

MarSurf Pocket Surf IV

Mobile Roughness Measuring Instrument

FEATURES

- Durable cast aluminum housing provides years of accurate and reliable measuring operations
- Can be used to measure four selectable parameters: Ra, Rmax/Ry, Rz
- Review all parameters after the measurement is complete
- Adjustable measuring length based on 1, 3 or 5 times the cutoff wavelength of 0.8 mm/0.030"
- Operates in any position – horizontal, vertical, and upside down
- Four switchable probe positions – axial or at an angle of 90°, 180° or 270°
- Even difficult to reach surfaces such as inside and outside diameters are accessible
- MarConnect data output for easy data transfer that is compatible with standard data processing systems
- Easy to read LCD presents the measured roughness value in μm or μinch immediately after scanning
- Out of range (high or low) and 'low battery' signals are also displayed
- Simplified calibration process
- Improved battery life with 9V battery that is easy to replace



Application:

- Pocket-sized, economically priced, completely portable instrument
- Performs traceable surface roughness measurements on a wide variety of surfaces
- Can be used confidently in production, on the shop floor and in the laboratory



TECHNICAL DATA

Order no.	2191800		2191802	
Product type	Pocket Surf IV			
Parameters	Ra, Ry, Rmax, Rz			
Stylus	10 μm / .0004"		5 μm / .0002"	
Data interface:	RS232C, USB			
Rechargeable batteries	Battery, 9V			
H x W x D	mm	140 x 76 x 6.35 mm		
Weight	kg	1.03		
Measuring principle	Skid probe system			
Probe	Piezoelectric skid probe			
Measuring range	mm	Ra –6.35 μm / 250 Ry, Rmax, Rz –25.3 μm / 999 μin	Ra –6.35 μm / 250 Ry, Rmax, Rz –25.3 μm / 999 μin	
Profile resolution	0.01 μm / 1 μin			
Number n of sampling length according to ISO/JIS	Selected: 1 –5			
Measuring force	N	15 mN		

MarSurf Pocket Surf IV

Mobile Roughness Measuring Instrument

ACCESSORIES

Order no.	Description	Type
2008010	General purpose probe, 10µm/90°	EGH-1019
2008012	Transverse chisel probe, 10 µm	EGH-1020-W1
2008013	Parallel chisel probe, 10 µm	EGH-1020-W2
2008014	Small bore probe, 10µm/90°	EGH-1021
2008011	General purpose probe, 5µm/90°	EGH-1026
2008015	Small bore probe, 5µm/90°	EGH-1027
2008016	Groove bottom probe, 10µm/90°	EGH-1028
2008024	Compact height stand	EAS-2496
2008025	Universal stand	EAS-2426
2008026	Column clamp for EAS-2426	EAS-2567
2008027	Adapter plate	EPL-1681
2008023	Portable V-fixture	EAS-2421
2008022	Bottom plate	EAS-2584
2008021	Bore adapter kit	EAS-2839
2008020	V-adapter kit	EAS-2739
2223604	Certified specimen, incl. test certificate	PMD-90101
2008031	Precision reference specimen, without certificate	EMD-90010
4346023	Data connection cable USB	
4346020	Data connection cable RS232C	



EAS-2584



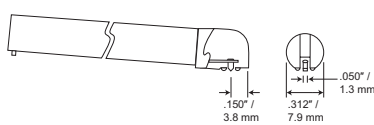
EAS-2839



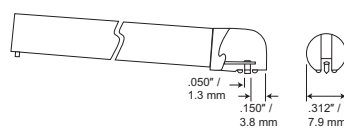
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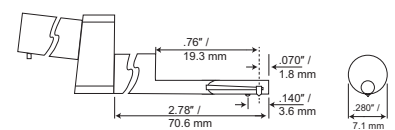
EAS-2421



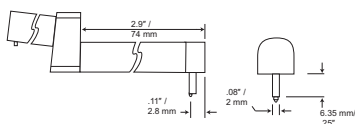
EGH-1020-W1



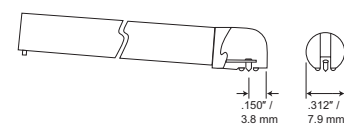
EGH-1020-W2



EGH-1021;EGH-1027



EGH-1028



EGH-1019;EGH-1026

MarSurf PS 10

Mobile Roughness Measuring Instrument

FEATURES

“SMAHRT Surf” – simple, smart and mobile

- Compact roughness measuring instrument for mobile use
- Simple and intuitive to use: as easy as using a smart phone
- Large, illuminated 4.3" TFT touch display
- Adjustable display
- Data backup as TXT, X3P, CSV or PDF file
- Create complete PDF measuring records directly in the measuring instrument
- Customized comments for the PDF measuring record can be entered directly into the MarSurf PS 10
- Mains-independent operation: Over 1200 measurements without having to recharge the instrument
- An all-in-one solution. Small and lightweight (approx. 500 g)
- Instrument flexibility: removable drive unit
- 31 surface parameters: offer the same range of functions as a laboratory instrument
- Roughness standard stored within housing aids in reducing errors
- Quick access to your frequently used functions via the Favorites list in the display
- Automatic cutoff selection, so even non-specialists can be sure of getting the correct measuring results
- NEW: Additional version with transverse drive unit available as MarSurf PS 10 C2 (item number 6910235)

Scope of delivery

- MarSurf PS 10 unit
- Drive unit (detachable)
- 1 standard probe conforming to standards
- Built-in rechargeable battery
- Roughness standard integrated into housing (detachable), including Mahr calibration certificate
- Probe protection
- Power source with 3 adapters
- Operating instructions
- Carry case with shoulder strap
- USB cable
- Extension cable for drive unit (length 1.2 m)
- Height adjustment (integrated)

Application:

- For shafts and housing components
- For large machines
- For large workpieces
- For milled and turned parts
- For ground and honed workpieces
- On the production line or directly on the machine; ideal for rapid testing of the surface roughness of a workpiece



TECHNICAL DATA

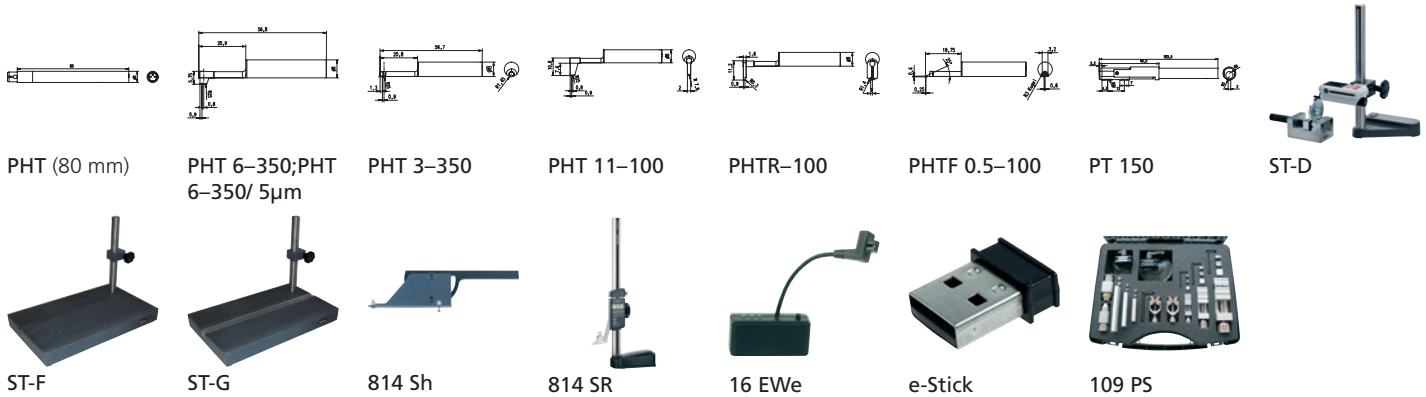
Order no.	6910230	6910232
Product type	PS 10	
Parameters	Ra, Rq, Rz (Ry (JIS) is equivalent to Rz), Rz (JIS), Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, RPl, Rmr (tp (JIS, ASME) is equivalent to Rmr), RSm, RSk, RS, CR, CF, CL, R, Ar, Rx, R3z	
Stylus	2 µm	5 µm
Calibration function	Dynamic; Ra, Rz, Rsm	
Storage capacity	Min. 3900 profiles, min. 500.000 results, min. 1500 PDF records, expandable to 32 GB with Micro SD card	
Languages	German, English, French, Italian, Spanish, Portugese, Dutch, Swedish, Russian, Polish, Czech, Japanese, Chinese, Korean, Hungarian, Turkish, Romanian	
Other	Lock/password protected, date/time	
Data interface:	USB, MarConnect (RS232), Micro SD slot for SD / SDHC cards up to 32 GB	
System of protection	IP 40	
Rechargeable batteries	Lithium-ion battery, min. 1200 measurements	
Wide range power supply	100 to 264 V	
H x W x D	mm	160 mm x 77 mm x 50 mm
Weight	kg	1.85
Measuring principle	Stylus method	
Probe	Inductive skidded probe	
Measuring range	mm	0.350
Profile resolution	8 nm	
Filter according to ISO/JIS	Gaussian filter as per ISO 16610-21 (formerly ISO 11562), special filter as per DIN EN ISO 13565-1, Lambda s filter as per DIN EN ISO 3274 (can be switched off)	
Cutoff lc according to ISO/JIS	0.25 mm, 0.8 mm, 2.5 mm, automatic filter detection	
Number n of sampling length according to ISO/JIS	Selectable: 1 to 16	
Short stroke under ISO/JIS	Selectable	
Traversing length Lt according ISO/JIS	1.5 mm, 4.8 mm, 15 mm, N x Lc, variable, automatic	
Traversing length according ISO 12085 (MOTIF)	1 mm, 2 mm, 4 mm, 8 mm, 12 mm, 16 mm	
Evaluation lenth ln according to ISO/JIS	1.25 mm, 4.0 mm, 12.5 mm	
Measuring force	N	0.00075

MarSurf PS 10

Mobile Roughness Measuring Instrument

ACCESSORIES

Order no.	Product description	Product type
6850540	PHT pick-up extension 80 mm	PHT (80 mm)
6111520	Standard probe 2 µm	PHT 6-350
6111526	Standard probe 5 µm	PHT 6-350/5µm
6111527	Standard probe 10 µm	PHT 6-350/10µm
6111521	Probe for bores with a dia. larger than 3 mm	PHT 3-350
6111524	Probe for grooves	PHT 11-100
6111525	Probe for concave and convex surfaces	PHTR-100
6111522	Probe for gear tooth flanks	PHTF 0.5-100
6111523	Probe for metal sheets	PT 150
6850715	Pick-up protection with header V-block, steel	PHT-ts4
7028530	Pick-up protection header V-block, plastic	PHT-ts3
6910209	Mount MarSurf PS 10 on measuring stand ST	ST-a3
6910435	RD 18 C / PS 10 upright holder for cylindrical drive unit, Ø 8 mm	ST-a2
6710803	Measuring stand 300 mm with cast iron base	ST-D
6710806	Measuring stand 300 mm with granite plate	ST-F
6710807	Measuring stand 300 mm with granite plate and T-slot	ST-G
2247086	Adjustable mounting bracket to connect to 814 SR	814 Sh
4426100	Height measuring and scribing instrument	814 SR
4426101	Height measuring and scribing instrument	814 SR
4102410	Data connection cable RS232C	16 EXr
4102357	Data connection cable USB	16 EXu
4102231	Transmitter	16 EWe
4102230	Receiver	e-Stick
6710401	V-block	PP
6710604	Parallel vice	PPS
6710529	XY Table	CT 120
4246819	Miniature precision vises, set	109 PS
6820420	Roughness standard with Mahr calibration certificate, profile depth 10 µm	PRN 10
6820601	Geometric standard with sinusoidal groove profile, profile depth 3 µm	PGN 3
6820602	Geometric standard with sinusoidal groove profile, profile depth 1.5 µm	PGN 1
6820605	Geometric standard with sinusoidal groove profile, profile depth 10 µm	PGN 10
9027715	Mahr calibration certificate for PGN Standard	PGN
6980102	DKD (German Calibration Service) calibration certificate for PGN Standard	PGN
4413000	Indicator stand with delta base	815 GN
4413001	Indicator stand with delta base	815 GN
4413005	Indicator stand with delta base	815 GN
4416000	Measuring tripod with magnetic base	815 MA
6299054	Evaluation software	SW XR 20
6910240	Protective films for LCD, real glass (3 pieces)	SF LCD



MarSurf M 300

Mobile Roughness Measuring Instrument

FEATURES

MarSurf M 300, the first portable roughness measuring unit with the option of wireless (Bluetooth) connection to the drive unit.

- Bluetooth wireless connection
- Easy to use, with high-resolution color display and ATM-style user guidance
- Integrated standard in drive unit
- Automatic profile detection and corresponding selection of filters and traversing length conforming to standards
- Integrated memory for the results of up to 40.000 measurements and 30 profiles
- Integrated thermal printer with high print quality
- Data transfer of results and profiles via USB interface to your PC
- Evaluation of most common parameters as well as characteristic curves, parameter lists (e.g. material ratio curve)
- Tolerance monitoring
- Printing of R-profile (ISO/ASME/JIS), P-profile (MOTIF), material ratio curve, measuring record
- Setting of asymmetrical intersection lines for peak count calculation
- Measuring units ($\mu\text{m}/\mu\text{inch}$) and standards (ISO/JIS/ASME/MOTIF) are selectable
- Individual sampling lengths and short cutoff can be selected
- Lock for instrument settings
- Built-in rechargeable battery with power management
- Suitable for use with stationary measuring station
- For use with PHT probe range
- MarSurf PS1/M 300 Explorer software for recording measurements

Scope of delivery

- Evaluation unit M 300 drive unit RD 18 with integrated roughness standard
- Standard pick-up PHT 6–350/2 μm (conforming to standards)
- Power source with 3 adapters
- Height adjustment accessory
- Pick-up protection
- Pick-up protection with prismatic underside end face V-block
- 2 USB cables
- 1 roll of thermal paper
- Shoulder strap
- Carrying case
- Mahr calibration certificate
- Operating instructions

Application:

- For shafts and housing components
- For large scale machines
- For large workpieces
- For milling and turning parts
- For use on grinding and honing components
- On the production line or directly on the machine; ideal for rapid testing of the surface roughness of a workpiece



TECHNICAL DATA

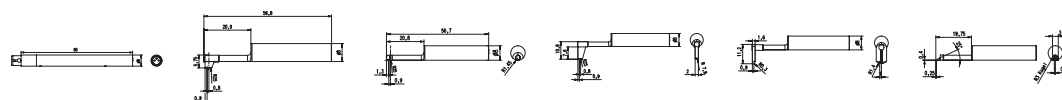
Order no.	6910401	6910411
Product type	M 300	
Parameters	Ra, Rz (Ry (JIS) is equivalent to Rz), Rz (JIS), Rq, Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, R3z, RPc, Rmr (tp (JIS, ASME) is equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx, Rv, W (MOTIF)	
Horizontal scale	Depends on cutoff	
Log contents	R profile, MRK,P profile (MOTIF), results	
Stylus	2 μm	5 μm
LC display	High resolution color display, 3.5", 320 x 240 pixel	
Printing	Automatic/manual record with time	
Printer	Thermal printer, 384 points/horizontal line, 20 characters/line	
Printing speed	Approx. 6 lines/second corresponds to approx. 25 mm/s (1 in/s)	
Thermopaper	\varnothing 40.0 mm–1.0 mm, width 57.5 mm–0.5 mm, coated	
Calibration function	Dynamic	Dynamic
Password protection	Yes	
Lock for device settings	Yes	
Languages	German, English, French, Italian, Spanish, Portugese, Dutch, Swedish, Russian, Polish, Czech, Japanese, Chinese, Korean, Hungarian, Turkish	
Power management	Yes	
Interfaces	Drive unit, power pack, USB, MarConnect	
Data interface:	RS232C, USB, Digimatic, USB A	
Relative humidity	30 % to 85 %	
System of protection	M 300 = IP 42, RD 18 = IP 40	
Operating temp. range	+5 °C to +40 °C	
Temperature range for storage	–15 °C to +55 °C	
Power supplied	NiMH battery, capacity: approx. 1.000 measurements (depends on number and length of record printouts), plug-in power pack with three power adapters, for input voltages from 90 V to 264 V	
(L x W x H) for drive unit in mm.	130 x 70 x 50 mm	
(L x W x H) for measuring instrument in mm.	190 x 140 x 75 mm	
Weight	kg	4.1
Measuring principle	Stylus method	
Probe	Inductive skidded probe	
Measuring range	mm	0.350
Profile resolution	8 nm	
Filter according to ISO/JIS	Gaussian filter, Ls filter	
Cutoff lc according to ISO/JIS	0.25 mm, 0.8 mm, 2.5 mm	
Number n of sampling length according to ISO/JIS	Selectable: 1–5	
Short stroke under ISO/JIS	Selectable	
Traversing length Lt according to ISO/JIS	1.75 mm, 5.6 mm, 17.5 mm	
Evaluation length ln according to ISO/JIS	1.25 mm, 4 mm, 12.5 mm	1.25 mm, 4 mm, 12.5 mm
Contacting speeds	0.5 mm/s	
Measuring force	N	0.00075
Weight drive unit	Approx. 300 g	
Weight measuring instrument	Approx. 1 kg	

MarSurf M 300

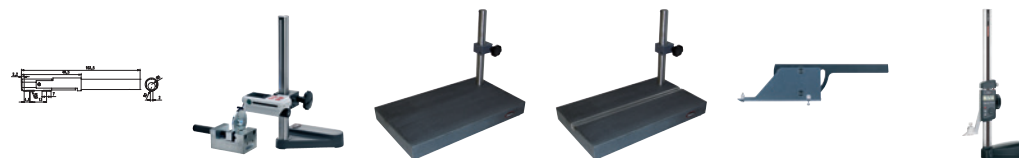
Mobile Roughness Measuring Instrument

ACCESSORIES

Order no.	Product description	Product type
6850540	PHT pick-up extension 80 mm	PHT (80 mm)
6111520	Standard probe 2 μm	PHT 6-350
6111526	Standard probe 5 μm	PHT 6-350/5μm
6111527	Standard probe 10 μm	PHT 6-350/10μm
6111521	Probe for bores with a dia. larger than 3 mm	PHT 3-350
6111524	Probe for grooves	PHT 11-100
6111525	Probe for concave and convex surfaces	PHTR-100
6111522	Probe for gear tooth flanks	PHTF 0.5-100
6111523	Probe for metal sheets	PT 150
6850715	Pick-up protection with header V-block, steel	PHT-ts4
6850541	Adapter for transverse tracing	PHT AQ
6850542	Vee-block holder	PS1 php
6910203	End face vee-block	PS1 / RD18
7028530	Pick-up protection header V-block, plastic	PHT-ts3
6910201	Mount for MarSurf PS1 / RD 18 on measuring stand ST	ST-a1
6710803	Measuring stand 300 mm with cast iron base	ST-D
6710806	Measuring stand 300 mm with granite plate	ST-F
6710807	Measuring stand 300 mm with granite plate and T-slot	ST-G
2247086	Adjustable mounting bracket to connect to 814 SR	814 Sh
4426100	Height measuring and scribing instrument	814 SR
4426101	Height measuring and scribing instrument	814 SR
4102357	Data connection cable USB	16 EXu
4102410	Data connection cable RS232C	16 EXr
4102915	Digimatic data cable	16 EWd
6710401	V-block	PP
6710604	Parallel vice	PPS
6710529	XY Table	CT 120
4246819	Miniature precision vises, set	109 PS
6910205	Evaluation software	SW PS1/M300 Explorer
6299054	Evaluation software	SW XR 20
6820420	Roughness standard with Mahr calibration certificate, profile depth 10 μm	PRN 10
6820601	Geometric standard with sinusoidal groove profile, profile depth 3 μm	PGN 3
6820602	Geometric standard with sinusoidal groove profile, profile depth 1.5 μm	PGN 1
6820605	Geometric standard with sinusoidal groove profile, profile depth 10 μm	PGN 10
9027715	Mahr calibration certificate for PGN Standard	PGN
6980102	DKD (German Calibration Service) calibration certificate for PGN Standard	PGN



PHT (80 mm) PHT 6-350;PHT 6-350/ 5μm PHT 3-350 PHT 11-100 PHTR-100 PHTF 0.5-100



PT 150 ST-D ST-F ST-G 814 Sh 814 SR



109 PS

MarSurf M 300 C

Mobile Roughness Measuring Instrument

FEATURES

- Bright, illuminated color display
- Automatic selection of filter and traversing length conforming to standards
- Integrated thermal graphics printer with high print quality
- Log printed by pressing a button
- Data transfer of results and profiles via USB interface to your PC
- Evaluation of most common parameters as well as characteristic curves, parameter lists (e.g. material ratio curve)
- Printing of R profile (ISO/ASME/JIS), P profile (motif), material ratio curve, measuring record
- Measuring units ($\mu\text{m}/\mu\text{inch}$) and standards (ISO/JIS/ASME/motif) are selectable
- Tolerance monitoring
- Integrated memory for results of up to 40000 measurements and 30 profiles
- Setting of asymmetric intersection lines for peak count calculation
- Individual sampling lengths and short cutoff can be selected
- Key pad lock and/or password protection for instrument settings
- Built-in rechargeable battery with power management
- Integrated roughness standard for the standard pick-up PHT 6-350
- Dynamic calibration function
- Date and/or time of measurement
- MarSurf PS1/M300 Explorer Software for recording measurements

Scope of delivery

- Evaluation unit M 300 C
- Cylindrical drive unit RD18 C
- Handheld V
- Block with height adjustable feet
- Standard pick-up PHT 6-350/2 μm (conforming to standards)
- Roughness standard PRN 10 with Mahr calibration certificate
- 1 roll of thermal paper
- Pick-up protection
- 8 mm mounting clamp for the drive unit
- Power source with 3 adapters
- USB cable (for connection to a PC)
- Shoulder strap
- Carrying case
- Operating instructions

Application:

- For shafts and housing components
- For large scale machines
- For large workpieces
- For milling and turning parts
- For use on grinding and honing components
- On the production line or directly on the machine; ideal for rapid testing of the surface roughness of a workpiece



TECHNICAL DATA

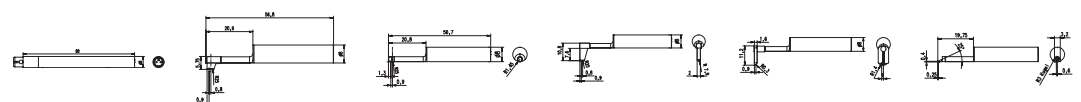
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Product type	M 300 C	
Parameters	Ra, Rq, Rz (Ry (JIS) is equivalent to Rz), Rz (JIS), Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, R3z, RPe, Rmr (tp (JIS, ASME) is equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx, Rv, W (MOTIF)	
Horizontal scale	Depends on cutoff	
Log contents	R profile, MRK, P profile (MOTIF), results	
Stylus	2 μm	
LC display	High resolution color display, 3.5", 320 x 240 pixel	
Printing	Automatic/manual record with time	
Printer	Thermal printer, 384 points/horizontal line, 20 characters/line	
Printing speed	Approx. 6 lines/second corresponds to approx. 25 mm/s (1 in/s)	
Thermopaper	\varnothing 40.0 mm -1.0 mm, width 57.5 mm-0.5 mm, coated	
Calibration function	Dynamic	
Storage capacity	Internal memory for max. 40000 results, max. 30 profiles	
Password protection	Yes	
Lock for device settings	Yes	
Languages	German, English, French, Italian, Japanese, Korean, Spanish, Dutch, Chinese, Polish, Czech, Portugese, Russian, Swedish, Hungarian, Turkish	
Power management	Yes	
Interfaces	Drive unit, power source, USB, MarConnect	
Data interface:	RS232C, Digimatic, USB, USB A	
Relative humidity	30 % to 85 %	
System of protection	M 300 = IP 42, RD 18 = IP 40	
Operating temp. range	+5 °C to +40 °C	
Temperature range for storage	-15 °C to +55 °C	
Power supplied	NiMH battery, capacity: approx. 500 measurements (depends on number and length of record printouts)	
Rechargeable batteries	NiMH battery, capacity: approx. 500 measurements	
Wide range power supply	Plug-in power pack with three power adapters, for input voltages from 90 V to 264 V	
(L x W x H) for drive unit in mm.	139 x 26 mm	
(L x W x H) for measuring instrument in mm.	190 x 140 x 75 mm	
Weight	kg	4.1
Measuring principle	Stylus method	
Probe	Inductive skidded probe	
Measuring range	mm	0,350
Profile resolution	8 nm	
Filter according to ISO/JIS	Gaussian filter, Ls filter	
Cutoff l_c according to ISO/JIS	0.25 mm, 0.8 mm, 2.5 mm, automatic	
Number n of sampling length according to ISO/JIS	Selectable: 1-5	
Short stroke under ISO/JIS	Selectable	
Traversing length l_t according ISO/JIS	1.75 mm, 17.5 mm, 5.6 mm, automatic	
Traversing length according ISO 12085 (MOTIF)	1 mm, 2 mm, 4 mm, 8 mm, 12 mm, 16 mm	
Evaluation length l_n according to ISO/JIS	1.25 mm, 4 mm, 12.5 mm	
Contacting speeds	0.5 mm/s	
Measuring force	N	0.00075
Weight drive unit	Approx. 300 g	
Weight measuring instrument	Approx. 1 kg	

MarSurf M 300 C

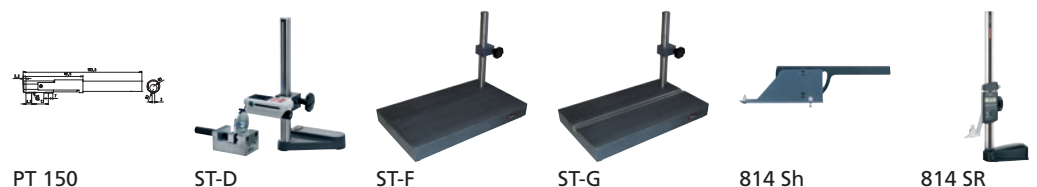
Mobile Roughness Measuring Instrument

ACCESSORIES

Order no.	Product description	Product type
6850540	PHT pick-up extension 80 mm	PHT (80 mm)
6111520	Standard probe 2 µm	PHT 6-350
6111526	Standard probe 5 µm	PHT 6-350/5µm
6111527	Standard probe 10 µm	PHT 6-350/10µm
6111521	Probe for bores with a dia. larger than 3 mm	PHT 3-350
6111524	Probe for grooves	PHT 11-100
6111525	Probe for concave and convex surfaces	PHTR-100
6111522	Probe for gear tooth flanks	PHTF 0.5-100
6111523	Probe for metal sheets	PT 150
6850715	Pick-up protection with header V-block, steel	PHT-ts4
6850541	Adapter for transverse tracing	PHT AQ
6850542	Vee-block holder	PS1 php
6910203	End face vee-block	PS1 / RD18
6910426	Drive unit for transverse tracing for MarSurf M300C	RD 18 C2
6850738	Collet chucks for RD 18 C2 / PFM-2 for ø 5 -80 mm	RD 18 C2
7028530	Pick-up protection header V-block, plastic	PHT-ts3
6851304	Mount for MarSurf RD18 C on measuring stand ST	PST-a2
6710803	Measuring stand 300 mm with cast iron base	ST-D
6710806	Measuring stand 300 mm with granite plate	ST-F
6710807	Measuring stand 300 mm with granite plate and T-slot	ST-G
2247086	Adjustable mounting bracket to connect to 814 SR	814 Sh
4426100	Height measuring and scribing instrument	814 SR
4426101	Height measuring and scribing instrument	814 SR
4102357	Data connection cable USB	16 EXu
4102410	Data connection cable RS232C	16 EXr
4102915	Digimatic data cable	16 EWd
6710401	V-block	PP
6710604	Parallel vice	PPS
6710529	XY Table	CT 120
4246819	Miniature precision vises, set	109 PS
6910205	Evaluation software	SW PS1/M300 Explorer
6299054	Evaluation software	SW XR 20
6820420	Roughness standard with Mahr calibration certificate, profile depth 10 µm	PRN 10
6820601	Geometric standard with sinusoidal groove profile, profile depth 3 µm	PGN 3
6820602	Geometric standard with sinusoidal groove profile, profile depth 1.5 µm	PGN 1
6820605	Geometric standard with sinusoidal groove profile, profile depth 10 µm	PGN 10
9027715	Mahr calibration certificate for PGN Standard	PGN
6980102	DKD (German Calibration Service) calibration certificate for PGN Standard	PGN



PHT (80 mm) PHT 6-350;PHT 6-350/ 5µm PHT 3-350 PHT 11-100 PHTR-100 PHTF 0.5-100



PT 150 ST-D ST-F ST-G 814 Sh 814 SR



109 PS

MarSurf GD 140 / GD 280

Roughness Measuring Station

DESCRIPTION

MarSurf GD: The new reference measuring station for roughness and waviness

The new measuring stations of the MarSurf GD series from Mahr set new standards. In addition to surface roughness evaluations, profile and waviness evaluations can also be carried out. With the new MarSurf GD series, manufacturing companies are reaching a new dimension in order to reliably secure and improve the production quality of workpieces in the measuring room or close to production.

The new measuring station concept combines speed, reliability and flexibility. The aim is to increase the profitability of the system for your company.

The measuring stations are operated with the user-friendly MarWin software (MarWin EasyRoughness or MarWin ProfessionalRoughness)

Innovative technologies:

- **Fast axes**
- Positioning speeds up to 200 mm/s in X
- 40 x faster than its predecessor MarSurf GD 120
- The Z-axis is fully CNC-capable by default
- The Z-axis is approx. twice as fast as previous Mahr Z-axes
- Up to 5 times faster than standard Z-axes on the market
- Contacting and zeroing via the Z-axis

New flexible probe system mount with BFW probe system

- Simple probe arm change and probe arm protection by means of magnetic probe arm holder
- Probe arm holder allows the change from standard to transverse measurement without tools or adapters
- Extensions for the touch probe are possible

Innovative workpiece clamping system

- Mounting plate 390 x 430 mm with bore dimension 50 mm
- Integrated 60 mm TY adjustment
- The combination of mounting plate and integrated TY adjustment makes an additional XY table superfluous
- Low workpiece setup supports a favorable short measurement loop, which has a positive effect on the measurement results



TECHNICAL DATA

MarSurf GD 140 / 280	
Measuring range	500 μm ($\pm 250 \mu\text{m}$) for probe arm length 45 mm 1500 μm ($\pm 750 \mu\text{m}$) for probe arm length 135 mm
Resolution	Measuring range 1: 7.6 nm Measuring range 2: 0.76 nm
Guide deviation	0.07 μm / 20 mm 0.2 μm / 60 mm 0.4 μm / 140 mm
Measuring speed	Up to 10 mm/s
Positioning speed	0.02 – 200 mm/s (in X)
Probe arm length	45 mm (x 1) 67.5 mm (x 1.5) 90 mm (x 2) 112.5 mm (x 2.5) 135 mm (x 3)

APPLICATIONS

Mechanical Engineering

- Bearings, threads, threaded bars, ball screws, shafts, racks

Production metrology

- Contour measurement in a semi-automatic process

Automotive industry

- Steering, brake system, gearbox, crankshaft, camshaft, cylinder head

Medical technology

- Contour of hip and knee endoprosthesis, contour of medical screws, contour of dental implants

ACCESSORIES

Optional

- Manual control panel with joystick and display
- Motor-driven TY axis
- Parallel vice
- Prism block
- Equipment table
- Vibration damping system

General software options

- Option - RoughnessPLUS
- Option - MeasurementPLUS
- Option - Dominant Waviness (WDC) for MarWin
- Option - ISO 13565-3 surface parameters
- Option - QS-STAT / QS-STAT Plus
- Option - Profile processing
- Option - User-defined parameters
- Option - Topography

MarSurf M 310 / M 310 with printer

Mobile roughness measuring instrument

FEATURES

Mobile roughness measurement – guaranteed success!

- Compact roughness measuring instrument for mobile use
- Simple and intuitive to use: as easy as using a smartphone
- Large, illuminated 4.3" TFT touch display
- Adjustable display
- Micro USB interface for remote control using ASCII commands, e.g. using software for statistical process control
- USB-A interface - for connection of e.g. a USB Bluetooth adapter or the USB/Bluetooth printer
- Specification of the intersection line C in μm or in % of Rz for the parameters Rmr and tp
- Data backup as TXT, X3P, CSV or PDF file
- Transfer of measuring records and data optionally via Bluetooth or cable
- IATF 16949 compliant – safe traceability with MarConnect
- Print directly on mobile printer (as option or directly in set with printer)
- Create complete PDF measuring records directly in the measuring instrument
- Customer-specific comments for the PDF measuring record can be entered directly into MarSurf M 310
- Display and printout of the MRC and ADC diagram
- Storage of measuring programs (quick & easy)
- Mains-independent operation: Over 1200 measurements without having to recharge the instrument
- An all-in-one solution. Small and lightweight (approx. 500 g)
- Instrument flexibility: removable drive unit
- 31 thread parameters: offer the same range of functions as a laboratory instrument.
- Roughness standard stored within housing aids in reducing errors
- Quick access to your frequently used functions via the Favorites list in the display
- Automatic cutoff selection, so even non-specialists can be sure of getting the correct measuring results
- Additional versions with transverse drive unit available as MarSurf M 310 C2 or MarSurf M 310 set without probe

Package contents:

- MarSurf M 310 basic device
- Drive unit (detachable)
- 1 standard probe PHT6–350, conforming to standards
- Built-in rechargeable battery



Application:

- For shafts and housing components
- For large machines
- For large workpieces
- For milled and turned parts
- For ground and honed workpieces
- On the production line or directly on the machine, ideal for rapid testing of the surface roughness of a workpiece in or on the machine.



TECHNICAL DATA

Order no.	6910260	6910267
Type	M 310	M 310 with printer
Parameters	A1, A2, Ar, CF, CL, CR, Mr1, Mr2, R, R3z, RPC, RS, RSK, RSm, Ra, Rk, Rmax, Rmr (tp (JIS, ASME) is equivalent to Rmr), Rp, RpA (ASME), Rpk, Rpm, Rpm (ASME), Rq, Rt, Rvk, Rx, Rz, Rz (JIS), Rz (Ry (JIS) is equivalent to Rz), Vo	
Stylus	2 μm	
Calibration function	Dynamic; Ra, Rz, Rsm	
Storage capacity	Min. 3900 profiles, min. 500,000 results, min. 1500 PDF records, expandable to 32 GB with Micro SD card	
Languages	German, English, French, Italian, Spanish, Portuguese, Dutch, Swedish, Russian, Polish, Czech, Japanese, Chinese, Korean, Hungarian, Turkish, Romanian	
Other	Lock/password protected, date/time	
Data interface:	USB A, USB B, MarConnect (bidirectional), Micro SD slot for SD / SDHC cards up to 32 GB	
System of protection	IP 40	
Rechargeable batteries	Lithium-ion battery, min. 1200 measurements	
Wide range power supply	100 to 264 V	
H x W x D	mm	160 mm x 77 mm x 50 mm
Weight	kg	3,6 4
Measuring principle	Stylus method	
Probe	Inductive skidded probe	
Measuring range	mm	0,350
Profile resolution	8 nm	
Filter according to ISO/JIS	Gaussian filter as per ISO 16610–21 (formerly ISO 11562), special filter as per DIN EN ISO 13565–1, Lambda s filter as per DIN EN ISO 3274 (can be switched off)	
Cutoff lc according to ISO/JIS	0,25 mm, 0,8 mm, 2,5 mm, automatic filter detection, variable	
Number n of sampling length according to ISO/JIS	Selectable: 1 to 16	
Short stroke under ISO/JIS	Selectable	
Traversing length Lt according ISO/JIS	1.5 mm, 4.8 mm, 15 mm, N x Lc, variable, automatic	
Traversing length according ISO 12085 (MOTIF)	1 mm, 2 mm, 4 mm, 8 mm, 12 mm, 16 mm	
Evaluation length ln according to ISO/JIS	1,25 mm, 4,0 mm, 12,5 mm	
Measuring force	N	0.00075

- Roughness standard integrated into housing (detachable), including Mahr calibration certificate
- Probe protection / V-block holder
- Charger / 3 adapters
- Height adjustment (integrated)
- Carry case with shoulder strap
- USB cable
- Hand-held support with height adjustment (pair)
- Extension cable for drive unit (length 1.2 m)
- Operating instructions

MarSurf M 310 / M 310 with printer

Mobile roughness measuring instrument

ACCESSORIES

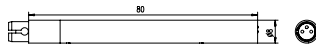
Order no.	Description	Type
6850540	PHT pick-up extension 80 mm	PHT (80 mm)
6111520	Standard probe 2 µm	PHT 6–350
6111526	Standard probe 5 µm	PHT 6–350/ 5µm
6111527	Standard probe 10 µm	PHT 6–350/ 10µm
6111521	Probe for bores with a dia. larger than 3 mm	PHT 3–350
6111524	Probe for grooves	PHT 11–100
6111525	Probe for concave and convex surfaces	PHTR–100
6111522	Probe for gear tooth flanks	PHTF 0.5–100
6111523	Probe for metal sheets	PT 150
6850715	Pick-up protection with header V-block, steel	PHT-ts4
7028530	Pick-up protection header V-block, plastic	PHT-ts3
6910209	Mount PS 10/M310 on measuring stand ST	ST-a3
6910435	RD 18 C / PS 10 upright holder for cylindrical drive unit, Ø 8 mm	ST-a2
6710803	Measuring stand 300 mm with cast iron base	ST-D
6710806	Measuring stand 300 mm with granite plate	ST-F
6710807	Measuring stand 300 mm with granite plate and T-slot	ST-G
2247086	Adjustable mounting bracket to connect to 814 SR	814 Sh
4426100	Height measuring and scribing instrument, 0 –350 mm	814 SR
4426101	Height measuring and scribing instrument, 0 –600 mm	814 SR
6710401	V-block	PP
6710604	Parallel vice	PPS
6710529	XY Table	CT 120
4246819	Set of miniature precision vises Set contents: Mini-vises, jaw widths 15 / 25 / 35 mm, with tripod and V-blocks and miniature dividing attachments	109 PS
6820420	Roughness standard with Mahr calibration certificate, profile depth 10 µm	PRN 10
6820601	Geometric standard with sinusoidal groove profile, profile depth 3 µm	PGN 3
6820602	Geometric standard with sinusoidal groove profile, profile depth 1,5 µm	PGN 1
6820605	Geometric standard with sinusoidal groove profile, profile depth 10 µm	PGN 10
9027715	Mahr calibration certificate for PGN Standard	PGN
6980102	DKD (German Calibration Service) calibration certificate for PGN Standard	PGN
4413000	Measuring tripod with triangular pedestal 300 mm	815 GN
4413001	Measuring tripod with triangular pedestal 500 mm	815 GN
4413005	Measuring tripod with triangular pedestal 750 mm	815 GN
4416000	Measuring tripod with magnetic base	815 MA
6299054	Evaluation software	SW XR 20
6910240	Protective films for LCD, real glass (3 pieces)	SF LCD
6850500	Magnetic fixture PS 10 / M 310	MH
6820521	PS 10 Gage / Geometric Standard incl. Mahr Calibration Certificate	PS 10 KN Mahr
4102603	Data cable USB bi-directional (2 m)	DK-U1

MarSurf M 310 / M 310 with printer

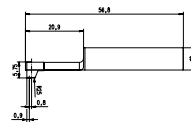
Mobile roughness measuring instrument



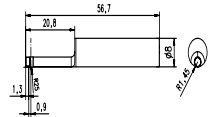
Printer



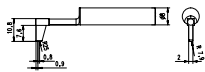
PHT (80 mm)



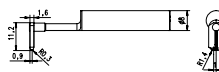
PHT 6-350;PHT
6-350/ 5µm;PHT
6-350/ 10µm



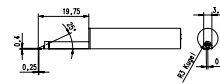
PHT 3-350



PHT 11-100



PHTR-100



PHTF 0.5-100



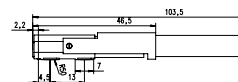
814 Sh



814 SR



109 PS



PT 150



ST-D



ST-F



ST-G

MarSurf M 310 PC

Mobile roughness measuring instrument

DESCRIPTION

Clever combination: The MarSurf M 310 & MarWin

The new MarSurf M 310 can be used as a drive unit together with MarWin Easy Roughness software. It can be easily connected to the computer by cable or Bluetooth wireless technology. This use combines the handiness of the Mahr M 310 with the wider range of functions of the software. It allows you to evaluate even more parameters and optimally analyze your measuring results without compromising on flexibility and ease of use. The PC-based instrument delivers all common thread parameters and profiles in accordance with international standards, both in the measuring room and in production. MarSurf M 310 PC from Mahr stands for innovative roughness evaluation software.



FEATURES

- Over 80 parameters for R-, P- and W-profiles according to current ISO/JIS or MOTIF standards (ISO 12085)
- Bandpass filter Ls in accordance with current standard; Ls can also be switched off or varied as required
- Comprehensive measuring records
- Quick & Easy measuring programs can be created fast using teach-in methods
- Automatic function for choosing cut-off and traversing length in accordance with standards
- Support for various calibration methods (static and dynamic) by specifying the Ra or Rz parameter
- Adjustable maintenance and calibration intervals
- Multiple measuring station configurations for custom applications
- Range of options provide system flexibility
- Various user levels protect the device against misuse and prevent unauthorized people from using it

Package contents:

- Software MarWin Easy Roughness mobile incl. Mahr License Key with standard license MarSurf M 310 Set, 2 µm probe tip

TECHNICAL DATA

Order no		6910295
Type		M 310 PC
Weight	kg	1,9
Measuring principle		Stylus method
Probe		Inductive skidded probe
Filter according to ISO/JIS		Gaussian filter as per ISO 16610-21 (formerly ISO 11562), special filter as per DIN EN ISO 13565-1, Ls filter as per DIN EN ISO 3274 (can be switched off)
Cutoff lc according to ISO/JIS		0,25 mm, 0,8 mm, 2,5 mm, automatic filter detection, variable
Number n of sampling length according to ISO/JIS		selectable: 1 to 16
Short stroke under ISO/JIS		selectable
Traversing length according to ISO 12085 (MOTIF)		1 mm, 2 mm, 4 mm, 8 mm, 12 mm, 16 mm

APPLICATION:

- **Mechanical Engineering**
To qualify and quantify roughness, geometry and wear volume
- **Electronics and semiconductors**
Component inspection down to the sub-micrometer range for defect-free products
- **Medical Technology**
Quality assurance of medical surfaces in production and laboratory
- **Material Science**
Optimization of functional properties of new surfaces and products
- **Microsystems Technology**
Measure complex surface geometries of smallest components with nanometer precision