



**SUPERIOR**

Unrivalled power  
performance

# NETYS RT

1.1 to 11 kVA



# 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

NETYS RT 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 (kVA)	1100	1700	2200	3300	5000	7000	9000	11000
NETYS RT	•	•	•	•	•	•	•	•
NETYS RT parallel or 1+1					•	•	•	•
NETYS RT Hot Swap						•		•
<i>Matrix table for model and kVA power rating</i>								

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 1,1 TO 11 kVA

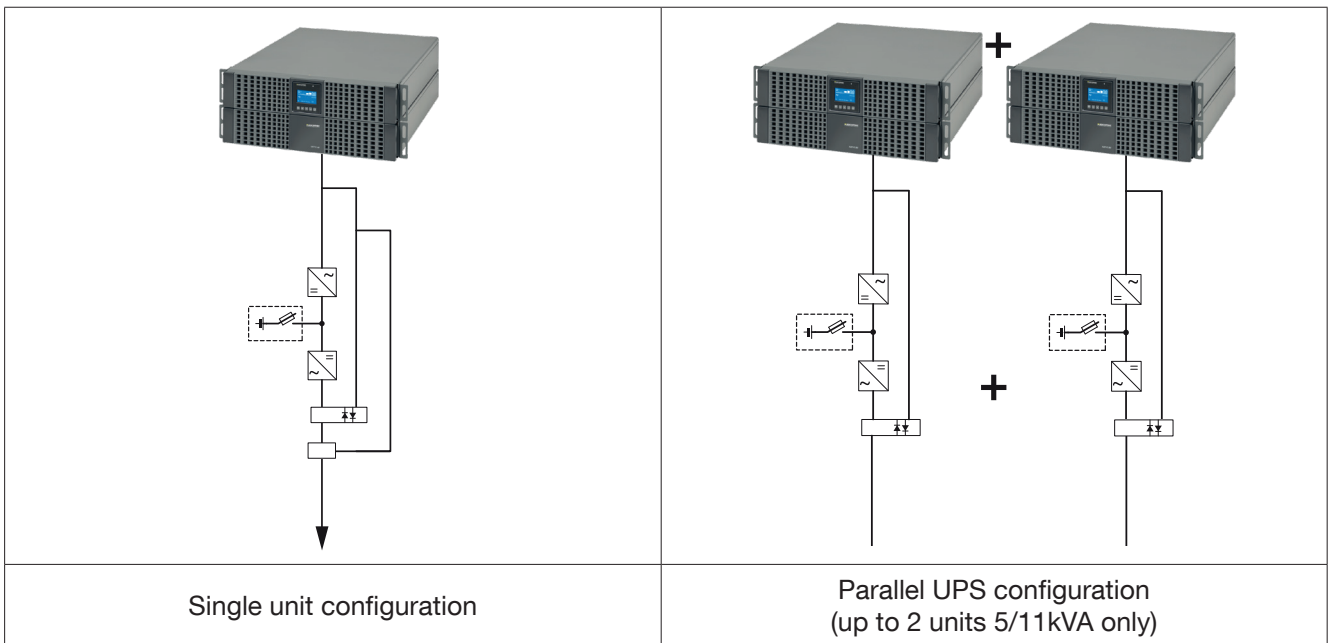
Dimensions				
Cabinet type		Width (W) [mm]	Depth (D) [mm]	Height (H) [mm]
	1100	89	332	440
	1700 2200	89	430	440
	3300	89	608	440
	5000 7000	89	430	440
	9000 11000	89	565	440
	7000 MBP	178	665	440

	<p><b>11000 MBP</b></p>	<p>220</p>	<p>750</p>	<p>440</p>
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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 PARALLEL

NETYS RT enables 1+1 parallel and redundant configurations to maximise the availability of critical utilities (up to 22 kVA).



## 2.3 RELIABILITY

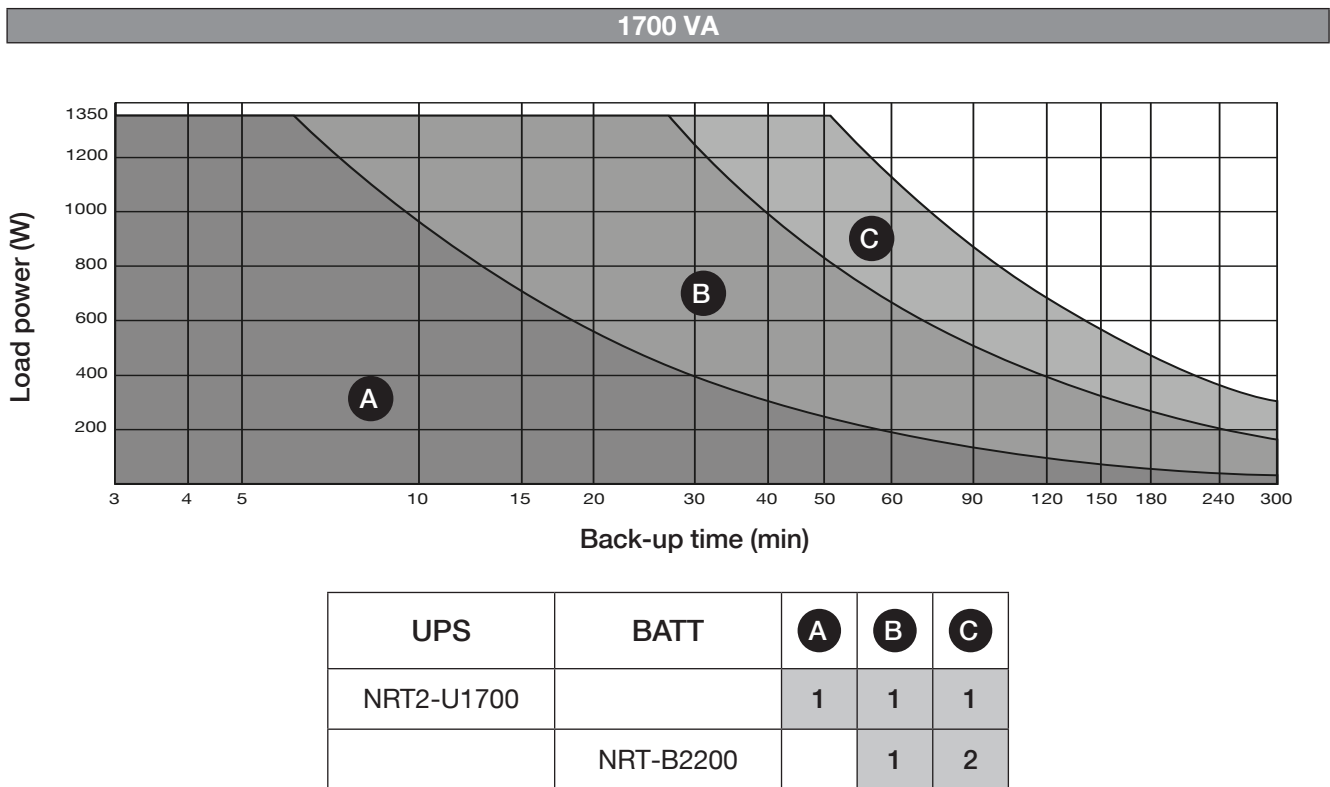
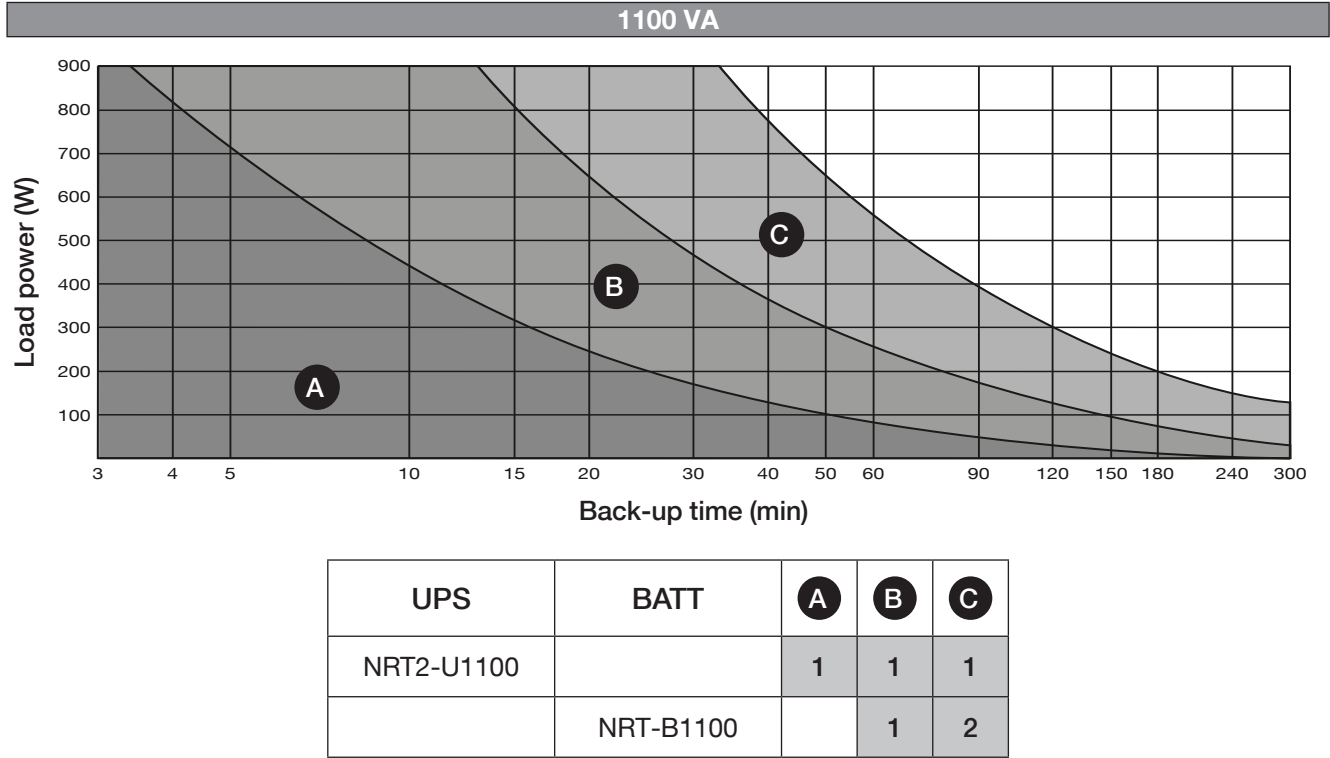
Reliability is the most critical factor for any UPS solution designed to protect and manage the continuity of activities and services.

NETYS RT MTBF exceeds the market standard, and Socomec officially declares its MTBF data

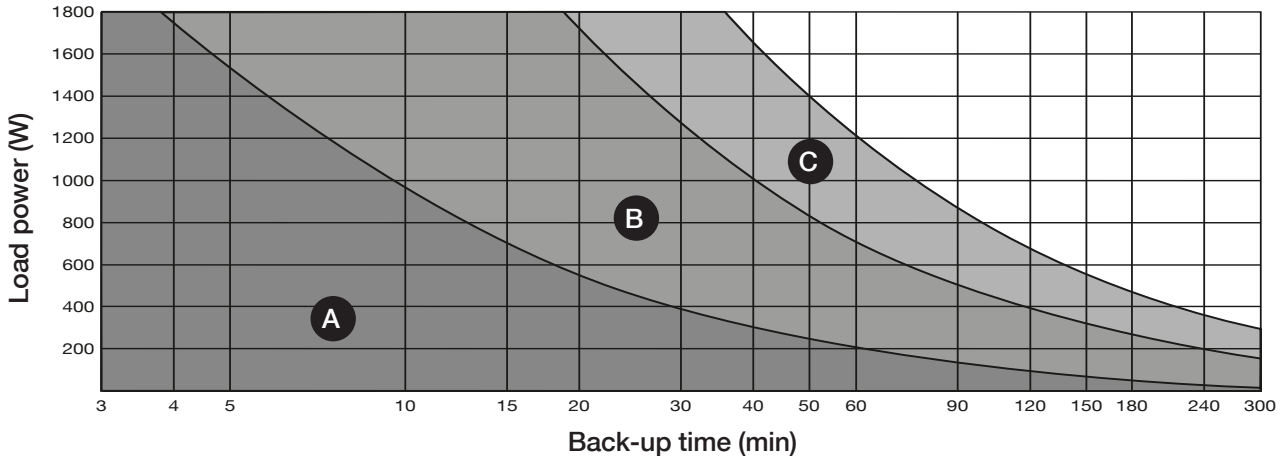
## 2.4 FLEXIBLE BACK-UP TIME

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 NETYS RT series is equipped with an EBS (Expert Battery System).

Use the following charts to select the UPS model in relation to power and back-up time.

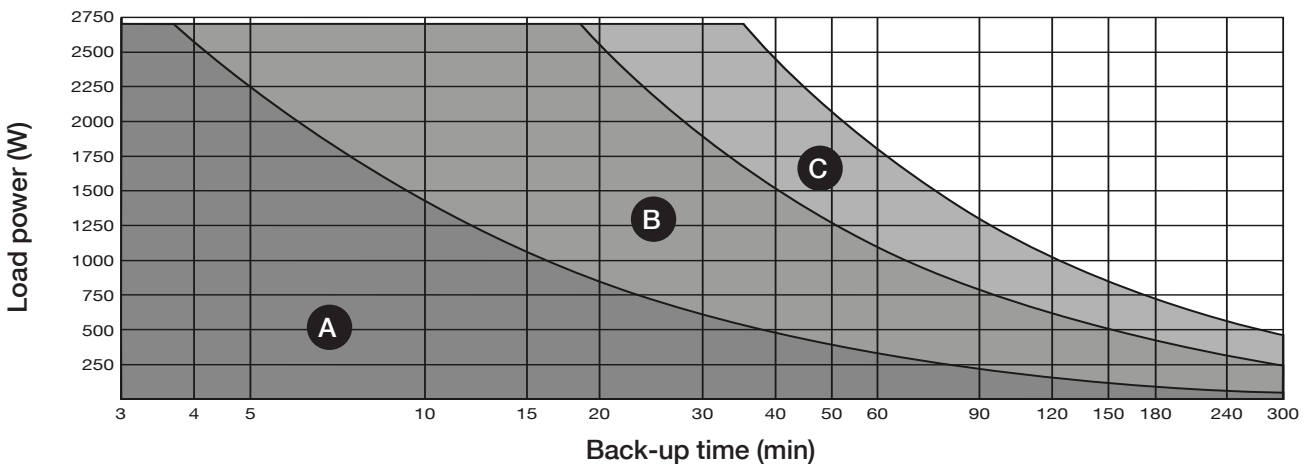


2200 VA



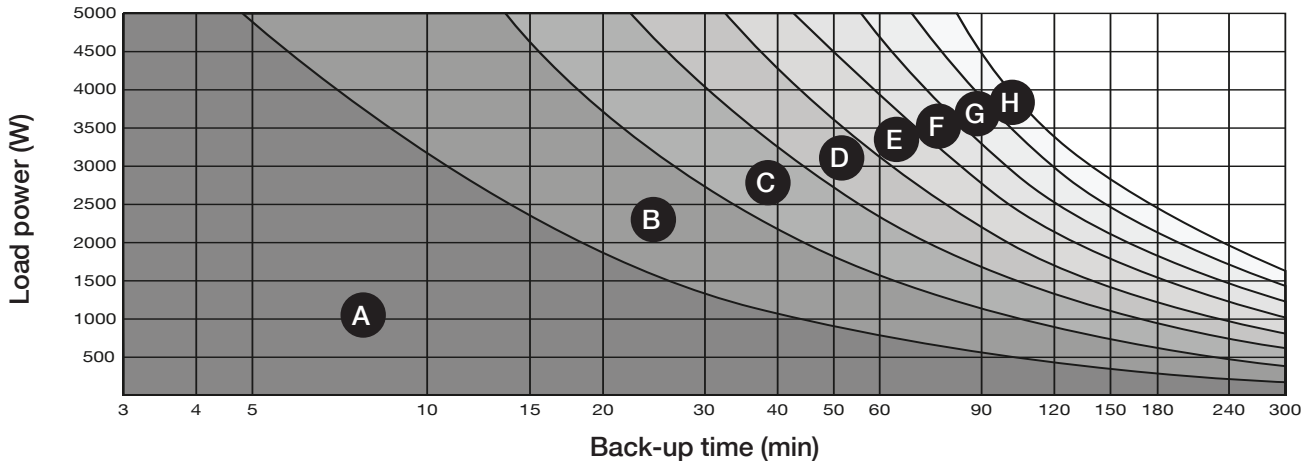
UPS	BATT	A	B	C
NRT2-U2200		1	1	1
	NRT-B2200		1	2

3300 VA



UPS	BATT	A	B	C
NRT2-U3300		1	1	1
	NRT-B3000		1	2

5000 VA

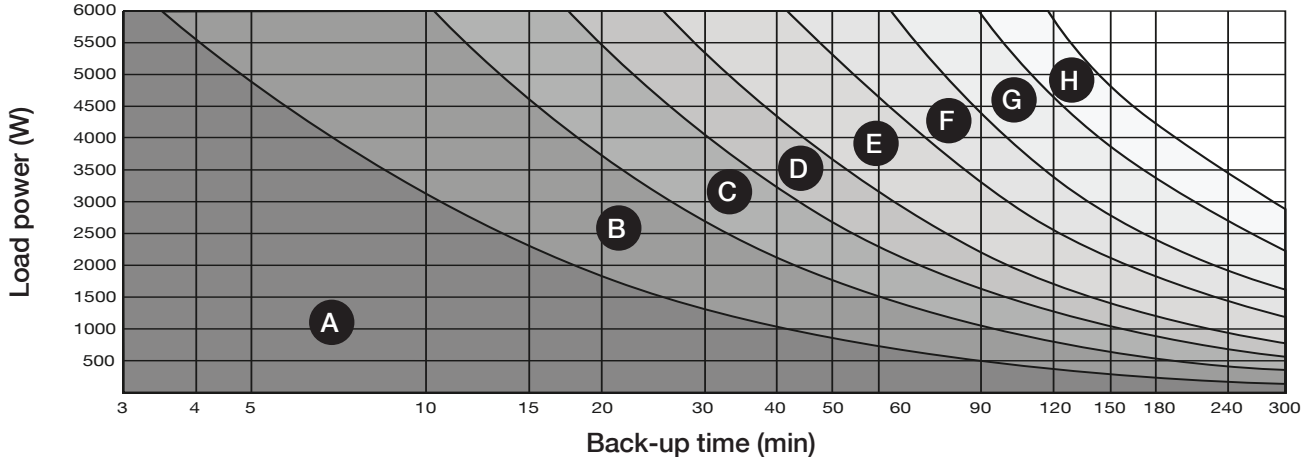


UPS	BATT	A	B	C	D	E	F	G	H
NRT3-U5000		1	1	1	1	1	1	1	1
	NRT3-B7000	1	2	3	4	5	6	7	8
NRT3-5000K		1	1	1	1	1	1	1	1
	NRT3-B7000		1	2	3	4	5	6	7



NOTE! The models are not available for all markets. Contact Socomec for further information.

7000 VA



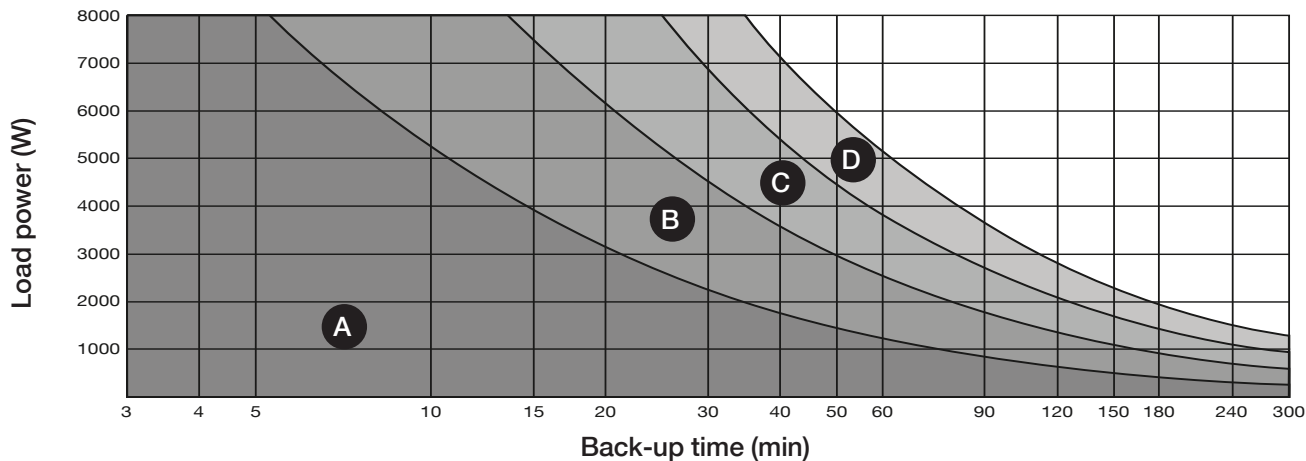
UPS	BATT	A	B	C	D	E	F	G	H
NRT3-U7000		1	1	1	1	1	1		
	NRT3-B7000	1	2	3	4	5	8		
NRT3-7000CLA		1	1	1	1	1	1	1	1
	NRT3-B7000	1	2	3	4	5	8	11	14
NRT3-7000K		1	1	1	1	1	1		
	NRT3-B7000		1	2	3	4	7		



NOTE! The models are not available for all markets. Contact Socomec for further information.



9000 VA

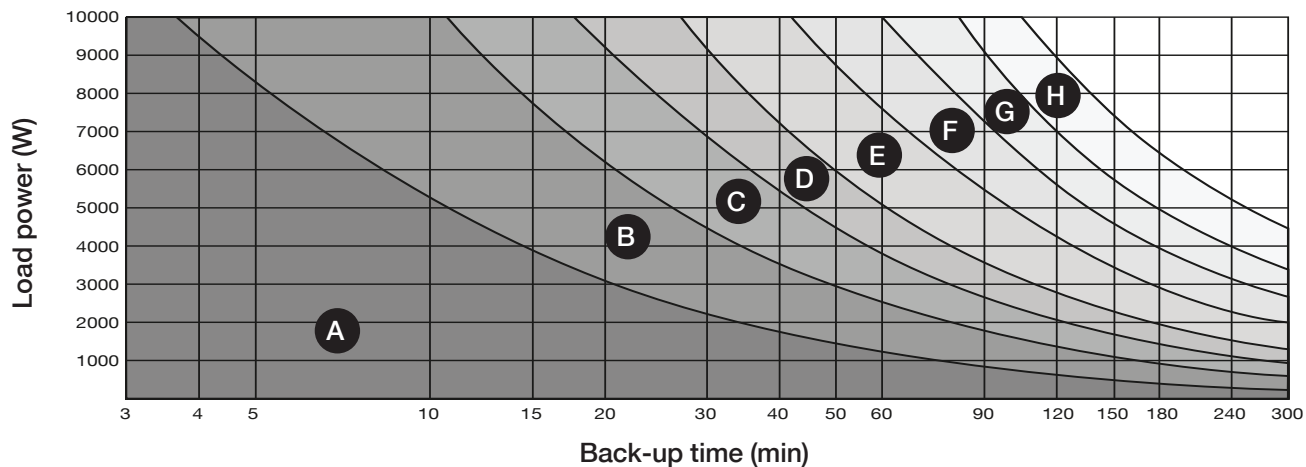


UPS	BATT	A	B	C	D
NRT3-U9000		1	1	1	1
	NRT3-B11000	1	2	3	4
NRT3-9000K		1	1	1	1
	NRT3-B11000		1	2	3



NOTE! The models are not available for all markets. Contact Socomec for further information.

11000 VA



UPS	BATT	A	B	C	D	E	F	G	H
NRT3-U11000		1	1	1	1				
	NRT3-B11000	1	2	3	4				
NRT3-U111000CLA		1	1	1	1	1	1	1	1
	NRT3-B11000	1	2	3	4	6	8	10	13
NRT3-11000K		1	1	1	1	1	1	1	1
	NRT3-B11000		1	2	3	5	7	9	12



NOTE! The models are not available for all markets. Contact Socomec for further information.

### 3. STANDARD FEATURES AND OPTIONS

Availability	
●	Standard feature
○	Available as option

Features	NETYS RT		Notes	Reference
	1100-3300 VA	5000-11000 VA		
<b>Battery Option</b>				
Additional charger		●		only on 7-11 kVA models depending on region
<b>Communication Option</b>				
USB	●	●		
RS 232	●	●		
RS485		●		
EPO/REPO	●	●		
Dry contact 1 input 3 output		●		
Relay board card 1 input,6 output programmable relays	○	○	⚠	⊘ Net Vision card ⊘ RT-VISION card NRT-OP-REL
RT-VISION WEB/SNMP card	○	○	⚠	⊘ Net Vision card ⊘ Relay board card NRT-OP-SNMP
Environment sensor temperature, humidity and 2 inputs	○	○	⚠	! RT-VISION card NRT-OP-EMD
Net Vision card <i>(professional WEB/SNMP interface for UPS monitoring)</i>	○	○	⚠	⊘ RT-VISION card ⊘ Relay board card NET-VISION7 CARD
EMD <i>(Environmental Monitoring Device: temperature, humidity, 2 dry contacts)</i>	○	○	⚠	! Net Vision card NET-VISION-EMD
<b>Electrical Option</b>				
Input Output cable	●			
Serial RS232 and USB cable	●	●		
Parallel and maintenance bypass		○		NRT3-OP-PMB
External maintenance bypass	○			NRT-OP-IEC16A ENT-OP-PDU16
		○		NRT3-OP-MBP
<b>Mechanical Option</b>				
Rail for rack mount	●	●		NRT-OP-RAIL
Rack brackets	●	●		
Tower stands	●	●		
Cable glands and Cord End Terminal		●		

! Required option

⊘ Incompatible option

## 4. SPECIFICATIONS - NETYS RT

### 4.1 INSTALLATION PARAMETERS

Installation parameters									
Rated power (VA)		1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out		1/1							
Active power	W	900	1350	1800	2700	5000	6000	8000	10000
Rated/maximum rectifier input current (EN 62040-3) <sup>(1)</sup>	A	4.4 /5.2	6.6/8	8.6/10.4	12.9/15.6	23/	28/	37/	46/
Rated bypass input current <sup>(1)</sup>	A	4	6	8	12	22	27	35	44
Inverter output current @ 230 V	A	4.8	7.4	9.6	14.3	22	26	35	44
Maximum air flow	m <sup>3</sup> /h	-				200	280		
Sound level	dB(A)	< 45	< 50		< 51	< 55			
Power dissipation in nominal conditions <sup>(1)</sup>	W	104	109	144	199	300	347	404	560
	kcal/h	89	94	124	171	258	298	347	482
	BTU/h	355	372	491	679	1024	1184	1379	1911
Dimensions	Width	mm	89						
	Depth	mm	332	430		608	430		565
	Height	mm	440						
Single unit Clearances	Operational	mm	Front ≥ 15; Rear ≥ 20; Lateral 0						
	Maintenance	mm	Front ≥ 1000 Top ≥ 0						
Weight without batteries	kg	13	18	19	30	11	12	16	17
Weight with batteries (depending on number of batteries)	kg	16	29	29	43	39	39	67	67

1) Considering nominal input current (230 V, battery charged) and rated output active power.

2) Considering maximum input current (low input voltage) and rated output active power.

### 4.2 ELECTRICAL CHARACTERISTICS

Electrical characteristics - Rectifier Input									
Rated power (VA)		1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out		1/1							
Rated mains supply voltage		230 V 1ph + N							
Voltage tolerance		175 V to 280 V (up to 100 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)		≥ 0.99							
Total harmonic distortion (THDi)		< 5%				< 3.4%			
Max inrush current at start-up	A	< 32	< 70	< 72	< 70	< 200			

Electrical characteristics - Bypass								
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
Bypass frequency variation speed	1 Hz/s (settable up to 2 Hz/s)							
Bypass rated voltage	Nominal output voltage -20% +15% (settable)							
Bypass rated frequency	50/60 Hz (selectable)							
Bypass frequency tolerance	±3% (configurable from 1% to 5%)							

Electrical characteristics - Inverter										
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000		
Phase in/out	1/1									
Rated output voltage phase neutral (selectable)	200/208/220/230/240 V									
Output voltage tolerance	Static: ±1% Dynamic: VFI-SS (EN62040-3) compliant									
Rated output frequency	50/60 Hz (selectable)									
Output frequency tolerance	±0.01%									
Load crest factor	≥ 2.7									
Voltage harmonic distortion (with linear load)	±1.5%				±1%		±2%			
Overload tolerated by the inverter	1 min	W	1125	1687	2250	3375	-			
	15 sec	W	1350	2025	2700	4050				
	2 min	W	-				6250	7500	10000	12500
	30 sec	W					7500	9000	12000	15000

Electrical characteristics - Efficiency								
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
Double conversion efficiency (normal mode - 230V @ full load)	up to 93%				up to 95.5%			
Efficiency in EcoMode	up to 97%				up to 98%			

Electrical characteristics - Environment								
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
Storage temperatures	-15 to +50 °C				-15 to +55 °C			
	(15 to 25 °C for better battery life)							
Working temperature	0 to +40 °C				0 to +40 °C up to 45 @ 90% Sn			
	(15 to 25 °C for better battery life)							
Maximum relative humidity (non-condensing)	95%							
Maximum altitude without derating	1000 m (3300 ft)							
Degree of protection	IP20							
Portability	Vibration: ISTA 1G, Drop: ISTA 1A							
Colour	RAL 7012							

Electrical characteristics - Battery									
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000	
Phase in/out	1/1								
Maximum recharge current	standard	A	1.5	1.6		2	2	2	2
	CLA	A	-				8	-	6
	Hot-Swap	A	-				8	-	6
Battery connection (UPS in parallel)	Distributed								

## 4.3 RECOMMENDED PROTECTION

RECOMMENDED PROTECTION DEVICES - Input <sup>(1)</sup>								
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
C curve circuit breaker (A)	8	13	16		-			
D curve circuit breaker (A)	-				50		80	

RECOMMENDED PROTECTION DEVICES - Input residual current circuit breaker <sup>(2)</sup>								
Rated power (kVA)	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
Input residual current circuit breaker	0,03 A type A				0,1 A type A			

RECOMMENDED PROTECTION DEVICES - Output <sup>(3)</sup>								
Model	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
Short-circuit inverter current (A) (when AUX MAINS is not present)	10.7	23	23	44	65	80	120	130
B curve circuit breaker <sup>(3)</sup> (A)	-				≤10			

CABLES - Maximum cable section								
Model	1100	1700	2200	3300	5000	7000	9000	11000
Phase in/out	1/1							
Rectifier terminals (flexible cable)/(rigid cable) mm <sup>2</sup>	IEC320-C14	IEC320-C20			6		10	
Battery terminals (flexible cable)/(rigid cable) mm <sup>2</sup>	connector							
Output terminals (flexible cable)/(rigid cable) mm <sup>2</sup>	6xIEC320 C13	6xIEC320 C13 +1x IEC320 C19			6		10	

- (1) Rectifier protection should only be considered in the event of separate inputs. The bypass protection is given by recommendation. When the bypass and rectifier inputs are combined (common input), the general input protection rating must be whichever is the highest (bypass or rectifier).
- (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 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 systems (UPS). Methods of specifying the performance and test requirements

### 5.2.4 ENVIRONMENTAL

IEC 62040-4 Uninterruptible Power System (UPS) - Part 4: Environmental 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 'Technical specifications' chapter in the user manual.