

## DC Electronic Loads

|                  |   |
|------------------|---|
| <b>LSG-175</b>   | (150V/35A/175W)                         |
| <b>LSG-350</b>   | (150V/70A/350W)                         |
| <b>LSG-1050</b>  | (150V/210A/1050W)                       |
| <b>LSG-2100S</b> | (150V/420A/2100W)(Booster for LSG-1050) |

- Operating Mode : C.V/C.C/C.R/C.P/C.C+C.V/C.R+C.V/C.P+C.C.
- High Precision, High Resolution (10A), High Speed Variable Slew Rate (16A/us).
- Sequence Function for High Efficient Load Simulations.
- Parallel Connection of Inputs for Higher Capacity. (With 4 Booster Units : Max 9.45kW or 4 Master Units)
- External Channel Control/Monitoring via Analog Control Connector.
- Program Mode to Create Work Routines for Repetitive Tests.
- Multiple-Interface : USB 2.0 Device/Host and GP-IB/RS-232C.
- Adjustable OPP/OCV/OVP Setting.

### Specifications

| CC Mode   |   |   |  |
|---|---|---|--|
| Model   | LSG-175   | LSG-350   | LSG-1050   |
| Operating Range   |   |   |  |
| H Range   | 0A~35A  | 0A~70A  | 0A~210A  |
| M Range   | 0A~3.5A   | 0A~7A   | 0A~21A   |
| L Range   | 0A~0.35A  | 0A~0.7A   | 0A~2.1A  |
| Resolution  |   |   |  |
| H Range   | 1mA   | 2mA   | 10mA   |
| M Range   | 0.1mA   | 0.2mA   | 1mA  |
| L Range   | 0.01mA  | 0.02mA  | 0.1mA  |
| Accuracy of Setting   |   |   |  |
| H, M Range  | $\pm(0.2\% \text{ of set} + 0.1\% \text{ of f.s.}^{\ast 1}) + \text{Vin}^{\ast 2}/500 \text{ k}\Omega$          |   |  |
| L Range   | $\pm(0.2\% \text{ of set} + 0.1\% \text{ of f.s.}) + \text{Vin}^{\ast 2}/500 \text{ k}\Omega$                   |   |  |
| Parallel Operating  | $\pm(1.2\% \text{ of set} + 1.1\% \text{ of f.s.}^{\ast 3})$  |   |  |
| *1 Full scale of H range  |   |   |  |
| *2 Vin: input terminal voltage of electronic load   |   |   |  |
| *3 M range applies to the full scale of H range   |   |   |  |
| CR Mode   |   |   |  |
| Model   | LSG-175   | LSG-350   | LSG-1050   |
| Operating Range <sup>1</sup>  |   |   |  |
| H Range   | 23.3336S~400uS<br>(42.857m $\Omega$ ~2.5k $\Omega$ )  | 46.6672S~800uS<br>(21.428m $\Omega$ ~1.25k $\Omega$ ) | 140.0016S~2.4mS<br>(7.1427m $\Omega$ ~416.6667 $\Omega$ )  |
| M Range   | 2.33336S~40uS<br>(428.566m $\Omega$ ~25k $\Omega$ )   | 4.6667S~80uS<br>(214.28m $\Omega$ ~12.5k $\Omega$ )   | 14.0001S~242.4uS<br>(71.427m $\Omega$ ~4.16667k $\Omega$ ) |
| L Range   | 0.233336S~4uS<br>(4.28566 $\Omega$ ~250k $\Omega$ )   | 0.46667S~8uS<br>(2.1428 $\Omega$ ~125k $\Omega$ )     | 1.40001S~24.24uS<br>(714.27m $\Omega$ ~41.6667k $\Omega$ ) |
| Resolution  |   |   |  |
| H Range   | 400uS   | 800uS   | 2.4mS  |
| M Range   | 40uS  | 80uS  | 240uS  |
| L Range   | 4uS   | 8uS   | 24uS   |
| Accuracy of Setting <sup>2</sup>  |   |   |  |
| H, M Range  | $\pm(0.5\% \text{ of set}^{\ast 3} + 0.5\% \text{ of f.s.}^{\ast 4}) + \text{Vin}^{\ast 5}/500 \text{ k}\Omega$ |   |  |
| L Range   | $\pm(0.5\% \text{ of set}^{\ast 3} + 0.5\% \text{ of f.s.}) + \text{Vin}^{\ast 5}/500 \text{ k}\Omega$          |   |  |
| *1 Siemens[S] = Input current[A] / Input voltage[V] = 1 / resistance[ $\Omega$ ]  |   |   |  |
| *2 Converted value at the input current. At the input current. It is not applied for the condition of the parallel operation.                                 |   |   |  |
| *3 set = Vin / Rset   |   |   |  |
| *4 f.s. = Full scale of High Range  |   |   |  |
| *5 Vin = Input terminal voltage of electronic load  |   |   |  |
| CV Mode   |   |   |  |
| Model   | LSG-175   | LSG-350   | LSG-1050   |
| Operating Range   |   |   |  |
| H Range   | 1.5V~150V   | 1.5V~150V   | 1.5V~150V  |
| L Range   | 1.5V~15V  | 1.5V~15V  | 1.5V~15V   |
| Resolution  |   |   |  |
| H Range   | 10mV  | 10mV  | 10mV   |
| L Range   | 1mV   | 1mV   | 1mV  |
| Accuracy of Setting <sup>1</sup>  |   |   |  |
| H, L Range  | $\pm(0.1\% \text{ of set} + 0.1\% \text{ of f.s.})$   |   |  |
| *1 At the sensing point during remote sensing under the operating range of the input voltage. It is also applied for the condition of the parallel operation. |   |   |  |

## LSG Series

High Capacity Electronic Load (Max. 9.45kW)



| CP Mode  |              |            |             |
|--|--------------|------------|-------------|
| Model  | LSG-175      | LSG-350    | LSG-1050    |
| Operating Range  |              |            |             |
| H Range  | 17.5W~175W   | 35W~350W   | 105W~1050W  |
| M Range  | 1.75W~17.5W  | 3.5W~35W   | 10.5W~105W  |
| L Range  | 0.175W~1.75W | 0.35W~3.5W | 1.05W~10.5W |
| Resolution   |              |            |             |
| H Range  | 10mW         | 10mW       | 100mW       |
| M Range  | 1mW          | 1mW        | 10mW        |
| L Range  | 0.1mW        | 0.1mW      | 1mW         |
| Accuracy of Setting <sup>1</sup>                             |              |            |             |
| $\pm(0.6\% \text{ of set} + 1.4\% \text{ of f.s.}^{\ast 2})$ |              |            |             |

\*1 It is not applied for the condition of the parallel operation.  
\*2 M range applies to the full scale of H range.

| Meter  |                 |                 |                 |
|--|-----------------|-----------------|-----------------|
| Model  | LSG-175         | LSG-350         | LSG-1050        |
| Voltmeter  |                 |                 |                 |
| H Range  | 0.00V~150.00V   | 0.00V~150.00V   | 0.00V~150.00V   |
| L Range  | 0.000V~15.000V  | 0.000V~15.000V  | 0.000V~15.000V  |
| Accuracy   |                 |                 |                 |
| $\pm(0.1\% \text{ of rdg} + 0.1\% \text{ of f.s.})$  |                 |                 |                 |
| Ammeter  |                 |                 |                 |
| H, M Range   | 0.000A~35.000A  | 0.000A~70.000A  | 0.00A~210.00A   |
| L Range  | 0.00A~350.00mA  | 0.00A~700mA     | 0.0000A~2.1000A |
| Accuracy   |                 |                 |                 |
| $\pm(0.2\% \text{ of rdg} + 0.3\% \text{ of f.s.})$<br>Parallel Operation: $\pm(1.2\% \text{ of rdg} + 1.1\% \text{ of f.s.})$ |                 |                 |                 |
| Wattmeter  |                 |                 |                 |
| H, M Range   | 0.00W~175.00W   | 0.00W~350.00W   | 0.00W~1050W     |
| L Range(CC/CR/CV)  | 0.000W~52.500W  | 0.000W~105.000W | 0.00W~315.00W   |
| L Range(CP)  | 0.0000W~1.7500W | 0.0000W~3.5000W | 0.000W~10.500W  |

| General                                     |          |          |          |           |
|---|----------|----------|----------|-----------|
| Model                                       | LSG-175  | LSG-350  | LSG-1050 | LSG-2100S |
| Input Range                                 |          |          |          |           |
| 90VAC ~ 132VAC/180VAC ~ 250VAC Single-phase |          |          |          |           |
| Input Frequency                             |          |          |          |           |
| 47 ~ 63Hz                                   |          |          |          |           |
| Power(max.)                                 |          |          |          |           |
|   | 90VA     | 110VA    | 190VA    | 230VA     |
| Dimensions                                  |          |          |          |           |
| W   | 213.8 mm | 213.8 mm | 427.8 mm | 427.7 mm  |
| H   | 124.0 mm | 124.0 mm | 124.0 mm | 127.8 mm  |
| D   | 400.5 mm | 400.5 mm | 400.5 mm | 553.5 mm  |
| Weight(Approx.)                             |          |          |          |           |
|   | 7 kg     | 8 kg     | 15 kg    | 17 kg     |

| Options   |  |
|-----------|--|
| GRA-413   | Rack Mount Kit (EIA+JIS) for LSG-2100S   |
| GRA-414-E | Rack Mount Kit (EIA) for LSG175/350/1050 |
| GRA-414-J | Rack Mount Kit (JIS) for LSG175/350/1050 |
| GTL-255   | Frame Link Cable                         |
| PEL-004   | GP-IB Control Board                      |

## DC Electronic Loads

|                   |  |
|-------------------|--|
| <b>LSG-175H</b>   | (800V/8.75A/175W)                        |
| <b>LSG-350H</b>   | (800V/17.5A/350W)                        |
| <b>LSG-1050H</b>  | (800V/52.5A/1050W)                       |
| <b>LSG-2100SH</b> | (800V/105A/2100W)(Booster for LSG-1050H) |

- Operating Mode : C.V./C.C./R.C./P.C./C.C.+C.V./C.R.+C.V./C.P.+C.C.
- High Precision, High Resolution , High Speed Variable Slew Rate.
- Sequence Function for High Efficient Load Simulations.
- Parallel Connection of Inputs for Higher Capacity. (With 4 Booster Units : Max 9.45kW or 4 Master Units)
- External Channel Control/Monitoring via Analog Control Connector.
- Program Mode to Create Work Routines for Repetitive Tests.
- Multiple-Interface : USB 2.0 Device/Host and GP-IB/RS-232C.
- Adjustable OPP/OCV/OVP Setting.
- Test mode for OCP/OPP/BATT

### Specifications

| CC Mode             |  |           |           |
|---------------------|--|-----------|-----------|
| Model               | LSG-175H   | LSG-350H  | LSG-1050H |
| Operating Range     |  |           |           |
| H Range             | 0A~8.75A   | 0A~17.5A  | 0A~52.5A  |
| M Range             | 0A~0.875A  | 0A~1.75A  | 0A~5.25A  |
| L Range             | 0A~0.0875A   | 0A~0.175A | 0A~0.525A |
| Resolution          |  |           |           |
| H Range             | 0.3mA  | 0.6mA     | 2mA       |
| M Range             | 0.03mA   | 0.06mA    | 0.2mA     |
| L Range             | 0.003mA  | 0.006mA   | 0.02mA    |
| Accuracy of Setting |  |           |           |
| H, M Range          | $\pm(0.2\% \text{ of set} + 0.1\% \text{ of f.s.}^{*1}) + \text{Vin}^2/3.24\text{M}\Omega$ |           |           |
| L Range             | $\pm(0.2\% \text{ of set} + 0.1\% \text{ of f.s.}) + \text{Vin}^2/3.24\text{M}\Omega$      |           |           |
| Parallel Operating  | $\pm(1.2\% \text{ of set} + 1.1\% \text{ of f.s.}^{*3})$                                   |           |           |

- \*1 Full scale of H range  
 \*2 Vin: input terminal voltage of electronic load  
 \*3 M range applies to the full scale of H range

| CR Mode               |  |                              |                                |
|-----------------------|--|------------------------------|--------------------------------|
| Model                 | LSG-175H   | LSG-350H                     | LSG-1050H                      |
| Operating Range**     |  |                              |                                |
| H Range               | 1.75S~30uS<br>(571mΩ~33.3kΩ)   | 3.5S~60uS<br>(285mΩ~16.6kΩ)  | 10.5S~180uS<br>(95.2mΩ~5.55kΩ) |
| M Range               | 175mS~3uS<br>(5.71Ω~333kΩ)   | 350mS~6uS<br>(2.85Ω~166kΩ)   | 1.05S~18uS<br>(952mΩ~55.5kΩ)   |
| L Range               | 17.5mS~0.3uS<br>(57.1Ω~3.33MΩ)   | 35mS~0.6uS<br>(28.5Ω~1.66MΩ) | 105mS~1.8uS<br>(9.52Ω~555kΩ)   |
| Resolution            |  |                              |                                |
| H Range               | 30uS   | 60uS                         | 180uS                          |
| M Range               | 3uS  | 6uS                          | 18uS                           |
| L Range               | 0.3uS  | 0.6uS                        | 1.8uS                          |
| Accuracy of Setting** |  |                              |                                |
| H, M Range            | $\pm(0.5\% \text{ of set}^3 + 0.5\% \text{ of f.s.}^{*1}) + \text{Vin}^2/3.24\text{M}\Omega$ |                              |                                |
| L Range               | $\pm(0.5\% \text{ of set}^3 + 0.5\% \text{ of f.s.}) + \text{Vin}^2/3.24\text{M}\Omega$      |                              |                                |

- \*1 Siemens[S] = Input current[A] / Input voltage[V] = 1 / resistance[Ω]  
 \*2 Converted value at the input current. At the input current. It is not applied for the condition of the parallel operation.  
 \*3 set = Vin / Rset  
 \*4 f.s. = Full scale of High Range  
 \*5 Vin = Input terminal voltage of electronic load

| CV Mode               |   |          |           |
|-----------------------|---|----------|-----------|
| Model                 | LSG-175H  | LSG-350H | LSG-1050H |
| Operating Range       |   |          |           |
| H Range               | 5V~800V   | 5V~1800V | 5V~800V   |
| L Range               | 5V~80V  | 5V~80V   | 5V~80V    |
| Resolution            |   |          |           |
| H Range               | 20mV  | 20mV     | 20mV      |
| L Range               | 2mV   | 2mV      | 2mV       |
| Accuracy of Setting** |   |          |           |
| H, L Range            | $\pm(0.2\% \text{ of set} + 0.2\% \text{ of f.s.})$ |          |           |

- \*1 At the sensing point during remote sensing under the operating range of the input voltage. It is also applied for the condition of the parallel operation.

## LSG-H Series

High Voltage Electronic Load (Max. 9.45kW)



| CP Mode  |              |            |             |
|--|--------------|------------|-------------|
| Model  | LSG-175H     | LSG-350H   | LSG-1050H   |
| Operating Range  |              |            |             |
| H Range  | 17.5W~175W   | 35W~350W   | 105W~1050W  |
| M Range  | 1.75W~17.5W  | 3.5W~35W   | 10.5W~105W  |
| L Range  | 0.175W~1.75W | 0.35W~3.5W | 1.05W~10.5W |
| Resolution   |              |            |             |
| H Range  | 10mW         | 10mW       | 100mW       |
| M Range  | 1mW          | 1mW        | 10mW        |
| L Range  | 0.1mW        | 0.1mW      | 1mW         |
| Accuracy of Setting**  |              |            |             |
| $\pm(0.6\% \text{ of set} + 1.4\% \text{ of f.s.}^{*2}) + \text{Vin}^2/3.24\text{M}\Omega$ |              |            |             |

- \*1 It is not applied for the condition of the parallel operation.  
 \*2 M range applies to the full scale of H range. \*3 Vin: input terminal voltage of electronic load

| Meter   |                  |                 |                 |
|---|------------------|-----------------|-----------------|
| Model   | LSG-175H         | LSG-350H        | LSG-1050H       |
| Voltmeter   |                  |                 |                 |
| H Range   | 0.00V~800.00V    | 0.00V~800.00V   | 0.00V~800.00V   |
| L Range   | 0.000V~80.000V   | 0.000V~80.000V  | 0.000V~80.000V  |
| Accuracy  |                  |                 |                 |
| $\pm(0.1\% \text{ of rdg} + 0.1\% \text{ of f.s.})$   |                  |                 |                 |
| Ammeter   |                  |                 |                 |
| H Range   | 0.0000A~8.7500A  | 0.000A~17.500A  | 0.000A~52.500A  |
| M Range   | 0.0000A~0.87500A | 0.0000A~1.7500A | 0.0000A~5.2500A |
| L Range   | 0.000mA~87.500mA | 0.00mA~175.00mA | 0.00mA~525.00mA |
| Accuracy  |                  |                 |                 |
| $\pm(0.2\% \text{ of rdg} + 0.3\% \text{ of f.s.})$ Parallel Operation: $\pm(1.2\% \text{ of rdg} + 1.1\% \text{ of f.s.})$ |                  |                 |                 |
| Wattmeter   |                  |                 |                 |
| H, M Range  | 0.00W~175.00W    | 0.00W~350.00W   | 0.00W~1050W     |
| L Range (CC/CR/CV)  | 0.000W~52.500W   | 0.000W~105.000W | 0.00W~315.00W   |
| L Range(CP)   | 0.0000W~1.7500W  | 0.0000W~3.5000W | 0.000W~10.500W  |

| General                                     |          |          |           |            |
|---|----------|----------|-----------|------------|
| Model                                       | LSG-175H | LSG-350H | LSG-1050H | LSG-2100SH |
| Input Range                                 |          |          |           |            |
| 90VAC ~ 132VAC/180VAC ~ 250VAC Single-phase |          |          |           |            |
| Input Frequency                             |          |          |           |            |
| 47 ~ 63Hz                                   |          |          |           |            |
| Power(max.)                                 |          |          |           |            |
|   | 90VA     | 110VA    | 190VA     | 230VA      |
| Dimensions                                  |          |          |           |            |
| W   | 213.8 mm | 213.8 mm | 427.8 mm  | 427.7 mm   |
| H   | 124.0 mm | 124.0 mm | 124.0 mm  | 127.8 mm   |
| D   | 400.5 mm | 400.5 mm | 400.5 mm  | 553.5 mm   |
| Weight(Approx.)                             |          |          |           |            |
|   | 7.5 kg   | 9 kg     | 17 kg     | 24 kg      |

| Options   |  |
|-----------|--|
| GRA-413   | Rack Mount Kit (EIA+JIS) for LSG-2100S   |
| GRA-414-E | Rack Mount Kit (EIA) for LSG175/350/1050 |
| GRA-414-J | Rack Mount Kit (JIS) for LSG175/350/1050 |
| GTL-255   | Frame Link Cable                         |
| PEL-004   | GP-IB Control Board                      |