

SPECIFICATION

For

UNINTERRUPTIBLE POWER SYSTEM

M/N: MPU-D205

Revision History

Version	Revise Date	Change Items
Rev. 01	Aug. 29. 2019	Established.



FEATURES

- ✓ MPU-D205 is a DC/DC uninterruptible power system. (battery not included).
- ✓ The UPS module would active battery source when the main power source loss.
- ✓ Support USB communication with windows system. (Provided GUI software monitoring)
- ✓ LED indicator for UPS status, Low Battery warning, UPS Fail, and Charging
- ✓ Battery application: Requires 2 pcs of Lead-acid batteries 12V/7Ah in series.

Models & Ratings

Model Number	Wattage (Rated / Peak)	Output Voltage	Rated Current	Peak. Current	Notes & Conditions
MPU-D205	200 / 250 W (10 sec)	+24 V (Normal mode: Vin – 0.5V, Battery mode: +20.2 to 27.9V)	8.33A	12A	

Note:

1. Battery mode will active automatically when the input source fails.
2. Battery charger included in the UPS.
3. UPS does not include batteries. Please refer the " Recommended Battery Specification" for Battery specification" in Page.3.

Summary

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Range	21.6	24	25.2	VDC	Continuous input range.
Operation Temperature	-20		+60	°C	
Weight		100		g	
Battery		24		VDC	24Vdc, SLA Sealed lead acid battery 2 x 12Vdc, SLA Sealed lead acid battery
Charge Current			1.5	A	
Dimensions	127mm x 76.2mm x 32mm				
EMC	EN 55022 / EN 55032, CISPR 32 & FCC Part 15				
Safety Approvals					
Serial Communication	USB mini B				
Software App	GUI for Windows 7 or higher operating system.				

Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	21.6	24	25.2	VDC	Continuous input range.
Input Current			12	A	DC Input Voltage 21.6VDC, Peak load.
Input Reverse Polarity Protection	When incorrect input polarity installation, the PSU will be not damaged and no output voltage.				

Recommended Battery Specification

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Nominal Battery Voltage		24		VDC	24Vdc, SLA Sealed lead acid battery 2 x 12Vdc, SLA Sealed lead acid battery
Battery Voltage Range	21.6		28.6	VDC	21.7-28.6Vdc (Continuously operating) 30Vdc Max (the maximum voltage that will not cause damage to the unit) 18Vdc Min (the voltage level of battery to enable)
Battery Capacity		7		Ah	2 x 12Vdc, SLA Sealed lead acid battery
Battery Fuse	25A (SLOW)				
Battery Charging Current	Max current 1.5A				
End-of-Charge Voltage	28.4V				

Note:

Battery recommendation is based on test results for best performance. We do not guarantee the batteries performance outside our recommendation.

Output

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Output Voltage	20.2	24	27.9	VDC	(Normal mode: $V_{in} - 0.5V$, Battery mode: +20.2 to 27.9V)
Output Current		8.33	12	A	
Short Circuit or Over Load Protection	Normal Mode: DC Fuse, Battery Mode: DC Fuse, Digital function cover.				

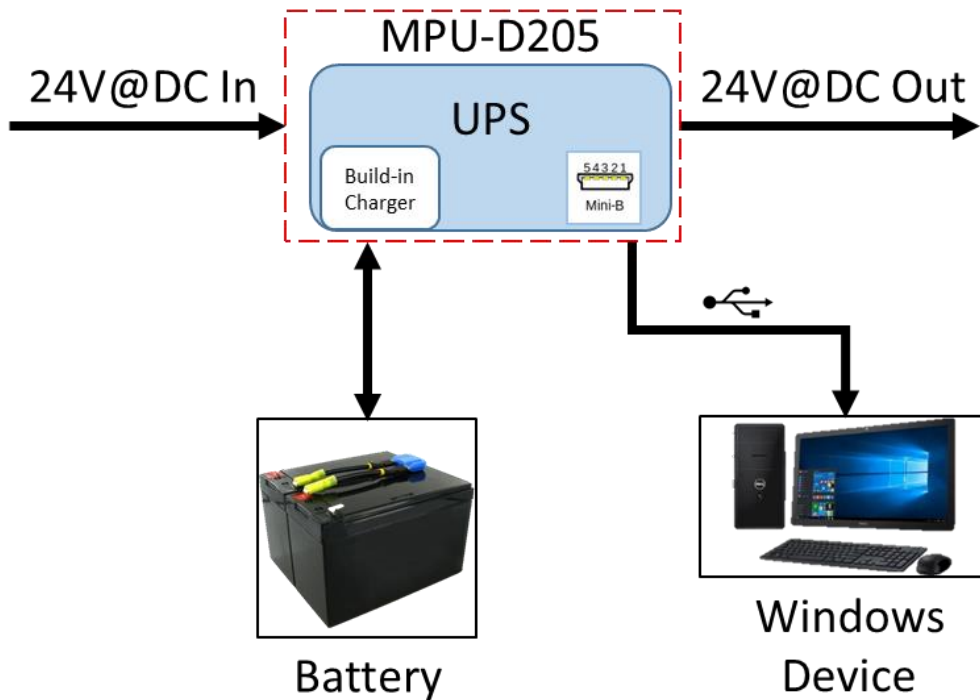
General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency	95			%	At input voltage 24VDC, rated load condition, (Charger is no work)

Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-20		+60	°C	
Relative Humidity	10		90	%RH	Non-condensing.
Cooling	TBD			CFM	Convection
Vibration	TBD		TBD	G	Frequency Type: Sweep Frequency Frequency Range: 10~55 Hz Displacement: 1.0mm Sweep Rate: 60 minute / cycle Number of cycle: 1 cycle / axis Direction: X ,Y and Z axis

Illustration



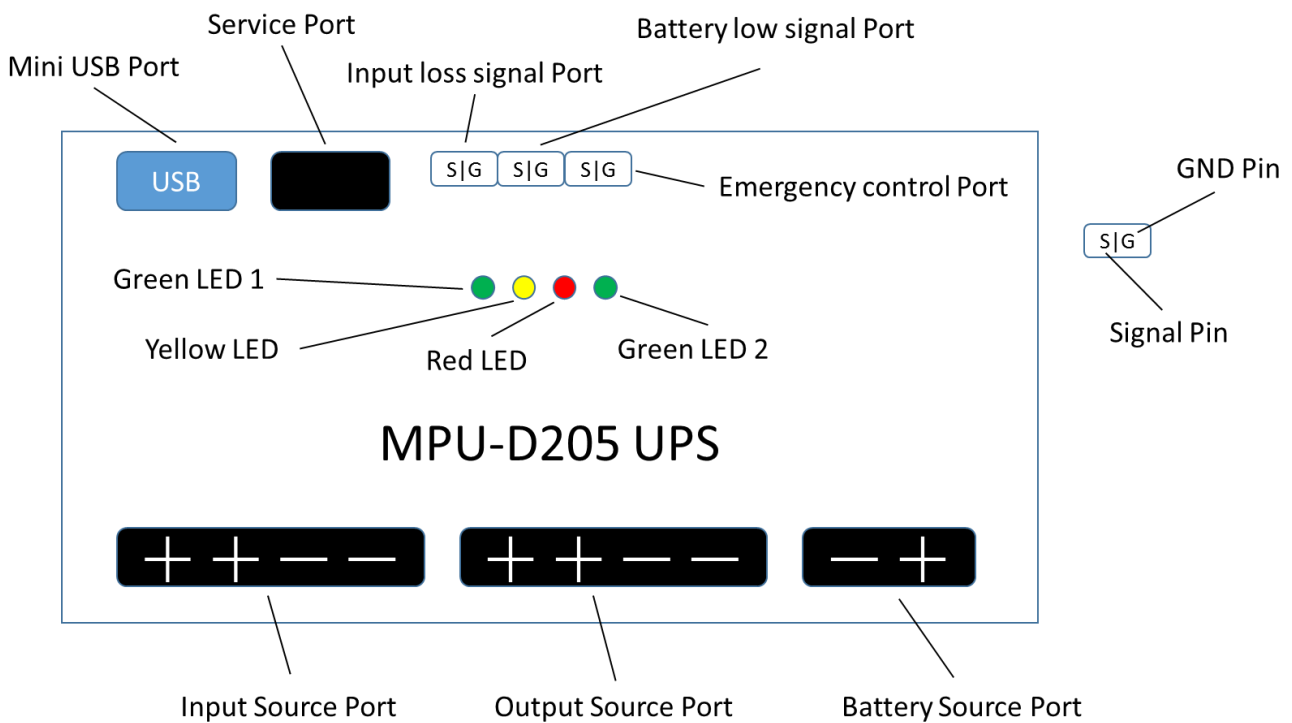
Application Note

Item	Description																		
Battery Specification	YUASA NP7-12(NEI) x 2Pcs series																		
Backup Time Curve	<p style="text-align: center;">MPU-D205 Backup Time curve (12V/7Ah * 2)</p> <table border="1"> <caption>MPU-D205 Backup Time Curve Data</caption> <thead> <tr> <th>Rated Current (%)</th> <th>Backup Time (min)</th> </tr> </thead> <tbody> <tr> <td>25%</td> <td>83</td> </tr> <tr> <td>50%</td> <td>36</td> </tr> <tr> <td>75%</td> <td>22</td> </tr> <tr> <td>100%</td> <td>13</td> </tr> </tbody> </table>	Rated Current (%)	Backup Time (min)	25%	83	50%	36	75%	22	100%	13								
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Safety Approvals

Safety Agency	Safety Standard	Notes & Conditions
UL/cUL	TBD	TBD
CB	TBD	TBD
TUV	TBD	TBD

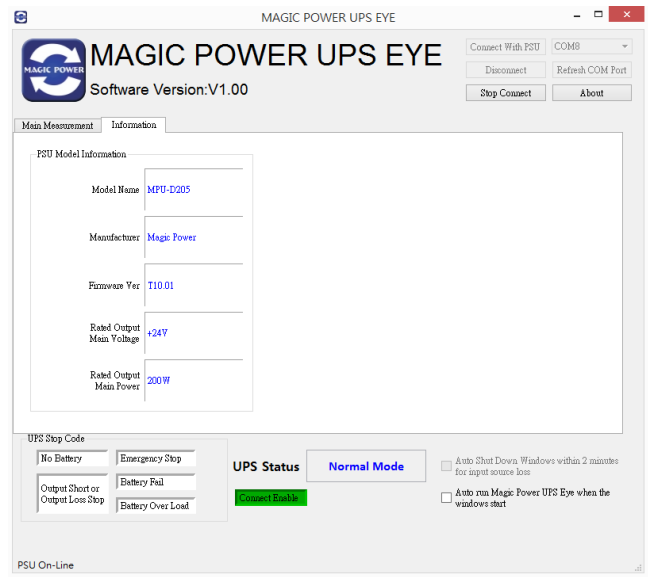
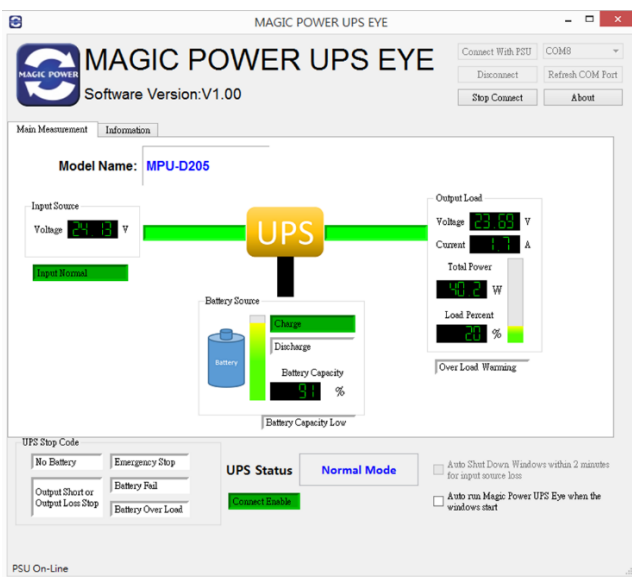
Firmware Details



UPS Function List	Description
1. Battery Test Function	Battery health check every 12 hours. (While checking and UPS works in battery mode, backup time may not meet 1 Second)
2. LED status (Green 1, Yellow, Red, Green 2)	<p>LED All Off: UPS waiting for working.</p> <p>Green LED 1: UPS working by the input source and Battery capacity is more than 25%</p> <p>Green LED 1 flashing (Frequency 1Hz): UPS working by the input source and Battery capacity is lower than 25%</p>

	<p>Yellow LED: UPS working by the battery and Battery capacity is more than 25%. (Input source is cut off)</p> <p>Yellow LED flashing (Frequency 1Hz): UPS working by the battery and Battery capacity is lower than 25%. (Input source is cut off)</p> <p>Red LED: UPS failure or Output loss.</p> <p>Red LED flashing (Frequency 1Hz): Battery old, No Battery or Battery needs to be changed.</p> <p>Green LED 2: Charger is working.</p>
<p>3. Dry contact signal function (Voltage Level:5V)</p>	<p>Input loss signal Port: Input Loss signal (Output signal) High Level: Input Normal, Low Level: Input Loss.</p> <p>Battery low signal Port: Battery Low signal (Output signal) High Level: Battery capacity normal, Low Level: Battery capacity low.</p> <p>Emergency control Port: Emergency signal (Input signal) Floating: UPS normal, Short: UPS Stops.</p>
<p>4. UPS protection function</p>	<ul style="list-style-type: none"> ● Input Source Loss Check: When the input source loss, the battery source will begin to output power to the Load. ● No Battery check: Battery disconnection check. ● Battery Fail check: Battery voltage is over normal range check. ● Battery low stop: when Battery capacity decreases to 0 percent, the battery discharging will be stopped. ● Battery Over Load Stop: Level 1: When the percent value of output load is between 100% to 125%, the UPS will shut down after 10 seconds. Level 2: When the percent value of output load is over than 125%, the UPS will shut down after 2 seconds. ● Output Short or Output Loss Stop: This stop message will be enabled when the output is short-circuited or powered down.
<p>5. USB Type B</p>	<p>USB mini Type B Port on the UPS with isolated.</p>

Software Details



Monitoring software Function List	Description
<p>1. Main screen</p>	<ul style="list-style-type: none"> ● Software Version: display software version. ● Connect to PSU: Start connecting to the machine. ● Refresh COM Port: Refresh the COM Port address. ● Disconnect: Disconnects from the machine. ● Auto Connect & Stop Connect: Auto refresh COM Port, connecting to PSU, and Disconnect. ● UPS Stop Code: (Red flag) <ul style="list-style-type: none"> a. No Battery: Battery Disconnection. b. Output Short or Output Loss Stop: UPS Output short-circuited or Output Loss Stop. c. Emergency Stop: UPS Emergency Stop. d. Battery Fail: Battery voltage is not normal. e. Battery Over Load: Output over load when the UPS is working in Battery mode . ● UPS Status: Display the UPS mode immediately. <ul style="list-style-type: none"> a. Standby Mode: The UPS waiting for the UPS start function. b. Normal Mode: The UPS output is working by input source, and the battery source is ready to backup. c. Battery Mode: The UPS output is working by battery source. d. Stop mode: When the UPS fails or the battery is empty, the battery source is stopped from backup.

	<ul style="list-style-type: none"> ● Connect Enable: Normal communication with the UPS (Green flag) ● Auto Run Software when the windows start.
<p>2. Main Measurement</p>	<ul style="list-style-type: none"> ● Input Source: Display the value of input voltage. ● Input Normal (Yellow flag): Display the input source is normal or loss. ● Battery Source: Display the battery capacity percent, charging & discharging status. ● Battery capacity low (Yellow flag): Display the battery capacity low status which is true or false. ● Output Load: Display the values of output voltage, output current, output power, and percent of output power. ● Output Load Warning (Yellow flag): Display the UPS output over load is true or false.
<p>3. Information</p>	<ul style="list-style-type: none"> ● UPS Model Information: <ol style="list-style-type: none"> a. Model Name: Display Model name of UPS. b. Manufacturer: Display Manufacturer name of UPS. c. Firmware Ver: Display firmware version of UPS. d. Rated Output Main Voltage: Display Rated Output voltage of UPS. e. Rated Output Main power: Display Rated Output power of UPS.

Mechanical Details

