



1 AC power input Characteristics				Unit
1-1	Input Voltage range :		200~264	Vac
1-2	Input Frequency :		50/60	47~63 Hz
1-3	Unload input current :		80	Max. mAac
1-4	Input Current consumption at 240Vac:	1).Output 6.6V 6A loading	0.5	Aac
		2).Output 13.5V 6A loading	0.8	Aac
1-5	Nominal Efficiency:	at 240Vac input, output 13.5V 6A	>78%	

2 Charging Output Control Characteristics												
2-1	Charging Flow :	Battery condition check → Manual Rejuvenation Charge → Soft Start Charge → → Bulk Charge → Absorption Charge → Manual Equalising Charge → Float Charge(Full)										
2-2-1	Manual Rejuvenation Charge Activity conditions:	Pressing the "Select Battery Type" button (Hold for 3 Seconds)										
2-2-2	Manual Rejuvenation Charge Time Limited:	Return to previous charging status when timer out	24	±0.5 Hours								
2-2-3	Manual Rejuvenation Charge Stop condition:	24 Hours timer out or Pressing the "Select Battery Type" button again (Hold for 3S) in the Rejuvenating stage.										
2-3-1	Soft Start Charging Activity conditions:	6V Battery Voltage is between 1 Vdc - 5.25Vdc	1-5.25	±0.3 Vdc								
2-3-2	Soft Start Charging Activity conditions:	12V Battery Voltage is between 1 Vdc - 10.5Vdc	1-10.5	±0.5 Vdc								
2-3-3	Soft Start Charging output current control:	Subject to Charging rate (2A/4A/6A) selected	0.5 / 1.0 / 1.5	±0.3 Adc								
2-3-4	Soft Start mode transit to Bulk mode when 6V bat. above:		5.25	±0.3 Vdc								
2-3-5	Soft Start mode transit to Bulk mode when 12V bat. above:		10.5	±0.5 Vdc								
2-3-6	Soft Start Charging Time Limited:	Stop charging if 6V battery voltage cannot reach 5.25V after 4hrs	4	±0.5 Hours								
2-3-7	Soft Start Charging Time Limited:	Stop charging if 12V battery voltage cannot reach 10.5V after 4hrs	4	±0.5 Hours								
2-4-1	Bulk Charging Activity conditions:	6V Battery Voltage is over 5.25Vdc	5.25	±0.3 Vdc								
2-4-2	Bulk Charging Activity conditions:	12V Battery Voltage is over 10.5Vdc	10.5	±0.5 Vdc								
2-4-3	Bulk Charging Current control:	Subject to Charging rate (2A/4A/6A) selected	2 / 4 / 6	±0.4 Adc								
2-4-4	Bulk mode transit to Absorption mode when Bat. above:	Subject to 6V Battery type (GEL/AGM&WET/Ca.) selected	7.1 / 7.2 / 7.35	±0.15 Vdc								
2-4-5	Bulk mode transit to Absorption mode when Bat. above:	Subject to 12V Battery type (GEL/AGM&WET/Ca.) selected	14.1 / 14.4 / 14.7	±0.25 Vdc								
2-4-6	Bulk Charging Time(Tcc) Limited:	Stop charging if 6V battery voltage cannot reach 7V after 24hrs	24	±1 Hours								
2-4-7	Bulk Charging Time(Tcc) Limited:	Stop charging if 12V battery voltage cannot reach 14V after 24hrs	24	±1 Hours								
2-5-1	Absorption Charging Output Voltage control:	Subject to 6V Battery type (GEL/AGM&WET/Ca.) selected	7.1 / 7.2 / 7.35	±0.15 Vdc								
2-5-2	Absorption Charging Output Voltage control:	Subject to 12V Battery type (GEL/AGM&WET/Ca.) selected	14.1 / 14.4 / 14.7	±0.25 Vdc								
2-5-3	Absorption Charging Time(Tcv) Limited:	Force to Float mode(skip Equalising process) when Time-out	6	±0.5 Hours								
2-6-1	Equalising Charge Activity conditions:	If selected "Calcium" battery type , the Equalisation charging function will be presented automatically.										
2-6-2	Max. Equalising Charging output Voltage control:	6V Calcium battery type selected	8.1	±0.3 Vdc								
2-6-3	Max. Equalising Charging output Voltage control:	12V Calcium battery type selected	16.2	±0.5 Vdc								
2-6-4	Equalising Charging current control:	Subject to Charging rate (2A/4A/6A) selected	<table border="1"> <tr> <td></td> <td>2A</td> <td>4A</td> <td>6A</td> </tr> <tr> <td>CALCIUM</td> <td>0.5</td> <td>1</td> <td>1.5</td> </tr> </table>			2A	4A	6A	CALCIUM	0.5	1	1.5
	2A	4A	6A									
CALCIUM	0.5	1	1.5									
2-6-5	Equalising Charging Time Limited:	When charging Calcium Battery Type:	1/2 (Tcc+ Tcv) 1 minimum Hours									
2-7-1	Float Charging output Voltage control:	Subject to 6V Battery type (GEL/AGM&WET/Ca.) selected	6.7 / 6.75 / 6.8	±0.15 Vdc								
2-7-2	Float Charging output Voltage control:	Subject to 12V Battery type (GEL/AGM&WET/Ca.) selected	13.8 / 13.8 / 13.8	±0.25 Vdc								
2-7-3	Max. Float Charging current control:	Subject to Charging rate (2A/4A/6A) selected	1.0 / 2.0 / 3.0	±0.5 Adc								
2-8	Unload output voltage when battery is disconnected		0.5	(Max.) Vdc								
2-9	Output short-circuit current when battery is disconnected :		5	(max.) mAac								
2-10	Battery flow back current (to the charger) when connected to 12V battery, AC Power disconnected :		5	(max.) mAac								

3 LED Indication & push button description

	Bulk			Absorption			Float(Full)		
	Yellow	Green	Green	Green	Green	Green	Green	Green	
3-1	A.C power disconnect , battery connected.....	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
3-2	A.C power connected , battery disconnected.....	OFF	OFF	OFF	OFF	OFF	OFF	OFF	
3-3	A.C power & battery connected , Soft Start charge mode.....	ON	OFF	OFF	OFF	OFF	OFF	OFF	
3-4	A.C power & battery connected , Bulk charge mode.....	ON	OFF	OFF	OFF	OFF	OFF	OFF	
3-5	A.C power & battery connected , Absorption charge mode.....	OFF	ON	ON	OFF	OFF	OFF	OFF	
3-6	A.C power & battery connected , Equalisation charge mode.....	OFF	ON	OFF	OFF	OFF	OFF	OFF	
3-7	A.C power & battery connected , Float charge mode.....	OFF	OFF	ON	ON	ON	ON	ON	

	2A			4A			6A		
	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF
2A	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF
4A	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF
6A	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN

	Calcium			AGM/WET			GEL		
	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF
Calcium	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF
AGM/WET	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF
GEL	OFF	OFF	GREEN	OFF	OFF	GREEN	OFF	OFF	GREEN

	FAULT		Rejuvenation	
	RED	RED	RED	RED
3-8	A.C power connected , Charger output shorted or reverse polarity	ON	OFF	OFF
3-9	A.C power & battery connected , Soft Start / Bulk Charge time limit.....	FLASH	OFF	OFF
3-10	A.C power & battery connected , Rejuvenation Charging mode selected.....	OFF	FLASH	FLASH
3-11	A.C power & battery connected ,Battery Weak Detected.....	OFF	FLASH	FLASH

→Remark: Equalisation charging model will be self-started when Calcium battery type selected.

- 3-12 Press "Select Charging Rate" button: Select charging current , select sequence is 2A → 4A → 6A
- 3-13 Press "Select Battery Type" button: Select battery type , select sequence is GEL → AGM / WET → Calcium
- 3-14 Press "Select Battery Type" button: Press "Select Battery Type" button (Hold for 3S) to select Rejuvenating function.

4 Safety & Protection

4-1	Safety Standards:	EN 60335-2, EN 60335-2-29, AS/NZS
4-2	EMC Standards:	C-Tick
4-3	Primary to Secondary insulation Test :	3000Vac 50/60Hz with 1 minutes, 5mAac
4-4	Build-in temperature protection	
4-5	Output short-circuit, reverse polarity Protection	

5 Electrical Cable

5-1	Input Connector:	VDE HO3VVH2-F 2X0.75mm ² with 2PIN plug, external length 6ft
5-2	Output cord :	18AWG X2C 105°C with Battery Clip , external Length 6 feet.

6 Enclosure Construction

6-1	Plastic Enclosure Dimension :	Approx 80 (W) x 180 (L) x 50 (H) mm
6-2	Weight:	Approx 630g

7 Environmental Characteristics

7-1	Operating temperature :	0 to 40 °C
7-2	Storage temperature :	-10 to 75 °C
7-3	Operating Humidity range :	90% RH Max
7-4	Cooling	By fan forced air

8 Charging Curve :

