

# Leica FlexLine TS09plus

Full Precision at  
High Performance



- when it has to be **right**

*Leica*  
Geosystems

# The First Plus: Original Leica Geosystems Quality



For most, “quality” is relative. Not so at Leica Geosystems. To ensure our instruments meet the highest precision and quality requirements, we manufacture them in state-of-the-art facilities around the world. Swiss technology combines with exceptional craftsmanship to provide best-in-class devices. And this quality also applies to all of our procedures – moving Leica Geosystems towards business excellence to meet our customers’ needs and expectations in every way. The Leica FlexLine TS09plus Manual Total Station is ideal for mid- to high-accuracy applications. The brilliant color display with touch operation, built-in Bluetooth®, USB host and device board offer the highest performance and ease of use.

Welcome to the world of Leica Geosystems. Welcome to a world of people, technologies, services and devices that you can completely rely on.

# The Third Plus: Full Precision, Superior Convenience and Performance

## Electronic Distance Measurement:

Wherever high-distance measurement accuracy is required, you can face the challenge of this demanding task with the TS09plus. It provides the most accurate Electronic Distance Measurement.

## Prism Mode

- Precision+ (1.5 mm + 2 ppm)
- Speed (1 second)

## Non-Prism Mode

- Precision (2 mm + 2 ppm)
- PinPoint EDM with coaxial, small laser pointer and measurement beam for accurate aiming and measuring
- Fewer set-ups required, because targets on which it is not possible to set up a reflector can be measured using reflectorless measurement up to 1,000

## Work productively with the new Leica FlexField plus on-board software and the new color & touch display.

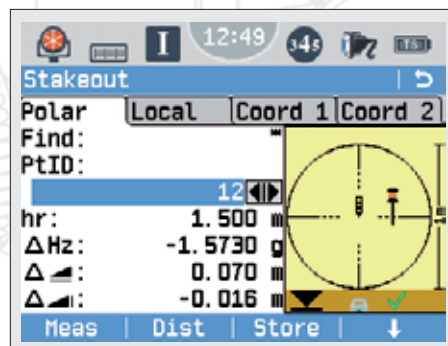
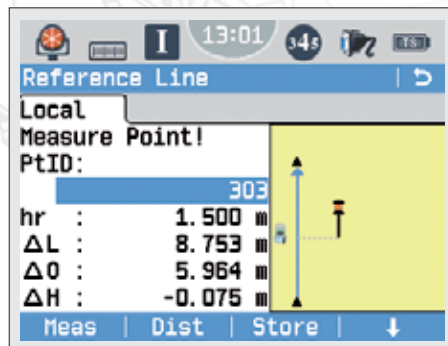
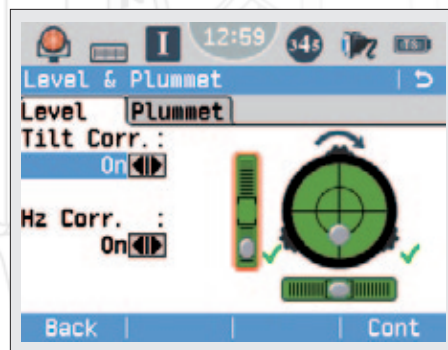
The new Leica FlexField plus software is without a doubt a highlight of the FlexLine plus. Its advantages are immediately apparent with the extra large, built-in color & touch display.



- Low learning curve due to guided workflows
- Easy to understand graphics and icons
- Icons to quickly verify instrument status
- Fast navigation inside the software via touch screen, tabs and icons
- High resolution color display to show all information without misinterpretation
- Larger font size for fast and clear readability
- Fast operation through graphic guidance

The Leica FlexLine TS09plus Communication Side Cover enables cable-free connection to any data collector via Bluetooth®, for example the field-controllers Leica Viva CS10 or Leica Viva CS15 with SmartWorks Viva software. The USB-stick enables the flexible transfer of such data as GSI, DXF, ASCII, LandXML and CSV.

**FlexField plus Onboard Software:** Easy to use due to its graphical guidance and intuitive workflows.



## Leica Geosystems – mySecurity

mySecurity gives you total peace of mind. If your instrument is ever stolen, a locking mechanism is available to ensure that the device is disabled and can no longer be used.

# Leica FlexLine Plus

## Proven Specifications, Reliable Instruments

### Leica FlexLine TS09plus specifications:

Angle Measurement (Hz, V)		
Accuracy <sup>1)</sup>	1" (0.3 mgon) / 2" (0.6 mgon) 3" (1 mgon) / 5" (1.5 mgon)	✓
Method	Absolute, continuous, diametrical: at all models	✓
Display resolution	0.1" / 0.1 mgon / 0.01 mil	✓
Compensation	Quadruple Axis Compensation: at all models	✓
Compensator Setting Accuracy	0.5" / 0.5" / 1" / 1.5"	✓
Distance Measurement with Reflector		
Range <sup>2)</sup> Round prism (Leica GPR1)	3.500 m	✓
Range <sup>2)</sup> Reflective tape (60 mm x 60 mm)	250 m	✓
Accuracy <sup>3)</sup>	Precise+: 1.5 mm + 2.0 ppm Precise Fast: 2.0 mm + 2.0 ppm Tracking: 3.0 mm + 2.0 ppm	✓
Typical Measurement time <sup>4)</sup>	1.0 s	✓
Distance Measurement without Reflector <sup>5)</sup>		
Range <sup>5)</sup>	> 500 m / > 1000 m	✓○
PinPoint R500 / R1000		✓
Accuracy <sup>3)6)</sup>	2 mm + 2 ppm	✓
Laser dot size	At 30 m: approx. 7 x 10 mm At 50 m: approx. 8 x 20 mm	✓
Data storage / Communication		
Internal memory	Max.: 100'000 fixpoints, Max.: 60'000 measurements	✓
Interfaces	- Serial (Baudrate up to 115'200) - USB Type A and mini B, - Bluetooth® Wireless, class 1, 150 m - > 1000 m (with TCP529)	✓ ✓ ✓ ○
Data formats	GSI / DXF / LandXML / CSV / user definable ASCII formats	✓
Guide Light (EGL)		
Working Range (average atmospheric conditions)	5 m - 150 m	○
Positioning accuracy	5 cm at 100 m	○

Telescope		
Magnification	30 x	✓
Resolving power	3"	✓
Field of View	1° 30' (1.66 gon) 2.7 m at 100 m	✓
Focusing range	1.7 m to infinity	✓
Reticle	Illuminated, 10 brightness levels	✓
Keyboard and Display		
Keyboard and Display	Full Alpha-numerical keyboard with Color & Touch display, Gra- phics, Q-VGA, key- and display illumination, 5 brightness levels	✓
Position	Face I, Face II	✓○
Operating System		
Windows CE	5.0 Core	✓
Laserplummet		
Type	Laser point, 5 brightness levels	✓
Centering accuracy	1.5 mm at 1.5 m Instrument height	✓
Battery		
Type	Lithium-Ion	✓
Operating time <sup>7)</sup>	approx. 30 hours	✓
Weight		
Total station including GEB211 and tribrach	5.1 kg	✓
Environmental		
Temperature range (operation)	-20° C to +50° C (-4° F to +122° F) Arctic Version -35° C to 50° C (-31° F to +122° F)	✓ ○
Dust / Water (IEC 60529) Humidity	IP55, 95%, non condensing	✓
Leica FlexField plus Onboard Software		
<b>Included Application Programs:</b> Topography; Stake Out; Station Setup including: Resection, Local Resection, Helmert Resection, Orientation (Angles & Coordinates), Height Transfer; Area (Plan & Surface); DTM Volume calculation; Tie Distance (MLM); Remote Height; Hidden Point; Backsight Check; Offset; Reference Line; Reference Arc; Reference Plane; Road 2D; COGO; Road 3D; Traverse		✓
Theft protection		
mySecurity, PIN/PUK Code		✓✓

### Model Comparison: Configurations & Options of Manual Total Stations

	TS02	TS06plus	TS09plus	Viva TS11
1" angular accuracy	-	○	○	○
Enhanced measurement accuracy to prism	1.5 mm + 2 ppm	1.5 mm + 2 ppm	1.5 mm + 2 ppm	1.0 mm + 1.5 ppm
Reflectorless measurement range	400 m option	500 m included/1000 m option	500 m included/1000 m option	500 m included/1000 m option
Display with graphics and display illumination	Black & White high resolution	Black & White high resolution	Q-VGA Color & Touch	Full-VGA Color & Touch
Full alpha-numerical keyboard with function keys	-	✓	✓	✓
Second Keyboard	○	○	○	○
Keyboard illumination	-	-	✓	✓
Electronic Guide Light	-	○	✓	✓
USB Type A and mini B	-	✓	✓	✓
Bluetooth® Wireless	-	✓	✓	✓
SD Card	-	-	-	✓
Imaging capability	-	-	-	○
Smart Station capability	-	-	-	○
Onboard software (package content)	FlexField plus (standard)	FlexField plus (advanced)	FlexField plus (full)	SmartWorx Viva (pro)

#### Legend:

1) Standard deviation ISO-17123-3

2) Overcast, no haze, visibility about 40 km;  
no heat shimmer.

3) Standard deviation ISO-17123-4

4) Prism Precise Fast mode

5) Under optimal conditions on Kodak  
Grey Card (90% reflective). Maximum range  
varies with atmospheric conditions, target  
reflectivity and surface structure.

6) Range > 500m 4mm+2ppm

7) Single Measurement every 30 second by  
25° C. Battery time may be shorter if  
battery is not new. Internal battery GEB222.

8) Reflectorless measurement time may vary  
according to measuring objects, observation  
situations and environmental conditions.

✓ Included

○ Option

- Not available

# The Second Plus: Real Features, True Benefits



## USB Stick

- For fast and easy transfer of data

## Wireless Bluetooth®

- For cable-free connection to data logger



## Electronic Guide Light

- For faster stake-out



## FlexField plus

- Modern and intuitive on-board software for higher productivity



## Arctic version

- For use at -35°C (-31°F)



## PinPoint EDM

- The most precise in its class (1.5 mm + 2 ppm)
- Extremely fast (1 second)
- > 1.000 meters without prism
- Coaxial laser pointer and measurement beam



## Color & Touch Display

- Highest user-friendliness



## Useful tools

- A range of tools, such as a trigger key and laser plummet, speed up your work



## mySecurity

- Unique cloud-based protection against theft





Scan the code  
to play  
the videos!

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.**

**Swiss Technology**  
by Leica Geosystems



**Total Quality Management –  
our commitment to total  
customer satisfaction.**

**Distance meter:**  
(PinPoint R500 / R1000):  
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:**  
(Prism Mode)  
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

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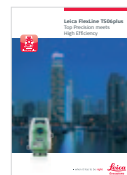
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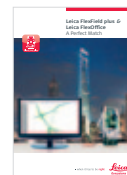
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**FlexLine  
TS02**  
Brochure



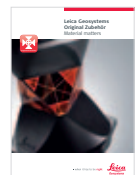
**FlexLine  
TS06plus**  
Brochure



**FlexField plus &  
FlexOffice**  
Brochure



**Viva TS11**  
Brochure



**Original  
Accessories**  
Brochure

Please visit [www.leica-geosystems.com](http://www.leica-geosystems.com)  
for detailed information about Leica FlexLine plus  
and more documents.