DISCOVERY

10-120 kVA

STAND ALONE THREEPHASE UPS

1:1 3:1 3:3

The ideal solution for:

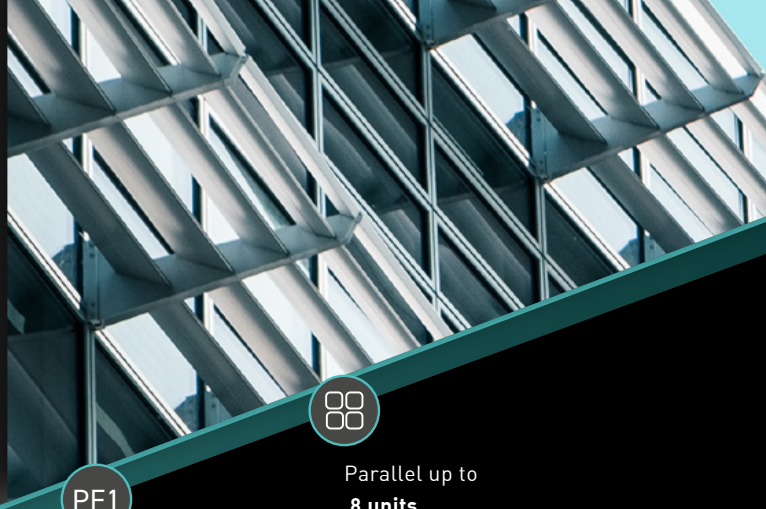
- ✓ *DATA CENTER*
- ✓ *TELECOMMUNICATIONS*
- ✓ *SMALL/MEDIUM ENTERPRISES*
- ✓ *TRANSPORTS*
- ✓ *HOSPITALS*

GTEC
Smart Energy Solutions

OVERVIEW

DISCOVERY is the stand-alone three-phase UPS characterised by an **extremely compact and at the same time highly performing state-of-the-art structure**.

The system, while guaranteeing extremely small dimensions, is designed and manufactured with state-of-the-art technology and components and provides excellent performance such as the **Power Factor 1 output and an efficiency at full load level up to 96.2% in Normal Mode**.



Parallel up to **8 units**

PF1

Power Factor 1 on the entire range

Display **Touch Screen**

Efficiency up to **96,2%**

Configurability **3:3**, **3:1**, **1:1**

PERFORMANCE ELEVATE

DISCOVERY delivers superior performance over previous generations of medium-powered three-phase UPSs, such as the Power Factor 1 output and an **efficiency that reaches at full load 96.2% in Normal Mode**.

Full power is guaranteed regardless of the load power factor or operating temperature (full rated power available up to 40°C).

The system is also able to guarantee a **high overload capacity** (125% for 10 minutes, 150% for 1 minute) and short circuit (270% for 200 msec and 150% for 300 msec), so as to be able to independently manage any sudden load peaks, without the intervention of static bypass.

MINIMUM DIMENSIONS

DISCOVERY is the latest generation three-phase solution that is **extremely compact** and provides extremely high performance at the same time. Ground dimensions are only 0.32 m^2 on 10 – 60 kVA, or 13.6% less than the previous generation, and allows a significant reduction in the environmental impact due to transport, as well as the space occupied in the warehouse.

Likewise, **the weight of the UPS is very low**, thus bringing additional advantages related to the transport phases and in terms of the amount of material to be disposed of.

DISCOVERY is the result of a meticulous engineering work that, through the optimisation and miniaturisation of various components, has led to contain the volume in only 0.33 m^3 (10 – 60 Kva power range) and 0.66 m^3 (80 – 120 kVA power range), without compromising in terms of reliability and performance.

TECHNOLOGY

- **High frequency (18 kHz) three-level** IGBT inverter
- **Internal manual bypass**
- **Integrated dry contact board** with 5 programmable inputs and 4 programmable outputs
- **EPO Emergency System**
- **Digital Signal Processor (DSP)** dual core microprocessor
- Built-in standard **COLD START function**
- **Speed-controlled fans**
- **Fan failure monitoring** for the 60-120 kVA/kW power ratings

PRODUCT RANGE

DISCOVERY 10-60 KVA

The system is available in sizes 10, 15, 20, 30, 40 and 60 kVA.

The UPS is configurable in 1/1, 3/1 (up to 20 kVA) and 3/3 modes and provides rated output power (Power Factor 1).

Up to 2 strings of internal batteries can be installed in the standard configuration.

DISCOVERY 80-120 KVA

The system is available in sizes 80, 100 and 120 kVA.

The UPS is configurable in 3/3 modes and provides rated output power (Power Factor 1).

DISCOVERY 10-60 KVA: MODELS ON REQUEST

For special applications, and only on specific request, the DISCOVERY 10 – 60 kVA series is also available in the **SLIM (DSS)** version, with power sizes from 10 to 20 kVA, and in the **EXTRA (DSX)** version, with power sizes from 10 to 60 kVA.

	DSS DISCOVERY SLIM	DISCOVERY 10-60 kVA	DSX DISCOVERY EXTRA
RANGE	10 – 15 – 20 kVA	10 – 15 – 20 – 30 – 40 – 60 kVA	10 – 15 – 20 -30 – 40 – 60 kVA
DIMENSIONS	280 x 840 x 700mm (WxDxH)	380 x 850 x 1025mm (WxDxH)	440 x 840 x 1320mm (WxDxH)
VOLUME	Volume 0.17 m^3	Volume 0.33 m^3	Volume 0.49 m^3
FOOTPRINT	Footprint 0.24 m^2	Footprint 0.32 m^2	Footprint 0.37 m^2
BATTERIES	Up to 1x40 internal string	Up to 2x40 internal strings*	Up to 3x40 internal strings
IP CLASS	IP20	IP20	Fino a IP31
DOUBLE INPUT	No	Optional	Standard

* Up to 40 kVA

BATTERY MANAGEMENT

In addition to allowing expansion through external battery cabinets, DISCOVERY is designed to contain from 1 to 3 strings of 40 batteries each, in the power sizes from 10 to 60 k VA. On the entire range the UPS can also be equipped with an **increased battery charger** capable of delivering up to 30 Ampere, so as to also meet the demands for greater autonomy.

OPTIMISED CHARGING

The UPS provides **several battery charging methods** as standard: in addition to the one- or two-level voltage charging system, the cyclic charging system is also available, which allows to reduce the consumption of electrolytes and prolong the life of the batteries.

DISCOVERY to prevent excessive charging or overheating of the battery is also provided with compensation for charging voltage based on ambient temperature (optional).

EXTENDED DURATION

DISCOVERY is designed to ensure maximum battery life while maintaining long-term system performance. This is possible, for example, thanks to the **thermal probe option** and the **high-frequency battery charger**.

The **rectifier** has also been specially designed to operate within a wide range of input voltage, thereby reducing the frequency of battery discharge.

WIDE COMPATIBILITY

DISCOVERY is compatible with the most common sealed batteries with lead acid (VRLA), AGM and GEL, Open Vented batteries and nickel cadmium, and can also mount the most modern **lithium-ion batteries** (Li-ion) or supercapacitors (on request).

DIAGNOSTIC TESTS

DISCOVERY not only offers the ability to run **battery tests** to diagnose any problems in advance, but is also equipped with **full discharge protection** to prevent any loss of battery performance.

ADVANCED COMMUNICATION

DISCOVERY is equipped with a **5-inch colour Touch Screen display** that allows to quickly view and understand the health status of the UPS and the operating conditions of the main components.

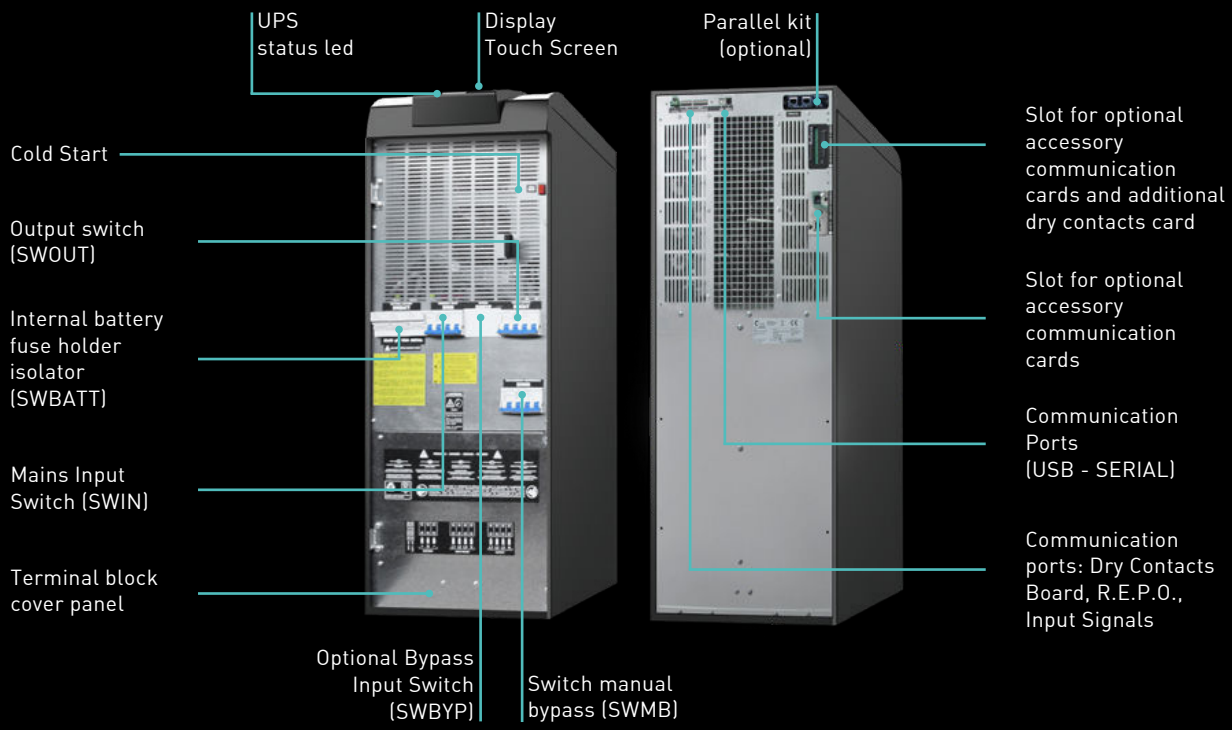
The system has three levels of access and protection, and is configurable in 9 different languages.

The user interface also includes an intuitive led bar that changes colour depending on the mode and operating conditions.

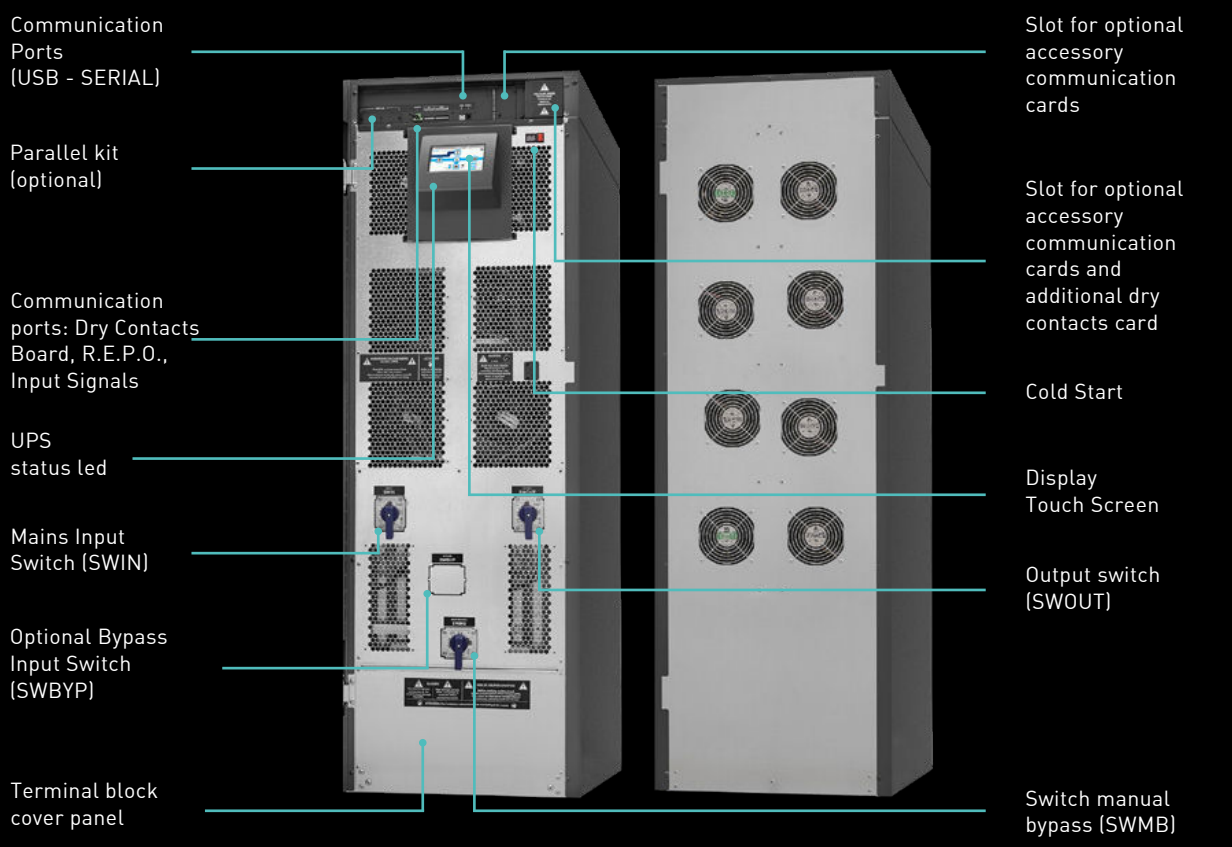
For advanced control of the UPS, **monitoring software** is also available, compatible with all major operating systems and network systems.

CONNECTIONS AND INTERFACE

DISCOVERY 10-60 kVA



DISCOVERY 80-120 kVA



MODEL	DSY010TM	DSY015TM	DSY020TM	DSY010TT	DSY015TT	DSY020TT	DSY030TT	DSY040TT	DSY060TT
Nominal Power	10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW	10 kVA / 10 kW	15 kVA / 15 kW	20 kVA / 20 kW	30 kVA / 30 kW	40 kVA / 40 kW	60 kVA / 60 kW
MAIN INPUT									
Grid system	3F+N+PE / 1F+N+PE			3F+N+PE					
Rated voltage / Frequency	380/400/415 VAC (3ϕ), 220/230/240 VAC (1ϕ), 50/60 Hz			380/400/415 VAC, 50/60 Hz					
Voltage range	320~480 VAC full load, 240~480 VAC at 50% load (3ϕ) 184~276 VAC full load, 140~276 VAC at 50% load (1ϕ)			320~480 VAC full load 240~480 VAC at 50% carico					
Frequency range	40~72 Hz (rectifier operating range)								
Power factor	≥0.99								
Current THDi	≤2.5% (1ϕ), ≤3% (3ϕ)			≤3%					
BYPASS INPUT									
Grid system	1F+N+PE			3F+N+PE					
Rated voltage / Frequency	220/230/240 VAC, 50/60 Hz			380/400/415 VAC, 50/60 Hz					
Voltage range	230 V, -22% ~ +15%								
Frequency range	±5 (selectable from ±0.10 to ±10)								
Bypass overload	110% long term operation 110-125%, 60 minutes 125-150%, 10 minutes 150-200%, 1 minute >200%, 20 seconds								
OUTPUT									
Grid system	1F+N+PE			3F+N+PE					
Rated voltage / Frequency	200 V (Pn-11%), 208 V (Pn-8%), 220 V (Pn-2%), 230 V, 240 V; 50/60 Hz			380 V (Pn-2%), 400 V, 415 V; 50/60 Hz					
Power factor	1								
Voltage THDv	<1% (linear load) ≤1.5% (non-linear load)								
Voltage precision	±0.5%								
Transient response	±1% for step resistive load (20->100% e 100->20%)								
Transient recovery	<20 ms for step resistive load (20->100% e 100->20%)								
Inverter overload	103% long term operation 103-110%, 60 minutes 110-125%, 10 minutes 125-150%, 1 minute 150-200%, 0.5 seconds >200%, 0.2 seconds								
Frequency regulation	50/60 Hz ±0.01% (battery mode)								
Synchronized range	Default ±5%; (selectable ±0.10% ~ ±10%)								
Synchronized slew rate	Selectable (0.5 Hz/S ~ 2 Hz/S), default 1 Hz/S								
Crest Factor	3:1								
BATTERIES									
Battery type	VRLA / AGM sealed lead acid batteries, open-vented batteries, NiCd batteries, lithium batteries								
Number of batteries in series	Default 40 (20+20), selectable from 15 to 22 (if <20 a power derating must be applied)								
Nominal voltage	±240 VDC								
Batteries arrangement	Internal and/or external								External
Maximum number and capacity of internal batteries	2 x 40 12 V / 9 Ah								-
External battery capacity	Selectable								
SYSTEM									
Efficiency - Normal operation	95.8	96.0	95.7	96.1	96.2	95.9	96.1	96.1	95.9
Efficiency - Eco Mode operation	99.0	98.9	98.9	99.3	99.5	99.5	99.6	99.8	99.1
Efficiency - Battery operation	95.9	95.9	95.9	95.9	96.4	96.4	96.5	96.5	96.7
Display	LED + LCD Touch Screen								
Protection degree	IP20 *								
Interface	Standard equipment: RS232, USB, dry contacts, Cold Start, EPO Optional: RS485, SNMP, parallel kit								
ENVIRONMENT									
Operating temperature	0 ~ 40 °C								
Storage temperature	-25 ~ 60 °C (UPS), -15 ~ 40 °C (batteries)								
Relative humidity	5 ~ 95% (no condensing)								
Noise (dBA at 1 meter far) - 100% load / 50% load	<52 /<45	<56 /<50	<56 /<50	<52 / <45	<56 / <50	<56 /<50	<52 /<45	<56 /<50	<68 /<50
Altitude	<1000 m; load derated 0.5% per 100 m from 1000 ~ 4000 m								
MECHANICAL DATA									
Dimensions W*D*H (mm)	380*850*1025								
Weight (Kg)	72	74	76	72	74	76	78	82	87
Colour	RAL 7016								

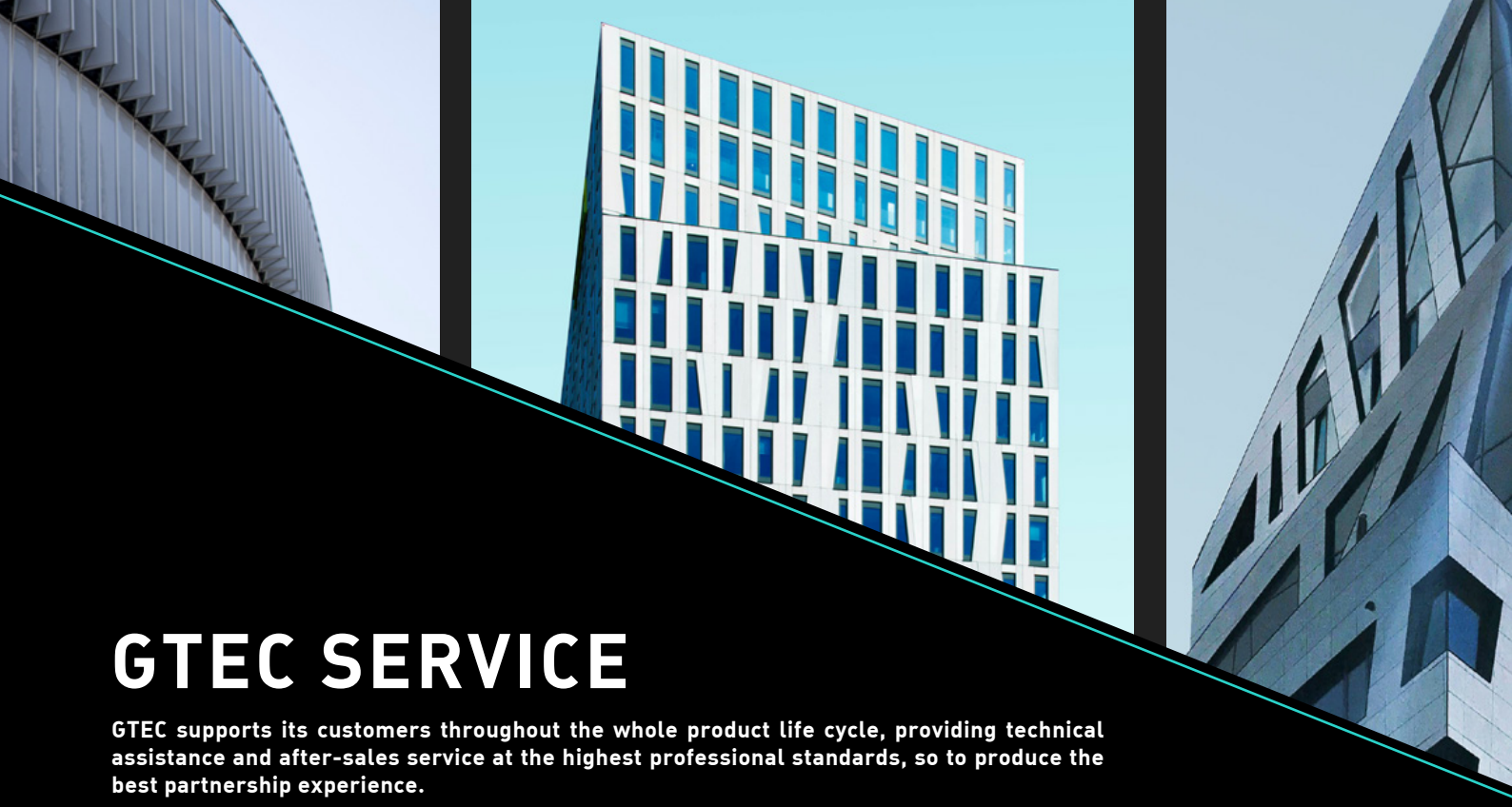
Note: technical specifications and data could be changed without notification

* IP21/31 protection degree and Dust Filter are available on request for DISCOVERY EXTRA version (DSX)

MODEL	DSY080TT	DSY100TT	DSY120TT
Nominal Power	80 kVA / 80 kW	100 kVA / 100 kW	120 kVA / 120 kW
MAIN INPUT			
Grid system	3F+N+PE		
Rated voltage / Frequency	380/400/415 VAC, 50/60 Hz		
Voltage range	320~480 VAC full load 240~480 VAC at 50% load		
Frequency range	40~72 Hz (rectifier operating range)		
Power factor	≥ 0.99		
Current THDi	≤ 3%		
BYPASS INPUT			
Grid system	3F+N+PE		
Rated voltage / Frequency	380/400/415 VAC, 50/60 Hz		
Voltage range	230 V, -22% ~ +15% (adjustable)		
Frequency range	±5% (adjustable from ±0.10% to ±10%)		
Bypass overload	110% long term operation 110-125%, 60 minutes 125-150%, 10 minutes 150-200%, 1 minute >200%, 20 seconds		
OUTPUT			
Grid system	3F+N+PE		
Rated voltage / Frequency	380 V (Pn-2%), 400 V, 415 V; 50/60 Hz		
Power factor	1		
Voltage THDv	<1% (linear load) ≤1.5% (non-linear load)		
Voltage precision	±0.5%		
Transient response	±1% for resistive step load (20->100% and 100->20%)		
Transient recovery	<20 ms for resistive step load (20->100% and 100->20%)		
Inverter overload	103% long term operation 103-110%, 60 minutes 110-125%, 10 minutes 125-150%, 1 minute 150-200%, 0.5 seconds >200%, 0.2 seconds		
Frequency regulation	50/60 Hz ±0.01% (battery mode)		
Synchronized range	Default ±5%; (adjustable ±0.10% ~ ±10%)		
Synchronized slew rate	Adjustable (0.5 Hz/S ~ 2 Hz/S), default 1 Hz/S		
Crest Factor	3:1		
BATTERIES			
Battery type	VRLA / AGM sealed lead acid batteries, open-vented batteries, NiCd batteries, lithium batteries		
Number of batteries in series	Default 40 (20+20), selectable from 15 to 22 (if <20 a power derating must be applied)		
Nominal voltage	±240 VDC		
Batteries arrangement	External		
External battery capacity	Selectable		
SYSTEM			
Efficiency - Normal operation	95.2		
Efficiency - Eco Mode operation	98.7	99.1	99.2
Efficiency - Battery operation	94.1	95.4	94.1
Display	LED + LCD Touch Screen		
Protection degree	IP20 *		
Interface	Standard equipment: RS232, USB, dry contacts, Cold Start, EPO Optional: RS485, SNMP, parallel kit		
ENVIRONMENT			
Operating temperature	0 ~ 40 °C		
Storage temperature	-25 ~ 60 °C (UPS), -15 ~ 40 °C (batteries)		
Relative humidity	5 ~ 95% (no condensing)		
Noise (dBA at 1 meter far) - 100% load / 50% load	<62 / <54	<63 / <54	<68 / <54
Altitude	<1000 m; load derated 0.5% per 100 m from 1000 ~ 4000 m		
MECHANICAL DATA			
Dimensions W*D*H (mm)	500*830*1600		
Weight (Kg)	172	180	198
Colour	RAL 7016		

Note: technical specifications and data could be changed without notification

* IP21/31 protection degree and Dust Filter are available on request



GTEC SERVICE

GTEC supports its customers throughout the whole product life cycle, providing technical assistance and after-sales service at the highest professional standards, so to produce the best partnership experience.

MAINTENANCE is an essential activity in order to guarantee a safe and stable load protection. GTEC shows maximum care about this topic, providing the best service in terms of experience, instrumentation and safety level.

The **TECHNICAL SUPPORT** service, delivered through the dedicated Help Desk platform, guarantees prompt answers to customers' requests and allows them to directly schedule maintenance activities.

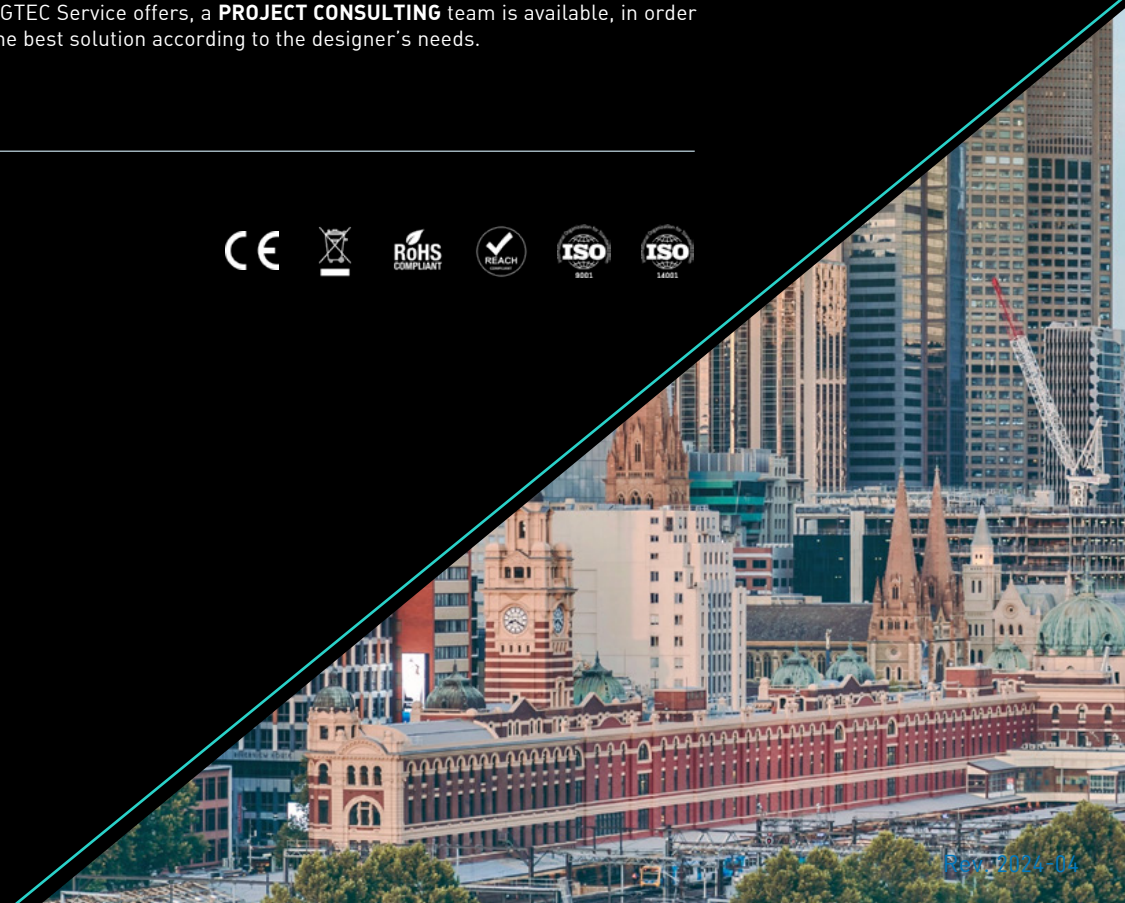
The partnership between GTEC and its customers gets consolidated through the **TRAINING SESSIONS** proposal for technical staff, so that each user can operate on the UPSs with maximum consciousness and safety.

Also, in the GTEC Service offers, a **PROJECT CONSULTING** team is available, in order to provide the best solution according to the designer's needs.

GTEC Europe srl
Strada Marosticana, 81/13
36031 Dueville (VI), Italy
Tel. +39 0444.361321
info@gtec-power.eu

GTEC France
france@gtec-power.eu

www.gtec-power.eu



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