User Manual

BlokCam Crane Camera Systems

Crosby BlokCam X4 & M4 Issue: 1 - 04/2026

Manufacturer: Crosby BlokCam - A Kito Crosby Brand
123 Proxima Park, Houghton Avenue, Waterlooville, Hants, PO7 3DU UK

Contents

Systems covered:

X4 M4

Parts covered:

T4 B6 S6 R5 P3 M2 M3 CH4

Remarks

- Always adhere to the machine manufacturer's instructions.
- Crosby BlokCam ® should be used to assist the operator's judgement, not replace it.
- All aspects of installation, removal, charging, use and fault finding should only be carried out by trained and competent persons
- Ensure Crosby BlokCam ® parts and components do not interfere with machine manufacturers and/or third-party components, parts and systems, moving or otherwise.
- Prior to adverse weather conditions or in any situation where Crosby BlokCam parts or components may become dislodged or come into unfavorable contact with the machine and/or third-party components, moving or otherwise, all magnetically mounted Crosby BlokCam parts and components must be removed.
- Always ensure that Lanyards are connected, and Rapid Links are tightened. Consider that the machine and/or mounting point may change configuration, shape, and size.
- High powered magnets in use. Neodymium magnets are permanent and strong, use correct protective equipment to avoid trapping hazard.
- If possible, installation work should be completed at ground level to avoid working at height. For working at height, please refer to regional and site-specific regulations and guidelines and ensure installation team are competent and adequately trained.
- In Wi-Fi networking, a point-to-point wireless bridge lets users wirelessly connect two or more locations together. This bridge connects two or more locations to share data across the network.
- Crosby BlokCam® transceivers operate within the 5GHz band. For best results ensure a direct line of sight between paired wireless transceivers and antennas.
- Frequency selection and transmit power may vary. Please refer to regional regulations, guidelines, and authorities to ensure legal operation.
- A competent person should carry out pre-use checks prior to the commencement of work. Pre-use check sheets are available online from kitocrosby.com/blokcam
- Parts and components may differ from renders.
- Manual subject to change without notice
- Subject to Copyright

Introduction

Crosby BlokCam® is a wireless camera system that can be quickly and easily deployed to a ferrous surface, such as steel. The sound and view captured by the camera is then transmitted and received wirelessly to a viewing platform such as a Monitor, tablet, smart phone, or laptop. This allows the operator to see and hear the load and surroundings, giving an unobstructed, live, audio-visual feed of the previously unseen critical areas.

The Process Explained – M4 System

1. A Battery provides power to the Transmitter and the Sensors.
2. The Sensors capture, encode, and push the data through the transmitter to the next wireless transceiver.
3. Depending on the required configuration, the data may be transmitted through one or more battery powered transceivers.
4. Finally, the data will reach the transceiver and decoder within the M3 display which projects the image and audio through the Monitor.

What's Included – M4

Qty	Description
4	6mm Rapid Links.
2	90 Degree N-Type Connector.
1	Ram Mount Arm - Double Socket Arm - 4.5 inch.
2	7 dBi Duck Bill Antenna.
1	USB Memory Stick - 2GB.
1	3mm x 600mm Lanyard - Stainless.
1	Triple Suction Cup c/w Monitor Mount Stickers.
3	Stainless Lanyard c/w Retaining Magnet.
1	M4 Camera System Case.
1	PC3 - Power Cable - Battery to Transceiver.
2	PSC1 - Power Supply Cable (DC-DC).
1	PSU1 - Power Supply Unit (AC-DC).
1	AN1 - 14dBi Flat Panel Antenna Assembly
2	B6 - Battery Pack
1	CH3 - Battery Charger
1	M3 - All in One Monitor
1	S6 - Sensor
1	T4 - Transmitter
1	Power Lead – (Regional – C8 Figure 8)

The Process Explained – X4 System

1. The Battery provides power to the Transmitter and the Sensor. The Sensor captures the audio-visual feed and sends it to the transmitter. Each component is magnetically attached and tethered to the desired surface. The signal is transmitted through one or more repeaters depending on the required configuration.
2. The Repeater is a modular transceiver which can be powered over ethernet (POE), by the BlokCam ® Battery or an alternative 12-24Vdc supply. The Repeater receives the wireless signal from the transmitter and relays the data back to a Processor and Monitor. The quantity and position of the repeater/s vary depending on the required configuration.
3. The final Repeater will be connected to, and powered over ethernet by the Processor. The Processor can be powered by mains or a 9-36vdc supply. The processor decodes the data and transfers the image and audio onto the Monitor. The Processor also powers the Monitor.

What's Included – X4

Qty	Description
5	6mm Rapid Links.
3	90 Degree N-Type Connector.
1	Ram Mount with U Bolts
4	7 dBi Duck Bill Antenna.
1	3m HDMI Lead
1	Strap Base with 1.5" Ball
1	USB Memory Stick - 2GB.
1	3mm x 600mm Lanyard - Stainless.
1	Twin Suction Cup c/w Monitor Mount Stickers.
2	Double Arm Socket c/w Lanyard
3	Stainless Lanyard c/w Retaining Magnet.
1	X4 Camera System Case.
1	Jib Cable - 75m
1	PC3 - Power Cable - Battery to Transceiver.
1	PSU1 - Power Supply Unit (AC-DC).
1	AN1 - 14dBi Flat Panel Antenna Assembly
2	B6 - Battery Pack
1	CH3 - Battery Charger
1	M2 - Monitor Assembly
1	P3 - Processor
1	PL-M2 Power Lead – Monitor
1	R5 - Repeater
1	S6 - Sensor
1	T4 - Transmitter
1	Power Lead – (Regional - C13 Kettle)
1	Power Lead – (Regional – C8 Figure 8)

Antennas

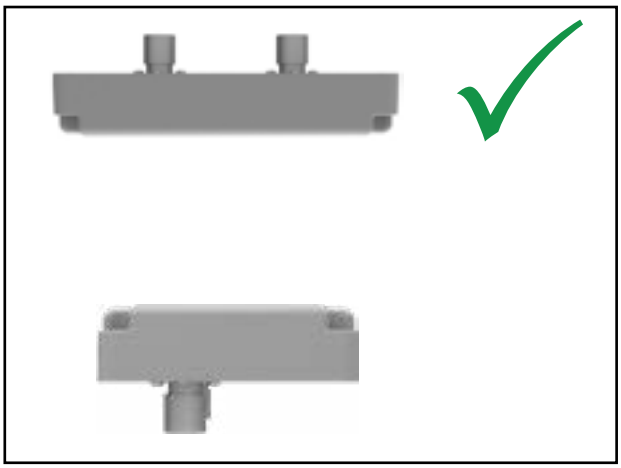
Foreword

A Flat Panel Antenna is an antenna which radiates or receives greater power in specific directions allowing increased performance and reduced interference from unwanted sources.

In general, Flat Panel Antennas provide increased performance over omnidirectional antennas when greater concentration of radiation in a certain direction is desired.

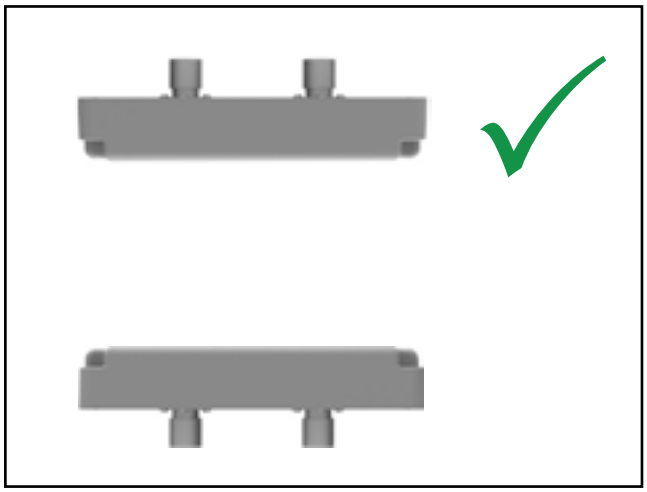
Duck Bill Antennas are omni directional. Omnidirectional antennas are a class of antenna which radiates equal radio power in all directions perpendicular to an axis. This radiation pattern is often described as doughnut shaped. Omni directional antennas do not emit a signal out of the tip of the antenna.

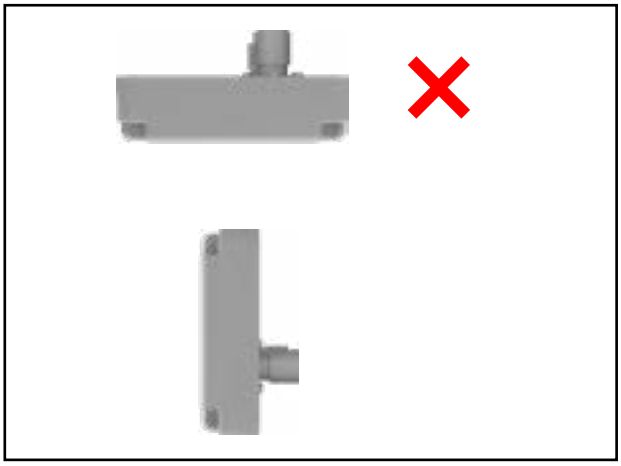
For best performance, the orientation between the transmitting and receiving antennas must remain parallel and in-line (not offset), consistent and with a direct line of sight.

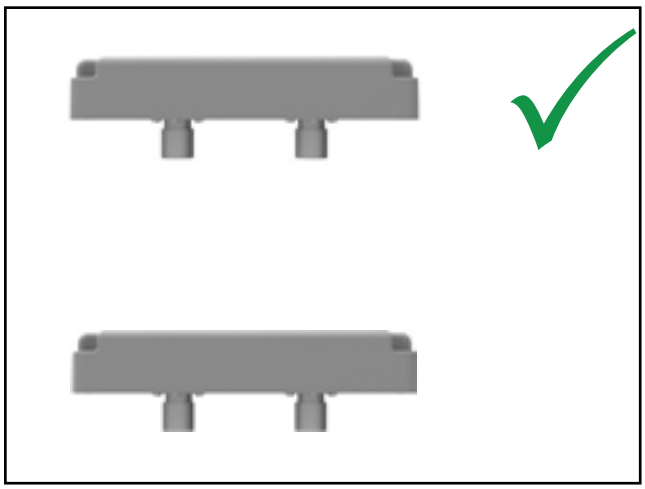


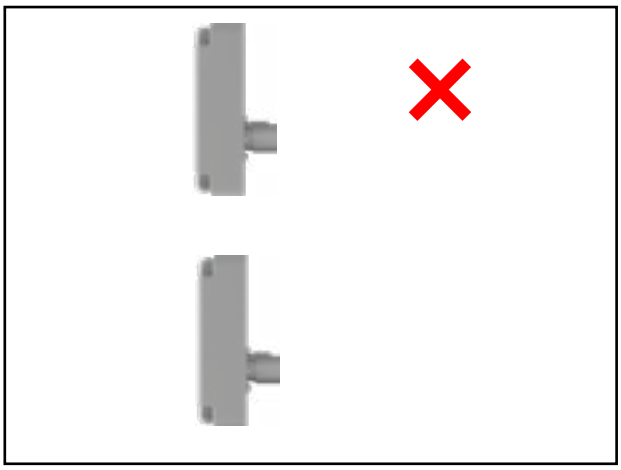
Antenna Relationships

Flat Panel Antenna to Flat Panel Antenna



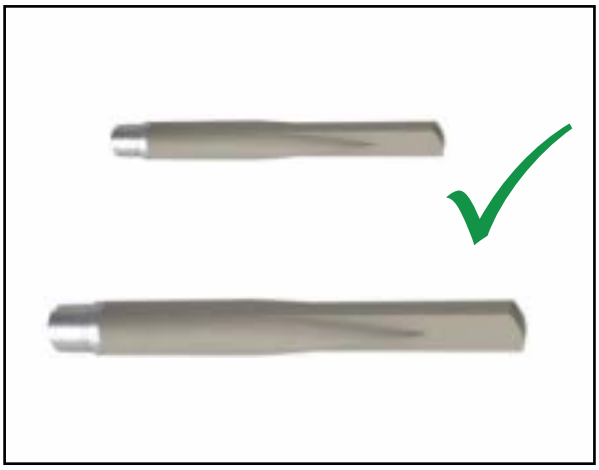


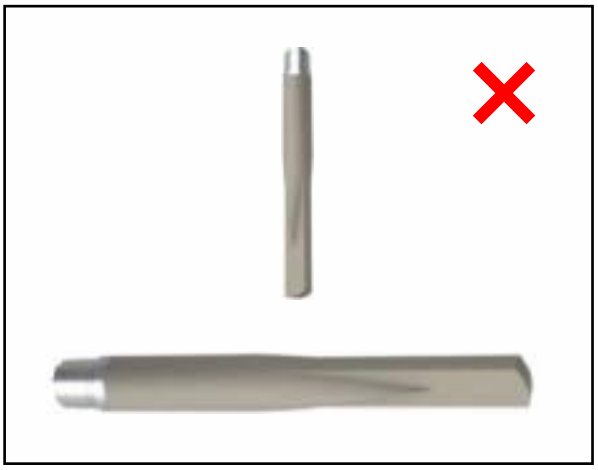


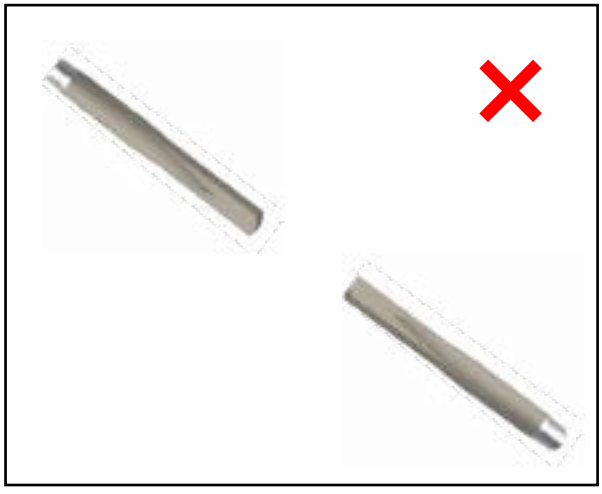


Antennas

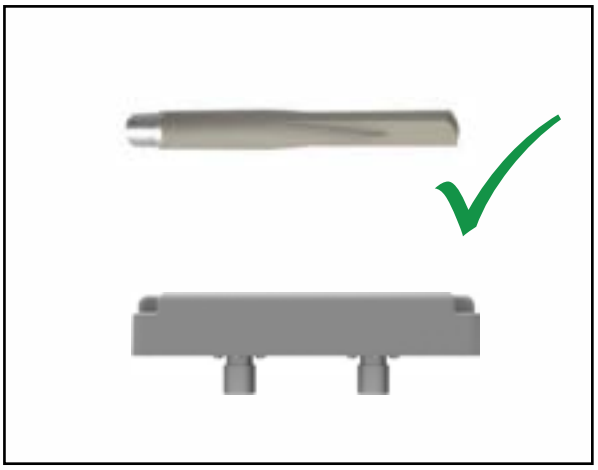
Duck Bill Antenna to Duck Bill Antenna

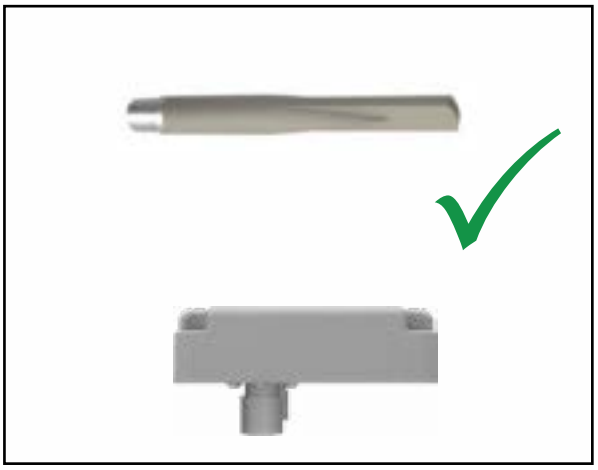


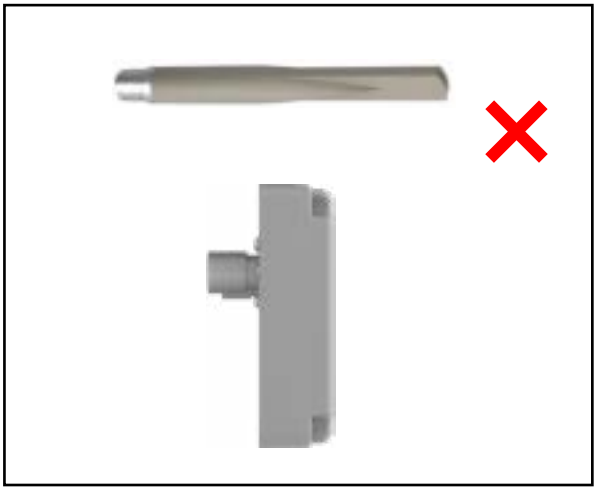




Flat Panel Antenna to Duck Bill Antenna







Installation & Technical Information

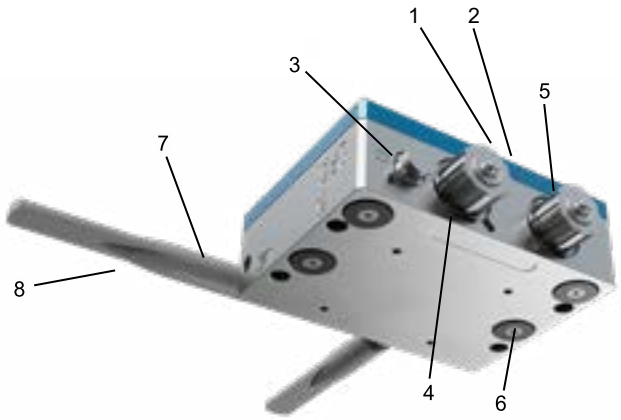
Foreword

The Transmitter, Sensor/s and Battery connect with cables. Prior to installation, plan a compatible layout and consider:

- **a.** the intended position of the Sensor
- **b.** the view from the intended Sensor position
- **c.** the Sensor cable length and route
- **d.** the lanyard length and distance to a secure point
- **e.** the orientation of the Sensor
- **f.** the distance to the Transmitter
- **g.** the intended position of the Transmitter
- **h.** lanyard length and distance to a secure point
- **i.** the position and/or intended position of other paired transceivers
- **j.** the most suitable antenna for the operation
- **k.** the intended position of the Battery
- **l.** the power cable length and route
- **m.** the distance between the Battery and Transmitter
- **n.** the lanyard length and distance to a secure point
- **o.** that the battery is changed on a regular basis.

T4 - Transmitter

Shown with Duck Bill Antennas fitted



1. LED - Data.
2. LED's - Signal Strength 25% - 100%.
3. Input Socket - 12-24Vdc.
4. Sensor Socket.
5. Lan Port/Socket and Cover.
6. Mounting Magnets (x4).
7. Rapid Link Anchor Points (x2).
8. 7dBi Duck Bill Antenna (x2).
9. Antenna Ports (not visible).

Technical Specifications

Video compression: H.264.
Resolution: 2688x1520 (WDR on).
Frame Rate: 15 fps (50/60 Hz).
Video streaming: Multiple, individually configurable streams in H.264, H.265 and Motion JPEG.
Image settings: Compression, colour, brightness, sharpness, contrast, white balance, exposure value, exposure control, exposure zones, local contrast, rotation, Corridor Format, text. and image overlay, privacy mask, mirroring of images.
Audio streaming: One-way.
Audio input: External microphone input.
Transmission Frequency: 5 GHz.
Transmit Power: 19-25dBm.
Size and Weight:

- » Height: 132mm (5.20 inches)
- » Width: 170mm (6.69 inches)
- » Depth: 59mm (2.32 inches)
- » Weight: 3500g (7.7 pounds)

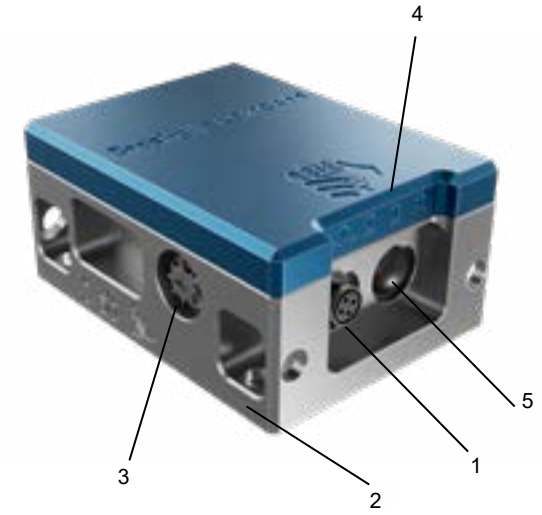
Casing: Aluminium.
Power: 12-24Vdc.
Power Consumption: Max 13.3 W.
Antenna Connector: N-Type.
Storage: One internal Micro SD slot supporting memory card, 256GB card included.
Operating Conditions: -10 °C to 50 °C (14 °F to 122 °F). Humidity 10-85% RH (non-condensing).
Storage Conditions: -40 °C to 65 °C (-40 °F to 149 °F).
IP Rating: IP67 (with external ports connected).

Mount & Secure the Transmitter/s

1. Magnetically mount the Transmitter to a clean and flat surface.
2. Choose the most suitable antenna/s based on the location of other transceivers.
3. Connect the antenna/s to the antenna ports. On the top side of the Transmitter.
4. If required, use the N-type right angle connectors (elbow joints) to achieve the desired position.
5. Once the optimum position has been achieved, firmly tighten the fittings.
6. Fit Rapid Link to Transmitter anchor point.
7. Choke and secure a lanyard to a fixed and secure point.
8. Attach the loose end of Lanyard to the Rapid Link.
9. Firmly tighten the Rapid Link.

When necessary, reverse the above steps for removal.

B6 - Battery



1. Power Socket
   - Pin 1 - Negative Output
   - Pin 2 - Positive Output
   - Pin 3 - Negative Charge Input
   - Pin 4 - Positive Charge Input
2. Rapid Link Anchor Points x 4.
3. External Fuse Holder.
4. Charge Status LED's.
5. Charge Status Push Button.
6. Mounting Magnets x3 (on rear, not shown).

Technical Specifications

Capacity: 14.54V 7Ah.

Cell Manufacturer: LG Chemical Ltd.

Cell Type: Lithium-Ion.

Easy Access Fuse: 1A.

Size and Weight:

- **H**eight: 140mm (5.51 inches)
- Width: 105mm (4.1 inches)
- Depth: 65mm (2.56 inches)
- Weight: 1600g (3.53 pounds)

MSDS: available on request.

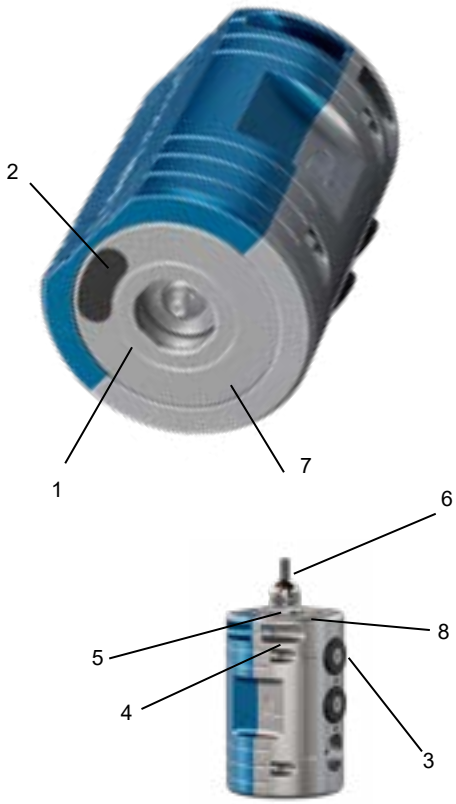
IP Rating: IP67 (with external ports connected).

Mount, Connect & Secure the Battery

1. Check for sufficient charge level prior to fitting: Push the Charge Status Button and check the Charge Status LED's.
2. Magnetically mount the Battery to a clean and flat surface.
3. Connect the Power Cable between the Power socket on the Battery and the Input Socket on the Transceiver.
4. Secure the cable to a clean and flat surface using the pre- installed cable magnets.
5. Fit Rapid Link to Battery.
6. Choke and secure a lanyard to fixed and secure point.
7. Attach the loose end of lanyard to the Rapid Link.
8. Firmly tighten the Rapid Link.

When necessary, reverse the above steps for removal.

S6 - Sensor



1. Video Sensor.
2. Audio Sensor.
3. Mounting Magnets.
4. Rapid Link Anchor Points (x2).
5. Notch - Orientation Indicator Plate.
6. Cable Gland.
7. Sprung Loaded Rotary Boss.
8. Map - Orientation Guide.
9. Sensor Cable and Plug (not shown).

Technical Specifications

Video Sensor: Fixed Iris, 2K QHD (Quad High Definition) resolution.

Resolutions: 2688*1520 @ 15fps (16:9).

Minimum illumination: 0.045 lux @ F2.5 (Color).

Frame Rate: Max 24 fps (50/60 Hz).

Audio streaming: One-way.

Audio input: External microphone input.

Size and Weight:

- » Height: 120mm (4.72 inches)
- » Width: 80mm (3.15 inches)
- » Depth: 74mm (2.91 inches)
- » Weight: 1500g (3.30 pounds)

Casing: Aluminium.

Power: Provided by Transmitter.

Operating Conditions:
-10 °C to 50 °C (14 °F to 122 °F)
Humidity 10-85% RH (non-condensing).

Storage Conditions: -20 °C to 60 °C (-4 °F to 140 °F).

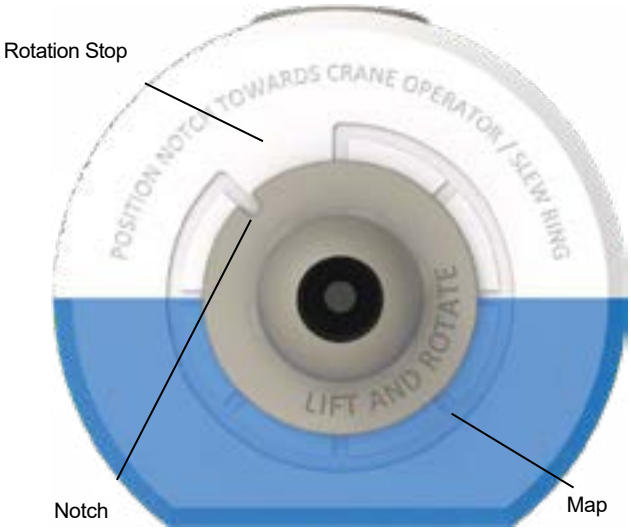
IP Rating: IP67 (with external ports connected, excludes IP65 Audio Sensor).

Mount, Connect & Secure the Sensor/s Foreword

The installation and orientation of the Sensor should correctly correlate with the monitor and machinery movements. Following installation, test to ensure the relationship between the Sensor, monitor and machinery are fixed, permanent and accurate i.e. is the image the correct orientation, all the time?

Note: When mounting a Sensor to a rotating surface, the added variable may cause a lack of synchronicity between the Sensor, monitor and machinery.

1. Changing the orientation of the camera is a tool free operation. The Camera and Rotary Boss are sprung loaded into locator slots. To rotate the camera, lift, rotate and lower the Sprung Loaded Rotary Boss. Use the engraved text, map, and notch as a guide to relocate correctly. As indicated the Rotary Boss will not rotate past 315 degrees due to the rotation stop.

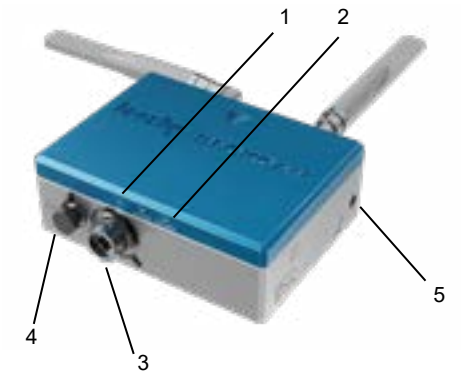


2. Magnetically mount the Sensor to a clean and flat surface.
3. Connect the Sensor Plug to the Sensor Socket 1 on the underside of the Transmitter.
4. Secure the cable to a clean and flat surface using the pre-installed cable magnets.
5. Fit Rapid Link to Sensor anchor point.
6. Choke and secure a lanyard to a fixed and secure point.
7. Attach the loose end of lanyard to the Rapid Link.
8. Firmly tighten the Rapid Link.
9. For twin camera systems, repeat step 1-8 connecting the second Sensor Plug to Sensor Socket 2.

When necessary, reverse the above steps for removal.

R5 – Repeater

Shown with Duck Bill Antennas fitted



1. LED - Data
2. LED's – Signal Strength 25% - 100%
3. Socket - PoE LAN Port
4. Input Socket – 12-24Vdc
5. Rapid Link Anchor Points (x2)
6. Antenna Ports x2 (on top, not shown)
7. Mounting Magnets x 4 (on rear, not shown)

Technical Specifications

Transmission Frequency: 5 GHz.
Transmit Power: 19 to 25dBm.
Receiver Sensitivity: -90 to -75 dBm.
Size and Weight:

- Height: 128mm (5.04 inches)
- Width: 170mm (6.69 inches) Depth: 58mm (2.28 inches
- Weight: 1930g (4.25 pounds)

Casing: Aluminium.
Power: 12-24Vdc, Passive PoE 24V.
Power Consumption: Max 5.5 W.
Antenna Connector: N-Type.
Operating Conditions: -20 °C to 70 °C (-4 °F to 158 °F). Humidity up to 5 to 95% (non-condensing)
Storage Conditions: -40 °C to 90 °C (-40 °F to 194 °F). Humidity Max 90% (non-condensing).
IP Rating: IP 67 (with external ports connected).

Mount & Secure the Repeater/s

Foreword

The Repeater is a modular transceiver that relays the wireless signal. The Repeater can be powered over ethernet (POE), by the Crosby BlokCam ® Battery or an alternative 12-24Vdc supply.

To protect against ingress, it is necessary to cap and seal all unused ports using the supplied blanking plug/s.

The installation, quantity, mounting position, location and orientation are dependent on the required configuration. Systems with multiple Repeaters must be connected in the correct series order.

X4 system only: The final Repeater in the series must be connected to, and powered over ethernet by the Processor's POE Ports (Ports 1 – 4).

Prior to installation, plan the scope of works and consider:

a. the data output method, wired or wireless
b. the best suited power supply option
c. the intended position of the Repeater
d. lanyard length and distance to a secure point
e. the position and/or intended position of other paired transceivers
f. the most suitable antenna/s for the operation
g. the dynamics of machine.

1. Attach the best suited RAM Mount, Ball Joint Bracket to a fixed and secure point. If the supplied brackets are not suitable please seek advice from an authorised BlokCam ® dealer.
2. Connect the Double Socket Ram Mount Arm complete with lanyard to the RAM Mount Ball Joint Bracket.
3. Connect the Ball Joint attached to the rear of the Repeater to the Double Socket Ram Mount Arm.
4. Fit Rapid Link to Repeater.
5. Connect Double Socket Arm lanyard to Rapid Link.
6. Choke and secure a second lanyard to fixed and secure point.
7. Attach the loose end of lanyard to the Rapid Link.
8. Firmly tighten the Rapid Link.
9. Choose the most suitable antenna/s based on the location of other transceivers.
10. Connect the antenna/s to the antenna ports. On the top side of the Transmitter
11. If required, use the N-type right angle connectors (elbow joints) to achieve the desired position.
12. Once the optimum position has been achieved, firmly tighten the Ram Mount Brackets, Antenna's and N-type connector.

Connecting & Powering the Repeater/s

Wired (Typical for X4 System, POE)

1. Fit 1 x Input Socket Blanking Plug to the 12-24v Input Socket.
2. Connect the Bayonet fitting from the '75m Jib Cable' to the LAN Port Socket on the Repeater.
3. Install and secure the cable from the Repeater to the anticipated Processor location using zip ties.

Wireless
(Typical for M4 System, battery powered)

1. Fit 1 x Lan Port Blanking Plug to the LAN Port Socket.
2. Mount, connect and secure the Crosby BlokCam ® Battery as instructed on page 8.

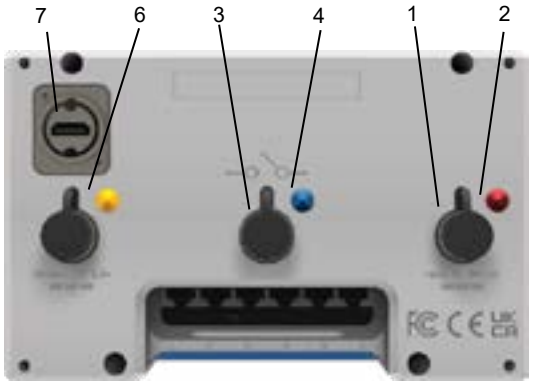
Wireless (alternative 12-24Vdc supply)

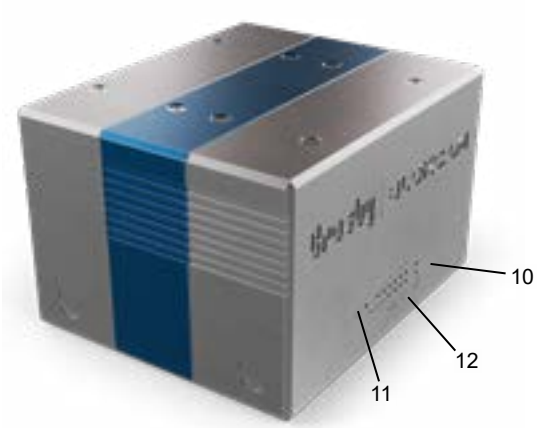
1. Fit 1 x Lan Port Blanking Plug to the LAN Port Socket
2. Obtain any required permissions to tap into a suitable supply.
3. Connect the supply to the 12-24Vdc Input Socket.

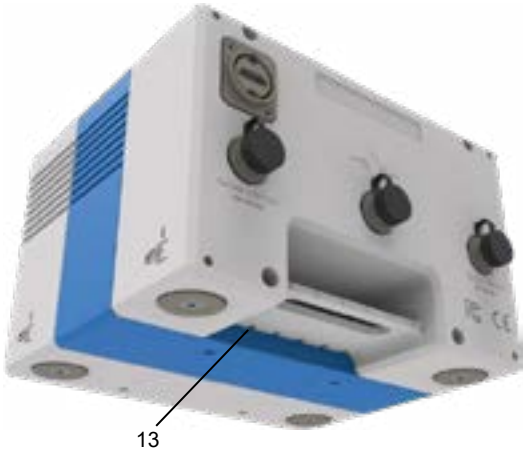
When necessary, reverse the above steps for removal.

P3 - Processor

X4 System Only







1. Input Socket - 9-36Vdc 5A
2. Input Socket - Colour Code - Red
3. Switch Socket - Multi Camera
4. Switch Socket - Colour Code – Blue
5. Output Socket - Monitor - 12Vdc 3.3A
6. Output Socket - Colour Code – Yellow
7. Output Socket - HDMI
8. POE Ports (Ports 1 – 4)
9. LAN Port (Ports 5 & 6)
10. LED - Power
11. LED - Data
12. LED - 1 - 6 Port related
13. Cable release port

Technical Specifications

Video Compression: H.264. **Latency:** >300mS.
Frame Rate: Max 24 fps.
Resolution: 2688 x 1520.
Video and Audio Output: HDMI
Monitor Output: 12Vdc 3.3A
Size and Weight:
- » Height: 121mm (4.76 inches)
- » Width: 190mm (7.48 inches)
- » Depth: 161mm (6.34 inches)
- » Weight: 3800g (8.38 pounds)

Casing: Aluminium.
Power: 9-36Vdc 5A.
Operating Conditions: 0 °C to 40 °C (32 °F to 104 °F).. Humidity up to 10% to 90% (non-condensing)
Storage Conditions: -40 °C to 70 °C (-40 °F to 158 °F). Humidity 5% to 90% (non-condensing).

Position & Connect the Processor

Pre-empt the position of the Processor and consider:

- **a.** the IP Rating, the Processor must be kept indoors
- **b.** the type of power supply, AC or DC
- **c.** the PSU/Power Cable, length and route
- **d.** the 75m Jib Cable length and route
- **e.** the monitor position
- **f.** the distance to the Monitor.

Systems with additional accessories may require considerations for:

- **a.** connecting and positioning additional cameras
- **b.** connecting and positioning a footswitch
- **c.** connecting and positioning a joystick
- **d.** connecting and positioning additional Repeaters
- **e.** connecting a laptop.

1. Connect the 75m Jib Cable from the Repeater to one of the Processor's POE Ports (Ports 1 – 4).

2. Connect the 3m HDMI Lead to the HDMI Socket

3. Connect the Monitor's Power Lead to the Yellow Output Socket (12Vdc 3.3A).

4.

a. Connect the AC-DC Power Supply Unit and associated PSU Mains Lead between the Red Input Socket and a mains supply socket.

or

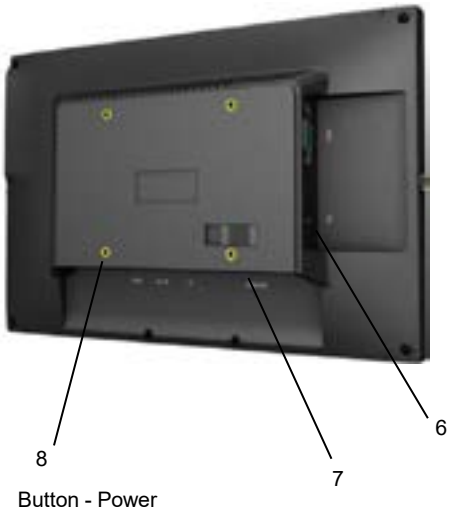
b. Connect the DC-DC Power Supply Cable between the Red Input Socket and a suitable DC supply socket.

5. Route and secure the Monitor's HDMI and Power Lead from the Processor to the anticipated Monitor location using zip ties.

When necessary, reverse the above steps for removal.

M2 - Monitor

X4 System Only



1. Button - Power
2. Button - Input
3. Button - FN (Function)
4. Button - MENU/EXIT
5. Navigation Wheel
6. Input Socket - 12Vdc
7. Input Socket – HDMI
8. 4 x Threaded Holes for Vesa Mount with 1.5” Ball Joint
9. Vesa Mount with 1.5” Ball Joint (Not Shown)

Technical Specifications

Screen Size: 10.1”.
A**spect Ratio:** 16:9.
R**esolution (pixels):** 2688 x 1520.
Scan Frequency (Hz): 60-72.
Response time (ms): 20.
Viewing Angle (degrees) 170 x, 170 y.
Brightness (cd/m²): 350.
Contrast Ratio: 800:1.
LCD backlight: LED.
Video and Audio Input: HDMI.
Audio Output: <1.2W Speaker, 3.5mm Headphone Output.
Size and Weight:

- Height: 121mm (4.76 inches)
- Width: 190mm (7.48 inches)
- Depth: 161mm (6.34 inches)
- Weight: 3800g (8.38 pounds)

Casing: Plastic.
Power: 12Vdc 3.3A - Provided by Processor.
Operating Conditions: 0 °C to 40 °C (32 °F to 104 °F).

Mount, Connect & Secure the Monitor

Pre-empt the position of the monitor and consider:

a. the mounting options
b. the lanyard length and distance to a secure point
c. the HDMI and power cable length and route.

1. Attach the best suited RAM Mount, Ball Joint Bracket to a fixed and secure point. If the supplied brackets are not suitable please seek advice from an authorised BlokCam ® dealer.

2. Connect the Double Socket Ram Mount Arm complete with lanyard to the RAM Mount Ball Joint Bracket.

3. Route the Double Socket Arm Lanyard to a fixed and secure point. If necessary, fit and firmly tighten a Rapid Link to secure.

4. Connect the Ball Joint attached to the rear of the Monitor to the Double Socket Ram Mount Arm.

5. Connect the HDMI Cable to the HDMI Port.

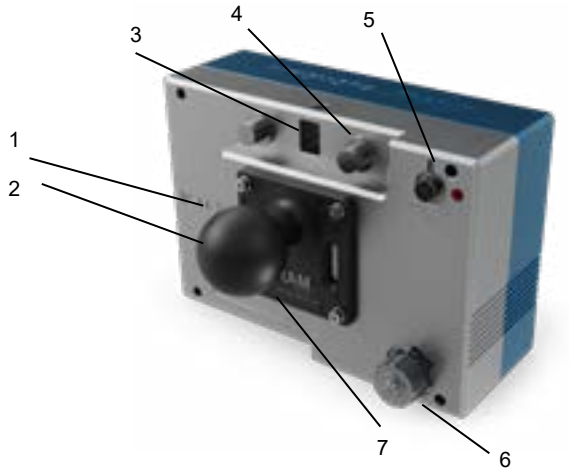
6. Connect the Power Cable to the 12Vdc Input Socket.

7. Adjust the mounting system to achieve the desired position and firmly tighten the Ram Mount Brackets.

When necessary, reverse the above steps for removal.

M3 – All in One Monitor

M4 System Only



1. LED - Data (not shown)
2. LED's - Signal Strength 25% - 100% (not shown)
3. Rapid Link Anchor Points (x1)
4. Antenna Ports (x2)
5. Input Socket - 9-30Vdc
6. Cat5e LAN Port
7. Vesa Mount complete with ball joint and triple suction cup mount
8. Flat Panel Antenna

Technical Specifications

Transmission Frequency: 5 GHz.
Transmit Power: 19 to 25dBm.
Receiver Sensitivity: -90 to -75 dBm.

Size and Weight:

- Height: 180mm (7.09 inches)
- Width: 265mm (10.43 inches)
- Depth: 115mm (4.5 inches)
- Weight: 3300g (7.28 pounds)

Casing: Aluminium.
Power: 9-30Vdc.
Power Consumption: Max 16.5 W.
Antenna Connector: N-Type.

Operating Conditions:

0 °C to 40 °C (32 °F to 104 °F) Humidity up to 10% to 90% (non-condensing).

Storage Conditions: -40 °C to 90 °C (-40 °F to 194 °F) Humidity Max 90% (non-condensing).

Mount, Connect & Secure the M3 Monitor

Foreword

A flat panel antenna and mounting bracket are preinstalled to the rear of the M3 Monitor. Prior to installation consider:

a.
b. the intended position of the Sensor
c. the operators view
d. the power supply cable length and route
e. the lanyard length and distance to a secure point
f. the position and/or intended position of other paired transceivers

1. With the Triple Suction Cup, attach the monitor to suitable, clean, flat, smooth, non-porous surface (typically, the side window of crane cab).
2. Adjust the mounting system to achieve the desired position and firmly tighten the Ram Mount Brackets.
3. Connect the Power Supply Cable between the Input socket on the rear of the M3 display and a suitable power supply.
4. Fit Rapid Link to Anchor Point.
5. Choke and secure a lanyard to fixed and secure point.
6. Attach the loose end of lanyard to the Rapid Link.
7. Firmly tighten the Rapid Link.

When necessary, reverse the above steps for removal.

CH4 - Charger

1. Charge Indicator Plate
2. Socket - Power input
3. LED - Status Indicator
4. Plug – Charge Output

Technical Specifications

Input: 100-240VAC.
Frequency: 50-60Hz.
Amps: Max 0.7A.

Charging Status Indicator

Step 1 - Constant Current Charge

Charge cycle starts automatically when input is connected to mains and battery is connected to the output. The charger is in constant current mode (CC), charging with the maximum current indicated on the charger. The LED-indication on the charger is YELLOW. This step allows rapid charging of your battery until the battery reaches typically 80-95% of its capacity. NOTE! If battery is less than 3V/cell, charger will apply low current start up. If normal voltage is not reached during start timer period, charge will terminate and 4 red blinks error will be indicated.

Step 2 - Constant Voltage Charge

The charger is in constant voltage mode (CV). Charge current is decreasing. The LED-indication on the charger is changed to FLASHING YELLOW shortly after entering this mode. The charger will remain in this mode until the current has decreased to end of charge detection level or until CV timer runs out. The battery is charged to its full capacity at the end of this step.

Step 3 - Charge Complete

The LED-indication on the charger is GREEN and the battery is fully charged. The charge current is zero and the battery has been charged to its full capacity. Charger may remain connected to the battery. A new charge cycle will be initiated if battery voltage decrease with 0.1V/cell.

BATTERY NOT CONNECTED INDICATIONS

Battery not connected is indicated by FLASHING GREEN. In this mode charger will apply short pulses attempting to wake up deeply discharged batteries.

ERROR INDICATIONS

•2 red blinks: Battery is connected to charger with wrong polarity!

•3 red blinks: Charger output is shorted. Check output cable connection!

•4 red blinks: Battery voltage is low. Check battery status or voltage.

•5 red blinks: Safety timer has run out. Check battery status or capacity.

•LED off: Battery voltage is too high. Check battery voltage.

WAIT MODE INDICATIONS

• Yellow with 1 red blink: Battery temperature is too low (<0°C)

• Yellow with 2 red blinks: Battery temperature is too high (>45°C)

Battery Charging Instructions

Foreword

The Crosby BlokCam ® X4/M4 camera system runs on Lithium- ion batteries. Under normal operating conditions each battery should provide approximately 11-12 hours of use. Certain operating conditions will decrease the standard runtime of the battery, including extreme hot or cold temperatures. The battery takes approximately 5 hours to fully charge.

Spare batteries should be kept in a clean and dry environment. Crosby BlokCam ® recommend swapping and charging the battery at the beginning of every shift.

Updates and language specific user manuals for Li-Ion Battery Chargers areavailable on www.mascot.no/downloads/usermanuals

1. Connect the charger to the mains and to the power socket on the B6 Battery.
2. Ensure the charger is powered up and refer to the Charge Indicator LED.
3. Disconnect the Charger when the charge LED is green.

Operating Instructions

X4 System

Operation is reliant on correct installation, charged batteries and/or reliable power source.

1. Power up all transceivers with a fully charged battery. Wired transceivers should power up automatically.
2. Power up the Processor via a suitable power supply.
3. The Monitor should power up automatically. If the Monitor does not power up automatically, press the power button on the right-hand side of the Monitor.
4. Following completion of the start-up procedure the camera system should be fully functional and ready to use.
5. If required, re-position the sensor to achieve the desired view.

If you are experiencing difficulties, pleaserefer to the fault finding guide.

M4 System

Operation is reliant on correct installation, charged batteries and/or a reliable power source.

1. Power up all transceivers with a fully charged battery. Wired transceivers should power up automatically.
2. Power up the M3 Monitor via a suitable power supply. The Monitor should power up automatically. If the Monitor does not power up automatically, press the power button on the right-hand side of the Monitor.
3. Following completion of the start-up procedure the camera system should be fully functional and ready to use.
4. If required, re-position the sensor to achieve the desired view.

If you are experiencing difficulties, pleaserefer to the fault finding guide.

VAST Security Station [VSS] Software

Accessing & Downloading Saved Data

Foreword

These instructions are only valid for the features within VAST Security Station [VSS] Software. VSS is a third party video management software, for more information please visit https://www.vivotek.com/products/software/vast_security_stati on

To access and download saved data, ensure the Crosby BlokCam ® system and components are installed correctly and fully operational.

You will need a Laptop with VMS installed (Video Management Software), a Cat5e RJ45 Patch Cable of suitable length, basic networking and IT skills and access to the Processor/M3 Display. Laptop/System recommendations and VMS are available from www.kitocrosby.com/blokcam/

Connecting to the Network

1. Connect the Cat5e RJ45 Patch Cable between the laptop and LAN Port 5 or 6 on the processor, or the LAN Port on the rear of the M3 Display.
2. To avoid conflict, ensure all other networks, wired or otherwise are disconnected and/or disabled.
3. Ensure the Laptop Internet Protocol Version 4 Properties are configured to 'Obtain an IP address automatically'.
4. Ensure the Laptop Internet Protocol Version 4 Properties are configured to 'Obtain DNS server address automatically'.

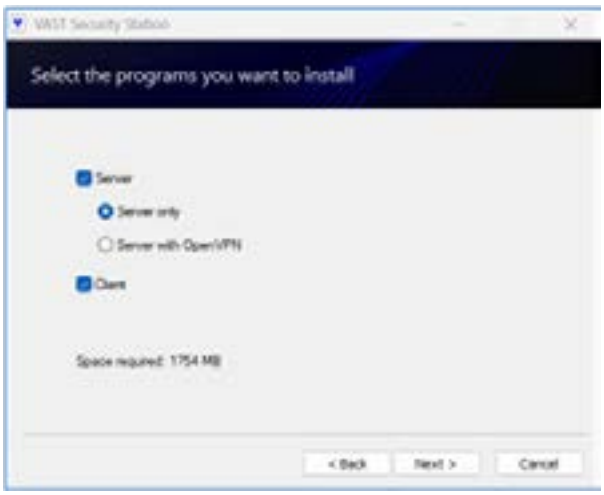
In some scenarios it may be necessary to manually configure the Laptops IP Address.

An IPv4 IP Address is made up of 4 Octets. The first, second and third Octet must be identical for connectivity across all paired units. The fourth Octet must be unique to avoid conflicting IP Addresses.

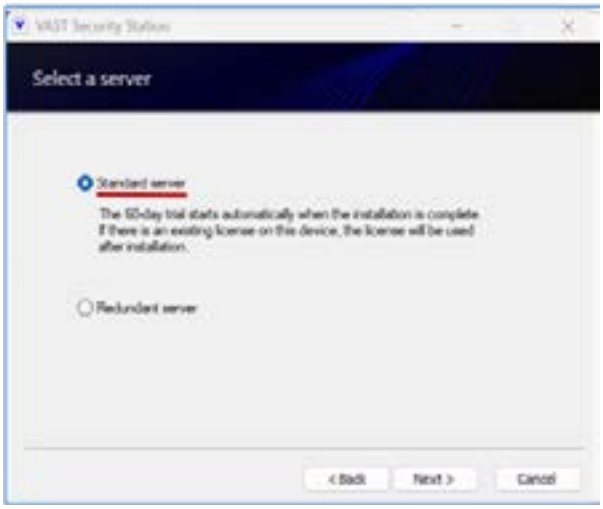
IPv4	1st Octet	2nd Octet	3rd Octet	4th Octet
Laptop	192	168	0	189
Camera	192	168	0	191
Transmitter	192	168	0	192
1st Repeater	192	168	0	193
2nd Repeater	192	168	0	194
Office Link	192	168	0	195

Installing the Video Management Software

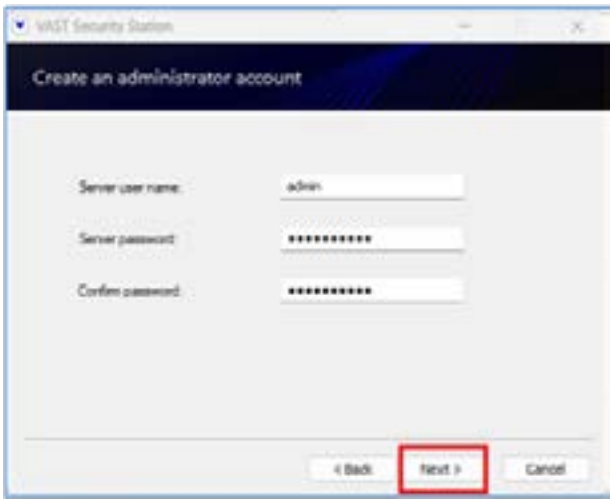
1. Download the installation file from this link.
2. Extract the file and install the software. Select Server and Client & click next



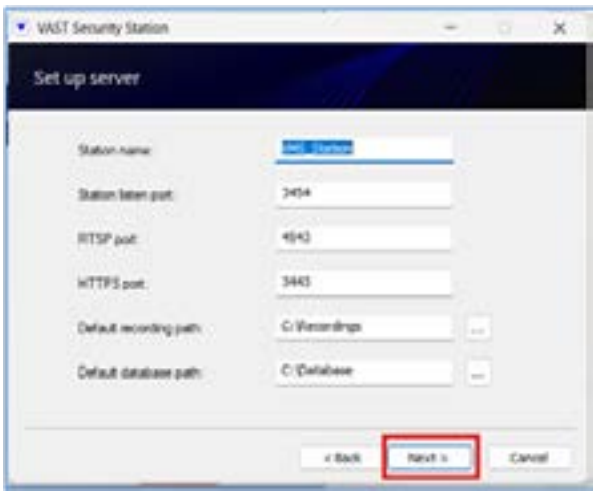
3. Select Standard Server.



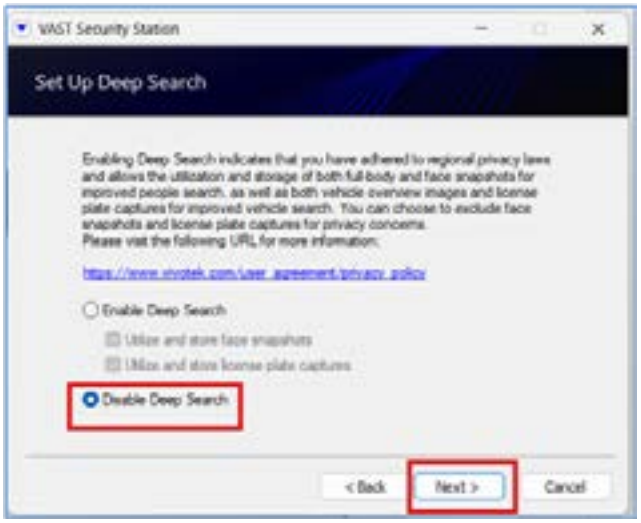
4. Enter password as “Adbctech1!”, leave username as “admin” then click next.



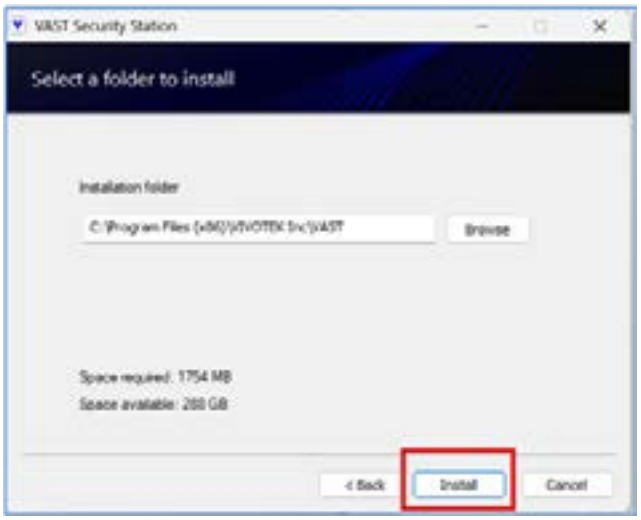
5. No need to change any settings on this screen and click next.



6. Click Disable Deep Search and click next.



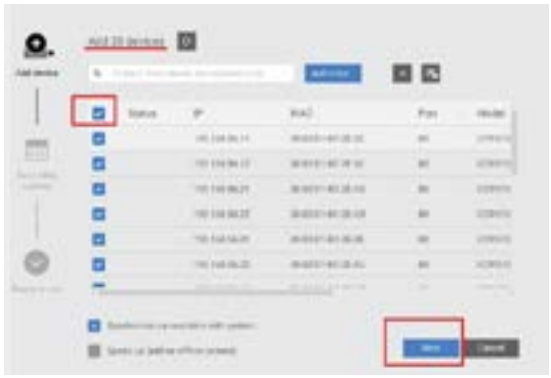
7. Click on ‘Install’ Once installed, click close and then run the VSS software.



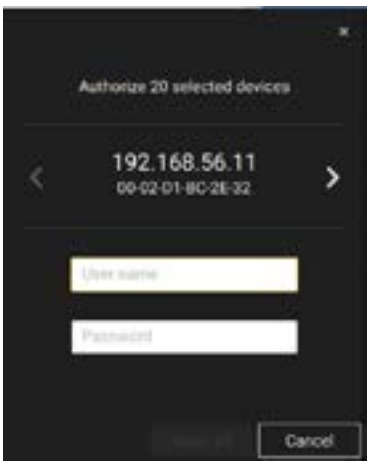
Viewing & Downloading the Recordings

1. Open the VSS and enter the password entered during installation.

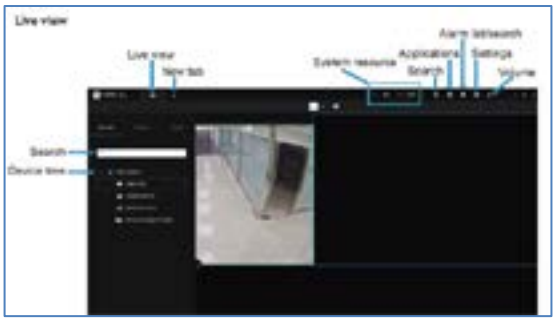
2. Software should automatically find the camera connected, if not please follow the instructions below to add devices manually.



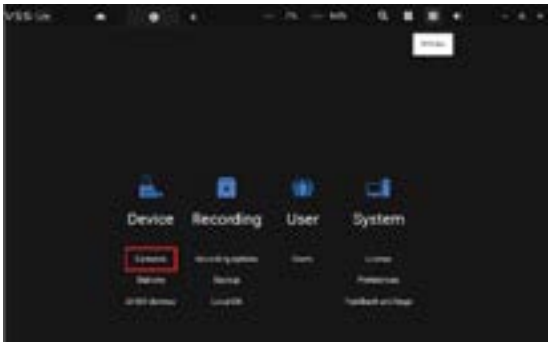
3. Type the camera user name [root] and password [Adbctech1!] and click apply all.



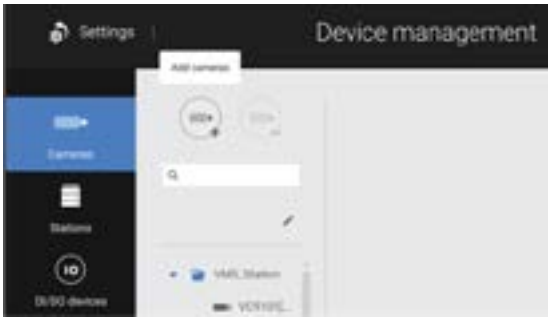
4. Basic Screen elements of VSS live view , playback and search panels are shown below:



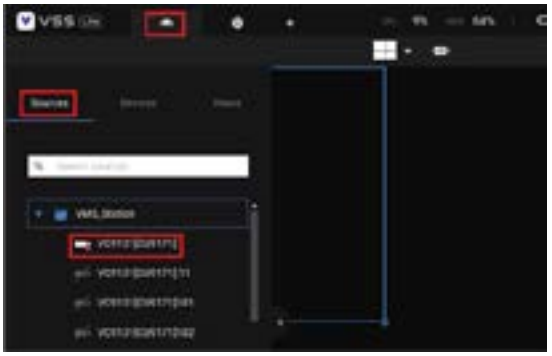
5. To add a camera>go to settings then under ‘Device’ select Cameras.



6. Click ‘Add Cameras’ symbol, this process will search for cameras and list out the camera. Select the camera and add to the software.

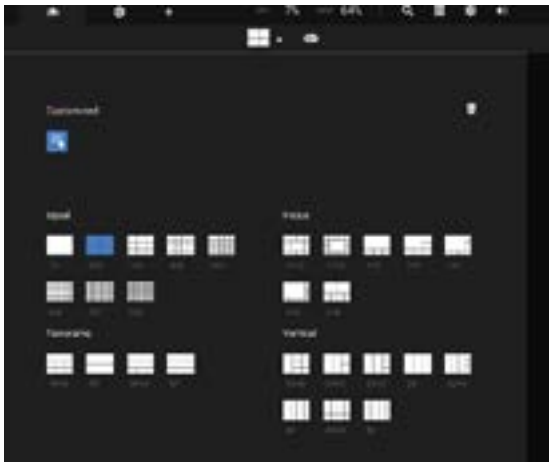


7. Go back to Live > Under ‘Sources’ you can see the added camera.



Viewing & Downloading the Recordings

8. Select the required view



9. Click and drag the station/camera to the view selected. Now, can see the camera feed as Live view.

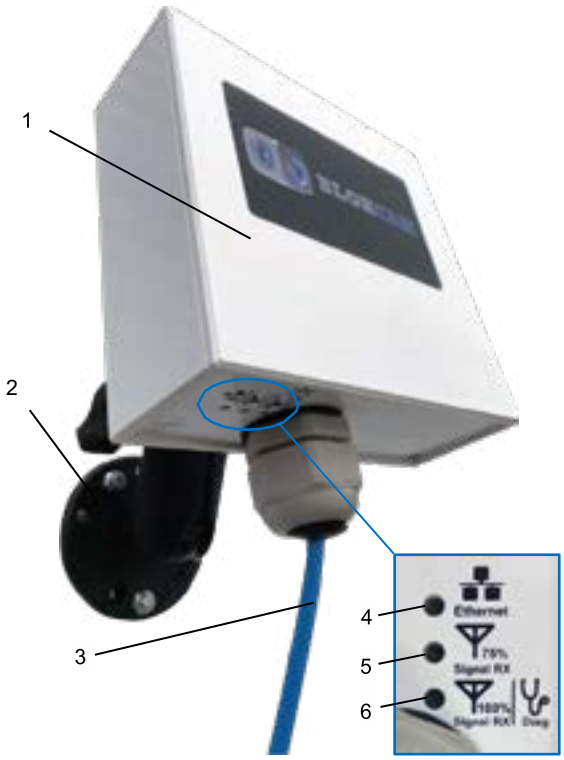
10. Now click on the Replay button to get the ‘Export’ option.

11. Click on the Export Clips button.

12. Select the date and time frame and click export to export the video (You can also drag and select the required clip section to export).

Accessories

Office Link



1. Front, receiving face
2. Magnetic Ball and Socket Mounting Bracket
3. 4m Power and Data Cable
4. Ethernet/Data LED
5. 75% Signal Strength LED
6. 100% Signal Strength LED

Overview

Crosby BlokCam Office Link allows the data from your BlokCam to be captured in a site office for site and crane monitoring and surveillance. Your host computer could monitor and record data from multiple systems. BlokCam Office Link and software comes with many additional benefits and features including:

- Quick and easy to install
- Take screen shots
- Extract footage for training and investigation
- Integrated 12dBi antenna
- Designed for outdoor applications
- 1km transmission distance
- Rugged mounting bracket
- IP66

Technical Specifications

Transmission Frequency: 5 GHz.

Transmit Power: 19 to 25dBm.

Receiver Sensitivity: -90 to -75 dBm.

Size (Excluding Mounting Bracket) and Weight :

- Height: 119mm (4.69 inches)
- Width: 123mm (4.84 inches)
- Depth: 45mm (1.77 inches)

Casing: Plastic.

Power: 12-24Vdc, Passive PoE 24V.

Power Consumption: Max 5.5 W.

Antenna Connector: N/A (Built in Antenna).

Operating Conditions: -20 °C to 70 °C (-4 °F to 158 °F) Humidity up to 5 to 95% (non-condensing)
Storage Conditions: -40 °C to 90 °C (-40 °F to 194 °F) Humidity Max 90% (non-condensing)
IP Rating: IP 67 (with external ports connected).

Mount and Connect the Office Link

Foreword

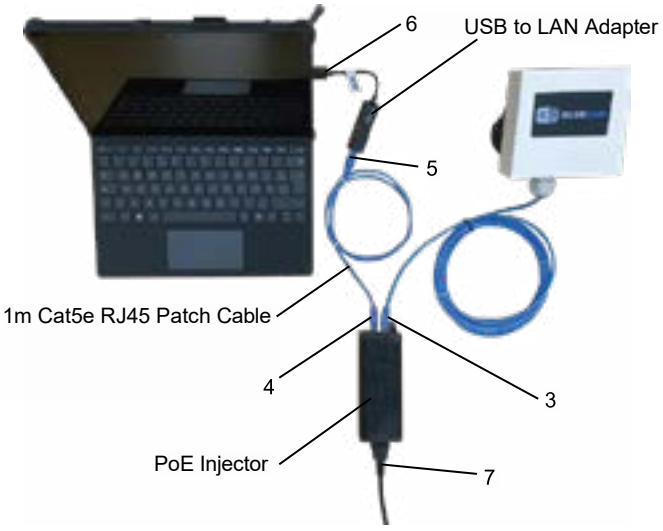
The Office Link is powered over ethernet (POE) using the supplied POE Injector.

Pre-empt the position of the Office Link and consider:

- **a.** the position and/or intended position of other paired transceivers
- **b.** Data cable length, route and distance to the host computer/laptop
- **c.** Power supply availability
- **d.** the dynamics of operation
- **e.** possible changes to the surroundings.

1. Position, mount and secure the Office Link with the receiving face, with a clear line of sight, towards the transmitting transceiver.
2. To avoid potential hazards, secure and tidy the cable from the Office Link to the anticipated Laptop location.
3. Connect the 4m Power and Data Cable to the output socket on the POE Injector.
4. Connect the 1m Cat5e RJ45 Patch Cable to the input socket on the POE Injector.
5. Connect the loose end of the 1m Cat5e RJ45 Patch Cable to the LAN port of the PC.(Use USB to LAN adapter if required).
6. Connect the POE Injector to a suitable mains supply socket with the supplied power cable.
7. Power up the POE Injector.
8. Power up the laptop.
9. For daily use, see the **VSS** section.

When necessary, reverse the above steps for removal.



Accessories

VC5a - V-Cam

Overview

The Versatile-Cam is our hardwired option which gives you the ability to expand your BlokCam ® system to include additional Sensors. The build quality of the VC5a coupled with its non-intrusive size and mounting versatility means it can be deployed in seconds and used in a multitude of scenarios. Ideal for visual monitoring and data logging of the Hoist Drum, Luffing Drum, Slew Ring, Tail Swing and the Operators Cab.

Technical Specifications

Video compression: H.265, H.264, MJPEG.

Resolution: 2560 × 1920 (5 Megapixel).

Minimum illumination: 0.05 Lux @ F2.2 (Colour).

Frame Rate: Up to 30 fps at 2560 × 1920.
Video streaming: Multiple simultaneous streams using H.265 / H.264 / MJPEG, Supports RTSP, RTP, RTCP streaming protocols.
Image settings: Adjustable image size, quality and bitrate, WDR Pro, 3D Noise Reduction, White balance, brightness, contrast, saturation, sharpness, Privacy mask and image orientation settings.

Audio streaming: Two-way audio supported.

Audio input: External microphone input (line-in).

Size and Weight:

- » Approx. Ø160 mm × 51 mm
- » Approx. 600 g

Casing: Outdoor-rated vandal resistant dome, IP66 weather-proof and IK10 vandal-resistant housing.

Power: Power over Ethernet (PoE) IEEE 802.3af.

Power Consumption: Maximum approx. 9 W.

Storage: One internal Micro SD slot supporting memory card, 256GB card included.

Operating Conditions: Temperature: −30 °C to +55 °C, Humidity: up to 98% RH (non-condensing).

Storage Conditions: Temperature: −40 °C to +65 °C.

- Quick and easy to install
- Uses high powered neodymium magnets
- The lens is auto-focus and always gives clear views
- HD1080p Resolution
- Durable all-weather design, manufactured to IP66
- Built-in microphone
- PIR motion sensor
- Bracket for wall and corner mount
- Day & night with IR illumination
- IP66

Installation

Foreword

V- Cam's are factory programmed with a specific IP Address and paired to a specific system. Please seek advice from an authorised BlokCam ® dealer for further programming and pairing options.

The V-Cam is powered over ethernet (POE) via a connection to a Processor POE Port (Ports 1 – 4).

The installation of two or more cameras will require the installation of a footswitch or similar control mechanism to select the desired camera/s in single or split screen mode.

Pre-empt the position of the V-Cam and consider:

- **a.** the sensor cable length and route
- **b.** the distance to the Processor
- **c.** the view from the intended position
- **d.** the lanyard length and distance to a secure point
- **e.** the orientation of the camera
- **f.** the dynamics of the machine

1. Magnetically mount the V-Cam to a clean and flat surface.
2. Choke a lanyard to the V-Cam and secure with a zip tie.
3. Attach the loose end of the Lanyard to a fixed and secure point. If necessary, fit and firmly tighten a Rapid Link to secure.
4. point. If necessary, fit and firmly tighten a Rapid Link to secure.
5. Secure the cable from the V-Cam to the Processor using zip ties.
5. Connect the hardwired LAN Cable from the V-Cam to one of the Processor's POE Ports (Ports 1 – 4).
6. After start up, if required, re-position the sensor to achieve the desired view.

When necessary reverse the above steps for removal.

Accessories

FS1 - Footswitch

Overview

When using multiple cameras, the Footswitch provides the hands-free operation that a crane operator needs to flick between single and split screen mode.

- Quick and easy to install
- IP67

Installation

Pre-empt the position of the switch and consider:

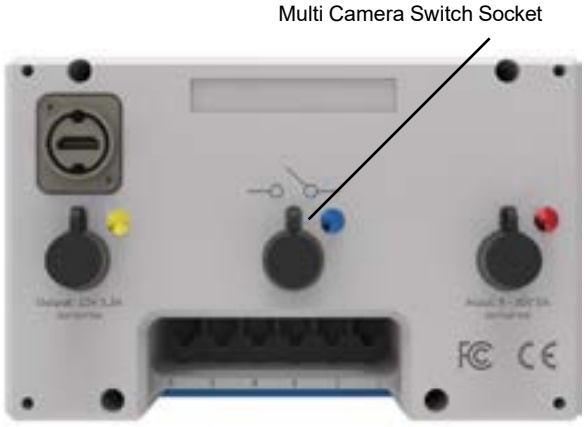
a. the Footswitch cable length and route

b. the distance to the processor.

Place the switch in a suitable position for the operator.

2. Secure the cable from the Footswitch to the Processor using zip ties.

3. Plug the Footswitch into the Processor's Blue Multi Camera Switch Socket.



When necessary reverse the above steps for removal.

BP1 - Pendulum

Overview

BP1 allows you to install your existing sensor to the boom tip of a crane. The pendulum allows the sensor to pivot and focus on the hook block, load and surrounding area regardless of the angle of the jib.

Installation

Foreword

Some assembly required, Installation of the Pendulum requires the use of medium strength thread lock and a 24mm spanner/ wrench.

1. Follow the instruction on the thread lock.

2. Apply thread lock to the Pendulum thread.

3. Screw the Pendulum thread into the rear, top recess of the Sensor, as pictured below and tighten using a spanner/ wrench.

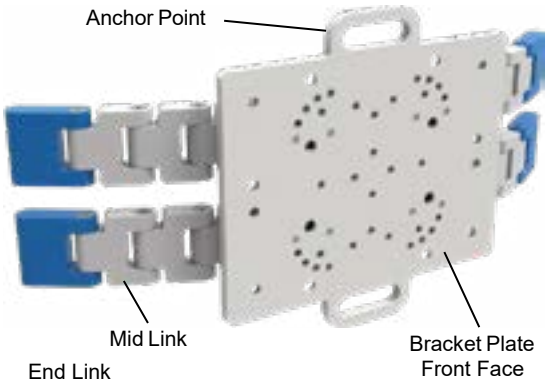
4. Allow the thread lock to dry thoroughly prior to use.

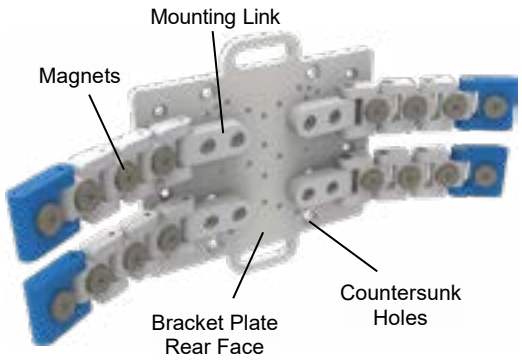
5. Install and secure the sensor as instructed on page 9.

6. Ensure the sensor cable does not limit or dictate the rotation of the Pendulum.

Accessories

BM1 - BlokMag





The above images show the Transmitter BlokMag ® (BM1-X) configured for installation on a cylindrical surface.

The below images show the Transmitter BlokMag ® (BM1-X) configured for installation on a spherical surface.

Overview

Attach your crane camera system to a curved surface. Flat, spherical, cylindrical, narrow, short or tall, our modular BlokMag ® system allows flat surfaces to mate with curved surfaces flawlessly. Mount your Transmitter, Sensor and/or Battery to the matching BlokMag ® magnetically, or if preferred, use the countersunk holes on rear of the Bracket Plate using countersunk fixings.

Assembly

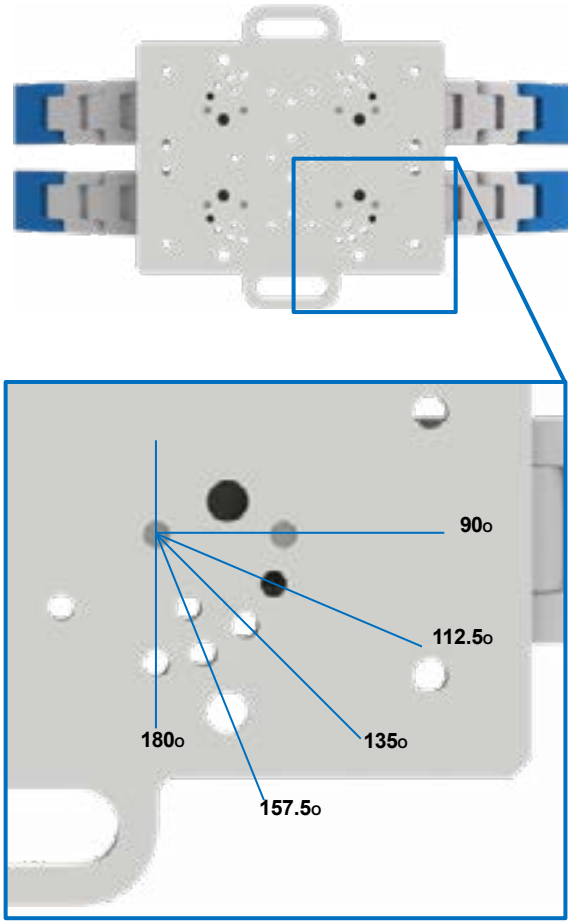
Foreword

Some assembly required. BlokMag's ® are dispatched partially assembled to improve modularity and increase installation options.

Each Bracket Plate comes with four Link Arms and associated fixings. Link Arms are factory assembled and retained with high strength thread lock. Each Link Arm includes:

1 x Mounting link
3 x Mid Link's, complete with magnets
1 x End Link, complete with magnet

Multiple threaded holes on the Bracket Plate allows the Link Arms to be installed at increments of 22.5-degree angles. You will need a 3mm hex key to fit the Link Arms to the Bracket Plate.



Accessories

BM1 - BlokMag

1. Position the 4 x Link Arms on the countersunk, rear face of the Bracket Plate to achieve the most suitable configuration.
2. Place an M5 spring washer (supplied) onto an M5 Button Head Socket Bolt (supplied).
3. Insert the bolt and spring washer into counterbored hole in the Mounting Link and screw to the Bracket Plate.
4. Repeat steps 2 and 3 until each Mounting Link and corresponding Link Arm has been fitted with two fixings.
5. Use a 3mm Hex Key (not supplied) to tighten the fixings and secure the Mounting Links to the Bracket Plate.
6. If desired, use countersunk fixings (not supplied) and medium strength thread lock (not supplied) to fix the Transmitter, Sensor and/or Battery to the matching BlokMag ®.

Installation

1. Pre-empt the position of the BlokMag ® and consider:
   a. the installation requirements of the mating Transmitter, Sensor and/or Battery
   b. the lanyard length and distance to a secure point.
2. Magnetically mount the BlokMag ® to a clean surface.
3. Ensure the assembly and configuration of the link arms are suitable and adjust if necessary.
4. Check each link arm is taught and correctly magnetised to the curved surface.
5. Fit Rapid Link to BlokMag ®.
6. Choke and secure a lanyard to fixed and secure point.
7. Attach the loose end of lanyard to the Rapid Link.
8. Firmly tighten the Rapid Link.
9. Refer to the installation guide for the mating Transmitter, Sensor and/or Battery.

When necessary reverse the above steps for removal.

Distributor Stamp

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