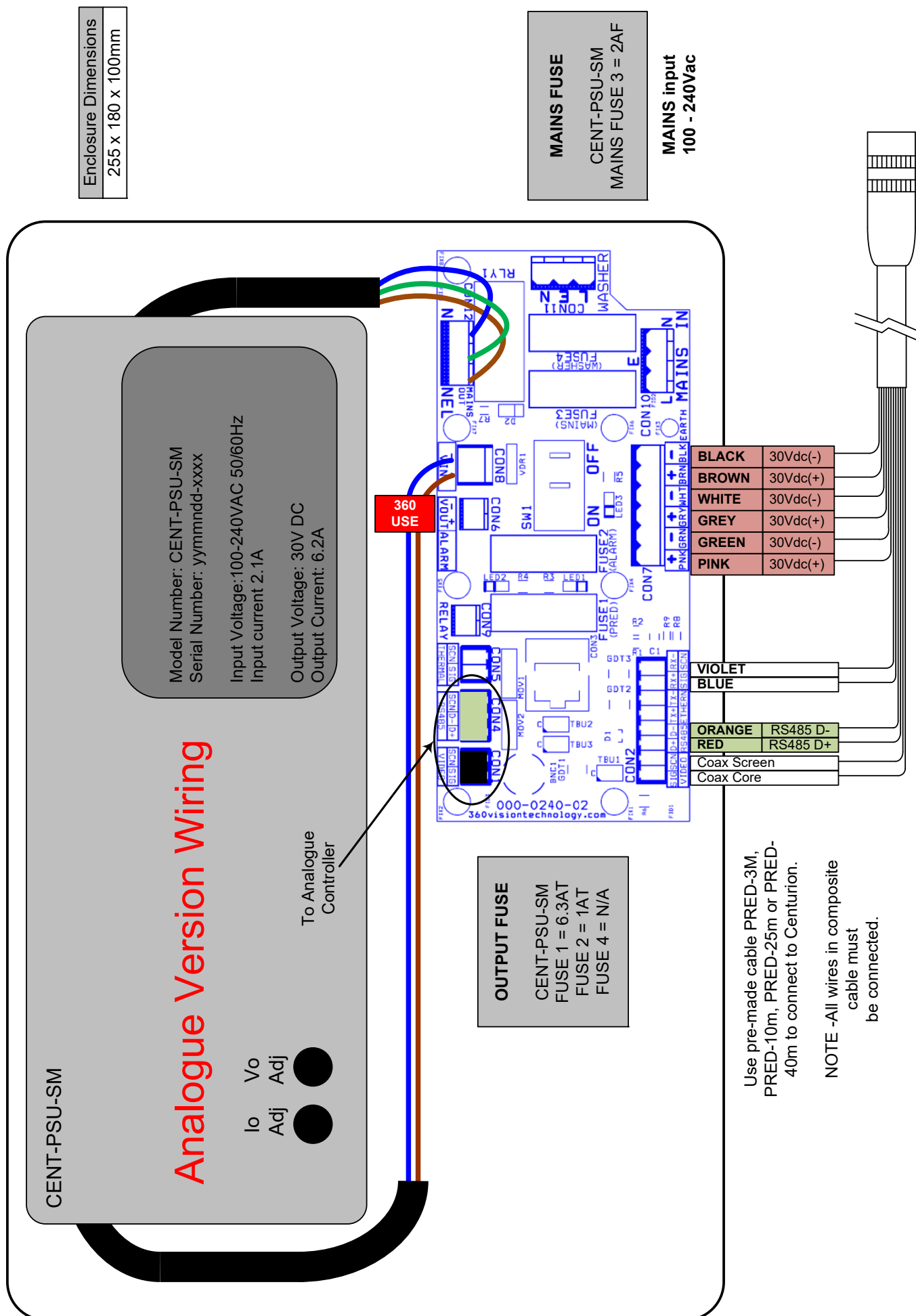


Cables for Connection to Centurion Power Supply

PRED-3M	Pre-made 3m cable
PRED-10M	Pre-made 10m cable
PRED-25M	Pre-made 25m cable
PRED-40M	Pre-made 40m cable

Cables for Connection from Centurion Power Supply

	Cable Type	Maximum Distance
Mains	3 x 0.75mm ² conductors with PVC insulation, PVC overall sheath (H03VV-F or H05RN-F)	250m
Video	RG59BU (low quality cable conductor)	250m
	RG59BU (Copper central conductor, RG11, CT125)	1000m
Twisted Pair Data (RS485)	Belden 9841, Belden 9842, Belden 8723	3000m



The CENT-XALARM-PSU-SM has eight normally open/normally closed (Dilswitch S1, switch 8 on) alarm inputs on connector CON1 on the alarm PCB. When using normally closed contacts, all unused alarm inputs must be connected to alarm in common CON1. Connect switches or volts free relay outputs from PIRs or other equipment to CON1 connector so that the terminal labelled COM is connected to the appropriate alarm input (A1 to A8) when the alarm contact is activated. There is also an alarm relay which can be used to activate alarms on other equipment (DVRs etc.). The alarm relay contacts (Common – ‘C’, Normally Open – ‘NO’ and Normally Closed – ‘NC’) use connector CON3 on the alarm PCB.

When an alarm is activated, the ALARM PCB will activate the alarm relay output and will send commands to set the Centurion to activate ‘alarm mode’. The Centurion will save the current status (pan, tilt, lens, tour and mimic) then it will seek the preset which corresponds with the active alarm number.

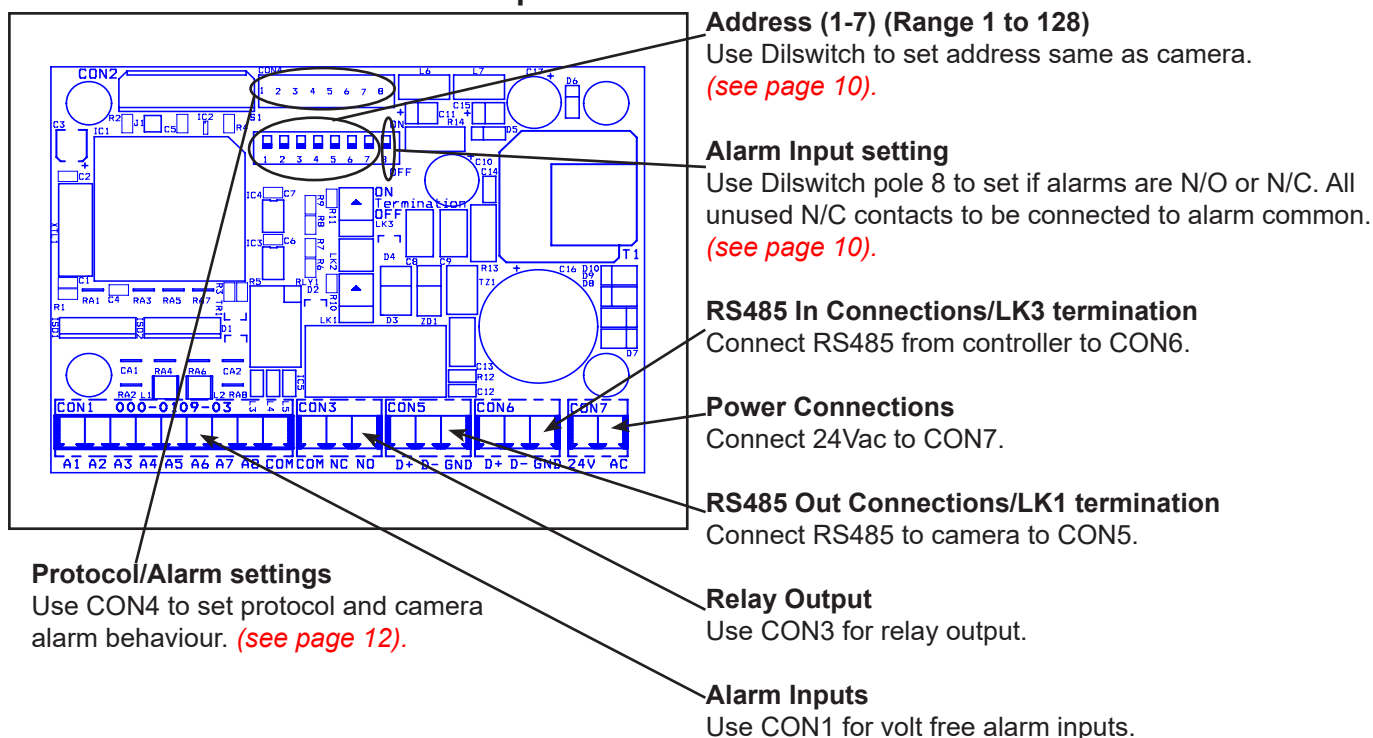
Alarm Number	Preset Number	Alarm Number	Preset Number
1	1	5	5
2	2	6	6
3	3	7	7
4	4	8	8

The alarm will remain active while the alarm input is active. After the alarm input becomes inactive, a 10 second alarm timer will start. The timer extends the alarm activity until the alarm timer expires. If the alarm input becomes active again before the timer has expired, the timer resets and will restart again when the alarm input becomes inactive and a further preset seek command is sent to the Centurion.

If an alarm is active and a further alarm becomes active, the latest alarm will interrupt the previous alarm. (i.e. the latest alarm has highest priority) The Centurion will seek the preset that corresponds with the new alarm. When the contacts become inactive, the Centurion will seek the preset that corresponds with the previous highest priority alarm that is still active. When all alarms inputs are inactive the alarm timer starts. After the timer expires, the Alarm PCB sends a command to the Centurion to end the ‘alarm mode’ and the Centurion will return to the status position and action that had been saved when first alarm became active. (Fit a link on the alarm card CON4 position 7 to disable the automatic return to the pre-alarm status when all alarms and the alarm time have expired).

When an alarm is active and the Centurion has automatically selected the appropriate preset, it is possible to send further commands (i.e. manual control) to the Centurion which will override the preset which had previously been automatically selected. Each time an automatic preset seek occurs as described in the previous paragraph; the manual control will be interrupted.

4.1 Standalone Alarmcard Setup



Dil Switch Settings	1-7
Address 1 to 128 range	See below

Dil Switch Settings	8
Normally Open Contacts	Off
Normally Closed Contacts (unused inputs must be connected to common)	On

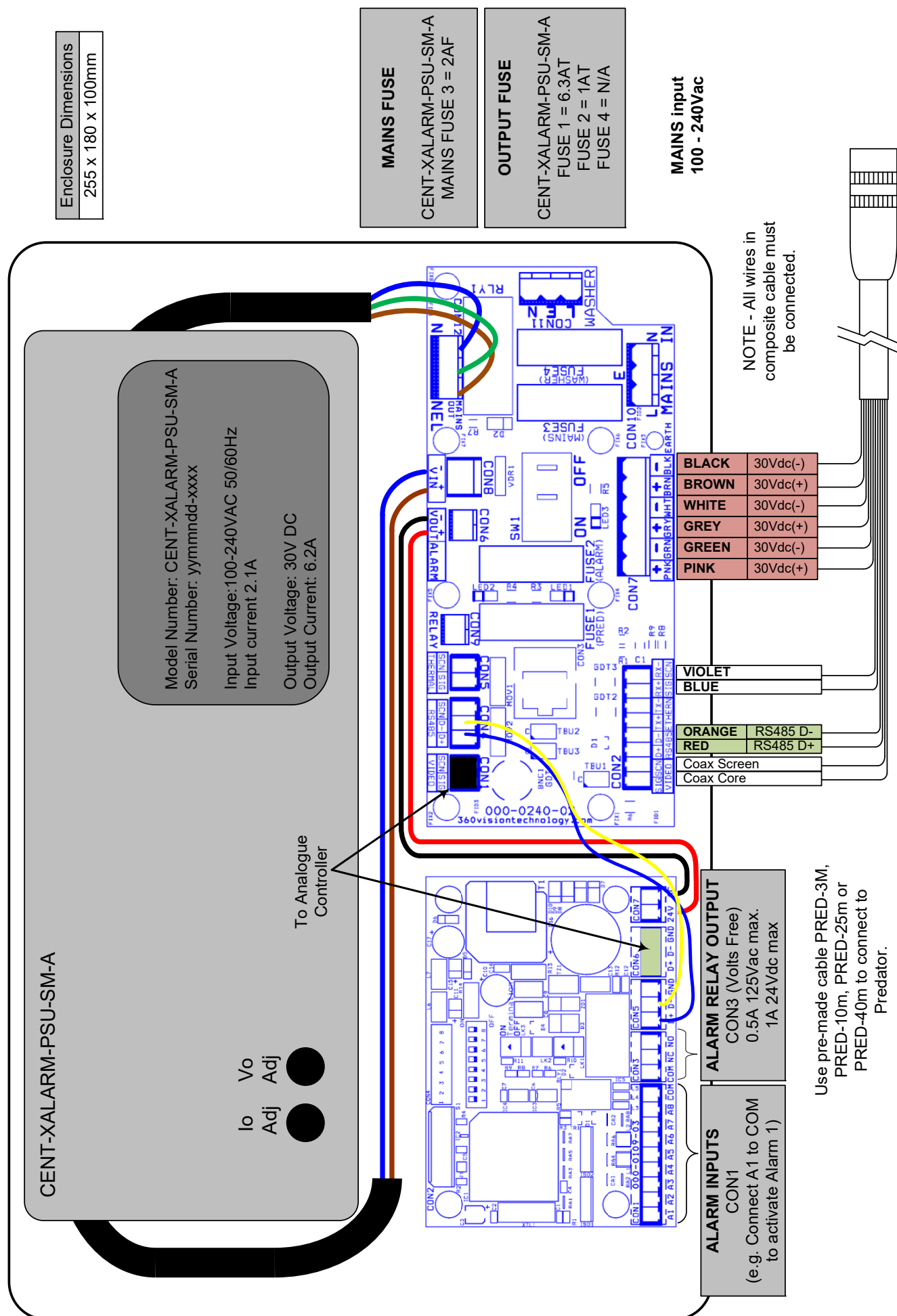
RS485 Address Settings

Switch is shown as white.



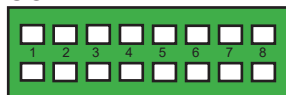
Example shows switch settings for camera address 3

	01		17		33		49
	02		18		34		50
	03		19		35		51
	04		20		36		52
	05		21		37		53
	06		22		38		54
	07		23		39		55
	08		24		40		56
	09		25		41		57
	10		26		42		58
	11		27		43		59
	12		28		44		60
	13		29		45		61
	14		30		46		62
	15		31		47		63
	16		32		48		64



CON4 Settings

CON4



Protocol Settings	3	4	5	6
360 Vision	Off	Off	Off	Off
Pelco D 9600 baud	On	Off	Off	Off
Pelco D 4800 baud	Off	On	Off	Off
Pelco D 2400 baud	On	On	Off	Off
Pelco P 9600 baud	Off	Off	On	Off
Pelco P 4800 baud	On	Off	On	Off
Pelco P 2400 baud	Off	On	On	Off
Alarm Settings			7	8
Normal Operation			Off	Off
No Pre-alarm, No White Light			On	Off
Forced White Light			Off	On
No Pre-alarm, White Light Timer			On	On

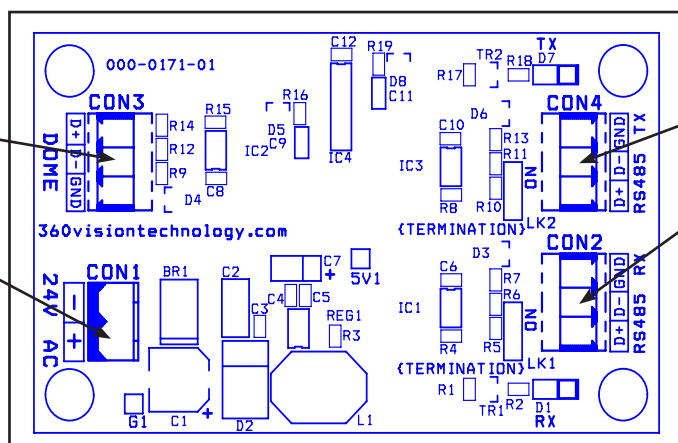
4.2 RS422/RS485 Converter

RS485

Pre-wired CON3 for RS485 to camera.

Power

Pre-wired CON1 for 24Vac power connection.



RS422 Tx/Termination LK2
Use CON4 for RS422 Tx

RS422 Rx/Termination LK1
Use CON2 for RS422 Rx

5 Connections to Centurions with HMA

When the HMA (Hinged Mount Adaptor) is fitted to the Centurion, the 'Centurion Composite Cable' is not used. Connections between the power supply and Centurion use conventional cables as detailed below.

30Vdc Power connections between Centurion PSU and Centurion that is fitted with HMA

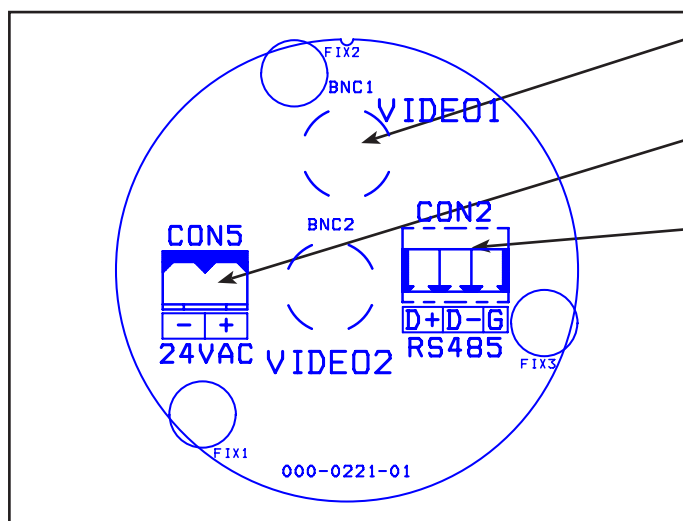
Cable Size	No IR	IR80	IR110WL
0.75mm ²	85m	32m	32m
1.00mm ²	113m	43m	43m
1.25mm ²	141m	54m	54m
1.50mm ²	170m	65m	65m
2.50mm ²	283m	108m	108m
3.00mm ²	340m	130m	130m
4.00mm ²	450m	173m	173m

Camera current draw table.

	No Lamps	IR80	IR110WL
Power Up	1.2A	1.2A	1.2A
Idle (No Lamps)	0.83A	0.83A	0.83A
PTZ/Wiper (No Lamps)	1.45A	1.45A	1.45A
Idle (IR Lamps)	N/A	2.3A	2.3A
PTZ/Wiper (IR Lamps)	N/A	3.1A	3.1A
Idle (White Lamps)	N/A	N/A	2A
PTZ/Wiper (White Lamps)	N/A	N/A	2.7A
Voltage at PSU	30Vdc	30Vdc	30Vdc
Voltage at Camera (PTZ/IR Fast tour)	28.5Vdc (No Lamps)	27Vdc	27Vdc
Current/Voltage test at cable length (1.5mm ²)	40m	40m	40m

Gain access to connectors in the HMA

- Ensure that the fixed part of the HMA is securely bolted to the top of the pole.
- The hinged part of the HMA (Hinged Mount Adapter) is fastened to the fixed part using three M8x25 long hex head bolts. Use a spanner (13mm) to remove the three bolts. Each bolt is fitted with a split spring lock washer, a plain metal washer (which prevents the split washer from damaging the fibre washer) and a fibre washer (which prevents the paint on the hinged part from being damaged unnecessarily).
- Open the hinge taking care that the gasket is not damaged and support the weight of the Centurion. Gently open the HMA until the lanyard is able to take the weight. If the lanyard appears to support the weight of the Centurion, there is no need to continue to support the Centurion. The connection circuit board (PCB-000-0221-xx) can now be seen.



Camera

Use BNC Video 1 for video connection from Centurion.

Power Connections

Connect 24Vac/30vdc to CON5.

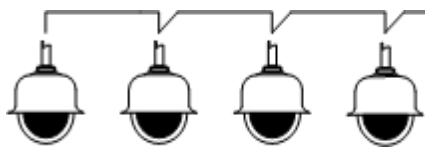
RS485 Connections

Connect RS485/Twisted Pair data cable to CON2.

Please make sure there is adequate spare cable (20cm) for when the camera is resting on the lanyard, failure to do this could damage the connector circuit board.

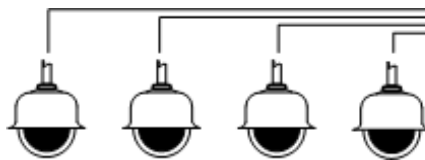
6 Basic Twisted Pair/RS485 Data Wiring

The Centurion is capable of being controlled by either Coax Telemetry or Twisted Pair Telemetry (RS485). Below are wiring configurations for two wiring formats used for Twisted Pair Telemetry (RS485). The Centurion camera **cannot** be wired in a Daisy Chain configuration as the RS485/twisted pair circuit is terminated/end of line.



Daisy Chain (Cannot be used with the 360 Centurion)

RS485 twisted pair cable is wired to each camera in a "chain". Only the last camera is to have the RS485 (end of line) termination on, all other cameras in the chain must have the RS485 termination off.



Star Wired

RS485 twisted pair cable is wired to each camera in a "star" from one point. A suitable RS485 star driver/data distribution product must be used. All cameras in this wiring configuration must have the RS485 (end of line) termination on.

7 Centurion Protocol/Address setup.

All Centurion cameras are supplied set to 360 Vision protocol, camera twisted pair address 1. When the Centurion is switched on, an OSD (On Screen Display) is shown on the image from the camera for approx 20 seconds.

PRO:360VTL CAM:0001 S
Centurion Software Version

PRO: Protocol being used for telemetry (e.g. 360 Vision Technology Ltd)

CAM: Camera RS485 ID (e.g. Cam 1)

S or L: Short or Long cable run. Use the utility to set whether the coax used to send video is under or over 300m.

Second Line: Shows the Centurion Software Version loaded into the camera.

To change the above settings in the camera, 360 Predator utility software, a USB/RS485 cable (PRED-USB-485) and a laptop are required.

The Predator utility and PRED-USB-485 cable drivers can be found on the CD (shipped with the camera) or contact 360 Vision Technical Support.

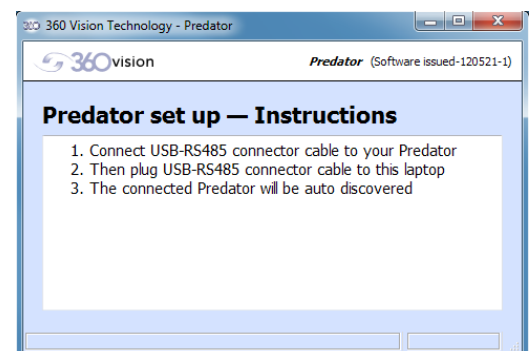
Install the software (Predator-issued-120521-1-installer.exe) on the laptop being used. Connect the RS485 end of the cable fitted with a 3 way connector to the Centurion PSU 3 way RS485 port. Run the utility on the laptop and then connect the USB end of the cable into the laptop. The utility will then look for new comms ports and then will look for the camera across all baud rates used.

Settings that can be altered from this software are:

- Protocol: 360 (Coax/RS485), Pelco P 2400/4800/9600, Pelco D 2400/4800/9600, Pelco Coaxitron (Extended version), VCL (Coax/RS485), Ultrak (RS485), Forward Vision (RS485), BBV/DENNARD C (FSK Coax)**, MARK MERCER (FSK Coax)**, Molynx (Coax/RS485)*
- Coax Cable length: Longer than 300m or shorter than 300m.
- RS485 Address: Used on RS485 systems only.

*Molynx Coax is only available when the camera is ordered with this requirement.

**BBV/DENNARD C (FSK Coax), MARK MERCER (FSK Coax) not supported.



8 Centurion OSD

OSD (On Screen Display) is accessed by defining/programming preset 6 or 95.

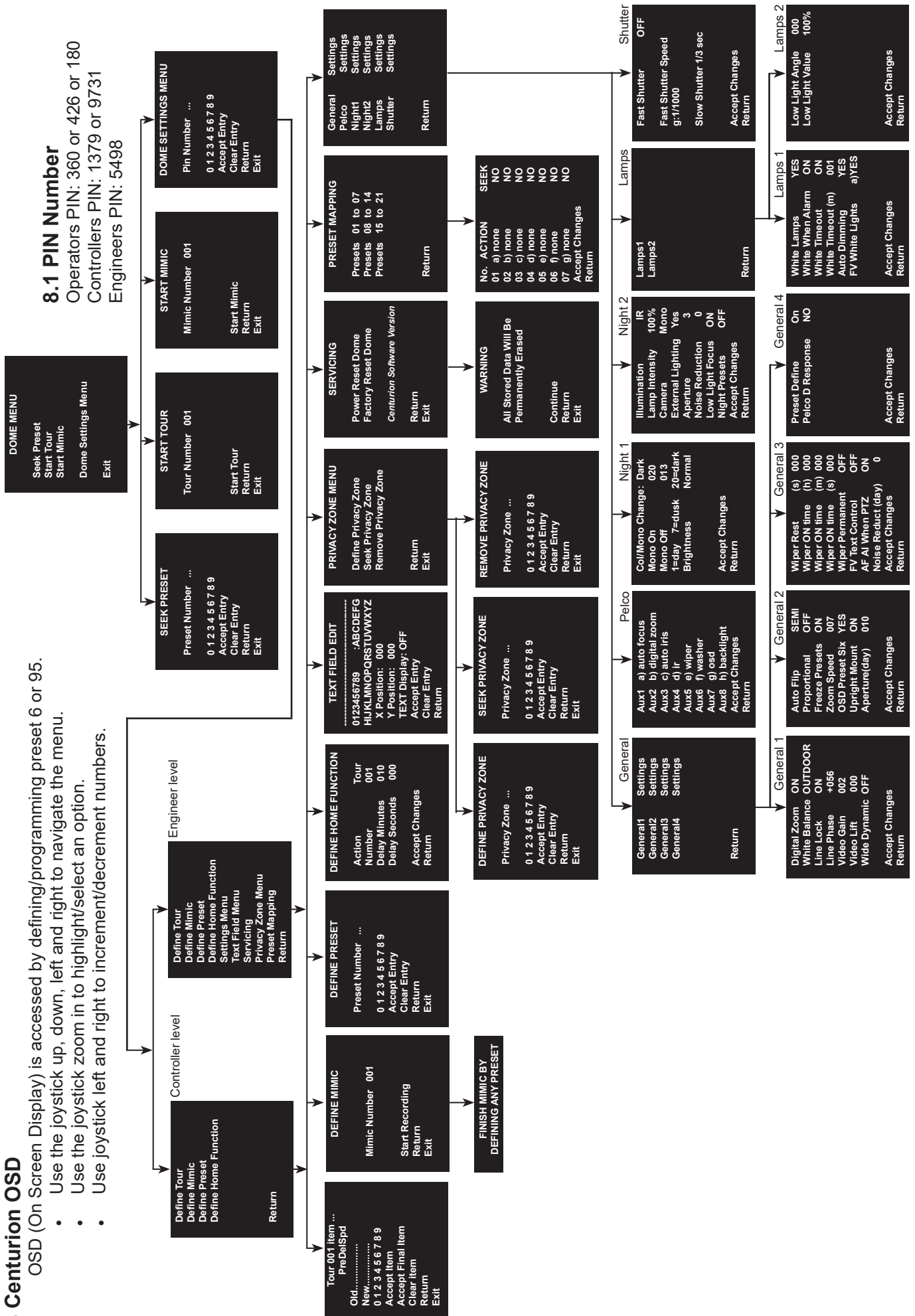
- Use the joystick up, down, left and right to navigate the menu.
- Use the joystick zoom in to highlight/select an option.
- Use joystick left and right to increment/decrement numbers.

8.1 PIN Number

Operators PIN: 360 or 426 or 180

Controllers PIN: 1379 or 9731

Engineers PIN: 5498



9 OSD Operation/Navigation

Dome menu

- Seek Preset
- Start Tour
- Start Mimic
- Dome Settings Menu

Define Tour

A tour of presets is stored in the Centurion as a list of tour points. Each tour point consists of a preset number, the dwell time for which the Centurion will pause and the speed parameter that will be used to seek the preset. Each of the four tours of presets can contain between 2 and 90 points.

When programming a tour of presets it is necessary to first store all the required presets into the Centurion and to define the required dwell times and speeds of travel that you will require the Centurion to use when the tour is started.

A maximum of four individual tours of presets can be stored in each Centurion. Each tour can have between 2 and 90 points, each point can be a preset in the range 1 to 101. Different points can use any preset number, including repeats of ones that have been used before. The speed that the camera will travel at to reach the preset can be in the range 1°/sec (slowest) to 100°/sec (fastest). To seek the preset at maximum speed, set speed to 0. The delay (dwell) at each point is defined in seconds, range 1 to 101.

This page will open on Tour 1, use the joystick left and right to change to another tour. To add item 1, use the joystick to tilt down. This will highlight the number line so that the tour can be programmed. Use the joystick to navigate along the number line and zoom in to select the number. This will add the number in to the NEW tour. Add in the figures for the item/point in the tour using the sequence labelled above (PREDELSPD. PRE is preset position, DEL is delay in seconds and SPD is speed at °/second). This is how the camera will be programmed to move to a preset for a period of time at a set speed. All nine figures must be added into the item. Figures must be added in three i.e. preset 21 will be added as 021.

Example of an item/point

021005100 = Move to preset 21 for 5 seconds at 100°/sec

Highlight ACCEPT ITEM and zoom in, this will add the item/point into the tour. The OLD item/point will be shown on the screen. If these settings are acceptable, highlight the ACCEPT ITEM option and zoom in. There is no need to add in these points again. Keep adding points until the tour is complete. On the final item/point of the tour highlight and zoom in on ACCEPT FINAL ITEM. This will complete the tour programming.

Define Mimic

When a mimic tour is started, the Centurion will perform all the actions which were defined when the mimic was programmed. Up to four mimic tours can be defined.

Before going into the OSD screen to programme a Mimic tour it is recommended to move the camera in to the start position, any movement or delay will be recorded once the recording has started.

Highlight and zoom in on START RECORDING, this will allow a mimic tour to be programmed into the camera. The mimic tour can then be used to playback any manual movement, preset seek or delay. Program a preset to end the mimic tour program.

Define Preset

Before going into the OSD screen to programme a preset, the camera must be in the position required. Once in the OSD you cannot manually move the camera.

Define Home Function

The camera will perform an ACTION (goto preset, start preset or mimic tour), after a period of inactivity. Use the NUMBER option to set which preset or tour to start, and the DELAY MINUTES/SECONDS to input the inactivity time period.

General Settings Menu

Offers more camera options.

General 1

- Digital Zoom - Use this option to enable or disable digital zoom.
- White Balance - Change the camera white balance settings to suit the area.
- Line Lock - Used to line lock the camera.
- Line Phase - Can be used to manually adjust the line phase.
- Video Gain - Used to adjust the video level to suit different lengths of coax cable.
- Video Lift - Used to adjust the frequency of the video level to suit different lengths of coax cable.
- Wide Dynamic - Enable WDR. Options available are ON, Auto and Off. Default is off.

General 2

- Auto Flip - Use this option to set how the camera behaves when full tilt down is reached.
Semi - Requires a second tilt down command when at full tilt down to spin camera 180°.
Full - Automatically spins the camera 180°
- Proportional - Automatically reduces/increases pan/tilt speed depending on zoom ratio.
- Freeze Presets - This option freezes the image, when moving between presets.
- OSD Preset Six - Go into OSD using preset 95 and you can switch off OSD access using preset 6.
- Upright Mount - Can be used to flip the image, so the camera can be used on a pole or a ceiling.
Default is pole.
- Aperture(day) - Can be used to increase the picture detail. Default is 10.

General 3

- Wiper Rest - Input a rest time for the wiper. *(See also Special Presets page 20).*
- Wiper On Time (h, m, & s) - Input a time period for the wiper operation.
(See also Special Presets page 20).
- Wiper Permanent - Enable or disable the permanent wiper time period.
- FV Text Control - Used on systems using Forward Vision protocol. Will add ANPR text on screen when camera is put into fast shutter mode.
- AF AI When PTZ - Auto focus/iris will activate when PTZ is used, can be switched off. Default is on.
- Noise Reduction (day) - Used to reduce noise. NR must be set to suit the environment. Default is off.

General 4

- Define Preset - Option to enable/disable the setting of presets. Default is on.
- Pelco D Response - Used on systems using Pelco D protocol where a response from the camera is required. *Do not use if the system doesn't require a response as it will have an affect on the telemetry control of the camera.*



Pelco

Used when using Pelco protocol auxiliary commands. Associate a function of the camera to a Pelco Aux command.

Night 1

- Col/Mono Level - Col/Mono level settings can be changed to suit the site requirements. Options are dark, medium and light. Default is dark. This sets when the camera goes into 'mono mode'.
- Mono On - Range is 7 to 25. A lower value will set the level on when the scene is brighter, a higher value will set the level on when the scene is darker.
- Mono Off - Range is 1 to 20. A lower value will set the level off when the scene is brighter, a higher value will set the level off when the scene is darker.
- Brightness - Options are normal, medium and bright.

Night 2

- Illumination - When the camera goes into dark mode, what illumination is required. Options are none, IR and White Light. Please note illumination type will only work if the camera has this option fitted to the camera. Default is IR.
- Lamp Intensity - Choose lamp intensity, options 100%, 80%, 60%, 40% and 20%. Default is 100%.
- Camera - Choose when the camera goes into dark mode, what the image will be. Options are mono or colour. Default is Colour.
- External Lighting - Sets how the camera will focus (when in mono) to suit the light source in the scene. If this is set incorrectly the image may not be in focus.
- Aperture - Can be used to increase the picture detail. Default is 3.
- Noise Reduction - Used to reduce noise with scenes of low illumination. NR must be set to suit the environment. Default is off.
- Low Light Focus - This can be set to on or off. When it is set to low the method used to focus the camera is suited to low light conditions. Default is on.
- Night Presets - This can be used to set the presets to different settings if required. Default is off.

Lamps

Offers more camera options.

Lamps 1

- White Lamps - Set if white lights are to be used.
- White When Alarm - Set if white lights are to be used if an alarm is triggered. This feature works with 360 Standalone alarmcard or 360 Vision Matrix only.
- White Timeout - Use if a white light timer is required. Default is on.
- White Timeout (m) - Set white light timer, for automatic switch off.
- Auto Dimming - When selected the camera will reduce the lamp power, when looking in scenes where there is too much light.
- FV White Lights - Used when using Forward Vision protocol, can be used to select what lamps are controlled from the lamp command.

Lamps 2

- Low Light Angle - Sets angle when reduced illumination intensity is used.
- Low Light Value - Sets illumination intensity.

Centurion lamps are used to improve the illumination of distant dark objects. The Centurion lamps are normally set to maximum intensity to increase the distance at which objects can be seen. When the Centurion lamps are ON and the camera tilts downwards to view nearby objects, the illumination could be too bright. This could cause the quality of the image to be reduced. Some Centurions include the 'intelligent lighting' feature which allows the intensity of the illumination to be reduced when the Centurion tilts down below a particular angle (i.e. the 'Low Light Angle'). Below this angle the power to the lamps is reduced to the percentage value that has been set (i.e. 'Low Lights Value').

Shutter

- Fast Shutter - Option to enable fast shutter and set speed of the shutter.
- Slow Shutter - Option to alter the slow shutter speed. Altering this figure will have an effect on the low light capabilities of the camera.

Text Field Menu

Navigate along alpha-numeric characters and use zoom in to select. Choose text position by inputting x and y co-ordinates. Set text display to on, if required.

Servicing

- Power Reset - This will reboot the camera, no settings will be lost.
- Factory Reset - This will reboot the camera and all the settings will be lost.
- Centurion Software Version - This shows the software version of the camera.

Privacy Zone Menu

Can be used to obscure a scene within an image e.g. private residence. Move the camera to the position required for the privacy zone before going into the camera OSD. You cannot manually move the camera once in the OSD. Use the zoom to set the size of the privacy zone. Privacy zone will cover the whole scene viewed when set.

- Define Privacy Zone - Used to set a privacy zone.
- Seek Privacy Zone - Used to seek a privacy zone.
- Remove Privacy Zone - Used to remove a privacy zone.

Preset Mapping

Use this option to re-map a function to a preset.

Options are:-

- none
- auto focus on
- auto iris on
- ir on
- wiper on
- white light
- fast shutter
- WDR
- ambient
- 20% lamp intensity
- 40% lamp intensity
- 60% lamp intensity
- 80% lamp intensity
- 100% lamp intensity
- video switch
- white day
- ir-mono
- mono
- normal night

10 Special Presets

Illumination (When it is dark)	Seek 64 (On)	IR (Mono/colour not changed)	Seek 66 (Off)
	Seek 65 (On)	White Lights (Mono/colour not changed, no timer)	Seek 66 (Off)
Night Sensor (When it is dark)	Seek 67 (Mono)		Seek 68 (Colour)
Night Focus Range (When it is dark)	Seek 69 (Ambient)		Seek 70 (IR)
Wiper	Seek 81	Double Wipe	Seek 86 (Stop)
	Seek 82	Permanent Intermittent Wipe	
	Seek 83	Permanent Fast Wipe	
	Seek 84	Timed Intermittent Wipe	
	Seek 85	Timed Fast Wipe	
De-Fog	Seek 87 (On)		Seek 88 (Off)
Set Privacy Zone	Seek 91	Scene being viewed	
Clear Privacy Zone	Seek 92	Privacy zones being viewed	
Clear Privacy Zone	Seek 93	All privacy zones	
White Lights (When it is dark)	Seek 100 (On)	White Lights (Change to colour, timer used)	Seek 101 (Off)

11 Important - Care of Painted Surfaces

The powder coating applied to the Centurion external housing is recognised as being in the forefront for quality and finish. However, in order to preserve the aesthetic finish it is recommended that the coating is regularly cleaned.

Regular cleaning on a maximum three month interval, using warm and mild detergent must be undertaken. Abrasive cleaners including strong solvent must NOT be used at any time.

In areas where the coating may come in contact with concentrated atmospheric pollutants [marine, chemical and especially bird droppings] it would be prudent to clean more frequently e.g. monthly.

Full documentation of the cleaning schedule MUST be maintained to ensure that a warranty claim can be considered.

If damage occurs to the coating (e.g. the Centurion is dropped, scrapped etc), repairs MUST be carried out immediately.

When the Centurion is installed in areas where there is a high risk of damage from birds or their droppings, additional precautions and measures should be used to keep the birds away from the Centurion e.g. fit anti-bird spikes.

12 Storage and Handling

Centurions should be handled with care and must not be dropped. When Centurions are inside the transit packaging which is used for despatch from the factory, they should not be stacked to a height of more than two Centurions.

When Centurions are being stored before installation they should be kept in the transit packaging and located in a dry indoor environment preferably between 1°C and 35°C which is dry and dust free. Humidity should such that water vapour is non-condensing. Centurions can be allowed to be outside this range for short periods of time (24 hours maximum) for transport (e.g. in aircraft or vans) but must never be allowed to be outside the normal operating temperature range of -40°C to +60°C even during storage.

Before installation the Centurion should be clean and dry. (If necessary it should be cleaned and dried taking care that the glass is not scratched).

13 Warranty

This information and/or any technical information – whether received verbally or writing – is given in good faith but without warranty and this also applies where proprietary rights of third parties are involved. The information provided does not release you from your obligation to check its validity and to test the products suitability for the intended purpose(s) and use(s). The application, use and installation of the products either in isolation or in conjunction with other products used, provided and installed by you on the basis of the technical advice issued are beyond our control and therefore remain entirely your own responsibility.

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