

SOKKIA

FX Series
Functional X-ellence Station

Totally Functional

- Windows® CE is Ready in a Lightweight, Compact Body
- MAGNET™ Field On-Board Application Software
- RED-tech Technology Reflectorless EDM
- Long-Range Bluetooth® Technology*
- Advanced Angle Measurement System
- Long-lasting Battery
- Waterproof, Rugged, and Operator Friendly

*Offered as an option in some areas.



**Exclusive
TSshield
technology built-in**

World's First
integrated support service

The FX Total Station Offers High

World's First
integrated support service

■ TSshield

Every FX total station is equipped with a telematics-based multifunction communications module providing the ultimate security and maintenance capabilities for your investment.

If an activated instrument is lost or stolen, you can send a coded signal to the instrument and disable it – Your total station is secure anywhere in the world!

And, in the same module, you have daily connectivity to cloud-based Sokkia servers that can inform you of available software updates and firmware enhancements.

*For more detail of TSshield, please refer to the TSshield's leaflet.



■ Windows® CE is Ready in a Lightweight, Compact Body

- Windows® CE 6.0 provides a comfortable operating environment.
- Completely new onboard application “MAGNET™ Field” is installed as standard feature.

■ MAGNET™

● Cloud-based Solutions for Precise Positioning*

MAGNET™ is a software family that uses the “cloud” to seamlessly connect data in the field and office. Real-time connections. When you need it. Where you need it. For data exchange, communications, asset tracking and more.

*Available when using an optional controller.

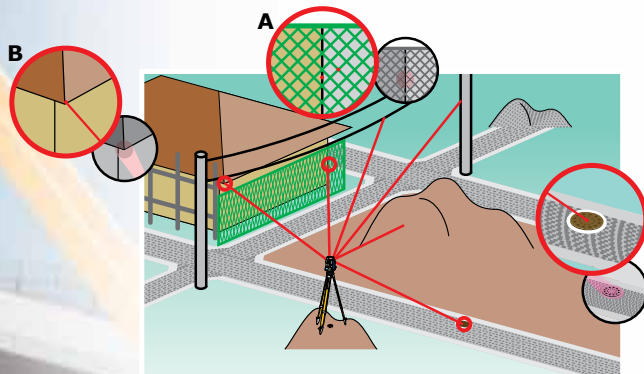
● MAGNET™ Field

Data collection, stakeout, roads, and coordinate geometry.



■ RED-tech Technology Reflectorless EDM

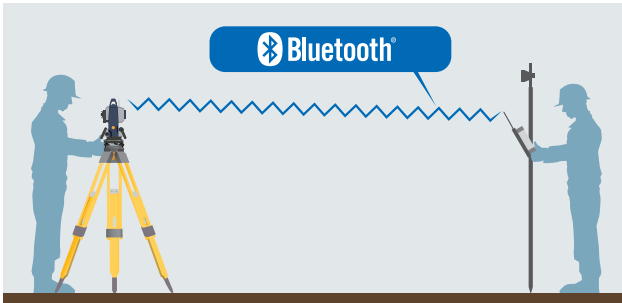
- Fast distance measurement of 0.9s regardless of object.
- Sokkia traditional pinpoint precision in reflectorless distance measurement.
- Reflectorless operation from 30cm to 500m.
- Coaxial EDM beam and laser-pointer provide fast and accurate aiming.
- Ensures accuracy even with reflective sheets.



The ultra-narrow EDM beam can precisely measure walls, corners, manholes on the road surface, even chain-link fences and tree branches.

Performance in a Compact Size.

■ Long-Range Bluetooth® Technology*

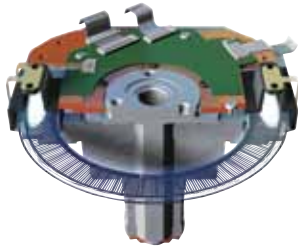


- The FX series of total stations features Bluetooth Class1 wireless technology for reliable data communications.
- All FX data is instantly available at the Bluetooth-equipped controller.

*Offered as an option in some areas.

■ Advanced Angle Measurement System

- FX features Sokkia's original absolute encoders that provide long-term reliability in any job site condition. Dual-axis compensator ensures stable measurements even when setup on uneven terrain.
- Sokkia's traditional motion clamp and tangent screw are employed to ensure stable angle measurement.
- FX-101 and FX-102 feature groundbreaking IACS (Independent Angle Calibration System) technology for extremely reliable angle measurement.



■ Long-lasting Battery

- Uses the same high capacity battery as MDTs and GNSS.
- One battery provides 20 hours of power.



■ Waterproof, Rugged, and Operator Friendly

- IP65 dustproof / waterproof rating.
- Metal chassis and heavy duty handle.
- Standard usage temperature range -20 to +50°C. Low temperature models can be used as low as -30°C^{*2} and high temperature models up to +60°C.^{*2}
- New star key [★] instantly brings up functions.
- Trigger key lets you take a series of measurements without taking your eye off the telescope.
- Control panel consists of 10-key pad with color LCD touch screen display.^{*2}
- USB type A / mini B as well as serial ports.



- Green / Red telescope guide light enhances work efficiency in a range up to 150m.



- Optional laser plummet with five brightness levels is equipped for quick instrument setting in all lighting conditions.^{*3}

*1 Low and High temperature models available as options.

*2 Face 2 is only touch screen display. Control panel location may vary depending on region or model.

*3 Offered as an option in some areas.

Functional X-ellence Station

Model	FX-101	FX-102	FX-103	FX-105	FX-107
Telescope					
Magnification / Resolving power	30x / 2.5"				30x / 3.5"
Others	Length: 171mm (6.7in.), Objective aperture: 45mm (1.8in.) (48mm (1.9in.) for EDM), Image: Erect, Field of view: 1°30' (26m/1,000m), Minimum focus: 1.3m (4.3ft.), Reticle illumination: 5 brightness levels				
Angle Measurement					
Display Resolution	0.5" / 1" (0.0001 / 0.0002gon, 0.002 / 0.005mil)	1" / 5" (0.0002 / 0.001gon, 0.005 / 0.02mil)			
Accuracy (ISO 17123-3:2001)	1"	2"	3"	5"	7"
IACS (Independent Angle Calibration System)	Provided				
Dual-axis compensator / Collimation compensation	Dual-axis liquid tilt sensor, working range: ±6' (±111mgon) / Collimation compensation available				
Distance Measurement					
Laser output *1	Reflectorless mode: Class 3R / Prism / sheet mode: Class 1				
Measuring range (under average conditions)*2	Reflectorless*3	0.3 to 500m (1.0 to 1,640ft.)			
	Reflective sheet*4/*5	RS90N-K: 1.3 to 500m (4.3 to 1,640ft.), RS50N-K: 1.3 to 300m (4.3 to 980ft.), RS10N-K: 1.3 to 100m (4.3 to 320ft.)			
	Mini prisms	CP01: 1.3 to 2,500m (8,200ft.), OR1PA: 1.3 to 500m (1,640ft.)			
	One AP prism	1.3 to 4,000m (4.3 to 13,120ft.) / Under good conditions*6: 5,000m (16,400ft.)			
	Three AP prisms	to 5,000m (16,400ft.) / Under good conditions*6: to 6,000m (19,680ft.)			
Display Resolution	Fine/Rapid: 0.001m / 0.01ft. / 1/8in. Tracking: 0.01m / 0.1ft. / 1/2in.				
Accuracy*2 (ISO 17123-4:2001) (D=measuring distance in mm)	Reflectorless*3	(3 + 2ppm x D) mm*7			
	Reflective sheet*4	(3 + 2ppm x D) mm			
	AP/CP prism	(2 + 2ppm x D) mm			
Measuring time*8	Fine: 0.9s (initial 1.7s), Rapid: 0.7s (initial 1.4s), Tracking: 0.3s (initial 1.4s)				
OS, Interface and Data management					
Operating system / Application	Microsoft Windows® CE 6.0 / MAGNET Field				
Display / Keyboard	3.5inch, Semi-transmissive TFT QVGA color LCD with LED backlight, Touch screen, Automatic brightness control / 26 keys with backlight				
Control panel location*9	On both faces (Face 2 is only touch screen display)				On one face
Trigger key	On right instrument support				
Data storage	Internal memory	500MB internal memory (includes memory for program files)			
	Plug-in memory device	USB flash memory (max. 8GB)			
Interface	Serial RS-232C, USB2.0 (Type A / mini B)				
Bluetooth modem (option)*10	Bluetooth Class 1, Ver.2.1+EDR, Operating range: up to 300m (980ft.)*11				
General					
Laser-pointer*12	Coaxial red laser using EDM beam				
Guide light*12	Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.)*2				
Levels	Graphic	6' (Inner Circle)			
	Circular level	10' / 2mm			
Optical plummet	Magnification: 3x, Minimum focus: 0.3m (11.8in.) from tribrach bottom				
Laser plummet (option)	Red laser diode (635nm±10nm), Beam accuracy: ≤1.0mm@1.3m, Class 2 laser product				
Dust and water protection	IP65 (IEC 60529:2001)				
Operating temperature*13	-20 to +50°C (-4 to +122°F)				
Size with handle*9	Control panel on both faces: W191 x D190 x H348mm (W7.5 x D7.5 x H13.7in.) Control panel on one face: W191 x D174 x H348mm (W7.5 x D6.9 x H13.7in.)				
Weight with battery & tribrach	Approx. 5.7kg (12.6 lb.)				
Power supply					
Battery	BDC70 detachable battery	Li-ion rechargeable battery			
Operating time (20°C)	BDC70	Approx. 20 hours (single distance measurement every 30 seconds)			
	External battery*14 (option)	BDC60: approx. 24 hours, BDC61: approx. 49 hours (single distance measurement every 30 seconds)			

*1 IEC60825-1:Ed.2.0:2007 / FDA CDRH 21 CFR Part 1040.10 and 11 *2 Average conditions: Slight haze, visibility about 20km (12 miles), sunny periods, weak scintillation. *3 Fine mode. With Kodak Gray Card White Side (90% reflective). When brightness on measured surface is 30,000 lx. or less. Reflectorless range/accuracy may vary according to measuring objects, observation situations and environmental conditions. *4 When the measuring beam's incidence angle is within 30° in relation to the reflective sheet target. *5 Measuring range in temperatures of -30 to -20°C (-22 to -4°F) with Low Temperature models and 50 to 60°C (122 to 140°F) with High Temperature models: RS90N-K: 1.3 to 300m (4.3 to 980ft.), RS50N-K: 1.3 to 180m (4.3 to 590ft.), RS10N-K: 1.3 to 60m (4.3 to 190ft.) *6 Good conditions: No haze, visibility about 40km (25 miles), overcast, no scintillation. *7 Measuring range: 0.3 to 200m *8 Typical, under good conditions. Reflectorless measurement time may vary according to measuring objects, observation situations and environmental conditions. *9 Control panel location may vary depending on region or model. *10 Usage approval of Bluetooth wireless technology varies according to country. Please consult your local office or representative in advance. *11 No obstacles, few vehicles or sources of radio emissions/interference in the near vicinity of the instrument, no rain. *12 The laser-pointer and the guide light do not work simultaneously. *13 Low Temperature models: -30 to 50 °C (-22 to 122°F) and High Temperature models: -20 to 60°C (-4 to 140°F, No direct sunlight) are available on built-to-order basis. *14 For FX-101, FX-102 and Low Temperature models.

Standard Accessories

- FX main unit
- Battery (BDC70)
- Battery charger (CDC68)
- Power Cable
- Lens cap
- Lens hood
- Tool pouch
- Screwdriver
- Lens brush
- Adjusting pin x2
- Cleaning cloth
- Operation manual
- USB memory
- Laser caution sign-board
- Carrying case
- Carrying strap



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