

# 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.

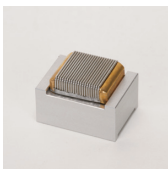
Obtainable data includes average frictional coefficient, and fluctuation of average frictional coefficient. From these characteristic values, the KES-SE evaluates and quantifies smoothness, slipperiness, and roughness felt when actually touching the target, in order to provide objective data.

**Measurement Example**

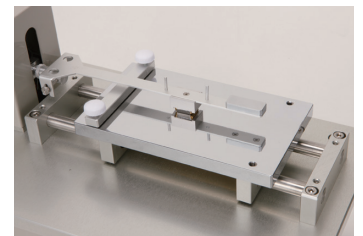
- Disposable diaper smoothness
- Evaluation of silky and comfortable feeling after applying skin care lotion
- Cream smoothness and spreadability
- Tissue paper texture
- Roughness of particle
- Tactile evaluation of car interior materials

### FEATURE

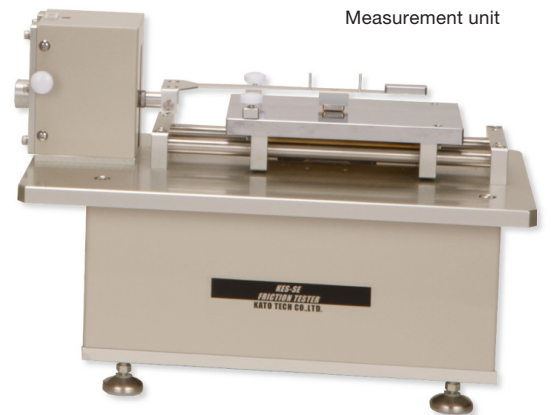
● **Sensor that imitates fingertips**



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

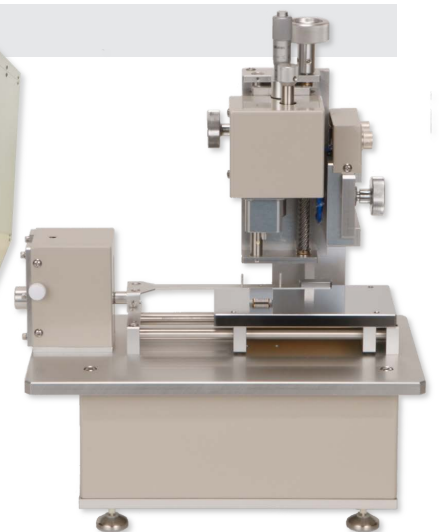


## KES-SESRU Roughness / Friction Tester

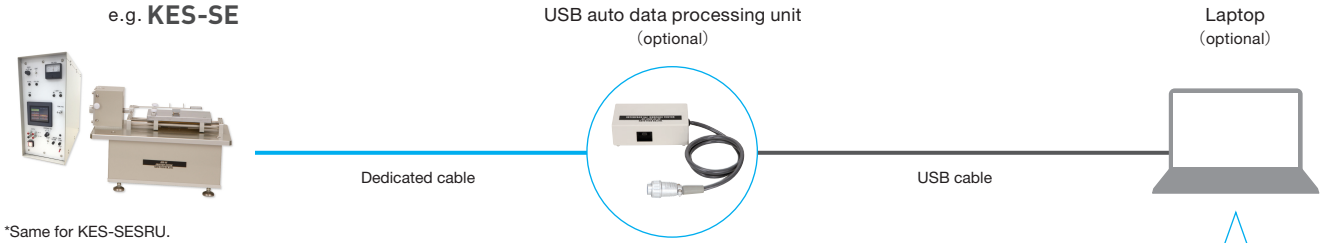
In addition to average frictional coefficient and fluctuation of average frictional coefficient, surface roughness data is obtained. The device is also suitable for light texture conditions and hair measurement.



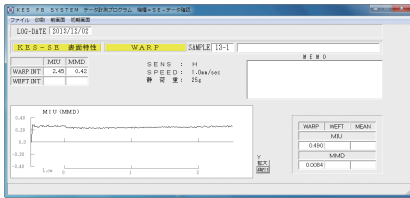
Measurement unit



SYSTEM CONFIGURATION DIAGRAM / MEASUREMENT DATA



Sample Measurement Software Screens



Surface properties

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<br>Electronic unit: 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.)<br>Temperature and humidity should be kept constant during measurement. (Standard temperature and humidity conditions: 20°C / 65% RH)<br>*The instrument should be located to minimize influence from wind or vibrations. |
| <b>Surface friction detection</b>                       | Detector: Ring-type detector with differential transformer<br>Load (full scale): 200 gf (with standard measurement), 1000 gf (with low-sensitivity measurement)<br>Accuracy: ±0.5% or less of full scale  |
| <b>Detection of surface measurement movement</b>        | Detector: Potentiometer<br>Travel distance: 30 mm (Range of effective measurement distance: 20 mm)<br>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<br>0.1 mm/sec, 0.2 mm/sec, 0.5 mm/sec with selection switches   |
| <b>Specimen 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<br>Electronic unit: 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<br>(No condensation.) Temperature and humidity kept constant during measurement.<br>(Standard temperature and humidity conditions: 20°C / 65% RH)<br>*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<br>Load (full scale): 200 gf (with standard measurement)<br>*Low-sensitivity measurement not allowed<br>Accuracy: ±0.5% or less of full scale<br>*Specifications are the same as KES-SE with single measurement          |
| <b>Surface roughness detection (with simultaneous measurement)</b> | Detector: Differential transformer<br>Displacement (full scale): 0.4 mm<br>Accuracy: ±1.0% or less of full scale   |
| <b>Detection of surface measurement movement</b>                   | Detector: Potentiometer<br>Travel distance: 30 mm (Range of effective measurement distance: 20 mm)<br>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)<br>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<br>0.1 mm/sec, 0.2 mm/sec, 0.5 mm/sec with selection switches  |
| <b>Specimen 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.

KatōTech

KATO TECH CO.,LTD.



理宝科技有限公司 Libero Technology Company Limited

香港 Hong Kong T: (852) 2555 8222 F: (852) 2518 0115  
上海 Shanghai T: 86 (21) 5655 8285 F: 86 (21) 5655 7752  
广州 Guangzhou T: 86 (20) 3928 3292 F: 86 (20) 3298 3290

www.liberohk.com Email: sales@liberohk.com