



**PRIME**

Trustworthy  
power

# OFYS RT

1 to 6 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

OFYS 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 (VA)	1000	2000	3000	6000	6000X
OFYS RT	•	•	•	•	•
<i>Matrix table for model and VA 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 TO 6 kVA

Dimensions				
Cabinet type		Width (W) [mm]	Depth (D) [mm]	Height (H) [mm]
	1000	89	310	440
	2000	89	410	440
	3000	89	630	440
	6000	89	610	440
	6000X	89	610	440
	OFYS-RT-B192V2U	178	668	440
	OFYS-RT-B240V3U	220	610	440

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.

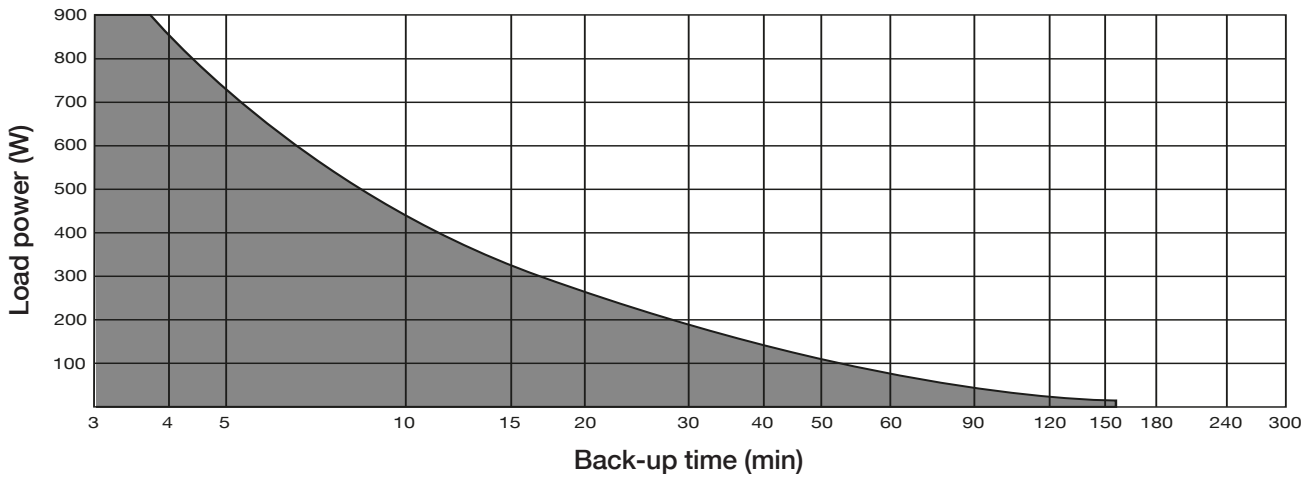
OFYS RT MTBF exceeds the market standard, and Socomec officially declares its MTBF data.

## 2.3 FLEXIBLE BACK-UP TIME

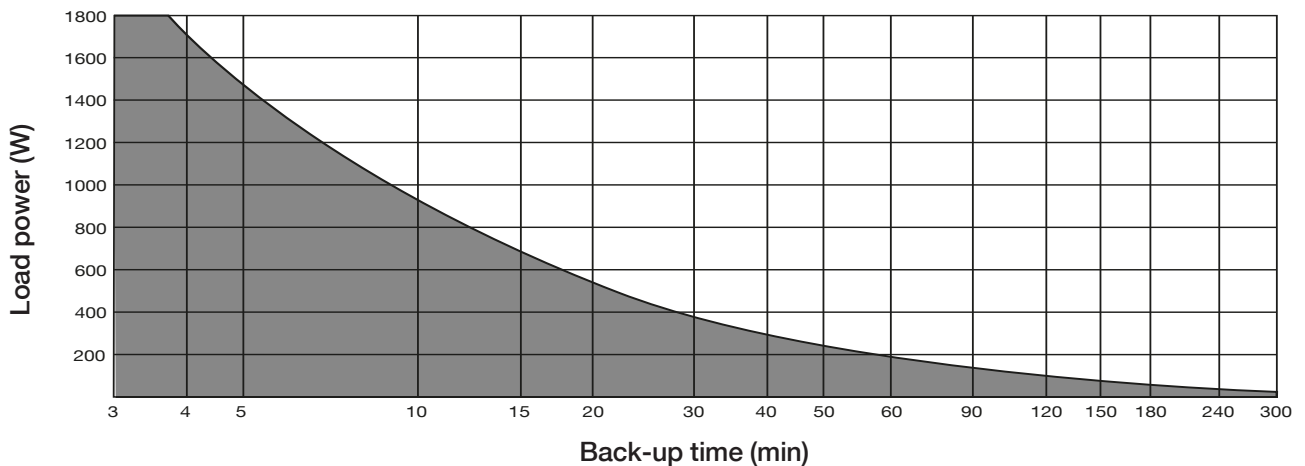
Different back-up times are possible by using models with internal battery or external battery cabinets. Batteries are installed on acid-proof trays and connected by means of polarised connectors to facilitate their maintenance. To guarantee maximum back-up time availability and battery life, the OFYS 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.

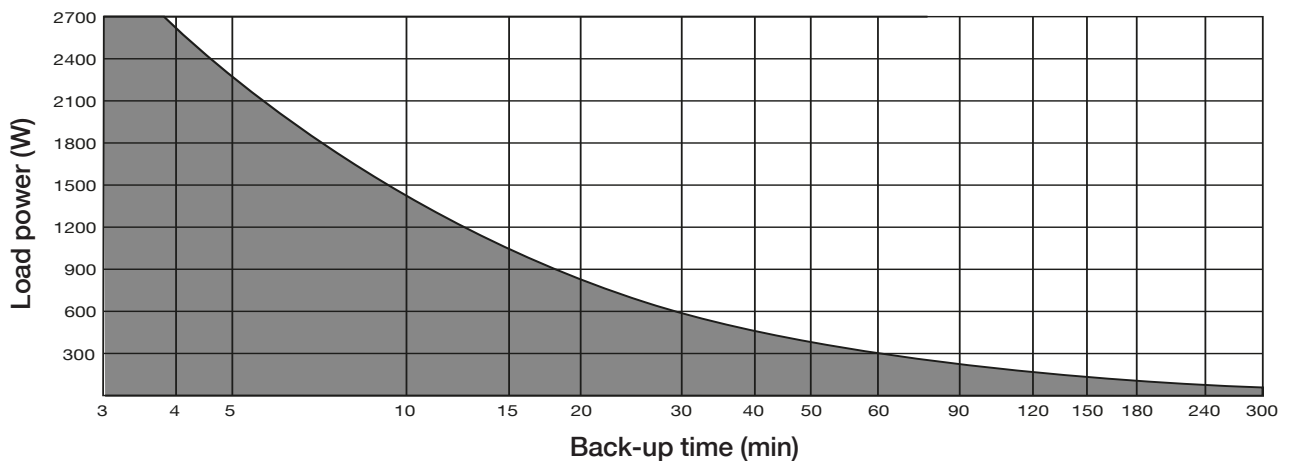
1000 VA



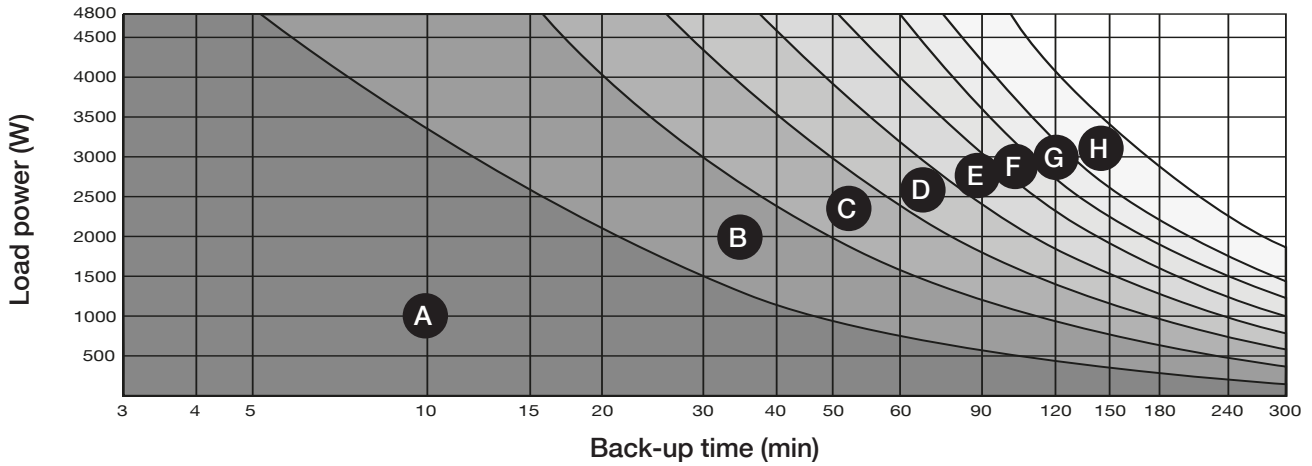
2000 VA



3000 VA



6000 VA 16batt

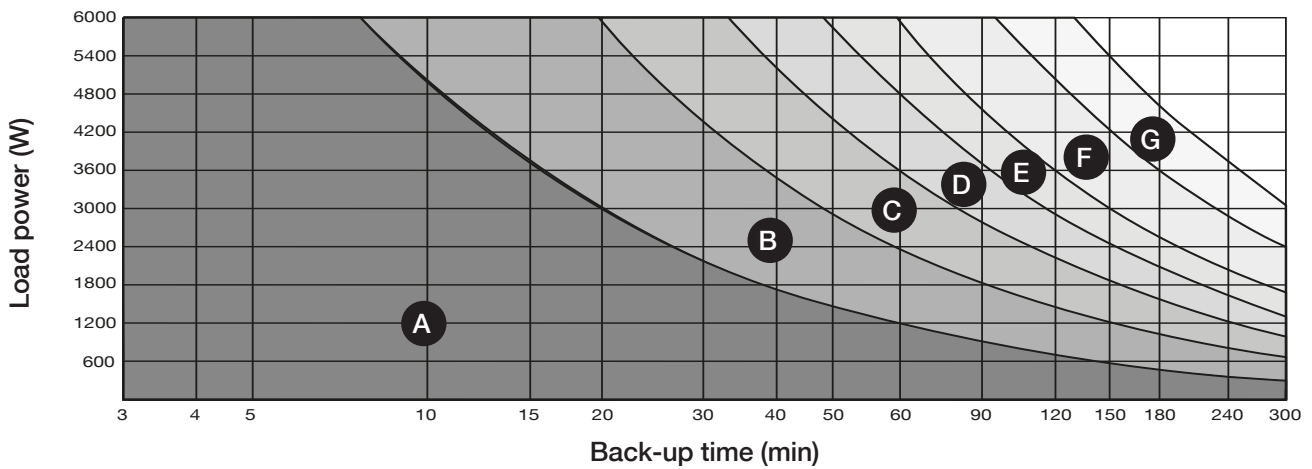


UPS	BATT	A	B	C	D	E	F	G	H
6000		1	1	1	1	1	1	1	1
	OFYS-RT-B192V2U	1	2	3	4	5	6	7	9



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

6000 VA 20batt



UPS	BATT	A	B	C	D	E	F	G
6000X		1	1	1	1	1	1	1
	OFYS-RT-B240V3U	1	2	3	4	5	7	9



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	OFYS RT		Notes	Reference
	1000-3000 VA	6000 VA		
<b>Communication Option</b>				
USB	●	●		
RS 232	●	●		
EPO/REPO		●		
Relay board card 1 input, 5 output programmable relays	○	○	⚠️ ⓧ OFYS-OP-SNMP	OFYS-OP-REL
RT-VISION WEB/SNMP card	○	○	⚠️ ⓧ OFYS-OP-REL	OFYS-OP-SNMP
<b>Electrical Option</b>				
Input Output cable	●			
USB cable	●	●		
External maintenance bypass	○			MBP-1U-IEC ENT-OP-PDU16
<b>Mechanical Option</b>				
Rail for rack mount	○	○		OFYS-OP-RAIL
Rack brackets	●	●		
Tower stands	●	●		

- ⓘ Required option
- ⓧ Incompatible option

## 4. SPECIFICATIONS - OFYS RT

### 4.1 INSTALLATION PARAMETERS

Installation parameters							
Rated power (VA)			1000	2000	3000	6000	6000X
Phase in/out			1/1				
Active power	W		900	1800	2700	4800	6000
Rated/maximum rectifier input current (EN 62040-3) <sup>(1)</sup>	A		4.4/10	8.8/10	13/16	22.4/50	27.8/50
Rated bypass input current <sup>(1)</sup>	A		4.3	8.7	13	26	26
Inverter output current @ 230 V	A		4	7.8	11.7	21	26
Sound level	dBA		50			55	
Power dissipation in nominal conditions <sup>(1)</sup>	W		105	210	273	368	405
	kcal/h		90	181	235	316	348
	BTU/h		358	717	932	1256	1382
Dimensions	Width	mm	440			438	
	Depth	mm	310	410	630	610	610
	Height	mm	89				
Single unit Clearances	Operational	mm	Front ≥ 15; Rear ≥ 20; Lateral 0				
	Maintenance	mm	Front ≥ 1000 Top ≥ 0				
Weight without batteries	kg					17	17
Weight with batteries (depending on number of batteries)	kg		10.8	18.2	29.3	65	82

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)			1000	2000	3000	6000	6000X
Phase in/out			1/1				
Rated mains supply voltage			208/220/230/240 V 1ph + N				
Voltage tolerance			180±280 VAC (100% load); 120±300 VAC (50% load)			176±300 VAC ± 3% (100% load); 110±300 VAC ± 3% (50% load)	
Rated frequency			50/60 Hz (selectable)				
Frequency tolerance			From 40 to 70 Hz			From 46 to 64 Hz	
Power factor (input at full load and rated voltage)			≥ 0,99			≥ 0.99	
Total harmonic distortion (THDi)			< 5%			< 5%	< 6%
Max inrush current at start-up	A		< 10			< 60	



Electrical characteristics - Bypass						
Rated power (VA)	1000	2000	3000	6000	6000X	
Phase in/out	1/1					
Bypass rated voltage	Nominal output voltage -40% +15% (settable)					
Bypass rated frequency	50/60 Hz (selectable)					
Bypass frequency tolerance	±3% (configurable from 1% to 5%)					

Electrical characteristics - Inverter							
Rated power (VA)	1000	2000	3000	6000	6000X		
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	±0.5%						
Load crest factor	3						
Voltage harmonic distortion (with linear load)	≤ 3%					≤ 1%	
Overload tolerated by the inverter	10 min	W	< 990	< 1980	< 2970	< 5280	< 6600
	1 min	W				< 6240	< 7800
	30 sec	W	< 1170	< 2340	< 3510		
	3 sec	W	< 1350	< 2700	< 4050		
	1 sec	W				> 6240	> 7800

Electrical characteristics - Efficiency						
Rated power (VA)	1000	2000	3000	6000	6000X	
Phase in/out	1/1					
Double conversion efficiency (normal mode - 230V @ full load)	88	89	90	93.6		
Efficiency in EcoMode	93	94	95	98		

Electrical characteristics - Environment						
Rated power (VA)	1000	2000	3000	6000	6000X	
Phase in/out	1/1					
Storage temperatures	-15 to +60 °C					
	(±15 to +25 °C for better battery life)					
Working temperature	0 to +40 °C					
	(±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					

Electrical characteristics - Battery						
Rated power (VA)	1000	2000	3000	6000	6000X	
Phase in/out	1/1					
Battery internal (pieces)	2	4	6			
Battery external (pieces)				16	20	
Maximum recharge current	A	1	1	1	4	4

## 4.3 RECOMMENDED PROTECTION

RECOMMENDED PROTECTION DEVICES - Input <sup>(1)</sup>					
Rated power (VA)	1000	2000	3000	6000	6000X
Phase in/out	1/1				
D curve circuit breaker (A)	/	/	/	50	60

RECOMMENDED PROTECTION DEVICES - Input residual current circuit breaker <sup>(2)</sup>					
Rated power (VA)	1000	2000	3000	6000	6000X
Phase in/out	1/1				
Input residual current circuit breaker				0,1 A type A	

RECOMMENDED PROTECTION DEVICES - Output <sup>(3)</sup>					
Model	1000	2000	3000	6000	6000X
Phase in/out	1/1				
Short-circuit inverter current (A) (when AUX MAINS is not present)	10	30	40	50	50
B curve circuit breaker <sup>(3)</sup> (A)	/	2	6	6	6

CABLES - Maximum cable section					
Model	1000	2000	3000	6000	6000X
Phase in/out	1/1				
Rectifier terminals (flexible cable) mm <sup>2</sup>	IEC 320 C14	IEC 320 C14	IEC 320 C20	10mm <sup>2</sup>	10mm <sup>2</sup>
Battery terminals (flexible cable)/(rigid cable) mm <sup>2</sup>	/	/	/	Connector	Connector
Output terminals (flexible cable)/(rigid cable) mm <sup>2</sup>	6 x IEC 320 C13	6 x IEC 320 C13	6 x IEC 320 C13 +1 x IEC 320 C19	10mm <sup>2</sup>	10mm <sup>2</sup>

- (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

### 5.3 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.



#### ELITE UPS: a mark of efficiency

Socomec, as CEMEP UPS manufacturer member, has signed a Code of Conduct put forward by the Joint Research Centre of the European Commission (JRC), to ensure the protection of critical applications and processes ensuring 24/7 continuous high quality supply. The JRC commits to mitigating energy losses and gas emissions caused by UPS equipment, therefore maximising UPS efficiency.

