



Electronic Digital Theodolites

DT210 · DT510 · DT510A · DT610

Variety of display modes

You can select the angle display unit that best suits you. Horizontal angle is switchable between clockwise and counterclockwise, and angle Hold and 0-set functions are also provided. Vertical angle can be set to Zenith=0, Horizontal=0, Horizontal=0±, or % of slope.

Enhanced reliability with absolute encoders

SOKKIA's market-proven advanced absolute encoders, which utilize RAB (RANdom Bi-directional) code and digital sampling technology, further enhance the reliability of angle measurement. DT210 guarantees 2" accuracy, DT510/DT510A ensure 5" accuracy and DT610-7" for both horizontal and vertical angles.

Ultra-long working hours

With SOKKIA's unique algorithm in operating absolute encoders, power consumption has been dramatically reduced. Powered by 2 standard LR14/C alkaline batteries, the DT210 and DT510 will operate for 75 hours, while the DT510A and DT610 will work for an astonishing 110 hours.

One-key start

You can start taking measurements as soon as you turn on the power, thanks to the absolute encoders. Moreover, azimuth is kept when restart the instrument after turning off the power.

Easy-to-read, easy-to-use control panels

A large LCD screen provides clear angle readings under all conditions, and thanks to simple 4-key operation no training is required. The DT210 and DT510 have control panels on both faces for added convenience.

Dual-axis compensator

The DT210/DT510 automatically compensate both Vertical and Horizontal angles by monitoring the tilt of instrument in X&Y two directions.

Audible right-angle notification

Once the zero (0) horizontal angle direction is determined, all models emit audible tones for each of the four right-angle directions. Specifically, it sounds two different tones within ±15° of 90° and stops beeping when it comes within ±1°.

Superior IP66 protection

Complying with the tough IP66 standard for resistance to dust and water, both models offer superior dependability even under harsh environmental conditions.

RS-232C port (DT210·DT510·DT510A)

Measurement data can be output to external devices via the RS-232C data port.

DT210·DT510·DT510A·DT610 Specifications

	DT210	DT510	DT510A	DT610
Telescope				
Length	165mm(6.5in.)		160mm(6.3in.)	
Objective aperture	45mm(1.8in.)		35mm(1.4in.)	
Magnification	30x		26x	
Image	Erect			
Resolving power	3"		3.5"	
Field of view	1°30'(26m/1,000m)			
Minimum focus	0.9m(3.0ft.) from telescope center			
Stadia	Multiplication constant	100		
	Additive constant	0		
Reticle illumination	Built-in. Bright/Dim, selectable		—	
Angle measurement				
Photoelectrical absolute encoder scanning, diametrical detection				
Display unit	Degree/Gon/Mil, selectable			
Display resolutions	1"/5", 0.2/1mg, 0.005/0.02mil, selectable			5"/10", 1/2mg, 0.02/0.05mil
Accuracy (ISO 17123-3:2001)	2"/0.6mg/0.01mil	5"/1.5mg/0.025mil		7"/2.2mg/0.035mil
Measuring mode	H	Clockwise, Counterclockwise, selectable. Hold, 0-set, available		
	V	Zenith 0 / Horizontal 0 / Horizontal 0± / % of slope, selectable		
Automatic dual-axis compensator	Dual-axis liquid tilt sensor Working range ±3'(±55mg)		—	
General				
Display	LCD, 8 digits x 2 lines with backlight			
Keyboard	4 keys			
Control panel location	On both faces		On one face	
Interface	Asynchronous serial, RS-232C compatible, baud rate 1,200bps			—
Self diagnostic function	Provided			
Right angle buzzer	Provided			
Sensitivity of levels	Plate level	30"/2mm*	40"/2mm	60"/2mm
	Circular level	10'/2mm		
Optical plummet	Image:Erect, Magnification:3x, Minimum focus:0.3m(1ft.)			
Tribrach	Detachable		Fixed	
Operating temperature	-20 to +50°C (-4 to +122°F)			
Dust and water protection	IP66 (IEC 60529:1989)			
Instrument height	236mm(9.3in.) from tribrach bottom			
Size with handle	W165 x D165 x H341mm (W6.5 x D6.5 x H13.4in.)			
Weight with handle	4.7kg(10.3lb.)	4.5kg (9.9lb)	4.2kg (9.3lb)	
Power supply				
Battery	LR14/C batteries x 2			
Continuous use with alkaline batteries at 25°C(77°F)	Approx. 75 hours		Approx. 110 hours	
Automatic power cut off	Auto-off time is selectable from 5, 10, 15, 30 minutes or none.			

* 20"/2mm plate level is available as a factory option for DT210.

Standard accessories

- LR14/C alkaline batteries (x2) • Lens cap • Lens hood • Plumb bob • Tool kit • Operator's manual • Carrying case • Shoulder strap

Optional accessories:

- CP7 tubular compass • DE25 diagonal eyepiece
- EL6 30x eyepiece (for DT610)
- ACE1 auto-collimation eyepiece
- ACE5 auto-collimation eyepiece
- LAP1 laser plummet nodule
- LSE1 laser sighting eyepiece
- 20"/2mm plate level for DT210 (factory option)
- OF1 solar filter