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# *TPS300 Basic Series*

**Great Performance, Affordable Price**

**Leica**  
MADE TO MEASURE

# ***Made to challenge: The new TPS300 Basic Series from Leica Geosystems***



In today's environment of continuous change, competitiveness is what counts most. If you want to stay ahead of the competition, you have to boost productivity. This applies not only to the way you work but even more to the tools you use. You want tools that allow you to do more with less effort.

With this in mind, the challenge imposed on Leica Geosystems' design and development team was clear: "Design a reliable total station which makes positioning tasks for construction sites easier and faster – at a more attractive cost of ownership to the user."

That's exactly what we did, and more: Leica Geosystems' new TPS300 Basic Series surpasses all expectations. With latest-generation technology, superior ergonomics and quality to Leica Geosystems standards. It lets you work faster, more accurately and more economically. Let it be your "measure mate".

This series offers:

- A faster coaxial EDM
- Friendlier on-board applications
- Large internal memory
- Endless drive on the tangent screws
- An ergonomic trigger
- Dual-axis compensation
- A laser plummet
- An optional reflectorless measuring mode
- And much more ...

Check it out for yourself: with its extensive line-up of features and options, the new TPS300 Basic Series will help you be more competitive. The TPS300 is the better and smarter instrument for construction applications! Can you afford not to invest in one?





# Reflectorless measurements with a visible pointer!



## **The advantages are obvious**

Significant time savings and more convenience are not the only benefits of reflectorless measurements. Leica Geosystems' reflectorless EDM allows you to measure to difficult targets: corners of buildings,

elevated objects that are inaccessible even with a long prism pole, complex profiles requiring many points to be measured and also points to which you have no legal physical access, etc. The reflectorless mode makes measuring a rubble dump just as much fun as surveying the facade of a high-rise building or the interior of a building.

## **New opportunities**

Take on new challenges with the Leica Geosystems reflectorless technology. Simplify post-processing for "as-built" building surveys. Get the correct data for prefabricated components in refurbishment and installation projects. Improve your quotation time for interior decoration jobs. The scope of applications for Leica Geosystems' reflectorless total station is limited only by your imagination. You won't run out of options with the TPS300's TCR models – the better and smarter instruments for construction and building applications!

The TCR models in the TPS300 Basic Series let you take measurements with or without a reflector. Leica Geosystems'

innovative coaxial reflectorless technology uses a beam with a very small spot size – 12 mm at 50 m to be exact. The integrated dual-mode infrared and visible red EDM technology allows you to quickly switch between the modes with one keystroke. You decide how you want to work. The TCR does the job your way.

## **Get results the easy way**

Steer the laser spot or aim the telescope cross-hairs at your target and trigger the measurement. Get immediate results for the targets to an accuracy of 3 mm + 2 ppm. No offsets or corrections for those hard to reach points! No prisms or special reflectors to manage. Just point and shoot.

While waiting for your assistant to get to the next point, change to the reflectorless mode to pick up additional points. You can collect more information in a shorter time.

This flexibility saves time which – on the bottom line – translates into potential for higher earnings!



# Discover the TPS300 Basic: It's absolutely amazing!



**The lightest total station**

## **The flyweight**

The TPS300, even when fully configured, has a compact size and lightweight compared with total stations in its class. It is certainly easy to handle and transport.

## **A common-sense energy concept**

TPS300 instruments run on ordinary camcorder batteries. These rechargeable batteries are commercially available and less expensive than custom batteries.

Two NiMH camcorder batteries with an extended temperature range (-20°C to +50°C) are delivered with each instrument. So you would not have power problems on a typical workday (for those 18-hour days, we recommend a quick charge unit which you can connect to the cigarette lighter socket in your car.)

## **Tops in ergonomics**

The more features a total station has, the greater the importance of operating convenience. That's why the TPS300 is equipped with an intuitive keyboard with predefined keys that have a consistent meaning in every menu. Cursor keys make it easy to navigate on the display. That's a benefit particularly appreciated by users who don't work with the TPS300 every day.

The learning curve for the TPS300 will certainly be short. On-screen prompts will guide you.

## **More than just a willing helper**

The job management feature of the TPS300 allows you to survey or load up to eight assignments. Before you start your work, the TPS300 will prompt you to define your job, set the station and orientation. That prevents errors and avoids the expensive repetition of measurements or entire jobs.

## **300 meters in 0.3 seconds**

The electronic distance measurement (EDM) feature works coaxially and with unprecedented speed – in the tracking mode only 0.3 seconds. A faster EDM also speeds up the time to your target in setting out. Speed is everything in a total station. Even if you don't need to work fast, don't let slow EDM control your pace of work.

## **Indexing? Forget it!**

The absolute, continuous angular measurement method employed by the TPS300 eliminates the need for indexing after power-up. And even following a shutdown, the instrument will not lose its orientation.

This is because the Leica Geosystems angle encoder determines the angle based on the position of the sensor. This gives you the best in operational readiness. It is a long Leica Geosystems tradition.



**Energy concept**



**Tops in ergonomics**



**300 meters in 0.3 seconds**







### ***Dual-axis compensation***

The integrated dual-axis compensation of the TPS300 automatically handles the fine leveling and angle correction for the vertical and horizontal axes. This improves the accuracy of your measurements.

### ***Ample memory capacity***

The affordability of the TPS300 does not mean you have to accept a tradeoff in terms of memory: it has the capacity to store 4000 data records. That's plenty to store coordinates for setting out or to save measurements.

### ***Biggest screen in class***

The TPS300 features the biggest screen in its class: it displays eight rows of 24 characters. Therefore it offers a clearer picture with all relevant information in a single display. There's no need to switch displays for frequently required information.

### ***Only shorthand is faster***

The TPS300's unique alphanumeric entry mode considerably simplifies your work because you can set any character faster – faster, in fact, than with any other instrument in this class – unless you know shorthand ...

### ***Adaptability that makes a difference***

All TPS300 models have a very flexible data output system which lets you upload format templates to the instrument so that you can download data in a selected format that is most convenient for post-processing in your office.

### ***No communication problems***

The fast serial (RS232) port of the TPS300 supports the GSI (GEO Serial Interface) commands. Therefore it is downward-compatible to many peripheral devices which communicate under the GSI protocol. In addition, the TPS300 also supports a number of non-Leica Geosystems interface commands.

### ***On-board utilities***

The TPS300 models come configured with many useful functions and programs. The USER or FNC key lets you activate a function at any time. You can assign one of the available functions to the USER key. REM (Remote elevation measurement) and REC are examples of functions while programs are setting out, tie distance, surveying, free station computing and area computing.

### ***Software for everything***

All TPS300 models are compatible with Leica Geosystems' Open Survey World (OSW) platform. In other words, all data interchange functions are transacted with Leica Geosystems' new "LEICA SurveyOffice" software package.

### ***Your investment is protected***

TPS300 can be configured with the latest software tomorrow and beyond. The TPS300 Basic platform is where technology makes sense.

### ***...To top it all off: Leica quality***

Granted, the TPS300 is noticeably less expensive than comparable competitive products. However this does not compromise

# Specifications



**Electronic levelling**



**Biggest Screen in class**



**Only shorthand is faster**

Leica Geosystems' legendary quality standards: If it's signed Leica Geosystems, Leica Geosystems stands behind it. Moreover, each and every TPS300 is subjected to a series of stringent tests before it is shipped, so all instruments easily fulfill the applicable requirements for field use, including compliance with IP54 protection according to IEC 529.

Technical data	TC/TCR 302	TC/TCR 303	TC/TCR 305	TC/TCR 307
<b>Telescope</b>				
Magnification	30x			
Field of View	1° 30' (26m at 1km)			
Reticle Illumination	Bright / Dim Selectable			
<b>Angle Measurement</b>				
Method	Absolute, Diametrical	Absolute	Absolute	Absolute
Display least count	1" (0.1mgon)	1" (0.5mgon)	1" (0.5mgon)	1" (0.5mgon)
Accuracy (DIN 18723, ISO 12857)	2" (0.6mgon)	3" (1mgon)	5" (1.5mgon)	7" (2mgon)
<b>Compensator</b>				
System	Integrated electronic dual axis, Liquid			
Working Range	± 4'			
Setting Accuracy	0.5"	1"	1.5"	2"
<b>Distance Measurement</b>				
<b>Infrared (IR) Coaxial</b>				
Range <sup>1)</sup> to 1 Leica GPR1 prism	3000m	3000m	3000m	2500m
Range <sup>1)</sup> to 1 Leica GMP102 prism	1200m			
Range <sup>1)</sup> to Retro Tape (60mm x 60mm)	250m			
Accuracy (Fine/Rapid/Tracking)	2mm + 2ppm / 5mm + 2ppm / 5mm + 2ppm			
Measuring Time (Fine/Rapid/Tracking)	< 1s / < 0.5s / < 0.3s			
<b>Visible Laser<sup>2)</sup> (RL) Coaxial</b>				
Range <sup>1)</sup> to suitable surface without reflector (Short mode) – White side of grey card	80m			
Range <sup>1)</sup> to Leica GPR1 prism (Long mode)	5000m			
Accuracy (Short/Long/Tracking)	3mm + 2ppm / 5mm + 2ppm / 5mm + 2ppm			
Measuring Time (Short/Long/Tracking)	3s + 1s / 10m (>30m) / 2.5s / 1s + 0.3s / 10m (>30m)			
Spot size at 50m	12mm elliptical			
Laser Class	2/II			
<b>System</b>				
Data storage: Internal memory	4000 data records			
Data storage: External	Connect to external data recorder via Interface port			
Serial Interface	RS232			
Data exchange	GSI / IDEX / Definable Formats			
On-board Programs	Surveying / Set Out / Tie Distance / Area / Free Station			
Built-in Functions	REM / REC / IR-RL Switch / Delete Last Record			
<b>Display</b>	LCD 8 lines x 24 characters / 40mm x 65mm with built-in illumination			
<b>Keyboard</b>	12 keys (Alphanumeric input) optional 2nd keyboard			
<b>Laser Plummet</b>				
Type	Laser Pointer with adjustable intensity			
Accuracy	± 0.8mm at 1.5m			
<b>Operation Environment</b>				
Operation temperature	-20°C to 50°C			
Protection to IEC529 (Dust and water)	IP54			
Humidity	95% RH, non condensing			
Storage temperature	-40°C to 70°C			
<b>Dimensions and Weights</b>				
Gross dimensions (L x W x H)	151mm x 203mm x 316mm			
Weight (instrument only)	4.5kg	4.2kg	4.2kg	4.2kg
<b>Power Supplies</b>				
Battery (Standard)	NiMH / Standard Camcorder			
Voltage/Capacity	6V / 1800mAh (GEB111)			
Continuous use – angle mode	>4 hours			
No. of measurements with distance	>1000			
Recharging time	1 hour			
Optional power supplies (Adapter required)	NiMH 6V / 3.6Ah (GEB121) / 6x LR6 AA 1.5V Alkaline cells			

<sup>1)</sup> Average atmospheric conditions; slight haze or some clouds, slight heat shimmer

<sup>2)</sup> Only valid for TCR models

# Outstanding features

## *The laser plummet*

It's faster to set up the instrument with a laser plummet. The intensity of the laser spot may be adjusted to the best view, in the prevailing light conditions.



## *Making the Difference*

The features in the TPS300 Basic Series are designed to enhance effectiveness at work. The process of setting up will be easier and faster with the laser plummet and dual-axis compensation. You can set-up even when the light conditions are dim.

## *The endless drive*

Concentrate on getting to the target. The endless drive on the tangent screw gives you enough driving space all the time. Without the clamps, there is one less item to worry about.



The default Measure and Record application allows you to take measurements immediately following set-up.

With the large internal memory and on-board applications, you work confidently. On-screen prompts are available.

The super-fast EDM, endless drives and the convenient trigger help you to stake or measure positions efficiently.

## *The trigger*

Keep your eye on the target and activate the measurement. The trigger is conveniently located at the horizontal drive. You will be 100% sure that you have measured to your target.



Easy and flexible data transfers for output make the dataflow from office to field and vice versa a pleasant experience. Simply a better instrument for your needs.

## *The EDM feature*

Results are obtained in split seconds. Reflective tapes may be used as targets. External optics are not required for short distances. In the TCR models, you can measure without reflectors.





### **Adjusted to requirements**

The best solution to every task in surveying. The technological lead of Leica Geosystems in the development and production of survey instruments and systems in the fields of GPS satellite surveying, digital image processing and information science is recognized all over the world. Leica Geosystems is demonstrating its competence in countless practical assignments, every day and everywhere, with the following products:

**Electronic total stations for land surveying and for engineering- and construction surveying**

**GPS survey systems**

**Digital and optical levels**

**Solutions for data capture and data management**

**Software solutions**

**Systems for monitoring and measuring deformations**

**Instruments and systems for industrial surveying**



OSW, the platform for an Open Survey World, enables data to be exchanged between different survey instruments.



**Total Quality Management – Our commitment to total customer satisfaction**

Ask your local Leica Geosystems agent for more information about our TQM program.

EGL:  
LED class 1 in accordance with IEC 825-1 and EN 60825-1

Distancer (infrared):  
Laser class 1 in accordance with IEC 825-1 and EN 60825-1  
Laser class I in accordance with FDA 21CFR Ch. I §1040

Distancer (visible laser) and laser plummet:  
Laser class 2 in accordance with IEC 825-1 and EN 60825-1  
Laser class II in accordance with FDA 21CFR Ch. I §1040



Your dealer

**Leica**

Leica Geosystems AG  
CH-9435 Heerbrugg  
(Switzerland)

Phone +41 71 727 31 31  
Fax +41 71 727 46 73

[www.leica-geosystems.com](http://www.leica-geosystems.com)