2+ Series

Programmable DC Power Supplies 200W/400W/600W/800W in 2U Built-in USB, RS-232 & RS-485 Interface

Optional Interface:

LXI Compliant LAN
IEEE488.2 SCPI (GPIB) Multi-Drop
Isolated Analog Programming



TDK·Lambda

TDK-Lambda

Features Include:

- High Power Density 200W/400W/600W/800W in 2U: 3.5 Inch (89mm) height
- Wide Range Input (85-265Vac continuous)
- Active Power Factor Correction (0.99 typical)
- Output Voltage up to 100V, Current up to 72A
- Constant Voltage (CV)/(CC) Constant Current auto-crossover
- Built-in RS-232/RS-485 Interface Standard
- Global Commands for Serial RS-232/RS-485 Interface
- Auto-Re-Start / Safe-Start: user selectable
- Last-Setting Memory
- High Resolution 16 bit ADCs & DACs
- · Low Ripple & Noise
- Front Panel Lock selectable from Front Panel or Software
- · Reliable Encoders for Voltage and Current adjustment
- · Parallel Operation with Active Current Sharing, for up to six identical units
- Advanced Parallel Master / Slave. Total Current is programmed and measured via the Master
- External Analog Programming and Monitoring (user selectable 0-5V & 0-10V)
- · Reliable Modular and SMT Design
- 19" Rack Mount Capability for ATE and OEM applications
- Optional Interfaces

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

LX Compliant LAN

LabView® and LabWindows® drivers

• Arbitrary functions for:

Automotive or laser simulation / 4 Pre-Programmed Functions

- · Fast Command Processing Time
- · Output Sequencing
- Four-cell Memory Settings
- User Programmable Signal Pins
- · Five Year Warranty
- Worldwide Safety Agency Approvals; CE Mark for LVD and EMC regulations





2

Front Panel Description





- 1. AC ON/OFF Switch
- 2. Air Intake allows zero stacking for maximum system flexibility and power density.*
- 3. Reliable encoder controls Output Voltage and power supply setting.
- 4. Volt Display shows Output Voltage and directly displays and power supply settings.
- 5. Reliable encoder controls Output Current, and power supply setting.
- 6. Current Display shows Output Current and power supply setting.
- 7. Function/Status LEDs:
- AlarmFine ControlPreview SettingsFoldback ModeRemote ModeOutput On
- 8. Pushbuttons allow flexible user configuration
- Coarse and Fine adjustment of Output Voltage/Current and Advanced Parallel Master or Slave
- Preview settings and set Voltage/Current with Output OFF, Front Panel Lockout
- · Set OVP, UVP, UVL Limits
- Set Current Foldback
- Local/Remote Mode and select Address and Baud Rate
- Output ON/OFF and Auto-Start/Safe-Start Mode
- Menu
- 9. Optional Output Jacks for modules up to 60V: 24A Max

3

^{*} Zero stacking - side-by-side mounting of 6 units in a 19" Rack

Rear Panel Description





- 1. Connector allows (Non-isolated) Analog Program and Monitor and other functions.
- 2. Remote/Local Output Voltage Sense Connections.
- 3. Signal Connector
- 4. RS-232/RS-485 INPUT Remote Serial Programming.
- 5. RS-485 OUTPUT to other Z⁺ Power Supplies.
- 6. USB Interface
- 7. Wide-Range Input 85-265VAC continuous, 47/63Hz with Active Power Factor Correction (0.99 typical) AC Input Connector: IEC320 -C16.
- 8. Exhaust air exits at the back. Allows vertical stacking of units without any separation between units
- 9. Output Connections: Rugged Busbars for 6V up to 100V.
- 10. Optional Interface Position for LAN Interface.
- 11. Optional Interface Position for GPIB Interface (shown) or Isolated Analog Interface.

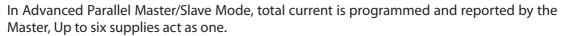


***** Power Benchtop Parallel and Series Configurations

Benchtop Power Supply

Parallel operation - Master/Slave:

Active current sharing allows up to six identical units to be connected in an auto-parallel configuration for six times the output power.





Series operation

Up to two units may be connected in series to increase the output voltage or to provide bipolar output.

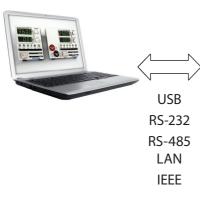
Remote Programming via Built-in USB, RS-232 & RS-485 Interface

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

Optional Interface: LAN & IEEE488.2 SCPI (GPIB)

Multi-Drop

Allows LAN/IEEE Master to control up to 31 slaves over RS-485 daisy-chain Only the Master needs be equipped with LAN/IEEE Interface













Applications

 Z^{+} series power supplies have been designed to meet the demands of a wide variety of applications.

Test and Measurement

Built-in Last-Setting memory based on Flash Memory no battery or capacitor backup. Simplifies test design and requirements.

Built-in RS-232/RS-485 gives maximum system flexibility along with 0-5V and 0-10V, selectable analog programming.

Wide range of available inputs allows testing of many different devices.

Semiconductor Burn-in

Safe-Start mode ENABLED - to re-start at Output OFF to protect load.

Wide range input (85-265Vac) with Active Power Factor correction rides through input transients easily.

Component Test

High power density, zero stacking and single wire parallel operation, give maximum system flexibility.

Laser Diode

OVP is directly set on Voltage Display, assuring accurate protection settings.

Fast Constant Current response, no over shoot. Current Limit Fold Back assures load is protected from current surges.

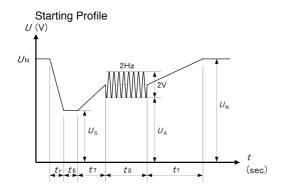
Heater Supplies

Smooth, reliable encoders enhance front panel control. Remote analog programming is user selectable 0-5V or 0-10V.

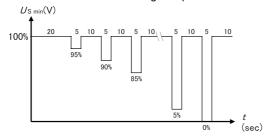
RF Amplifiers and Magnets

Robust design assures stable operation under a wide variety of loads. High linearity in Voltage & Current mode.

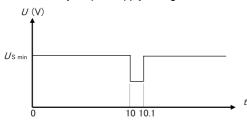
Z⁺ Series Sequence Programming Applications: ISO 16750-2



Reset behaviour at voltage drop



Discontinuities in supply voltage Momentary drop in supply voltage



Options: (200W/400W/600W/800W)

Front Panel Output Jacks

Up to 60V Output Module

P/N: Z__--_L



Up to 24A Output Current via Front Panel Jacks

Z⁺ Assemblies

Dual Output Housing (for 105mm) 200W/400W/600W/800W Triple Output Housing (for 70mm) 200W/400W/600W/800W P/N: Z-NL200 (same p/n for both Dual & Triple Output Housing)





19" Rack Mounted to 4.8kW

Six units (70mm) can be assembled into 19-Inch rack/2U high Four units (105mm) can be assembled into 19-Inch rack/2U high to meet your configuration requirements.

In cases where the entire rack is not occupied with power units,

P/N: Z-BP for 70mm, P/N: Z-WBP for 105mm blank panels can be installed:

P/N: Z-NL100





Power Modules Table

Module Type	200W	400W	600W	800W
0~10V	20A	40A	60A	72A
0~20V	10A	20A	30A	40A
0~36V	6A	12A	18A	24A
0~60V	3.5A	7A	10A	14A
0~100V	2A	4A	6A	8A
19" rack width	1/6 width	1/6 width	1/6 width	1/6 width
19" rack width	1/4 width	1/4 width	1/4 width	1/4 width





Programming Options (Factory Installed)

Digital Programming via IEEE Interface

- IEEE 488.2 SCPI Compliant
- Program Voltage
- Measure Voltage
- Over Voltage setting and shutdown
- Error and Status Messages
- Multi-Drop
- Allows IEEE Master to control up to 31 slaves over RS-485 daisy-chain
- Only the Master needs be equipped with IEEE Interface

Isolated Analog Programming

Four Channels to Program and 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.

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%

Current Programming with 4-20mA signal.
 Power Supply Voltage and Current Programming Accuracy ±1%
 Power Supply Voltage and Current Monitoring Accuracy ±1.5%

LAN Interface Compliant to Class C P/N: LAN

• Meets all LXI-C Requirements

Address Viewable on Front Panel

Fixed and Dynamic Addressing

Compatible with most standard Networks

• TCP / UDP Socket Programming

- VISA & SCPI Compatible
- LAN Fault Indicators

Program Current

Measure Current

Current Foldback shutdown

Auto-detects LAN Cross-over Cable

P/N: IEEE

P/N: IS510

P/N: IS420

Fast Startup

AC Cord

Region	Europe	Japan	North America	Israel
Output Power	850W	850W	850W	850W
AC Cords	10A/250Vac L=2m	15A/125Vac L=2m	13A/125Vac L=2m	10A/250Vac L=2m
Wall Plug	INT'L 7/VII	JIS C8303	NEMA 5-15P	SI-32
Power Supply	IEC320-C15	IEC320-C15	IEC320-C15	IEC320-C15
Connector				
Part Number	P/N: Z-E	P/N: Z-J	P/N : Z-U	P/N: Z-I

Communication Cable

RS-232/RS-485 Cable is used to connect the power supply to the PC Controller

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

Serial Link Cable*

Daisy-chain up to 31 Z⁺ Series power supplies.

Mode	Power Supply Connector	Communication Cable	P/N
RS-485	EIA/TIA-568A (RJ-45)	Shield Ground	Z/RJ45

^{*} Included with power supply

Power Supply Identification / Accessories How to order

Z	10 -	40-	-	-	
Series	Output Voltage	Output Current	Factory	Output	AC cord Options:
Name	(0~10V)	(0~40A)	Options:	Jacks	Region :
			IEEE		E - Europe
			LAN	1	J - Japan
			IS510	L	U - North America
			IS420		I - Middle East

Factory option

USB Interface built-in Standard

RS-232/RS-485 Interface built-in Standard

GPIB Interface

Voltage Programming Isolated Analog Interface

Current Programming Isolated Analog Interface

LAN Interface (Complies with LAT Class C)

Front Panel Output Jacks (60V or 24A max)

L

Model	Output Voltage (VDC)	Output Current (A)	Output Power (W)
Z10-20		0~20	200
Z10-40	0~10 VDC	0~40	400
Z10-60	0~10 VDC	0~60	600
Z10-72		0~72	720
Z20-10		0~10	200
Z20-20	0~20 VDC	0~20	400
Z20-30	0~20 VDC	0~30	600
Z20-40		0~40	800
Z36-6		0~6	216
Z36-12	0~36 VDC	0~12	432
Z36-18	0~30 VDC	0~18	648
Z36-24		0~24	864
Z60-3.5		0~3.5	210
Z60-7	0~60 VDC	0~7	420
Z60-10	0~60 VDC	0~10	600
Z60-14		0~14	840
Z100-2		0~2	200
Z100-4	0.100/56	0~4	400
Z100-6	0~100VDC	0~6	600
Z100-8		0~8	800



Z⁺200 SERIES SPECIFICATIONS

MODEL	Z	10-20	20-10	36-6	60-3.5	100-2
1. Rated output voltage(*1)	V	10	20	36	60	100
2. Rated output vortage(1)	A	20	10	6	3.5	2
	w	200	200	216		200
3. Rated output power	VV	200	200	210	210	200
CONSTANT VOLTAGE MODE	Z	10-20	20-10	36-6	60-3.5	100-2
1. Max. Line regulation (*6)				6 of rated output voltage		
2. Max. Load regulation (*7)			0.019	6 of rated output voltage	+2mV	
3. Ripple and noise (p-p, 20MHz) (*8)	mV	50	50	50	50	80
4. Ripple r.m.s. 5Hz~1MHz	mV	5	6	6	7	8
5. Temperature coefficient	PPM/°C	_		output voltage, following		
6. Temperature stability		0.02% of r	ated Vout over 8hrs. interv			ad & temp
			s than 0.05% of rated out			
7. Warm-up drift						
8. Remote sense compensation/wire	V	1	1	2	3	5
9. Up-prog. Response time, 0~Vomax.(*9)	mS	15	30	30	50	50
10. Down-prog. response time: Full load (*9)		12	25	30	40	50
Time delay (*17)	mS	210	250	320	380	1200
No load (*10) (*15)(*17)	1113	40	65	85	100	250
No load (*10) (*16)(*17)	1	200	200	290	310	1100
			age to recover within 0.5	% of its rated output for a		
11. Transient response time	mS	Time for output voit		set-point: 10~100%, Loc		rated output current.
11. Hallslefft response time	1113			S, for models up to and ir		
12 Hald #100	1	15CT	ress mign [1]]	· · · · · · · · · · · · · · · · · · ·		
12. Hold-up time (*19)		15mSec Typical.		16mSec	турісаі.	
	1	1				
CONSTANT CURRENT MODE	Z	10-20	20-10	36-6	60-3.5	100-2
1. Max. Line regulation (*6)			0.019	6 of rated output current	+2mA	
2. Max. Load regulation (*11)				6 of rated output current		
3. Load regulation thermal drift		1.	ess than 0.05% of rated ou			ge.
4. Ripple r.m.s. 5Hz~1MHz (*12)	mA	25	15	8	A	3
		23			20 minutos wares	<u>)</u>
5. Temperature coefficient	PPM/°C	0.050/ 6		output current, following		0
6. Temperature stability			l lout over 8hrs. interval fo			
7. Warm-up drift		<u>L</u>	ess than +/-0.1% of rated	output current over 30 m	inutes following power o	n.
PROTECTIVE FUNCTIONS	Z	10-20	20-10	36-6	60-3.5	100-2
	İ	Output shi	ut-down when power sup	nly change mode from C	V to CC or CC to CV User	nresetable
1. Foldback protection			ycle in autostart mode or			
			thod. Reset by AC input re			
2. Over-voltage protection (OVP)		inverter shut down me	thod. Reset by AC input re			by rear panel ENABLE, or
				by communication port.		
3. Over -voltage trip point	V	0.5~12	1~24	2~40	5~66	5~110
4. Output under voltage limit (UVL)		Preset by front panel or	communication port. Prev	ents from adjusting Vout b	elow limit. Does not affect	in analog programming.
5.0		Output shut-	down when power supply	output voltage goes bel	ow UVP programming, U	ser presetable.
5. Output under voltage protection (UVP)			ycle in autostart mode or			
6. Over temperature protection		, , , , , , , , , , , , , , , , , , , ,		electable, latched or non l		
or over temperature protection			030.30	nectubic, laterica or morn	accircui	
ANALOG PROCRAMMING AND MONITORING						
ANALOG PROGRAMMING AND MONITORING		I				
1. Vout voltage programming			user selectable. Accuracy			
2. lout voltage programming (*13)			user selectable. Accuracy			
3. Vout resistor programming			ull scale, user selectable. A			
4. lout resistor programming (*13)		0~100%, 0~5/10Kohm fo	ull scale, user selectable. A	Accuracy and linearity: +/-	1.5% of rated lout.	
5. Shut Off (SO) control		By electrical Voltage: 0~	0.6V/2~15V or dry contact	t, user selectable logic.		
6. Output current monitor (*13)		0~5V or 0~10V, user sele				
7. Output voltage monitor		0~5V or 0~10V, user sele				
8. Power supply OK signal		4~5V-OK, 0V-Fail. 500oh				
	_			ata ala sutua accomente te d		
9. Parallel operation (*20)			master/slave mode with	single wire current baland	e connection.	
10. Series operation		2 identical units (with ex				
11. CV/CC indicator			e: On, CV mode: Off. Maxi			
12. Interlock (ILC) control			ut by dry contact (Short: On, C			ted by front panel.
13. Local/Remote mode Control			en/Short: 0~0.6V or short			
14. Local/Remote mode Indicator		Open collector (shunted	by 36V zener). On (0~0.6)	V, 10mA sink current max	.)-Remote. Off-Local (30V	max.).
			out =0.8V, Minimum high			
15.Trigger out			t =16mA, pulse =20µs Tyr			
			it =1.2V, Minimum high le		n high lovel in a F1/ A4	avimum sink
		iviaxiffium fow level inpu			ıı mgn ievel input =5V, M	aximum sink current
16.Trigger in		1 Com A manufation of the				
		=16mA, positive edge, to				
17. Programmed signal 1		Open collector, maximu	m voltage 25V,maximum	sink current 100mA. (Shu		
		Open collector, maximu		sink current 100mA. (Shu		
17. Programmed signal 1		Open collector, maximu	m voltage 25V,maximum	sink current 100mA. (Shu		
17. Programmed signal 1		Open collector, maximu	m voltage 25V,maximum	sink current 100mA. (Shu		
17. Programmed signal 1 18. Programmed signal 2		Open collector, maximul Open collector, maximul	m voltage 25V,maximum m voltage 25V,maximum	sink current 100mA. (Shu		
17. Programmed signal 1 18. Programmed signal 2		Open collector, maximul Open collector, maximul Multiple options with 2	m voltage 25V,maximum m voltage 25V,maximum Encoders	sink current 100mA. (Shu		
17. Programmed signal 1 18. Programmed signal 2		Open collector, maximul Open collector, maximul Multiple options with 2 Vout/lout manual adjust	m voltage 25V,maximum m voltage 25V,maximum Encoders	sink current 100mA. (Shu		
17. Programmed signal 1 18. Programmed signal 2		Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/lout manual adjust OVP/UVL/UVP manual a	m voltage 25V,maximum m voltage 25V,maximum Encoders	sink current 100mA. (Shu sink current 100mA. (Shu		
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL		Open collector, maximul Open collector, maximul Multiple options with 2 Vout/lout manual adjust OVP/UVL/UVP manual a Protection Functions - O	n voltage 25V,maximum n voltage 25V,maximum Encoders djust VP, UVL,UVP, Foldback, OC	sink current 100mA. (Shu sink current 100mA. (Shu 		
17. Programmed signal 1 18. Programmed signal 2		Open collector, maximul Open collector, maximul Multiple options with 2 l Yout/lout manual adjust OVP/UVL/UVP manual a Protection Functions - O Communication Function	m voltage 25V,maximum m voltage 25V,maximum Encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEEE	sink current 100mA. (Shu sink current 100mA. (Shu 		
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL		Open collector, maximul Open collector, maximul Multiple options with 2 l Yout/lout manual adjust OVP/UVL/UVP manual a Protection Functions - O Communication Function	n voltage 25V,maximum n voltage 25V,maximum Encoders djust VP, UVL,UVP, Foldback, OC	sink current 100mA. (Shu sink current 100mA. (Shu 		
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL		Open collector, maximul Open collector, maximul Multiple options with 2 Yout/lout manual adjust OVP/UVL/UVP manual ar Protection Functions - O Communication Functio Communication Functio	m voltage 25V,maximum m voltage 25V,maximum Encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEEE	sink current 100mA. (Shu sink current 100mA. (Shu EP, INT, SO ,RS232,RS485,USB ie, Address	nted by 27V zener)	
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL		Open collector, maximul Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/lout manual adjust OVP/UVL/UVP manual a Protection Functions - O Communication Functio Analog Control Function	n voltage 25V,maximum m voltage 25V,maximum Encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEE ns - Selection of Baud Rat ss - Selection Voltage/resis	sink current 100mA. (Shu sink current 100mA. (Shu CP, INT, SO ,RS232,RS485,USB e, Address stive programming, 5V/10	nted by 27V zener)	Panel Lock.
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL 1. Control functions		Open collector, maximul Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/lout manual adjust OVP/UVL/UVP manual a Protection Functions - O Communication Functio Communication Function Analog Control Functior Analog Control Functior	m voltage 25V,maximum m voltage 25V,maximum encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IER s - Selection of Baud Rat s - Selection Voltage/resis s - Selection of Voltage/cs	sink current 100mA. (Shu sink current 100mA. (Shu ZP, INT, SO ,RS232,RS485,USB ze, Address stive programming, 5V/10 urrent Monitoring 5V/10	nted by 27V zener)	Panel Lock.
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL		Open collector, maximul Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/lout manual adjust OVP/UVL/UVP manual a Protection Function - O Communication Functio Analog Control Functior Analog Control Functior Vout: 4 digits, accuracy:	m voltage 25V,maximum m voltage 25V,maximum Encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEEE ns - Selection of Baud Rat is - Selection Voltage/resi is - Selection of Voltage/Co.5% of rated output volt	sink current 100mA. (Shu sink current 100mA. (Shu 2P, INT, SO ,RS232,RS485,USB e, Address students programming, 5V/10 urrent Monitoring 5V/10 age+/-1 count.	nted by 27V zener)	ranel Lock.
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL 1. Control functions		Open collector, maximul Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/Out manual adjust OVP/UVL/UVP manual ar Protection Function - O Communication Functio Communication Functio Analog Control Functior Analog Control Functior Vout: 4 digits, accuracy: I lout: 4 digits, accuracy: I	m voltage 25V,maximum m voltage 25V,maximum encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEEE ns - Selection of Baud Rat is - Selection Voltage/resis s - Selection of Voltage/C 0.5% of rated output volta	sink current 100mA. (Shu sink current 100mA. (Shu EP, INT, SO ,R5232,R5485,USB ee, Address stive programming, 5W10 urrent Monitoring 5W10 age+/-1 count.	nted by 27V zener)	Panel Lock.
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL 1. Control functions		Open collector, maximul Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/lout manual adjust OVP/UVL/UVP manual a Protection Function - O Communication Functiol Communication Functiol Analog Control Functior Analog Control Functior Vout: 4 digits, accuracy: Iout: 4 digits, accuracy: Iout: 4 digits, accuracy: GREEN LEDs: FINE, MENU	m voltage 25V,maximum m voltage 25V,maximum m voltage 25V,maximum encoders djust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEEE ns - Selection of Baud Rat is - Selection of Voltage/resis is - Selection of Voltage/resis	sink current 100mA. (Shu sink current 100mA. (Shu EP, INT, SO ,R5232,R5485,USB ee, Address stive programming, 5W10 urrent Monitoring 5W10 age+/-1 count.	nted by 27V zener)	Panel Lock.
17. Programmed signal 1 18. Programmed signal 2 FRONT PANEL 1. Control functions 2. Display		Open collector, maximul Open collector, maximul Open collector, maximul Multiple options with 2 I Vout/Out manual adjust OVP/UVL/UVP manual ar Protection Function - O Communication Functio Communication Functio Analog Control Functior Analog Control Functior Vout: 4 digits, accuracy: I lout: 4 digits, accuracy: I	m voltage 25V,maximum m voltage 25V,maximum m voltage 25V,maximum dijust VP, UVL,UVP, Foldback, OC ns - Selection of LAN,IEEE ns - Selection of Baud Rat is - Selection of Voltage/Co .5% of rated output volta .5% of rated output volta J, PREV, PROT, REM, OUTP P, OTP, FOLD, AC FAIL).	sink current 100mA. (Shu sink current 100mA. (Shu EP, INT, SO ,R5232,R5485,USB ee, Address stive programming, 5W10 urrent Monitoring 5W10 age+/-1 count.	nted by 27V zener)	Panel Lock.

10 -



Z ⁺ 200 SERIES SPECIFICATIONS								
	PRO	OGRAMMING AND READE	BACK (RS232/485,USB, Op	tional: IEEE, LAN)				
1. Vout programming accuracy			0.05% of rated output voltage					
2. lout programming accuracy (*13)		0.1% of actual +0.1% of rated output current						
3. Vout programming resolution			0.012% of full scale					
4. lout programming resolution			0.012% of full scale					
5. Vout readback accuracy			0.05% of rated output voltage					
6. lout readback accuracy (*13)			0.1% of actual +0.3% of rated output current					
7. Vout readback resolution				0.012% of full scale				
8. lout readback resolution				0.012% of full scale				
INPUT CHARACTERISTICS	Z	10-20	20-10	36-6	60-3.5	100-2		
1. Input voltage/freq. (*3)			85~265Va	c continuous, 47~63Hz, sir	ngle phase			
2. Maximum Input current 100/200VAC (*4) (*18)		2.65/1.31	2.62/1.29	2.76/1.37	2.69/1.33	2.55/1.26		
3. Power Factor (Typ)			>0.99 at	100Vac, >0.98 at 200Vac,1	00% load			
4. Efficiency (Typ) 100/200VAC (*4) (*18)	%	76/77.5	77/79	79/80.5	79/80.5	79/81		
5. Inrush current 100/200VAC (*5)				Less than 15A/30A		·		

ENVIRONMENTAL CONDITIONS		
1. Operating temperature		0~50°C, 100% load.
2. Storage temperature		-20~85°C
3. Operating humidity	%	20~90% RH (no condensation).
4. Storage humidity	%	10~95% RH (no condensation).
5. Altitude		Maximum 3000m. Derate ambient temp above 2000m. Operating: Maximum ambient temperature, From 2000m up to 3000m Ambient temperature 40°C.

SAFETY/EMC		
1. Applicable standards:		 UL61010-1, EN61010-1, IEC61010-1. Design to meet UL60950-1, EN60950-1 10V≤Vout≤60V: Output,J1,J2,J3,J4,USB,LAN,IEEE/ISOLATED Analog are Non Hazardous Vout=100V:Output,J1,J2 are Hazardous J3,J4,USB, IEEE/ISOLATED Analog ,LAN are Non Hazardous
	EMC	 IEC/EN61326-1 (Built to meet EN55022/EN55024)
2. Withstand voltage		 10 \(\text{\substact}\) models: Input-Output&J1,J2,J3,J4,USB,LAN/IEEE/ISOLATED ANALOG: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1,J2,J3,J4,USB,LAN/IEEE/ISOLATED ANALOG-Ground: 707VDC/1min. 60V,100V models: Input-Output&J1,J2: 4242VDC/1min; Input-J3,J4,USB,LAN/IEEE/ISOLATED Analog: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1,J2-J3,J4,USB,LAN/IEEE/ISOLATED ANALOG: 1910VDC/1min; Output&J1,J2-Ground: 1380VDC/1min. J3, J4, USB/LAN/IEEE/ISOLATED ANALOG - Ground: 707VDC/1min;
3. Insulation resistance		 More than 100Mohm at 25°C, 70%RH.
4. Conducted emission		 IEC/EN61326-1 Industrial Location - B, FCC part 15-B, VCCI-B
5. Radiated emission		 IEC/EN61326-1 Industrial Location - A, FCC part 15-A, VCCI-A

MECHANICAL				
1. Cooling			Forced air cooling by internal fan.	
STANDARD		Kg	Less than 1.9Kg.	
2. Weight	WIDE BODY	Kg	Less than 2.4Kg. Wide body with Isolated analog or Binding post or IEEE.	
3. Dimensions (WxHxD)	STANDARD	mm	H: 83, W: 70, D: 350 (excluding bus bars, handles). (Refer to Outline drawing).	
3. DITTETISIONS (WXTIXD)	WIDE BODY	mm	H: 83, W: 105, D: 350 (excluding bus bars, handles). (Refer to Outline drawing).	
4. Vibration			According to: IEC60068-2-64	
5. Shock			Less than 20G, half sine, 11mS. Unit is unpacked. According to: IEC60068-2-27	

- NOTES:
 *1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
- *2: Minimum current is guaranteed to maximum 0.2% of rated output current.
- *3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).
- *4: Ta=25°C with rated output power.

- *5: Not including EMI filter inrush current, less than 0.2mSec at cold start Ta=25°C
 *6: At 85~132Vac or 170~265VAC, constant load.
 *7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- *8: Measured with JEITA RC-9131A (1:1) probe.

- *10: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated resistive load.

 *10: From 90% to 10% of Rated Output Voltage.

 *11: For load voltage change, equal to the unit voltage rating, constant input voltage.

 *12: For 10V model the ripple is measured at 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current.
- *13: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
 *14: Measured with JEITA RC-9131A (1:1) probe.
 *15: For cases where the time interval between each down programming is longer than Td (time delay).
 *16: For cases where the time interval between each down programming is shorter than Td (time delay).

- *17: Tot typical Minimum time between consecutive down programming cycles.
 *18: PS with Lan, IEEE, models decrease efficiency by 0.5% and increase input current by 0.5%.
 PS with Isolated analog option decreases efficiency by 1.5% and increases input current by 1.5%.
 *19: At rated output power.
 *20: For Parallel operation more than 2 units 5% of total output current is requierd.



Z⁺400 SERIES SPECIFICATIONS

	_		1		1	1
MODEL	Z	10-40	20-20	36-12	60-7	100-4
1. Rated output voltage(*1)	V	10	20	36	60	100
2. Rated output current (*2)	A	40	20	12	7	4
3. Rated output power	W	400	400	432	420	400
		1	T	T	1	1
CONSTANT VOLTAGE MODE	Z	10-40	20-20	36-12	60-7	100-4
1. Max. Line regulation (*6)				% of rated output voltage+		
2. Max. Load regulation (*7)				% of rated output voltage+		
3. Ripple and noise (p-p, 20MHz) (*8)	mV	50	50	50	50	80
4. Ripple r.m.s. 5Hz~1MHz	mV	5	6	6	7	8
5. Temperature coefficient	PPM/°C		30PPM/°C from rated	output voltage, following	30 minutes warm-up.	
6. Temperature stability		0.02% of	rated Vout over 8hrs. inter	val following 30 minutes w	arm-up. Constant line, load	d & temp.
7. Warm-up drift		Le	ess than 0.05% of rated out	:put voltage+2mV over 30 i	minutes following power o	n.
8. Remote sense compensation/wire	V	1	1	2	3	5
9. Up-prog. Response time, 0~Vomax.(*9)	mS	15	30	30	50	50
10. Down-prog. response time: Full load (*9)		10	10	15	30	50
Time delay (*17)		210	250	320	380	1200
No load (*10) (*15) (*17)	mS	40	65	85	100	250
No load (*10) (*16) (*17)		200	200	290	310	1100
1131333 (15) (15) (11)		 		% of its rated output for a l		
11. Transient response time	mS	Time for output ve		t set-point: 10~100%, Loca		ea output current.
11. Hansient response time	1113			nS, for models up to and in		
12. Hold-up time (*19)		15mSec Typical.	Less than m	16mSec		
12. Hold up time (12)		i ombee typical.	1	TOTIISEC	Typical.	
CONSTANT CURRENT MODE	Z	10-40	20-20	36-12	60-7	100-4
1. Max. Line regulation (*6)		10-40		% of rated output current+		100-4
2. Max. Load regulation (*11)				<u> </u>		
				% of rated output current+		
3. Load regulation thermal drift	A			utput current over 30 minu	ites rollowing load change	
4. Ripple r.m.s. 5Hz~1MHz (*12)	mA	70	40	15	30 1 1	3
5. Temperature coefficient	PPM/°C			d output current, following		
6. Temperature stability		0.05% of rat		following 30 minutes warm		
7. Warm-up drift			Less than +/-0.1% of rated	l output current over 30 mi	nutes following power on.	
	_	1	T	T	1	
PROTECTIVE FUNCTIONS	Z	10-40	20-20	36-12	60-7	100-4
1. Foldback protection				pply change mode from CV		
1.1 olubuck protection		Reset by AC input re	ecycle in autostart mode o	r by OUTPUT button or by	rear panel ENABLE, or by c	ommunication port.
2. Over-voltage protection (OVP)		Inverter Shut down	method. Reset by AC input	recycle in autostart mode	or by OUTPUT button or b	y rear panel ENABLE,
2. Over-voltage protection (OVF)				or by communication port		
3. Over - voltage trip point	V	0.5~12	1~24	2~40	5~66	5~110
4. Output under voltage limit (UVL)		Preset by front panel or	communication port. Prev	ents from adjusting Vout b	elow limit. Does not affect	in analog programming.
5.0.4		Output shu	t-down when power suppl	y output voltage goes belo	ow UVP programming. Use	r presetable.
5. Output under voltage protection (UVP)		Reset by AC input r	ecycle in autostart mode o	r by OUTPUT button or by	rear panel ENABLE, or by c	ommunication port.
6. Over temperature protection			User S	electable. Latched or non la	atched	
ANALOG PROGRAMMING AND MONITORING						
1. Vout voltage programming		0~100%, 0~5V or 0~10V.	user selectable. Accuracy a	ind linearity: +/-0.5% of rate	ed Vout.	
2. lout voltage programming (*13)				ind linearity: +/-1% of rated		
3. Vout resistor programming				curacy and linearity: +/-1%		
4. lout resistor programming (*13)				curacy and linearity: +/-1.59		
5. Shut Off (SO) control			6V/2~15V or dry contact, i		70 OT TALCA IOULI	
6. Output current monitor (*13)		0~5V or 0~10V, user selec		aser sereetasie logiei		
7. Output voltage monitor		0~5V or 0~10V, user selec				
8. Power supply OK signal		· · · · · · · · · · · · · · · · · · ·				
9. Parallel operation (*21)		4~5V-OK, 0V-Fail. 500ohr		ngle wire current balance co	onnoction	
				igie wire current Dalance C	omiccion.	
10. Series operation		2 identical units (with ext		um voltago, 2017	sink current: 10 A	
11. CV/CC indicator 12. Interlock (ILC) control				um voltage: 30V, maximum		c activated by front and
				On, Open: Off, Source curren		s activated by front panel.
13. Local/Remote mode Control				Remote, 2~15V or open: Lo		\
14. Local/Remote mode Indicator				10mA sink current max.)-Re		J.
15.Trigger out				vel output =3.8V, Maximum	nign ievel output =5V,	
			=16mA, pulse =20µs Typic			
16.Trigger in		'		el input =3.5V, Maximum hi	gh level input =5V, Maxim	um sink current =16mA,
			=10µs minimum, Tr/Tf =1µ			
17. Programmed signal 1				nk current 100mA. (Shunte		
18. Programmed signal 2		Open collector, maximum	n voltage 25V, maximum si	nk current 100mA. (Shunte	d by 27V zener)	
FRONT PANEL						
		Multiple options with 2 E	ncoders			
		Vout/lout manual adjust				
		OVP/UVL/UVP manual ac	ljust			
1 Cantual functions		Protection Functions - OV	P, UVL, UVP, Foldback, OCF	, INT, SO		
1. Control functions			s - Selection of LAN,IEEE (*	· · ·		
			s - Selection of Baud Rate,			
				ve programming, 5V/10V, 5	5K/10K programming	
				rent Monitoring 5V/10V, O		Lock.
			.5% of rated output voltag		,	
2. Display						
			PREV, PROT, REM, OUTPUT			
3. Indications		RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).				
4. Function buttons		FINE, MENU, PREV, PROT,				
1.1 direction pattons		I INL, IVILINO, FINEV, PROT,	LIVI, OUITUI			

- 12 **-**



Z ⁺ 400 SERIES SPECIFICATIONS							
	PROGR	RAMMING AND READBAC	K (RS232/485,USB, Optio	onal: IEEE(*20), LAN)			
1. Vout programming accuracy			C	0.05% of rated output volta	ge		
2. lout programming accuracy (*13)			0.1% of	actual +0.1% of rated outp	ut current		
3. Vout programming resolution				0.012% of full scale			
4. lout programming resolution			0.012% of full scale				
5. Vout readback accuracy			0.05% of rated output voltage				
6. lout readback accuracy (*13)			0.1% of actual +0.3% of rated output current				
7. Vout readback resolution				0.012% of full scale			
8. lout readback resolution				0.012% of full scale			
INPUT CHARACTERISTICS	Z	10-40	20-20	36-12	60-7	100-4	
1. Input voltage/freq. (*3)			85~265V	ac continuous, 47~63Hz, si	ngle phase		
2. Maximum Input current 100/200VAC (*4) (*18)		5.05/2.47	4.98/2.45	5.25/2.57	5.10/2.50	4.80/2.37	
3. Power Factor (Typ)		0.99 at 100/200Vac, 100% load					
4. Efficiency (Typ) 100/200VAC (*4) (*18)	%	80/82 81/83 83/85 83/85 84/86					
5. Inrush current (*5)				Less than 25A			

ENVIRONMENTAL CONDITIONS		
1. Operating temperature		0~50°C, 100% load.
2. Storage temperature		-20~85°C
3. Operating humidity	%	20~90% RH (no condensation).
4. Storage humidity	%	10~95% RH (no condensation).
5. Altitude		Maximum 3000m. Derate ambient temp above 2000m. Operating: Maximum ambient temperature, From 2000m up to 3000m Ambient temperature 40°C.

SAFETY/EMC		
1. Applicable standards: Safety EMC		 UL61010-1, EN61010-1, IEC61010-1. Design to meet UL60950-1, EN60950-1 10V≤Vout≤60V: Output,J1,J2,J3,J4,USB,LAN,IEEE/ISOLATED Analog are Non Hazardous Vout=100V:Output,J1,J2 are Hazardous J3,J4,USB, IEEE/ISOLATED Analog ,LAN are Non Hazardous
		 IEC/EN61326-1 (Built to meet EN55022/EN55024)
2. Withstand voltage		 10≤Vout≤36V models: Input-Output&J1,J2,J3,J4,USB,LAN/IEEE/ISOLATED ANALOG: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1,J2,J3,J4,USB,LAN/IEEE/ISOLATED ANALOG-Ground: 707VDC/1min. 60V,100V models: Input-Output&J1,J2: 4242VDC/1min; Input-J3,J4,USB,LAN/IEEE/ISOLATED Analog: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1,J2-J3,J4,USB,LAN/IEEE/ISOLATED ANALOG: 1910VDC/1min; Output&J1,J2-Ground: 1380VDC/1min. J3, J4, USB/LAN/IEEE/ISOLATED ANALOG - Ground: 707VDC/1min;
3. Insulation resistance		 More than 100Mohm at 25°C, 70%RH.
4. Conducted emission		 IEC/EN61326-1 Industrial Location - B, FCC part 15-B, VCCI-B
5. Radiated emission		 IEC/EN61326-1 Industrial Location - A, FCC part 15-A, VCCI-A

MECHANICAL					
1. Cooling			Forced air cooling by internal fan		
STANDARD		Kg	Less than 1.9Kg.		
2. Weight WIDE BODY		Kg	Less than 2.4Kg. Wide body with Isolated analog or Binding post or IEEE		
2 Dimensions (Mallad)	3. Dimensions (WxHxD) STANDARD WIDE BODY		H: 83, W: 70, D: 350 (excluding bus bars, handles). (Refer to Outline drawing)		
3. Dimensions (WXHXD)			H: 83, W: 105, D: 350 (excluding bus bars, handles). (Refer to Outline drawing)		
4. Vibration			According to: IEC60068-2-64		
5. Shock	5. Shock		Less than 20G, half sine, 11mS. Unit is unpacked. According to: IEC60068-2-27		

- *1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.

 *2: Minimum current is guaranteed to maximum 0.2% of rated output current.

 *3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).
- *4: Ta=25°C with rated output power.
- *5: Not including EMI filter inrush current, less than 0.2mSec.
- *6: At 85~132Vac or 170~265VAC, constant load.

 *7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.

 *8: Measured with JEITA RC-9131A (1:1) probe.

 *9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated resistive load.

- *10: From 90% to 10% of Rated Output Voltage.
- *11: For load voltage change, equal to the unit voltage rating, constant input voltage.

 *12: For 10V model the ripple is measured at 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current.
- *13: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift. *14: Measured with JEITA RC-9131A (1:1) probe.

- *15: For cases where the time interval between each down programming is longer than Td (time delay).
 *16: For cases where the time interval between each down programming is shorter than Td (Time delay).
- *17: Td typical Minimum time between consecutive down programming cycles.
 *18: PS with Lan, IEEE, models decrease efficiency by 0.25% and increase input current by 0.25%.
 PS with Isolated analog option decreases efficiency by 0.75% and increases input current by 0.75%.

- *19: At rated output power.
 *20: Max. ambient temperature for using IEEE is 45°C
 *21: For Parallel operation more than 2 units 5% of total output current is requierd.



Z⁺600 SERIES SPECIFICATIONS

1. Rend couples around 172							
	MODEL	Z	10-60	20-30	36-18	60-10	100-6
State of county grower W 500 500 548 500 501 100 6	1. Rated output voltage(*1)	V	10	20	36	60	100
CONSTANT YOUTAGE MODE	2. Rated output current (*2)	Α	60	30	18	10	6
CONSTANT YOUTAGE MODE	·	W	600	600	648	600	600
1. Max. Inter graphston (%)							
1. Max. Inter graphston (%)	CONSTANT VOLTAGE MODE	Z	10-60	20-30	36-18	60-10	100-6
2. Aus. Load regulation (**7) — 0.01% of rated output voltage-2 and ** 3. displace and noise by 2. 2004 (**1) 19							
Bigine can Strick Page 2009k1 Pig							
A simple term confidence			50				80
S. Temperature coefficient							
. 6. Represents statisticy			<u> </u>				15
2. Nome you girl			0.05% of ra				and f. tomp
8. Bemote keeps compensation/wire 9.							
St. Up-progr. Response time. G-Monack 19				1		1	
10. Down-prog. response time Intil Isad Fig. 25 25 25 25 30 1370 1	·						
Time detection 1777 No load (*19)(*19)(*17) No load (*19)(*19)(*17) No load (*19)(*19)(*17) No load (*19)(*19)(*19) No load (*19)(*19)(*19)(*19) No load (*19)(*19)(*19)(*19) No load (*19)(*19)(*19)(*19)(*19) No load (*19)(*19)(*19)(*19)(*19)(*19)(*19)(*19)		m5					
No load (*10) (*15)(*17)							
1. Transpietr reports (line)		mS					
11. Transient response time 12. Fold up time (*18) 13. Fold up time (*18) 14. Fold up time (*18) 15. Fold up time (*18) 16. Fold up time (*18) 17. Fold up time (*18) 18. Fold up time (*18) 19. Fold up time (*18) 10. Fold up time (*18) 1							
1. In Instruct Response time 10	No load (*10) (*16)(*17)						
12. Hold-up thme (*18)	11 Transient response time	mS					
CONSTANT CURRENT MODE Z 10-60 20-30 36-18 60-10 100-6 1. Max. Line regulation (**) — 0.01% of rated output current-SmA A. Load regulation (**) — 0.01% of rated output current-SmA A. Load regulation (**) — 0.01% of rated output current-SmA A. Load regulation (**) — 0.05% of rated output current over 30 minutes following load change. **A flag pice rax, 95-14-Mile (**) **A flag pice rax, 95-14-Mile (**) — 0.05% of rated output current over 30 minutes following load change. **A flag pice rax, 95-14-Mile (**) — 0.05% of rated output current over 30 minutes following power on. **ON Model Less than 1-0.05% of rated output current over 30 minutes following power on. **ON Model Less than 1-0.05% of rated output current over 30 minutes following power on. **PROTECTIVE FUNCTIONS Z 10-60 20-30 36-18 66-10 100-6 60/100 Models Less than 1-0.05% of rated output current over 30 minutes following power on. **PROTECTIVE FUNCTIONS Z 10-60 20-30 36-18 66-10 100-6 **Output shut down when power supply change mode from CV to CC or CC to CV. Use presentable. **Reset by A fingul recycle in autostart mode or by OUTPUT but for or by rear shall. Early to rormunication port. **Output under voltage protection (DVP) — 10-5-12 Fingul recycle in autostart mode or by OUTPUT but for or by rear shall. Early to rormunication port. **Reset by A C input recycle in autostart mode or by OUTPUT but for or by rear panel BNAELS or by communication port. **Reset by A C input recycle in autostart mode or by OUTPUT but for or by rear panel BNAELS or by communication port. **Reset by A C input recycle in autostart mode or by OUTPUT but fort or by rear panel BNAELS or by communication port. **Reset by A C input recycle in autostart mode or by OUTPUT but fort or by rear panel BNAELS or by communication port. **Reset by A C input recycle in autostart mode or by OUTPUT but fort or by rear panel BNAELS or by communication port. **Prove the prove the provided by the provided by BNAELS or by communication port. **Reset by A C input r	11. Hansieneresponse time	1113	Output	set-point: 10~100%, Loca	sense. Less than 1mS, fo	r models up to and includ	ling 100V
1. Max Line regulation (**)	12. Hold-up time (*18)		15mSec	Typical.		20mSec Typical.	
1. Max Line regulation (**)							
2. Max. Load regulation (**1)	CONSTANT CURRENT MODE	Z	10-60	20-30	36-18	60-10	100-6
2. Max. Load regulation (**1)	1. Max. Line regulation (*6)			0.019	% of rated output current	+2mA	
Less than 0.15% of rated output current over 30 minutes following load change.	2. Max. Load regulation (*11)						
A Ripple ms. SHz-IMMz (*12) mA 150 75 2 8 5 5 5. Emperature confecient PMPC 10PMPC To	3. Load regulation thermal drift		Le				ge.
5. Temperature coefficient	4. Ripple r.m.s. 5Hz~1MHz (*12)	mA	150	75	25	8	5
6. Temperature stability	5. Temperature coefficient					g 30 minutes warm-up.	*
Nam-up drift	6. Temperature stability		0.05% of rated				& temperature.
7. Warm up drift 20, 39V Model: Less than +/-0.15% of rated output current over 30 minutes following power on. 800, 100V Models: Less than +/-0.15% of rated output current over 30 minutes following power on. 9ROTECTIVE FUNCTIONS 2 10-60 20-30 36-18 60-10 100-6 Rest by AC input volunt-drown when power supply change mode from CV LC or CC to CV. User preseable. 8 Power voltage for point V 10 0.5-12 1-24 2-40 5-66 5-110 8 A Output under voltage limit (UVL)	,						
### ROTECTIVE FUNCTIONS Z 10-60 20-30 30-18 60-10 10-6 10-7	7 Warm-up drift						
PROTECTIVE FUNCTIONS Z 10-60 20-30 36-18 60-10 100-6 Output shut-down when power supply change mode from CV to CC or CC To CV. User presentable. Reset by AC input recycle in autostart mode or by OUTPUT button or by rear panel ENABLE, or by communication port. A Output under voltage protection (UVP)	7. Waim up aint						
1. Foldback protection			001,1001	models, Less than 17 or 17	o or racea output carrent	over 50 minutes tonoving	g porter orn
1. Foldback protection	DROTECTIVE ELINCTIONS	7	10.60	20.20	26.10	60.10	100.6
Reset by AC input recycle in autostart mode or by OUTPUT button or by rear panel ENABLE, or by communication port.	FROTECTIVE FONCTIONS						
2. Over voltage protection (OVP) 4. Output under voltage limit (UVL) 5. Output under voltage limit (UVL) 5. Output under voltage limit (UVL) 6. Output under voltage protection (UVP) 6. Output under voltage protection (UVP) 7. Reset by finot panel or communication port. Prevents from adjusting Vout below limit. Does not affect in analog programmin of the protection (UVP) 7. Reset by AC input recycle in autostant mode or by OUTPUT button or by rear panel ENABLE, or by communication port. 6. Over temperature protection 7. Vout voltage programming 8. Output voltage programming (**13) 8. Out voltage programming (**13) 8. Out resistor programming (**13) 8. Output voltage programming (**13) 9. Output voltage programming (**14) 9. Output voltage programming (**14) 9. Output voltage programming (**14) 9. Output voltage programming (**15) 9. Output voltage programming (**16) 9. Output voltage programming (**17) 9. Output voltage pro	1. Foldback protection						
3. Over voltage trip point V 0.5-12 1-24 2-40 5-66 5-110 Voltupt under voltage limit (UVL)	. (2)(2)		Reset by AC Input rec	ycie in autostart mode or	by OUTPUT button or by	rear panel ENABLE, or by	communication port.
4. Output under voltage limit (UVL)							
Soluput under voltage protection (UVP)							
Reset by AC input recycle in autostart mode or by OUTPUT button or by rear panel ENABLE, or by communication port. User Selectable. Latched or non latched. ANALOG PROGRAMMING AND MONITORING 1. Vout voltage programming	4. Output under voltage limit (UVL)		Preset by front panel or c	communication port. Preve	ents from adjusting Vout b	elow limit. Does not affec	t in analog programming
NALIOG PROGRAMMING AND MONITORING 1. Vout voltage programming	5. Output under voltage protection (LIVP)						
ANALOG PROGRAMMING AND MONITORING 1. Vout voltage programming 1. Oo-100%, 0-5V or 0-10V, user selectable. Accuracy and linearity: +/-0.5% of rated Vout. 2. lout voltage programming (*13) 1. Oo-100%, 0-5V or 0-10V, user selectable. Accuracy and linearity: +/-1% of rated lout. 3. Vout resistor programming (*13) 1. Oo-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1% of rated Vout. 4. lout resistor programming (*13) 1. Oo-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1% of rated Vout. 4. lout resistor programming (*13) 1. Oo-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1% of rated Vout. 4. lout resistor programming (*13) 1. Oo-100%, 0-5/10Kohm full scale, user selectable logic. 6. Output ourent monitor (*13) 1. Oo-5V or 0-10V, user selectable. Accuracy +/-1% 8. Power supply OK signal 1. Oo-5V or 0-10V, user selectable. Accuracy +/-1% 8. Power supply OK signal 1. Oo-5V or 0-10V, user selectable. Accuracy +/-1% 8. Power supply OK signal 1. Oo-5V or 0-10V, user selectable. Accuracy +/-1% 8. Power supply OK signal 1. Oo-5V or 0-10V, user selectable. Accuracy +/-1% 8. Power supply OK signal 1. Oo-5V or 0-10V, user selectable was resistance. 9. Parallel operation (*20) 2. Identical units (with external diodes). 1. Covic indicator 2. Identical units (with external diodes). 1. Covic indicator 2. Identical units (with external diodes). 3. Local/Remote mode Control 4. Local/Remote mode Control 5. Possible, up to 6 units in master/slave mode with single wire current ites shan 05mA). Ena/Dis is activated by front pane shell of the	5. Output under voltage protection (ovi)		Reset by AC input rec	ycle in autostart mode or	by OUTPUT button or by	rear panel ENABLE, or by	communication port.
1. Vout voltage programming (*13)	6. Over temperature protection			User Se	electable. Latched or non	latched.	
1. Vout voltage programming (*13)							
2. Lout voltage programming (*13) 0-100%, 0-5V or 0-10V, user selectable. Accuracy and linearity: +/-1% of rated lout. 3. Vout resistor programming (*13) 0-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1% of rated lout. 4. Lout resistor programming (*13) 0-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1% of rated lout. 5. Shut Off (SO) control 89 electrical Voltage: 0-0.6V/2-15V or dry contact, user selectable logic. 6. Output curnert monitor (*13) 0-5V or 0-10V, user selectable. Accuracy: +/-1%. 7. Output voltage monitor 0-5V or 0-10V, user selectable. Accuracy: +/-1%. 8. Pover supply OK signal 0-5V or 0-10V, user selectable. Accuracy: +/-1%. 9. Parallel operation (*20) Possible, up to 6 units in master/slave mode with single wire current balance connection. 10. Series operation 2 identical units (with external diodes). 11. CV/CC indicator Open collector. CC mode: 0-n. CV mode:	ANALOG PROGRAMMING AND MONITORING						
3. Vout resistor programming 0-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-15% of rated vout. 4. lout resistor programming (*13) 0-100%, 0-5/10Kohm full scale, user selectable. Accuracy and linearity: +/-15% of rated lout. 5. Shut Off (SO) control SV or 0-10V, user selectable. Accuracy: +/-19%. 6. Output current monitor (*13) 0-5V or 0-10V, user selectable. Accuracy: +/-19%. 8. Power supply OK signal 4-5V-OK, OV-Fail. Soloohm series resistance. 9. Parallel operation (*20) Possible, up to 6 units in master/slave mode with single wire current balance connection. 10. Series operation 2 identical units (with external diodes). 11. CVICC indicator Open collector. CC mode: On, CV mode: Off. Maximum voltage: 30V, maximum sink current: 10mA 11. Local/Remote mode Control Enables/Disables the PS output by dy contact, Short: On, Open: Off, Source current: less than 0.5mA). EnaDis is activated by front pane 13. Local/Remote mode Control Sy electrical signal or Open/Short: O-0-08 or short: Remote, 2-15V or open: Local Open collector (shunted by 36V zener). On (O-0-06V, 10mA sink current max). Permote. Off-Local (30V max). 15. Trigger out Maximum low level output = 0.8V, Minimum high level output = 3.8V, Maximum high level output = 5V, Maximum high level output = 3.8V, Maximum high level output = 5V, Maximum high level output = 1.8V, Maximum high level output = 3.8V, Maximum high level output = 5V, Maximum low level output = 1.2V, Minimum high level output = 3.8V, Maximum high level output = 5V, Maximum high level output = 5V, Maximum low level output = 1.2V, Minimum high level output = 3.8V, Maximum high level output = 5V, Maximum low level output = 1.2V, Minimum linear level output = 3.8V, Maximum linear level output = 1.8V, Minimum linear level output = 1.8V, Mini	1. Vout voltage programming						
4. Jout resistor programming (*13)	2. lout voltage programming (*13)						
S. Shut Off (SO) control	3. Vout resistor programming		0~100%, 0~5/10Kohm fu	ull scale, user selectable. <i>F</i>	Accuracy and linearity: +/	-1% of rated Vout.	
6. Output vorlage monitor (*13)	4. lout resistor programming (*13)		0~100%, 0~5/10Kohm fu	ull scale, user selectable. A	Accuracy and linearity: +/-	1.5% of rated lout.	
7. Output voltage monitor	5. Shut Off (SO) control		By electrical Voltage: 0~0	0.6V/2~15V or dry contact	t, user selectable logic.		
7. Output voltage monitor 8. Power supply OK signal 9. Parallel operation (*20) 9. Parallel operation (*20) 9. Parallel operation (*20) 10. Series operation 10. Series operation 11. CV/CC indicator 12. Interlock (ILC) control 13. Local/Remote mode Control 14. Local/Remote mode Indicator 15. Trigger out 16. Trigger in 16. Trigger in 16. Trigger in 17. Programmed signal 1 17. Programmed signal 1 18. Programmed signal 2 19. Poper collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 19. Protection Functions 10. Control functions 10. Control functions 10. Series operation 10. Series operation 10. Series operation 10. Poper Collector (*Cort mode: On, CV mode: Off. Maximum voltage: 30V, maximum sink current: 10mA 11. CV/CC indicator 12. Interlock (ILC) control 13. Local/Remote mode Control 14. Local/Remote mode Indicator 15. Trigger out 16. Trigger out 16. Trigger in 16. Trigger in 16. Trigger in 17. Programmed signal 1 17. Programmed signal 1 18. Programmed signal 1 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 19. Protection Functions - Selection of LAN, IEEE (*19), RS232,RS485,USB 10. Communication Functions - Selection of LAN, IEEE (*19), RS232,RS485,USB 10. Communication Functions - Selection of Voltage/Current Monitoring 5V/10V, SK/10K programming 18. Programming 5V/10V, SK/10K programming 19. Vout. 4 digits, accuracy: 0.5% of rated output voltage-y-1 count. 19. RED LED: PROT (DVP, UVP, POT, PEOL, AC, FAIL).	6. Output current monitor (*13)						
8. Power supply OK signal	7. Output voltage monitor		0~5V or 0~10V, user sele	ectable. Accuracy: +/-1%.			
9. Parallel operation (*20) 10. Series operation 10. CVCC indicator 11. CVCC indicator 12. Interlock (ILC) control 13. Local/Remote mode Control 14. Local/Remote mode Control 15. Local/Remote mode Indicator 16. Local/Remote mode Indicator 17. Interlock (ILC) control 18. Local/Remote mode Indicator 18. Local/Remote mode Indicator 19. Pop collector, Colsult of Substitute of Subst	8. Power supply OK signal						
10. Series operation 11. CV/C indicator 11. CV/C indicator 12. Interlock (LIC) control 13. Local/Remote mode Control 14. Local/Remote mode Control 15. Trigger out 16. Trigger in 16. Trigger in 17. Programmed signal 1 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 19. Protection Functions 10. Control functions 10. Communication Functions - Selection of LaN, LEEE (*19), R5232, R5485, USB 10. Communication Functions - Selection of Baud Rate, Address 10. Led (Biglis, accuracy: 0.5% of rated output voltage: 1.C control. 10. Led (Biglis, accuracy: 0.5% of rated output voltage: 1.C control. 10. CRED, LED: First, McMU, PREV, PROT, REM, QUITPUT, CV, CC 13. Indications 10. Pence Control voltage. Inc., Not most accuracy in Trip, McC, Carrent, Jept Led: Led: Led: Led: Led: Led: Led: Led:	9. Parallel operation (*20)				single wire current balan	ce connection.	,
11. CV/CC indicator 12. Interlock (ILC) control 12. Interlock (ILC) control 13. Local/Remote mode Control 14. Local/Remote mode Control 15. Trigger out 16. Trigger in 16. Trigger in 17. Programmed signal 1 17. Programmed signal 2 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 19. Protection Functions 19. Protection Functions - Selection of LAN, IEEE (*19), RS232,RS485,USB 20. Communication Functions - Selection of Baud Rate, Address 21. Display 22. Display 23. Indications 24. OVER VLV UVP, DRIV, UVP, Fold Dack, OUTP UT, CV, CC 24. END LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).	10. Series operation						
12. Interlock (ILC) control 13. Local/Remote mode Control 14. Local/Remote mode Control 15. Local/Remote mode Indicator 16. Local/Remote mode Indicator 17. Open collector (shunted by 36V zener). On (0 – 0.6V, 10mA sink current max). Pemote. Off-Local (30V max.). 17. Trigger out 18. Trigger out 18. Trigger in 18. Programmed signal 1 18. Programmed signal 1 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 18. Programmed signal 2 19. Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 19. Protection Functions 19. Multiple options with 2 Encoders 19. OVPL/VL/ UVP manual adjust 19. OVPL/VL/ UVP manual adjust 19. Communication Functions - Selection of Baud Rate, Address 20. Display 20. Display 21. Indications 22. Display 23. Indications 24. Enables/Disables the PS output by dry contact (Short: On, Open: Off, Source current: less than 0.5mA), Enal/Dis is activated by front pane deliver of the protection of Lord, Incomplex current and post of the protection of Lan, IEEE (**19), RS232,RS485,USB 24. Display 25. Display 26. RED LED: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC 26. RED LED: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC 27. RED LED: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC 28. Display, Protection of Lan, IEEE, Incomental output, ou					mum voltage: 30V. maxim	num sink current: 10mA	
13. Local/Remote mode Control 14. Local/Remote mode Indicator 15. Trigger out 15. Trigger out 16. Trigger in 16. Trigger in 17. Programmed signal 1 18. Programmed signal 2 19. Pope collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) 19. Troprammed signal 2 19. Multiple options with 2 Encoders 19. Vout/lour manual adjust 19. OVP/UVL_UVP manual adjust 19. Protection Functions 19. Protection Functions - Selection of Baud Rate, Address 19. Communication Functions - Selection of Voltage/Esistive programming, 5V/10V, Output ON/OFF, Front Panel Lock. 20. Display 3. Indications 20. September 20. Vov. Vor. Prot. (CVP, UVP, OTP, FOLD, AC FAIL). 3. Indications 3. Indi							is activated by front panel
14. Local/Remote mode Indicator							
15.Trigger out							max.).
Maximum source current =16mA, pulse =20μs Typical.							
16.Trigger in	15.Trigger out					nam mgmever output =3	· *,
positive edge, trigger: tw = 10µs minimum, Tr/Tf = 1µs maximum. 17. Programmed signal 1						sigh lovel inner - FV March	mum sink summer 16 A
17. Programmed signal 1	16.Trigger in					iigii ievei iriput =5v, Maxii	num sink current = 16mA
18. Programmed signal 2 Open collector, maximum voltage 25V, maximum sink current 100mA. (Shunted by 27V zener) FRONT PANEL Multiple options with 2 Encoders Vout/out manual adjust OVP/UVL/UVP manual adjust Protection Functions - OVP, UVL, UVP, Foldback, OCP, INT, SO Communication Functions - Selection of LAN,IEEE (*19), R5232,R5485,U5B Communication Functions - Selection of Baud Rate, Address Analog Control Functions - Selection of Ultage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/resistive programming 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count RED LED: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).							
FRONT PANEL							
	18. Programmed signal 2		Open collector, maximul	m voltage 25V, maximum	sink current 100mA. (Shu	inted by 2/V zener)	
Vout/lout manual adjust OVP/UVL /UVP manual adjust OVP/UVL /UVP manual adjust OVP/UVL /UVP manual adjust OVP/UVL, UVP, Foldback, OCP, INT, SO Communication Functions - Selection of LAN,IEEE (*19), RS232,RS485,USB Communication Functions - Selection of Baud Rate, Address Analog Control Functions - Selection of Baud Rate, Address Analog Control Functions - Selection of Voltage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).	FRONT PANEL						
Vout/lout manual adjust OVP/UVL /UVP manual adjust OVP/UVL /UVP manual adjust OVP/UVL /UVP manual adjust OVP/UVL, UVP, Foldback, OCP, INT, SO Communication Functions - Selection of LAN,IEEE (*19), RS232,RS485,USB Communication Functions - Selection of Baud Rate, Address Analog Control Functions - Selection of Baud Rate, Address Analog Control Functions - Selection of Voltage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).			Multiple options with 2 I	Encoders			
1. Control functions							
1. Control functions							
1. Control functions					CP. INT. SO		
Communication Functions - Selection of Baud Rate, Address Analog Control Functions - Selection Voltage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).	1. Control functions						
Analog Control Functions - Selection Voltage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).							
Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count lout: 4 digits, accuracy: 0.5% of rated output current+/-1 count GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).						V 5K/10K programming	
2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count. lout: 4 digits, accuracy: 0.5% of rated output current+/-1 count. GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).							Panel Lock
2. Display lout: 4 digits, accuracy: 0.5% of rated output current+/-1 count. 3. Indications GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).						r, σαιραι Οιν/ΟΓΓ, ΓΙΟΠΙ Γ	unci Lock.
3. Indications GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).	2. Display						
3. Indications RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL).							
RED LED: PROT (OVP, OVP, FOLD, AC FAIL).	3. Indications				υ ι, C ۷, C C		
4. FUNCTION DUTTONS FINE, MENU, PKEV, PKUI, KEM, OUTPUT							
	4. Function buttons		FINE, MENU, PREV, PROT,	, KEM, OUTPUT			

- 14 -

Z⁺600 SERIES SPECIFICATIONS

PROGRAMMING AND READBACK (RS232/485,USB, Optional: IEEE(*19), LAN)						
1. Vout programming accuracy 0.05% of rated output voltage						
2. lout programming accuracy (*13)		0.1% of actual +0.1% of rated output current				
3. Vout programming resolution		0.012% of full scale				
4. lout programming resolution		0.012% of full scale				
5. Vout readback accuracy		0.05% of rated output voltage				
6. lout readback accuracy (*13)		0.1% of actual +0.3% of rated output current				
7. Vout readback resolution		0.012% of full scale				
8. lout readback resolution		0.012% of full scale				

INPUT CHARACTERISTICS	Z	10-60	20-30	36-18	60-10	100-6
1. Input voltage/freq. (*3)		85~265Vac continuous, 47~63Hz, single phase				
2. Maximum Input current 100/200VAC (*4)		7.48/3.69	7.22/3.56	7.70/3.80	7.13/3.52	7.13/3.52
3. Power Factor (Typ)		0.99 at 100, 0.98 at 200Vac, 100% load				
4. Efficiency (Typ) 100/200VAC (*4)	%	81/83	84/86	85/87	85/87	85/87
5. Inrush current (*5)		Less than 30A				

ENVIRONMENTAL CONDITIONS		
1. Operating temperature		0~50°C, 100% load.
2. Storage temperature		-20~85℃
3. Operating humidity	%	20~90% RH (no condensation).
4. Storage humidity	%	10~95% RH (no condensation).
5. Altitude		Maximum 3000m. Derate ambient temp above 2000m. Operating: Maximum ambient temperature, From 2000m up to 3000m Ambient temperature 40°C.

SAFETY/EMC	SAFETY/EMC						
1. Applicable standards: Safety			UL61010-1, EN61010-1, IEC61010-1. Design to meet UL60950-1, EN60950-1 10V≤Vout≤60V: Output,J1,J2,J3,J4,USB,LAN,IEEE/ISOLATED Analog are Non Hazardous Vout=100V:Output,J1,J2 are Hazardous J3,J4,USB, IEEE/ISOLATED Analog ,LAN are Non Hazardous				
	EMC		IEC/EN61326-1 (Built to meet EN55022/EN55024)				
2. Withstand voltage			10Vout36V models: Input-Output&J1, J2, J3, J4, USB, LAN/IEEE/ISOLATED ANALOG: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1, J2, J3, J4, USB, LAN/IEEE/ISOLATED ANALOG-Ground: 707VDC/1min. 60V,100V models: Input-Output&J1, J2: 4242VDC/1min; Input-J3, J4, USB, LAN/IEEE/ISOLATED Analog: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1, J2-J3, J4, USB, LAN/IEEE/ISOLATED ANALOG: 1910VDC/1min; Output&J1, J2-Ground: 1380VDC/1min. J3, J4, USB/LAN/IEEE/ISOLATED ANALOG - Ground: 707VDC/1min;				
3. Insulation resistance			More than 100Mohm at 25°C, 70%RH.				
4. Conducted emission			IEC/EN61326-1 Industrial Location - B, FCC part 15-B, VCCI-B				
5. Radiated emission			IEC/EN61326-1 Industrial Location - A, FCC part 15-A, VCCI-A				

MECHANICAL	MECHANICAL						
1. Cooling			Forced air cooling by internal fan.				
2. Weight STANDARD WIDE BODY		Kg	Less than 2.1Kg.				
		Kg	Less than 2.6Kg. Wide body with Isolated analog or Binding post or IEEE.				
2 Dimensions (Mallad)	STANDARD	mm	H: 83, W: 70, D: 350 (excluding bus bars, handles). (Refer to Outline drawing)				
3. Dimensions (WxHxD)	WIDE BODY	mm	H: 83, W: 105, D: 350 (excluding bus bars, handles…). (Refer to Outline drawing)				
4. Vibration			According to: IEC60068-2-64				
5. Shock			Less than 20G, half sine, 11mS. Unit is unpacked. According to: IEC60068-2-27				

NOTES:

- *1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
- *2: Minimum current is guaranteed to maximum 0.2% of rated output current.
- *3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).

- *4: Ta=25C with rated output power.

 *5: Not including EMI filter inrush current, less than 0.2mSec.

 *6: At 85~132Vac or 170~265VAC, constant load .

 *7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- *8: Measured with JEITA RC-9131A (1:1) probe.
- *9: From 10% to 90% or 90% to 10% of Rated output Voltage, with rated resistive load.
- *10: From 90% to 10% of Rated output Voltage.
- *11: For load voltage change, equal to the unit voltage rating, constant input voltage.
 *12: For 10V model the ripple is measured at 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10~100%
- of rated output voltage and rated output current.
 *13: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.
- *14: Measured with JEITA RC-9131A (1:1) probe.
- *15: For cases where the time interval between each down programming is longer than Td (time delay).
- *16: For cases where the time interval between each down programming is shorter than Td (time delay).
- *17: Td typical Minimum time between consecutive down programming cycles.
- *18: At rated output power.
- *19: Max. ambient temperature for using IEEE is 45°C
 *20: For Parallel operation more than 2 units 5% of total output current is required.



	Z ⁺ 800 SERIES SPECIFICATIONS						
	MODEL	Z	10-72	20-40	36-24	60-14	100-8
Author Company Compa	Rated output voltage(*1)						
A content 1/2	Vin > 100Vac Ta < 50°C	Α	72	40	24	14	8
Ander Journal March 2004	Current (*2)(*21) 85Vac ≤ Vin < 100Vac, 1a ≤ 40°C						
An April	85 Vac ≤ Vin < 100 Vac, 40°C < 1a ≤ 50°C						
EPACE 29th 1997/08 1997 290 720	3. Kated output 85\/ac < \/in < 100\/ac Ta < 40°C						
CONSTANT COURSET MODE 2							
1. Has Liver regulation (**)							
2 Des. Loss desgréation 17			10-72				100-8
2. Eight earn, 51-1-1 Miles Paper Pa							
September Sept			50				80
Company of the process scaled by	4. Ripple r.m.s. 5Hz~1MHz			5	5	12	
2. Wern up eith	5. Temperature coefficient						
8. Bennet sems compensation view V 1 1 1 2 2 3 5 5 10. Bennet sems compensation view of the seminary of the							
8. Up prosp. Represent Error, D-Visionary 1971 1. Transfert response time 17.7. 1. Transfert response time 17.							
16. Door project response trace. Full lead (%) 19.5 25 25 25 25 25 25 25							
No back (**10 (1914) 17)			25	25	25	25	80
1. Translet response to 1901 (1907) (mS					
11. Transient response time		1115					
Content requirement	•						
12 Hold-up Heavy 12 Hold-up 12 Hold-	11. Transient response time	mS					
Max. Line regulation (**)	12. Hold-up time (*18)		23,7				
Max. Line regulation (**)		7	10.72				100.0
2. Max. Load regulation (**11). — 10.01% of readed output current -SmA For 10% Less than 0.1% of rated output current -SmA For 10% Less than 0.1% of rated output current over 20 minutes following load change. 4. Ropple nor. Str IMEX (**12). mA 1. 10.00% Less than 0.1% of rated output current over 30 minutes following load change. 4. Ropple nor. Str IMEX (**12). mA 1. 10.00% Less than 0.1% of rated output current over 30 minutes sollowing load output. 5. Emperature stability — - 0.05% of rated load over 8m; internal following 30 minutes warm-up. Constant line, load temperature. 7. Valem-rup drift — 10 mode Less than +4.1% 30.5% to 10 mode Less than			10-72				100-8
For 10V Less than 0.15% of rated output current over 9 minutes following load change.	2. Max. Load regulation (*1)						
Fox 20V - 100V, Less than 0.1 % of rated couptur, current over 30 minuses following load change, 4 higher fam. \$1.9 for 10V the couptur coefficient			For	10V: Less than 0.15% of rat	ted output current over 30 i	minutes following load cha	ange.
5. Temperature sofficient PPM/C Tomperature sofficient DOPPM/C from rated output current, following of minutes warm-up, Constant he, bodd Retemperature. DOPPM/C from rated output current, following of minutes warm-up, Constant he, bodd Retemperature. DOPPM/C from rated output current over the provided output current to foun			For 20'	V ~ 100V: Less than 0.1% of	rated output current over	30 minutes following load	change.
6. Remperature stability — 0.05% of rated out over 8hrs. Interval following 30 minutes warn-up. Constant line, load it emperature. 109 model Less than +/-0.3%, 300 model Less than +/-0.3%, 300 model Less than +/-0.3% for faced output current over 30 minutes following power on. 2 10-72 2-040 3-6-24 6-0-14 100-8 2 11-072 2-040 3-6-24 6-0-14 100-8 2 1-1-cidlaback protection — Beast by K. Brush of the Communication of the Com			180				12
7. Warm-up drift			0.05% of ra				temperature
A Sommune following power on. 3 Ominus following power on. 3 Ominus following power on. 4 Output shut-down when power supply change mode from CY to CC or CC to CV. User presentable. Reset by AC input recycle in puts power on substant mode of by OUTPUT button or by rear panel RNAIL or by Communication port. 5 Over voltage protection (OVP)							
1. Foldback protection	/. Warm-up drift						
1. Foldback protection	PROTECTIVE FLINCTIONS	7	10-72	20-40	36-24	60-14	100-8
Reset by AC input recycle in autostart mode or by QUTFUT button for by rear panel PNARE, or by communication port. 2. Over-voltage trip point 3. Over-voltage pritip point 4. V. 4. Output under voltage protection (UVP) 5. Output under voltage protection (UVP) 5. Output under voltage protection (UVP) 6. Over temperature protection 7. Output under voltage protection (UVP) 6. Over temperature protection 7. Output under voltage protection (UVP) 8. Output under voltage protection (UVP) 9. Output voltage protection (UVP) 9. Output under voltage protection (UVP) 9							
A Cover-voltage prince (not volve)	1. Foldback protection						
3. Over - voltage trip point 4. Output under voltage Initit (UN) 5. Output under voltage protection (UVP) 7. Peets by front panel or communication port. Peerset from adjusting voltage goes below UVP programming. User precetable. 8. Reset by AC input recycle in autostart mode or by OUTPUT Distort or by rear panel (EMBAE, or by communication port. 8. Over temperature protection 9. Peerset panel (EMBAE) 9. Output under voltage protection (UVP) 9. Reset by AC input recycle in autostart mode or by OUTPUT Distort or by rear panel (EMBAE). Or by communication port. 9. Over temperature protection 9. Output voltage programming (19) 9. Output voltage monitor (19) 9. Output voltage programming (19) 9. Output voltage monitor (19) 9. Output voltage monitor (19) 9. Parallel operation (19) 10. Series operation (19) 11. CVPC conficiate (19) 12. Voltage monitor (19) 13. Output voltage monitor (19) 14. Output voltage promition (19) 15. Output voltage monitor (19) 15. Output voltage promition (19) 15. Output voltage promition (19) 16. Voltage promition (19) 17. Output voltage promition (19) 18. Programming voltage (19) 19. Output voltage promition (19) 19. Output voltage p	2 Over-voltage protection (OVP)				t recycle in autostart mode	or by OUTPUT button or b	
4. Output under voltage limit (UNI) — Preset by front panel or communication port. Prevents from adjusting yout below limit, Does not affect in analog programming. 5. Output under voltage protection (UVP) — Duty by the voltage below UVP programming. User presetable. 6. Over temperature protection — Uver Selectable Accuracy and linearity: +10 per voltage of the v			0.5.40	1.24			5 440
5. Output under voltage protection (IV/P)							
Reset by AC input recycle in autostart mode or by OUTPUT bit or or by rear parel BFABEL, or by communication port. Over temperature protection Duer Selectable. Latorist or by rear parel BFABEL, or by communication port. Over 100%, 0–5V or 0–10V, user selectable. Accuracy and linearity: +/-15% of rated Yout. 2. Lout vottage programming (**) 0–100%, 0–5V or 0–10V, user selectable. Accuracy and linearity: +/-15% of rated Yout. 3. Wort resistor programming (**) 0–100%, 0–5V or 0–10V, user selectable. Accuracy and linearity: +/-15% of rated Yout. 4. Autor sixtor programming (**) 0–100%, 0–5V or 0–10V, user selectable. Accuracy and linearity: +/-15% of rated Yout. 4. Lour tesistor programming (**) 0–100%, 0–5V or 0–10V, user selectable. Accuracy and linearity: +/-15% of rated Yout. 4. Lour tesistor programming (**) 0–100%, 0–5V or 0–10V, user selectable. Accuracy and linearity: +/-15% of rated Yout. 5. Shut Off (50) control 0–50 or 0–10V, user selectable. Accuracy: +/-15% or faced Yout. 4. Shut Old Stages (Accuracy: +/-15% or 100%) or 100% or							
ANALGG PROGRAMMING AND MONITORING 1. Nout voltage programming	5. Output under voltage protection (UVP)						
1. Vout voltage programming 0-100%, 0-5V of 0-10V, user selectable. Accuracy and linearity: +0-15% of rated Vout.	6. Over temperature protection			User S	Selectable. Latched or non l	atched	
1. Vout voltage programming 0-100%, 0-5V of 0-10V, user selectable. Accuracy and linearity: +0-15% of rated Vout.	ANALOG PROGRAMMING AND MONITORING						
2. Lout voltage programming (*13)			0100% 05V or 010V i	icar calactable. Accuracy ar	ad linearity: 1 / 0.5% of rate	d Vout	
3. Vout resistor programming — 0-10%%, 0-5/10Kohm full scale, user selectable Accuracy and linearity; +/1-9% of rated Vout. 4. Nout resistor programming (**13) — 0-10%%, 0-5/10Kohm full scale, user selectable Accuracy and linearity; +/1-9% of rated vout. 5. Shut Off (SO) control — By electrical Voltage: 0-68/V2-15V or dry contact, user selectable logic. 6. Output current monitor (**13) — 0-5V or 0-10V, user selectable. Accuracy; +/1-9%. 7. Output voltage monitor — 0-5V or 0-10V, user selectable. Accuracy; +/1-9%. 8. Power supply 05 stignal — 4-5V-0K, OV-Fall. Solomb meries resistance. 9. Parallel operation (**20) — Possible, up to 6 units in master/slave mode with single wire current balance connection. 11. CVICC indicator — 2 identical units (with external diodes) — 3 identical units (with external diodes) — 3 identical units (with external diodes) — 2 identical units (with external diodes) — 3 identical units (with external diodes) — 3 identical units (with external diodes) — 3 identical units (with external diodes) — 4 identical units (with external diodes) — 5 identical units (wi							
4. Jour resistor programming (**13)							
6. Output current monitor (*13)	4. lout resistor programming (*13)						
7. Output whatage monitor	5. Shut Off (SO) control		By electrical Voltage: 0~0.	6V/2~15V or dry contact, u	ser selectable logic.		
8. Power supply OK signal — 4-SV-OK, OV-Fall. 5000hm series resistance. 9. Parallel operation (**20) — Possible, up to 6 prossible, up to 6 prossi							
9. Parallel operation (*20) —— Possible, up to 6 units in master/slave mode with single wire current balance connection. 10. Series operation —— 2 identical units (with external diodes). 11. CV/CC indicator —— Open collector. CC mode: On, CV mode: Off. Maximum voltage: 30V, maximum sink current: 10mA —— Enables/Disables the PS output by dry contact (Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: Off. Source current: less than 0.5mA). Enables of Short-On, Open: One Collector (Shunted by 36V zener). One O-0.6V or Short-On. Open: One Oscillator (Shunted by 26V zener). One O-0.6V or Short-On. Open: One Oscillator (Shunted by 26V zener). One O-0.6V or Short-On. Open: One Oscillator (Shunted by 26V zener). Open: Oscillator (Shunted by 26V zener). Open: Oscillator (Shunted by 27V zener). O							
10. Series operation					ala usiva eurrant halanea ea	nnaction	
11. CV/CC indicator					gie wire current baiance co	nnection.	
12. Interlock (ILC) control					ım voltage: 30V maximum	sink current: 10mA	
13. Local/Remote mode Control By electrical signal or Open/Short: 0-0.6V or short: Remote 2-15V or open: Local							l by front panel.
14. Local/Remote mode Indicator	13. Local/Remote mode Control						
Maximum source current = 16mA, pulse = 20µs Typical.							•
16.Trigger in	15.Trigger out					igh level output =5V,	
positive edge, trigger: tw = 10µs minimum, Tr/T = 1µs maximum. 17. Programmed signal 2	ggc. cat						
possive edge, rigger: we lefts minimum, in it ell prinaminum, it el	16.Trigger in					level input =5V, Maximum	sink current =16mA,
18. Programmed signal 2			3 . 33			hu 271/ 702021	
FRONT PANEL							
Multiple options with 2 Encoders Yout/lout manual adjust Your/lout lout/lout/lout/lout/lout/lout/lout			open conector, maximum	vortage 23 v, maximum SIT		1 Dy 2 / V 201101)	
1. Control functions	FRONT PANEL						
1. Control functions				ncoders			
1. Control functions				iust			
					INT SO		
Communication Functions - Selection of Baud Rate, Address Analog Control Functions - Selection Voltage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection Voltage/resistive programming 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count lout: 4 digits, accuracy: 0.5% of rated output current+/-1 count GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP) UPV, OTP, FOILD, AC FAIL) FINE, MENU, PREV, PROT, REM, OUTPUT PROGRAMMING AND READBACK (RS232/485,USB, Optional: IEEE(*20), LAN) Vout programming accuracy O.05% of rated output voltage Lout programming accuracy (*13) O.1% of actual +0.1% of rated output current Vout readback accuracy (*13) O.012% of full scale Vout readback accuracy (*13) O.015% of rated output voltage O.05% of rated output voltage O.05% of rated output voltage O.05% of rated output current O.015% of full scale O.05% of rated output voltage	1. Control functions						
Analog Control Functions - Selection Voltage/resistive programming, 5V/10V, 5K/10K programming Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count Iout: 4 digits, accuracy: 0.5% of rated output current+/-1 count. 3. Indications GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL). 4. Function buttons FINE, MENU, PREV, PROT, REM, OUTPUT PROGRAMMING AND READBACK (R5232/485,USB, Optional: IEEE(*20), LAN) Vout programming accuracy 0.05% of rated output voltage 2. lout programming accuracy (*13) 0.1% of actual +0.1% of rated output current 3. Vout programming resolution 0.012% of full scale 4. lout programming resolution 0.010% of full scale 5. Vout readback accuracy (*13) 0.0% of actual +0.3% of rated output current 6. lout readback accuracy (*13) 0.05% of rated output voltage 6. lout readback resolution 0.012% of full scale 7. Vout readback resolution 0.012% of full scale							
Analog Control Functions - Selection of Voltage/Current Monitoring 5V/10V, Output ON/OFF, Front Panel Lock. 2. Display Vout: 4 digits, accuracy: 0.5% of rated output voltage+/-1 count lout: 4 digits, accuracy: 0.5% of rated output current+/-1 count. GREEN LEDs: FINE, MENU, PREV, PROT, REM, OUTPUT, CV, CC RED LED: PROT (OVP, UVP, OTP, FOLD, AC FAIL). 4. Function buttons FINE, MENU, PREV, PROT, REM, OUTPUT PROGRAMMING AND READBACK (R5232/485,USB, Optional: IEEE(*20), LAN) 1. Vout programming accuracy 0.05% of rated output voltage 2. lout programming accuracy (*13) 0.1% of actual +0.1% of rated output current 3. Vout programming resolution 0.012% of full scale 4. lout programming resolution 0.012% of full scale 5. lout readback accuracy 0.05% of rated output voltage 6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale						(/10K programming	
							ock.
	2 Display						
	z. Display						
	3. Indications				CV, CC		
PROGRAMMING AND READBACK (R5232/485,USB, Optional: IEEE(*20), LAN) 1. Vout programming accuracy							
1. Vout programming accuracy 0.05% of rated output voltage 2. lout programming accuracy (*13) 0.1% of actual +0.1% of rated output current 3. Vout programming resolution 0.012% of full scale 4. lout programming resolution 0.012% of full scale 5. Vout readback accuracy 0.05% of rated output voltage 6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale				NEIVI, OUTPUT			
2. lout programming accuracy (*13) 0.1% of actual +0.1% of rated output current 3. Vout programming resolution 0.012% of full scale 4. lout programming resolution 0.012% of full scale 5. Vout readback accuracy 0.05% of rated output voltage 6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale		onal: IEEE(
3. Vout programming resolution 0.012% of full scale 4. lout programming resolution 0.012% of full scale 5. Vout readback accuracy 0.05% of rated output voltage 6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale							
4. lout programming resolution 0.012% of full scale 5. Vout readback accuracy 0.05% of rated output voltage 6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale				tea output current			-
5. Vout readback accuracy 0.05% of rated output voltage 6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale							
6. lout readback accuracy (*13) 0.1% of actual +0.3% of rated output current 7. Vout readback resolution 0.012% of full scale				tage			
7. Vout readback resolution 0.012% of full scale							
	7. Vout readback resolution			output current			
	8. lout readback resolution						

16 —



Z[†]800 SERIES SPECIFICATIONS

INPUT CHARACTERISTICS	Z	10-72	20-40	36-24	60-14	100-8	
1. Input voltage/freq. (*3)			85~265Vac continuous, 47~63Hz, single phase				
2. Maximum Input current 100/200VAC (*4)		9.00/4.45	9.65/4.75	10.30/5.10	10.00/4.95	9.50/4.7	
3. Power Factor (Typ)		0.99 at 100Vac, 100% load / 0.98 at 200Vac, 100% load					
4. Efficiency (Typ) 100/200VAC (*4)	%	81/83	84/86	85/87	85/87	85/87	
5. Inrush current (*5)		Less than 30A					

ENVIRONMENTAL CONDITION	IS							
1. Operating temperature			0∼50°C, 100% load.					
2. Storage temperature			-20~85°C					
3. Operating humidity		%	20~90% RH (no condensation).					
4. Storage humidity		%	10∼95% RH (no condensation).					
5. Altitude			Maximum 3000m. From 2000m up to 3000m, max. Ambient temperature 40°C and rated output current according to the table below:					
		Z	10-72	20-40	36-24	60-14	100-8	
Pate	Rated output current	Α	72	40	24	14	8	
Rate		Α	66	36	20	12.5	7.5	

SAFETY/EMC						
1. Applicable standards:	Safety		UL61010-1, EN61010-1, IEC61010-1. Design to meet UL60950-1, EN60950-1 10V≤Vout≤60V: Output,J1,J2,J3,J4,USB,LAN,IEEE/ISOLATED Analog are Non Hazardous Vout=100V:Output,J1,J2 are Hazardous J3,J4,USB, IEEE/ISOLATED Analog ,LAN are Non Hazardous			
	EMC	IEC/EN61326-1 (Built to meet EN55022/EN55024)				
2. Withstand voltage			10≤Vout≤36V models: Input-Output&J1,J2,J3,J4,USB,LAN/IEEE/ISOLATED ANALOG: 4242VDC/1min; Input-Ground: 2828VDC/1min: Output&J1,J2,J3,J4,USB,LAN/IEEE/ISOLATED ANALOG-Ground: 707VDC/1min. 60V,100V models: Input-Output&J1,J2: 4242VDC/1min; Input-J3,J4,USB,LAN/IEEE/ISOLATED Analog: 4242VDC/1min; Input-Ground: 2828VDC/1min. Output&J1,J2: J3,J4,USB,LAN/IEEE/ISOLATED ANALOG: 1910VDC/1min; Output&J1,J2-Ground: 1380VDC/1min. J3, J4, USB/LAN/IEEE/ISOLATED ANALOG - Ground: 707VDC/1min; Output&J1,J2-Ground: 1380VDC/1min.			
3. Insulation resistance			More than 100Mohm at 25°C, 70%RH.			
4. Conducted emission			IEC/EN61326-1 Industrial Location - B, FCC part 15-B, VCCI-B			
5. Radiated emission			IEC/EN61326-1 Industrial Location - A, FCC part 15-A, VCCI-A			

MECHANICAL					
1. Cooling			Forced air cooling by internal fan		
2. Weight	STANDARD	Kg	Less than 2.1Kg.		
	WIDE BODY	Kg	Less than 2.6Kg. Wide body with Isolated analog or Binding post or IEEE		
3. Dimensions (WxHxD)	STANDARD	mm	H: 83, W: 70, D: 350 (excluding bus bars, handles). (Refer to Outline drawing)		
	WIDE BODY	mm	H: 83, W: 105, D: 350 (excluding bus bars, handles). (Refer to Outline drawing)		
4. Vibration			According to: IEC60068-2-64		
5. Shock			Less than 20G, half sine, 11mS. Unit is unpacked. According to: IEC60068-2-27		

- *1: Minimum voltage is guaranteed to maximum 0.1% of rated output voltage.
- *2: Minimum current is guaranteed to maximum 0.2% of rated output current.
- *3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).
- *4: Ta=25°C with rated output power. *5: Not including EMI filter inrush current, less than 0.2mSec.
- *6: At 85~132Vac or 170~265VAC, constant load.
- *7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- *8: Measured with JEITA RC-9131A (1:1) probe.

 *9: From 10% to 90% or 90% to 10% of Rated Output Voltage, with rated resistive load.

 *10: From 90% to 10% of Rated Output Voltage.

 *11: For load voltage change, equal to the unit voltage rating, constant input voltage.

- *12: For 10V model the ripple is measured at 2V to rated output voltage and rated output current. For other models, the ripple is measured at 10~100% of rated output voltage and rated output current.

 *13: The Constant Current programming, readback and monitoring accuracy do not include the warm-up and Load regulation thermal drift.

 *14: Measured with JEITA RC-9131A (1:1) probe.

 *15: For cases where the time interval between each down programming is longer than Td (time delay).

- *16: For cases where the time interval between each down programming is shorter than Td (Time delay).
- *17: Td typical Minimum time between consecutive down programming cycles.
- *18: At rated output power. *19: Max. ambient temperature for using IEEE is 45°C
- *20: For Parallel operation more than 2 units 5% of toatal output current is requierd.
- *21: Refer to Fig.2-1 below

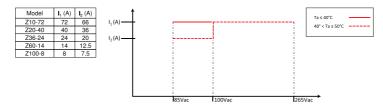
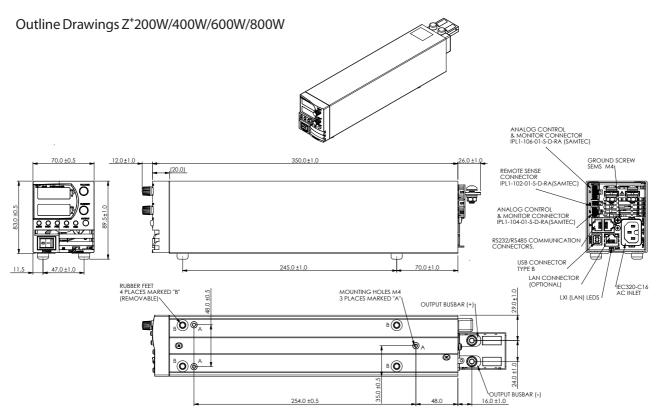
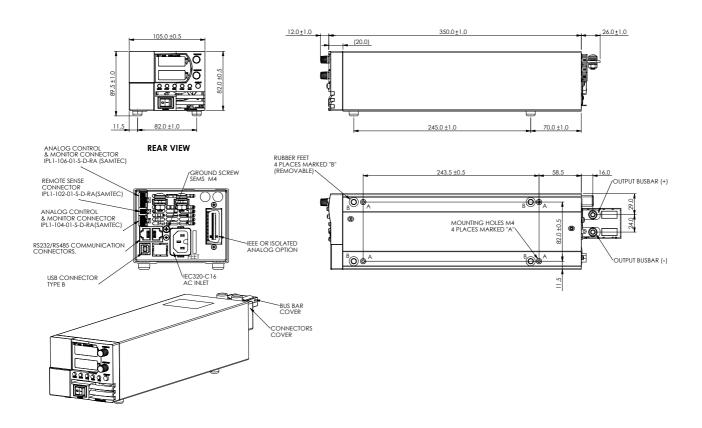


Fig. 2-1: Z⁺800 Rated Output Current Vs. Line Voltage and Ambient Temperature



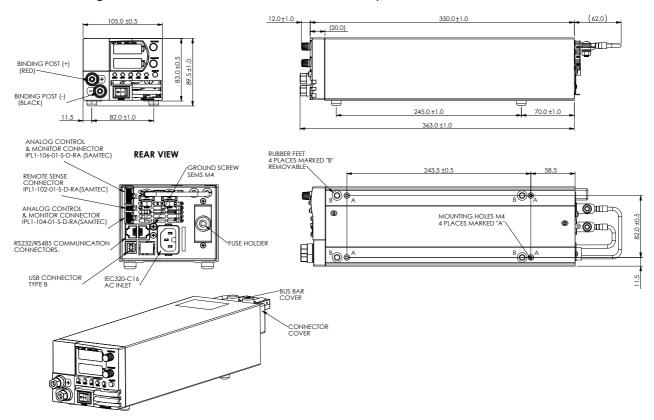


Z⁺200W/400W/600W/800W Optional IEEE, Isolated Analog Interface

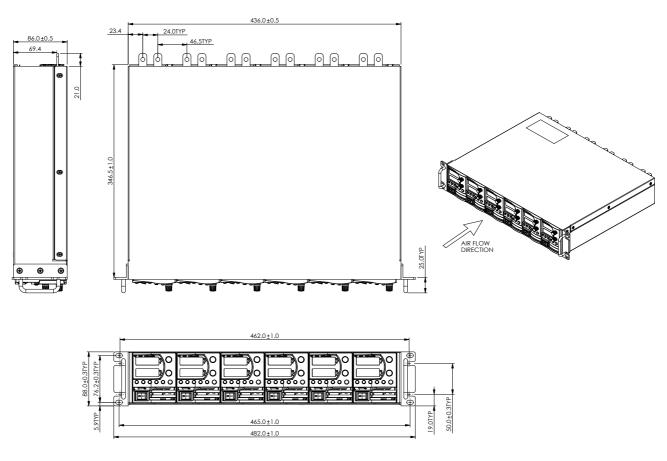




Outline Drawings Z⁺200W/400W/600W/800W Front Panel Output Jacks



19" Rack Housing for Z⁺200W/400W/600W/800W



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