

USER GUIDE

TOPLINE BATTERY CONTROLLER

100 Ampères

1	PRINCIPLE	2
2	OPERATION	2
3	CHANNELS DISPLAY.....	2
3.1	ON SIMPLE AND DOUBLE MULTIFUNCTIONS.....	2
3.2	ON THE PERFORMANCE MULTIFUNCTION	2
3.3	ON THE INTERCOM.....	3
4	INITIALISATION.....	3
4.1	SECONDARY CHANNELS PRESENTATION.....	3
4.2	BATTERY PERFORMANCE	3
4.3	CAPACITY SETTING.....	4
5	TRIGGERING OF THE ALARMS	6
6	ELECTRICAL CHARACTERISTICS.....	6
7	MECHANICAL CHARACTERISTICS	6
8	WIRING.....	7
8.1	WIRING TO THE BATTERY BANKS	7
8.2	WIRING DIAGRAM	7
8.3	WIRING TO THE TOPLINE BUS	7
8.4	CONNECTION TO THE SHIP'S POWER.....	8

1 PRINCIPLE

The battery controller:

- measures the voltage on one or two battery banks, in either 12 or 24 volts,
- measures the intensity in charging or dis-charging,
- calculates the charging and the capacity available in each battery bank,

The values can be displayed on all Topline multifunctions delivered after December 1998. Previous multifunctions can be upgraded in factory, to do so, contact your nearest distributor.

2 OPERATION

The battery controller records the charging of the battery as long as the voltage is superior to 7 volts. If the voltage falls under 7 volts, the battery controller will lose the battery capacity values that you entered in the sensor. The sensor's power consumption is extremely weak with 0,3 mA, i.e. 2,6 Ah per year.

If the battery is unplugged from the battery controller, the charging when reconnected will be incorrect. You shall then re-initialize the controller.

3 CHANNELS DISPLAY

3.1 ON SIMPLE AND DOUBLE MULTIFUNCTIONS

- Battery channel '**b1**' or '**b2**' for the display alternatively of voltage and intensity of the banks 1 and 2.
- Capacity channel '**c1**' or '**c2**' for the display alternatively of the capacity and the % of charge of the banks 1 and 2.

3.2 ON THE PERFORMANCE MULTIFUNCTION

- Battery channel '**BAT 1**' or '**BAT 2**' for the display alternatively of voltage and intensity of the banks 1 and 2.
- Capacity channel '**CAP 1**' or '**CAP 2**' for the display alternatively of the capacity and the % of charge of the banks 1 and 2.

Battery channel b1 or b2, BAT1 or BAT2

	Range	Display	Designation
Voltage	10 to 36V	12.3u	12,3 Volts
Intensity	-100 A to 0 A	-10	Discharging intensity 10 Amps
Intensity	0 A to 100 A	10	Charging intensity 10 Amps

Capacity channel c1 or c2, CAP1 or CAP2

	Range	Display	Designation
Capacity in AH.	0 to 999Ah	123	123 Amp/hour available

Percentage in %	0 to 99 %	80%	80 % of the nominal capacity available
------------------------	-----------	-----	--

3.3 ON THE INTERCOM

	Range	Example	Designation
Ux : Voltage	10 to 36V	12.3 <u>u</u>	12,3 Volts
Ix : Intensity	-100 A to 0 A	-10	Discharging intensity 10 Amps
Ix : Intensity	0 A to 100 A	10	Charging intensity 10 Amps
Cx : Capacity in AH	0 to 999 Ah	123	123 Amp/hour available
Cx : Percentage in %	0 to 99%	80%	80 % of the nominal capacity available

4 INITIALISATION

4.1 SECONDARY CHANNELS PRESENTATION

To access to the secondary channel settings, refer to your multifunctions or Intercom's user guides.

Once the installation is completed, the battery controller considers the batteries as empty. After having configured the sensor as per instructions in sections 4.1 and 4.2, you should force the capacity to the maximum.

	Secondary channel name	Calibration range	Example	DESIGNATION
Battery Performance	CA	0 to 1	0.80	According to the type and age of your battery, the battery doesn't keep 100 % of the energy supplied by the charger. Therefore, according to its age and characteristics, you should enter a calibration coefficient between 0 and 1. Ex: charging 10 A for an hour period with a calibration at 0.8 will provide a capacity of 8 A.h.
Capacity	OF	000 to 999Ah	100	Nominal battery capacity according to the manufacturer.
Caliber	FI	1	1	Shunt caliber (factory setting NOT to be modified)

4.2 BATTERY PERFORMANCE

As per the above table indication, enter the Battery Performance calibration in the secondary channel CA.

Note: every year you should decrease this value to take into account the battery age.

4.3 CAPACITY SETTING

When first powering the battery controller, you have to enter in the secondary channel OF the battery nominal capacity in Amperes/Hours given by the battery's manufacturer. Then, you shall initialize your battery controller when the battery is fully charged.

Note: If, after a full charging of your battery banks, your battery controller is not indicating the right capacity, you need to reset the controller with an initialization.

4.3.1 From a Simple 13, Double 13, Double 18 or Wind Multifunction

- On the top line of the display, select the channel C1 or C2 according to the battery bank you want to initialize.
- Press and hold the key ▲.
- Press on ▼ to bring on screen the secondary channel "OF".
- Loose the key ▲.
- Using keys ▲ or ▼, enter the nominal capacity in the « OF » secondary channel.

Example: Entering 70 Ah for a battery

- Press and hold both ▲ and ▼ keys to confirm your setting.
- Once the battery bank is fully charged:
- Bring on the top row the channel « C1 » or « C2 »
- Press and hold the ▼ key until the beep.
- The display resets itself to the capacity stored in OF and on 99% of charge.

4.3.2 From a Performance Multifunction

- Select on the top row of the display « Bat 1 capa » or « Bat 2 capa » according to the battery bank you want to initialize.
- Press and hold the key Ent until the beep. The screen displays "calib coeff" alternatively with "Bat x capa".
- Using the ▼ key, bring the secondary channel "calib OFFSE" on screen.

- Press on Ent. The screen displays alternatively "Modif" and "calib coeff".
- Using keys ▲ and ▼, enter the nominal capacity in the « calib » offse » secondary channel.
- Confirm with a press on Ent.
-

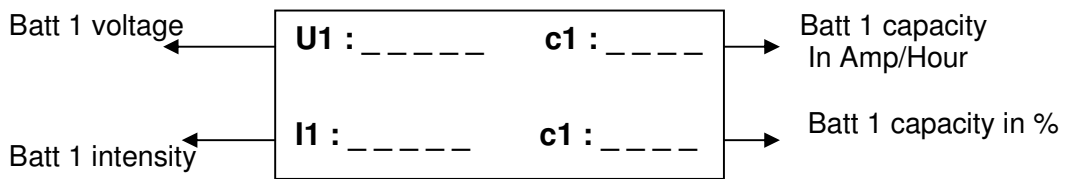
Example: Entering 70 Ah for a battery.

- Press on Esc to come back to the « Bat X capa » channel.
- Once the battery bank is fully charged:
- Bring on the top row the channel « Bat 1 capa » or « Bat 2 capa »
- Press and hold the ▼ key until the beep.
- The display resets itself to the capacity stored in OF and on 99% of charge.

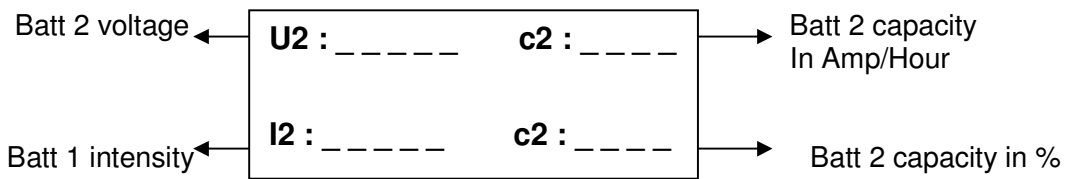
4.3.3 From an Intercom


You can visualize the information regarding TWO different battery banks on the pages 7 and 8.


Push key 7 the window will then show:





Push key 8 the window will then show:



Using key , bring the cursor on c1

Press key Ent to enter the secondary channels and press key  to bring the secondary channel OF : xxxA on screen.

- Using the numeric keypad, enter the battery capacity 

Example: Entering  for a battery.


After the message ENT has been displayed, press on.

- Press twice on .

Once the battery bank  fully charged:

- Bring the cursor on the channel « Bat 1 capa » or « Bat 2 capa »



- Press and hold .

- Press key  (as I for Init)

- The display resets itself to the capacity stored in OF and on 99% of charge.

4.3.4 The commissioning of the Battery Controller from a TL 25

- With the aid of a remote control, select on the upper display the channel “Bat 1 capa” depending on the initialisation of the battery.

- Press and hold the “ENT” key until you hear a second beep (about 5 seconds long). The display “COEFF CALIB” appears.

- Release the “ENT” key.

- Press once again the “ENT” key in order to display the lower channel “OFFSET”.

- Using the keys ▲ and ▼ adjust the lower channel “OFFSET” to the battery’s nominal capacity (provided by the manufacturer) in amperes-hours.

Example: For a battery with a capacity of 70 amperes-hours, press 70.

- Press and maintain “ENT” to return to the display “Bat x capa”.
- Once the battery park has changed :
 - Select on the upper display, the channel “Bat x capa”.
 - Using the keys ⬇ select the middle display (the display flash).
 - Press and hold the key ⬇ until reaching the capacity in amperes, memorised in the lower channel “OFFSET” at 99%.

5 TRIGGERING OF THE ALARMS

The alarms settings can be done in the secondary channels of the capacity channel for each battery bank (i.e. c1, c2 or CAP 1 and CAP 2).

		Range	Factory setting	
High alarm on the percentage of charge	HA	00 to 99%	99	The displays beep if the value is > to the value set
Low alarm on the percentage of charge	LA	00 to 99 %	50	The displays beep if the value is < to the value set
REMOVING THE ALARMS				Enter the value 0 in HA and LA

To use the alarms set, you should then activate the alarms in the Configuration channels (Co or CONF) and select in the secondary channel VA or Valid Alarm: yes.

6 ELECTRICAL CHARACTERISTICS

MAXIMAL INTENSITY ADMITTED

- 40A permanently
- 100A for 2 minutes
- 200A for 30 seconds

Protection fuse type of the measurement wire on the + :5 x 20 100mA

Power consumption: 0,3 mA

Note: you can connect the sensor on one 12 volts bank and the other one on 24 volts

7 MECHANICAL CHARACTERISTICS

Total height	60 mm
Length	105 mm
Width	71 mm
Mounting holes diameter	5 mm

Distance between mounting holes	95 mm
Weight	700 gramms
Nut type bat1, bat2 et COM	M10

8 WIRING

8.1 WIRING TO THE BATTERY BANKS

If only one battery bank is used, you can choose to use either BAT 1 or BAT 2. The connections BAT1, BAT2, COM must be done using 50mm² for a 100A intensity.

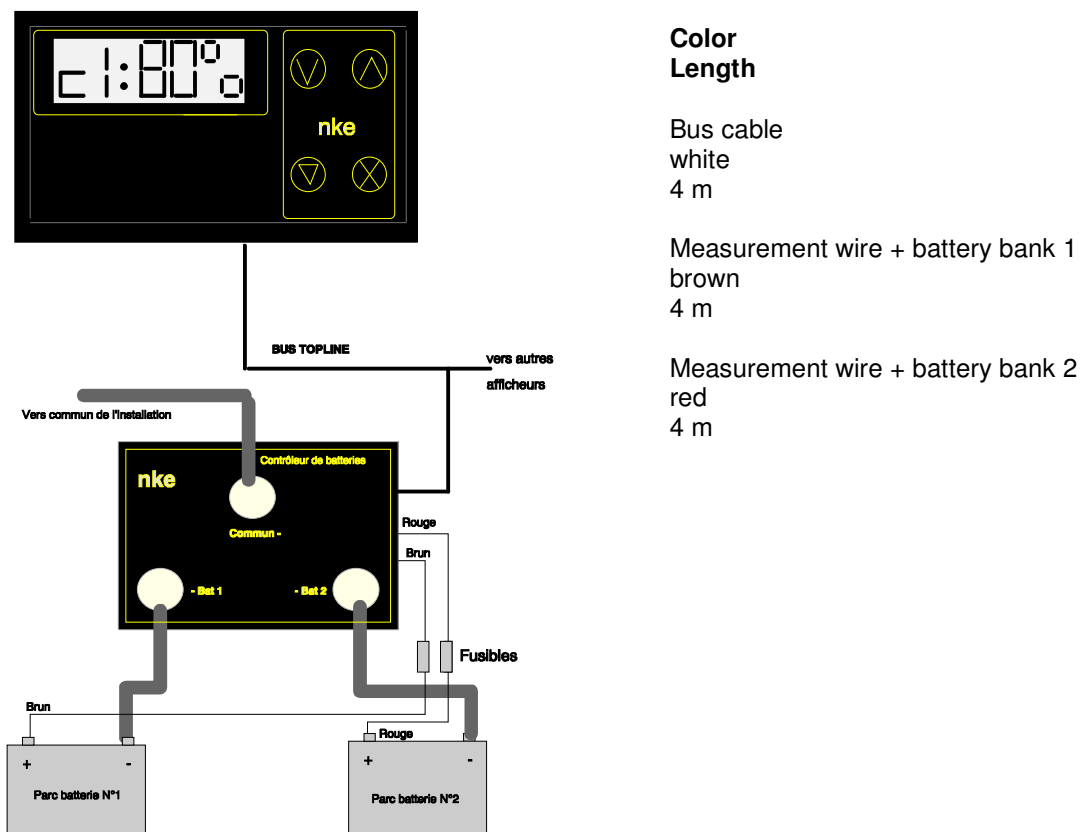
The BAT 1 plot must be connected to the minus plot of the battery.

The « Commun » plot must be connected to the ship's ground.

For the battery bank 1, the BROWN wire must be connected DIRECTLY to the PLUS of the battery bank.

For the battery bank 2, the RED wire must be connected DIRECTLY to the PLUS of the battery bank.

8.2 WIRING DIAGRAM



8.3 WIRING TO THE TOPLINE BUS

Connect the bus cable color to color on the other elements of the Topline Bus already installed on the Boat.

White wire: + 12 volts
Bare Wire: 0 volts (ground)
Black wire: data

As a proper installation is the key to reliability, we recommend that you use nke's bus connection boxes as below.

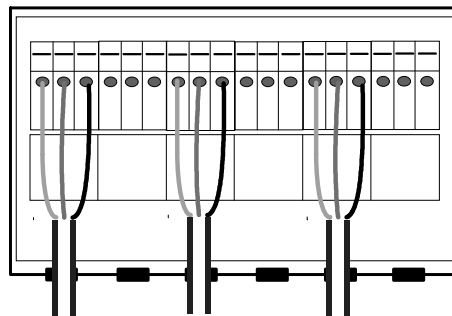
1. Cut the Bus cable at the nearest point from the display or sensor.
2. Mount a junction box at this location
3. Strip 3 cm of the cover off the Bus cable.



4. Strip the wires of the two Bus cables and of the Display/Sensor Bus cable.



5. For good connections and prevent corrosion, apply silver solder on the tips of the wires.
6. Feed the three cables into the junction box.
7. Connect, color to color, the three wires of each cable to each other on the connectors
8. Apply wire ties to the cables on the inside of the junction box to prevent the cables from being pulled out accidentally.
9. Close the box.



TOPLINE BUS CABLE

8.4 CONNECTION TO THE SHIP'S POWER

1. Cut the Bus where it runs closest to the main switchboard.
2. On the power cable going to the main switchboard, **at both ends**, cut the data (black) wire of 2 cm and tape or insulate the end so that no contact can be made with the other wires.
3. In the connection box, connect the cables and close it.
4. Connect the negative (bare) wire to the ship's ground.
5. Connect the positive (white) wire to a fuse (5 amps) or circuit breaker at the ship's main 12 volts power supply.
6. The system is now ready to be turned on.