Quality Energy Provider

AC & DC Power System for industrial application

- AC/DC RECTIFIERS BATTERY CHARGER
- INDUSTRIAL UPS
- DC/AC INVERTERS

- DC/DC CONVERTERS
- POWER STATION SUPPLY
- STATIONARY RAILWAYS SUPPLY

- FREQUENCY CONVERTERS
- LOW VOLTAGE DISTRIBUTION PANELS
- POWER SYSTEMS FOR GAS & OIL APPLICATION

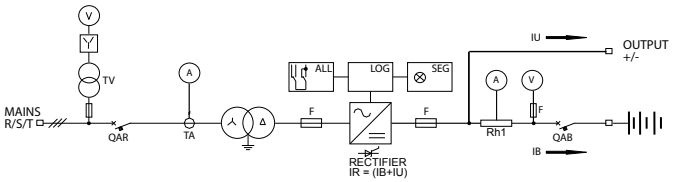
AC e DC POWER SYSTEM

AC/DC RECTIFIERS BATTERY CHARGER

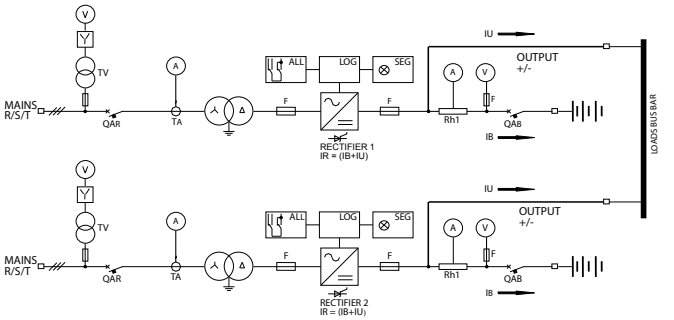
The **RECTIFIER BATTERY CHARGER SERIES** is an industrial type designed to supply critical DC loads and to recharge any type of battery (Ni-Cd, Sealed or Vented Pb). All the AC/DC converter systems are developed as requirements of our customer, operating with long experience acquired in the industrial fields.

G-Tec Group is able to satisfy every required application still keeping high reliability of the plant and assuring a full test of devices before shipping.
A wide selection of systems is available with output voltage range from 24Vdc to 220Vdc and output current up to 1000A.
For the lower powers as AMS Series we use switching AC/DC modules and for large capacity as SME we use SCR technologies based on 6pulses or 12pulses total controlled by microprocessor.

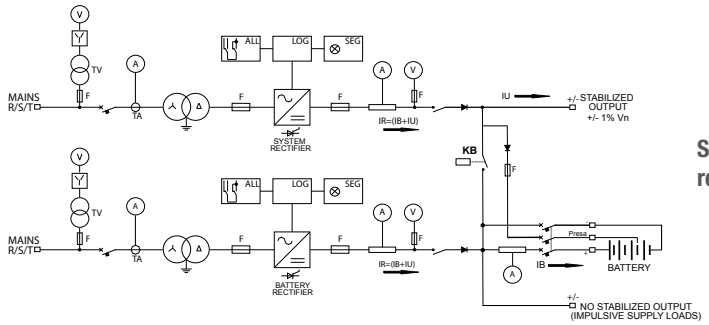
The equipments are installed inside free standing self supporting cabinets with LCD display. The enclosure and the structure are made of steel, the standard mechanical protection degree is IP30 with closed door, but we could provide up to IP54 studying the cooling specifications. All the access is frontal and all parts are easy for replacing.
Different requirement will be treated as optional so that they will be designed and verified in production.
The rectifiers will be designed as single branch, redundant single branches or double branches.



SME or AMS Series Single branch rectifier



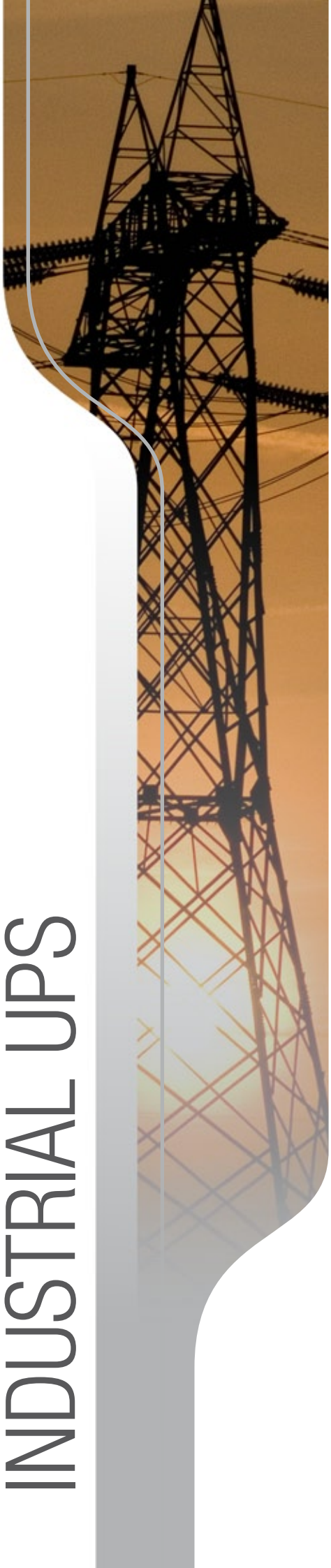
SME or AMS Series Redundant single branch rectifiers



SEE Double branch rectifier

SME Series Rectifier Specifications

SIZE (A)		60	80	100	120	150	200	300	400	500	600	800	1000
Input voltage (Vac)		400 ± 10% 3 wires (other voltages are availlable on request)											
Input frequency		47 ÷ 63Hz											
Input current distortion at nominal load (THD%)		≤ 27% with 6 pulse bridge (standard) ≤ 12% with 12 pulses bridge (on request) ≤ 6% with 12 pulse bridge + input THD filter (on request)											
Pulse power bridge		6	6	6	6	6	6	6	6	6	6	12	12
Rated Output Voltage		24, 48, 110, 125, 220 Vdc											
Output voltage (Vdc) floating		2,2 ÷ 2,3 V/cell for Lead battery (adjustable) 1,4 ÷ 1,5 V/cell for NiCd (adjustable) Thermal compensation for sealed lead battery (on request)											
Output voltage (Vdc) Boost		2,4 ÷ 2,45 V/cell for Lead battery (adjustable) 1,5 ÷ 1,65 V/cell for NiCd (adjustable)											
Output voltage (Vdc) Equalizing		up to 2,7 V/cell for Lead battery up to 1,65 V/cell for NiCd battery Forced boost push button (on request)											
Equalizing		Forced boost push button (on request)											
Output ripple		≤ 1% rms											
Overload capability		< 120% for 20 min; <150% for 2 min; > 150% for 20 sec.											
Battery recharging system		DIN 41773											
Efficiency (%)		≥ 93 at full load											
Cable wiring		N07V-K											
ENVIRONMENTAL DATA													
Acustic noise level (according EN 50091)		< 65dB											
EMI		EN 62040-2 (CE Label) restricted											
Operating Temperature (°C)		-0 … +40											
Storage Temperature (°C)		-20 … +70											
Relative Humidity (non condensating)		< 95% (with tropicalization on request)											
Cooling		Natural											
Altitude (mt above see level)		≤ 1000 (de-rating according CEI EN 62040-3)											
MECHANICAL DATA													
Protection degree (IEC529)		IP30 (IP20 inside) - Other on request											
Painting colour and type		RAL 7035 (grey), ≥ 60µm, 40 gloss, Orange peel (other on request)											
Dimensions (mm)	W	600	600	600	600	800	800	1000	1000	1000	2000	2000	2400
	D	600	600	600	800	800	800	800	800	800	1000	1000	1000
	H	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100
Input/output cable connection		Bottom side (Top Side on request)											
Transport		Base provided : for forklift handling (for lifting belts and balancing hooks- on request											
Transport mechanical stress		According to EN 62040 - Resticted											
Installation		30cm from ceiling Air inlet from the front . Air outlet from the top and rear											
Accessibility		Front (not rear access - on request with cabinet extension											



INDUSTRIAL UPS

DPS Uninterruptible Power Supplier in Digital Technology

DPS provides maximum protection for mission-critical in industrial application thanks to outstanding mechanical and electrical design.

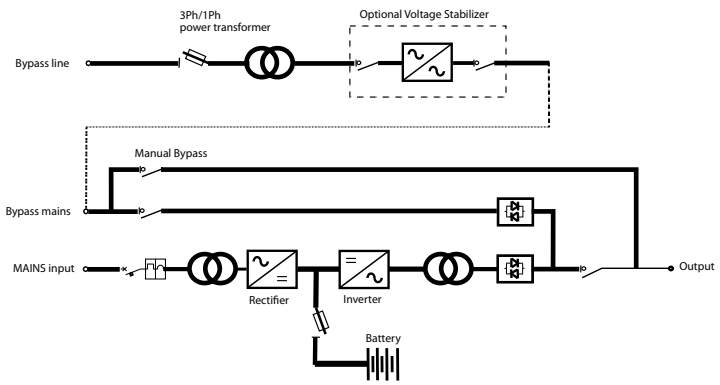
The **DPS SERIES** runs from 10 to 400kVA and uses double conversion ON-LINE technology (VFI) with inverter transformer based. The load is powered continuously by the inverter with a filtered, stabilized and regulated sine-wave supply. The input and output EMI filters considerably increase the immunity of the load to mains disturbance and surges. DPS is supplied with the LMS100 software as standard and can be remotely monitored using LMS-NET software from anywhere. DPS can have a different battery voltage dependent from plants or a custom technical specification. DPS can be configured on the customer request.

MAIN FEATURES

- Flexible and robust design
- Full DIGITAL microprocessor controls
- LCD and mimic multifunction control panel
- IGBT Technology (PWM) transformer based
- Input galvanic isolation
- Reduced output THD with not linear load
- EPO Emergency Power Off
- Up to 8 units in parallel
- Efficiency > 98% in Economy Mode configuration
- Intelligent management for Ni-Cd, Sealed, Wet battery type
- Temperature compensation for battery voltage

MAIN OPTIONS

- Bypass isolation transformer with additional voltage regulator
- Input filter to reduce the THD
- Redundant ventilation
- 12 Pulse rectifier
- AC/DC Distribution panel as customer requirements
- Battery circuit breaker in EEXD protection box
- Earth fault alarm
- Internal lighting and heater
- Communication Interface: SNMP, MODBUS, Serials protocols



DATA SHEETS DPS-TM; DCBUS 110Vdc

SIZE (KVA)	5	10	15	20	30	40	50
Active power (KW)	4	8	12	16	24	32	40

Input voltage (Vac)	400Vca (±10%) 3ph
Input frequency	47 ÷ 63Hz
Mains system configuration	TN, TN-C, TN-S, TN-C-S, TT, IT

Voltage DC bus	110Vdc

	Input current distortion at nominal load (THD%)	≤ 27% with 6 pulse bridge (standard) ≤ 12% with 12 pulses bridge (on request) ≤ 6% with 12 pulse bridge + input THD filter (on request)						
RECTIFIER	Pulse power bridge	6	6	6	6	6	6	6
	Output Current (A)	49	96	143	190	285	376	470
	Input Current (A)	11	22	33	43	64	85	106
	Input Power (KVA)	8	15	25	30	45	60	75
	Efficiency (%)	92	93	93	93	94	94	94
BATTERY	Battery Capacity (AH) (Backup time 30 min.)	37/50	75/100	125	150/200	250	400	400/500
	Battery Charger Current (A)	7	14	21	29	43	56	70
INVERTER	Input Voltage (Vdc)	95 ÷ 165						
	Output Voltage (Vac)	1Ph 115 (110-120) or 230 (220-240)						
	Output frequency	50-60Hz						
	Frequency stabilization without mains	± 0,05 %						
	Frequency slew rate	±2 % default (selectable ± 1% /± 5% by display)						
	Rated Output Current (A) 230/115V	17/35	35/70	52/104	70/139	104/209	139/278	174/348
	Input Power (KW)	4,6	9,2	13,6	18,2	27,3	35,9	44,9
	Efficiency (%)	86	87	88	88	88	89	89
	Voltage Stability	1% static; 5% dinamic with reset to 1% in 40ms						
	Total Harmonic Distor-sion (THD)	1,5% linear Load 5% not linear load according to CEI EN 62040-3						
	Crest Factor	3:1 without power derating						
	Overload	125%Pn x 10 min.; 150%Pn 1 min.						

TOTAL EFFICIENCY (%)		79	81	82	83	83	84	84
Dimensions (mm)	W	1200	1200	1400	1400	1600	1600	1800
	D	600	600	600	800	800	800	800
	H	2100	2100	2100	2100	2100	2100	2100

GENERAL DATA	
Acustic noise level (according EN 50091)	≤ 65db
Cooling	Natural
Protection degree (IEC529)	IP30 (IP20 inside) - Other on request

DATA SHEETS DPS-TM; DCBUS 220Vdc

SIZE (KVA)	5	10	15	20	30	40	50	60	80	100
Active power (KW)	4	8	12	16	24	32	40	48	64	80

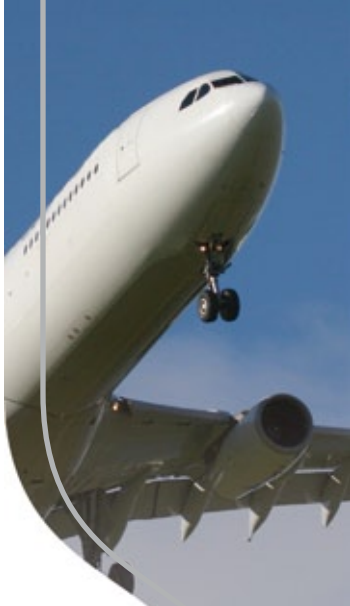
Input voltage (Vac)	400Vac (±10%) 3ph
Input frequency	47 ÷ 63Hz
Mains system configuration	TN, TN-C, TN-S, TN-C-S, TT, IT

Voltage DC bus	220Vdc

	Input current distortion at nominal load (THD%)	≤ 27% with 6 pulse bridge (standard) ≤ 12% with 12 pulses bridge (on request) ≤ 6% with 12 pulse bridge + input THD filter (on request)									
RECTIFIER	Pulse power bridge	6	6	6	6	6	6	6	6	6	6
	Output Current (A)	24	47	69	92	136	182	227	270	360	450
	Input Current (A)	11	21	31	42	61	82	101	120	160	200
	Input Power (KVA)	8	15	22	30	43	60	70	85	111	140
	Efficiency (%)	92	93	93	93	94	94	95	95	95	95
BATTERY	Battery Capacity (AH) (Backup time 30 min.)	25	37/50	65	80	120	150/200	200	250	400	400/500
	Battery Charger Current (A)	4	7	10	14	20	27	34	40	54	67
INVERTER	Input Voltage (Vdc)	176 ÷ 325									
	Output Voltage (Vac)	1Ph 115 (110-120) or 230 (220-240)									
	Output frequency	50-60Hz									
	Frequency stabilization without mains	± 0,05 %									
	Frequency slew rate	±2 % default (selectable ± 1% /± 5% by display)									
	Rated Output Current (A) 230/115V	17/34	35/70	52/104	70/139	104/209	139/278	174/348	209/417	278/557	348/696
	Input Power (KW)	4,5	8,9	13	17,5	26	34,7	43,4	51,6	68,8	86
	Efficiency (%)	88	89	91	92	92	92	92	93	93	93
	Voltage Stability	1% static; 5% dinamic with reset to 1% in 40ms									
	Total Harmonic Distorsion (THD)	1,5% linear Load 5% not linear load according to CEI EN 62040-3									
	Crest Factor	3:1 without power derating									
	Overload	125%Pn x 10 min.; 150%Pn 1 min.									

Total Efficiency (%)		81	83	85	85	86	86	87	88	88	88
Dimensions (mm)	W	1400	1400	1400	1400	1400	1400	1400	1800	1800	1800
	D	800	800	800	800	800	800	800	800	800	800
	H	2100	2100	2100	2100	2100	2100	2100	2100	2100	2100

GENERAL DATA	
Acustic noise level (according EN 50091)	≤ 65db
Cooling	Natural
Protection degree (IEC529)	IP30 (IP20 inside) - Other on request



DC/AC INVERTERS

The **INVERTER SERIES** is an industrial type of DC/AC converter with 110Vdc or 220Vdc inputs and 110/220Vac 1phase or 380/400/415Vac 3phase as standard, others application can be designed as customer requirements when possible.

All the inverters are built in IGBT power conversion bridge with PWM modulation and transformer based, as request a thyristor static switch can be included to allow automatic transfer to the emergency line and the manual bypass for maintenance operation.
The system is designed to feed critical AC loads with stabilized continuous supply; the high frequency commutation bridge assures to supply non-linear load minimizing harmonic distortion of the output voltage.

The fully digital microprocessor controls the power conversion and the enclosure has an integrated LCD and mimic panels for status and measurements.

The not standard requirements are designed under customer specification for different IP protection, additional alarms and output distribution panels.

FREQUENCY CONVERTERS

The **STATIC FREQUENCY CONVERTERS**, FC Series, allow output voltage at frequency 16 2/3 Hz or 400Hz for railways and airfield applications from the standard voltage ranges.

To complete our devices for airfield application, constant current regulators for lighting system and 28.5Vdc feeder for the engine starter are available.

All of our equipments distinguish themselves by the employment of advanced technological components, excellent reliability and easy maintenance. The simplicity of working is the main feature of all of our products.

FREQUENCY CONVERTER

G-Tec Group is also present worldwide with Business Partners in several countries.

G-Tec Europe Srl in Vicenza – Italy

G-Tec Asia Pacific Pte Ltd in Singapore

Quality Energy Provider

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