CENTURION

POLOview™
VIDEO INTERCOM

POLOphone

disa
Design Institute South Africa
Design Excellence Award
2006

AUDIO AND VIDEO INTERCOM SYSTEMS

The POLOview surveillance system links the simplicity of an audio intercom with the power and flexibility of colour CCTV. It is designed to provide the ability to communicate with visitors at ones entrance while at the same time survey the surrounding entrance area and other security risk areas for unwanted visitors.

¥

POLOview consists of a switching module which allows the connection of up to 4 external colour CCTV cameras. Internal jumpers are used to set the number of cameras in the system. The output of the switcher is a single feed to a compact colour LCD monitor.

¥ The switcher is not limited to controlling colour cameras, it can be used to switch black and white cameras and interface with a black and white monitor.
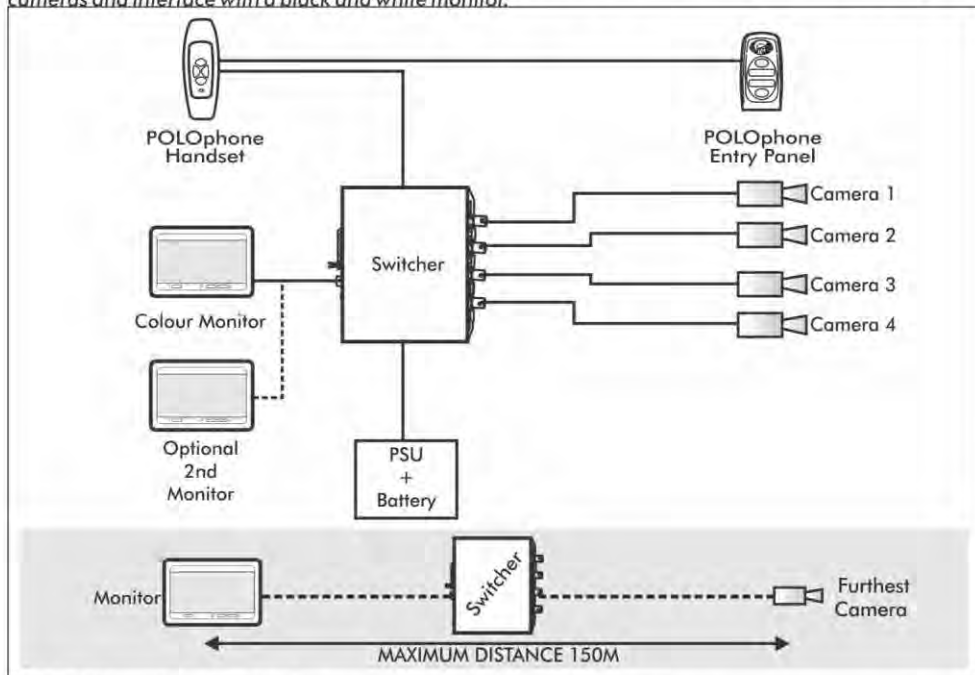

Fig 1 Block Diagram of the POLOview System

The monitor is typically mounted adjacent the handset of the POLOphone audio intercom system. A maximum of two monitors can be connected in parallel with this output.

The cameras are active all the time and therefore with the monitor switched on, there is always an image which changes as the system switches sequentially from one camera to the next. The time that the system remains with one camera image before switching to the next, is adjustable from 5 to 30 seconds.

Using the auxiliary output provided on the POLOphone handset, connected to the POLOview switcher, the user can manually switch between the cameras and by simply pressing and holding the auxiliary pushbutton for slightly longer than three seconds, the system will lock on the camera selected. A single press will release the system and allow it to continue its timed sequential switching between cameras.

AUX
BUTTON

- Press to switch to next camera

- Press and hold for 3 seconds to
  lock onto specific camera

LED

- Indicates system locked onto specific
  camera

- 3 Flashes every 2 seconds indicates
  battery voltage of POLOview system is
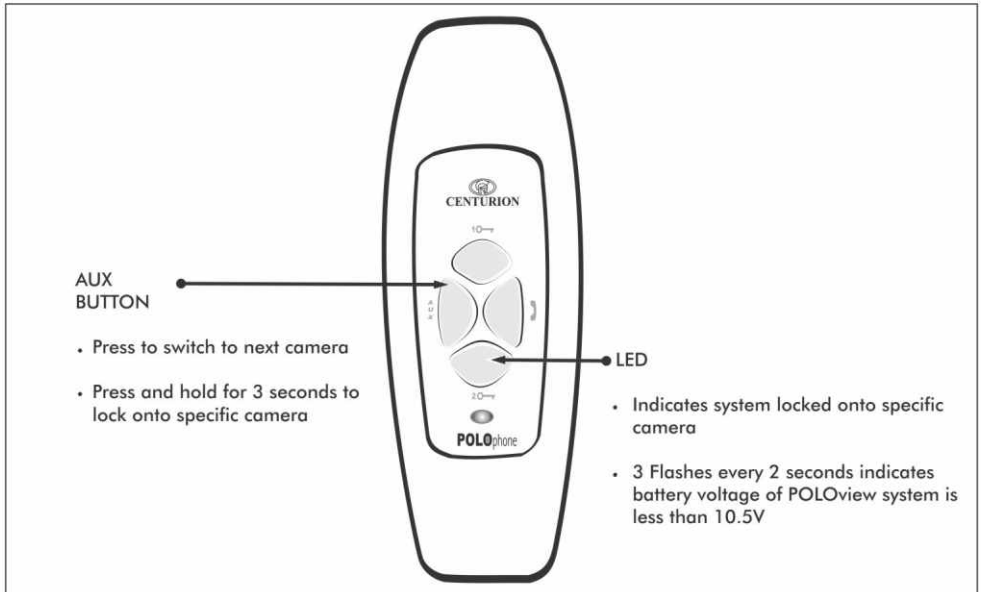 less than 10.5V

Fig 2 POLOphone handset showing aux and LED

The POLOview switcher provides an LED output which can be connected to the LED input provided on the POLOphone handset. This will indicate when lit, that the switcher has been locked onto the specific camera on view via the monitor. While the switcher is in normal sequential switching mode, the LED will be off. The LED also gives a Battery-Low warning when the battery voltage is below 10.5V. (3 Flashes every two seconds)

Besides the auxiliary inputs from the audio handset, the POLOview operates independently of the audio intercom. For instance it does not switch on or activate the camera adjacent the audio entry panel when an entry panel call button is pressed. Should a visitor arrive at the entrance and ring the intercom, the user will have to use the auxiliary pushbutton on the handset to simply switch to the specific camera if that camera is not already active on the monitor.

The switcher provides a clean regulated 12V DC supply to each camera allowing a battery backed-up supply to feed the system and provide secure power failure protection.

ADDITIONAL CAMERAS AND MONITORS

The system is limited to a maximum of 4 cameras however it is possible to connect a second LCD monitor or TV to the output of the switcher. When connecting a TV, one must switch to the AV channel on the TV system before a signal will appear.

It is possible to use just the TV as a monitor. Should the TV be mounted in a different place to the audio handset and the auxiliary pushbutton for manual switching, one can connect a NOVA or equivalent remote control to the switcher to allow remote switching between cameras.

Contact your nearest Centurion outlet for information on connecting additional monitors or TV to the system.

SPECIFICATIONS OF SWITCHER MODULE

Input Voltage	12-18V DC ≠
Maximum Current	2.5A @ 12V
Camera connection	4 channels, each with B&C connectors for video signal and wired terminal for regulated 12V DC to cameras
Monitor connection	Single B&C connector and wired terminal for regulated 12V DC to monitor
System protection	12V supply to monitor and each camera protected via PTC device, maximum 500mA per output
Operating temperature	-20°C to + 50°C
Humidity	0 – 90% non condensing
Housing	Plastic housing for indoor mounting only

≠ Configured for 12V supply with battery back-up.

CABLING

Powerax cable which is a combined co-axial cable (RG59) and two plain cores, (0.75mm²) is recommended between each camera and the POLOview switcher module. The co-axial is for the video feed from the camera and the twin core supplies 12V DC power to the camera.

The same cabling can be used to link the output of the switcher to the LCD monitor.

A single two core (>0.2mm²) connects between the switcher and the POLOphone handset for control of the switcher and if the LED indication is required, an extra core is required for this.

Cabling Distance: The maximum distance between any camera and the monitor must be less than 150m. The POLOview switcher being located somewhere within this distance.

The maximum distance between the POLOphone handset and the switcher is typically less than 100m.

POWER SUPPLY

The switcher needs a fused 12V DC supply preferably with battery back-up to power the switcher which in turn will power the cameras and the monitor. The peak current draw of the system with 4 cameras and one monitor is 2.5A.
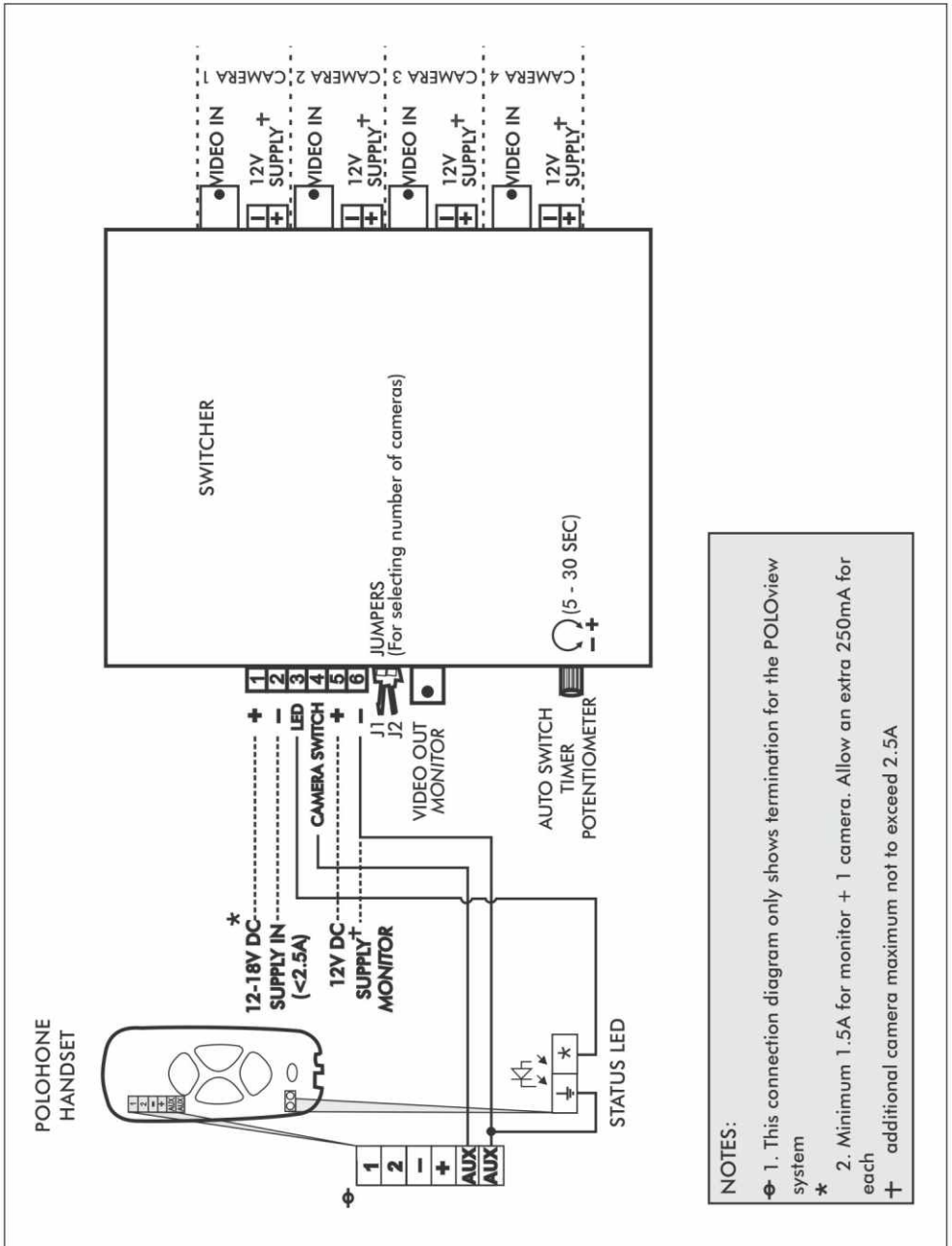
Fig 3 General connection diagram
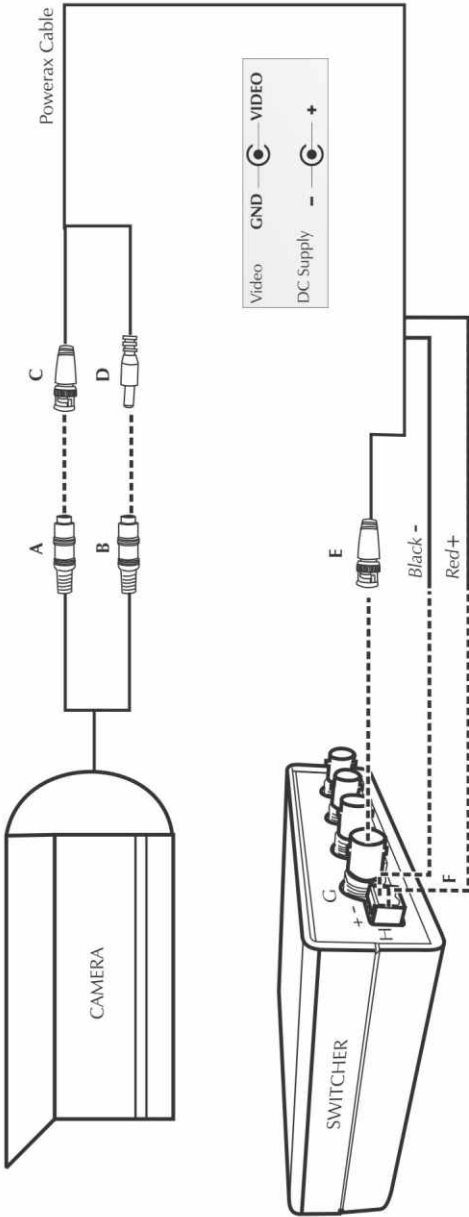
POLOVIEW CAMERA TO SWITCHER CONNECTION SCHEDULE

CAMERA TO POWERAX CABLE

	FUNCTION	TERMINAL	COMMENT
A	Video output	BNC Male	Supplied with camera
B	12V DC input	DC Jack	Supplied with camera
C	Video output	BNC Female	Must be crimped onto cox-ax part of POWERAX cable
D	12V DC input	DC Jack-fly lead	Must be soldered to twin core section of POWERAX

POWERAX CABLE TO SWITCHER

	FUNCTION	TERMINAL	COMMENT
E	Video input	BNC Female	Must be crimped onto co-ax part of POWERAX cable
F	12V DC output	None	Terminate wires into connector
G	Video input	BNC Male	Supplied with switcher
H	12V DC output	Plain screw	Terminate wires into connector

Fig 4 Camera to Switcher
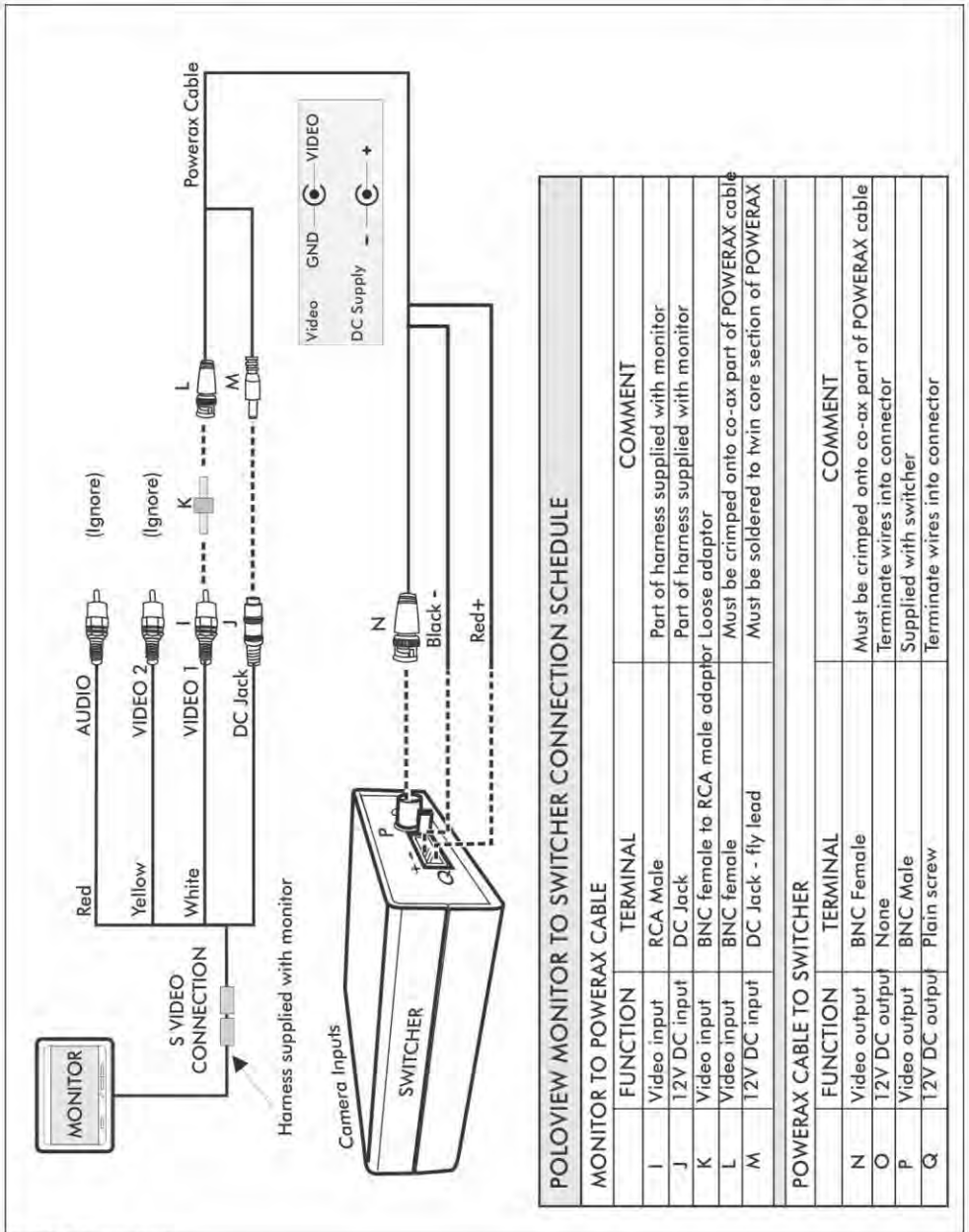
Fig 5 Switcher to Monitor

POLOVIEW MONITOR TO SWITCHER CONNECTION SCHEDULE

MONITOR TO POWERAX CABLE

	FUNCTION	TERMINAL	COMMENT
I	Video input	RCA Male	Part of harness supplied with monitor
J	12V DC input	DC Jack	Part of harness supplied with monitor
K	Video input	BNC female to RCA male adaptor	Loose adaptor
L	Video input	BNC female	Must be crimped onto co-ax part of POWERAX cable
M	12V DC input	DC Jack - fly lead	Must be soldered to twin core section of POWERAX

POWERAX CABLE TO SWITCHER

	FUNCTION	TERMINAL	COMMENT
N	Video output	BNC Female	Must be crimped onto co-ax part of POWERAX cable
O	12V DC output	None	Terminate wires into connector
P	Video output	BNC Male	Supplied with switcher
Q	12V DC output	Plain screw	Terminate wires into connector

Refer to termination schedule and connection diagram on page 5.

1. Selecting number of cameras:

No CAMERAS / JUMPER	J1	J2
1	OFF	OFF
2	ON	OFF
3	OFF	ON
4	ON	ON

2. Adjust the camera switching time

Use the potentiometer on the side of the switcher to adjust the time that system fixes on one camera before

automatically switching to the next camera. The time range is from approximately 5 seconds when turned

fully anti-clockwise to approximately 30 seconds when turned fully clockwise.

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