Large Capacity 1500 W of Electronic Load is realized

High Power DC Electronic Loads

- 4 operation modes: constant voltage, constant current, constant power, constant resistance
- The model made speeding up CV response is available.
- Suitable for evaluation test of secondary battery and in-vehicle DC motor.

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EHD series are best-fitted DC electronic loads to life tests for primary or secondary batteries and DC power supplies and aging test and so on. Larger capacity of 1.5 times than conventional one is realized and this one unit can be applied to maximum 1500 W input. They are able to easily expand to 16 units, 24 kW (-LGob option models: Max. 32 units, 48 kW) and additional expansion is able as required according to number of cells. They are able to configure systems with our DC power supplies REK series or RK series and so on with LAN(Ethernet *), USB, RS-232C / RS-485 or GPIB interface.

EHHD series are models made speeding up CV response based on EHD series. They are best-fit to evaluation test of motors as it is able to protect peripheral equipment by sinking smoothly current regenerated by the motor.

* : Ethernet is the registered trademark of Xerox Corporation, Ltd.

Features

- Maximum 1500 W of load power is realized in the same size of a 19 inches rack of 3U size.
- They are operable in 4 modes of Constant Voltage (CV), Constant Current (CC), Constant Resistance (CR) and Constant Power (CP).
- It is possible to control up to maximum 24 kW (-LGob option models: Max. 48 kW) by the digital interface.
- Low sink current at load off is realized.

Lineup

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Current</th>
<th>Rated Voltage</th>
<th>Rated Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHD1k-150V</td>
<td>150 A</td>
<td>150 V</td>
<td>1000 W</td>
</tr>
<tr>
<td>EHD1.5k-150V</td>
<td>150 A</td>
<td>150 V</td>
<td>1500 W</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Current</th>
<th>Rated Voltage</th>
<th>Rated Power</th>
<th>Response time at CV mode *1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHHD1k-150V</td>
<td>150 A</td>
<td>150 V</td>
<td>1000 W</td>
<td>≤ 10 ms *2</td>
</tr>
<tr>
<td>EHHD1.5k-150V</td>
<td>150 A</td>
<td>150 V</td>
<td>1500 W</td>
<td>≤ 10 ms *2</td>
</tr>
</tbody>
</table>

*1 : Time before current beginning to flow after the input voltage was beyond a set point.
(Time until actual input voltage is stabilized is affected with testing power supply and impedance of wiring.)

*2 : When the potential difference of input voltage and setting voltage is more than 3 V. (When it is operated alone)

Typical applications

- Evaluation of DC switching power supply
- Evaluation of in-vehicle DC / DC converter
- Evaluation of constant voltage and large current DC / DC converter for server
- For the absorption of surge current flowing into brushless DC motor
- Discharge test of a large current rechargeable battery and Electric double-layer capacitor
- Evaluation of AC adaptor
- Evaluation of DC relay and DC switches
- I-V characteristic test of solar cells
Best fit to Evaluation Test of DC Motor for Cars

It is able to evaluate motors without damages on ECU and the power supply by sinking current regenerated by the motor with EHD / EHHD series in combination with our DC power supply REK series, etc.

These Applications are available, for example

**Constant Current(CC) Discharge**
- Voltage
- Current
- It is discharged in the set current value. Even if the terminal voltage changes at discharging, output current can flow to EHD constantly.

**Constant Voltage(CV) Discharge**
- Voltage
- Current
- It is discharged in the set voltage value. Even if the terminal current changes at discharging, operation voltage can be fixed.

**Constant Resistance(CR) Discharge**
- Voltage
- Current
- It is discharged in the set resistance value. The terminal voltage is measured, and then discharge current is determined according to the set resistance value.

**Constant Power(CP) Discharge**
- Voltage
- Current
- It is discharged in set power value. If the terminal voltage changes at discharging, it is possible to set off consuming the constant power according to the change of terminal voltage.

**Standard Functions**

**Digital Interface**
- Digital control via USB, LAN (Ethernet) *, RS-232C and RS-485 is possible.
- It is applicable as one electronic load of large capacity by hooking maximum 16 units (24 kW) of EHD / EHHD.

**Master-slave Control**
- By using the dedicated cable for Master-slave Control “EHD-MS cable”, (length of 0.55 m, sold separately), it is able to control maximum 4 slave units with one master unit.

**Total 16 units can be hooked with one adapter.**

**Various Adapters (sold separately)**
- CO-M cable
  - One piece (2 mL) is included per a unit.
  - Please consult our sales staff, if much more extension required.

**In case that it is presumed to be utilized under any particular environment, option -LGob (optical interface) is required. Refer to page 7 for detail.**

**In order to enlarge capacity without PC, please utilize the master-slave control shown as the right illustration.**
Specifications

- **Input Voltage**: 90 to 250 VAC, 50 / 60 Hz, single phase
- **Input Current**: 1.5 A max. (At 100 VAC)
- **Operation Voltage**: 1.5 V to 150 VDC
- **Maximum Current**: 150 A
- **Operation**: Constant Voltage (CV) Mode, Constant Current (CC) Mode, Constant Resistance (CR) Mode, Constant Power (CP) Mode

<table>
<thead>
<tr>
<th>Operation Range</th>
<th>Settable Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHD1k-150V</td>
<td>EHD1.5k-150V</td>
</tr>
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</tr>
<tr>
<td>EHD1k-150V</td>
<td>EHD1.5k-150V</td>
</tr>
<tr>
<td>Constant Volt. (CV) Mode</td>
<td>1.5 V to 150 V</td>
</tr>
<tr>
<td>Constant Current (CC) Mode</td>
<td>L Range: 0 A to 30 A, 0 A to 150 A</td>
</tr>
<tr>
<td>Constant Resistance (CR) Mode</td>
<td>L Range: 0.066 Ω to 0.6 Ω, 0.066 Ω to 0.6 Ω</td>
</tr>
<tr>
<td>Constant Power (CP) Mode</td>
<td>0 W to 1000 W, 0 W to 1500 W, 0 W to 1050 W, 0 W to 1575 W</td>
</tr>
</tbody>
</table>

[Operation range of EHD1.5k-150V]

- **Load Control**: Setting with the rotary encoder on the front panel
- **Protections**: Overcurrent Protection (OCP): Cut-off load or Limitation by approx.110 % of Rating
- **Voltage**: 5 digits digital meter (accuracy 1 % F.S.±5dgt)
- **Current**: 5 digits digital meter (accuracy 1 % F.S.±5dgt)
- **Settings of Current, Resistance, Power and Voltage, Setting of operation mode, Setting Range**:
  - Constant Current Mode : L and H range
  - Constant Resistance Mode : L, M and H range
- **Display**: Overvoltage Protection (OVP): Cut-off load by approx.110 % of Rating
- **Overpower Protection (OPP)**: Cut-off load or Limitation (except at CP mode) by 1W to approx.110 % of Rating
- **Protection against Reverse Connection**: Over Temperature Protection (OTP)
- **Operation Temp.**: 0 °C to +40 °C
- **Storage Temp.**: -20 °C to +70 °C
- **Storage Humidity**: 20 % to 80 % RH (no condensation)
- **Withstand voltage**: Between the power input and the chassis : AC 1,500 V / 1 minute
- **Between the load terminal to hook and the chassis**: DC 500 V / 1 minute
- **Accessories**: Input AC cable, 3 cores for single phase, 2.5 m length (1)
- **Instruction Manual (1)**
- **Cover for load terminals (1)**
- **CO-M cable, 2 m length (at no option) (1)**
- **Communication Functions**: Switching operation modes, Switching set ranges, Load control, Voltage monitor, Current monitor

The dedicated "EHD-MS cable" for the master-slave control is available as separately sold one.
## Explanation of the Function

### Front

- **Power Switch**: ON / OFF
- **Load Switch**: ON / OFF
- **Display**:
- **Key switches**
- **Rotary encoder**
- **LED to indicate Load ON**

### Rear

- **Terminals for load input**
- **Connector for remote control**
- **Terminal for Grounding (M4)**
- **Connection terminal for Master-slave**
- **AC input**
- **Digital Interface**

### Details of key switches

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RANGE</td>
<td>To switch operation range&lt;br&gt;(at CC mode: L / H, at CR mode: L / M / H)</td>
</tr>
<tr>
<td>MODE</td>
<td>To switch operation modes. (CC / CR / CP)</td>
</tr>
<tr>
<td>SET</td>
<td>To shift setting screens to, Current, Resistance, Power, Voltage or&lt;br&gt;Over Power Protection value. At SHIFT in active, shift to the menu screen for CONFIGURATION</td>
</tr>
<tr>
<td>CV ON / OFF</td>
<td>To switch ON / OFF of CV mode</td>
</tr>
<tr>
<td>Shifting key, left</td>
<td>To move the cursor left.</td>
</tr>
<tr>
<td>Shifting key right</td>
<td>To move the cursor right.</td>
</tr>
<tr>
<td>KEYLOCK</td>
<td>To disable key operations.</td>
</tr>
<tr>
<td>MEMORY / SHORT</td>
<td>To shift to the menu screen for MEMORY to register and to call up. At SHIFT in active, switch ON / OFF of SHORT function.</td>
</tr>
<tr>
<td>ENTER / SHIFT</td>
<td>To switch Active / Inactive for SHIFT function. To utilize to confirm settings at setting of memory to register, memory to call up and the menu for CONFIGURATION</td>
</tr>
</tbody>
</table>
Insulation control is made with optical communication. As perfect insulation is made by optical fiber it is able to forestall miss operation as transient phenomenon caused by surge, dielectric thunder or foreign noise, etc.

When use them under following environments, please select –LGob always.
- Noisy environment as in a factory.  
  (Ex. Motors or coils are used near to loads or power supplies)
- Used in high voltage floating. (250 V and higher)
- Our power supplies and controllers (PC or PLC) can not be installed within 2 m.

*1 : If this option is selected, the standard digital interface is not equipped.
*2 : Ethernet is a registered trademark of Xerox CO. Ltd.

How to Order
Please suffix above optional codes on the tail of Model number.
(Example) EHD1.5k-150V-LGob(Fc20)
Customer Inquiry Sheet (EHD / EHHD series)

Please copy this page and above fax number after filling out form below.

- I would like
  - [ ] A quotation
  - [ ] An explanation of product
  - [ ] A demonstration
  - [ ] To purchase
  - [ ] Other ( )

- Give us your requirement / comment

- Please fill in below.

  Address: [ ]

  Company: [ ]

  Dept.: [ ]  Title: [ ]

  Name: [ ]

  Tel: [ ]  Fax: [ ]

  E-mail: [ ]

Manufacturer warranty

We warrant the specification, unless otherwise specified, at max. rated output after warm up, and scope of application is between 10% and 100% of max. rated output. We warrant that products contained in this catalog (hereinafter, the “Products”) are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. We will not inspect, adjust or repair any of our power supply products in the field or at any customer site. If you suspect that there has been a power supply failure in the field, please inspect your whole unit by yourself in an effort to determine that the problem is, in fact, arising out of our power supply products. If it is found that the problem is arising out of such power supply product after inspection, please contact your local sales office for additional troubleshooting. A “Return Merchandise Authorization” is required in case the power supply must be sent back to the factory in Japan for inspection and repair. We, at our sole discretion repair or replace such defective products at no cost to the purchaser. We assume no liability to the purchaser or any third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products are not designed and produced for such applications as requiring extremely high reliability and safety, or involving human lives (such as nuclear power, aerospace, social infrastructure facility, medical equipment, etc.). The use under such environment is not covered by this warranty and may require additional design and manufacturing processes. No modification or supplement of this warranty shall be binding unless in writing and signed by a duly authorized officer of Matsusada. Matsusada reserves the right to make any changes in the contents of catalogs or specifications at any time without advance notice. Due to compelling reason such as unavailability of components used, products might be un available or unable to repair. The products specified in catalogs or specifications are designed for use by the person who has enough expertise or under the control of such person, and not for general consumers. Schematics of products shall not be submitted to users. Test result or test data for the products shall be available upon request with charge.

Make sure you read the specification in the latest catalog before you order. Contact nearby sales office for the latest catalog.

PLEASE SEE THE LINK BELOW FOR THE COMPLETE WARRANTY TERMS

http://www.matsusada.com/site/warranty.html