New ! 800V, 1000V, 1250V and 1500V models - 10kW/15kW **Programmable DC Power Supplies** 10kW/15kW in 3U Built in RS-232 & RS-485 Interface **Advanced Parallel Operation**

Genes

ТМ

Optional Interfaces: LXI Compliant LAN GPIB (IEEE 488.2 & SCPI Compliant) Isolated Analog Program/Monitor



Genesys[™] Family GEN H 750W Half-Rack GEN 1U 750W/1500W/2400W Full-Rack GEN 2U 3.3kW/5kW GEN 3U 10kW/15kW



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(ES) Equipements Scientifiques SA - Département Tests Energie Mesures - 127 rue de Buzenval BP 26 - 92380 Garches Tél. 01 47 95 99 45 - Fax. 01 47 01 16 22 - e-mail: tem@es-france.com - Site Web: www.es-france.com

The Genesys[™] family of programmable power supplies sets a new standard for flexible, reliable, AC/DC power systems in OEM, Industrial and Laboratory applications.

Features include:

- High Power Density 10kW/15kW in 3U package
- High Output Current up to 1000ADC
- Wide Range of popular worldwide 3Φ AC inputs, (208VAC, 400VAC, 480VAC)
- Power Factor 0.88 (Passive PFC on all AC Inputs)
- Output Voltage up to 1500V; Output Current up to 1000A
- Built-in RS-232/RS-485 Interface Standard
- Last Setting Memory; Front Panel Lockout
- "Advanced Parallel" configuration reports total system current (up to four identical units)
- Global Commands for Serial RS-232/RS-485 Interface
- Continuous Encoders for Voltage and Current Adjustment
- Independent Remote ON/OFF and Remote ENABLE/DISABLE
- Reliable Modular and SMT Design
- 19" Rack Mounted for ATE and OEM Applications, zero-stack
- Optional Interfaces

Compliant LAN (Class C) GPIB (IEEE 488.2 & SCPI Compliant) w/ Multi-Drop capability Isolated Analog Programming and Monitoring Interface (0-5V/0-10V & 4-20mA)

- LabView[™] and LabWindows[™] Software Drivers
- Worldwide Safety Agency Approvals; UL Recognized and CE Mark for LVD and EMC Regulation (208VAC, 400VAC and select 480VAC models)
- Five Year Warranty

Applications

Genesys[™] power supplies are designed for demanding applications.

Test & Measurement systems using GPIB control save significant costs by incorporating the optional IEEE Multi-Drop Interface (IEMD) in the Master unit. Then up to 30 Slave units may be used with the standard RS-485 Multi-Dropinterface.

c([™]L)us **CE**

Automated System designers will appreciate new, standard, remote programming features such as Global commands. Also, new high-speed status monitoring is available for the RS-485 bus as well as the optional LAN (LXI compliant) Interface.

Industrial & Military high power systems can be configured with up to four identical units in parallel (up to 60kW). No space is required above or below each power supply (zero stack). The Master unit can be configured by the user to report the total Output current of the combined system. Applications include Heaters, Magnets and Laser Diodes.

Aerospace & Satellite Testing systems use the complete Genesys[™] Family: <u>1U</u>-750W Half-Rack, <u>1U</u>-750W/ 1.5kW/2.4kW Full-Rack, <u>2U</u>-3.3kW/5kW Full-Rack and <u>3U</u>-10kW/15kW Full-Rack. All are identical in Front Panel, Rear Panel Analog and Digital Interface Commands. A wide variety of Outputs (voltage and current) allows testing of many different user configurations.

Component Device Testing is simplified because of the many user-friendly control options in the Analog and Digital interfaces. Lamps, capacitors, motors and actuators are typical devices tested.

Medical Imaging and Treatment systems require reliable power. Modular construction, SMT and thoroughly proven designs assure continuous performance at full rated power.

Semiconductor Processing & Burn-in equipment designers appreciate the wide variety of worldwide AC Inputs and Outputs from which to select, depending on application. Selectable Safe-Start and Auto Re-Start protects loads and process integrity. Typical applications include Magnets, Filaments and Heaters.

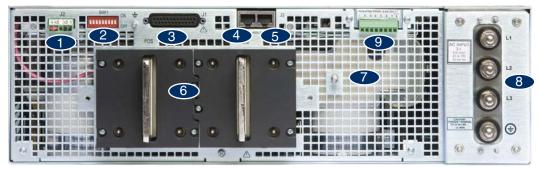
1 Genesys™ 3U 10/15kW

Front Panel Description



- 1. AC ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.
- 3. Continuous encoder controls Output Voltage, Address, OVP and UVL settings.
- 4. Voltage Display shows Output Voltage and directly displays OVP, UVL and Address settings.
- 5. Continuous encoder controls Output Current, sets Baud rate and Advanced Parallel mode.
- 6. Current Display shows Output Current and displays Baud rate. Displays total current in Parallel Master/Slave Mode.
- 7. Function/Status LEDs:
 - Alarm
 - Foldback Mode
- Fine ControlRemote Mode
- Preview Settings
 Output On
- 8. Pushbuttons allow flexible user configuration
 - Coarse and Fine adjustment of Output Voltage/Output Current and Advanced Parallel Master or Slave select.
 - Preview Settings and set Voltage/Current with Output OFF, Front Panel Lock.
 - Parallel Master/Slave (Basic and Advanced).
 - Set OVP and UVL Limits.
 - Set Current Foldback Protection.
 - Go to Local Mode and select Address and Baud rate.
 - Output ON/OFF and Safe-Start/Auto Re-Start mode.

Rear Panel Description



- 1. Remote/Local Output Voltage Sense Connections.
- 2. DIP Switches select 0-5V or 0-10V Programming and other functions.
- 3. DB25 (Female) connector allows Analog Program and Monitor (non-isolated) and other functions.
- 4. RS-485 OUT to other Genesys[™] Power Supplies.
- 5. RS-232/RS-485 IN Remote Serial Programming.
- Output Connectors: Rugged 2 hole busbars (shown) for models < 30V Output, single hole busbars for 30V to 300V Output, and threaded-stud terminals for models > 300V Output.
- Exit air assures reliable operation when zero stacked.
- 8. Input Terminals L1. L2. L3. and Ground (threaded studs).
- 9. Optional Interface Position for LAN (LXI Class C), GPIB (IEEE 488.2 SCPI) or Isolated Analog Interface.

LAN Interface complies with LXI Class C Specification

TDK·Lambda |2

Genesys[™] 3U 10kW Specifications

1.0 MODEL	GEN	7.5-1000	10-1000	12.5-800	20-500	25-400	30-333	40-250	50-200	60-167	80-125	100-100	125-80	10
1.Rated Output Voltage	VDC	7.5	10	12.5	20	25	30	40	50	60	80	100	125	╧
.Rated Output Current	ADC	1000	1000	800	500	400	333	250	200	167	125	100	80	╧
Rated Output Power	kW	0.75	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	+
Efficiency (min) at low AC line, 100% Rated Load	%	77		1010	10.0	1010	1010	83	1010	1010	1010	1010	1010	╈
					C	ontact Fa	ctory for o	other mod	lels					╈
.1 CONSTANT VOLTAGE MODE (CV)														
. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤		7.5	40	40.5	00	05	00	4	-	0	0	40	40.5	Т
$600V; 0.05\% - 600V < Vor \le 1500V)$	mV	7.5	10	12.5	20	25	30	4	5	6	8	10	12.5	
2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - 30V < Vor ≤	mV	7.5	10	12.5	20	25	30	8	10	12	16	20	25	Т
600V; 0.1% - 600V < Vor ≤ 1500V)	IIIV	7.5	10	12.5	20	25	30	0	10	12	10	20	25	
3. Ripple, rms, 5Hz~1MHz, CV (*1)	mV	20	20	20	20	20	20	20	20	20	25	25	25	Τ
4. Output Noise, p-p, (20MHz), CV (*1)	mV	60	60	60	60	60	60	60	75	75	100	100	125	Τ
S.Remote Sense Compensation / Wire	V	1	1	1	1	1	1.5	2	3	3	4	5	5	Τ
6. Temperature Stability		± 0.05%	of Vo(rat	ted) over 8	8 hours af	ter 30 mir	nute warn	n up (con	stant Line	, Load &	Temperatu	ure)		Τ
7. Temperature Coefficient	ppm / °C	± 200 (±	: 0.02% o	of Vo Rate	d) / °C									Т
3. Up-Prog. Response Time, 0 ~ Vomax, full-load	ms							100						Τ
9. Up-Prog. Response Time, 0~Vomax, no-load	ms							50						Τ
0. Transient Response Time (CV mode) (*2)	ms						Les	s than 3						Τ
.2 CONSTANT CURRENT MODE (CC)														
		1												Т
. Max. Line Reg. (0.1% - Ior ≥ 333A; 0.050% - 17A < Ior < 33A; 0.15% - Ior < 17A)	mA	1000	1000	800	500	400	333	125	100	83.5	62.5	50	40	
2. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 17A ≤ lor <	+													+
2. Max. Load Reg (0.1% - for \geq 333A; 0.075% - 17A \leq for < 333A; 0.2% - for < 17A) (*3)	mA	1000	1000	800	500	400	333	188	150	125	94	75	60	
3. Ripple rms, 5Hz~1MHz, CC	mA	5300	4000	2560	1000	640	444	250	160	67	50	40	32	+
A. Temperature Stability												-	52	+
5. Temperature Coefficient	ppm/°C			of Io Rated		51 00 Mill	ato warri			, 2000 0	Sinperatu	,		+
· · · · ·	phin c	± 300 (±	0.03 /8 0	or to mateu	<i>i) / C</i>									ـلـــ
.3 PROTECTIVE FUNCTIONS														_
. OCP	%	0 ~ 100												
. OCP type		Constar	t current											Τ
B. Foldback Protection (FOLD)		Output s	shutdown	; Manual r	reset by fr	ont panel	OUT but	ton or Dig	jital comr	nunicatior	n, user-sel	ectable		T
. Foldback Response Time	S			= 0.25 / N							,			Ť
5. OVP type											a or Diaita	al commuine	cation	$^{+}$
6. OVP Programming Accuracy	%		Vo(rated)					00.00		otorrandio	<u>g o. D.g.a</u>		Julion	+
OVP Trip Point	1				for Vor < 6	00V· 10%	to 105%	of Vo(rat	ed) - 600	V < Vor <	1500V: St	nall always	he areater	+
	V			setting); D				01 10(121	eu) - 000	v < voi <u><</u>	1500 0, 01	ian aiwayo i	be greater	
3. OVP Response Time	İ							V: Less th	nan 2.0 (f	or Output	to begin to	o drop) for		Ť
	ms		Vor ≤ 150		5			,			5			
9. Max. OVP Reset Time	s	7 (from	AC On/Of	ff switch tu	urn On)									Ť
10. Over-Temperature Protection (OTP)		Shut do	wn if inter	rnal tempe	erature exe	ceeds sat	fe operati	na levels	(Latched	: Safe-mo	de / Unlate	ched: Auto-	mode)	Ť
11. Phase-Loss Protection				y shutdow									,	Ť
				,						,				-
I.4 REMOTE ANALOG CONTROLS & SIGNALS	0.4000/	0 51/	0 401/			0	Line a solution	40/ -41	(_
I. Vout Voltage Programming		0 ~ 5V or							()					+
2. Iout Voltage Programming		0 ~ 5V or												\downarrow
3. Vout Resistor Programming		0 ~ 5/10kc		,		,	<u>,</u>		· · ·	,				\downarrow
4. Iout Resistor Programming		0 ~ 5/10kc												
5. Shut-Off (SO) Control (rear panel)	By Voltag	e: 0.6V =	Disable, 2	2-15V = E	nable (def	iault) or D	ry Conta	ct: Open :	= EN, Sho	ort = DIS	(user-sele	ctable logic)	
6. Output Current Monitor	0 ~ 5V or	0 ~ 10V, A	Accuracy:	± 1% of l	o(rated), ι	user-selec	ctable							Τ
2 Output Voltage Monitor	0 ~ 5V or	0 ~ 10V, A	Accuracy:	± 1% of \	/o(rated),	user-sele	ctable							Т
3. Power Supply OK (PS_OK) Signal	Yes. TTL	High = OK	, 0V = Fa	ail (500ohr	m series ii	mpedanc	e)							Ť
9. CV/CC Signal	CV: TTL F	-ligh (4 ~ 5	V), Max	source cu	rrent = 10	mA; CC:	TTL Low	(0 ~ 0.4V), Max sir	nk current	= 10mA			Ť
10. Enable/Disable		act; Open =												Ť
1. Remote/Local Selection	,	lemote or	- ,	,		<u>.</u>								+
2. Remote/Local Signal										= On (Ma	ax sink our	rrent = 10m	A)	+
· ·	- Signals 0		, ope		20001 -	0 poir (10		, v)	,				.,	1
.5 FRONT PANEL	Т													_
Control Functions		t manual a								le)				F
	OVP/UVL	. manual a	djust by \	Voltage Ac	djust enco	der, Fron	t Panel Lo	ock/Unloc	k					L
	Address s	selection b	y Voltage	e Adjust er	ncoder. # d	of addres	ses = 31							L
	AC ON/O	FF, Outpu	t On/Off,	Restart M	lodes (Aut	o/Safe), I	Foldback	Control (CV to CC), Go-to-L	ocal			
	RS-232/F	RS-485, IE	EE (IEM	D) and LA	N selectio	n by rear	panel DI	P-switch						Γ
	Baud rate	e selection	(RS-232	/RS-485 c	only): 1200), 2400, 4	800, 960	0 and 19,	200 (by c	urrent ad	just encod	ler)		Γ
		d Parallel I										,		F
2.Display	+	1 digits, Ac									x-7			$^{+}$
	-	4 digits, Ac			,									F
		displays v			,		or at load	d (Remote	e sense)					F
B.Indications	-	D's: PRE	-											+
		: ALRM (C					511,01/	SO, FINE						
			,,	,,,,	, _1	,,								-
.6 DIGITAL PROGRAMMING & READBACK	0.50	(-
Vout Programming Accuracy		f rated Out												+
l. lout Programming Accuracy	+	f rated Out	put curre	ent for unit	s with lo <	< 187.5A;	± 0.7% of	rated Ou	tput curre	ent for lo	≥187.5A			\downarrow
· · · ·	0.02% of	· ,												
· · · ·		lo(rated)												_[
3. Vout Programming Resolution	0.04% of											_		T
3. Vout Programming Resolution 4. lout Programming Resolution	+	of Vo(actua	l) + 0.2%	of Vo(rate	ed))									
3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy	± (0.1% c	of Vo(actua of Io(actua	,		,,,									+
Vout Programming Resolution Iout Programming Resolution Vout Readback Accuracy Iout Readback Accuracy	± (0.1% c ± (0.1% c	of lo(actua	,		,,,									+
3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy 7. Vout Readback Resolution	± (0.1% c ± (0.1% c 0.02% of	of Io(actua Vo(rated)	,		,,,									
3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy	± (0.1% c ± (0.1% c 0.02% of 0.02% of	of Io(actua Vo(rated)	l) + 0.4%	of lo(rate	d))	imit and	1 sunniv I	nhibit tur	ning Op)					+

*1. Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input, per EIJ R9002A. *2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of lo(rated). *3. From 20% - 100% for models with lor < 17A.

All specifications subject to change without notice.

Genesys[™] 3U 10kW Specifications

1.0 MODEL	GEN	150-66	200-50	250-40	300-33	400-25	500-20	600-17	800-12.5	1000-10	1250-8	1500-6.7	
1.Rated Output Voltage	VDC	150	200	250	300	400	500	600	800*	1000*	1250*	1500*	
2.Rated Output Current	ADC	66	50	40	33	25	20	17	12.5	10	8.0	6.7	Γ
3.Rated Output Power	kW	9.9	10.0	10.0	9.9	10.0	10.0	10.2	10.0	10.0	10.0	10.0	Γ
4.Efficiency (min) at low AC line, 100% Rated Load	%				83						93.5		t
1.1 CONSTANT VOLTAGE MODE (CV)					Con	tact Facto	ry for othe	r models					1
1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤						4.0			100				T
600V; 0.05% - 600V < Vor ≤ 1500V)	mV	15	20	25	30	40	50	60	400	500	625	750	
2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - 30V < Vor ≤ 500V; 0.1% - 600V < Vor ≤ 1500V)	mV	30	40	50	60	80	100	120	800	1000	1250	1500	
B. Ripple, r.m.s, 5Hz~1MHz, CV (*1)	mV	25	35	35	60	60	60	60	80	100	120	140	\vdash
I. Output Noise, p-p (20MHz), CV (*1)	mV	150	175	200	200	300	350	350	700	800	1000	1400	\top
5.Remote Sense Compensation / Wire	V	5	5	5	5	5	5	5	5	5	5	5	İ
. Temperature Stability		± 0.05%	6 of Vo(ra	ted) over	8 hours a	after 30 m	inute warr	n up (con	stant Line,	, Load & Te	emperature)	İ
Temperature Coefficient	ppm / °C	± 200 (0	0.02% of	Vo Rated) / °C								Ì
. Up-Prog. Response Time, 0~Vomax, full-load	mS				100					1	17		Τ
. Up-Prog. Response Time, 0~Vomax, no load	mS				50					1	17		Τ
0. Transient Response Time (CV mode) (*2)	mS	İ			Less than	3			İ	Less	than 1		İ
2 CONSTANT CURRENT MODE (CC)	·												
Max. Line Reg. (0.1% - lor ≥ 333A; 0.050% - 17A < lor <	mA	33	25	20	17	13	10	9	19	15	12	10	Т
33A; 0.15% - lor < 17A) . Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 17A ≤ lor <			-	-			-	-	-			-	┢
33A; 0.2% - lor < 17A) (*3)	mA	50	38	30	25	19	15	13	25	20	15	14	
. Ripple rms, 5Hz~1MHz, CC	mA	26	20	16	13	10	8	7	15	10	6	4	
. Temperature Stability						fter 30 mi	nute warm	up (cons	stant Line,	Load & Te	emperature)		
5. Temperature Coefficient	ppm / °C	± 300 (0	0.03% of	lo Rated)	/ °C								Ľ
.3 PROTECTIVE FUNCTIONS													
. OCP	%	0 ~ 100											Т
2. OCP type			nt current										+
B. Foldback Protection (FOLD)					l rocot by	front non		tton or Di	igital comm	nunication	, user-selec	tablo	┼
× /	S			,	,				a "FBD" co		, user-selec	lable	+
I. Foldback Response Time											or Digital c		╞
					al reset by	/ AC On/C	Diff recycle	, OUT bu	tton, Remo	ote Analog	or Digital C	omm.	┢
6. OVP Programming Accuracy	%	<u>. </u>	Vo(rated	/									
OVP Trip Point	V	than 10	5% of Vo	(setting);	Default =	105% of \	/o(rated).				500V; Shall		gre
B. OVP response time	mS		an 10 (foi Vor ≤ 15		o begin to	drop) for	$Vor \le 600$	V; Less t	han 2.0 (fo	or Output to	o begin to d	rop) for	
9. Max. OVP reset time	S		AC On/C		turn On)								t
10. Over-Temperature Protection (OTP)		<u> </u>			,	xceeds sa	afe operati	na levels	. (Latched:	Safe / Un	latched: Aut	to)	t
11. Phase-Loss Protection									Auto-mode				t
.4 REMOTE ANALOG CONTROLS & SIGNALS	<u> </u>									,			
I. Vout Voltage Programming	0~100%,	0 51/ 64	0 101/		atabla Ar		Linesihu	. 10/ of	(reted)				—
									. ,				┢
2. Iout Voltage Programming	0 ~ 100%					,			. ,	D			┢
3. Vout resistor programming									of Vo(rate				┢
			nm full-so					arity ± 1%	of lo(rated				+
			D: 11		-selectabl								
5. Shut-Off (SO) Control (rear panel)	By Voltage	e: 0.6V =		2-15V = E	Enable (de	efault) or l	Dry Conta				(user-selec	table logic)	-
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor	By Voltage 0 ~ 5V or	e: 0.6V = 0 ~ 10V, /	Accuracy	2-15V = E : ± 1% of	Enable (de lo(rated),	efault) or I user-sele	Dry Conta ctable				(user-selec	ctable logic)	
5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor	By Voltage 0 ~ 5V or 0 ~ 5V or	e: 0.6V = 0 ~ 10V, / 0 ~ 10V, /	Accuracy Accuracy	2-15V = E : ± 1% of : ± 1% of	Enable (de lo(rated), Vo(rated)	efault) or l user-sele , user-sele	Dry Conta ctable ectable				(user-selec	table logic)	
5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I	e: 0.6V = 0 ~ 10V, / 0 ~ 10V, / high = OK	Accuracy Accuracy (, 0V = Fa	2-15V = E ± 1% of ± 1% of ail (500oh	Enable (de lo(rated), Vo(rated) m series	efault) or l user-sele , user-sele impedanc	Dry Conta ectable ectable ee)	ct : Open	= ENA, Sł	hort = DIS		stable logic)	
5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal	By Voltage 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL I	e: 0.6V = 0 ~ 10V, / 0 ~ 10V, / high = Ok High (4 ~ 5	Accuracy Accuracy K, 0V = Fa 5V), Max	2-15V = E : ± 1% of : ± 1% of ail (500oh source c	Enable (de lo(rated), Vo(rated) m series urrent = 1	efault) or l user-sele , user-sele impedanc 0mA; CC:	Dry Conta ectable ectable ectable :e) : TTL Low	ct : Open (0 ~ 0.4)	= ENA, Sh	hort = DIS		ctable logic)	
5. Shut-Off (SO) Control (rear panel) 6. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal	By Voltage 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL I	e: 0.6V = 0 ~ 10V, / 0 ~ 10V, / high = Ok High (4 ~ 5	Accuracy Accuracy K, 0V = Fa 5V), Max	2-15V = E : ± 1% of : ± 1% of ail (500oh source c	Enable (de lo(rated), Vo(rated) m series urrent = 1	efault) or l user-sele , user-sele impedanc 0mA; CC:	Dry Conta ectable ectable ectable :e) : TTL Low	ct : Open (0 ~ 0.4)	= ENA, Sł	hort = DIS		ctable logic)	
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 0. Enable/Disable 1. Remote/Local Selection	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL H Dry conta Selects R	$e: 0.6V = \frac{0 - 10V, y}{0 - 10V, y}$ $high = OK$ $High (4 - 3)$ $high = 0$ $high (4 - 3)$ $high = 0$	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op	$2-15V = B$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ all (500oh source c ort = On; eration by	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage:	efault) or l user-sele , user-sele impedanc 0mA; CC: age acros 0 ~ 0.6V	Dry Conta ectable ectable :e) : TTL Low s Enable/I = Local /	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V =	= ENA, Sh /), Max sinl ontacts = 6 = Remote	hort = DIS k current = 3V	= 10mA		
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL H Dry conta Selects R	$e: 0.6V = \frac{0 - 10V, y}{0 - 10V, y}$ $high = OK$ $High (4 - 3)$ $high = 0$ $high (4 - 3)$ $high = 0$	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op	$2-15V = B$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ all (500oh source c ort = On; eration by	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage:	efault) or l user-sele , user-sele impedanc 0mA; CC: age acros 0 ~ 0.6V	Dry Conta ectable ectable :e) : TTL Low s Enable/I = Local /	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V =	= ENA, Sh /), Max sinl ontacts = 6 = Remote	hort = DIS k current = 3V			
Shut-Off (SO) Control (rear panel) Output Current Monitor Output Voltage Monitor Output Output Voltage Monit	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL H Dry conta Selects R	$e: 0.6V = \frac{0 - 10V, y}{0 - 10V, y}$ $high = OK$ $High (4 - 3)$ $high = 0$ $high (4 - 3)$ $high = 0$	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op	$2-15V = B$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ all (500oh source c ort = On; eration by	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage:	efault) or l user-sele , user-sele impedanc 0mA; CC: age acros 0 ~ 0.6V	Dry Conta ectable ectable :e) : TTL Low s Enable/I = Local /	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V =	= ENA, Sh /), Max sinl ontacts = 6 = Remote	hort = DIS k current = 3V	= 10mA		
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 9. CV/CC Signal 1. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL F Dry conta Selects R Signals o	e: 0.6V = 0 - 10V, h $0 - 10V, h$ $high = 0K$ $High (4 - 1)$ $act; Open$ Remote or $perating r$	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op node; Op	$2-15V = E$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ ail (500oh source c ort = On; eration by en collec	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local	efault) or I user-sele , user-sele impedanc 0mA; CC: age acros 0 ~ 0.6V = Open (l	Dry Conta ctable ectable ee) TTL Low s Enable/I = Local / Max voltas	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V)	= ENA, Sh /), Max sinl ontacts = 6 = Remote	hort = DIS k current = 6V = On (Max	= 10mA		
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 9. CV/CC Signal 1. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL F Dry conta Selects R Signals o	e: 0.6V = 0 - 10V, h $0 - 10V, h$ $high = 0K$ $High (4 - 1)$ $act; Open$ $bemote or$ $perating r$ $c: manual action (100)$	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op mode; Op	$2-15V = E$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ ail (500oh source c ort = On; eration by en collec separate	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders	efault) or I user-sele , user-sele impedance 0mA; CC: age acros 0 ~ 0.6V = Open (l (coarse a	Dry Conta actable ectable ectable ectable ectable s Enable/I = Local / Max voltag	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment	= ENA, Sh /), Max sini ontacts = 6 = Remote I, Remote =	hort = DIS k current = 6V = On (Max	= 10mA		
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 9. CV/CC Signal 1. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL I Dry conta Selects R Signals o	e: $0.6V =$ $0 \sim 10V, r$ $0 \sim 10V, r$ high = OK High (4 \sim 1 kernote or perating r manual a manual a	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by	$2-15V = E$ $\pm 1\% \text{ of } i$ $\pm 1\% \text{ of } i$ $\pm 1\% \text{ of } i$ $i (500 \text{ oh} source c \text{ ort} = 0n; \text{ ort} = 0n; \text{ ort} = 0n; \text{ ort} = 0n; \text{ ort} = 0n; \text{ ort} = 0n; \text{ otherwise} $ $separate Voltage A$	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta voltage: tor: Local encoders djust enc	efault) or I user-sele impedance 0mA; CC: age acros 0 ~ 0.6V = Open (I (coarse a oder, Fror	Dry Conta actable ectable ectable re) TTL Low s Enable/I = Local / Max voltag and fine ac and fine ac	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment	= ENA, Sh /), Max sini ontacts = 6 = Remote I, Remote =	hort = DIS k current = 6V = On (Max	= 10mA		
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 9. CV/CC Signal 1. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL I Dry conta Selects R Signals on Vout/ Iout OVP/UVL Address s	e: $0.6V =$ $0 \sim 10V, i$ $0 \sim 10V, i$ high = OK High (4 \sim H	Accuracy Accuracy (, OV = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by py Voltag	$2-15V = E$ $\pm 1\% \text{ of } 1$ $\pm 1\% \text{ of } 1$ $\pm 1\% \text{ of } 1$ $\pm 1\% \text{ of } 1$ $5000h$ source c ort = On; eration by en collect separate Voltage A a Adjust e	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders djust enc	efault) or I user-sele , user-sele impedanc 0mA; CC: age acros 0 ~ 0.6V = Open (I (coarse a oder, Fror of addres	Dry Conta actable actable actable actable actable sentime sentime and fine action and fine action ac	(0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloo	= ENA, Sh /), Max sini ontacts = 6 = Remote I, Remote =	hort = DIS k current = 6V = On (Max	= 10mA		
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 9. CV/CC Signal 1. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL I Dry conta Selects R Signals on Vout/ Iout OVP/UVL Address s AC ON/O	e: 0.6V = $0 \sim 10V, r$ $0 \sim 10V, r$ high = OK $High (4 \sim +$ ext; Open emote or perating r rr manual a selection the selection the sel	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by oy Voltag ut On/Off,	$2-15V = E$ $\pm 1\% \text{ of } 1$ $\pm 1\% \text{ of } 1$ $\pm 1\% \text{ of } 1$ $5000h$ source c ort = On; eration by en collec separate Voltage A e Adjust e Restart I	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders djust enc encoder. # Modes (Au	efault) or I user-sele , user-sele impedance 0mA; CC: age acros 0 ~ 0.6V = Open (I (coarse a oder, Fror of addres uto/Safe),	Dry Conta cctable ectable ectable ectable ectable se TTL Low s Enable/I = Local / Max voltag and fine ac th Panel L sses = 31 Foldback	(0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloo Control (= ENA, Sh /), Max sinl ontacts = 6 = Remote h, Remote = t selectable ck	hort = DIS k current = 6V = On (Max	= 10mA		
Shut-Off (SO) Control (rear panel) Output Current Monitor Output Voltage Monitor Power Supply OK (PS_OK) Signal O. CV/CC Signal CV/CC Signal CN/CC Signal Remote/Local Selection Remote/Local Signal SFRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 10 ~ 5V or	e: 0.6V = 0 - 10V, y = 0 - 10	Accuracy Accuracy (, ov = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by adjust by voltag ut On/Off, EEE (IEM	$2-15V = E$ $\pm 1\% \text{ of }$ $\pm 1\% \text{ of }$ $\pm 1\% \text{ of }$ source c ort = On; eration by en collec separate Voltage A e Adjust e Restart I D) and LD	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta / voltage: tor: Local encoders. djust enc encoder. # Modes (An AN selecti	efault) or I user-sele , user-sele impedance 0mA; CC: age acros 0 ~ 0.6V = Open (I (coarse a oder, Fror of addres uto/Safe), ion by rea	Dry Conta ctable ectable ectable in TTL Low s Enable/I = Local / Max voltag and fine ac th Panel L sses = 31 Foldback r-panel DI	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustmeni ock/Unloo Control (P-switch	= ENA, Sł /), Max sini ontacts = 6 = Remote - Remote = t selectable ck CV to CC),	hort = DIS k current = 3V = On (Max e) , Go-to-Lo	= 10mA	nt = 10mA)	
Shut-Off (SO) Control (rear panel) Output Current Monitor Output Voltage Monitor Power Supply OK (PS_OK) Signal O. CV/CC Signal CV/CC Signal CN/CC Signal Remote/Local Selection Remote/Local Signal SFRONT PANEL	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I CV: TTL F Dry conta Selects R Signals of Vout/ lout OVP/UVL Address s AC ON/O RS-232/R Baud rate	e: 0.6V = 0.6V	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by oy Voltag ut On/Off, EEE (IEM a (RS-232	$2-15V = E$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $3000 \text{ ord} = 0$ $5000 \text{ ord} =$	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta / voltage: tor: Local encoders djust encc mcoder. # Modes (Au AN selecti only): 120	efault) or I user-sele , user-sele impedanc OmA; CC: age acros 0 ~ 0.6V = Open ((coarse a oder, Fror of addres uto/Safe), ion by rea	Dry Conta ctable ectable ectable interpretation interpret	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloo Control (P-switch 0 and 19	= ENA, Sł /), Max sini ontacts = 6 = Remote I, Remote = : selectable ck CV to CC), ,200 (by cu	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
Shut-Off (SO) Control (rear panel) Output Current Monitor Output Voltage Monitor Power Supply OK (PS_OK) Signal O. CV/CC Signal CV/CC Signal CV/CC Signal Remote/Local Selection Remote/Local Signal SFRONT PANEL Control Functions	By Voltag 0 ~ 5V or 0 ~ 5V or Yes. TTL I Dry conta Selects R Signals of Vout/ lout OVP/UVL Address s AC ON/O RS-232/R Baud rate Advanced	e: 0.6V = 0 - 10V, 10V, 10V, 10V, 10V, 10V, 10V, 10V,	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by oy Voltag ut On/Off, EEE (IEM n (RS-232 Master/S	$2-15V = E$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $\pm 1\% \text{ of}$ $3500 \text{ ord} = 0\text{ ord}$ $500 \text{ ord} = 0\text{ ord}$ $500 \text{ ord} = 0\text{ ord}$ $500 \text{ ord} = 0\text{ ord}$ $500 \text{ ord} = 0\text{ ord}$ $600 \text{ ord} = 00000000000000000000000000000000000$	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta / voltage: tor: Local encoders djust enc mcoder. # Modes (AL AN selecti only): 120 = Master L	efault) or I user-sele impedance OmA; CC: age across 0 ~ 0.6V = Open (I (coarse a oder, Fror of addres uto/Safe), ion by rea 00, 2400, unit, where	Dry Conta ctable ectable ee) TTL Low s Enable// = Local / Max voltag and fine ad tt Panel L sses = 31 Foldback r-panel DI 4800, 960 e x = # of	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloo Control (P-switch 0 and 19	= ENA, Sł /), Max sini ontacts = 6 = Remote I, Remote = : selectable ck CV to CC), ,200 (by cu	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL .Control Functions	By Voltag 0 ~ 5V or 0 ~ 5V or Ves. TTL I Dry conta Selects R Signals on Vout/ Iout OVP/UVL Address s AC ON/O RS-232/R Baud rate Advanced Voltage: 4	e: 0.6V = 0 - 10V, A = 0 - 10	Accuracy Accuracy (, 0V = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by oy Voltag ut On/Off, EEE (IEM n (RS-232 Master/S couracy:	$2-15V = E$ $\pm 1\% \text{ of }$ $\pm 1\% \text{ of }$ $\pm 1\% \text{ of }$ $\pm 1\% \text{ of }$ $500 \text{ or } C$ $500 $	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders. djust enc nncoder. # Modes (Ar AN selection) only): 120 Max enc only):	efault) or I user-sele impedance OmA; CC: age across 0 ~ 0.6V = Open (I (coarse a oder, Fror of addres uto/Safe), ion by rea 00, 2400, unit, where) ±1 coun	Dry Conta ctable ectable ee) TTL Low s Enable// = Local / Max voltag and fine ac th Panel L sses = 31 Foldback r-panel DI 4800, 960 e x = # of t	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloo Control (P-switch 0 and 19	= ENA, Sł /), Max sini ontacts = 6 = Remote I, Remote = : selectable ck CV to CC), ,200 (by cu	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
Shut-Off (SO) Control (rear panel) Output Current Monitor Output Voltage Monitor Power Supply OK (PS_OK) Signal O. CV/CC Signal CV/CC Signal CV/CC Signal Remote/Local Selection Remote/Local Signal SFRONT PANEL Control Functions	By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or Ves.TTL I Dry conta Selects R Signals of Vout/ Iout OVP/UVL Address s AC ON/O RS-232/R Baud rate Advanced Voltage: 4 Current: 4	e: $0.6V = 0 - 10V$, $u = 0 - 10V$,	Accuracy Accuracy (, OV = Fc 5V), Max = Off, Sh Local op node; Op adjust by adjust by oy Voltag adjust by oy Voltag tt On/Off, EEE (IEM no (RS-232 Master/S couracy:	2-15V = E \pm 1% of \pm 0% of \pm 0.5% of \pm 0% 0	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders djust enc. Alv select only): 120 = Master to f Vo(rated)	efault) or I user-sele , user-sele impedance OmA; CC: age acros 0 ~ 0.6V = Open (I (coarse a oder, Fron of addres uto/Safe), ion by rea 00, 2400, unit, where) ±1 count	Dry Conta ctable ectable ep TTL Low s Enable/I = Local / Max voltag and fine ac th Panel L sses = 31 Foldback r-panel DI 4800, 960 9 x = # of t	ct : Open (0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloo Control (P-switch 0 and 19 Slave uni	= ENA, Sł /), Max sini ontacts = 6 = Remote -, Remote = a selectable ck CV to CC), ,200 (by cu ts (0 to 4),	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1.Control Functions 2. Display	By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 10 ~ 5V or	e: 0.6V = 0 ~ 10V, 1 0 ~ 10V, 1 high = OK digh (4 ~ 1 kct; Open lemote or perating r manual a selection th FF, Outpu S-485, IE s selectior d Parallel d digits, Ac displays	Accuracy Accuracy Accuracy Accuracy Accuracy Accuracy Max adjust by adjust by adjust by adjust by by Voltag adjust by by Voltag tt On/Off, EE (IEM (RS-232) Master/S ccuracy: ccuracy: voltage a	2-15V = E $\pm 1\%$ of $\pm 1\%$	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders djust encc incoder. # Modes (An AN selection); 12C e Master L f Vo(rated lo(rated) upply (L0)	efault) or I user-sele , user-sele impedanco OmA; CC: age across 0 ~ 0.6V = Open (I (coarse a oder, Fror of addres uto/Safe), ion by rea 00, 2400, unit, where) ±1 count ±1 count cal sense	Dry Conta ctable ectable ep TTL Low s Enable// = Local / Max voltag and fine an th Panel L ssees = 31 Foldback r-panel DI 4800, 960 e x = # of t	(0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustmeni ock/Unloc Control (P-switch 0 and 19 Slave uni d (Remot	= ENA, Sł /), Max sini ontacts = 6 = Remote , Remote = t selectable ck CV to CC), ,200 (by ct ts (0 to 4), e sense)	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
Shut-Off (SO) Control (rear panel) Output Current Monitor Output Voltage Monitor Output Output Voltage Monit	By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or Ves.TTL I Dry conta Selects R Signals of Vout/ Iout OVP/UVL Address s AC ON/O RS-232/R Baud rate Advanced Voltage: 4 Current: 4	$e: 0.6V = 0 - 10V, \mu$ $0 - 10V, \mu$ high = 0K digh =	Accuracy Accuracy (, oV = Fa 5V), Max = Off, Sh Local op node; Op	2-15V = E $\pm 1\%$ of ± 1	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders. djust enc encoders. djust enc encoder. djust enc encoder. djust enc encoder. djust encoder. djust enc	efault) or I user-sele , user-sele impedance 0mA; CC: age across $0 \sim 0.6V$ = Open (((coarse a ooder, Fror of addres; uto/Safe), ion by rea 00, 2400, unit, where 1 ± 1 count ± 1 count ± 1 count cal sense OUT ON	Dry Conta ctable ectable ep TTL Low s Enable// = Local / Max voltag and fine an th Panel L ssees = 31 Foldback r-panel DI 4800, 960 e x = # of t	(0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustmeni ock/Unloc Control (P-switch 0 and 19 Slave uni d (Remot	= ENA, Sł /), Max sini ontacts = 6 = Remote , Remote = t selectable ck CV to CC), ,200 (by ct ts (0 to 4), e sense)	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions 2. Display 3. Indications 1.6 DIGITAL PROGRAMMING & READBACK	By Voltag 0 ~ 5V or 0 ~ 5V or Ves. TTL I Dry conta Selects R Signals of Vout/ Iout OVP/UVL Address s AC ON/O RS-232/R Baud rate Advanced Voltage: 4 Current: 4 Voltmeter Green LE Red LED:	e: 0.6V = 0 ~ 10V, 1 0 ~ 10V, 1 high = 0 kK ligh (4 ~ 1 et; Open lemote or perating r manual a selection k FF, Outpu RS-485, IE s selection d Parallel I d digits, Ac d digits, Ac d displays: D's: PRE': ALRM (C	Accuracy Accuracy X, OV = Fa 5V), Max = Off, Sh Local op node; Op node; Op node; Op node; Op node; Op node; Op solution to On/Off, EEC (IEM n (RS-232 Master/S couracy: couracy: couracy: couracy couracy couracy couracy couracy couracy couracy	2-15V = E $\pm 1\%$ of $i \pm 1\%$	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders. djust enc encoders. djust enc encoder. djust enc encoder. djust enc encoder. djust encoder. djust enc	efault) or I user-sele , user-sele impedance 0mA; CC: age across $0 \sim 0.6V$ = Open (((coarse a ooder, Fror of addres; uto/Safe), ion by rea 00, 2400, unit, where 1 ± 1 count ± 1 count ± 1 count cal sense OUT ON	Dry Conta ctable ectable ep TTL Low s Enable// = Local / Max voltag and fine an th Panel L ssees = 31 Foldback r-panel DI 4800, 960 e x = # of t	(0 ~ 0.4V Disable c 2 ~ 15V = ge = 30V) djustmeni ock/Unloc Control (P-switch 0 and 19 Slave uni d (Remot	= ENA, Sł /), Max sini ontacts = 6 = Remote , Remote = t selectable ck CV to CC), ,200 (by ct ts (0 to 4), e sense)	hort = DIS k current = 3V = On (Max a) , Go-to-Lo	= 10mA	nt = 10mA)	
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Signal 1.5 FRONT PANEL 1. Control Functions 2. Display 2. Display 3. Indications	By Voltag 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 0 ~ 5V or 10 ~ 5V or	e: 0.6V = 0 ~ 10V, 1 0 ~ 10V, 1 high = 0 KK ligh (4 ~ 4 loct; Open lemote or perating r a manual a selection th FF, Outpu RS-485, IE a selection 1 Parallel 1 digits, Ac digits,	Accuracy Accuracy (, OV = Fe 5V), Max = Off, Sh Local op mode; Op adjust by adjust by adjust by oy Voltagi ti On/Off, EEE (IEM n (RS-232 Master/S couracy: couracy: couracy: toolage a VIEW, FC DVP, OTP	2-15V = E $\pm 1\%$ of $\pm 1\%$ of	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders djust enc. encoder. # Modes (Ar AN selecti only): 120 e Master L f Vo(rated) lo(rated) upply (Lo A/LOCAL, E	efault) or I user-sele , user-sele impedance 0 ~ 0.6V = Open (I (coarse a oder, Fro of addres to/Safe), ion by rea 00, 2400, unit, where) ±1 count ±1 count cal sense OUT ON NA, SO)	Dry Conta ctable actable actable e) TTL Low s Enable/I = Local / Max voltag and fine act t Panel L sses = 31 Foldback r-panel Dl 4800, 960 a x = # of t) or at loav //OFF, CV/	(0 ~ 0.4W Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloc Control (P-switch 0 and 19 Slave uni d (Remot /CC, FINE	= ENA, Sł /), Max sini ontacts = 6 = Remote -, Remote = t selectable cV to CC), ,200 (by cu ts (0 to 4), e sense) =	hort = DIS k current = SV = On (Max e) , Go-to-Lo urrent adju Slave = S	= 10mA < sink currer cal ist encoder) lave unit(s)	nt = 10mA)	
5. Shut-Off (SO) Control (rear panel) 5. Output Current Monitor 7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal 9. CV/CC Signal 10. Enable/Disable 11. Remote/Local Selection 12. Remote/Local Selection 13. SFRONT PANEL 14. Control Functions 15. Display 2. Display 3. Indications 16. DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Iout Programming Accuracy	By Voltag 0 ~ 5V or 0 s.TTL I Dry conta Selects R Signals of Vout/ lout OVP/UVL Address s AC ON/O RS-232/R Baud rate Advanced Voltage: 4 Current: 4 Voltmeter Green LE # 0.5% of ± 0.5% of	e: 0.6V = 0 ~ 10V, 1 0 ~ 10V, 1 high = OK digh (4 ~ 1 kct; Open lemote or perating r a manual a selection t FF, Outpu SS-485, IE a selection t d Parallel d Oraplays D's: PRE' : ALRM (C frated Out	Accuracy Accuracy (, OV = Fa 5V), Max = Off, Sh Local op node; Op adjust by adjust by adjust by opy Voltagy adjust by opy Voltagy t On/Off, EEE (IEM (RS-232 Master/S couracy: couracy: couracy: couracy couracy to the opp to the opp the op	2-15V = E $\pm 1\%$ of $\pm 1\%$ of	Enable (de lo(rated), Vo(rated) m series urrent = 1 Max. volta v voltage: tor: Local encoders djust enc. encoder. # Modes (Ar AN selecti only): 120 e Master L f Vo(rated) lo(rated) upply (Lo A/LOCAL, E	efault) or I user-sele , user-sele impedance 0 ~ 0.6V = Open (I (coarse a oder, Fro of addres to/Safe), ion by rea 00, 2400, unit, where) ±1 count ±1 count cal sense OUT ON NA, SO)	Dry Conta ctable actable actable e) TTL Low s Enable/I = Local / Max voltag and fine act t Panel L sses = 31 Foldback r-panel Dl 4800, 960 a x = # of t) or at loav //OFF, CV/	(0 ~ 0.4W Disable c 2 ~ 15V = ge = 30V) djustment ock/Unloc Control (P-switch 0 and 19 Slave uni d (Remot /CC, FINE	= ENA, Sł /), Max sini ontacts = 6 = Remote , Remote = t selectable ck CV to CC), ,200 (by ct ts (0 to 4), e sense)	hort = DIS k current = SV = On (Max e) , Go-to-Lo urrent adju Slave = S	= 10mA < sink currer cal ist encoder) lave unit(s)	nt = 10mA)	
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L *800V - 1500V models (10kW) only available with 400VA and 480VAC input. For 208VAC Input models please contact the factory. *1. Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input. per EIJ R9002A *2. Time for the Output voltage to recover within 2% of rating for a load current change of 50-100% or 100-50% of lo(rated). *3. From 20% - 100% for models with lor < 17A. All specifications subject to change without notice.

TDK·Lambda 14

Genesys[™] 3U 15kW Specifications

1.0 MODEL		N/A	N/A	N/A	N/A	N/A	30-500	40-375	50-300	60-250	80-187.5	100-150	125-120	15k\ X
1.Rated Output Voltage	VDC						30*	40*	50*	60	80	100-100	125	X
2.Rated Output Current	ADC						500	375	300	250	187.5	150	120	X
3.Rated Output Power	kW						15.0	15.0	15.0	15.0	15.0	15.0	15.0	X
	%						15.0	15.0	15.0	88	13.0	15.0	13.0	X
4.Efficiency (min) at low AC line, 100% Rated Load	%						actory for c	thormod	olo	88				X
1.1 CONSTANT VOLTAGE MODE (CV)						JILACI Fa	ICIOI Y IOI C		615					
1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor <	1													T
$600V; 0.05\% - 600V < Vor \le 1500V)$	mV						30	4	5	6	8	10	12.5	Х
2. Max. Load Reg (0.1% - Vor \leq 30V; 0.02% - 30V < Vor \leq														+
$600V; 0.1\% - 600V < Vor \le 1500V)$	mV						30	8	10	12	16	20	25	Х
3. Ripple, rms, 5Hz~1MHz, CV (*1)	mV						20	20	20	20	25	25	25	X
4. Output Noise, p-p, (20MHz), CV (*1)	mV						60	60	75	75	100	100	125	X
5.Remote Sense Compensation / Wire	V						1.5	2	3	3	4	5	5	X
6. Temperature Stability											Temperatu	-	0	X
7. Temperature Coefficient	ppm / °C			f Vo(rated		00 00 111	nate warn			, Loud a	Temperata	10)		X
8. Up-Prog. Response Time, 0 ~ Vomax, full-load	ms	1 200 (1	. 0.02 /0 0	1 10(1000	,,,,, 0			100						X
9. Up-Prog. Response Time, 0~Vomax, no load	ms							50						X
10. Transient Response Time (CV mode) (*2)	ms							s than 3						X
	1115						Les	s man s						
1.2 CONSTANT CURRENT MODE (CC)														
1. Max. Line Reg. (0.1% - Ior ≥ 333A; 0.050% - Ior < 333A)	mA						500	375	334	125	94	75	60	Х
2. Max. Load Reg (0.1% - Ior \geq 333A; 0.075% - 25A \leq Ior $<$	mA						500	375	334	188	141	113	90	х
333A; 0.2% - lor < 25A) (*3)														
3. Ripple, rms, 5Hz~1MHz, CC	mA						350	200	150	100	100	100	50	Х
4. Temperature Stability						ər 30 mir	nute warm	up (cons	tant Line,	Load & T	Femperatur	re)		Х
5. Temperature Coefficient	ppm/°C	± 300 (±	: 0.03% o	f lo(rated)) / °C									Х
1.3 PROTECTIVE FUNCTIONS														
1. OCP	%	0 ~ 100												Х
2. OCP type			t current											Х
3. Foldback Protection (FOLD)				Manual	reset by fro	ont nane	OUT but	on or Dio	ital comm	nunication	n, user-sele	ectable		X
4. Foldback Response Time	s						= 0.25); Se				1, 4001 0010			X
5. OVP type			· · ·								g or Digita	l communi	cation	X
6. OVP Programming Accuracy	%		Vo(rated)	n, manaa	ricoct by i		n recycle,	001 544		0107111010	g or Digita	1 oommann	oution	X
	i			Vo(rated) - for Vor	< 600V [.]	10% to 10	5% of Vo(rated) - 6	00V < Vo	r <u><</u> 1500V;	Shall alwa	ivs he	1
7. OVP Trip Point	V						5% of Vo(iatea) o	000 < 00	<u> </u>	onan anno	yo bo	Х
									an 2.0 (fo	or Output	to begin to	drop) for		
8. OVP Response Time	ms		Vor <u><</u> 150		5			,			5			х
9. Max. OVP Reset Time	s	7 (from /	AC On/Of	f switch tu	ırn On)									Х
10. Over-temperature Protection (OTP)		Shut do	wn if inter	nal tempe	erature exc	ceeds sa	ife operatir	ng levels	(Latched:	Safe-mo	de/ Unlatcl	hed: Auto-r	node)	Х
11. Phase-Loss Protection							node / Unl							X
1.4 REMOTE ANALOG CONTROLS & SIGNALS														
1. Vout Voltage Programming	0100%	0 - 5V or	0 - 101/ 1	isor-solor		curacy &	Linearity:	+1% of \	(rated)					X
2. lout Voltage Programming							Linearity:							X
3. Vout Resistor Programming							acy & Line			atod)				X
4. lout Resistor Programming							acy & Line			,				X
5. Shut-Off (SO) Control (rear panel)										,	(user-selec	table logic		X
6. Output Current Monitor		0 ~ 10V, A						. Open -	- LIN, OHC	nt = D13	(usel-selec	lable logic)	X
		,			<u>, ,,</u>									-
7. Output Voltage Monitor		0 ~ 10V, A												X
8. Power Supply OK (PS_OK) Signal		High = OK					,	0 0 0 0			10. 1			X
9. CV/CC Signal							TTL Low				= IUMA			X
10. Enable/Disable	· · ·		,	,		<u> </u>	s Enable/D			6V				X
11. Remote/Local Selection							= Local / 2							Х
12. Remote/Local Signal	Signals o	perating m	node; Ope	en collecto	or: Local =	Open (I	Max voltag	e = 30V),	Remote	= On (Ma	ax sink curi	rent = 10m	A)	Х
1.5 FRONT PANEL														
	Vout/ lout	manual a	djust by s	eparate e	encoders (coarse a	ind fine ad	justment	selectable	e)				Х
1.Control Functions										-				Х
	I OVP/UVL		iajusi by i	vollage AC	ljust enco	der, Fror	nt Panel Lo							Х
				0		· ·								Х
	Address s	selection b	y Voltage	Adjust er	ncoder. # c	of addres	ses = 31		CV to CC)	. Go-to-L	ocal			Х
	Address a	selection b FF, Outpu	y Voltage t On/Off,	Adjust er Restart M	ncoder. # c odes (Auto	of addres o/Safe),	ses = 31 Foldback (Control (C	CV to CC)	, Go-to-L	ocal			
	Address s AC ON/O RS-232/F	selection b FF, Outpu S-485, IE	y Voltage t On/Off, EE (IEMI	Adjust er Restart M) and LA	ncoder. # c odes (Auto N selectio	of addres o/Safe), n by rea	sses = 31 Foldback (r panel DIF	Control (C P-switch	,			ar)		
	Address s AC ON/O RS-232/F Baud rate	selection b FF, Outpu RS-485, IE selection	y Voltage t On/Off, EE (IEMI (RS-232	Adjust er Restart M) and LA RS-485 c	ncoder. # c odes (Auto N selectio only): 1200	of addres o/Safe), n by rea), 2400, 4	sses = 31 Foldback (r panel DIF 4800, 960(Control (C P-switch) and 19,5	200 (by c	urrent adj	just encode	er)		Х
1.Control Functions	Address s AC ON/O RS-232/F Baud rate Advanced	selection b FF, Outpu RS-485, IE e selection d Parallel M	y Voltage t On/Off, EE (IEMI (RS-232) Master/Sla	Adjust er Restart M) and LA /RS-485 c ave: Hx =	ncoder. # c lodes (Auto N selectio only): 1200 Master un	of addres o/Safe), n by rea 0, 2400, hit, where	sses = 31 Foldback (r panel DIF 4800, 960(e x = # of S	Control (C P-switch) and 19,3	200 (by c	urrent adj	just encode	er)		X X
	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4	Selection b FF, Outpu SS-485, IE Selection Description Parallel N digits, Ac	y Voltage t On/Off, EE (IEMI (RS-232) Master/Sla	Adjust er Restart M) and LA (RS-485 c ave: Hx = 0.5% of \	ncoder. # c odes (Auto N selectio only): 1200 <u>Master un</u> /o(rated) ±	of addres o/Safe), n by rea), 2400, hit, where ±1 count	sses = 31 Foldback (r panel DIF 4800, 960(e x = # of \$	Control (C P-switch) and 19,3	200 (by c	urrent adj	just encode	er)		X X X
1.Control Functions	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Current: 4	selection b FF, Outpu RS-485, IE e selection d Parallel M d digits, Ac d digits, Ac	y Voltage t On/Off, EE (IEME (RS-232) Master/Sla curacy: ± curacy: ±	Adjust er Restart M I) and LA IRS-485 c ave: Hx = 0.5% of V 0.5% of V	ncoder. # c odes (Auto N selectio only): 1200 Master un /o(rated) ± /o(rated) ±	of addres o/Safe), n by rea 0, 2400, hit, where ±1 count ±1 count	sses = 31 Foldback (r panel DIF 4800, 9600 ax = # of S	Control (C P-switch D and 19,3 Blave unit	200 (by c s (0 to 4);	urrent adj	just encode	er)		X X X X
1.Control Functions 2.Display	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Current: 4 Voltmeter	selection b IFF, Outpu RS-485, IE selection d Parallel M digits, Ac digits, Ac digits, Ac	y Voltage t On/Off, EE (IEMI (RS-232) Master/Sla curacy: ± curacy: ± voltage at	Adjust er Restart M)) and LA (RS-485 c ave: Hx = 0.5% of V 0.5% of V power su	Acoder. # c lodes (Auto N selectio only): 1200 Master un /o(rated) ± /o(rated) ±	of addres o/Safe), n by rea 0, 2400, hit, where ±1 count ±1 count al sense	sses = 31 Foldback (r panel DII 4800, 9600 a x = # of S) or at load	Control (C 2-switch 0 and 19,3 Slave unit	200 (by c s (0 to 4); e sense)	urrent adj	just encode	er)		X X X X X
1.Control Functions	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 2 Voltage: 4 Voltage d Voltage d Voltage d	selection b FF, Outpu S-485, IE selection Parallel M digits, Ac digits, Ac digits, Ac displays v ED's: PREV	vy Voltage t On/Off, EE (IEME (RS-232) Master/Sla curacy: ± curacy: ± voltage at /IEW, FO	Adjust er Restart M D) and LA (RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM	Acoder. # c lodes (Auto N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ±	of addres o/Safe), n by rea 0, 2400, 4 hit, where ±1 count al sense OUT ON	sses = 31 Foldback (r panel DIF 4800, 9600 ax = # of S	Control (C 2-switch 0 and 19,3 Slave unit	200 (by c s (0 to 4); e sense)	urrent adj	just encode	ər)		X X X
1.Control Functions 2.Display 3.Indications	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 2 Voltage: 4 Voltage d Voltage d Voltage d	selection b IFF, Outpu RS-485, IE selection d Parallel M digits, Ac digits, Ac digits, Ac	vy Voltage t On/Off, EE (IEME (RS-232) Master/Sla curacy: ± curacy: ± voltage at /IEW, FO	Adjust er Restart M D) and LA (RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM	Acoder. # c lodes (Auto N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ±	of addres o/Safe), n by rea 0, 2400, 4 hit, where ±1 count al sense OUT ON	sses = 31 Foldback (r panel DII 4800, 9600 a x = # of S) or at load	Control (C 2-switch 0 and 19,3 Slave unit	200 (by c s (0 to 4); e sense)	urrent adj	just encode	ər)		X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage: 4 Voltmeter Green LE Red LED	selection b FF, Outpu RS-485, IE selection d Parallel N d digits, Ac d digits, Ac d displays v D's: PREV ALRM (C	y Voltage t On/Off, EE (IEME (RS-232, <u>Master/Sia</u> ccuracy: ± ccuracy: ± voltage at /IEW, FO VP, OTP,	Adjust er Restart M)) and LA (RS-485 c ave: Hx = 0.5% of \ 0.5% of \ power su LD, REM FOLD, AC	Acoder. # c lodes (Auto N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ±	of addres o/Safe), n by rea 0, 2400, 4 hit, where ±1 count al sense OUT ON	sses = 31 Foldback (r panel DII 4800, 9600 a x = # of S) or at load	Control (C 2-switch 0 and 19,3 Slave unit	200 (by c s (0 to 4); e sense)	urrent adj	just encode	er)		X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage: 4 Voltmeter Green LE Red LED	selection b FF, Outpu RS-485, IE selection d Parallel N digits, Ac digits, Ac displays D's: PREV :.ALRM (C	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla curacy: ± curacy: ± voltage at /IEW, FO VP, OTP, 	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of \ 0.5% of \ power su LD, REM FOLD, AC	Acoder. # c odes (Aut N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated, ± /LOCAL, C FAIL, EN	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage:	selection b FF, Outpu RS-485, IE e selection d Parallel N d digits, Act d d digits, Act d d digits, Act d d d d d d d d d d d d d d d d d d d	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla curacy: ± curacy: ± voltage at /IEW, FO VP, OTP, 	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of \ 0.5% of \ power su LD, REM FOLD, AC	Acoder. # c odes (Aut N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated, ± /LOCAL, C FAIL, EN	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DII 4800, 9600 a x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	ər)		X X X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage: 4 Voltmeter Green LE Red LED	selection b FF, Outpu RS-485, IE e selection d Parallel N d digits, Act d d digits, Act d d digits, Act d d d d d d d d d d d d d d d d d d d	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla curacy: ± curacy: ± voltage at /IEW, FO VP, OTP, 	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of \ 0.5% of \ power su LD, REM FOLD, AC	Acoder. # c odes (Aut N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated, ± /LOCAL, C FAIL, EN	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage:	selection b FF, Output S-485, IE e selection d Parallel N d igits, Ac d igiplays N D's: PREV ALRM (C f rated Out f rated Out Vo(rated)	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla curacy: ± curacy: ± voltage at /IEW, FO VP, OTP, 	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of \ 0.5% of \ power su LD, REM FOLD, AC	Acoder. # c odes (Aut N selectio only): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated, ± /LOCAL, C FAIL, EN	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage:	selection b FF, Output S-485, IE e selection d Parallel N d igits, Ac d igiplays N D's: PREV ALRM (C f rated Out f rated Out Vo(rated)	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sli curacy: ± curacy: ± voltage at /IEW, FO V/P, OTP, put voltas, pput voltas,	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM FOLD, AC je nt for unit:	cooder. # c odes (Aut N selectio nly): 1200 Master un /o(rated) ± /o(rated) ±	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution 4. lout Programming Resolution	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage:	selection b FF, Output S-485, IE e selection d Parallel N d digits, Act d	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla ccuracy: ± curacy: ± voltage at /IEW, FO WP, OTP, iput voltag pput voltag pput curre	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM FOLD, AC ge nt for unit: of Vo(rate	cooder. # c odes (Aut N selectio mly): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± s with lo < s with lo <	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X X X X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1.Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Voltage:	selection b IFF, Output S-485, IE selection d Parallel N d garallel N d gigits, Act d igits,	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla ccuracy: ± curacy: ± voltage at /IEW, FO WP, OTP, iput voltag pput voltag pput curre	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM FOLD, AC ge nt for unit: of Vo(rate	cooder. # c odes (Aut N selectio mly): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± s with lo < s with lo <	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 4 Current: 4 Voltage: 4 Current: 4 Voltage: 4 Current: 4 Voltage: 4 Current: 4 Voltage: 4 Current: 4 Voltage: 4 Current: 4 Voltage: 4 Current: 4 Current: 4 Soft of the set 0.02% of 0.02% of 0.02% of ± (0.1% c ± (0.1% c)	selection b FF, Output S-485, IE a selection d Parallel I digits, Act digits,	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla ccuracy: ± curacy: ± voltage at /IEW, FO WP, OTP, iput voltag pput voltag pput curre	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM FOLD, AC ge nt for unit: of Vo(rate	cooder. # c odes (Aut N selectio mly): 1200 Master un /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± /o(rated) ± s with lo < s with lo <	of address o/Safe), n by rea), 2400, 4 tit, where t1 count t1 count t1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,3 3lave unit 1 (Remote 1 (CC, FINE	200 (by c s (0 to 4); e sense)	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X X X X X X X X X X X X X
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy 7. Vout Readback Resolution	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 2 Voltage:	selection b FF, Output S-485, IE e selection d Parallel N d digits, Ac d	y Voltage t On/Off, EE (IEMI (RS-232, Master/Siz curacy: \pm curacy: djust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM FOLD, AC ge of Vo(rate of Io(rate	ocoder. # c odes (Aut N selectio only): 1200 Master un /o(rated) ± /o(rated) =	of address o/Safe), n by rea , 2400, 4 iit, where ⊧1 count ⊧1 count al sense OUT ON NA, SO)	sses = 31 Foldback (r panel DIF 4800, 9600 e x = # of S) or at load	Control (C 2-switch 0 and 19,; Slave unit I (Remote CC, FINE rated Ou	200 (by ci s (0 to 4); e sense) tput curre	urrent adj S = Slav	just encode e unit(s)	er)		X X X X X X X X X X X X X X X X X X	
1.Control Functions 2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy 7. Vout Readback Resolution 8. lout Readback Resolution	Address s AC ON/O RS-232/F Baud rate Advanced Voltage: 2 Voltage: 4 Voltage:	selection b FF, Outpu S-485, IE e selection d Parallel N d digits, Ac d di d digits, Ac d digits, Ac d digits	y Voltage t On/Off, EE (IEMI (RS-232, Master/Sla couracy: ± couracy: to couracy:	Adjust er Restart M)) and LA RS-485 c ave: Hx = 0.5% of V 0.5% of V power su LD, REM FOLD, AC ge of Vo(rate of Vo(rate of Vo(rate	cooder. # c oodes (Aut N selectio only): 1200 Master un /o(rated) ± /o(rated)	of address o/Safe), n by rea 0, 2400, 4 iit, where	see = 31 Foldback (r r panel DIB 4800, 9600 9 x = # of \$ 0 or at load //OFF, CV/ ± 0.7% of	Control (C 2-switch 0 and 19,; Slave unit I (Remote (CC, FINE rated Ou nhibit turr	200 (by ci s (0 to 4); e sense) tput curre	urrent adj	just encode e unit(s)	er)		xx xx

*30V, 40V and 50V models (15kW) only available with 400VAC and 480VAC. For 208VAC Input models please contact the factory. *1. Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input, per EIJ R9002A. *2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of rated Output. *3. From 20% - 100% for models with lor < 25A. All specifications subject to change without notice.

Genesys[™] 3U 15kW Specifications

1.0 MODEL	GEN	150-100	200-75	250-60	300-50	400-37.5	500-30	600-25	800-18.8	1000-15	1250-12	1500-10	15k X
1.Rated Output Voltage	VDC	150	200	250	300	400	500	600	800*	1000*	1250*	1500*	X
2.Rated Output Current	ADC	100	75	60	50	37.5	30	25	18.8	15	12	10	X
3.Rated Output Power	kW	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.04	15.0	15.0	15.0	>
4.Efficiency (min) at low AC line, 100% Rated Load	%				88					ç	93.5		
1.1 CONSTANT VOLTAGE MODE (CV)					Con	tact Factor	ry for othe	r models					
1. Max. Line Reg (0.1% - Vor ≤ 30V; 0.01% - 30V < Vor ≤ 600V; 0.05% - 600V < Vor ≤ 1500V)	mV	15	20	25	30	40	50	60	400	500	625	750)
2. Max. Load Reg (0.1% - Vor ≤ 30V; 0.02% - 30V < Vor ≤ 600V; 0.1% - 600V < Vor ≤ 1500V)	mV	30	40	50	60	80	100	120	800	1000	1250	1500	,
3. Ripple r.m.s, 5Hz~1MHz, CV (*1)	mV	25	35	35	60	60	60	60	80	100	120	140	\mid
4. Output Noise p-p (20MHz), CV (*1)	mV	150	175	200	200	300	350	350	700	800	1000	1400	5
5.Remote Sense Compensation / Wire	V	5	5	5	5	5	5	5	5	5	5	5	
6. Temperature Stability		± 0.05%	6 of Vo R	lated over	8 hours,	after 30 m	inute war	m up, cor	istant Line,	, Load & T	emperature		
7. Temperature Coefficient	ppm / °C	200 (0.0	02% of V	o Rated)									
8. Up-Prog. Response Time, 0~Vomax, full-load	mS	ļ			100						7		
9. Up-Prog. Response Time, 0~Vomax, no load 10. Transient Response Time (CV mode) (*2)	mS mS				50 Less thar					Less	7		
	1 115				Less than	13				Less	inan i		<u> </u>
1.2 CONSTANT CURRENT MODE (CC)	1 A	50			05	10	45	10			10	45	<u> </u>
1. Max. Line Reg (0.1% - lor ≥ 333A; 0.050% - lor < 333A)	mA	50	38	30	25	19	15	13	28	23	18	15	
2. Max. Load Reg (0.1% - lor ≥ 333A; 0.075% - 25A ≤ lor < 333A; 0.2% - lor < 25A) (*3)	mA	75	57	45	38	28	23	19	38	30	24	20	>
3. Ripple r.m.s, 5Hz~1MHz, CC	mA	50	20	20	20	10	10	10	15	10	6	4	
4. Temperature Stability											mperature)		
5. Temperature Coefficient	ppm / °C	-	· · ·	of lo(rate				, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,		,		
1.3 PROTECTIVE FUNCTIONS					,,								
1. OCP	%	0 ~ 100											
2. OCP type			nt curren	t									
3. Foldback Protection		Output	shut dow	n; Manua	I reset by	front pane	el OUT bu	tton or D	gital comm	nunication	, user-selec	table	
4. Foldback Response Time	s	Less the	an 1 (Mir	n = 0.25 /	Max = 25	/ Default :	= 0.25); S	ettable vi	a "FBD" co	mmand			
5. OVP type		Inverter	shut-do	wn; Manu	al reset b	y On/Off re	ecycle, Ol	JT button	, Remote A	Analog or [Digital comr	nunication	
6. OVP Programming Accuracy	%	± 5% of	f Vo(rated	d)									2
7. OVP Trip Point	v					r <u><</u> 600V;); Default =				00V < Vor	≤ 1500V; Sł	nall always	:
8. OVP response time	ms		an 10 (fo Vor ≤ 15		o begin to	o drop) for	$Vor \le 600$	V; Less t	han 2.0 (fo	r Output to	o begin to d	rop) for	
9. Max. OVP reset time	s			Off switch	turn On)								
10. Over temperature Protection		,			,	xceeds sa	fe operat	ng levels	(Latched:	Safe/ Unla	tched: Auto)	
11. Phase Loss Protection		Yes, po	wer supp	oly shutdo	wn (Latch	ned: Safe-r	node / Ur	latched: /	Auto-mode))
1.4 REMOTE ANALOG CONTROLS & SIGNALS													
1. Vout Voltage Programming	0~100%,	0 ~ 5V or	0 ~ 10V,	user-sele	ectable, A	ccuracy &	Linearity:	± 1% of \	Vo(rated))
2. lout Voltage Programming	0 ~ 100%	5, 0~5V or	0 ~ 10V,	user-sele	ectable. Ad	ccuracy &	Linearity	± 1% of lo	o(rated))
3. Vout resistor programming	0~100%,	0~5/10ko	hm full-s	cale, use	r-selectab	le. Accurac	cy & Linea	arity ± 1%	of Vo(rate	ed))
4. lout Resistor Programming									of lo(rated				
5. Shut-Off (SO) Control (rear panel)								ct: Open	EN, Shor	t-DIS (use	r-selectable	e logic)	
6. Output Current Monitor						user-sele							
7. Output Voltage Monitor 8. Power Supply OK (PS_OK) Signal		,			. ,	impedanc							
9. CV/CC Signal			,				,	$(0 \sim 0.4)$), Max sinl	k current =	10mA		5
10. Enable/Disable		0 (<i>//</i>			,			ontacts = 6		- 1011/1		5
11. Remote/Local Selection						0 ~ 0.6V =							
12. Remote/Local Signal										= On (Max	sink currer	nt = 10mA)	
1.5 FRONT PANEL													
1.Control Functions	Vout/ Iou	t manual a	adjust by	separate	encoders	(coarse a	nd fine a	djustment	selectable	e)			
						oder, Fron				,			
	Address	selection I	by Voltag	e Adjust e	encoder. #	of addres	ses = 31)
									(CV to CC), Go-to-L	ocal)
	RS232/R	S-485, IE	EE (IEM	D) and LA	N selecti	on by rear	panel DI	P-switch)
		e selectior									t encoder)		
			M + / C	Maximum Line	- Mastar i	unit uubore	x - # of	Slave uni	ts (0 to 4);	S = Slave	unit(s)		
	Advance	d Parallel											
2.Display	Advance Voltage:	d Parallel 4 digits, Ad	ccuracy:	± 0.5% 0	f Vo(rated	l) ±1 count							
2.Display	Advance Voltage: Current:	d Parallel 4 digits, Ad 4 digits, Ad	ccuracy: ccuracy:	± 0.5% o ± 0.5% of	f Vo(rated lo(rated)	l) ±1 count ±1 count	t	d /Demot	0.000000)				
	Advance Voltage: Current: Voltmete	d Parallel 4 digits, Ad 4 digits, Ad r displays	ccuracy: ccuracy: Voltage a	± 0.5% o ± 0.5% of at power s	f Vo(rated f Io(rated) supply (Lo	l) ±1 count ±1 count cal sense)	t) or at loa						
	Advance Voltage: Current: Voltmete Green LE	d Parallel 4 digits, Ad 4 digits, Ad r displays	ccuracy: ccuracy: Voltage a VIEW, F0	± 0.5% of ± 0.5% of at power s OLD, RE	of Vo(rated) f Io(rated) supply (Lo M./LOCAL	l) ±1 count ±1 count cal sense) ., OUT ON	t) or at loa						
3.Indications	Advance Voltage: Current: Voltmete Green LE	d Parallel 4 digits, Ad 4 digits, Ad r displays ED's: PRE	ccuracy: ccuracy: Voltage a VIEW, F0	± 0.5% of ± 0.5% of at power s OLD, RE	of Vo(rated) f Io(rated) supply (Lo M./LOCAL	l) ±1 count ±1 count cal sense) ., OUT ON	t) or at loa						
3.Indications 1.6 DIGITAL PROGRAMMING & READBACK	Advanced Voltage: 4 Current: 4 Voltmete Green LE Red LED	d Parallel 4 digits, Ad 4 digits, Ad r displays ED's: PRE :ALRM (0	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF	± 0.5% of ± 0.5% of at power s OLD, REI P, FOLD, A	of Vo(rated) f Io(rated) supply (Lo M./LOCAL	l) ±1 count ±1 count cal sense) ., OUT ON	t) or at loa						
3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy	Advance Voltage: Current: Voltmete Green LE Red LED ± 0.5% o	d Parallel 4 digits, Ad 4 digits, Ad r displays D's: PRE :.ALRM (C	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF	± 0.5% of ± 0.5% of at power s OLD, REI P, FOLD, A	f Vo(ratec f lo(rated) supply (Lc M./LOCAL AC FAIL, I	I) ±1 count ±1 count cal sense -, OUT ON ENA, SO)	t) or at loa I/OFF, CV	/CC, FIN	E	nt for Io >	187.5A		
3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Iout Programming Accuracy	Advance: Voltage: - Current: - Voltmete Green LE Red LED ± 0.5% of ±0.5% of	d Parallel 4 digits, Ad 4 digits, Ad r displays D's: PRE :.ALRM (C	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF	± 0.5% of ± 0.5% of at power s OLD, REI P, FOLD, A	f Vo(ratec f lo(rated) supply (Lc M./LOCAL AC FAIL, I	I) ±1 count ±1 count cal sense -, OUT ON ENA, SO)	t) or at loa I/OFF, CV	/CC, FIN		nt for Io ≥	187.5A		
3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Accuracy 3. Vout Programming Resolution	Advance: Voltage: - Current: - Voltmete: Green LE Red LED ± 0.5% of 0.02% of	d Parallel 4 digits, Ad 4 digits, Ad r displays D's: PRE' :.ALRM (0 f rated Out	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF	± 0.5% of ± 0.5% of at power s OLD, REI P, FOLD, A	f Vo(ratec f lo(rated) supply (Lc M./LOCAL AC FAIL, I	I) ±1 count ±1 count cal sense -, OUT ON ENA, SO)	t) or at loa I/OFF, CV	/CC, FIN	E	nt for Io ≥	187.5A		
3. Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Iout Programming Resolution 4. Iout Programming Resolution	Advance: Voltage: Current: Voltmete Green LE Red LED ± 0.5% of 0.02% of 0.04% of	d Parallel 4 digits, Ad 4 digits, Ad r displays D's: PRE :ALRM (0 f rated Out Vo(rated)	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF tput volta	± 0.5% of ± 0.5% of at power s DLD, REI P, FOLD, / age ent for uni	f Vo(rated) f Io(rated) supply (Lo M./LOCAL AC FAIL, f ts with Io	I) ±1 count ±1 count cal sense -, OUT ON ENA, SO)	t) or at loa I/OFF, CV	/CC, FIN	E	nt for Io ≥	187.5A		
3. Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. Jout Programming Resolution 4. Jout Programming Resolution 5. Vout Readback Accuracy 6. Jout Readback Accuracy	Advance: Voltage: Current: Voltmete: Green LE Red LED ± 0.5% of 0.02% of 0.04% of ± 0.1% + ± 0.1% +	d Parallel 4 digits, Ar 4 digits, Ar r displays D's: PRE ::.ALRM (0 r ated Out rated Out rated Out vo(rated) lo(rated) 0.2% of r 0.4% of r	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF tput volta tput curre ated Out	± 0.5% of ± 0.5% of at power s OLD, REI P, FOLD, / age ent for uni	f Vo(rated) f lo(rated) supply (Lo M./LOCAL AC FAIL, f ts with lo	I) ±1 count ±1 count cal sense -, OUT ON ENA, SO)	t) or at loa I/OFF, CV	/CC, FIN	E	nt for Io ≥	187.5A		
2.Display 3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy 7. Vout Readback Resolution	Advance Voltage: - Current: - Voltmete Green LE Red LED ± 0.5% of 0.02% of 0.04% of ± 0.1% + ± 0.1% +	d Parallel 4 digits, Ad 4 digits, Ad 7 displays D's: PRE D's: PRE	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF tput volta tput curre ated Out	± 0.5% of ± 0.5% of at power s OLD, REI P, FOLD, / age ent for uni	f Vo(rated) f lo(rated) supply (Lo M./LOCAL AC FAIL, f ts with lo	I) ±1 count ±1 count cal sense -, OUT ON ENA, SO)	t) or at loa I/OFF, CV	/CC, FIN	E	nt for Io ≥	187.5A		
3.Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Resolution 4. lout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy 7. Vout Readback Resolution 8. lout Readback Resolution 8. lout Readback Resolution	Advance Voltage: Current: Voltmete Green LE Red LED ± 0.5% of 0.02% of 0.02% of ± 0.1% + ± 0.1% + 0.02% of 0.02% of	d Parallel 4 digits, Ad 4 digits, Ad r displays D's: PRE D's: PRE	ccuracy: ccuracy: Voltage a VIEW, F(DVP, OTF tput volta put curre ated Out	± 0.5% c ± 0.5% of at power s DLD, REI P, FOLD, / age ent for uni put voltag put current	if Vo(ratec) supply (Lc M./LOCAL AC FAIL, t ts with lo ge	I) ±1 count ±1 count ical sense; ., OUT ON ENA, SO) < 1875A;	t) or at loa I/OFF, CV +/-0.7% o	f rated O	E utput curre	nt for Io ≥	187.5A		
3. Indications 1.6 DIGITAL PROGRAMMING & READBACK 1. Vout Programming Accuracy 2. lout Programming Resolution 3. Vout Programming Resolution 5. Vout Readback Accuracy 6. lout Readback Accuracy 7. Vout Readback Resolution	Advance: Voltage: Current: Voltmete Green LE Red LED ± 0.5% of 0.02%	d Parallel 4 digits, Ad 4 digits, Ad 4 digits, Ad 7 displays D's: PRE ::.ALRM (C 7 displays f rated Out 7 vo(rated) 10(rated) 0.2% of r 0.4% of r Vo(rated) 0.4% of r Vo(rated) aximum (b	ccuracy: ccuracy: Voltage a VIEW, FC DVP, OTF atput volta put curre ated Out ated Out	± 0.5% c ± 0.5% of at power s DLD, REI P, FOLD, A age ent for uni put voltac put voltac	f Vo(ratec) f lo(rated) supply (Lc M./LOCAL AC FAIL, t ts with lo ge nt eding OV	I) ±1 count ±1 count ical sensej ., OUT ON ENA, SO) < 187.5Å; · P Limit and	t) or at loa I/OFF, CV +/-0.7% o d supply i	/CC, FIN f rated Ou	E utput curre		187.5A		

*800V - 1500V models (15kW) only available with 400VA and 480VAC input. For 208VAC Input models please contact the factory.
*1. Ripple and Noise at Vo(rated) and rated Load, Ta = 25C and nominal AC input, per EU R9002A.
*2. Time for the Output voltage to recover within 2% of rating for a load current change of 50~100% or 100-50% of lo(rated).
*3. From 20% - 100% for models with lor < 25A.
All specifications subject to change without notice.

TDK·Lambda 16

General Specifications, Genesys[™] 3U 10kW/15kW

2.1 INPUT CHARACTERISTICS		
1. Input Voltage / Frequency (range)		208VAC (180-253), 400VAC (360-440 , 342-440 (select 10kW/15kW models)), 480VAC (432-528); 47-63Hz (all)
2. No. of phases		3-Phase (Wye or Delta) 4 wire total (3-Phase and 1 protective Earth ground)
3. Dropout Voltage	l v	180 / 360, 342 (select models) / 432; select models (10kW): 800V-1500V, select models (15kW): 30V-50V, 800V-1500V
	1	10kW - 45/23/20 (Vout ≤ 600V); N/A/23/20 (800V ≤ Vout ≤ 1500V) - at full rated Output power
4. Input Current (180VAC/360 or 342VAC/432VAC)	Arms	15kW - 64/32/27 (Vout ≤ 600V); N/A/32/27 (800V ≤ Vout ≤ 1500V) - at full rated Output power
5. Inrush Current	A	Not to exceed full rated Input current (see para. above)
6. Power Factor		0.88 Passive (typical)
7. Leakage Current	mA	3.5 (EN60950) max.
8. Input Protection		208VAC: circuit breaker (Vout ≤ 600V); 400VAC/480VAC (all models) - line fuse
9. Input Overvoltage Protection		Unit shall not be damaged by line overvoltage of 120% nominal AC input voltage with maximum duration of 100usec.
10. Phase Imbalance	%	≤ 5% on Three-Phase Input
2.2 POWER SUPPLY CONFIGURATION		
1. Parallel Operation	current of	r (4) identical units may be connected in Master/Slave Mode with single wire connection (*3). In Advanced-Parallel feature, the Master unit multiplied by number of units connected in parallel, is available via digital interface and displayed on the front play of the Master unit. Remote Analog current monitor of the Master is scaled to the Output current of the Master unit (only).
2. Series Operation		with external diodes); Up to two identical units with total Output voltage not to exceed ± 600V from Chassis ground (for Vor ≤ 600V); eed ± 1500V from Chassis ground (for 600V < Vor ≤ 1500V).
2.3 ENVIRONMENTAL CONDITIONS		
1. Operating Temperature	0 ~ +50°0	C, 100% load
2. Storage Temperature	-20 ~ +70	
3. Operating Humidity	_	RH (non-condensing)
4. Storage Humidity		RH (non-condensing)
5. Vibration & Shock	Assuranc	169, Standard Practice for Performance Testing of Shipping Containers and Systems, Shipping Unit: Single Package e Level: Level II; Acceptance Criteria: Criterion 1 - No product damage Criterion 2 - Packaging is intact, Distribution Cycle: 12 - ity) and motor freight (local), unitized is used.
6. Altitude		g: +50°C up to 7500 ft. (2500m), +45°C from 7501 to 10,000ft (2501m - 3000m), Non-Operating 40,000 ft (12,000m)
7. Audible Noise	65dBA at	lo(rated) (measured 1m from front panel)
2.4 EMC (*4)		
1. 208VAC Input	CE Mark	
1. ESD		-4-2 (IEC 801-2): Air-discharge ± 8kV , Contact-discharge ± 4kV
2. Fast Transients		-4-4 (IEC 1000-4-3)
3. Surge Immunity		4-5 (IEC 1000-4-5)
4. Conducted Immunity		-4-6 (IEC 1000-4-6)
5. Radiated Immunity		-4-3 (IEC 1000-4-3)
6. Power Frequency Magnetic Field	EN61000	
7. Conducted Emissions		A, FCC part 15J-A
8. Radiated Emissions		A, FCC part 15J-A
2. 400VAC/480VAC (*4) Input	CE Mark	
1. ESD		-4-2 (IEC 801-2): Air-discharge ± 8kV , Contact-discharge ± 4kV
2. Fast Transients		-4-4 (IEC 1000-4-3)
3. Surge Immunity		-4-5 (IEC 1000-4-5)
4. Conducted Immunity		-4-6 (IEC 1000-4-6)
5. Radiated Immunity		-4-3 (IEC 1000-4-3)
6. Power Frequency Magnetic Field	EN61000	
7. Voltage Dips, Short Interruptions and Voltage	IEC 6100	0-4-11
Variations Immunity Test (400VAC Only).		
8. Conducted Emissions	EN55011	A, FCC part 15J-A
9. Radiated Emissions		A, FCC part 15J-A
2.5 SAFETY		
1.Applicable Standards:	7.5V <u><</u> Vo 400V < V 600V < V	0950-1, EN60950-1 recognized, CB Scheme, CE Mark (208VAC & 400VAC inputs only) ut ≤ 400V: Output is Hazardous; LAN/IEEE/Isolated Analog/USB are SELV put ≤ 600V: Output is Hazardous; LAN/IEEE/Isolated Analog/USB are not SELV out ≤ 1500V: Output is Hazardous; LAN/IEEE/Isolated Analog/USB are SELV
2. Withstand Voltage	Hazardou 300 < Vo Hazardou 600 < Vo	10V models: Input - Ground: 2900VDC for 1min, Input-Hazardous Output: 3500VDC for 1min, Input - SELV: 2900VDC for 1min Is Output - SELV: 2121VDC for 1min, Hazardous Output - Ground: 2121VDC for 1min tt ≤ 600V models: Input-Ground: 2900VDC for 1min, Input-Hazardous Output: 3900VDC for 1min, Input-SELV: 2900VDC for 1min. Is Output - SELV: 2688VDC for 1min, Hazardous Output - Ground: 2688VDC for 1min tt ≤ 1500V models: Input-Ground: 2900VDC for 1min, Input-Hazardous Output: 5040VDC for 1min, Input-SELV: 2900VDC for 1min. Is Output - SELV: 2500VDC for 1min, Hazardous Output - Ground: 2500VDC for 1min, Input-SELV: 2900VDC for 1min. Is Output - SELV: 2500VDC for 1min, Hazardous Output - Ground: 2500VDC for 1min, Input-SELV: 2900VDC for 1min.
3.Insulation Resistance	> 100Me	johms at 500VDC, +25°C
2.6 MECHANICAL CONSTRUCTION		
1. Cooling	Ean-drive	n, Airflow from front to rear. Supplemental vents on side that shall not be blocked. EIA Rack mounting, stackable
······································		ckable" top and bottom. Chassis slides or suitable rear support required.
2. Dimensions (WxHxD)		9mm / 16.9", Height: 3U - 133mm / 5.22", Depth - 564mm / 22.2" (excluding connectors, encoders, handles, etc.)
3. Weight	32kg / 70	
4. AC Input connector (with Protective Cover)	<u> </u>	1" threaded studs (L1, L2, L3 and Chassis GND) and terminal cover.
5. Output Connectors		l including 300V models: bus-bars (one and two-hole). Greater than 300V models: M6 x 0.5" threaded-stud terminals.
6.Control Connectors		
		rogramming: DB25, plastic connector, AMP747461-5, Female on Supply; Male on Mating connector, 747321, 25 pin Sub-D connector.
7. Mounting Method		19" Rack-Mount, provision for standard chassis slides. Side/Rear Support is required; Do not mount by front panel only.
8. Output Ground Connection	UID X 1.0"	threaded-stud
2.7 WARRANTY		
1. Warranty	5 years	
	1 1 4 / / - 1 1 4 /	ndoels require a Two-Wire Parallel Master-Slave connection. See the Product USer's Manual for details.

*3 GENESYSTM 30V-50V (15kW) and 800V-1500V (10kW/15kW) mdoels require a Two-Wire Parallel Master-Slave connection. See the Product USer's Manual for details. *4. 30V-50V (15kW) and 800V-1500V (10kW/15kW) models with 480VAC Input have CE Mark. All specifications subject to change without notice



Genesys[™] Power Parallel and Series Configurations

Parallel operation - Master/Slave:

Active current sharing allows up to four identical units to be connected in an Auto-parallel configuration for four times the Output power. In Advanced Parallel Master/Slave Mode, total current is programmed and reported by the Master, Up to four supplies act as one.

Series operation

Up to two units may be connected in series to increase the Output voltage or to provide bipolar output. (Max 600V to Chassis GND for Vor < 600V; Max 1500V to Chassis GND for 600V < Vor < 1500V).

Remote Programming via RS-232 & RS-485 Interface

Standard Serial Interface allows daisy-chain control of up to 31 power supplies on the same communication bus with built-in RS-232 & RS-485 Interface.



Programming Options (Factory installed)

IEEE Multi-Drop Interface

- Allows IEEE Master to control up to 30 (Standard) slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface
- IEEE 488.2 & SCPI Compliant
- **Program Voltage**
- Measure Voltage
- Over-Voltage setting and shutdown
- Error and Status Messages

Multi-Drop Slave Option is Standard

- Standard Units are equipped with the Multi-Drop Slave (RS-485) function
- Allows RS-485 Master to control up to 30 (standard) Slaves over RS-485 Daisy-chain

Isolated Analog Programming

- ۲ Four Channels total (Two to Program Voltage and Current; Two to Monitor Voltage and Current)
- Isolation allows operation with floating references in harsh electrical environments.
- Choose between programming with Voltage or Current.
- Connection via removable terminal block: Phoenix MC1,5/8-ST-3.81
- P/N: IS510 • Voltage Programming, User-selectable 0-5V or 0-10V signal. Power supply Voltage and Current Programming Accuracy: ±1% Power supply Voltage and Current Monitoring Accuracy: ±1.5% P/N: IS420
- Current Programming with 4-20mA signal. Power supply Voltage and Current Programming Accuracy: ±1%

LXI Compliant to Class C LAN Interface

- Meets all LXI Class C Requirements • Address Viewable on Front Panel
- VISA & SCPI Compatible LAN Fault Indicators

Program Current

•

Measure Current

Current Foldback shutdown

- Fixed and Dynamic Addressing
- Fast Startup

۰

- Auto-detects LAN Cross-over Cable
 - Compatible with most standard Networks



P/N: "-----"

P/N: LAN

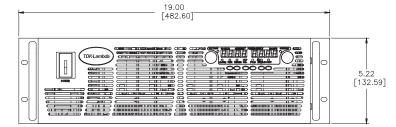
TDK·Lambda 18

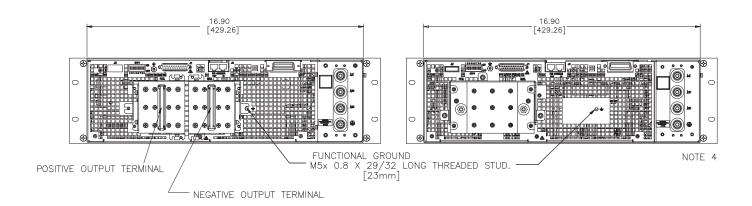
P/N: IEMD

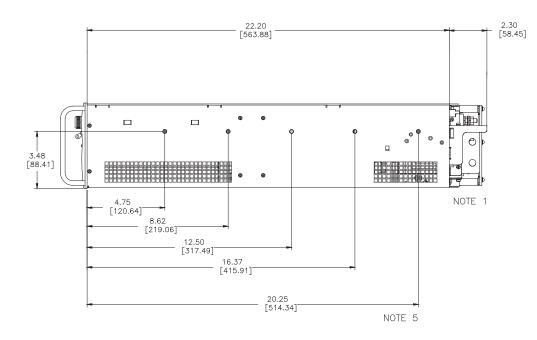


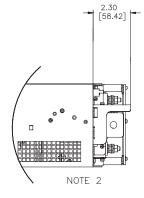


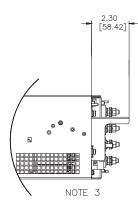
Outline Drawings: Genesys™ 10kW (All - 208VAC), 10kW/15kW (60V to 600V - 208/400/480VAC)









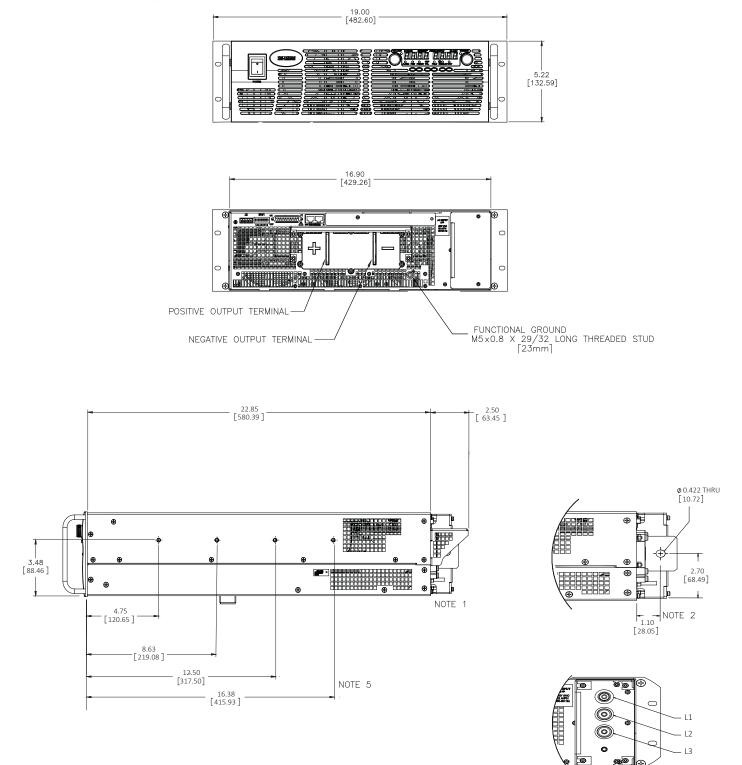


NOTES:

- 1. Busbars for models up to 30V Output: two holes 0.42" (10.72mm) diameter.
- Busbars for models 40-300V (10kW) and 60-300V (15kW) Output: one hole 0.42" (10.72mm) diameter.
- 3. Threaded stud terminal for models above 300V Output.
- 4. Input Terminals M6 x 1" (3) + Ground M5 x 1" (2).
- Mounting for Slide Mounts (not included). Recommend General Devices, Chassis Trak P/N C230-S-122. Secure with pan head screw M5 x 0.8-8mm long (max).

9 Genesys[™] 3U 10/15kW

Outline Drawings: Genesys[™] 15kW (30V to 50V - 400VAC/480VAC)



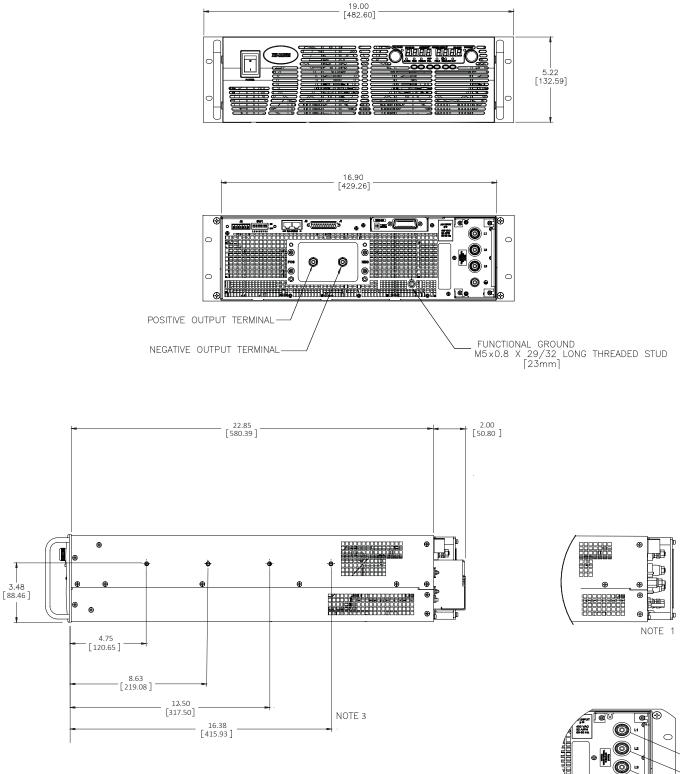
NOTES:

- 1. N/A
- 2. Bus bars for models 30-50V Output (15kW): one hole 0.42" (10.72mm) diameter.
- 3. N/A
- 4. Input Terminals M6 x 1" (3) + Ground M5 x 1" (2)
- Mounting for Slide Mounts (not included). Recommend General Devices, Chassis Trak P/N C230-S-122. Secure with pan head screw M5 x 0.8-8mm long (max).

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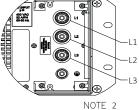
NOTE 4

Outline Drawings: Genesys[™] 15kW (800V to 1500V - 400VAC/480VAC)



NOTES:

- 1. Threaded stud terminals for 800V 1500V Output; M5 x 1".
- 2. Input Terminals M6 x 1" (3) + Ground M5 x 1" (2)
- 3. Mounting for Slide Mounts (not included).
- Recommend General Devices, Chassis Trak P/N C230-S-122. Secure with pan head screw M5 x 0.8-8mm long (max).



Power Supply Identification / Accessories (Genesys[™] 3U 10/15kW) How to Order:

_	EN 10 ries Outp me Volta (0~10	ut Outp ge Curre	Fact out Op	LAN tory Options Dition: "" LAN IEMD IS510 IS420	- 3P208 AC Input Options 3P208 (Thre 3P400 (Thre 3P480 (Thre	e-Phase 40	0VAC)
Model	Output Voltage (Vdc)	Output Current (Adc)	Output Power (kW)		Model	Output Voltage (Vdc)	Output Current (Adc)
GEN 7.5-1000	0~7.5	0~1000	7.5]	GEN 200-50	0~200	0~50
GEN 10-1000	0~10	0~1000	10]	GEN 200-75	0~200	0~75
GEN 12.5-800	0~12.5	0~800	10]	GEN 250-40	0~250	0~40
GEN 20-500	0~20	0~500	10]	GEN 250-60	0~250	0~60
GEN 25-400	0~25	0~400	10		GEN 300-33	0~300	0~33
GEN 30-333	0~30	0~333	10		GEN 300-50	0.000	0~50
GEN 30-500	0~30	0~500	15		GEN 400-25	0~400	0~25
GEN 40-250	0~40	0~250	10		GEN 400-37.5	0~400	0~37.5
GEN 40-375	0~40	0~375	15		GEN 500-20	0~500	0~20
GEN 50-200	0~50	0~200	10		GEN 500-30	0~300	0~30
GEN 50-300	0~30	0~300	15]	GEN 600-17	0~600	0~17
GEN 60-167	0~60	0~167	10]	GEN 600-25	0~000	0~25
GEN 60-250	0~00	0~250	15]	GEN 800-12.5	0~800	0~12.5
GEN 80-125	0~80	0~125	10]	GEN 800-18.8	0~800	0~18.8
GEN 80-187.5	0~80	0~187.5	15]	GEN 1000-10	0~1000	0~10
GEN 100-100	0~100	0~100	10]	GEN 1000-15	0~1000	0~15
GEN 100-150	0~100	0~150	15]	GEN 1250-8	0~1250	0~8
GEN 125-80	0~125	0~80	10]	GEN 1250-12	0~1250	0~12
GEN 125-120	0~125	0~120	15]	GEN 1500-6.7	0~1500	0~6.7
GEN 150-66	0~150	0~66	10]	GEN 1500-10	0~1500	0~10
GEN 150-100	0~150	0~100	15]			

Factory options

RS-232/RS-485 Multi-Drop Interface (built-in Standard) LAN Interface (LXI Class C compliant) GPIB (Multi-Drop Master) Interface Voltage Programming Isolated Analog Interface Current Programming Isolated Analog Interface

P/N

"-----" LAN IEMD IS510 (standard on 800-1500V models) IS420

Accessories

1. Serial Communication cable

RS-232/RS-485 cable is used to connect the power supply to the Host PC.

Mode	RS-485	RS-232	RS-232
PC Connector	DB-9F	DB-9F	DB-25F
Communication Cable	Shield Ground, L=2m	Shield Ground, L=2m	Shield Ground, L=2m
Power Supply Connector	EIA/TIA-568A (RJ-45)	EIA/TIA-568A (RJ-45)	EIA/TIA-568A (RJ-45)
P/N	GEN/485-9	GEN/232-9	GEN/232-25

2. Serial Link cable*

Daisy-chain up to 31 Genesys[™] power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground, L=50cm	GEN/RJ45

* Included with GENESYSTM-1U, -2U power supply only.

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Output

Power

(kW)

10 15

10

15

10

15

10

15

10

15

10

15

10

15

10

15

10

15

10

15

Genesys[™] Family - Output Voltage / Output Current

Model	GENH		GEN-1U		GEI	V-2U	GE	IN 3U
Rated Power	750W	750W	1500W	2400W	3300W	5000W	10kW	15kW
Voltage Range				Output	Current Rang	je		
0~6V	0~100A	0~100A	0~200A					
0~7.5V							0~1000A	
0~8V	0~90A	0~90A	0~180A	0~300A	0~400A	0~600A		
0~10V				0~240A	0~330A	0~500A	0~1000A	
0~12.5V	0~60A	0~60A	0~120A				0~800A	
0~15V					0~220A			
0~16V				0~150A		0~310A		
0~20V	0~38A	0~38A	0~76A	0~120A	0~165A	0~250A	0~500A	
0~25V							0~400A	
0~30V	0~25A	0~25A	0~50A	0~80A	0~110A	0~170A	0~333A	0~500A ^{(3), (4)}
0~40V	0~19A	0~19A	0~38A	0~60A	0~85A	0~125A	0~250A	0~375A ^{(3), (4)}
0~50V			0~30A				0~200A	0~300A ^{(3), (4)}
0~60V	0~12.5	0~12.5A	0~25A	0~40A	0~55A	0~85A	0~167A	0~250A
0~80V	0~9.5A	0~9.5A	0~19A	0~30A	0~42A	0~65A	0~125A	0~187.5A
0~100V	0~7.5A	0~7.5A	0~15A	0~24A	0~33A	0~50A	0~100A	0~150A
0~125V							0~80A	0~120A
0~150V	0~5A	0~5A	0~10A	0~16A	0~22A	0~34A	0~66A	0~100A
0~200V							0~50A	0~75A
0~250V							0~40A	0~60A
0~300V	0~2.5A	0~2.5A	0~5A	0~8A	0~11A	0~17A	0~33A	0~50A
0~400V							0~25A	0~37.5A
0~500V							0~20A	0~30A
0~600V	0~1.3A	0~1.3A	0~2.6A	0~4A	0~5.5A	0~8.5A	0~17A	0~25A
0~800V							0~12.5A	*0~18.8A ^{(3), (4}
0~1000V							0~10A	*0~15A ^{(3), (4)}
0~1250V							0~8A	*0~12A ^{(3), (4)}
0~1500V							0~6.7A	*0~10A ^{(3), (4)}
Weight (kg/lb)	4.5 / 9.9	7.0 / 15.0	8.5 / 18.0	10 .0 / 22.0	13.0 / 29.0	16.0 / 35.0	43.0 / 97.0	43.0 / 97.0 *32.0 / 70.0

(4) Available in 400VAC and 480VAC input. For 208VAC input please contact the factory.

AC Inputs

85-265Vac, 1Ø	• (1)	• (1)	• (1)					
230Vac, 1Ø				• (1	• (1)			
208Vac, 3Ø				• (1	• (1)	• (1)	• (2)	• (2)
400Vac, 3Ø					• (1)	• (1)	• (2)	• (2)
480Vac, 3Ø							• (3)	• (3)

(1) UL Listed; CE Mark , RoHS (2) UL Recognized; CE Mark (3) UL Recognized only (CE Mark for select 10kW (800V-1500V) and 15kW (30V-50V and 800V-1500V) models.

Options (All Models)

""	Standard (with Multi-Drop Slave installed)
LAN	LXI Compliant LAN Interface (Class C)
IEMD	IEEE Master (IEEE 488.2 & SCPI compliant) with Multi-Drop Slave installed
IS510	Isolated Analog Programming (0-5V or 0-10V, User-selectable); standard on 800-1500V Outputs
IS420	Isolated Analog Programming (4-20mA)

(All options are factory installed and limited to one per power supply). All specifications subject to change without notice.

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