

SOKKIA



SET1010•SET2010 SET3010•SET4010

POWERSET SERIES TOTAL STATIONS



**Award-Winning
Total Stations with
Proven Power and
More Memory**

POWERSET

THE POWERSET SERIES

PROVEN POWER AND MORE MEMORY

Enjoy the benefits of proven total station technology with
Sokkia's renown SDR software

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) with the POWERSET Series.

The POWERSET Series continues to offer the highest standard in surveying efficiency with:
An extensive range of popular easy-to-use surveying software (version 4.2).
A larger internal memory for software and data storage.
Reliable memory cards for greater 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.

These advanced functions are packed into an incredibly compact instrument
weighing a mere 5.4kg (11.9 lbs.)

SET1010/SET2010		
Dist. meas. with reflecting prism	Range: 3,500m (11,400ft.)*	Accuracy: $\pm(2+2\text{ppmxD})\text{mm}^{**}$
Dist. meas. with reflective sheet target	Range: 120m (390ft.)***	Accuracy: $\pm(4+3\text{ppmxD})\text{mm}^{**}$
Angle measurement	Display resolution: 0.5"/0.1 mgon or 1"/0.2mgon	Accuracy: SET1010 1"(0.3mgon) SET2010 2"(0.6mgon)
SET3010		
Dist. meas. with reflecting prism	Range: 3,300m (10,800ft.)*	Accuracy: $\pm(2+2\text{ppmxD})\text{mm}^{**}$
Dist. meas. with reflective sheet target	Range: 100m (320ft.)***	Accuracy: $\pm(4+3\text{ppmxD})\text{mm}^{**}$
Angle measurement	Display resolution: 1"/0.2mgon or 5"/1 mgon	Accuracy: 3" (1 mgon)
SET4010		
Dist. meas. with reflecting prism	Range: 2,400m (7,800ft.)*	Accuracy: $\pm(2+2\text{ppmxD})\text{mm}^{**}$
Dist. meas. with reflective sheet target	Range: 80m (260ft.)***	Accuracy: $\pm(4+3\text{ppmxD})\text{mm}^{**}$
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 RS90N (90 x 90 mm)		
•The SET1010 is made only on order.		

POWERSET

Accurate, Reliable and Sophisticated Technology in an Ultra-Light Body

SIGHTING PERFORMANCE

Sokkia's proven mechanical, optical and electronic technologies are embodied in the POWERSET Series within the ultra-light body weighing only 5.4 kg/11.9 lb. The award-winning POWERSET series is one of the most sophisticated total stations ever developed.

■ Ultra-light Total Station

The POWERSET Series total stations are extremely light, weighing a mere 5.4 kg / 11.9 lb. - including tribrach, handle and battery. Carrying the instrument is no longer an arduous task.

■ Miniaturized Telescope

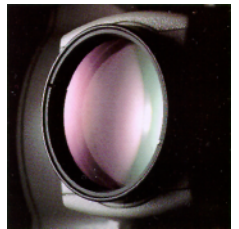
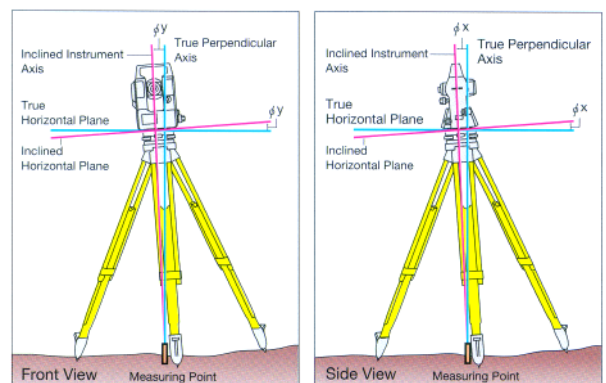
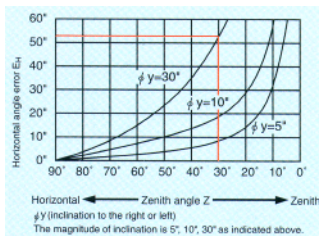
The compact telescope considerably eases the sighting of targets compared with the bulky telescope usually encountered in conventional total stations. This benefit is especially appreciated by the surveyor wearing a hardhat. The offset between the peep sight and telescope is minimized, so the short-range sighting is easier and faster.

■ Two-Speed Controls

All rotating knobs, such as the telescope focusing ring and the vertical and horizontal fine motion screws, rotate at two speeds for fine and coarse control. These knobs are coated with durable non-slip rubber to give a comfortable and sure grip.

■ Simultaneous Automatic Compensation for the Vertical, Horizontal and Sighting Axes

Since it was first introduced with the Series C total stations in 1989, Sokkia's dual-axis compensator has proven its reliability and accuracy at survey sites all over the world. Deviations of both the X and Y axes are monitored by the dual-axis tilt sensor, and corrections for horizontal and vertical angle readings are automatically computed and applied. This makes levelling of the instrument easier and less time-consuming. The collimation function automatically corrects the deviations of the horizontal, vertical and sighting axes.



Micro-Prism Reflective Sheet Targets make Routine Surveying Easier and Provide Simple Solutions in Demanding Situations

REFLECTIVE SHEET TARGETS

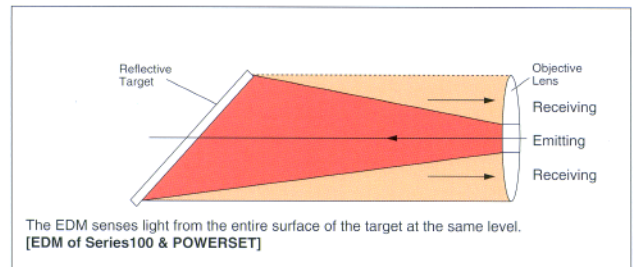
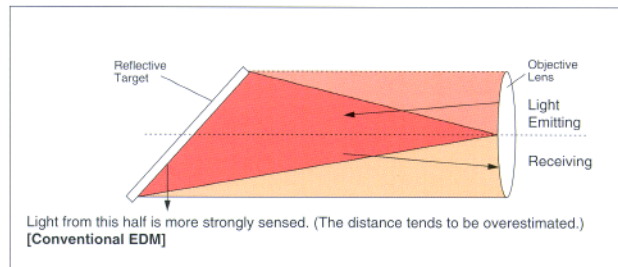
With the POWERSET Series total stations you have the option of measuring distances with Sokkia's innovative reflective sheet targets as well as with conventional glass prisms. Reflective sheet targets are far less expensive than glass prisms and can be quickly and easily set up in locations where glass prisms cannot.



■ Unique EDM designed for use with both reflective sheet targets and glass prisms.

Conventional EDM's rely on vertical or horizontal partitioning of the lens, of which one half is used as the light emitter and the other half as the light receiver. This design works well with glass prisms, but it does not accommodate reflective sheet targets. When measuring the sheet targets, inclination of the sheet (setup angle) causes variations in the returned light that render measurement either impossible or erroneous. The POWERSET Series incorporates an innovative optical system in which the central portion of the objective lens acts as the light emitter and the surrounding portion acts as the receiver. With this system, errors introduced by inclination of the target are obviated (providing it is set within $\pm 30^\circ$) resulting in measurements accurate to $\pm(4+3\text{ppm} \times D)\text{mm}^*$. With glass prisms, the POWERSET can measure the distance with an accuracy of $\pm(2+2\text{ppm} \times D)\text{mm}^*$.

*D: measuring distance, unit:mm



● Measuring Ranges

Model	Size (mm)	Measuring distance (when targets face in right angle)		
		SET1010/2010	SET3010	SET4010
RS10N	10x10	1m~40m	1m~30m	1m~25m
RS50N	50x50	1m~90m	1m~80m	1m~60m
RS90N	90x90	1m~120m	1m~100m	1m~80m

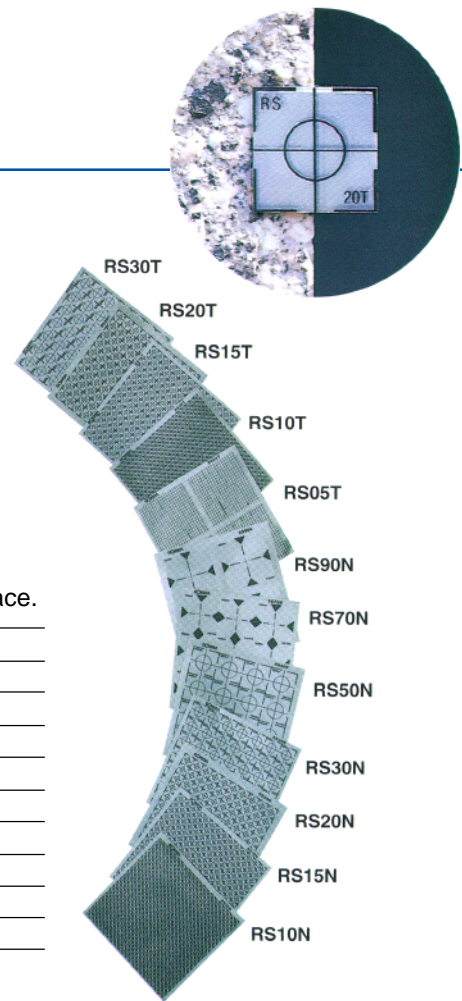
■ **A variety of reflective sheet targets provide solutions for tricky survey situations which would have proven difficult or impossible.**

Prism constant of all the reflective targets is "0".

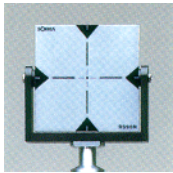
● RS series Reflective Sheets

These 0.4 mm thick, self-adhesive sheets adhere at a touch to almost any dry surface.

Boldness of cross hair line	Normal	Thin	Plain (no lines)
5 x 5 mm	-	RS05T	-
10 x 10 mm	RS10N	RS10T	-
15 x 15 mm	RS15N	RS15T	-
20 x 20 mm	RS20N	RS20T	-
30 x 30 mm	RS30N	RS30T	-
50 x 50 mm	RS50N	-	-
70 x 70 mm	RS70N	-	-
90 x 90 mm	RS90N	-	-
230 x 230 mm	-	-	RS00



● Detachable Rotary Target RT90C



A 90 x 90 mm, 360° rotating sheet target, the RT90C can be mounted on a tribrach with the AP41 adapter, or mounted directly to prism pole AP61.

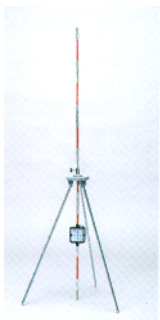
● Grip Anchor Targets

RT30G10 · RT50G10 · RT90G10

Fully rotatable targets with 10 mm dia. male screws. They can be mounted in M10 female bolt holes. The RT30G10 is 30 x 30 mm, RT50G10 is 50 x 50 mm, and RT90G10 is 90 x 90 mm.

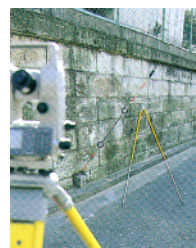


● Pin Pole Target RT50P



A 50 x 50 mm, 360° rotating sheet target the RT50P can be connected to narrow pin poles.

● Two-Point Target 2RT500



For the measurement of hidden points. The distance between the two targets is 500 mm, and the total length can be extended by adding poles. The measuring range is the same as for a 50 x 50 mm sheet target.

2RT500

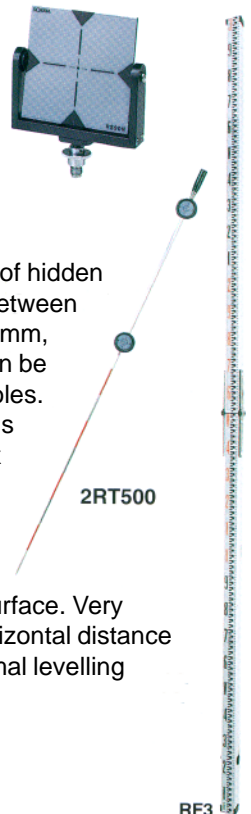
● Magnetic Rotary Targets RT50M · RT90M

Incorporating a powerful magnet base, these targets can be mounted on a magnetic steel surface in seconds. Full 360° rotation. The RT50M is 50 x 50 mm, RT90M is 90 x 90 mm.



● Reflective Staff RF3

A levelling staff with a special reflective surface. Very quick to sight, for horizontal angle and horizontal distance applications. It can also be used as a normal levelling staff for reading heights.



RF3

Full Alphanumeric Keyboards and Easy-to-Read Displays are Provided on Both Faces

OPERABILITY

Only alphanumeric keyboards can offer such ease of data input, and the large displays provide certain confirmation at a glance. Rechargeable batteries (two supplied) provide enough power for a full day's work and can be charged in just over an hour.

■ Two Displays and Full Alphanumeric Keyboards for Easy and Sure Operation

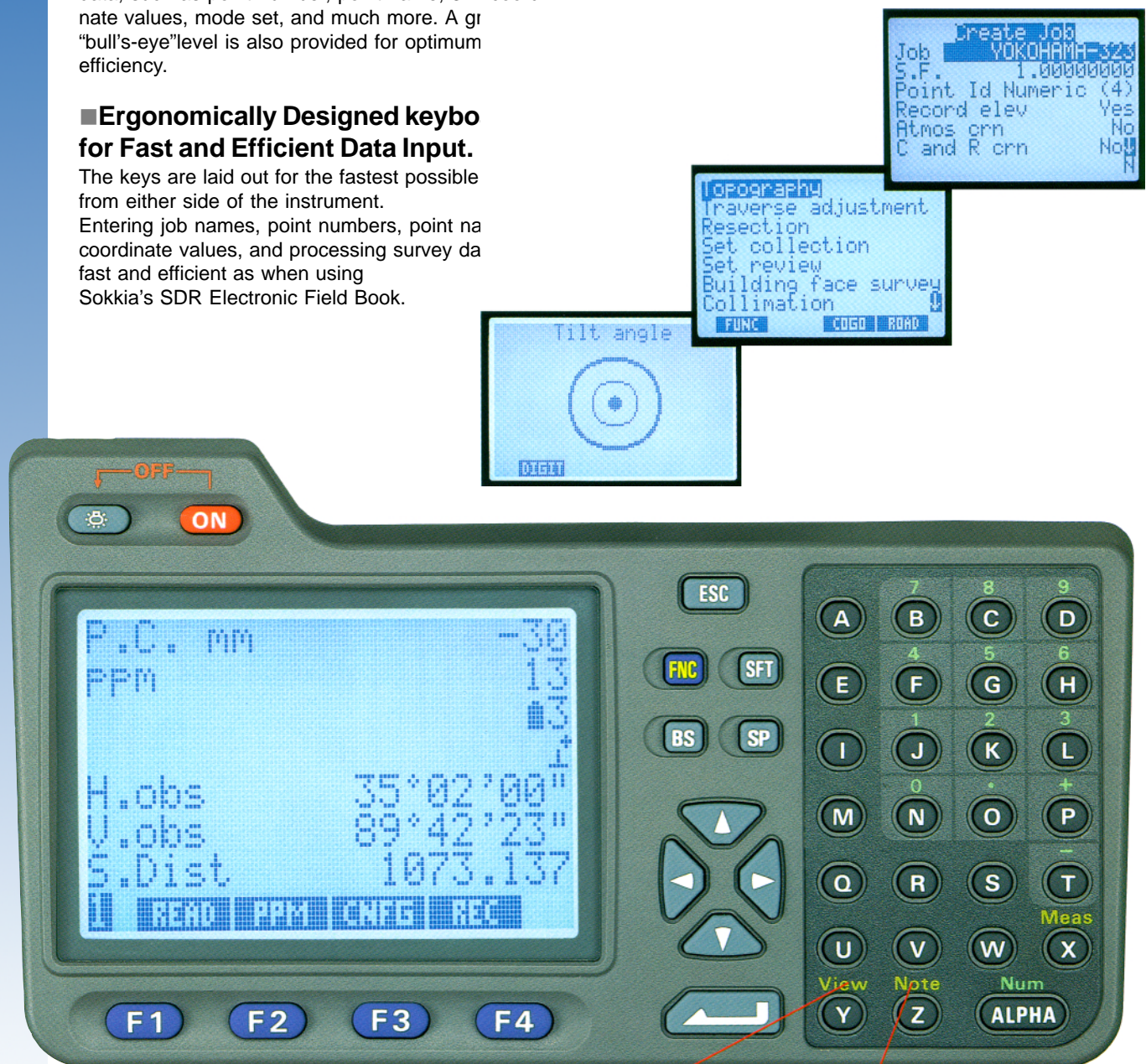
Even with a wide variety of functions, operation is remarkably easy thanks to the POWERSET's large displays and alphanumeric keyboards. The 8-line, 20-character screens display alphanumeric data. They allow at-a-glance confirmation of a large volume of data, such as point number, point name, 3-D coordinate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

■ Ergonomically Designed keyboard for Fast and Efficient Data Input.

The keys are laid out for the fastest possible from either side of the instrument. Entering job names, point numbers, point na coordinate values, and processing survey da fast and efficient as when 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 power- consuming display heaters.



View: Confirm or search for the recorded data at any time. **Note:** Input notes at any time.



■ Nickel-Metal Hydride Battery

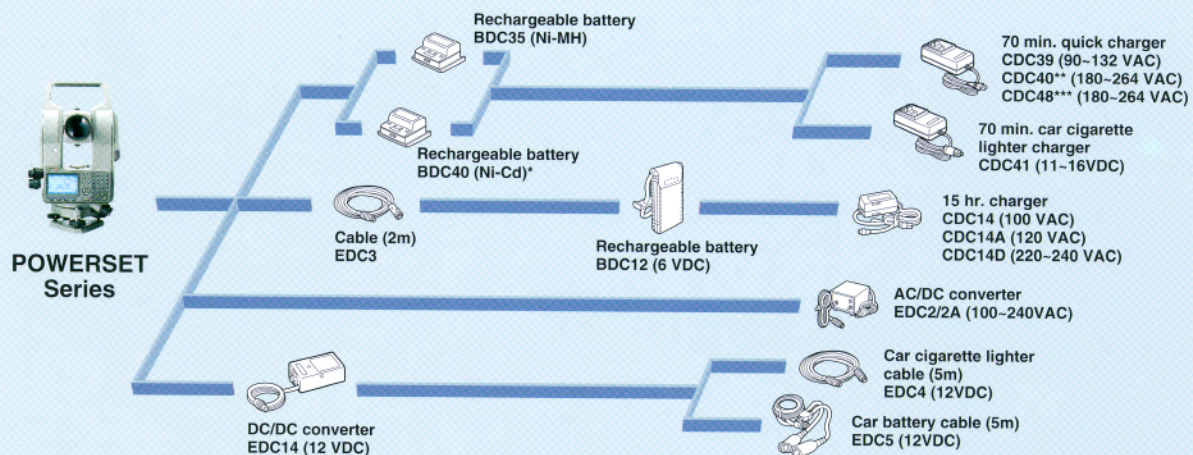
The rechargeable Ni-MH battery lasts about 32%* longer than conventional Ni-Cd batteries. When fully charged, battery life is about 4.5 hours, or approximately 500 measurements.** As two batteries are provided as standard equipment, the POWERSET Series can be operated for a total of 9 hours - more than enough for an average day's work. Recharging takes only 70 minutes or less, making it easy to prepare for the next day's tasks.

* Sokkia's tests

** In the Fine and Single measurement modes at measurement intervals of 30 seconds.



Ni-MH
Ni-Cd



*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

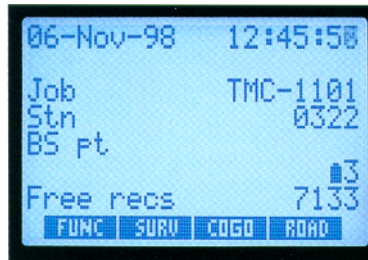
Larger Internal Memory Provides Rapid Processing of Surveying Data

RECORDABILITY

High processing speed and secure storage are provided by an increased internal memory with the unlimited storage capacity of multiple memory cards. Handling of data - from the field to the office or from the office to the field - is easy and efficient.



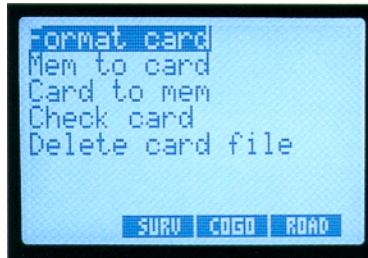
■ POWERSET Internal Memory Increased to 512KB



The processing speed of measured data has a dramatic effect on on-site efficiency. The POWERSET Series combines a 512K internal memory (approx. 4800 points) with memory cards to ensure efficient measurement and storage of data. The internal memory has been increased to double that of the original POWERSET Series to store and rapidly process more data, and the popular non-contact memory cards can also be used to provide fast and reliable backup, transfer,

and storage of measured data. Since the card is not accessed each time a measurement is performed, the processing speed is maximized. Recorded data is automatically time-stamped for management records and productivity analysis. Stored data can also be efficiently transferred to a PC for further processing.

■ Waterproof, Dustproof Memory Cards



Three memory card sizes are available:

- 128KB SDC5 (about 1200 points*, supplied as standard),
- 256KB SDC6 (about 2400 points*),
- 512KB SDC8 (about 4800 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 safely used in unfavorable surveying environments.

*When using four digit point numbers.

**Degree of protection against water: protected against splashing water as defined by IEC Standard Class IPX4

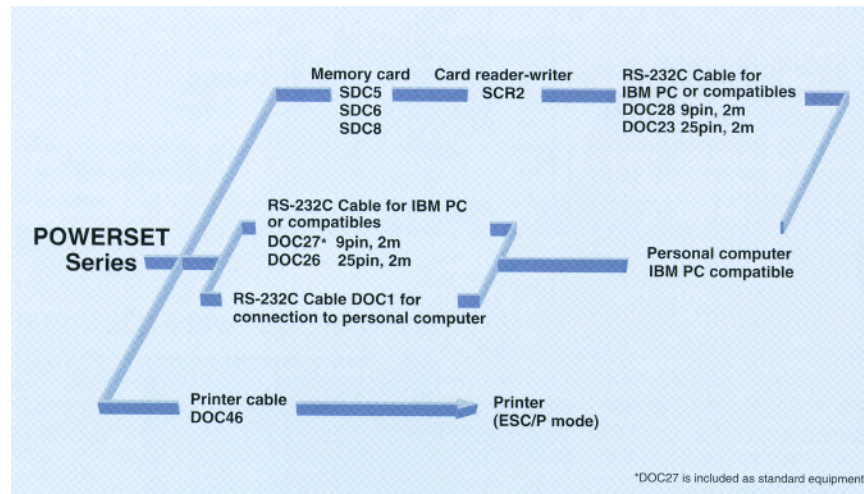




■ Direct Data Output to Computer and Printer

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 compatible with the ESC/P mode. The POWERSET sends formatted reports, starting a new page for each job.

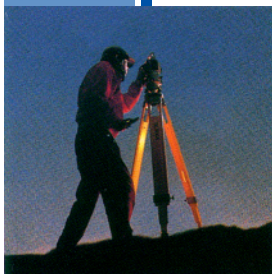
■ Communication System



Powerset Total Stations Ship With Highly Functional Surveying Software Pre-Installed and ready for Use

VERSATILITY

With Sokkia's electronic field book functions and optional Expert Software, the POWERSET software provides versatility and extendability to meet the needs of the professional surveyor in a wide variety of surveying scenarios.



■ SOFTWARE

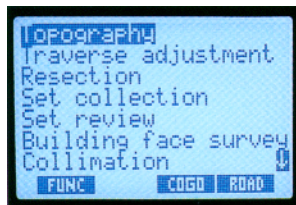
Sokkia's industry standard SDR33/31 Electronic Field Book functions have been integrated into the pre-installed POWERSET software for consistent and convenient operation. From the wide range of programs to the powerful Expert options, you can access exactly the software you need to handle your surveying projects efficiently.

■ Pre-installed Software

The following application software is preinstalled in the instrument's internal memory when it is shipped from the factory:

SURV	COGO	ROAD
Topography	Set out coords	Cross-section survey
Resection	Set out line	
Collimation	Resection	
Tilt offset	Traverse	
Remote elevation	Areas	
Keyboard input	Intersections	

■ Expert Software (Optional)



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		Road topo
Set review	Professional Positioning	Cross-section survey
Building face survey	Inverse	Define road
Collimation	Areas	Review road
Tilt offset	Intersections	Define template
Remote elevation	Point projection	Review template
Keyboard Input	Taping from baseline	
	Transformation	
	Keyboard input	

*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 mistaken target points, point displacement or incorrect measurements.

■ COMMS

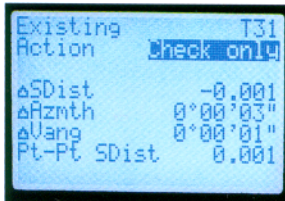
Expert software comes with COMMS, a Windows- based communications program. COMMS, running on a PC, can send and receive SDR files (jobs, roads, templates and feature code libraries) to and from SDR devices (POWERSET, SDR33 or SDR31). Furthermore, COMMS can export SDR files in DXF, MOSS, ICS and SDMS formats. MOSS files can also be imported and converted to SDR files and transferred to a POWERSET, SDR33 or SDR31. (COMMS runs on Windows 3.1 and Windows 95)



SOFTWARE FOR LAND SURVEYING

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

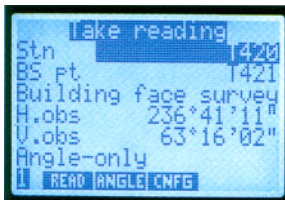
The **Topography** program helps increase data validity by automatically calculating and displaying the difference in observed positions. When a point is observed more than once, you may choose to replace the old observation, store the new observation under a different point number, or average the two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



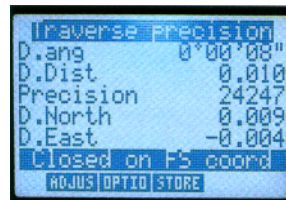
Set Collection lets you structure your traverse and network data collection procedures. A sophisticated set review mechanism allows you to scan the accumulated data with as much summary or detail as you need. Differences and standard deviations are displayed. You can mark a "bad" set and recalculate.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



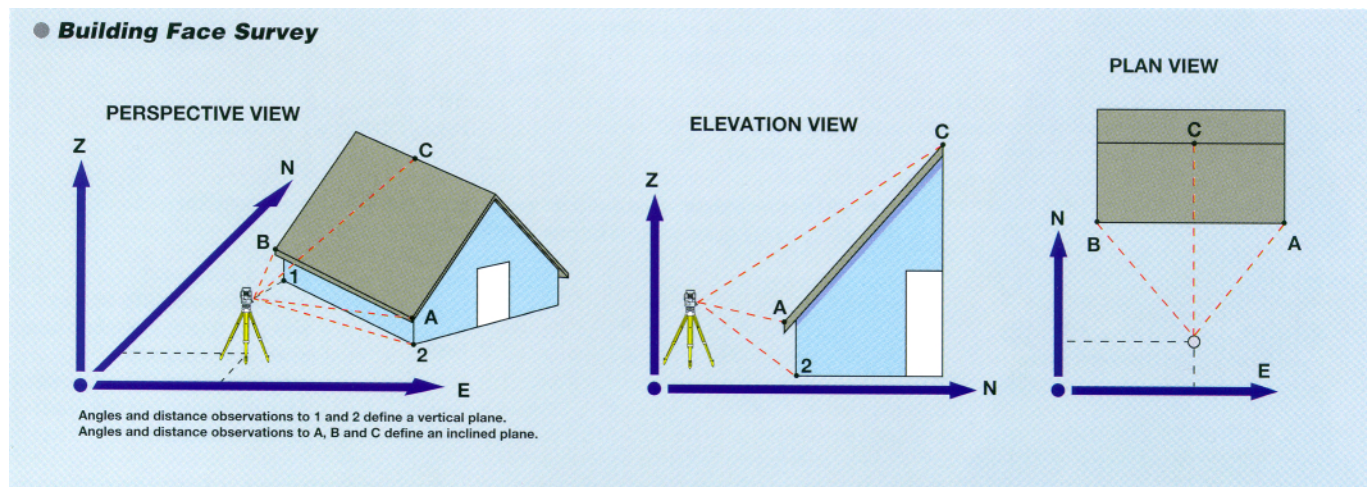
The **Building Face Survey** feature allows for the coordination of points in a defined vertical plane. Recessed and protruding points may also be measured by entering an offset distance from the defined plane.



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 traverse and angles or elevations.



Functions written in bold italics are supported only in the Expert software.. e.a. Set Collection



COGO and Roding Software bring High Productivity to every Surveying Solution

FUNCTIONALITY

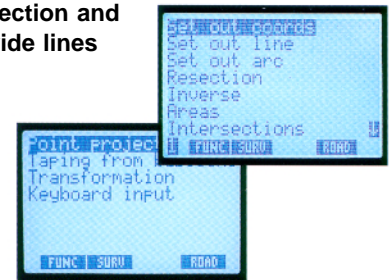
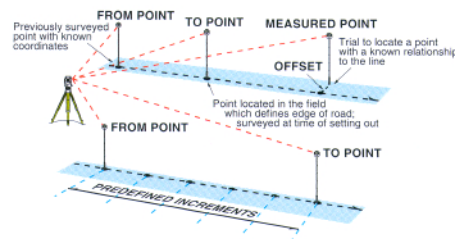
With the optional Expert Software' the COGO and Roding functions can be extended to provide a truly comprehensive software suite comfortably meeting the complex requirements of a wide range of modern civil and construction projects.



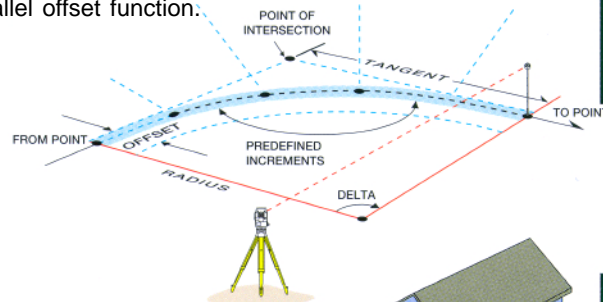
SOFTWARE FOR COGO

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*.

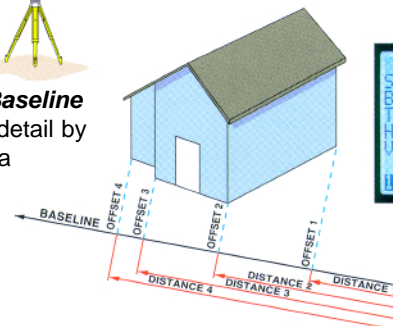


- The POWERSET Series supports several "setting-out" methods including **Set Out Line** and **Set Out Arc** with parallel offset function.



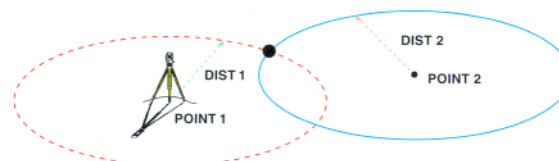
Left	0.000
Out	0.321
Arm H.obs	21°48'05"
Arm U.obs	95°18'16"
H.obs	21°48'18"
U.obs	95°43'37"
S.Dist	5.090

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



Take reading	
Stn	2000
BS pt	2010
Taping from baseline	
H.obs	338°07'04"
U.obs	92°01'59"

- 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 the least squares method.

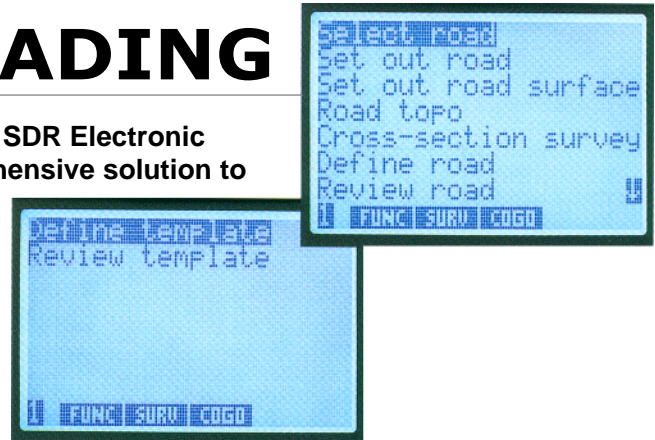
Functions written in bold italics are supported only in the Expert software, e.g. **Taping from Baseline**.



SOFTWARE 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.

- Roding 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 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.

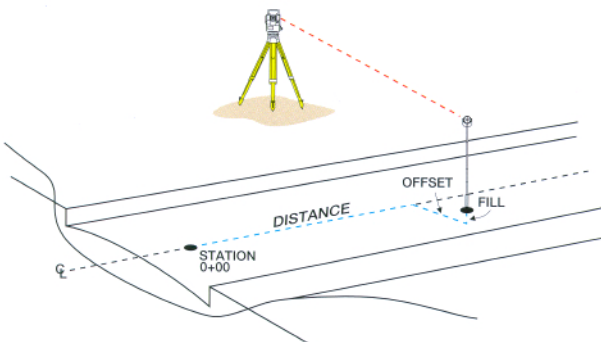
- Superelevation and widening parameters are user-defined. Left and right definitions and calculations are independent of each other. This allows easy stake-out of the most complicated road surfaces.

- 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.

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

- Horizontal definitions can also be defined using string points.



POWERSET SPECIFICATIONS

			SET1010/2010	SET3010	SET4010
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)		
Focusing ring			Fine / Coarse two speeds		
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		SET1010 1"(0.3mgon) SET2010: 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		
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 RS90N	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.)
Unit			Meters or feet, selectable		
Display resolution	Fine measurement		0.0001 m / 0.001 m (0.001ft. / 0.01ft)	0.001 m (0.01ft.)	
	Rapid measurement		0.001 m (0.01ft.)		
	Tracking measurement		0.01m (0.1ft.)		
Unambiguous measuring range (Slope distance)			9999.9999m (32,808.333ft.)	9999.999m (32,808.33ft)	
Accuracy	with glass prism	Fine meas.	±(2+2ppm x D)mm		
(D=measuring distance, unit: mm)		Rapid meas.	±(5+5ppm x D)mm		
	with reflective sheet target	Fine meas.	±(4+3ppm x D)mm		
		Rapid meas.	±(5+5ppm x D)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		

		SET1010/2010	SET3010	SET4010
Computer and data transfer				
CPU		V25 (10MHz)		
Operating system		MS-DOS compatible		
RAM		640KB		
System ROM		128KB		
ROMDISK (for application software)		1 MB FLASHROM		
RAMDISK		512KB		
Data storage	Onboard	512KB SRAM, Data memory capacity About 4,800 points		
	Memory card	SDC5 (128KB): SRAM, Memory capacity about 1,200 points SDC6 (256KB), SDC8 (51 2KB) 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 Standard Class IPX4		
Calendar, clock function		Provided		
Interface		Asynchronous serial, RS-232C compatible, Centronics compatible (w/optional DOC46 Printer cable) Baud rate: 38,400 / 19,200 / 9,600 / 4,800 / 2,400 / 1,200bps Data bits: 7/8, Parity: Not set / Odd / Even, Stop bit 1 / 2 selectable		
General				
Display unit		Alphanumeric / graphic dot matrix LCD (120 x 64 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)		
Self-diagnostic function		Automatic, Messages / Codes displayed		
Sensitivity of levels	Plate level	20" / 2 mm	30" / 2 mm	
	Circular level (in tribrach)	10" / 2mm		
Optical plummet		Image: Erect, Magnification: 3x, Minimum focus: 0.5 m (1.64 ft.)		
Clamps / Fine motion screws	H&V	Co-axial, Fine/Coarse two-speed motion		
Standing axis		Single		
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 H345 mm (W7.4 x D6.5 x H13.6 in)		
Weight with handle, battery and memory card		5.4 kg (11.9 lbs.)		
Weight of parts		BDC35 battery: 240g (8.5oz), handle: 100g (3.5oz), tribrach: 700g (1lbs), carrying case: 3.7kg (8.2lbs)		
Power supply				
Operating voltage		6V DC		
Battery level display		4 steps with warning message		
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)		
BDC35 Rechargeable Battery		Ni-MH rechargeable battery, 2 pcs. supplied		
	Continuous use at 25°C (77°F) per battery	Angle & distance meas.: About 4.5 hours (About 500 points) (Fine & single measurement, measurement interval: 30 seconds) Angle measurement only: About 7 hours		
	Charging time per battery	About 70 minutes with CDC39, CDC40 or CDC48		
BDC12 Large External Rechargeable Battery (option)	Continuous use at 25°C (77°F) per battery	Angle & distance mode: About 14 hours (About 1,600 points) (Fine/single measurement, measurement interval: 30 seconds) Angle measurement only: About 23 hours		
	Charging time per battery	15 hours with optional CDC14 series charger		

*When the beam's incident angle is within $\pm 30^\circ$ up and down / right and left in relation to the surface of the target.
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●Standard Configuration●

The POWERSET Series comes with:
 a tribrach, two rechargeable batteries BDC35, a quick charger CDC39/40/48, memory card SDC5 (128KB), RS-232C cable DOC27, tubular compass CP7, sunshade, lens cap, plumb bob, vinyl cover, tool kit, basic operating manual, POWERSET SDR software reference manual, application software menu list, carrying case and shoulder strap.

●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 (optional) ●



Diagonal Eyepiece
DE17A



Solar Filter (flip-up type)
OF3A



Back Pack SC153

Sokkia's Dynamic English Web Pages

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