TEST & MEASUREMENT INSTRUMENTS — DATASHEET

# ET5300 / ET5301 / ET5302 / ET5303 / ET5304

## ET53 Series Programmable DC Electronic Load



## OVERVIEW

The ET53 series single- and dual-channel programmable DC electronic loads use high-performance chips with a high-speed, high-precision design, providing 1 mV / 1 mA resolution and superior performance. The series is widely used for production-line testing of chargers, switching power supplies, linear power supplies and batteries across the battery industry, and in R&D testing at research institutes. Five 400 W models cover 0–150 V and 0–500 V input ranges, with the dual-channel ET5304 for parallel two-channel work.

## FEATURES

- 3.5-inch TFT LCD with rich display content; Chinese / English display
- Simple, convenient operation with an intuitive interface system; key lock prevents accidental misoperation
- Six basic measurement modes: CC, CV, CR and CP, plus combined CC+CV and CR+CV
- Battery test mode for capacity testing of all battery types
- LED test, simulating the performance test of LED power supplies
- Dynamic test mode for testing the dynamic output performance of power supplies
- Scan test mode, testing power-supply output continuity within a set range
- List mode, simulating a variety of load-state changes
- Short-circuit test, simulating a load short circuit
- External trigger input; built-in buzzer alarm; power-off data storage
- Remote operation via USB and RS-232 interfaces
- Multiple protections: over-voltage, over-current, over-power and over-temperature protection, with over-voltage and over-current thresholds flexibly settable
- Intelligent fan speed control effectively reduces operating noise

## SPECIFICATIONS

| Item | ET5300 | ET5301 | ET5302 | ET5303 | ET5304 |
|---|---|---|---|---|---|
| **Channels** | Single | Single | Single | Single | Dual |
| **Rated input power** | 400 W | 400 W | 400 W | 400 W | 400 W |
| | 0–150 V | 0–150 V | 0–500 V | 0–500 V | 0–150 V |

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|---|---|---|---|---|---|
| **Input voltage** | | | | | |
| **Input current** | 0–40 A | 0–60 A | 0–15 A | 0–30 A | 0–60 A (30 A per channel) |
| **CV mode range** | 0.1–19.999 V / 0.1–150.00 V | 0.1–19.999 V / 0.1–150.00 V | 0.1–19.999 V / 0.1–500.00 V | 0.1–19.999 V / 0.1–500.00 V | 0.1–19.999 V / 0.1–150.00 V |
| **CV resolution** | 1 mV / 10 mV | | | | |
| **CV accuracy** | ±(0.05 % + 0.02 % FS) | | | | |
| **CC mode range** | 0–3.000 A / 0–40.00 A | 0–6.000 A / 0–60.00 A | 0–3.000 A / 0–15.00 A | 0–3.000 A / 0–30.00 A | 0–3.000 A / 0–30.00 A |
| **CC resolution** | 1 mA / 10 mA | | | | |
| **CC accuracy** | ±(0.05 % + 0.05 % FS) | | | | |
| **CR mode range** | 0.05 Ω–1 kΩ / 1 kΩ–4.5 kΩ | | | | |
| **CR resolution** | 10 mΩ / 100 mΩ | | | | |
| **CR accuracy** | ±(0.1 % + 0.5 % FS) | | | | |
| **CP mode range** | 0–400 W | 0–400 W | 0–400 W | 0–400 W | 0–200 W |
| **CP resolution** | 10 mW | | | | |
| **CP accuracy** | ±(0.1 % + 0.5 % FS) | | | | |
| **Dynamic test** | CC / CV modes · T1 & T2: 50 ms–60 s | | | | |
| **Battery test** | Discharge in CC / CR modes · max. discharge capacity 9,999 Ah · resolution 1 mA / 10 mA / 10 mΩ / 100 mΩ | | | | |
| **Voltage readback range** | 0–19.999 V / 0–150.00 V | 0–19.999 V / 0–150.00 V | 0–19.999 V / 0–500.00 V | 0–19.999 V / 0–500.00 V | 0–19.999 V / 0–150.00 V |
| **Voltage readback resolution / accuracy** | 1 mV / 10 mV · ±(0.05 % + 0.1 % FS) | | | | |
| **Current readback range** | 0–3.000 A / 0–40.00 A | 0–6.000 A / 0–60.00 A | 0–3.000 A / 0–15.00 A | 0–3.000 A / 0–30.00 A | 0–3.000 A / 0–30.00 A |
| **Current readback resolution / accuracy** | 1 mA / 10 mA · ±(0.05 % + 0.1 % FS) | | | | |
| **Power readback range** | 400 W | 400 W | 400 W | 400 W | 200 W |
| **Power readback resolution / accuracy** | 10 mW · ±(0.1 % + 0.5 % FS) | | | | |
| | > 21 V / > 155 V | > 21 V / > 155 V | > 21 V / > 510 V | > 21 V / > 510 V | > 21 V / > 155 V |

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|---|---|---|---|---|---|
| **Over-voltage protection** | | | | | |
| **Over-current protection** | > 3.1 A / > 41 A | > 6.1 A / > 61 A | > 16 A, cut off | > 3.1 A / > 31 A | > 31 A, cut off |
| **Over-power protection** | 410 W | 410 W | 410 W | 410 W | 210 W |
| **Over-temperature protection** | 85 ℃ | | | | |
| **Display** | 3.5-inch TFT LCD, 480 × 320 · Chinese / English interface | | | | |
| **Interfaces** | USB and RS-232 standard · RS-485 optional · external trigger input | | | | |

## GENERAL SPECIFICATIONS

| | |
|---|---|
| **Power supply** | 220 Vac ±10 % / 110 Vac ±10 %, 45–65 Hz |
| **Operating temperature** | 0 ℃ to 40 ℃ · relative humidity < 80 % |
| **Storage temperature** | −10 ℃ to 70 ℃ |
| **Dimensions** | 320 mm × 220 mm × 100 mm (L × W × H) |
| **Weight** | 4.2 kg (main unit) |

Specifications are as published in the ET53 series technical data sheet. Instruments are quoted per enquiry — contact with your voltage and current range for pricing and availability.