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ELB 1200

Service Manual



ELB 1200 (10289.1)



ELB 1200 Action Head (20189)

ELB 1200 Hi-Sync Head (20188)

ELB 1200 Pro Head (20187)

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1. SAFETY NOTICE



The interior of the Elinchrom devices contain components carrying dangerous levels of electric charge, even though the unit has been disconnected from the mains or without supply battery. **Before all servicing operations or repairs, you must execute the following discharge process:**

ELB 1200 DISCHARGE PROCESS BEFORE SERVICING

<p>1. Activate the Service Menu</p> <ol style="list-style-type: none"> Unit must be ON Press together buttons Left, Right and LED Modelling lamp Service Menu is now activated. 																					
<p>2. Enter in Service Menu</p> <ol style="list-style-type: none"> Press Menu button Select "Service" 	<table border="1"> <thead> <tr> <th colspan="2">SETUP MENU</th> </tr> </thead> <tbody> <tr><td>Radio</td><td>Burn-in</td></tr> <tr><td>Flash mode</td><td>Functional test</td></tr> <tr><td>Photocell</td><td>Flash test</td></tr> <tr><td>Extras</td><td>Booster test</td></tr> <tr><td>Info</td><td>Discharge unit</td></tr> <tr><td>Service</td><td>Voltage calibration</td></tr> <tr><td></td><td>SMPS calibration</td></tr> <tr><td>BACK</td><td>SELECT</td></tr> <tr><td></td><td>EXIT</td></tr> </tbody> </table>	SETUP MENU		Radio	Burn-in	Flash mode	Functional test	Photocell	Flash test	Extras	Booster test	Info	Discharge unit	Service	Voltage calibration		SMPS calibration	BACK	SELECT		EXIT
SETUP MENU																					
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Flash mode	Functional test																				
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Extras	Booster test																				
Info	Discharge unit																				
Service	Voltage calibration																				
	SMPS calibration																				
BACK	SELECT																				
	EXIT																				
<p>3. Discharge unit</p> <ol style="list-style-type: none"> Select "Discharge unit" Press "Start" Automatic discharge in progress... Wait until "discharge OK" and then press "Shutdown" Remove the battery from the unit. 	<p>a) b) </p> <p>c) </p>																				

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4. Open the housing

Info: To remove the metal housing, it's more easier and faster to remove the bottom part (Base ELB 1200) of the unit than the top part (Front panel ELB 1200)



- 5. Check the voltage on the Flashboard 911.065.SAV**
Between **UCAP (J409)** and **PGND (J411)**.
And between **UCAP/2 (J416)** and **PGND (J411)**.
These both voltage must be under **50VDC**



- 6. Unit discharged and secured**
Now you can repair and servicing safely.



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2. SPARE PARTS

All available spare parts are displayed in the Elinchrom Web Shop in our Distributors Center www.elinchrom.com/agent

10289		ELB 1200			
	Ref. #	Description	CHF	Min. Qty Package	Order
	10288.1	ELB 1200 without Battery		1PCE	
	19273	Li-Ion Battery Air for ELB 1200		1PCE	
	19296	Li-Ion Battery HD for ELB 1200		1PCE	
	280.004	ELB 1200 Battery protection Cover		10PCE	
	19278	Charger Li-Ion Battery ELB 1200		1PCE	

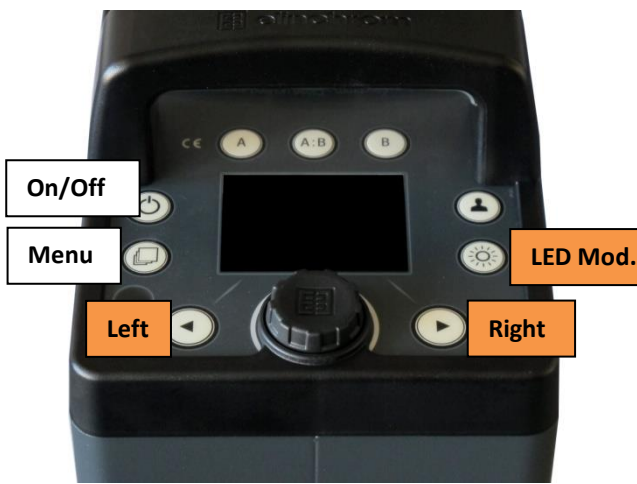
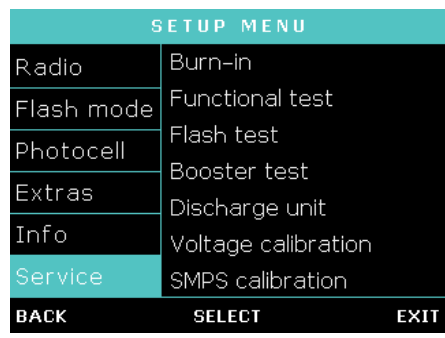
All available and no longer available spare parts are displayed in the “Spare Parts List” of the Technical Center in our Distributors Center www.elinchrom.com/agent

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3. SERVICE MENU

3.1. Activate Service Menu

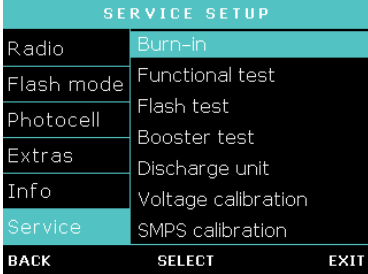
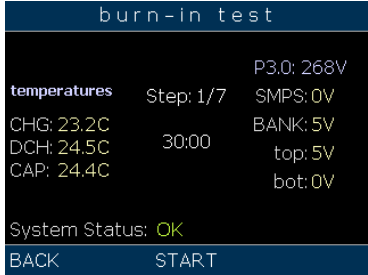
<p>Activate the Service Menu</p> <ol style="list-style-type: none"> Unit must be ON Press together buttons Left, Right and LED Modelling lamp Service Menu is now activated. 	
<p>Enter in Service Menu</p> <ol style="list-style-type: none"> Press Menu button Select "Service" 	

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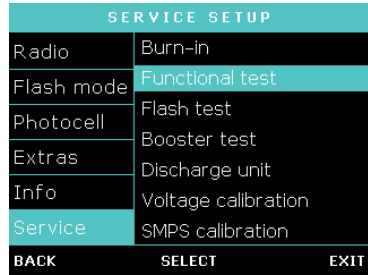
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3.2. Menus overview

3.2.1. Burn-in

<p>Select "Burn-in" in the service menu</p>	
<p>Burn-in test (4 hours)</p> <p>Press "Start"</p> <ul style="list-style-type: none"> Step 1/5 [30 minutes at P3.0: 325 V UCAP] Step 2/5 [30 minutes at P4.0: 440 V UCAP] Step 3/5 [30 minutes at P5.0: 575 V UCAP] Step 4/5 [30 minutes at P6.0: 555 V UCAP] Step 5/7 [120 minutes at P7.5: 700 V UCAP] Step 6/7 [Discharge] Step 7/7 [Test results] 	

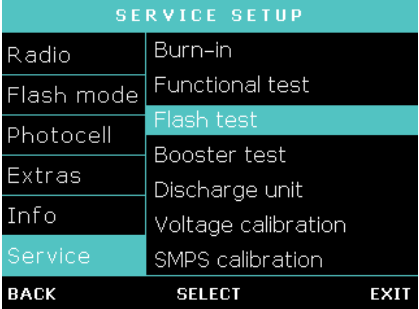
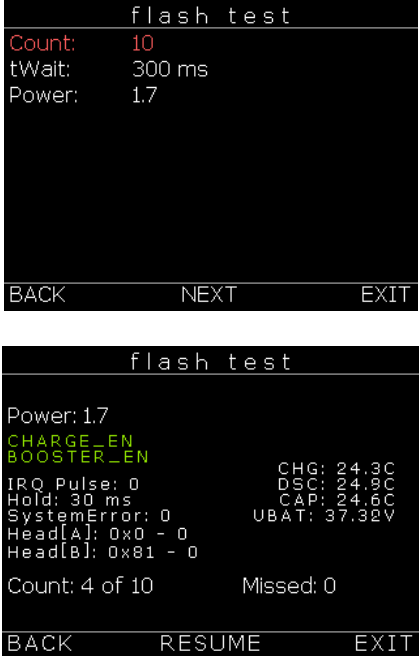
3.2.2. Functional tests

<p>Select "Functional test" in the service menu</p>	
<p>Functional test</p> <ol style="list-style-type: none"> 1. All LED on 2. All LED off 3. Push ON [Push ON/OFF button] 4. Push Menu [Push Menu button] 5. Push Left [Push Left function button] 6. Push Center [Push Test button] 7. Push Right [Push Right function button] 8. Push ModLamp [Push Modelling Lamp button] 9. Push User [Push User button] 10. Push B [Push B button] 11. Push Ratio [Push Ratio button] 12. Push A [Push A button] 13. Waiting cell. trig [Check the cell trigger by flashing the cell] 14. Synchro trigger [Check the Synchro socket by a synchro triggering] 	

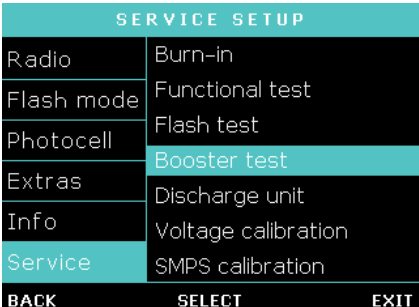
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3.2.3. Flash test

<p>Select "flash test" in the service menu</p>	
<p>Flash test</p> <p>Count [Choose the number of flashes and press Next] tWait [Choose the time [ms] between flashes and press Next] Power [Choose the Power [f-stop] of flashes and press Start]</p> <p><i>Flash test in progress...</i></p> <p><i>Results</i></p>	

3.2.4. Booster test

<p>Select "Booster test" in the service menu</p>	
--------------------------------------------------	--------------------------------------------------------------------------------------

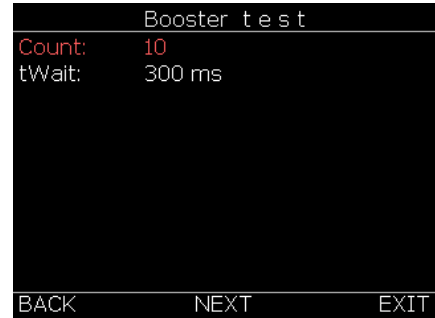
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Booster test

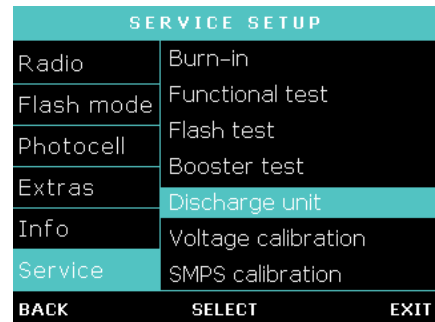
Count [Choose the number of booster trigger and press Next]
tWait [Choose the time between flashes and press Next]

Booster test in progress...
Results



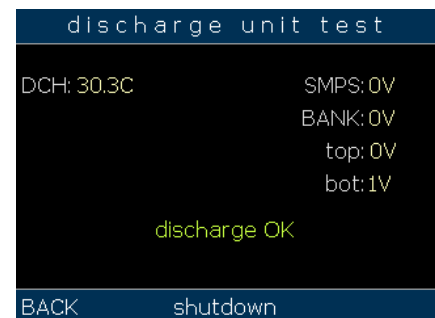
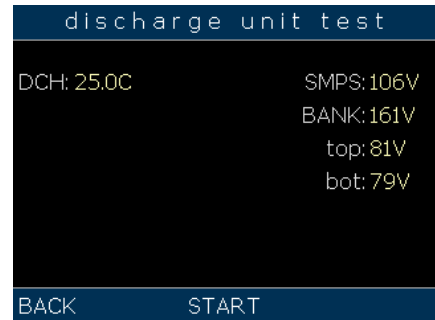
3.2.5. Discharge unit

Select "Discharge unit" in the service menu



Discharge unit

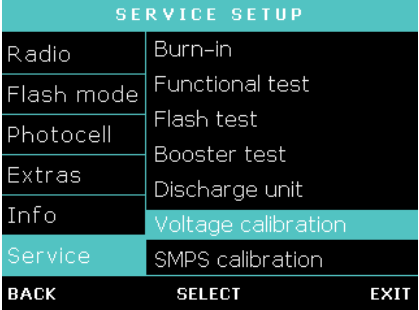
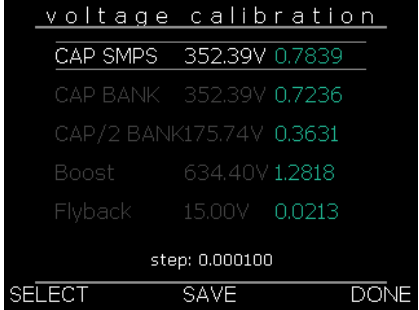
- Select "Discharge unit" in the Service Menu
 - Press "Start"
- Automatic discharge in progress...*
- Wait until "discharge OK" and then press "Shutdown"
 - Remove the battery from the unit.



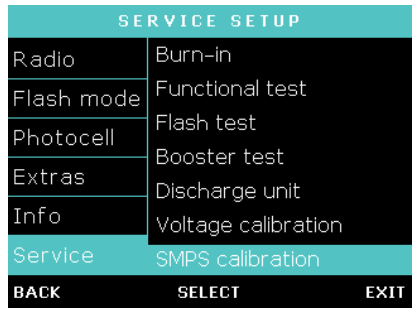
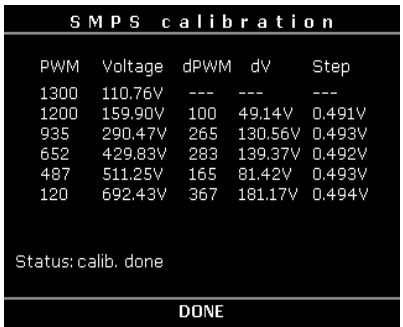
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3.2.6. Voltage calibration

<p>Select "Voltage calibration" in the service menu</p>	
<p>See "ELB 1200 Calibration Process" §4 of this Service Manual</p>	

3.2.7. SMPS calibration





<p>Select "SMPS calibration" in the service menu</p>	
<p>See "ELB 1200 Calibration Process" §4 of this Service Manual</p>	

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4. ELB 1200 CALIBRATION PROCESS

The ELB 1200 Calibration Process must be done after replacing or repairing the following items:

	911.050	Front Panel ELB 1200 (Complete Assembly)
	280.115.ADJ	Keyboard ELB 1200 (Adjusted)
	911.065.SAV	Flashboard ELB 1200
	911.070.SAV	Power boards SMPS ELB 1200

ELB 1200 Calibration Process

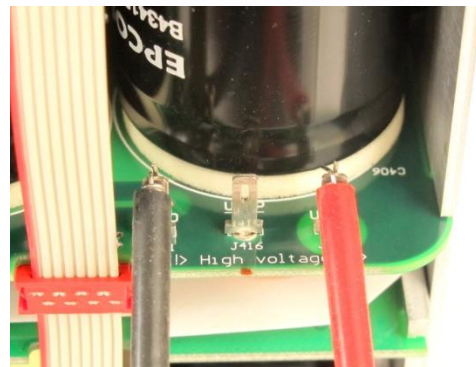
Consist of the Voltage Calibration and the SMPS Calibration



During all the ELB 1200 Calibration Process, the interior of the unit contain components carrying dangerous levels of electric charge. Be careful to not touch inside parts and use isolated security gloves to prevent any electric shocks.

Prepare the unit for the Calibration Process

- a) Keep the metal housing unmounted
- b) Connect a Voltmeter between UCAP (+) and PGND (-)
- c) Connect a ELB 1200 Battery
- d) Power ON the ELB 1200 unit

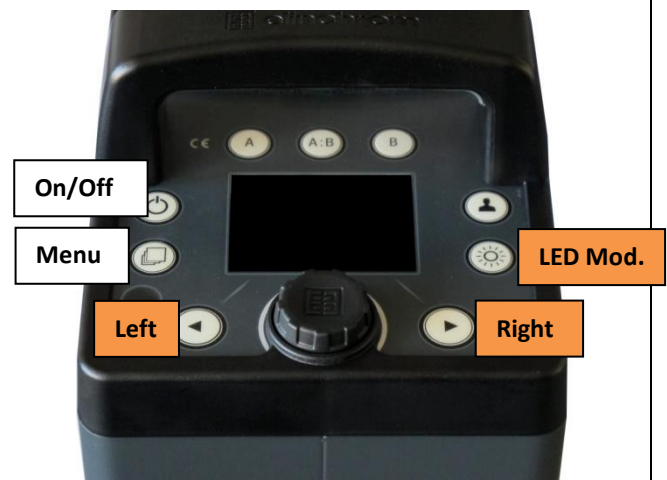


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Activate the Service Menu

- Unit must be ON
- Press together buttons **Left**, **Right** and **LED Modelling lamp**
- Service Menu is now activated.



Enter in Service Menu

- Press **Menu** button
- Select "Service"

SETUP MENU	
Radio	Burn-in
Flash mode	Functional test
Photocell	Flash test
Extras	Booster test
Info	Discharge unit
Service	Voltage calibration
	SMPS calibration
BACK	SELECT
	EXIT

Voltage Calibration

Voltage Calibration

- Select "Voltage Calibration"
- With the ELB 1200 rotary knob, adjust the CAP SMPS voltage with the voltage value measured between UCAP (+) and PGND (-). Valid by pressing SAVE and then press SELECT
- With the ELB 1200 rotary knob, adjust the CAP BANK voltage with the voltage value measured between UCAP (+) and PGND (-). Valid by pressing SAVE and then press SELECT

a)

SERVICE SETUP	
Radio	Burn-in
Flash mode	Functional test
Photocell	Flash test
Extras	Booster test
Info	Discharge unit
Service	Voltage calibration
	SMPS calibration
BACK	SELECT
	EXIT

b)

voltage calibration	
CAP SMPS	352.39V 0.7839
CAP BANK	352.39V 0.7236
CAP/2 BANK1	75.74V 0.3631
Boost	634.40V 1.2818
Flyback	15.00V 0.0213
step: 0.000100	
SELECT	SAVE
	DONE

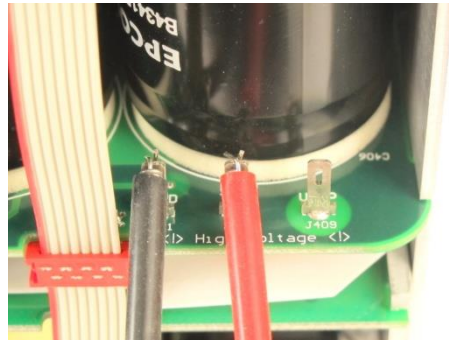
c)

voltage calibration	
CAP SMPS	352.39V 0.7839
CAP BANK	352.39V 0.7236
CAP/2 BANK1	75.74V 0.3631
Boost	634.40V 1.2818
Flyback	15.00V 0.0213
step: 0.000100	
SELECT	SAVE
	DONE

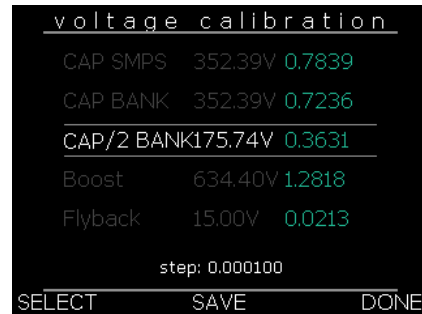
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Connect the voltmeter between UCAP/2 (+) and PGND (-)



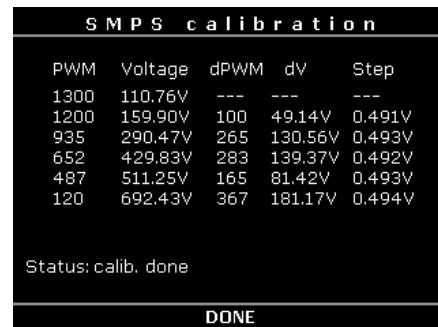
- d) With the ELB 1200 rotary knob, adjust the CAP/2 BANK voltage with the voltage value measured between UCAP/2 (+) and PGND (-). Valid by pressing SAVE
- e) Press DONE



SMPS Calibration

SMPS Calibration

- a) Select and start "SMPS calibration"
- b) Wait until all steps are executed and status will show "calib. Done"
- c) All calculated Step value should have a similar value (+ or - 0.005V excepted the first step)
- d) If the steps value are out of spec, you have to repeat the SMPS Calibration
- e) Check that the Step values are between 0.46V to 0.5V
- f) Press DONE



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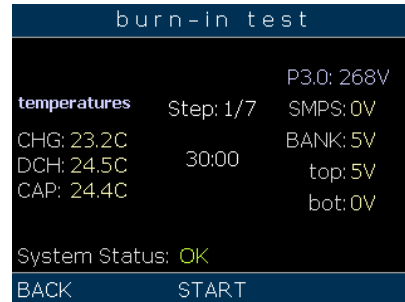
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Burn-In (*Optional)

*Mandatory after replacing Flashboard 911.065.SAV and Power board SMPS 911.070.SAV

Burn-In

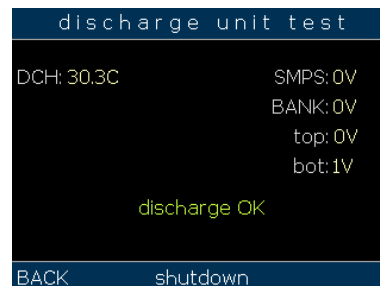
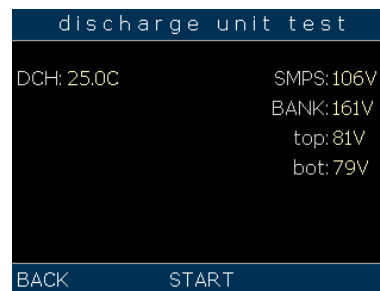
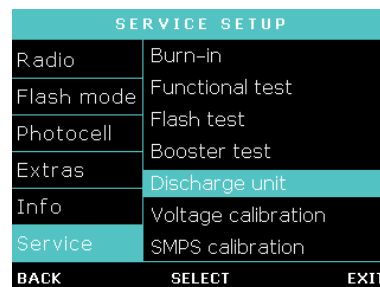
- e) Select "Burn-in" in the Service Menu
- f) Press "Start"
Burn-in in progress (4 hours)



Discharge Unit

Discharge unit

- g) Select "Discharge unit" in the Service Menu
- h) Press "Start"
Automatic discharge in progress...
- i) Wait until "discharge OK" and then press "Shutdown"
- j) Remove the battery from the unit.



ELB 1200 Calibration Process done



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5. FIRMWARE

5.1. Release

ELB 1200 firmware version could be displayed in the Setup Menu > Info


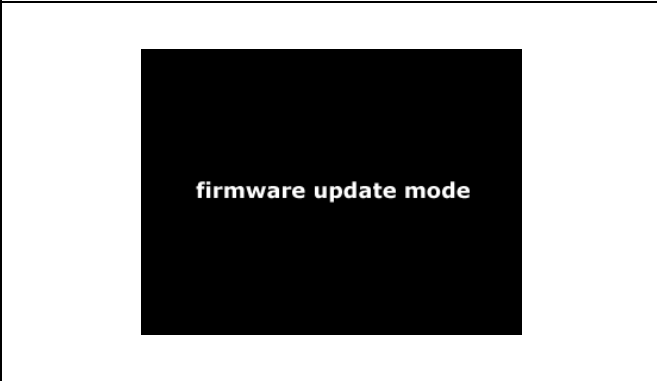
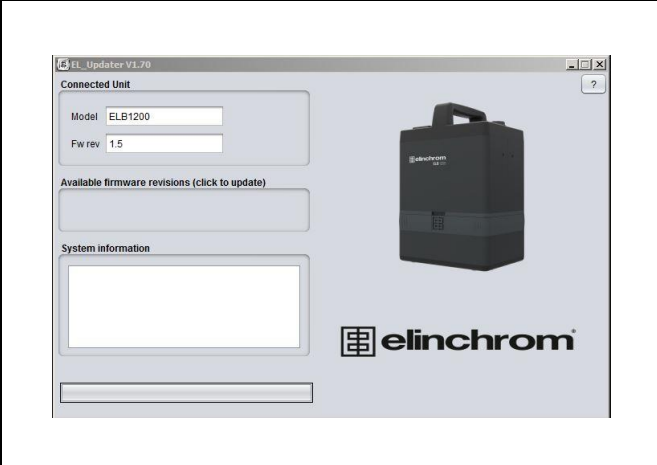
SETUP MENU		
Radio	Firmware rev.	1.5
Flash mode	Serial number	c0322
	Life time	26:17 h
Photocell	Power-on count	201
Extras	Flash count	116
	Flash on A	20
Info	Flash on B	65
BACK	SELECT	EXIT

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5.2. Update

ELB 1200 firmware update could be done with the software Elinchrom Updater and a micro USB cable.

<p>Activate the firmware update mode</p> <p>a) Press together buttons On/OFF and User</p>	
<p>Firmware update mode is now activated on the ELB 1200 unit.</p>	
<p>Now connect your ELB 1200 unit to your computer with the micro USB cable and start the Elinchrom Updater software. Follow the instructions of the Elinchrom Updater software.</p>	

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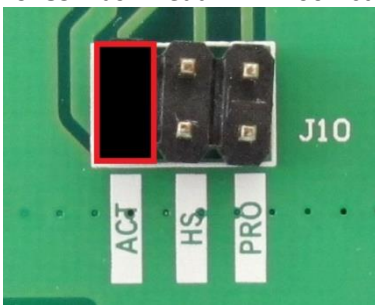
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6. ELB 1200 HEAD BOARD CONFIGURATION

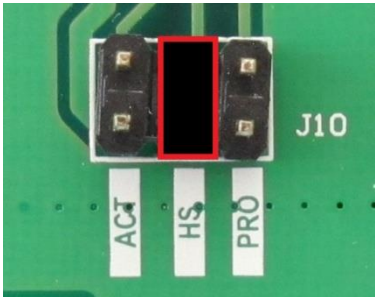
911.090.SAV ELB 1200 Head board Settings

ELB 1200 Head board have to be set with the corresponding head type (Action, HS or Pro) by placing the bridge 280.145 (J10) on the head type position.

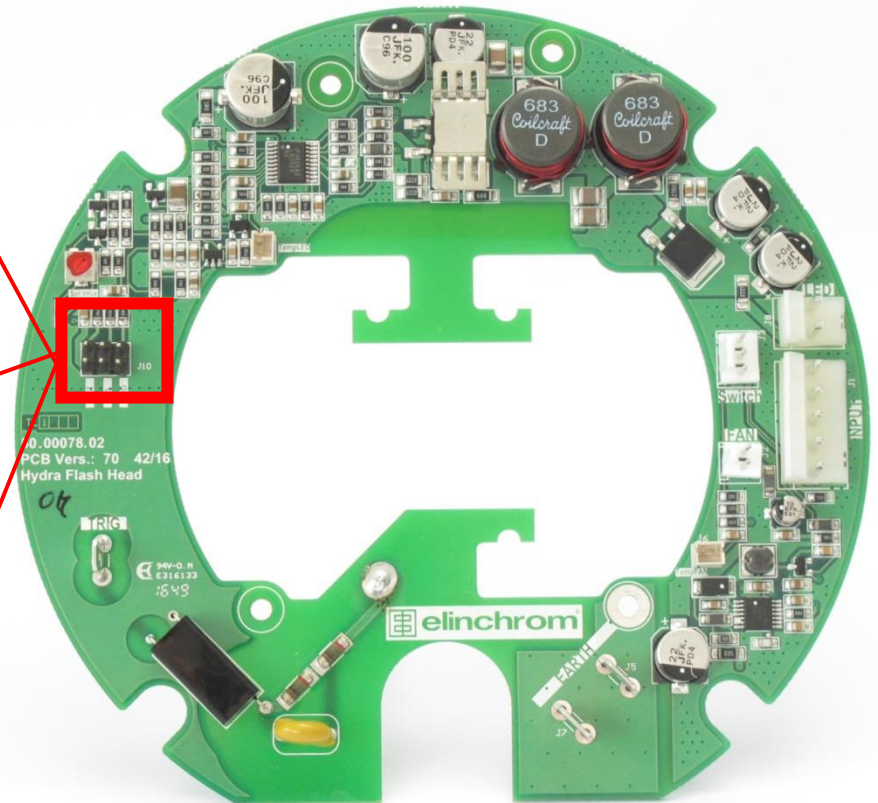
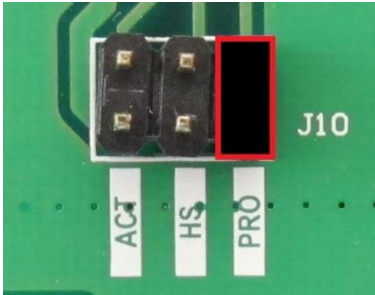
20189 Flash Head ELB 1200 Action



20188 Flash Head ELB 1200 Hi-Sync



20187 Flash Head ELB 1200 Pro



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7. REPAIR ASSISTANCE

7.1. Error management

The following table describes the possible errors, which could be shown on the display if the unit micro controller detects them. Before apply the solution for service, always update the firmware with the last version.

Error number	Description	Solution for user (User manual)	Solution for Service
-1	Capacitors over voltage	Restart -> Service	1. Do the ELB1200 calibration process (§4) 2. Check the UCAP voltage (J409), if this voltage is upper than 710V at Power max (7.5 f-stop), then replace the Power board SMPS 911.070.SAV
-2	System overheat	Wait until cooling down	This error is only a warning, nothing to replace.
-3	Discharge circuit fault	Restart -> Service	Replace Power board SMPS 911.070.SAV
-4	Charge Timeout	Restart -> Service	If the ELB 1200 is power supplied by the EL-Dock: 1. Replace Power board SMPS 911.070.SAV 2. Replace Flashboard 911.065.SAV If the ELB 1200 is power supplied by a battery: Check if the error-4 happens when the unit is power supplied by the EL-Dock. If no, change the battery. If yes : 1. Replace Power board SMPS 911.070.SAV 2. Replace Flashboard 911.065.SAV
-9	No input voltage on SMPS !	Restart -> Service	Replace the Base board 911.060
-15	Charge MOS thermistor open	Restart -> Service	1. Check the thermistor 2. Replace Power board SMPS 911.070.SAV
-18	Discharge MOS thermistor open	Restart -> Service	1. Check the thermistor 2. Replace Power board SMPS 911.070.SAV
-19	Capacitor thermistor open	Restart -> Service	1. Check the thermistor 2. Replace Power board SMPS 911.070.SAV
-24	Capacitor voltage symmetry error	OFF 10 min. Restart -> Service	1. Replace Power board SMPS 911.070.SAV 2. Replace Flashboard 911.065.SAV
-26	Booster voltage error	Restart -> Service	Replace Power board SMPS 911.070.SAV
-28	Tube hanged	Restart -> Service	Replace the flash tube
-60	System peripheral bus error	Restart -> Service	Communication between Keyboard, flash board and base to the battery is fail. (After each following steps, check if the problem is solved) 1. Check the flat cable 280.150 2. Replace Flashboard 911.065.SAV 3. Replace the Base board 911.060 4. Replace Front Panel 911.050

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Error number	Description	Solution for user (User manual)	Solution for Service
-61	Supply communication error	Restart -> Service	<p>Update the last firmware version and check if the Error-61 is solved.</p> <p>Error -61 could be due to an old or defective battery.</p> <p>If Error-61 is permanent: Communication between Keyboard, flash board and base to the battery is fail. (After each following steps, check if the problem is solved)</p> <ol style="list-style-type: none"> 1. Check the flat cable 280.150 2. Replace Flashboard 911.065.SAV 3. Replace the Base board 911.060 4. Replace Front Panel 911.050 <p>If Error-61 is random: If this this error-61 is random, that' could be due to a misconnected battery/Dock or a dirty middle contacts. In this case, check the contacts or you can also try to plug the unit on the other way by rotating the unit 180°.</p> <p>Note: If you unplug the battery or the EL-Dock off the ELB 1200 unit (with an activated head) without shutting down the unit before, the error-61 appears shortly on the display. The error-61 could also appear if the Calibration Process was badly done or missed (after repairs). In this case, make the Calibration Process.</p>
-62	System memory error	Restart -> Service	Replace Front Panel 911.050
-67	High voltage short circuit	Service	<ol style="list-style-type: none"> 1. Replace Power board SMPS 911.070.SAV 2. Replace Flashboard 911.065.SAV
-99	Uncategorized error	Restart -> Service	(not applicable)
-101	Low battery level	Warning	This error is only a warning, nothing to replace.

Confidentiality level class 2:

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7.2. Failures management

Failure Description	Solution for Service
Skyport disturbances	Replace Skyport module 270.131
Photocell defective	Replace Front Panel 911.050
Keyboard touch defective	Replace Front Panel 911.055
LEDs of the multifunctional control knob defectives	Replace Front Panel 911.055
No Booster	Replace Power board SMPS 911.070.SAV
No modelling LED	Check the head with another unit, if necessary replace the Head board 911.090.SAV
Heads not detected	<ol style="list-style-type: none"> 1. Check jumper J10 on the Head board 911.090.SAV 2. Check the head with another unit, if necessary replace the Head board 911.090.SAV 3. Replace Front Panel 911.050

8. KNOWN PROBLEMS

All known problems have a corresponding Technical Note available in the online **Technical Centre**.