SOKKIA

DT4

FIVE-SECOND
ELECTRONIC DIGITAL THEODOLITE

A highly accurate electronic digital theodolite that provides total station performance when combined with the REDline EDM

Electronically performs and displays angle measurements to 5"/1mgon/0.02mil

Features for optimal convenience

Automatic indexing—Both horizontal and vertical circles are provided with 0 index points

Vertical circle is automatically indexed* when the telescope is moved passed 90° from zenith. Horizontal circle is automatically indexed* when the upper part is rotated horizontally and can be set to 0 at any position by simple key operation. Horizontal index value is stored in a short-term (5-hr.) memory, allowing easy recovery in the event of accidental power loss. The previous orientation is restored when the DT4 is switched on and the circle is indexed.

Automatic compensator

Tilt angle of the standing axis is measured by an internal sensor. Vertical angle can be automatically compensated for this tilt angle* and the compensated angle value displayed.

Interface port and external power plug

Interface port permits connection of an SDR Electronic Field Book for automatic data collection. A Sokkia external power supply system can be used via the external power plug. The port and the plug are located in the base, allowing the alidade to rotate freely without cable interference.

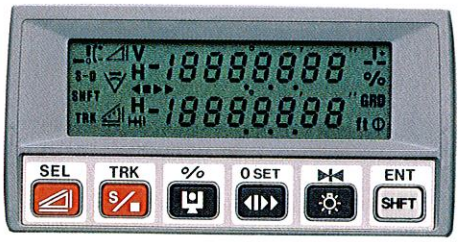
Maximum control for easy, accurate pointing

Wing clamp & fine motion assemblies for horizontal and vertical motions are coaxial with a large fine motion screw for optimum control. For horizontal circle motion, a wing clamp assembly with a slide cover is used to prevent accidental reorientation of the horizontal circle.

* ON/OFF, selectable by control panel key.

User-friendly control panel for fast, accurate work in the field

- Vertical and horizontal angles are displayed on LCD display on each position and are continuously updated.
- Keypad on each position allows selection of horizontal angle measurement clockwise, counterclockwise or accumulation.



- For vertical measurement, percentage of slope as well as zenith angle, vertical angle, and height angle can be selected by keying.
- Built-in illumination function for reticle and display enables clear reading. Illumination auto off (30 seconds) facility* is provided.

Key Functions

SEL ■ Transfer to instrument parameter setting mode and select the required instrument parameter option. □ Select slope distance, horizontal distance, or height difference for distance measurements.

0 SET ■ Set horizontal angle to zero. □ Select clockwise, counterclockwise, or accumulation for horizontal angle measurement.

TRK ■ Select/release tracking mode of REDMINI2 EDM. □ Transfer to angle + distance measurement mode and start/stop distance measurement.

■ Hold/release horizontal angle reading. □ ON/OFF illumination of displays and reticle.

% ■ Select/release % of slope display for vertical angle measurement. □ Return to angle measurement mode.

ENT ■ Enter selected parameter setting into memory. □ Select/release shift mode (upper function ■).

Instrument parameter setting selectable by simple key operation include:

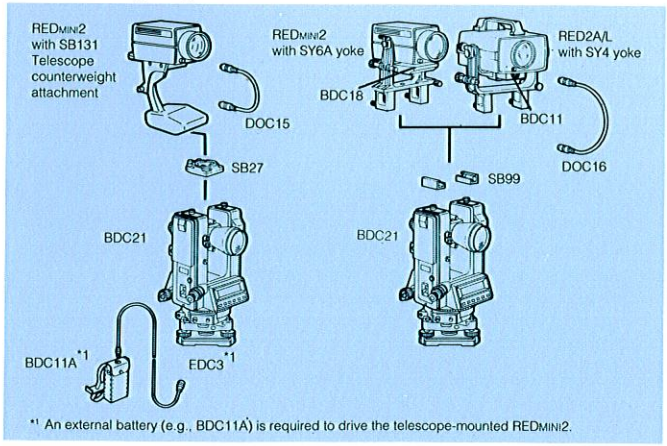
- Angle unit and resolution
- Vertical measurement mode
- Distance unit
- Automatic circle indexing (ON/OFF)
- Automatic compensator (ON/OFF)
- Illumination auto-off (ON/OFF)
- Auto power off (ON/OFF)

Internal memory retains most recent parameter settings even after power is shut off. Each time the instrument parameters are changed, the new settings become the current default parameters.

DT4 + Electronic Distance Meter = A Total Station

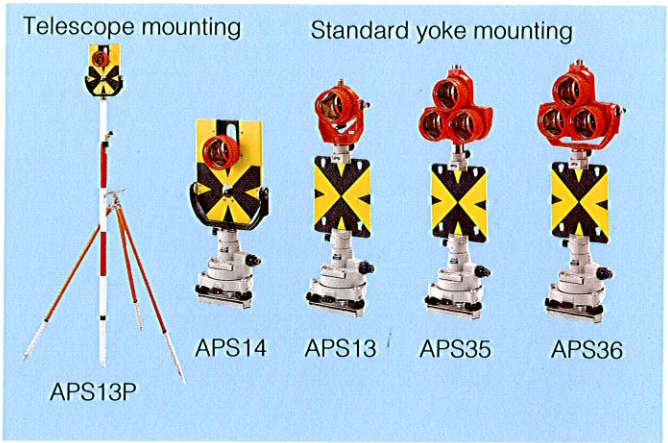
Combined with the REDline EDM, the DT4 becomes a total station. Both the DT4 and the EDM can be operated from either of the DT4 control panels. The control panels facilitate rapid selection of angles, slope distance, horizontal distance, and height difference measurements. Measured and reduced distance data are automatically indicated on both of the DT4 displays. An SDR Electronic Field Book can be connected to the DT4 to automate data collection and to facilitate further processing of data.

Mounting System



*1 An external battery (e.g., BDC11A) is required to drive the telescope-mounted REDMINI2.

Recommended Prism Systems



Battery Features

The BDC21 battery cassette is easily inserted into the right standard and is securely fixed by a double lock system. The battery cassette, holding four "AA" standard batteries, supplies power for 15 hours of continuous operation. The DT4 battery indicator shows the relative strength of the batteries. Alkaline batteries can also be used with the BDC21 for longer periods of operation. Ni-Cd rechargeable batteries are recommended when operating under cold climate conditions.
Other external power supplies, which can plug into the external power input plug, are available for any field condition or application.
DT4's automatic power cut-off function* shuts off power supply after 30 minutes of non-use to extend battery life and ensure fail-safe operation.

* ON/OFF, selectable by control panel key

DT4 Specifications

Telescope		Fully transiting		
Length		165mm (6.5 in)	Field of view [at 1,000m]	1°30' [26m]
Objective aperture		45mm (1.8 in)	Minimum focus	0.9m (3.0 ft)
Magnification		30x	Stadia multiplication constant	100
Image		Erect	Stadia additive constant	0cm
Resolving power		3"	Reticle illumination	Built-in
Angle measurement		Photoelectric incremental rotary encoder scanning		
Display resolution	H&V	5", 1mgon, 0.02mil, 10", 2mgon, 0.05mil, selectable by control panel key		
Accuracy (Standard deviation of mean of a measurement taken in position I and II, according to DIN 18723)				
	H&V	5" (2mgon)		
Measuring time		Less than 0.5 seconds, continuous		
Circle automatic indexing	H&V	Both circles are provided with 0 index points		
Automatic compensator		ON/OFF, selectable by control panel key		
		Type: Liquid tilt sensor, Range: ±3' (±55mgon)		
		Display resolution: according to selection of display resolution		
		Out of range warning: Code displayed		
Display mode	H	Clockwise, Counterclockwise, Accumulation, selectable by control panel key		
	V	% of slope, Zenith angle (Zenith 0), Vertical angle (Horizontal 0),		
		Height angle (Horizontal 0±); selectable by control panel key		
General				
Display unit		2 LCDs (2 lines, 8 digits per line),		
		one on each position, with built-in illumination		
Keyboard		6 keys on each position		
Sensitivity of	Plate level	30"/2mm		
levels	Circular level	10'/2mm (in tribrach)		
Optical plummet (in alidade)		Image: Erect, Magnification: 3x, Minimum focus: 0.1m (0.33 ft.)		
Standing axis		Double		
Self-diagnostic function		Codes displayed		
Battery check display		Codes displayed		
Automatic power cut-off		30 min. after operation, ON/OFF selectable by panel key		
Interface		Asynchronous serial, RS-232C compatible		
Operating temperature		–20 to +50°C (–4 to +122°F)		
Tilting axis	from tribrach bottom	236mm (9.3 in)		
height	from tribrach dish	193mm (7.6 in)		
Size with handle [w/o handle]		W143 x D165 x H338[286]mm (W5.6 x D6.5 x H13.3[11.3]in)		
Weight with handle & battery		5.2kg (11.5 lbs)		
		BDC21 battery: 125g (4.4 oz), Handle: 162g (5.7 oz)		
Base screw		ø5/8 inch		
Operating voltage		4.8V DC to 6V DC		

Power Supplies			
	BDC21 Battery cassette	**BDC11A External rechargeable battery**	**BDC12 Large external rechargeable battery**
	Standard insertable, use w/ 4 standard "AA" batteries	Ni-Cd, plugs into base via EDC3 cable, optional	
Continuous use Angle mode	15 hours at 25°C (77°F) 5 hours at –20°C (–4°F)	15 hours	90 hours
Angle+ Distance mode (w/REDMINI2)	n/a	About 600 measurements	About 4,000 measurements
Output voltage	4.8V DC to 6V DC	6V DC	
Charging time	n/a Note: 4 "AA" size alkaline or rechargeable Ni-Cd batteries can also be used.	12 hrs. with CDC11 series charger, 1 hr. with CDC12/ 13/15 series charger	15 hrs. with CDC14 series charger

Ordering information

DT4 Electronic Digital Theodolite comes complete with:

DT4 main unit with WA tribrach (base screw: ø5/8 inch),
BDC21 Battery cassette with four standard "AA" batteries,
CP7 Tubular compass, Sunshade,
Lens cap, Plumb bob, Vinyl cover, Tool kit,
Operator's manual, Field guide (keyboard operation guide), Carrying case

Shifting base-type instrument for rapid centering, DT4S (base screw: ø35mm) is optionally available on request.

Optional accessories

EP3	Eyepiece prism
EF2	Eyepiece solar filter
DE17	Diagonal eyepiece (erect image)
MA04A	Diagonal eyepiece solar filter for DE17
CP8	Circular compass (degree)
CP8G	Circular compass (gon)
PFW1	Hardwood telescopic tripod (head screw: ø5/8 inch)
PFA1	Aluminum telescopic tripod (head screw: ø5/8 inch)
PFA2	Aluminum telescopic tripod (head screw: ø35mm), for shifting base-type instruments
ACE1	Auto-collimation eyepiece

A complete range of reflecting prisms, traversing equipment, tripods, optional power supplies, and electronic field books is available for any field condition or application, and the systems are compatible with Sokkia instruments.

Designs and specifications are subject to change without notice.

SOKKIA CO.,LTD.

1-1, TOMIGAYA 1-CHOME, SHIBUYA-KU, TOKYO, 151 JAPAN
PHONE 03-3465-5211 FAX 03-3465-5203 TELEX SURSOK J28518
INTERNATIONAL DEPT. PHONE 03-3302-7033 FAX 03-3302-7133

SOKKIA CORPORATION 9111 Barton, P.O. Box 2934, Overland Park, Kansas 66201, U.S.A., Phone 913-492-4900
SOKKIA INC. 820 Denison Street, Unit 1, Markham, Ontario, Canada L3R 3K5, Phone 416-475-1450
SOKKIA PTY. LTD. 107 Leicester Street, Carlton, Victoria 3053, Australia, Phone 03-347-5844
SOKKIA NEW ZEALAND 20 Constellation Drive, Mairangi Bay, Auckland 10, C.P.O. Box 4464, Auckland, New Zealand, Phone 09-479-3064
SOKKIA B.V. Businesspark De Vaart, Damsluisweg 1, 1332 EA Almere, P.O. Box 1292, 1300 BG Almere, The Netherlands, Phone 036-53-22-880
SOKKIA LTD. Electra Way, Crewe Business Park, Crewe, Cheshire, CW1 1ZT, United Kingdom, Phone 0270-250525
SOKKIA GmbH An der Wachsfabrik 25, 5000 Köln 50 (Rodenkirchen), Germany, Phone 02236-64058
SOKKIA S.A. 12, Avenue Gabriel Peri, 78360 Montesson, France, Phone 1-30-53-09-73
SOKKIA S.R.L. Via Bologna 50, 10152 Torino, Italy, Phone 011-248-0080
SOKKIA AB Transportgatan 5, S-422 46 Hisings Backa, Sweden, Phone 031-581550
SOKKIA N.V. Sphere Businesspark, Doornveld 1-1A, B-1731 Zellik (Brussels), Belgium, Phone 02-466-82-30
SOKKIA KOREA CO.,LTD. Rm. 401, Kwan Seo Bldg, 561-20 Sinsa-Dong, Kangnam-ku, Seoul, Republic of Korea, Phone 02-514-0491
SOKKIA SINGAPORE PTE.LTD. 6001 Beach Road, #21-06, Golden Mile Tower, Singapore 0719, Phone 292-5483
SOKKIA (M) SDN.BHD. No 88 Jln SS 24/s Taman Megah, 47301 Petaling Jaya, Selangor Darul Ehsan, Malaysia, Phone 03-7764240
SOKKIA HONG KONG CO.LTD. Rm 1406 Shatin Galleria, Shan Mei Street, Fo Tan, Shatin, New Territories, Hong Kong, Phone 852-6910280
SOKKIA GULF P.O.Box 4801, Dubai, U.A.E., Phone 9714-690965
SOKKIA CO.,LTD. SHANGHAI REP. OFFICE No.170 Nanjing W. Road, Shanghai, People's Republic of China, Phone 3205466

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