

Online 3ph/3ph - 3ph/1ph

OPTIMA-33-RT10 05K TO 20K

Online de Doble Conversion UPS with Output PF 1.0 and IGBT technology in rectifier and inverter stages. Three-Phase Input and Output, Output can be configured as Single-Phase. Designed to offer the best protection to critical systems requiring a high level of power protection and high operational availability. Dual installation Rack & Tower, simply the best choice for any application.



Available for Three-Phase: 208, 400, and 480V Installations

Three-Phase Input and Output (3 Phases + Neutral + Ground) and models to operate in 208/120V (05K to 20K) and 400/230V (10K to 20K) systems.

Flexibility & Versatility

Standard UPS Output can be configured to operate as Single-Phase, turning these 3/3 UPS into 3/1 UPS. This setting is reserved for XSMART Technical Service.

IGBT + ON-LINE Doble Conversion Technology

New generation On Line Doble Conversion Technology offers high reliability and strength as well as outstanding features. DSP signal control system and an efficient rectifier/inverter system based in IGBT technology give exceptional attributes to this product family and an input power factor over 0.99 at full load.

Touch Screen

From this versatile 3.5 inches color touch screen LCD, all UPS parameter, as well as AC Line conditions, can be monitored. It is also a very intuitive interface to set up all configurable functions of this avant-garde unit.

Communication (USB - RS232 - SNMP) & Software de Control

Several communications options are available: USB, RS232 and Smart SNMP port. Smart SNMP port supports LAN cards, RS485 cards, or dry contact cards (AS400).

Multiple Bypass System

Includes an internal automatic bypass which activates if UPS fails or gets overloaded. This keeps the system powered and working while the situation is solved. Besides, UPS includes control port for external bypass switch for major maintenance.

Eco-Mode Operation, for power saving

ECO-Mode is a power saving function which reduces electrical consumption over 5%. In this mode the load is powered directly by AC Line as long as it keeps between pre-configured limits. Otherwise, the UPS goes to regular ONLINE mode. During power outage, the UPS goes into Battery Mode to keep your equipment working perfectly safe.

Conformal Coating

This XSMART equipment features a Conformal Coating treatment on its internal boards and components. Conformal coating is a protection against moisture and corrosive contaminants to ensure stable performance and extend its lifespan in various environments, as long as technical specifications requirements of the equipment are met.

Parallel Operation

Up to 4 units can be installed in parallel either to grow in capacity or for redundancy purposes (N+1). 2 UPS in parallel systems can operate either with one shared battery pack, or with separate battery packs, according to installation requirements.

Emergency Power Off (EPO)

EPO port to connect an emergency switch which turns off the UPS output when activated.

High Energy Efficiency

One of the main features of this family is high energy efficiency (>94%). This generates high operational savings and contributes with the environment.

Expandable Backup

External battery packs (as many as you need) can be connected to this UPS to offer longer backup.

Power Generators Compatible

Only True On-Line Double conversion UPS can filter voltage fluctuation and other particularities generated by Power Generators to generate a clean, perfect, and pure sine wave power to feed your installation.

Smart Battery Charger

With a smart battery charger this UPS family can charge batteries in an outstanding time (2-4 hours up to 90%), offering a better availability than similar products. A smart 3 stages charging algorithm, along with temperature compensation improves battery lifespan.

Applications: IT Systems, Industrial Installations, etc.



Technical Features / Características Técnicas

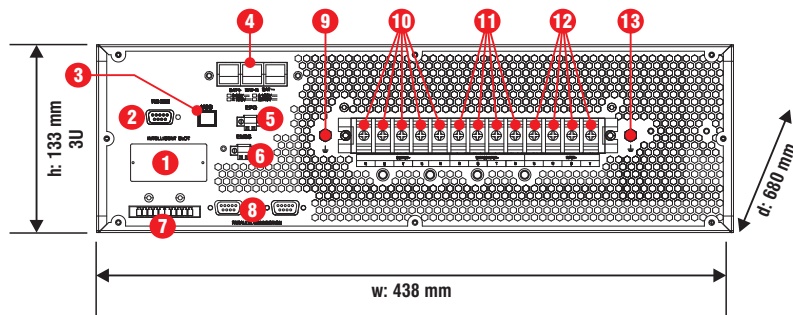
- 1.- SNMP Smart Port
- 2.- RS232 Port
- 3.- USB Port
- 4.- External Battery Connector
- 5.- EPO Connector Off)

- 6.- External Maintenance Bypass Switch Port
- 7.- Shared Current Connectors
- 8.- Parallel Control Connectors
- 9.- Input Ground Terminal

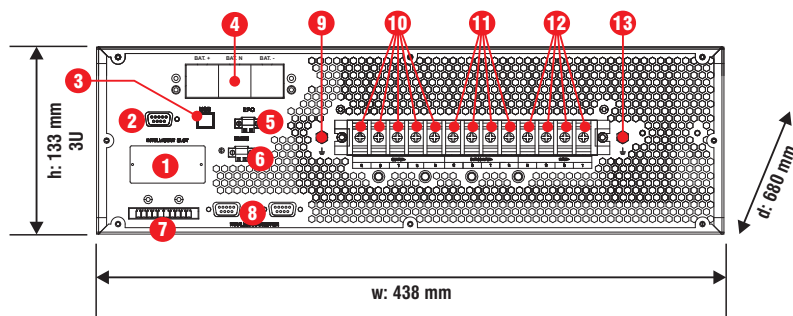
- 10.- AC Output Terminals
- 11.- Bypass Input Terminals
- 12.- AC Input Terminals
- 13.- Output Ground Terminal

Rear View / Vista Trasera

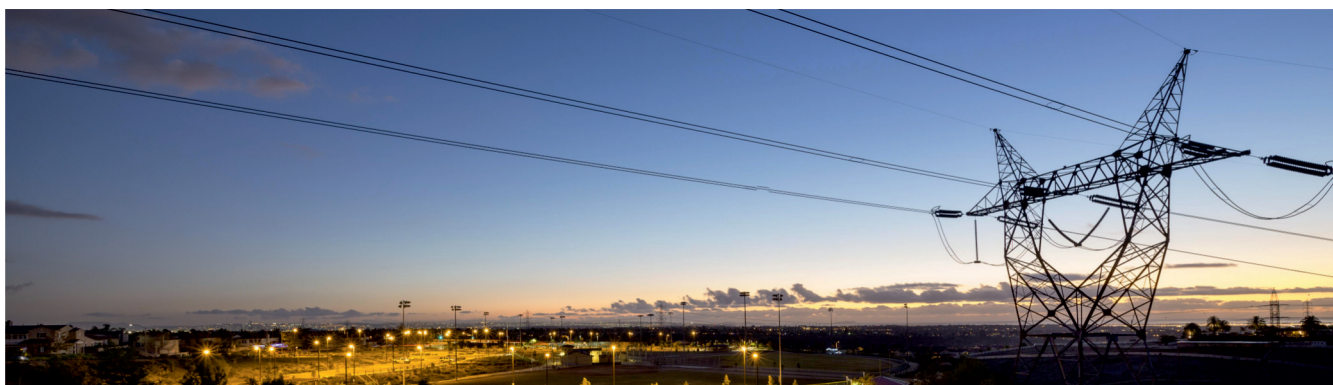
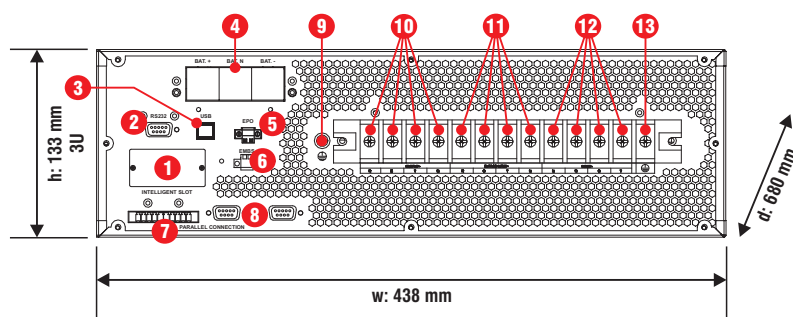
OPT-33-RT10 10K (400V/230V)
OPT-33-RT10 05K (208V/120V)



OPT-33-RT10 15K & 20K (400V/230V)
OPT-33-RT10 10K (208V/120V)



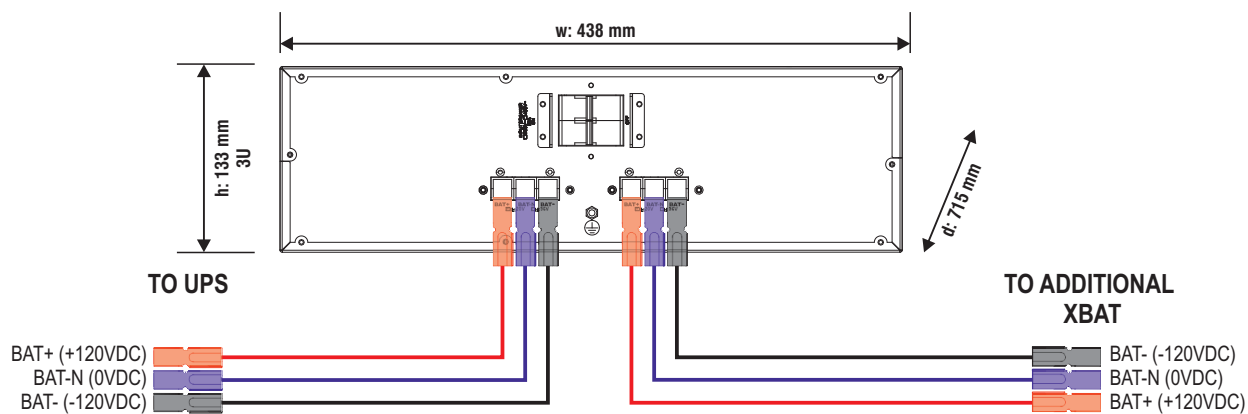
OPT-33-RT10 20K (208V/120V)



XBAT - External Battery Packs / Paquetes de Baterías Externas

XBAT-OPT33-RT-2x120V-H (20 batteries 12V/9AH)

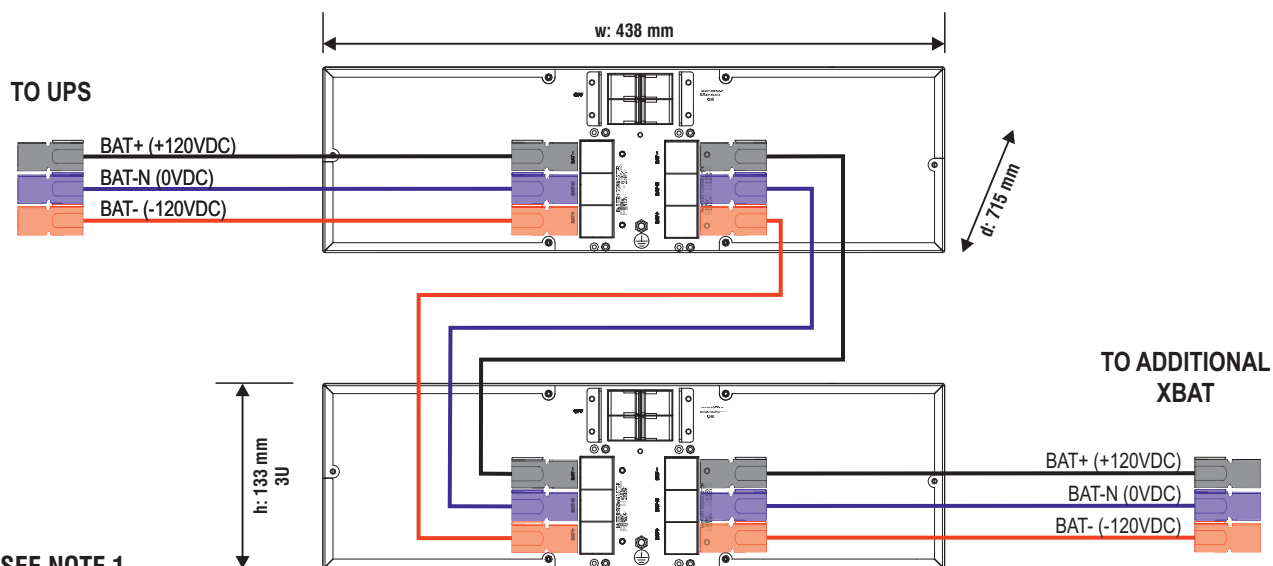
XBAT Array For:
OPTIMA-33-RT10-05K-208V
OPTIMA-33-RT10-10K-208V
OPTIMA-33-RT10-10K-400V



SEE NOTE 1

XBAT-OPT33-RT-2x120V-V (20 batteries 12V/9AH)

XBAT Array For:
OPTIMA-33-RT10-20K-208V



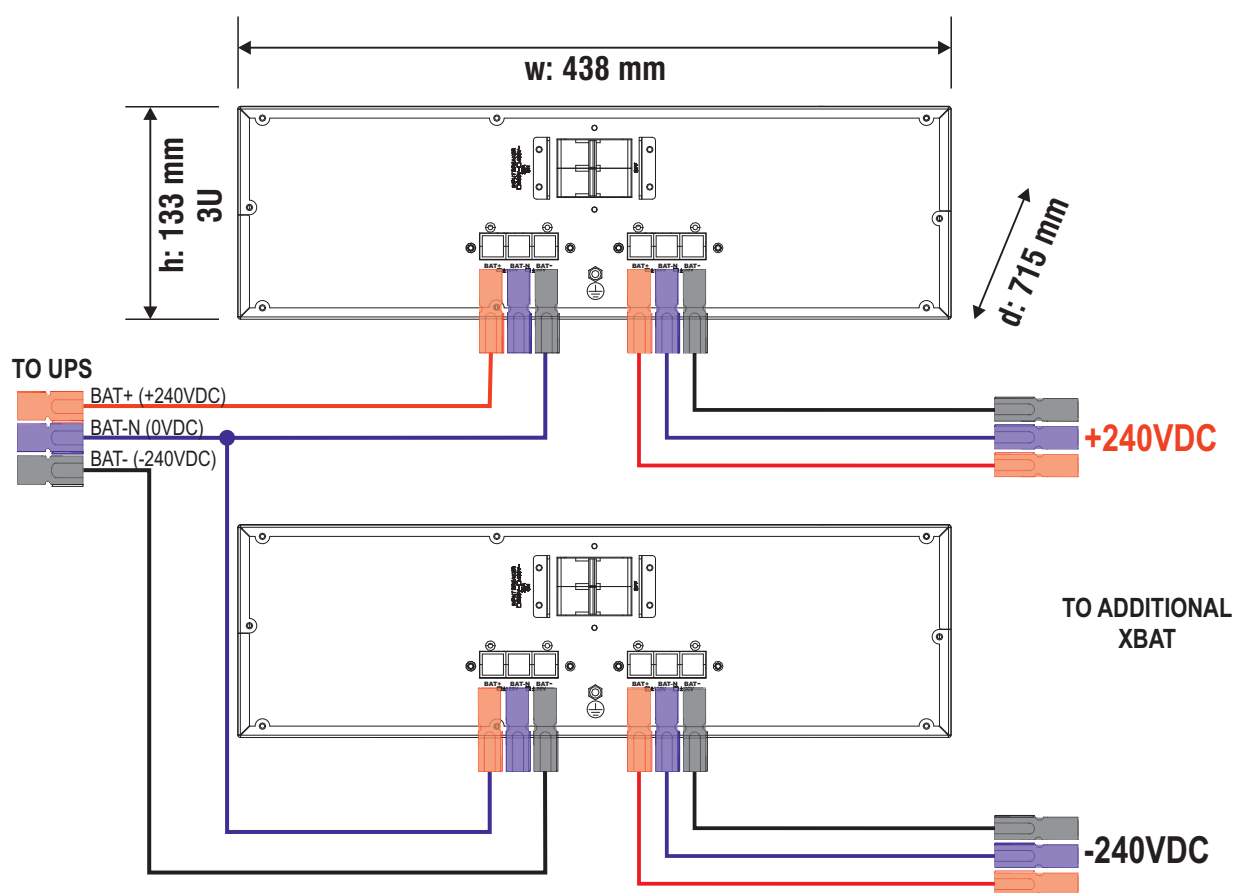
SEE NOTE 1

NOTE 1: DC cables are either included with UPS or with XBAT. All details, including Part Numbers, are clearly described in User Manual for OPTIMA-33-RT10 family

External Battery Packs / Paquetes de Baterías Externas

XBAT-OPT33-RT-2x120V-H (20 batteries 12V/9AH)

XBAT Array For:
OPTIMA-33-RT10-15K-400V
OPTIMA-33-RT10-20K-400V



SEE NOTE 1

NOTE 1: DC cables are either included with UPS or with XBAT. All details, including Part Numbers, are clearly described in User Manual for **OPTIMA-33-RT10** family

Technical Features / Características Técnicas

400V/230V (1/2)

OPTIMA-33-RT10 (400/230V) Page 1 of 2	10K-400-NB	15K-400-NB	20K-400-NB
Capacity / Capacidad (VA)	10KVA/10KW	15KVA/15KW	20KVA/20KW
Parallel Units / Unidades en Paralelo	4		
Installation / Instalación	Rack & Tower / Rack y Torre		
Input-Output / Entrada-Salida	3Ph-3Ph (3ph-1ph Configurable)		
INPUT / ENTRADA			
Phase / Fases	(Y) : 3Ph + N + G		
Input Range / Rango de Entrada	L-N: (176Vac-276Vac) @ >=80% Load L-N: (X-276Vac) @ 50% < Load < 80%; X=110 + (220*(Load-50%)) L-N: (110Vac-300Vac) @ <=50% Load		
Max. Current / Corriente Max. (130% load, A x ph.)	25A	37A	50A
Frequency Range / Rango de Frecuencia	Autosensing: 50Hz: (46-54Hz) / 60Hz: (56-64Hz)		
Power Factor / Factor de Potencia	>= 0.99 @ 100%load		
THDi (IEC 62040-3)	< 4% @ 100% load < 6% @ 50% load (IEC61000-3-4)		
Slew Rate / Seguimiento de Frecuencia:	1 Hz / s		
OUTPUT / SALIDA			
Phase / Fases	(Y): 3Ph + N + G or (DELTA): 3Ph +G or (Configurable): 1Ph + N + G		
Voltage / Tensión de Salida	360/208Vac - 380/220Vac - 400/230Vac - 415/240Vac - 230Vac Configurable (*N1)		
Voltage Regulation / Regulación de Salida:	+/- 1%		
Max. Angle Deviation / Max. Desviación de Fase	2° (EN-62040-3)		
Max. Voltage Unbalance Ratio / Desbalance Max.	1% (EN-62040-3)		
Frequency / Frecuencia (Batt. Mode)	50 Hz +/- 0.1 Hz / 60 Hz +/- 0.1 Hz		
Current Crest Ratio / Factor de Cresta	3:1 @ 100% load		
THDv (IEC 62040-3)	<= 2% @ Linear Load / Carga Lineal <= 5% @ No Linear Load / Carga no Lineal		
Dynamic Accuracy / Regulación Carga Variable	6% (load variations 0%-100% & 100%-0% R Load)		
Transient Recovery / Recuperación Cambio Carga	100ms / 90% vs (0%-100% & 100%-0% R load)		
Transfer Time / Tiempo de Transferencia:	0 ms		
Waveform / Forma de Onda	Sine Wave / Sinusoidal Pura		
Power Output / Salidas	Terminal Block / Regleta de Conexión		
DC Offset / Componente DC	+/-50mV max.		
INTERNAL BYPASS			
Bypass type / Tipo de Bypass:	SCR board / Tarjeta SCR		
Input Range in Bypass / Rango entrada en Bypass:	176-264Vac (L-N) & 50/60 +/- 4Hz Freq.		
PROTECTION SYSTEMS / SISTEMAS DE PROTECCION			
Surge & Spikes Suppression / Supresión de Picos	(L-N: 1.490J) + (LG: 1.490J) + (N-G: 490J) = TOTAL=3.470J (10/1000us)		
Output Short-Circuits / Cortocircuitos a la Salida (ONLINE)	Electronic inverter shortcircuit protection / Protección del inversor contra cortocircuitos: <100ms: Current limited to max. capacity / Corriente limitada al 100% de Capacidad >=100ms: Output shutdown. UPS in Fault Mode / Salida se apaga. SAI/UPS en Modo Falla		
AC Input Current / Sobre-Corriente de Entrada AC	Input breaker or fuse / Disyuntor o fusible de entrada		
Battery overcurrent / Sobrecorriente de baterías	Internal Fuse protection in battery line / Protección por fusible interno en línea de baterías		
Phase rotation / Fases de entrada intercambiadas	Alarm & turn-on disable / Alarma y encendido inhabilitado		
Repetitive Overloads / Overloads repetitivos	3 overloads in 30min =UPS locks in bypass / 3 overloads en 30min = UPS a bypass		
Starting Time / Tiempo de Arranque	7s - 10s (@ 100% load)		
EFFICIENCY / EFICIENCIA			
Eco Mode (100%/50% load)	98,5% / 98.0%		
AC Mode / Modo AC (100%/50% load)	94,8% / 95.5%		
Battery / En Batería (100%/50% load)	93.8% / 94.5%		
Inverter Efficiency / Eficiencia Inversor	94.8% inverter @ 100% load		
OVERLOAD / SOBRECARGA			
AC Mode / Modo Normal	[100%-110%: 60m]	[110%-125%: 10m]	[125%-150%: 1m] [>150%: 0.4s] to bypass
Battery Mode / Modo Batería	[100%-110%: 60m]	[110%-125%: 10m]	[125%-150%: 1m] [>150%: 0.4s] to Cut-Off
Bypass	[100%-130%: OK] [>130%: 1min]		

OPTIMA-33-RT10 (400/230V) Page 2 of 2		10K-400-NB	15K-400-NB	20K-400-NB
BATTERIES / BATERIAS				
Battery Type / Tipo de Baterías	VRLA Sealed & Free maintenance / Sellada de libre mantenimiento VRLA (12V-9AH)			
Batteries location / Ubicación de las Baterías	External (XBAT) / Externas (XBAT)			
Battery Voltage / Voltaje de Baterías	+/- 120 Vdc		+/- 240 Vdc	
Charging Amps / Corriente de Carga	1A - 12A Configurable (According to/ De acuerdo con DIN41773)			
Recharging Time / Tiempo de recarga (90%)	According to Battery Array / Según el arreglo de baterías usado (*N2)			
Charging Voltage / Voltaje del cargador (Floating)	+/- 136.5 Vdc		+/- 273 Vdc	
Temp. Compensation / Compensación Temp.	20mV/°C per battery (Input Air Temp/ Temp. Aire entrada: 25-50°C)			
Shutdown battery Voltage / Voltaje DC Apagado	10.7Vdc/batt			
Low Battery Warning / Aviso de Baterías Baja	11.4Vdc per Battery			
Max. DC Current / Corriente DC Max. (150% load)	140A	105A	140A	
INDICATORS / INDICADORES				
3.5 Inches Touch Screen / Pantalla Táctil de 3.5 Pulgadas	Full Status, Error Codes, & Real Time Values Estado, Códigos de Error y Valores en Tiempo Real			
ALARM / ALARMAS				
Acoustic Beep Alarm / Alarma sonora:	Battery Mode, Low Battery, Overload, UPS Failure Modo Batería, Baja Batería, Sobrecargas, Falla			
PRODUCT SIZE & NET WEIGHT / TAMAÑO Y PESO NETO (DxWxH) / (mm) / (Kg)				
SIZE: UPS (no internal batteries)	680*438*133 (3U)			
WEIGHT: UPS (no internal batteries)	26	28	28	
SIZE: Ext. Batt Pack / Baterías Externas	606*438*133 (3U)			
WEIGHT: Ext. batt Pack / Baterías Externas	67			
PACKING: Individual Small Pallet per Unit / EMPAQUE: Equipo en Pallet Individual (DxWxH) / (mm) / (Kg)				
SIZE: UPS	870*580*250			
WEIGHT: UPS	30	32	32	
SIZE: Ext. Batt Cab. / Baterías Externas	870*580*250			
WEIGHT: Ext. batt Cab. / Baterías Ext.	74			
OPERATING / AMBIENTALES				
Operating Conditions / Condiciones de Operación	(0 to +40°C) (*N3) <95 % (non-condensing / no condensante)			
Storage Temperature/ Temperatura de Almacenaje	-15 °C to +60 °C			
Noise Level / Ruido Producido (dB @ 1m)	<62	<65	<65	
Protecting Coating / Tropicalizado de Tarjetas	Yes / Si			
Altitude / Altura	Max Altitude: 4.500m. (over 1.000m output capacity is de-rated 1% every 100m) Altura máx 4.500msnm (sobre 1.000m la capacidad de salida disminuye 1% cada 100m)			
COMMUNICATION / COMUNICACION				
Smart RS-232 & USB ports	Built-In, Supports / De fábrica, soporta: Windows family, Linux, Unix and MAC			
Smart Port (SNMP)	Optional / Opcional: LAN, AS400 & RS485			
SAFETY & STANDARDS / NORMATIVAS Y ESTANDARES				
CE Directives	IEC 62040 - 1			
UPS General Safety / Seguridad General	IEC 62040 - 1			
UPS EMC / Compatibilidad. Electromag.	IEC 62040 - 2 (Class C3)			
UPS Tests / Procedimiento Pruebas UPS	IEC 62040 - 3			
ESD / RS / EFT / Surge / CS / F. Mag. Field	IEC / EN 61000 - 4-2 & 4-3 & 4-4 & 4-5 & 4-6 & 4-8			
Low Frequency Signals	IEC / EN 61000 - 2 - 2			
Degree of protection / Grado de Protección	IP20			
Conduction & Radiation	IEC / EN 62040-2 (Cat 3)			
Quality and Enviroment	RoHS / ISO9001 & ISO14001			
Transportation / Transporte	ETS 300019 - 2 - 2 class 2.3			

Specifications can be modified to comply with special requirements. Technical specifications may change without further notice

Las especificaciones pueden bajo requerimiento adaptarse a proyectos especiales y pueden cambiar sin previo aviso.

(*N1): Output voltage selectable by Screen. Capacity derrated to 90% for 360/208V / Voltaje de salida configurable desde LCD. Cap. disminuida a 90% para 360/208V

(*N2): Recharging time based on previous 10min to 20min full discharging cycles / Tiempo de recarga basado en ciclos previos de descarga profunda de 10 a 20min.

(*N3): UPS can work up to 40°C but batteries short their life over 25°C / El UPS puede trabajar hasta los 40°C, pero las baterías acortan su vida útil por encima de 25°C

Technical Features / Características Técnicas

208V/120V (1/2)

OPTIMA-33-RT10 (208/120V) Page 1 of 2		5K-208-NB		10K-208-NB		20K-208-NB	
Capacity / Capacidad (VA)		5KVA / 5KW		10KVA / 10KW		20KVA / 20KW	
Parallel Units / Unidades en Paralelo		4					
Installation / Instalación		Rack & Tower / Rack y Torre					
Input-Output / Entrada-Salida		3Ph-3Ph (3ph-1ph Configurable)					
INPUT / ENTRADA							
Phase / Fases		(Y) : 3Ph + N + G					
Input Range / Rango de Entrada		L-N: (88Vac-146Vac) @ >=80% Load L-N: (X-146Vac) @ 50% < Load < 80%; X=70 + (60*(Load-50%)) L-N: (70Vac-156Vac) @ <=50% Load					
Max. Current / Corriente Max. (130% load, A x ph.)		25A		50A		99A	
Frequency Range / Rango de Frecuencia		Autosensing: 50Hz: (46-54Hz) / 60Hz: (56-64Hz)					
Power Factor / Factor de Potencia		>= 0.99 @ 100%load					
THDi (IEC 62040-3)		< 4% @ 100% load < 6% @ 50% load (IEC61000-3-4)					
Slew Rate / Seguimiento de Frecuencia:		1 Hz / s					
OUTPUT / SALIDA							
Phase / Fases		(Y): 3Ph + N + G or (DELTA): 3Ph + G (1Ph + N + G, Configurable) (*N)					
Voltage / Tensión de Salida		208/120Vac - 220/127Vac (*N1)					
Voltage Regulation / Regulación de Salida:		+/- 1%					
Max. Angle Deviation / Max. Desviación de Fase		2° (EN-62040-3)					
Max. Voltage Unbalance Ratio / Desbalance Max.		1% (EN-62040-3)					
Frequency / Frecuencia (Batt. Mode)		50 Hz +/- 0.1 Hz / 60 Hz +/- 0.1 Hz					
Current Crest Ratio / Factor de Cresta		3:1 @ 100% load					
THDv (IEC 62040-3)		<= 2% @ Linear Load / Carga Lineal					
Dynamic Accuracy / Regulación Carga Variable		6% (load variations 0%-100% & 100%-0% R Load)					
Transient Recovery / Recuperación Cambio Carga		100ms / 90% vs (0%-100% & 100%-0% R load)					
Transfer Time / Tiempo de Transferencia:		0 ms					
Waveform / Forma de Onda		Sine Wave / Sinusoidal Pura					
Power Output / Salidas		Terminal Block / Regleta de Conexión					
DC Offset / Componente DC		+/-50mV max.					
INTERNAL BYPASS							
Bypass type / Tipo de Bypass:		SCR board / Tarjeta SCR					
Input Range in Bypass / Rango entrada en Bypass:		96-146Vac (L-N) & 50/60 +/- 4Hz Freq.					
PROTECTION SYSTEMS / SISTEMAS DE PROTECCION							
Surge & Spikes Suppression / Supresión de Picos		(L-N: 1.490J) + (LG: 1.490J) + (N-G: 490J) = TOTAL=3.470J (10/1000us)					
Output Short-Circuits / Cortocircuitos a la Salida (ONLINE)		Electronic inverter shortcircuit protection / Protección del inversor contra cortocircuitos: <100ms: Current limited to max. capacity / Corriente limitada al 100% de Capacidad >=100ms: Output shutdown. UPS in Fault Mode / Salida se apaga. SAI/UPS en Modo Falla					
AC Input Current / Sobre-Corriente de Entrada AC		Input breaker or fuse / Disyuntor o fusible de entrada					
Battery overcurrent / Sobrecorriente de baterías		Internal Fuse protection in battery line / Protección por fusible interno en línea de baterías					
Phase rotation / Fases de entrada intercambiadas		Alarm & turn-on disable / Alarma y encendido inhabilitado					
Repetitive Overloads / Overloads repetitivos		3 overloads in 30min =UPS locks in bypass / 3 overloads en 30min = UPS a bypass					
Starting Time / Tiempo de Arranque		7s - 10s (@ 100% load)					
EFFICIENCY / EFICIENCIA							
Eco Mode (100%/50% load)		97% / 96.5%					
AC Mode / Modo AC (100%/50% load)		92.5% / 93.5%					
Battery / En Batería (100%/50% load)		91.5% / 92.5%					
Inverter Efficiency / Eficiencia Inversor		92.5% inverter @ 100% load					
OVERLOAD / SOBRECARGA							
AC Mode / Modo Normal		[100%-110%: 60m]	[110%-125%: 10m]	[125%-150%: 1m]	[>150%: 0.4s] to bypass		
Battery Mode / Modo Batería		[100%-110%: 60m]	[110%-125%: 10m]	[125%-150%: 1m]	[>150%: 0.4s] to Cut-Off		
Bypass		[100%-130%: OK] [>130%: 1min]					

OPTIMA-33-RT10 (208/120V) Page 2 of 2		5K-208-NB	10K-208-NB	20K-208-NB
BATTERIES / BATERIAS				
Battery Type / Tipo de Baterías	VRLA Sealed & Free maintenance / Sellada de libre mantenimiento VRLA (12V-9AH)			
Batteries location / Ubicación de las Baterías	External (XBAT) / Externas (XBAT)			
Battery Voltage / Voltaje de Baterías	+/- 120 Vdc			
Charging Amps / Corriente de Carga	1A - 12A Configurable (According to/ De acuerdo con DIN41773)			
Recharging Time / Tiempo de recarga (90%)	According to Battery Array / Según el arreglo de baterías usado (*N2)			
Charging Voltage / Voltaje del cargador (Floating)	+/- 136.5 Vdc			
Temp. Compensation / Compensación Temp.	20mV/°C per battery (Input Air Temp/ Temp. Aire entrada: 25-50°C)			
Shutdown battery Voltage / Voltaje DC Apagado	10.7Vdc/batt			
Low Battery Warning / Aviso de Baterías Baja	11.4Vdc per Battery			
Max. DC Current / Corriente DC Max. (150% load)	70A	140A	280A	
INDICATORS / INDICADORES				
3.5 Inches Touch Screen / Pantalla Táctil de 3.5 Pulgadas	Full Status, Error Codes, & Real Time Values Estado, Códigos de Error y Valores en Tiempo Real			
ALARM / ALARMAS				
Acoustic Beep Alarm / Alarma sonora:	Battery Mode, Low Battery, Overload, UPS Failure Modo Batería, Baja Batería, Sobrecargas, Falla			
PRODUCT SIZE & NET WEIGHT / TAMAÑO Y PESO NETO (DxWxH) / (mm) / (Kg)				
SIZE: UPS (no internal batteries)	680*438*133 (3U)		797*438*176 (4U)	
WEIGHT: UPS (no internal batteries)	26	28	42	
SIZE: Ext. Batt Cab. / Baterías Externas	606*438*133 (3U)			
WEIGHT: Ext. batt Cab. / Baterías Externas	67			
PACKING: Individual Small Pallet per Unit / EMPAQUE: Equipo en Pallet Individual (DxWxH) / (mm) / (Kg)				
SIZE: UPS	870*580*250		980*580*285	
WEIGHT: UPS	30	32	47	
SIZE: Ext. Batt Cab. / Baterías Externas	870*580*250			
WEIGHT: Ext. batt Cab. / Baterías Ext.	74			
OPERATING / AMBIENTALES				
Operating Conditions / Condiciones de Operación	(0 to +40°C) (*N3) <95 % (non-condensing / no condensante)			
Storage Temperature/ Temperatura de Almacenaje	-15 °C to +60 °C			
Noise Level / Ruido Producido (dB @ 1m)	<62	<65	<70	
Protecting Coating / Tropicalizado de Tarjetas	Yes / Si			
Altitude / Altura	Max Altitude: 4.500m. (over 1.000m output capacity is de-rated 1% every 100m) Altura máx 4.500msnm (sobre 1.000m la capacidad de salida disminuye 1% cada 100m)			
COMMUNICATION / COMUNICACION				
Smart RS-232 & USB ports	Built-In, Supports / De fábrica, soporta: Windows family, Linux, Unix and MAC			
Smart Port (SNMP)	Optional / Opcional: LAN, AS400 & RS485			
SAFETY & STANDARDS / NORMATIVAS Y ESTANDARES				
CE Directives	IEC 62040 - 1			
UPS General Safety / Seguridad General	IEC 62040 - 1			
UPS EMC / Compatibilidad. Electromag.	IEC 62040 - 2 (Class C3)			
UPS Tests / Procedimiento Pruebas UPS	IEC 62040 - 3			
ESD / RS / EFT / Surge / CS / F. Mag. Field	IEC / EN 61000 - 4-2 & 4-3 & 4-4 & 4-5 & 4-6 & 4-8			
Low Frequency Signals	IEC / EN 61000 - 2 - 2			
Degree of protection / Grado de Protección	IP20			
Conduction & Radiation	IEC / EN 62040-2 (Cat 3)			
Safety / Seguridad	IEC / EN60950 - 1			
Quality and Enviroment	RoHS / ISO9001 & ISO14001			
Transportation / Transporte	ETS 300019 - 2 - 2 class 2.3			

Specifications can be modified to comply with special requirements. Technical specifications may change without further notice

Las especificaciones pueden bajo requerimiento adaptarse a proyectos especiales y pueden cambiar sin previo aviso.

(*N): Model 20K-208 does not support Single-Phase output configuration / El modelo 20K-208, no admite configuración de salida Monofásica.

(*N1): Output voltage is selectable by Screen / Voltaje de salida configurable desde LCD

(*N2): Recharging time based on previous 10min to 20min full discharging cycles / Tiempo de recarga basado en ciclos previos de descarga profunda de 10 a 20min.

(*N3): UPS can work up to 40°C but batteries short their life over 25°C / El UPS puede trabajar hasta los 40°C, pero las baterías acortan su vida útil por encima de 25°C