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ONE PERSON SURVEYING SYSTEM

Imagine doing a large topo job with one person, in less time than it would normally take with a two man crew. Or a stakeout job with two people in less than half the time it would take using conventional methods.

Welcome to the world of Robotic Surveying.

The Topcon AP-L1A Auto Tracking Total Station creates a new era in surveying. It offers surveyors greater versatility, accuracy and ease of use than ever before. The AP-L1A has a prism auto searching and auto tracking function and is driven by servo motors in both horizontal and vertical planes. The radio communication offers remote control of the AP-L1A. This enables one surveyor to operate the AP-L1A from the prism. He can carry out the survey, collect and check data of the survey points via the hand held data collector. This one man surveying system results in major economic benefits.

Tracking Light

The red LED (which is emitted from the telescope of the AP-L1A) shows the direction of aiming for stakeout surveying and aids one person surveying by indicating the tracking status of the AP-L1A.

Function and Menu

The dot matrix LCD wide display (16 characters x 4 lines) offers clear visibility of measured data. The special measurement functions are operated easily with the interactive menu.

Horizontal/Vertical Search Ability

Due to the horizontal and vertical searching ability of the AP-L1A, there is no need for aiming at the prism. On top of this, the instrument can be remotely directed to a search area to optimize its operating time and get the best performance.

High Speed Tracking

To optimize your surveying work the AP-L1A can easily track a moving prism. With maximum tracking speed of 63.5km/hr at a 100m, this even makes the instrument well suited for hydrographic surveying.

AP-L1A COMPLETE SYSTEM





State of the art technology and world famous reliability separate Topcon from their competition



Prism Unit A3

With this special prism it is not necessary to constantly consider the direction in which the prism is facing. The specially designed prism unit will be followed by the AP-L1A from all directions.



FS series Husky data collector with TDS software

Through the handheld terminal, connected to the remote radio link, the surveyor can control the AP-L1A and use the extensive TDS Survey Pro software for all surveying tasks.



AP-L1A SPECIFICATIONS:

Automatic Tracking Unit

Maximum rotating speed	45°/sec
Tracking angle speed	10°/sec: at 100m front/17.6m/s (63.5km/h)
Coarse movement unit	Shuttle operating in 7 speed levels
Fine movement unit	Jog operating (minimum increment 2.5 seconds)
Collimation accuracy	±2'(10°/sec) (standard deviation) ±3"(in still condition) (standard deviation)
Safety standard for Laser Beam	Class1 (IEC publication 825), (FDA/BRH 21 CER1040)

Telescope Unit

Length	173mm
Magnification	30x
Image	Erect
Field of view	1°30'
Resolving power	4"
Minimum focus	1.5m

Distance Measurement

Measurement range	Pin pole prism: 4m to 500m /13ft. to 1600ft. 1 prism: 7m to 1000m /23ft. to 3200ft.
Measurement accuracy	±(3mm + 2ppm) m.s.e. (in fine mode) ±(10mm + 2ppm) m.s.e. (in track mode)
Least count	1mm/0.2mm (in fine mode) 10mm/1mm (in track mode)
Measuring time	2 second (in fine mode) 0.5 second (in track mode)

Angle Measurement

Method	Incremental reading
Detecting system	2 sided in horizontal and vertical angle
Tilt correction unit	Automatic correction in 2 axis
Least count	1"/5"
Accuracy	2" (standard deviation based on DIN 18723)

Display Unit

Display size	Dot matrix LCD 16 characters in 4 lines, one side display (with back light/heater/brightness control)
Measuring display	Maximum 999.999.999m

Level Sensitivity

Circular level	10"/2mm
Plate level	30"/2mm
Optical Plummet Telescope	
Magnification	3x
Image	Erect
Field of view	5° (114mm / 1.3m)
Operating temperature limit	-20° to 50° C

Other

Dimensions	405(H) x 210(W) x 180(L) mm
Weight	8.9kg (19.6lbs.)

Power Supply Unit

Mark light battery	voltage: DC12V capacity: 8Ah
Battery charger	input voltage: 115 or 230V recharging time: 4 hours

ELECTRONIC
TOTAL
STATIONS



Specifications

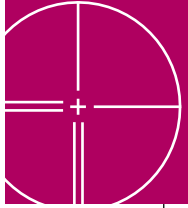
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AP-L1A standard package

- ◆ AP-L1A 2" total station
- ◆ 12V battery, charger and power cable
- ◆ Satel radios with battery and charger
- ◆ A3 six prism housing
- ◆ Husky MP2500 4MB data collector with TDS Survey Pro software, cables and Survey Link for Windows PC software



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SERVO TOTAL STATION

The Topcon GTS-800 Series total stations take the next step in the evolution of servo motor technology. Combining the latest servo motor and PCMCIA card technology, the GTS-800 Series makes the job of collecting and staking points fast and easy. With complete upgradability the GTS-800 Series instruments will allow for auto-tracking as well as robotic functionality down the road.

GTS-800 - 1" accuracy
GTS-802 - 3" accuracy

Features:

High Speed Rotation - 50 degrees per second

New Jog/Shuttle Hardware - The jog and shuttle mechanism takes the place of a conventional clamp and tangent screw system.

MS-DOS Operating System - Makes the GTS-800 Series more versatile in hardware and software applications.

Large LCD Graphic Display - The GTS-800 Series has two backlit LED displays. Each display is 240 x 80 pixels for easy reading.

PCMCIA Card System - Data files can be stored on a standard PCMCIA card. Available card sizes are 256k, 512k or 1 megabyte.

TDS Application Software - Tripod data systems popular Survey Pro software can be installed on-board the GTS-800 Series for data collection and stakeout.



TDS Survey Pro Application Software:

Job Creation & Review - Open, edit, delete jobs as well as file maintenance.

Coordinate Geometry - Complete set of COGO commands.

Data Collection - Topo, traversing, offset shots as well as data transferring.

Stakeout - Stakeout points, offsets, roads all from here.

Road Layout - Extensive road layout with cross sections and templates.

See page 8 for a complete list of TDS Survey Pro software functions.

Accessories for GTS-800

51731	BT-47Q on-board battery
51757	BC-27B 120V charger
51758	BC-27C 230V charger
51737	BT-3L Heavy duty battery
51743	Charger for BT-3L
51340	Diagonal eyepiece
51341	Solar reticle
51344	Solar filter
51205	256k PCMCIA card
51206	512k PCMCIA card
51207	1 Meg. PCMCIA card
51065	CR-5 card reader/writer



GTS-800AR robotic package

- GTS-800AR total station
- 2- On-board batteries and charger
- 2- Satel radios with battery and charger
- A3 six prism housing
- Husky MP2500 4MB data collector with TDS Survey Pro software, cables and Survey Link for Windows PC software

Prism Unit A3

With this special prism it is not necessary to constantly consider the direction in which the prism is facing. The specially designed prism unit will be followed by the GTS-800AR from all directions.



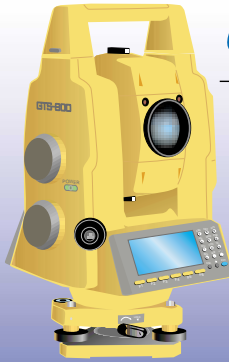
MP2500 series Husky data collector with TDS software



Through the handheld terminal, connected to the remote radio link, the surveyor can control the GTS-800AR and use the extensive TDS Survey Pro software for all surveying tasks.



GTS-800 SPECIFICATIONS:

Servo Driven Unit	
Maximum rotating speed	50°/sec
Operating range	Fully rotation (H,V)
Telescope Unit	
Length	166mm
Magnification	30x
Image	Erect
Field of view	1°30'
Resolving power	3"
Minimum focus	1.4m
Distance Measurement	
Measurement range	1 prism - 2000m (6600ft.) 3 prism - 2600m (8600ft.)
Measurement accuracy	± (2mm + 2ppm) m.s.e. (in fine mode)
Least count	0.2mm (.001ft.) (in fine mode) 1mm (.005ft.) (in track mode)
Measuring time	3.0 second (in fine mode) 0.7 second (in track mode)
Angle Measurement	
Method	Absolute encoder
Tilt correction unit	Automatic correction in 2 axis
Least count	GTS-800 0.5"/1" - GTS-802 1"/5"
Accuracy	1" and 3" (standard deviation based on DIN 18723)
Display Unit	
Display size	Graphic LCD 40 characters in 10 lines, dual display (with back light/heater/brightness control)
Level Sensitivity	
Circular level	10"/2mm
Plate level	30"/2mm
Optical Plummet Telescope	
Magnification	3x
Image	Erect
Field of view	4° (114mm / 1.3m)
Operating temperature limit	-20° to 50° C
Other	
Dimensions	325(H) x 226(W) x 210(L) mm
Weight	7.7kg (16.8lbs.)
Recharging time	Approx. 2 hours
Operating system	MS-DOS
Point Guide	Yes



Survey into the New Millennium
with the GTS-800 Series upgradable servo total station

- ◆ standard servo total station
- ◆ standard servo TS with TDS survet pro on-board
- ◆ auto tracking TS with TDS survey pro on-board
- ◆ fully robotic one man total station



MOTORIZED TOTAL STATION

The Topcon GMT-100 Motorized Total Station incorporates a servo driven system and the MS-DOS operating system all in one compact total station. The GMT-100 assures optimum return on your investment because of its versatility and ease of use.

Topcon GMT-100 motorized total station

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Servo Driven

Turning horizontal and vertical angles is accomplished by the servo motors at a speed of 40 degrees/second. The operator can also collimate the instrument with the fine or coarse motorized tangents.

Built-in MS-DOS

The GMT-100 operating system is standard MS-DOS which makes it possible to develop application programs with file format compatibility.

TDS Software

The GMT-100 has standard pre-installed TDS software that operates the servo system for surveying and stakeout applications.

Internal Memory

The internal memory of the GMT-100 stores over 2000 points for data storage and layout.

GMT-100 SPECIFICATIONS:

Servo Driven Unit

Maximum rotating speed	30°/sec
Coarse movement unit	Shuttle operating in 7 speed levels
Fine movement unit	Jog operating (minimum increment 2.5 seconds)
Operating range	Fully rotation (H,V)

Telescope Unit

Length	164mm
Magnification	30x
Image	Erect
Field of view	1°30'
Resolving power	2.5"
Minimum focus	1.3m

Distance Measurement

Measurement range	1 prism - 2500m (8200ft.) 3 prism - 3300m (10800ft.)
Measurement accuracy	±(2mm + 2ppm) m.s.e. (in fine mode)
Least count	0.2mm (.001ft.) (in fine mode) 1mm (.005ft.) (in track mode)
Measuring time	2.5 second (in fine mode) 0.4 second (in track mode)

Angle Measurement

Method	Incremental reading
Tilt correction unit	Automatic correction in 2 axis
Least count	1°/5"
Accuracy	2" (standard deviation based on DIN 18723)

Display Unit

Display size	Dot matrix LCD 16 characters in 4 lines, one side display (with back light/heater/brightness control)
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Level Sensitivity

Circular level	10"/2mm
Plate level	30"/2mm
Optical Plummet Telescope	
Magnification	3x
Image	Erect
Field of view	5° (114mm / 1.3m)
Operating temperature limit	-20° to 50° C

Other

Dimensions	405(H) x 210(W) x 180(L) mm
Weight	9.0kg (19.8lbs.)
Operating time	Approx. 2 hours
Operating system	MS-DOS
Point Guide	Yes
Internal memory	Over 2000 points



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REFLECTORLESS TOTAL STATION

The new GPT-1000 Series pulse laser EDM technology allows measurement to virtually any target! Plus you get all the features of the popular Topcon GTS-310 Series total stations, including on-board collection and 4 line LCD display.

Features:

- Ideal for prismless measurements at dangerous or impossible sites.
- Available in 2" or 3" accuracies.
- Measures up to 100 meters (white board).
- Measures up to 4000 meters to a single prism.
- Patterned on the popular GTS-310 Series total stations.



Imagine getting a distance to these and many other objects without a prism.
GO REFLECTORLESS!



- GPT-1001 - 2" accuracy**
- GPT-1002 - 3" accuracy**
- GPT-1003 - 5" accuracy**

GPT-1000 SPECIFICATIONS:

Telescope Unit		
Length	150mm	
Magnification	30x	
Image	Erect	
Field of view	1°30'	
Resolving power	3"	
Minimum focus	1.4m	
Distance Measurement		
Measurement range PRISM MODE	4000m (13000ft.)	
Measurement range NON-PRISM MODE	100m (330ft.)	
Measurement accuracy PRISM MODE	± (3mm + 2ppm) m.s.e. (in fine mode)	
Measurement accuracy PRISM MODE	± (10mm)	
Least count	0.2mm (.001ft.) (in fine mode) 1mm (.005ft.) (in track mode)	
Measuring time	1.0 second (in fine mode) 0.3 second (in track mode)	
Angle Measurement		
Method	Incremental reading	
Tilt correction unit	Automatic correction in 2 axis	
Least count	1"75"	
Accuracy	2"-1001 3"-1002 5"-1003 (standard deviation DIN 18723)	
Display Unit		
Display size	LCD 20 characters in 4 lines, dual display	
Level Sensitivity		
Circular level	10"/2mm	
Plate level	30"/2mm	40"/2mm-GPT-1003
Optical Plummet Telescope		
Magnification	3x	
Image	Erect	
Field of view	4° (114mm / 1.3m)	
Operating temperature limit	-20° to 50° C	
Other		
Dimensions	347(H) x 190(W) x 150(L) mm	
Weight	5.9kg	4.8kg-GPT-1003
Operating time	Approx. 3.5 hours	
Point Guide	Yes	No-GPT-1003
Internal memory	Over 2000 points	

**ELECTRONIC
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Topcon GPT-1000 reflectorless total station

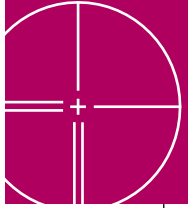
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TOTAL STATION WITH ON-BOARD DATA COLLECTION

The Topcon GTS-710 Series are the super intelligent total stations with built-in MS-DOS® operating system. All your requirements for surveying, data collecting and setting out are satisfied in the most versatile “all in one” total station system available.

The 710 system data collection software package features the popular Tripod Data Systems software. This software is well known for its powerful functions and ease of use.

GTS-710 - 1" accuracy with on-board data collection

GTS-711 - 2" accuracy with on-board data collection

GTS-712 - 3" accuracy with on-board data collection

Superior Accuracy

The GTS-710 series offers superior angular and distance accuracy for the most demanding jobs.

Built-in MS-DOS®

This makes it possible to develop application programs for any surveying job. What makes this system even more superior, is the PCMCIA card which is compatible with most office PC's and laptop computers.

The 710 series comes standard with 320K of internal RAM, and a 256K RAM card. Files can be transferred directly from the GTS-710 to a computer or the files can be copied from the PCMCIA card to a computer. Store your jobs internally in the 710 or directly to the card, it's your choice.

Dual Axis Compensation

Horizontal and vertical axis compensators ensure accurate measurements under the toughest conditions.

Point Guide

Two LED lights above the objective lens make it easier and faster for the rod person to get on line, or clear line.



PCMCIA Card (type II)

standard 256k memory card to store up to 3500 NEZ points. 512k and 1 meg. cards are available as an option.



Card reader/writer package

used for bi-directional data exchange between PC and card.



Advanced Application Programs

In the Advanced Application Program, the TDS software options are as follows:

Job Creation & Review

Select Data Path
Create New Job
Open Existing Job
Current Job Information
Edit/View Coordinates
Create/View Raw Data
Delete Job
Delete Raw Data
Rename Job
Delete Points
Backup Job
Recall Job
Create Point List
Show Directory
Edit Descriptors

Setup Functions

Time/Date
Raw Data File Time
Total Station Setup
Manual Data Entry
Repetition: Angles
Repetition: Distance
Repetition: Sets
Repetition: Radial SS
Operating Modes
Control File
Descriptor Codes
Collimation Correction
Degrees/Grads
Feet/Meters
Print Trace
Direct Recording
Rod Height Prompt
System Manager

Data Collection
Traverse
Sideshot
Backsight Comp
Backsight Check

Transfer Backsight
Backsight Circle Check
Height of Instrument
Next Unused Point
Off-Center Shots
Radial Sideshots
Direct & Reverse
Shot Option
Survey Notes
Fast Shot Mode
Shoot From Two Ends

Triangle Solutions

3 Sides Known
2 Angles & Included Side
2 Angle & Opposite Side
2 Sides & Included Angle
2 Sides & Opposite Angle

Leveling

Differential
Trigonometric

Earthwork

Average End Area
Borrow Pit/Mound

Sunshots

Ephemeris Method
Almanac Method
Error Check

COGO

Area
Azimuth/Bearing Conversion
Zenith Angle Conversion
Slope Distance Conversion
Intersections
Define A Direction
Auto Inverse: Distance,
Angle & Direction

Inverse By Point
Inverse By Line
Inverse By Coordinates
Inverse By Station Offset
Store Offset Point
Pre-Determined Area
2-Point Resection
3-Point Resection
Line Intersection
Compute Corner Angle
Remote Elevation
Map Check
Where's Next Point

Curves

Horizontal
Vertical
Spiral
3-Point Curve Solution
2-Point & Radius Point
PC Computation
PT Computation
Radius Point Computation
PI Deflection Layout
Curve In A Traverse
Straight-Grade Elevation
Line Tangent To A Circle
Traverse On A Curve
Straight Grade

Adjustments

Change Scale
Translation
Rotation
Angle Adjustment
Compass Rule
Elevation
Transit Rule

Stakeout

Radial/Point Stake
Offset Stakeout
Slope Stakeout

Store Reference Point
Move Stakeout Point
Come/Go
Cut/Fill
Compute Stake Coordinate
Locate Stake By Station
Stake Elevation
Store Cut Sheet
Basic Road Layout
Traverse By Station

Data Manipulation

Transfer Between Screens
Edit Default Values

File Transfer To PC

Coordinates
Raw Data
Cut Sheet
Point List
Text Files
Road Layout Files
FAST Data Transfer

Print/Plot

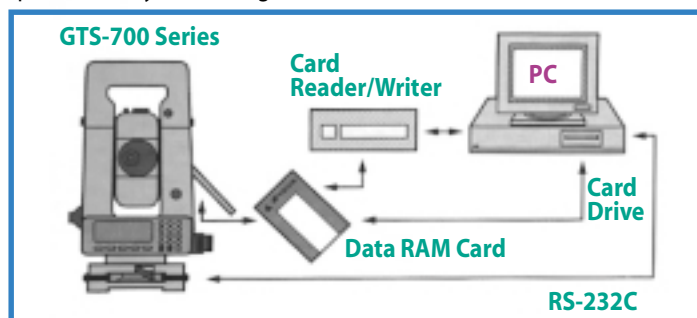
Screen Plot: Points
Screen Plot: Lines
Screen Plot: Pt. Number
Print To A File
Print Coordinates
Print Raw Data
Print Cut Sheet
Print Directory
Print Calls
Print Spray Point Info.
Print Descriptor Codes

Road Layout

Horizontal Alignment
Vertical Alignment
Cross-Section Profile
Templates
Super Elevation

Data Communication System

Combining MS-DOS operation system and the PCMCIA card, makes it quick and easy to exchange files between the field and office.



Accessories for GTS-710

51727 BT-30Q on-board battery
51755 BC-20B 120V charger
51756 BC-20C 230V charger
51711 Universal quick charger
51714 Cable from 51711 to GTS-710
51720 110V AC adapter for 51711
51206 512K RAM card
51207 1 Meg. RAM card
51340 Diagonal eyepiece
51341 Solar reticle
51344 Solar filter
51334 Trochometer



TOTAL STATION WITH MS-DOS

The Topcon GTS-510 Series total stations offer the same superior accuracy as the GTS-710 Series without the on-board data collection. You can use the internal MS-DOS® based or other external data collection system of your choice. Plus it keeps your options open; you can upgrade your GTS-510 to a 710 Series with full on-board data collection capabilities if your future requirements change.



GTS-510 - 1" accuracy
GTS-511 - 2" accuracy

Features:

- Dual Axis Compensation
- MS-DOS® Operating System
- Point Guide Tracking Light
- Superior Angle And Distance Accuracy
- RS-232 Port
- Fully Upgradable to 700 Series
- Easy To Operate Controls

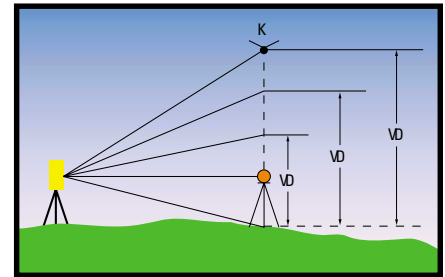
Accessories for GTS-510

51727	BT-30Q on-board battery
51755	BC-20B 120V charger
51756	BC-20C 230V charger
51711	Universal quick charger
51714	Cable from 51711 to GTS-510
51720	110V AC adapter for 51711
51340	Diagonal eyepiece
51341	Solar reticle
51344	Solar filter
51334	Trough compass

Layout Point (LAYOUT)

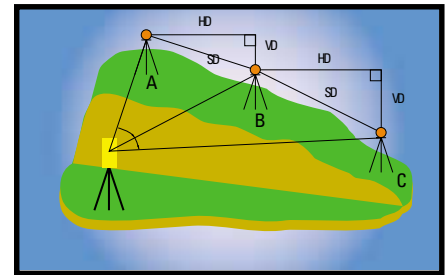
Using entered design coordinates, the instrument automatically converts them into H-Angle and H-Distance. Turn the instrument so that the indicated angle difference shows zero. Direct the rod person to move until indicated difference shows zero and finally Z-Distance shows zero also.

Application Software:



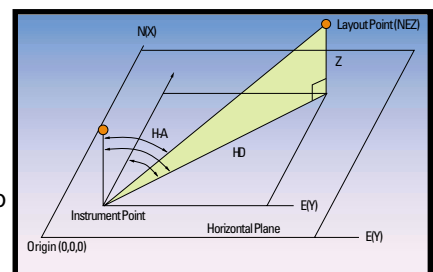
Remote Elevation (REM)

For measuring the height where the prism can not be placed directly. Measurement can be extended along the plumb line and height is continuously displayed.



Missing Line Measurement (MLM)

Missing lines can be drawn from two prism locations and horizontal distance, difference in height and slope distance can be calculated without occupying either points.



GTS-710 series / GTS-510 series

**ELECTRONIC
TOTAL
STATIONS**



Specifications

		GTS-710	GTS-711	GTS-712	GTS-510	GTS-511
TELESCOPE						
Objective Lens		45mm (1.77in.) EDM: 50mm (1.96in.)			45mm (1.77in.) EDM: 50mm (1.96in.)	
Magnification(X)		30X			30X	
Resolving Power		2.5"			2.5"	
Minimum Focus		1.3m			1.3m	
Illumination		Provided			Provided	
DISTANCE MEASUREMENT						
Measuring Range	1 prism	2400m (7900ft)		2200m (7200ft)	2400m (7900ft)	
	3 prisms	3100m (10200 ft)		2900m (9500ft)	3100m (10200ft)	
	9 prisms	3700m (12100ft)		3600m (11800ft)	3700m (12100ft)	
Accuracy		±(2mm+2ppm) m.s.e			±(2mm+2ppm) m.s.e	
Measuring Time		2.5seconds			2.5seconds	
Single-Repeat		0.6seconds			0.6seconds	
Tracking		fine: 0.2mm (0.001ft.) normal: 1mm (0.005ft.) tracking: 10mm (0.02ft.)			fine: 0.2mm (0.001ft.) normal: 1mm (0.005ft.) tracking: 10mm (0.02ft.)	
Atmospheric Correction		-999.9 tp +999.9 (0.1ppm steps)			-999.9 tp +999.9 (0.1ppm steps)	
Prism Constant Correction		-99.9 tp +99.9 (0.1mm steps)			-99.9 tp +99.9 (0.1mm steps)	
Ambient Temperature Range		-4°F to +122°F			-4°F to +122°F	
ANGLE MEASUREMENT						
Minimum Reading		0.5" or 1"	1" or 5"	1" or 5"	0.5" or 1"	1" or 5"
Accuracy		1"	2"	3"	1"	2"
(standard deviation DIN18723)		(0.2mgon)	(0.6mgom)	(1.0mgon)	(0.2mgon)	(0.6mgon)
Detection Method		H: 2sides V: 2 sides			H: 2 sides V: 2 sides	
Circle Diameter		71 mm			71 mm	
TILT SENSOR						
Type		Dual-axis Liquid Type			Dual-axis Liquid Type	
Range		±3'			±3'	
LEVEL SENSITIVITY						
Circular Level		10"/2mm			10"/2mm	
Plate Level		30"/2mm			30"/2mm	
OPTICAL PLUMMET TELESCOPE						
Magnification		3X			3X	
Focusing Range		0.5mm to infinity			0.5mm to infinity	
BATTERY PACK						
Output Voltage		7.2 volts			7.2 volts	
Capacity		2.8AH			2.8AH	
Operating Time		4.5 hours			4.5 hours	
Distance Measurement		10hours			10hours	
Angle Measurement		1.5 hours			1.5 hours	
Recharging Time		2.2 lbs. (1.0kg)			2.2 lbs. (1.0kg)	
Battery						
BATTERY CHARGER						
Input Voltage		AC 120V (BC-20B)			AC 120V (BC-20B)	
Recharging Time		1.5 hours			1.5 hours	
Operating Temperature		50°F to 104°F			50°F to 104°F	
Charging Signal		Red Lamp			Red Lamp	
Weight		2.0 lbs. (0.9kg)			2.0 lbs. (0.9kg)	
DIMENSIONS						
Instrument (with battery)		11.6(H) x 8.3(W) x 6.4(D)			11.6(H) x 8.3(W) x 6.4(D)	
Weight		15.1 lbs. (6.9kg)			15.1 lbs. (6.9kg)	
Carrying Case		8.1 lbs. (3.7kg)			8.1 lbs. (3.7kg)	

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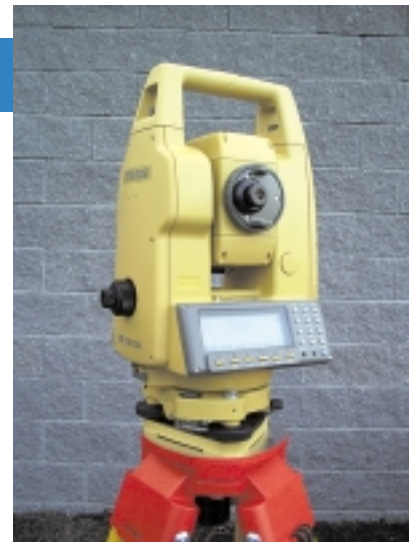
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toll free **1.800.45ESSCO**

PRO SERIES TOTAL STATION

Topcon America announces another breakthrough in total station technology. The GTS-600 ProSeries total stations with optional auto focusing. The GTS-600 has been designed for the professional surveyor to allow maximum productivity with innovative new features, while maintaining a competitive price.

Bad weather is no longer an excuse for lost productivity. The new generation GTS-600 auto focus, waterproof, total station technology is designed to keep you on the job and finish faster.



- GTS-601 - 1" accuracy**
- GTS-602 - 2" accuracy**
- GTS-603 - 3" accuracy**
- GTS-605 - 5" accuracy**

Application Software:

Features:

Auto-Focusing

One touch focusing for rapid target sighting (all models)

Laser or Optical Plummet

Available on all models

On-Board Data Collection

Topcon's easy to use menu driven on-board data collection makes logging field data fast and easy.

Dual Axis Compensation

Topcon's durable liquid compensators correct for both horizontal and vertical angle measurements.

Point Guide Tracking Light

Aids the rodperson in getting on line by emitting a visible laser light.

RS-232 Port

For use with an external data collector.

Large 240 x 80 LCD Display



NiMH Rechargeable Batteries

No more NiCad battery problems

Water Resistant Design

Meets "IXP5" water resistance performance based on IEC529 international standards.

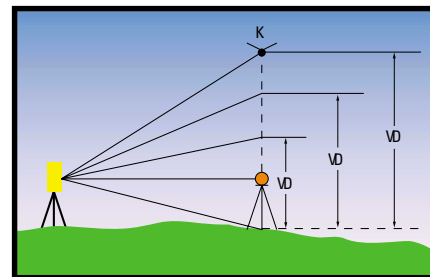
3 Year Warranty

Accessories for GTS-600

- 51731 BT-50Q on-board battery
- 51757 BC-27B 120V charger
- 51758 BC-27C 230V charger
- 51737 BT-3L Heavy duty battery
- 51743 Charger for BT-3L
- 51340 Diagonal eyepiece
- 51341 Solar reticle
- 51344 Solar filter

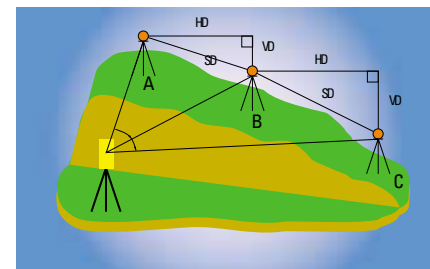
Offset Shots

For measuring the distance to a point where the prism can not be placed. The measured distance to an eccentric point is transferred to the direction angle of the correct point.



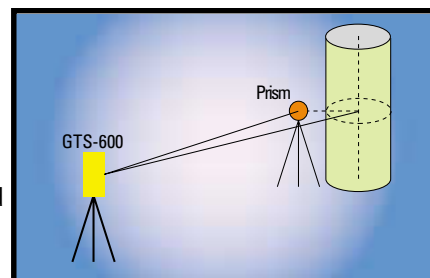
Remote Elevation (REM)

For measuring the height where the prism can not be placed directly. Measurement can be extended along the plumb line and height is continuously displayed.



Missing Line Measurement (MLM)

Missing lines can be drawn from two prism locations and horizontal distance, difference in height and slope distance can be calculated without occupying either points.



Topcon GTS-600 Series total station



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South Plainfield

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www.esscosupply.com

GTS-600 series

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Specifications

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	GTS-601	GTS-602	GTS-603	GTS-605
TELESCOPE				
Objective Lens	45mm (1.77in.) EDM: 50mm (1.96in.)			
(1.96in.)Magnification(X)	30X			
Resolving Power	2.5"			
Minimum Focus	1.3m			
Illumination	Provided			
DISTANCE MEASUREMENT				
Measuring Range 1 prism	3000m (9840ft)	3000m (9840ft)	3000m (9840ft)	3000m (9840ft)
(normal conditions) 3 prisms	4000m (13120 ft)	4000m (13120ft)	4000m (13120ft)	4000m (13120ft)
9 prisms	5000m (16400ft)	5000m (16400ft)	5000m (16400ft)	5000m (16400ft)
Accuracy	±(2mm+2ppm) m.s.e			
Measuring Time				
Single-Repeat	3.1 seconds			
Tracking	0.7 seconds			
Minimum Reading	single: 0.2mm (0.001ft.) coarse: 1mm (0.005ft.) tracking: 10mm (0.02ft.)			
Atmospheric Correction	-99 tp +99 (1ppm steps)			
Prism Constant Correction	-99 tp +99 (1mm steps)			
Ambient Temperature Range	-4°F to +122°F			
ANGLE MEASUREMENT				
Minimum Reading	0.5" or 1"	1" or 5"	1" or 5"	5" or 10"
Accuracy	1"	2"	3"	5"
(standard deviation DIN18723)	(0.3 mgon)	(0.6mgon)	(1.0mgon)	(1.5mgon)
Detection Method	H: 2sides V: 2 sides			
Circle Diameter	71 mm			
TILT SENSOR				
Type	Dual-axis Liquid Type			
Range	±3'			
LEVEL SENSITIVITY				
Circular Level	10"/2mm			
Plate Level	30"/2mm			
OPTICAL PLUMMET TELESCOPE				
Magnification	3X			
Focusing Range	0.5mm to infinity			
BATTERY PACK				
Output Voltage	7.2 volts			
Capacity	2.7AH			
Operating Time				
Distance Measurement	5 hours			
Angle Measurement	9 hours			
Recharging Time	1.8 hours			
Battery	1.1 lbs. (0.5kg)			
BATTERY CHARGER				
Input Voltage	AC 120V (BC-27BR)			
Recharging Time	1.8 hours			
Operating Temperature	50°F to 104°F			
Charging Signal	Red Lamp			
Weight	1.1 lbs. (0.5kg)			
DIMENSIONS				
Instrument (with battery)	343mm(H) x 230mm(W) x 178mm(D)			
Weight	12.9 lbs. (5.9kg)			
Carrying Case	8.1 lbs. (3.7kg)			



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WATERPROOF TOTAL STATION

The Topcon GTS-210 Series instruments are the world's first "All Weather" electronic total stations. Powerful and reliable the 210 series will perform on the toughest job sites.

GTS-211D - 5" accuracy

GTS-212 - 6" accuracy

GTS-213 - 7" accuracy

Features:

Automatic Slope Reduction

Quickly and easily display horizontal and vertical distances as well as direct ground elevations and coordinates.

Dual Axis Compensation (GTS-211D only)

Topcon's durable liquid compensators correct for both horizontal and vertical angle measurements.

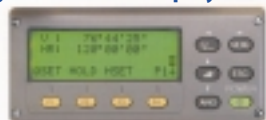
Enhanced Measuring Distance

Longer range and faster measurements to a single or triple prism reflector.

RS-232 Port

For use with an external data collector.

Large 4 Line LCD Display



NEZ Measurements

For computing foresight coordinates or perpendicular offsets.

WaterProof Design

Meets "IXP6" water resistance performance based on IEC529 international standards.

Faster Measuring Time

To increase field efficiency.

Accessories for GTS-210

- 51250K CRC transfer software
- 51724 BT-32Q on-board battery
- 51769 BC-19B 120V charger
- 51711 Universal quick charger
- 51714 Cable from 51711 to GTS-210
- 51720 110V AC adapter for 51711
- 51318 Diagonal eyepiece
- 51311 Solar reticle
- 51332 Solar filter
- 51334 Trough compass

Internal Memory

For data recording and layout. Data transfer to a PC is possible with the PC interface cable.

DATA STORAGE

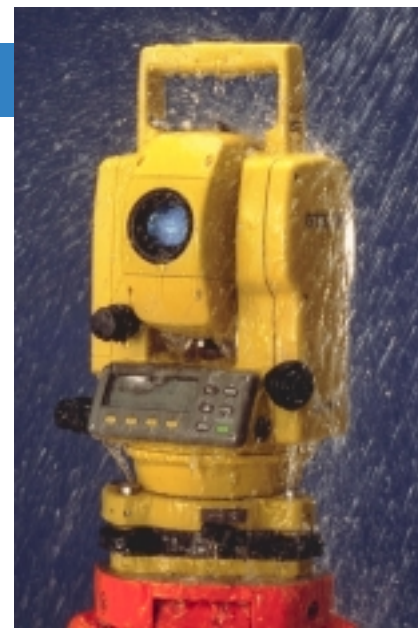
	Measured	Layout
211D	2400	4800
212	2400	4800
213	---	600

Data Collection/Layout (211D, 212)

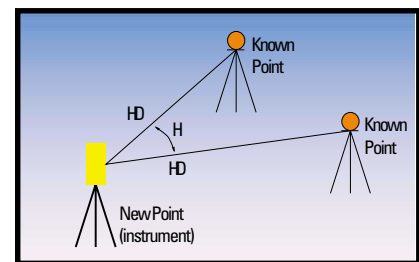
Measured data (angle, distance, NEZ) along with prompt message data of up to 2400 points can be stored in the internal memory. After typing in the prompt data, simply press the "ALL" key to measure a distance and automatically store all the data.

CRC Software and cable (optional)

For bi-directional data transfer

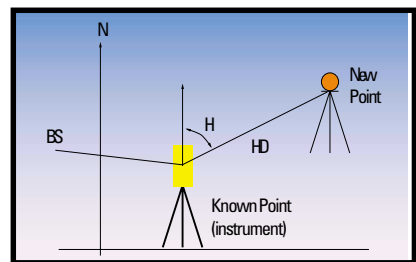


Application Software:



Resection

Instrument coordinates can be calculated by measuring two known points stored in the internal memory of the instrument.



Side Shot

Set the instrument on a known point. Collecting the side shot point angle and distance, the side shot point coordinate is calculated and stored in the coordinate data area.

GTS-210 series

**ELECTRONIC
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Specifications

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		GTS-211D	GTS-212	GTS-213
TELESCOPE				
Objective Lens		40mm (1.57in.) EDM: 45mm (1.77in.)		
(1.96in.)Magnification(X)		26X		
Resolving Power		3.0"		
Minimum Focus		0.9m		
Illumination		Nb		
DISTANCE MEASUREMENT				
Measuring Range (normal conditions)	1 prism 3 prisms 9 prisms	1100m (3600ft) 1600m (5200ft)	900m (3000ft) 1200m (4000ft)	600m (2000ft) 900m (3000ft)
Accuracy		±(3mm+2ppm) m.s.e	±(3mm+5ppm) m.s.e	±(5mm+5ppm) m.s.e
Measuring Time		2.5 seconds		
Single-Repeat		0.5 seconds		
Tracking		fine: 1mm (0.005ft.) coarse: 1mm (0.005ft.) tracking: 10mm (0.02ft.)		
Minimum Reading				
Atmospheric Correction		-99 to +99 (1ppm steps)		
Prism Constant Correction		-99 to +99 (1mm steps)		
Ambient Temperature Range		-4°F to +122°F		
ANGLE MEASUREMENT				
Minimum Reading		1" or 5"	1" or 5"	5" or 10"
Accuracy (standard deviation DIN18723)		5" (1.5mgon)	6" (1.8mgon)	10" (3mgon)
Detection Method		H: 2sides V: 1 sides		
Circle Diameter		65 mm		
TILT SENSOR				
Type		Dual-axis Liquid Type	Single-axis Liquid Type	
Range		±3'	±3'	
LEVEL SENSITIVITY				
Circular Level		10"/2mm	10"/2mm	
Plate Level		30"/2mm	40"/2mm	
OPTICAL PLUMMET TELESCOPE				
Magnification		3X		
Focusing Range		0.5mm to infinity		
BATTERY PACK				
Output Voltage		7.2 volts		
Capacity		1.4AH		
Operating Time		3.5 hours		
Distance Measurement		12 hours		
Angle Measurement		1.5 hours		
Recharging Time		0.71 lbs. (0.3kg)		
Battery				
BATTERY CHARGER				
Input Voltage		AC 120V (BC-19B)		
Recharging Time		1.5 hours		
Operating Temperature		50°F to 104°F		
Charging Signal		Red Lamp		
Weight		1.8 lbs. (0.8kg)		
DIMENSIONS				
Instrument (with battery)		11.4(H) x 7.2(W) x 6.0(D)		
Weight		110.8 lbs. (4.9kg)		



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