

Desktop PC Power Supply HN9-520P-S20 Series

80PLUS & ErP Directive Compliant.
Low Power Consumption and High Efficiency Nonstop Power Supply Available !

ErP Directive
Standby power 1W max.

RoHS Directive



HN9-520P-S20-H1V



Standby Power
at 100 VAC at 230 VAC
0.55W 0.65W

ATX NSP
(nonstop power supply)
Continuous Max. **400W** Peak Power **520W**

*Standby power is an example of actual measurement.

Model	Description	Stock
HN9-520P-S20-H1V	With RS232C signal unit	Standard stock
HN9-520P-S20-H2V	With buzzer unit	Contact us
HN9-520P-S20-H6V	With USB signal unit	Standard stock
HN9-520P-S20-H0V	No signal unit	Standard stock

Model Name Coding HN9 - 520 P - S 2 0 - H * V ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨	1. Series name 2. Output power 3. Peak output compliant	4. Standard 5. DC input voltage (battery voltage) 24V type 6. Modification code 7. Nonstop circuit embedded	8. Type of signal unit (1: RS232C signal unit, 2: buzzer unit 6: USB signal unit, 0: no signal unit) 9. Silent type (thermal-sensing variable speed fan embedded)
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Features

- With backup function, it protects your PC from blackout.
- 80PLUS BRONZE approved ATX power supply
- Double-sided through hole PCB suitable for industrial use.
- High efficiency with synchronous rectification circuit
- Min. load current is 0A for all outputs.
- Safety standard approved (IEC/UL/CSA60950-1)
- By building in the thermal-sensing variable speed fan, noise reduction can be realised.
- Less than 1W standby power complying with ErP directive



Additional output unit can be fitted



Additional output unit

By connecting the optional output unit on HN9-520P-S20-H*V, +24V or +48V can be output from isolated ATX outputs simultaneously. Refer to the output specification below.

Output / Dimensions (with additional output unit)

Model	HN9-520P-S20-H*V-24V						HN9-520P-S20-H*V-48V					
	+3.3V	+5V	+12V	-12V	+5VSB	+24V	+3.3V	+5V	+12V	-12V	+5VSB	+48V
Output voltage	20A	24A	30A	0.5A	2.0A	8.3A	20A	24A	16.5A	0.5A	2.0A	4.0A
Max. current / max. power (continuous)	150W	360W	6W	10W	200W		150W	198W	6W	10W	192W	
	390W			199.1W			400W			305.1W		
Peak current / peak power (5 sec max.)	30A	30A	35A	0.5A	2.5A	12.5A	30A	30A	35A	0.5A	2.5A	4.0A
	200W		420W		6W		12.5W		300W		507.5W	
Min. current	580W			520W			30A			12.5W		
	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A
Dimensions	150(W)×86(H)×175(D)mm											

*HN9-520P-S20-H1V-48V is safety-approved.

Refer to "Product Page Guideline" on p.13

Safety standard / Approval	UL	CSA	EN	CE	CCC
Reliability Grade	HFA	FA	HOA	OA	

Function



*RS232C: only HN9-520P-S20-H1V

*USB: only HN9-520P-S20-H6V

Automatic shutdown compliant OS



Input

AC input	85 - 264V (worldwide range, PFC mounted)
DC input	24V (dedicated battery package*)

*Battery package is optional (sold separately).

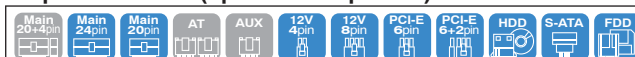
Output

Output voltage	+3.3V	+5V	+12V	-12V	+5VSB
Max. current / max. power (continuous)	20A	24A	30A	0.5A	2A
	Total 150W		360W		6W
Peak current / peak power (5 sec max.)	Total 390W		Total 400W		10W
	30A	30A	35A	0.5A	2.5A
Min. current	Total 200W		420W		6W
	Total 507.5W		Total 520W		12.5W
	0A	0A	0A	0A	0A

Dimensions

W×H×D (mm)	150×86×140 (PS/2 size)
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Output connector (optional component)

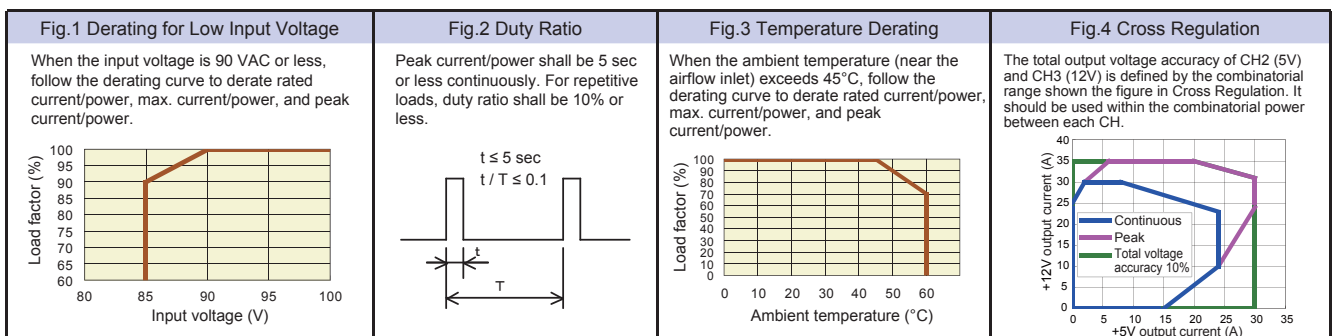


Refer to p.19 "Detachable Output Harness" for details

General Specification Condition: at normal temperature and humidity unless otherwise specified

BRAIN Power Supply
Desktop PC Power Supply
Nonstop (Uninterruptible / No Power-interruption) Power Supply

	Items	Specification	Measurement conditions, etc.	
AC Input	Rated Voltage	100 - 240 VAC (85* - 264 VAC)	Worldwide range, *Refer to Fig.1	
	Input Frequency	50 / 60Hz	47 - 63Hz	
	Efficiency	80% typ. (100 VAC), 85% typ. (240 VAC) *Characteristic data: Fig.5	At rated input/output, 80PLUS BRONZE approved	
	Power Factor	96% min. (100 VAC), 90% min. (240 VAC) *Characteristic data: Fig.6	At rated input/output	
	Inrush Current	31A peak (100 VAC), 75A peak (240 VAC) *Characteristic data: Fig.7	At rated input/output at cold start (25°C). The inrush current into X-capacitor of input noise filter is not specified unless its period is more than 100µs.	
	Input Current	4.8A typ. (100 VAC), 2.1A typ. (240 VAC) *Characteristic data: Fig.5		
DC Input	Rated Voltage	24 VDC (corresponds to dedicated battery package)		
	Battery Discharge Cut-off Voltage	17V typ. (shutdown of battery circuit)		
	Efficiency (at Battery Operation)	80% typ	At rated input/output	
Output	Rated Voltage	+3.3V +5V +12V -12V +5VSB		
	Rated Current	10A 10A 25A 0.5A 2A	Reference value during the measurement of input/output characteristics	
	Max. Current / Power	20A 24A 30A 0.5A 2A	Max. output power: 400W *Refer to Fig.1	
		150W max. 390W max. 400W max.		
		6W 10W		
	Peak Current / Power	30A 30A 35A 0.5A 2.5A	Peak output power: 520W Time: 5 sec or less Duty ratio of repetitive load: 10% or less *Refer to Fig.2	
		200W max. 420W 6W 12.5W		
		507.5W max. 520W max.		
	Min. Current	0A 0A 0A 0A 0A		
	Total Voltage Accuracy (%)	±5 max. ±5 max. ±5 max. ±5 max. ±5 max.	*Refer to Fig.4	
Max. Ripple Voltage (mVp-p)	50 max. 50 max. 120 max. 120 max. 50 max.			
Max. Spike Voltage (mVp-p)	100 max. 100 max. 170 max. 170 max. 100 max.			
Protection	Overcurrent Protection	OCP Point (A)	27 min. 31 min. 37 min. Short protection	
		Method	All outputs except for +5VSB shutdown. All outputs shutdown at battery operation Hold down current limiting All outputs shutdown	
	Recovery (Overcurrent)	At AC Operation	Reclosing AC input, or switching PS_ON# signal from 'H' to 'L'	Automatic recovery
		At Battery Operation	Reclosing AC input	Automatic recovery Reclosing AC input
	Overvoltage Protection	OVP Point (V)	3.76 - 4.3 5.74 - 7.0 13.4 - 15.6	- -
		Method	All outputs except for +5VSB shutdown. All outputs shutdown at battery operation	- -
Recovery (Overvoltage)	At AC Operation	Reclosing AC input, or switching PS_ON# signal from 'H' to 'L'	- -	
	At Battery Operation	Reclosing AC input	- -	
Charge	With Dedicated Ni-MH Battery Connected	Charge voltage	35V max. (automatically switches to the voltage that complies with the dedicated battery)	
		Charge current	0.7A max. (microcomputer with charge control function is embedded on the battery.)	
	With Dedicated Lead Battery Connected	Charge voltage	27.3V typ. (at 25°C with fully-charged battery, thermal compensation)	
	Charge current	0.5±0.2A (at 24V battery voltage)		
Environment	Operating Temp. / Humidity	0 to 60°C* / 10 to 90%	No condensation *Refer to Fig.3	
	Storage Temp. / Humidity	-20 to 70°C / 10 to 95%	No condensation	
	Vibration	Acceleration amplitude: 2g (10-55Hz), Sweep cycles: 10, Test duration: 45 minutes each axis	JIS-C-60068-2-6, at no operation	
	Mechanical Shock	Lift one bottom edge up to 50mm and let it fall. Number of bumps: 3 each of 4 edges	JIS-C-60068-2-31, at no operation	
Insulation	Dielectric Strength	AC/DC input - FG/DC output: 1500 VAC for 1 minute	Cut-off current: 10mA	
	Insulation Resistance	AC/DC input - FG/DC output: 50MΩ min.	At 500 VDC	
	Leakage Current	0.5mA max. (100 VAC) / 1mA max. (200 VAC) / 1.2mA max. (240 VAC) *Characteristic data: Fig.8	YEW, TYPE3226 (1kΩ) or equivalent	
EMC	Line Noise Immunity	±2000V (pulse width: 100/1000ns, repetitive cycle: 30-100Hz, normal/common mode with pos./neg. polarity for 10 minutes each)	Measured by INS-410 No fluctuation of DC output or malfunction	
	Electrostatic Discharge	EN61000-4-2 compliant		
	Radiated, Radio-Frequency EM Field	EN61000-4-3 compliant		
	Fast Transient Burst	EN61000-4-4 compliant		
	Lightning Surge	EN61000-4-5 compliant		
	RF Conducted Immunity	EN61000-4-6 compliant		
	Magnetic Field Immunity	EN61000-4-8 compliant		
	Voltage Dip / Regulation	EN61000-4-11 compliant		
	Conducted Emission	VCCI-B, FCC-B, EN55022-B compliant *Characteristic data: Fig.9 and 10	Measured by single unit	
	Harmonic Current Regulation	IEC61000-3-2 (Ver.2.1) Class D, EN61000-3-2 (A14) Class D compliant	At rated input/output	
Others	Safety Standard	UL60950-1, CSA C22.2 No.60950-1, CE Marking (LVD, EMC)		
	Cooling System	Forced air cooling: thermal-sensing variable speed fan embedded	Fan rotates at low speed depending on the internal temperature of power supply even PS_ON# signal 'H'.	
	Output Grounding	Connected chassis (FG)*	*It can be customized to connect to capacitor.	
	Output Hold-up time	PWR_OK holds up 16ms min. after AC failure *Characteristic data: Fig.15	At rated output	
	Reliability Grade	FA (industrial equipment grade, double-sided through hole PCB)	Follow our standard	
	MTBF	70,000H min.	Based on EIAJ RCR-9102	
	Weight	1.8 kg		
Warranty	3 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		

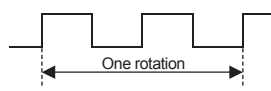


Signal Input / Output Specification Condition: at normal temperature and humidity unless otherwise specified

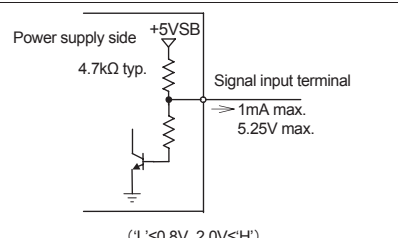
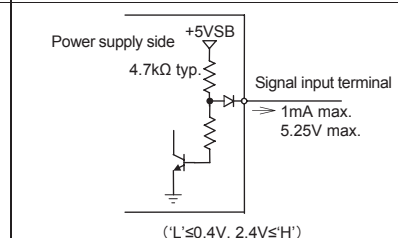
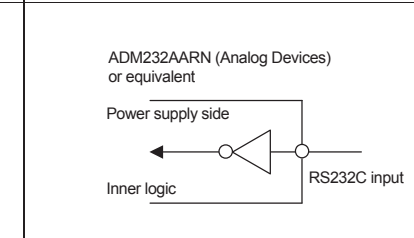
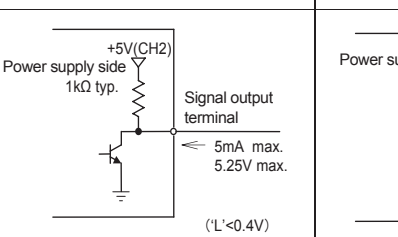
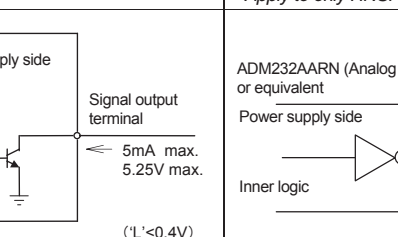
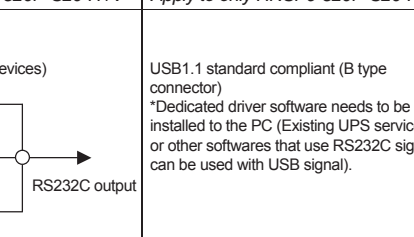
BRAIN Power Supply

Desktop PC Power Supply

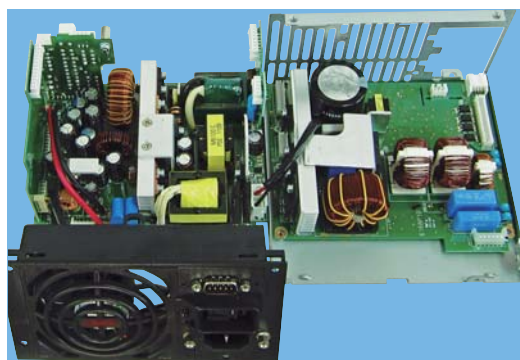
Nonstop (Uninterruptible / No Power-interruption) Power Supply

Items	Specification	Note	
Input Signal	Output ON / OFF Control Signal (PS_ON#)	+3.3V, +5V, +12V, and -12V outputs shutdown with 'H' or 'OPEN' input. (During the backup operation, battery connection is shut off with 'H' or 'OPEN' input.)	The pin 22 of MAIN1 connector, the pin 6 of SIG connector
	+3.3V SENSE	The input terminal to detect the voltage of +3.3V output; by connecting to the load terminal, only the line drop of the + side of the output cable is compensated.	The pin 2 of MAIN1 connector
	Battery Shutdown Signal for TTL (SHUT_DOWN_T)	Battery connection is shut down with 'L' input (60ms min. input). (available only during the backup operation)	The pin 2 of SIG connector
	Battery Shutdown Signal for RS232C (SHUT_DOWN_R)	Battery connection is shut down with 'positive (+2.4V min.)' input (60ms min. input). (available only during the backup operation)	Apply to only HNSP9-520P-S20-H1V The pin 4 of front panel RS232C connector
	Fan Control Signal (FAN_C)	The control terminal of fan motor; the fan motor is forcibly rotated at full speed at 'L' input.	The pin 4 of SIG connector
Output Signal	Normal Output Signal (PWR_OK)	'H' signal is delivered at normal output (detection delay time: 100 - 500ms).	The pin 21 of MAIN1 connector
	Fan Monitor Signal (FAN_M)	Two cycle pulses per one rotation of the fan motor are delivered (open collector output). Duty ratio of the pulse shall be 0.5 typ. (Interval between the signals becomes longer at low speed and shorter at high speed.) The signal remains 'L' or 'OPEN' when the fan stops caused by any failure or malfunction.	The pin 5 of SIG connector 
	Blackout Detection Signal for TTL (AC FAIL_T)	The signal goes 'OPEN' at low AC input voltage and blackout detection (open collector output). (detection voltage: 75 VAC typ., detection delay time: 16 - 40ms after AC input failure at rated input/output)	The pin 1 of SIG connector
	Blackout Detection Signal for RS232C (AC FAIL_R)	'Negative (-9V typ.)' is delivered at low AC input voltage and blackout detection. (detection voltage: 75 VAC typ., detection delay time: 16 - 40ms after AC input failure at rated input/output)	Apply to only HNSP9-520P-S20-H1V The pin 8 of front panel RS232C connector
	Blackout Detection Signal for USB (AC FAIL_U)	The equivalent data signal of AC FAIL_R 'negative' is delivered at low AC input voltage and blackout detection. (detection voltage: 75 VAC typ., detection delay time: 16 - 40ms after AC input failure at rated input/output)	Apply to only HNSP9-520P-S20-H6V Front panel USB connector
	Low Battery Voltage Signal for TTL (BATT_LOW_T)	The signal goes 'OPEN' when the battery terminal voltage decreases to 19V typ. (open collector output). 'L' is delivered when the battery package is not connected.	The pin 3 of SIG connector
	Low Battery Voltage Signal for RS232C (BATT_LOW_R)	'Negative (-9V typ.)' is delivered when the battery terminal voltage decreases to 19V typ. ('positive (+9V typ.)' is delivered when the battery package is not connected.)	Apply to only HNSP9-520P-S20-H1V The pin 1 of front panel RS232C connector
	Low Battery Voltage Signal for USB (BATT_LOW_U)	The equivalent data signal of BATT_LOW_R 'negative' is delivered when the battery terminal voltage decreases to 19V typ. (The equivalent data signal of BATT_LOW_R 'positive' is delivered when the battery package is not connected.)	Apply to only HNSP9-520P-S20-H6V Front panel USB connector
Buzzer Noise	Buzzer noise is delivered at blackout (the volume can be adjusted). Note: The buzzer may go off for a few seconds when AC input is turned on or interrupted.	Apply to only HNSP9-520P-S20-H2V	

Signal Circuit

Input Signal Circuit	(PS_ON#)	(SHUT_DOWN_T)	(SHUT_DOWN_R)
	 <p>Power supply side +5VSB 4.7kΩ typ. Signal input terminal ⇒ 1mA max. 5.25V max. ('L' ≤ 0.8V, 2.0V ≤ 'H')</p>	 <p>Power supply side +5VSB 4.7kΩ typ. Signal input terminal ⇒ 1mA max. 5.25V max. ('L' ≤ 0.4V, 2.4V ≤ 'H')</p>	<p>Apply to only HNSP9-520P-S20-H1V</p> <p>ADM232AARN (Analog Devices) or equivalent</p>  <p>Power supply side Inner logic RS232C input</p>
Output Signal Circuit	(PWR_OK)	(AC FAIL_T), (FAN_M), (BATT_LOW_T)	(AC FAIL_R), (BATT_LOW_R) Apply to only HNSP9-520P-S20-H1V
	 <p>Power supply side +5V(CH2) 1kΩ typ. Signal output terminal ← 5mA max. 5.25V max. ('L' < 0.4V)</p>	 <p>Power supply side Signal output terminal ← 5mA max. 5.25V max. ('L' < 0.4V)</p>	<p>(AC FAIL_U), (BATT_LOW_U) Apply to only HNSP9-520P-S20-H6V</p> <p>ADM232AARN (Analog Devices) or equivalent</p>  <p>Power supply side Inner logic RS232C output</p>

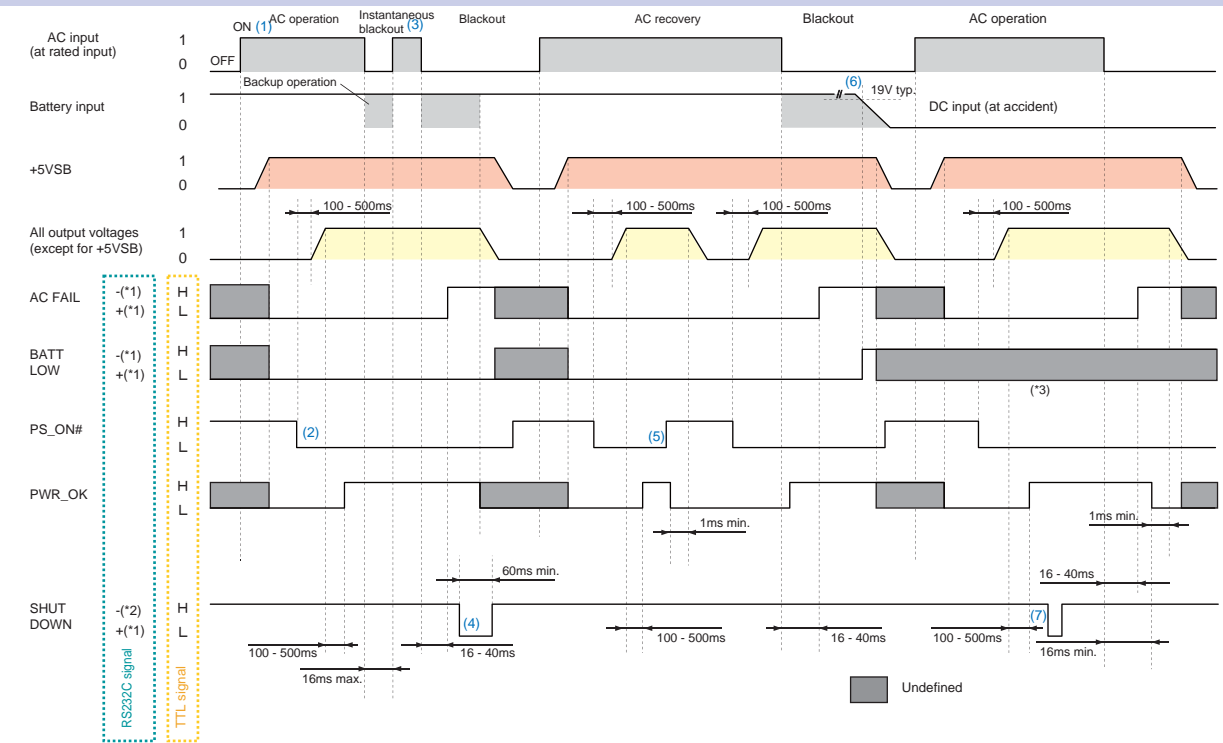
Internal Structure



Additional Output Unit

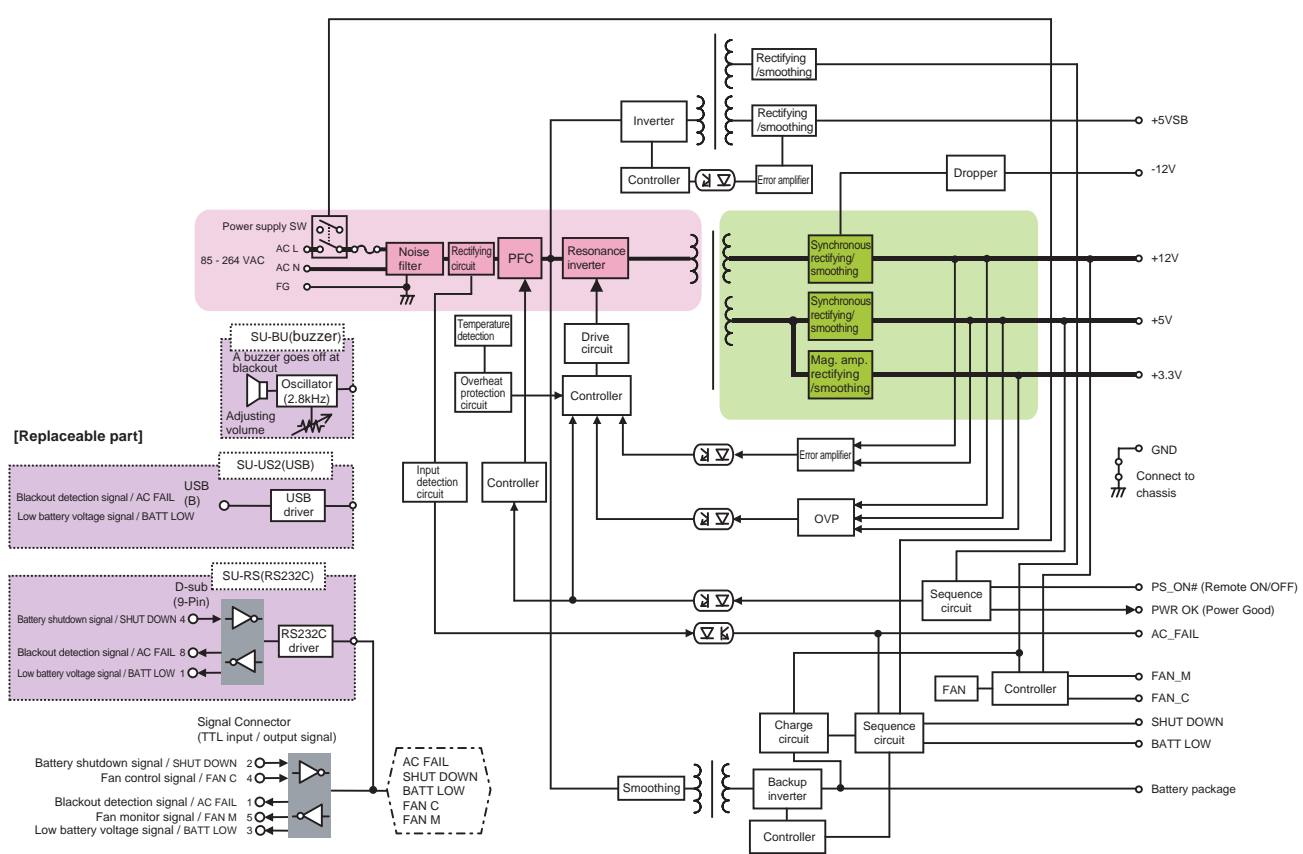


Sequence Diagram HN5P9-520P-S20-H1V connected w/ dedicated RS232C signal unit: 'SU-RS' and dedicated battery package



- (*1) Negative signal output is -9V typ. Positive signal output is +9V typ.
- (*2) Negative signal input should be +0.4V to -20V. Positive signal output should be +2.8V to +20V.
- (*3) BATT LOW might not be delivered because of the charging output and depending on battery terminal voltage.
- (1) With AC input, only +5VSB starts up.
- (2) With PS_ON# 'L' input, all outputs start up. After 100 - 500ms, PWR_OK goes 'H'.
- (3) AC FAIL 'negative (RS232C)' and 'H (TTL)' are delivered 16 - 40ms after blackout.
- (4) At blackout, all outputs including +5VSB shutdown with SHUT DOWN 'positive (RS232C)' or 'L (TTL)' input of 60ms min.
- (5) When AC input and all outputs including +5VSB start up, all outputs except for +5VSB shutdown with PS_ON# 'H'.
- (6) When the battery voltage decreases to 19V typ. at backup operation, BATT LOW 'negative (RS232C)' and 'H (TTL)' are delivered; after it decreases to 17V typ., all outputs including +5VSB shutdown.
- (7) At AC input, the output does not change even SHUT DOWN 'positive (RS232C)' or 'L (TTL)' input.

Block Diagram



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 Nonstop (Uninterruptible / No Power-interruption) Power Supply

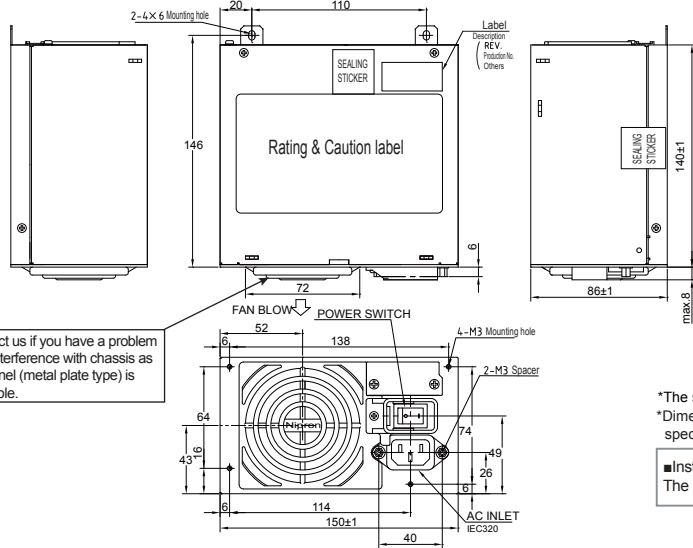
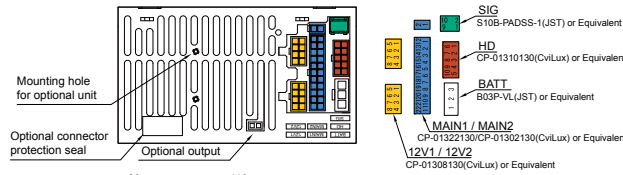
Outline Drawing

BRAIN Power Supply
Desktop PC Power Supply

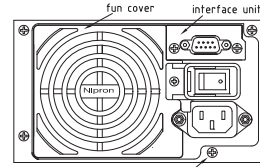
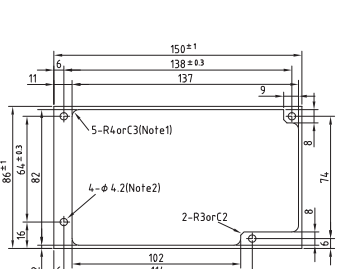
Nonstop (Uninterruptible / No Power-interruption) Power Supply

Pin No.	FUNCTION	MAX. CURRENT
1	+3.3V	6A
2	+3.3V SE	-
3	+12V	6A
4	+5V	6A
5	+5V	6A
6	COM	6A
7	COM	6A
8	COM	6A
9	COM	6A
10	-12V	0.6A
11	+5VSB	4A
12	+3.3V	6A
13	+3.3V	6A
14	+12V	6A
15	+5V	6A
16	+5V	6A
17	COM	6A
18	COM	6A
19	COM	6A
20	COM	6A
21	PWR_OK	5 mA
22	PS_ON	1 mA

Pin No.	FUNCTION	MAX. CURRENT
1	COM	6A
2	COM	6A
3	COM	6A
4	COM	6A
5	+12V	6A
6	+12V	6A
7	+12V	6A
8	+12V	6A
9	+3.3V	6A
10	+5V	6A
11	+5V	6A
12	COM	6A
13	COM	6A
14	COM	6A
15	COM	6A
16	COM	6A
17	COM	6A
18	COM	6A
19	COM	6A
20	COM	6A
21	COM	6A
22	COM	6A



How to process the mounting holes(Recommended)

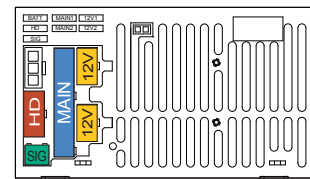


*The screw depth of penetration into PSU is 12mm max.
*Dimensional tolerance shall be ±0.5 unless otherwise specified.

■ Installation direction
The unit can be installed in any directions.


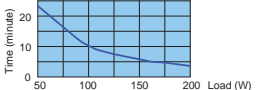

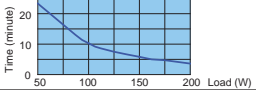
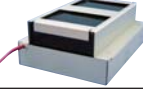
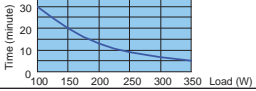

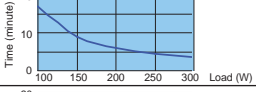

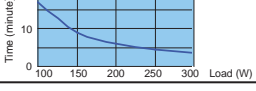
Optional Components Sold Separately

Detachable Output Harness		Length and Type of Connector		Output Port Allocation	
Model					
Main power cable MAIN					
WH-M2022-500	MAIN	500±10	20-pin		
WH-M2022-300	MAIN	300±10	20-pin		
WH-M2422-500	MAIN	500±15	24-pin		
12V power cable 12V					
WH-V0808-500	12V	500±15	12V 8-pin		
WH-V0408-500	12V	500±15	12V 4-pin		
WH-VG208-500	12V	500±15	12V 4-pin PCI-E 6-pin		
WH-VV208-500-02	12V	500±10	12V 8-pin 12V 8-pin		
WH-VG208-500-02	12V	500±10	12V 8-pin PCI-E 6-pin		
WH-G0808-500	12V	500±10	PCI-E 6+2-pin		
WH-GG208-500	12V	500±10	PCI-E 6-pin PCI-E 6+2-pin		
HD power cable HD					
WH-PP610-850	HD	550±15	150±15 150±15		peripheral (HD)
WH-PS610-850	HD	550±15	150±15 150±15		FD
WH-PS710-850	HD	550±15 850±15	150±15 150±15		S-ATA
SIG cable SIG					
WH-S0610-500	SIG	500±15	SIG-1		
WH-S0610-500-01	SIG	500±15	SIG-2		
WH-S0310-500	SIG	500±15	SIG-3		









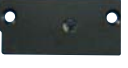

Acceptable cable(s)
MAIN 12V HD SIG
 1 model 2 models 1 model 1 model


Optional Components sold Separately

Battery package					
Page	Picture	Model	Type	Shape (size)	Backup Time
P.402		BS11A-P24/2.3L	Lead	5-inch bay fixed type (WxDxH=146x190x37mm)	
P.404		RBS02A-P24/2.3L	Lead	5-inch bay fixed, removable type (WxDxH=146x245x42mm)	
P.405		BS12A-P24/5.0L	Lead	5-inch bay 2-unit fixed type (WxDxH=146x190x74.9mm)	
P.409		BS10A-H24/2.0L	Ni-MH	5-inch bay fixed type (WxDxH=146x200x38mm)	
P.413		BS22A-H24/2.0L	Ni-MH	5-inch bay fixed type (WxDxH=146x210x41mm)	

*The backup time is a reference value at initial use; it is not a guaranteed value.

Cable			
Picture	Model	Type	Description
	WH2601-02	RS232C communication cable	Dedicated to Windows 2000 / XP / Vista / 7. The cable can be used with power supplies equipped with SU-RS (RS232C signal unit). [RoHS]
	WH2967	USB communication cable	USB communication cable The cable can be used with power supplies equipped with SU-US2 (USB signal unit). [RoHS]
	WH2753	AC power cord	125 VAC 12A [PSE]
	WH2753-02	AC power cord	125 VAC 12A (tracking resistance type) [PSE]

Parts / Unit			
Picture	Model	Type	Description
	SU-RS	RS232C signal unit	Automatic shutdown is possible with RS232C. (standard equipment for HN9-520P-S20-H1V)
	SU-US2	USB signal unit	Automatic shutdown is possible with USB. (standard equipment for HN9-520P-S20-H6V)
	SU-BU	Buzzer unit	Buzzer noise is delivered at blackout (the volume can be adjusted). (standard equipment for HN9-520P-S20-H2V)
	ACC2734	AC power cord retention clamp	It prevents the slipping of AC power cord (WH2753, WH2753-02) and operational Mistakes of power switch. *In some cases, the clamp (ACC2734) might not be possible mounted to a commercial AC power cord.

Software			
Picture	Model	Type	Description
	NSP Pro 2	Automatic shutdown software	Dedicated to Windows 2000 / XP / Vista / 7

*Free software "NSP Pro 2" available at our web-site
*The UPS service of Windows 2000 and XP available

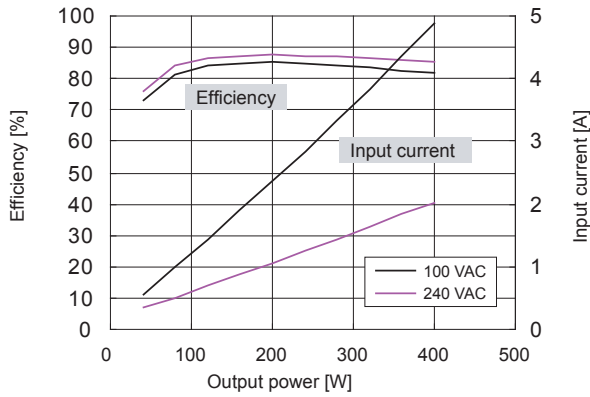
Other Optional Components			
Model	Description	Model	Description
ACC2637	Automatic startup unit	WH5105	12V 4-pin connector conversion harness (80mm)
WH2820	20-pin extension harness (600mm)	WH5105-02	12V 4-pin connector conversion harness (320mm)
WH2747	20-pin extension harness (450mm)	WH5055	AT connector conversion harness
WH2892-02	20-pin extension harness (200mm)	ACC5046	Harness with PS_ON switch
WH2884	Battery extension cable (450mm)	ACC5077	PS_ON terminal short connector
WH2812	PCI-E 6-pin connector conversion harness	WH5073	PS_ON terminal short 20-pin harness

Characteristics Data HN5P9-520P-S20-H1V (Examples of actual measurement)

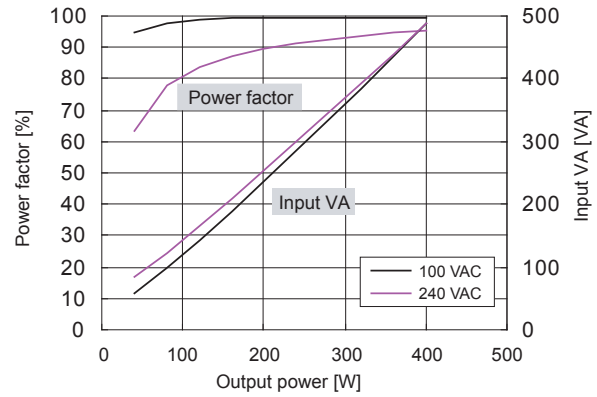
BRAIN Power Supply
Desktop PC Power Supply

Nonstop (Uninterruptible / No Power-interruption) Power Supply

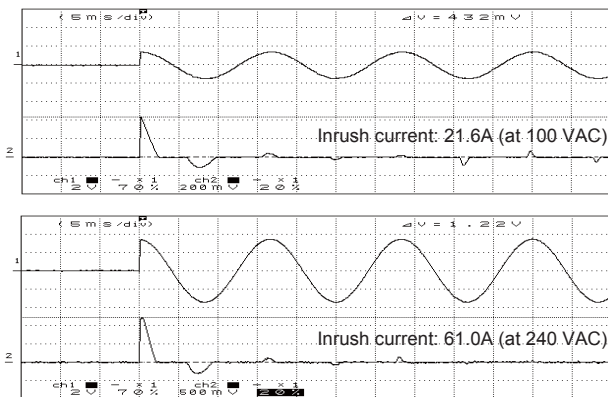
● Fig.5 Efficiency / Input Current vs. Output Power



● Fig.6 Power Factor / Input VA vs. Output Power



● Fig.7 Inrush Current



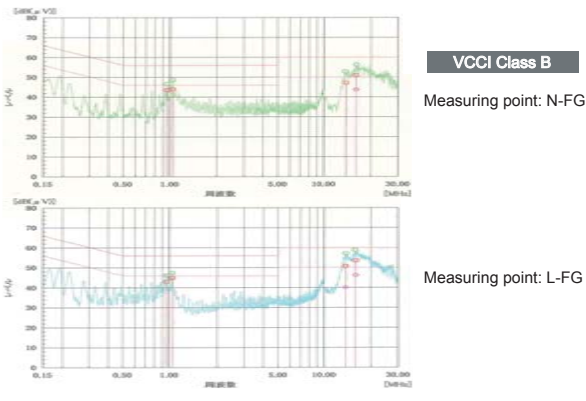
● Fig.8 Leakage Current

Input: 100 / 200 / 240 VAC
Load: Rated and min. load
Measurement conditions: IEC60950 compliant

	Rated load	Min. load
100 VAC	0.18mA	0.17mA
200 VAC	0.30mA	0.29mA
240 VAC	0.35mA	0.35mA

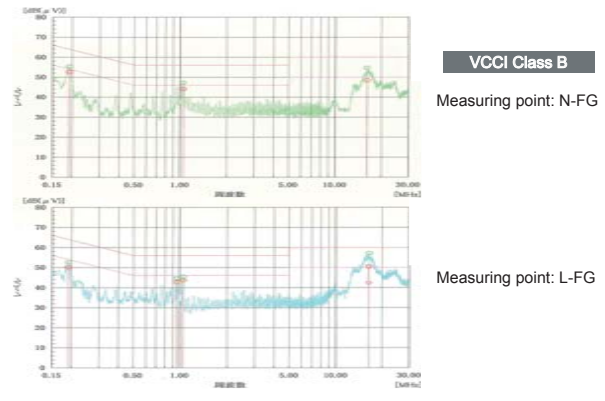
● Fig.9 Conducted Emission at 100 VAC

Input: 100 VAC
Load: Rated
Mode: Peak



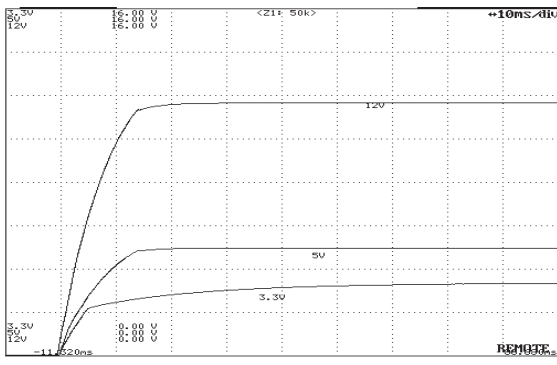
● Fig.10 Conducted Emission at 230 VAC

Input: 230 VAC
Load: Rated
Mode: Peak



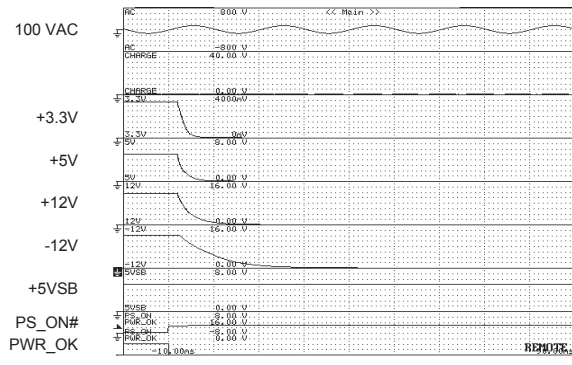
● Fig.11 Rising Characteristics at 100 VAC

Input: 100 VAC
Load: Rated
Time axis: 10ms/DIV



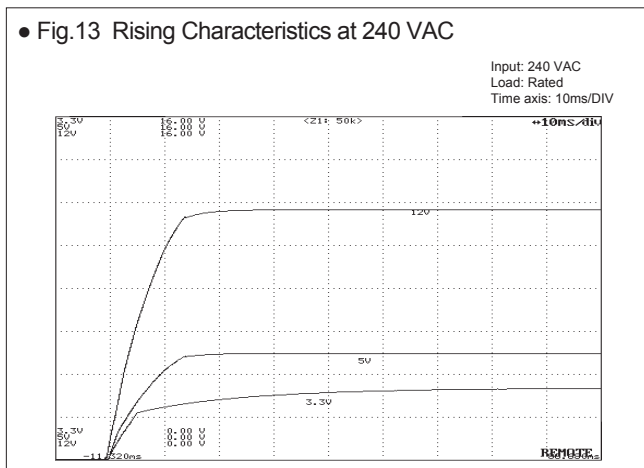
● Fig.12 Falling Characteristics at 100 VAC when REMOTE goes Off

Input: 100 VAC
Load: Rated
Time axis: 10ms/DIV

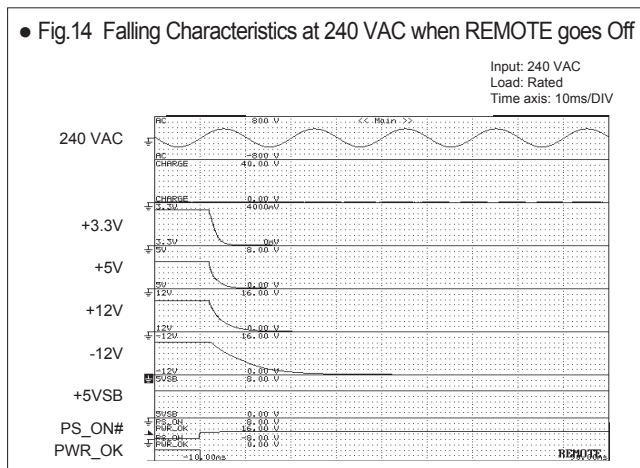


Characteristics Data HN5P9-520P-S20-H1V (Examples of actual measurement)

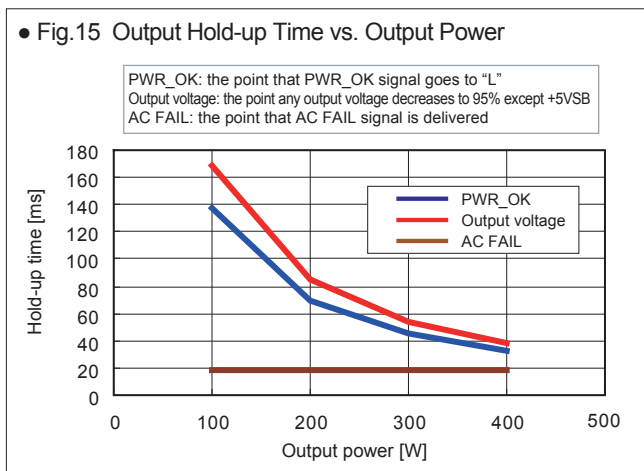
● Fig.13 Rising Characteristics at 240 VAC



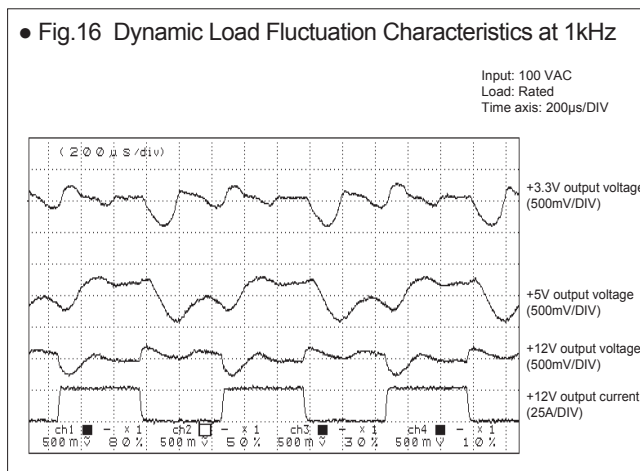
● Fig.14 Falling Characteristics at 240 VAC when REMOTE goes Off



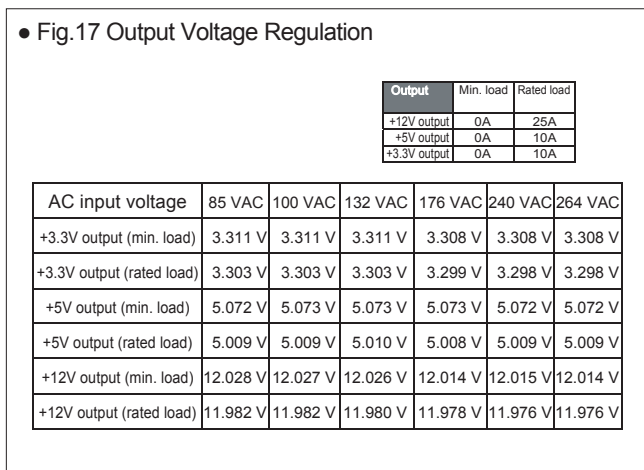
● Fig.15 Output Hold-up Time vs. Output Power



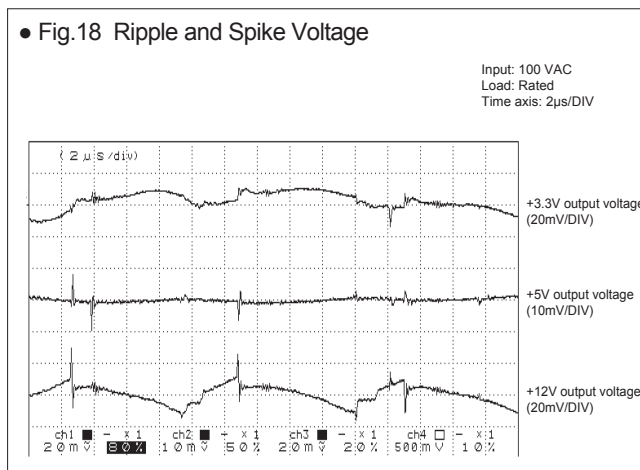
● Fig.16 Dynamic Load Fluctuation Characteristics at 1kHz



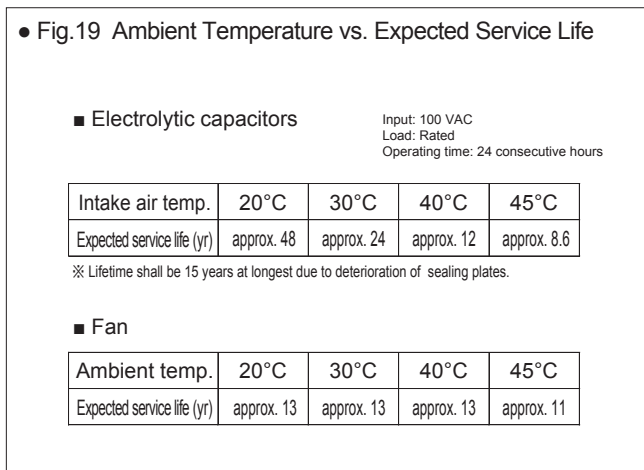
● Fig.17 Output Voltage Regulation



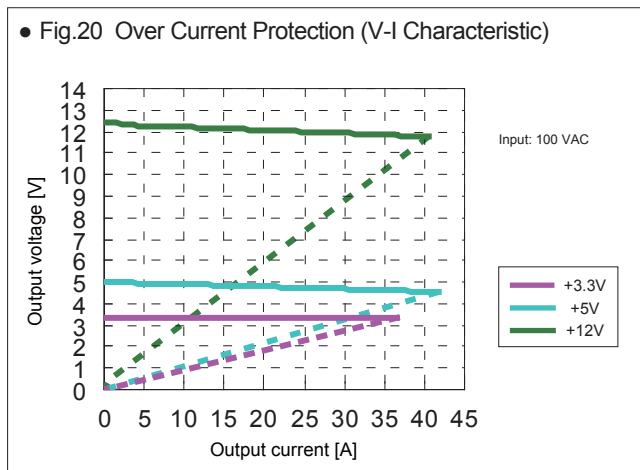
● Fig.18 Ripple and Spike Voltage



● Fig.19 Ambient Temperature vs. Expected Service Life



● Fig.20 Over Current Protection (V-I Characteristic)



BRAIN Power Supply
 Desktop PC Power Supply
 Nonstop (Uninterruptible / No Power-interruption) Power Supply