



**New!** Perthometer S2.  
Simply the best ...



EXACTLY

# Precision has a good reason. It's Mahr . . .

Technology has its apparent limits. We're proud to have moved these limits once again! The new Perthometer S2 is unique in its instrument class - you can depend on it.

Not just because it is possible to assess tracing lengths of up to 120 mm (4.716 in) with our Perthometer S2, but also because you can use the advantages of the automatic, patented pick-up zeroing of our drive units. Above all, the new, simple operating philosophy and the brilliant, high-resolution display will convince you.

From now on you can fulfill almost any surface measuring task - regardless of whether difficult measuring tasks await you in the measuring laboratory, or whether you have to take random samples directly at the processing machine. With the new Perthometer S2 you're excellently equipped.

The Perthometer S2 is ready for any situation: Constantly changing tasks are not a problem. Flexibility is its motto. The measuring conditions are quickly set and saved as a measuring program: Just press 2 keys + START = measurement finished, documented and saved!

- Unit operation is self-explanatory according to the „Automatic teller principle“. Simply follow the software menu.
- The display has a brilliant, high resolution. Background lighting can be switched on as needed.
- The main views: Result/profile display, measuring station view with pick-up signal display and the main menu have their own pictograph keys for fast, safe operation.
- The status bar in the display provides permanent information on the current unit state and on special events, e.g. on a required calibration of the servicing of your measuring station.
- The integrated, high-resolution thermal printer enables an immediate logging of results, profile, curves and lists, as well as workpiece/company texts and date/time.
- The keypad is designed with the system of protection IP 54. Key presses, tolerance violations and errors/warnings can be emphasized by acoustic signals.
- The compact housing also includes the required accessories. A spare memory card, Allen wrench for tracing arm replacement and a brief operating manual are always available on the unit.
- The interfaces RS 232 and PLC, the power supply connection and the connection for the drive unit are located on the rear. The PCMCIA memory card is easy to reach from the side.
- Various threaded holes are provided on the housing. This enables the integration of the Perthometer S2 into processing machines or the mounting of customer-specific holding devices.





*Perthometer S2 with PGK 120 , a compact measuring station and a small X/Y-table - ideal for series measurements on the shop floor*

With its extensive software functions, the Perthometer S2 supports any functions of all drive units from Mahr. Especially that of the PGK 120.

Handling is matched to actual workshop conditions. Functions like the patented, motorized lowering and zeroing of the pick-up considerably simplify and automate measurements.

The compact measuring station provides a complete measuring set-up with a small measuring loop for assessing roughness and waviness with utmost precision. Ideal for series measurements on the shop floor.

We offer pick-ups with minimal measuring forces and maximum linearity and flexibility in design. The drive units are characterized by minimum residual Rz values, i.e. they are extremely smooth running and their guides feature barely detectable straightness deviations.

Each workpiece material has special properties. The technology of our drive units and pick-ups respects your demand for utmost precision and reproducibility of the measuring results – even under worst case conditions.



*Perthometer S2 with PGK 120 and PST-G measuring stand*



*Foil measurement with Perthometer S2 and PZK*

# Perthometer S2. Universal – Compact – Mobile

## Your advantages

- Mobile measurement of roughness, waviness and profile depth with maximum precision according to the latest standards
- Mobile skidless tracing with motorized pick-up zeroing (patented) – as simple as skidded tracing
- Up to 100 measurements in battery operating mode
- Large, illuminated graphics display for profile and plain text indication
- Extremely simple operation according to the „automatic teller principle“
- Automatic function for setting standardized filters and tracing lengths
- Dynamic calibration routine for checking the measuring station
- Free choice of tracing lengths and filters for measurements over up to 120 mm
- ARC function for arc elimination
- Light-weight housing, < 3 kg (6.6 lbs) – for easy transport in case of on-site measurements
- Monitoring of calibration and maintenance intervals as well as of tolerance limits
- Memory card for measuring programs, profiles, results and software updates
- RS2 232 and PLC interfaces with control outputs
- Integrated, high-resolution thermal printer for outputting results with texts, date and time
- Threaded holes on the housing for mounting customer-specific brackets or installation in a processing machine
- The practice-proven PZK, PGK and PRK (via PAV 62) drive units can be connected
- Statistics can be run for a maximum of 200 measurements; 10 parameters per measuring program
- Measuring programs are created on the Perthometer S2 or on a PC. The required software is included in the delivery scope
- Can be used all around the world. 13 languages selectable, including three Asian languages (in preparation)
- Option: Carrying and storage case for your mobile Perthometer S2 measuring station and its accessories

High class metrology goods have their price. Our new Perthometer S2 has got an extremely smashing one!

Get your personal offer right away!





Perthometer S2 with PGK 120 and swivel device on measuring stand

## Perthometer S2. Technical Data

Measurement	by means of a stylus instrument
Measuring ranges [ $\mu\text{m/in}$ ]	$\pm 25 \pm 250 \pm 2500$ ( $\pm .000985, \pm .000985, \pm .0985$ ) 16-bit (i.e. 7.6 nm at $\mu$ 250 $\mu\text{m}$ ( $\pm .006985$ in))
ADU-resolution	DIN EN ISO/JIS/ASME 46.B
Standards	approx. 60,000 steps/vertical range 11,200 measuring points/standard tracing length
Profile resolution	R; D; G; P; W (profile inversion)
Profile types	0.1... 5,000 (.000039 ... .197) or auto
Vertical scale [ $\mu\text{m/in}$ ]	1... 5,000 $\mu\text{m}$ (.00039... .197) or auto
Horizontal scale [ $\mu\text{m}$ ]	0.56/1.75/5.60/17.50/56.00 (.022/.0689/.22/.689/2.205)
Tracing lengths Lt [mm/in]	1 / 2 / 4 / 8 / 16
CNOMO/(Motif)	0.56 ... 120.00 adjustable
Special tracing lengths [mm/in]	1 ... 5 adjustable
No. of sampling lengths	phase-correct filter (Gauss) as per DIN EN ISO 1156
Filter (as per ISO/JIS)	special filters as per DIN EN ISO 13565-1/2, 1997; Ic/Is bandpass as per ISO 3274, ARC function .08/.25/.8/2.5/8 (.00315/.00984/.0315/.0984/.315)
Cutoff Ic [mm/in]	yes
Shortened/variab. cutoff Ic	Ra, Rq; Rz, Rt, Rp, Rv, RSm R $\Delta$ q, Parameters Rsk, Rku, R $\delta$ c, Rmr, Pmr, Pt, Wt, (41, with tolerance limits) P $\delta$ c (DIN EN ISO 4287) Rmax (DIN 4288), Rpk, Rk, Rvk, Mr1, Mr2, P $\delta$ c, A1, A2 (DIN EN ISO 13565), R $\rho$ c (prEN 10049) R, Ar, W, Aw, Rx, Wx, Wte, Nr, Ncrx, Nw, CPM (ISO 12085) R3z (DB N 31007), Rzj, S (JIS B 601)
Parameter lists	Rmr; Pmr; M%; Rk; Rz; Rp; Nf; CR/ CF/CL (profile type selectable, reference line and lines of intersection adjustable)
Characteristic curves	Profile graph; Mr (material ratio/ Abbott curve); amplitude density; (profile type selectable)
Calibration function	automatic, dynamic
Tolerance monitoring	yes, max./min.
Automatic funktion	yes, selection of standardized filter and tracing length
Statistics	for 10 parameters per measuring program X, S, R; Max, Min, max. 200 meas. No. of tolerance violations; No. of invalid measurements inductive, carrier frequency 20 kHz
Pick-up	
Pick-up types/ measuring range (default 2 $\mu\text{m}$ (.00039 in)/90°)	R-series: $\pm 50/250 \mu\text{m}$ (skid) (.00197/.00985) MFW: $\pm 250 \mu\text{m}$ (skidless) FRW: $\pm 750 \mu\text{m}$ (.0296) (10 (.000394)) (skidless) Focodyn: $\pm 250 \mu\text{m}$ (optical) LS1/LS10: $\pm 250 \mu\text{m}$ (optical)
Tracing force [approx. mN]	R-Reihe: 0.7 MFW: 0.7/FRW: 6 Focodyn/ LS1/LS10: laser

Drive units	PZK, PGK 20/120; PRK via PAV 62
Transverse tracing	Adapter on drive unit PGK
Tracing speed [mm/s (in/s)]	0.1 and 0.5 (.0394 and .0197)
Display	graphics LCD module with background lighting, b/w, 480 x 320 pixels, profile presentation
Keyboard	membrane keypad
Printer	thermal graphics printer, 384 dots/ horizontal line; 8 dots/mm (200 dots/in)
Printing	printing speed 25 mm/s (1 in/s) automatic/manual, log with date and/or time
Temperature range [°C (°F)]	for storage -15... + 55 + 5... + 131 for operation/work + 5... + 40 (+41...+104)
Rel. humidity	30 % to 85 % (non-condensing)
Weight	< 3 kg (6.6 lbs)
Dimensions (HxWxD) [mm (in)]	approx. 150x320x250 (6x12.5x9.85)
Type of protection	device: IP40; keypad: IP54
Power supply	plug-in power supply unit 9 V; NiMH battery
Charging state display	yes, in display
Power management	yes
Connections	drive unit, RS-232 C and PLC interface, plug-in power supply unit, slot for PCMCIA card, fuse
Languages	German, English, French, others in preparation (13)
Software	S2Prog Windows program; Perthometer Concept (optional)
Lock/code word protection	yes
Date/time	yes
Units of measurement	mm/inch, selectable
Memory	internal for 10 measuring programs; PCMCIA memory card for profiles, results, measuring programs

<b>Perthometer S2</b>	<b>Order No. 6250803</b>
<b>Drive unit PZK-Set</b>	<b>Order No. 6910301</b>
<b>Drive unit PGK 20</b>	<b>Order No. 6721002</b>
<b>Drive unit PGK 120</b>	<b>Order No. 6721010</b>
<b>Skidless pick-up MFW</b>	<b>Order No. 6111404</b>
<b>Compact measuring station</b>	<b>Order No. 6851906</b>
<b>Small X/Y-table</b>	<b>Order No. 6851909</b>
<b>Carrying case (not shown)</b>	<b>Order No. 6851214</b>

Additional accessories on request.

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