



GWM1 12/24VDC Lead Acid Battery Charger

General Overview:

The GWM1 Intelligent Digital Switch Mode Battery Charger has been designed to offer additional features not commonly found in battery chargers.

The GWM1 Charger offers the following:

1. 12/24VDC selectable modes.
2. Battery Disconnected Indication.
3. Reverse Polarity Indication.
4. Bulk Charge Mode Indication.
5. Absorption Charge Mode Indication.
6. Float Charge Mode Indication.
7. Charger Fail / Fault Indication.
8. DC Fuse Fail Indication
9. Fused 2A Auxiliary or Control Circuit Output.
10. Fused 6.5A Battery Output.
11. Mains Input Voltage Monitoring.

General Specifications:

1. Supply input voltage: 186VAC to 250VAC.
2. Supply input current Maximum: 1.7A
3. Supply inrush current on power up: 6.6A
4. MCU 1 Clock speed: 32 MHz
5. MCU 2 Clock speed: 32 MHz
6. Switching Frequency: 40Khz
7. Potential free outputs: 1 x SPDT outputs rated at 90W.
8. Inrush current limiting: Yes.
9. MOV Input Protection: Yes.
10. Fuse Protection input and output: Yes.
11. Mains Voltage Range protection: Yes.
12. Primary Current Limiting: Yes.
13. Control Mode: Constant Current and Constant Voltage.
14. Primary to Secondary Side Isolation: Yes
15. Charger Dimensions: 148mm(W) x 155mm(L)
16. Thermal protection: Yes

General Operation:

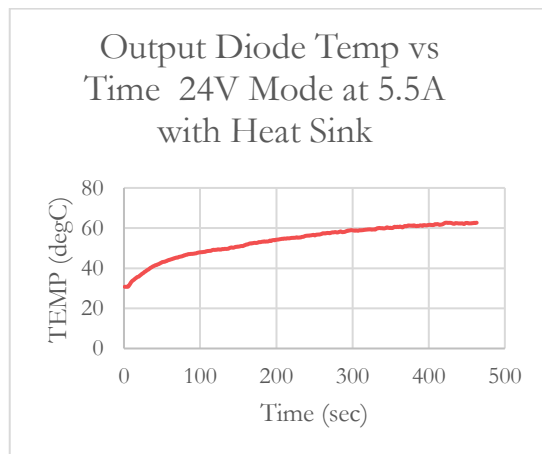
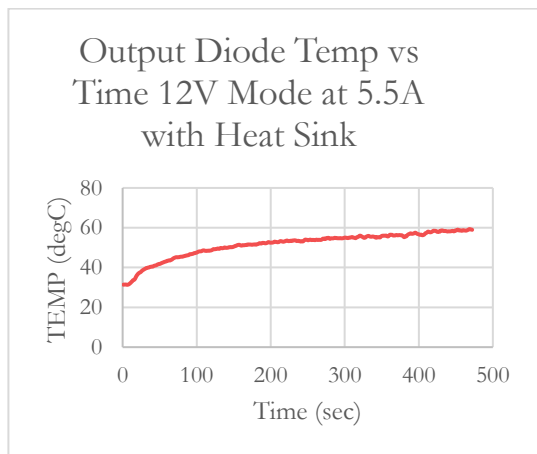
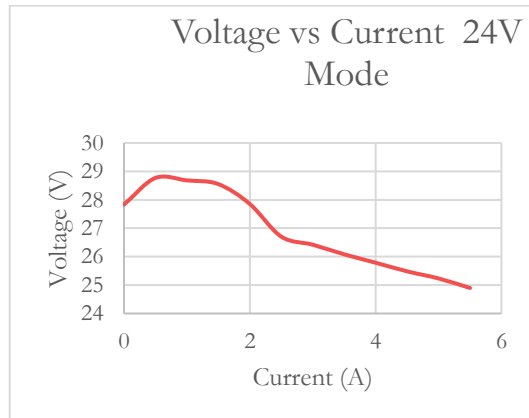
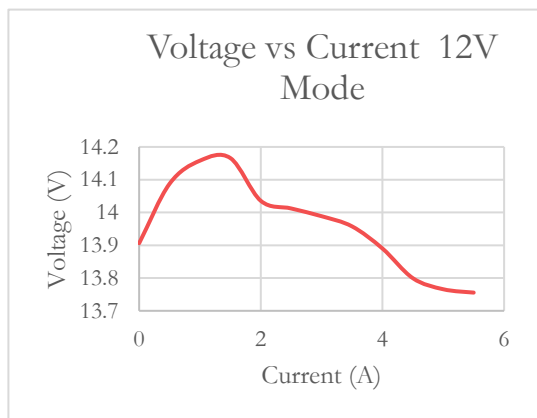
The general operation of the battery charger is to offer a reliable battery charging and battery management solution to industry.

The Battery charger utilizes a half bridge topology for improved efficiency and power output, with the digital control loop offering unique flexibility with Frequency, Power, Protections and so much more.

The charger when powered up within its protected limits will initiate a testing sequence and automatically select the correct charging algorithm for the selected battery voltage. If the charger moves out of any of its defined parameters, then the charger will enter a fault state and thus switching the charger fail relay.

The charger failure relay is a potential free output for the purpose of notifying the operator of any unwanted conditions related to the battery charger or battery.

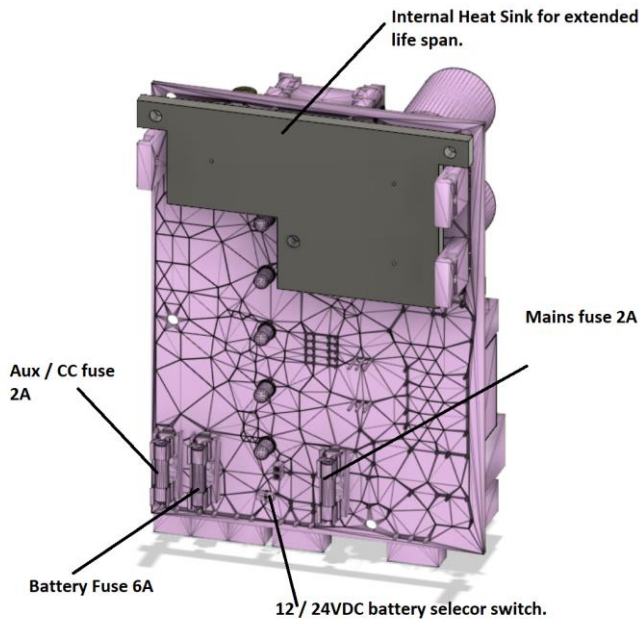
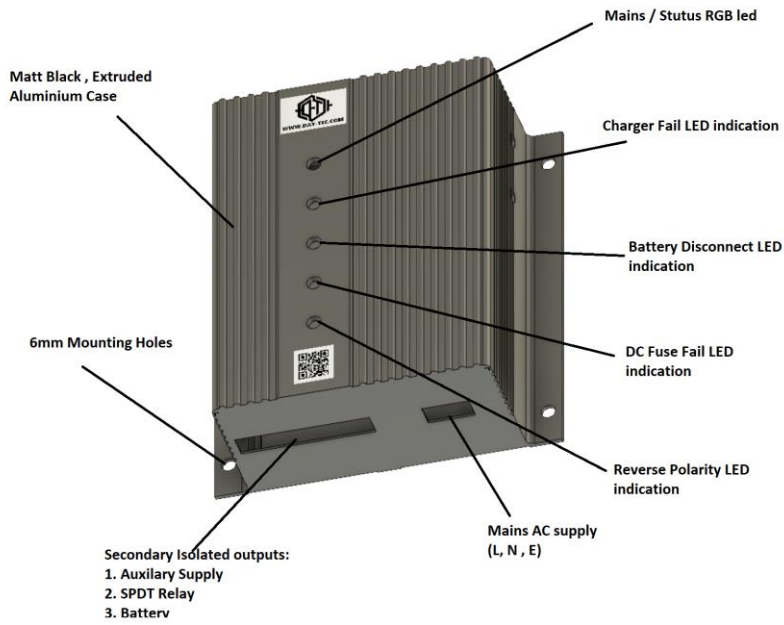
Performance Curves:



Condition vs Expected Result:

Condition/Test Description:	Result / Expected Response:
AC Power ON, no battery connected (Quick test under 10 seconds) - Correct Voltage reading	<ol style="list-style-type: none"> 1. 12VDC = 14.2V / 24VDC = 27.7V 2. Relay Healthy 3. Mains LED = On
AC Power ON, no battery connected - check for battery disconnect led indication (30 second delay)	<ol style="list-style-type: none"> 1. Battery Disconnection LED = On 2. Mains LED = On 3. Relay Switched 4. Charger Fail LED = On
AC Power ON, no battery connected - Remove Control circuit Fuse (30 Second delay)	<ol style="list-style-type: none"> 1. Battery Disconnection LED = On 2. Charger Fail LED = On 3. Fuse Fail LED = On 4. Relay Switched 5. Mains LED = On
AC Power ON, no battery connected - Remove Battery Fuse (30 second Delay)	<ol style="list-style-type: none"> 1. Charger Fail LED = On 2. Fuse Fail LED = On 3. Mains LED = On 4. Relay Switched
AC Power ON, no battery connected - 500ma Load (Quick test under 10 seconds)	<ol style="list-style-type: none"> 1. Mains LED = On 2. Charger Must Start Up
AC Power ON, WITH battery connected - Correct Voltage reading, Load below 500mA (Float Mode)	<ol style="list-style-type: none"> 1. 12VDC = 13.7V / 24VDC = 27.4V 2. Relay Healthy 3. Mains LED = On
AC Power ON, WITH battery connected - Correct Voltage reading, Load Greater than 1000mA (Abortion Mode)	<ol style="list-style-type: none"> 1. 12VDC = 14.4V / 24VDC = 28.8V 2. Relay Healthy 2. Mains LED = On
AC Power ON, WITH battery connected - Correct Voltage reading, Load Greater than 5500mA (Bulk Mode)	<ol style="list-style-type: none"> 1. Charger Should Current Limit at 5.5A 2. Relay Healthy 3. Mains LED = On
AC Power OFF , WITH battery connected - check for Mains led indication	<ol style="list-style-type: none"> 1. Relay Switched 2. Charger Fail LED = On 3. Mains LED = OFF
AC Power OFF , WITH battery connected - Remove Control circuit Fuse	<ol style="list-style-type: none"> 1. Charger Fail LED = On 2. Fuse Fail LED = On 3. Relay Switched 4. Mains LED = OFF
AC Power ON, WITH 12VDC battery connected and set to 24V mode.	<ol style="list-style-type: none"> 1. Mains LED Flashes 2. Charger Fail LED flashes
AC Power ON, WITH 24VDC battery connected and set to 12V mode.	<ol style="list-style-type: none"> 1. Mains LED is ON 2. Charger Fail LED is ON 3. Charger is Shutdown

General Layout of Charger:



Contact us:

For further details or requirements please contact us at Info@day-tec.com