

Working in Power



AP160^{Series}

online UPS COMPACT

Rack-tower convertible

1, 2, 3, 6 & 10 kVA UPS (1/1)

10, 15, 20 kVA UPS (3/1)

10, 15, 20, 30, 40 kVA UPS (3/1 & 3/3)

- LOCAL AREA NETWORKS (LAN)
- SERVERS
- DATA CENTERS

- INTERNET CENTERS (ISP/ASP/POP)
- INDUSTRIAL PLCs
- EMERGENCY DEVICES (LIGHT, ALARM)

- ELECTROMEDICAL DEVICES
- TELECOMMUNICATION DEVICES
- INDUSTRIAL APPLICATION

AP160 Series

G-TEC is proud to extend the product capacity of AP160 Series UPS, with higher performance and affordable in its class with high reliability; power available; high power density and efficiency to safe guard your valuable data and mission critical equipment from power disturbances.

Today's mission critical equipment such as IT infrastructure, industrial devices, medical equipment, blade servers; VOIP; PoE, laboratory equipment, emergency voice announcement systems and etc, are demanding reliable power supply as down time and system recovery is not affordable. AP160 Series rack/ tower convertible is most suitable for different application.

AP160 Series rack/ tower convertible UPS is a double conversion true on-line high efficiency designed UPS to ensure regulated sinusoidal voltage and frequency is supplied to the load despite whatever input power coming into the UPS, such as power surges; transient spike; power dips, electrical noise or even power blackout. The regulated UPS output supply meets all standards demanded by the critical load.

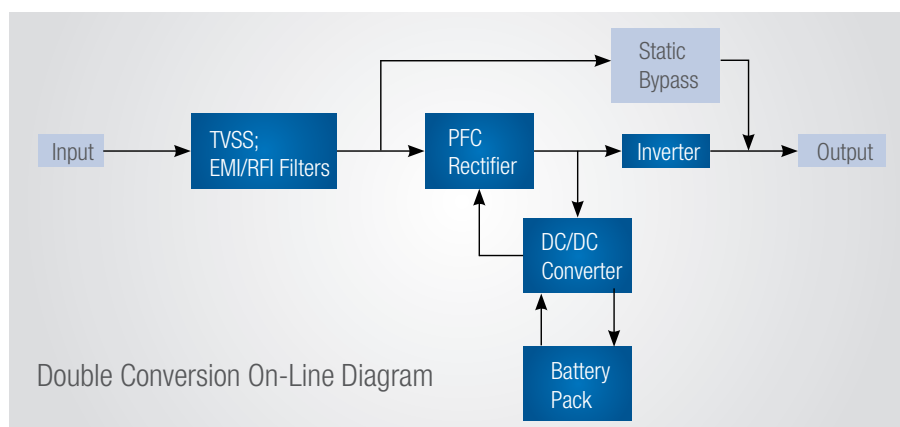
The new G-TEC higher power single phase rack/ tower UPS includes:

AP160+6K/ 10K UPS for single phase (1/1)

AP160+10KS/ 15KS/ 20KS for three-single phase (3/1)

AP160+10KS/ 15KS/ 20KS/ 30KS/ 40KS Pro for three-three/ three-one (3/3, 3/1)

They are designed with unity power factor (PF1), enabling them to support more power than similar UPS with lower power factor.



Rack-Tower Convertible

AP160 Series 1kVA to 40kVA rack tower convertible can be easily adapted and installed to different environment. LCD display panel can be adjusted.

AP160 Series

AP160 Series rack/ tower convertible UPS provide standard backup time as well as optional battery packs for extended battery run-time solutions.



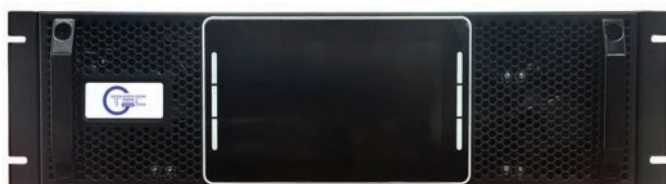
AP160i - 2K & 3K UPS



AP160+6KS & 10KS UPS



Battery Box



AP160+10-30 Pro (10-30 kVA)



AP160+6K & 10K UPS

1kVA to 3kVA 1/1



- LCD Display
- Function Button
- ON/OFF Button

STRONGEST PERFORMANCE

- DSP technology fully controlled
- Self monitoring and fault diagnosis
- Lowest output voltage distortion
- Transient voltage surge suppressor (TVSS)
- Short circuit protection

HIGH POWER DENSITY

- Wide input voltage range
- 0.9 output power factor
- Input power factor connection and lowest current distortion

FLEXIBLE SETTINGS

- Selectable configuration via LCD: online, eco-mode
- EPO connector for remote emergency power off
- External battery connection for KS model
- Simplified installation

6kVA to 40kVA UPS FEATURES

HIGHER OUTPUT POWER (6KVA - 40KVA)

- UPS is designed with output unity power factor (PF1), more real power for load.

EXCELLENT RELIABILITY

- Designed with DSP technology and tropicalized costed PCBs for maximum reliability.

USER FRIENDLY ADJUSTABLE PARAMETERS

- With proprietary computer monitoring software, voltage; frequency; Battery EOD voltage; UPS shutdown and shutdown timing setting; battery testing; transfer & re-transfer etc, can be set and adjusted to achieve the maximum desire UPS performance.

UPS PARALLELING

- 6kVA & 40kVA can be paralleled up to 4 units to achieve redundancy and increase power capacity.

USER FRIENDLY LARGE LCD DISPLAY

- LCD display segment can rotate 90° to ease readout easier in rack or tower installation; all electrical measurements and power consumption can be read from the display.

EXTENDED BATTERY RUNTIME

- Optional battery pack is available to increase battery runtime for hours in case of emergency.

COMPREHENSIVE REMOTE COMMUNICATION

- AP160+6K to 20K UPS are designed with dual intelligent slots for optional SNMP & and contact cards for additional remote communication options. AP160+10 to 40 Pro comes with standard built-in dry contact.

INTELLIGENT FAN SPEED CONTROL

- UPS is featured with automatic fan speed regulation dependent on load rate, input voltage & working mode

DIGITAL CONTROL, FLEXIBLE BATTERY MANAGEMENT

- UPS is designed with fully digitized flexible battery management system, battery quantity can be adjusted at user friendly mimic panel.

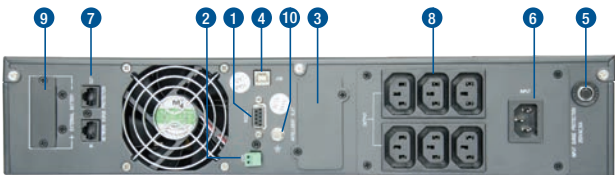
SELF AGING, POWER CIRCULATION FEATURE

- UPS is featured with this function to enable simulation of UPS testing can be done without load connected.

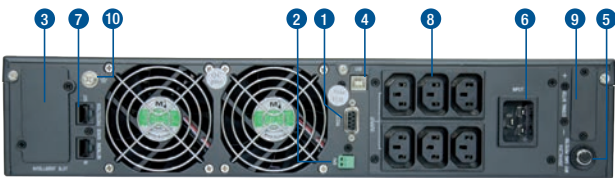
AP160 Series

1kVA to 10kVA

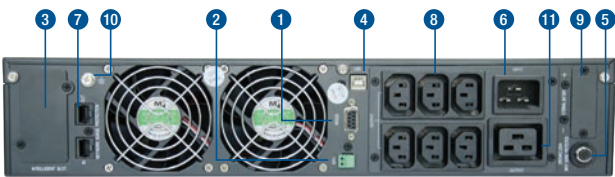
Overview of UPS rear panel for external connection.



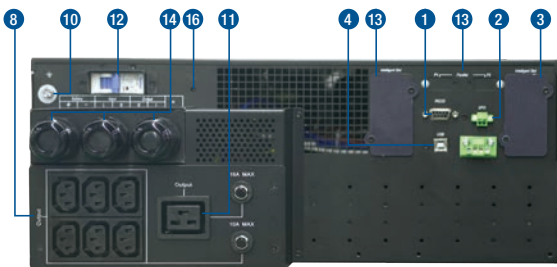
AP160i - 1K rear panel



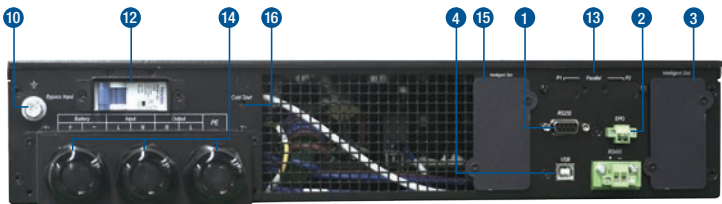
AP160i - 2KS rear panel



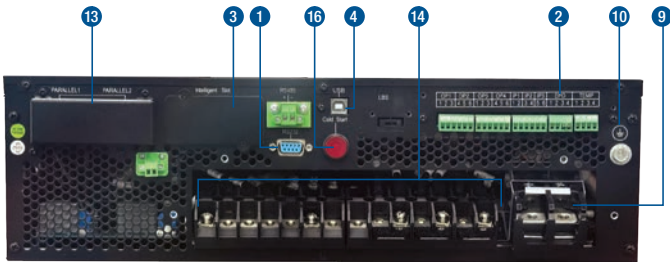
AP160i - 3KS rear panel



AP160+6K & 10K rear panel

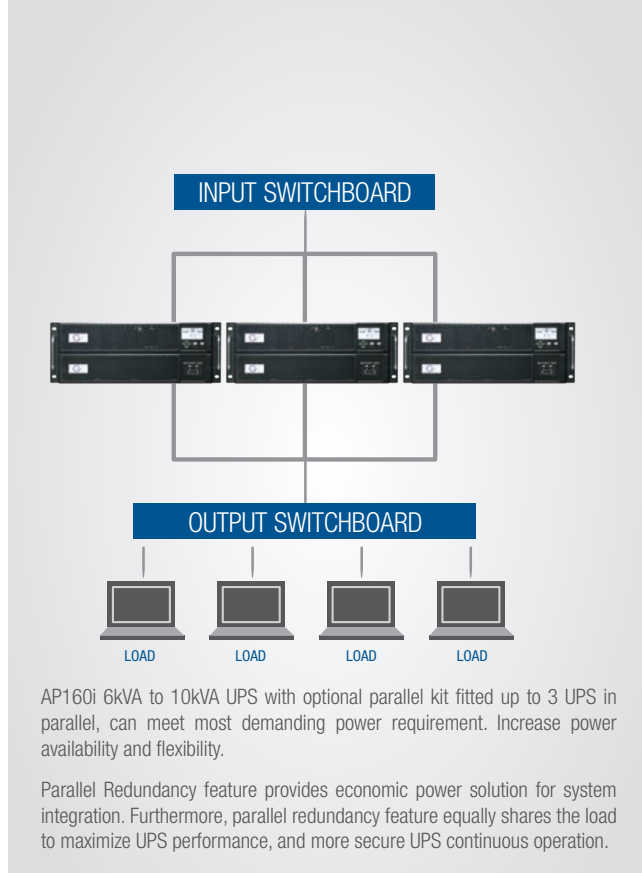


AP160+6KS & 10KS rear panel

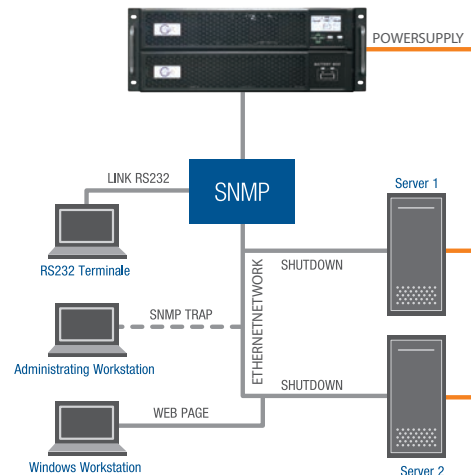


AP160+10K to 40KS Pro rear panel

Description	
1	RS232 communication DP9 port
2	EPO, normally close
3	Intelligent slot for SNMP/ AS400 card
4	B type USB port
5	Input surge protection
6	Power cord input socket
7	Network surge protection
8	10A Output socket C13
9	External battery port
10	Battery ground
11	16A output socket C19
12	Input circuit breaker
13	Optional parallel port
14	Input and output cable entry
15	Intelligent slot for SNMP
16	Battery Cold Start



Direct Connection with Ethernet Network



Communication and Power Management Solutions

With optional SNMP card, it has the function to remote monitor and control UPS, warning notifications through broadcast and mobile phone, multi-shutdown PCs, and schedule UPS self-test. This unique software provides complete power protection for computer system during power failure. The software supports lots of O/S including Windows family, Linux, FreeBSD. More than that, to offer increased benefits for our customers, we have also released USB version MAC version on the internet.

Options and Accessories



UPS management card DY807 NetAgent 9 SNMP card is featured with the followings:

- Real Time UPS monitoring
- Comprehensive UPS management and flexible configuration via Web Browser, NMS, Telnet, SNMP
- IPv6 Supported
- Encryption of HTTPS, SSL, SSH, SNMPv1/v2/v3
- Centralized authentication by Radius
- Event notification via Email, SMS, Trap
- Environmental sensors supported via USB (Temperature, Humidity, Water, Smoke, Door/Windows)
- Standard UPS MIB, RFC1628, PPC MIB
- Multi-languages supported
- Schedule periodic UPS self-tests
- Record event / data log
- Graceful shutdown operating system



Flexible AS400 card designed with 6 I/O contacts offering two (2) different connections; i.e.DB9 serial port and phoenix terminator solutions to accommodate different connection for UPS remote monitoring.

Status monitoring includes:

- UPS failure
- General alarm
- Load on Bypass
- Battery low
- Normal condition
- Mains fail



63A External Maintenance Bypass PDU



Accessories are available to suit different installation method
Guide rail for rack mounting
Support base and spacer for tower standing

	TECHNICAL SPECIFICATIONS												
Model	AP160i-1K	AP160i-1KS	AP160i-2K	AP160i-2KS	AP160i-3K	AP160i-3KS	AP160+6K	AP160+6KS	AP160+10K	AP160+10KS	AP160+10KS (3/1)	AP160+15KS (3/1)	AP160+20KS (3/1)
Power Rating (kVA / kW)	1 / 0.9		2 / 1.8		3 / 2.7		6 / 6		10/ 10			15/ 15	20/ 20
	INPUT												
Rated Voltage	200Vac / 208Vac/ 220Vac / 230Vac / 240Vac						220Vac / 230Vac / 240Vac 200Vac / 208Vac (PF 0.9)			380Vac/ 400Vac/ 415Vac			
Voltage Tolerance (L to N)	>176V for 100% load; >154Vac for 80% load; >132Vac for 70% load; >110Vac for 50% load						>176V for 100% load; >154Vac for 90% load; >132Vac for 75% load; >110Vac for 50% load						
AC Input Connector	IEC C14 power cord		IEC C20 power cord				Terminal block						
Frequency Range	40Hz – 70Hz												
THDi%	<3.6% at full load						<4% at full load						
Power Factor	≥0.98 (input 220V, full RCD load)						≥0.99						
	OUTPUT												
Rated Voltage	200Vac / 208Vac/ 220Vac / 230Vac / 240Vac						220Vac / 230Vac / 240Vac 200Vac / 208Vac (PF 0.9)						
Voltage Regulation	±1%												
Frequency	50/ 60 Hz ±5Hz (synchronizing) / 50/ 60 Hz ±0.1Hz (free running)						50/ 60 Hz ±5Hz (synchronizing) / 50/ 60 Hz ±0.1% (free running)						
Crest Factor	3:1												
Harmonic Distortion (THDv)	≤2% linear load / ≤5% non-linear load						≤1% linear load / ≤5% non-linear load						
Power factor	0.9						1						
Output Connection	6 x C13		6 x C13		6 x C13& 1 x C19		6 x C13, 1 x C19 & terminal block	Terminal block	6 x C13, 1 x C19 & terminal block	Terminal block	Terminal block		
	BATTERY												
Type	VRLA						Lithium (LiFePo4) &VRLA						
Rating (VRLA)	7Ah	See note	7Ah	See note	7Ah	See note	7Ah	See note	9Ah	See note	See note		
Numbers of Batteries	3		6		8		16		16				
Backup Time (typical load)	> 6 mins		> 6 mins		> 6 mins		> 8 mins		> 8 mins				
Recharge Time	6 hours to 90% of battery capacity for internal battery model For KS model depending on battery Ah and quantity												
	GENERAL CHARACTERISTICS												
Efficiency (online mode)	89.6%		90.3%		90.6%		95%						
Dimensions LxDxH (mm)	440 x 430 x 86 (2U)		440 x 480 x 173 (4U)	440 x 480 x 86 (2U)	440 x 480 x 173 (4U)	440 x 480 x 86 (2U)	440 x 660 x 173 (4U)	440 x 660 x 86 (2U)	440 x 660 x 173 (4U)	440 x 660 x 86 (2U)	440(L) x 730(D) x 173(H)		
Weight UPS case (kg)	13.5	8	28	9.5	33	10.5	62.5	16	43	18	30		
Operating Temperature	0-40° C												
Humidity	0-95% (non-condensing)												
Noise Level (dBA @ 1m)	<50		<55				<58			<55	<62		
Standard Interface	Intelligent slot; RS232; USB						Dual intelligent slots; RS232/485; USB						
Interface for Intelligent Slot	SNMP / AS400 dry contact												
Compliance	IEC62040-1-1; IEC62040-2 Class A; IEC61000-4-2 level 4; IEC61000-4-3 level 3; IEC61000-4-4 level 4; IEC61000-4-5 level 4; IEC61000-2-2												

Note: 1) Battery for KS model is external and its Ah rating & quantity shall depending on battery runtime.
2) Product specifications are subject to change for upgrading without prior notice.

	TECHNICAL SPECIFICATIONS				
Model	AP160+10KS Pro	AP160+15KS Pro	AP160+20KS Pro	AP160+30KS Pro	AP160+40KS Pro
Power Rating (kVA / kW)	10 / 10	15 / 15	20 / 20	30 / 30	40 / 40
	INPUT				
Rated Voltage	380V/ 400V/ 415V, 3 phase + N + E				
Voltage Tolerance	>304V(L-L) for 100% load; >228Vac(L-L) for 75% load;				
AC Input Connector	Dual input, M6 terminal block (common neutral internally)				
Frequency Range	40Hz – 70Hz				
THDi (%) / PF	<3% / 0.99 linear load				
	OUTPUT				
Rated Voltage	380V/ 400V/ 415V, 3 phase + N + E / 220V/ 230V/ 240V + E				
Voltage Regulation	±1%				
Frequency	50Hz / 60Hz ±0.1%				
Crest Factor	3:1				
Harmonic Distortion (THDv)	≤1% linear load / ≤5% non-linear load to IEC 62040-3				
Overload	110% for 60mins; 125% for 10mins; 150% for 60sec; >150% for 200ms				
Power Factor	1				
Output Connection	M6 terminal block				
	BATTERY				
Type	Lithium (LiFePO4) & VRLA				
DC Volt nominal	VRLA ±240Vdc adjustable / Lithium (LiFePO4) to consult GTEC				
Recharge Time	Depending on battery Ah and quantity				
	GENERAL CHARACTERISTICS				
Efficiency (online mode)	Up to 96%				
Dimensions LxDxH (mm)	440 x 774 x 130 (3U)				440 x 788 x 175 (4U)
Weight UPS (net) kg	27	28	29	38	
Mimic Panel	7" colour touch screen & LED				
Operating Temperature	0-40° C				
Humidity	0% - 95% non-condensing				
Noise Level (dBA @ 1m)	65dBA @ 100% load / 62dBA @ 45% load				
Standard Interface	Dry contacts; USB, RS232/485; Intelligent slot, parallel port				
Interface for Intelligent Slot	SNMP				
Compliance	IEC62040-1-1; IEC62950-1; IEC62040-2 (C3); IEC62040-3; IEC61000-4-2 (ESD); IEC61000-4-3 (RS); IEC61000-4-4 (EFT); IEC61000-4-5 (Surge)				

Note: 1) Battery for KS model is external and its Ah rating & quantity shall depending on battery runtime.
2) Product specifications are subject to change for upgrading without prior notice.

UPService can provide customers with:

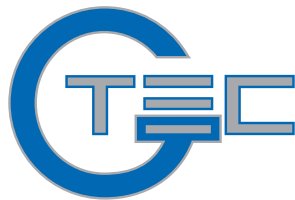
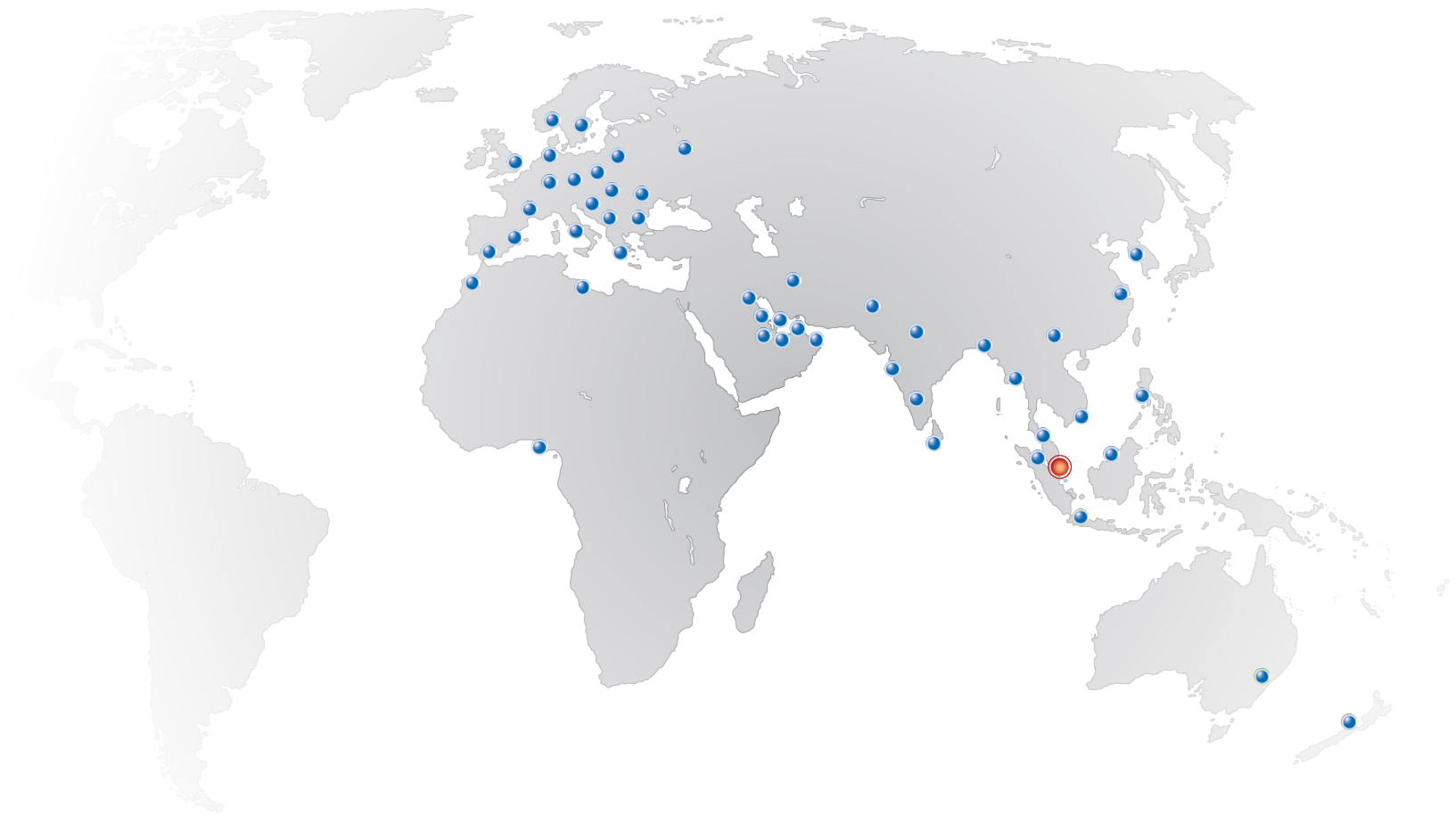
- A dedicated CALL CENTRE for connection to the UPService organisation. UPService personnel are always available and ready to provide advice and assistance regarding UPS installation, maintenance, fault finding and repair.
- FAST & READY A fast repair on site is guaranteed through the use of state-of-the-art UPS technology and the professionalism of the UPService personnel and Authorised Assistance Centres. UPService guarantees that failed parts are replaced with original ones, tested and updated in order to maintain the safety, reliability and operating characteristics of the UPS.
- COMMISSIONING AND START-UP UPService can provide assistance during commissioning and startup of the UPS equipment on-site with additional training during handover to site personnel. UPService engineers can also verify site suitability, analyse and advise on potential problems, and disconnect and relocate equipment. UPService recommend that all hardwired installations are commissioned by UPService engineers.
- MAINTENANCE CONTRACTS can be provided by UPService to minimise response times and repair costs. Contracts range from periodic inspections to comprehensive cover including labour and materials.

- UPService organises regular TECHNICAL TRAINING COURSES for UPS operators and installers.

TECHNICAL ASSISTANCE SERVICE

UPService, our technical assistance facility uses highly trained engineers to provide a reliable and competent technical support and after-sales service.

G-Tec Asia Pacific Pte Ltd



Working in Power

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