

# LEICA TC2003/TCA2003



*High-performance total station for precision surveying  
to millimetre accuracies – with quality certificate*

**Leica**  
Geosystems

# **LEICA TC2003/TCA2003** **high-performance total stations ...**

The TC2003/TCA2003 high-performance total stations meet the most demanding requirements. The outstanding accuracy with which they measure angles and distances makes them the preferred instruments for precision surveying.

Both of these total stations have the same tried-and-proven functionality as the instruments of the TPS-System 1000, including automatic target recognition (ATR) and on-board applications software. The accessories and data recording associated with the TC2003/TCA2003 total stations are fully compatible with the TPS-System 1000.

The TCA2003 has a unique feature: an on-board monitoring program for carrying out repeat measurements automatically at regular intervals.

Every Leica Geosystems high-performance total station is exhaustively tested before dispatch. Its outstanding performance is confirmed by means of a certificate.



## **LEICA TC2003 ...**

... for manually-performed precision measurements  
0.15mgon (0.5'')/1mm + 1ppm



## **LEICA TCA2003 ...**

... for automated precision measurements  
0.15mgon (0.5'')/1mm + 1ppm

**High-performance total station for precision surveying  
to millimetre accuracies – with quality certificate**



## *... for machine guidance*

### *Highway and railroad construction*



Guidance of shuttering machines, paver-spreaders, graders and milling machines. The advantage: The continuous on-line measurement with the total station eliminates the need for costly installation of cabling for controlling the machine.

### *Tunnelling*

Guidance of roadheaders and drilling rigs. The advantage: Precise and reliable determination of the cutting positions eliminates the need for expensive reworking.



### *Planing*



Guidance of all types of compactors (rollers). The advantage: The use of an automated total station eliminates expensive machine down-time for measuring heights. Even slopes can be worked without interruption and without problems.

### *Foundation engineering*

Guidance of vertical drilling machines and paving rammers. The advantages: Pegs for marking network points are no longer needed. In addition, the TCA2003 total station permits automatic inspection of depth.



# *... for applications in engineering surveying*

## **Dams**

Monitoring deformations. The advantage: Continuous, timer-controlled monitoring measurements of high accuracy right round the clock, with automatic alarm.



## **Bridges**



Measuring stresses on bridges, continuous measurement of deformation, automatic observation of the abutments. The advantage: Flexible application of the total station for highest-precision measurements with manual or automatic operation.

## **Tunnels**

Monitoring the deformations of existing projects and of those under construction. Manual or automatic convergence measurements. Monitoring tunnel networks. The advantage: Automatic or manual operation, great versatility in application even under difficult conditions.

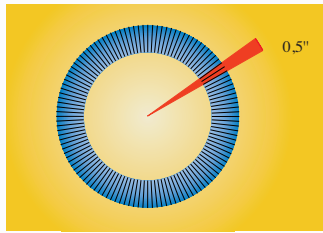


## **Engineering surveying**



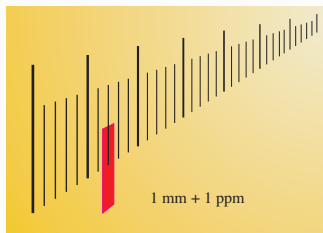
Precision stakeouts, inspection measurements in civil engineering and in microtriangulation networks. The advantage: The high precision of the TC2003/TCA2003 high-performance total stations ensures extremely reliable measurements.

## ... unsurpassed accuracy



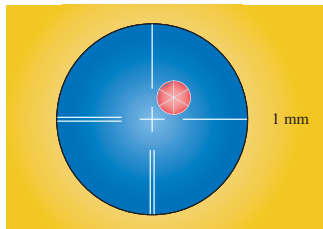
### **Measuring of angles**

The TC2003 and the TCA2003 have a specially-developed system for measuring angles. It enables the high measuring precision of 0.15mgon (0.5") to be attained. This capability allows static and dynamic measuring procedures to be carried out with extreme accuracy.



### **Measuring of distances**

Both total stations are equipped with the same coaxial precision distancer. The measuring accuracy of 1mm + 1ppm and the range of up to 2500 metres (8300ft) render the instruments particularly useful for applications where distance needs to be determined with extreme accuracy.



### **Target recognition**

A modified version of the coaxial automatic target recognition (ATR1) used in the Leica Geosystems TPS-System 1000 has been incorporated into the TCA2003 precision total station. The recognition procedure, which is based upon CCD video technology, has a high targeting accuracy.

At a distance of 100 metres (330 feet), and under good conditions of visibility, the TC2003/TCA2003 total stations can measure the position of a point with an accuracy of under a millimetre. Even at 200 metres the accuracy is still around a millimetre. The high measuring accuracy of the TC2003/TCA2003 total stations is attained by means of the refined interplay between the various selected high-technology components for measuring angles, for measuring distances and for recognizing targets. These three functions decide the precision with which the position of a point can be determined.

The TC2003/TCA2003 total stations are routinely supplied with a laser plummet for centring the instrument over the ground point.



# LEICA TC2003/TCA2003

## Technical data

Feature	TC2003	TCA2003
Angle-measurement accuracy Standard deviation (ISO 17123-2)	0.15mgon 0.5"	0.15mgon 0.5"
Automatic target recognition* Accuracy at below 200m (660ft) Accuracy at 500m (1650ft)	– –	1mm 2mm – 3mm
Distance measurement Standard deviation (ISO 17123-4) Range (with one prism)**	1mm + 1ppm 2'500m	1mm + 1ppm 2'500m

\* under good atmospheric conditions

\*\* under average atmospheric conditions, i.e. visibility 15km (9 miles)

## What else is Leica Geosystems offering you?

- Support in planning projects
- Complete solutions
- Development of special solutions in accordance with your specifications
- Help in installing systems
- After-sales support and servicing the world over
- Partnership for all applications of precision surveying and engineering surveying



OSW –  
the open  
survey world –

enables data to be exchanged between various survey instruments. With TPS-System 1000 theodolites and total stations, you have therefore secured for yourself the potential to accommodate future developments.



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

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

EDM and EGL1:

LED Class 1 in accordance with IEC 60825-1 and EN 60825-1

ATR:

Laser class 1 in accordance with IEC 60825-1 and EN 60825-1

Laser class I in accordance with FDA 21CFR Ch.I §1040

Laser plummet:

Laser class 2 in accordance with IEC 60825-1 and EN 60825-1

Laser class II in accordance with FDA 21CFR Ch.1 §1040



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