

TECHNICAL TESTING AND CALIBRATION SYSTEM FOR TOTAL STATIONS INSTRUMENTS

OVERVIEW

Check, calibrate and evaluate the quality of Total Station and Digital Levels through testing, measuring, identifying and evaluating errors: Vertical angle, horizontal angle and distance measurement of the Total Station; Deviation standard of Digital Levels.

Initial check, periodic check and post-repair for electronic total stations with angular accuracy $\geq 1.5''$ and distance accuracy $\geq (1.5 + 2 \text{ ppm} \times D)$ mm; Level measuring devices have standard deviation $\geq 0.5 \text{ mm}/1000 \text{ m}$.

Check and calibrate the standard deviation, vertical angle error, level angle error and distance measurement standard deviation of the electronic total station; Deviation, error of height difference value of leveling means.

Powerful processing unit and specialized software to help acquire, analyze, and automatically calculate measurement data according to installed and established testing and calibration procedures to provide

FULL CONFIGURATION

TECHNICAL TESTING AND CALIBRATION SYSTEM FOR TOTAL STATIONS INSTRUMENTS COMPRISES

DEVICE NAME	QUANTITY	MODEL/CODE	BRAND
Universal Collimator	01 unit	727043	Leica Geosystems
Total stations	01 unit	TS60	Leica Geosystems
Digital Levels	01 unit	LS15	Leica Geosystems
Data processing unit	01 unit	DatAV1	Anaxi
Protection unit	01 unit	PSC-5/1	Anaxi
Specialized software	01 unit	TotalstationAnalysis	Anaxi
Accessories and cables ensuring comprehensive system connectivity	01 set		



Operation diagram of system

Products' colors and specifications are subject to change without prior notice. All pictures shown are for illustration purposes only.

COMPONENTS

UNIVERSAL COLLIMATOR



UNIVERSAL COLLIMATOR COMPONENTS		
DEVICE NAME	QUANTITY	MODEL/CODE
Universal collimator	01 unit	727043
Universal collimator holder	01 unit	726921
Universal collimator bracket	01 unit	725390
Collimator tube	05 units	723864
Tilt bracket for collimator	01 unit	921585 & 921586
Support bracket	01 unit	354415
Base	02 units	GDF321
Power supply	04 units	869831
Round mirror	03 units	GPR121
Reflection mirror	03 units	
Wall-mirror mounting kit, connecting cable and accessories (centering screw, Reflection sheet)	06 sets	

- Optical lenses:
 - Focal length of objective: 282 mm
 - Objective aperture: 45 mm
 - Focusing distance: infinity
 - Addition constant K=1:100
- Compensator:
 - Range: $\pm 12'$
 - Setting accuracy: $\pm 0.3''$
- Circular level:
 - Sensitivity: 4'
 - Tolerance: $\pm 1.5'$

TOTAL STATIONS

TOTAL STATIONS COMPONENTS		
DEVICE NAME	QUANTITY	MODEL/CODE
Total station	01 unit	TS60
Carrying case	01 unit	
Base	01 unit	GDF321
Battery	02 units	GEB242
Battery charger	01 unit	GKL311
Wooden tripod	01 unit	GST120-9



- Distance measurement:
 - Range of Prism: from 0.9 m to 3500 m
 - Range of Non-Prism (in standard, reflector 90%): from 0.9 m to 1000 m
 - Accuracy/Measurement time of Single prism: (0.6 mm + 1 ppm/2.4 s)
 - Accuracy/Measurement time of Single any surface: (2 mm + 2 ppm/2s)
- Angle measurement:
 - Angle Accuracy: Absolute, continuous, quadruple
 - Accuracy Hz and V: 0.5" (0.15 mgon)
 - Telescope camera: 5 megapixel
 - Autofocus telescope:
 - Magnification: 30x
 - Focus range: from 1.7 m to infinity
 - Display: 5 inches, WVGA, touch
 - Data storage: 2GB
 - Interface: RS232, USB, Bluetooth, WLAN

DIGITAL LEVELS



TOTAL STATIONS COMPONENTS		
DEVICE NAME	QUANTITY	MODEL/CODE
Digital level	01 unit	LS15
Carrying case	01 unit	
Battery	02 units	GEB334
Battery charger	01 unit	GKL311
Wooden tripod	01 unit	GST120-9
Barcode Invar staff	02 units	GPCL2
Staff	02 units	

- Accuracy of measuring height difference in a closed loop over 1 km of outbound and return measurements
 - Accuracy using standard Invar staff at 3 m: 0.2 mm
 - Accuracy using standard staff: 1.0 mm
- Distance measurement:
 - Range: from 1.8 m to 110 m
 - Measurement time (average): 2.5 s
 - Accuracy: ± 15 mm at 30 m
- Autofocus with working range from 1.8 m to infinity
- Digital compass: accuracy 2.7°
- Compensator:
 - Working range: $\pm 9'$
 - Accuracy: $0.3''$
- Telescope magnification: 32x
- Interface: Bluetooth, Mini USB, RS232 / USB
- Data storage: 30,000 measurements, additional USB
- Colour display: 3.6 inches, QVGA, touch

DATA PROCESSING UNIT

- Style: Portable suitcase
- Material: Aluminum alloy
- Processor: Intel® Core™ i5-1235U (10 cores, up to 4.4 GHz)
- Memory RAM: 8 GB
- Internal storage SSD: 512 GB
- Display: 14 inches Full HD
- Interface: Audio; USB; HDMI; Ethernet RJ-45; Wi-Fi
- Battery: Lithium polymer



PROTECTION UNIT

- Capacity: 5 kVA
- Input voltage: $90 \div 250$ V AC, 1 phase
- Response time against 10% input Voltage Deviation: $0.4s \div 1s$
- Stable output voltage: 220 V AC $\pm 3\%$, 1 phase
- Automatically disconnect to the load when overcurrent or overvoltage occurs
- The meters display the voltage and current



SPECIALIZED SOFTWARE

- The software is supplied with a perpetual license
- Technical support: 12 months for warranty and lifetime free for maintenance
- Management the devices under test. TotalStationsAnalysis allows to addition, editing, deleting, searching; measured objects, parameters of measured objects
- Management user permissions
- Automatically calculate the error of measurement parameters: 2C, MO, horizontal angles, vertical angles, distances and height's difference values
- Allow accessing, searching, exporting reports and printing the testing and calibration results accordingly required
- Collect, process and calculate the obtained measurement data

ACCESSORIES AND CABLES ENSURING COMPREHENSIVE SYSTEM CONNECTIVITY

- Full accessories and connection cables, power cords, and standard power sockets ensure overall connection and complete system
- 1x Technology table made of powder-coated steel 1.6 m x 0.85 m, available Power socket, grounding connector and anti-static table surface
- Full set of user manual and catalogue