PRIME

Trustworthy power

ITYS

1 to 10 kVA/kW

RoHS COMPLIANT

3 LEVEL TECHNOLOGY

95% EFFICIENCY

kW = kVA

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OBJECTIVES

The aim of these specifications is to provide:

- the information required to choose the correct uninterruptible power supply for a specific application.
- the information required to prepare the system and installation site.

The specifications are intended for:

- installation engineers.
- design engineers.
- engineering consultants.

INSTALLATION REQUIREMENTS AND PROTECTION

Connection to the mains power supply and load(s) must be implemented using cables of suitable size, in accordance with current standards. If not already present, an electrical control station which can isolate the network upstream of the UPS must be installed. This electrical control station must be equipped with a circuit breaker (or two, if there is a separate bypass line) of an appropriate rating for the power drawn at full load.

If an external manual bypass is required, only the model supplied by the manufacturer must be installed.

We recommend fitting two metres of unanchored flexible cable between the UPS terminals and the cable anchor (wall or cabinet). This makes it possible to move and service the UPS.

For detailed information, see the installation and operating manual.

1. ARCHITECTURE

1.1 RANGE

ITYS is a full range of high performing UPS systems designed to:

- ensure 24/7/365 availability and business continuity for datacentre infrastructure,
- avoid data losses and downtime of company operations,
- reduce the electrical infrastructure's total cost of ownership,
- adopt a sustainable development approach.

Models						
Rated power (VA)	1000	2000	3000	6000	8500	10000
ITYS 1/1	•	•	•	•	•	•
ITYS 3/1					•	•
LB (long Backup)	•	•	•	•		•

Matrix table for model and kVA power rating

Each family has been specifically designed to meet the demands of loads in specific application contexts, in order to optimise product features and facilitate integration within the system.

2. FLEXIBILITY

2.1 POWER RATINGS FROM 1 TO 10 kVA/kW

Dimensions				
Cabinet type		Width (W) [mm]	Depth (D) [mm]	Height (H) [mm]
	**1000**	145	404	224
	**2000 B / LB** **3000 B / LB**	192	428	322
	**6000 B 1/1** **10000 B 1/1** **8500 B 3/1** **10000 B 3/1**	225	416	589
	**6000 LB** **10000 LB**	225	416	354

The equipment has been designed with a minimum net and gross footprint (the actual space occupied by the unit and the space required around it for maintenance, ventilation and access to operating mechanisms and communication devices).

All of the control mechanisms and communication interfaces are located in the upper front section.

The intelligent design also provides easy access for maintenance and installation.

The air inlet is on the front, with outflow to the rear.

2.2 RELIABILITY

Reliability is the most critical factor for any UPS solution designed to protect and manage the continuity of activities and services.

2.3 FLEXIBLE BACK-UP TIME

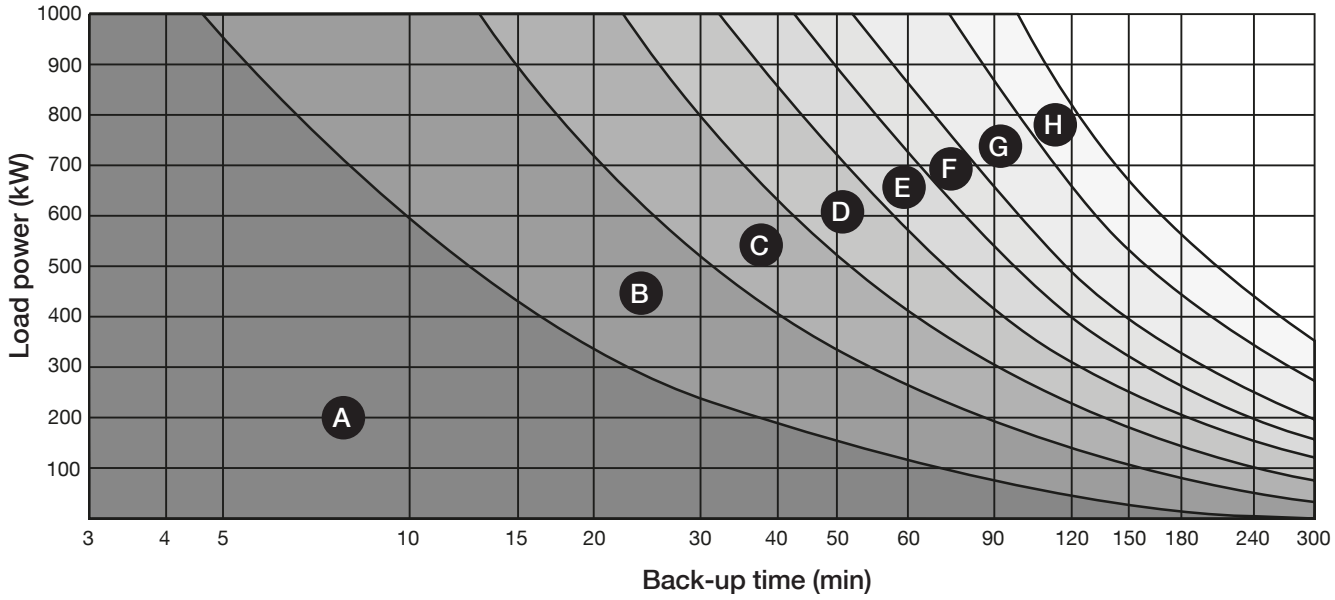
Different back-up times are possible by using models with internal battery or external battery cabinets.

Batteries are installed on acid-proof trays and connected by means of polarised connectors to facilitate their maintenance.

To guarantee maximum back-up time availability and battery life, the ITYS series is equipped with an EBS (Expert Battery System).

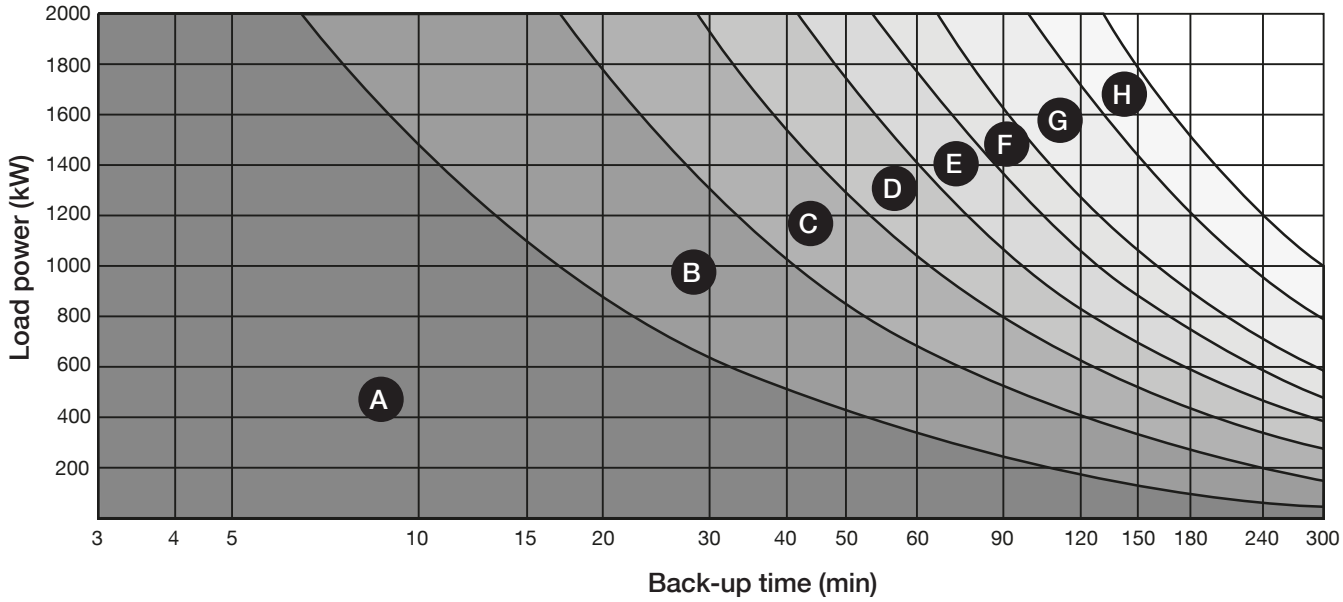
Use the following charts to select the model (L/LB) in relation to power and corresponding back-up time (BUT) please consult us.

1000 VA



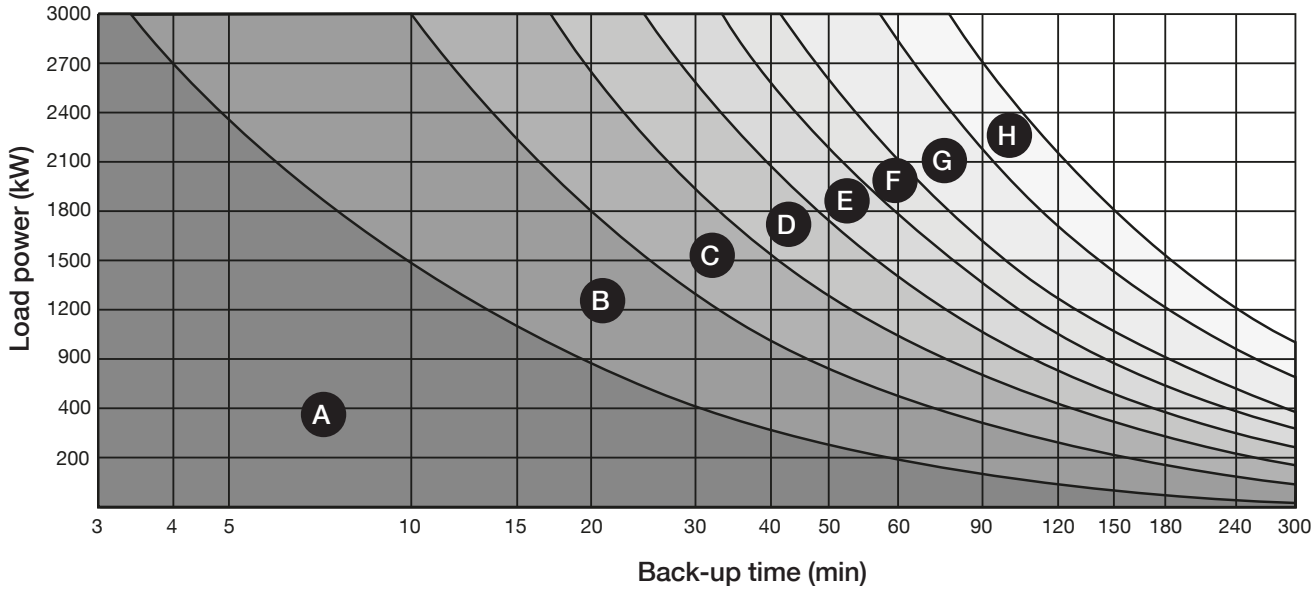
UPS 1/1	BATT	A	B	C	D	E	F	G	H
ITY3-TW010B		1	1	1					
ITY3-TW010LB					1	1	1	1	1
	ITY3-EX010HB		1			1			
	ITY3-EX010B			1	2	2	3	4	5

2000 VA



UPS 1/1	BATT	A	B	C	D	E	F	G	H
ITY3-TW020B		1	1	1					
ITY3-TW020LB					1	1	1	1	1
	ITY3-EX030HB		1			1			
	ITY3-EX030B			1	2	2	3	4	5

3000 VA



UPS 1/1	BATT	A	B	C	D	E	F	G	H
ITY3-TW030B		1	1	1					
ITY3-TW030LB					1	1	1	1	1
	ITY3-EX030HB		1			1			
	ITY3-EX030B			1	2	2	3	4	5

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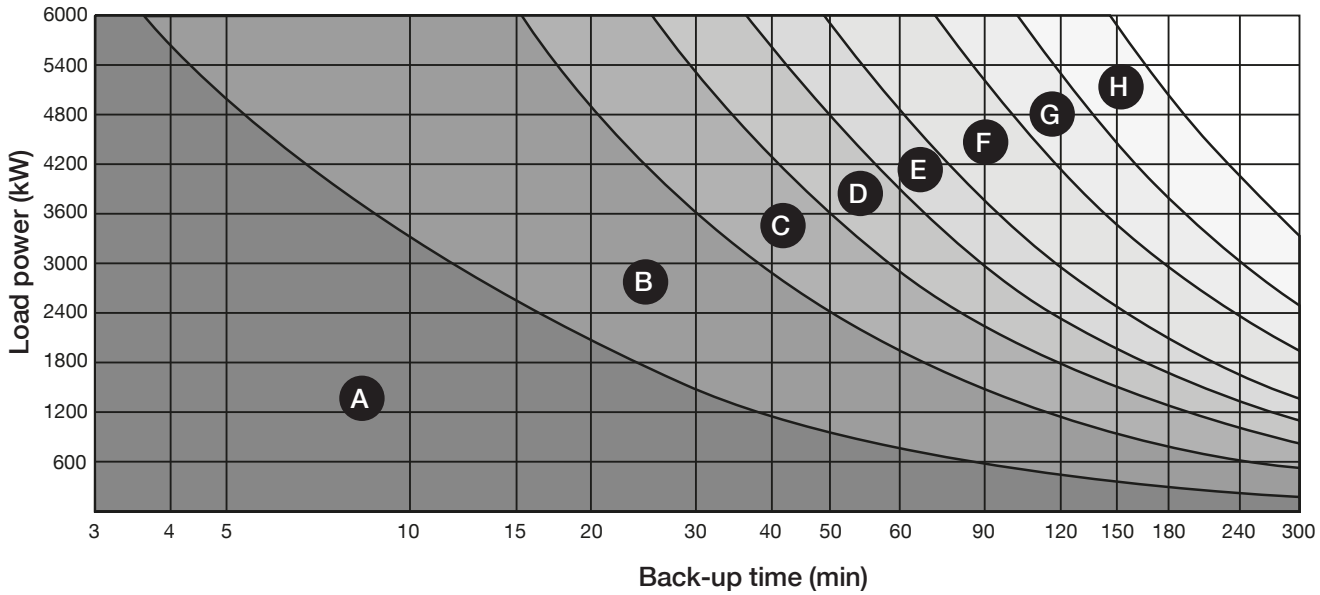
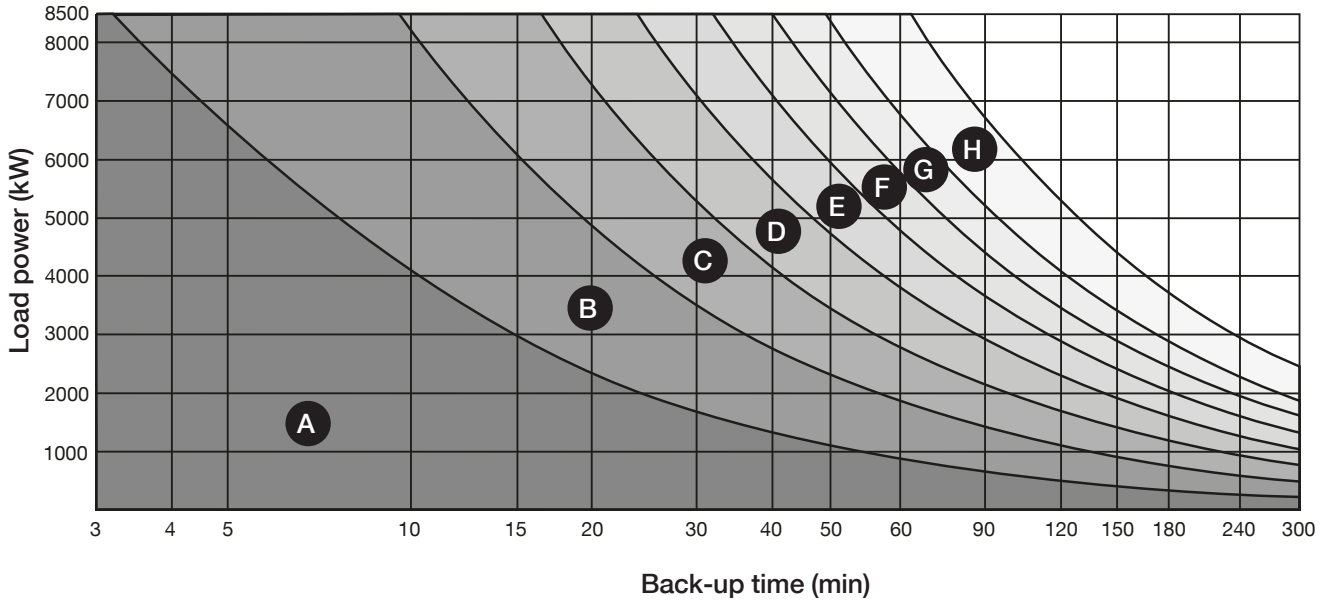
6000 VA



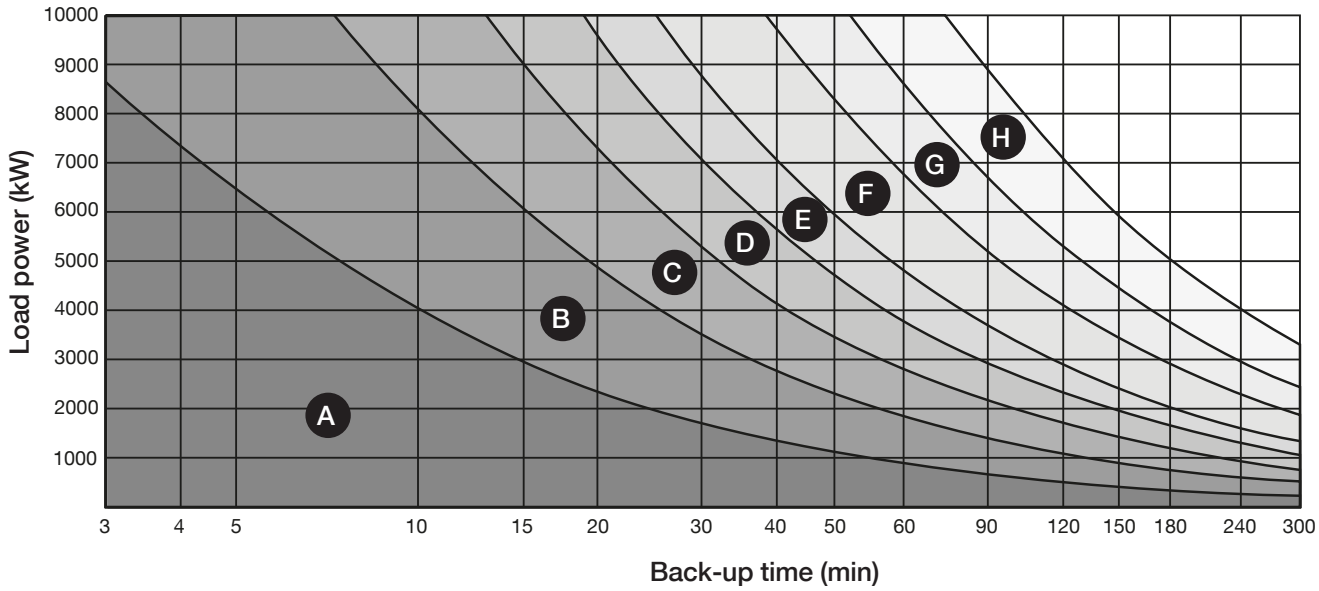
UPS 1/1	BATT	A	B	C	D	E	F	G	H
ITY3-TW060B		1	1	1	1	1	1	1	
ITY3-TW060LB									1
	ITY3-EX100HB		1		1				
	ITY3-EX100B			1	1	2	3	4	6

8500 VA



UPS 3/1	BATT	A	B	C	D	E	F	G	H
ITY3-TW108B		1	1	1	1	1	1	1	1
/									
	ITY3-EX100HB		1		1		1		
	ITY3-EX100B			1	1	2	2	3	4

10000 VA



UPS 1/1	UPS 3/1	BATT	A	B	C	D	E	F	G	H
ITY3-TW100B	ITY3-TW110B		1	1	1	1	1	1	1	
ITY3-TW100LB										1
		ITY3-EX100HB		1		1				
		ITY3-EX100B			1	1	2	3	4	6

3. STANDARD FEATURES AND OPTIONS

Availability	
●	Factory-installed option
○	Available as option

Features	ITYS		Notes	
	1-3kVA	6-10 kVA		
Communication Option				
ITY-OP-ADC card *(Advanced Dry Contact)*	○	○	⚠	⊘ NET Vision card
Net Vision card *(professional WEB/SNMP interface for UPS monitoring)*	○	○	⚠	⊘ ITY-OP-ADC card
EMD *(Environmental Monitoring Device: temperature, humidity, 2 dry contacts)*	○	○	⚠	! Net Vision card
Electrical Option				
Internal maintenance bypass		●		
External maintenance bypass	○			MBP-1U_IEC
		○		MOD-OP-EBP
Plug 16A IEC320-C20 for output connection	○			NRT-OP-IEC16A
Battery cable 1 side free for special cabinets (LB model only)	●	●		

! Required option

⊘ Incompatible option

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4. SPECIFICATIONS - ITYS

4.1 INSTALLATION PARAMETERS

Installation parameters								
Rated power (VA)			1000	2000	3000	6000	8500	10000
Phase in/out[1]			1/1				1/1 or 3/1	
Active power		W	1000	2000	3000	6000	8500	10000
Rated/maximum rectifier input current		A	5 /10	9 /16	14 /20	28/42	39/46	46/61
Inverter output current @ 230 V		A	4.4	8.7	13	26	37	43.5
Maximum air flow		m3/h	75	192	192	230	345	345
Sound level		dBA	< 45	< 50		< 50	< 55	
Power dissipation in nominal conditions[2]		W	93	135	188	326	470	574
		kcal/h	80	116	162	280	404	494
		BTU/h	317	461	641	1112	1604	1959
Dimensions	Width	mm	145	192		225		
	Depth	mm	404	428		416		
	Height /(LB)	mm	224	322		589/354	589	589/354
Single unit Clearances	Operational	mm	Rear ≥ 200; Lateral 0			Rear ≥ 500; Lateral 0		
	Maintenance	mm	Front ≥ 200; Top ≥ 0			Front ≥ 500; Top ≥ 0		
Weight without batteries (LB)		kg	8	11	11	13.5	-	15.8
Weight with batteries		kg	14.4	26	26	53	58	61

1) TN-S/IT/TN-C/TT of electrical supply system may be connected by UPS.
2) Considering nominal input current (230 V, battery charged) and rated output active power.

4.2 ELECTRICAL CHARACTERISTICS

Electrical characteristics - Rectifier Input						
Rated power (VA)	1000	2000	3000	6000	8500	10000
Phase in/out	1/1				1/1 or 3/1	
Rated mains supply voltage	230 V 1ph + N					
Voltage tolerance	160 V to 300 V			160 V to 276 V		
	(up to 110 V with load linear decrease from 100% Pn to 50% Pn)					
Rated frequency	50/60 Hz (selectable)					
Frequency tolerance	from 40 to 70 Hz					
Power factor (input at full load and rated voltage)	≥ 0.995					
Total harmonic distortion (THDi)	< 5%			< 3%		
Max inrush current at start-up	< 8 x In					

Electrical characteristics - Bypass								
Rated power (kVA)			1000	2000	3000	6000	8500	10000
Phase in/out			1/1				1/1 or 3/1	
Bypass frequency variation speed			1 Hz/s (settable up to 3 Hz/s)					
Bypass rated voltage			187-264					
Bypass rated frequency			50/60 Hz (selectable)					
Bypass frequency tolerance			±10% (configurable from 1% to 10%)					

Electrical characteristics - Inverter								
Rated power (kVA)			1000	2000	3000	6000	8500	10000
Phase in/out			1/1				1/1 or 3/1	
Rated output voltage phase neutral (selectable)			200/208/220/230/240 V 200 V (@ 80% Pn) 208 V (@ 90% Pn)			220/230/240 V		
Output voltage tolerance			Static: ±1%					
Rated output frequency			50/60 Hz (selectable)					
Output frequency tolerance			±0.1%					
Load crest factor			< 3:1					
Voltage harmonic distortion			<1% with linear load					
Overload tolerated by the inverter	10 min	W				7500	10625	12500
	5 min	W	1250	2500	3750			
	30 sec	W	1500	3000	4500	9000	12750	15000

Electrical characteristics - Efficiency								
Rated power (kVA)			1000	2000	3000	6000	8500	10000
Phase in/out			1/1				1/1 or 3/1	
Double conversion efficiency (normal mode - @ full load)			up to 93%			up to 95%		
Efficiency in EcoMode			up to 97%			up to 98%		

Electrical characteristics - Environment								
Rated power (kVA)			1000	2000	3000	6000	8500	10000
Phase in/out			1/1				1/1 or 3/1	
Storage temperatures			-5 to +50 °C (15 to 25 °C for better battery life)					
Working temperature			0 to +40 °C (15 to 25 °C for better battery life) Max +45°C @ 80% Sn for a limited time			0 to +40 °C (15 to 25 °C for better battery life) Max +45°C @ 75% Sn for a limited time		
Maximum relative humidity (non-condensing)			95%					
Maximum altitude without derating			1000 m (3300 ft)					
Degree of protection			IP20					
Portability			ISTA 1H P-164000664					
Colour			RAL 7016 textured					

Electrical characteristics - Battery								
Rated power (kVA)			1000	2000	3000	6000	8500	10000
Phase in/out			1/1				1/1 or 3/1	
Maximum recharge current	B	A	1.5			4		
	LB	A	8			12		

4.3 RECOMMENDED PROTECTION

RECOMMENDED PROTECTION DEVICES - Input							
Rated power (kVA)		1000	2000	3000	6000	8500	10000
Phase in/out		1/1				1/1 or 3/1	
C curve circuit breaker(1)	A	16	20	20			
D curve circuit breaker(1)	A				63	80	80
Maximum I^2t	A^2s	206	631	631	2200	3800	
High speed fuse (Ur)	A	10	20	20	63	80	

RECOMMENDED PROTECTION DEVICES - Input residual current circuit breaker(2)						
Rated power (kVA)	1000	2000	3000	6000	8500	10000
Phase in/out	1/1				1/1 or 3/1	
Input residual current circuit breaker	0.03 A Selective Type B					

RECOMMENDED PROTECTION DEVICES - Output(3)							
Model		1000	2000	3000	6000	8500	10000
Phase in/out		1/1					
Short-circuit inverter current (A) (when AUX MAINS is not present)	0 to 100 ms	22	49	66	83	130	
C curve circuit breaker(3) (A)					6	10	

CABLES - Maximum cable cross section						
Model	1000	2000	3000	6000	8500	10000
Phase in/out	1/1				1/1 or 3/1	
Input terminals/sockets (flexible cable)/(rigid cable) mm^2	IEC320-C14	IEC320-C20	IEC320-C20	16 mm^2		
Battery terminals (flexible cable)/(rigid cable) mm^2	Connector					
Output terminals/sockets (flexible cable)/(rigid cable) mm^2	4x IEC320-C13	8 x IEC 320-C13	8 x IEC 320-C13 +1 x IEC 320-C19	16 mm^2		

(1) Intend for circuit breaker function

(2) Must be selective with residual current circuit breakers downstream of the UPS connected to the UPS output. If the bypass network is separate from the rectifier circuit, or in the event of a parallel UPS configuration, use a single residual current circuit breaker upstream of the UPS.

(3) Selectivity of distribution after the UPS with inverter short-circuit current (short-circuit with AUX MAINS not present). The rating of the protection can be increased by "n" times downstream of a parallel UPS system, with "n" equal to the number of parallel modules.

5. REFERENCE STANDARDS AND DIRECTIVES

5.1 OVERVIEW

The equipment, installed, used and serviced in accordance with its intended use, its regulations and standards, its manufacturer's instructions and rules, is in compliance with the relevant Union harmonisation legislation:

LVD 2014 / 35 / EU

DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014, on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

EMC 2014 / 30 / EU

DIRECTIVE 2014/30/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014, on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

RoHS 2011/65/EU

DIRECTIVE 2011/65 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

5.2 STANDARDS

5.2.1 SAFETY

EN 62040-1 Uninterruptible Power System (UPS) - Part 1: General and safety requirements

IEC 62040-1 Uninterruptible Power System (UPS) - Part 1: Safety requirements (CB scheme by TÜV)

5.2.2 ELECTROMAGNETIC COMPATIBILITY

EN 62040-2 Uninterruptible Power System (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements (tested and verified by third party)

IEC 62040-2 Uninterruptible Power System (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements

5.2.3 TEST AND PERFORMANCE

EN 62040-3 Uninterruptible Power System (UPS). Methods of specifying the performance and test requirements

5.2.4 ENVIRONMENTAL

IEC 62040-4 Uninterruptible Power System (UPS) - Part 4: Enviromental aspects - Requirements and reporting

5.3 SYSTEM AND INSTALLATION GUIDELINES

When carrying out electrical installation, all the above standards must be observed. All national and international standards (e.g IEC60364) applicable to the specific electrical installation including batteries must be observed. For further information refer to the ‘Technical specifications’ chapter in the user manual.