



## Programmable DC Electronic Load

### — — 10kW-20kW series

#### 🕒 OVERVIEW

The HT8XXX-M is a high precision programmable DC electronic load controlled by a high performance

3.5-inch TFT true color LCD display with Chinese and English menu.

- With 4 basic working modes (CC/CV/CR/CW) and 10 functional modes.
- With comprehensive protection including overheat protection, over-current protection, over-power protection, over-voltage protection, loop oscillation protection.

Built-in rich interfaces. HT8XXX-M supports RS232, LAN, USB and analog interfaces to fit your versatile solution and testing needs.

#### ☰ Test function

4 basic working modes CC/CV/CR/CW and 10 multiple extended function modes:

- DYNA dynamic test function
- OCP over current protection mode
- BATT battery mode
- EFFT load effect mode
- SWEEP dynamic frequency conversion scanning function
- TIMEING time measurement function
- OVP over voltage protection mode
- AUTO mode
- LIST function
- ESR function



High Energy Density



Wide Range Electronic Load



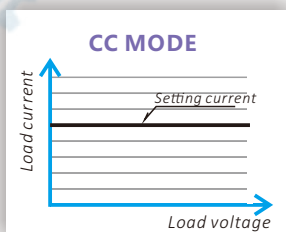
Instrument Self-diagnosis



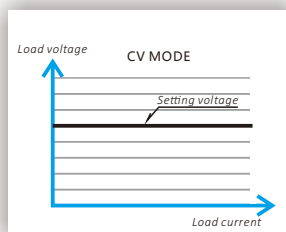
Modular Design



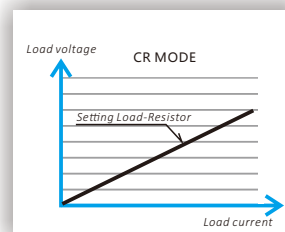
Multiple Protection



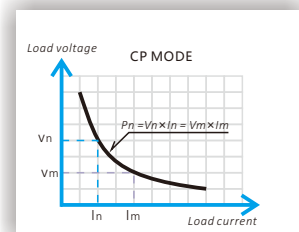
CC MODE



CV MODE



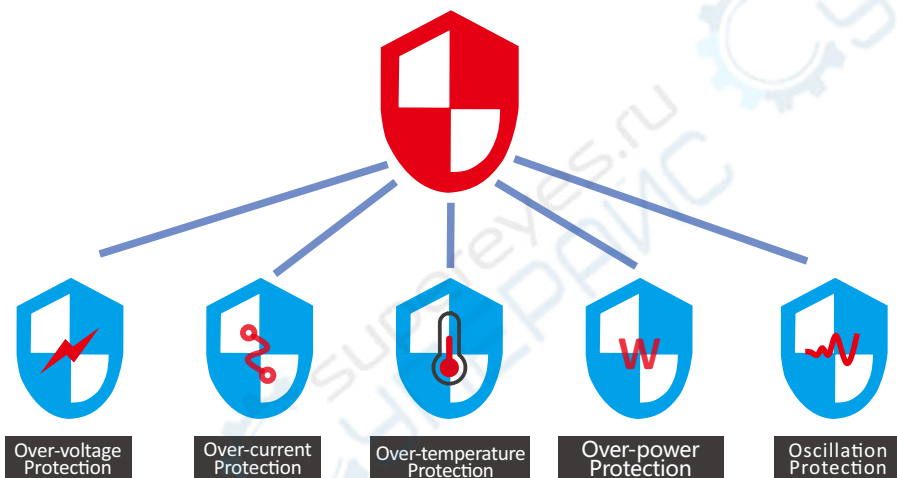
CR MODE



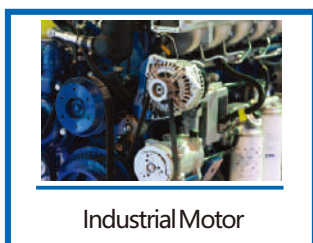
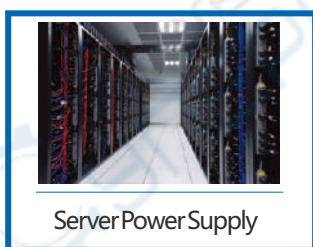
CP MODE

## FEATURES

- 500kHz high speed voltage, current sampling rate
- High precision voltage and current measurement
- Fast loop response speed and current slew rate
- Programmable single step up to 10 $\mu$ S
- Equipped with remote four-wire compensation
- Unique real-time display of current ripple and voltage ripple
- Real-time display of load power and resistance



## APPLICATION



## SPECIFICATION

| Model                       | HT8103B-M         |      | HT8103C-M  |      | HT8123B-M  |      | HT8123C-M |      |
|-----------------------------|-------------------|------|------------|------|------------|------|-----------|------|
| Input voltage               | 50V               | 500V | 15V        | 150V | 50V        | 500V | 15V       | 150V |
| Input current               | 24A               | 240A | 50A        | 500A | 24A        | 240A | 50A       | 500A |
| Input power                 | 10kW              |      |            |      | 12kW       |      |           |      |
| Min.operation voltage       | 1.5V@240A         |      | 1.5V@500A  |      | 2.5V@240A  |      | 1.5V@500A |      |
| Min.risetime@FS current     | 25us              |      | 25us       |      | 25us       |      | 25us      |      |
| CV mode                     |                   |      |            |      |            |      |           |      |
| Range                       | 50V               | 500V | 15V        | 150V | 50V        | 500V | 15V       | 150V |
| Resolution                  | 0.7mV             | 7mV  | 0.2mV      | 2mV  | 0.7mV      | 7mV  | 0.2mV     | 2mV  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |            |      |            |      |           |      |
| CC mode                     |                   |      |            |      |            |      |           |      |
| Range                       | 24A               | 240A | 50A        | 500A | 24A        | 240A | 50A       | 500A |
| Resolution                  | 0.3mA             | 3mA  | 0.7mA      | 7mA  | 0.3mA      | 3mA  | 0.7mA     | 7mA  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |            |      |            |      |           |      |
| CR mode                     |                   |      |            |      |            |      |           |      |
| Range                       | 0.04Ω~21kΩ        |      | 0.008Ω~3kΩ |      | 0.04Ω~21kΩ |      | 0.01Ω~3kΩ |      |
| Resolution                  | 16Bits            |      |            |      |            |      |           |      |
| Accuracy                    | ±0.1%             |      |            |      |            |      |           |      |
| CW mode                     |                   |      |            |      |            |      |           |      |
| Range                       | 10kW              |      |            |      | 12kW       |      |           |      |
| Resolution                  | 16Bits            |      |            |      |            |      |           |      |
| Accuracy                    | ± (0.1%+0.1%FS)   |      |            |      |            |      |           |      |
| Dynamic mode                |                   |      |            |      |            |      |           |      |
| Ta& Tb                      | 10us~50s          |      |            |      |            |      |           |      |
| Min.resolution              | 10us              |      |            |      |            |      |           |      |
| Min. rise time              | 3A/us             |      | 3A/us      |      | 3A/us      |      | 3A/us     |      |
| Read-back voltage           |                   |      |            |      |            |      |           |      |
| Range                       | 50V               | 500V | 50V        | 500V | 50V        | 500V | 15V       | 150V |
| Resolution                  | 0.3mV             | 3mV  | 0.1mV      | 1mV  | 0.3mV      | 3mV  | 0.1mV     | 1mV  |
| Accuracy                    | ±(0.015%+0.01%FS) |      |            |      |            |      |           |      |
| Read-back current           |                   |      |            |      |            |      |           |      |
| Range                       | 24A               | 240A | 50A        | 500A | 24A        | 240A | 50A       | 500A |
| Resolution                  | 0.1mA             | 1mA  | 0.3mA      | 3mA  | 0.1mA      | 1mA  | 0.3mA     | 3mA  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |            |      |            |      |           |      |
| Read-back Ripple            |                   |      |            |      |            |      |           |      |
| Range(R/I)                  | 500V/240A         |      | 150V/500A  |      | 500V/240A  |      | 150V/500A |      |
| bandwidth                   | 10Hz~250kHz       |      |            |      |            |      |           |      |
| Accuracy                    | ±1%               |      |            |      |            |      |           |      |
| Protection range            |                   |      |            |      |            |      |           |      |
| Over-power protection       | 10500W            |      |            |      | 12600W     |      |           |      |
| Over-current protection     | 252A              |      | 525A       |      | 252A       |      | 525A      |      |
| Over-voltage protection     | 525V              |      | 158V       |      | 525V       |      | 158V      |      |
| Over-temperature protection | ≈85°C             |      |            |      |            |      |           |      |
| Specification               |                   |      |            |      |            |      |           |      |
| Dimension (L*W*D)           | -----             |      |            |      |            |      |           |      |
| Gross Weight                | -----             |      |            |      |            |      |           |      |

## SPECIFICATION

| Model                       | HT8143B-M         |      | HT8143C-M |      | HT8163B-M  |      | HT8163C-M |      |
|-----------------------------|-------------------|------|-----------|------|------------|------|-----------|------|
| Input voltage               | 50V               | 500V | 15V       | 150V | 50V        | 500V | 15V       | 150V |
| Input current               | 24A               | 240A | 50A       | 500A | 24A        | 240A | 50A       | 500A |
| Input power                 | 14kW              |      |           |      | 16kW       |      |           |      |
| Min.operation voltage       | 2V@240A           |      | 1.5V@500A |      | 2.5V@240A  |      | 1.5V@500A |      |
| Min.risetime@FS current     | 25us              |      | 25us      |      | 25us       |      | 25us      |      |
| CV mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 50V               | 500V | 15V       | 150V | 50V        | 500V | 15V       | 150V |
| Resolution                  | 0.7mV             | 7mV  | 0.2mV     | 2mV  | 0.7mV      | 7mV  | 0.2mV     | 2mV  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |           |      |            |      |           |      |
| CC mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 24A               | 240A | 50A       | 500A | 24A        | 240A | 50A       | 500A |
| Resolution                  | 0.3mA             | 3mA  | 0.7mA     | 7mA  | 0.3mA      | 3mA  | 0.7mA     | 7mA  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |           |      |            |      |           |      |
| CR mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 0.05Ω~21kΩ        |      | 0.01Ω~3kΩ |      | 0.06Ω~21kΩ |      | 0.01Ω~3kΩ |      |
| Resolution                  | 16Bits            |      |           |      |            |      |           |      |
| Accuracy                    | ±0.1%             |      |           |      |            |      |           |      |
| CW mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 14kW              |      |           |      | 12kW       |      |           |      |
| Resolution                  | 16Bits            |      |           |      |            |      |           |      |
| Accuracy                    | ± (0.1%+0.1%FS)   |      |           |      |            |      |           |      |
| Dynamic mode                |                   |      |           |      |            |      |           |      |
| Ta& Tb                      | 10us~50s          |      |           |      |            |      |           |      |
| Min.resolution              | 10us              |      |           |      |            |      |           |      |
| Min. rise time              | 3A/us             |      | 3A/us     |      | 3A/us      |      | 3A/us     |      |
| Read-back voltage           |                   |      |           |      |            |      |           |      |
| Range                       | 50V               | 500V | 50V       | 500V | 50V        | 500V | 15V       | 150V |
| Resolution                  | 0.3mV             | 3mV  | 0.1mV     | 1mV  | 0.3mV      | 3mV  | 0.1mV     | 1mV  |
| Accuracy                    | ±(0.015%+0.01%FS) |      |           |      |            |      |           |      |
| Read-back current           |                   |      |           |      |            |      |           |      |
| Range                       | 24A               | 240A | 50A       | 500A | 24A        | 240A | 50A       | 500A |
| Resolution                  | 0.1mA             | 1mA  | 0.3mA     | 3mA  | 0.1mA      | 1mA  | 0.3mA     | 3mA  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |           |      |            |      |           |      |
| Read-back Ripple            |                   |      |           |      |            |      |           |      |
| Range(R/I)                  | 500V/240A         |      | 150V/500A |      | 500V/240A  |      | 150V/500A |      |
| bandwidth                   | 10Hz~250kHz       |      |           |      |            |      |           |      |
| Accuracy                    | ±1%               |      |           |      |            |      |           |      |
| Protection range            |                   |      |           |      |            |      |           |      |
| Over-power protection       | 14700W            |      |           |      | 16800W     |      |           |      |
| Over-current protection     | 252A              |      | 525A      |      | 252A       |      | 525A      |      |
| Over-voltage protection     | 525V              |      | 158V      |      | 525V       |      | 158V      |      |
| Over-temperature protection | ≈85°C             |      |           |      |            |      |           |      |
| Specification               |                   |      |           |      |            |      |           |      |
| Dimension (L*W*D)           | -----             |      |           |      |            |      |           |      |
| Gross Weight                | -----             |      |           |      |            |      |           |      |

## SPECIFICATION

| Model                       | HT8183B-M         |      | HT8183C-M |      | HT8203B-M  |      | HT8203C-M |      |
|-----------------------------|-------------------|------|-----------|------|------------|------|-----------|------|
| Input voltage               | 50V               | 500V | 15V       | 150V | 50V        | 500V | 15V       | 150V |
| Input current               | 24A               | 240A | 50A       | 500A | 24A        | 240A | 50A       | 500A |
| Input power                 | 18kW              |      |           |      | 20kW       |      |           |      |
| Min.operation voltage       | 2V@240A           |      | 1.5V@500A |      | 2V@240A    |      | 1.5V@500A |      |
| Min.risetime@FS current     | 25us              |      | 25us      |      | 25us       |      | 25us      |      |
| CV mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 50V               | 500V | 15V       | 150V | 50V        | 500V | 15V       | 150V |
| Resolution                  | 0.7mV             | 7mV  | 0.2mV     | 2mV  | 0.7mV      | 7mV  | 0.2mV     | 2mV  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |           |      |            |      |           |      |
| CC mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 24A               | 240A | 50A       | 500A | 24A        | 240A | 50A       | 500A |
| Resolution                  | 0.3mA             | 3mA  | 0.7mA     | 7mA  | 0.3mA      | 3mA  | 0.7mA     | 7mA  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |           |      |            |      |           |      |
| CR mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 0.06Ω~21kΩ        |      | 0.01Ω~3kΩ |      | 0.07Ω~21kΩ |      | 0.02Ω~3kΩ |      |
| Resolution                  | 16Bits            |      |           |      |            |      |           |      |
| Accuracy                    | ±0.1%             |      |           |      |            |      |           |      |
| CW mode                     |                   |      |           |      |            |      |           |      |
| Range                       | 18kW              |      |           |      | 20kW       |      |           |      |
| Resolution                  | 16Bits            |      |           |      |            |      |           |      |
| Accuracy                    | ± (0.1%+0.1%FS)   |      |           |      |            |      |           |      |
| Dynamic mode                |                   |      |           |      |            |      |           |      |
| Ta& Tb                      | 10us~50s          |      |           |      |            |      |           |      |
| Min.resolution              | 10us              |      |           |      |            |      |           |      |
| Min. rise time              | 3A/us             |      | 3A/us     |      | 3A/us      |      | 3A/us     |      |
| Read-back voltage           |                   |      |           |      |            |      |           |      |
| Range                       | 50V               | 500V | 50V       | 500V | 50V        | 500V | 15V       | 150V |
| Resolution                  | 0.3mV             | 3mV  | 0.1mV     | 1mV  | 0.3mV      | 3mV  | 0.1mV     | 1mV  |
| Accuracy                    | ±(0.015%+0.01%FS) |      |           |      |            |      |           |      |
| Read-back current           |                   |      |           |      |            |      |           |      |
| Range                       | 24A               | 240A | 50A       | 500A | 24A        | 240A | 50A       | 500A |
| Resolution                  | 0.1mA             | 1mA  | 0.3mA     | 3mA  | 0.1mA      | 1mA  | 0.3mA     | 3mA  |
| Accuracy                    | ±(0.03%+0.02%FS)  |      |           |      |            |      |           |      |
| Read-back Ripple            |                   |      |           |      |            |      |           |      |
| Range(R/I)                  | 500V/240A         |      | 150V/500A |      | 500V/240A  |      | 150V/500A |      |
| bandwidth                   | 10Hz~250kHz       |      |           |      |            |      |           |      |
| Accuracy                    | ±1%               |      |           |      |            |      |           |      |
| Protection range            |                   |      |           |      |            |      |           |      |
| Over-power protection       | 18900W            |      |           |      | 21000W     |      |           |      |
| Over-current protection     | 252A              |      | 525A      |      | 252A       |      | 525A      |      |
| Over-voltage protection     | 525V              |      | 158V      |      | 525V       |      | 158V      |      |
| Over-temperature protection | ≈85°C             |      |           |      |            |      |           |      |
| Specification               |                   |      |           |      |            |      |           |      |
| Dimension (L*W*D)           | -----             |      |           |      |            |      |           |      |
| Gross Weight                | -----             |      |           |      |            |      |           |      |