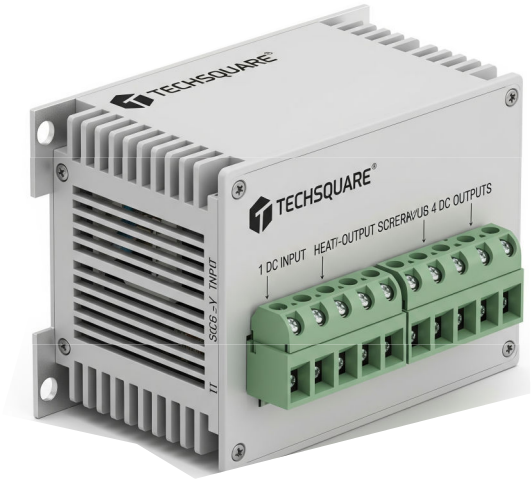
MULTI-OUTPUT DC-DC POWER SUPPLY



Non-Isolated Multi-Output DC-DC Power Supply Specification

1. General Specifications:

- **Input Voltage:** 28V DC (Nominal)
  - **Input Voltage Range:** 24V - 32V DC (to account for variations in the 28V source)
- **Topology:** Non-isolated, typically buck converters for each output from a common 28V rail, or a cascaded buck-boost approach if 24V is directly generated and others from that. Given the outputs are all lower than 28V, individual buck converters are most likely.
- **Efficiency:** (Target a minimum, e.g., for full load)
  - Overall Efficiency: >85% (Target)
- **Operating Temperature Range:** -20°C to +70°C (Industrial Grade)
- **Storage Temperature Range:** -40°C to +85°C
- **Humidity:** 5% to 95% RH, non-condensing
- **Cooling:** Convection Cooled (unless high power dictates forced air)
- **Protection:**
  - Over-Current Protection (OCP) on each output
  - Short-Circuit Protection (SCP) on each output (auto-recovery)
  - Over-Temperature Protection (OTP) (shutdown with auto-recovery)
  - Input Under-Voltage Lockout (UVLO)
  - Input Over-Voltage Protection (OVP) (optional, but good practice)
- **Compliance:** (Relevant standards depending on application)
  - RoHS Compliance
  - CE Mark (if for European market)
  - FCC Part 15 Class B (for EMI/EMC)

2. Output Specifications (for each output):

Output 1: 3.3V

- **Nominal Output Voltage:** 3.3V DC
- **Voltage Tolerance:** ±2% (e.g., 3.234V to 3.366V)
- **Maximum Output Current:** 10A
- **Load Regulation:** ±1%
- **Line Regulation:** ±0.5%
- **Ripple & Noise (P-P):** <50mV (20MHz bandwidth)
- **Transient Response:** <200mV deviation for 50%

Output 2: 5V

- **Nominal Output Voltage:** 5.0V DC
- **Voltage Tolerance:** ±2% (e.g., 4.9V to 5.1V)
- **Maximum Output Current:** 10A
- **Load Regulation:** ±1% (from 10% to 100% of full load)
- **Line Regulation:** ±0.5%
- **Ripple & Noise (P-P):** <75mV (20MHz bandwidth)
- **Transient Response:** <250mV deviation for 50%.

Output 3: 12V

- **Nominal Output Voltage:** 12.0V DC
- **Voltage Tolerance:** ±2% (e.g., 11.76V to 12.24V)
- **Maximum Output Current:** 10A
- **Load Regulation:** ±1% (from 10% to 100% of full load)
- **Line Regulation:** ±0.5%
- **Ripple & Noise (P-P):** <120mV (20MHz bandwidth)
- **Transient Response:** <300mV deviation for 50% load step.

Output 4: 24V

- **Nominal Output Voltage:** 24.0V DC
- **Voltage Tolerance:** ±2% (e.g., 23.52V to 24.48V)
- **Maximum Output Current:** 5A
- **Load Regulation:** ±1% (from 10% to 100% of full load)
- **Line Regulation:** ±0.5% (across specified input voltage range)
- **Ripple & Noise (P-P):** <200mV (20MHz bandwidth)
- **Transient Response:** <400mV deviation for 50% load step,

3. Mechanical & Interconnection:

- **Form Factor/Mounting:** Enclosed Brick
- **Dimensions:** 200X200X78 in m
- **Input Connector:** Terminal Block
- **Output Connector(s):** Terminal Block

4. Additional Features (Optional):

- **Remote ON/OFF Control:** (TTL compatible)
- **Power Good Signal:** (for each output or overall)
- **Remote Sense:** (for critical outputs like 3.3V and 5V, to compensate for voltage drop across cables)
- **Current Sharing:** (if multiple units are to be paralleled for higher current)
- **Adjustable Output Voltage:** (e.g., via potentiometer or external resistor)
- **LED Indicators:** (for power on, fault)

Ordering Information:

- **Part Number:** TSQ-MULTI-DCDC-CON-IND
- **Description:** Non-Isolated Multi-Output DC-DC Power Supply