

SMU Series 24 to 64 Channel High-Precision, Universal Measuring System

FEATURES

- 24/32/40/48/56/64-Channel utilizing low-noise 24-bit ADCs
- Sampling up to 200 Samples/sec/Channel
- All channels are Software-Selectable for supporting different sensor/transducers:
 - Strain-Gauge(Quarter-, Half- and Full-Bridge)
 - Strain-Gauge Based Transducer
 - Potentiometer and MEMS sensor
- Suitable for both dynamic and static sampling(0.1-200 samples/sec/channel)
- High-precision stable complement resistors for strain measurement on each channel
- USB interface for connecting to PC
- Configuring, Controlling and Acquiring data from the *SMU Series* is done by *BlueApple-Log* Software



Description and Applications

SMU-24/32/40/48/56/64 is a high-precision, data acquisition system intended for both static and dynamic test and measurement applications including:

- Laboratory Test and Measurement
- Strain Measurement
- Low-frequency Vibration Measurement

SMU-24/32/40/48/56/64 supports different types of sensor/transducers and is suitable for test and measurement applications where there are numerous sensor/transducers. Each channel can be defined, via software, to be one of the following sensor types:

- Strain-Gauge(Quarter-, Half- and Full-Bridge)
- Strain-Gauge-Based Transducer(Load Cell, Accelerometer, Displacement Transducer, ...)
- Potentiometer
- MEMS Voltage-Based Sensor(Accelerometer, Pressure Sensor, ...) and Voltage

STRAIN GAUGE SUPPORT

SMU-24/32/40/48/56/64 has special features that made it a suitable tool for simple, fast and accurate strain measurement.

- Each channel supports strain gauges in Quarter- Half- and Full-Bridge configurations.
- Supports Quarter-bridge in 3-wire circuit for eliminating cable resistance changes over temperature in long period measurements.
- Supports Half-bridge in 5-wire circuit for eliminating cable resistances in long cables.
- Bridge configuration for each channel is selected through the *BlueApple-Log* Software.
- Each channel has high-precision 120-ohm completion resistor for Quarter-bridge configuration.
- R-Calibration capability

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High-Precision SAMPLING

Each eight-channel has its own 24-bit analog-to-digital converter that scans them in a way that the maximum time interval between samples of the first and last channel is less than 400 microseconds.

Thanks to the use of a new-technology ADC, it is possible to achieve low-noise measurement even in high rate sampling. Supported sampling rates vs. noise are listed below:

Sampling Rate (Sample/sec/ch)	ADC Noise p-p Resolution(bits)	Total Scan Time(μsec)
0.1,0.2,0.5	18.7	800
1,2,5	18.7	800
10,20,50	18	384
100,200	18	384

OTHER SPECIAL FEATURES

- Two excitation voltages per channel with short-circuit protection capability.
- Excitation circuitry utilizes feedback for counting voltage drops in long cables

GENREAL INFORMATION

Power supply: 220VAC

Dimensions: 35 × 21 × 38 cm

Accessories: USB cable and Power cable

BlueApple-Log SOFTWARE

Configuring, controlling and acquiring data from the SMU-24/32/40/48/56/64 is done by Windows®-based BlueApple-Log Software. BlueApple-Log has following features:

- Online monitoring of all channels
- Different selectable sampling frequencies from 0.1 to 200 Sample/sec/Ch.
- Saving Data-files in ASCII format
- Easy and Fast Measurement
 - Simple menus for choosing sensor/transducer type(strain gauges, strain-gauge-based transducers, potentiometers, voltage sensors and Current Transmitters)
 - Auto-zero button for each channel
 - Two-point calibration capability
 - Saving and restoring calibration settings

