New HANDYSURF reborn with sophisticated design
Portable surface texture measuring instrument for global use responding to diverse needs

Display changeable in 20 languages
Multi-language support available worldwide

20 Asian and European languages including Japanese, English and German are provided as standard. Display language can be easily changed by operating the buttons.

High resolution with wide measuring range
No need to set up measuring range

The previous HANDYSURF required setting of a narrow measuring range when measuring with a high resolution, but HANDYSURF+ does not have such a requirement. The instrument has the Z direction measuring range of 370 µm, which is the widest in class, and achieved a resolution as high as 0.0007 µm over the entire range.

Resolution 0.0007 µm
Measuring range +160 µm ~ -210 µm

NEW!
Dedicated catalog is available.
Handy drive unit selectable from 3 types according to workpiece and measurement location

35 (Standard type)
The standard-type measurable with different attitudes including horizontal, inclined, vertical and ceiling surfaces.

40 (Retract type)
Retract-type that reduces damage to the stylus and pickup by raising the pickup while waiting for measurement or at ending. It can be used as a detector incorporated into an automatic machine.

45 (transverse trace-type)
The transverse trace-type where the pickup moves sideways. Narrow areas, such as crankshaft pins and journals, that were difficult to measure before can now be measured.

The handy tracing driver can be used while stored in the amplifier* as well as away from the amplifier by connecting the extension cable.

*except for HANDYSURF+ 45

Superior Operability

2.4 inch color LCD has significantly improved the visibility. Moreover, 6 buttons and newly developed UI have achieved simple and intuitive operations.

Main screen Menu screen Measurement condition setting display

Multiple analysis functions

Graphic representation of measurement results enables their on-site verification with parameter and waveform. Waveform types can be easily changed by the icon at the top of the screen. Enlargement function and automatic OK/NG judgment function using set upper and lower limits are available for parameters. HANDYSURF+ is also capable of a variety of analyses including BAC, ADC, peak count and motif analysis, despite being a portable type.
Substantial standard accessories with ultimate ease of use

- **Carrying case for HANDYSURF+**
  The carrying case for HANDYSURF+ convenient for transportation and storage is a standard accessory.
  The amplifier, tracing driver, pickup, cables, calibration table and all the other standard accessories can be stored.

  1. Carrying Case for HANDYSURF+
  2. Calibration Plate
  3. CD-ROM
     (User’s guide, inspection certificate creation program, etc.)
  4. Amplifier
  5. Tracing Driver
  6. Pickup
  7. AC adapter
  8. Tracing Driver extension cable
  9. USB cable (1 m)
     • Rechargeable with a socket (using the AC adapter) or PC
     • Measured data can be sent to PC
  10. Roughness Specimen
  11. Quick Reference
     Precautions and instructions for use

- **Inspection Certificate Creation Program SupportWare II**
  Using the USB cable or the optional USB memory, inspection certificates can be created from measurement results displayed on the amplifier or saved in the amplifier’s internal memory/USB memory. When connected to PC with the USB cable, measurement results saved in the amplifier’s internal memory can be loaded into PC as a text file.

- **Calibration Plate**
  A standard specimen for surface texture and a driver selected are set to the standard calibration plate. Calibration can be conducted easily without need of height and inclination adjustment of the driver as before.

- **User’s Guide / Quick Reference**
  An easy-to-understand user’s guide, as with general home appliances, is in the CD-ROM. A quick reference with the summary of basic operating procedure is also included in the package both on paper and as data in the CD-ROM so that users do not need to create written procedures.
Multiple options responding to various situations

• Usage example of various pickup (Option)
  
  [Images of various pickup options]

• Usage example of magnetic stand (Option)
  
  [Image of magnetic stand]

• Example of connection with height gauge (Option)
  
  Not only the magnetic stand but users’ own height gauge* can be used as a stand for HANDYSURF+.

  [Image of height gauge adapter]

• Compact Printer (Option)
  
  Through the USB connector, measurement results can be generated from the compact printer. On-the-spot printing of the results enables immediate confirmation and comparison of multiple measured results on the scene.

[Image of compact printer]

• Off-line ACCTee analysis program (Option)
  
  This is the off-line version of ACCTee analysis program, accessory to the high-end model, SURFCOM series (PC type). Full-scale analysis can be performed by sending measured data through the USB cable or the USB memory to Off-line ACCTee-installed PC.

[Image of ACCTee analysis program]

• Usage example of various adapter (Option)
  
  [Images of various adapter options]

• USB Memory (Option)
  
  The small-sized USB memory is for saving measurement results/conditions and for loading saved data into HANDYSURF+.

  By connecting to HANDYSURF+, maximum 1000 measurement results and 500 measurement conditions can be saved.

[Image of USB memory]

• Nose Piece for Flat Surfaces / Cylinders (Option)
  
  Flat or cylindrical surfaces too small for measuring can be measured by holding the instrument in hand.

  [Image of nose piece]

• Example of connection with height gauge (Option)

  [Image of nose piece for flat surfaces/cylinders]

  Not only the magnetic stand but users’ own height gauge* can be used as a stand for HANDYSURF+.

  [Image of height gauge adapter]

• Compact Printer (Option)

  Through the USB connector, measurement results can be generated from the compact printer. On-the-spot printing of the results enables immediate confirmation and comparison of multiple measured results on the scene.

[Image of compact printer]

• Off-line ACCTee analysis program (Option)

  This is the off-line version of ACCTee analysis program, accessory to the high-end model, SURFCOM series (PC type). Full-scale analysis can be performed by sending measured data through the USB cable or the USB memory to Off-line ACCTee-installed PC.

[Image of ACCTee analysis program]

• USB Memory (Option)

  The small-sized USB memory is for saving measurement results/conditions and for loading saved data into HANDYSURF+.

  By connecting to HANDYSURF+, maximum 1000 measurement results and 500 measurement conditions can be saved.

[Image of USB memory]

• Nose Piece for Flat Surfaces / Cylinders (Option)

  Flat or cylindrical surfaces too small for measuring can be measured by holding the instrument in hand.

  [Image of nose piece]

• Compact Printer (Option)

  Through the USB connector, measurement results can be generated from the compact printer. On-the-spot printing of the results enables immediate confirmation and comparison of multiple measured results on the scene.

[Image of compact printer]

• Off-line ACCTee analysis program (Option)

  This is the off-line version of ACCTee analysis program, accessory to the high-end model, SURFCOM series (PC type). Full-scale analysis can be performed by sending measured data through the USB cable or the USB memory to Off-line ACCTee-installed PC.

[Image of ACCTee analysis program]

• USB Memory (Option)

  The small-sized USB memory is for saving measurement results/conditions and for loading saved data into HANDYSURF+.

  By connecting to HANDYSURF+, maximum 1000 measurement results and 500 measurement conditions can be saved.

[Image of USB memory]

• Nose Piece for Flat Surfaces / Cylinders (Option)

  Flat or cylindrical surfaces too small for measuring can be measured by holding the instrument in hand.

  [Image of nose piece]

• Compact Printer (Option)

  Through the USB connector, measurement results can be generated from the compact printer. On-the-spot printing of the results enables immediate confirmation and comparison of multiple measured results on the scene.

[Image of compact printer]

• Off-line ACCTee analysis program (Option)

  This is the off-line version of ACCTee analysis program, accessory to the high-end model, SURFCOM series (PC type). Full-scale analysis can be performed by sending measured data through the USB cable or the USB memory to Off-line ACCTee-installed PC.

[Image of ACCTee analysis program]
### HANDYSURF+ Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>35</th>
<th>40</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement range</strong></td>
<td>Z direction</td>
<td>Tip radius 5 µm</td>
<td>Tip radius 2 µm</td>
</tr>
<tr>
<td>X direction 16 mm</td>
<td>Y direction 4 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Movement type</strong></td>
<td>Standard type</td>
<td>Retraction type</td>
<td>Horizontal tracing type</td>
</tr>
<tr>
<td><strong>Evaluation Length</strong></td>
<td>0.2 to 16 mm</td>
<td>0.2 to 40 mm</td>
<td></td>
</tr>
<tr>
<td><strong>Measurement speed</strong></td>
<td>0.5, 0.6, 0.75, 1.0 mm/s</td>
<td>0.9 mm/s</td>
<td></td>
</tr>
<tr>
<td><strong>Sensing type</strong></td>
<td>Differential indutance</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Z direction resolution</strong></td>
<td>0.0001 µm/210 fs x 160 µm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td>E-DT-SM10A</td>
<td>E-DT-SM49B</td>
<td></td>
</tr>
<tr>
<td><strong>Stylus</strong></td>
<td>E-DT-SM10A</td>
<td>E-DT-SM49B</td>
<td></td>
</tr>
<tr>
<td>Tip radius</td>
<td>r_{tip} = 5 µm</td>
<td>r_{tip} = 5 µm</td>
<td></td>
</tr>
<tr>
<td>Tip angle</td>
<td>90° cone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tip material</td>
<td>Diamond</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calculation Standards</strong></td>
<td>Profile Curve</td>
<td>Ra, Rq, Rt, Rz, Rv, Rn, Rsk, Rku, Rmr(c), Rmr, Rpke, Rvke, Rke, Rpke, Rvke, NCRX, NR, CPM, SR, SAR, Wx, Wv, SW, Sm, S, Sm, S</td>
<td></td>
</tr>
<tr>
<td><strong>Analysis item</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Parameter</strong></td>
<td>Profile Curve</td>
<td>Ra, Rq, Rt, Rz, Rv, Rn, Rsk, Rku, Rmr(c), Rmr, Rpke, Rvke, Rke, Rpke, Rvke, NCRX, NR, CPM, SR, SAR, Wx, Wv, SW, Sm, S, Sm, S</td>
<td></td>
</tr>
<tr>
<td><strong>Roughness Curve</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motif</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Evaluation Curve</strong></td>
<td>Profile Curve, Roughness Curve, ISO13565Special Roughness Curve, Roughness motif curve, Waviness motif curve, Upper envelope waviness curve</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Characteristics graph</strong></td>
<td>Bearing area curve, Amplitude distribution curve</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Filter</strong></td>
<td>Gaussian, 2RC (phase compensation), 2RC (non-phase compensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cutoff value</td>
<td>Ac</td>
<td>0.08, 0.25, 0.6, 2.5 mm</td>
<td></td>
</tr>
<tr>
<td>Aa</td>
<td>0.08, 0.25, 0.6, 2.5 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>2.4-inch color liquid crystal panel</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Data output</strong></td>
<td>USB connectors for USB memory/printer connection x 1, Miro USB connector for USB communication x 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Print output</strong></td>
<td>USB connectors for USB memory/printer connection x 1, Miro USB connector for USB communication x 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>Japanese, English, Chinese (Traditional Chinese/Simplified Chinese), Korean, Thai, Malay, Vietnamese, Indonesian, German, French, Italian, Czech, Polish, Hungarian, Turkish, Swedish, Dutch, Spanish, Portuguese</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Specifications</strong></td>
<td>Charging</td>
<td>Built-in battery (to be charged using AC adapter, PC USB port, USB battery), charging period: 4 hours (about 1000 measurements can be taken when fully charged)</td>
<td></td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Voltage, frequency</td>
<td>AC100 to 240 V ±10%, 50/60 Hz. Single phase (included AC adapter)</td>
<td></td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>Maximum 10 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Amplification indicator</strong></td>
<td>2.4-inch color liquid crystal panel</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>External dimensions (W x D x H) / Weight</strong></td>
<td>184.5 x 68 x 57.4 mm/about 500 g for the entire system</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### HANDYSURF+ External view

**When tracing driver is stored inside amplifier**

HANDYSURF+ 35

![HANDYSURF+ 35 Diagram](image1)

HANDYSURF+ 40

![HANDYSURF+ 40 Diagram](image2)

**When extension cable is used**

HANDYSURF+ 35

![HANDYSURF+ 35 Diagram](image3)

HANDYSURF+ 40

![HANDYSURF+ 40 Diagram](image4)

HANDYSURF+ 45

![HANDYSURF+ 45 Diagram](image5)