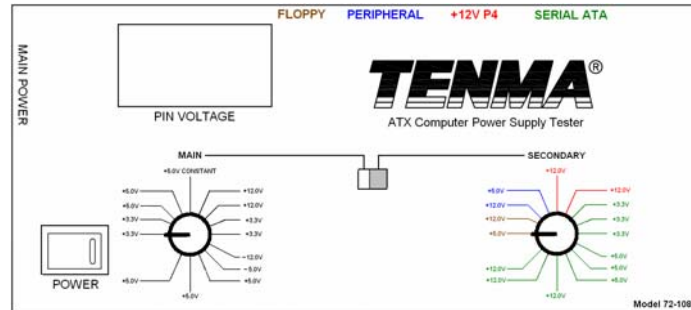




ATX Computer Power Supply Tester



Overview

The Tenma Model 72-1086 ATX Power Supply Tester is designed to provide fast convenient verification of proper operation of ATX style computer power supplies. Connecting an ATX 20-pin or 24-pin connector to the MAIN POWER connector of this tester will provide immediate visual indication of operation of the power supply. An analog voltage meter is also included to verify correct voltage of all applicable pins on this connector, as well as the peripheral power, floppy drive power, +12V CPU and Serial ATA power connectors.

Operation

Typically, ATX style power supplies are switched on/off from the motherboard. The Tenma ATX Power Supply Tester simulates this command by pulling PIN-16 low (on the 24-pin connector), and placing an appropriate current load across Pin-4 and Pin-5. When the tester rocker switch is placed in the **ON** position, the power supplies cooling fan will engage and the LED indicator, located in the tester rocker switch, will light. This indicates that the power supply is functioning. In many situations, this level of pass/fail testing is all that is required.

In circumstances where the supply is operational yet erratic behavior exists, it may be desirable to verify correct voltage at all pins. The DC panel meter, and 14-position and 15-position rotary switches allow easy verification of voltages at each of the MAIN POWER connections, as well as the SECONDARY power connectors, which are used to power external peripherals such as DVD/CD ROM, floppy and hard drives and Serial ATA devices.

Many low cost computer power supplies have one internal circuit for each of 3.3V, 5V and 12V voltages. In this case, all outputs whether on the motherboard, the processor or a peripheral connector, of the same voltage, are internally tied together. In higher quality supplies, these outputs are independent and isolated from each other. The Tenma #72-1086 ATX Power Supply Tester will independently verify each of these outputs, as well as -5V and -12V outputs located on some mother board connectors.

Directions

General Pass/Fail Test

- Disconnect the computer power supply from the AC power source
- Disconnect all IDE and other devices that are connected to the computer power supply
- Disconnect the large ATX connector from the motherboard
- Set the rocker switch on the tester to the **OFF** position
- Connect the large ATX connector, from the power supply, to the tester. This will be either 20 or 24-pin, depending upon the version of power supply under test
- If testing a 20-pin supply, it must be connected to the far right side of the MAIN POWER connector. In this case, the four pins on the left side are not used
- Connect the computer power supply to an AC power source
- Set the rocker switch on this tester to the **ON** position
- If the LED on the rocker switch lights, the power supply is functioning

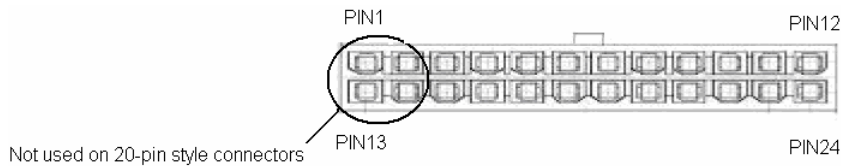
Testing Output Voltages

- The ATX connector must remain inserted into the MAIN POWER connector to allow the tester to keep the computer power supply in the **ON** mode
- Ensure that the slide switch, located in the center of the unit, is set to the left "MAIN" position
- Use the 14-position rotary switch labeled "MAIN" to individually test each of the outputs on the ATX connector. See the TYPICAL PIN CONFIGURATIONS in the following section for information regarding pin usage
- Each rotary switch position is labeled with the voltage that should be displayed on the panel meter
- If the meter displays the voltage level indicated by the switch, the supply should function properly
- Move the center slide switch to the right "SECONDARY" position
- Insert the small floppy drive connector, larger peripheral connector, square P4 connector and Serial ATA connectors into the appropriate sockets. Depending upon the supply under test, multiple (or none) of these listed connectors may exist
- Use the 15-position rotary switch labeled "SECONDARY" to individually test each of the outputs on these connectors. Note that each position on the SECONDARY selector is color coded to match the corresponding supply connector

MAIN POWER Pin Configurations

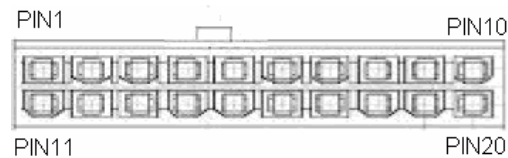
Note: Connector arrangement as shown facing pins on the tester, not on the power supply.

Newer style 24-PIN MAIN POWER connector



| | |
|--------|--|
| Pin 1 | +3.3V |
| Pin 2 | +3.3V |
| Pin 3 | Ground |
| Pin 4 | +5.0V |
| Pin 5 | Ground |
| Pin 6 | +5.0V |
| Pin 7 | Ground |
| Pin 8 | Power status indicator "+" connection (directly feeds LED in tester rocker switch) |
| Pin 9 | +5V Standby Power. This pin is always on, even when power supply switched off |
| Pin 10 | +12V |
| Pin 11 | +12V |
| Pin 12 | +3.3V |
| Pin 13 | +3.3V (plus sense return) |
| Pin 14 | -12V |
| Pin 15 | Ground |
| Pin 16 | Remote power "ON" connection. Pull low (tie to ground) to switch power supply on |
| Pin 17 | Ground |
| Pin 18 | Ground |
| Pin 19 | Ground |
| Pin 20 | -5.0V (Not always used) |
| Pin 21 | +5.0V |
| Pin 22 | +5.0V |
| Pin 23 | +5.0V |
| Pin 24 | Ground |

Original style 20-PIN MAIN POWER connector



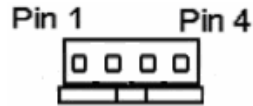
| | |
|--------|--|
| Pin 1 | Ground |
| Pin 2 | +5.0V |
| Pin 3 | Ground |
| Pin 4 | +5.0V |
| Pin 5 | Ground |
| Pin 6 | Power status indicator "+" connection (directly feeds LED in tester rocker switch) |
| Pin 7 | +5V Standby Power. This pin is always on, even when power supply switched off |
| Pin 8 | +12V |
| Pin 9 | +12V |
| Pin 10 | +3.3V (plus sense return) |
| Pin 11 | Ground |
| Pin 12 | Remote power "ON" connection. Pull low (tie to ground) to switch power supply on |
| Pin 13 | Ground |
| Pin 14 | Ground |
| Pin 15 | Ground |
| Pin 16 | -5.0V |
| Pin 17 | +5.0V |
| Pin 18 | +5.0V |
| Pin 19 | +5.0V |
| Pin 20 | Ground |

SECONDARY Power Pin Configurations (cont.)

4-PIN FLOPPY POWER connector

- Commonly used to power 3-1/2" floppy disk drives

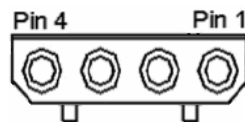
| | |
|-------|--------|
| Pin 1 | +5.0V |
| Pin 2 | Ground |
| Pin 3 | Ground |
| Pin 4 | +12.0V |



4-PIN PERIPHERAL POWER connector

- Commonly used to power older 5-1/4" floppy drives, CD ROM, hard disk drives and similar devices

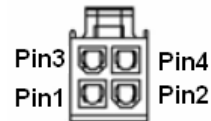
| | |
|-------|--------|
| Pin 1 | +12.0V |
| Pin 2 | Ground |
| Pin 3 | Ground |
| Pin 4 | +5.0V |



4-PIN P4 POWER connector

- Used to provide independent power connection to P4 processors on motherboards so equipped

| | |
|-------|--------|
| Pin 1 | Ground |
| Pin 2 | Ground |
| Pin 3 | +12.0V |
| Pin 4 | +12.0V |



15-PIN Serial ATA connector

- Used to power devices meeting Serial ATA Specifications

| | | | |
|-------|--------|--------|--------|
| Pin 1 | +3.3V | Pin 9 | +5.0V |
| Pin 2 | +3.3V | Pin 10 | Ground |
| Pin 3 | +3.3V | Pin 11 | Ground |
| Pin 4 | Ground | Pin 12 | Ground |
| Pin 5 | Ground | Pin 13 | +12.0V |
| Pin 6 | Ground | Pin 14 | +12.0V |
| Pin 7 | +5.0V | Pin 15 | +12.0V |
| Pin 8 | +5.0V | | |



Caution

- Ensure that all devices are disconnected from the computer power supply prior to testing
- Be sure that the tester switch is in the OFF position prior to connecting power supply
- MAIN POWER connector must be connected when testing SECONDARY connector outputs
- Under normal operation, this test device will become warm
- Do not leave unattended while in use