SOKKIA

SET5W
WATERPROOF TOTAL STATION

Water, water everywhere . . . but not a drop of worry.

Caution: The photo shows the SET5W under test conditions. It should not be handled in this manner.

IEC529
IPX7

The waterproof SET5W is ruggedly built to withstand harsh operating conditions.

Being fully water-resistant, the SET5W operates dependably even where conventional total stations do not, such as in sudden showers, continuous drizzling rain, or the high humidity of underground construction sites.

- The SET5W complies with IPX7 of international standard IEC 529 (when waterproof battery BDC25A and connector caps are installed).
- IPX7 requires that an instrument is protected against the effects of temporary immersion in water. Testing is conducted in a water tank with the instrument kept at a depth of 1 m (measured from the bottom of the instrument) for 30 minutes. The water temperature should not differ from that of the instrument by more than 5°C/9°F.
- The SET5W is thus safely protected against sudden showers.
- During periods of prolonged rain, survey work can be continued even without an umbrella.
- In the hot and highly humid conditions of an underground construction site, the telescope of the SET5W is highly resistant to being fogged.
- Because the SET5W is not charged with nitrogen gas, maintenance and service work can be carried out with greater ease and at less cost.

Enhanced Software

The SET5W can be easily customized to your preferred key assignments.
•The SET5W offers optimum keyboard flexibility. Any keyboard layout can be configured. For example, functions can be assigned to any key position on any page, and unused functions can be temporarily deleted.
•A powerful "softkey" feature facilitates input of coordinate values, feature codes, etc.
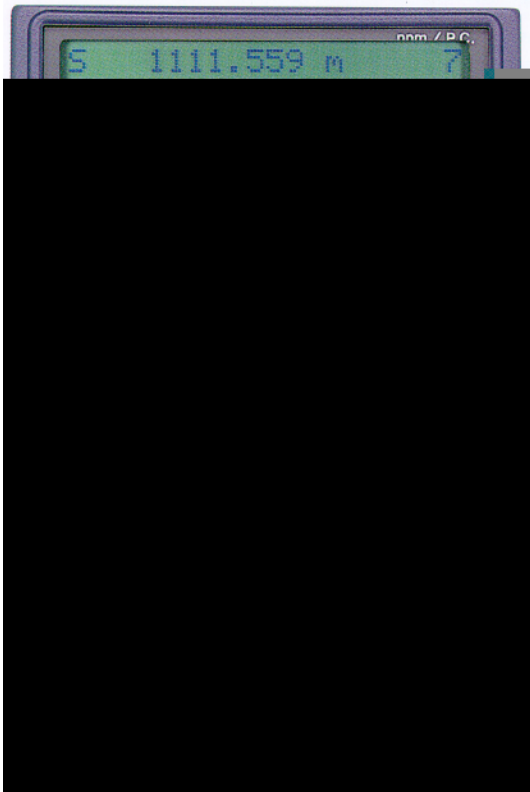
Spacious 3,000-point Internal Memory
•The SET5W's internal memory is large—holding a full 3,000 data points—and secure. For optimum convenience, measurements can be performed and recorded at the touch of a key.
•Up to five (5) job files can be created to efficiently organize multiple survey tasks.
•Forty (40) feature codes (max.13 characters each) can be kept in the memory for easy recall as needed.
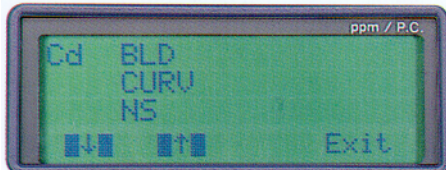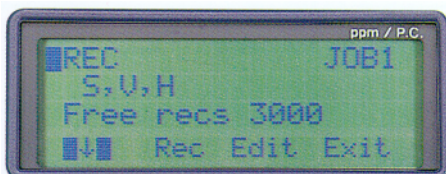
Sophisticated Application Software
Missing Line Measurement (MLM)
•The SET5W measures horizontal distance, slope distance, height difference, and slope in percent (%) between two prisms, all at the touch of a key.
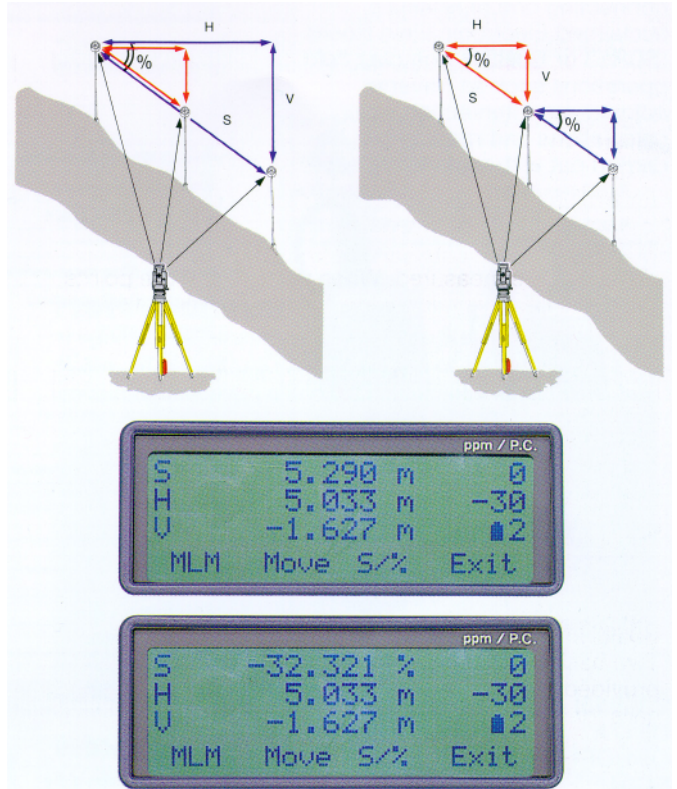
Remote Elevation Measurement (REM)
•The SET5W can be used to easily determine the height of a point where a prism cannot be placed. The system sights a prism directly above or below the target point, and then sights the point desired.
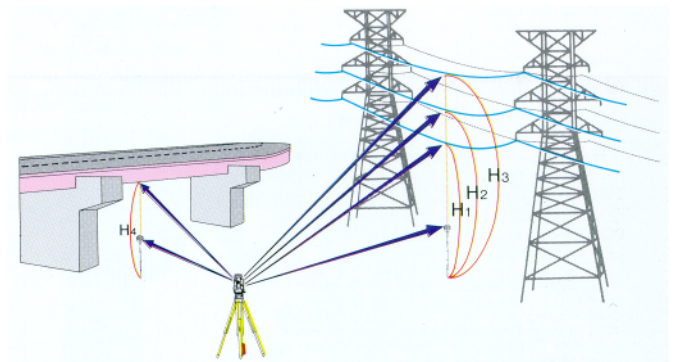
Angle Repetition
•For enhanced accuracy in the horizontal angle measurement, the SET5W can measure in repetition. It then calculates and displays the average of the multiple angle measurements.
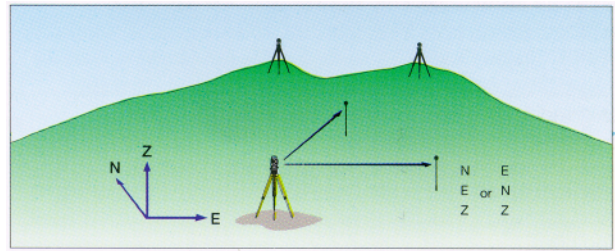
Azimuth Angle Setting

•Using the coordinates of the instrument station and a backlight point, the SET5W can automatically set the horizontal angle to the azimuth of the backsight.
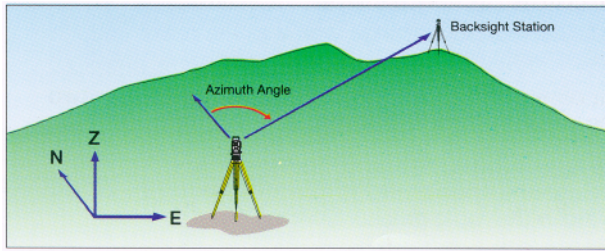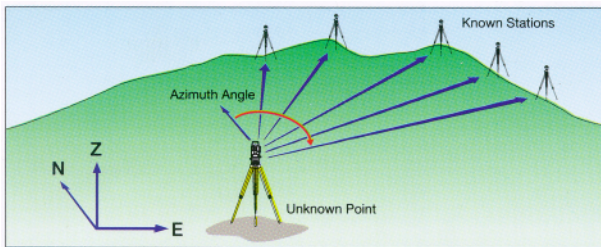

3-D Coordinate Measurement

•The SET5W calculates 3-D coordinate values of measuring points.
•The operator may choose display settings either of "N, E, Z" or "E, N, Z."

Resection

•With 2 to 5 known points, the SET5W can be used to determine the azimuth and coordinates of the unknown instrument station.
•When using 2 known points, both angles and distances are measured. When using 3 or more points, the distance does not always have to be measured.
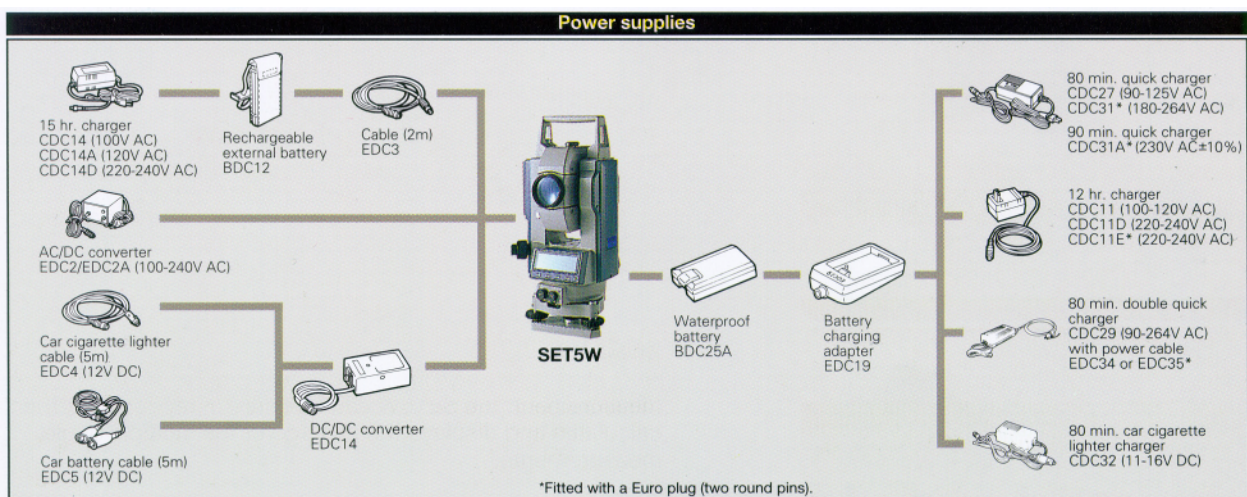

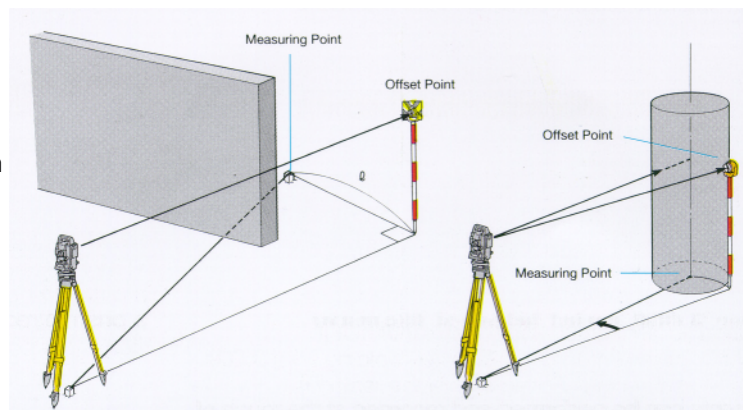## 3-D Setting-out

•The SET5W can be used to perform 3-dimensional setting-out with N, E and/or Z coordinates.
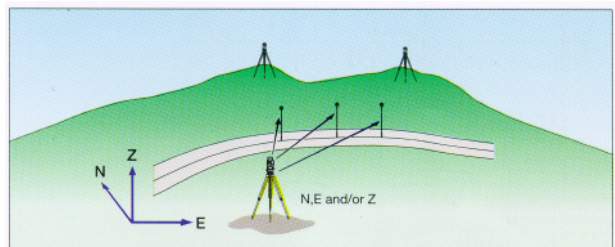
Offset Measurements

Two basic offset measurement methods are provided to measure the hidden points. One calls for input of the offset distance and the direction between the measuring point and the prism. The other uses a prism set on the left or right side of the measuring point at the same distance from the SET5W; the angles and distance to the prism are measured, and the measuring point is sighted. In both cases, the SET5W calculates the horizontal and vertical angles and distance, or the N, E, Z coordinates.

Power supplies

15 hr. charger
CDC14 (100V AC)
CDC14A (120V AC)
CDC14D (220-240V AC)

Rechargeable external battery BDC12

Cable (2m) EDC3

AC/DC converter
EDC2/EDC2A (100-240V AC)

Car cigarette lighter cable (5m) EDC4 (12V DC)

Car battery cable (5m) EDC5 (12V DC)

DC/DC converter EDC14

SET5W

Waterproof battery BDC25A

Battery charging adapter EDC19

80 min. quick charger
CDC27 (90-125V AC)
CDC31* (180-264V AC)

90 min. quick charger
CDC31A* (230V AC±10%)

12 hr. charger
CDC11 (100-120V AC)
CDC11D (220-240V AC)
CDC11E* (220-240V AC)

80 min. double quick charger
CDC29 (90-264V AC)
with power cable
EDC34 or EDC35*

80 min. car cigarette lighter charger
CDC32 (11-16V DC)

*Fitted with a Euro plug (two round pins).

Dependable Hardware

Proven Dual-axis Compensator

•Since its introduction with the Series C total station in 1989, Sokkia's dual-axis compensator has proven its reliability and accuracy at survey sites all over the world.
•The dual-axis tilt sensor monitors deviations of both the X and Y axes, and the correct horizontal and vertical angle readings are automatically computed and applied. The result is easier and faster instrument leveling.
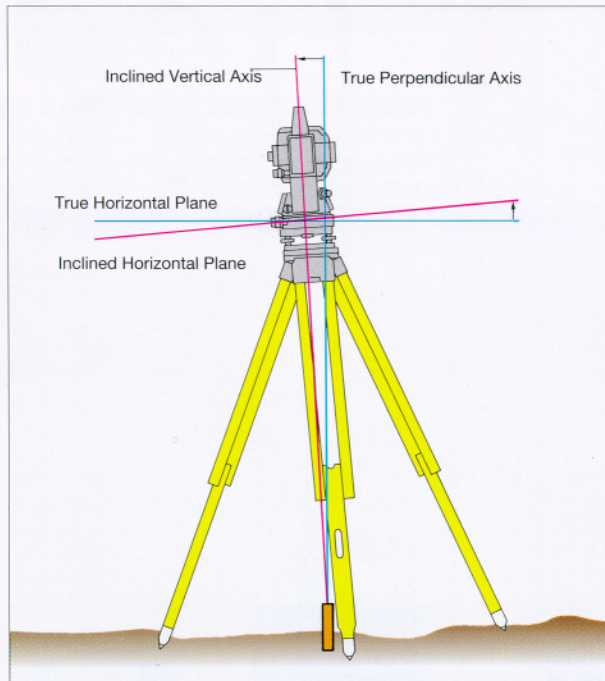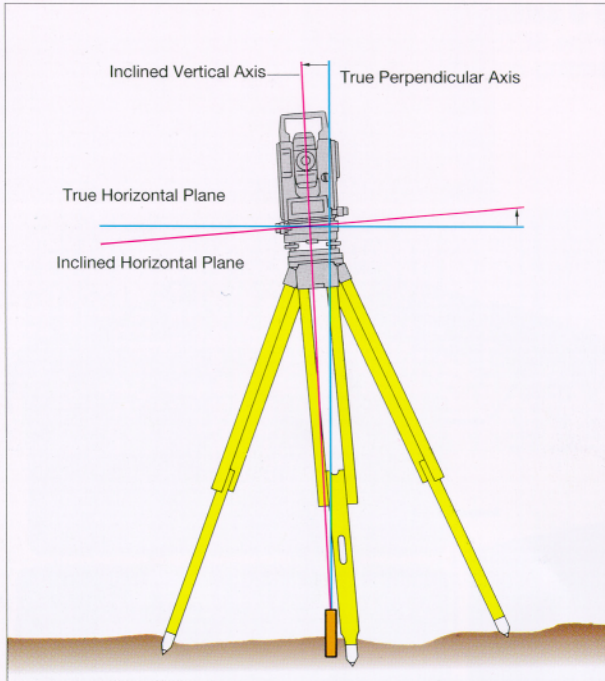

The High-performing EDM

•1,500 m/4,900 ft range with a single prism under good ambient conditions (40 km/25 miles visibility, with no haze, overcast, no scintillation).
•Outstanding precision; ±(3+2 ppmxD)mm. This corresponds to a deviation of a mere ±3.2 mm at a distance of 100 m and ±5 mm at 1,000 m.
•Supreme speed; only 1.7 seconds initial measuring time in the rapid measurement mode.

	Average Conditions	Good Conditions
CP01 Compact Prism	700 m/2,300 ft.	
One AP01 Prism	1,200 m/3,900 ft.	1,500 m/4,900 ft.
Three AP01 Prisms	1,600 m/5,200ft.	2,000 m/6,500ft.

Powerful Telescope

•Highest magnification in its class: 30x
•Easy, accurate sighting of prisms or targets
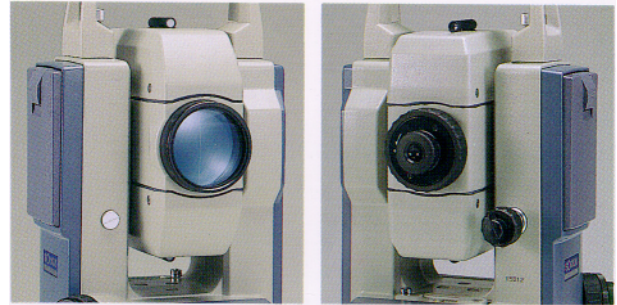
Outstanding Mobility

•Total carrying weight (including instrument, tribrach, battery and hard case) is a mere 8 kg/18 lbs. The secret lies in the lightest and most compact carrying case of its kind (W390xD255xH220mm / W15.3xD10.0xH8.6 in.), making the SET5W supremely portable.
•A convenient shoulder strap is provided as standard. An optional back pack (SC94) is ideal for longer day treks.

Standard Configuration

The SET5W comes with two (2) waterproof batteries (BDC25A), a battery charging adapter (EDC19), a quick charger (CDC27, CDC31 or CDC31A), a tubular compass (CP7), sunshade, lens cap, plumb bob, vinyl cover, tool kit, operator's manual, carrying case and shoulder strap.

Electronic Field Books (SDR33/SDR31)

Thanks to its advanced two-way communications port, the SET5W's functions can all be accessed by external controller. For example, by connecting one of Sokkia's acclaimed Electronic Field Books (SDR33 or SDR31), complex field operations such as traverse adjustment, intersection, area calculations and roading can be carried out with remarkable ease.

Optional Accessories

DE17A	Diagonal Eyepiece
OF1/OF1A	Solar Filters
SC94	Back Pack

SET5W Specifications

Telescope		Fully transiting, coaxial EDM
Length		165mm (6.5in)
Objective aperture		45mm (1.8in)
Magnification, image		30x, Erect
Resolving power		3.0"
Field of view		1°30'(26m/1,000m)
Minimum focus		1.3m (4.3ft.)
Reticle Illumination		Bright or Dim, selectable
Angle measurement		**Incremental encoder, diametrical detection**
Display resolution	H&V	1"/ 0.2 mgon/ 0.005 mil, 5"/ 1 mgon/ 0.02 mil
Angle unit	H&V	Degree/Gon/Mil
Accuracy	H&V	5" (1.5 mgon/ 0.02 mil) according to DIN18723
Dual-axis compensator		Liquid dual-axis tilt sensor, range: ±3'(±55 mgon)
Display mode	H	Clockwise/Counterclockwise, Repetition, Oset, Hold available
	V	Zenith 0°/ Horizontal 0°/ Horizontal 0°±90°/ Slope %
Distance measurement		**Electro-optical with modulated infrared light.**
Measuring range (slope distance)		A: Average conditions; slight haze, visibility about 20km (12 miles), sunny periods, weak scintillation. G: Good conditions; no haze, visibility about 40km (25 miles), overcast, no scintillation.
With CP01 compact prism		A: 1.3m (4.3ft.) to 700m (2,300ft.)
With one AP01 prism		A: 1.3m (4.3ft.) to 1,200m (3,900ft.), G: 1,5OOm (4,900ft.)
With three AP01 prism		A: 1.3m (4.3ft.) to 1,600m (5,200ft.), G: 2,000m (6,500ft.)
Distance unit		Meters or feet selectable
Accuracy (Fine measurement)		±(3+2ppmxD)mm D=measuring range, unit=mm
Measuring unit and time (slope distance)	Fine	0.001m Every 3.2 seconds (initial 4.7 seconds)
	Rapid	0.001m 1.7 seconds
	Tracking	0.01m Every 0.3 seconds (initial 1.4 seconds)
Atmospheric correction		Key-in the temperature and pressure, or -499 to +499ppm.
Prism constant		-99 to 0mm (1 mm steps)
Refraction & Earth-curvature correction		On/Off selectable (K=0.142)
General		
Display		LCD dot matrix display (20 characters x 4 lines) on both faces with back light.
Keyboard		5 keys on both faces, free assignment of functions.
Resume function		On/off selectable
Sensitivity of levels		Plate level: 40"/2mm, Circular level: 10'/2mm (in tribrach)
Optical plummet		Image: erect, Magnification: 3x, Minimum focus: 0.5m (1.6ft.)
Interface		Asynchronous serial, RS-232C compatible, baud rate 1200/9600 bps
2-way communication		Provided
Data storage		3,000-point data memory
Water protection		IPX7 (when BDC25A battery and connector caps are installed.)
Operating temperature		-20°C to +50°C (4°F to 122°F)
Tilting/Trunnion axis height		236mm (9.3in) from tribrach bottom, 193mm (7.6in) from tribrach dish.
Size with handle and battery		W150 x D165 x H353 mm, W5.9 x D6.5 x H13.9 in.
Weight with handle and battery		5.6kg (12.4 lbs)
Weight of parts		BDC25A battery: 240g (6.5oz), Handle: 100g (3.5oz), Tribrach: 740g(1.6lbs), Case: 2.4kg (5.3lbs)
Power supplies		
Battery level display		4 steps with warning message.
Automatic power cut-off		On/off selectable (30 minutes after the last operation)
Power source		BDC25A waterproof battery, Ni-Cd 6V, 2 supplied as standard.
Working duration at 25°C (77°F) w/one BDC25A battery		Distance & angle measurement: about 5 hours, about 600 points (Fine & single measurement with 30 seconds intervals). Angle measurement only: about 9 hours.
Charging time		CDC27/31: about 80 minutes, CDC31A: about 90 minutes

Sokkia is a sponsor of the International Federation of Surveyors.

ISO 9001 Certified
Certificate No. JQA-0557
ISO 9001/BS EN ISO 9001/EN 29001/JIS Z9901
SOKKIA CO.,LTD.