



CHHABI
Electricals Pvt. Ltd.





DC UPS Solution

Analog Thyristor Battery Charger

(Endurance Series)

Product Description:

Analog-controlled Thyristor Battery Charger delivers decades of trouble-free performance in the harshest environments—from substations to remote industrial sites—where dependability is non-negotiable. This charger is designed for simplicity and resilience, making it the top choice for engineers who demand hands-on control and robust operation.





Industrial Grade Durability

Analog-controlled thyristor charger built to withstand surges, heat, and dust.

Manual Precision Control

Potentiometer-based voltage/current tuning for predictable operation.

Universal Compatibility

Works with 6/12/24-pulse rectifiers, integrates with legacy and modern systems.

Wide Power Range

Power backups up to 360 V heavy machinery, handling up to 3000 A

Electrical:

Parameter	Specification
Input AC Supply	415 V AC ±10%, 3PH, 3/4 Wire, 50Hz or 60Hz ±5% or 230V AC ±10%
DC Output Voltages	24V, 30V, 48V, 72V, 96V, 110V, 125V, 220V, 360V. (customisable up to 600V)
DC Output Current Range	5A – 3000A (other ratings on request)
Applicable Standards	IS 4540, IEC 146 (as applicable)
Quality Standard	ISO 9001, ISO 14001, ISO 45001 & ZED (Zero Defects Zero Effects)
Supported Battery Types	Lead Acid, VRLA (Valve Regulated Lead Acid), Nickel Cadmium, Li-Ion
Charging Characteristics	Constant Current, Constant Voltage (CC–CV)
Cell Configuration	24V, 30V, 48V, 72V, 96V, 110V, 125V, 220V, 360V. (customisable up to 600V)
DC Output Voltage (VPC)	Float Mode: LA 2.15–2.2, VRLA 2.15–2.25, NiCd 1.40–1.42, Li-Ion 3.35-3.45 Boost Mode: LA 2.65–2.75, VRLA 2.3–2.35, NiCd 1.65–1.7, Li-Ion 3.55-3.65
Voltage Regulation	±1% (0–100% load, float mode)
Current Variation	Adjustable 10%–100% (boost mode)
Current Limit	105% of rated current (float mode)
DC Current Regulation	±2% (boost mode)
Magnetics	Isolation transformer / Filter choke
Insulation Class	Class F, temperature rise 90°C (for magnetics), Class B, Class A (optional on request)
High Voltage Withstand	2.5 kV for 1 minute
Rectifier Type	Fully controlled bridge (6 / 12 / 24 pulse thyristor)
Output Ripple	≤1% RMS / 2% RMS / 3% RMS or Peak-to-Peak (without battery connected)
Efficiency	≥80% at full load (110V, 220V, 360V models) ≥70% at full load (24V, 48V, 72V, 96V models)

Instrumentation:

Instrument	Details
Output	DC Voltmeter, DC Ammeter
Battery	DC Voltmeter, DC Ammeter
Input	AC Voltmeter, AC Ammeter (optional)

Protection Features:

Feature	Description
Thyristor Protection	Dedicated fuse for thyristor safety
Soft Start	Prevents inrush currents during startup
Electronic Current Limit	Protects system from excessive load
Phase Protection	Phase sequence reversal & phase failure protection

Alarms & Indications:

Category	Details
Alarms / Annunciations	• LED Annunciations • Window Annunciation • Digital, Analog combined Annunciations (DAA – Chhabi make)
Status Indications	Relay Contacts: Potential free (optional)
Phase Protection	Phase sequence reversal & phase failure protection

Mechanical:

Specification	Details
Construction	Folded sheet MS, powder coated (Paint Shade – Customizable)
Sheet Thickness	Frame (Load bearing members) – 2 mm, Panels (Non-load bearing members) – 1.6 mm
Cable Entry	Bottom (top on request)
Panel Access	Front & rear; Only front on request
Terminal Arrangement	Back side
Enclosure Protection	IP20 / IP31 / IP42 (others i.e. IP5x on request)
Cooling	Natural air cooling / Forced air cooling
Noise Level	70 dBA (natural) / 80 dBA (forced cooling)
Installation	Indoor, floor mounting, self-standing

Operating Conditions:

Condition	Details
Temperature	0°C to +50°C
Humidity	≤95% RH (non-condensing)
Altitude	≤1000m above MSL

DC UPS Solution

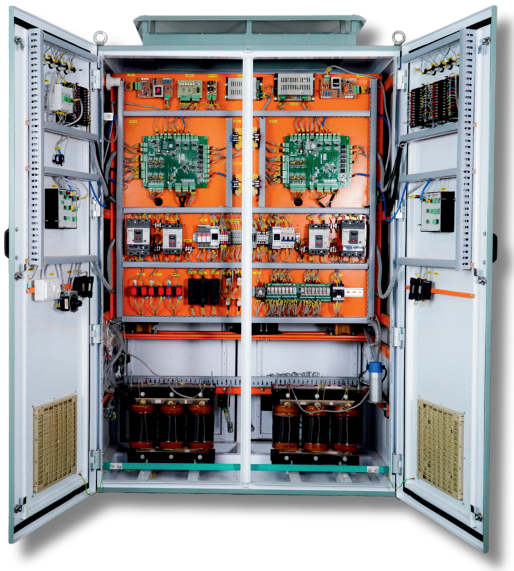
Digital Thyristor Battery Charger

(Agile Alpha Series)

Product Description:

The Digital Thyristor Battery Charger is engineered for environments where real-time insights, automation, and precision control are essential. More than a charger, it acts as a smart power guardian—optimizing performance, preventing failures, and providing complete visibility through advanced monitoring and diagnostics.





Precision Control

DSP/microcontroller closed-loop control ensures ±1% regulation accuracy.

Predictive Diagnostics

Monitors 25+ parameters.

Intuitive HMI

7-inch LCD/touchscreen for live data, alarms, and mode visualization.

Adaptive Charging

Auto-switches between Float/Boost/Equalize with temperature compensation.

Seamless Integration

Supports Modbus RS-485, RS-232, TCP/IP, Profibus; remote read/write facility

Electrical:

Specification	Details
Input AC Supply	415 V AC ±10%, 3 Phase, 3/4 Wire, 50Hz or 60Hz ±5% or 230 V AC ±10%
DC Output Voltages	24V, 30V, 48V, 72V, 96V, 110V, 125V, 220V, 360V. (customisable up to 600V)
DC Output Current Range	5A – 3000A (other ratings on request)
Applicable Standards	IS 4540, IEC 146 (as applicable)
Quality Standards	ISO 9001, ISO 14001, ISO 45001, ZED (Zero Defects Zero Effects)
Supported Battery Types	Lead Acid, VRLA, Nickel Cadmium, Li-Ion
Charging Characteristics	Constant Current – Constant Voltage (CC-CV)
Cell Configuration	24V, 30V, 48V, 72V, 96V, 110V, 125V, 220V, 360V. (customisable up to 600V)
DC Output Voltage – Float Mode	LA: 2.15–2.20 VPC VRLA: 2.15–2.25 VPC Ni-Cd: 1.40–1.42 VPC Li-Ion: 3.35–3.45 VPC
DC Output Voltage – Boost Mode	LA: 2.65–2.75 VPC VRLA: 2.30–2.35 VPC Ni-Cd: 1.65–1.70 VPC Li-Ion: 3.55–3.65 VPC
Voltage Regulation	±1% (0–100% load, float mode)
Current Variation	Adjustable 10%–100% (boost mode)
Current Limit	105% of rated current (float mode)
DC Current Regulation	±2% (boost mode)
Magnetics	Isolation Transformer / Filter Choke
Insulation Class	Class F, temperature rise 90°C (for magnetics), Class B, Class A (optional on request)
High Voltage Withstand	2.5 kV for 1 minute
Rectifier Type	Fully Controlled Bridge (6 / 12 / 24 Pulse Thyristor)
Output Ripple	≤1% RMS / 2% RMS / 3% RMS or Peak-to-Peak (without battery connected)
Efficiency	≥80% at full load (110V, 220V, 360V models) ≥70% at full load (24V, 48V, 72V, 96V models)

Instrumentation:

Category	Details
Output	DC Voltmeter, DC Ammeter
Battery	DC Voltmeter, DC Ammeter
Input	AC Voltmeter, AC Ammeter (optional)
Display	Through LCD / Touchscreen

Protection Features:

Protection Feature	Details
Thyristor Protection Fuse	Provides safety for thyristors against faults
Soft Start	Prevents inrush currents during startup
Electronic Current Limit	Restricts current to safe operating levels
Phase Protection	Phase sequence reversal & phase failure protecti

Alarms & Indications:

Category	Details
Alarms / Annunciations	• LED Annunciations • Window Annunciation • Digital & Analog combined Annunciations (DAA – Chhabi make)
Status Indications	Relay Contacts: Potential free (optional)
Communication	RS485 (optional)

Mechanical:

Specification	Details
Construction	Folded sheet MS, powder coated (Paint Shade – Customizable)
Sheet Thickness	Frame (Load bearing members) – 2 mm, Panels (Non-load bearing members) – 1.6 mm
Cable Entry	Bottom (top on request)
Panel Access	Front & rear; Only front on request
Terminal Arrangement	Back side
Enclosure Protection	IP20 / IP31 / IP42 (others i.e. IP5x on request)
Cooling	Natural air cooling / Forced air cooling
Noise Level	70 dBA (natural) / 80 dBA (forced cooling)
Installation	Indoor, floor mounting, self-standing

Operating Conditions:

Condition	Details
Temperature	0°C to +50°C
Humidity	≤95% RH (non-condensing)
Altitude	≤1000m above MSL

DC UPS Solution

SMPS Modular Charger

(Optima Series)

Product Description:

The SMPS Modular Charger uses cutting-edge technology to deliver exceptional efficiency, seamless expandability, and intelligent system management. Designed to scale with growing power demands, it provides hot-swappable modularity, a compact footprint, and superior reliability for mission-critical environments.



Energy Redefined

>90% efficiency, PF >0.90, reduced harmonics, lower electricity costs.

Scalable Architecture

Hot-swappable modules allow capacity expansion or redundancy on demand.

Intelligent Control

DSP regulation with ±1% voltage accuracy and programmable charging modes.

Compact & Reliable

Modular design reduces footprint while maintaining high reliability.

Smart Connectivity

Supports RS485, Modbus, and SCADA/BMS integration.

Electrical:

Parameter	Specification
Input AC Supply	415V ±10%, 3PH / 3/4 Wire, 50-60Hz ±5% or 230V ±10%
DC Output Voltages	24V, 48V, 110V, 220V
DC Output Current	20A – 1000A (others on request)
Standards	IS 4540, IEC 146
Certifications	ISO 9001, ISO 14001, ISO 45001, ZED certified
Supported Batteries	Lead Acid, VRLA, Ni-Cd, Li-Ion
Charging Characteristics	CC–CV, programmable IU / IUIU curves
Voltage Regulation	±1% (float mode)
Ripple	≤1–3% RMS

Instrumentation:

Instrument	Details
Output	DC Voltmeter, DC Ammeter
Battery	DC Voltmeter, DC Ammeter
Input	AC Voltmeter, AC Ammeter (optional)
Display & Monitoring	LCD/Touchscreen HMI for live status, alarms, and logs

Protection Features:

Feature	Description
Rectifier Protection Fuse	Protects rectifier components against internal faults
Soft Start	Inrush prevention during startup to avoid current surges
Electronic Current Limit	Restricts current to safe operating levels automatically
Phase Protection	Phase sequence reversal & phase failure protection

Alarms & Indications:

Category	Details
Annunciations	• LED annunciations • Window annunciation • Digital + Analog combined annunciations (DAA – Chhabi make)
Status Indications	On panel
Relay Contacts	Potential-free (optional)
Communication	RS485 (optional)

Mechanical:

Specification	Details
Construction	Folded sheet MS, powder coated (customizable shade)
Sheet Thickness	Frame 2 mm (load-bearing), Panels 1.6 mm (non-load-bearing)
Cable Entry	Bottom (top on request)
Panel Access	Front & rear (front-only optional)
Terminal Arrangement	Back side
Enclosure Protection	IP20 / IP31 / IP42 (higher IP on request)
Cooling	Natural or forced air
Noise	70 dBA (natural), 80 dBA (forced)
Installation	Indoor, floor-mounted, self-standing

Operating Conditions:

Condition	Details
Temperature	0°C to +50°C
Humidity	≤95% RH (non-condensing)
Altitude	≤1000m above MSL

DC UPS Solution

IGBT Charger

(Vector Series)

Product Description:

The IGBT charger uses next-generation technology to deliver superior efficiency, rapid response to load variations, and stable output under dynamic grid and system conditions. With DSP-controlled regulation, robust protection, and advanced connectivity, it ensures reliable performance in demanding environments.



High Performance Efficiency

>90% efficiency, near-unity PF, low harmonics.

Fast Dynamic Response

Stable DC even during rapid load variations.

Digital Precision

DSP-based control with ±1% voltage accuracy.

Robust Design

Protection from surges, overloads, and thermal stress.

Compact & Reliable

Smaller footprint vs. thyristor chargers.

Smart Connectivity

RS485/Ethernet/Modbus for SCADA/BMS.

Electrical:

Parameter	Specification
Input AC Supply	415 V ±10%, 3PH / 3/4 Wire, 50–60Hz ±5% or 230 V ±10%
DC Output Voltages	24V, 48V, 110V, 125V, 220V, 360V
DC Output Current	5A – 3000A (other ratings on request)
Standards	IS 4540, IEC 146
Certifications	ISO 9001, ISO 14001, ISO 45001, ZED certified
Supported Batteries	Lead Acid, VRLA, Ni-Cd, Li-Ion
Charging	Constant Current / Constant Voltage (CC–CV)
Cell Configuration	24V, 48V, 110V, 125V,220V, 360V

Instrumentation:

Instrument	Details
Output	DC Voltmeter, DC Ammeter (optional)
Battery	DC Voltmeter, DC Ammeter (optional)
Input	AC Voltmeter, AC Ammeter (optional)
Display	LCD/Touchscreen for monitoring

Protection Features:

Feature	Description
Soft Start	Prevents inrush currents during startup
Electronic Current Limit	Restricts current to safe operating levels
Phase Protection	Phase sequence reversal & phase failure protection

Alarms & Indications:

Category	Details
Annunciations	• LED annunciations (optional) • Window annunciation (optional) • Digital Analog Annunciator (optional)
Relay Contacts	Potential free (optional)
Communication	RS485 (optional)

Mechanical:

Specification	Details
Construction	Folded sheet MS, powder coated
Frame Thickness	2 mm
Panels	1.6 mm
Cable Entry	Bottom (top on request)
Panel Access	Front & rear (front-only optional)
Enclosure	IP20 / IP31 / IP42 (higher on request)
Cooling	Natural or forced air
Noise	70 dBA (natural), 80 dBA (forced)
Installation	Indoor, floor-mounted, self-standing

Operating Conditions:

Condition	Details
Temperature	0°C to +50°C
Humidity	≤95% RH (non-condensing)
Altitude	≤1000m above MSL

AC UPS Solution

Industrial UPS

(Aegis Series)

Product Description:

The Industrial UPS delivers uninterrupted and stable AC power using advanced inverter technology. Designed for harsh industrial conditions, it combines rugged construction, high efficiency, and digital intelligence to provide dependable performance and seamless power continuity.



High Efficiency

Advanced inverter/rectifier design with >90% efficiency.

Rugged Industrial Design

Wide input tolerance, high fault-withstand capacity.

Digital Intelligence

DSP/IGBT control ensures precise voltage regulation.

Advanced Battery Management

Compatible with external BMS for VRLA, Li-Ion, and NiCd.

Enhanced Safety

Input/output isolation transformer for safe operation. (optional)

Smart Connectivity

RS485, Ethernet, Modbus, SNMP for SCADA/DCS integration.

Rectifier Section:

Parameter	Specification
Specification	Details
Input Voltage Range	1-Phase: 230V AC (±10%) / 3-Phase: 415V AC (±10%)
Input Frequency	50 / 60Hz (±5%)
Power Factor	> 0.90 at full load
Input Harmonics (THDi)	< 5%
Soft Start	Available
Rectifier Type	IGBT-based, high-frequency PWM
Efficiency	≥ 90%
Charging Capacity	Adjustable 0–100% of rated current
Battery Compatibility	VRLA, Lithium-Ion, NiCd
DC Voltage Ripple	< 1%

Static Bypass Section:

Specification	Details
Type	Fully static, IGBT-based
Transfer Time	≤ 4ms (online), ≤ 20ms (double conversion)
Bypass Voltage Range	±15%
Overload Capability	125% for 10 min, 150% for 1 min, 1000% for 1 cycle (fault clearing)
Auto Re-transfer	Supported
Protection Features	Overcurrent, short circuit, synchronization with utility, manual bypass

Communication & Monitoring:

Category	Details
Display	LCD panel with real-time monitoring of input, output & battery parameters
Communication Ports	RS232, RS485, MODBUS, USB, SNMP (optional)
Remote Monitoring	SNMP-based monitoring
Alarm Indications	Audible & visual alarms for warnings and faults

Inverter Section:

Specification	Details
Input Voltage	1-Phase: 230V AC / 3-Phase: 415V AC
Output Voltage	1-Phase: 230V AC (±1%) / 3-Phase: 415V AC (±1%)
Output Frequency	50/60Hz
Waveform	Pure sine wave
THD	< 2% (linear load), < 5% (non-linear load)
Overload Capacity	125% for 10 min, 150% for 1 min
Crest Factor	3:1
Efficiency	≥ 90%
Load PF Compatibility	0.7 lag to 0.99 lead
Technology	IGBT PWM-based inverter
Auto Synchronization	With bypass supply
Parallel Redundancy	Optional (N+1)
Dynamic Response	≤ 20ms for 100% load step
Cold Start	Supported
Configurations	1Ø–1Ø, 3Ø–3Ø, 3Ø–1Ø, 1Ø–3Ø
Protection Features	Overload, short circuit, OV/UV, overtemperature, phase imbalance

Environmental & Mechanical:

Specification	Details
Operating Temperature	0°C to 50°C (derating above 40°C)
Storage Temperature	-20°C to 70°C
Relative Humidity	0–95% (non-condensing)
Altitude	≤1000m (without derating), up to 3000m (with derating)
Cooling	Forced air cooling with redundant fans
Enclosure Protection	IP20 standard, IP31 optional
Compliance	IEC 62040-1/2/3

AC UPS Solution

Commercial UPS

(Helios Series)

Product Description:

The Commercial UPS is designed for commercial, IT, and data-centric environments where clean, reliable, and uninterrupted power is essential. Built with high-efficiency architecture, intelligent monitoring, and a compact footprint, it protects sensitive equipment from disturbances and ensures seamless business continuity for offices, hospitals, server rooms, and commercial facilities.



High Efficiency Operation

>90% efficiency with IGBT-based rectifier & inverter.

Compact Design

Optimized footprint for server rooms and commercial spaces.

Digital Precision

DSP-based regulation ensures stable power and fast response.

Advanced Battery Management

Supports VRLA, Li-Ion, NiCd with intelligent charging.

Comprehensive Protection

Safeguards against overload, short circuit, overtemperature, and disturbances.

Nominal Ratings:

Specification	Details
Power Range	Till 5 kVA
Topology	Online double conversion
Parallel Redundancy	N+1 configurable
I/O Combinations	**1Ø–1Ø, 3Ø–3Ø, 3Ø–1Ø, 1Ø–3Ø**

Input (Rectifier Section):

Specification	Details
Nominal Voltage	230V / 415V AC, 3-Phase, 4 Wire
Nominal Frequency	50/60Hz
Input Power Factor	0.9
Input Harmonics (THDi)	<5% at full linear load

Battery:

Type	Supported Models
Internal Battery	VRLA, Li-Ion
External Battery	VRLA, Li-Ion

Output (Inverter Section):

Specification	Details
Nominal Voltage	**230V AC, Single Phase**
Frequency	**50/60Hz**
Voltage Harmonic Distortion	**<2% (linear), <5% (non-linear)**
Overload Capacity	**100–110%: 60 min**
	125%: 10 min
	150%: 1 min
Crest Factor	**3:1**
Efficiency	**≥90% (double conversion)**

Static Bypass Section:

Specification	Details
Type	Fully static, IGBT-based
Transfer Time	≤4 ms (online), ≤20 ms (double conversion)
Bypass Voltage Range	±15%
Overload Capability	125% (10 min), 150% (1 min), 1000% (1 cycle, fault clearing)
Auto Re-transfer	Supported

Environmental & Mechanical:

Specification	Details
Operating Temperature	0–50°C (derating above 40°C)
Storage Temperature	-20°C to +70°C
Relative Humidity	0–95% (non-condensing)
Altitude	≤1000m (without derating), up to 3000m (with derating)
Cooling	Forced air with redundant fans
Enclosure Protection	IP20 standard, IP31 optional
Compliance	IEC 62040-1/2/3

Communication & Monitoring:

Category	Details
Display	LCD panel with real-time monitoring of input, output & battery parameters
Ports	RS232, RS485, MODBUS, USB, SNMP (optional)
Remote Monitoring	SNMP supported
Alarm Indications	Audible & visual alarms for warnings and faults

Noise & Dimensions:

Specification	Details
Noise (at 1m)	<70 dB
Dimensions & Weight	Standard per rating

Panel Solutions

MCC & PCC Panels

(Titan Series)

Product Description:

The Motor Control Centers (MCC) and Power Control Centers (PCC) are designed for safe, reliable, and efficient power distribution across industrial and commercial environments. Built to IEC/IS standards, these panels combine robust construction, intelligent protection, and flexible configurations to support diverse operational needs.



Robust Design

Form 2/3/4 segregation, high mechanical strength.

Flexible Configurations

Fixed, semi-drawout, or drawout feeders.¸

Enhanced Safety

Arc fault containment, busbar shrouding, IP-rated enclosures.

Smart Monitoring

Energy meters, Modbus/Profibus/Ethernet for SCADA/BMS.

High Reliability

High fault withstand capacity.

Ease of Maintenance

Front/rear access, compartmentalized design.

Motor Control Center (MCC):

Specification	Details
Rated Voltage	415V AC, 3-Phase, 50Hz
Busbar Rating	4000A, 5000A, up to 6300A (Al/Cu)
Busbar Fault Level	50kA, 65kA–100kA (1 sec)
Feeder Types	DOL, Star-Delta, Soft Starter, VFD integration
Construction	Fixed / Semi-drawout / Fully drawout
Form of Separation	Form 2 / 3 / 4 (IEC 61439)
Enclosure Protection	IP42 / IP54 / IP55
Standards	IEC 61439-1/2

Power Control Center (PCC):

Specification	Details
Rated Voltage	415V AC, 3-Phase, 50Hz
Busbar Rating	4000A, 5000A, up to 6300A (Al/Cu)
Busbar Fault Level	50kA, 65kA–100kA (1 sec)
Main Incomers	ACB / MCCB / SF6 / Vacuum Circuit Breakers
Metering & Protection	Multifunction meters, protective relays, energy monitoring
Construction	Fixed / Drawout
Form of Separation	Form 3 / Form 4 (IEC 61439)
Enclosure Protection	IP42 / IP54 / IP65
Standards	IEC 61439-1/2, IS 8623

Panel Solutions

ACDB & DCDB Panels

(Sentinel Series)

Product Description:

The ACDB & DCDB Panels are engineered for UPS-linked power distribution, ensuring reliable delivery of backup AC and DC power to mission-critical loads. With a compact footprint, high safety features, and intelligent monitoring options, these panels form the first line of protection for data centres, control rooms, utilities, and industrial plants.



Seamless UPS Integration

Works with both AC and DC UPS outputs.

Robust Protection

Includes MCCBs, MCBs, ACBs, fuses, SPDs, and isolators for reliable defense.

Compact Design

Optimized for control rooms with limited space.

Flexible Configurations

Supports redundancy, input/output feeders, and metering options.

Smart Monitoring

Optional alarms, relays, and SCADA/BMS integration.

Compliance Ready

Designed as per IEC 61439 / IS standards with IP31, IP42, and IP5x enclosures

Technical Specifications:

Specification	Details
Rated Voltage	ACDB: 230V / 415V AC, 50Hz DCDB: 24V / 48V / 110V / 220V DC
Busbar Rating	Up to 800A (Cu/Al)
Protection Devices	MCCB, MCB, ACB, fuses, SPDs, isolators
Metering	Digital/Analog (V, A, kW, kWh, PF, frequency) with relays
Enclosure Protection	IP42 / IP54 (indoor)
Construction	Fixed / Semi-drawout / Fully drawout; single or double front
Type	Floor-mounted / Wall-mounted
Compliance	IEC 61439-1/2, IS 8623

Panel Solutions

DC Starter Panel

Product Description:

The DC Starter Panel is designed for dependable starting and protection of 110V and 220V DC motors used in power plants, substations, utilities, and heavy industrial environments. Purpose-built for SOP, EOP, and JOP applications, the panel uses mill-duty components and rugged resistors to ensure safe, smooth, and reliable motor operation even under harsh conditions.



Wide Voltage & Current Range

Supports 110VDC and 220VDC supply with ratings up to 600A.

Motor Applications

Specifically designed for SOP, EOP, and JOP motor operations.

Heavy-Duty Starters

Uses DC mill-duty contactors rated for DC-5 duty, ensuring long life and rugged performance.

Advanced Protection

Integrated mill-duty magnetic overload relays safeguard motors from overcurrent and electrical faults.

Robust Starting Resistors

Equipped with FeCrAl (AISI406) chromium steel alloy resistors that are corrosion-resistant and vibration-proof.

Reliable Operation

Built for harsh environments in power plants and process industries

Technical Specifications:

Specification	Details
Rated Voltage	110VDC / 220VDC
Current Rating	Up to 600A
Motor Applications	SOP, EOP, JOP
Starter Types	Resistance Starter with DC mill-duty contactors (DC-5 duty)
Protection Devices	DC mill-duty magnetic overload relays
	MCCB, HRC fuses, isolators
	Starting Resistors: FeCrAl alloy (AISI406), corrosion-resistant and vibration-proof
Enclosure Protection	IP42 / IP54 (indoor)
Construction	Fixed type, floor-mounted

Panel Solutions

Battery Isolation Box

Product Description:

The Battery Isolation Box is designed to provide controlled isolation, protection, and monitoring of battery banks used in UPS systems, battery chargers, and DC power networks. With heavy-duty isolators, fuses, and optional metering, it ensures batteries can be safely disconnected during maintenance or faults while protecting DC circuits from overloads, short-circuits, and reverse currents.



Safe Battery Isolation

Provides quick, secure disconnection of battery banks during maintenance or emergencies.

Wide Compatibility

Supports 24V, 48V, 110V, 220V, and higher voltage battery systems.

Robust Protection

Includes MCCBs, HRC fuses, isolators, and surge devices for maximum safety.

Advanced Protection

Space-efficient enclosures with floor or wall mounting options.

Smart Monitoring (Optional)

Digital meters and alarms for voltage, current, and fault status.

Rugged Construction

Corrosion-resistant with IP42 / IP54 protection for industrial environments

Technical Specifications:

Specification	Details
Rated Voltage	24V / 48V / 110V / 220V DC (custom on request)
Current Rating	Up to 800A
Protection Devices	MCCB/MCB, HRC fuses, SPD, isolators
Metering & Indications	Digital/Analog meters, fault/alarm lamps (optional)
Enclosure Protection	IP42 / IP54 indoor/ flameproof on request
Construction	Fixed type, floor or wall-mounted

Panel Solutions

Marshalling Box

Product Description:

Marshalling Boxes are designed for consolidating, organizing, and terminating multiple field cables from instruments, sensors, and control devices. Used extensively in power plants, substations, and process industries, they ensure clean wiring practices, simplify troubleshooting, and provide reliable signal transfer between the field and control room.



Neat Cable Management

Consolidates multiple signals into a structured terminal arrangement.

Ease of Maintenance

Enables quick testing, monitoring, and fault finding.

Custom Configurations

Supports terminal blocks, fuses, MCBs, relays, and surge protection.

Rugged Construction

Built with weatherproof enclosures to withstand dust and moisture.

Flexible Mounting

Options for wall-mounted or floor-standing setups as per site needs.

Technical Specifications:

Specification	Details
Rated Voltage	24V DC / 48V DC / 110V DC / 220V DC, 230V AC / 415V AC
Terminal Capacity	24 to 500+ terminals (customizable)
Enclosure	IP42 / IP54 / IP55
Protection Devices (Optional)	MCBs, fuses, surge suppressors
Construction	CRCA / SS304 / SS316 enclosures with powder coating

Panel Solutions

Feeder Pillar

Product Description:

Feeder Pillars are robust outdoor distribution panels designed to safely control and protect outgoing feeders in power networks, street lighting systems, renewable energy installations, and industrial complexes. Engineered to withstand harsh environmental conditions, they ensure reliable power delivery, easy accessibility, and long operational life.



Outdoor Rated Design

Consolidates multiple signals into a structured terminal arrangement.

Flexible Feeder Options

Enables quick testing, monitoring, and fault finding.

Rugged Construction

Supports terminal blocks, fuses, MCBs, relays, and surge protection.

Safety Features

Built with weatherproof enclosures to withstand dust and moisture.

Custom Configuration

Options for wall-mounted or floor-standing setups as per site needs.

Technical Specifications:

Parameter	Specification
Rated Voltage	415V AC, 3-Phase, 50Hz
Current Rating	Up to 1000A
Busbar Fault Level	50kA for 1 sec (customizable)
Feeder Types	MCCB, MCB, SFU, ACB
Enclosure Protection	IP42 / IP54
Construction	Mild steel, galvanized steel, or stainless steel with powder coating

Panel Solutions

Junction Box

Product Description:

Junction Boxes offer a reliable and compact solution for terminating and connecting electrical cables in power, control, and instrumentation circuits. Used across industrial plants, commercial buildings, renewable energy installations, and utilities, they safeguard connections while enabling easy inspection and maintenance.



Industrial-Grade Durability

Tough enclosures built to resist corrosion, dust, and impact.

Safe Termination

Protects cable joints against moisture and accidental contact.

Flexible Options

Available with/without terminal blocks, cable glands, and surge protection.

Indoor & Outdoor Use

Wide range of IP ratings for diverse operating conditions.

Instrumentation:

Parameter	Specification
Rated Voltage	Up to 415V AC, 50Hz / 24–220V DC
Terminal Capacity	Terminals as per scheme requirement
Cable Entry	Gland plates / knockouts (top/bottom/side entry)

Enclosure Options:

Parameter	Specification
Material	CRCA, FRP, SS304, SS316
Protection	IP42 / IP54 / IP55

Battery Maintenance Solutions

Cell Booster

Product Description:

Individual weak cells can compromise the performance of the entire battery bank. The Cell Booster is a portable, DC-powered unit designed to restore balance by providing controlled voltage correction to underperforming cells. It helps extend overall battery life and reduces the need for early bank replacement.



Universal Compatibility

Works with Lead-Acid, VRLA, and Ni-Cd chemistries.

Simple, Rugged Operation

Manual variac design ensures ease of use in industrial environments.

Portable & Flexible

Available with castor wheels, single or three-phase input options.

Technical Specifications:

Specification	Details
Application	Suitable for 1–6 battery cells
Output Voltage	Adjustable 0–12V DC
Current Rating	Up to 400A
Input Power	Single-phase or three-phase AC
Cooling	Natural / Forced air cooling
Protections	Basic AC input and DC output protections
Enclosure	Standard IP20

Battery Maintenance Solutions

Online Cell Booster

Product Description:

The Online Cell Booster is engineered for continuous uptime environments where batteries cannot be taken offline. It enables live correction and conditioning of individual weak cells without disrupting the connected critical load. Built for demanding industrial applications, it ensures your backup system remains healthy, balanced, and ready when needed.



True Online Operation

Corrects weak cells without load disruption or system shutdown.

Advanced Multi-Stage Charging

Sophisticated IU/IUIU and CC/CV algorithms tailored for Lead-Acid, VRLA, and Ni-Cd.

Ruggedized Industrial Design

Withstands harsh plant and utility environments.

High-Efficiency Performance

Achieves >80% efficiency, reducing energy costs and thermal stress

Technical Specifications:

Specification	Details
Application	Suitable for 1–6 battery cells
Output Voltage	Adjustable 0–12V DC
Current Rating	Up to 400A
Input Power	Single-phase or three-phase AC
Cooling	Natural / Forced air cooling
Protections	AC input & DC output protections
Enclosure	Standard IP20, customizable sizes and colors

Battery Maintenance Solutions

Battery Discharger / DC Load Bank

Product Description:

Battery banks on continuous float charge often lose capacity silently, creating unreliable backup power. Chhabi's Discharge Resistor Panels provide controlled, measurable discharge testing to verify real battery capacity, identify weak cells, and ensure dependable runtime during critical events.



Rugged Industrial Design

Built with FeCrAl or AISI 304 SS resistance elements for repeated use.

Universal Application

Supports 24V, 48V, 110V, 125V, and 220V DC systems.

Stepwise Load Control

Multiple resistance steps with contactors for gradual load variation.

Efficient Cooling System

Forced air cooling with redundant fans ensures stable performance.

Enhanced Options

Natural cooling, customized enclosures, and advanced reporting available

Technical Specifications:

Specification	Details
Type	Resistive (FeCrAl / AISI 304 SS wire)
System Voltages	24V, 48V, 110V, 125V, 220V DC
Monitoring	Battery Voltmeter & Ammeter
Load Control	Stepwise variation via contactors
Cooling	Forced air cooling with redundant fans
Enclosure	IP20 (others on request), customizable paint shade
Options	Natural cooling, enhanced reporting, custom enclosures

Battery Maintenance Solutions

Regenerative Load Bank

Product Description:

The Regenerative Load Bank is engineered for high-power testing without the typical energy loss and excessive heat of traditional resistive systems. By recovering and feeding test energy back into the utility grid, it enables efficient, precise, and environmentally conscious testing of power equipment across industrial, commercial, and renewable applications.



Energy Recovery Design

Achieves >90% efficiency by regenerating absorbed test power back into the grid.

Universal Testing Capability

Suitable for UPS systems, battery chargers, DG sets, inverters, and renewable energy power setups.

Reduced Heat Stress

Minimizes thermal load on facilities compared to conventional resistive load banks.

Sustainable Operation

Lowers operational costs while aligning with green energy goals

Technical Specifications:

Parameter	Specification
Efficiency	>90%
Applications	UPS, battery chargers, DG sets, inverters, renewable energy systems
Output	Stepwise load variation, programmable options available
Cooling	Minimal requirement due to reduced heat dissipation
Enclosure	Customizable, industrial-grade protection
Standards	Built to international safety and performance norms

Monitoring Solutions

Battery Health Monitoring System
(BHMS)

Product Description:

A battery bank is your final layer of protection during an outage. The BHMS elevates it from a passive energy source to a fully monitored, predictive system. With real-time analytics, cell-level visibility, and early-fault detection, it prevents unexpected failures, extends battery life, and ensures dependable backup power when it matters most.



Granular Cell-Level Visibility
Track 1.2V, 2V, and 12V cells, string currents, and ambient conditions.

Comprehensive Diagnostics
Internal resistance, cycle count, SOH & SOC analysis.

Remote Monitoring & Alerts
Modbus RTU/TCP integration with automated alarms (email/SMS).

Data Logging & Reporting
Capture and analyze historical charge/discharge, voltage/temperature trends, and faults.

Modular & Scalable Design
BATMOD, STRMOD, and CONMOD modules for flexible expansion.

Robust Safety Isolation
Up to 2000 V via opto-isolation for high-voltage safety.

Technical Specifications:

Category	Specification
Monitoring Range	24V – 360V DC systems
Cell Monitoring	Voltage Accuracy: ±0.05%, resolution 1 mV (BATMOD) Internal Resistance: 0.1–64 mΩ, resolution 1 µΩ, accuracy ±2%
String Monitoring	Voltage: Up to 2500V DC, resolution 10 mV, accuracy ±0.1% Current: Up to 500A (Hall effect sensors), resolution 10 mA, accuracy ±1%
Environmental	Temperature: –10 °C to +100 °C, resolution 0.1 °C, accuracy ±2% Humidity: 5–90% RH, resolution 1%, accuracy ±5%
Analytics	SOC/SOH Estimation: 0–100%, resolution 1%, accuracy ±5% (optional)
Communication	RS-485 Modbus RTU, Ethernet (TCP/IP), optional Wi-Fi/GPRS
Protection Features	Internal short-circuit fuses, reverse polarity protection (BATMOD)
Operating Conditions	–10 °C to +70 °C; relative humidity 5–90% RH; 80–110 kPa
Power & Enclosure	BATMOD: 10–50 mA STRMOD: 100 mA CONMOD: 12VDC / 20W Enclosures: ABS / Metal

Monitoring Solutions

Earth Leakage Monitoring System

(ELMS)

Product Description:

Earth faults often remain unnoticed until they escalate into serious hazards. The ELMS provides early, accurate detection of insulation breakdown across multiple feeders, helping prevent equipment damage, safety risks, and unexpected shutdowns. Designed for industrial reliability, it delivers continuous surveillance and fast fault identification to keep your operations safe and stable.



High-Precision Detection

Identifies positive and negative ground faults with sensitivity down to 50mA (100mA optional).

Multi-Channel Monitoring

Simultaneously supervises up to 8 independent feeders.

Clear Alerts

Seven-segment LED displays per feeder, with positive/negative indicators.

Remote Integration

Modbus RTU/TCP options for SCADA/BMS connectivity.

User-Friendly Operation

Includes scan-and-hold function with configurable scan time

Technical Specifications:

Specification	Details
Monitoring Range	24V – 360V DC systems
Cell Voltage Accuracy	±0.05%, resolution 1 mV
Internal Resistance	0.1–64 mΩ, resolution 1 µΩ, ±2% accuracy
String Voltage	Up to 2500V DC, resolution 10 mV, ±0.1% accuracy
Current Monitoring	Up to 500A, resolution 10 mA, ±1% accuracy
Temperature	–10°C to +100°C, resolution 0.1°C, ±2% accuracy

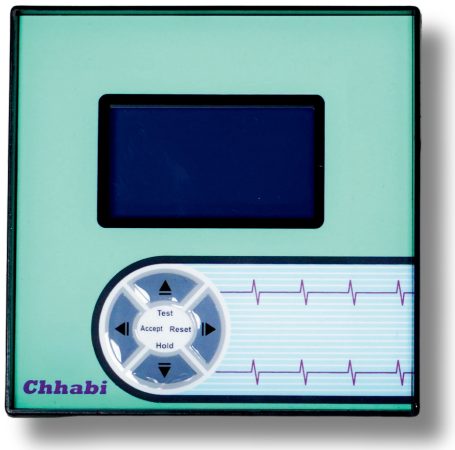
Specification	Details
Humidity	5–90% RH, resolution 1%, ±5% accuracy
Communication	RS-485 Modbus RTU, Ethernet (TCP/IP), optional Wi-Fi/GPRS
Protections	Internal fuses, reverse polarity protection
Operating Conditions	–10°C to +70°C, 5–90% RH, 80–110 kPa pressure
Enclosure	Metal, modular power design

Monitoring Solutions

Digital Analog Annunciator & Process Controller

Product Description:

This integrated system combines analog measurement, digital status monitoring, and intelligent alarm handling in a single compact platform. Designed for complex processes, it simplifies control room operations by providing real-time visibility, automated alarm management, and seamless connectivity to SCADA systems.



Unified Monitoring Platform

Integrates 16–24 channels of analog (4–20 mA) and digital (24VDC) signals.

Intelligent Alarm Management

Includes acknowledge, test, and reset functions for efficient control

Rugged Industrial Design

Field-proven for over a decade across multiple industries.

Total Process Integration

MODBUS-485/TCP connectivity for SCADA and remote monitoring.

Compact User Interface

Standard 144 × 144 mm panel mount with clear window annunciations

Technical Specifications:

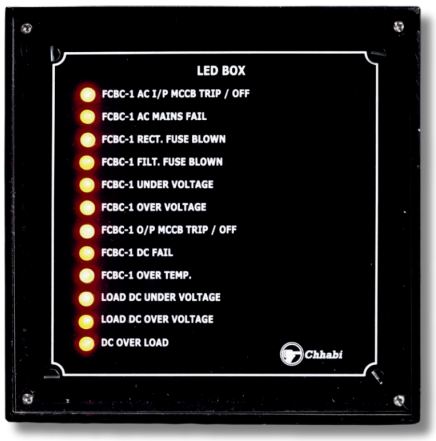
Specification	Details
Display Size	144 × 144 mm panel mount
Controller	Microcontroller-based system
Analog Inputs	13 optically isolated (4–20 mA), programmable thresholds
Digital Inputs	24 optically isolated inputs at 24VDC
Digital Outputs	13 outputs at 24VDC linked to threshold conditions + relays for group alarms
Annunciation Windows	2 × 12 configurable windows
User Interface	Membrane keys (Accept, Test, Reset, Hold) + navigation keys
Communication	RS-485 MODBUS protocol, MODBUS-TCP optional
Data Handling	Built-in logging and metering functions

Monitoring Solutions

LED-Based Annunciator

Product Description:

Designed for applications needing simple, direct alarm indication, our LED-based annunciators offer rugged reliability with zero programming requirements. They deliver high-visibility fault windows and straightforward operation for essential system monitoring.



Simple & Robust Operation

Relay-driven system ensures long service life.

Easy Installation & Maintenance

Straightforward wiring, no programming required.

Bright LED Indicators

High-intensity LEDs in red, amber, or green options.

Cost-Effective Security

Provides critical fault alerts without added complexity

Technical Specifications:

Specification	Details
Number of Windows	12
Indication Type	Individual LED displays
Auxiliary Supply Voltage	24V DC / 48V DC / 110V DC / 220V DC (factory selectable)
Input Type	Potential-free contacts / voltage inputs (configurable)
Alarm Outputs	Common alarm relay, group alarm relay, audible buzzer output
Functions	Test, Accept, Reset, Hold

Monitoring Solutions

Window-Type Annunciator

Product Description:

Window-type annunciators provide an organized, high-visibility method for displaying multiple fault conditions simultaneously. With dedicated windows for each alarm point, operators gain instant clarity on system abnormalities, improving response time and operational safety. Durable construction and customizable layouts make them ideal for control rooms, substations, and industrial monitoring panels.



Instant Visual Overview

Dedicated windows for each fault enable rapid identification.

Durable Construction

Acrylic or polycarbonate windows with high-intensity backlighting.

Configurable Layouts

Custom labeling with replaceable legend plates and dual-color indicators (red/green).

Comprehensive Alarm Outputs

Includes relays for group alarms, common alarms, and audible buzzers

Technical Specifications:

Specification	Details
Number of Windows	12
Indication Type	Individual window displays with replaceable legend plates (lamp/LED illumination)
Auxiliary Supply Voltage	24V DC / 48V DC / 110V DC / 220V DC (factory selectable)
Input Type	Potential-free contacts / voltage inputs (configurable)
Alarm Outputs	Common alarm relay, group alarm relay, audible buzzer output
Functions	Test, Accept, Reset, Hold

Industrial Rectifiers

Electroplating Rectifiers

Product Description:

Electroplating Rectifiers are engineered for high-precision metal finishing processes such as electroplating, anodizing, and electroforming. With stable DC output, low ripple, and rugged industrial construction, they ensure uniform coating quality, long equipment life, and uninterrupted production in demanding plating environments.



Ultra-Stable DC Output

Minimal ripple (<3%) for consistent coating thickness and finish.

Industrial-Grade Reliability

Continuous duty design for demanding environments.

Digital Control & Monitoring

Touchscreen HMI, real-time logging, and SCADA-ready Modbus/Ethernet communication.

Rugged Transformer Design

Available in both air-cooled and oil-cooled variants for high reliability.

Full Protection Suite

Overvoltage, undervoltage, overcurrent, over-temperature trip, and semiconductor fuses for SCR safety

Technical Specifications:

Specification	Details
Input Voltage	3-Phase, 415V AC, 50Hz
Output Voltage Range	0–15V DC (customizable)
Output Current Range	From 500A onwards (higher ratings on request)
Ripple Factor	<3% at full load
Control Modes	Constant Voltage (CV) / Constant Current (CC) with auto crossover
Cooling	Air-cooled / Oil-cooled

Specification	Details
Duty Cycle	100% continuous
Protections	Undervoltage/overvoltage, overcurrent, short-circuit, over-temperature, SCR fuses
Monitoring	Digital/Analog meters with alarms
Enclosure Protection	IP31 / IP42 (higher IP on request)
Compliance	IEC 60146, IS standards for rectifiers

Industrial Rectifiers

Cathodic Protection Rectifier

Product Description:

Cathodic Protection Rectifiers are designed for long-term corrosion prevention in pipelines, storage tanks, marine structures, and other buried or submerged assets. Engineered with rugged SCR/diode rectification and heavy-duty transformers, they deliver stable DC power, precise current control, and dependable performance in harsh outdoor environments.



Constant Current Control

Manual adjustment for precise polarization of structures.

Heavy-Duty Construction

Transformer plus silicon diode/SCR rectification for long service life.

Flexible Cooling Options

Available in natural, forced-air, and oil-cooled designs.

Built-In Safety

Includes breakers, output shunts, fuses, and surge protection.

Monitoring Ready

Provides output metering for voltage and current with shunt-based measurement.

Customizable Ratings

Voltage and current ranges tailored for pipelines, tanks, and marine environments.

Technical Specifications:

Specification	Details
Control Mode	Constant Current (manual adjustment)
Input Supply	230V / 415V AC, 50Hz, 1Ø or 3Ø (customizable)
Output Voltage Range	0–50V / 0–100V DC (other ranges on request)
Output Current Range	0–10A up to 0–500A (higher on request)
Ripple Factor	<3% at full load
Operating Temperature	0°C to +55°C (continuous duty)
Cooling	Natural air-cooled, forced-air cooled, or oil-cooled
Enclosure Protection	IP31 / IP42 (others on request)
Protection Features	AC input breaker, DC output breaker/fuses, surge arrestors, overload & short-circuit protection

Sourced Solutions

Batteries

Product Description:

Battery solutions that are engineered for durability, precision, and performance — ensuring seamless continuity in critical applications. Whether you need Lead-Acid, VRLA, Ni-Cad, or Lithium-ion, we deliver the right technology for your power needs.

Lithium-Ion



VRLA



Lead-Acid OPZS



Ni Cadmium



Reliable Backup

Engineered to provide seamless power during outages, ensuring your operations never stop.

Wide Technology Range

Choose from Lead-Acid, VRLA, Ni-Cd, and Lithium-ion to match your runtime and load needs.

Long Cycle Life

Built for durability, with designs that deliver consistent performance over extended service life.

Expert Guidance

Our team helps you select the right battery technology for your specific environment and application.

Technical Specifications:

Battery Type	Key Features
Lead-Acid Batteries	Proven technology, cost-effective (provided in 2V, 12V cell option)
VRLA Batteries	Maintenance-free, sealed design (provided in 2V, 12V cell option)
Nickel-Cadmium Batteries	Rugged, long service life (nominal cell value 1.3V)
Lithium-ion Batteries	Lightweight, fast-charging, high cycle life (nominal cell value 3.2V)

Sourced Solutions

Cables

Product Description:

Every cable we source meets the highest standards of conductivity, insulation, and fire safety. From power transmission to instrumentation and data transfer, our cables ensure your systems run safely, efficiently, and without compromise.



Certified Safety

Sourced to comply with stringent national and international safety standards.

High Efficiency

Low-loss conductors and superior shielding ensure maximum power and data integrity.

Rugged Durability

Built to withstand stress, abrasion, and challenging industrial conditions.

Tailored Solutions

Available for power, control, instrumentation, and communication systems.

Technical Specifications:

Cable Type	Key Features
Power Cables	For heavy-duty transmission
Control Cables	For precision in industrial automation
Instrumentation Cables	For accuracy in process industries
Data Cables	For reliable communication and IT infrastructure

Sourced Solutions

Switchgears

Product Description:

We bring you advanced switchgear technology that protects, monitors, and optimizes your power distribution. Built for safety, reliability, and scalability, our switchgears deliver complete peace of mind in demanding environments.



Enhanced Safety

Smart protection devices that instantly isolate faults, prevent electrical hazards, and safeguard both personnel and equipment.

Operational Excellence

Intelligent switching and monitoring features that provide precise control over power distribution, maximizing uptime and efficiency.

Unmatched Reliability

Manufactured to the highest quality standards to ensure consistent performance even in the most demanding environments.

Future-Ready Design

Scalable and modular systems that evolve with your business, supporting future expansion and smart grid integration.

Technical Specifications

Switchgear	Key Features
Low Voltage Switchgears	Compact and efficient
Medium Voltage Switchgears	Reliable protection for industrial applications
Protection Devices	Circuit breakers, relays, fuses
Smart Systems	SCADA and automation-ready