



GENESYS™ AC

dataTec

Mess- und Prüftechnik. Die Experten.

**Ihr Ansprechpartner /
Your Partner:**

dataTec AG

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datatec.eu

2kVA–45kVA AC Programmable Power Sources **Data Sheet & Specifications**

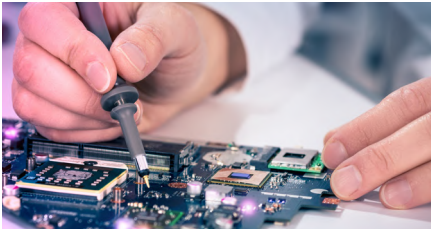
www.emea.lambda.tdk.com/il-en





Applications

The GENESYS™ AC programmable power source supports industrial, research, and compliance applications with high power density, advanced programmability and precise AC & DC performance. Designed for renewable energy systems, laboratory environments, and automated testing, it delivers reliable and flexible power simulation for modern electronic and industrial applications.



Test & Measurement

Enables accurate compliance, validation, and production testing with stable programmable AC & DC power as an option.

- IEC and industrial compliance testing
- EMC and production validation systems
- Fast transient response and harmonic analysis



Renewable Energy

Designed for testing and validation of solar inverters, energy storage systems, and smart-grid applications.

- Grid simulation and power disturbance testing
- Solar inverter and ESS validation
- EV charging infrastructure testing



Research

Provides precise and programmable power for advanced laboratory and product development environments.

- Advanced waveform and transient generation
- Automated laboratory testing environments
- High accuracy and repeatable performance



Medical

Provides stable and precise programmable power for medical device development, validation, and regulatory compliance testing.

- Medical equipment testing and validation
- Regulatory and safety compliance support
- Reliable low-distortion AC/DC performance



Aerospace

Designed for aerospace and avionics testing requiring accurate frequency conversion and compliance simulation.

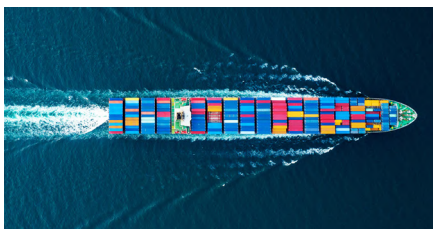
- RTCA/DO-160 and MIL-STD testing
- Avionics and airborne equipment validation
- High-frequency and transient simulation



Automotive

Supports automotive electronics, EV systems, and component validation with flexible programmable AC/DC power.

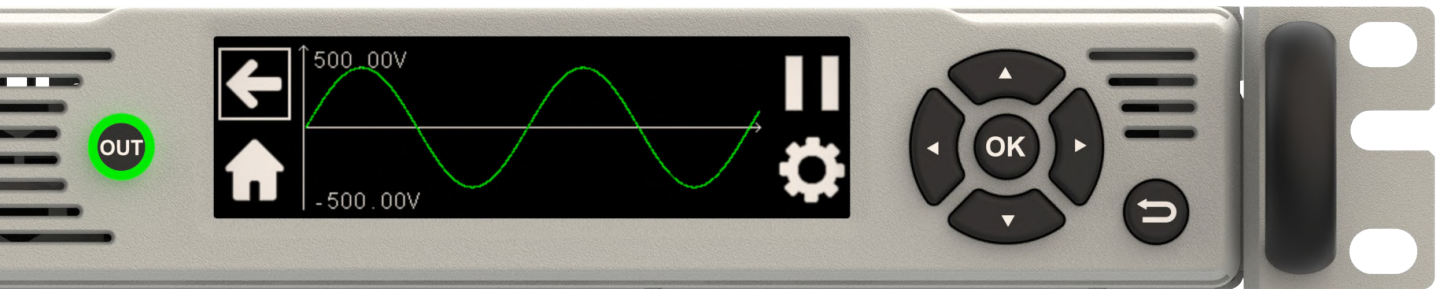
- EV and charging system validation
- Automotive electronics testing
- Battery and powertrain development



Marine

Enables reliable marine power simulation and compliance testing for shipboard electrical and electronic systems.

- MIL-STD-1399 marine compliance testing
- Shipboard power system simulation
- Marine electronics validation



Features & Benefits

Ultra-High-Power Density

- ▶ Up to 3 kVA in 1U chassis
- ▶ Up to 9 kVA in 3U chassis

Flexible Power Architecture

- ▶ Single-phase / Dual-phase / Three-phase
- ▶ Output up to 45 kVA

Industry-Leading Reliability

- ▶ 5-year warranty
- ▶ Maximum warranty available on the market

Operational Modes

- ▶ GAC: AC only up to 360Vac
- ▶ GAC PRO: AC, DC, or combined AC+DC
- ▶ GAC PRO: Full rated DC output up to ± 510 V

User-Friendly Interface

- ▶ Full-color capacitive touch panel
- ▶ Multi-language support

Expandable Power Capacity

- ▶ Customer-expandable at any stage
- ▶ 18 kVA, 27 kVA, 36 kVA, up to 45 kVA

Certified Compliance

- ▶ IEC / UL / EN 61010-1 Ed. 3
- ▶ cTUVus, T-Mark, CE, UKCA approved
- ▶ Market-unique certified approval

High Crest Factor Performance

- ▶ 4:1 crest factor (3 / 9 kVA)
- ▶ 6:1 crest factor (2 / 6 kVA)
- ▶ Peak current up to 120 A

Wide Frequency Range

- ▶ Standard: 16 Hz – 1.2 kHz
- ▶ PRO option: up to 5 kHz without power derating

Remote VCP Software

- ▶ GUI with sequence programming
- ▶ Pre-loaded IEC, aerospace, and marine standards
- ▶ Custom script creation supported

Virtual Control Panel – GUI

Unified control system

The VCP works both for the GAC & DC series, allowing you to connect and control multiple instruments at once from a single interface. Download once and use it for all of your Genesys, G+, and Z+ products.

Benefits of the scope features

The measurement screens allow remote viewing of the GAC's output, providing basic views much like an oscilloscope, DAQ, or spectrum analyzer, but without the need for external equipment.

Access to upgrades

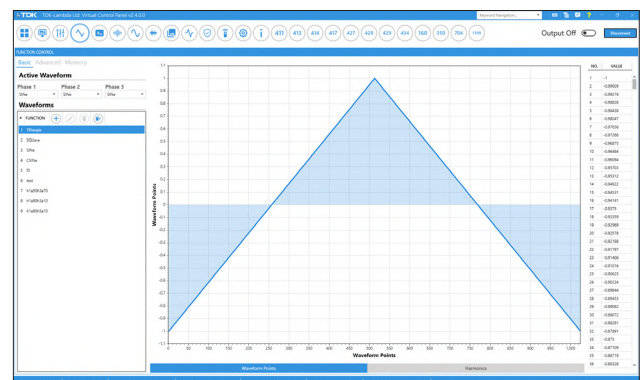
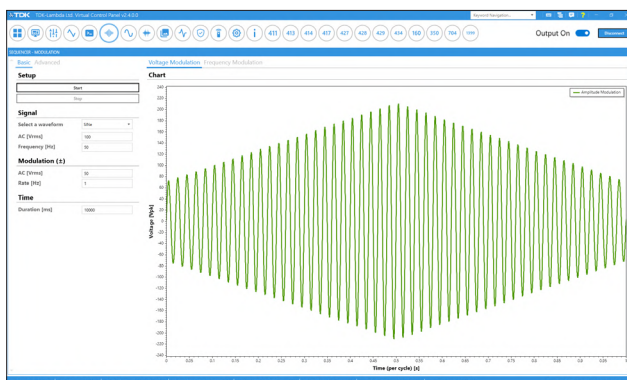
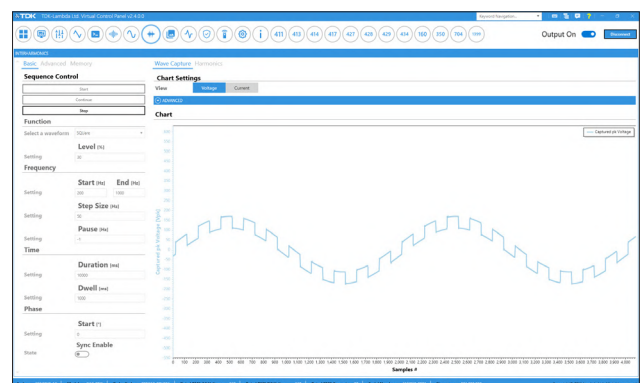
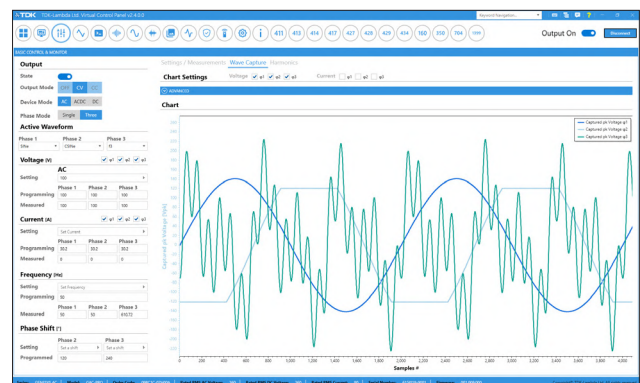
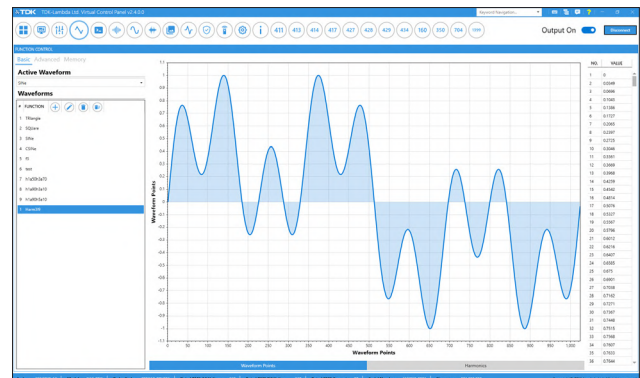
While the on-product touchscreen provides convenient access to key functions, the free VCP software enables using the standards upgrade options and Modulation Sequencer (Wave Generator option), if purchased.

Modern & easy

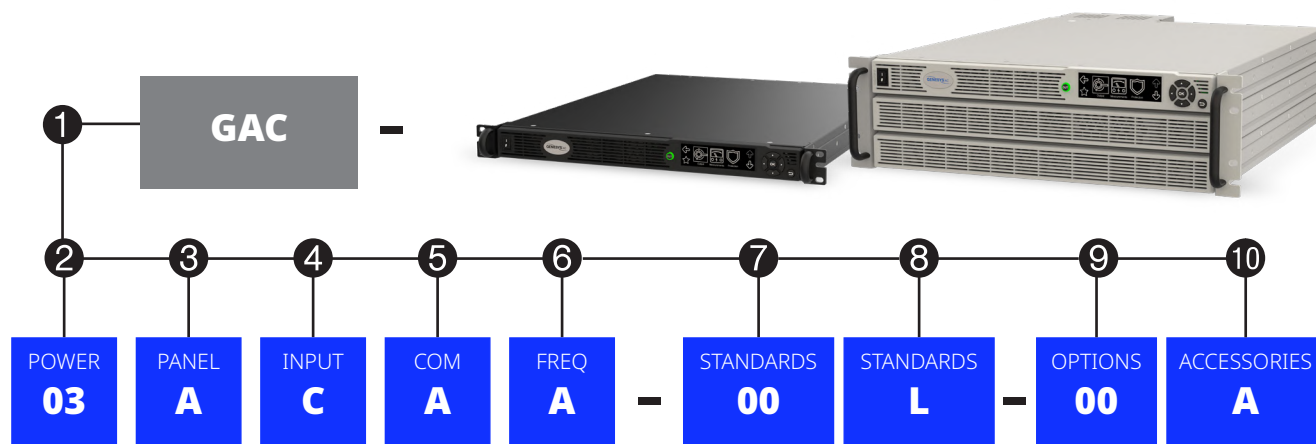
Its modern design and intuitive layout make the VCP comfortable and easy to use.



[Click here to Download](#)



Part Numbering Scheme



1 SERIES	2 POWER	3 PANEL	4 INPUT
GAC	02 2kVA 03 3kVA 06 6kVA 09 9kVA	A Full Grey B Full Black C Blank Grey D Blank Black	A 85-265Vac Single Phase B 170-265Vac 3-Phase C 342-528Vac 3-Phase

5 COMMUNICATION	7 AVIONIC STANDARDS	9 OPTIONS
A Built-In RS232, RS485, USB, LAN B IEEE	00 None	00 None

6 FREQUENCY LIMIT	8 IEC & OTHER STANDARDS	10 ACCESSORIES
A AC 16-1200Hz	A None I WG + HA J 4-11 + WG + HA K 4-13 + WG + HA L 4-11 + 4-13 + WG + HA	A None



Configure
Your GAC



An easy-to-use on-line part number configurator is available

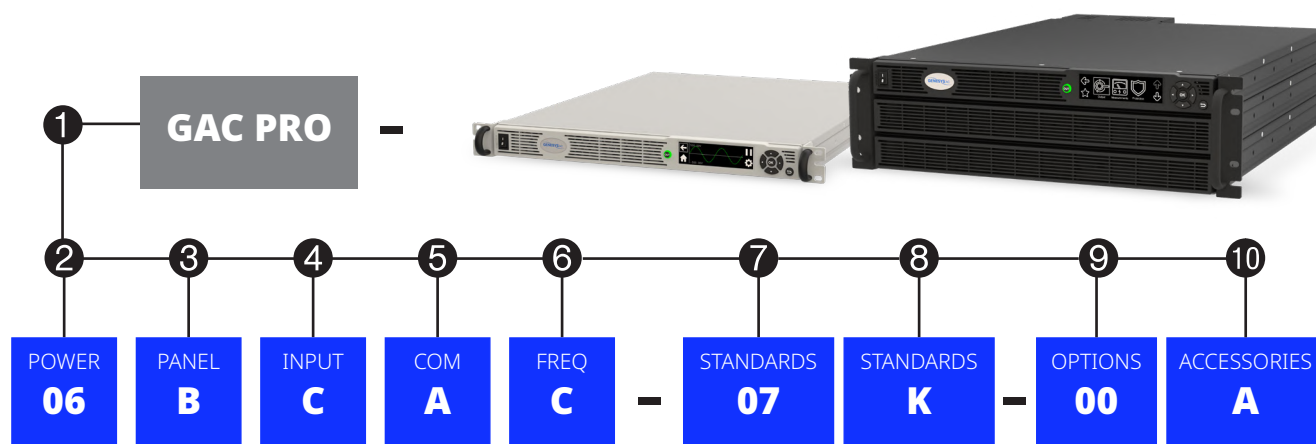
Standards Reference Table

IEC & OTHER STANDARDS		AVIONIC STANDARDS *(GAC PRO ONLY)	
4-11	IEC61000-4-11	RD	RTCA/DO 160
4-13	IEC61000-4-13	MIL7	MIL-STD 704
WG	Wave Generator (Sequencer)	A350	A350 (Airbus ABD100.1.8.1)
HA	Harmonic Analysis		

Example:

GAC - 03 A C A A - 00 L - 00 A

Part Numbering Scheme



1 SERIES	2 POWER	3 PANEL	4 INPUT
GAC PRO	02 2kVA	A Full Grey	A 85-265Vac Single Phase
	03 3kVA	B Full Black	B 170-265Vac 3-Phase
	06 6kVA	C Blank Grey	C 342-528Vac 3-Phase
	09 9kVA	D Blank Black	

5 COMMUNICATION	7 AVIONIC STANDARDS	8 IEC & OTHER STANDARDS
A Built-In RS232, RS485, USB, LAN	00 None	A None
B IEEE	01 RD	B 4-11
	02 MIL7	C 4-13
	03 A350	D MIL
	04 RD + MIL7	E 4-11 + 4-13
	05 RD + A350	F 4-11 + MIL
	06 MIL7 + A350	G 4-13 + MIL
	07 RD + MIL7 + A350	H 4-11 + 4-13 + MIL



Configure Your GAC



An easy-to-use on-line part number configurator is available

9 OPTIONS	10 ACCESSORIES
00 None	A None

Standards Reference Table

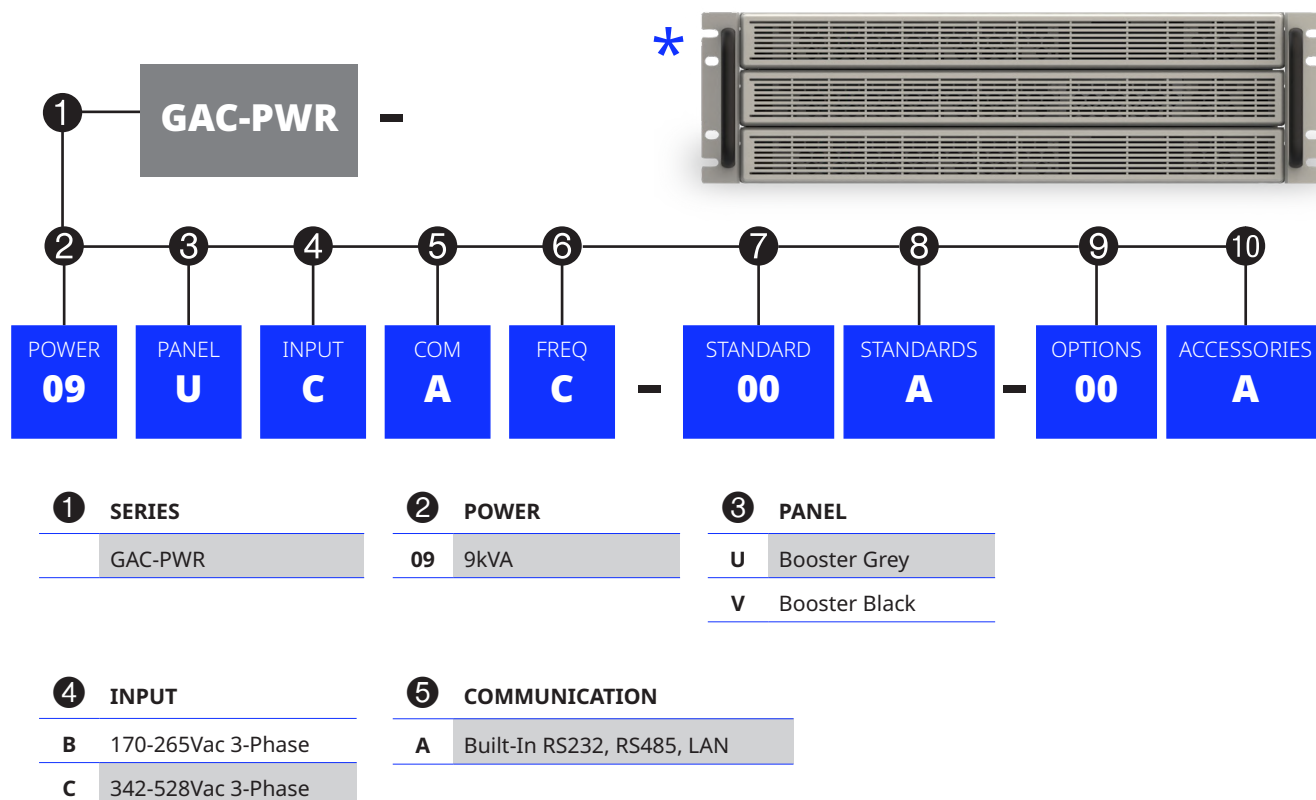
IEC & OTHER STANDARDS		AVIONIC STANDARDS *(GAC PRO ONLY)	
4-11	IEC61000-4-11	RD	RTCA/DO 160
4-13	IEC61000-4-13	MIL7	MIL-STD 704
MIL	MIL-STD-1399-300 Part 1	A350	A350 (Airbus ABD100.1.8.1)
WG	Wave Generator (Sequencer)		
HA	Harmonic Analysis		

Example:

GAC PRO — **06** **B** **C** **A** **C** — **07** **K** — **00** **A**

TDK-Lambda

Part Numbering Scheme



* The Booster is an extension unit only
Booster unit automatically applies all Master unit standards



Configure
Your GAC



An easy-to-use on-line part number configurator is available

Example:

GAC-PWR - **09** **U** **C** **A** **C** - **00** **A** - **00** **A**

GENESYS™ AC Power Source Specifications

Unless otherwise noted, specifications are relative to rated values, warranted over the ambient temperature range of 0° to 40° Celsius.

Models			2kVA 1200Hz 2kVA 5000Hz	3kVA 1200Hz 3kVA 5000Hz	6kVA 1200Hz 6kVA 5000Hz	9kVA 1200Hz (*30) 9kVA 5000Hz (*30)
Programming						
AC output voltage (*1)						
Output phase configuration		-	1 phase		1/3 phase	
Rated output RMS voltage		V	360 Line-Neutral			
Setting range (*3)		V	0 – 360.2			
Programming resolution		V	≤0.02			
Programming accuracy	16 – 1200Hz	%	≤0.2			
	1200.1 – 5000Hz	%	≤0.4			
AC output current						
Rated output	1 phase	A	20	30	60	90
RMS current	3 phase (per phase)		-	-	20	30
Setting range (*5)	1 phase	A	0 – 20.2	0 – 30.2	0 – 60.6	0 – 90.6
	3 phase (per phase)		-	-	0 – 20.2	0 – 30.2
Programming resolution		mA	≤5			
Programming accuracy		%	≤1	≤0.6	≤1	≤0.6
AC output power						
Rated output apparent power	1 phase	VA	2000	3000	6000	9000
	3 phase (per phase)		-	-	2000	3000
Load power factor		-	0 – 1 (leading or lagging)			
Frequency						
Range	1200Hz models	Hz	16 – 1200			
	5000Hz models	Hz	16 – 5000			
Programming resolution	16 – 1200Hz	Hz	0.01			
	1200.1 – 5000Hz	Hz	0.1			
Programming accuracy		%	≤0.01			
DC output voltage						
Rated output DC voltage (*2)		V _{DC}	±510			
DC voltage setting range (*6)		V _{DC}	0 – ±510.2			
Programming resolution		V _{DC}	≤0.02			
Programming accuracy		%	≤0.15			
DC output current						
Rated output DC current		A _{DC}	20	30	60	90
Setting range (*7)		A _{DC}	0 – 20.2	0 – 30.2	0 – 60.6	0 – 90.6
Programming resolution		mA	≤5			
Programming accuracy		%	≤1	≤0.6	≤1	≤0.6
DC output power						
Rated output power		W	2000	3000	6000	9000
Measurement						
Output voltage						
AC voltage resolution		V	≤0.02			
AC voltage accuracy	16 – 1200Hz	%	≤0.2			
	1200.1 – 5000Hz	%	≤0.4			
DC voltage resolution		V _{DC}	≤0.02			
DC voltage accuracy		%	≤0.2			
Output current						
RMS current resolution		mA	≤5			
RMS current accuracy		%	≤1	≤0.6	≤1	≤0.6
DC current resolution		mA _{DC}	≤5			
DC current accuracy		%	≤1	≤0.6	≤1	≤0.6
Peak current resolution		mA _{PK}	≤5			
Peak current accuracy (*25)		%	≤1.5			
Output power						
Active (real) power resolution		W	≤0.2			
Active (real) power accuracy		%	AC: ≤2.25; DC: ≤3	AC: ≤1.5; DC: ≤3	AC: ≤2.25; DC: ≤3	AC: ≤1.5; DC: ≤3
Apparent power resolution		VA	≤0.2			
Apparent power accuracy		%	≤2.25	≤1.5	≤2.25	≤1.5
Frequency (*4)						
Resolution	16 – 1200Hz	Hz	0.01			
	1200.1 – 5000Hz	Hz	0.1			
Accuracy (*8)		%	≤0.1			

Models			2kVA 1200Hz 2kVA 5000Hz		3kVA 1200Hz 3kVA 5000Hz		6kVA 1200Hz 6kVA 5000Hz		9kVA 1200Hz (*30) 9kVA 5000Hz (*30)		
Supplemental											
Crest factor / Maximum peak current			-	6:1 (6 times the rated RMS output current) / 120A		4:1 (4 times the rated RMS output current) / 120A		6:1 (6 times the rated RMS output current) / 360A		4:1 (4 times the rated RMS output current) / 360A	
Ripple RMS (*11)			mV _{RMS}	≤500							
Transient response time (*12)			μs	≤40							
Response speed Trise, Tfall(*13)			μs	1200Hz models: ≤120; 5000Hz models: ≤40							
Voltage slew rate (typical)			V/μs	1200Hz models: 4.4; 5000Hz models: 16.34							
DC offset voltage (typical)			mV _{DC}	≤35							
Remote sense compensation			-	AC, AC+DC mode: 35VRMS, 50VPK; DC Mode: 35VDC							
Start-up delay			-	Less than 7 seconds							
Parallel operation			-	Possible. Form 3-phase system or increase 1-phase output power							
AC input											
Voltage nominal	1-Phase (*14)	V	100 – 240					-			
	3-Phase 200		190 – 240								
	3-Phase 480		380 – 480								
Voltage variation	1-Phase (*14)	V	85 – 265					-			
	3-Phase 200		170 – 265								
	3-Phase 480		342 – 528								
Maximum input current	1-Phase	A	13.5 @ 200VAC		18.5 @ 200VAC		-				
	3-Phase 200		7.5 @ 200VAC		11.2 @ 200VAC		22.4 @ 200VAC		33.6 @ 200VAC		
	3-Phase 480		4 @ 380VAC		6 @ 380VAC		12 @ 380VAC		18 @ 380VAC		
Frequency nominal			Hz	50 – 60							
Frequency variation			Hz	47 – 63							
Power factor (*15)	1-Phase	-	0.96		0.98		-				
	3-Phase 200 and 480	-	0.92		0.94		0.92		0.94		
Efficiency (*16)	1-Phase	%	78		81.5		-				
	3-Phase 200		79		82.5		79		82.5		
	3-Phase 480		79		82.5		79		82.5		
Hold-up time (*15)			ms	≥10							
Inrush peak current (*17)			A	Less than 52					Less than 156		
Mechanical											
Cooling			-	Forced air cooling by internal fans. Airflow direction: From front panel to power source rear							
Weight			Kg	≤8					≤25		
Dimensions	Without strain relief	mm	W: 423, H: 43.6, D: 544.5					W: 423, H: 132.5, D: 649.7			
	With strain relief		W: 423, H: 43.6, D: 640.5					W: 423, H: 132.5, D: 755.5			
Vibration			-	MIL-PRF-28800F, Class 3; 5-500 Hz per Paragraph 4.5.5.3.1; MIL-STD-810G:08, Method 514.6, procedure I							
Shock			-	MIL-PRF-28800F, Class 3; 30G half-sine with 11ms duration per 4.5.5.4.1					MIL-PRF-28800F, Class 3; 20G half-sine with 11ms duration per 4.5.5.4.1		
Transportation integrity			-	ISTA 1A							
Regulatory compliance (safety / EMC)											
Safety (*18)			-	IEC/UL/EN 61010-1 Ed. 3 (cTUVus, T-Mark, CE/UKCA)							
Interface classification (*29) (*31)			-	Hazardous: Input, Output (including Sense), J9 and J10 Non-hazardous: J1~J8					Hazardous: Input, Output, Sense, J9 and J10 Non-hazardous: J1~J8 and Service Port (including J4- 1, J4-2, J6-1, J6-2, J7-1 and J7-2)		
Withstand voltage (*29) (*31)			V _{DC} 1min	Input – Output (including sense), J1~J10: 4000 Output (including sense), J9 and J10 – J1~J8: 3850 Output (including sense), J9 and J10 – Ground: 3060 Input – Ground: 2835					Input – Output, Sense, J1~J10 and Service Port (including J4-1, J4-2, J6-1, J6-2, J7-1 and J7-2): 4000 Output, Sense, J9 and J10 – J1~J8 and Service Port (including J4-1, J4-2, J6-1, J6-2, J7-1 and J7-2): 3850 Output, Sense, J9 and J10 – Ground: 3060 Input – Ground: 2835		
Isolation resistance			MΩ	>100 at 25°C, 70%RH, output to ground 500VDC					>60 at 25°C, 70%RH, output to ground 500VDC		
Isolation to ground			V	360VAC, 510VDC							
EMC (*19)	General	-	EN 61326-1:2021								
	Immunity	-	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11								
	Conducted emissions	-	CISPR11 Class A								
	Radiated emissions	-	CISPR11 Class A								
Protective functions											
Foldback protection			Output shutdown when power source changes mode from CV to CC mode or from CC to CV mode. User presetable								
Output overvoltage protection (OVP)			Output shutdown when overvoltage is sensed on the output. Programming range: 385VAC, +/-550VDC. Accuracy: ≤0.5%								
Output overvoltage protection (OVP) type			RMS – Shutdown when RMS voltage exceeds OVP RMS setting. Peak – shut-down when peak voltage exceeds OVP Peak setting								
Overtemperature protection (OTP)			Output shutdown when ambient temperature sensor or internal temperature sensors thresholds exceed								
Overcurrent protection (OCP)			Output shutdown when peak overcurrent is sensed on the output								
Overcurrent protection (OCP) range			A _{PK}	±0.5 – ±130		±0.5 – ±130		±1.5 – ±390		±1.5 – ±390	
AC input protection			Fuse on each phase, two fuses in 1-Phase input, three fuses in 3-Phase input. Not user accessible								
Output undervoltage limit (UVL)			Prevents from adjusting output voltage below limit								
Output undervoltage protection (UVP)			Output shutdown when undervoltage is sensed on the output								

Models			18kVA 1200Hz (*34) 18kVA 5000Hz (*34)	27kVA 1200Hz (*34) 27kVA 5000Hz (*34)	36kVA 1200Hz (*34) 36kVA 5000Hz (*34)	45kVA 1200Hz (*34) 45kVA 5000Hz (*34)
Programming (*38)						
AC output voltage (*1)						
Output phase configuration (*2)		-	1/3 phase			
Rated output RMS voltage		V	360 Line-Neutral			
Setting range (*3)		V	0 – 360.2			
Programming resolution		V	≤0.02			
Programming accuracy	16 – 1200Hz	%	≤0.2			
	1200.1 – 5000Hz	%	≤0.4			
AC output current						
Rated output RMS current	1 phase	A	180	270	360	450
	3 phase (per phase)		60	90	120	150
Setting range (*5)	1 phase	A	0 – 181.2	0 – 271.8	0 – 362.4	0 – 453
	3 phase (per phase)		0 – 60.4	0 – 90.6	0 – 120.8	0 – 151
Programming resolution		mA	≤5			
Programming accuracy		%	≤0.6			
AC output power						
Rated output apparent power	1 phase	VA	18000	27000	36000	45000
	3 phase (per phase)		6000	9000	12000	15000
Load power factor		-	0 – 1 (leading or lagging)			
Frequency						
Range	1200Hz models	Hz	16 – 1200			
	5000Hz models	Hz	16 – 5000			
Programming resolution	16 – 1200Hz	Hz	0.01			
	1200.1 – 5000Hz	Hz	0.1			
Programming accuracy		%	≤0.01			
DC output voltage						
Rated output DC voltage (*2)		V _{DC}	±510			
DC voltage setting range (*6)		V _{DC}	0 – ±510.2			
Programming resolution		V _{DC}	≤0.02			
Programming accuracy		%	≤0.15			
DC output current						
Rated output DC current		A _{DC}	180	270	360	450
Setting range (*7)		A _{DC}	0 – 181.2	0 – 271.8	0 – 362.4	0 – 453
Programming resolution		mA	≤5			
Programming accuracy		%	≤0.6			
DC output power						
Rated output power		W	18000	27000	36000	45000
Measurement						
Output voltage						
AC voltage resolution		V	≤0.02			
AC voltage accuracy	16 – 1200Hz	%	≤0.2			
	1200.1 – 5000Hz	%	≤0.4			
DC voltage resolution		V _{DC}	≤0.02			
DC voltage accuracy		%	≤0.2			
Output current						
RMS current resolution		mA	≤5			
RMS current accuracy		%	≤0.6			
DC current resolution		mA _{DC}	≤5			
DC current accuracy		%	≤0.6			
Peak current resolution		mA _{PK}	≤5			
Peak current accuracy (*25)		%	≤1.5			
Output power						
Active (real) power resolution		W	≤0.2			
Active (real) power accuracy		%	AC: ≤1.5; DC: ≤3	AC: ≤2.25; DC: ≤3		
Apparent power resolution		VA	≤0.2			
Apparent power accuracy		%	≤1.5	≤2.25		
Frequency (*4)						
Resolution	16 – 1200Hz	Hz	0.01			
	1200.1 – 5000Hz	Hz	0.1			
Accuracy (*8)		%	≤0.1			

Models		18kVA 1200Hz (*34) 18kVA 5000Hz (*34)	27kVA 1200Hz (*34) 27kVA 5000Hz (*34)	36kVA 1200Hz (*34) 36kVA 5000Hz (*34)	45kVA 1200Hz (*34) 45kVA 5000Hz (*34)	
Supplemental						
Crest factor / Maximum peak current		-	4:1 (4 times the rated RMS output current) / 720A	4:1 (4 times the rated RMS output current) / 1080A	4:1 (4 times the rated RMS output current) / 1440A	4:1 (4 times the rated RMS output current) / 1800A
Ripple RMS (*11)		mV _{DC}	≤500			
Transient response time (*12)		μs	≤40			
Response speed Trise, Tfall(*13)		μs	1200Hz models: ≤120; 5000Hz models: ≤40			
Voltage slew rate (typical)		V/μs	1200Hz models: 4.4; 5000Hz models: 16.34			
DC offset voltage (typical)		mV _{DC}	≤60			
Remote sense compensation		-	AC, AC+DC mode: 35VRMS, 50V _{PK} ; DC Mode: 35VDC			
Start-up delay		-	Less than 7 seconds			
Parallel operation		-	Possible. Form 3-phase system or increase 1-phase output power			
AC input						
Voltage nominal	1-Phase	V	-			
	3-Phase 200		190 – 240			
	3-Phase 480		380 – 480			
Voltage variation	1-Phase	V	-			
	3-Phase 200		170 – 265			
	3-Phase 480		342 – 528			
Maximum input current	1-Phase	A	-			
	3-Phase 200		67.2 @ 200VAC	100.8 @ 200VAC	134.4 @ 200VAC	168 @ 200VAC
	3-Phase 480		36 @ 380VAC	54 @ 380VAC	72 @ 380VAC	90 @ 380VAC
Frequency nominal		Hz	50 – 60			
Frequency variation		Hz	47 – 63			
Power factor (*15)	1-Phase	-	-			
	3-Phase 200 and 480	-	0.92			
Efficiency (*16)	1-Phase	%	-			
	3-Phase 200		82.5			
	3-Phase 480		82.5			
Hold-up time (*15)		ms	≥10			
Inrush peak current (*17)		A	Less than 312	Less than 468	Less than 624	Less than 780
Mechanical						
Cooling		-	Forced air cooling by internal fans. Airflow direction: From front panel to power source rear			
Weight		Kg	≤50	≤75	≤100	≤125
Dimensions	Without strain relief	mm	W: 423, H: 265, D: 649.7	W: 423, H: 399, D: 649.7	W: 423, H: 532, D: 649.7	W: 423, H: 665, D: 649.7
	With strain relief		W: 423, H: 265, D: 755.5	W: 423, H: 399, D: 755.5	W: 423, H: 532, D: 755.5	W: 423, H: 665, D: 755.5
Vibration		-	MIL-PRF-28800F, Class 3; 5-500 Hz per Paragraph 4.5.5.3.1; MIL-STD-810G:08, Method 514.6, procedure I			
Shock		-	MIL-PRF-28800F, Class 3; 20G half-sine with 11ms duration per 4.5.5.4.1			
Transportation integrity		-	ISTA 1A			
Regulatory compliance (safety / EMC)						
Safety (*18) (*35)		-	IEC/UL/EN 61010-1 Ed. 3 (cTUVus, T-Mark, CE/UKCA)			
Interface classification (*29) (*31)		-	Hazardous: Input, Output, Sense, J9 and J10 Non-hazardous: J1~J8 and Service Port (including J4-1, J4-2, J6-1, J6-2, J7-1 and J7-2)			
Withstand voltage (*29) (*31)		V _{DC} 1min	Input – Output, Sense, J1~J10 and Service Port (including J4-1, J4-2, J6-1, J6-2, J7-1 and J7-2): 4000 Output, Sense, J9 and J10 – J1~J8 and Service Port (including J4-1, J4-2, J6-1, J6-2, J7-1 and J7-2): 3850 Output, Sense, J9 and J10 – Ground: 3060 Input – Ground: 2835			
Isolation resistance		MΩ	>30 at 25°C, 70%RH, output to ground 500VDC	>20 at 25°C, 70%RH, output to ground 500VDC	>15 at 25°C, 70%RH, output to ground 500VDC	>12 at 25°C, 70%RH, output to ground 500VDC
Isolation to ground		V	360VAC, 510VDC			
EMC (*19) (*35)	General	-	EN 61326-1:2021			
	Immunity	-	EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11			
	Conducted emissions	-	CISPR11 Class A			
	Radiated emissions	-	CISPR11 Class A			
Protective functions						
Foldback protection		Output shutdown when power source changes mode from CV to CC mode or from CC to CV mode. User presetable				
Output overvoltage protection (OVP)		Output shutdown when overvoltage is sensed on the output. Programming range: 385VAC, +/-550VDC. Accuracy: ≤0.5%				
Output overvoltage protection (OVP) type		RMS – Shutdown when RMS voltage exceeds OVP RMS setting. Peak – shut-down when peak voltage exceeds OVP Peak setting				
Overtemperature protection (OTP)		Output shutdown when ambient temperature sensor or internal temperature sensors thresholds exceed				
Overcurrent protection (OCP)		Output shutdown when peak overcurrent is sensed on the output				
Overcurrent protection (OCP) range		A _{PK}	±3 – ±780	±4.5 – ±1170	±6 – ±1560	±7.5 – ±1950
AC input protection		Fuse on each phase, two fuses in 1-Phase input, three fuses in 3-Phase input. Not user accessible				
Output undervoltage limit (UVL)		Prevents from adjusting output voltage below limit				
Output undervoltage protection (UVP)		Output shutdown when undervoltage is sensed on the output				

Models		All models	
Harmonics measurement			
Fundamental frequency		Hz	16 – 1000
Harmonic frequency / harmonic #		Hz	32 – 50000 / 2 – 50
Measurement items		-	RMS Voltage, RMS current, phase angle and THD
Stability			
Line regulation		%	≤0.02
Load regulation (*9)		%	≤0.03
Total harmonic distortion (THD) (*9)	16 – 500	%	≤0.4
	501 – 1200		≤0.7
	1201 – 5000		≤1
Temperature coefficient (*10)		ppm/°C	50
Temperature stability (voltage)		%	±0.05 of FS over 8 hours. Constant line, load, and temperature. Remote sense
Warm-up drift (voltage)		%	Less than 0.05 of rated output voltage over 30 minutes following power on
Environmental conditions			
Operating temperature		°C / °F	0 – 40 / 32 – 104
Storage temperature		°C / °F	-30 – 85 / -22 – 185
Operating environment		-	Overvoltage category II, Indoor use
Operating humidity		%	20 – 90 RH (no condensation)
Storage humidity		%	10 – 95 RH (no condensation)
Altitude (*26)		m / feet	Operating: 2000 / 6562; Non-operating: 12000 / 39370
Remote control interfaces (isolated from the output) (*32)			
USB		2.0, Full Speed, Virtual COM Port, Type B high retention connector	
RS232		Up to 921.6kbps with optional handshake (RTS/CTS), DB9 connector	
RS485		Up to 921.6kbps, full duplex (4-wire), DB9 connector (shared with RS232)	
LAN		10/100Mbps, Auto-MDIX, Auto-Negotiation, built-in web server	
GPIO (optional interface)		IEEE488.1, IEEE488.2 compliant	
Signals and controls (isolated from the output)			
Constant voltage / Constant current monitor		Open collector. CC mode: On (0 – 0.6V). CV mode: Off. Maximum voltage: 30V. Maximum sink current: 10mA	
Power source OK #2 monitor (*32)		Push pull. Output on: 4.5 – 5.5V. Output off: 0 – 0.6V. Maximum source / sink current: 10mA	
Power source OK #1 monitor (*32)		Open collector. Output on: On (0 – 0.6V). Output off: Off. Maximum voltage: 30V. Maximum sink current: 10mA	
Trigger in signals (*32)		Maximum low level input voltage: 0.8V. Minimum high level input voltage: 2.5V. Maximum high level input: 5V Positive edge trigger width: 10us minimum. Maximum Tr/F: 1us. Minimum delay between 2 pulses: 1ms	
Trigger out signals		Maximum low level output voltage: 0.6V. Minimum high level output voltage: 4.5V. Maximum high level output voltage: 5V Maximum source / sink current: 10mA. Minimum pulse width:100us	
Local / Remote analog programming monitor		Open collector. Remote: On (0 – 0.6V). Local: Off. Maximum Voltage: 30V. Maximum sink current: 10mA	
Local / Remote analog programming enable		Enable / Disable analog programming control by electrical signal or dry contact. Remote: On (0 – 0.6V) or short. Local: Off (2 – 30V) or open	
Enable / Disable (ENA) power source output (*32)		Enable / Disable power source output by electrical signal or dry contact. Voltage levels: 0 – 0.6V or short, 2 – 30V or open. User selectable output on / off logic	
Interlock (ILC) inhibit power source output (*32)		Enable / Disable power source output by electrical signal or dry contact. Output on: 0 – 0.6V or short. Output OFF: 2 – 30V or open	
Programmed signals		Two open drain programmable signals. Maximum voltage: 25V. Maximum sink current: 100mA	
AC input voltage OK monitor		Open collector. AC input voltage OK: 0 – 0.6V. AC input voltage not OK: Off. Maximum voltage: 30V. Maximum sink current: 10mA	
Alarm (fault) monitor		Open collector. No faults: 0 – 0.6V. power source fault: Off. Maximum voltage: 30V. Maximum sink current: 10mA	
Emergency power off (EPO) (*32)		Enable / Disable power source output by electrical signal or dry contact. Output on: 0 – 0.6V or short. Output OFF: 2 – 30V or open	
Analog programming and monitoring (isolated from the output)			
Output voltage programming (*21)		Full mode range: ±0 – 10V. RMS mode range: 0 – 10V. User selectable range: ±2.5 – 10V. Accuracy: 0.3%	
Output voltage monitoring (*21)		Full mode range: ±0 – 10V. RMS mode range: 0 – 10V. User selectable range: ±2.5 – 10V. Accuracy: 0.4%	
Output current monitoring (*21)		Full mode range: ±0 – 10V. RMS mode range: 0 – 10V. User selectable range: ±2.5 – 10V. Accuracy: 2kVA/6kVA - ≤1.3%; 3kVA/9kVA/18kVA/27kVA/36kVA/45kVA - ≤0.9%	
Software / Firmware test sequences (*20) (*33)			
RTCA/DO 160 (*22)		Environmental conditions and test procedures for airborne equipment	
MIL-STD 704 (*22)		Aircraft electric power characteristics	
A350 (Airbus ABD100.1.8.1) (*22)		Electric characteristics of A350 AC and DC equipment	
MIL-STD-1399-300 PART 1 (*22)		Low voltage electric power, alternating current	
IEC61000-4-11 (*23)		Voltage dips, short interruptions and voltage variations immunity	
IEC61000-4-13 (*23)		Harmonics and interharmonics including mains signalling at a.c. power port	
IEC61000-4-14 (*24)		Voltage fluctuation immunity test for equipment with input current not exceeding 16 A per phase	
IEC61000-4-17 (*24)		Ripple on d.c. input power port immunity	
IEC61000-4-27 (*24)		Unbalance, immunity test for equipment with input current not exceeding 16 A per phase	
IEC61000-4-28 (*24)		Variation of power frequency, immunity test for equipment with input current not exceeding 16 A per phase	
IEC61000-4-29 (*24)		Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests	
IEC61000-4-34 (*24)		Voltage dips, short interruptions and voltage variations immunity tests for equipment with mains current more than 16 A per phase	

Output Characteristics

AC and AC+DC characteristics

output current vs output voltage

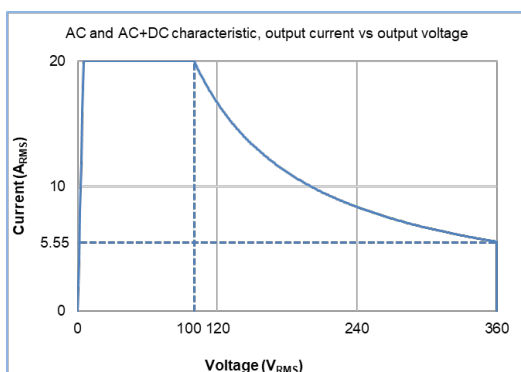


Figure 1: 2kVA AC and AC+DC characteristic

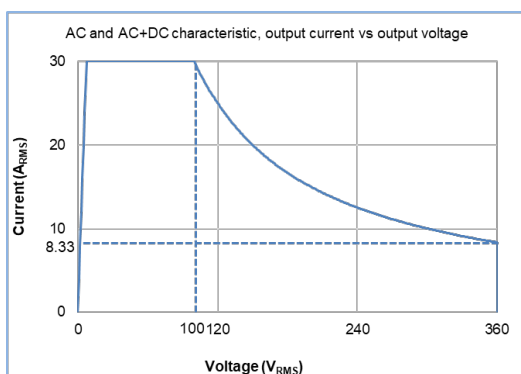


Figure 3: 3kVA AC and AC+DC characteristic (*27)

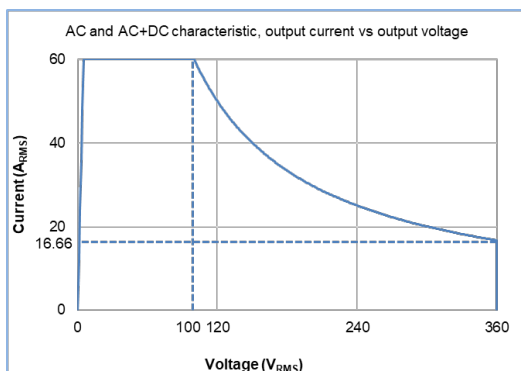


Figure 5: 6kVA AC and AC+DC characteristic

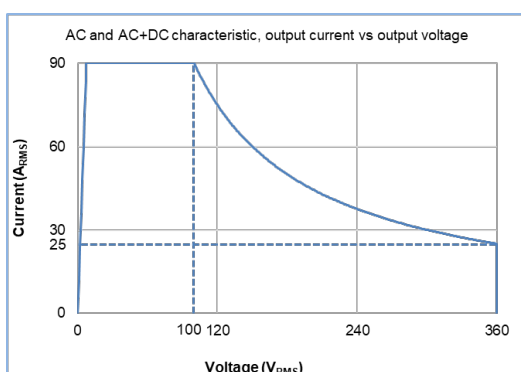


Figure 7: 9kVA AC and AC+DC characteristic (*28)

DC characteristics

output current vs output voltage

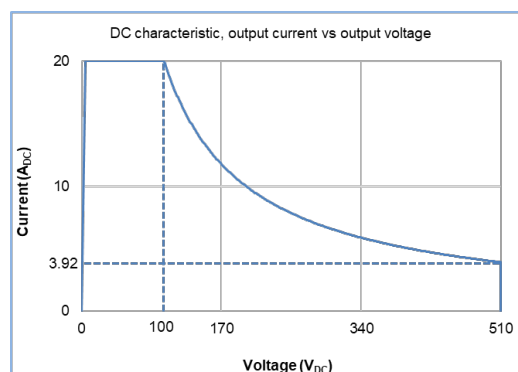


Figure 2: 2kW DC characteristic

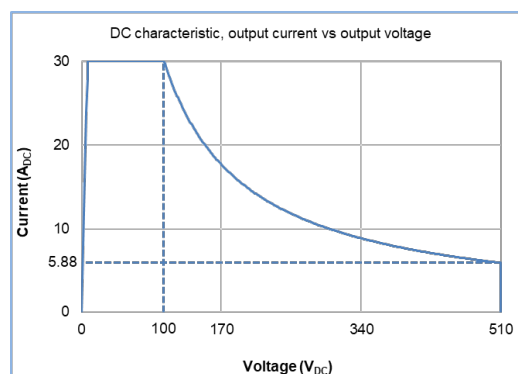


Figure 4: 3kW DC characteristic

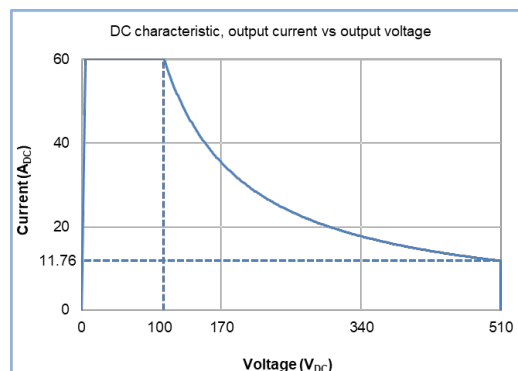


Figure 6: 6kW DC characteristic

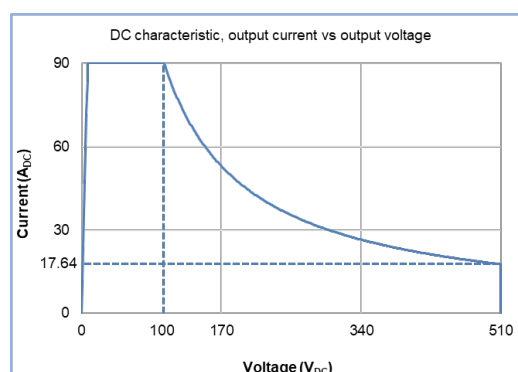


Figure 8: 9kW DC characteristic

Output Characteristics

AC and AC+DC characteristics

output current vs output voltage

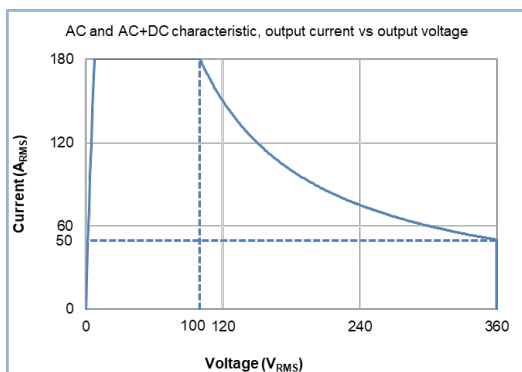


Figure 9: 18kVA AC and AC+DC characteristic (*36)

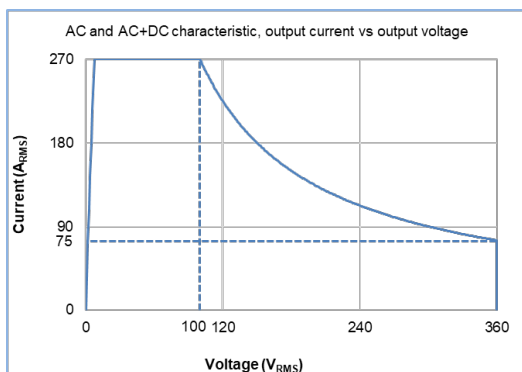


Figure 11: 27kVA AC and AC+DC characteristic (*39)

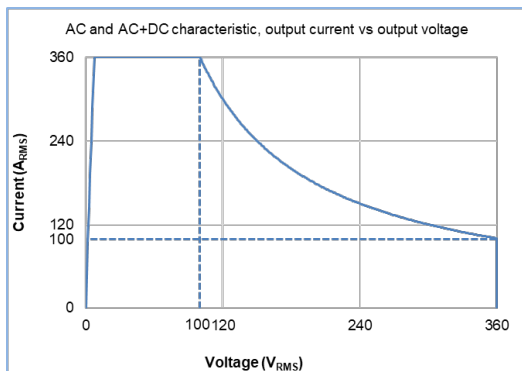


Figure 13: 36kVA AC and AC+DC characteristic (*40)

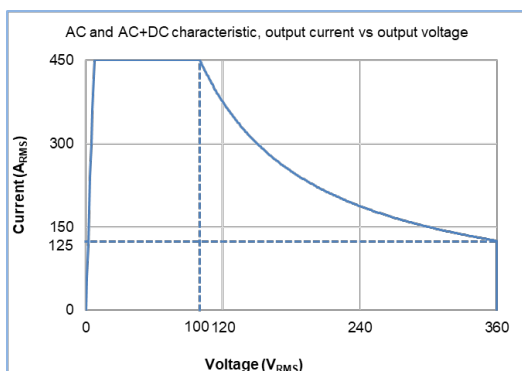


Figure 15: 45kVA AC and AC+DC characteristic (*37)

DC characteristics

output current vs output voltage

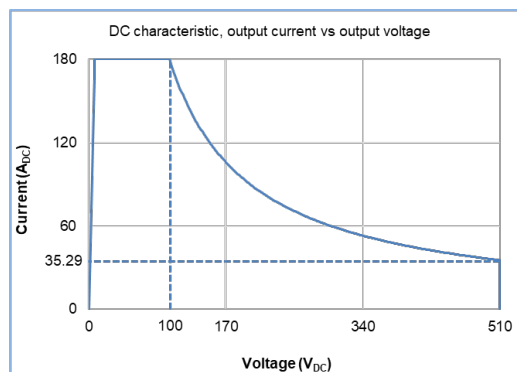


Figure 10: 18kW DC characteristic

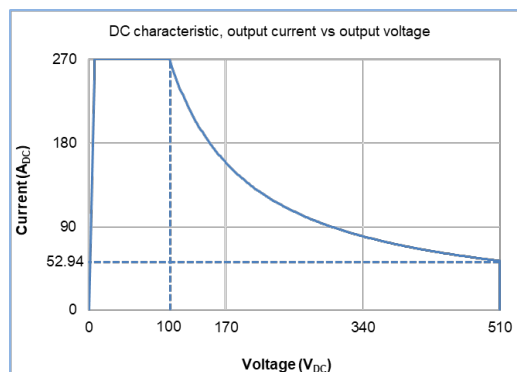


Figure 12: 27kW DC characteristic

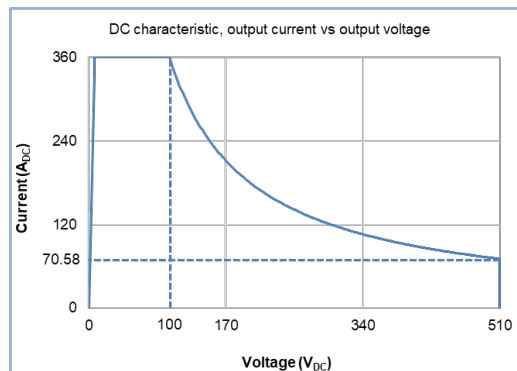


Figure 14: 36kW DC characteristic

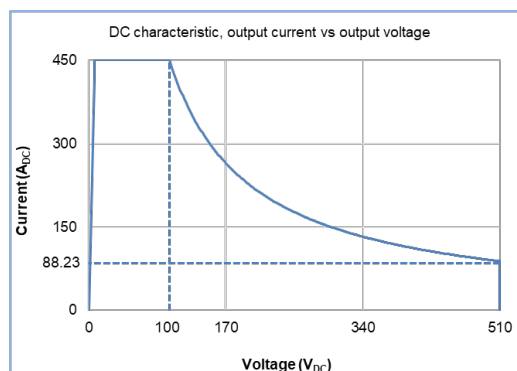


Figure 16: 45kW DC characteristic

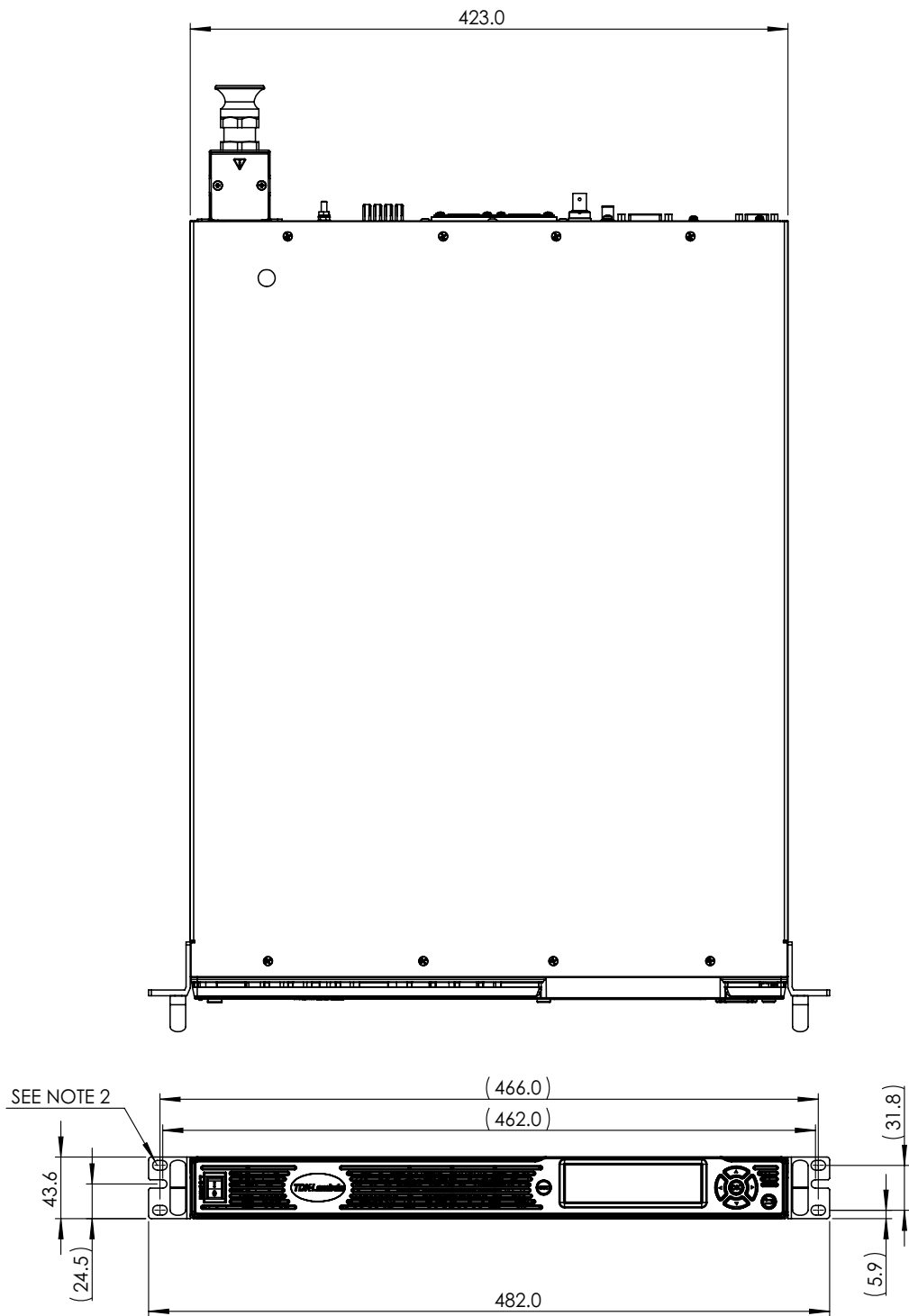
"NOTES:

- *1: Combined with AC and DC output, the peak voltage must be between -510V to +510V.
- *2: 18kVA and 36kVA models support 2-Phase output configuration.
- *3: Maximum RMS voltage setting range is associated with the output current setting. When the output current setting is above 5.55A for 2kVA, 8.33A for 3kVA, 16.66A for 6kVA, 25A for 9kVA, 50A for 18kVA, 75A for 27kVA, 100A for 36kVA or 125A for 45kVA the output voltage setting is limited to rated output power. Refer to Figure 1, Figure 3, Figure 5, Figure 7, Figure 9, Figure 11, Figure 13 or Figure 15.
Maximum RMS current setting is adjusted automatically to the maximum allowed value according to the rated output power when the RMS voltage is set.
- *4: Frequency measurement is available above 10VAC.
- *5: Maximum RMS current setting range is associated with the output voltage setting. When the output voltage setting is above 100VAC, the output current setting is limited to rated output power.
- *6: Maximum DC voltage setting range is associated with the output current setting. When the output current setting is above 3.92A for 2kW, 5.88A for 3kW, 11.76A for 6kW, 17.64A for 9kW, 35.29A for 18kW, 52.94A for 27kW, 70.58A for 36kW or 88.23A for 45kW the output voltage setting is limited to rated output power. Refer to Figure 2, Figure 4, Figure 6, Figure 8, Figure 10, Figure 12, Figure 14 or Figure 16.
Maximum DC current setting is adjusted automatically to the maximum allowed value according to the rated output power when the DC voltage is set.
- *7: Maximum DC current setting range is associated with the output voltage setting. When the output voltage setting is above 100VDC, the output current setting is limited to rated output power.
- *8: Accuracy is guaranteed above 5% of rated output voltage.
- *9: Load power factor is 1. Measured on the sensing point. Regulation is guaranteed above 5% of rated output voltage. THD is guaranteed above 15% of rated output voltage.
- *10: ppm/°C of rated output voltage, following 30 minutes warm-up.
- *11: The ripple is measured at 10 – 100% of rated output voltage and rated output current. BW 5Hz – 1MHz, load power factor is 1.
- *12: Time for output voltage to recover within 1% of its rated output for a load change 10~90% of rated output current. Output set point: 10 – 100%, local sense, load power factor is 1, at rated output voltage.
- *13: At 10% to 90% of the output voltage, at rated output voltage.
- *14: Output power is limited to 1500W or 1500VA at input voltage below 170VAC.
- *15: Typical at rated output power, rated output current, DC mode or sine wave, load power factor is 1. 1-Phase models at 230VAC input voltage, 3-Phase 200V models at 200VAC input voltage, 3-Phase 480V at 380VAC input voltage.
- *16: Typical at rated output power, rated output current, DC mode or sine wave, load power factor is 1. 1-Phase models at 230VAC input voltage, 3-Phase 200V models at 200VAC input voltage, 3-Phase 480V at 380VAC input voltage.
- *17: Not including the EMI filter inrush current, less than 0.2mSec. 1-Ph Input, at Input line $\geq$ 240Vac, less than 70A.
- *18: Class I; Pollution Degree 2.
- *19: All cables' length except LAN must be less than 3 meters.
- *20: Software / Firmware test sequences must be acquired. Require Virtual Control Panel (VCP) software via RS232, RS485, USB, LAN or GPIB. Wave Generator & Harmonic Analysis: Built-in in Genesys AC Pro Series. Must be acquired in Genesys AC Series.
IEC61000-4-17 and IEC61000-4-29: Built-in in Genesys AC Pro Series (not available in Genesys AC models without DC capability). For details and limitations on test sequences, see Virtual Control Panel (VCP) Installation and Applications Guide (IA761-04-03).
- *21: RMS mode, programming and monitoring.
- *22: Available in Genesys AC Pro (must be acquired).
- *23: Available in Genesys AC and Genesys AC Pro (must be acquired).
- *24: Available in Genesys AC and Genesys AC Pro. Wave Generator & Harmonic Analysis must be acquired in Genesys AC.
- *25: Minimum peak current duration - 10 μ sec.
- *26: AC operating mode, frequency below 40Hz:
- 3kVA: Derate output power linearly from 3000VA to 2700VA starting at 500 meters (maximum allowed output power is 2700VA at 2000 meters). 9kVA: Derate output power linearly from 9000VA to 8100VA starting at 500 meters (maximum allowed output power is 8100VA at 2000 meters). 18kVA: Derate output power linearly from 18000VA to 16200VA starting at 500 meters (maximum allowed output power is 16200VA at 2000 meters). 27kVA: Derate output power linearly from 27000VA to 24300VA starting at 500 meters (maximum allowed output power is 24300VA at 2000 meters). 36kVA: Derate output power linearly from 36000VA to 32400VA starting at 500 meters (maximum allowed output power is 32400VA at 2000 meters). 45kVA: Derate output power linearly from 45000VA to 40500VA starting at 500 meters (maximum allowed output power is 40500VA at 2000 meters).
- *27: Maximum allowed output power in AC+DC mode: 2kVA at output frequency
30Hz, 2.5kVA at output frequency $\geq$ 30Hz and
100Hz, 3kVA at output
frequency $\geq$ 100Hz.
- *28: Maximum allowed output power in AC+DC mode: 6kVA at output frequency
30Hz, 7.5kVA at output frequency $\geq$ 30Hz and
100Hz, 9kVA at output
frequency $\geq$ 100Hz.

- *29: J1 – RS232 and RS485, J2 – USB, J3 – LAN, J4 – Remote Programming (Single Power Source / System Master / Phase 1), J4-1 – Remote Programming (System Slave / Phase 2), J4-2 – Remote Programming (System Slave / Phase 3), J5 – Emergency Power Off, J6 – Trigger Out (Single Power Source / System Master / Phase 1), J6-1 – Trigger Out (System Slave / Phase 2), J6-2 – Trigger Out (System Slave / Phase 3), J7 – Voltage Monitor (Single Power Source / System Master / Phase 1), J7-1 – Voltage Monitor (System Slave / Phase 2), J7-2 – Voltage Monitor (System Slave / Phase 3), J8 – Optional Interface slot, J9 – Parallel Master, J10 – Parallel Slave.
- *30: Including GAC-PWR, except items marked by *31, *32 and *33.
- *31: J1, J2, J3, J5 and J8 are not available in GAC-PWR.
- *32: Not applicable to GAC-PWR. Controlled by the Master unit via parallel connection.
- *33: Not applicable to GAC-PWR. Software / Firmware test sequences are defined by the Master unit.
- *34: The 18kVA unit consists of a GAC-09/GAC-PRO-09 unit and a GAC-PWR-09 unit.
The 27kVA unit consists of a GAC-09/GAC-PRO-09 unit and two GAC-PWR-09 units. The 36kVA unit consists of a GAC-09/GAC-PRO-09 unit and three GAC-PWR-09 units. The 45kVA unit consists of a GAC-09/GAC-PRO-09 unit and four GAC-PWR-09 units.
- *35: The 18kVA, 27kVA, 36kVA and 45kVA approval is based on each 9kVA unit approval.
- *36: Maximum allowed output power in AC+DC mode: 12kVA at output frequency
30Hz, 15kVA at output frequency $\geq 30\text{Hz}$ and
100Hz, 18kVA at output
frequency $\geq 100\text{Hz}$.
- *37: Maximum allowed output power in AC+DC mode: 30kVA at output frequency
30Hz, 37.5kVA at output frequency $\geq 30\text{Hz}$ and
100Hz, 45kVA at output
frequency $\geq 100\text{Hz}$.
- *38: Starting from firmware 001.008.000:
Maximum programming voltage (rated voltage) range is extended from 350VAC / $\pm 500\text{VDC}$ to 360VAC / $\pm 510\text{VDC}$. Minimum programming current range is extended from 5% of rated current to 0 Amperes.
- *39: Maximum allowed output power in AC+DC mode: 18kVA at output frequency
30Hz, 22.5kVA at output frequency $\geq 30\text{Hz}$ and
100Hz, 27kVA at output
frequency $\geq 100\text{Hz}$.
- *40: Maximum allowed output power in AC+DC mode: 24kVA at output frequency
30Hz, 30kVA at output frequency $\geq 30\text{Hz}$ and
100Hz, 36kVA at output
frequency $\geq 100\text{Hz}$.

Outline Drawing

1U - 2kVA-3kVA

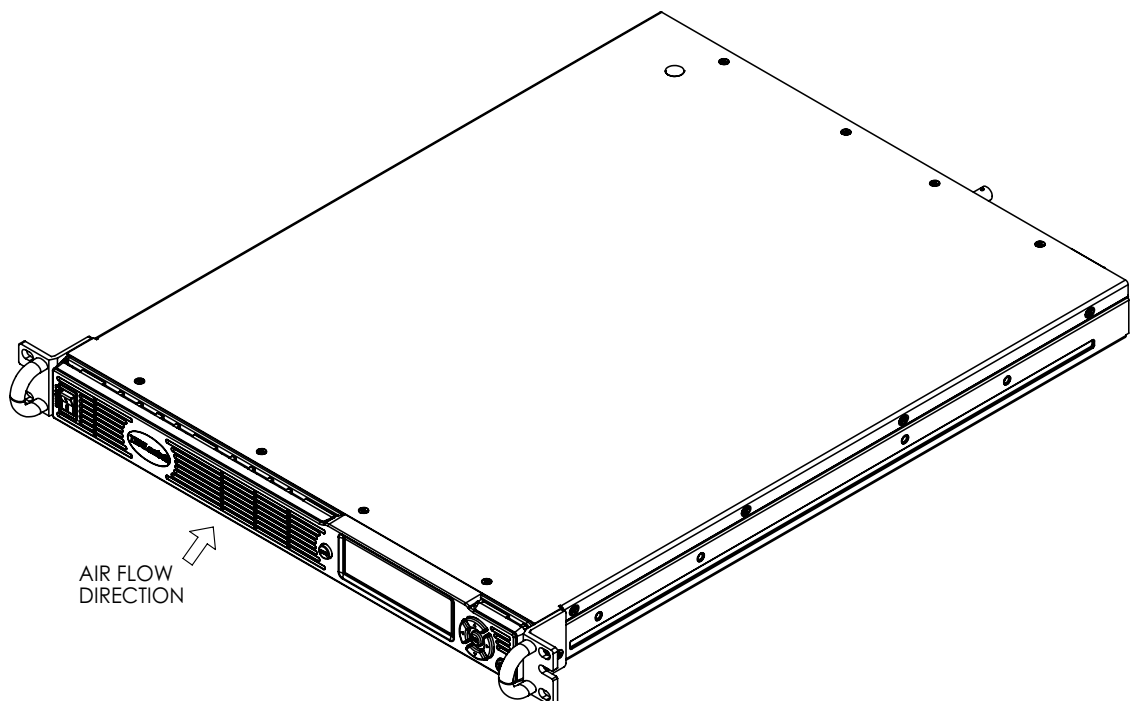


Outline Drawing

1U - 2kVA-3kVA



1U - 2kVA-3kVA

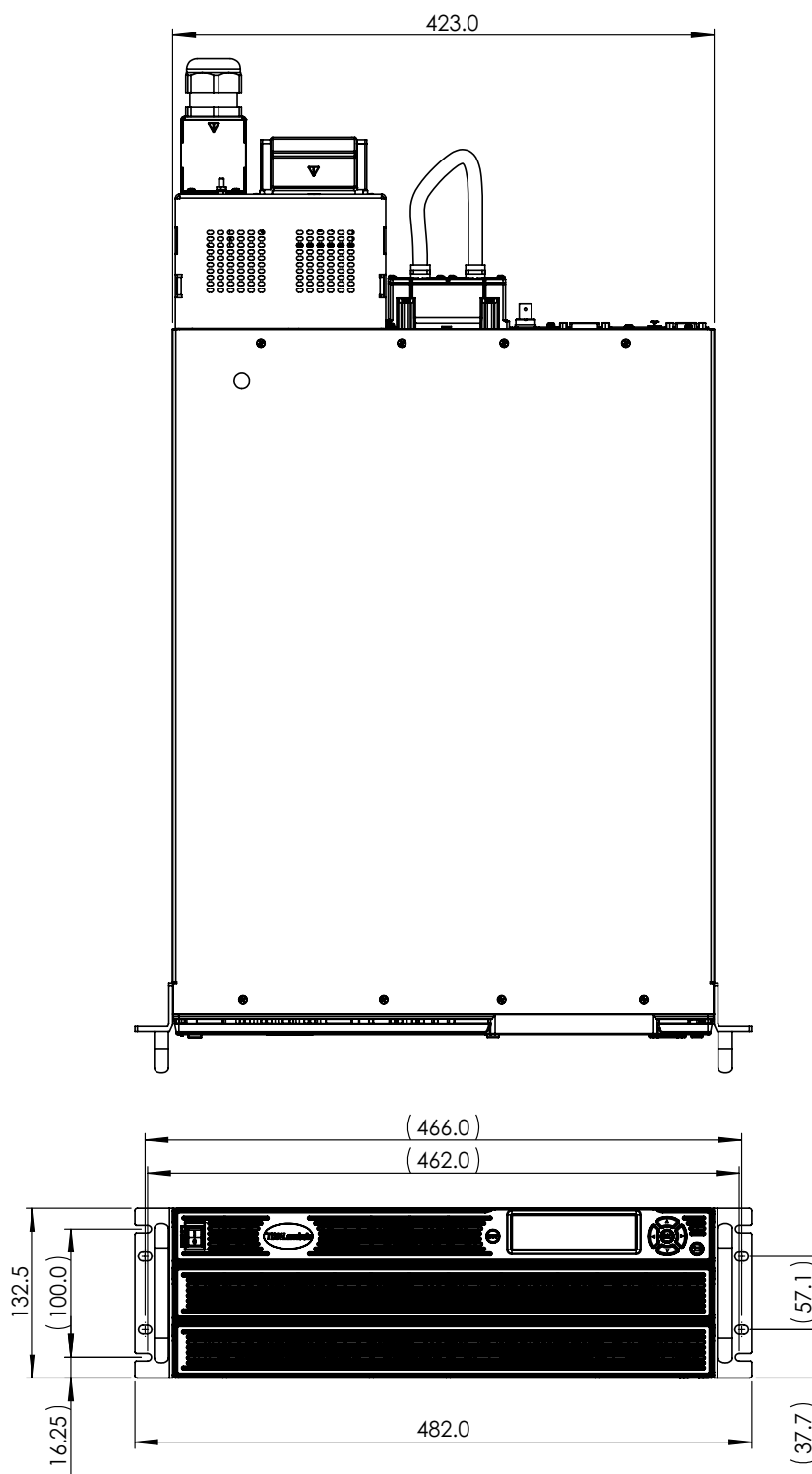


NOTE

1. MOUNTING HOLES FOR SLIDES P/N:CC3001-00-S160, GENERAL DEVICES OR EQUIVALENT.
USE #10-32x0.375 INCH x 3 SCREWS FOR EACH SLIDE IN POSITION MARKED BY "A".
ENSURE THAT THE SCREWS DO NOT PENETRATE MORE THAN 6.0mm INTO THE UNIT.
2. MOUNTING HOLES FOR 19" RACK, USE M6x16 SCREWS TO FIX THE UNIT TO THE RACK.
3. RACK DIMENSIONS COMPLIES TO EIA310 & JIS C 6010 STANDARDS.

Outline Drawing

3U - 6kVA-9kVA



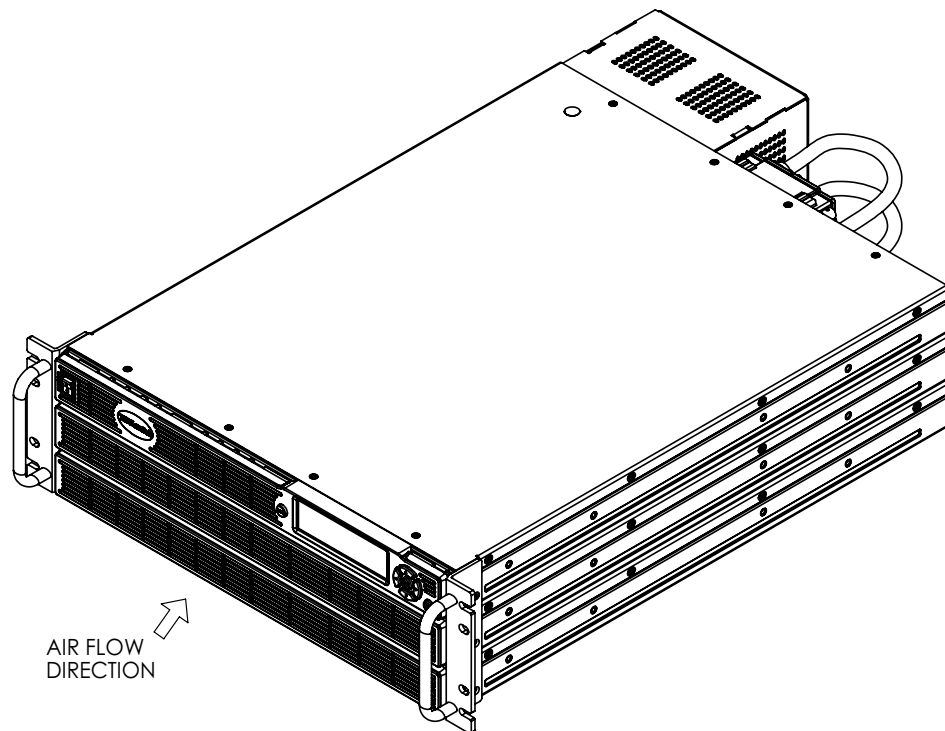
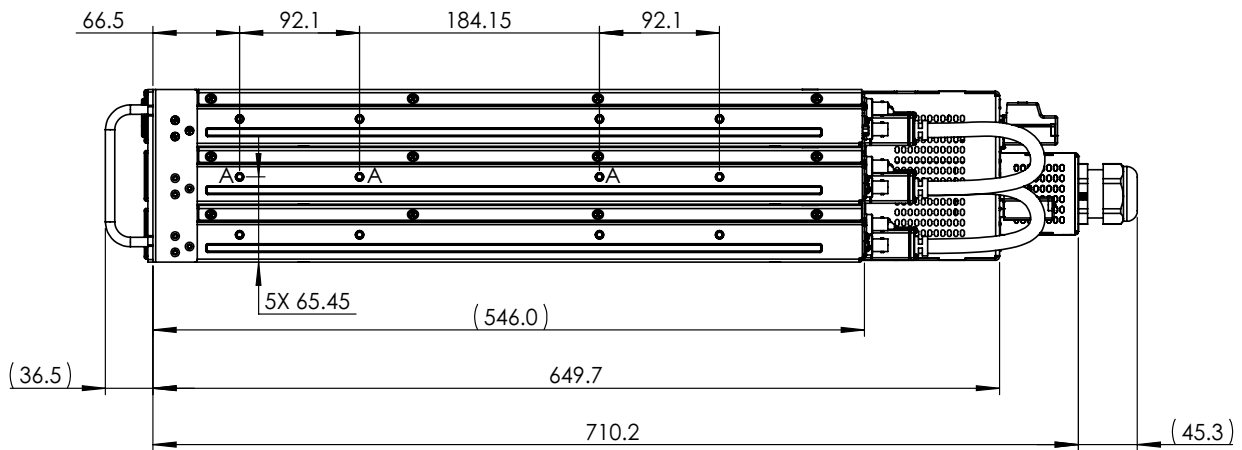
The booster unit does not include a display or ON/OFF switch.
The outline drawing is identical to that of the Master unit

Outline Drawing

3U - 6kVA-9kVA



3U - 6kVA-9kVA



NOTE

1. MOUNTING HOLES FOR SLIDES P/N:CC3001-00-S160,GENERAL DEVICES OR EQUIVALENT.
USE #10-32x0.375 INCH x 3 SCREWS FOR EACH SLIDE IN POSITION MARKED BY "A".
ENSURE THAT THE SCREWS DO NOT PENETRATE MORE THAN 6.0mm INTO THE UNIT.
2. MOUNTING HOLES FOR 19" RACK, USE M6x16 SCREWS TO FIX THE UNIT TO THE RACK.
3. RACK DIMENSIONS COMPLIES TO EIA310 & JIS C 6010 STANDARDS.
4. THE BOOSTER UNIT DOES NOT INCLUDE A DISPLAY OR ON/OFF SWITCH.
5. THE BLANK PANEL UNIT DOES NOT INCLUDE A DISPLAY.
6. THE BLANK PANEL AND BOOSTER UNIT OUTLINE DRAWING IS IDENTICAL TO THAT OF THE STANDARD UNIT



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