

Tecnichal Specification

Vision

800 VA up to 2000 VA
Line Interactive technology (VI)



INDEX

- 1 GENERAL DESCRIPTION 3
 - 1.1 UPS main features 3
 - 1.2 Standard version 4
- 2 VISION SERIES UPS AESTHETICS 4
 - 2.1 VISION front panel..... 4
 - 2.2 Views..... 5
- 3 TECHNICAL DATA TABLE 7
 - 3.1 UPS VISION..... 7
- 4 PART NUMBER AND PACKAGING 10
 - 4.1 UPS VISION - Part Number and GTIN-13 code 10
 - 4.2 Vision - Dimensions, weights, and unit for shipping 11
- 5 COMMUNICATION PORTS AND FIRMWARE 12
- 6 UPS OPERATING MODES and ENERGY SHARE 13
- 7 AVR THRESHOLD AND OUTPUT VOLTAGE LEVEL 14
 - 7.1 L.I. - NORMAL RANGE or ECO - NORMAL RANGE..... 14
 - 7.2 L.I. - WIDE RANGE or ECO - WIDE RANGE 15
 - 7.3 L.I. - NARROW RANGE 16
 - 7.4 ECO - AVR OFF - NORMAL RANGE 17
 - 7.5 ECO - AVR OFF - WIDE RANGE..... 18

1 GENERAL DESCRIPTION

The VISION DUAL UPS is a line interactive single-phase unit for tower installation.

The units are available with power ratings of 800 VA-1100 VA-1500 VA-2000 VA, with an output power factor equal to 0.8.

1.1 UPS main features

The VISION main features are:

- VI type (Line Interactive) / pure sinusoidal waveform during battery-powered functionality
- High voltage (230V)
- Output frequency with automatic selection (auto-sensing)
- Front/rear ventilation
- LCD display
- AVR Buck/Boost
- UPS with configurable and customizable functions (i.e. AVR, by-pass thresholds, automatic testing, acoustic alarm, etc.) through proprietary configuration software
- The internal battery tray is of a hot-swap typology and the connector is secured to the test finger and the pin based on the requirements of the TUV.
The battery tray can be replaced using the manual bypass function. This function can be enabled by pressing and holding down the ON and SEL keys for 4 seconds.
- Protected battery expansion connector.
- Expansion slot for communication cards (i.e. second USB and RS 232 Port, SNMP, ModBus, etc.).
- RS232 and USB port
- REPO contact
- Eco mode function (AVR disabled)
- EnergyShare output socket.

1.2 Standard version

- 800VA – 540W – PF 0,8 – 2 batteries, 12V, 7Ah – narrow cabinet
- 1100VA – 880W – PF 0,8 – 2 batteries, 12V, 9Ah – narrow cabinet
- 1500VA – 1200W – PF 0,8 – 4 batteries, 12V, 7Ah – wide cabinet
- 2000VA – 2700W – PF 0,8 – 4 batteries, 12V, 9Ah – wide cabinet

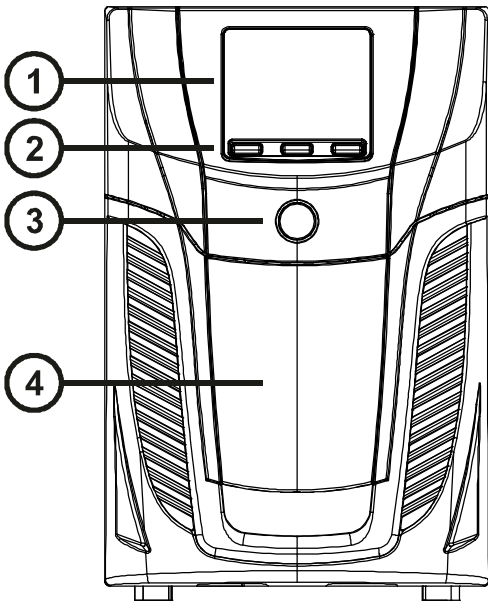
2 VISION SERIES UPS AESTHETICS

2.1 VISION front panel

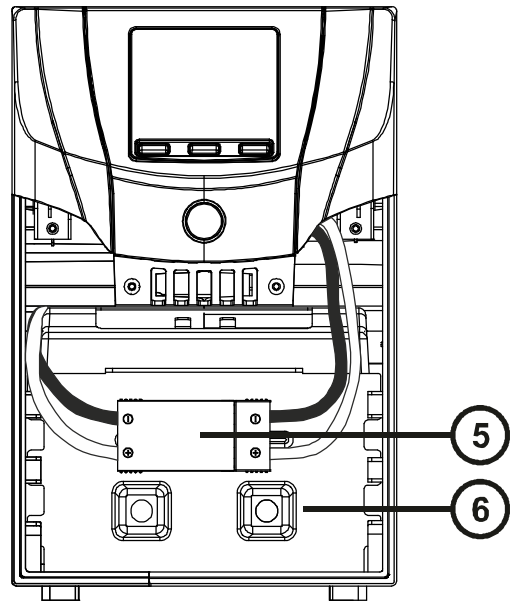


Chassis reference colour: Pantone black C
Colour of the glossy parts: Pantone black C

2.2 Views

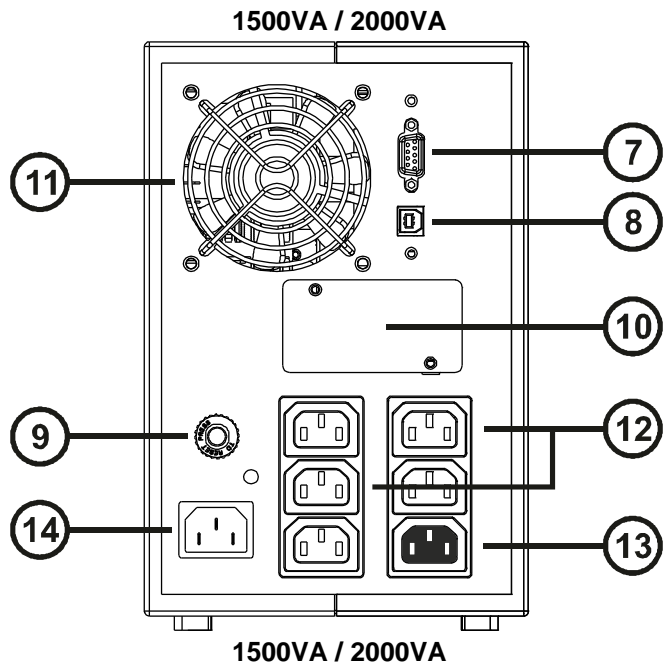
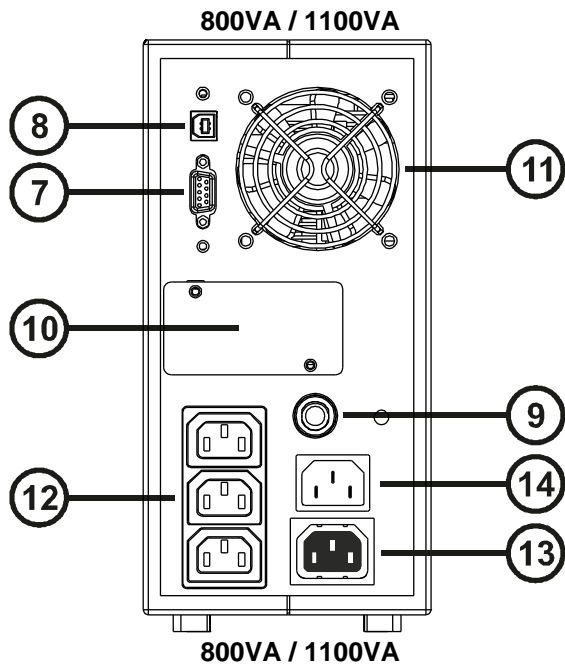


- ① Display
- ② Multifunctional keys
- ③ ON/OFF Switch



- ④ Removable front panel
- ⑤ Battery pack connector
- ⑥ Battery pack retention panel

REAR VIEW



- ⑦ Communication port RS232
- ⑧ USB communication port
- ⑨ Circuit breaker
- ⑩ Communication Card Slots
- ⑪ Cooling fan
- ⑫ IEC 10A output socket

- ⑬ EnergyShare socket
- ⑭ IEC 10A input plug

3 TECHNICAL DATA TABLE

3.1 UPS VISION

UPS VISION	800 VA	1100 VA	1500 VA	2000 VA
------------	--------	---------	---------	---------

INPUT

Rated voltage [Vac]	220 - 230 - 240			
Maximum allowed input voltage [Vac]	300 Vac RMS / 400 V Peak			
Voltage range for no battery intervention (configurable through UPSTools)	Default: 280 Vac Maximum: 290 Vac Default: 172 Vac Minimum: 162 Vac Options: Normal range – Wide range – Narrow range – AVR off normal range – AVR off wide range			
Voltage range for no AVR intervention (configurable through UPSTools)	Default: 242 Vac Default: 202 Vac Options: Normal range – Wide range – Narrow range			
Rated frequency [Hz]	50 – 60			
Frequency range for no battery intervention (configurable through UPSTools)	± 5% default [configurable 3% ÷ 10%]			
Rated current @220Vac(1) [A]	3,9	5,3	7,4	9,7
Circuit breaker [A]	5	7	10	15

(1) @ rated load, nominal voltage of 220 Vac, battery charging

BATTERY

Number of batteries / V [n°] / [V]	2 / 12V	2 / 12V	4 / 12V	4 / 12V
Standard capacity [Ah]	7Ah (a)	9Ah (b)	7Ah (a)	9Ah (b)
Recharging current [A]	0,9 ÷ 1 A @ UPS on with maximum fan speed About 1.1 A @ UPS in Stand-By			
Recharging time (c) [h]	< 4h for 80% of the load			

(a) 12V/7Ah Batteries: CSB GP1272-F2 or CSB GP1272(28W) or CSB UPS12360-7 or YUASA NPW36-12

(b) 12V/9Ah Batteries: CSB HR1234W-F2 or YUASA NPW45-12

OUTPUT

Rated voltage (configurable through UPSTools) [Vac]	Selectable: 220 / 230 / 240 Selectable in step of 1 V from 220 V to 240 V			
AVR coils ratio	In buck mode: $V_{out} = V_{in} \times 0,87$ In boost mode: $V_{out} = V_{in} \times 1,15$			
Rated voltage in mains mode (configurable through UPSTools)	Default: 230 Vac +5% -13%			
Waveform (8)	Sinusoidal			
Voltage distortion @ linear load (8)	≤ 4%			
Voltage distortion @ distorting load (8)	≤ 7,5%			
Rated frequency [Hz]	Selectable: 50 / 60 / automatic detection			
Output frequency accuracy (8)	0,1 Hz			
Current crest factor (8)	≥ 3 : 1			
Rated power [VA]	800VA	1100VA	1500VA	2000VA
Rated power [W]	640W	880W	1200W	1600W

UPS VISION	800 VA	1100 VA	1500 VA	2000 VA
Overload: 100% < load < 110%	Line mode: shutdown after 5 min Battery mode: shutdown after 60 sec			
Overload: 110% < load < 150%	Line mode: shutdown after 10 sec Battery mode: shutdown after 10 sec			
Overload load > 150%	Line mode: shutdown after 1 sec Battery mode: shutdown after 0,5 sec			
Inverter short circuit	Short circuit current \leq Power [VA] / 220 V x 3 shutdown after 60ms			

- (3) Battery @ load 0% -100%
 (4) @ Mains / battery / mains
 @ resistive load 0% / 100% / 0%
 (8) In battery working mode

AUTONOMIES

Measured autonomy @ 100% linear load – only internal batteries	4'15"	4'	5'15"	4'
--	-------	----	-------	----



MISCELLANEOUS

Leakage current to ground [mA]	<1mA			
AC/AC efficiency in LINE mode	95,98%	97,24%	97,44%	96,88%
AC/AC efficiency in ECO mode	97,64%	97,88%	98,02%	98,01%
Autoconsumption in ECO mode (AVR disconnected)	11,25W	10,4W	11,75W	12,2W
DC/AC efficiency in BATTERY mode	84,34%	83,99%	89,19%	88,47%
Autoconsumption from mains (batteries disconnected)	19,4W	18,75W	22,1W	27,3W
Autoconsumption in Stand-by (batteries disconnected)	8,55W	7,7W	10,35W	10,15W
Autoconsumption with on/off switch turned off	17,7 μ A	17,7 μ A	25,4 μ A	24,8 μ A
Autoconsumption without load from battery	30,8W @ Vbatt=25Vdc	27,93W @ Vbatt=25Vdc	40,8W @ Vbatt=51Vdc	40,6W @ Vbatt=51Vdc
Power loss with resistive nominal load				
[W]	26	25	31	51
[BTU/h]	90	85	107	175
[kcal/h]	23	21	27	44

UPS VISION	800 VA	1100 VA	1500 VA	2000 VA
Operating temperature (6) [°C]	0 – 40			
Humidity	5 - 95% without condensation			
Installation height	Operation: 1000 m at nominal power (-1% power for every 100 m above 1000 m) 4000 m maximum Transport: <15000 m			
Protection	Excessive battery discharge – overcurrent – short circuit – over voltage – undervoltage – thermal			
Overvoltage protection	n°2 VDR x 148 Joule			
Noise levels	< 40 dB(A) at 1 m			
Dimensions L x D x H [mm]	120 x 443 x 247		160 x 443 x 247	
Packaging Dimensions L x D x H [mm]	208 x 530 x 342		250 x 540 x 354	
Net weight [Kg]	10.5	11.3	10.5	11.3
Gross weight [Kg]	12.2	13	12.2	13

(6) 20 - 25 °C for a long-life battery

OTHER

Safety compliance	EN 62040-1-1 and directive 2006/95/EC		
EMC conformance	EN 62040-2 cat C2 and directive 2004/108/EC		
Marks		Mark on all models	

Only for Riello brand

4 PART NUMBER AND PACKAGING

4.1 UPS VISION - Part Number and GTIN-13 code

Part Number and GTIN – 13 codes

MODELS	PART NUMBER	GTIN – 13	DESCRIPTION
LC2 800VA small	BVST8001RU	8023251002274	UPS VST 800
LC2 1100VA small	BVST1K11RU	8023251002281	UPS VST 1100
LC2 1500VA big	BVST1K51RU	8023251002298	UPS VST 1500
LC2 2000VA big	BVST2K01RU	8023251002304	UPS VST 2000

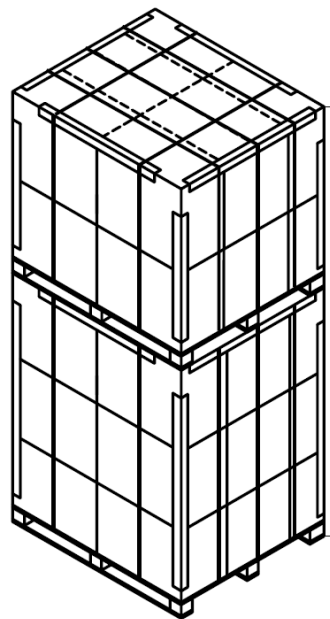
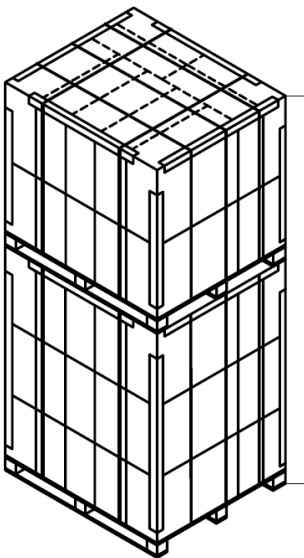
4.2 Vision - Dimensions, weights, and unit for shipping

Vision	800VA	1100VA
Carton box dimension (WxDxH) [mm]	215 x 535 x 350	
Total pallet dimension (WxDxH) [mm]	1 layer: 1200 x 1000 x 510 (contains 9 units) 2 layer: 1200 x 1000 x 860 (contains 18 units) 3 layer: 1200 x 1000 x 1210 (contains 27 units) 4 layer: 1200 x 1000 x 1720 (contains 36 units) 5 layer: 1200 x 1000 x 2070 (contains 45 units)	
Q.ty for 20" container model	Max 10 pallets; max 450 units	
Q.ty for 40" container model	Max 21 pallets; max 945 units	

Vision	1500VA	2000VA
Carton box dimension (WxDxH) [mm]	250 x 543 x 365	
Total pallet dimension (WxDxH) [mm]	1 layer: 1200 x 1000 x 525 (contains 8 units) 2 layer: 1200 x 1000 x 890 (contains 16 units) 3 layer: 1200 x 1000 x 1255 (contains 24 units) 4 layer: 1200 x 1000 x 1780 (contains 32 units) 5 layer: 1200 x 1000 x 2145 (contains 40 units)	
Q.ty for 20" container model	Max 10 pallets; max 400 units	
Q.ty for 40" container model	Max 21 pallets; max 840 units	

Vision small - pallet packing assembly:

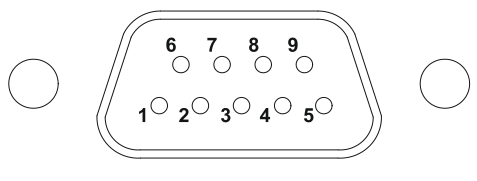
Vision big pallet - packing assembly



5 COMMUNICATION PORTS AND FIRMWARE

The UPS comes with a standard RS 232 port with input and output signals, a USB Port and an expansion slot for connecting additional electronic boards.

RS 232 CONNECTOR

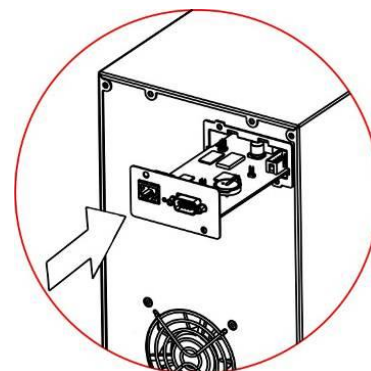
RS 232 CONNECTOR		
		
PIN #	SIGNAL	NOTES
1	Programmable output *: [default: UPS shutdown]	(*) Opto-isolated contact max. +30Vdc / 35mA. These contacts can be associated with other events using the appropriate software For additional information about interfacing with the UPS unit, please refer to the appropriate manual
2	TXD	
3	RXD	
5	GND	
6	DC Power Supply (Imax = 20mA)	
8	Programmable output *: [default: discharge pre-alarm]	
9	Programmable output *: [default: battery-powered functionality]	

COMMUNICATIONS SLOT

The UPS comes supplied with an expansion slot for optional communication cards (see the diagram on the right), which can allow the device to communicate using the most common communication standards.

Some examples include:

- Additional RS 232 and USB communication ports
- Serial duplicator
- Ethernet network card with TCP/IP, HTTP and SNMP protocols
- JBUS / MODBUS protocol converter card
- PROFIBUS protocol converter card
- Card with isolated relay contacts



Please consult the website www.riello-ups.com to check the availability of additional accessories

6 UPS OPERATING MODES and ENERGY SHARE

The area of the display shown in the figure displays the active operating mode and allows the user to choose other modes directly from the display panel.



POSSIBLE SETTINGS

The UPS is designed to be configured in various operating modes:

- **L.I.** normal operating mode
- **ECO** is the mode with which the UPS consumes the least amount of power, and is therefore the most efficient
- **MODE** using the **UPSTools** software it is possible to customise the UPS operational characteristics.
 - MODE 1: Wide range
 - MODE 2: Narrow range
 - MODE 3: AVR off
 - MODE 4: AVR off and wide range

The following table highlights the possible settings via UPSTools and the corresponding signal on the display. The different settings allow to have different range of power input and output.

Configuration from UPSTools	On display
L.I. - NORMAL RANGE	L.I.
L.I. - WIDE RANGE	L.I. Mode 1
L.I. - NARROW RANGE	L.I. Mode 2
ECO - NORMAL RANGE	ECO
ECO - WIDE RANGE	ECO Mode 1
ECO - AVR OFF - NORMAL RANGE	ECO Mode 3
ECO - AVR OFF - WIDE RANGE	ECO Mode 4

PROGRAMMABLE AUXILIARY SOCKET (EnergyShare)

The EnergyShare sockets are outlets that allow for the automatic disconnection of the load applied to them in certain operating conditions. The events that determine automatic disconnection of the EnergyShare sockets can be selected by the user through the **UPSTools** configuration software. For example, it is possible to select disconnection after a certain period of battery operation; or when the pre-alarm threshold for battery discharge has been reached, or when an overloading event occurs.

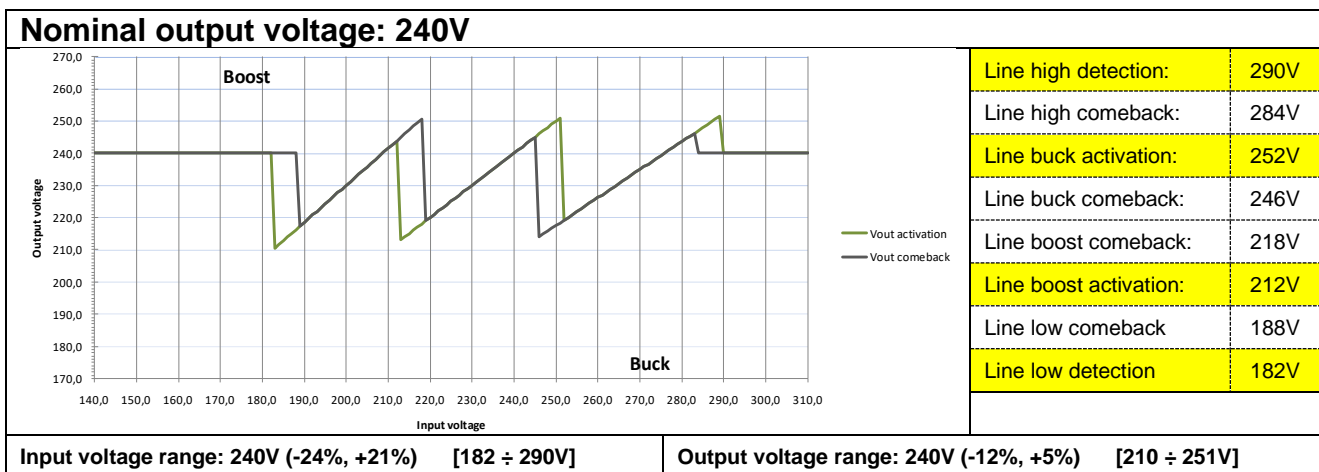
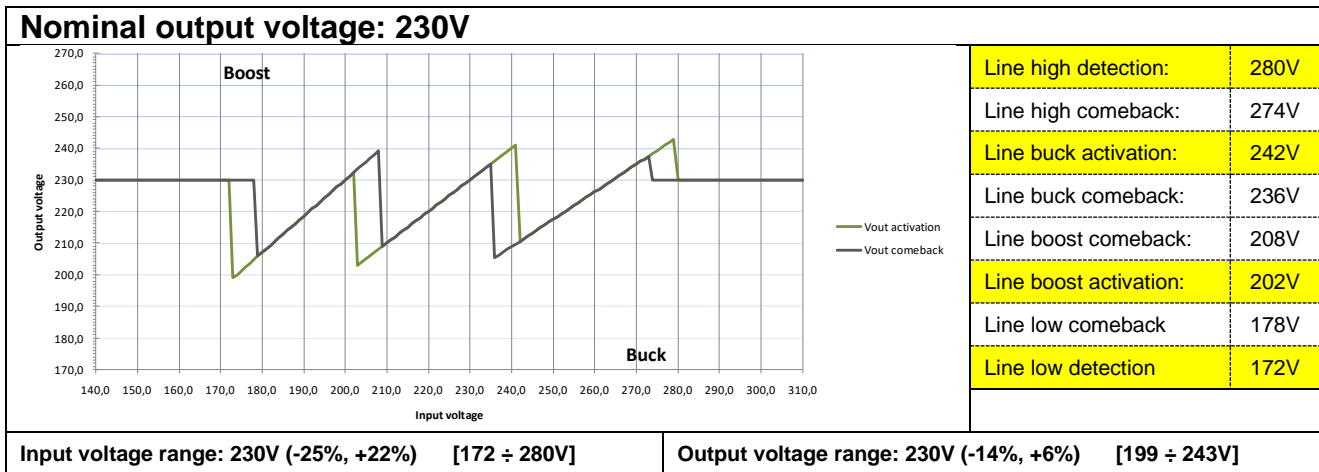
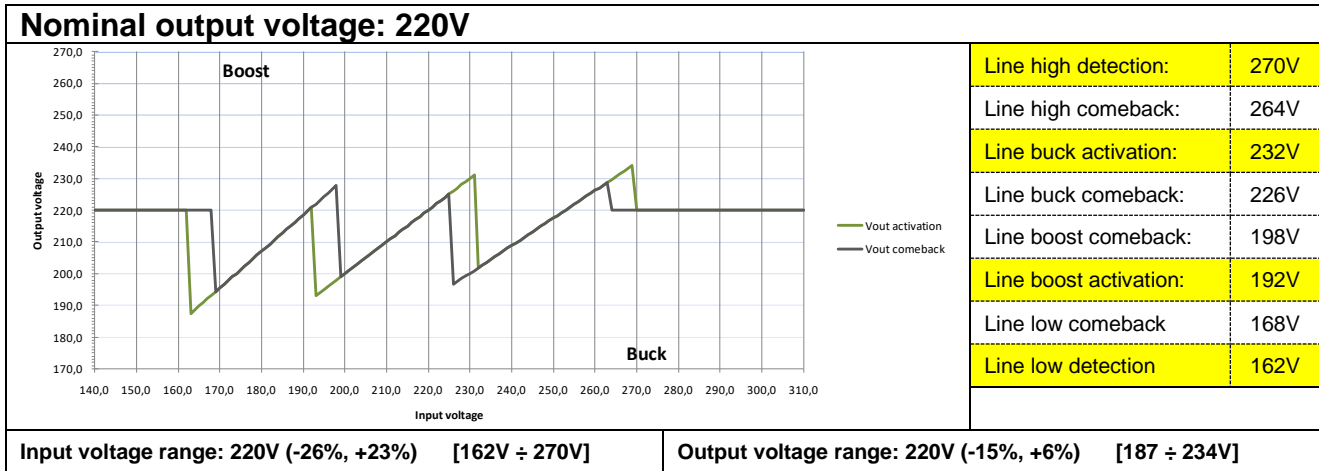
By default the Energyshare sockets are not configured and therefore function as other outlets.

The EnergyShare function is associated with an icon on the display whose meaning is explained in the paragraph entitled “**Display panel indications**”.

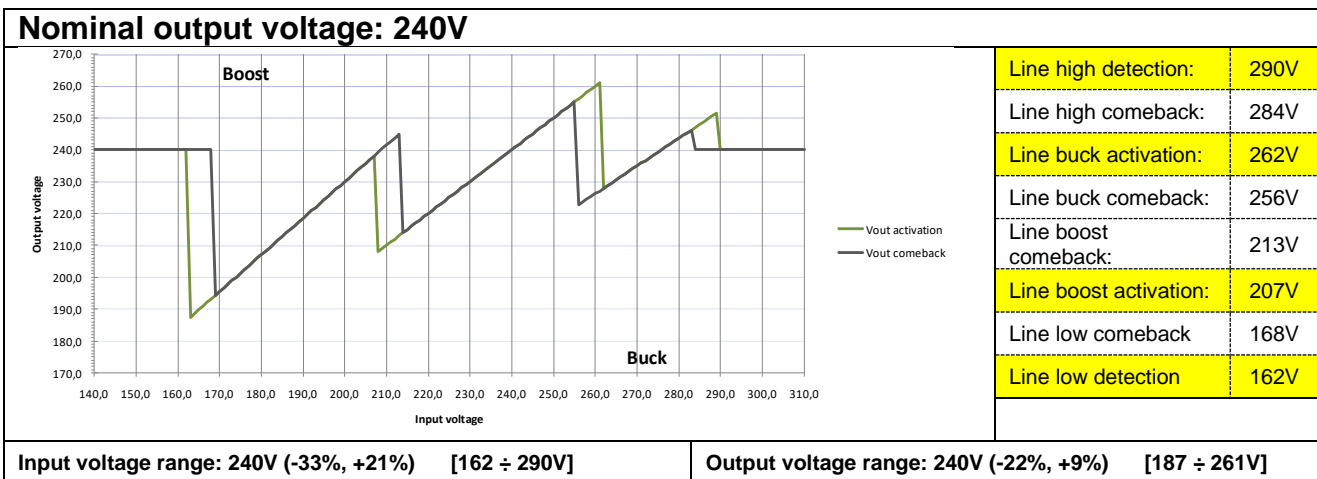
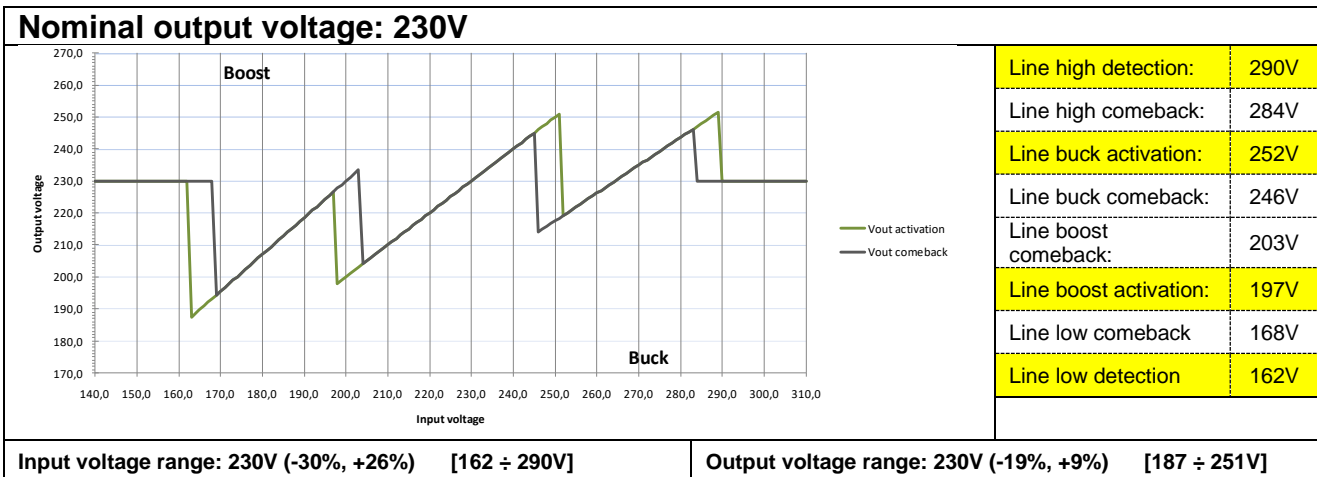
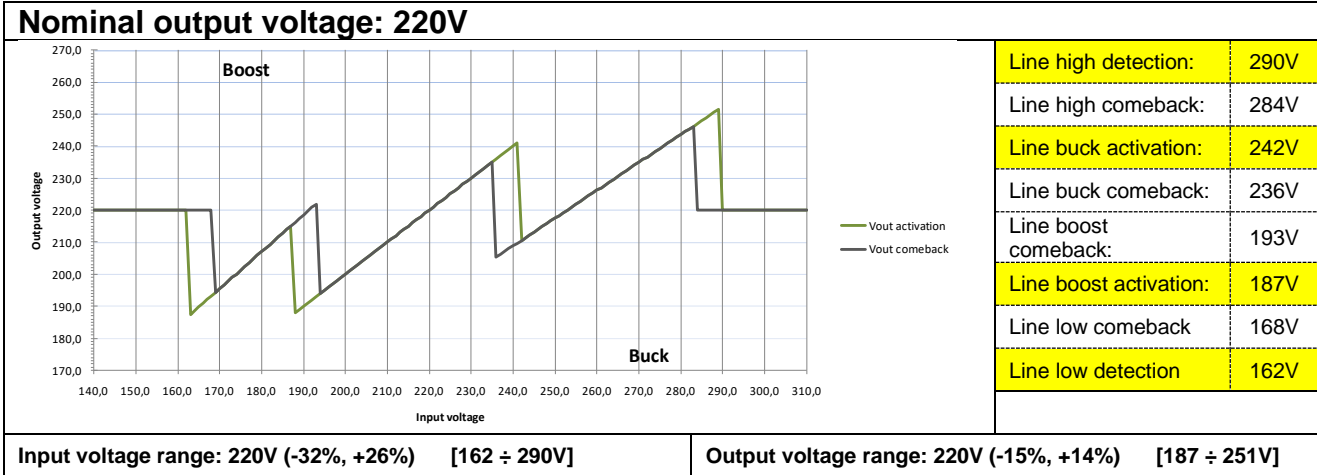
The presence and the number of these sockets depend on the UPS type, and they are distinguished by a different colour with respect to other sockets.

7 AVR THRESHOLD AND OUTPUT VOLTAGE LEVEL

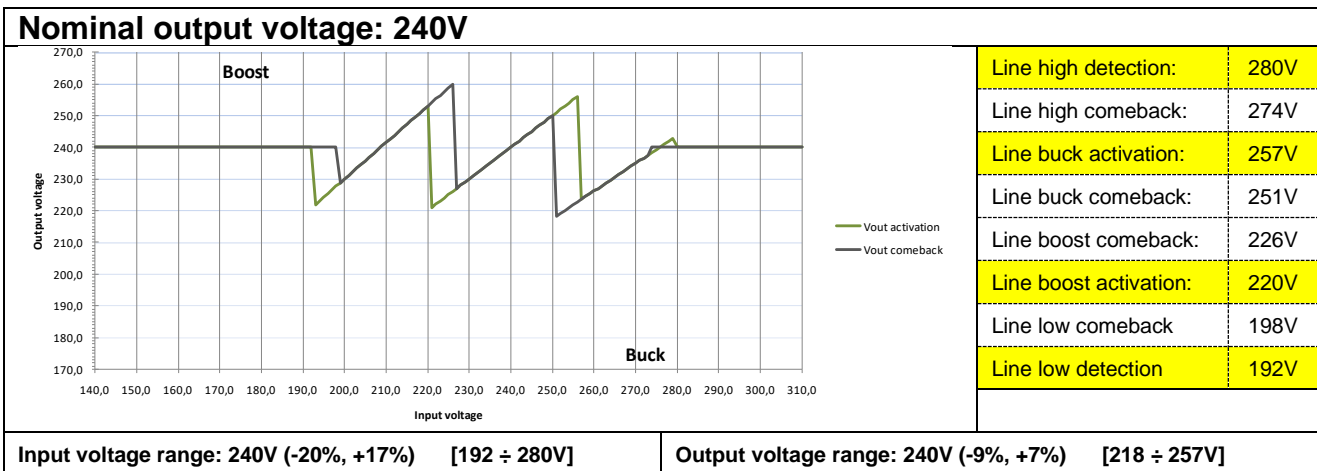
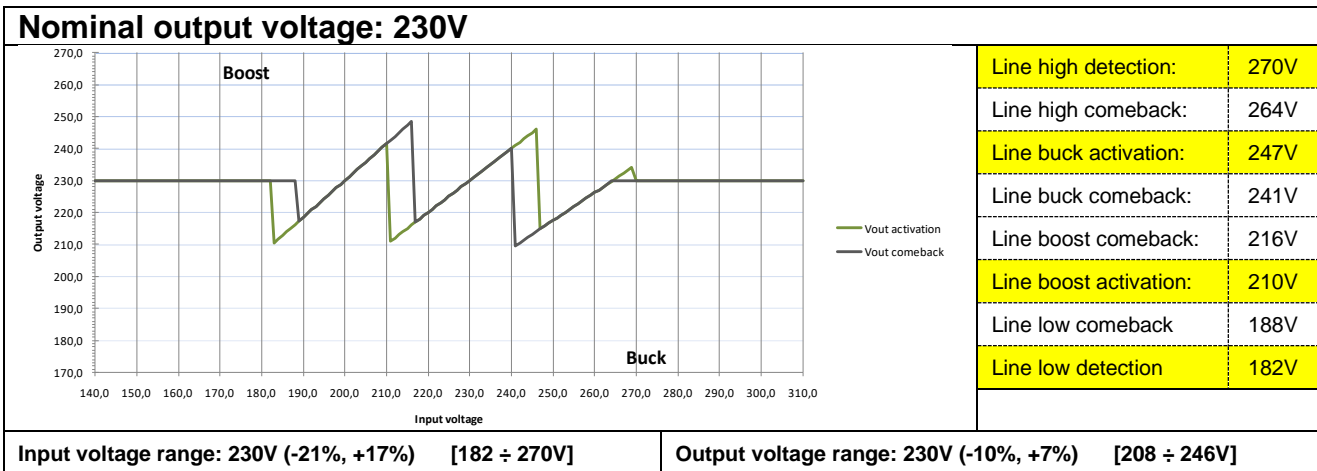
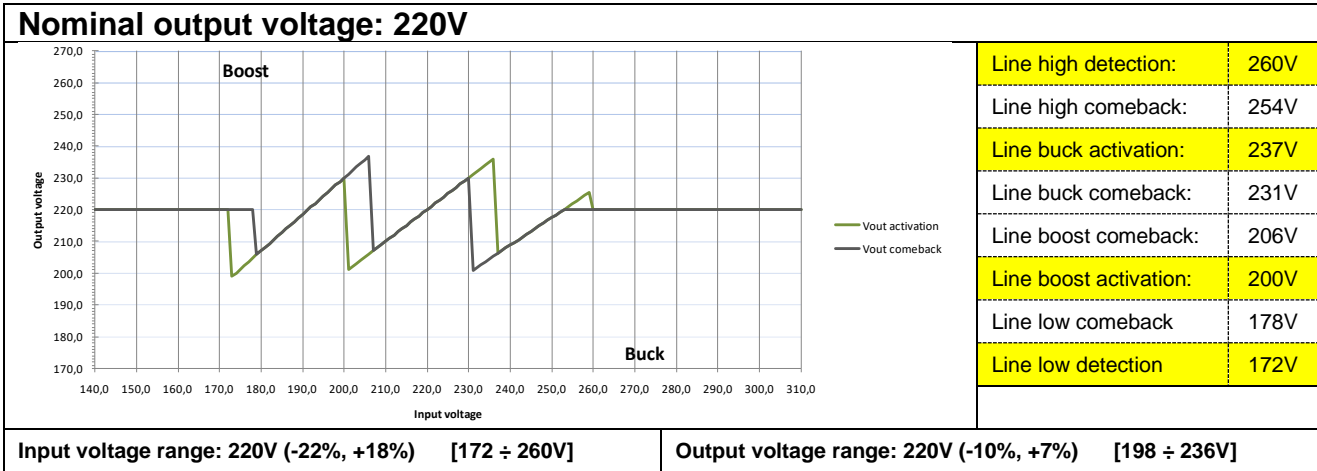
7.1 L.I. - NORMAL RANGE or ECO - NORMAL RANGE



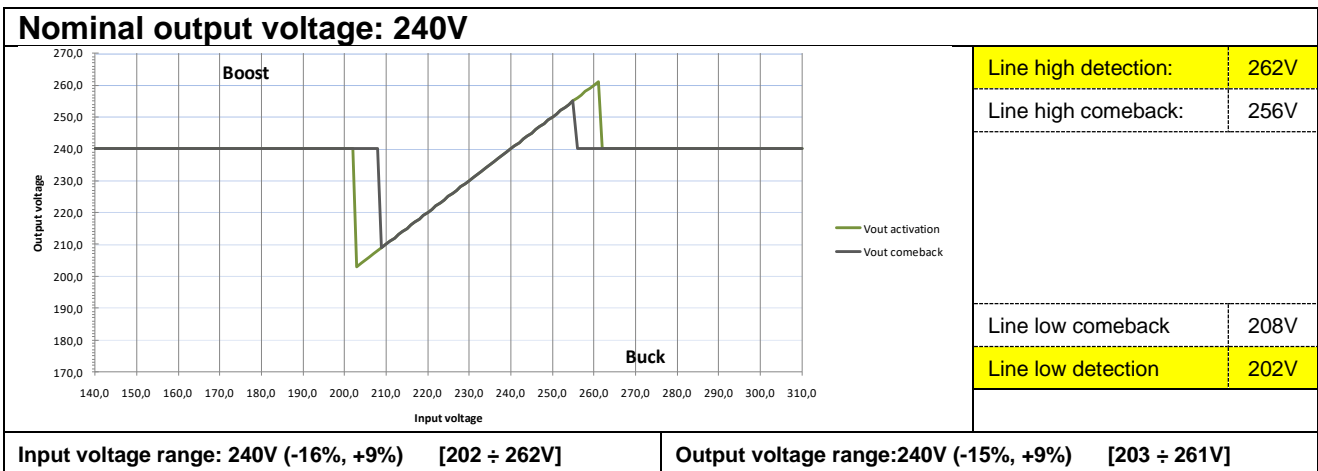
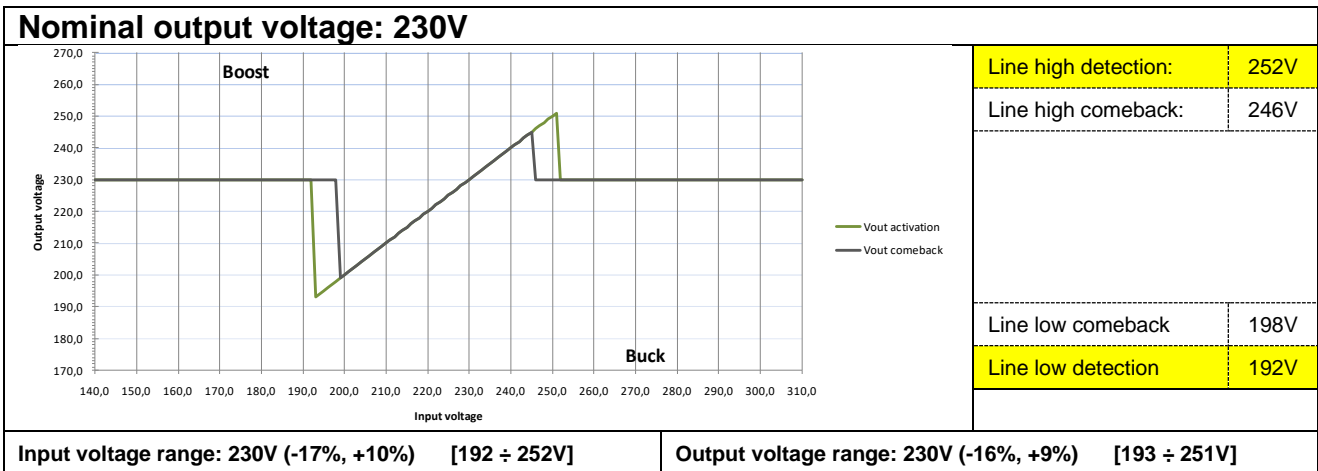
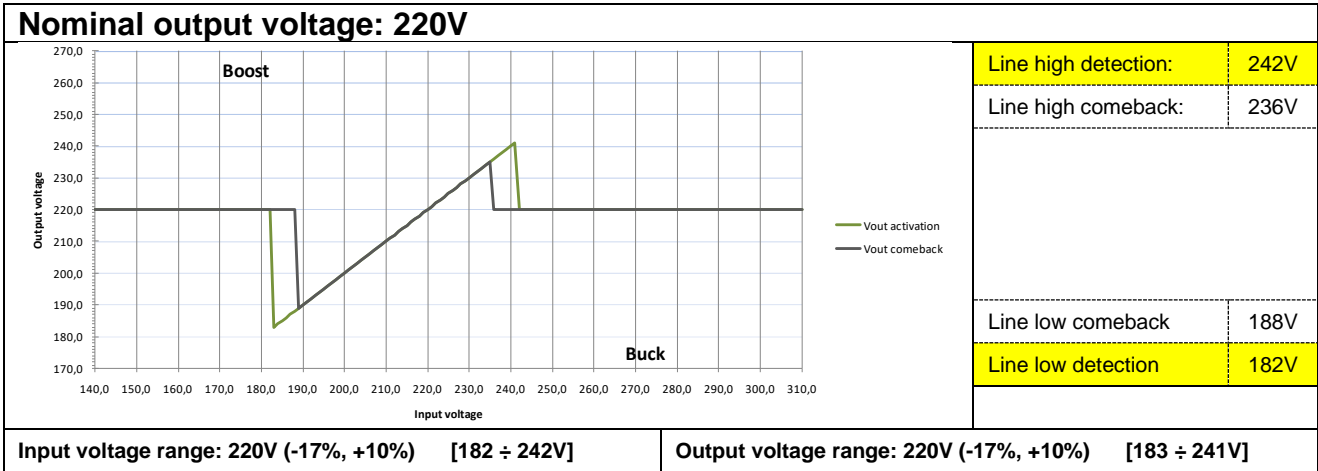
7.2 L.I. - WIDE RANGE or ECO - WIDE RANGE



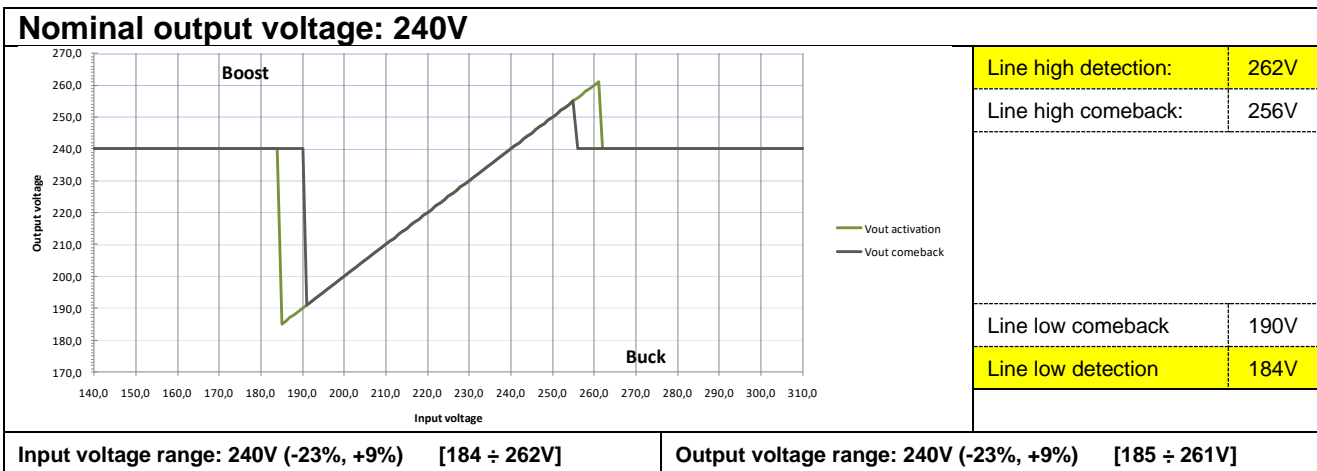
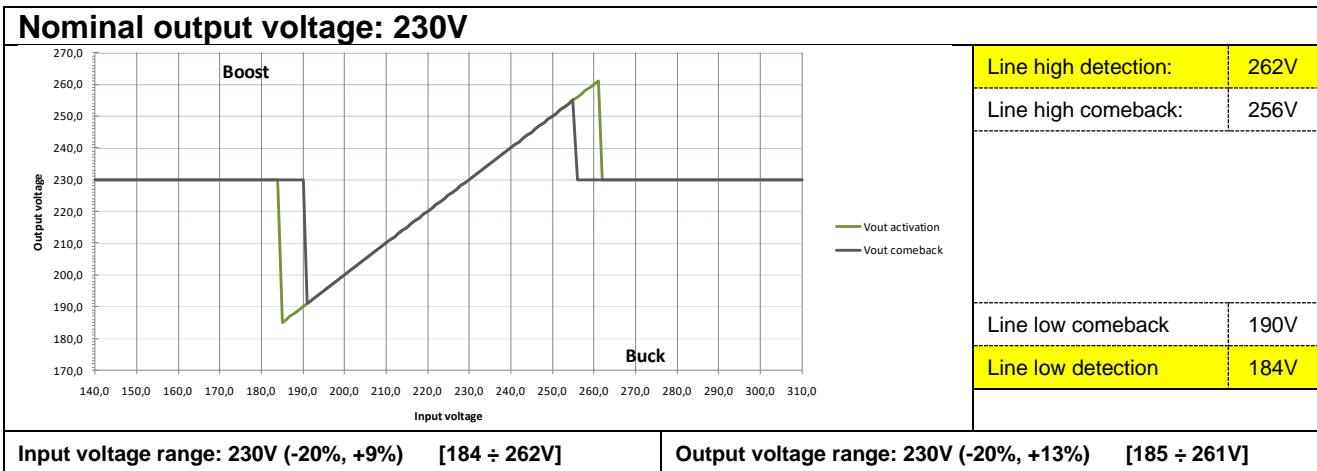
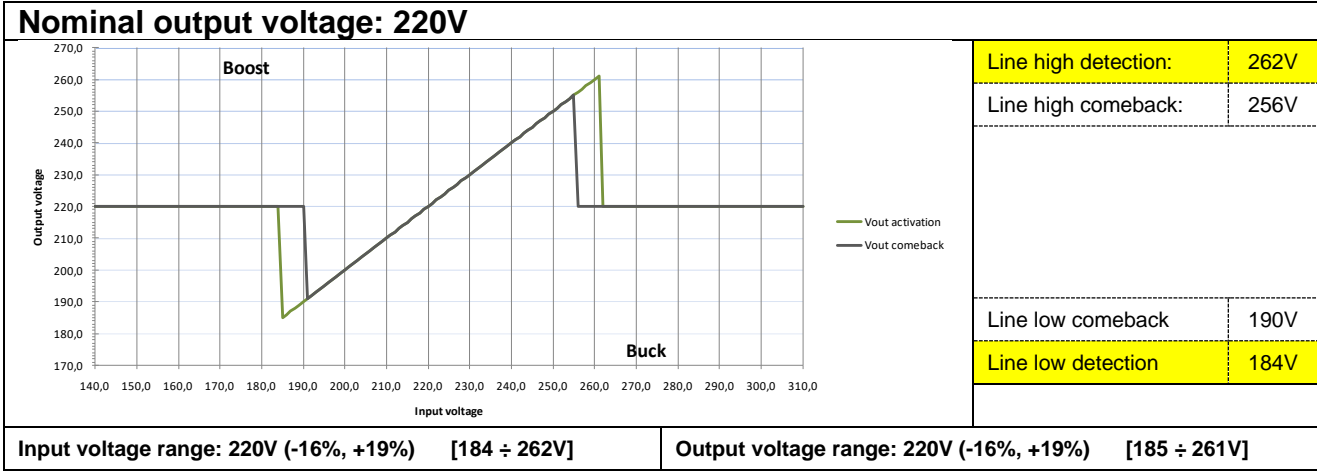
7.3 L.I. - NARROW RANGE



7.4 ECO - AVR OFF - NORMAL RANGE



7.5 ECO - AVR OFF - WIDE RANGE





RPS SpA – Riello Power Solutions
Viale Europa, 7
37045 Legnago (VR)-Italy
e-mail: info@riello-ups.com
www.riello-ups.com