order to prevent such situations. M4-ATX operates as low as 6V and as high as 30V while providing strict regulation as well as input voltage clamping and reverse protection.

**Anti-Thump**: If your PC is connected to your car amplifier, you will hear a loud pop when the computer is first started. The M4-ATX has an 'anti-thump' control that will keep your amp OFF while the PC starts. Simply connect the 2 pin wire to J6 harness to your amplifier remote control pins. The pin at the edge of the PCB is GND, inner pin is HOT.

### Mode of operation explained

1) Ignition=OFF. Nothing happens. M4-ATX is waiting for ignition signals.

2) Ignition=ON. M4-ATX waits for few seconds then turns on the 5VSB rail. After another second M4-ATX sends an "ON" signal to the motherboard via the 2 wires connected to the motherboard's ON/OFF pins. The motherboard will turn ON and your system should start booting. The Ignition state will be latched for 60 more seconds so that the motherboard will have a change to come up in a clean manner.

3) Ignition=ON. Your computer will remain ON.

4) Ignition=OFF. M4-ATX waits for "OFFDELAY" in seconds (see jumper chart) and then it turns the motherboard OFF by sending a signal to the motherboard's ON/OFF switch. Your computer should turn off gracefully (shutdown procedure). After shutdown, 5VSB will still be provided for another "HARDOFF" seconds. In the event where the shutdown process is longer than "HARDOFF" (Operating System gets frozen, etc), power will be shut down hard, turning off all power rails. During the HARDOFF procedure, the battery levels will be constantly monitored to prevent deep discharge situations.

5) M4-ATX will go to step 1, if ignition is tuned ON again.

**NOTE**. When all dip switches are off, M4-ATX acts as a regular power supply. M4-ATX will also send a gratuitous "ON" pulse (to the ON/OFF motherboard pins, should you have a wire harness connected to it) when power is applied for the first time. Do not connect the on/off switch if you don't want your PC to be started automatically.

**M4-ATX Characteristics**

| | |
|---|---|
| Minimum Input Operating. voltage | 6V |
| Maximum input Operating voltage | 30V (hard clamping will occur at 34V) |
| Deep-Discharge shutdown threshold | 11.2V |
| Input current limit (fuse protected) | Mini-blade 25A |
| Max Output Power | 250 Watts / 300 watts peak |
| Deep Sleep Current Consumption. | < 1.6mA |
| Storage and operating temperature | -40 to +125 degrees Celsius (storage), -40 – 65C (operating) |
| MTBF | 200,000 Hrs |
| Efficiency (Input 10-16V) | >95%, all rails combined, 50% load. |
| Input connectors | M4 screw terminal |
| Output Connector | ATX Power 24 pin (Molex P/N 39-01-2200) |

*Unit shuts down when internal temperature sensor indicates > 85C. This value can be changed with software.

**Maximum Power Characteristics**

| Output Rail | Current (Max) | Current Peak (<30 seconds) | Regulation |
|---|---|---|---|
| 5V | 15A | 20A | 1.5% |
| 3.3V | 15A | 20A | 1.5% |
| 5VSB | 1.5A | 2A | 1.5% |
| -12V | 0.15A | 0.2A | 10% |
| 12V | 12A (see below) | 16A (see below) | 2% |

When operating at <8V or >28V or extreme temperatures, de-rate by 25-50%, ventilation might be required.
When operating at constant 160watts or more forced ventilation might be required.

**12V Rail Output Current (12V buck/boost converter)**

| Input (V) | 12V out current | Input (V) | 12V out current |
|---|---|---|---|
| 6-8V | 8A | 11-16V | 12A (16A peak) |
| 8-11V | 10A (12A peak) | 16-30V | 12A (14A peak) |

**Support and warranty:** Standard Hardware Warranty 1Year / US, 2 Year EU.



# M4-ATX

## 6-30V Intelligent ATX Power Supply

## Installation Guide

Version 1.0e
P/N M4-ATX-01

**Before you start...**

Please take a moment and read this manual before you install the M4-ATX in your vehicle. Often times, rushing into installing the unit can result in serious damage to your M4-ATX board, computer and probably your car's electrical system. **Always double check the polarity** of your wires with a voltmeter.

Avoid using the cigarette plug as a power source, often times the contacts are not capable of delivering high current to your PC.

**Introduction**

Thank you for purchasing the M4-ATX power sequencer / vehicle ATX power supply.

The M4-ATX was designed to work with a wide variety of main boards ranging from low power to fully fledged Intel, AMD or VIA motherboards.

**M4-ATX Logic Diagram**