



Tutorial

MasterCharger LXC Battery Charger-Analyzer *Preliminary – V0.1*

Warnings *(general)*

1. This tutorial is intended for professional personnel experienced in the testing of aircraft batteries
2. Refer to the Operator's Manual for complete details on the operation of the instrument
3. Information provided on battery testing is solely as an operational reference - Refer to the manufacturer's battery manual and/or CMM for battery specific information

Warnings *(specific)*

1. Observe precautions when handling batteries
 1. Batteries are heavy
 2. Batteries will generate extremely high currents if shorted
 - Tools can easily be dropped shorting several cells
2. Follow battery test procedures as outlined in the CMMs and OMMs provided by the manufacturers.
3. The Operator is ultimately responsible for the correct and proper analysis of the batteries under test.

Receiving – Inspection

Unpacking the unit

1. Caution! Heavy equipment.
2. Verify that the following are in the package:
 - Charger-Analyzer
 - Accessory Kit containing:
 - Battery Cable
 - Temp-Plate
 - Single Cell Adaptor
 - Spare Parts
 - Operator Manual and various certificates
3. Inspect the equipment
4. Save the carton – It will be needed if the equipment has to be sent out for calibration/repair.

Installation

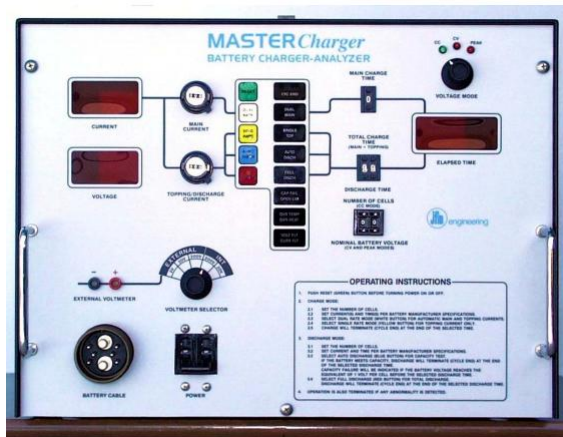
1. Place the Charger-Analyzer on a suitably strong bench
 1. Caution! Heavy equipment (175 lb. – 79.3 Kg)
 2. Connect to a dedicated (not shared) outlet with 208V/230V/240V with 30A capability (with motor load rated circuit breaker)
 1. In the US, use a NEMA-630R receptacle



2. Verify that the unit is wired for the proper line (mains) voltage (see manual for wiring diagrams)

Installation (continued)

2. Connect the Battery Cable to the Front Panel and connect the Temp-Plate sensing pig tail cable to the temp-plate
 - Note that there are two DB9 cables in the Temp-Plate. Connect to either one (the other one is used by the BTAS-16)



Installation (continued)

3. Turn Power ON
4. Observe the following:
 - Meters and Timer indicators are ON
 - Ammeter reads zero and Voltmeter reads about 0.2V
 - Status indicators show RESET (green)
5. Place a battery on the Temp-plate
6. Connect a battery to battery cable and note that the Voltmeter now reads the battery voltage.

Ideal Installation Configuration

**SuperMasterCharger Shown*



BTAS Connection

1. BTAS connections are on the rear of the unit.
2. One port for “CONTROL”
3. One port for “SHUNT”
4. Connected to associated C Scan
5. Further Details on Setting up the BTAS system can be found in the BTAS manual



Operating Introduction

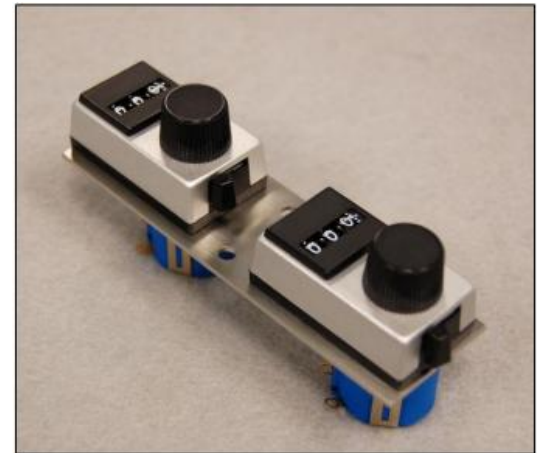
1. These slides are meant to be a brief tutorial for the operation of the MasterCharger Battery Charger-Analyzer
2. For more complete information refer to the Operator's Manual
3. Sections describing operation include:
 - Section 2 – Condensed Operation Instructions
 - Section 4 – Controls and Displays
 - Section 6 – Modes of Operation
 - Section 7 – Operating Instructions
4. Documentation available on our website: www.jfmeng.com in the documentation section.

Basic Information

1. The MasterCharger Battery Charger-Analyzer operates based on settings indicated by knobs and switches on the front panel of the MasterCharger
2. Unit operation is based on the following parameters:
 - Main Charge Current Selector
 - Topping Discharge Current Selector
 - Main Time Selector Switch
 - Total Time Selector Switch
 - Keypad
 - Cell Selector
 - Voltage Mode Selector
3. Consult the CMMs for battery specific test parameters when setting up the charger/analyzer for test.

Current Selectors

1. Both Main Charge and Topping/Discharge Current Selectors are ten turn potentiometers with numeric read out displays.
2. Dial 10 for 1 Amp, 20 for 2 Amps, 50 for 5 amps, 500 for 50 amps, etc.
3. Maximum current for charging is 50 Amps
4. Maximum current for discharge is 60 Amps (older units 50 Amps).



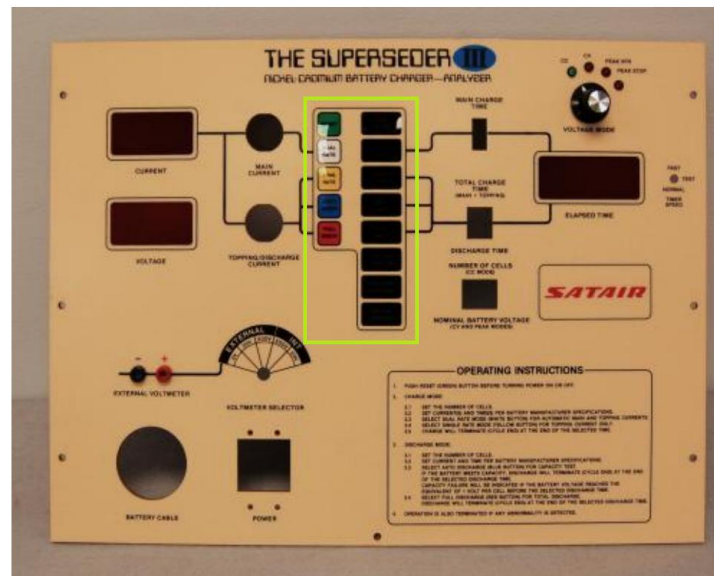
Main and Total Time Selectors

1. Set the amount of time the unit is in the main portion of the charge and the total amount of time the unit is in charge.
2. The total time also controls the amount of time that the unit is in topping charge and discharge modes, independent of the main time setting.
3. Lines on keypad indicate which settings apply to which tests.
4. e.g. Set Main to two and total to six for a standard full charge six operation.



Keypad Functions

1. Green: Stop/reset, cycle end
2. White: Two rate charge mode (main and topping)
3. Yellow: Single Rate charge mode
4. Blue: Auto cut-off discharge (analysis).
5. Red: Full discharge (deep cycle).
6. Note associated Indicators



Status Indicators

1. RESET: unit is in standby
2. CYC END: unit has completed cycle
3. DUAL: Indicates that DUAL rate mode is selected
4. MAIN: Indicates that the unit is in MAIN charge
5. SINGLE: Indicates that the SINGLE rate mode is selected
6. TOP: Indicates that the unit is in TOPPING charge
7. AUTO: Indicates that the AUTO mode is selected
8. DISCH: Indicates that the unit is in AUTO discharge
9. CAP FAIL: Indicates that the battery has failed capacity
10. OPEN LIM: Charge or discharge limiter is open
11. OVER TEMP: Continuous = no temp-plate, flashing means over heat of battery
12. VOLT FLT: Continuous = reverse polarity detected, flashing means battery voltage to high for cell settings.
13. CURR FLT: Current not within 1 Amp of set current

Cell Selector and Voltage Mode Selector

1. Cell Selector adjusts the unit to operate for test on NiCds of various cell numbers.
2. Is also used to set the charger up for use with SLA batteries of various voltages (see the manual).
3. Voltage Mode Selector adjusts the type of charge operation to the unit is setup to perform
4. Options are Constant Current, Constant Voltage, Peak Transfer (newer units) and Peak Stop



Revisions

V0.1 – 6 July 2017 – Preliminary Release