MARSURF PS1 I ABSOLUTE MOBILITY

FOR SURFACE ROUGHNESS MEASUREMENTS

- 0 +

Mahr

EXACTLY

ABSOLUTE MOBILITY WITH MARSURF PS1

Large display
All the information you need at a glance.
All functions displayed in plain text.
Functions called up using arrow keys.
Defaults/language simple to select and change.

Height adjustment accessory included in the scope of delivery. For many additional measuring tasks.
Simply clipped onto the bottom of the **PS1.**

Integrated calibration standard
No external calibration standard required (patent pending). Gives greater reliability for standards-compliant measurements.

Drive unit
Can be rotated and moved longitudinally. Enables the pick-up to be moved into the calibrating position. The pick-up is also protected for transport in this position.

Pick-up with removable pick-up protection
Standards-compliant measurement.
2 µm (80 µin) diamond stylus tip.
Measuring force 0.7 mN.

Pick-ups are available for various measuring tasks.

With increasing manufacturing and machine quality, the quality of technical products' surface finishes is becoming ever more important.

This makes it all the more crucial to offer metrological solutions with instrument designs that provide quick and simple yet standards-compliant measuring options.
In some cases measurements are transferred from the inspection room to production to save time and money. Components may be too large or heavy to be transported, leaving no alternative but to carry out measurements directly on the component or machine.

The **MarSurf PS1** lives up to its claim of "**Absolute mobility**" in all manner of ways, providing:

- **Mains-independent operation**
  Over 500 measurements without having to recharge the instrument.

- **An all-in-one solution** that is no larger than a digital camera. Small and lightweight (400 g / 0.88 lbs).

- **Instrument flexibility**
  The standard range of functions is sufficient for this all-purpose smart little instrument to perform your measuring tasks.

- **All the measuring positions you need**
  Can be used horizontally, vertically, upside down or in any other position required by the component.

- **24 parameters**
  Offer the same range of functions as a laboratory instrument.

- **Error-free operation** thanks to an integrated roughness standard.

- **Automatic cutoff selection** (patented) so that even non-specialists are ensured correct measuring results.

- **Simple operation**
  The brief guide in pocket diary format reflects how simple the **PS1** is to use. You quickly get to grips with the essential features, enabling you to complete your measuring tasks with excellent results.

Directly selectable parameters
Ra, Rz

Freely programmable
F1 button for direct access to one of 24 parameters of your choice.

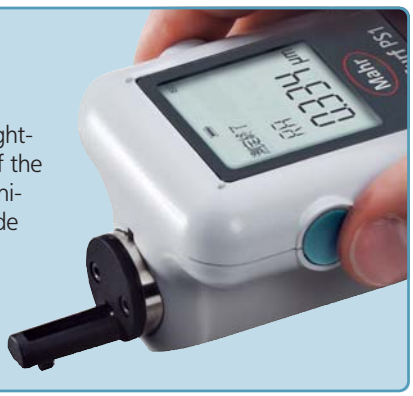
USB interface
PS1 is detected without a driver (such as a memory stick).

Evaluation possible using **MarSurf XR 20** evaluation software or **MarSurf XR 20** instrument.

MarConnect interface (RS232), e.g. to connect a Mahr **MSP2** printer.

Flexibility thanks to 4 internally threaded bores
There are four tapped studs on the bottom of the **PS1** for attaching your own special accessories.

Start button on right and left
Not only easy to operate whether you are left- or right-handed but also practical if the instrument is used as a mini-measuring station for upside down measurements.



MARSURF PS1 I ON-SITE SURFACE ROUGHNESS MEASUREMENT

Images in cooperation with: MTU Aero Engines, Munich (Germany)

AEROSPACE I SHIPBUILDING I MECHANICAL ENGINEERING I AUTOMOTIVE I PRECISION ENGINEERING

MARSURF PS1 I MEASURING DURING THE PRODUCTION PROCESS

Images in cooperation with: KS Kolbenschmidt GmbH, Neckarsulm (Germany)

AEROSPACE I **SHIPBUILDING** I MECHANICAL ENGINEERING I AUTOMOTIVE I PRECISION ENGINEERING

MARSURF PS1 I UNIVERSAL USE ON PROCESSING MACHINERY ...

Images in cooperation with: Heidelberger, Wiesloch (Germany)

AEROSPACE I SHIPBUILDING I **MECHANICAL ENGINEERING** I AUTOMOTIVE I PRECISION ENGINEERING

OR FOR INCOMING GOODS INSPECTIONS

Images in cooperation with: Deutz Power Systems GmbH & Co. KG, Mannheim (Germany)

AEROSPACE I SHIPBUILDING I **MECHANICAL ENGINEERING** I AUTOMOTIVE I PRECISION ENGINEERING

MarSurf PS1. Wide Range of Applications

The **MarSurf PS1** comes with a simple mount for **height adjustment**.

This enables measurements to be performed on items such as cones.

Perfect upside down measurements are possible with the **MarSurf PS1**.
All you have to do is position the part and start measurement.

This means that small components can be measured without additional mounts.

Measurements on measuring stands.
The **MarSurf PS1** can easily be mounted on **ST-D** / **ST-F** or **ST-G** measuring stands.

The **MarSurf PS1** is the perfect entry-level measuring instrument for a very wide range of standards-compliant roughness measurements.

One possibility offered by an optional **end face vee-block** is to measure surfaces perpendicular to the contact face.

MarSurf PS1. Optional Accessories for Even Greater Flexibility ...

80 mm (3.15 in) pick-up extension
for example, for measuring points located deep within cylinders.
Order No. 6850540

PHT 3-350 pick-up
for measurements in bores from dia. 3 mm (0.12 in).
Order No. 6111521

PHT 11-100 pick-up
for measurements at recessed measuring points,
e.g. in grooves from 2.5 mm (0.10 in) wide and up to 7.5 mm (0.30 in) deep.
Order No. 6111524

PHTR 100 pick-up
for measurements on concave and convex surfaces.
Order No. 6111525

PHTF 0.5-100 pick-up
for measurements on tooth flanks.
Order No. 6111522

PT 150 pick-up
Dual-skid pick-up for measurements on metal sheets and roller surfaces according to DIN EN 10049 (SEP).
Order No. 6111523

Pick-up set (not illustrated)
consisting of
- PHT 3-350 pick-up (6111521)
- PHT 11-100 pick-up (6111524)

Order No. 6910213

Accessory set (not illustrated)
consisting of
- Pick-up extension (6850540), length 80 mm (3.15 in)
- Adapter for transverse tracing (6850541)
- Measuring stand mount (6910201)
  Allows the MarSurf PS1 to be mounted on the Mahr ST-D / ST-F / ST-G family of measuring stands
- End face vee-block (6910203)
  Suitable for measurements on flat faces of cylindrical and planar components

Order No. 6910212

Printer set
consisting of **MSP2** printer with connection cable (**MarConnect**)
Order No. 6910211

MarSurf PS1. Software for Evaluation and Documentation

Multilingual PC-Software PS1 Explorer
to document results and profil recordings on PC. 14 languages.
Order No. 6910205

Evaluation Software MarSurf XR 20
for a thorough evaluation and documentation. **MarWin** based.
Order No. 6299009

MarSurf PS1. Technical Data

Unit of measurement	Metric, inch
Measuring principle	Stylus method
Pick-up	Inductive skidded pick-up, 2 µm (80 µin) stylus tip, measuring force approx. 0.7 mN
Parameters	Ra, Rq, Rz equiv. to Ry (JIS), Rz (JIS), Rmax, Rp, Rp (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1,
(24, with tolerance limits)	A2, Vo, Rt, R3z, RPc, Rmr equiv. to tp (JIS, ASME), RSm, R, Ar, Rx
Languages	14 including 3 Asian languages
Measuring range	350 µm, 180 µm, 90 µm (changes automatically)
Profile resolution	32 nm, 16 nm, 8 nm (changes automatically)
Filter*	Phase-correct profile filter (Gaussian filter) acc. to DIN EN ISO 11562, special filter acc. to DIN EN ISO 13565-1, ls filter acc. to DIN EN ISO 3274 (can be disabled)
Cutoff lc*	0.25 mm, 0.8 mm, 2.5 mm; automatic (0.010 in, 0.030 in, 0.100 in)
Traversing length Lt*	1.75 mm, 5.6 mm, 17.5 mm; automatic (0.069 in, 0.22 in, 0.69 in)
Traversing length (acc. to MOTIF)	1 mm, 2 mm, 4 mm, 8 mm, 12 mm, 16 mm (0.040 in, 0.080 in, 0.160 in, 0.320 in, 0.480 in, 0.640 in)
Short cutoff*	Selectable
Evaluation length ln*	1.25 mm, 4.0 mm, 12.50 mm (0.050 in, 0.15 in, 0.50 in)
Number n of sampling lengths*	Selectable: 1 to 5
Calibration function	Dynamic
Memory capacity	Max. 15 profiles, max. 20,000 results
Other functions	Blocking of settings (code-protected), date/time
Dimensions	140 mm × 50 mm × 70 mm (5.51 in × 1.97 in × 2.76 in)
Weight	400 g (0.88 lbs)
Battery	Li-ion battery
Interfaces	USB, MarConnect (RS232)
Long-range power supply	100 V to 264 V

* acc. to ISO/JIS

MarSurf PS1. The Set

The **MarSurf PS1** comes in a complete set. Thanks to the carrying case, you always have your surface roughness measuring instrument with you as you pass through the production floor. Quick and reliable on-the-spot measurements ensure your quality requirements are met during the production process or incoming goods inspection.

The set contains

- **MarSurf PS1 base unit**
- **Drive unit**
- **1 standard pick-up conforming to standards**
- **Built-in battery**
- **Roughness standard integrated into casing**
- **Height adjustment accessory**
- **Pick-up protection**
- **Charger / mains adapter**
- **Operating instructions**
- **Carrying case with shoulder strap and belt loop**
- **USB cable**
- **Mahr Calibration Certificate**

Order No. 6910214

MarSurf PS1. Available Parameters

Parameter	Output	Meaning	Standards
Ra	RA	Arithmetic mean roughness Ra	DIN EN ISO 4287 : 1998; ISO 4287 : 1997; JIS B 0601 : 2001
Rq	RQ	Root mean square roughness Rq	DIN EN ISO 4287 : 1998; ISO 4287 : 1997; JIS B 0601 : 2001
Rz **Ry** (JIS) equiv. to **Rz**	RZ	Mean peak-to-valley height Rz (acc. to ISO) or Ry (acc. to JIS)	DIN EN ISO 4287 : 1998; ISO 4287 : 1997; JIS B 0601 : 2001
Rz (JIS)	RZJ	Mean height Rz of profile elements	JIS B 0601 : 2001 (was: ISO 4287/1 : 1984)
Rmax	RMAX	Maximum roughness depth Rmax	DIN 4768 : 1990
Rp	RP	Mean profile peak height Rp	DIN EN ISO 4287 : 1998; ISO 4287 : 1997
Rp (ASME)	RP	Maximum profile peak height Rp	ASME B46
Rpm (ASME)	RPM	Mean profile peak height Rp	ASME B46
Rpk	RPK	Reduced peak height Rpk	DIN EN ISO 13565-2 : 1998
Rk	RK	Core roughness depth Rk	DIN EN ISO 13565-2 : 1998
Rvk	RVK	Reduced valley depth Rvk	DIN EN ISO 13565-2 : 1998
Mr1	MR1	Smallest material ratio Mr1 of roughness core profile	DIN EN ISO 13565-2 : 1998
Mr2	MR2	Largest material ratio Mr2 of roughness core profile	DIN EN ISO 13565-2 : 1998
A1	A1	Material-filled profile peak area A1	DIN EN ISO 13565-2 : 1998
A2	A2	Lubricant-filled profile valley area A2	DIN EN ISO 13565-2 : 1998
Vo	VO	Oil-retaining volume Vo	
Rt	RT	Total height Rt of R-profile	DIN EN ISO 4287:1998
R3z	R3Z	Arithmetic mean third peak-to-valley height R3z	DB N 31007 : 1983
RPc	RPC	Peak count RPc is the number of profile elements (see RSm) per cm that exceed the set upper profile section level c1 and then fall short of the lower c2.	EN 10049 : 2005; ASME B46
Rmr **tp** (JIS, ASME) equiv. to **Rmr**	RMR	Material ratio Rmr	DIN EN ISO 4287 : 1998; ISO 4287 : 1997; JIS B 0601 : 2001
RSm	RSM	Mean width RSm of profile elements (was: groove spacing)	DIN EN ISO 4287 : 1998; ISO 4287 : 1997; JIS B 0601 : 2001
R	R	Mean depth R of roughness motifs	ISO 12085 : 1996
Ar	AR	Mean width Ar of roughness motifs	ISO 12085 : 1996
Rx	RX	Maximum depth Rx of profile irregularity	ISO 12085 : 1996

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3758541-01.09.05