Robotic Total Station

GT-1200/GT-600

The Ultimate Total Station

GT-1200/GT-600

With the GT-1200/GT-600, you get the efficiency of a single-operator robotic system, the power of long-range reflectorless measurements, and the versatility of Hybrid Positioning™, all in your choice of 1", 2" or 3" GT-1200 models or 2", 3" or 5" GT-600 models.

Ultra powerful

Improved, intelligent Ultrasonic motor control provides smoother operation with less wear and tear. Ideal for survey, vertical construction or machine guidance, the solution is designed to stake or layout more points in less time even in challenging conditions.

Ultra accurate

Improved, UltraTrac™ prism tracking for challenging job site environments utilizes optical sensing combined with high-speed Ultrasonic motor control. Whether working at a distance or up close, the instrument maintains prism lock making you more productive in any environment.

Ultra productive

Combine and conquer by accelerating your productivity with our hybrid solutions that utilize both GNSS and robotics so you can capture the shot, regardless of tree cover, loss of line of sight, or hard to reach points. Get to the next level of performance to tackle any project in a fraction of the time.

10 Hz update rates for faster more efficient staking

180°/sec turning speed for exceptional productivity

30% smaller and lighter than any other Topcon series robotic instrument

Stay productive, stay confident with UltraTrac™ prism lock technology

GNSS hybrid ready so you can handle any job site

1. Fast and powerful EDM – 1,000 m (3,280 ft) non-prism and 5,000 m (16,404 ft) prism range
2. Rugged waterproof and dustproof IP65 design
3. Bright color touchscreen display for on-board data collection
4. Integrated Bluetooth® and advanced LongLink™ communication for up to 600 m (1,968 ft) fully robotic range
5. Direct Drive motors with a turning speed of 180º per-second
6. Advanced UltraTrac technology
7. Raised multi-key functionality
8. Add the RC-5A remote for up to 600 m (1,968 ft) “single tap” prism re-acquisition

Your return on investment

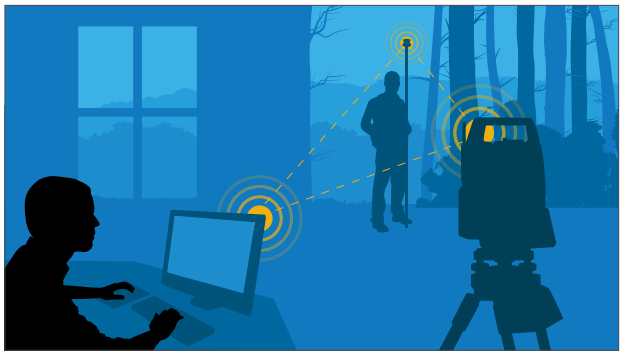
An MEP contractor saved over $200,000 in labor laying out over 128,000 points for sleeves and inserts over the span of a multiple building project with 109 floors. ***HPS Mechanical Case Study***

> “The bottom line is that a team equipped with a robotic total station can be five times as fast as team armed only with a set of drawings and a measuring tape.”
>
> ***MCAA study***

Workdays turned into workflows

Bridge the gap between your mobile workforce and office staff with faster, more efficient cloud-based MAGNET® Enterprise services.

- Use the Point Manager plug-in for Revit and AutoCAD for automated point creation
- Secure connectivity to your active job sites as well as heavy machines using Sitelink3D™
- Instant file sharing with both Autodesk® AutoCAD Civil 3D and Bentley MicroStation



GT-1200/GT-600 Robotic Total Station

- 10 Hz update rates to the FC-6000 field computer for more efficient staking
- Ultrasonic Direct Drive motors with 180° turning speed for exceptional productivity
- 30% smaller and lighter than any other Topcon series robotic instrument
- Optimize productivity by combining the GT-1200/GT-600, FC-6000, and MAGNET software with a HiPer series receiver

FC-6000 Field Computer

- Increased processing speed for data sets large and small with improved graphics
- LongLink™ Bluetooth provides two times longer range than class 1 Bluetooth
- Long lasting, hot swappable battery and an internal battery for additional runtime
- Optional external keyboard and docking station further enhance productivity

HiPer VR Receiver

- Automatically tracks every satellite constellation signal now and into the future
- Withstand the harshest environments with rugged IP67 design
- Compact form factor ideal for Millimeter GPS and Hybrid Positioning
- Capture mis-leveled field measurements out of plumb by as much as 15°

MAGNET Software Suite

- Streamline your most-used routines and ensure a fast and easy data connection from field to office
- Faster, customizable applications for processing, field-to-finish and 3D construction
- Integrate robotic total station and GNSS with increased speed and productivity
- Graphical intuitive software with low learning curve
- Microsoft Bing Maps® for satellite image background

TOPCON

Specifications subject to change without notice.

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www.topconpositioning.com/gt1200-600series

GT-1200/600

Accurate, powerful, and versatile

Built for job site mobility, the flagship GT series Ultrasonic robotic total station enables accurate and productive workflows for highly demanding survey and construction applications. Precisely lay out or survey more points in less time and improve quality and consistency. Easy-to-use digital processes with repeatably accurate results mean less rework and better quality control. The GT series is an all-in-one professional tool for layout, survey and machine guidance.

- Precise positioning with single-person operation
- High-speed advanced Ultrasonic motors
- Easy-to-use with MAGNET or Pocket3D software
- Seamless integration into BIM workflows
- Available in GT-1200 and GT-600 models with multiple accuracy levels
- Three-year instrument and five-year motor warranty
- Ultra-rugged IP65 dust and water resistance

TELESCOPE	
Length	142 mm
Aperture	EDM: 38 mm
Magnification	30x
Image	Erect
Resolving power	2.5”
Field of view	1°30’
Minimum focus	1.3 m (4.3 ft.)
Reticle illumination	5 brightness levels
ANGLE MEASUREMENT	
Horizontal and vertical circles type	Rotary absolute encoder
Detecting	2 sides
Angle Units	Degree/Gon/Mil (selectable)
MINIMUM DISPLAY	
GT 1201/1202/602	0.5” (0.0001 gon/0.002 mil) 1” (0.0002 gon/0.005 mil) (selectable)
GT 1203/603/605	1” (0.0002 gon/0.005 mil) 5” (0.0015 gon/0.025 mil) (selectable)
ANGLE ACCURACY (ISO 17123-3 : 2001)	
GT 1201	1” (0.0003 gon/0.005 mil)
GT 1202/602	2” (0.0006 gon/0.010 mil)
GT 1203/603	3” (0.0010 gon/0.015 mil)
GT 605	5” (0.0015 gon/0.025 mil)
Collimation compensation	On/Off (selectable)
Measuring mode	Horizontal angle: Right/Left (selectable) Vertical angle: Zenith/Horizontal/Horizontal ± 90° /% (selectable)
TILT ANGLE COMPENSATION	
Type	Liquid 2-axis tilt sensor
Minimum display	1”
Range of compensation	± 6’ (0.0018 gon)
Automatic compensator	On (V and H/V) / Off (selectable)
Tilt offset	Can be changed
DISTANCE MEASUREMENT	
Measuring method	Coaxial phase shift measuring system
Signal source	Red laser diode 690 nm Class 3R
(IEC60825-1 Ed. 3.0: 2014/FDA CDRH 21CFR Part1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No.56, dated May 8, 2019.))	
MEASURING RANGE	
Prism-2 X 1*2	GT-1200 series: 1.3 to 5,000 m (16,400 ft.) GT-600 series: 1.3 to 4,500 m (14,760 ft.)
360° Prism ATP1/ATP1S	1.3 to 1,000 m (3,280 ft.)
Prism-5	1.3 to 500 m (1,640 ft.)
Reflective sheet RS90N-K*3	1.3 to 500 m (1,640 ft.)
Reflective sheet RS50N-K*3	1.3 to 300 m (980 ft.)
Reflective sheet RS10N-K*3	1.3 to 100 m (320 ft.)
Reflectorless (White)*2	GT-1200 series: 0.3 to 1,000 m (3,280 ft.) GT-600 series: 0.3 to 800 m (2,624 ft.)
(Using the following reflective prism/reflective sheet target during normal atmospheric conditions*1)	

GT-1200/600

MINIMUM DISPLAY	
Fine/Rapid measurement	0.0001 m (0.001 ft./ 1/16 inch) or 0.001 m (0.005 ft./ 1/8 inch)
Tracking measurement	0.001 m (0.005 ft./ 1/8 inch) or 0.01 m (0.1 ft./ 1/2 inch)
Maximum slope prism / reflective sheet	12,000 m
Slope distance	Reflectorless: 1,200 m (3,930 ft.) Prism: 9,600 m (31,490 ft.)
Distance unit	m/ft./US ft./inch (selectable)

DISTANCE ACCURACY	
Circular or 360° Prism ATP1	GT-1200 series Fine: 1 mm (0.003 ft.) + 2 ppm Rapid: 5 mm (0.0016 ft.) + 2 ppm GT-600 series Fine: 2 mm (0.006 ft.) + 2 ppm Rapid: 5 mm (0.016 ft.) + 2 ppm
Reflective sheet*3	Fine: 2 mm (0.006 ft.) + 2 ppm Rapid: 5 mm (0.016 ft.) + 2 ppm
Reflectorless (White)*4	Fine: 2 mm (0.006 ft.) + 2 ppm (0.3 to 200 m) 5 mm (0.016 ft.) + 10 ppm (200 to 350 m) 10 mm (0.032 ft.) + 10 ppm (350 to 1000 m) Rapid: 6 mm (0.020 ft.) + 2 ppm (0.3 to 200 m) 8 mm (0.026 ft.) + 10 ppm (200 to 350 m) 15 mm (0.049 ft.) + 10 ppm (350 to 1000 m)
Measurement mode	Fine measurement (single/repeat/average) Rapid measurement (single/repeat) / Tracking (selectable)

MEASURING TIME	
Fine measurement	1.5 sec + every 0.9 sec.
Rapid measurement	1.3 sec + every 0.6 sec.
Tracking measurement	1.3 sec + every 0.4 sec.
Temperature input range	- 35 to 60°C (in 0.1°C step)/ - 31 to 140°F (in 1°F step)
Pressure input range	500 to 1,400 hPa (in 0.1 hPa step), 375 to 1,050 mm Hg (in 0.1 mm Hg step), 14.8 to 41.3 inch Hg (in 0.01 inch Hg step)
ppm input range	-499 to 499 ppm (in 0.1 ppm step)
Prism constant correction	-99 to 99 mm (in 0.1 mm step) 0 mm fixed for reflectorless measurement
Earth curvature and refraction correction	No/Yes K=0.142 Yes K=0.20 (selectable)
Sea level correction	No/Yes (selectable)

*1: Slight haze, visibility about 20 km, sunny periods, weak scintillation.
*2: No haze, visibility about 40 km, overcast, no scintillation.
*3: Figures when the laser beam strikes within 30° of the reflective sheet target.
*4: Figures when using Kodak Gray Card White side (reflection factor 90%) and brightness level is less than 5,000 lx (a little cloudy). When performing reflectorless measurement, the possible measurement range and precision will change depending on the target reflection factor, weather conditions and location conditions.

ROTATION	
Max revolving speed (turning)	GT-1200: 180 degrees per second GT-600: 120 degrees per second
Max auto tracking speed	GT-1200: 20 degrees per second GT-600: 18 degrees per second

ULTRATRAC™ TRACKING RANGE	
Prism-2	GT-1200: 1.3 to 1,000 m (3,280 ft.) GT-600: 1.3 to 800 m (2,624 ft.)
360 degree prism (ATP1)	2 to 600 m (1,960 ft.)

AUTO POINTING ACCURACY	
Standing still at 100 m or less	1.2 mm or better
Standing still greater then 100 m	0.3 mm (0.001ft.) + 9 ppm

GUIDE LIGHT	
Light source	LED (red 626 nm/green 524 nm)
Visible distance	1.3 to 150 m
Visible angle	Right and Left/Upward and Downward: ± 4° (7 m/100 m)
Resolving power at center area (width)	4' (about 0.12 m/100 m)
Brightness	3 levels (bright/normal/dim)

MEMORY AND DATA	
Internal memory	1GB
External memory	USB flash memory (up to 32GB)
Visible angle	Asynchronous serial RS232C compatible USB Revision 2.0 (FS) Host (Type A) Client (Type miniB)

LONGLINK™ BLUETOOTH® WIRELESS TECHNOLOGY	
Transmission method	FHSS
Modulation	GFSK (Gaussian-filtered frequency shift keying)
Frequency band	2.402 to 2.48 GHz
Bluetooth® profile	SPP, DUN
Power class	Class 1
Range	600 m (No obstacles, few vehicles or sources of radio omissions/interference in the near vicinity of the instrument, no rain, while in communication
Authentication	Yes/No (selectable)

WI-FI	
Communication distance	10 m
Access method	Infrastructure mode/ad hoc mode
Frequency range	2,412 to 2,472 MHz (1 to 11ch)
Transmission specification	IEEE802.11b/g/n

GT-1200/600

POWER SUPPLY	
Power source	Rechargeable Li-ion battery BDC72
Working duration at 20°C	BDC72: approx. 4 hours BT-73Q (external optional) approx. 6.5 hours
Fine single measurement = every 30 seconds after worked 180 degrees and locking on prism	
Battery state indicator	4 levels
Auto power-off	5 levels (5/10/15/30 min/Not set) (selectable)
External power source	6.7 to12 V

BATTERY (BDC72)	
Nominal voltage	7.2 V
Capacity	5,986 mAh
Dimensions (w x d x h)	40 x 70 x 40 mm
Weight	approx. 220 g
Charging time at 25°C	approx. 8 hours for two batteries using CDC77 charger

CHARGER (CDC77)	
Voltage	AC100 to 240 V
Charging temperature range	0 to 40°C
Storage temperature range	-20 to 65°C
Size (w x d x h)	94 x 102 x 36 mm
Weight	about 250 g

OPERATING SYSTEM
Windows Compact 7

DISPLAY
Color touchscreen 4.3 inch Transmissive TFT VWGA color LCD
Backlight LED 9 brightness levels
Touch panel resistance sensitive analog type

SENSITIVITY OF LEVELS	
Circular level	10’/2 mm on tribrach 8’/2 mm on main unit (optional)
Electronic circular levels	Graphic display range: 6’ (inner circle) Digital display range: ± 6’ 30”

OPTICAL PLUMMET	
Image	Erect
Magnification	3X
Minimum focus	0.5 m

ENVIRONMENTAL	
Operating temperature	Standard models: -20 to 50°C (-4 to 122°F) (no condensation)
Storage temperature	-30 to 60°C (-22 to 140°F) (no condensation)
Dust/Water rating	IP65 (IEC 60529: 2001)
Instrument height	192 mm from tribrach mounting surface
Size with handle (w x d x h)	212 x 172 x 355 mm
Weight (with handle/battery)	5.8 kg

CERTIFICATIONS AND STANDARDS
USA FCC Class A
Europe R&TTE-Class1
Europe EMC-ClassB
Canada ICES –ClassA
Australia C-Tick N 13813
Europe WEEE Directive
Europe Battery Directive
California Proposition 65
California Perchlorate Material CR
TELEC

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