



HEIDENHAIN



Preliminary Product
Information

TS 249

Workpiece Touch Probe for
Grinding Machines and
Lathes

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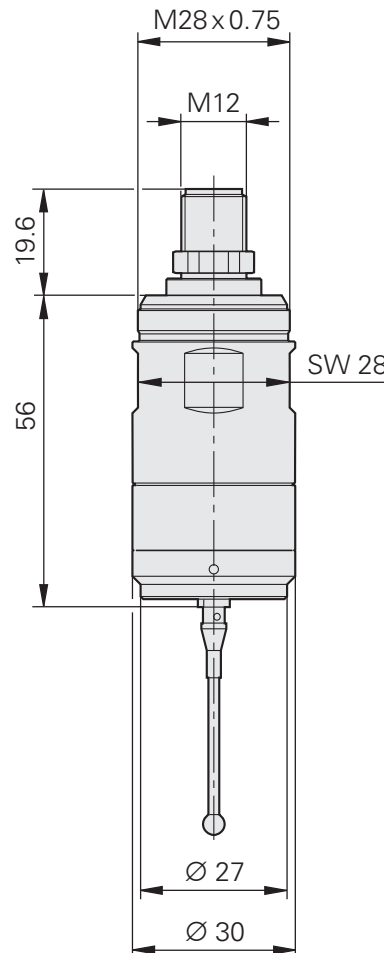
TS 249

Workpiece Touch Probe for Grinding Machines and Lathes

The TS 249 triggering touch probe was designed specifically for workpiece measurement on grinding machines and lathes. It makes in-process production control possible not only for cylindrical grinding and tool grinding, but also on lathes with single-part and small-batch production. With the TS 249 you measure and inspect the workpiece tolerance before or after machining directly on the machine, which both increases the reliability of the machining process and prevents expensive scrap.

Due to its compact dimensions—the outside diameter is only 30 mm—the TS 249 is even suited for limited installation space. Its high degree of protection (IP 67) and a two-fold sealing system enable its use directly on the machine. The service-friendly design permits quick and easy replacement of the external seal.

The TS 249 features a standard stylus (ball-tip diameter: 4 mm), but any commercially available styli with M3 threads can be inserted. An adapter available as an accessory permits the use of styli with M4 threads. By using the coupling joint, the TS 249 can be rotated into position in order to align asymmetric or cuboid probe contacts exactly.



Dimensions in mm



Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ±0.2 mm

Workpiece touch probe	TS 249
Probe accuracy	$\leq \pm 5 \mu\text{m}$ when using a standard stylus
Probe repeatability Repeated probing from one direction	$2 \sigma \leq 1 \mu\text{m}$ at a probing velocity of 1 m/min <i>Typical values:</i> $2 \sigma \leq 1 \mu\text{m}$ at a probing velocity of 3 m/min $2 \sigma \leq 4 \mu\text{m}$ at a probing velocity of 5 m/min
Deflection of probe contact	$\leq 5 \text{ mm}$ in all directions (with stylus length $L = 40 \text{ mm}$)
Deflection force	Axial: Approx. 7 N Radial: Approx. 0.7 to 1.3 N
Probe velocity	$\leq 5 \text{ m/min}$
Protection EN 60529	IP 67
Operating temperature Storage temperature	10 °C to 40 °C -20 °C to 70 °C
Weight	Approx. 0.15 kg
Fastening*	<ul style="list-style-type: none"> • Via M28x0.75 external thread • Via coupling joint with M22x1 external thread
Power supply Without load	15 to 30 V / $\leq 100 \text{ mA}$
Signal transmission	Cable
Output signals	Switch signal S/\bar{S} and additional "Trigger" floating switching output
Signal level	HTL $U_H \geq 20 \text{ V}$ at $-I_H \leq 20 \text{ mA}$ $U_L \leq 2.8 \text{ V}$ at $I_L \leq 20 \text{ mA}$ at 24 V rated voltage
Electrical connection	M12 flange socket, 8-pin
Cable length	$\leq 25 \text{ m}$

* Please select when ordering

Mounting

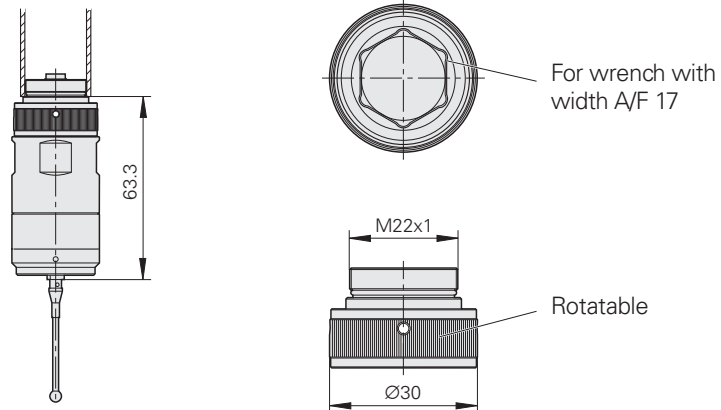
The TS 249 is easily mounted via the M28x0.75 external thread, for example directly to a machine element, a mounting base or a tilting device.

If the point of attachment cannot be rotated, then mounting via a coupling joint is recommended.

Accessory:

Coupling joint

M22x1 external thread
ID 643 089-01



Electrical Connection

The TS 249 touch probe features floating switching outputs ("Triggers") in addition to the commonly used Ready B and Switch signal S outputs. This makes it possible to connect it directly to any control system, without the need for additional electronics.

Accessory:

Connecting cable with one M12 connector (female, 8-pin)
ID 634 265-xx

Pin layout

8-pin connector M12								
Power supply			Signals					
	2	7	3	4	1	5	6	8
	U_P 15 V to 30 V	U_N 0 V	S	\bar{S}	Ready signal B	Trigger +	Trigger -	Trigger 0 V
	Blue	Violet	Gray	Pink	White	White/Green	Yellow	Brown/Green

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For more information

- Brochure: *Touch Probes*