

SPECIFICATIONS

DA003-01-01A

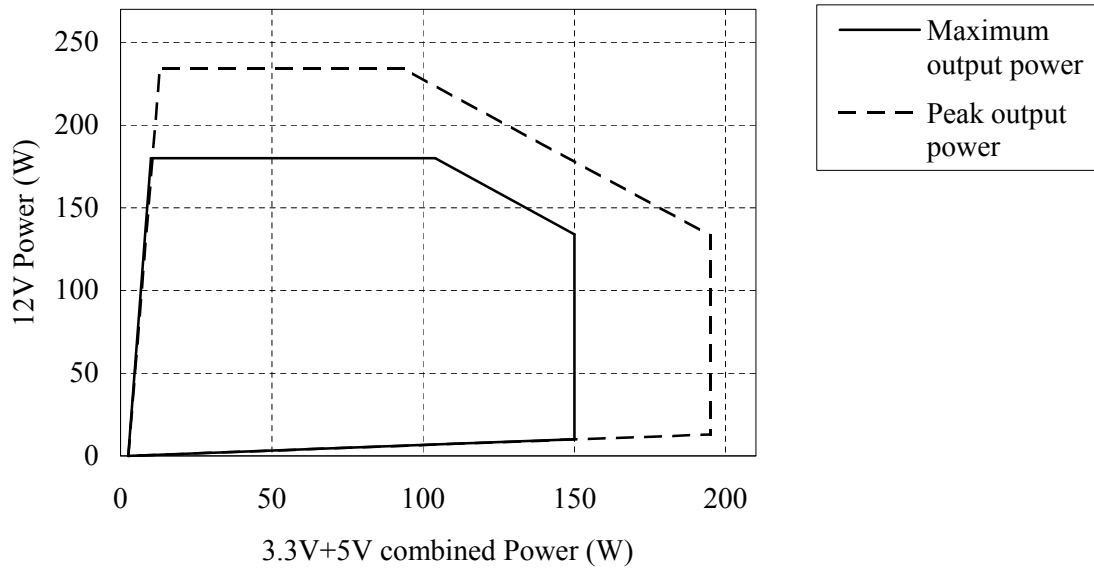
ITEMS	CHANNEL		CH1	CH2	CH3	CH4	CH5		
	1	Nominal Output Voltage	V	+3.3	+5	+12	-12	+5VSB	
2	Minimum Output Current	A	0	0.5	0	0	0		
3	Maximum Output Current	A	16	25	15	0.5	2		
4	Maximum Output Power (Typical Power Distribution)	W	52.8	125	180	6	10		
			150						
			284						
			300						
5	Peak Output Current	A	28	30	19.5	0.8	2.5		
6	Peak Output Power (Typical Power Distribution)	W	92.4	150	234	9.6	12.5		
			195						
			328						
			350						
7	Efficiency (Typ.)	(*)3 %	70						
8	Input Voltage Range	(*)4,8 -	85 - 265VAC /47 - 63Hz (85 - 115VAC : Need Output Derating)						
9	Input Current (Typ.)	(*)5 A	4.5/ 2.3						
10	Inrush Current	(*)6 -	Less than 20A at 100VAC , 50A at 240VAC(Ta=25°C, Cold start)						
11	PFHC	-	Built to meet EN61000-3-2 (class A)						
12	Power Factor (Typ)	(*)5 -	0.98/0.92 (100VAC/ 240VAC, Ta=25°C)						
13	Maximum Ripple & Noise	(*)7 mV	100	100	200	200	100		
14	Max Power Total Regulation	(*)8 %	±5	±5	±10	±5	±5		
15	Peak Power Total Regulation	(*)8 %	±7	±7	±10	±5	±5		
16	Over Current Protection	(*)9 A	30.8 -	33 -	21.45 -	Short Protect	Short Protect		
17	Over Voltage Protection	(*)10 V	3.76 - 4.3	5.74 - 7.0	13.4 - 15.6	-	-		
18	Hold-up time	(*)11 -	more than 17ms at max output power, 115VAC Input , without Battery						
19	Leakage Current	(*)12 -	MAX 0.5mA at100VAC/60Hz , Max 1mA at 230VAC/60Hz						
20	Back Up Input Voltage	(*)13 V	DC20 - 24						
21	Back Up Battery	(*)13 -	Only UNA-BT242R3 (Valve Regulated Lead-Acid Batteries ,Long Life type.)						
22	Back Up Efficiency (Typ)	(*)13,14 %	70						
23	Back Up Time (Typ)	(*)13 -	1.5min. at 250W Load (with UNA-BT242R3,Ta=25°C)						
24	Recovering Charge Time	(*)13 -	Less than 10 hours at discharge of Rated(250W) (with only UNA-BT242R3)						
25	Charging Method	(*)13 -	Constant Voltage and Current Charger (Charging current is 0.35A(typ))						
26	Operation Signal	(*)13 -	PB : PS_ON#, PWR_OK, FAN ALM, AC Fail, BATT Low, Shut Down PN : PS_ON#, PWR_OK						
27	D-SUB Signal	-	None						
28	FAN ALM Function	-	2 pulse per revolution tachometer signal						
29	Operating Temperature	(*)8 -	0 - +50°C (+25 - +50°C : Need Output Derating) (UNA-BT242R3: +10 - +40°C)						
30	Operating Humidity	-	30 - 90%RH (No Condensing) (UNA-BT242R3: 25 - 75%RH, No Condensing)						
31	Storage Temperature	-	-25 - +70°C (UNA-BT242R3: -20 - +40°C)						
32	Storage Humidity	-	10 - 95%RH (No Condensing) (UNA-BT242R3: 25 - 75%RH, No Condensing)						
33	Cooling	-	Forced Air Cooled By Blower. (Cooling FAN with variable speed function.)						
34	Withstand Voltage	-	Input-output, Input-FG:3kVAC(15mA) , for 1min.						
35	Isolation Resistance	-	Not specified						
36	Vibration	-	19.6m/s <sup>2</sup> (10 - 55Hz/min, X,Y,Z 60min each)						
37	Shock	-	196.1m/s <sup>2</sup>						
38	Safety	-	Approved by UL60950-1, CSA60950-1(c-UL),EN60950-1						
39	Conducted Emission	(*)15 -	Built to meet VCCI-ClassB, FCC-ClassB						
40	Radiated Emission	(*)15 -	Built to meet VCCI-ClassB , FCC-ClassB						
41	Weight	kg	1.8 (Except Harness)						
42	Size(WxHxD)	mm	150 x 86 x 155						

- \*1: Ratings - Refer to derating curve and Power distribution.(refer to DA003-01-02\_)
- \*2: Peak power interval; Peak Power 5sec, interval 3 minutes.
- \*3: At 115/240VAC,Ta=25°C and maximum output power without battery unit.
- \*4: Input voltage range shall be 100 - 240VAC(50/60Hz) depending on the requirement of safety specs (UL,EN,CSA,IEC)
- \*5: At 100/240VAC, Ta=25°C and maximum output power without battery unit.
- \*6: Not applicable for the inrush current to Noise Filter less than 0.2ms.
- \*7: Measure with JEITA RC-9131 probe, Bandwidth of scope:100MHz. (refer to DA003-01-08\_)
- \*8: 85 - 265VAC, Inside of Power distribution.(refer to DA003-01-02\_)
- \*9: Constant current limit with automatic recovery.  
+5v,+3.3V and +12V have Low-Voltage-Protection. (Manual reset : power recycle or cycling PS\_ON#)
- \*10: OVP circuit will shut down output. (Manual reset : power recycle or cycling PS\_ON#)
- \*11: At Ta=25°C.
- \*12: Measured by the each measuring method of UL,CSA,EN.
- \*13: UNA350PB has the battery back-up function with a battery unit UNA-BT242R3.
- \*14: At 24VDC(Battery voltage),Ta=25°C, Po=250W.
- \*15: Measured power supply within PC case.

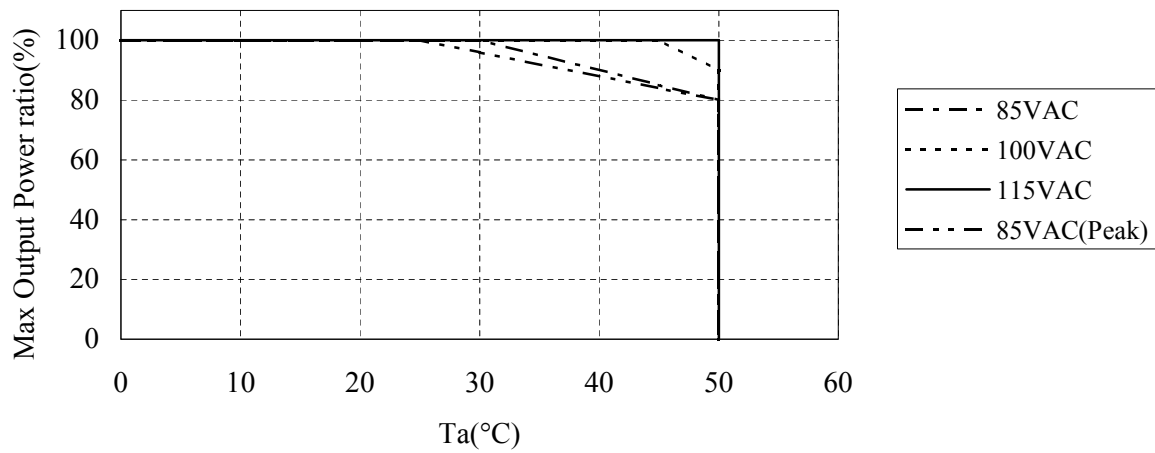
OUTPUT DERATING

DA003-01-02

Cross Loading Graph for 350W output power distribution  
( 5Vrail and 3.3V rail combined Load vs. 12V rail Load)



Output power derating



UNA350PB Model Output Connector Pin Assignment

DA003-01-03C

**CN51** 5566-22A (Molex)

1	2	3	4	5	6	7	8	9	10	11
+3.3V	+3.3V	COM	+5V	COM	+5V	COM	PWR_OK	+5VSB	+12V	NC
12	13	14	15	16	17	18	19	20	21	22
+3.3V	-12V	COM	PS_ON#	COM	COM	COM	NC	+5V	+5V	+3.3V SENSE

**CN10** 53103-0830 (Molex) or 70553-0007 (Molex)

1	2	3	4	5	6	7	8
COM	Shut Down (TTL)	AC Fail (TTL)	BATT Low (TTL)	FAN ALM	Shut Down (RS232C)	AC Fail (RS232C)	BATT Low (RS232C)

**CN50** 5566-12A (Molex)

1	2	3	4	5	6
+5V	COM	COM	+12V	COM	COM
7	8	9	10	11	12
+5V	COM	COM	+12V	+12V	+12V

**CN53** VLR-02V (JST)

1	2
BATT (+24V)	BATT (G)

UNA350PN Model Output Connector Pin Assignment

DA003-01-04

**CN51** 5566-22A (Molex)

1	2	3	4	5	6	7	8	9	10	11
+3.3V	+3.3V	COM	+5V	COM	+5V	COM	PWR_OK	+5VSB	+12V	NC
12	13	14	15	16	17	18	19	20	21	22
+3.3V	-12V	COM	PS_ON#	COM	COM	COM	NC	+5V	+5V	+3.3V SENSE

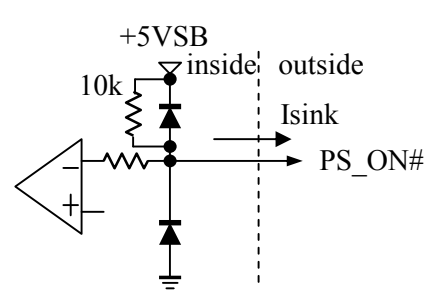
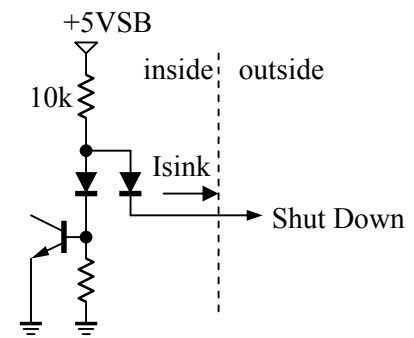
**CN50** 5566-12A (Molex)

1	2	3	4	5	6
+5V	COM	COM	+12V	COM	COM
7	8	9	10	11	12
+5V	COM	COM	+12V	+12V	+12V

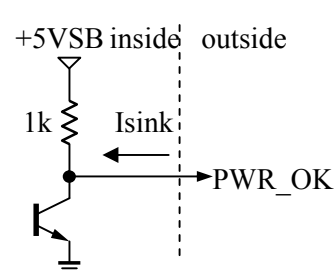
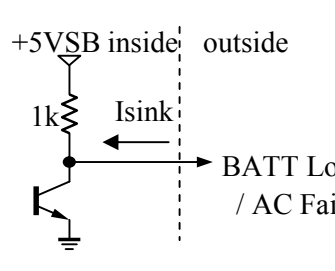
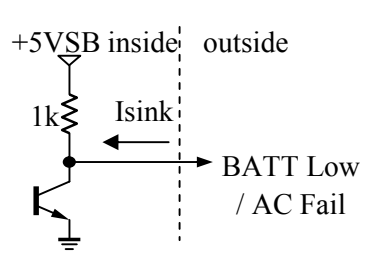
Interface Signal

DA003-01-05

Input Signal

Signal name	Specification	
PS_ON# (CN51-15pin)	When PS_ON# signal is pulled to "Low", the power supply turn on the four main output rails: +5V,+3.3V,+12V and -12V. At the same time battery charge and back up function of UNA350PB shall be turned on. PS_ON# has no effect on the +5VSB output which is always enabled when never the AC power is present. High > 2.0V (Isink=200uA) or OPEN (5.25V) Low <0.8V or short to COM Isink<1.6mA at Vin=0.4V	
Only UNA350PB Model Function		
Shut Down (CN10-2pin)	When Shut Down signal is pulled to "Low" while operating battery back up, all DC outputs shall be shut down.  High > 2.7V or OPEN  Low <0.7V or short to COM Isink>1mA	

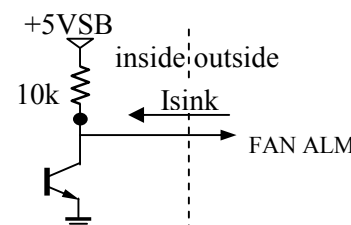
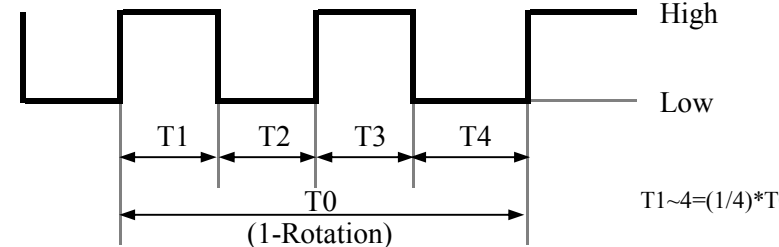
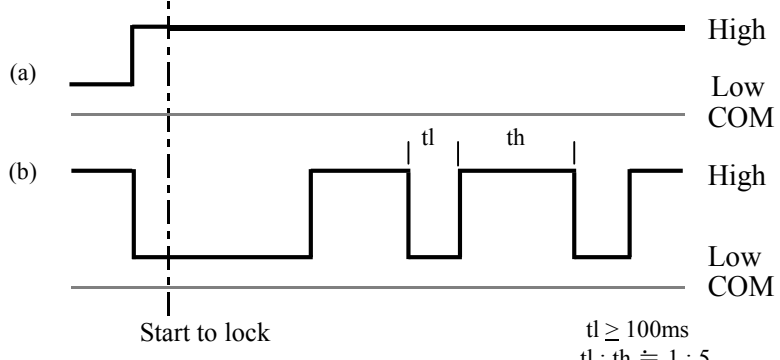
Output Signal

Signal name	Specification	
PWR_OK (CN51-8pin)	When +3.3V,+5V and +12V are normal output voltage, PWR_OK signal shall be turned on "High".  High : Between 2.4V and +5VSB output while sourcing 200uA Low < 0.4V while sinking 4mA	
Only UNA350PB Model Function		
AC Fail (CN10-3pin)	When AC input voltage is dropped or AC power line is failure, AC Fail signal shall be turned on "High".  High = +5VSB Low < 0.4V Isink<1mA	
BATT Low (CN10-4pin)	When battery voltage fall down to 19±1V , BATT Low signal shall be turned on "High". After that battery voltage fall down to 17±1V, battery back-up circuitly shall be stopped and all DC output rails shall not deliver current. High = +5VSB Low < 0.4V Isink<1mA	

Interface Signal

DA003-01-06

Output Signal

Signal name	Specification	
<p>FAN ALM (CN10-5pin)</p>	<p>(a)Normal Operation The FAN ALM signal outputs 2-pulses for each rotation of internal FAN MOTOR.</p> <p>High <math>\leq +5V_{SB}</math> Low <math>\leq 0.5V</math> (<math>I_{sink} \leq 5mA</math>)</p>	
		
	<p>(b)FAN LOCKED Transistor for FAN ALM becomes "off" synchronized with operation of protection circuit. FAN ALM becomes (a) or (b) below by stopped position of fan rotor.</p> <p>High <math>\leq +5V_{SB}</math> Low <math>\leq 0.4V</math> (<math>I_{sink} \leq 5mA</math>)</p>	
		

Interface Signal

DA003-01-07

RS232C Signal

Input Signal

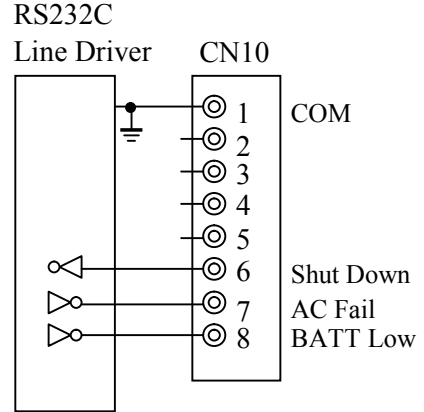
Signal name	Specification
Shut Down (CN10-6pin)	When Shut Down signal is pulled to "High" while battery back up, all DC output rails shall be shut down.  +5V < High < +30V -5V > Low > -30V

Output Signal

Signal name	Specification
AC Fail (CN10-7pin)	When AC input voltage is dropped or AC power Line failure, AC Fail signal shall be turned on "High".  +5V ≤ High ≤ +15V -5V ≤ Low ≤ -15V (with 3kΩ to COM)
BATT Low (CN10-8pin)	When battery voltage fall down to 19±1V , BATT Low signal shall be turned on "Low". After that battery voltage fall down to 17±1V, battery back-up circuitly shall be stopped and all DC output rails should not deliver current.  +5V ≤ High ≤ +15V -5V ≤ Low ≤ -15V (with 3kΩ to COM)

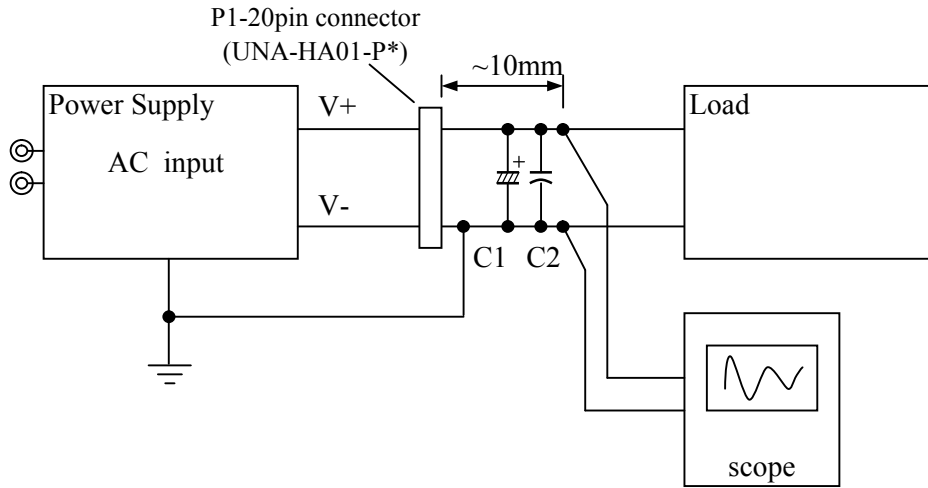
Other

Signal name	Specification
COM (CN10-1pin)	Signal GND for Shut Down.



Differential Noise Test Setup

DA003-01-08



Notes.

1. C1=10uF Aluminum Electrolytic Capacitor
2. C2=0.1uF Ceramic Capacitor
3. Scope: Bandwidth of scope:100MHz
4. Measure with JEITA RC-9131 probe