

# DISCOVERY

10-40 kVA

STANDALONE THREE-PHASE UPS

1:1

3:1

3:3

The ideal solution for:

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





# 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 level of up to 96.6% in Normal Mode**.




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

 Efficiency up  
to **96,6%**

 Display  
**Touch Screen**

 Footprint smaller  
than **0.33 m<sup>2</sup>**

 Parallel up to  
**8 unità units**



## 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<sup>2</sup>, 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<sup>3</sup>, without compromising in terms of reliability and performance.

## HIGH PERFORMANCE

DISCOVERY delivers superior performance over previous generations of medium-powered three-phase UPSs, such as the Power Factor 1 output and a **throughput that reaches 96.6% in Normal Mode**.

Full power (kVA=kW) 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.



# PRODUCT RANGE

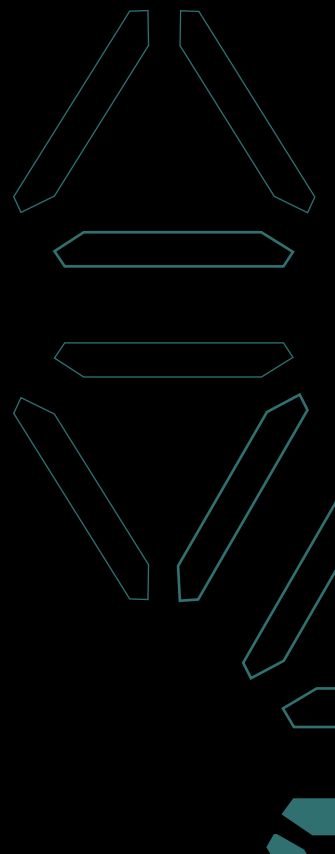
## DISCOVERY 10-40 KVA

DISCOVERY is available in sizes 10, 15, 20, 30 and 40 kVA. The system is configurable in 1/1, 3/1 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.

## TECHNOLOGY

- High frequency (18 kHz) three-level IGBT inverter
- Digital Signal Processor (DSP) dual core microprocessor
- Internal manual bypass
- Integrated dry contact board with 5 programmable inputs and 4 programmable outputs
- EPO Emergency System
- Built-in standard COLD START function
- Speed-controlled fans with speed and flow management based on ambient temperature and load level
- Programmable intelligent sockets that can be activated under certain conditions according to the user's settings (optional)



# BATTERY MANAGEMENT

DISCOVERY is designed to contain, in the standard version, **up to 2 strings** of 40 batteries each, in addition to allowing expansion through external battery cabinets.

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).

## 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).

## 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.

## DIAGNOSTIC TESTS

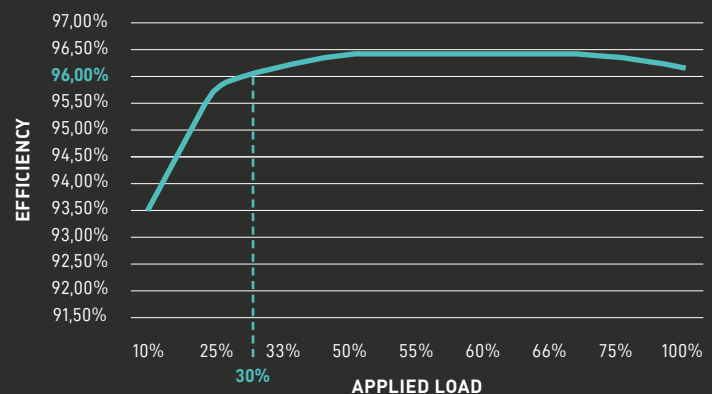
DISCOVERY not only offers the ability to run **battery tests** to diagnose any problems in advance, but is also equipped with **full discharge protection** to prevent any loss of battery performance.

# HIGH EFFICIENCY

DISCOVERY boasts extremely high and above-average performances of other three-phase UPSs.

The system is able to achieve **96% overall efficiency already at 27% applied load**, and touches the tip of 96.6% efficiency in the range between 50% and 70% load.

This is a very important service, which then results in considerable practical advantages. For example, for every 10 kW installed, a percentage point increase in efficiency results in an average saving of 876 kW/h per year, as well as a consequent saving in oil and CO2 emissions.



# 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, such as rectifier, batteries, inverter and bypass.

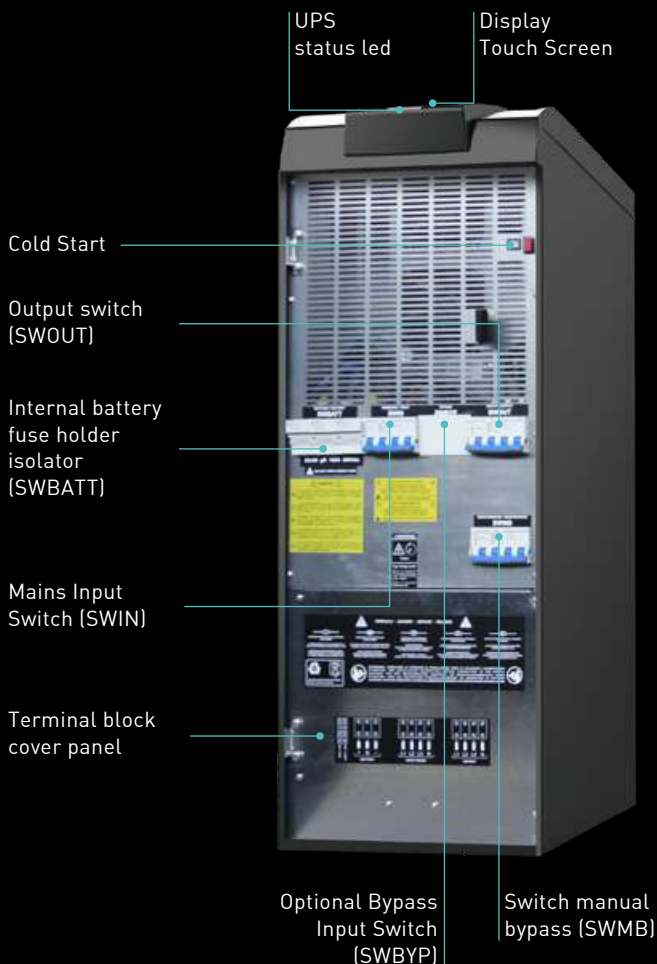
The system has three levels of access and protection, and is configurable in 9 different languages.

The user interface also includes an intuitive led bar that changes colour (light blue, blue, orange and red) depending on the mode and operating conditions.

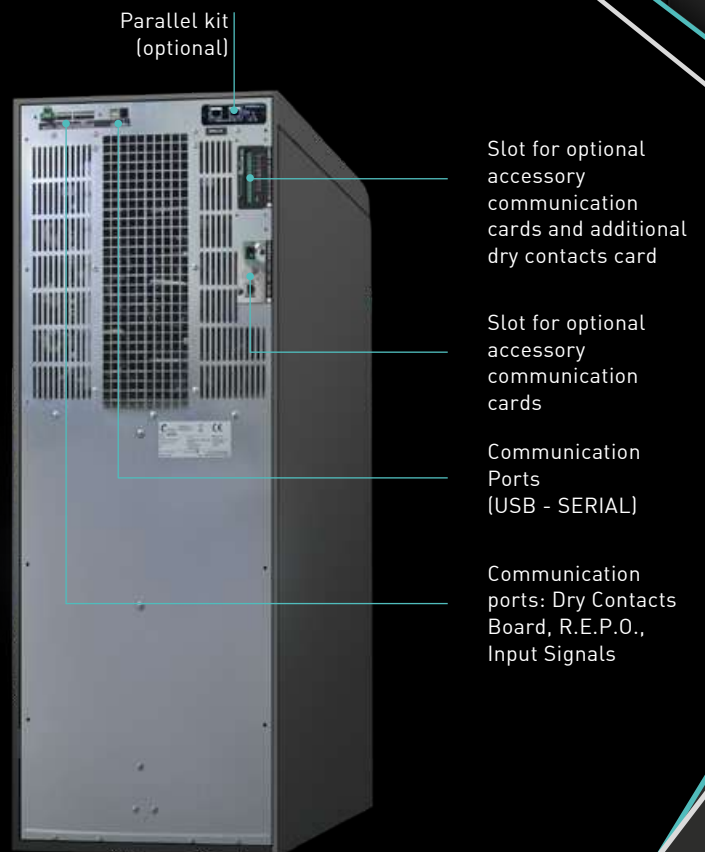
For advanced control of the UPS, **monitoring software** is also available, compatible with all major operating systems and network systems.



## FRONT



## REAR



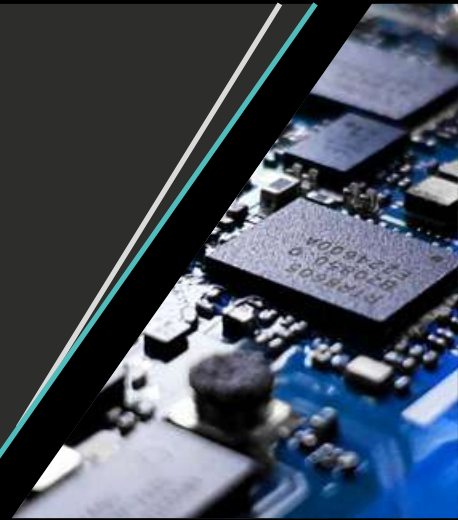
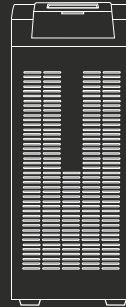
# CUSTOMISATIONS ON REQUEST

For special applications, and only on specific request, the DISCOVERY series is also available in the **SLIM (DSS)** version, with power sizes from 10 to 20 kVA, and in the **EXTRA version (DSX)**, with power sizes from 10 to 40 kVA.

## DSS DISCOVERY SLIM (DSS)

**DISCOVERY SLIM** is specifically designed for all those who are looking for a **minimum size**, medium power, three-phase solution.

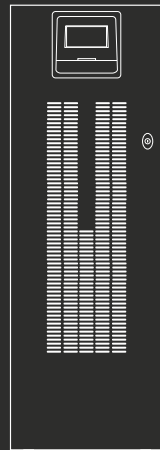
The UPS, characterised by a support **area of less than 0.24 m<sup>2</sup>**, can also be installed in very small spaces without having to compromise in terms of performance and reliability. The system is equipped with **Power Factor 1**, just as in the standard version, and offers the possibility of installing **a string of internal batteries**.



## DSX DISCOVERY EXTRA (DSX)

**DISCOVERY EXTRA** was created to meet greater autonomy needs and **more extensive installation requirements**. Among the distinctive features of this UPS we can identify: the standard double inlet, the dust filter and a **degree of protection up to IP31** (optional).

While maintaining a volume of less than 0.5 m<sup>3</sup>, **DISCOVERY EXTRA** can hold **up to 3 strings of internal batteries**, thus guaranteeing an excellent level of autonomy.



## COMPARING SOLUTIONS

	DSS DISCOVERY SLIM	DISCOVERY	DSX DISCOVERY EXTRA
RANGE	10 - 15 - 20 kVA	10 - 15 - 20 - 30 - 40 kVA	10 - 15 - 20 - 30 - 40 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 <sup>3</sup>	Volume < 0.34 m <sup>3</sup>	Volume < 0.5 m <sup>3</sup>
FOOTPRINT	Footprint < 0.24 m <sup>2</sup>	Footprint < 0.33 m <sup>2</sup>	Footprint < 0.37 m <sup>2</sup>
BATTERIES	Up to 1x40 internal string	Up to 2x40 internal strings	Up to 3x40 internal strings
IP CLASS	IP20	IP20	Up to IP31
DOUBLE INPUT	No	Optional	Standard

MODEL	DSY010TM	DSY015TM	DSY020TM	DSY010TT	DSY015TT	DSY020TT	DSY030TT	DSY040TT
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
<b>MAIN INPUT</b>								
Grid system	3PH+N+PE / 1PH+N+PE			3PH+N+PE				
Rated voltage / Frequency	380/400/415 VAC (3 $\phi$ ), 220/230/240 VAC (1 $\phi$ ), 50/60 Hz			380/400/415 VAC, 50/60 Hz				
Voltage range	320~480 VAC full load, 240~480 VAC at 50% load (3 $\phi$ ) 184~276 VAC full load, 140~276 VAC at 50% load (1 $\phi$ )			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	$\leq$ 2.5% (1 $\phi$ ), $\leq$ 3% (3 $\phi$ )			$\leq$ 3%				
<b>BYPASS INPUT</b>								
Grid system	1PH+N+PE			3PH+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	40~72 Hz							
Bypass overload	110% long term operation 110-125%, 60 minutes 125-150%, 10 minutes 150-200%, 1 minute >200%, 20 seconds							
<b>OUTPUT</b>								
Grid system	1PH+N+PE			3PH+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							
Sinewave	Pure sine wave							
Voltage THDv	$<$ 1% (linear load) $\leq$ 1.5% (non-linear load)							
Voltage precision	$\pm$ 0.5% (0-100% linear load)							
Transient response	$\pm$ 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 $\pm$ 0.01% (battery mode)							
Synchronized range	Default $\pm$ 5%; (selectable $\pm$ 0.10% ~ $\pm$ 10%)							
Synchronized slew rate	Selectable (0.5 Hz/S ~ 2 Hz/S), default 1 Hz/S							
Crest Factor	3:1							
<b>BATTERIES</b>								
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	$\pm$ 240 VDC							
Batteries arrangement	Internal and/or external							
Maximum number and capacity of internal batteries	2 x 40 12 V / 9 Ah							
External battery capacity	Selectable							
<b>SYSTEM</b>								
Efficiency - Normal operation	95.8	96.0	95.7	96.1	96.2	95.9	96.1	
Efficiency - Eco Mode operation	99.0	98.9		99.3	99.5		99.6	99.8
Efficiency - Battery operation	95.9			96.4			96.5	96.5
Display	LED + LCD Touch Screen							
Protection degree	IP20 *							
Interface	Standard equipment: RS232, USB, dry contacts, Cold Start, EPO Optional: RS485, SNMP, parallel kit							
<b>ENVIRONMENT</b>								
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)	$<$ 55	$<$ 60	$<$ 55	$<$ 60	$<$ 62			
Altitude	$<$ 1000 m; load derated 0.5% per 100 m from 1000 ~ 4000 m							
<b>MECHANICAL DATA</b>								
Dimensions W*D*H (mm)	380*850*1025							
Weight (Kg)	72	74	76	72	74	76	78	82
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)

# 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.

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