

CHALCO ELEVEN LTD



“CHALCO HOUSE”
MARYCULTER
ABERDEEN
AB12 5GQ

TEL (44)-(0)-1224 733321
E-Mail: ce@chalco.co.uk

FAX (44)-(0)-1224 733685
www.chalco.co.uk

OPERATING MANUAL



MODEL HYPER DIGITAL CE04

CONTENTS

- 1.0 GENERAL
- 2.0 SPECIFICATIONS
- 3.0 OPERATING CONTROLS
- 4.0 CONNECTING DETAIL FOR
- 5.0 BLOCK DIAGRAMS
- 6.0 CIRCUIT DIAGRAMS

1.0 GENERAL

Hyper Digital CE03 offers commercial / naval divers and underwater investigators a new level of technology in their search for high quality underwater video footage along with data collection in Dive Control. The System offers picture-in-picture facility where one or two Cameras can be viewed simultaneously or individually on a single screen along with video overlay/GPS, depth, heading and sonar data. Digital video recording is in the Mini-DV tape format. To complement the DV recording, the Cameras are true digital processing with a 2 x digital zoom which allows the user to interrogate in detail its image.

All facilities of the Hyper Digital CE03 Systems are included with the level of engineering upgraded to satisfy military and naval standards. The System offers greater versatility than ever before for professional or military applications. The System is compatible with any of the Hyper Digital range of high resolution, fixed or optical zoom, wide angle lens Cameras and accessories. System accessories including Lights and Video-writer can be stored within the case lids

All of this is built into a specially designed case comprising 10mm plywood covered in very tough trilaminate. The box is sealed into a single piece aluminium end frame which provides additional strength. The front and back fascia panels are sealed. The fascia panels are corrosion resistant and incorporate waterproof switches to protect against water entry.

The total System comprises of :

Flight Case containing:

- a) 1 off 10" 750TVL Colour Monitor
- b) 1 off CC650Z2-C2 Controller
- c) 1 off Sony GVD-1000 Mini DV Recorder with LCD Screen and Remote

- d) 2 off CC620ZX2 Underwater Camera
- e) 2 off CC-12-50L Underwater Camera Light
- f) 2 off 100M Umbilicals CE1C/9-100UC
- g) 2 off 'Y' Splices

CAMERA CONTROLLER

The Camera Controller is designed for topside use, comes in a Flight Case and has an internal circulating fan and there must be sufficient air circulation in order to keep the internal components cool.

The Controller is equipped with the following controls :

On / Off Switch

Light Switches / Dimmers

Digital Readouts for Lights and Cameras Voltage Output

Digital Zoom Switches

PIP Select

PIP On / Off

In order to operate the System, no calibration is required to the Camera or the Controller.

The Light should not be left on for long periods if not submerged in water.

UMBILICAL

See Data Sheet on Cable

MONITOR

See Operating Manual on Monitor

2.0 SPECIFICATIONS

CAMERA CONTROLLER

SUPPLY VOLTAGE :	90-260V AC 50/60 Hz
OUTPUT VOLTAGE CAMERA :	15V-19V DC
OUTPUT VOLTAGE LIGHT :	0V-24V DC
INPUT SIGNAL :	Composite Video 75Ω
OUTPUT SIGNAL :	Composite Video 75Ω
OPERATING TEMPERATURE :	-5°C to +50°C

CAMERA

OPERATING VOLTAGE :	15V-24V DC
OUTPUT SIGNAL :	Composite Video 75Ω
OPERATING DEPTH :	1500 ft
OPERATING TEMPERATURE :	-5°C to +50°C
SIZE :	50mm Diameter x 90mm long excluding interconnect socket

LIGHT

OPERATING VOLTAGE :	12V DC
OPERATING CURRENT :	3.7 Amps at full intensity
BEAM ANGLE :	Wide
OPERATING DEPTH :	1500 ft
OPERATING TEMPERATURE :	-5°C to + 90°C
SIZE :	50mm Diameter x 90mm long excluding interconnect socket

3.0 OPERATING CONTROLS

On/Off Switch

The On/Off Switch is situated top centre of the Rack. When rotated clockwise, if power is connected, the internal fan will start circulating air and Camera A / B digital readout will indicate appropriate voltages.

Monitor

Monitor must be switched on along with the Controller and **must be switched off when not in use.** (See separate Operating Manual for Monitor).

Camera Power

Cameras A and B are automatically powered as soon as the On Switch is rotated clockwise. Cameras A and B digital readout will display the voltage being transmitted to the Camera head.

Light Switches / Dimmers

There are 2 Light Switches / Dimmers marked A and B. Each switch has an LCD above it indicating that once the switch is rotated clockwise the Light is activated and will start to illuminate. The pointer will be sitting off the off position. The LCD will read a voltage thus indicating that the power to the Light is ready to be transmitted to illuminate to the desired setting. However, this LED may fluctuate rapidly for quite some time before settling to your setting. This does not affect the luminance of the Light. As the switch is rotated clockwise, the LCD will read from LO to 18V.

Digital Zoom Switches

There are 2 Digital Zoom Switches underneath each Camera LCD. If rotated to x 2 clockwise the appropriate Camera automatically zooms digitally x 2. Although this can be used permanently, it is intended for brief interrogation of video images. If objects are closer than 2 metres they will have jagged edges. This is quite normal for digital enhancement circuitry.

Select Switch

When this Switch is pressed it selects Camera A or B. If the picture of Camera A is displayed in the top left hand corner and the button is pressed, this will change the Cameras round ie the full screen will be Camera A and Camera B becomes the small picture.

PIP Switch

If this Switch is pressed, it will switch off the picture-in-picture just displaying the original picture on the screen. If pressed again, a small picture will appear at top left-hand corner.

Mini DV Recorder

On initial power-up, the Mini DV Recorder will automatically switch on. The screen will go blue indicating time and date. A green LED will illuminate and stay illuminated until switched off. If the above does not happen, switch on the Mini DV Recorder. The Mini DV Recorder must be switched on at all times in order to view Cameras or for playback, sound can be heard as well as picture playback on the main screen as well as the LCD display. For all other instructions and features, please refer to separate Mini DV Operating Manual.

4.0 CONNECTING DETAIL

'Y' SPLICE

<u>6 WAY MALE TO UMBILICAL</u>		<u>4 WAY FEMALE TO CAMERA</u>	<u>2 WAY FEMALE TO LIGHT</u>	<u>DESCRIPTION</u>
1	Black	Black		SCREEN-VIDEO COAX
2	White	White		CORE-VIDEO COAX
3	Red	Red		CAMERA POWER +V
4	Green	Green		DIGITAL ZOOM
5	Orange	-----	White	LIGHT POWER +V
6	Blue	-----	Black	LIGHT POWER -V

CC620ZX2 CAMERA

4 PIN MALE SS

DESCRIPTION

1	Black	SCREEN-VIDEO COAX
2	White	CORE-VIDEO COAX
3	Red	CAMERA POWER +V
4	Green	DIGITAL ZOOM

6 PIN-UMBILICAL CE1C/9-100UC-UM

6 WAY FEMALE

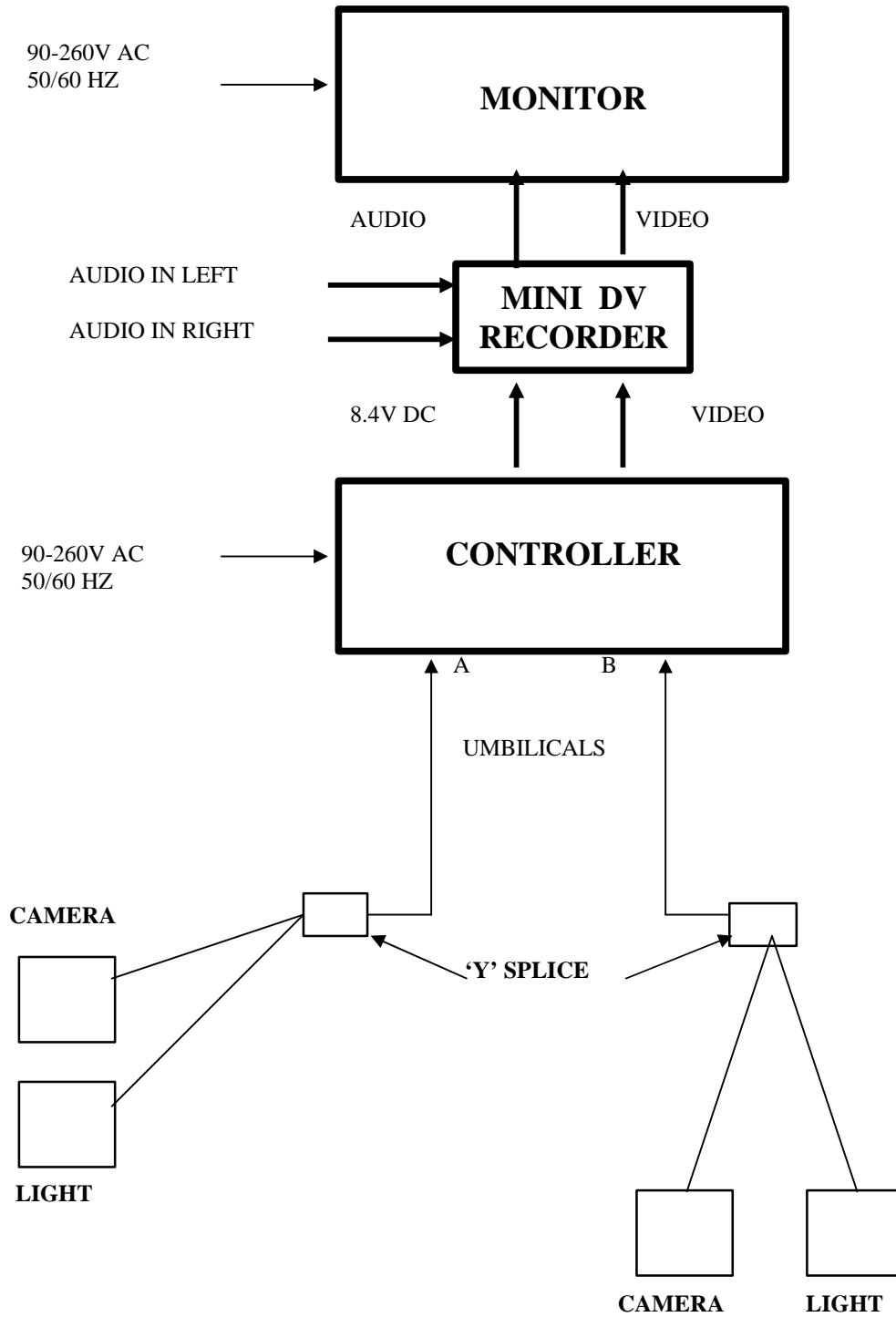
UMBILICAL CE1C/9-100UC

DESCRIPTION

RACK 10 PIN

1	Coax Screen		SCREEN-VIDEO COAX	B
2	Coax Core		CORE-VIDEO COAX	C
3	Yellow	1.34mm ²	CAMERA POWER +V	D
4	2 x screen	1.34mm ²	DIGITAL ZOOM	E
5	White	1.34mm ²	LIGHT POWER +V	A
6	Green	1.34mm ²	LIGHT POWER -V	H

5.0 BLOCK DIAGRAMS

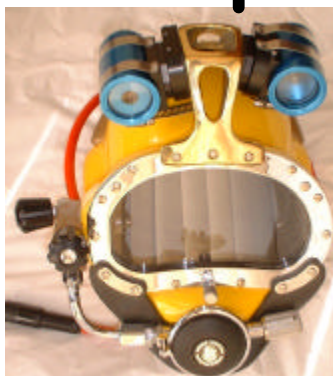


90-240V AC
50/60Hz



2 X 100M UMBILICAL
2 X "Y" SPLICE

CAMERA AND LIGHT A



CAMERA AND LIGHT B



6.0 CIRCUIT DIAGRAMS

12 WAY FEMALE**UMBILICAL CE1C/9-100UC****DESCRIPTION****12 WAY MALE**

1	Black	Coax Screen		SCREEN-VIDEO COAX	1	Black
2	White	Coax Core		CORE-VIDEO COAX	2	White
3	Red	Yellow	1.34mm ²	CAMERA POWER +V	3	Red
4	Green	2 x screen	1.34mm ²	CAMERA POWER -V	4	Green
5	Orange	White	1.34mm ²	LIGHT POWER +V	5	Orange
6	Blue	Green	1.34mm ²	LIGHT POWER -V	6	Blue
7	White/Black	Blue	0.22mm ²	CAMERA ZOOM	7	White/Black
8	Red/Black	Red	0.22mm ²	CAMERA ZOOM	8	Red/Black
9	Green/Black	Orange	0.5mm ²	Not Used	9	Green/Black
10	Orange/Black	Blue	0.5mm ²	Not Used	10	Orange/Black
11	Blue/Black	Outer Screen	0.22mm ²	Screen	11	Blue/Black
12	Black/White	Not Used			12	Black/White