

### Measuring voltage, current, and temperature using GL7000 Data Platform

Accelerated life cycle testing and durability testing is the key aspect of any battery development currently, and GL7000 offers channel to channel isolation to measure accurate readings for voltage, temperature, and current for extreme cycle testing requirements. Sampling interval of up to 1MS/s also supports discontinuity testing for battery manufacturing using vibrometers and shakers to design batteries with consistent VDC output.

#### Model & its Configuration

GL7000 + GL7-M + GL7-HSV + GL7-HV + GL7-DISP

#### Outline of Measuring items & its Sensors

Temperature	Thermocouple
Currents	Clamp sensor
Voltage	N/A

#### Outline of the Measuring Conditions

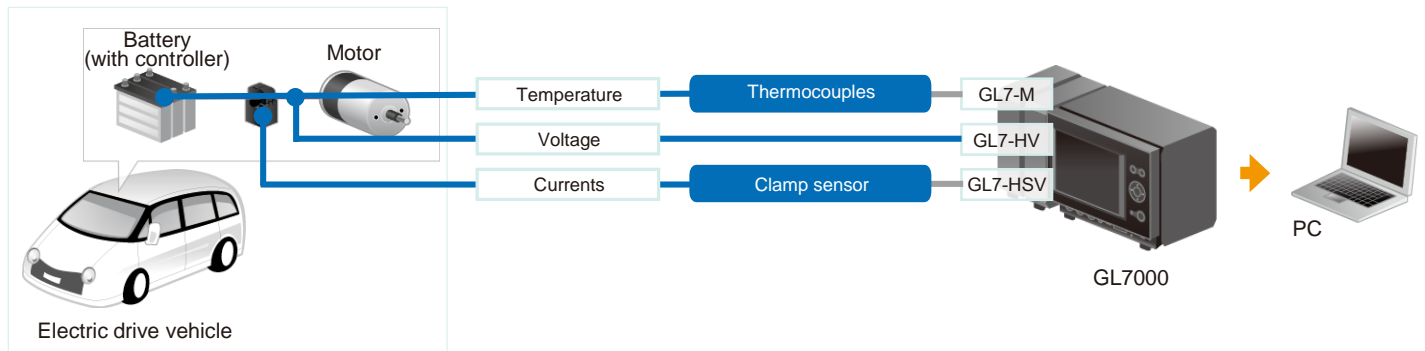
Sampling: 1 MS/s - 1 kS/s (1  $\mu$ s - 1 ms)

Channel: 6 – 200 channels

Measuring time: 30min – 24hrs

#### Advantages in using Graphtec Product

1. Long-term measurement in high-speed sampling environment.
2. Plug and Play ready standalone data acquisition platform.
3. Wide range of input voltage; up to 1000V in GL7-HV high voltage module, and 1MS/s for 4ch GL7-HSV high speed voltage module.



## Modular Type Data Acquisition Unit DATA PLATFORM GL7000



- High Speed
- Multi-channels
- High Voltage
- Large Memory Capacity

\* Display and modules are optional.

- Input modules can be expanded to accommodate wide variety of measurements (expand up to 10 modules)
- Attaching the high-definition display module with a touch panel capability allows both stand-alone operation and a system-embedded solution
- 2 interfaces to connect the GL7000 to PC (USB and Ethernet)
- 4 destinations to save the captured data (Built-in RAM, Built-in Flash memory, SD memory card, and SSD module)
- Software for high performance and easy operation (GL-Connection)



#### Module GL7-M



- Voltage/Temp.** 10ch/unit
- Max. 100S/s** (10ms)
- Sigma-Delta type A/D** Isolated
- Measurement of temperature and working voltage levels of test objects in an environmental testing are typical applications.

- 100 Samples/s (10 ms) High speed scan method
- 10 channels / unit
- Variety of input types (Voltage, Thermocouple, RTD)

#### Module GL7-HSV



- High speed** 4ch/unit
- Max. 1MS/s** (1 $\mu$ s)
- Simultaneous sampling** Isolated
- Measurement of parameters in the inverter system, vibration testing, impact test, drop test are typical applications.

- 1 M Samples/s (1  $\mu$ s) high speed simultaneous sampling
- 4 channels / unit
- Maximum input voltage 100 V

#### Module GL7-HV



- Voltage** 2ch/unit
- Max. 1MS/s** (1 $\mu$ s)
- Max. input voltage 1000V** Isolated
- High voltage measurement in power line sources, electric vehicle batteries are typical applications.

- High withstand voltage (Maximum input voltage: 1000 V)
- Maximum sampling speed 1 M Samples/s (1  $\mu$ s)
- Real-time RMS measurement