Yokogawa has been offering two types of source measure units: the one-channel GS610 that generates and measures up to ±110 V, and the two-channel GS820 that generates and measures up to ±18 V. Another model in which the voltage range of the GS820 has been expanded to ±50 V has been newly released. This 50 V range model can test and evaluate characteristics of a wider range of electrical and electronic components.

**MAJOR FEATURES**

- **Fast test speed**
  The GS820 has achieved high-speed operation for testing on production lines. Measurement through two channels is performed simultaneously, and the measured values can be quickly obtained by a PC via a USB or the Ethernet.

- **Generating arbitrary waveforms consisting of up to 100,000 data points**
  The GS820 can easily acquire arbitrary waveform data, which is created by a spreadsheet or text editor in CSV format, simply by connecting a PC via a USB cable. The data can be easily created because the format is very simple and requires the voltages or currents to be placed in order. The time interval between the points can be specified respectively, enabling creation of various waveforms.

- **Various combinations of source and measurement function**
  The source and measurement function of two respective channels are isolated and can be selected independently. For example, a multiple output power IC can be evaluated by respectively applying different voltage patterns through two channels, and the output voltage of an AD converter can be observed while changing the input voltage. Because the timing at which to generate and measure signals can be set independently, several measurements of signals can be performed after a specified time after applying a certain signal.

**MAJOR SPECIFICATIONS of the 50 V range model**

- **Source mode:** DC, pulse
- **Voltage source range:** 200 mV, 2 V, 20 V, 50 V
  - **Maximum output range:** ±50 V
  - **One-year accuracy:** ±(0.02% of setting + 400 µV)
  - **(2 V range)**
- **Current source range:** 200 nA, 2 µA, 20 µA, 200 µA, 2 mA, 20 mA, 200 mA, 0.5 A, 1 A
  - **Maximum output range:** ±1.2 A
  - **One-year accuracy:** ±(0.03% of setting + 250 nA)
  - **(2 mA range)**
- **Voltage measurement range:** 200 mV, 2 V, 20 V, 50 V
  - **Maximum measurement range:** ±50.1 V
  - **One-year accuracy:** ±(0.015% of reading + 200 µV)
  - **(2 V range)**
- **Current measurement range:** 200 nA, 2 µA, 20 µA, 200 µA, 2 mA, 20 mA, 200 mA, 0.5 A, 1 A
  - **Maximum measurement range:** ±1.2 A
  - **One-year accuracy:** ±(0.02% of reading + 400 nA)
  - **(2 mA range)**
- **Digital I/O:** 2 bits for each I/O (model 765611)
  - 16 bits for each I/O (model 765612)
- **Communication interface:** GP-IB, RS-232, USB, Ethernet
- **External dimension (mm):** 213(w) × 132(H) × 450 (D)
- **Weight:** Approx. 8 kg

**APPLICATIONS AND USAGE**

- **Inspecting and evaluating LED lighting equipment**
  A LED module consists of LEDs and varistors connected in series. Because the GS820 50 V model can output up to 50 V, it can evaluate current-voltage characteristics (I/V curves) of varistors. It can also measure I/V curves of LEDs.

- **Measuring static characteristics of 3-terminal semiconductor devices (transistors, FETs, etc.)**
  The GS820 can measure drain current (I_d) of a 3-terminal semiconductor device while applying voltage between gate and source (V_GS) through Channel 1 and voltage between drain and source (V_DS) through Channel 2. Measured current values are saved with applied voltages in its internal memory in CSV format. After downloading them to a PC, they can be easily displayed in an I_d-V_GS characteristic graph.

Contact us:
To Yokogawa Japan:
URL: http://tmi.yokogawa.com/
E-mail: tmi@cs.jp.yokogawa.com
For worldwide locations, please see the back cover.

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