

Leica TPS700 Automated Series  
**Increased surveying  
performance and comfort**

**PinPoint  
Technology**



- when it has to be **right**

**Leica**  
Geosystems

# Leica TPS700 Automated Series with automation for more comfort

**Do you have to solve various surveying tasks every day? Would you like easier handling and more flexibility? Then the total stations from the Leica TPS700 Automated Series are right for you.**

The TPS700 total stations offer everything you can expect from a surveying instrument: precision, reliability, user friendliness and a comfortable interface to your office software.

They offer brilliant features such as automatic target recognition (ATR), reflectorless distance measurement and integrated survey programs. Classic surveying tasks are solved quicker, easier and more comfortably.

You will find out that the total stations provide for new qualities in the field of surveying and for a decisive edge on your competitors.



# Automatic target recognition



**Gone are the days when you had to spend a lot of time aiming at the target to be measured. Today, TPS700ultra and TPS700power total stations perform this task with automatic target recognition (ATR).**

New technologies open new perspectives: aim the telescope roughly at the target point, trigger the measurement with a key press ...that's all. Precise targeting and data storage are performed automatically by the instrument.

Automatic target recognition is not only quicker but provides for consistent precision in all situations.

ATR by Leica does not require expensive special prisms or power supply at the reflector pole. Just continue to use your prisms and measure with improved quality and speed.

## You gain from automatic target recognition:

### **Cadastral survey:**

With automatic target recognition (ATR) you are much more productive. If you have to measure hundreds of points daily, ATR will help you in doing more, because ATR reduces the time for each measurement to a few seconds.

ATR offers more advantages for your every day surveying: have you ever had to interrupt your work at dusk and restart surveying the few remaining points the next day?

ATR lets you continue working. ATR finds your target at dusk and even at night.



### **Monitoring and deformation measurements:**

Control, monitoring and deformation measurements are ideal applications for automatic target recognition. For repeated measurements to the same target ATR can be programmed to a large extent: roughly aim the telescope at the target, press the trigger – that's all...

# Leica TPS700 Automated Series with PinPoint technology to extend your range



Gone are the days when hard to access targets could only be determined with a lot of effort. The PinPoint technology enables a reflectorless distance measurement to any surface at an exceptional range of over 500m ("TPS700ultra").

The PinPoint technology is offered in two versions: R100 in the "TPS700power" with a range of up to 200 m and the R300 in the "TPS700ultra" with a range of over 500 m.

The tightly bundled PinPoint laser of the R100 and R300 marks a target with a high-precision red dot. Press the button to start a precise and quick measurement.

The coordinates of the target can be immediately calculated and saved without any additional measuring programs.

**PinPoint**

## You gain from reflectorless distance measurement:

### Cadastral survey:

With a key press select your preferred method: fixed and easy to access targets are measured as usual with a target prism, hard to access targets with a reflectorless distance measurement.

### Construction survey:

How to place prisms on roofs, bridges, high walls, tunnel ceilings or in trenches for foundations? With the PinPoint technology you can forget the question. Just place the red laser dot or the crosshairs on your target and safely measure and store the values and coordinates.

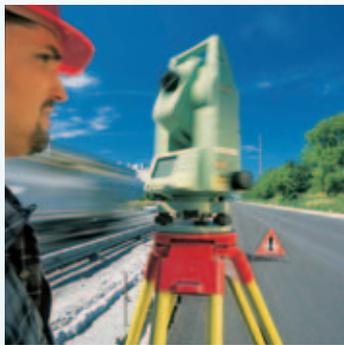
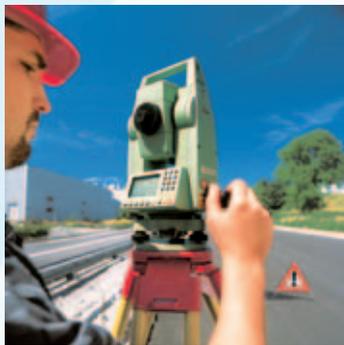
### Facade and interior measurement:

What has only been possible with a lot of effort in measuring and recalculating in the office, is now quick and direct thanks to reflectorless measurement. Control points for photogrammetric evaluations, arbitrary points on a facade and interior points can be directly aimed at, measured and registered.



# Automated measuring processes

Gone are the times when targets had to be aimed at manually. The TPS700ultra and TPS700power total stations perform this and other standard processes with its intelligent software and motorized drives.



## Automation

Both the "ultra" and the "power" models compute positional changes and positions the instrument to the design values at the press of a key. Save time and leave these elaborate and tedious standard processes up to the automatic instrument.

## Program-support

In your daily work the TPS700 total stations support you with a whole range of integrated easy to use programs.

- Orientation
- Height transmission
- Free stationing
- Surveying
- Staking out
- Tie distance (MLM)
- Reference line
- Height of inaccessible points
- Area calculation
- Eccentric target point calculation
- Sets of Angles (optional)



You gain from automated surveying processes:

## Cadastral and construction survey:

Manual aiming at the target for staking out is no longer required. Right after entering the point numbers the automated instrument turns towards the point to be staked out. The reflector pole bearer can be directed to the correct location.

## Setting up the instrument, standard surveying processes:

For all important surveying processes, the TPS700 total stations lead you step-by-step to the solution. For example; in determining the station coordinates and orientating the instrument. Here, the programs "Free stationing" and "Orientation" perform all the important calculations and supplies the desired result at the press of a key.

Integrated applications programs such as "Reference line" automate work processes and make complex calculations superfluous.



# Leica TPS700 Automated Series with many extras - included

## Light and handy

The TPS700 total stations weight, including batteries and tribrach, only 5.6kg. You will appreciate the lack of weight after a long day in the field.

## No awkward "clamping tightening and loosening"

With the sliding clutch and endless loop drive the annoying act of backward rotation of the micro drives is no longer required. Endless. And very efficient.

## Always up-to-date

The absolute-encoder displays the current angle immediately after the instrument is switched on.

## The difference lies in the little button

Thanks to the trigger mounted on the side of the instrument you do not lose sight of the target while measuring. This is particularly important when a lot of points are to be measured.

**PinPoint**



## Support: Application programs and software

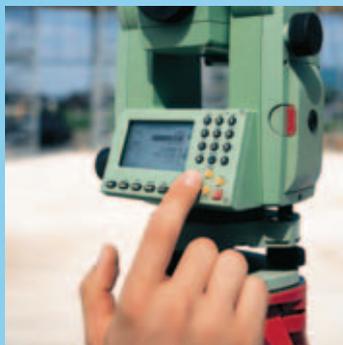
On board software and applications programs such as, stake out, tie distance and area calculation support you with the most important surveying tasks and lead you step-by-step to the solution.

## Standard with laser plummet and biaxial compensator

The laser plummet built into the standing axis makes centering and leveling easy. Leveling inaccuracies are automatically corrected by the built in biaxial compensator.

## Correct on first try - TPS700 Data management

All data (point numbers, measured values, coordinates, codes, parameters and results from the application programs) are stored to internal memory. Via RS232 interface and supplied program package



### Three classes of accuracy

TPS700 total stations are available in three classes of accuracy: 2" (0.6mgon); 3" (1mgon) and 5" (1.5mgon).

### Clear visibility

Leica's precision optics provide for clear target visibility.

### More than 10'000 measurements

The internal memory of the TPS700 total stations can store more than 10'000 data blocks (measurements and coordinates).

### Everything at a glance

The large display keeps you informed about all important aspects at a glance. With the alphanumeric keyboard you can enter numbers, letters and special characters as quickly and as easily as you are used to with your mobile phone.

"Leica Geo Office Tools" you can transmit the measurements in the desired data format to the office software on your PC.

You may select one of the pre-defined formats or create your own format with the supplied format manager.

This gives you unique flexibility in designing a measurement protocol.



With "Direct.dxf" functionality, data can be read directly from the instrument in dxf-format and transferred into AutoCAD®, on a PC without any intermediate steps. Coordinates, codes and point numbers can be stored in different layers.

# Leica TPS700

## Technical specifications and system features

■ Leica TCRA702/3/5 ultra with R300

■ Leica TCRA702/3/5 power with R100

Technical data	Typ 702	Typ 703	Typ 705
<b>Angular measurement</b>			
Display resolution	1"(0.1mgon)	1"(0.5mgon)	1"(0.5mgon)
Standard deviation (ISO 17123-3)	2"(0.6mgon)	3"(1mgon)	5"(1.5mgon)
Method	absolute, continuous		
<b>Telescope</b>			
Magnification	30x		
Field of view/shortest target distance	1° 30' (26m at 1km)/1.7m		
<b>Distance measurement (IR)</b>			
Range to GPR1 circular prism	3000m (medium conditions)		
Range to reflective tape (60mm x 60mm)	250m		
Display resolution	1mm		
<b>Std. dev. (ISO 17123-4) / time per meas. (IR)</b>			
Infrared laser			
Fine mode	2mm + 2ppm/< 1 sec		
Quick mode	5mm + 2ppm/< 0.5 sec		
Tracking mode	5mm + 2ppm/< 0.15 sec		
<b>PinPoint Reflectorless Distance measurement (RL)</b>			
Visible red laser			
Range (medium atmospheric conditions)			
PinPoint R100 («power»)	170m (Kodak Gray Card 90% reflective)		
PinPoint R300 («ultra»)	500m (Kodak Gray Card 90% reflective)		
Point size at 100m	approx. 12mm x 40mm		
Minimum Measuring Distance	1.5m		
<b>Std. dev. (ISO 17123-4) / time per meas. (RL)</b>			
Visible red laser			
Normal mode	3mm + 2ppm/3s-6s		
Tracking mode	5mm + 2ppm/1s		
<b>Long Range</b>			
Visible red laser			
Distance measurement			
Range to GPR1 circular prism	1000m - 7500m (medium conditions)		
<b>Automatic Target Recognition (ATR)</b>			
Range GPR1 circular prism	1000m		
Range GRZ4 360° reflector	600m		
Accuracy (standard deviation)	< 300m: 3mm, > 300m: 2", 3", 5" (accord. Typ)		
<b>System</b>			
Internal memory	> 10'000 data blocks		
Data exchange	GSI8/GSI16/IDEX/dxf/user definable		
Online-data recording	GSI-format via RS232		
<b>Slope sensor/compensator</b>			
Method	Central, electr. biaxial compensator		
Setting range/setting accuracy	± 4'/0.5"-1.5" (accord. Typ)		
<b>Laser plummet</b>			
deviation from vert. line	1.5mm at 1.5m (2 sigma)		
<b>Weight TPS700ultra/power</b>			
incl. GEB111 battery and GDF111 tribrach	5.6kg		
<b>Size with tribrach</b>			
	150mm x 207mm x 360mm		
<b>Working environment</b>			
Working temperature range	-20°C to +50°C		
Storage temperature range	-40°C to +70°C		
Dust/water (IEC 60529)	IP54		
Humidity	95%, non condensing		

Whether you want to survey a parcel of land or objects on a construction site, determine measured points on facades or in rooms, gather the coordinates of a bridge or a tunnel – Leica Geosystems' total stations provide the right solution for every application.

They unite reliable results with easy operation and user-friendly applications. Our total stations are designed to meet your specific requirements. Modern technology enables you to work fast and productively, thanks to the straightforward and clearly structured range of functions.

**When it has to be right.**



**Total Quality Management – Our commitment to total customer satisfaction**  
Ask our local Leica Geosystems dealer for more information about our TQM program.

**Distance meter (PinPoint R100/R300):**  
Laser class 3R in accordance with IEC 60825-1 resp. EN 60825-1

**Laser plummet:**  
Laser class 2 in accordance with IEC 60825-1 resp. EN 60825-1

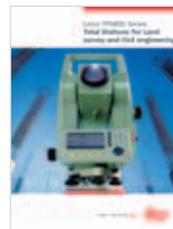
**Distance meter (IR):**  
Laser class 1 in accordance with IEC 60825-1 resp. EN 60825-1

**Guide light (EGL):**  
LED class 1 in accordance with IEC 60825-1 resp. EN 60825-1

Illustrations, descriptions and technical specifications are not binding and may change.  
Printed in Switzerland – Copyright Leica Geosystems AG, Heerbrugg, Switzerland, 2005.  
725896en – 1.06 – RDV



**Leica TPS400**  
Product brochure



**Leica TPS800**  
Product brochure



**Leica TPS1200**  
Product brochure



**Leica DNA**  
Product brochure