



# HANDYSURF+

## Mobile Surface Measuring Instrument

With a sleeker design, new 2.4-inch color LCD screen, and improved user interface for intuitive operations, HANDYSURF+ offers a simple quality assurance option for measuring surface parameters throughout production. It is an ideal solution for the automotive, mechanical engineering and medical technology industries.



### Flexible use

HANDYSURF+ is flexible and robust, with horizontal, vertical and overhead surface measurement capabilities that travel to the workpiece



### User-friendliness

HANDYSURF+ meets all common surface standards (ISO, DIN, CNOMO, ASME and JIS), features 20 languages and can be connected to a PC, printer or flash drive via built-in USB



### Wider measuring range

HANDYSURF+ covers a 370  $\mu\text{m}$  measuring range — the widest in its class — without compromising its 0.0007  $\mu\text{m}$  resolution



### Enhanced analysis

HANDYSURF+ offers graphic representations of measurements for on-site verification with parameter and waveform, and is capable of a variety of analyses including BAC, ADC, peak count and motifs



### Technical Data & Specifications:

- Available in three models: 35, 40 and 45, with stylus tip radiuses of 2 or 5  $\mu\text{m}$  (45 only available with 5  $\mu\text{m}$  stylus tip radius)
- Z measuring range: -210 to +160  $\mu\text{m}$
- Z measuring resolution: 0.0007  $\mu\text{m}$
- Stylus tip material: Diamond

# Technical Data

## HANDYSURF+

		HANDYSURF+				
Model		35	35	40	40	45
		Tip radius 5 $\mu\text{m}$	Tip radius 2 $\mu\text{m}$	Tip radius 5 $\mu\text{m}$	Tip radius 2 $\mu\text{m}$	Tip radius 5 $\mu\text{m}$
<b>Measurement range</b>						
Z direction -210 to +160 $\mu\text{m}$		-210 to +160 $\mu\text{m}$	-210 to +160 $\mu\text{m}$	-210 to +160 $\mu\text{m}$	-210 to +160 $\mu\text{m}$	-210 to +160 $\mu\text{m}$
Drive axis		X direction 16 mm	X direction 16 mm	X direction 16 mm	X direction 16 mm	Y direction 16 mm
<b>Tracing Driver</b>						
Movement type		Standard type	Standard type	Retraction type	Retraction type	Horizontal tracing type
Evaluation Length		0.2 to 16 mm	0.2 to 16 mm	0.2 to 16 mm	0.2 to 16 mm	0.2 mm to 4.0 mm
Measurement speed		0.5, 0.6, 0.75, 1.0 mm/s	0.5, 0.6, 0.75, 1.0 mm/s	0.5, 0.6, 0.75, 1.0 mm/s	0.5, 0.6, 0.75, 1.0 mm/s	0.6 mm/s
<b>Pickup</b>						
Sensing type		Differential inductance	Differential inductance	Differential inductance	Differential inductance	Differential inductance
Measurement Method		Skid	Skid	Skid	Skid	Skid
Z direction resolution		0.0007 $\mu\text{m}/-210$ to +160 $\mu\text{m}$	0.0007 $\mu\text{m}/-210$ to +160 $\mu\text{m}$	0.0007 $\mu\text{m}/-210$ to +160 $\mu\text{m}$	0.0007 $\mu\text{m}/-210$ to +160 $\mu\text{m}$	0.0007 $\mu\text{m}/-210$ to +160 $\mu\text{m}$
Model		E-DT-SM10A	E-DT-SM49A	E-DT-SM10A	E-DT-SM49A	E-DT-SM39A
Stylus	Measurement force	4 mN	0.75 mN	4 mN	0.75 mN	4 mN
	Tip radius	$r_{\text{tip}} = 5 \mu\text{m}$	$r_{\text{tip}} = 2 \mu\text{m}$	$r_{\text{tip}} = 5 \mu\text{m}$	$r_{\text{tip}} = 2 \mu\text{m}$	$r_{\text{tip}} = 5 \mu\text{m}$
	Tip angle	90°cone	60°cone	90°cone	60°cone	90°cone
	Tip material	Diamond	Diamond	Diamond	Diamond	Diamond
<b>Analysis item</b>						
Calculation Standards		Comply with JIS2013/2001, JIS1994, JIS1982, ISO1997/2009, ISO13565, DIN1990, ASME2002/2009, ASME1995, CNOMO				
Parameter	Profile Curve	Pt, Rmax, Rz, Rk, Rpk, Rvk, Mr1, Mr2, Vo, K, tp				
	Roughness Curve	Ra, Rq, Rz, Rv, Rc, Rt, RSm, RΔq, Rsk, Rku, Rmr(c), Rmr, R c, Rz94, R3z, RΔa, Ry, Sm, S, tp, PC, Rpc JIS, Rpc ISO, Rpc EN, Pc, PPI, Rp, Rmax, Mr1, Mr2, Rpk, Rvk, Rk, Vo, K, A1, A2, Rpm, Δa, Δq, Htp				
	Motif	R, Rx, AR, W, Wx, AW, Rke, Rpk, Rvke, NCRX, NR, CPM, SR, SAR, Wte, NW, SAW, SW, Mr1e, Mr2e, Vo, K				
Evaluation Curve		Profile Curve, Roughness Curve, ISO13565 Special Roughness Curve, Roughness motif curve, Waviness motif curve, Upper envelope waviness curve				
Characteristics graph		Bearing area curve, Amplitude distribution curve				
<b>Filter</b>						
Filter type		Gaussian, 2RC (phase compensation), 2RC (non-phase compensation)				
Cutoff value	$\lambda_c$	0.08, 0.25, 0.8, 2.5 mm				
	$\lambda_s$	None, 2.5, 8 $\mu\text{m}$				
<b>Amplification indicator</b>						
Display		2.4-inch color liquid crystal panel				
Data output		USB connectors for USB memory/printer connection x 1, Micro USB connector for USB communication x 1				
Print output		Optional (external printer unit) / Thermal recording paper width: 58 mm (recording width: 48 mm)				
Language		Japanese, English, Chinese (Traditional Chinese/Simplified Chinese), Korean, Thai, Malay, Vietnamese, Indonesian, German, French, Italian, Czech, Polish, Hungarian, Turkish, Swedish, Dutch, Spanish, Portuguese				
<b>Specifications</b>						
Power Supply	Charging	Built-in battery (to be charged using AC adaptor, PC USB port, USB battery), charging period: 4 hours (about 1000 measurements can be take when fully charged)				
	Voltage, frequency	AC100 to 240 V $\pm 10\%$ , 50/60 Hz, Single phase (Included AC adapter)				
	Power consumption	Maximum 10 W				
External dimensions (W x D x H) / Weight		Amplification indicator: 184.5 x 68 x 57.4 mm/about 500 g for the entire system				