



MANDATORY BATTERY BALANCE PRE-FLIGHT CHECK FOR ALPHA ELECTRO

ANALYSIS

- DUE TO CUMULATIVE DATA PACKETS THE EPSI DISPLAY CAN REACH AN ERROR STATE

During flight and charge cycles, the BMS reports to the EPSI regularly. In this process there is an accumulation of data that can result in a misread of the EPSI SOC/battery balance interface display.

RISK

- THE BATTERY SOC DISPLAY ON THE EPSI CAN RAPIDLY CHANGE

During operation of the aircraft, there is a risk that this accumulation can force an error on the SOC display, indicating the battery has had a rapid SOC reduction. This information is most likely false.

MANAGEMENT (IN FLIGHT)

- IF YOU EXPERIENCE A BATTERY READ ERROR IN FLIGHT

Do not panic. Switch the EPSI display to the secondary aircraft information page to assess the battery SOC.

First - Assess the Batt U: display voltage for each battery.
Each battery Batt U: value should be similar, not less than 5% difference.
A Batt U: voltage display of 350V represents approximately 50% SOC
THE MINIMUM BATT U: VOLTAGE VALUE IS 300V - This represents approx. 10% SOC

Second - Assess the **MIN U:** display voltage for the lowest individual cell voltage Each battery **MIN U:** value should be similar, not less than 5% difference. THE MINIMUM SAFE FLIGHT MIN U: VOLTAGE VALUE IS 3200mV THE MIN U: FAILURE VOLTAGE IS APPROX. 2800mV

If the above values present within these thresholds, the aircraft is safe to continue flying. HOWEVER, if there is a battery balance or battery value read error on the main user interface display YOU MUST immediately route to the closest practical airstrip for a safe landing, flying as efficiently as possible.

MITIGATION

- MANDATORY ASSESSMENT AT END OF CHARGE CYCLE

The above read errors and data cache anomalies are easily mitigated by a simple check of the EPSI state during flight and at the end of the charge cycle.

IF AT THE END OF THE COMPLETE CHARGE CYCLE (or during the previous flight) the batteries are showing any imbalance on the main EPSI display, complete a firmware reflash of the EPSI via the following method.

With the **Master** and **Avionics** switches turned OFF, Load the (attached) USB with the latest firmware installed into the USB socket above the screen on the EPSI.

Turn on the **Master** and **Avionics** switches, initiate the Firmware update with the EPSI selection knob. Follow the on screen instructions.

At the end of the firmware re flash, the batteries should read closely in balance. If at the end of a complete charge cycle, they will read 100%-100% and the acccumulated data packet anomalies will have been removed for stable EPSI information display in flight. Update the maintenance release with a 'firmware reflash' notation.

SYSTEM mode shows several diagnostic values of the system components. This mode is selected by rotating the knob. Refer to the table below for a short description of the parameters.

	FLIGHT SYSTEM			
BATTERY				
Position: Mode:	front Active	rear Active	NMT state: Status:	ו 63
SOC/SOH:	88/99	89/100 34° (0)	Temp M/I:	80°/55°
MIN U: MAX U:	4090mV 4100mV	4100m∨ 4123m∨	R-m	
Bus U: Batt U:	369.0V 371.0V	373.0V 370.0V	Coolant: Hobbs:	55°/58° Omio
Batt I:	89.0A	75.0A		0
PC err: Balancing:				
Uptime:	5554	6675		
			POWER LEVER	
Presence	yes		Presence:	yes
State:	ו		Ουτρυτ:	800
Output U:	1.40		Scaled:	880
Output I:	2.5A		Final:	870
Input U: Input I:	369.0V 0.3A		Seen zero:	yes

BATTERY section				
One column for each battery				
Parameter	Description			
Mode:	Battery status (ready = connected ; active = connected and power relays closed ; error)			
SOC:	State Of Charge of the batteries			
MAX temp:	Shows the max temp inside the battery pack, detected by the tem- perature sensors integrated.			
	(x) value: number of temperature sensors not working			
MIN V: MAX V:	Minumum and Maximum voltage value of the cells in each battery pack.			
Bus U:	Voltage on the bus (power lines after the batteries) (0 when batteries are ready but no power transfer)			
Batt V: Batt I:	Battery voltage and current. Negative values possible during charging.			
PC err:	Pre-Charge error. This value is for servicing purposes.			