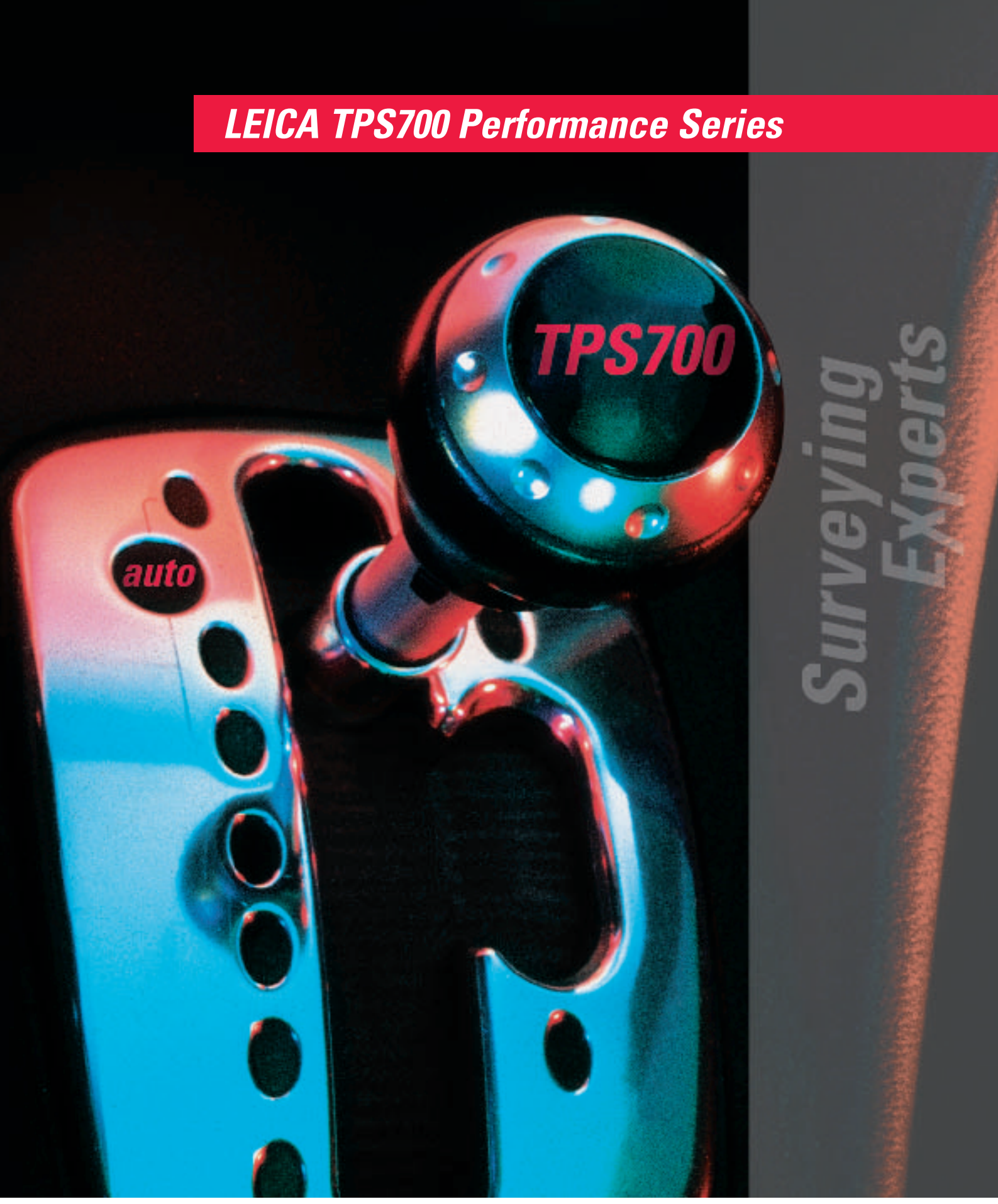
LEICA TPS700 Performance Series



TPS700 – now with automatic
for increased surveying performance and comfort

Leica
Geosystems

LEICA TPS700 Performance Series...

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 Performance 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.

TPS700 total stations offer more. They offer new and 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 TPS700 total stations provide for new qualities in the field of surveying and for a decisive edge on your competitors.

... with automatic for more comfort

Automatic target recognition

Gone are the days when you had to spend a lot of time aiming at the target to be measured. Today, TPS700 instruments 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 ...thatís 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 Performance Series...

Reflectorless distance measurement

Gone are the times when hard to access targets could only be measured with a lot of effort. Now there are the TPS700 instruments featuring reflectorless distance measurement.

The TCR and TCRauto models of the TPS700 Performance Series have two different coaxial arranged laser systems. The invisible (infrared) laser is used for conventional measurements to prisms and reflective foils. The visible laser opens entirely new perspectives.

With it you can measure from the instrument to targets and objects previously only accessible with a lot of effort instantly, with precision and comfort. Measured distances and target points can be used without recalculating them.

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 reflectorless distance measuring 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.

... automatically reach your target quicker

Automated measuring processes

Gone are the times when targets had to be aimed at manually. The TPS 700 performs this and other standard processes with its intelligent software and motorized drives.

Automation
The TCRauto model computes 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 supports you with a whole range of integrated easy to use programs.

- ***Orientation***
- ***Height transmission***
- ***Free stationing***
- ***Surveying – staking out***
- ***Tie distance – 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 leads 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 Performance Series...

Light and handy
The TPS700 total stations weigh, including batteries and tribrach, only between 5.4kg (TC) and 5.6kg (TCRauto). You will appreciate the lack of weight after a long day in the field.

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

Clear visibility
Leica's precision optics provide for clear target visibility.

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.

Selections: two lasers for distance measurements
With the TCR and TCRauto instruments you can select visible laser for reflectorless aiming and measuring or infrared measuring to prisms at the press of a key.

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 loop drive, and very efficient.

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.

More than 8000 measurements
The internal memory of the TPS700 total stations can store more than 8000 measurements and coordinates.

... with many extras – included

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.

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

You may select one of the predefined formats or create your own format with the supplied format manager. This gives you unique flexibility in designing a measurement protocol.

Standard with laser plummet and biaxial compensator
Quickly ready to measure: the laser plummet built into the standing axis makes centering and leveling easy. At a key press, the laser, adjustable to the ambient light, is switched on and the position of the instrument is displayed on the electronic bubble.

Leveling inaccuracies are automatically corrected by the built in biaxial compensator.

Economical bundle of energy
Practical and kind to your budget: no expensive special batteries but simple commercially available, inexpensive standard rechargeable batteries for camcorders supply the TPS700 instruments with the required power.

LEICA TPS700 Performance Series, an overview of the models

LEICA TC702, 703 and 705:

- ***Angular measurements***
- ***Infrared distance measurements*** *(IR)*

LEICA TCR702, 703 and 705:

- ***Angular measurements***
- ***Infrared distance measurements*** *(IR)*
- ***Reflectorless distance measurement*** *(RL)*

LEICA TCR702auto, 703 and 705:

- ***Angular measurements***
- ***Infrared distance measurement*** *(IR)*
- ***Reflectorless distance measurement*** *(RL)*
- ***Automatic target recognition*** *(ATR)*
- ***Motorized survey***

Technical data	Typ 702	Typ 703	Typ 705
Angular measurement			
Method	absolute, continuous		
Standard deviation DIN 18723	2“(0.6mgon)	3“(1mgon)	5“(1.5mgon)
Display resolution	1“(0.1mgon)	1“(0.5mgon)	1“(0.5mgon)
Telescope			
Magnification	30x		
Field of view/shortest target distance	1° 30′ (26m at 1km) / 1.7m		
Distance measurement (IR)	Infrared laser		
Range to GPR1 circular prism (Leica)	3000m (medium conditions)		
Range to reflective foil (60mm × 60mm)	250m		
Display resolution	1mm		
Standard deviation/time per meas. (IR)	Infrared laser		
Fine mode	2mm + 2ppm/< 1 sec		
Quick mode	5mm + 2ppm/< 0.5 sec		
Tracking mode	10mm + 2ppm/< 0.15 sec		
Reflectorless Distance measurement (RL)	Red laser		
Range	170m (white target acc. Kodak Gray Card)		
Point size at 100m	approx. 15mm × 30mm		
Standard deviation/time per meas. (RL)	Red laser		
Normal mode	3mm + 2ppm/3s (+1s/10m over 30m)		
Tracking mode	5mm + 2ppm/1s (+ 0.3s/10m)		
Distance measurement (RL)	Red laser		
Range to GPR1 circular prism (Leica)	1000m–7500m (medium conditions)		
Automatic target recognition (ATR)			
Range GPR1 circular prism 360° reflector	1000m/600m		
Accuracy (standard deviation)	to 300m: 3mm, > 300m: 2”, 3”, 5” (accord. Typ)		
System			
Internal memory (Flash)	> 8000 measurements and coordinates		
Data exchange module	IDEX/GSI8/GSI16/flexible formats		
Online-data memory	GSI-format via RS232		
Slope sensor/compensator			
Method	Central, electr. biaxial compensator		
Setting range/setting accuracy	± 4′/ 0.5”–1.5”		
Laser plummet: deviation from vert. line (2σ)	1.5mm at 1.5m		
Weight			
incl. GEB111 battery and GDF111 tribrach	5.4kg–5.6kg		
Size with tribrach	150mm x 207mm x 360mm		
Working environment			
Operational temperature	–20°C to +50°C		
Dust/water (IEC 60529)	IP54		
Humidity	95%, non condensing		
Warehouse temperature	–40°C to +70°C		

CAUTION
LASER RADIATION – DO NOT STARE INTO BEAM
620-690nm/0.95mW max.
CLASS II LASER PRODUCT

EGL:
LED class 1 according to
IEC 60825-1 resp. EN 60825-1

Distance measurement (Infrared):
Laser class1 according to
IEC 60825-1 resp. EN 60825-1
Laser class according to
FDA 21CFR Ch. I §1040

Distance measurement (visible laser) and laser plummet:
laser class2 according to
IEC 60825-1 resp. EN 60825-1
Laser class II according to
FDA 21CFR Ch. I §1040

TQM
ISO 9001 / ISO 14001

Total Quality Management – our engagement for total customer satisfaction.

For more information on out TQM program please contact your local Leica Geosystems representative.

Leica Geosystems

Leica Geosystems AG
CH-9435 Heerbrugg
(Switzerland)
Phone +41 71 727 31 31
Fax +41 71 727 46 73
www.leica-geosystems.com

725896en – IX.02 – RDV