

System Rack Power Supply PS2692

Highly Reliable ATX Power Supply
Completely safe and uninterruptible operation with double input of AC+DC!



PS2692

Other	
Continuous Max	Peak Power
279W	284W

Model	Description	Stock	Standard Price (Before Tax)
PS2692		Min. lot: 10 units, 100 days for delivery	¥105,000

This unit is specifically designed for power companies with its long life expectancy and high reliability. It is also suitable for other uses that require high reliability.

Features

- Long life expectancy and high reliability design for power companies
- To prevent careless mistakes, DC input has a terminal block system. It has a AC power cord coming-off prevention bracket.
- Highly reliable fan with 100,000 hours guarantee is used.
- The electrolytic capacity is 105°C 5000H compliant
- The charger with ON/OFF switch allows for the selection of either external DC power supply or battery connection.

Since DC input terminal is isolated, the unit can be operated for a long time with an external battery (lead) or an external DC power supply.

Refer to "Product Page Guideline" on page B-B1 for icons.

Acquired safety standard	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

● Function

DC start RS 232C USB **TTL** PFC Silence 5VSB FAN TSFC FAN Connection Fit for Peak Auto On/Off

● Input

AC input	85V to 115V
DC input	21.6V to 26.4V

● Automatic shutdown compliant OS

Windows 95/98 **Windows NT** Windows 2000 Windows XP Windows Vista

※See D-29 "power supply monitoring software" for details of automatic shutdown.
 ※Refer to D-45「Q96J for Linux.

● Output

Output voltage	+3.3V	+5V	+12V	-5V	-12V	+5VSB
Max current/	8A	30A	7A	0.3A	0.8A	1.5A
max power (continuous)	Total 279W					
Peak current/	8A	30A	7A	0.3A	0.8A	2.5A
peak power (10s max)	Total 284W					
Minimum current	0A	2A	0A	0A	0A	0A

● Dimensions

W × H × D (mm)	220 × 86 × 140
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● Output connector

20 Pin 24 Pin AT 12V AUX Processor ×5 ×1 S-ATA PCLE

General Specification (Items are provided at normal temperature and humidity unless otherwise specified.)

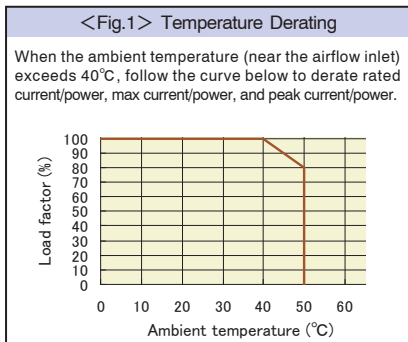
UPDATE
A.

	Page	Items	Specification	Measurement conditions, etc.
AC Input	D-6(1)	Rated voltage	AC 100V (AC85-115V) Characteristic data (B-C156 Fig.6)	
	D-6(2)	Input frequency	50/60Hz	Frequency range: 47-63Hz
	D-6(3)	Efficiency	60% min (AC100V) Characteristic data (B-C156 Fig.2)	At rated input/output
	D-6(4)	Power factor	90% min (AC100V) Characteristic data (B-C156 Fig.2)	
	D-6(5)	Inrush current	50A peak (AC100V) Characteristic data (B-C156 Fig.3)	With rated input/output at cold start (25°C)
DC Input	D-6(6)	Input VA	480VA max Characteristic data (B-C156 Fig.2)	At rated input, max output (25°C)
	D-6(1)	Rated voltage	DC24V (DC 21.6-26.4V)	DC startup available
	D-6(7)	Battery discharge cut-off voltage	Less than 21.6V (shutdown of battery circuit)	
Output	D-6(6)	Input VA	470VA max	
	D-6(3)	Efficiency	60% min	At rated input/output
	—	Rated voltage	+3.3V +5V +12V -5V -12V +5VSB	
	—	Rated current	8A 30A 7A 0.3A 0.8A 1.5A	
	D-6(8)	Max current/power	8A 30A 7A 0.3A 0.8A 1.5A	Max output power is 279W.
	D-6(9)	Peak current/power	8A 30A 7A 0.3A 0.8A 2.5A	Peak output power is 284W. It shall be 10ms or less.
	D-6(10)	Minimum current	0A 2A 0A 0A 0A 0A	
	D-6	Total voltage accuracy (%)	±5 max ±5 max ±5 max ±5 max ±5 max ±5 max	Sum of temperature, input, and load regulations.
	D-7(12)	Max ripple voltage (mVp-p)	50 max 50 max 100 max 50 max 100 max 50 max	Connect two wires of 50cm max in length to the output connector. Put a 10μF electrolytic capacitor and a 0.1μF ceramic capacitor on the other end of wires to measure with a 20MHz oscilloscope. Characteristic data (B-C157 Fig.17)
	D-7(12)	Max spike voltage (mVp-p)	50 max 50 max 120 max 100 max 120 max 50 max	
Protection	D-7(13)	Over current protection	OCP point (A) 9.6 min 32 to 42 7.5 to 10 0.36 min 0.96 min 2.6 min	Other outputs have rated loads. All outputs except for +5VSB shut down while +3.3V, +5V, and +12V are at OCP operation. For -5V and -12V, all outputs except for +5VSB shut down after foldback current limiting.
		Method	All outputs except for +5VSB shut down. All outputs shut down at DC operation.	
		Recovery	Reclosing AC input (10s min interval) Automatic shutdown or reclosing input	
	Over voltage protection	OVP point (V)	3.6 to 4.2 5.5 to 7.0 13.2 to 16.8 -7.5 to -5.5 -16.8 to -13.2 5.5 to 7.0	
		Method	All outputs except for +5VSB shut down. All outputs shut down at DC operation.	
		Recovery	Reclosing AC input or switching PS_ON# signal from 'H' to 'L'	
D-7(14)	Low voltage protection	LVP point (V) 1.98 to 2.97 4 to 4.75 7.2 to 10.8 -4.75 to -4 -10.8 to -7.2 4 to 4.75		
	Method	All outputs except for +5VSB shut down. All outputs shut down at DC operation.		
	Method	Reclosing AC input		
—	Over heat protection	Internal temperature is monitored and all outputs except for +5VSB shut down (at 95°C)		
Charge	—	Charge voltage	27.0 to 27.6V typical (At 25°C, at full charge)	
	—	Charge current	0.5±0.1A	
Environment	D-7(16)	Operating temperature/humidity	-5-50°C*/20-80%	*See <Fig.1> below. There shall be no condensation.
	D-7(18)	Vibration	At operation Acceleration of 29.4m/s ² (1-33Hz), 9.8m/s ² (33-100Hz), vibration frequency of 1-100Hz for 30s in the X-Y-Z directions.	
		At no operation	Acceleration of 58.8m/s ² (1-33Hz), 19.6m/s ² (33-100Hz), vibration frequency of 1-100Hz for 30s in the X-Y-Z directions.	
D-7(19)	Mechanical shock	At operation It is to endure an acceleration of 10G in the X-Y-Z directions.		
	At no operation	It is to endure an acceleration of 30G in the X-Y-Z directions.		
Insulation	D-7(20)	Dielectric strength	AC 2000V for one minute between AC input and DC input/FG/DC output AC 1000V for one minute between DC input and FG/DC output	Perception current: 20mA
	D-7(21)	Insulation resistance	50MΩ min between AC input and DC output, AC input and FG, AC input and DC input 50MΩ min between DC input and DC output, DC input and FG	At DC500V
	D-7(22)	Leakage current	3.5mA max (AC 100V)	YEW. TYPE3226 (1kΩ) or equivalent
EMC	D-7(23)	Line noise immunity	±2000V (pulse width: 50ns and 500ns, repetitive cycle: 10ms)	It is to follow the DC output specification.
	D-7(24)	Electrostatic discharge	EN61000-4-2 compliant	
	D-7(25)	Radiated, radio-frequency EM field	EN61000-4-3 compliant	
	D-7(26)	Fast transient burst	EN61000-4-4 compliant	
	D-7(27)	Lightning surge	EN61000-4-5 compliant	
	D-7(28)	Conducted disturbances induced by radio-frequency	EN61000-4-6 compliant	
	D-7(29)	Power source frequency magnetic field	EN61000-4-8 compliant	
	D-8(30)	Voltage dip/regulation	EN61000-4-11 compliant	
	D-8(31)	Conducted emission	VCCI-A compliant	Measured with power supply single body
	D-8(32)	Harmonic current regulation	IEC61000-3-2 Class A, EN61000-3-2 Class A compliant	At rated input/output
Other	D-8(34)	Cooling system	Forced-air cooling	
	D-8(35)	Output GND terminal	Capacitor grounding	
	D-8(38)	Output hold-up time	Characteristic data (B-C157 Fig.10)	At rated output
	F-3	Reliability Grade	FA (Industrial equipment grade, double-sided PWB with through holes)	It is to follow our standard.
	D-8(41)	MTBF	75,000 H min	
	—	Weight	3.3kg typical	
F-3	Warranty	Three years after delivery. If any faults belong to us, the defective unit shall be repaired or replaced at our cost.	Except for errors caused by operation not listed.	

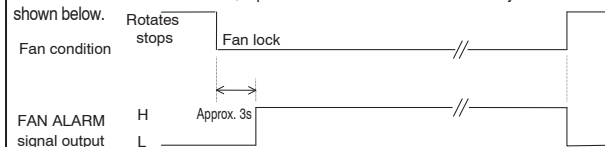
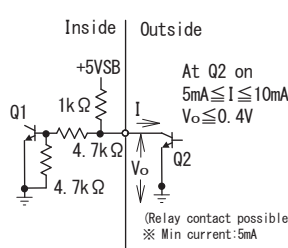
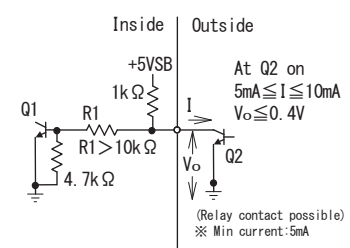
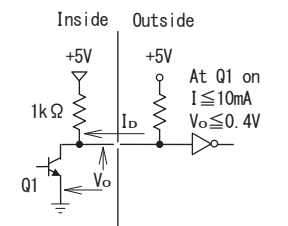
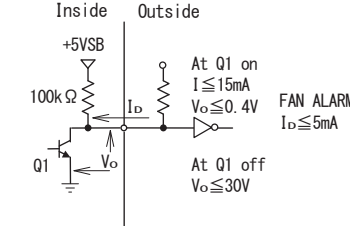
Computer Power Supply - BRAIN

Control & Mechanism System Power Supply - LIMBS

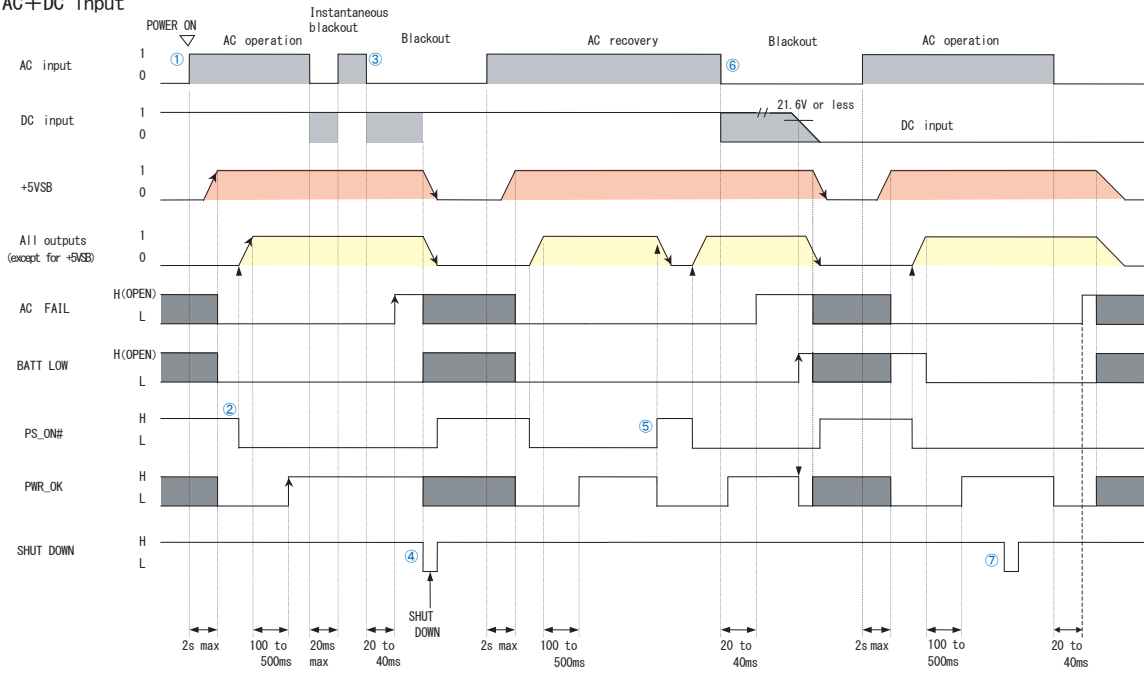
- B-A SELECTION GUIDE
- B-B PRODUCT PAGE GUIDELINE
- B-C NONSTOP POWER SUPPLY
- B-D AC+DC DUAL-INPUT PSU
- B-E GENERAL PURPOSE PC PSU
- B-F GENERAL PURPOSE REDUNDANT PSU
- B-G OPTIONS
- C-A SELECTION GUIDE
- C-B PRODUCT PAGE GUIDELINE
- C-C AC-DC SINGLE OUTPUT NONSTOP PSU
- C-D AC-DC MULTI-OUTPUT NONSTOP PSU
- C-E AC-DC SINGLE OUTPUT POWER SUPPLY
- C-F AC-DC MULTI-OUTPUT POWER SUPPLY
- C-G DC-DC CONVERTER
- C-H OPTIONS
- D. TECHNICAL DICTIONARY
- E. COMPANY PROFILE
- F. BUSINESS MANUAL
- G. INDEX



Signal Input/Output Specification (Items are provided at normal temperature and humidity unless otherwise specified.)

	Items	Specification	Note
Input Signal	Output ON/OFF control signal (PS_ON#)	At 'H' or 'OPEN' input, +3.3V, +5V, +12V, -5V, and -12V outputs shut down (a signal of 200us or less will not be received).	P11 connector 3-pin P2 connector 14-pin
	Battery shutdown signal for TTL (SHUT DOWN)	Battery connection is shut down with 'L' input (only available at battery backup operation).	P10 connector 2-pin
Output Signal	Normal output signal (PWR_OK)	When +5V output is normal, 'H' signal is delivered (detection delay time: 100 to 500ms)	P11 connector 2-pin
	Blackout detection signal for TTL (AC FAIL)	The signal goes 'OPEN' at low AC input voltage and blackout detection (open collector output) (detection voltage: less than 85V, detection delay time: 20 to 40ms after AC input failure).	P10 connector 3-pin
	Low battery voltage signal for TTL (BATT LOW)	The signal goes 'OPEN' when the battery terminal voltage decreases to less than 21.6V (open collector output).	P10 connector 4-pin
	Fan alarm signal (FAN ALARM)	When the fan lock status remains, square waves are delivered continuously as shown below. 	P11 connector 1-pin
Signal Circuit			
Input Signal Circuit	(PS_ON#)		(SHUT DOWN)
			
Output Signal Circuit	(PWR_OK)		(AC FAIL), (FAN ALARM), (BATT LOW)
			

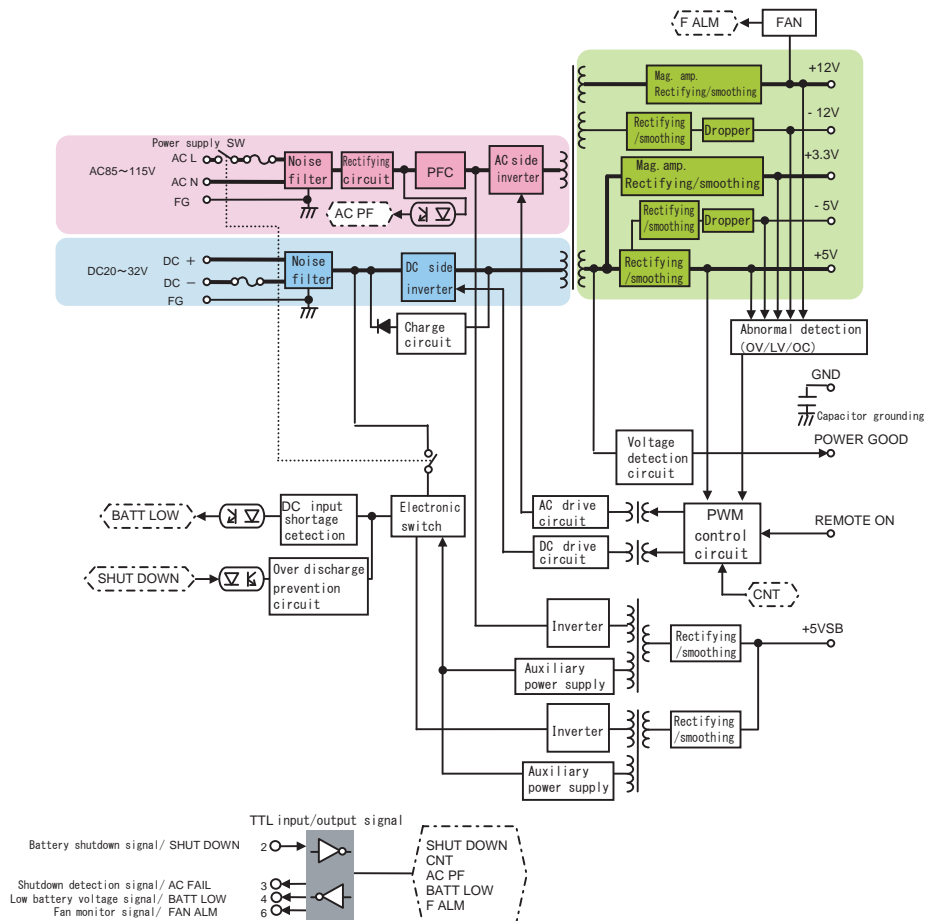
At AC+DC input



(Note) At AC operation with PS_ON# 'H' (with +5VSB output only), it will not be switched to battery backup operation even if a blackout occurs.

- ① With AC input, only +5VSB starts up.
- ② With PS_ON# 'L' input, all outputs start up. After 100 to 500ms, PWR_OK goes 'H'.
- ③ 20 to 40ms after blackout, AC FAIL 'H' (OPEN)' is delivered.
- ④ At blackout, all outputs, including 5VSB shut down with SHUT DOWN 'L' input.
- ⑤ With PS_ON# 'H' input, all output except for 5VSB shut down.
- ⑥ When the battery voltage decreases to less than 21.6V at battery backup, BATT LOW 'H' (OPEN)' is delivered.
- ⑦ At AC input, the output does not change with SHUT DOWN 'L' input.

Block Diagram



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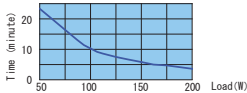

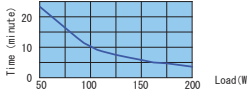

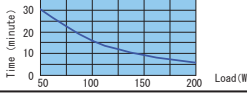

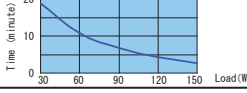
- B-A SELECTION GUIDE
- B-B PRODUCT PAGE GUIDELINE
- B-C NONSTOP POWER SUPPLY
- B-D AC+DC DUAL-INPUT PSU
- B-E GENERAL PURPOSE PC PSU
- B-F GENERAL PURPOSE REDUNDANT PSU
- B-G OPTIONS

Control & Mechanism System Power Supply - LIMBS


- C-A SELECTION GUIDE
- C-B PRODUCT PAGE GUIDELINE
- C-C AC-DC SINGLE OUTPUT NONSTOP PSU
- C-D AC-DC MULTI-OUTPUT NONSTOP PSU
- C-E AC-DC SINGLE OUTPUT POWER SUPPLY
- C-F AC-DC MULTI-OUTPUT POWER SUPPLY
- C-G DC-DC CONVERTER
- C-H OPTIONS



- D. TECHNICAL DICTIONARY
- E. COMPANY PROFILE
- F. BUSINESS MANUAL
- G. INDEX

Optional Components (Sold separately)

Battery package					
Page	Picture	Model	Battery type	Shape (size)	Backup time
B-G2		BS05A-P24/2. 2L	Lead	5-inch bay fixed type (W × D × H=146 × 190 × 37mm)	
B-G4		RBS01A-P24/2. 2L	Lead	5-inch bay fixed, removable type (W × D × H=146 × 245 × 42mm)	
B-G10		BS06A-H24/2. 5L (For standby use) BS06B-H24/2. 5L (With fan, for cycle use)	Ni-MH	5-inch bay fixed type (W × D × H=146 × 181 × 38mm)	
B-G24		BS08A-H24/2. 0L	Ni-MH	Compact size, fixed type (W × D × H=130 × 140 × 38mm)	

※ Connector part needs to be processed for connecting a battery package.

Cable				
Page	Picture	Model	Type	Description
B-G46		WH2753	AC power cord	AC125V 12A 【PSE】

Software				
Page	Picture	Model	Type	Description
B-G60		NSP Pro for 95/98	Automatic shutdown software	Dedicated to Windows 95/98 RS232C cables, WH2601-01 and WH2601-02 (accessories)
B-G60		NSP Pro for NT	Automatic shutdown software	Dedicated to Windows NT RS232C cable, WH2601-01 (accessory)

Other optional components					
Page	Model	Description	Page	Model	Description
B-G52	ACC2637	Automatic startup unit	B-G50	WH5105	12V 4-pin connector conversion harness (80mm)
B-G49	WH2820	20-pin extension harness (600mm)	B-G50	WH5105-02	12V 4-pin connector conversion harness (320mm)
B-G49	WH2747	20-pin extension harness (450mm)	B-G47	WH5055	AT connector conversion harness
B-G49	WH2892-02	20-pin extension harness (200mm)	B-G47	ACC5046	Harness with PS_ON switch
B-G51	WH2812	PCI-E 6-pin connector conversion harness	B-G48	ACC5077	PS_ON terminal short connector
			B-G48	WH5073	PS_ON short terminal 20-pin harness

A. UPDATE

B. SELECTION GUIDE

B. PRODUCT PAGE GUIDELINE

B. NONSTOP POWER SUPPLY

B. AC+DC DUAL-INPUT PSU

B. GENERAL PURPOSE PC PSU

B. GENERAL PURPOSE REDUNDANT PSU

B. OPTIONS

Computer Power Supply - BRAIN

C. SELECTION GUIDE

C. PRODUCT PAGE GUIDELINE

C. AC-DC SINGLE OUTPUT NONSTOP PSU

C. AC-DC MULTI-OUTPUT NONSTOP PSU

C. AC-DC SINGLE OUTPUT POWER SUPPLY

C. AC-DC MULTI-OUTPUT POWER SUPPLY

C. DC-DC CONVERTER

C. OPTIONS

Control & Mechanism System Power Supply - LIMBS

D. TECHNICAL DICTIONARY

E. COMPANY PROFILE

F. BUSINESS MANUAL

G. INDEX

Characteristics Data (Examples of actual measurement)

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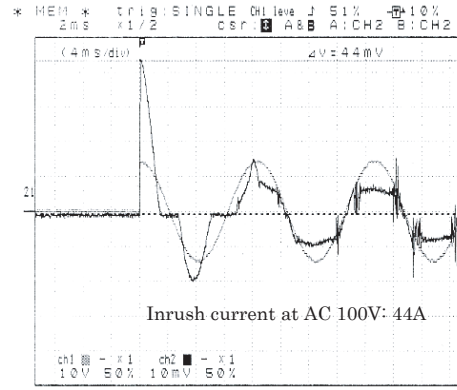
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● Fig.2 Efficiency, Power Factor, Input Current, Input VA

Load : Rated

	Input voltage (V)	Efficiency (%)	Power factor (%)	Input current (A)	Input VA (VA)
AC	85	66.83	99.64	4.90	416.50
AC	100	68.33	99.66	4.07	407.00
AC	115	69.50	99.44	3.49	401.35
DC	22	65.34	-	19.60	-
DC	24	66.27	-	17.40	-
DC	26	65.76	-	15.90	-

● Fig.3 Inrush Current



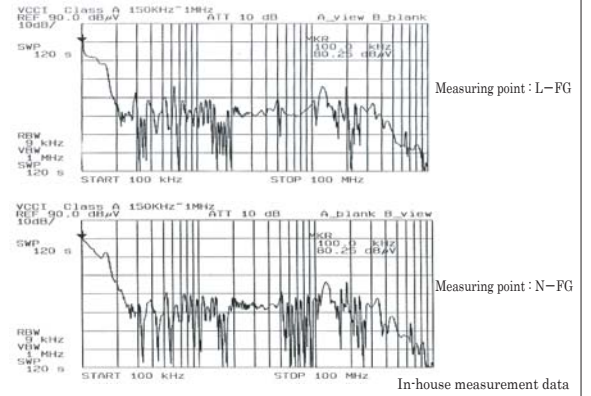
● Fig.4 Leakage Current

Input : AC100V
Load : Rated load and Min. load

	Rated load	Min. load
AC 100V	0.44mA	0.44mA

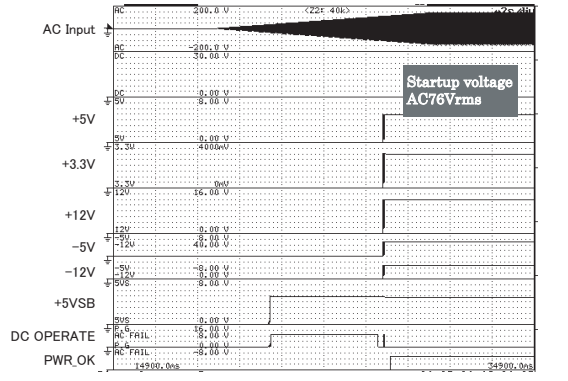
● Fig.5 Conducted Emission At 100V

Input : AC100V
Load : Rated



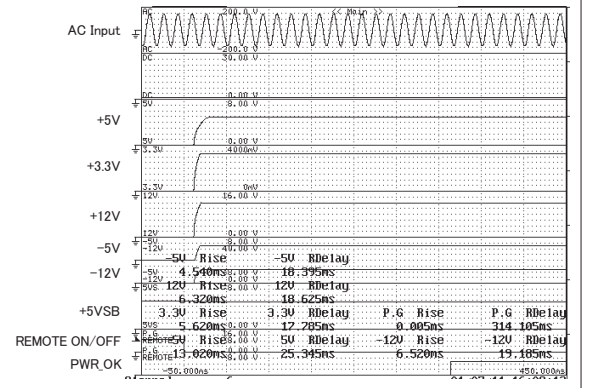
● Fig.6 AC Startup Voltage (Rated load)

Input : AC0V ⇒ AC100V
Load : Rated
Time axis : 2s/DIV



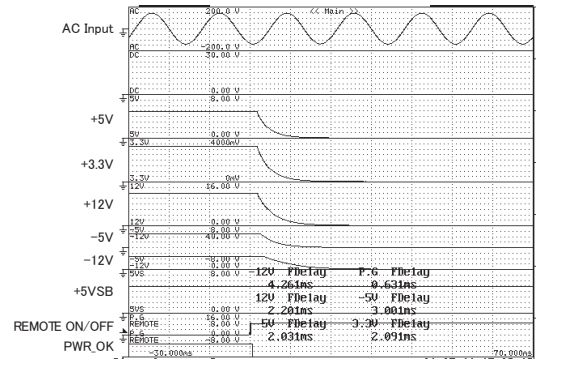
● Fig.7 Rising Sequence At AC 100V

Input : AC100V
Load : Rated
Time axis : 50ms/DIV



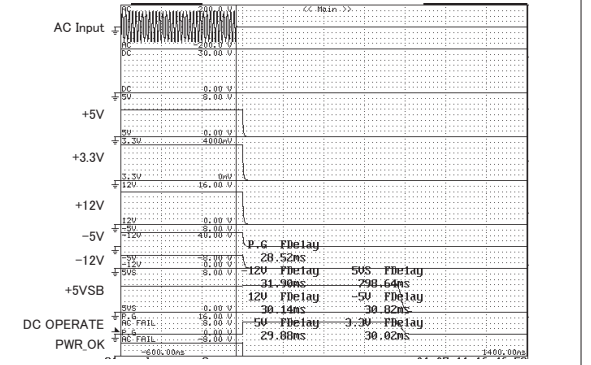
● Fig.8 Falling Characteristics At AC 100V When REMOTE Is Off

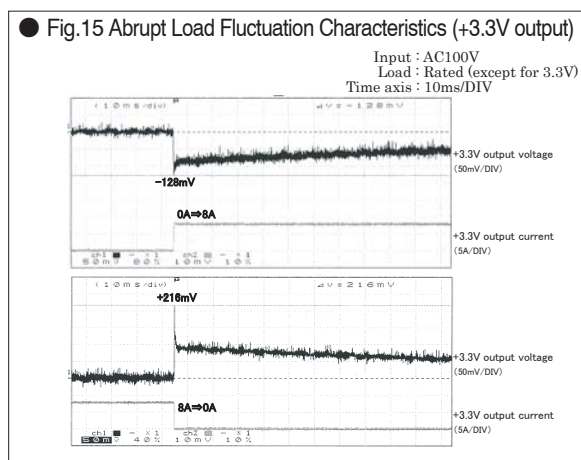
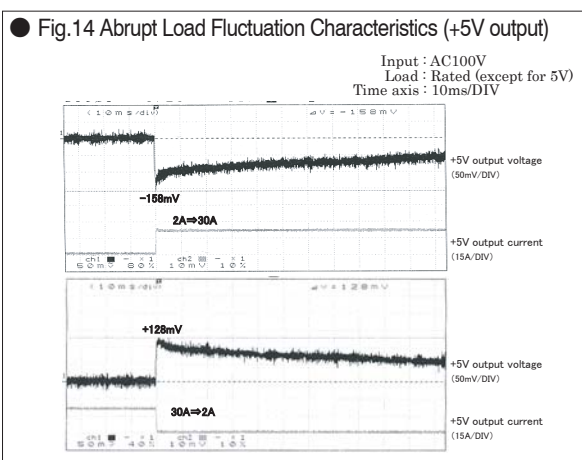
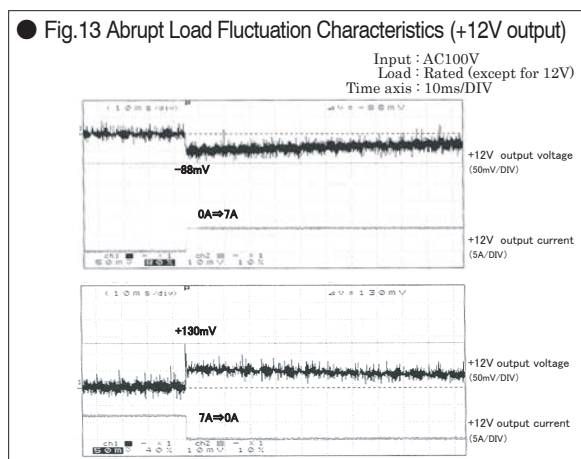
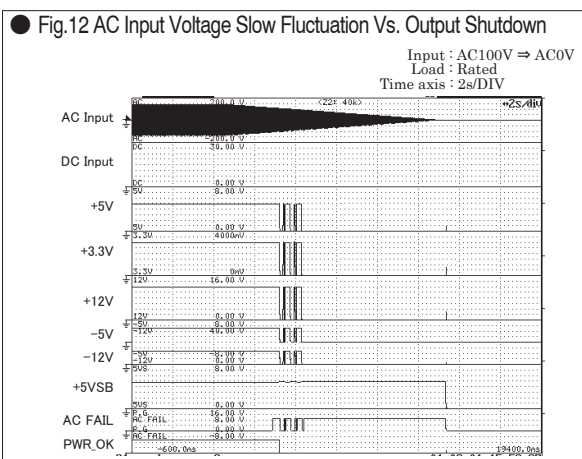
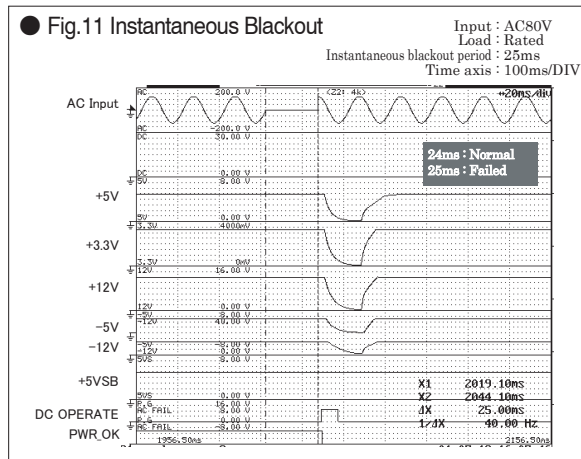
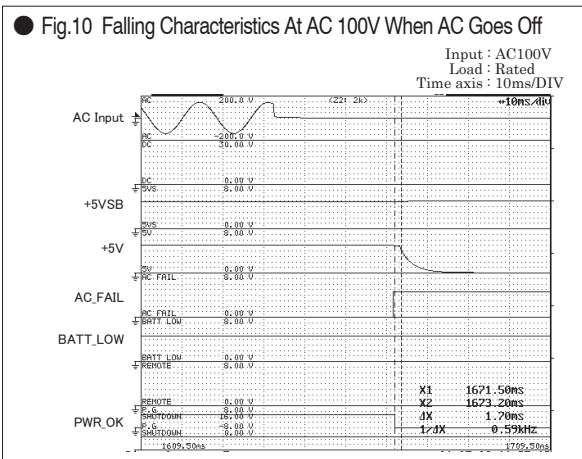
Input : AC100V
Load : Rated
Time axis : 10ms/DIV



● Fig.9 Falling Characteristics At AC 100V When AC Goes Off

Input : AC100V
Load : Rated
Time axis : 200ms/DIV





● Fig.16 Output Voltage Regulation

Output	Min. load	1/2 load	Rated load
12V output	0A	3.5A	7A
5V output	2A	15A	30A
3.3V output	0A	4A	8A

AC input	AC 85V	AC 100V	AC 115V
12V output (min)	12.022 V	12.023 V	12.023 V
12V output (1/2)	11.96 V	11.958 V	11.961 V
12V output (rated)	11.89 V	11.892 V	11.891 V
5V output (min)	5.057 V	5.057 V	5.057 V
5V output (1/2)	4.975 V	4.965 V	4.97 V
5V output (rated)	4.886 V	4.888 V	4.887 V
3.3V output (min)	3.341 V	3.341 V	3.341 V
3.3V output (1/2)	3.28 V	3.269 V	3.274 V
3.3V output (rated)	3.229 V	3.232 V	3.228 V

● Fig.17 Ripple and Spike Voltage

Load : Rated

Input voltage (V)	12V output Ripple / Spike (mV) (mV)	5V output Ripple / Spike (mV) (mV)	3.3V output Ripple / Spike (mV) (mV)
AC 85	20 / 50	20 / 45	20 / 45
AC 100	30 / 30	20 / 45	20 / 45
AC 115	20 / 40	20 / 45	20 / 45
DC 22	20 / 40	20 / 45	10 / 40
DC 24	20 / 40	20 / 45	20 / 40
DC 26	20 / 40	20 / 45	20 / 40

Computer Power Supply - BRAIN

Control & Mechanism System Power Supply - LIMBS

- A. UPDATE
- B. SELECTION GUIDE
- B. PRODUCT PAGE GUIDELINE
- B. NONSTOP POWER SUPPLY
- B. AC+DC DUAL-INPUT PSU
- B. GENERAL PURPOSE PC PSU
- B. GENERAL PURPOSE REDUNDANT PSU
- B. OPTIONS
- C. SELECTION GUIDE
- C. PRODUCT PAGE GUIDELINE
- C. AC-DC SINGLE OUTPUT NONSTOP PSU
- C. AC-DC MULTI-OUTPUT NONSTOP PSU
- C. AC-DC SINGLE OUTPUT POWER SUPPLY
- C. AC-DC MULTI-OUTPUT POWER SUPPLY
- C. DC-DC CONVERTER
- C. OPTIONS
- D. TECHNICAL DICTIONARY
- E. COMPANY PROFILE
- F. BUSINESS MANUAL
- G. INDEX