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ELECTRONIC

Innovative Power Solutions & Voltage Stabilizers

FLT Catalog

ENG

FLT

FLT Battery Charger

Key Features

- Input Isolation Transformer
- Durable structure with thyristor technology
- Three phase and Single phase input voltage option
- Production at all industrial input voltages
- High power up to 500 Kva
- Ni-cd, Lead Acid and Stationary battery charging
- Constant Voltage / Constant Current Charge Function
- Float Charge / Boost Charge Facility
- Microprocessor based management card
- DC Earth Leakage protection
- Overload protection
- Over temperature protection
- Low Voltage / High Voltage protection
- Efficiency >% 85-95
- Operator Panel with 4x20 LCD Display
- Suitable design for industrial environment
- TS EN ISO 9001: 2015 Quality Certified

Optional Features

- Battery Deep Discharge Protection (LVD)
- DC Voltage Dropping with Silicon Dropper (SDU)
- Dry Contacts for Automation
- Battery Temperature Compensation
- Equalization / Commissioning Charge
- Parallel / Redundant Operation
- Battery Reverse Polarity Protection
- Input Harmonic Filter
- DC Distribution Fuses
- 7” Touchscreen Operator Panel
- ETHERNET and MOD-BUS RTU interface

What is FLT Battery Charger?

FLT Battery Chargers are AC/DC Rectifier and Battery Chargers that are designed to safely charge high-capacity battery packs and provide stable DC voltage to critical loads at the same time.

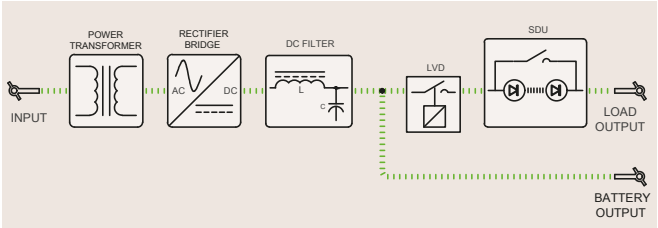
The network voltage is rectified by a microprocessor controlled Thyristor bridge. Specially designed LC filter units provide low ripple level and stable DC output voltage.

Optionally added Silicon Dropper Units provide voltage regulation at DC load output.

It can be used as an uninterrupted DC Power supply by connecting the battery to the FLT Battery Chargers.

How does it work?

FLT Battery Chargers consist of input power transformer, thyristor rectifier unit and electronic control units.



The power transformer adjusts the network voltage close to the DC charging voltage. Thyristor bridge that is connected to the secondary windings of the power transformer provides AC/DC voltage conversion and DC voltage adjustment. Output filters are used to keep the OUTPUT voltage stable and low ripple.

The microprocessor-based management board that is equipped with sensitive measuring circuits controls the thyristor bridge and adjusts the output voltage and current values to the most suitable value for battery charging. The special software algorithm of the FLT Battery Charger decides the charging characteristics of the batteries and the DC voltage supply regime.

Battery charging parameters can be adjusted by the user in accordance with the recommended information by the battery manufacturer.

Charging is done automatically and without any operator intervention.

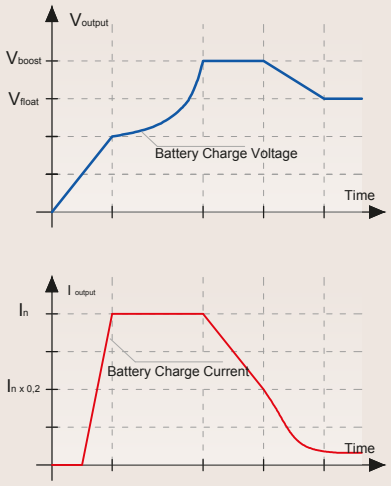
Constant Current / Constant Voltage Charging Algorithm

FLT Battery Chargers have a special charging procedure to keep the batteries at the highest performance.

FLT Battery Charger increases the DC output voltage to its nominal value with a soft-start curve.

Constant Current Function becomes active when battery charging starts. In ***Constant Current Mode***, current that is supplied to the batteries remains stable at the ***Battery Charge Current*** value set by the operator. When the battery voltage reaches its nominal value, the ***Constant Voltage function*** is activated.

Constant Current/Constant Voltage function is active again when the charging process restarts and the charging mode is changed.



Float Charge / Boost Charge Function

Battery charging in FLT Battery Chargers starts in ***Boost Charge*** mode and with ***Constant Current*** function. When the battery voltage reaches its nominal value, the Constant Voltage function is activated.

Float Charge mode is activated when the battery charge current falls below 20% of the nominal value. The nominal output voltage is adjusted to ***Float Voltage. Float charge*** mode is a continuous operation mode in which DC loads are supplied and the nominal charge voltages of the batteries are maintained.

There is ***Manual Boost Charge*** option on FLT Battery Charger. In ***Manual Boost Charge*** mode, the nominal output voltage is adjusted to Boost Voltage. Boost charging continues for the ***Boost Charge Time*** determined by the Operator. At the end of the Boost charging period, it switches to ***Float Charge Mode***.

Equalization / Commissioning Charge (optional)

Equalization charge / Commissioning charge feature can be added to FLT Battery Chargers optionally.

In the equalizing charge mode, the nominal output voltage is adjusted to the ***Equalizing Charge Voltage***. Battery Charge Current is adjusted to the ***Equalizing Current***. Equalizing charge starts with the ***Constant Current*** function. When the battery voltage reaches the ***Equalizing Charge Voltage***, the ***Constant Voltage*** function is activated. At the end of the ***Equalization Charge Time*** determined by the operator, it automatically returns to Float Charge mode.

Galvanic Isolation Transformer

The galvanic isolation transformer breaks the direct electrical connection between the Network installation and DC loads. This feature provides safe operation and detection of earth leakages in DC distribution installations. The secondary voltage of the isolation transformer is adjusted close to the DC output voltage. In this way, the thyristor controlled rectifier unit can produce the highest efficiency and stable DC voltage. The isolation voltage is 2.500V.

Earth Leakage Monitoring

FLT Battery Chargers have an Earth Leakage monitoring circuit. The isolation resistance between the DC output (+) and (-) terminals and the ground line is measured. In case of any DC leakage, the warning signal is activated.

Parallel Connection and Load Sharing (optional)

FLT battery chargers can be connected in parallel for redundancy and load sharing. Parallel connected FLT Battery Chargers share the output load. In case of failure, all loads are covered by a single device. There are load balancing inductors for equal load sharing. FLT battery chargers are suitable for parallel connection of 2 or 3 devices.

Production at All Industrial Voltages (optional)

FLT Battery Chargers are manufactured in all industrial input voltages.

3 Phase + with Neutral connection , 208VAC, 220VAC, 380VAC, 400VAC, 415VAC, 480VAC, 600VAC

The nominal operating voltage of the FLT Battery Chargers is determined at the time of order and cannot be changed later.

Please contact with the sales representative for special production requests and right solutions.

Battery Deep Discharge Protection (LVD) (optional)

FLT Battery Chargers have load disconnection unit for battery deep discharge protection. When the measured battery voltage falls below the LVD Voltage set by the operator, the LVD contactor cuts the load current. There is dry contact information and light signal for LVD protection.

Silicon Dropper Unit (optional)

Silicon Dropper unit can be added to FLT Battery Chargers to regulate the DC voltage on the load supply line. Silicon Dropper units that are designed in accordance with DC load parameters and customer demand can be used in 2 pcs or more. Silicon Dropper units are automatically activated and deactivated.

Automation Unit / Dry Contact Information (optional)

Dry contact information can be added to FLT Battery Chargers for connection to automation systems or for remote monitoring.

Dry contact outputs: General Fault, Low Battery, Earth Leakage, Input Fault, Over-temperature, Overload, Input CB On/Off, Output CB On/Off, Battery CB On/Off

Please contact with the sales representative for special production requests and right solutions.

Remote Monitoring and Management

Ethernet Web Server (optional)

It is designed for remote monitoring over the network. It can be monitored and managed by connecting with an Ethernet cable. The remote management interface is designed as browser-based. It can be connected from any computer with a web browser. No additional software is required. With the remote management interface, all parameters of FLT Battery Chargers can be monitored and some parameters can be changed. There is 2-level password protection for accessing the remote monitoring interface.

MOD-BUS RTU (optional)

It is designed for monitoring and management via Mod-Bus. It can be monitored and managed by connecting with a cable. All parameters of FLT Battery Chargers can be monitored and some parameters can be changed with Mod-Bus protocol.

FLT Battery Chargers have an ergonomic and user-friendly Operator Panel designed for management and monitoring.

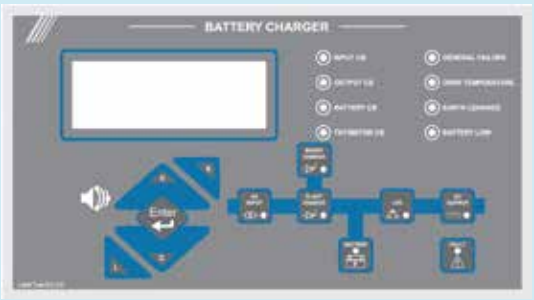
All operating parameters can be monitored from this panel and some operating parameters can be adjusted. There are 2-level password protection for parameter changing.

Monitorable parameters: Device Input Voltages, DC Output Voltage, Battery Voltage, Output Current, Battery Current, Operating Frequency, Charge Mode, Date-Time, Device Status Information, Fault and Error Codes.

Changeable Parameters: Float Charge Set Value, Boost Charge Set Value, Equalizing Charge Set Value, Output Current Set Value, Battery Charge Current, LVD Voltage, Manual Boost Charge Time, Communication Parameters, Date-Time Information.

1. LCD Display Operator Panel

- 4 lines 20 characters LCD display
- Mimic Diagram
- Light indicators
- 5 pcs selection and application buttons
- 3 language options (on order)
- Economical and long-lasting



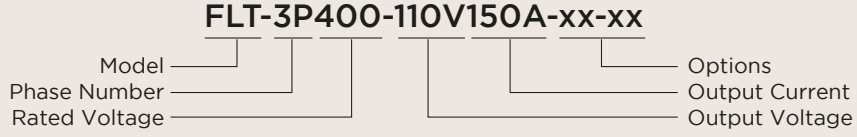
2. Touch Screen Operator Panel (Optional)

- 7” inch Color Display
- Resistive Feature,
- Backlight
- Three Language Options (On Order)
- Simple and Understandable Menu

Technical specifications

FLT Battery Charger		
General Features		
Model	FLT-1P	FLT-3P
Technology	Thyristor Controlled Rectifier, Microprocessor Controlled Industrial Type Battery Charging System	
Power Factor	< 0.65 (Power factor can be increased with optional Input Filter)	
Input		
Rated Input Voltage	3 Phase Model: 400VAC 3 Phase + Neutral + Ground (Different voltages are Optional)	1 Phase Model: 230VAC 1 Phase + Neutral + Ground (Different voltages are Optional)
Voltage Tolerance	+15 % , -15 %	
Frequency	50 Hz. +/-%5 (60 Hz. Optional)	
Output		
Rated Output Voltage	24 - 48 - 60 - 110 - 125 - 220 - 240 VDC (Different voltages are Optional)	
Voltage Tolerance	+/- 1 %	
Voltage Adjustment	+/- 20 %	
Rated Output Current	20 - 40 - 60 - 80 - 100 - 150 - 200 ADC (High currents are optional)	
Current Adjustment	Between 2 % - 100 %	
Charging Mode	Constant Voltage/Constant Current, Boost Charge, Float Charge	
Efficiency	85% - 95%	
Protection Functions		
Over Temperature Protection	Fan cooling works at 50C. At 80C, the power to the load is cut.	
Surge Arrester	Surge Arrester Class-I or Class-II for Over Voltage and Lightning Protection (optional)	
Earth Leakage Protection	It monitors the isolation between DC(+) or DC(-) and ground. It gives an alarm in case of leakage.	
Optional Features		
Silicon Dropper Unit	Automatic voltage regulation unit for DC load output. 1 Step or 2 Steps	
LVD Unit	Battery deep discharge Protection. It seperate the load connection when the battery voltage drops.	
Automation Unit	Dry Contact Outputs for fault and status information	
Battery Reverse Polarity Protection	It prevents the Battery Circuit Breaker from being set up when the Battery is connected in reverse.	
Management Monitoring and Communication Interfaces		
LCD Display Operator Panel	4 lines 20 characters LCD display and Mimic Diagram. Input Voltage, Output Voltage, Output Current, Battery current, Boost Voltage, Float voltage, Boost Timer, LVD voltage, Date-time, Status and Fault information, Parameter settings	
Touchscreen Operator Panel (optional)	7" Touch Color screen Input Voltage, Output Voltage, Output Current, Battery current, Boost Voltage, Float voltage, Boost Timer, LVD voltage, Date-time, Status and Fault information, Parameter settings	
Remote Management Interface (optional)	Browser-based remote management with Ethernet connection MOD-BUS RTU with RS485 connection	
Environmental Conditions		
Operating temperature	-10 °C ~ +40 °C	
Altitude Operating Height	1.500m	
Humidity	90% none condensed	
Acoustic Noise	< 55dB (at 1m distance and doors closed)	
Cabinet Specifications		
Type–Protection Class	Free Standing Modular Cabinet, IP21 Indoor type (IP54 and higher protection class, Outdoor Type Cabinets are optional)	
Paint–Color	Epoxy-Polyester Powder Paint - RAL 7035	
Cooling	Air cooling with thermostat controlled fan.	

ORDER CODE



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You may visit our Website for more detailed information and solutions.