

LIMITED WARRANTY

Mobile Mounting Solutions Inc. (MOBILE MOUNTS) warrants the VPDU circuit assembly to be free from defects in material and workmanship for a period of 3 years from date of purchase under normal use. During this warranty period, MOBILE MOUNTS, will at its option, repair or replace the product at no charge for parts and labor when the product is returned postage paid as a complete unit to MOBILE MOUNTS. A Return Material Authorization (RMA) form must be requested using the contact information below.

This warranty does not apply if any part of the VPDU has been altered, subjected to abuse, accident or misuse. This warranty excludes incidental or consequential damage resulting from this product or the use of this product. This warranty is in lieu of all other warranties expressed or implied and no person is authorized to assume for MOBILE MOUNTS any other liability in conjunction with this product. The warranty gives you, the purchaser, specific legal rights and you may have other rights which may vary from state to state and country to country.

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VEHICLE POWER DISTRIBUTION UNIT



The Vehicle Power Distribution Unit (VPDU) is designed to power mobile data equipment installed in vehicles. It combines the functions of a shut down timer and power distribution fuse block. The shut down timer feature protects your vehicle battery from over discharge and protects sensitive electronic equipment from low and high voltage damage. The device turns off connected electrical loads a preset time after the vehicle engine is shut down. The fuse block provides for all electronic devices to be connected and fused in one central place. A ground bus also provides a common point of connection for all grounds. The VPDU can be used with an optional remote display module.

FEATURES:

- Dip switch settable time delay from 15 seconds to 8 hours (constant on is also available).
- Low voltage cutoff at 10.5 volts.
- High voltage cutoff at 18.0 volts.
- LED display indicates the time delay and status.
- Automatic activation by sensing battery voltage.
- Optional activation by wiring to ignition sense point.
- OVER-RIDE SWITCH for 15 minutes of operation on demand.
- Fuse block has 4 mini-ATO fuses controlled by the timer.
- Fuse block has 1 mini-ATO fuse position that is constant on.
- Loads up to 50 amps total.
- LED indicators shows operative state of all 5 fused positions.
- Reverse polarity protected.

INSTALLATION

Mount the VPDU inside the cab of the vehicle. Do not install it in the engine compartment or where it will be exposed to the elements. It is designed to be mounted in a vertical orientation but can also be mounted horizontally (indicator panel facing up). Make sure that the front cover can be removed and the indicator LED's are visible for troubleshooting.

The VPDU is connected between the 12 volt vehicle electrical system and the loads to be controlled. Loads may be computer docks, modems, radios, printers and similar devices. Minimum wire gauge used to the battery compartment of the vehicle is 12 gauge for up to 30 amps and 10 gauge for up to 50 amps. However, this is dependent upon the length of the run (typically 10 feet in most vehicles) – refer to wire gauge charts if in doubt. Run the positive connection directly to the battery or to an OEM AUX post near the battery. Place an in-line fuse (30 or 50 amps depending on the application) within 10 inches of where power is tapped. Run the negative connection near to where the positive power was tapped and connect either to an existing OEM ground stud or use a self-tapping screw with star washer and attach to the metal frame of the vehicle. There are ¼ inch studs inside the cover of the VPDU clearly marked +BATT and –BATT that will accept ring connectors for the main power connection.

Loads are wired to the terminal strips in the VPDU. Use standard forked spade connectors. There are 4 timed outputs that are labeled OUT1, OUT2, OUT3 and OUT4. The fuses (mini-ATO) for the 4 timed outputs are inserted to the left of the screw terminal. There is one constant power out terminal labeled PWR and the fuse for it is inserted directly above the terminal.

Grounds for all equipment to be controlled by the VPDU can be connected to the ground bus terminal strip near the –BATT stud.

All wiring exits through the bottom of the case and must be strain relieved using a tie wrap on the exit bracket.

Activation of the VPDU timing period may be automatic by sensing the battery voltage drop when the engine is turned OFF or by the optional ignition sense connection to the IGN screw terminal inside the case. The IGN wire must go to the OEM fuse block in the vehicle where a connection is made using a fuse tap to a fuse that has been tested to indicate key-on/key-off. If the IGN option is used it will over-ride the battery voltage automatic mode. The turn-on mode can be "ignition only" by setting the internal DIP switch S4 to "ON".

SETUP

The VPDU has the timer delay default set at 2 hours. To change the delay use the dip switches provided on the circuit board. There is a table of settings etched next to the switches. The available settings are shown below:

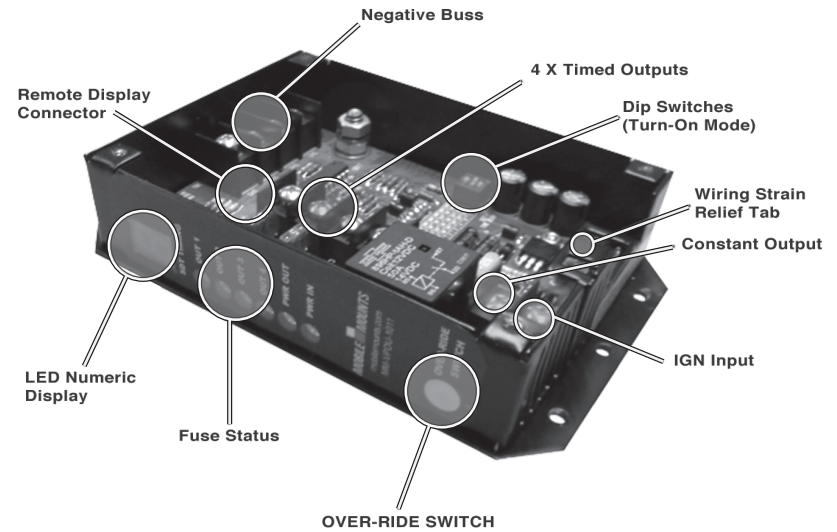
DELAY	15sec	15min	1hour	2hour	3hour	4hour	8hour	constant
S3	ON	OFF	ON	OFF	ON	OFF	ON	OFF
S2	ON	ON	OFF	OFF	ON	ON	OFF	OFF
S1	ON	ON	ON	ON	OFF	OFF	OFF	OFF
DISPLAY	O	F	1	2	3	4	8	C

The OVER-RIDE SWITCH at the bottom of the display panel can be used to provide 15 minutes of power to all timed terminals without starting the vehicle by holding in the switch for 3 seconds. The OVER-RIDE SWITCH can also be used to cutoff power to all timed circuits by holding in the switch for over 4 seconds.

OPERATION

The VPDU is used to power up sensitive electronic equipment when the vehicle is started and then, using the timer function, shut down that equipment after a preset delay. There is also a constant voltage out terminal that can be used to power devices such as 2-way radios and AVL equipment that require uninterrupted power.

There is a display panel that provides status and troubleshooting information. The numerical LED confirms the shut down timer (SDT) delay setting when the unit is activated. For example if the delay is set for two hours, the LED will indicate "2" to verify the delay that is set. The display will blink the delay time when the engine is turned off to show that the timer is in its countdown mode. There are also LED indicator lights that turn on if the mini-ATO fuse is "good" in the 4 timed OUT connections and the untimed PWR OUT connection. No need to take the cover off and pull a fuse to determine if it is functional. There is also a PWR IN indicator light that confirms that the VPDU has power from the vehicle battery.



VPDU SPECIFICATIONS

Sensing modes	Voltage rise and hardwired ignition sense. Hardwired mode will over-ride the "automatic" voltage rise mode if present.
Battery voltage rise (turn-on) trigger	>13.1 Volts
Battery voltage to trigger timer sequence	<12.7 Volts
Ignition "on" threshold if used	>5.0 Volts
Ignition "off" threshold if used	<2.5 Volts
High battery voltage disconnect	>18 Volts
Low battery voltage disconnect	<10.5 Volts
Low battery voltage disconnect delay to allow for cold cranking	30 Seconds
Low battery voltage for timer PCB to still operate	5-6 volts. Be able to ride a voltage drop below 5 volts for about 15mS
Input voltage range	9-18 Volts
Maximum output current	50 Amps total
Current draw in OFF mode	20-50 mAmps
Current draw in ON/TIMING mode	190 mAmps typical
Time delay adjustment range (dip switch selectable)	15 Seconds, 15 Minutes, 1 Hour, 2 Hours, 3 Hours, 4 Hours, 8 hours, Constant
OVER-RIDE SWITCH mode	15 Minutes. Hold in switch for 3 seconds. Note that the OVER-RIDE SWITCH will not function if the high battery voltage is detected to be >18 volts
Special switch functions	Depressing the OVER-RIDE SWITCH for >10 seconds will shut the timer OFF. However, if the voltage "turn-on" (engine running) is active or the ignition sense voltage is present, the timer will resume operation once the switch is released
Operational display – Numeric LED	Numeric LED display – will display the timer interval in green. Once the timer starts the countdown sequence, the LED will blink on and off.
Operational LED indicator lights	Lit when circuits 1-4 are active (fused) Lit when "Constant" is active (fused) Lit when DC supply voltage is present
Operating temperature	0-70 degrees C, derate above 50 degrees C to 50% at 70 degrees C
Reverse polarity protection	Included
Remote Display	Internal connector for optional Remote Display