SOKKIA

SET1000•SET2000
SET3000•SET4000

POWERSET SERIES TOTAL STATIONS

Geodesical

Introducing the Version 4.2 POWERSET Series

Enjoy the benefits of all the latest technology with standardized SDR software you can upgrade with ease

With the integration of corrective hardware sensors, self-collimating software and the most powerful, easy-to-use field application programming ever, SOKKIA introduces a new era in CAS (Computer Aided Surveying).

The POWERSET Series sets a new standard for surveying efficiency: 1) an extensive range of surveying software; 2) a large internal memory for high-speed data processing; 3) reliable memory cards for storage of survey data.

•

Entirely new design features a miniaturized telescope unit that makes sighting as easy as using a theodolite. Thanks to the POWERSET Series' advanced optics, you can use reflective sheet targets and standard glass prisms for greater flexibility in the field.

•

The dual-axis compensator and collimation program ensure consistently accurate measurements.

•

The POWERSET Series is designed for maximum ease of use. Large screens on each side of the instrument are easy to read in any field conditions, and the keyboards on both faces feature full alphanumeric keys.

•

All these advanced functions are packed into an incredibly compact instrument weighing a mere 5.6kg (12.4 lbs.)

Geodesical

	SET1000/SET2000	
Dist. meas. with reflecting prism	Range: 3,500m (11,400ft.)*	Accuracy: ±(2+2ppmxD)mm**
Dist. meas. with reflective sheet target	Range: 120m (390ft.)***	Accuracy: ±(4+3ppmxD)mm**
Angle measurement	Display resolution: 0.5"/0.1 mgon or 1"/0.2mgon	Accuracy: SET1000 1"(0.3mgon) SET2000 2"(0.6mgon)
	SET3000	
Dist. meas. with reflecting prism	Range: 3,300m (10,800ft.)*	Accuracy: ±(2+2ppmxD)mm**
Dist. meas. with reflective sheet target	Range: 100m (320ft.)***	Accuracy: ±(4+3ppmxD)mm**
Angle measurement	Display resolution: 1"/0.2mgon or 5"/1 mgon	Accuracy: 3" (1 mgon)
	SET4000	
Dist. meas. with reflecting prism	Range: 2,400m (7,800ft.)*	Accuracy: ±(2+2ppmxD)mm**
Dist. meas. with reflective sheet target	Range: 80m (260ft.)***	Accuracy: ±(4+3ppmxD)mm**
Angle measurement	Display resolution: 5"/1mgon or 10"/2mgon	Accuracy: 5"(1.5mgon)

*With 3 reflecting prisms under good weather conditions. **D: measuring distance, unit: mm ***With reflective sheet target RS9ON (90 x 90 mm)
•The SET1000 is made only on order.

POWERSET

HARD WARE **Highly Reliable, Durable and User-Friendly Hardware**

POWER 1

[Sighting Performance]

Miniaturized Telescope Allows Quick, Accurate Sightings

To simplify operation, we developed a miniaturized telescope specifically for the POWERSET Series. Sighting targets is easier than ever.

To facilitate quick and accurate sighting, the focusing ring, fine motion screws and clamps have been coated with durable rubber. The focusing ring and fine motion screw have been designed to rotate at two speeds for greater control: fine and coarse.
Size of the telescope (without peep sights):
L165 x W62 x H80mm (L6.5 x W2.5 x H3.2 in.)

■ **Co-axial Clamp and Fine Motion Screw for Quick Sighting**
For precise adjustment, the diameter of the fine motion ring has been increased to 29mm (1.14in.)

POWER 2

[Distance Measurement Performance]

Unique EDM and Optical System Enable High-Speed, High-Accuracy Distance Measurements

To achieve faster, more precise and longer distance measurements, we adopted a unique optical system with a coaxial light emitting and receiving system.

This system enables measurements to reflective sheet targets, in addition to glass prisms, with guaranteed survey-class precision. The reflective sheet targets, popular among the users of MONMOS/NET2B, Sokkia's high precision 3-D Coordinate Measuring System for industrial measurement, allow measurements to points where it is difficult to set glass prisms, such as walls.

In the EDM, the mechanical shutter has been replaced by an electric one to maximize reliability.

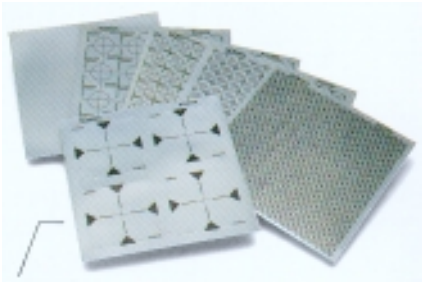
Geodesical

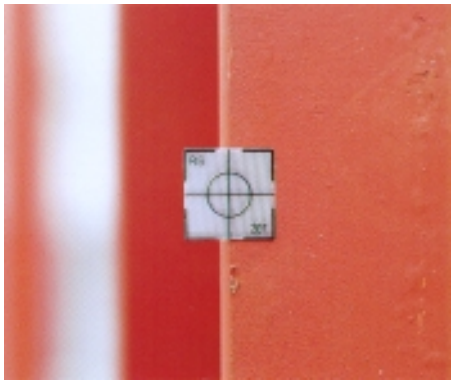
■Distance Measurement with Reflective Sheet Targets

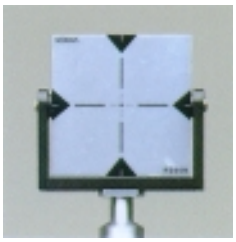
Distance measurement accuracy
- Fine measurement: ±(4+3ppm x D)mm
- Rapid measurement: ±(5+5ppm x D) mm
- (D=measuring distance)

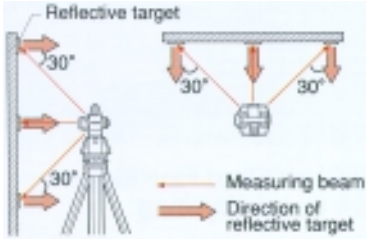
Measuring range with RS9ON(slope distance)

SET1000 / SET2000	1m to 120m (390ft.)
SET3000	1m to 100m (320ft.)
SET4000	1m to 80m (260ft.)









■Convenient Micro-Prism Reflective Sheet Targets

An adhesive backing lets you attach the micro-prism reflective targets directly to any object to be measured. Reflective sheet targets are available in a variety of types and sizes to meet your specific requirements.

■New Optical System for Reflective Sheet Targets

In conventional total stations, the objective lens of the telescope is divided into either top and bottom or left and right. One side is used for the emitting beam, the other for the receiving beam. However, this configuration often results in distance measurement errors when the reflective sheet targets do not face the total station to create 90° angles with the measuring beam. In the POWERSET Series, we solved this problem by aligning the emitted and reflected beams on the same axis.

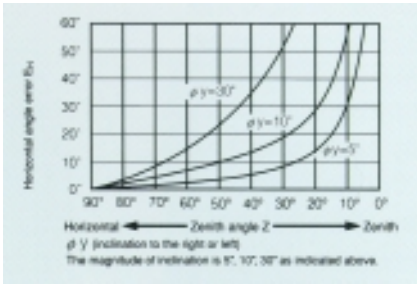
POWER 3

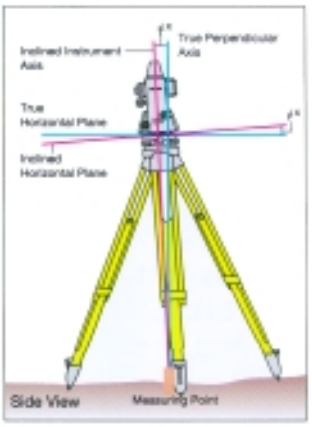
POWERSET
TOTAL STATIONS

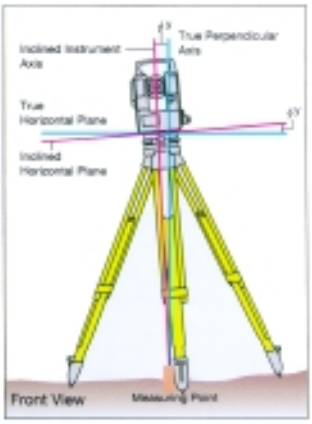
[Angle Measurement Performance]

Simultaneous Automatic Compensation Of Errors in the Vertical, Horizontal And Sighting Axes Improves Measurement Accuracy

The dual-axis compensator and collimation functions allow greater accuracy in both horizontal and vertical angle measurements. The dual-axis compensator even compensates for vertical axis errors that cannot be corrected with other methods, such as face-left and face-right measurement. The collimation function automatically corrects errors of the horizontal and vertical axes. Other state-of-the-art technologies, like a standing axis machined to accuracy of 1/10000mm and angle encoders manufactured using advanced cutting and photographic technology, have also been adopted to further improve reliability.







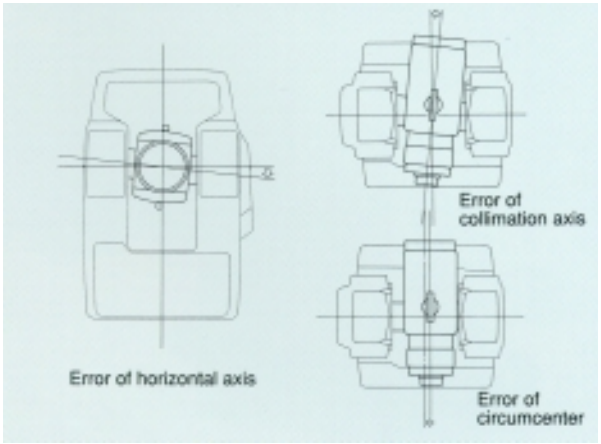
■ **Simultaneous Detection of Inclination in Two Directions And Automatic Compensation**

The built-in dual-axis tilt sensor constantly monitors the inclination of the vertical axis in two directions. It calculates the compensation value and automatically corrects the horizontal and vertical angles. (The compensation range is ±3'.)

Geodesical

■ **Graphic "Bull's Eye" Level**

A graphically displayed "bull's-eye" lets you quickly and efficiently level the instrument.



■ **Horizontal Circle Positioning Knob with a Cover**

To improve resistance to the environment, we've built the horizontal circle right in. It rotates when the cover is opened and the positioning knob is rotated. To ensure quick and precise settings, the large-diameter positioning knob rotates at two speeds - fine and coarse. The cover also eliminates accidents such as inadvertently loosening the horizontal circle.

POWER 4

[Greater Portability & Resistance to the Environment]

Ultra-Light Body and Case, Durable Design

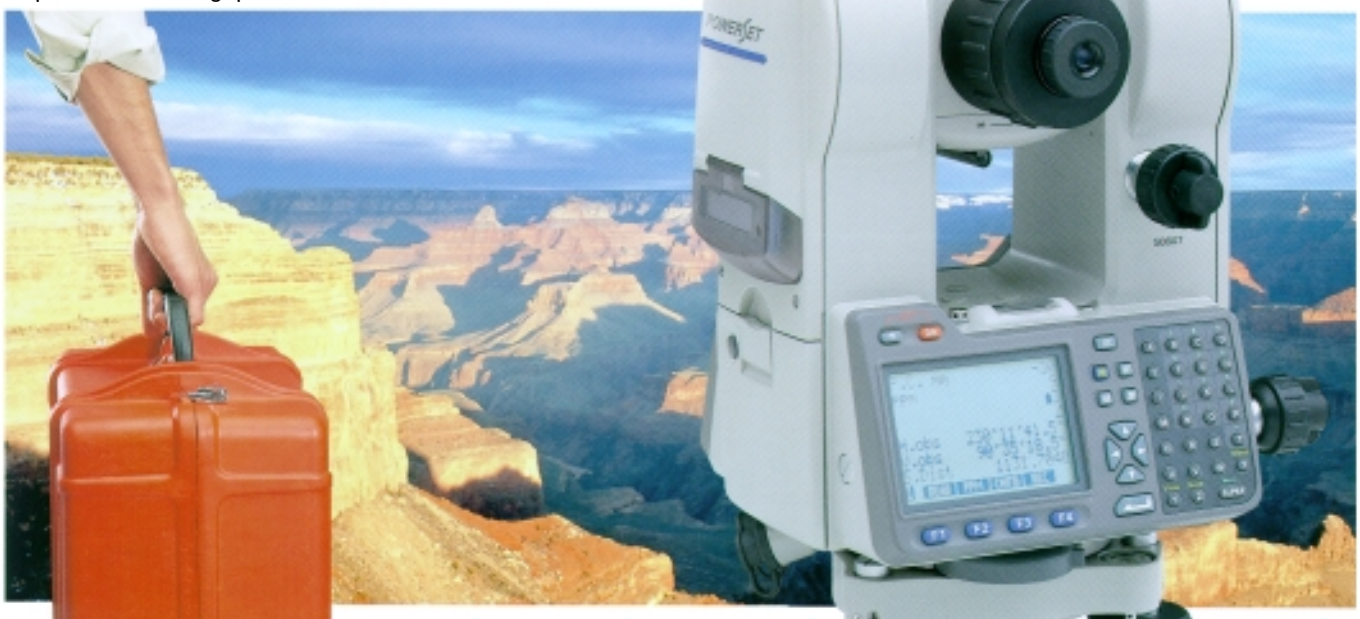
To be effective, an instrument must be easy to carry, easy to set up and resistant to the elements. The POWERSET Series meets this challenge head-on. Weighing just 5.6kg (12.41bs.) with battery and tribrach, the POWERSET Series is easy to carry and set up. And, in order to meet the JIS Class IPX2* requirements for protection against water, we have adopted a unique design in the rotating and contact sections. This durable, reliable, compact design gives you the freedom to take your POWERSET almost anywhere.

*Protected against falling water drops as defined by Japanese Industrial Standard Class IPX2 in compliance with the International Electrotechnical Commission Standard Class IPX2.

Geodesical

■Easy Grip, Slip-Proof Handle

The detachable handle has a wide grip to fit comfortably into your hand. A special synthetic resin has also been used for improved feel and grip.



■Tough Fiberglass Carrying Case

We thoroughly reviewed the shape, material and balance to develop a new, stronger, compact and lightweight case. All standard equipment, including two batteries, can be stored in this case.

POWER 5

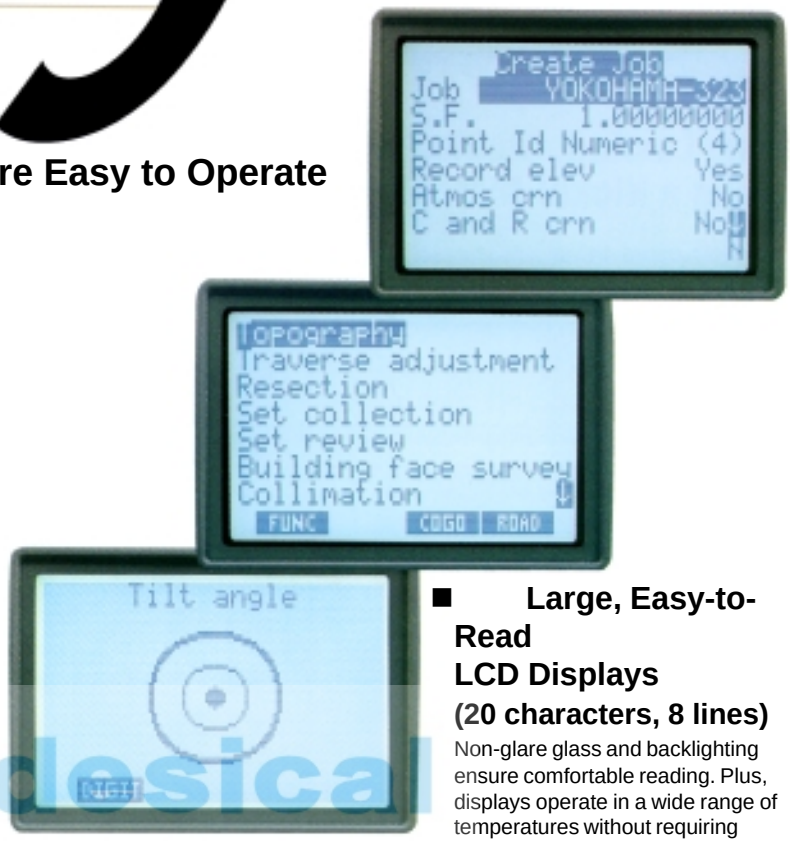
[Easy Operation]

POWERSET
TOTAL STATIONS

Two Large, User-Friendly Displays And Full Alphanumeric Keyboards Are Easy to Operate

Even with a wide variety of functions, operation is remarkably easy thanks to the POWERSET's large displays and alphanumeric keyboards. The 8-line, 20-character screens display alphanumeric data. They allow at-a-glance confirmation of a large volume of data, such as point number, point name, 3-D coordinate values, mode set, and much more. A graphic "bull's-eye" level is also provided for optimum set-up efficiency.

The POWERSET Series also features ergonomic control keyboards with full alphanumeric keys. Entering job names, point numbers, point names, coordinate values, and processing survey data are as fast and efficient as if you were using Sokkia's SDR Electronic Field Book.



■ **Large, Easy-to-Read LCD Displays (20 characters, 8 lines)**

Non-glare glass and backlighting ensure comfortable reading. Plus, displays operate in a wide range of temperatures without requiring power-consuming heaters.

View: Confirm or search for the recorded data at any time.

Note: Input notes at any time.

■ **Full Alphanumeric Keyboard for Efficient User Interface**

The keys are laid out for the fastest possible

Geodesical

POWER 6

[Long-Life Battery]

Long Lasting, Stable Power Supply Using a Nickel-Metal Hydride Battery

Ni-MH
Ni-Cd

A rechargeable nickel-metal hydride (Ni-MH) battery is used for the power supply. It lasts much longer than the nickel cadmium type (Sokkia ratio: about 32% longer) When fully charged, it supports about 4.5 operating hours, or approximately 500 measurements.* Because two batteries are included as standard equipment, the instrument runs for a total of 9 hours, eliminating worry about the power supply during a normal working day; the resume function even lets you change batteries without setting the modes again.

*In the Fine and Single measurement mode with measurement intervals of 30 seconds.

■Power Management

The battery level is displayed in four levels. When it's time to replace the battery, a convenient message is displayed. If you choose the auto power cutoff function, the power is automatically turned off 30 minutes after operation.

CDC39

■Batteries Charged in 70 Minutes

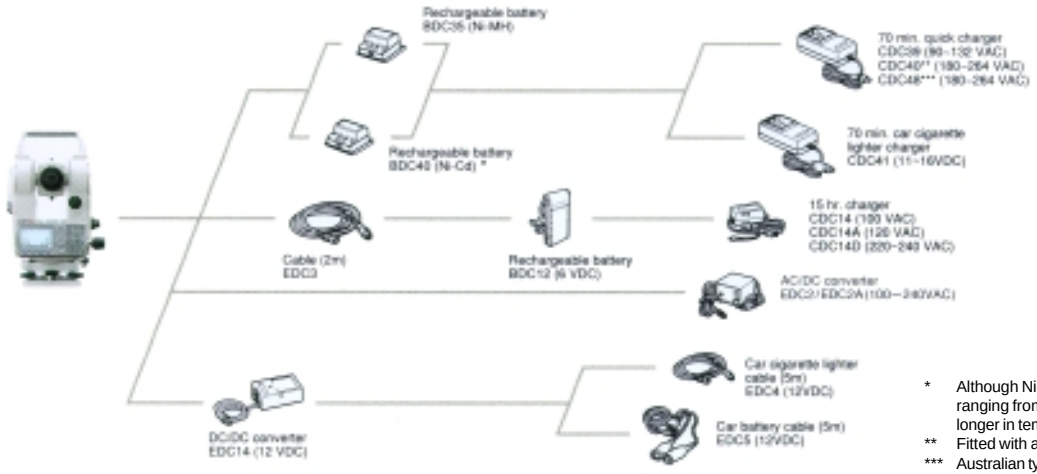
The quick charger CDC39, CDC40 or CDC48 charges a BDC35 battery in just 70 minutes. The optional CDC41, which uses a car cigarette lighter, is also available.

■A Wide Variety of External Power Supplies (Option)

A range of external power source accessories is available, including the large BDC12 Rechargeable Battery, EDC2 AC/DC Converter, the EDC4 Car Cigarette Lighter Cable, and the EDC5 Car Battery Cable.
The external power plug is located at the base of the instrument and is fitted diagonally to reduce the load imposed on it. External power source cables will not interfere with operation when connected.

BDC12

EDC12 + EDC5

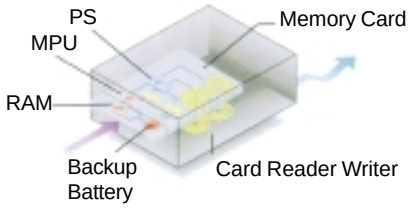


* Although Ni-MH batteries can be used in temperatures ranging from -20°C to +50°C, Ni-Cd batteries last longer in temperatures below 0°C
** Fitted with a Euro plug (two round pins)
*** Australian type

Geodesical

POWER 7

POWERSET
TOTAL STATIONS



Large Internal Memory Provides Rapid Processing of Surveying Data

The processing speed of measured data has a dramatic effect on on-site efficiency. The POWERSET Series combines a large internal memory with memory cards to ensure efficient measurement and storage of data. The large internal memory can store and quickly process a large amount of data, and the popular non-contact memory cards can also be used for fast, reliable backup, transfer and storage of measured data. Recorded data is automatically time-stamped for managing records and productivity. Stored data can be efficiently transferred to a PC for further processing.

■128K byte Internal Memory (Storage Capacity: Approximately 1,300 Points)

Measured data is stored and processed in the internal memory. Since the card is not accessed each time a measurement is performed, the processing speed is maximized.

Geodesical

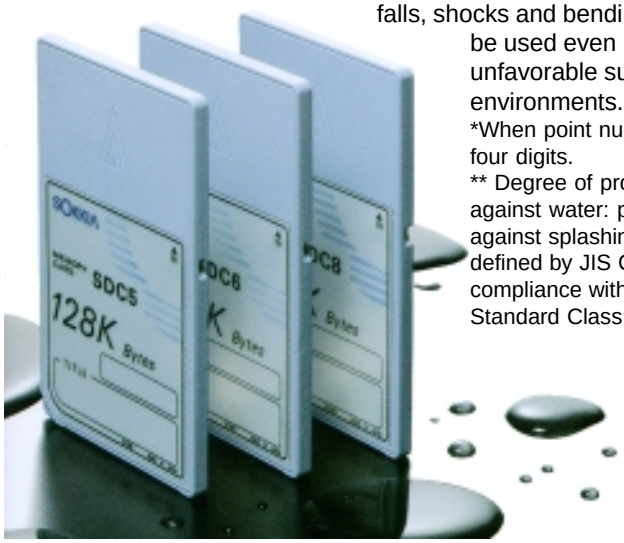
■Water-Proof, Dust-Proof Memory Cards

Three memory card sizes are available—128K byte SDC5 (about 2,000 points*, supplied as standard), 256K byte SDC6 (about 4,000 points*), and 512 K byte SDC8 (about 8,000 points*). When using multiple cards, the storage capacity is practically limitless. The cards can be sent one at a time to the office for processing, and can then be loaded with coordinate data for the next stake-out project. They make data handling more flexible and increase efficiency.

Because the data is accessed using a non-contact magnetic coupling system, the cards have no metallic connectors, which can be prone to corrode and wear failure. They are also water- and dust-proof ** and will effectively protect your valuable data from contact faults caused by water, oil, dirt, finger prints, static electricity, etc. Since they are resistant to falls, shocks and bending, they can be used even in unfavorable surveying environments.

*When point numbers are in four digits.

** Degree of protection against water: protected against splashing water as defined by JIS Class IPX4 in compliance with IEC Standard Class IPX4.

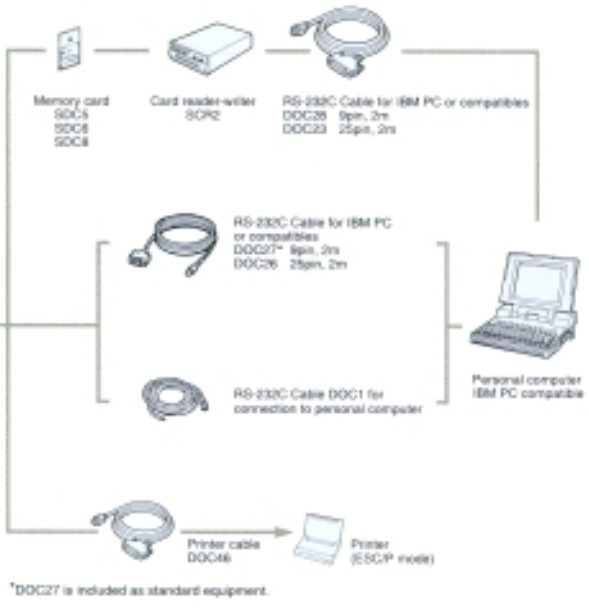


■Direct Data Output to Computer and Printer

With the standard equipment DOC27 serial cable, connect your POWERSET to a computer for easy data transfer and convenient storage. Moreover, you can send survey data directly from the POWERSET to a printer via the optional DOC46 cable. Use any printer with a parallel port which is also compatible with the ESC/P mode. The POWERSET sends formatted reports, starting a new page for each job.

■Communication System

POWERSET Series



SOFT WARE

Integrated SDR Electronic Field Book functions handle surveying jobs with maximum efficiency

POWER 8

Thanks to the POWERSET's new Ver. 4.2 software, you can take advantage of surveying software equivalent to Sokkia's industry standard SDR33/31 Electronic Field Book, providing you with consistent and uniform operation.

From the wide range of pre-installed programs to the powerful Expert options, you can access exactly the software you need to handle every job at maximum efficiency.
As advancements in software occur, upgrades for all POWERSET and SDR products will be introduced at the same time. Optional Expert software is supplied on 3.5" floppy disks. Upgrade software to Ver. 4.2 and future upgrades will also be supplied on 3.5" floppy disks and can easily be loaded from your computer.

Geodesical

■Pre-installed software

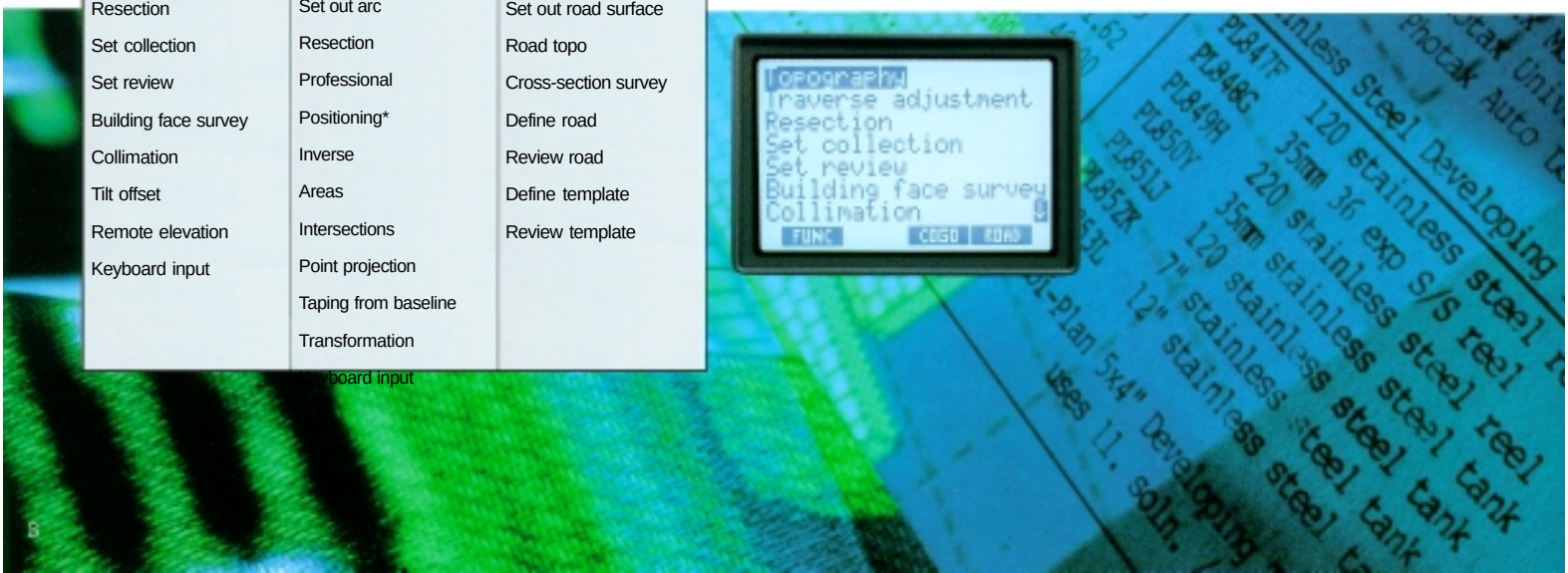
The following application software is pre-installed in the instrument's internal memory when it is shipped from the factory: Topography, Resection, Keyboard Input, Set Out Coordinates, Set Out Line, Collimation, Tilt Offset, Remote Elevation, Inverse, Areas, Intersections, Cross-Section Survey.

■Communication

Expert software comes with COMMS, a Windows- based communication program. COMMS, running on a PC, can send and receive SDR files jobs, roads, templates and feature code libraries) to and from SDR devices i.e. a POWERSET, an SDR33 or an SDR31. Furthermore, COMMS converts SDR files into DXF, MOSS, ICS and SDMS formats. It also converts MOSS files into SDR files, which then can be transferred to a POWERSET, an SDR33 or an SDR31.
(COMMS runs on Windows 3.1 and Windows 95)

SURV	COGO	ROAD
Topography	Set out coords	Select road
Traverse adjustment	Set out line	Set out road
Resection	Set out arc	Set out road surface
Set collection	Resection	Road topo
Set review	Professional	Cross-section survey
Building face survey	Positioning*	Define road
Collimation	Inverse	Review road
Tilt offset	Areas	Define template
Remote elevation	Intersections	Review template
Keyboard input	Point projection	
	Taping from baseline	
	Transformation	

*Professional Positioning is a program which calculates the coordinates of an unknown station based on observations to known target points. Statistical methods minimize, and in most cases eliminate, the adverse effects of outlying observations or blunders on the calculated position. The operator need not be concerned about the mathematics behind the program and is not asked to provide additional information for these calculations. Once the results are given, the operator is able to trace any errors, such as wrong target points, point displacement or incorrect measurements. Roading functions (except cross-section survey) are not available when Professional Positioning is in use.



POWER FOR LAND SURVEYING

The POWERSET Series provide you with integrated solutions to data collection and processing functions for your professional survey work. The application software supports complex field operations and reporting functions.

The **Topography** program helps increase data validity by automatically calculating and displaying the difference in observed positions. When a point is observed more than once, you may choose to replace the old observation, store the new observation under a different point number, or average the two observations for more accurate results. Tolerances are selected by user defined settings.

Set Collection lets you structure your traverse and network data collection procedures. A sophisticated set review mechanism allows you to scan the accumulated data with as much summary or detail as you need. Differences and standard deviations are displayed. You can mark a "bad" set and recalculate. It may be re-marked as "good" and the original calculations restored. In all cases, the original data is maintained.

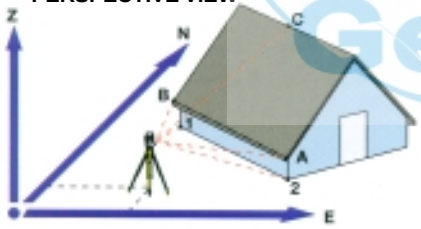
The **Building Face Survey** feature allows for the coordination of points in a defined vertical plane. Recessed and protruding points may also be measured by entering an offset distance from the defined plane.

The ***Traverse Adjustment*** feature can be used with traverse data collected in either ***Set Collection*** or **Topography**. 3-D traverse data can be collected in any manner, including non-consecutive set-ups. The POWERSET does some of the thinking for you, like calculating precision and errors of closure, or adjusting angles or elevations.

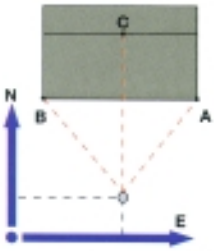
Functions written in bold italics are supported only in the Expert software, Eg. Set Collection.

Geodesical

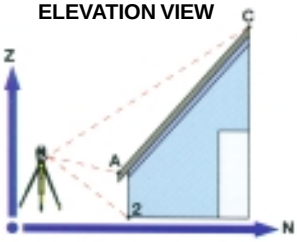
PERSPECTIVE VIEW



PLAN VIEW



ELEVATION VIEW

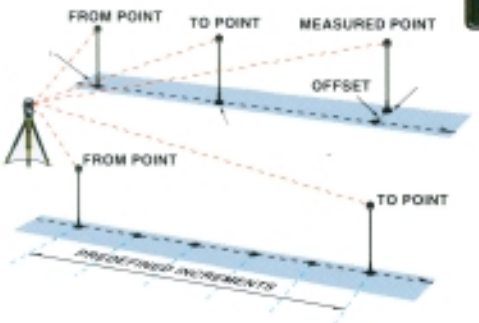


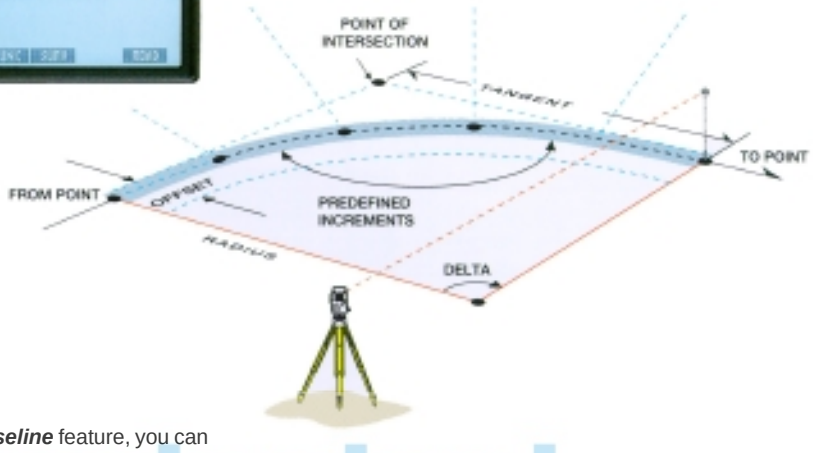
POWER FOR COGO

The POWERSET Series offers a comprehensive suite of functions designed to make data collection, field calculations and stake-out work as fast and accurate as possible. The streamlined functions dramatically reduce your field time and increase your productivity.

COGO features include **Setting Out, Resection** and **Inverse**. Plus, they make it easy to subdivide **lines** and ***arcs*** or calculate ***Point Projections***.

The POWERSET Series supports several "setting-out" methods including **Set Out Line** and ***Set Out Arc*** with parallel offset function.





With the ***Taping from Baseline*** feature, you can pick up detail by distance and offset from a pre-defined baseline.

Intersections calculations are supported by three methods: bearing-bearing, bearing-distance, and distance-distance.

The ***Helmert Transformation*** option lets you rotate, translate and scale a survey while constraining to known points. This process uses a least squares technique.

Functions written in bold italics are supported only in the Expert software, Eg. Taping from Baseline.

POWER FOR ROADING

Roading is one of the functions which have made Sokkia's SDR Electronic Field Books so popular among surveyors. It is the comprehensive solution to field roading work.

Roading is accomplished by loading or keying in the horizontal and vertical alignment and template information into the POWERSET. When you indicate what stationing and offset or coordinate point you wish to set out, the POWERSET instruments will give you angles and distances to set out that point in 3-D. Horizontal and vertical offsets and checking of roads under construction are easily accomplished with this program.

No matter what method is used for defining horizontal and vertical alignments, the data can be input directly into the POWERSET or downloaded using road design software.

•***Set Out Road Surface*** gives cut and fill for any random point measured within the defined road alignment. This allows the marking of the vertical grades for items such as manholes and water valves, even if they were built in a position other than that shown on the drawing.

•Spiral curves can be defined for entering and exiting highway curves.

•Horizontal definitions can also be defined using string points.

Cross-Section Survey comes pre-installed. All other Roading functions are supported only in the optional Expert software.

•Superelevation and widening parameters are user-defined.
Left and right definitions and calculations are independent of each other. This allows easy stake-out of the most complicated road surfaces.

•Slope stakes can be located in the field by matching the existing ground with pre-entered side slope information.

•Vertical alignments support straight grades, circular curves and parabolic curves.

Geodesical

			SET1000/2000	SET3000	SET4000
Telescope			Fully transiting. Coaxial sighting and distance measuring optics		
Size (without peep sights)			L 165 x W 62 x H 80mm (6.5 x 2.5 x 3.2in.)		
Objective aperture			45mm (1.8in.) (EDM: 50mm (2.0in.))		
Magnification			30x		
Image			Erect		
Resolving power			3”		
Field of view			1°30' (26 m/1,000 m)		
Minimum focus			1.0m (3.3ft.)		
Reticle illumination			Built-in (Bright/Dim, selectable)		
Two-speed focusing ring			Provided		
Angle measurement					
Unit		H&V	360°/400gon / Quad brng / mil, selectable		
Display resolution (selectable)		H&V	0.5” /0.1 mgon / 0.002mil 1”/ 0.2mgon / 0.005mil	1” / 0.2mgon / 0.005mil 5” / 1 mgon / 0.02mil	5” / 1 mgon / 0.02mil 10” / 2mgon / 0.05mil
Accuracy (Standard deviation of mean of a measurement taken in position I and II, according to DIN18723)		H&V	SET1000 1”(0.3mgon) SET2000: 2 (0.6mgon)	3”(1mgon)	5”(1.5mgon)
Measuring time		H&V	Less than 0.5 seconds, continuous		
Automatic dual-axis level compensator			ON (V&H / only V) / OFF selectable Display: Digital / Graphic, selectable		
	Type		Dual-axis liquid tilt sensor		
	Range		±3'/ (±55 mgon), out-of-range warning displayed		
	Display resolution		According to selection of display resolution		
Collimation program			ON / OFF selectable		
Display mode		H	Clockwise / Counterclockwise, selectable; 0 set, angle setting, available		
		V	Zenith angle (Zenith 0°) Vertical angle (Horizontal 0°), selectable		
Horizontal circle positioning system			Horizontal circle positioning knob (two speed, cover provided)		
Distance measurement			Modulated near infrared light, 3 frequencies, Near infrared LED, Coaxial EDM transmitting and receiving optics		
Measuring range (Slope distance)	Atmospheric conditions		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 The range is achieved by using Sokkia’s AP prism system,		
			CP01 Compact prism and Reflective sheet target RS90N (90 x 90 mm).		
	Reflective sheet target RS9ON	A.	1m to 120m (390ft.)	1m to 100m (320ft.)	1m to 80m (260ft.)
	With CP01 compact prism	A.	1m to 800m (2,600ft.)	1m to 700m (2,200ft.)	1m to 600m (1,900ft.)
	With one AP01prism	A.	1m to 2,400m (7,800ft.)	1m to 2,200m (7,200ft.)	1m to 1,600m(5,200ft.)
		G.	1m to 2,700m (8,800ft.)	1m to 2,500m (8,200ft.)	1m to 1,800m (5,900ft.)
	With three AP01 prisms	A.	1m to 3,100m(10,100ft.)	1m to 2,900m (9,500ft.)	1m to 2,100m(6,800ft.)
		G.	1m to 3,500m (11 ,400ft.)	1m to 3,300m (10,800ft.)	1m to 2,400m (7,800ft.)
	With nine AP01 prisms	A.	1m to 3,700m(12,100ft.)	1m to3,500m(11,400ft.)	1m to 2,500m(8,200ft.)
		G.	1m to 4,200m (13,700ft.)	1m to 4,000m (13,000ft.)	1m to 2,900m (9,500ft.)
Display resolution	Fine measurement		0.0001 m /0.001 m	0.001 m (0.01ft.)	
			(0.001ft. / 0.01ft)		
	Rapid measurement		0.001 m (0.01ft.)		
	Tracking measurement		0.01m (0.1ft.)		
Distance unit			Meters or feet, selectable		
Unambiguous measuring range (Slope distance)			9999.9999m (32,808.333ft.) 9999.999m (32,808.33ft)		
Accuracy (D=measuring distance, unit: mm)	with glass prism	Fine meas.	±(2+2ppmXD)mm		
		Rapid meas.	±(5+5ppmXD)mm		
	with reflective sheet target	Fine meas.	±(4+3ppmXD)mm		
		Rapid meas.	±(5+5ppmXD)mm		
Measuring time	Fine meas. Single/repeat		Every 2.0 s (initial meas. 4.2 s)		
	Rapid meas. Single/repeat		Every 0.7 s (initial meas. 2.9 s)		
	Tracking meas.		Every 0.5 s (initial meas. 2.9 s)		
Atmospheric correction			(1) Temperature/pressure input, (2) Temperature/pressure/humidity input, (3) ppm input,		
			(4) w/o compensation, selectable		
	Temperature input range		-30°C to +60°C (1°C steps) / -22°F to +140°F (1°F steps)		
	Pressure input range		500hPa to 1400hPa (1 hPa steps), 375mmHg to 1050mmHg (1mmHg steps),		
			14.8inchHg to 41.3inchHg (0.1inchHg steps)		
	ppm input range		-499ppm to +499ppm (1ppm steps)		
	Humidity input range		0% to 100% (1% steps)		
Prism constant correction			-99mm to +99mm (1 mm steps)		
Refraction & earth-curvature correction			ON (K=0.14 / K=0.20) / OFF, selectable		
Audio target acquisition			Display and audio; ON/OFF, selectable		
Automatic light intensity control			Provided		

Geodesical

		SET1000/2000	SET3000	SET4000
Software and data transfer				
Internal memory (for application software)		512K byte EEPROM		
Data storage	Internal memory (for data storage)	128K byte SRAM, Data memory capacity: About 1,300 points		
	Memory card	SDC5 (1 28K byte): SRAM, Memory capacity about 2,000 points SDC6 (256K byte), SDC8 (512K byte) are optionally available. Data transfer: Non-contact magnetic coupling system Water resistance: protected against splashing water as defined by Japanese Industrial Standard Class IPX4 in compliance with International Electrotechnical Commission Standard Class IPX4		
Calendar, clock function		Provided		
Operating system		DR DOS		
Interface		Asynchronous serial, RS-232C compatible, Centronics compatible (w/ optional DOC48 Printer cable) Baud rate: 38400/19200/9600/4800/2400/1200bps Data bits: 7/8, Parity: Not set/Odd/Even, Stop bit 1/2 selectable		
General				
Display unit		Alphanumeric/graphic dot matrix LCD (120 x 84 dots, 20 characters x 8 lines) on each face Backlight, Non-reflective glass, provided		
Keyboard		43 latex keys on each face (alphanumeric, cursor, edit, power, softkey function, illumination)		
Clamp/fine motion screws		H&V Co-axial, Fine/Coarse two-speed motion		
Sensitivity of levels	Plate level	20"/2mm	30"/2mm	
	Circular level (in tribrach)	10'/2mm		
Optical plummet		Image: Erect, Magnification: 3x, Minimum focus: 0.5m (1.64ft.)		
Standing axis		Double		
Self-diagnostic function		Automatic, Messages/Codes, displayed		
Battery check display		Codes displayed, Message displayed		
Automatic power cut-off		Automatic cut-off 30 minutes after operation, ON/OFF selectable		
Resume function		ON/OFF selectable (backed up for about 1 week)		
Computer		CPU: V25 (10MHz), RAM: 512K byte System ROM: 128K byte, ROMDISK: 51 2K byte, RAMDISK: 128K byte		
Operating temperature		-20°C to +50°C (-4°F to +122°F)		
Water resistance		Protected against falling water drops as defined by Japanese Industrial Standard Class IPX2 in compliance with International Electrotechnical Commission Standard Class IPX2		
Tilting / Trunnion axis height		236mm (9.3in.) from tribrach bottom, 193mm (7.6in.) from tribrach dish		
Size with handle and BDC35 battery		W188 x D165 x H 345 mm (W7.4 x D6.5 x H13.6 in.)		
Weight with handle, battery and memory card		5.6kg (1 2.41bs.)		
Operating voltage		6VDC		
Power Supply				
BDC35 Rechargeable Battery		Ni-MH rechargeable battery, 2 pcs. supplied		
	Continuous use at 25°C (77°F) per piece	Angle & distance mode: About 4.5 hours (About 500 points) (Fine & single measurement, measurement interval: 30 seconds) Angle measurement only: About 7 hours		
	Charging time per piece	About 70 minutes with CDC39, CDC40 or CDC48		
BDC12 Large external rechargeable battery (option)	Continuous use at 25°C (77°F) per piece	Angle & distance mode: About 14 hours (About 500 points) (Fine/single measurement, measurement interval: 30 seconds) Angle measurement only: About 7 hours		
	Charging time	15 hours with optional CDC14 series charger		

*When the beam's incident angle is within ±30° up and down/right and left in relation to the surface of the target.
Designs and specifications are subject to change without notice.
Specifications not listed under specific instruments are identical to those appearing to the left.
DR DOS is a trademark of Novell Inc., U.S.A.
Windows is a trademark of Microsoft Corporation.
The SET1000 is made only on order. Please inquire about lead times when ordering.

•POWERSET Standard Equipment•

Main unit with WA1 tribrach, BDC35 Rechargeable Battery x 2, CDC39/40/48 Quick changer, SDC5 Memory Card (128k byte), DOC27 RS-232C Cable, CP7 Tubular Compass, Sunshade, Lens cap, Plumb bob, Vinyl cover, Tool kit, Basic Operation Manual, POWERSET SDR Software Reference Manual, Application Software Menu List, Atmospheric Correction Chart, Carrying Case

•Expert Software (optional)•

Diskette Box containing:
- POWERSET SDR Version 4.2 Expert (3.5" floppy disk x 1),
- COMMS Software (3.5" floppy disk x 2),

COMMS Reference Manual, Document Envelope

•Accessories•

DE17A
Diagonal eyepiece

OF3A
Solar filter (flip-up type)

PFW1B
Hardwood telescopic tripod (head screw: 5/8in. dia.)

PFG3
Hardwood/fiberglass telescopic tripod (head screw: 5/8in. dia.)

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