

PURE
RELIABILITY



POWERTRONIX **AURIGA HP UPS** is complete and cost effective power protection solution delivering premium VFI online double conversion for IT and electrical infrastructures in corporate, medical, banking and industrial applications.

100% MADE IN ITALY, **AURIGA HP UPS** adopt PFC IGBT-based topology resulting in the highest levels of efficiency (0.99 input power factor - THDi <2%) and reliability for all mission critical loads for all three-phase installations.

Featuring multilanguage LCD display, RS232 port, BMS communication interface (DRY CONTACT & MODBUS RTU PROTOCOL BOARD), intelligent slot for SNMP adapter, **AURIGA HP UPS** is real time energy sentinel able to alert you in any situation.

Combining proven performance with technical innovation to deliver pure quality to any mission critical load, **AURIGA HP UPS** is your best choice.



MAIN TECHNICAL DATA	AURIGA HP 120	AURIGA HP 160	AURIGA HP 200
UPS Topology	VFI On-Line Double Conversion (Sine-wave form output)		
Converter	Power factor correction PFC IGBT-based		
Inverter	High frequency IGBT inverter transformerless		
Static switch	Electronic static switch plus contactor		
Cooling	Forced air & liquid closed circuit		
Input nominal voltage	3Ph+N 380/400/415V		
Input voltage tolerance 100% load	±20%		
Input nominal frequency	50 or 60 Hz		
Input frequency tolerance	40 ÷ 70 Hz		
Power factor	0.99		
Soft start	0 ÷ 100% in 30 sec		
Backfeed protection	available		
Input current distortion	THDi ≤2%		
Bypass nominal voltage	3Ph+N 380/400/415V		
Bypass voltage tolerance	±20%		
Bypass factory setting	±10%		
Bypass nominal frequency	50 or 60 Hz		
Bypass accepted overload	10In per 100ms		
Manual bypass	with mechanical lock		
Output active power	108kW	144kW	180kW
Nominal output voltage	3Ph 380/400/415V		
Nominal output current 3ph 3Ph+N@400V	173A	230A	288A
Output power factor	0.9		
Output voltage static variation	± 1%		
Output voltage dynamic variation	± 5%		
Crest factor	3:1		
Output voltage distortion linear load	≤ 2%		
Output voltage distortion non linear load	≤ 5%		
Output frequency	50Hz or 60Hz		
Output frequency stability	0.01%		
UPS system efficiency	≥ 96%		
Overload	125% for 10 minutes 150% for 60 seconds		

MAIN TECHNICAL DATA	AURIGA HP 120	AURIGA HP 160	AURIGA HP 200
Battery type	VRLA AGM or GEL		
Number of elements	360		
Battery nominal voltage	720 Vdc		
Battery voltage range	600 ÷ 830 Vdc		
Batttery maximum charging current	25A		
Battery charging profile	DIN 41733		
	Charging voltage: 810Vdc		
	Temperature compensated battery charging profile		
Battery low threshold (factory se7 ng)	640 Vdc		
Battery management & test	Supervised battery management & settable regular test		
Remote signals	Dry contact board - remote EPO		
Standard interfaces and protocol	RS232 port & MODBUS RTU + slot for communication options		
Monitoring software	UPSMan & UPSMon		
Communication options	web adapter SNMP		
Parallel capability (optional)	up to 8 units (cloosed loop via op, cal fiber)		
MECHANICAL DATA			
Case protection rating	metal case - RAL 7016 - IP20 (upgrade IP31 on request)		
Dimensions (WxDxH mm)	800 x 830 x 1800 mm		
Weight kg (UPS no battery)	480kg	540kg	590kg
Noise level at 1m	≤ 64dB		
Storaging temperature	-20°C ÷ +70°C (UPS) +20°C ÷ +30°C (Ba l ery)		
Operating temperature	+0°C ÷ +40°C		
Relative humidity	95% non condensing		
Altitude	1000m above MSL without derating (1% dera, ng any 100m up to 2.000m)		
Ventilation	multilevel fan		
UPS moving	castors		
UPS packaging	overseas shipment suitable cartoon box on fumigated wooden pallet		
UPS packaging dimensions (WxDxH mm)	1000x1000x2100 mm * 70 kg		
STANDARDS	European Direc, ves: LC 2014/35/EU low voltage Directive EMC 2014/30/EU electromagnetic compatibility Directive Standards: Safety IEC EN 62040-1:2008+A1:2013; EMC IEC EN 62040-2 C2 Classification in accordance with IEC 62040-3 VFI - SS - 111 IEC EN 50171 Directive		

While every precaution has been taken to ensure accuracy and completeness herein, Powertronix assumes no responsibility, and disclaims all liability, for damages resulting from use of this information or for any errors or omissions. Specifications subject to be changed without notice.

Main electrical features

- * Dual input mains: separated or common
- * Genset compatibility without any additional equipment
- * Integrated maintenance bypass
- * Detection circuit for backfeed protection (additional backfeed device UPS built in or in external panel)
- * Distributed or shared battery for optimized energy storage and uninterrupted power during strings maintenance
- * Battery temperature sensor and supervised battery management dual charging method profile
- * UPS *eco-mode* functional profile for 99% efficiency
- * Frequency converter profile with or without backup time 60Hz to 50Hz or viceversa

Main electrical optional features

- * Parallel capability for redundant or add capacity system configuration (up to 8 units)
- * Extended runtime in external cabinet matching UPS design
- * Extended runtime in external cabinet IP20 or open rack, complete of DC breaker
- * UPS external cabinet galvanic isolation transformer (full system isolation)
- * UPS I/O phase voltage and frequency configuration settable via LCD
- * UPS upgrade to double independent outputs — EN 50171 standard
- * Battery bank disconnection in case of UPS shutdown or according to BMS design
- * BACS battery advanced care system for constant monitoring and harmonization of individual charging voltages

UPS connectivity available features for immediate system status info

Real time information, real time solution!

- * User friendly Multilanguage LCD (Russian and Chinese available)
- * Event log access via LCD for on-site checking & event log download via open software
- * Dry contact interface complete of 4 change-over contact outputs
- * Serial connection interface via RS232/RS485 Modbus RTU for BMS full compatibility
- * At-a-glance user view for simultaneous monitoring of all UPS systems connected in the same network
- * Intelligent free slot for additional SNMP interface and ambient sensors (temperature, humidity, smoke etc...)
- * UPS MAN & MON software for UPS managing and monitoring
- * Remote LED panel for UPS status
- * Remote EPO
- * Remote UPS monitoring service 24/7 - 365
- * Server, PC and/or virtual machine configured shutdown
- * e.mail/SMS/pop up UPS status information

Battery sizing according to time and power value

Grezzago 30/07/2024

UPS model	AURIGA HP
UPS nominal rating	160,000 kVA
Battery string design	60 x12V _{DC}
Sizing method	IEEE 485

Voltage window

Maximum voltage:	817,20 V _{DC}
Minimum voltage:	600,12 V _{DC}
Cell number range:	360

Calculation criteria

U float charge:	2,27 V _{pc}
Uf interpolated:	Activated
Temperature:	25 °C
Temperature factor:	1,000
Aging factor:	1,000
Margin factor:	1,000
Total factor:	1,000

Power value

Time set:	30 min	pre-set or calculated
Nominal rating:	80,000 kVA	pre-set
CosPhi:	1	pre-set
Efficiency DC-AC:	98,000 %	pre-set

Battery

Battery model:	SLC 12- 120	calculated
Battery type:	VRLA AGM 12V	
Part code:	OCBE12 120	
Number of cells:	360	range: 600,12÷817,2 VDC
String quantity:	1	
Final voltage:	1,667 V _{DC}	

Battery bank design

1	string(s) 60x12VDC 120Ah
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Specifications

Nominal Voltage		12 V
Capacity 20hr 25°C		120 Ah
Dimensions	Length	333 mm
	Width	175 mm
	Height	214 mm
	Total Height	222 mm
Approx. Weight		30.0 kg
Internal resistance fully charged 25°C		Approx. 3.9mΩ
Capacity affected by temperature 20hours	40°C	103%
	25°C	100%
	0°C	86%
	-15°C	65%
Self discharge 25°C	3 months	Remaining Capacity: 91%
	6 months	Remaining Capacity: 82%
	12 months	Remaining Capacity: 65%
Nominal operating temperature		25°C ± 3°C
Operating temperature range		-15°C to +50°C
Float charging voltage 25°C		13.60 to 13.80V
Cyclic charging voltage 25°C		14.50 to 14.90V
Maximum charging current		30 A
Terminal material		Copper
Maximum discharging current		1250 A 5sec

VRLA Absorbent Glass Material & GAS recombination technology
UL & CE recognized

ABS container UL94 HB - Shock and vibrations resistant

Non-spillable and maintenance free

Non-hazardous for sea/air/rail/road transportation

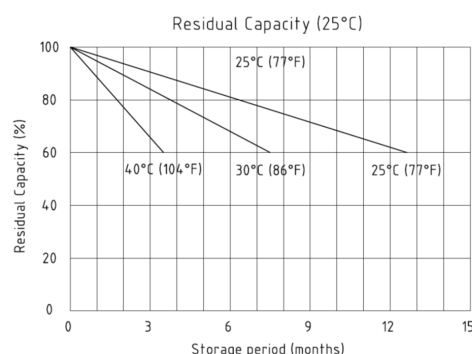
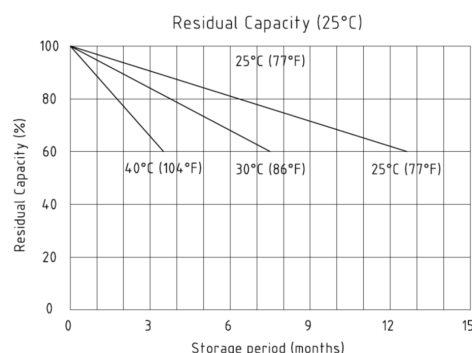
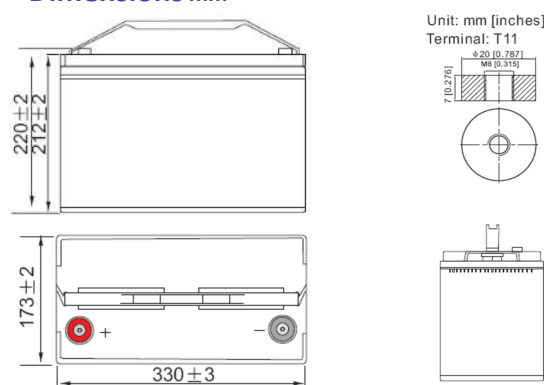
Ideal for high rate discharge UPS application

EUROBAT 10÷12 years project lifetime design - floating life @20°C

Outstanding value and performance

Extended shelf life thanks to low self discharge rate

Dimensions mm



Constant Current Discharge Characteristics - A/cell @25°C

F.V / Time	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
1.85V / cell	154,8	131,6	110,1	87,5	66,2	54,2	34,5	27,3	22,3	18,0	15,6	12,8	10,8	5,92
1.80V / cell	197,7	159,0	130,1	103,2	77,1	60,8	37,7	29,4	23,8	19,3	16,8	13,5	11,5	5,98
1.75V / cell	217,3	173,7	140,0	107,1	79,9	63,5	39,1	29,9	24,3	19,7	17,3	13,7	11,6	6,04
1.70V / cell	236,8	185,4	147,1	111,6	83,1	65,6	40,6	30,8	25,0	20,3	17,6	13,9	11,7	6,15
1.67V / cell	246,2	191,3	151,7	114,6	84,1	66,7	41,2	31,4	25,4	20,6	17,8	14,0	11,8	6,19
1.65V / cell	255,6	197,1	156,3	117,7	85,2	67,8	41,8	32,1	25,9	20,9	18,0	14,1	12,0	6,23
1.60V / cell	277,4	210,8	166,5	124,2	88,7	70,2	43,2	33,1	26,6	21,6	18,4	14,3	12,1	6,27

Constant Power Discharge Characteristics - Watt/cell @25°C

F.V / Time	10 min	15 min	20 min	30 min	45 min	1 h	2 h	3 h	4 h	5 h	6 h	8 h	10 h	20 h
1.85V / cell	307,91	262,69	220,68	176,31	133,54	109,05	68,91	54,16	44,12	35,58	30,95	25,16	21,53	11,70
1.80V / cell	395,73	318,16	260,87	207,39	155,68	122,67	75,32	58,32	47,09	38,15	33,16	26,62	22,77	11,80
1.75V / cell	436,44	348,96	281,96	216,04	161,76	128,94	78,33	59,65	48,24	39,12	33,94	27,09	23,00	11,91
1.70V / cell	474,52	373,45	298,57	226,42	169,38	133,85	81,68	61,43	49,00	40,15	34,75	27,54	23,24	12,21
1.67V / cell	496,40	387,90	314,40	233,80	172,50	136,50	83,10	62,70	49,30	40,90	35,30	28,00	23,50	12,26
1.65V / cell	516,51	400,61	319,17	239,54	173,52	138,24	83,94	63,96	51,27	41,17	35,54	28,15	23,78	12,31
1.60V / cell	553,19	425,09	338,87	252,44	180,40	142,98	86,65	65,92	52,84	42,60	36,35	28,25	24,01	12,41

POWERTRONIX[®]

UNINTERRUPTIBLE POWER SUPPLY

USER MANUAL AURIGA HP 120 ÷ 200kVA

Document : DT0503 English

<i>Revision</i>	<i>Date</i>	<i>Checked</i>	<i>Approved</i>
04	12/09/2013	Modenesi A.	Modenesi A.
05	09-04-2014	Ghezzi R.	Ghezzi R.

1.2.6 REMOTE PANEL

The remote panel is used for remote viewing of the UPS state; it shows the status of the main UPS blocks with LED indicators and the sound signalization in the case of alarm conditions (more info chapter 2.8.3).

1.2.7 REMOTE E.P.O. PUSHBUTTON

The remote E.P.O push-button provides the safe, remote way to fast and full disable the unit running in the event of an emergency (more info chapter 2.8).

1.2.8 REMOTE MANUAL BY-PASS

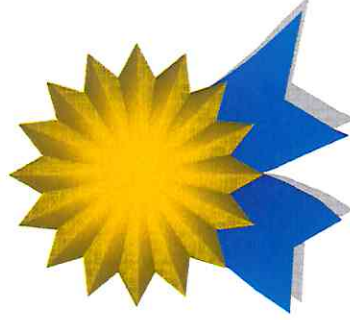
The remote Manual By-Pass is a security system that allows, when closed, to connect directly load to the power line, excluding the UPS (more info chapter 2.8).

Certificate of Training

TO WHOM IT MAY CONCERN

We,
the Italian company **POWERTRONIX s.r.l.**, hereby certify that **Mr. Ion Negru** has successfully completed the Technical Training Course, which has been sponsored by us for the benefit of **Intermed SRL**, located in the Republic of Moldova, that has been held from 6th of February to 09th of February 2023.

Therefore, **Mr. Ion Negru** has been instructed to install, operate, maintain and repair the MIZAR, ALCOR, AURIGA, AURIGA HP, QUASAR, VELA, ATLAS, SUPERNOVA U.P.S. manufactured by **POWERTRONIX s.r.l.**



Grezzago, Italy, 09th February 2023

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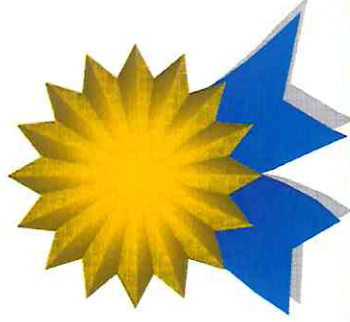

Andrea Modenesi

Certificate of Training

TO WHOM IT MAY CONCERN

We,
the Italian company **POWERTRONIX s.r.l.**, hereby certify that **Mr. Alexandr Grigoret** has successfully completed the Technical Training Course, which has been sponsored by us for the benefit of **Intermed SRL**, located in the Republic of Moldova, that has been held from 6th of February to 09th of February 2023.

Therefore, **Mr. Alexandr Grigoret** has been instructed to install, operate, maintain and repair the MIZAR, ALCOR, AURIGA, AURIGA HP, QUASAR, VELA, ATLAS, SUPERNOVA U.P.S. manufactured by **POWERTRONIX s.r.l.**



Grezzago, Italy, 09th February 2023

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Andrea Modenesi

Certificate of Training

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We,
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Therefore, **Mr. Andrei Guranda** has been instructed to install, operate, maintain and repair the MIZAR, ALCOR, AURIGA, AURIGA HP, QUASAR, VELA, ATLAS, SUPERNOVA U.P.S. manufactured by **POWERTRONIX s.r.l.**



Grezzago, Italy, 09th February 2023

Powertronix Srl
Societă Unipersonale

Andrea Modenesi

CE DECLARATION OF CONFORMITY

POWERTRONIX S.r.l.

Via Abruzzi 1 - 20056 Grezzago – Milano – Italia

Codice Fiscale e Partita Iva 08305700158

Iscrizione Tribunale n. 258503/6752/3MI - CCIAA n. 1214863 MI

Herewith we declare that below designated Uninterruptible Power Supply models are developed, designed and manufactured in accordance with

European Directive

EC Directive on Electromagnetic Compatibility 2014/30/EU

EC Directive on Low Voltage Directive 2014/35/EU

RoHS Directive 2017/2102/EU replacing 2011/65/EU

UPS Standards

EN 62040-1:2008+A1:2013 UPS: Safety

EN 62040-1-2 UPS: Safety

EN 62040-2 UPS: Electromagnetic Compatibility (EMC)

EN 62040-3 **UPS: Performances and tests**

Category: Uninterruptible Power Supply

Antares Pro UPS series 1÷10kVA	single phase UPS – tower/rack design
Vector HP UPS series 10÷30kVA	3 phase UPS – tower design
Vector RI UPS series 10÷100kVA	3 phase UPS – rack design
Mizar UPS series 10÷15kVA	3 phase UPS – tower design
Alcor UPS series 20÷40kVA	3 phase UPS – tower design
Coral UPS series 10÷80kVA	3 phase UPS – tower design
Auriga UPS series 60÷100kVA	3 phase UPS – tower design
Auriga HP UPS series 120÷200kVA	3 phase UPS – tower design
Auriga MV UPS series 20÷300kVA	3 phase UPS – modular design
Auriga MV9 UPS series 20÷90kVA	3 phase UPS – modular design
Auriga MS UPS series 100÷800kVA	3 phase UPS – modular design
Hyperion UPS series 100÷300kVA	3 phase UPS – tower design
Vela UPS series 40÷60kVA	3 phase UPS – tower design
Atlas UPS series 80÷120kVA	3 phase UPS – tower design
Supernova UPS series 160kVA÷300kVA	3 phase UPS – tower design

Grezzago (MI)

05-01-2024

(Place)

(Date)

Powertronix S.r.l

(Signature of the Legal Representative)

AURIGA HP LIST OF ALARM

msg Auriga HP

Msg No	String ENG	
1	Mains	not available
3	Battery	boost charge
4	Battery	float charge
5	Battery test	failed
6	Battery test	executing
7	Battery empty	
8	Battery prealarm	
9	Battery test	passed
10	Battery test	not executed
11	Inverter	switched off
12	Inverter overload	(>100%)
13	Inverter overload	(>125%)
14	Inverter overload	(>150%)
15	Inverter overload	time exceeded
16	Cabinet temperature	over alarm level
17	Maintenance period	elapsed
18	UPS Emergency	Power Off
19	ECONOMY MODE	enabled
20	Static switch	overload (>100%)
21	Static switch	overload (>125%)
22	Static switch	overload (>150%)
23	SS overload	time exceeded
24	Manual bypass	switch closed
25	Load on	manual bypass
26	PFC overload	(>100%)
27	PFC overload	(>125%)
28	PFC overload	(>150%)
29	PFC overload	time exceeded
30	wrong reserve	phases sequence
31	Reserve not	available
32	Static switch	failure
33	Static switch	locked
34	Load on reserve	
35	Load on inverter	
36	Battery failure	
37	UPS Master	
38	UPS Slave	
39	Parallel data	exchange failure
41	Load not fed	
42	Input status	low / ok / fail
43	PFC power reduction	function active

msg Auriga HP

50	<u>Fan speed</u>	<u>reduced</u>
51	<u>Cabinet temperature</u>	<u>over warning level</u>
52	<u>Battery temperature</u>	<u>over alarm level</u>
53	<u>Battery temperature</u>	<u>over warning level</u>
54	<u>PFC IGBT temperature</u>	<u>over warning level</u>
55	<u>Fan speed</u>	<u>nominal</u>
56	<u>PFC IGBT temperature</u>	<u>over alarm level</u>
57	<u>INV IGBT temperature</u>	<u>over warning level</u>
58	<u>INV IGBT temperature</u>	<u>over alarm level</u>
59	<u>PFC/INV module</u>	<u>overtemp. protection</u>
60	<u>Command E.P.O.</u>	<u>(local)</u>
61	<u>Command E.P.O.</u>	<u>(relay board 1)</u>
62	<u>Command E.P.O.</u>	<u>(relay board 2)</u>
63	<u>Command E.P.O.</u>	<u>(parallel)</u>
65	<u>Mains ok</u>	
67	<u>Inverter on</u>	
68	<u>Reserve ok</u>	
69	<u>Synchro</u>	<u>not ok</u>
70	<u>Manual bypass</u>	<u>breaker open</u>
71	<u>Input section</u>	<u>activated</u>
72	<u>Flash memory</u>	<u>write protection</u>
73	<u>Synchro ok</u>	
74	<u>Precharge failed</u>	
75	<u>Autostart process</u>	<u>activated</u>
76	<u>Autostart process</u>	<u>finished</u>
77	<u>Autostart process</u>	<u>interrupted</u>
78	<u>Autostart process</u>	<u>failed</u>
80	<u>System start</u>	<u>done</u>
81	<u>System start</u>	<u>failed</u>
82	<u>System stop</u>	<u>done</u>
83	<u>System stop</u>	<u>failed</u>
84	<u>UPS protection</u>	<u>Power supply low</u>