



**CDSP9000 Cameras  
Installation Instructions**

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Read these instructions first!

**INTRODUCTION**

These instructions cover Baxall CDSP9000 series cameras. Read all of these instructions. Use them to install your camera and have them available for its lifetime. If you have any problems, contact Baxall Limited. Note that not all cameras have all of the features described in this manual. Refer to the table below for the features of individual cameras. All CDSP9000 series cameras are fitted with a Direct Drive (DD) lens connector, have adjustable back focus and accept C and CS lenses.

**TABLE 1**

Option	CDSP9714	CDSP9714/LV	CDSP9713	CDSP9713/LV	CDSP9313	CDSP9313/LV	CDSP9311	CDSP9311/LV	CDSP9752	CDSP9752/LV	CDSP9742	CDSP9742/LV
Mono									●	●	●	●
Colour	●	●	●	●	●	●	●	●				
Resolution (TVL)	480	480	480	480	480	480	330	330	570	570	570	570
Sensitivity (lux @ f1.2)	0.4	0.4	0.8	0.8	1.0	1.0	0.9	0.9	0.08	0.08	0.04	0.04
Extended IR Performance											●	●
CCD Sensor size	1/2"	1/2"	1/2"	1/2"	1/3"	1/3"	1/3"	1/3"	1/2"	1/2"	1/2"	1/2"
Sony HyperHAD CCD			●	●	●	●	●	●	●	●		
Sony ExwaveHAD CCD	●	●									●	●
Adjustable Gamma (0.45 and 1.0)	●	●	●	●	●	●	●	●	●	●	●	●
Automatic Gain Control (AGC)	●	●	●	●	●	●	●	●	●	●	●	●
AGC on/off	●	●	●	●	●	●	●	●	●	●	●	●
Backlight Compensation (BLC)	●	●	●	●	●	●	●	●	●	●	●	●
BLC on/off	●	●	●	●	●	●	●	●	●	●	●	●
Manual Shutters	●	●	●	●	●	●	●	●	●	●	●	●
Flickerless	●	●	●	●	●	●	●	●	●	●	●	●
Electronic Iris (EI)	●	●	●	●	●	●	●	●	●	●	●	●
EI on/off	●	●	●	●	●	●	●	●	●	●	●	●
4 Colour Balance modes*	●	●	●	●	●	●	●	●				
Auto Iris connection	●	●	●	●	●	●	●	●	●	●	●	●
Genlock **	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	●	●	●	●
Line lock with phase adjust (AC only)	●	●	●	●	●	●	●	●	●	●	●	●
<b>Supply</b>												
11 - 40 VDC; 12 - 30 VAC		●		●		●		●		●		●
230 VAC ± 10%	●		●		●		●		●		●	

\* 4 Modes = Auto Tracing (ATW), Indoor, Outdoor and Fluorescent

\*\* Where optional, part number suffixed with ../G

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**PRODUCT SAFETY**

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**⚠ WARNING**

- **Installation and servicing is only to be carried out by suitably qualified and experienced personnel.**
- **Mains cameras contain hazardous voltages**
- **Do not remove covers as there is a risk of injury or death by electric shock.**
- **Cameras connected to mains supplies must be earthed.**
- **Only power low voltage cameras from a class 2 isolated power supply.**

The CDSP9000 range is designed for use in general purpose CCTV applications and has no other purpose. Only operate your camera between the temperatures of -10°C and +50°C. Do not operate your camera outside its specified power supply range. CDSP9000 cameras must only be used in clean, dry, dust-free environments unless housed in a suitable protective housing to IP65 or better.

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**ELECTROMAGNETIC COMPATIBILITY (EMC)**

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**⚠ CAUTION**

**This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.**

This product is intended solely for use in general CCTV applications.

The product must be installed and maintained in accordance with good installation practice to enable the product to function as intended and to prevent problems. Refer to Baxall Limited for installation guidance.

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**MANUFACTURER'S DECLARATION OF CONFORMANCE**

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The manufacturer declares that the equipment supplied with this manual is compliant with the essential protection requirements of the EMC directive 89/336 and the Low Voltage Directive LVD 73/23 EEC. Conforming to the requirements of standards EN 55022 for emissions, IEC801 parts 2, 3 and 4 for immunity and EN 60950 for Electrical Equipment safety.

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**CAUTIONS**

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**⚠ CAUTION**

In order to avoid damaging your camera, note the following points.

- 1) The camera has threaded mounting points on the top and bottom of the case. Only use a standard, photographic mounting bolt with a 1/4" BSW or 20 UNC thread.
- 2) Before fitting the lens, make sure that its back will not touch the CCD sensor or associated components when screwed fully home.
- 3) Do not touch the image surface of the sensor. If the sensor is accidentally touched, only clean it using isopropanol.
- 4) Do not expose the sensor to direct sunlight as this may impair the performance of the camera.

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**POWER SUPPLY**

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CDSP9000 series cameras are available in AC mains and AC and DC low voltage types. **The voltage required to operate the camera is clearly marked on the rear panel of the camera.** The green POWER LED on the rear panel indicates that power is connected. **Only power low voltage cameras from a class 2 isolated power supply.** The power consumption of a CDSP9000 series camera is less than 5 Watts.

**Mains power supply**

Cameras that are intended to operate directly from the mains supply are fitted with a non-detachable power supply cord. The voltage of operation is clearly marked on the rear panel of the camera. Generally this is 230V AC +6% -10% at 50Hz. REFER TO THE WIRING INSTRUCTION LABEL ATTACHED TO THE SUPPLY CORD and terminate the cord with the appropriate mains plug fitted with a 3A fuse. **MAINS CAMERAS MUST BE CONNECTED TO A PROTECTIVE EARTH.** Ensure that a secure means of isolation from the mains is provided for the camera in accordance with the national wiring regulations of the country of installation.

**Auto-switching power supply**

Cameras fitted with an automatic selecting power supply operate between 11-40V DC and 12-30V AC. Connections and polarity are indicated above the screw terminals on the rear panel. **The power supply must be a class 2 isolated type.**

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**VIDEO CONNECTIONS**

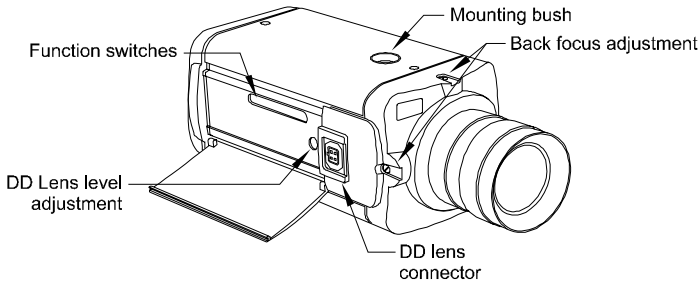
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To obtain a video output, connect a video coaxial cable terminated with a 75Ω BNC connector to the BNC socket marked VIDEO OUT on the rear of the camera.

On selected cameras, a means of external synchronisation may be provided - see table 1 for details. For external synchronisation, connect a video coaxial cable terminated with a 75Ω BNC connector to the socket marked GENLOCK on the rear of the camera. The GENLOCK facility synchronises to either a 1V peak-to-peak video signal or a standard sync plus blanking signal. A signal connected to the GENLOCK input automatically overrides all other synchronisation settings.

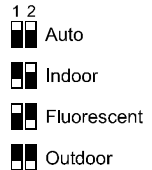
## FUNCTION SWITCHES

On the side of the camera is a hinged flap. The hinged flap covers a lens level potentiometer and 10 function switches.



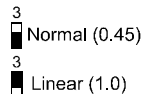
### Colour Balance

There are four colour balance modes selected by dip switches 1 and 2. For the majority of applications the **Auto** setting will provide excellent colour rendition and is the default setting. For applications where the illumination is predominantly daylight, the **Outdoor** setting may provide improved colour rendition over Auto. Where a mixture of illuminations such as tungsten, fluorescent and daylight exist, the **Indoor** setting may provide the best colour rendition. Where fluorescent lighting is predominant use the **Fluorescent** setting.



### Gamma

There are two different levels of Gamma selected by dip switch 3. Choose between **Normal** (0.45) to provide increased visibility in dark areas of the scene, or **Linear** (1.0). The default setting is **Normal**.



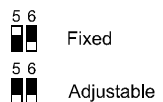
### AGC (Automatic Gain Control)

The Automatic Gain Control facility can improve picture quality when level of illumination are low. Select **ON** or **OFF** using dip switch 4. For most applications, the AGC facility should be **ON** and is therefore the default setting.



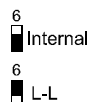
### LL-PH (Line Lock, Phase Adjust)

The Line Lock, Phase Adjust facility is selected by dip switches 5 and 6. Choose **Fixed** or **Adjustable**. Both settings are line-locked however, the **Adjustable** setting allows  $\pm 120^\circ$  phase adjustment via the potentiometer located on the rear of the camera. The **Adjustable** mode should be used when cameras are connected to different mains supply phases (R, Y, B). Default setting is **Fixed**.



### SYNC (Synchronisation)

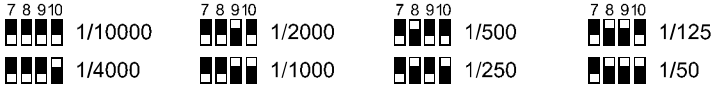
The Synchronisation facility is selected using dip switch 6. Choose **LL** (Line-Lock) or **Internal**. **LL** locks the frame rate to the mains so that cameras are triggered at the same point on the mains supply AC cycle. **Internal** locks the frame rate to the internal oscillator of the camera. The default setting is **LL**.



**FUNCTIONS SWITCHES**

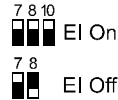
**Shutter speed switches**

Shutter speeds are selected with dip switches 8, 9 and 10. Dip switch 7 must be down to enable manual shutter speed selection. For EI, BLC and Flickerless functions, switch 7 must be up.



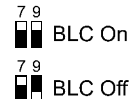
**EI (Electronic Iris)**

The EI (Electronic Iris) facility compensates for excessive light level by automatically adjusting shutter speed. Selecting Electronic Iris disables manual shutter speed selection. The Electronic Iris setting must not be used when the camera is set to Flickerless mode. The default setting is Electronic Iris **ON**.



**BLC (Back Light Compensation)**

The BLC (Back Light Compensation) facility compensates for back-lit scenes by enhancing objects in the centre of the scene which would previously have been in silhouette. Select **ON** or **OFF** using the BLC switch. Default is **OFF**. BLC will only function with a manual iris lens when the Electronic Iris facility is switched on. For direct drive and auto iris lenses, BLC will still function even though the Electronic Iris facility is switched off.



**Flickerless**

The Flickerless setting can reduce the flicker caused by certain lighting conditions. Choose between **ON** or **OFF**. The default setting is **OFF**. Note that the Electronic Iris setting must be off for correct operation of the Flickerless function.



**LENS SELECTION**

Suitable lens types are C and CS mount in fixed iris, manual iris, auto iris or direct drive versions. Sizes are shown below. Cameras are factory set for CS mount lenses. If using a C mount lens, rotate either of the back focus screws approximately 30 turns anticlockwise before fitting the lens.

Lens size	CDSP9714	CDSP9714/LV	CDSP9713	CDSP9713/LV	CDSP9313	CDSP9313/LV	CDSP9311	CDSP9311/LV	CDSP9752	CDSP9752/LV	CDSP9742	CDSP9742/LV
1/3"					●	●	●	●				
1/2"	●	●	●	●	●	●	●	●	●	●	●	●
2/3"	●	●	●	●	●	●	●	●	●	●	●	●
1"	●	●	●	●	●	●	●	●	●	●	●	●

**LENS CONNECTION**

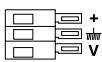
Fixed and Manual iris lenses (for indoor use only) require no wiring connections.

**Auto Iris Lenses**

Connections for auto-iris lenses are located on the rear of the camera. Connect auto-iris lenses to the 3 terminal connector according to the diagram below.

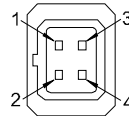
**Direct Drive**

Connect DD lenses to the female 4 pin socket on the side of the camera. If the lens does not have a DD plug fitted then wire the lens to a suitable plug in accordance with the diagram below.



+ = Lens positive supply  
V = Video drive signal  
mwr = Lens ground

Auto Iris Lens Connections



1 = Damp -  
2 = Damp +  
3 = Drive +  
4 = Drive -

DD Lens Connector

**LENS SETUP PROCEDURES**

For manual or fixed iris lenses set the EI switch and AGC switch to ON.

**Auto Iris lenses**

Switch the EI and AGC off. Refer to the lens instructions and adjust the lens for the optimum picture (video output level of 1V peak-to-peak). Switch the AGC on.

**Direct Drive lenses**

Where fitted, switch the EI and AGC off. Use an appropriate screwdriver to turn the lens level potentiometer (under the hinged flap) fully clockwise. Next, slowly adjust the potentiometer anticlockwise until the optimum picture is obtained (video output level of 1V peak-to-peak). Switch the AGC on.

**FOCUS ADJUSTMENT**

The back focus adjustment screws are located on the top and side of the case at the front of the camera and should be adjusted using an appropriate screwdriver. Do not 'over turn' the back focus mechanism.

**Fixed Lenses**

Set the lens focus to infinity and view an image greater than two metres away. Focus the image using the back focus screw. Set the lens focus as required.

**Manual Iris Lenses**

Open the iris fully and set the lens focus to infinity. View an image greater than two metres away. Focus the image using the back focus screw. Set the lens focus and iris as required.

**Auto-iris and Direct Drive Lenses**

Fully open the iris by covering the lens with a suitable neutral density (ND) filter. Set the lens focus to infinity. View an image greater than two metres away. Focus the image using the back focus screw. Remove the ND filter and set the lens focus as required.

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**FOCUS ADJUSTMENT**

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**Zoom Lenses**

Set the lens focus to infinity and fully open the iris by covering the lens with a suitable neutral density (ND) filter. Zoom out to the widest field of vision and view a distant object. Adjust the back focus screw until the object is in focus. Next, zoom fully in and adjust the lenses focus until the object is again focused. Repeat these steps until the full zoom range may be viewed with the minimum loss of focus.

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**SYNCHRONISATION**

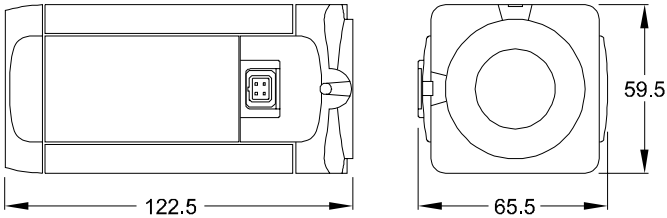
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Cameras that operate from AC supplies are line-locked for a supply frequency of 50Hz. If the supply frequency is unstable, then disable the line lock by setting the SYNC switch to **Internal**.

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**DIMENSIONS**

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Baxall Limited reserve the right to make changes to the product and specification of the product from time to time without prior notice