

# KES-SE/SESRU

## KES-SE Friction Tester

The KES-SE Friction Tester analyzes hand movements—particularly, sliding over surface—performed by artisans and professionals when judging a fabric’s texture. The device performs this movement mechanically, making it possible to obtain objective numerical data while offering more enhanced versatility over the KES-FB4-A Surface Tester.

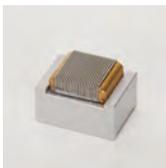
Obtainable data includes average frictional coefficient, and fluctuation of average frictional coefficient. From these characteristic values, the KES-SE evaluates and quantifies smoothness, slipperiness, and roughness felt when actually touching the target, in order to provide objective data.

**Measurement Example**

- Disposable diaper smoothness
- Evaluation of silky and comfortable feeling after applying skin care lotion
- Cream smoothness and spreadability
- Tissue paper texture
- Roughness of particle
- Tactile evaluation of car interior materials

### FEATURE

● **Sensor that imitates fingertips**



The sensor unit’s design features a load and surface treatment that mimics a fingertip, allowing for quantification similar to that of the human fingertip.



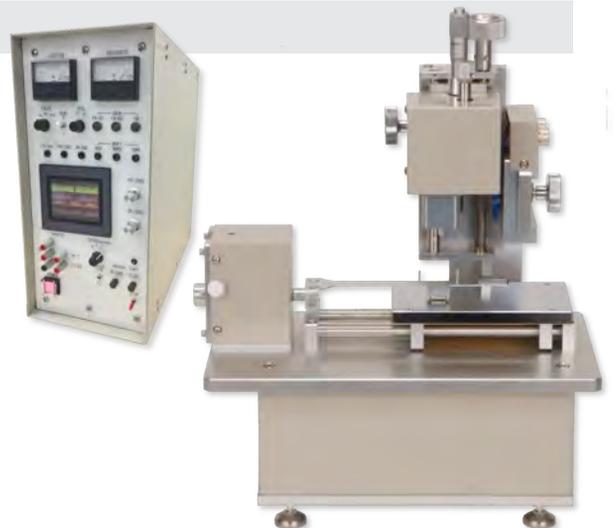
Measurement unit

## KES-SESRU Roughness / Friction Tester

In addition to average frictional coefficient and fluctuation of average frictional coefficient, surface roughness data is obtained. The device is also suitable for light texture conditions and hair measurement.



Measurement unit



SYSTEM CONFIGURATION DIAGRAM / MEASUREMENT DATA



Sample Measurement Software Screens



Obtainable Data

Item	Characteristic value	Description	Reading the data
Surface properties	MIU	Mean frictional coefficient	Higher values mean less tendency to slip
	MMD	Fluctuation of mean frictional coefficient	Higher values mean less smoothness and more roughness
	SMD*	Surface roughness	Higher values mean more surface unevenness

\*Characteristic values are for KES-SE-SR-U.

KES-SE Friction Tester

<b>Dimensions/Weight (approx.)</b>	Measuring unit: W320 × D180 × H220 (mm) / 7 kg Amplifier: W180 × D400 × H400 (mm) / 12 kg
<b>Power source</b>	100 VAC, power consumption: 30W Max.
<b>Measurement environment temperature and humidity</b>	20 to 30°C / 50 to 70% RH. (No condensation.) Temperature and humidity should be kept constant during measurement. (Standard temperature and humidity conditions: 20°C / 65% RH) *The instrument should be located to minimize influence from wind or vibrations.
<b>Surface friction detection</b>	Detector: Ring-type detector with differential transformer Load (full scale): 200 gf (with standard measurement), 1000 gf (with low-sensitivity measurement) Accuracy: ±0.5% or less of full scale
<b>Detection of surface measurement movement</b>	Detector: Potentiometer Travel distance: 30 mm (Range of effective measurement distance: 20 mm) Accuracy: ±0.5% or less of full scale
<b>Filter properties</b>	Active secondary filter: $\mu = 0.6$ , $\omega 0 = 1$ cps
<b>Sensor size</b>	10 mm × 10 mm
<b>Velocity of sample movement</b>	1 mm/sec, 2 mm/sec, 5 mm/sec, 10 mm/sec 0.1 mm/sec, 0.2 mm/sec, 0.5 mm/sec with selection switches
<b>Sample size</b>	30 mm × 270 mm (standard)

KES-SESRU Roughness / Friction Tester

<b>Dimensions/Weight (approx.)</b>	Measuring unit: W320 × D200 × H390 (mm) / 10 kg Amplifier: W180 × D400 × H400 (mm) / 12 kg
<b>Power source</b>	100 VAC, Max. power consumption: 30 W
<b>Measurement environment temperature and humidity</b>	20 to 30°C / 50 to 70% RH (No condensation.) Temperature and humidity kept constant during measurement. (Standard temperature and humidity conditions: 20°C / 65% RH) *Installation should be in a location with minimal influence from wind or vibrations.
<b>Surface friction detection (with simultaneous measurement)</b>	Detector: Resistance wire strain gauge type Load (full scale): 200 gf (with standard measurement) *Low-sensitivity measurement not allowed Accuracy: ±0.5% or less of full scale *Specifications are the same as KES-SE with single measurement
<b>Surface roughness detection (with simultaneous measurement)</b>	Detector: Differential transformer Displacement (full scale): 0.4 mm Accuracy: ±1.0% or less of full scale
<b>Detection of surface measurement movement</b>	Detector: Potentiometer Travel distance: 30 mm (Range of effective measurement distance: 20 mm) Accuracy: ±0.5% or less of full scale
<b>Filter properties</b>	Active secondary filter: $\mu = 0.6$ , $\omega 0 = 1$ cps
<b>Sensor size</b>	Friction contactor: 10 mm × 10 mm (with stand-alone measurement) Roughness contactor: 0.5 mm diameter single wire (contact surface width: 5 mm)
<b>Velocity of sample movement</b>	1 mm/sec, 2 mm/sec, 5 mm/sec, 10 mm/sec 0.1 mm/sec, 0.2 mm/sec, 0.5 mm/sec with selection switches
<b>Sample size</b>	30 mm × 270 mm (standard)

**⚠ Caution** For safety use, please read the operation manual / the instruction carefully and thoroughly before using the tester.

Specification details recorded here are subject to change without notice. We appreciate your understanding.

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