Leica Industrial Theodolites & Total Stations
Highest Industrial Precision

New Standards – More Applications

The Leica Industrial Theodolites and Total Stations of the TPS5000 Series set new standards in portable, large-scale coordinate measurement. Based on proven technology, unrivalled precision and optics, the Leica Industrial Theodolites have, for example, become the standard in Aerospace alignment applications. By incorporating a precision distance meter and automation features, the Industrial Total Stations have spread into all major industries as a true large-scale transportable solution for tooling, inspection and assembly.

Highest Reliability on the Market

- Proven track record with more than 1,500 TPS5000 instruments on the market
- A seamless integration with standard software or with automated processes via serial communication
- Tracker on a budget – "Point-and-Shoot" as well as tracking in "Step-and-Go" built-in Automatic Target Recognition ATR within the TDA5005

- when it has to be **right**

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Specifications

TDM5005, TDA5005 and TM5100A	
Angular measurement	
Accuracy, standard dev. per ISO17123-3, 1σ [1]	0.5" (0.15 mgon)
Units of measurement	360° sexagesimal, 400 gon 360° decimal, 6,400 mil
Display (smallest selectable unit)	0.01 mgon; 0.1", 0.00001°, 0.00001 mil
Automatic reference to the horizon	(2-axis liquid compensator)
Working range, longitudinal/lateral	3' (0.055 gon)
Setting accuracy	0.3" (0.1 mgon)
Displays	
LCD (liquid crystal display)	8 rows of 35 characters each, 6 status fields
Data storage and interfaces	PCMCIA memory card RS232 programmable interface
Motor and fine drives	
Fine drives	Coarse/fine, motorized, infinite, slip coupling
Motor	
Rotation speed	45°/s (50 gon/s)
Positioning accuracy	0.8" (0.2 mgon)
Power supply	
Plug-in battery pack	12 V/1.8Ah, rechargeable
External power supply	Any 12V battery (e.g. GEB70) or mains power supply
Temperature range	
Operational	-20°C to +50°C (-4F to +122F)
Storage	-40°C to +70°C (-40F to +158F)
Protection against water, dust, sand (IEC60529)	IP53

TDM5005, TDA5005	
Point accuracy (total RMS 1σ) [2] at 20m (65ft) measuring volume	0.3mm (0.012")
Distance measurement Accuracy, standard deviation (absolute) per ISO17123-4, 1S	(integrated in the TDM5005 and TDA5005) 1mm + 2 ppm (0.04" + 2 ppm) over the entire measurement range
Typical distance accuracy measuring volume [3]	at 100m (330ft)
Reflective tape	± 0.5mm (0.02")
Corner cube reflector	± 0.2mm (0.008")
Units of measurement	m, mm, feet, inch
Display (smallest selectable unit)	0 – 5 decimal places, dependent on the selected unit
Reflectors (selectable)	Prisms, Corner Cube Reflectors CCR (1.5" diameter), Leica reflective tapes, 360° prisms
Measurement range	
w/ Corner cube reflector	2 – 600m (6 – 1,900ft)
w/ reflective tapes (target-size dependant)	2 – 180m (6 – 600ft)
ATR – Automatic Target Recognition	Integrated in the TDA5005
Tracking speed lateral (linear)	3m/s (10ft/s) at a distance of 10m (33ft)
Tracking speed longitudinal	4m/s (13ft/s)
Measurement range (reflector-dependant)	2.5 – 1,000m (8 – 3,300ft)
Weight (w/o battery, tribrach)	7.5kg (17.5lbs)
Safety Class	
ATR	Laser class 1 in accordance with IEC 60825-1 (2001-08) resp. EN 60825-1:1994 + A11:1996 + A2:2001 FDA 21 CFR Ch. I §1040
Distance meter (Infrared)	LED class 1 compliant w/ IEC 60825-1 resp. EN 60825-1

More features and benefits than any other Theodolite and Total Station on the market

The most precise instrument worldwide in it's category with a proven track record of far over 1,500 TPS5000 installations in all industries.

- Highest angle and distance accuracy – Completely guided and highly automated measurement of inspection and assembly processes.
- Motorization & automation – Minimal production and assembly process down-times, minimal setup time within minutes, best adaptation to your part inspection, building and tooling applications.
- A truly large-scale transportable measurement solution for large assembly and inspection processes – Extended specifications for wide-ranging environmental conditions.

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Specifications

TM5100A	
Telescope type	Pan-focal alignment telescope
Autocollimation device	built-in
Unobstructed lens diameter	52mm (2")
Field of view diameter	2.08m (6.8ft) at 100m 0.26m (10") at 10m, non-linear
Magnification with the FOK53 standard eyepiece [4]	13x at 0.6m 32x at 10m, non linear
Shortest target range	0.6m (2ft)
Range of inclination, telescope positions I and II	-55° to +47° (-60 gon +52 gon)
Weight (w/o battery, tribrach)	7.3kg (17.0lbs)

1) Producer inspection certificate available as an option
2) In comparison with the Leica Laser Tracker
3) Producer inspection certificate (compliant with ISO 17123) included with the instrument
4) Eyepieces with different magnification factors and diagonal eyepieces are also available

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