

# Marstech



## Rectifier Charger System



**Marstech Charger**

**MARSTECH**

## Main Feature

- ▶ Industrial Layout
- ▶ Easy maintenance/front access
- ▶ Input isolation transformer , protected by MCCB
- ▶ Full set of battery charging methods available
- ▶ Microprocessor control
- ▶ LCD Display
- ▶ 12 pulse bridge
- ▶ DC/DC stabilizer (dropping diodes or chopper regulator)

## Main Option

- ▶ Customized input and output voltage
- ▶ AC mains failure monitoring, DC earth fault monitoring
- ▶ Temperature compensated battery voltage
- ▶ Timer controlled battery charging
- ▶ Reversible operation (battery discharging to the ac mains)
- ▶ Additional PFI filters
- ▶ Additional THD filters
- ▶ Output distribution panels

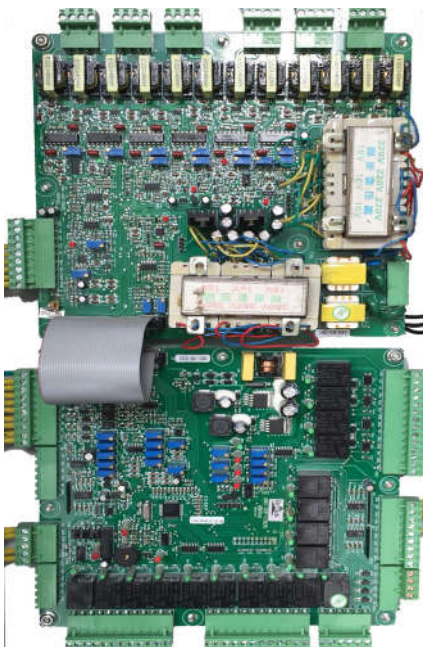
## Application

- ▶ Power Station and Substation
- ▶ Water Treatment Plants
- ▶ Manufacture Plants
- ▶ Transportations
- ▶ Oil & Gas and Petrochemical Plants

## Standards

- ▶ International Quality Certificate
- ▶ Low voltage assemblies
- ▶ Semiconductor convertors
- ▶ Power transformers
- ▶ Degree of protection
- ▶ Safety
- ▶ IEC EN 61000-6-4
- ▶ Applicable standards

- ▶ ISO 9001
- ▶ IEC 439
- ▶ IEC 146
- ▶ IEC 76
- ▶ IEC 529
- ▶ IEC EN 62040-1
- ▶ IEC EN 61000-6-1, IEC EN 61000-6-2
- ▶ IEC 60146-3/DIN41733



- ▶ **Marstech** is with DSP technology fully controlled. Charger is base on Thyristor with Isolation transformer, Input PF >0.9 Low harmonic <6% , Standard low DC Ripple < 1% for 3 phase systems and Charger characteristic according DIN 41773 (UL)

## Marstech Rectifier Catalogue

A Compact Industrial DC System  
Specially Designed for Power Stations  
and Substations

**Marstech** standby power system chargers are built for both lead acid and nickel cadmium batteries. It has incorporated the most asked-for features and offers a high degree of standardization and reliability. Development of the system took into account the requirements of our customers and the experience acquired by Marstech over more than 12 years of activity in the area of power version technology.

**Marstech** system is based on a 6-pulse or 12-pulse thyristor bridge controlled by microprocessor. The system is provided with

**LCD** control panel, displaying the operational status of the equipment. Serial interfaces are available for remote control of the system. Upon request supervision



IP 31 -42

**MARSTECH**

## Technical characteristics

|                       |                                                                                                                             |              |              |              |                        |              |              |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|------------------------|--------------|--------------|
| Model 3BC -           | 110-25                                                                                                                      | 110-50       | 110-75       | 110-100      | 220-25                 | 220-50       | 220-100      |
| Size (A)              | 25                                                                                                                          | 50           | 75           | Max 125      | 25                     | 50           | Max 125      |
| INPUT                 |                                                                                                                             |              |              |              |                        |              |              |
| Nominal Voltage       | One Phase Input                                                                                                             |              |              |              | Three Phase Input      |              |              |
|                       | 1 phase 230VAC +/- 20%                                                                                                      |              |              |              | 3 phase 400VAC +/- 20% |              |              |
| Nominal Frequency     | 50 / 60 Hz ±5%                                                                                                              |              |              |              |                        |              |              |
| Cosφ                  | >0.9                                                                                                                        |              |              |              |                        |              |              |
| Transformer           | Galvanically isolated                                                                                                       |              |              |              |                        |              |              |
| ITHD                  | 27% 6P, 12% 12P, 6% THD Filter + 12P                                                                                        |              |              |              |                        |              |              |
| Input Protection      | Thermic-Magnetic Over Current Protection, Over Voltage Protection, Phase Sequence                                           |              |              |              |                        |              |              |
|                       | Free Operation ( 3 phase ), Soft Start, MCCB Auxiliary contact                                                              |              |              |              |                        |              |              |
| Surge protection      | Charger provide surge protection and filter both electromagnetic interference                                               |              |              |              |                        |              |              |
| OUTPUT                |                                                                                                                             |              |              |              |                        |              |              |
| Nominal Output Volt   | 110 VDC                                                                                                                     |              |              |              | 220 VDC                |              |              |
| Voltage Adjust        | 110VDC to 160VDC                                                                                                            |              |              |              | 220VDC to 280VDC       |              |              |
| Load Current Adjust   | 0-100% of Nominal Output Current                                                                                            |              |              |              |                        |              |              |
| Batt Current Adjust   | 0-100% of Nominal Battery Capacity                                                                                          |              |              |              |                        |              |              |
| Ripple                | ≤ 1% Vn (RMS )                                                                                                              |              |              |              |                        |              |              |
| Static stability      | +/- 1% Vn                                                                                                                   |              |              |              |                        |              |              |
| Overload              | 120% for 10mins                                                                                                             |              |              |              |                        |              |              |
| Float Voltage         | 2,23 lead acid battery or 1,40 Ni-Cd battery                                                                                |              |              |              |                        |              |              |
| Boost Voltage         | 100% to 120% of Floating Output Voltage                                                                                     |              |              |              |                        |              |              |
| Equal Voltage         | 100% to 120% of Boosting Output Voltage                                                                                     |              |              |              |                        |              |              |
| Battery Charging      | Constant Current/ Constant Voltage                                                                                          |              |              |              |                        |              |              |
| Output Protection     | Short Circuit Protection, Over Voltage Protection, Reverse Voltage Protection,                                              |              |              |              |                        |              |              |
|                       | Short Circuit, MCB or NH Fuse (based on current value)                                                                      |              |              |              |                        |              |              |
| Ventilation           | Natural and Fan                                                                                                             |              |              |              |                        |              |              |
| GENERAL               |                                                                                                                             |              |              |              |                        |              |              |
| Boost Timer           | 0 – 99.9 hours adjustable                                                                                                   |              |              |              |                        |              |              |
| Isolation Voltage     | 2500VAC input/chassis and output/chassis                                                                                    |              |              |              |                        |              |              |
| Battery Protection    | L-C filters, Overcurrent Electronic protection, Over Voltage Protection and Thermic Fuse                                    |              |              |              |                        |              |              |
| Efficiency (%)        | > 90%                                                                                                                       |              |              |              |                        |              |              |
| Noise 1m(dBA)         | 55 - 60                                                                                                                     |              |              |              |                        |              |              |
| Colour                | RAL 7035 ( other as option )                                                                                                |              |              |              |                        |              |              |
| Operation temperature | - 10 ÷ 40°C                                                                                                                 |              |              |              |                        |              |              |
| Protection Degree     | IP31-42 ( Optional for other protection degree )                                                                            |              |              |              |                        |              |              |
| Altitude level        | 1000m above sea                                                                                                             |              |              |              |                        |              |              |
| COMMUNICATION         |                                                                                                                             |              |              |              |                        |              |              |
| Communication         | RS232/RS485 Modbus serial port /RJ45/Dry Contactor (Option )                                                                |              |              |              |                        |              |              |
| Computer Setting      | Software to Setting : Float Voltage Setting, Output current setting, battery current setting, automatic.....                |              |              |              |                        |              |              |
|                       | Equal, boost, Float setting and Reset buttons.                                                                              |              |              |              |                        |              |              |
| OPTION                |                                                                                                                             |              |              |              |                        |              |              |
| Event History         | Last 250 events recorded on SD card                                                                                         |              |              |              |                        |              |              |
| Dropping Diod         | 1 step or 4 step                                                                                                            |              |              |              |                        |              |              |
| Access to Batteries   | Batteries and rectifier in the same cabinet with front access (optional)                                                    |              |              |              |                        |              |              |
| Alarm contact         | Mains failure, Charger Failure, Low Battery, Hi Volt, Low Rectifier Volt, Line MCCB, Load MCCB, Batt MCCB, Over temperature |              |              |              |                        |              |              |
| Distribution Output   | Reserve space for 5 MCB 2P                                                                                                  |              |              |              |                        |              |              |
| Dimension WxDxH       | 600x600x1700                                                                                                                | 600x600x1700 | 700x700x1700 | 750x750x1700 | 600x600x1700           | 700x700x1700 | 800x800x1700 |
| Weight (Kg)           | 250                                                                                                                         | 300          | 350          | 380          | 300                    | 350          | 400          |

## LCD MULTIFUNCTIONAL PANEL

### MONITORS

- ▶ AC voltage Input
- ▶ Current Input
- ▶ DC voltage output
- ▶ Boost Voltage
- ▶ Float Voltage
- ▶ Rectifier current
- ▶ Load current
- ▶ Battery current
- ▶ Hi DC
- ▶ Low DC

### ALARM

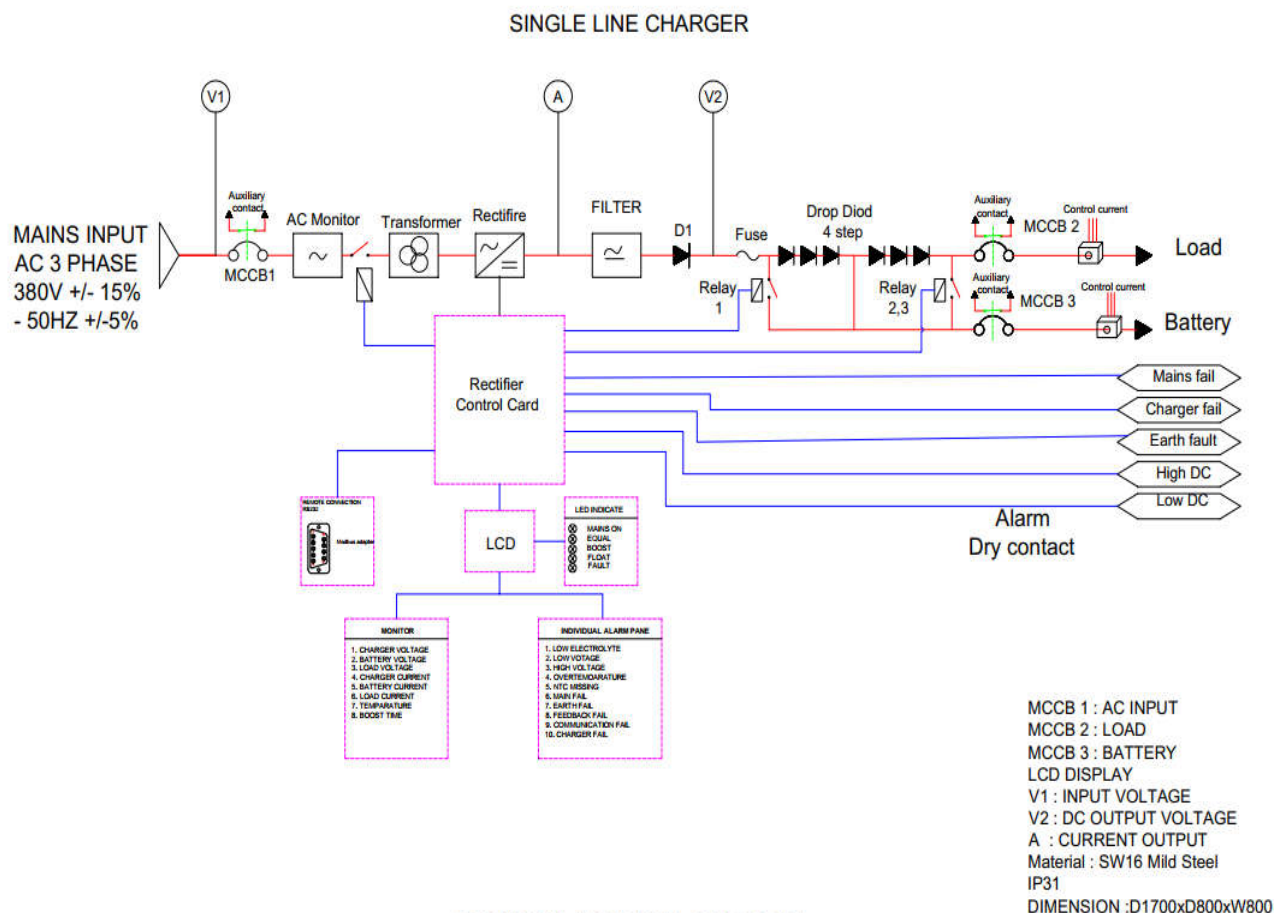
- ▶ Mains fail
- ▶ Charger fail
- ▶ Earth fault
- ▶ Hi DC
- ▶ Low DC
- ▶ Low Electrolyte
- ▶ Overload
- ▶ Low input volt
- ▶ Hi input volt



### LED FUNCTION

- ▶ MAINS ON
- ▶ EQUAL
- ▶ BOOST
- ▶ FLOAT
- ▶ FAULT

## One Line Diagram



3BCX-X ELECTRICAL DIAGRAM

For further information, please contact our local agent or distributor

*MARSTECH SYSTEM PTE LTD*

[www.marstech.com.sg](http://www.marstech.com.sg)

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