



Features

- 5 digit V/A/W Meter.
- High-speed measurement and communication transmission.
- Large LCD Display \ setting values can be adjusted by rotary knob or push button.
- Voltage \ Current and Watt value can be displayed simultaneously.
- OCP \ OPP test function automatically.
- Power ON status can be set.
- CC, CR, CV, CP, Dynamic and Short operation mode.
- SHORT time setting.
- Protections against V,I,W, and °C.
- Voltage meter display the polarity positive ("+") or negative ("-") is selectable.
- Optional Interface : GPIB \ RS232 \ USB \ LAN.

Descriptions

- 33500F Series has its own control and display panel, CC/CR/CV/CP/Dynamic modes, 150 sets Store/Recall memory which provides load set-up more efficiently, also can be remote controlled via GPIB \ RS232 \ USB and LAN interface.
- SHORT time setting and SHORT_VH, SHORT_VL setting function, also can measure Short Voltage and Current.
- Dynamic can be simulated under CC, CP mode. The current Rise/Fall slew rate can be adjusted individually and there is an external signal input for a Arbitrary Waveform to simulate load current.
- Single key for OCP \ OPP test function will be more efficiency and accuracy on OCP \ OPP testing.
- Programmable Load ON/OFF voltage, GO/NG meter check, Voltage meter display "+" or "-" is selectable and 150 sets Store/Recall larger memory is much advance feature for each different application.
- 150 sets test parameter and status storage function, user can recall the storage memory real time in accordance with the auto sequence requirement.

Applications

- Voltage / Current source
- SMPS transient response
- CV/Current limit testing and battery emulation
- Battery charger
- Battery discharge
- R&D Quality Control
- ATE system
- Production testing

Specifications

| MODEL | 33501F | 33521F | 33511F | 33531F | 33541F |
|--------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Power | 2400W | 2400W | 3600W | 3600W | 3600W |
| Current | 0 ~ 240A | 0 ~ 480A | 0 ~ 240A | 0 ~ 480A | 0 ~ 720A |
| Voltage | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V |
| Min.Operation Voltage | 0.7V @ 240A | 0.7V @ 480A | 0.6V @ 240A | 0.7V @ 480A | 0.7V @ 720A |
| CC MODE | | | | | |
| Range *1 | 0 ~ 24A / 240A | 0 ~ 48A / 480A | 0 ~ 24A / 240A | 0 ~ 48A / 480A | 0 ~ 72A / 720A |
| Resolution | 0.4mA / 4mA | 0.8mA / 8mA | 0.4mA / 4mA | 0.8mA / 8mA | 1.2mA / 12mA |
| Accuracy | ±0.1% OF (Setting+Range) | | | | |
| CR MODE | | | | | |
| Range | 0.0041 ~ 0.25~15KΩ | 0.002 ~ 0.125~7.5KΩ | 0.0041~0.25 ~15KΩ | 0.002~0.125~7.5KΩ | 0.00138~0.0833~5KΩ |
| Resolution | 0.0041mΩ / 0.066mS | 0.002mΩ / 0.1333mS | 0.0041mΩ / 0.066mS | 0.002mΩ / 0.133mS | 0.00138mΩ / 0.2mS |
| Accuracy | ±0.2% OF (Setting + Range) | | | | |
| CV MODE | | | | | |
| Range | 6V / 60V | | | | |
| Resolution | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV |
| Accuracy | ± 0.05% OF (Setting+Range) | | | | |
| CP MODE | | | | | |
| Range | 240W / 2400W | 240W / 2400W | 360W / 3600W | 360W / 3600W | 360W / 3600W |
| Resolution | 4mW / 40mW | 4mW / 40mW | 6mW / 60mW | 6mW / 60mW | 6mW / 60mW |
| Accuracy | ± 0.5% OF (Setting+Range) | | | | |
| DYNAMIC MODE - CC | | | | | |
| Timing | | | | | |
| Thigh & Tlow | 0.050~9.999 / 99.99 / 999.9 / 9999mS | | | | |
| Resolution | 0.001 / 0.01 / 0.1 / 1mS | | | | |
| Accuracy | 1μS / 10μS / 100μS / 1mS + 50ppm | | | | |
| Slew rate | 0.016A ~ 1A / μS 0.16A ~ 10A / μS | 0.032A ~ 2A / μS 0.32A ~ 20A / μS | 0.016A ~ 1A / μS 0.16A ~ 10A / μS | 0.016A ~ 1A / μS 0.16A ~ 10A / μS | 0.048A ~ 3A / μS 0.48A ~ 30A / μS |
| Resolution | 0.004 / 0.04A / μS | 0.008 / 0.08A / μS | 0.004 / 0.04A / μS | 0.004 / 0.04A / μS | 0.012 / 0.12A / μS |
| Accuracy | (5% of setting) ± 10μS | | | | |
| Min. Rise Time | 24μS (typical) | | | | |
| Current | | | | | |
| Range | 24A / 240A | 48A / 480A | 24A / 240A | 48A / 480A | 72A / 720A |
| Resolution | 0.4mA / 4mA | 0.8mA / 8mA | 0.4mA / 4mA | 0.8mA / 8mA | 1.2mA / 12mA |
| Accuracy | ± 0.1% OF (Setting+Range) | | | | |
| MEASUREMENT | | | | | |
| Voltage Read Back | | | | | |
| Range (5 Digital) | 0 ~ 6V / 60V | 0 ~ 6V / 60V | 0 ~ 6V / 60V | 0 ~ 6V / 60V | 0 ~ 6V / 60V |
| Resolution | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV |
| Accuracy | ± 0.025% OF (Reading+Range) | | | | |
| Current Read Back | | | | | |
| Range (5 Digital) | 0 ~ 24A / 240A | 0 ~ 48A / 480A | 0 ~ 24A / 240A | 0 ~ 48A / 480A | 0 ~ 72A / 720A |
| Resolution | 0.4mA / 4mA | 0.8mA / 8mA | 0.4mA / 4mA | 0.8mA / 8mA | 1.2mA / 12mA |
| Accuracy | ± 0.1% OF (Reading+Range) | | | | |
| Power Read Back | | | | | |
| Range (5 Digital) | 0 ~ 2400W | 0 ~ 2400W | 0 ~ 2400W | 0 ~ 3600W | 0 ~ 3600W |
| Resolution | 0.04W | 0.04W | 0.04W | 0.06W | 0.06W |
| Accuracy | ± 0.125% OF (Reading + Range) | | | | |
| PROTECTIONS | | | | | |
| Over Power | 105% of Rated Power | | | | |
| Over Current | 105% of Rated Current | | | | |
| Over Voltage | 105% of Rated Voltage | | | | |
| Over Temp. | Yes | | | | |
| OTHERS | | | | | |
| Load ON Voltage | | | | | |
| Range | 0.1 ~ 25.0V | | | | |
| Resolution | 0.1V | | | | |
| Accuracy | 1% of Setting + 0.25V | | | | |
| Load OFF Voltage | | | | | |
| Range | 0 ~ 25V | | | | |
| Resolution | Same as Voltage Meter | | | | |
| Accuracy | Same as Voltage Meter | | | | |
| GENERAL | | | | | |
| Short Circuit | | | | | |
| Current | 240A | 480A | 240A | 480A | 720A |
| Temperature Coefficient | 100ppm / °C (typical) | | | | |
| Power consumption | 200Wmax | 200Wmax | 200Wmax | 200Wmax | 200Wmax |
| Operating Temperature *2 | 0 ~ 40°C | | | | |
| Dimension (HxWxD) | 459 x 480 x 577mm | 459 x 480 x 577mm | 459 x 480 x 577mm | 459 x 480 x 577mm | 459 x 480 x 577mm |
| Weight | 36 kg | 36 kg | 44 kg | 44 kg | 44 kg |
| Safety & EMC | CE | | | | |

Input AC Power : 115/230 Vac ±10% · 50/60Hz
Cooling : Advanced Fan Cooled

Note*1 : The range is automatically or forcing to range II only in CC Mode
Note*2 : Operating temperature range is 0~40°C · all specifications apply for 25°C±5°C

Order Information

Optional interface :

- ① GPIB Card
- ② RS232 Card
- ③ USB Card
- ④ LAN Card



33501F 60V · 240A · 2400W



33521F 60V · 480A · 2400W



33511F 60V · 240A · 3600W



33531F 60V · 480A · 3600W



33541F 60V · 720A · 3600W

Specifications

| MODEL | 33512F | 33532F | 33542F | 33513F |
|--------------------------|--|--------------------------------------|---|--------------------------------------|
| Power | 5400W | 5400W | 5400W | 7200W |
| Current | 0 ~ 360A | 0 ~ 720A | 0 ~ 1000A | 0 ~ 480A |
| Voltage | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V |
| Min.Operation Voltage | 0.6V @ 360A | 0.7V @ 720A | 0.7V @ 1000A | 0.6V @ 480A |
| CC MODE | | | | |
| Range *1 | 0 ~ 36A / 360A | 0 ~ 72A / 720A | 0 ~ 100.2A / 1000.2A | 0 ~ 48A / 480A |
| Resolution | 0.6mA / 6mA | 1.2mA / 12mA | 1.67mA / 16.7mA | 0.8mA / 8mA |
| Accuracy | ± 0.1% OF (Setting + Range) | | | |
| CR MODE | | | | |
| Range | 0.0027 ~ 0.167 ~ 10KΩ | 0.00138 ~ 0.0833 ~ 5KΩ | 0.001 ~ 0.06 ~ 3.6KΩ | 0.002 ~ 0.125 ~ 7.5KΩ |
| Resolution | 0.0028mΩ / 0.1mS | 0.0028mΩ / 0.1mS | 0.001mΩ / 0.277mS | 0.002mΩ / 0.13mS |
| Accuracy | ± 0.2% OF (Setting + Range) | | | |
| CV MODE | | | | |
| Range | 6V / 60V | | | |
| Resolution | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV |
| Accuracy | ± 0.05% OF (Setting + Range) | | | |
| CP MODE | | | | |
| Range | 540W / 5400W | 540W / 5400W | 540W / 5400W | 720W / 7200W |
| Resolution | 9mW / 90mW | 9mW / 90mW | 9mW / 90mW | 12mW / 120mW |
| Accuracy | ± 0.5% OF (Setting + Range) | | | |
| DYNAMIC MODE - CC | | | | |
| Timing | | | | |
| Thigh & Tlow | 0.050 ~ 9.999 / 99.99 / 999.9 / 9999mS | | | |
| Resolution | 0.001 / 0.01 / 0.1 / 1mS | | | |
| Accuracy | 1μS / 10μS / 100μS / 1mS + 50ppm | | | |
| Slew rate | 0.024A ~ 1.5A / μS 0.24A ~ 15A / μS | 0.048A ~ 3A / μS 0.48A ~ 30A / μS | 0.0664A ~ 4.15A / μS 0.644A ~ 41.5A / μS | 0.032A ~ 2A / μS 0.32A ~ 20A / μS |
| Resolution | 0.006 / 0.06A / μS | 0.012 / 0.12A / μS | 0.0166 / 0.166A / μS | 0.008 / 0.08A / μS |
| Accuracy | (5% of setting) ± 10 μS | | | |
| Min. Rise Time | 24μS (typical) | | | |
| Current | | | | |
| Range | 36A / 360A | 72A / 720A | 100.2A / 1000.2A | 48A / 480A |
| Resolution | 0.6mA / 6mA | 1.2mA / 12mA | 1.67mA / 16.7mA | 0.8mA / 8mA |
| MEASUREMENT | | | | |
| Voltage Read Back | | | | |
| Range (5 Digital) | 0~6V / 60V | 0~6V / 60V | 0~6V / 60V | 0~6V / 60V |
| Resolution | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV |
| Accuracy | ± 0.025% OF (Reading + Range) | | | |
| Current Read Back | | | | |
| Range (5 Digital) | 0~36A / 360A | 0~72A / 720A | 0~100.2A / 1000.2A | 0~48A / 480A |
| Resolution | 0.6mA / 6mA | 1.2mA / 12mA | 1.67mA / 16.7mA | 0.8mA / 8mA |
| Accuracy | ± 0.1% OF (Reading + Range) | | | |
| Power Read Back | | | | |
| Range (5 Digital) | 0 ~ 5400W | 0 ~ 5400W | 0 ~ 5400W | 0 ~ 7200W |
| Resolution | 0.09W | 0.09W | 0.09W | 0.12W |
| Accuracy | ± 0.125% OF (Reading + Range) | | | |
| PROTECTIONS | | | | |
| Over Power | 105% of Rated Power | | | |
| Over Current | 105% of Rated Current | | | |
| Over Voltage | 105% of Rated Voltage | | | |
| Over Temp. | Yes | | | |
| OTHERS | | | | |
| Load ON Voltage | | | | |
| Range | 0.1 ~ 25.0V | | | |
| Resolution | 0.1V | | | |
| Accuracy | 1% of Setting + 0.25V | | | |
| Load OFF Voltage | | | | |
| Range | 0 ~ 25V | | | |
| Resolution | Same as Voltage Meter | | | |
| Accuracy | Same as Voltage Meter | | | |
| GENERAL | | | | |
| Short Circuit | | | | |
| Current | 360A | 720A | 1000.2A | 480A |
| Temperature Coefficient | 100ppm / °C (typical) | | | |
| Power consumption | 300Wmax | 300Wmax | 300Wmax | 400Wmax |
| Operating Temperature *2 | 0 ~ 40°C | | | |
| Dimension (HxWxD) | 839 x 600 x 600 mm | 839 x 600 x 600 mm | 839 x 600 x 600 mm | 1061 x 600 x 600 mm |
| Weight | 104.8 kg | 104.8 kg | 104.8 kg | 161.4 kg |
| Safety & EMC | CE | | | |

Input AC Power : 115/230 Vac ±10% · 50/60Hz
Cooling : Advanced Fan Cooled

Note*1 : The range is automatically or forcing to range II only in CC Mode
Note*2 : Operating temperature range is 0~40°C · all specifications apply for 25°C±5°C

Order Information

Optional interface :

- ① GPIB Card
- ② RS232 Card
- ③ USB Card
- ④ LAN Card



33512F 60V · 360A · 5400W



33532F 60V · 720A · 5400W



33542F 60V · 1000A · 5400W



33513F 60V · 480A · 7200W

Specifications

| MODEL | 33514F | 33515F | 33516F | 33517F |
|--------------------------|--|--------------------------------------|--|--------------------------------------|
| Power | 9000W | 10800W | 12600W | 14400W |
| Current | 0 ~ 600A | 0 ~ 720A | 0 ~ 840A | 0 ~ 960A |
| Voltage | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V | 0 ~ 60V |
| Min.Operation Voltage | 0.6V @ 600A | 0.6V @ 720A | 0.6V @ 840A | 0.6V @ 960A |
| CC MODE | | | | |
| Range *1 | 0 ~ 60A / 600A | 0 ~ 72A / 720A | 0 ~ 84A / 840A | 0 ~ 96A / 960A |
| Resolution | 1mA / 10mA | 1.2mA / 12mA | 1.4mA / 14mA | 1.6mA / 16mA |
| Accuracy | ± 0.1% OF (Setting + Range) | | | |
| CR MODE | | | | |
| Range | 0.0017 ~ 0.1 ~ 6KΩ | 0.00138 ~ 0.083 ~ 5KΩ | 0.0012 ~ 0.0714 ~ 4284Ω | 0.001 ~ 0.0625 ~ 3750Ω |
| Resolution | 0.0016mΩ / 0.016mS | 0.0014mΩ / 0.2mS | 0.0003mΩ / 0.23mS | 0.001mΩ / 0.267mS |
| Accuracy | ± 0.2% OF (Setting + Range) | | | |
| CV MODE | | | | |
| Range | 6V / 60V | | | |
| Resolution | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV |
| Accuracy | ± 0.05% OF (Setting + Range) | | | |
| CP MODE | | | | |
| Range | 900W / 9000W | 1080W / 10800W | 1260W / 12600W | 1440W / 14400W |
| Resolution | 15mW / 150mW | 18mW / 180mW | 21mW / 210mW | 24mW / 240mW |
| Accuracy | ± 0.5% OF (Setting + Range) | | | |
| DYNAMIC MODE - CC | | | | |
| Timing | | | | |
| Thigh & Tlow | 0.050 ~ 9.999 / 99.99 / 999.9 / 9999mS | | | |
| Resolution | 0.001 / 0.01 / 0.1 / 1mS | | | |
| Accuracy | 1μS / 10μS / 100μS / 1mS + 50ppm | | | |
| Slew rate | 0.04A ~ 2.5A / μS 0.4A ~ 25A / μS | 0.048A ~ 3A / μS 0.48A ~ 30A / μS | 0.056A ~ 3.5A / μS 0.56A ~ 35A / μS | 0.064A ~ 4A / μS 0.64A ~ 40A / μS |
| Resolution | 0.01 / 0.1A / μS | 0.012 / 0.12A / μS | 0.014 / 0.14A / μS | 0.016 / 0.16A / μS |
| Accuracy | (5% of setting) ± 10 μS | | | |
| Min. Rise Time | 24μS (typical) | | | |
| Current | | | | |
| Range | 60A / 600A | 72A / 720A | 84A / 840A | 96A / 960A |
| Resolution | 1mA / 10mA | 1.2mA / 12mA | 1.4mA / 14mA | 1.6mA / 16mA |
| MEASUREMENT | | | | |
| Voltage Read Back | | | | |
| Range (5 Digital) | 0 ~ 6V / 60V | 0 ~ 6V / 60V | 0 ~ 6V / 60V | 0 ~ 6V / 60V |
| Resolution | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV | 0.1mV / 1mV |
| Accuracy | ± 0.025% OF (Reading + Range) | | | |
| Current Read Back | | | | |
| Range (5 Digital) | 0 ~ 60A / 600A | 0 ~ 72A / 720A | 0 ~ 84A / 840A | 0 ~ 96A / 960A |
| Resolution | 1mA / 10mA | 1.2mA / 12mA | 1.4mA / 14mA | 1.6mA / 16mA |
| Accuracy | ± 0.1% OF (Reading + Range) | | | |
| Power Read Back | | | | |
| Range (5 Digital) | 0 ~ 9000W | 0 ~ 10800W | 0 ~ 12600W | 0 ~ 14400W |
| Resolution | 0.15W | 0.18W | 0.21W | 0.24W |
| Accuracy | ± 0.125% OF (Reading + Range) | | | |
| PROTECTIONS | | | | |
| Over Power | 105% of Rated Power | | | |
| Over Current | 105% of Rated Current | | | |
| Over Voltage | 105% of Rated Voltage | | | |
| Over Temp. | Yes | | | |
| OTHERS | | | | |
| Load ON Voltage | | | | |
| Range | 0.1 ~ 25.0V | | | |
| Resolution | 0.1V | | | |
| Accuracy | 1% of Setting + 0.25V | | | |
| Load OFF Voltage | | | | |
| Range | 0 ~ 25V | | | |
| Resolution | Same as Voltage Meter | | | |
| Accuracy | Same as Voltage Meter | | | |
| GENERAL | | | | |
| Short Circuit | | | | |
| Current | 600A | 720A | 840A | 960A |
| Temperature Coefficient | 100ppm / °C (typical) | | | |
| Power consumption | 500Wmax | 600Wmax | 700Wmax | 800Wmax |
| Operating Temperature *2 | 0 ~ 40°C | | | |
| Dimension (HxWxD) | 1556 x 596 x 600 mm | 1556 x 596 x 600 mm | 1556 x 596 x 600 mm | 1778 x 596 x 600 mm |
| Weight | 185 kg | 208.6 kg | 232.2 kg | 268.8 kg |
| Safety & EMC | CE | | | |

Input AC Power : 115/230 Vac ±10% · 50/60Hz
Cooling : Advanced Fan Cooled

Note*1 : The range is automatically or forcing to range II only in CC Mode
Note*2 : Operating temperature range is 0~40°C · all specifications apply for 25°C±5°C

Order Information

Optional interface :

- ① GPIB Card
- ② RS232 Card
- ③ USB Card
- ④ LAN Card



33514F 60V · 600A · 9000W



33515F 60V · 720A · 10800W



33516F 60V · 840A · 12600W



33517F 60V · 960A · 14400W