# picoPSU-90
## 12V, 90Watt ATX Power Supply

# Quick Installation Guide
Version 1.0b
P/N picoPSU-90

**Introduction**

Based on the electrical design of the picoPSU-120, the picoPSU-90 is a small yet powerful and fully compliant ATX power supply designed to power a wide variety of motherboard from a single 12V regulated power source.

The PICOPSU-90 is the only snap power supply solution for general purpose motherboards. Compatible with an entire range of mini-ITX, UATX or full size ATX motherboards the picoPSU-90 provides cool, silent power for system. The PICOPSU-90 has many advantages over a regular power supply:

-Smallest ATX PSU to date
-100% silent operation
-Low heat dissipation with efficiency over 95%
-Plugs directly into the motherboard's power connector, no cable mess

**Quick installation Instructions**

The PICOPSU-90 has been specifically designed for the Mini-ITX form factor, thus eliminating the need for ATX power cables. It is also 1U compliant – height will not exceed 1U form factor.

1) After the picoPSU module was 'snapped in', hook the hard drive power or floppy power to your floppy/hard drives. If more hard drives or floppy connectors are needed, use a HDD/floppy "Y" splitter cable.



PicoPSu-90 shown with the D201GLY Intel Motherboard.

2) Connect a 12 VDC power adapter (or any 12V source) to the DC-to-DC connector, center pin / white wire is positive (+).

3) Turn on the PC using the motherboard ON/OFF motherboard switch

**Typical configuration**

The picoPSU-90 has been tested with all mini-ITX board (VIA C3, VIA C7, AMD, Celeron, Core Solo and Core Duo) under virtually any disk / floppy / CDROM / PCI configuration. Additionally, the PICOPSU-90 can power P4 boards equipped with an 12VATX 4 pin connector. NOTE: The hard drive cable harness can be disconnected in case the user does not need any peripheral. Additionally, the cable harness can be made to any length or output connector type provided that the max load does not exceed 6A for GND return. Please look under specifications for the mating connector type.

**Removing the picoPSU-90**

In order to remove the picoPSU you must release the power connector latch and then remove the unit. Gently lift the picoPSU out from the ATX connector, by grabbing from the picoPSU PCB, not from components or the wire harness.

**Specifications, picoPSU-90, 90Watts DC-DC ATX Power Supply**

Power Ratings (Peak Load = 120 Watts)

| Volts (V) | Max Load (A) | Peak Load (A) | Regulation % |
|-----------|--------------|---------------|--------------|
| 5V | 6A | 7A+/- | 1.5% |
| 5VSB | 1.5A | 2A+/- | 1.5% |
| 3.3V | 6A | 7A+/- | 1.5% |
| -12V | 0.05A | 0.1A+/- | 5% |
| 12V | 6A | 8A | Switched input |

At max load, forced air ventilation is required. For fanless operation de-rate the output of the 3.3 and 5V rails by ~20%. Peak load should not exceed 60 seconds.

**Input Requirements:** 12V regulated, min=2A, max=10A (load dependent). Over-voltage shutdown will occur at ~13-13.5V.

**Size:** 44.5mm(L) * 20mm(W) * 30mm (H) (1U compliant)

**Weight:** 45gramms, including cable harness, 20 grams without cable harness.

**DC-Jack:** Female, panel mount, 2.5*5.5*10 mm.

**Connectors**
Molex 39-01-2200 compatible, two 3.5" drive power connectors (PATA and SATA) and one P4-12V 4 connector (mini-fit JR 4p). Header and mating  connector for the removable cable harness can be found at: http://www.jst-mfg.com/product/pdf/eEH.pdf

**Overload protection**
Over load protection will be effected when either of the loads (+5V & +3.3V) exceeds > 200% Max Load.

**Turn-on Delay**
After turning on, at least 20 ms will be needed for the rise of +5VSB output voltage (measured from 10% to 95%) to reach its peak.

**Remote ON/OFF control (PS_ON)**
Logic level is LOW - Output voltage is enabled (PS_ON pin)
Logic level is HIGH - Output voltage is disabled (PS_ON pin)

PWR_GD
Logic level is low: PWR_GD=OK
Logic level is high: PWR_GD=not OK (10.5V<V(in)>13.5V or other fault conditions)

**Operating environment**: Temperature: -20 to 85 degree centigrade.
NOTE: Thermal shutdown occurs at 105-115C.
Relative Humidity: 10 to 90 percent, non-condensing.

**Efficiency, MTBF:** 95%. MTBF=100K hours at 55Celsius.

**Shipping and storage:** Temperature -40 to +85 degree centigrade.
Relative humidity 5 to 95 percent, non-condensing