Test&Measurement

Plug-in module for ScopeCorder series

720252
1 MS/s 16-bit Isolation Module (with Offset Adjust)

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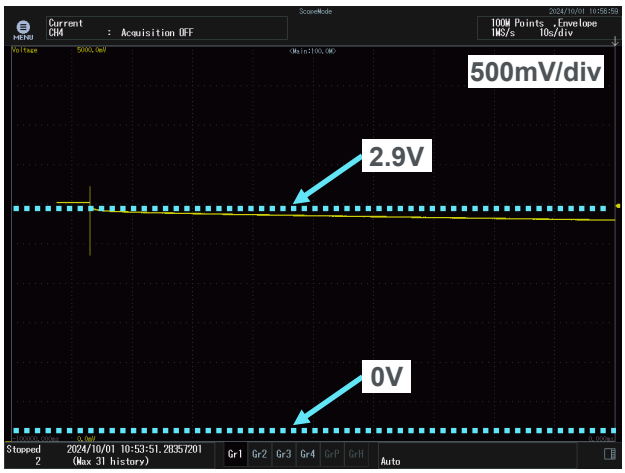
Measure minute DC voltage fluctuations using an offset adjustment function unavailable on typical oscilloscopes

Ideal for minute voltage measurements in secondary batteries and for evaluating ripple and noise in DC power supplies

[Features]

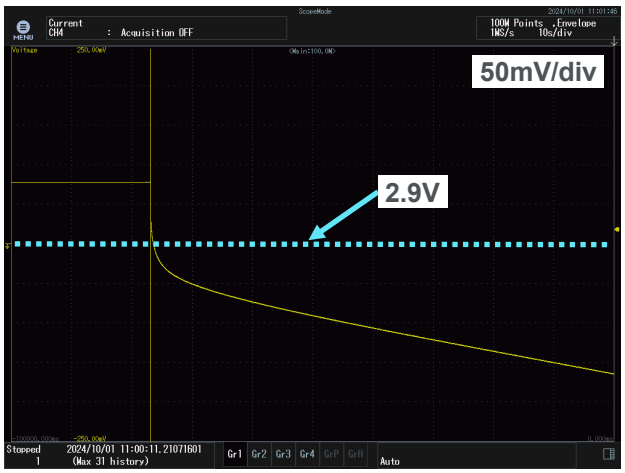
- **Measure fluctuations in DC output voltage at a high resolution of 1 mV/div using an offset adjustment function.**
- **Hi-Z input impedance mode for battery measurements.**
- **DC voltage offset adjustment function (Probe Factor: 1:1; 1 MΩ mode)**
  - **±5 V max., setting resolution: 0.2 mV**
  - **±140 V max., setting resolution: 20 mV**

Offset Adjust: [OFF]
(Equivalent to typical oscilloscope operation)



Because the entire voltage signal, including the DC offset, is measured, it is difficult to analyze minute voltage fluctuations in sufficient detail.

Offset Adjust: [ON]

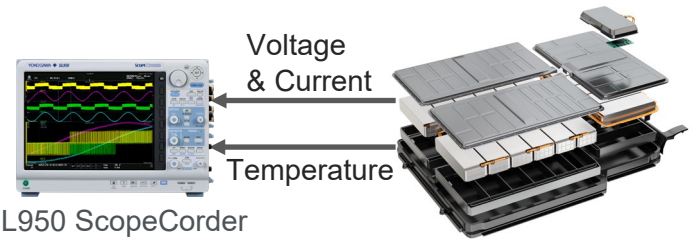


The offset adjustment function removes the DC component, enabling high-resolution measurement of minute voltage fluctuations.

<Application Example>

Ideal for observing waveforms of minute voltage fluctuations caused by load (current consumption) variations in secondary-battery cells, modules, and packs, including lithium-ion, all-solid-state, and alkaline rechargeable batteries.

Measurement of automotive Li-ion batteries



DL950 ScopeCorder
+ 720252

Precision Making

<Specifications>

Item		Specification
Input channels		2
Input type		Isolated unbalanced
Input coupling		AC*, DC, GND * Not available using the offset adjustment.
Input connector		BNC connector (isolated type)
Input impedance		1 MΩ mode: 1 MΩ±1%, Approx. 35 pF Hi-Z mode: >1 GΩ
Common mode rejection ratio		80 dB (50/60 Hz) or more (Typ.)
Maximum sample rate		1 MS/s
Frequency range (−3 dB)*1		DC to 300 kHz (5 mV/div to 20 V/div) DC to 200 kHz (1 mV/div to 2 mV/div)
A/D conversion resolution		16 bit (2400 LSB/div)
Voltage-axis sensitivity setting*12		1 MΩ mode: 1 mV/div to 20 V/div (1-2-5 steps) Hi-Z mode: 1 mV/div to 500 mV/div (1-2-5 steps) * In Hi-Z mode, only 1:1 probe attenuation ratio is supported
Maximum input voltage (1 kHz or less) In combination with 700929 (10:1)/702902 (10:1)/701947 (100:1)*2		600 V (DC + ACpeak)
In combination with 701901 + 701954 (1:1)*6		140 V (DC + ACpeak)
Direct input*10		42 V (DC + ACpeak)
Selected input impedance Hi-Z mode		7 V (DC + ACpeak)
Maximum rated voltage to earth (1 kHz or less) In combination with 700929 (10:1)/702902 (10:1)/701947 (100:1)*3		400 Vrms (O), 300 Vrms (CAT II)
In combination with 701901 + 701954 (1:1)*9		400 Vrms (O), 300 Vrms (CAT II)
Direct input*11		42 V (DC + ACpeak) (CAT II, 30 Vrms)
Offset adjustment (When selected 1:1 Probe Factor)	1 MΩ mode:	Max.±140 V, setting resolution 0.02 V (500 mV/div to 20 V/div) Max. ±5 V, setting resolution 0.2 mV (1 mV/div to 200 mV/div)
	Hi-Z mode:	Max. ±5 V, setting resolution 0.2 mV (1 mV/div to 200 mV/div) Max. ±5 V, setting resolution 0.5 mV (500 mV/div)
−3 dB point when AC coupled low frequency attenuation point		1 Hz or less (0.1 Hz or less when using the 700929/720902, 0.01 Hz or less when using the 701947)
Vertical (voltage) axis accuracy*1	DC accuracy	5 mV/div to 20 V/div: ±(0.25% of 10 div + offset adjustment accuracy*) 2 mV/div: ±(0.3% of 10 div + offset adjustment accuracy*) 1 mV/div: ±(0.5% of 10 div + offset adjustment accuracy*) * offset adjustment accuracy applies only when offset adjustment is enabled.
Offset adjustment accuracy		±0.1% of offset setting value + 1 mV (1 mV/div to 200 mV/div) ±0.1% of offset setting value + 0.1 V (500 mV/div to 20 V/div)
Temperature coefficient	Zero point	5 mV/div to 20 V/div: ±(0.02% of 10 div + offset adjustment temperature coeff.*)/˚C (Typ.) 2 mV/div: ±(0.05% of 10 div + offset adjustment temperature coeff.*)/˚C (Typ.) 1 mV/div: ±(0.10% of 10 div + offset adjustment temperature coeff.*)/˚C (Typ.)
	Gain	1 mV/div to 20 V/div: ±(0.02% of 10 div)/˚C (Typ.) * offset adjustment temperature coefficient applies only when offset adjustment is enabled.
Offset adjustment temperature Coefficient	Zero point	±10 µV/˚C (Typ.)
	Gain	±(0.002% of offset adjustment setting value)/˚C (Typ.)
Bandwidth limit		Full/400 Hz/4 kHz/40 kHz
Weight		Approx. 280 g

*1: Under standard operating conditions (temperature of 23°C ± 5°C, 20 to 80% RH, warm-up of 30 minutes or more), after calibration.
Recommended calibration period: 1 year.
*2 to *11: See the catalog Bulletin DL950-02EN for notes on the maximum input voltage and maximum rated voltage to earth.
*12: See the catalog Bulletin DL950-02EN for the voltage-axis sensitivity setting.

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https://tmi.yokogawa.com/ YMI-E03

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