GEN 2.4KW SERIES SPECIFICATIONS

OUTPUT RATING		8-300	60-40	150-16	600 4	REV.
1.Rated output voltage(*1)	V	8	60	150	600	
2.Rated output current (*2)	A	300	40	16	4	
3.Rated output power	W	2400	2400	2400	2400	

INPUT CHARACTERISTICS		V	8	60	150	600	
1.Input voltage/freq. (*3)		---	1-Phase models: 170~265Vac, 47~63Hz				
			3-Phase models: 170~265Vac, 47~63Hz				
2. Maximum Input current at 100% load	1-Phase models:	---	17.3	16.3	16.3	16.3	A
	3-Phase models:		10.5	9.8	9.8	9.8	
3.Power Factor (Typ)		---	1-Phase models: 0.99@230Vac, 3-Phase models: 0.94@200Vac, rated output power.				B
5.Efficiency (Typ) (*4)		%	84	88	88	88	B
6.Inrush current (*5)		---	Less than 50A				

CONSTANT VOLTAGE MODE		V	8	60	150	600
1.Max. Line regulation (*6)		---	0.01% of rated output voltage+2mV			
2.Max. Load regulation (*7)		---	0.015% of rated output voltage +5mV			
3.Ripple and noise (p-p, 20MHz) (*8)		mV	60	60	100	300
4.Ripple r.m.s. 5Hz~1MHz		mV	8	8	25	75
5.Temperature coefficient		PPM/°C	100PPM/°C from rated output voltage, following 30 minutes warm-up.			
6.Temperature stability		---	0.05% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.			
7. Warm-up drift		---	Less than 0.05% of rated output voltage+2mV over 30 minutes following power on.			
8.Remote sense compensation/wire		V	2	5	5	5
9.Up-prog. Response time, 0~Vomax.(*9)		mS	15	30	60	100
10.Down-prog response time:	Full load (*9)	mS	10	30	60	100
	No load (*10)		500	1100	2500	3000
11.Transient response time		mS	Time for output voltage to recover within 0.5% of its rated output for a load change 10~90% of rated output current. Output set-point: 10~100%, Local sense. Less than 1mS, for models up to and including 100V. 2mS, for models above 100V.			
12.Hold-up time		---	10mSec Typical. Rated output power.			

CONSTANT CURRENT MODE		V	8	60	150	600
1.Max. Line regulation (*6)		---	0.01% of rated output current+2mA			
2.Max. Load regulation (*11)		---	0.02% of rated output current+5mA			
3.Load regulation thermal drift		---	Less than 0.05% of rated output current over 30 minutes following load change.			
4.Ripple r.m.s. 5Hz~1MHz (*12)		mA	1200	70	30	7
5.Temperature coefficient		PPM/°C	100PPM/°C from rated output current, following 30 minutes warm-up.			
6.Temperature stability		---	0.05% of rated Iout over 8hrs. interval following 30 minutes warm-up. Constant line, load & temperature.			
7. Warm-up drift		---	8~16V model: Less than +/-0.2% of rated output current over 30 minutes following power on.			
			20V~600V: Less than +/-0.1% of rated output current over 30 minutes following power on.			

AUXILIARY OUTPUTS

1. 15V output (*14)	---	15V±5%, 0.2A max load, Ripple & noise 100mVp-p Referenced internally to the negative output potential	A
2. 5V output (*14)	---	5V±5%, 0.2A max load, Ripple & noise 100mVp-p Referenced internally to IF_com potential	A

ANALOG PROGRAMMING AND MONITORING

1.Vout voltage programming	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-0.5% of rated Vout.
2.Iout voltage programming (*13)	---	0~100%, 0~5V or 0~10V, user selectable. Accuracy and linearity: +/-1% of rated Iout
3.Vout resistor programming	---	0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1% of rated Vout
4.Iout resistor programming (*13)	---	0~100%, 0~5/10Kohm full scale, user selectable. Accuracy and linearity: +/-1.5% of rated Iout.
5.On/Off control	---	By electrical Voltage: 0~0.6V/2~15V or dry contact, user selectable logic.
6.Output current 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.Power supply OK signal	---	4~5V-OK, 0V-Fail. 500ohm series resistance.
9.Parallel operation	---	Possible, up to 4 units in master/slave mode with two wires current balance connection.
10.Series operation	---	Possible (with external diodes), up to 2 units. 600Vdc max. from chassis ground.
11.CV/CC indicator	---	Open collector. CC mode: On, CV mode: Off. Maximum voltage: 30V, maximum sink current: 10mA
12.Enable/Disable	---	Dry contact. Open: Off, Short: On Max. voltage at Enable/Disable in: 6V.
13.Local/Remote analog Control	---	By electrical signal or Open/Short: 0~0.6V or short: Remote, 2~15V or open: Local
14.Local/Remote analog Indicator	---	Open collector. Local: Open, Remote: On. Maximum voltage: 30V, maximum sink current: 10mA

PROGRAMMING AND READBACK (RS232/485, Optional IEEE Interface)

1.Vout programming accuracy	---	0.05% of actual output voltage+0.05% of rated output voltage	A
2.Iout programming accuracy (*13)	---	0.1% of actual output current+0.2% of rated output current	
3.Vout programming resolution	---	0.012% of full scale	
4.Iout programming resolution	---	0.012% of full scale	
5.Vout readback accuracy	---	0.1%+0.1% of rated output voltage	
6.Iout readback accuracy (*13)	---	0.1%+0.3% of rated output current	
7.Vout readback resolution	---	0.012% of full scale	
8.Iout readback resolution	---	0.012% of full scale	

DWG. NO.:	IA669-01-01B
DRAW:	Kazmi S. Sep-7-08
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CHECK:	Sep-7-08
APPR.:	Sep-7-08

GEN 2.4KW SERIES SPECIFICATIONS

REV.
B

PROTECTIVE FUNCTIONS	V	8	60	150	600
1.Foldback protection	---	Output shut-down when power supply change from CV to CC. User presetable.			
2.Over-voltage protection (OVP)	---	Inverter shut-down, manual reset by AC input recycle or by OUT button or by communication port command.			
3.Over -voltage trip point	V	0.5~10	5~66.15	5~165.3	5~661.5
4.Output under voltage limit (UVL)	---	Preset by front panel or communication port. Prevents from adjusting Vout below limit. Does not affect in analog programming.			
5.Over temperature protection	---	User selectable, latched or non latched.			

FRONT PANEL

1.Control functions	---	Vout/Iout manual adjust by separate encoders (coarse and fine adjustment)
	---	OVP/UVL manual adjust by Vout. Adjust encoder.
	---	Address selection by Voltage Adjust encoder. No of addresses:31.
	---	Go to local control.
	---	Output on/off
	---	AC on/off
	---	Front panel lock
	---	Foldback control
	---	Baud rate selection: 1200, 2400, 4800, 9600 and 19200.
	---	Re-start modes (automatic restart, safe mode).
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	---	VOLTAGE, CURRENT, ALARM, FINE, PREVIEW, FOLDBACK, REMOTE(RS232,RS485,IEEE), OUTPUT ON.

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 output current by 2%/100m above 2000m. Alternatively maximum ambient temp. derating by 1°C/100m above 2000m.

MECHANICAL

1.Cooling	---	Forced air cooling by internal fans.
2.Weight	Kg	Less than 10Kg.
3.Dimensions (WxHxD)	mm	W: 422.8, H: 43.6, D: 441 (Refer to Outline drawing).
4.Vibration	---	MIL-810F, method 514.5
5.Shock	---	Less than 20G, half sine, 11mS. Unit is unpacked.

SAFETY/EMC

1.Applicable standards:	Safety	---	UL60950-1 listed, EN60950-1. Vouts 40V. Output is SELV, IEEE/Isolated analog are SELV. 60< Vouts 400V: Output is hazardous, IEEE/Isolated analog are SELV. 400<Vouts 600V: Output is hazardous, IEEE/Isolated analog are not SELV.
	EMC	---	EN55022, EN55024
2.Withstand voltage		---	Vouts 10V models: Input-Outputs (SELV): 4242VDC 1min, Input-Ground: 2828VDC 1min.,
			40V<Vouts 100V models: Input-Haz. Output: 2800VDC 1min, Input-SELV: 4242VDC 1min, Hazard Output-SELV: 1900VDC 1min, Hazard. Output-Ground: 1200VDC 1min, Input-Ground: 2828VDC 1min.
			100V<Vouts 600V models: Input-Haz. Output: 4000VDC 1min, Input-SELV: 4242VDC 1min, Hazard. Output-SELV: 3550VDC 1min, Hazard. Output-Ground: 2670VDC 1min, Input-Ground: 2828VDC 1min.
3.Insulation resistance		---	More than 100Mohm at 25°C, 70%RH.
4.Conducted emmision		---	EN55022A, FCC part 15-A, VCCI-A
5.Radiated emission		---	EN55022A, FCC part 15-A, VCCI-A

NOTES:

*1: Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.
*2: Minimum current is guaranteed to maximum 0.4% 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: At 200Vac input voltage, Ta=25C with rated output power.
*5: Not including EMI filter inrush current, less than 0.2mSec.
*6: At 170~265Vac, constant load.
*7: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
*8: For 8V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10.1 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 8V~16V models 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.

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