

Stallion Battery Charger Battery Charger - DC UPS System

Range: Up to 1200 AMP



HITACHI

About Battery Charger / DC UPS

The Stallion series of advanced battery chargers deploy Thyristor based technology and Digital Signal Processing Control (DSP) to achieve the desired DC output. Power required is adjusted by using phase control technology actuated by the DSP based control card. The DSP based control system enables user-friendly setting via the keypad on the front of the panel. Stallion series battery chargers are designed for compatibility with all types of batteries-like-VRLA, NiCd, Plante, Lead acid tubular, Gel etc.

Hitachi Hi-Rel has supplied DC UPS /FC & FCBC charger for Power plant, process plant, hydro carbon industry and offshore projects.

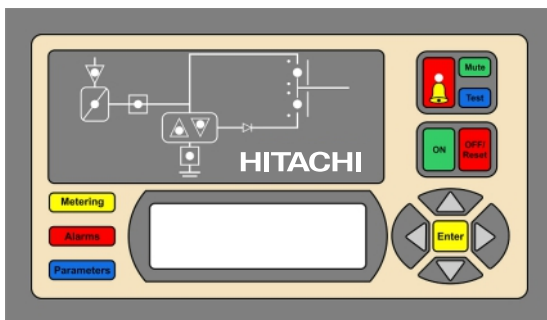
Design Philosophy

Proven Thyristor phase angle DC voltage control. It consists of transformer, semiconductor bridge rectifier, filters & load cut-off circuit.

The AC mains voltage is transformed to a suitable level and fed to the rectifier bridge which rectifies the AC input and feeds controlled DC output to the battery and load, through filter circuit.

Control of voltage and current is based on a digital signal processor (DSP).

Human Interface Module



AC to DC conversion :

The AC to DC Conversion element of the system is typically configured from Thyristor or switch mode technology depending on the performance and size constraints.

The range of Thyristor based systems are highly rugged industrial systems, suitable for the most demanding of environmental and operating conditions. The Thyristorised range of single phase and three phase input charger products capable of operating on 24 V to 240 V DC nominal voltage with output current up to 1200 AMP.

Salient Features

- DSP based Digital control
- LCD Display + Keypad interface
- Comprehensive LED mimic
- Single or Parallel Redundant battery charger
- Auto temperature compensated battery charging
- Three mode of battery charging :
 - Auto float/ boost
 - Manual float / boost
 - Timer based boost
- Independent battery & load current limit
- Wide range of battery charger in standard and customized State of the art design and high quality standards ensure absolute reliability of the equipment
- Battery charger finds usage in mission critical applications like, process control, power station, switchgear protection, telecommunication etc.
- User friendly components layout for easy operation and maintenance date – time stamp event recording last 999 events logged in non – volatile memory
- Battery charger is suitable with variety of battery types like, SMF, VRLA, Tubular, Plante, NiCad & Li-ion batteries
- Inbuilt Modbus, RS 232, RS 485 communication/ Facility
- Conformal Coating on PCB's make the Charger ultra rugged and failure - free due to gaseous, corrosive, dusty environment
- Monolithic SCR Based design achieves much higher Reliability and Uptime Availability than modular SMPS - MOSFET based design
- True Three Phase design ensures precisely balanced loading of Utility by Charger all time
- Isolation Transformer right at the Input of the Rectifier ensures Galvanic Isolation of complete Rectifier Charger System

Technical Specifications

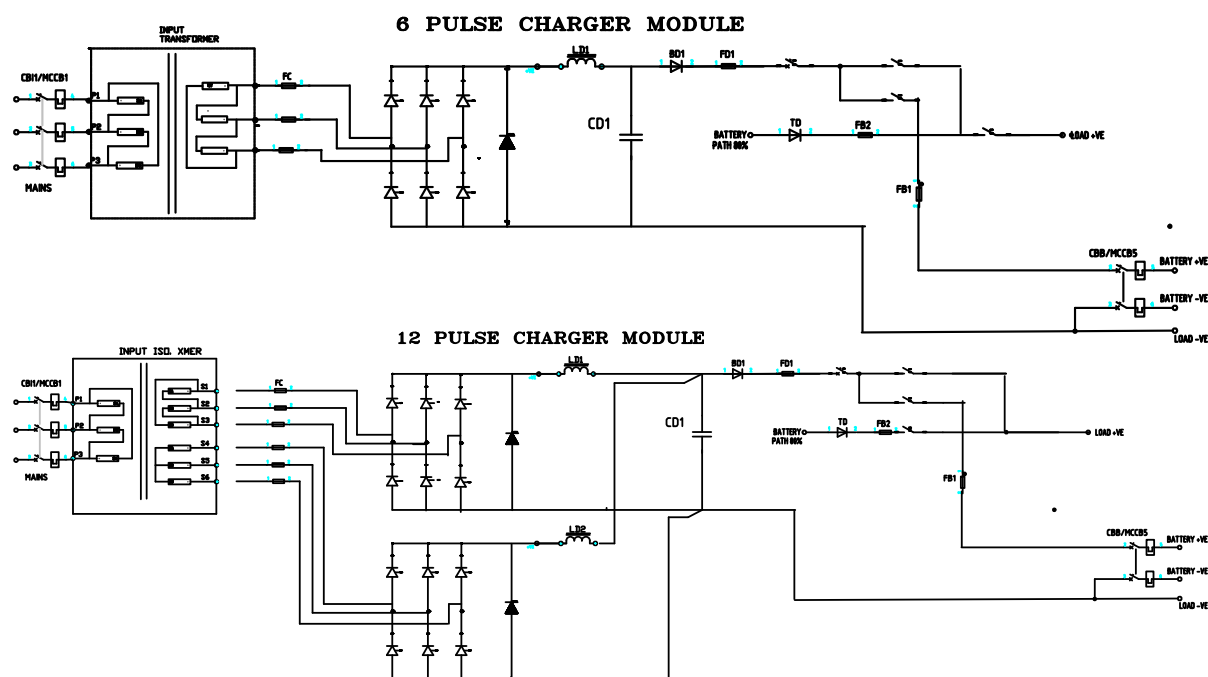
Charger Type	Stallion Battery Charger
Applicable Standard	IEC 62040-5-3
Charger Characteristics	Constant voltage / constant current with current limit
Control Technology	DSP based digital control, 6-Pulse charger
Input Voltage	415VAC, +10%, -15% Three phase (optional : Single phase input)*
Input Frequency	50 Hz $\pm$ 6%
Output Voltage	24VDC, 48VDC, 110VDC, 120VDC, 220VDC, 240VDC, 360VDC
Output Current	Up to 1200AMP
Output Voltage Regulation	Regulation $\pm$ 1% of set value
Ripple Voltage	$\pm$ 1% RMS with battery connected
	$\pm$ 2% RMS without battery connected
Protection	Input Switch / MCCB with fuse
	Output MCB / MCCB (Optional)
	Battery fuse / Switch / MCB / MCCB
	Current limit
	Soft start
	Overload protection
	Reverse polarity protection
	DC ground fault protection
Meters	Input voltmeter
	Input current meter
	Input frequency meter
	Output voltmeter
	Battery charging / discharging current meter
	Load current
Indication	Input ON
	Charger ON
	Battery charging
	Battery discharging
	Battery breaker ON
Alarms	Mains low
	Mains high
	Charger Fail
	DC Low
	DC High
	DC earth fault
	Battery on float mode
	Battery on boost mode
	Charger over temperature
Operating Ambient Temperature	0 to 50°C
Altitude	1000 Meter from MSL
Atmosphere	Non-corrosive, Dust free, Freely ventilated
Audible Noise @ 1 Meter from Panel Front	55 dBA to 70 dBA (depending on system rating & configuration)
Enclosure Protection	IP-41 (IP-42**)
Type of Cooling	Natural air cooling or forced air cooling
Paint Shade	RAL-7032, Epoxy powder coated (standard)
	Other shades on request
Dimensions	On request

*Available up to 8kW output. | ** Optional.

Options

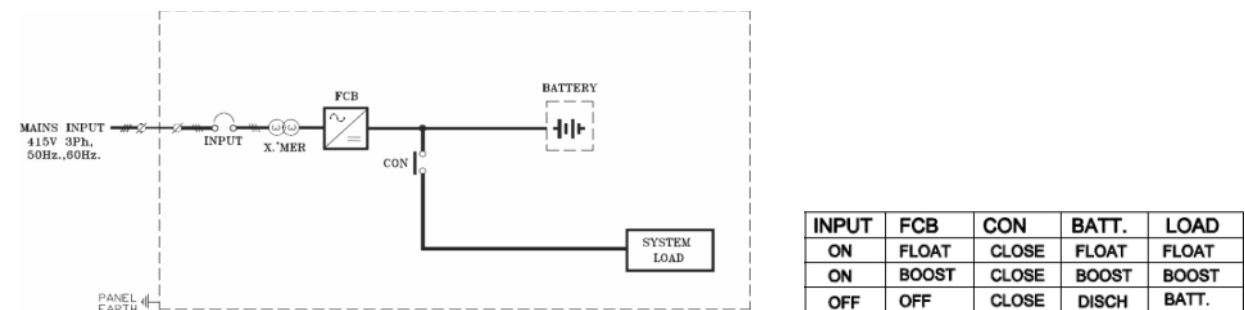
- 12-Pulse Battery Charger
- Different Input Voltages
- Frequency : 60Hz
- RS-485, MODBUS, SNMP
- Paint shade : Other shades on request
- Redundant Cooling Fans
- DC Distribution Board
- Voltage Drop Diode

Single Line Diagram of Battery Charger

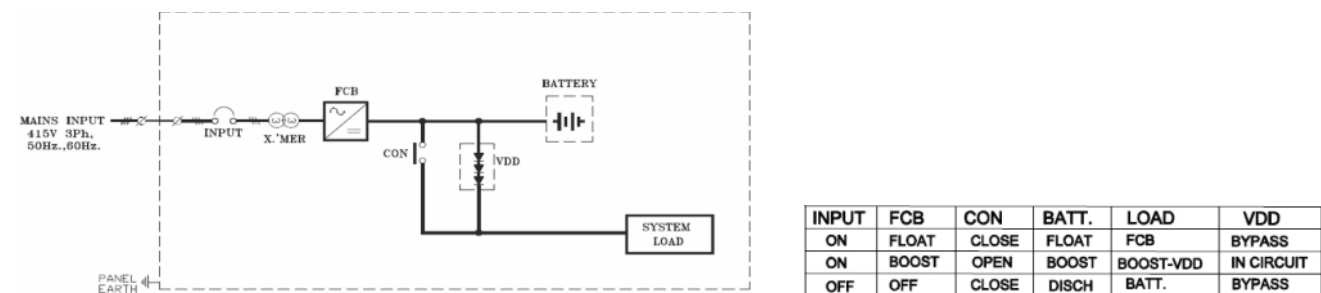


Mode of Operation

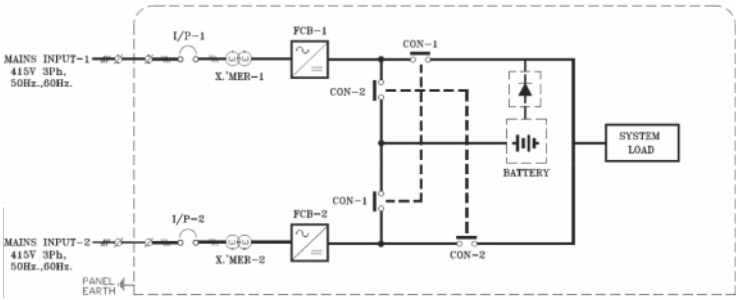
Battery Charger-Single Load-Single Battery



Battery Charger with Diode Dropper-Single Load-Single Battery



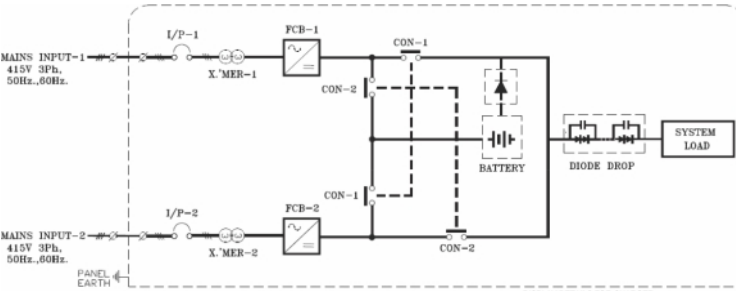
Redundant Float Cum Boost Charger-Single Load-Single Battery



INPUT-1	INPUT-2	FCB-1	FCB-2	CON-1	CON-2	BATT.	LOAD
ON	ON	FLOAT	FLOAT	CLOSE	CLOSE	FLOAT	FCB-1/2
ON	ON	FLOAT#	BOOST	CLOSE	OPEN	BOOST	FCB-1
ON	ON	BOOST	FLOAT#	OPEN	CLOSE	BOOST	FCB-2
OFF	ON	OFF	FLOAT#	CLOSE	CLOSE	FLOAT	FCB-2
ON	OFF	FLOAT#	OFF	CLOSE	CLOSE	FLOAT	FCB-1
OFF	OFF	OFF	OFF	CLOSE	CLOSE	DISCH	BATT.

BOOST OPERATION NOT ALLOWED

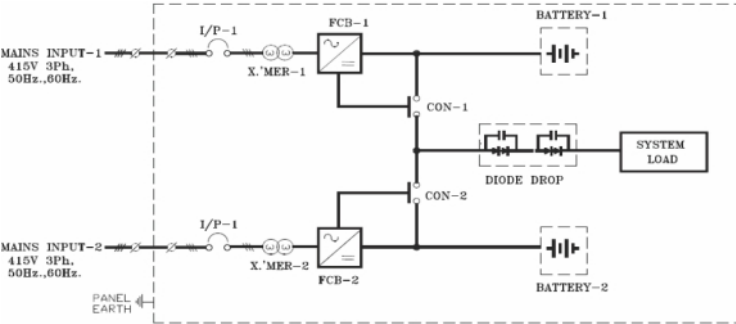
Redundant Float Cum Boost Charger with Diode Dropper-Single Load-Single Battery



INPUT-1	INPUT-2	FCB-1	FCB-2	CON-1	CON-2	BATT.	LOAD
ON	ON	FLOAT	FLOAT	CLOSE	CLOSE	FLOAT	FCB-1/2
ON	ON	FLOAT#	BOOST	CLOSE	OPEN	BOOST	FCB-1
ON	ON	BOOST	FLOAT#	OPEN	CLOSE	BOOST	FCB-2
OFF	ON	OFF	FLOAT#	CLOSE	CLOSE	FLOAT	FCB-2
ON	OFF	FLOAT#	OFF	CLOSE	CLOSE	FLOAT	FCB-1
OFF	OFF	OFF	OFF	CLOSE	CLOSE	DISCH	BATT.

BOOST OPERATION NOT ALLOWED

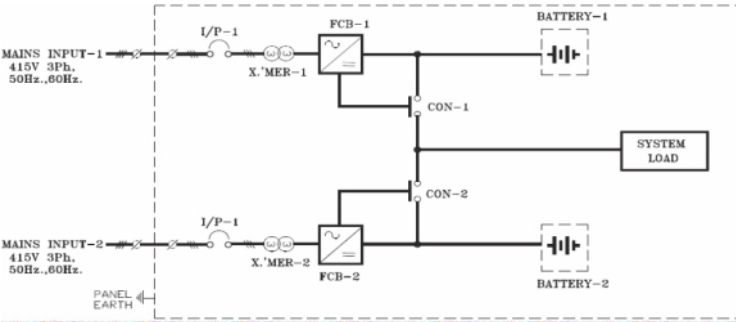
Redundant Float Cum Boost Charger with Diode Dropper-Single Load-Dual. Battery Bank



INPUT-1	INPUT-2	FCB-1	FCB-2	CON-1	CON-2	BATT.-1	BATT.-2	LOAD
ON	ON	FLOAT	FLOAT	CLOSE	CLOSE	FLOAT	FLOAT	FCB-1/FCB-2
ON	ON	FLOAT	BOOST	CLOSE	OPEN	FLOAT	BOOST	FCB-1
ON	ON	BOOST	FLOAT#	OPEN	CLOSE	BOOST	FLOAT	FCB-2
OFF	ON	OFF	FLOAT#	CLOSE	CLOSE	FLOAT	FLOAT	FCB-2
ON	OFF	FLOAT	OFF	CLOSE	CLOSE	FLOAT	DISCH	FCB-1
OFF	OFF	OFF	OFF	CLOSE	CLOSE	DISCH	DISCH	BATT.-1/2

BOOST OPERATION NOT ALLOWED

Redundant Float Cum Boost Charger-Single Load-Dual. Battery Bank



INPUT-1	INPUT-2	FCB-1	FCB-2	CON-1	CON-2	BATT.-1	BATT.-2	LOAD
ON	ON	FLOAT	FLOAT	CLOSE	CLOSE	FLOAT	FLOAT	FCB-1/FCB-2
ON	ON	FLOAT	BOOST	CLOSE	OPEN	FLOAT	BOOST	FCB-1
ON	ON	BOOST	FLOAT#	OPEN	CLOSE	BOOST	FLOAT	FCB-2
OFF	ON	OFF	FLOAT#	CLOSE	CLOSE	FLOAT	FLOAT	FCB-2
ON	OFF	FLOAT	OFF	CLOSE	CLOSE	FLOAT	DISCH	FCB-1
OFF	OFF	OFF	OFF	CLOSE	CLOSE	DISCH	DISCH	BATT.-1/2

BOOST OPERATION NOT ALLOWED

Communication Feature

- 2 lines with 16 characters (standard version for English characters) and 12 keys (the function is described for each operating mode) using LCD.
- MCR is a DC UPS Monitoring Software which supports the multiple DC UPS connected in the RS-485 network to the local computer system.
- MCR will automatically search & Monitor the DC UPS devices connected in the network.
- MCR can provide the overview details of all the DC UPS connected in network with the same window provides all information at glance.
- MCR can provide detailed view about all information of the DC UPS such as main's Input, Output, Inverter, Load, Battery data. The information is shown in the same window.
The functionality of collecting all the information about Alarms occurs in DC UPS and alerting by giving Alarm when it comes. These alarms come with instant information like their date, time and other properties too.
- With the functionality of data logging (DC UPS metering parameter) MCR provides last 30 days data of each DC UPS.

Event Log

Sr. No.	Date	Time	Event Name
1	12/11/2008	13:16:43	MANUAL BOOST
2	12/11/2008	13:16:00	BATT DISCHARGE*
3	12/11/2008	13:14:36	LOW BATT*
4	12/11/2008	13:13:58	LOW BATT TRIP*
5	12/11/2008	13:13:12	MAINS FREQ O TOL*
6	12/11/2008	13:12:11	I/P PHASE OUT*
7	12/11/2008	13:07:43	MAINS LOW*
8	12/11/2008	13:06:56	MAINS FAIL*
9	12/11/2008	13:05:11	LOW BATT TRIP
10	12/11/2008	13:03:13	LOW BATT
11	12/11/2008	13:02:25	BATT DISCHARGE
12	12/11/2008	13:02:11	CHG OFF
13	12/11/2008	12:13:49	MAINS FAIL
14	12/11/2008	12:13:33	MAINS FREQ O TOL
15	12/11/2008	12:13:21	I/P PHASE OUT
16	12/11/2008	12:12:50	MAINS LOW

Metering Display Information

Mains Input

	Voltage	Current	Frequency
R-Y Phase	385 Volt	40 AMP	49.85 Hz
Y-B Phase	385 Volt	40 AMP	49.85 Hz
B-R Phase	385 Volt	40 AMP	49.85 Hz

Output

DC	Current
220 Volt	1000 AMP

Battery

Current	Status	Mode
0.2 AMP	Charging	Float

Load

In AMP	Load(%)
10 AMP	10%

Applications

- Telecommunication Systems.
- Power Plant (Generation, Transmission, Distribution).
- Manufacturing Industries.
- Railways.
- Critical DC Requirements.
- Oil & Gas Industries.
- Fertilizer and Petrochemical Industries.

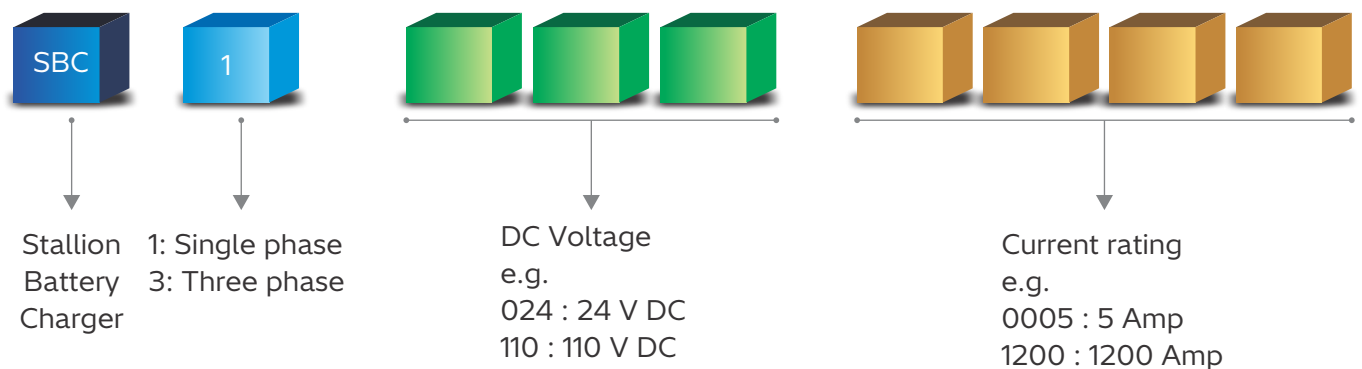
Battery Charger Rating

Current (Amp)	24 V	48 V	110 V	220 V
40	SBC10240040	SBC30480040	SBC31100040	SBC32200040
50	SBC10240050	SBC30480050	SBC31100050	SBC32200050
60	SBC30240060	SBC30480060	SBC31100060	SBC32200060
70	SBC30240070	SBC30480070	SBC31100070	SBC32200070
80	SBC30240080	SBC30480080	SBC31100080	SBC32200080
90	SBC30240090	SBC30480090	SBC31100090	SBC32200090
100	SBC30240100	SBC30480100	SBC31100100	SBC32200100
150	SBC30240150	SBC30480150	SBC31100150	SBC32200150
200	SBC30240200	SBC30480200	SBC31100200	SBC32200200
250	SBC30240250	SBC30480250	SBC31100250	SBC32200250
300	SBC30240300	SBC30480300	SBC31100300	SBC32200300
350	SBC30240350	SBC30480350	SBC31100350	SBC32200350
400	SBC30240400	SBC30480400	SBC31100400	SBC32200400
450	SBC30240450	SBC30480450	SBC31100450	SBC32200450
500	SBC30240500	SBC30480500	SBC31100500	SBC32200500
550	SBC30240550	SBC30480550	SBC31100550	-
600	SBC30240600	SBC30480600	SBC31100600	-
650	SBC30240650	SBC30480650	SBC31100650	-
700	SBC30240700	SBC30480700	SBC31100700	-
800	SBC30240800	SBC30480800	SBC31100800	-
1000	SBC30241000	-	-	-
1200	SBC30241200	-	-	-

STALLION BATTERY CHARGER(SBC) - PHASE - VOLTAGE - CURRENT

* Other voltage range available on request

Selection Chart





The Sanand Manufacturing Works

State-of-the-Art Power Electronics Products Manufacturing Facility

About Hitachi Hi-Rel Power Electronics

High-Precision Manufacturing

Hitachi Hi-Rel Power Electronics (HHPE) stands as an essence of reliability and innovation within the power electronics domain, delivering comprehensive solutions for the most critical infrastructure and diverse industries. Established in 1983 as Hi-Rel Electronics Pvt. Ltd., our journey evolved significantly in 2015 when we became a 100% subsidiary of Hitachi, Japan, a Global Fortune 500 company. Today, Hitachi Hi-Rel empowers a diverse range of industries and organizations worldwide, enabling them to meet mission-critical applications demands through technologically superior, environmentally conscious and innovative power electronics products and solutions.

We are a pioneer with over four decades of unparalleled experience in power electronics and our vision, "To be recognized as the most trusted Power Electronics Company by supplying superior products and services," guides our operations. This vision has cultivated a significant level of trust within the Indian power electronics market and beyond. We are a leading manufacturer renowned for our specialized offerings Industrial UPS, IT & Infra UPS, Drives (VFDs), Solar Inverters and Railway Products.

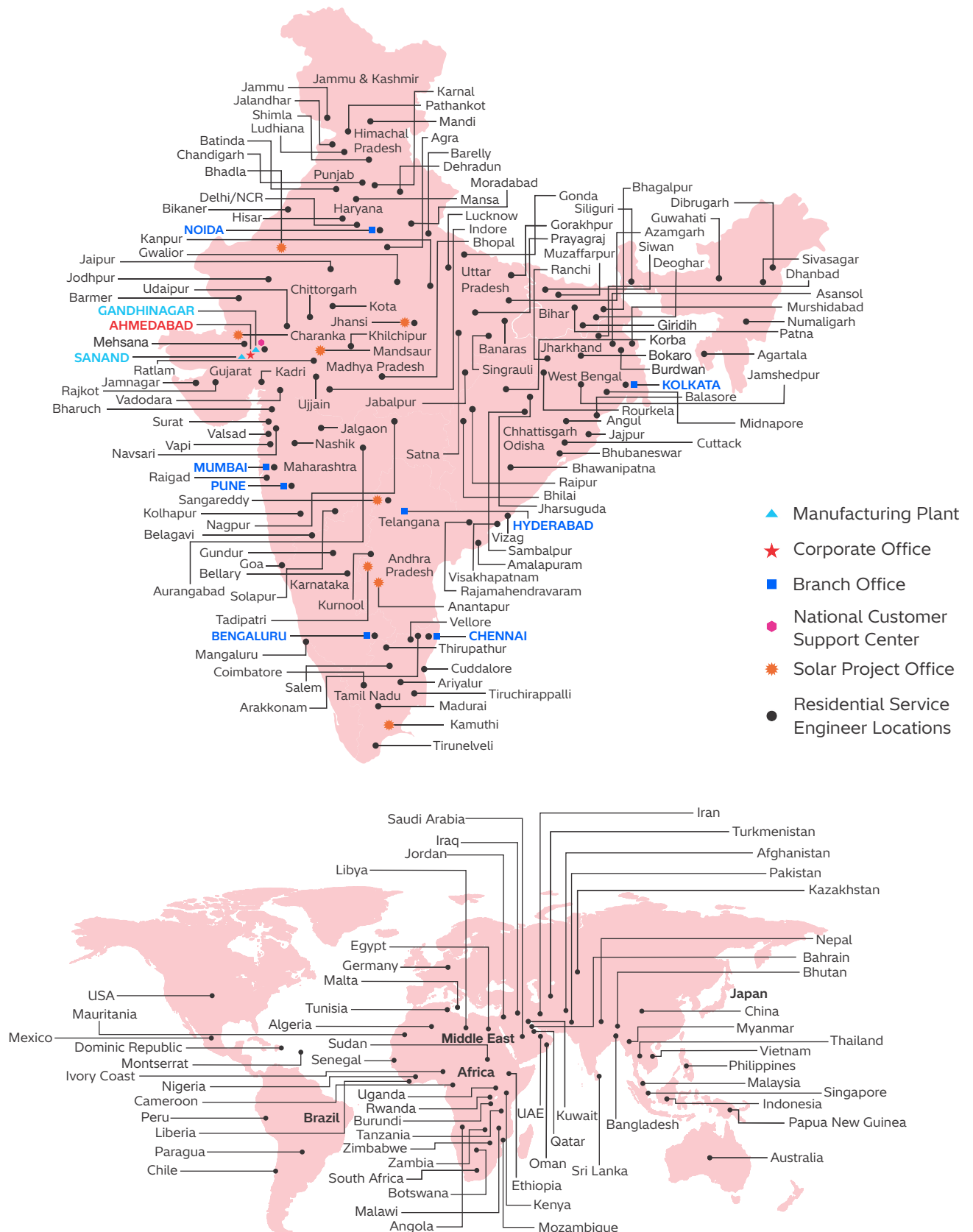
Our unwavering commitment to excellence is validated by approvals from leading consultants and EPC players. We operate a world-class, state-of-the-art manufacturing facility in Sanand, India, and our National Customer Support Centre in Gandhinagar, India ensures robust post-sales assistance and exceptional service uptime. Hitachi Hi-Rel is a testament to quality and operational excellence, holding ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and ISO/IEC 27001:2022 certifications and recognized as a "Great Place to Work". Our extensive sales network and robust service infrastructure reach globally, establishing a strong presence in markets across South East Asia, the Middle East, Africa and Brazil.

Powering Continuity. Driving Sustainability.

Global Footprint and Reach

Delivering Critical Power Solutions Worldwide

We are a key manufacturing hub for global power electronics solutions, capable of meeting diverse international requirements. Our ability to supply specialized, high-reliability products to various industries across international territories reinforces our commitment to serve critical loads globally.



Hitachi Hi-Rel Power Electronics Pvt. Ltd.

Delivering Advanced Power Electronics Solutions that empower Industries and sustain Progress.

Registered Office: B-52, Corporate House, Near Judges Bungalow, Bodakdev, Ahmedabad - 380054, Gujarat, India. Phone: +91-79-66046200

Sanand Works: Plot No. SM 3 & 4, Sanand GIDC II, Industrial Estate, Bol Village, Sanand - 382170, Gujarat, India. Phone: +91-2717-678777

Gandhinagar Facility: B-14/1 & 171, GIDC Electronics Zone, Sector - 25, Gandhinagar - 382028, Gujarat, India. Phone: +91-79-61700500

www.hitachi-hirel.com