Data Loggers

Data loggers are designed to measure static strain, a phenomenon where the subject strain does not change at all or slowly changes. As seen in load tests of large-scale structures, static strain is often measured in several hundred channels and under dozens of load conditions. Data loggers are available in 2 types: stand-alone and PC-controlled. Both are oriented to automatic multi-channel measurement as intelligent, expansible systems. A data logger can stably measure microvolt signals in strain/stress measurement indoors and outdoors. Besides that advantage, some data loggers have a processing capability incorporated into the portable package. Advancements in electronic components, progress in multimedia in information-related fields and downsizing of equipment have generated the following demands:

- Simultaneous measurement of various static variables including strain/stress, load, pressure, acceleration, displacement, torque, voltage and temperature
- Visual presentation of the progressive status of measurement and function that enables smooth progression of measurement while accepting the engineer’s judgment.
- Unattended measurement
- More compact and lightweight design
- Capability to measure not only static phenomena but also events changing at a frequency of several Hz

To cope with these demands, Kyowa has been making every effort.

### Scanning methods and synchronous sampling of all channels

#### Scanning methods

The measurement channel is switched one by one and measured.

- CH000
- CH001
- ...
- CH999
- Date update rate
- Scanning speed

→ There is a difference at the measurement time of each measurement channel, therefore this method is not suitable for a dynamic measurement.

#### Synchronous sampling of all channels

All channels are synchronously measured (No scanning)

- CH000
- CH001
- ...
- CH999
- Date update rate

→ All channels are synchronously sampled and the data is updated every constant interval. Therefore, a dynamic measurement is possible.
### Data Loggers

#### Universal Stand-alone Type UCAM-60C M14
- **Online Type UCAM-65C M14**

- Dedicated scanning units
  - USS-61B/62B (For general strain measurement)
  - USS-63B (For civil engineering measurement)

#### Data Logger

- **Online Type (Fast) UCAM-550A**

- Control software
  - UCS-60B

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**Strain gages**

**Strain-gage transducers**

**Civil engineering transducers with a thermal sensor**

**Potentiometer sensors**

**DC voltage-output sensors**

**Thermocouples**

**Platinum-resistance thermometer sensors**

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**External scanners**
- USB-70B

**Scanner interfaces**
- USI-67A

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**Note:** For LAN connection, put a LAN hub between the UCAM-60C M14/65C M14 and PC and use a straight cable.

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**PC**

**LAN Hub**

**LAN cable (Straight)**

**Control software**
- DCS-100A/106A