

**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.



# 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.

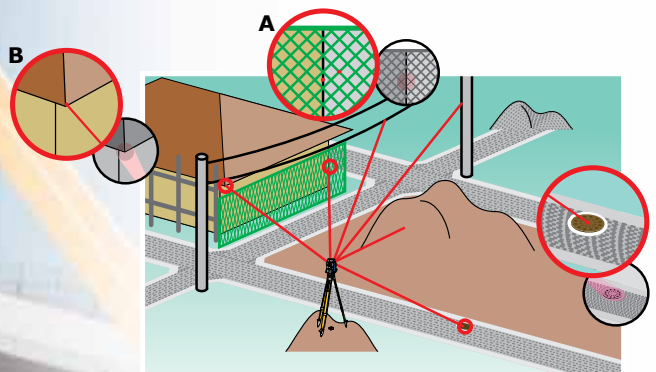
### ● MAGNET™ Field

Data collection, stakeout, roads, and coordinate geometry.



## ■ RED-tech Technology Reflectorless EDM

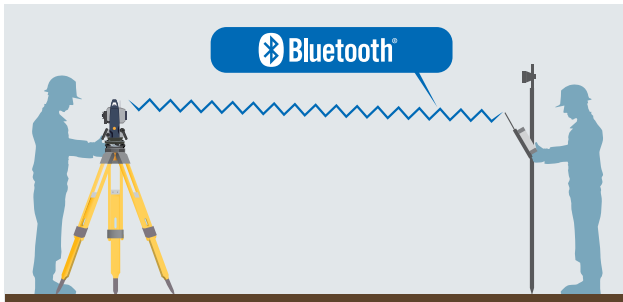
- Fast distance measurement of 0.9s regardless of object.
- Sokkia traditional pinpoint precision in reflectorless distance measurement.
- Reflectorless operation from 30cm to 500m.
- Coaxial EDM beam and laser-pointer provide fast and accurate aiming.
- Ensures accuracy even with reflective sheets.



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\*

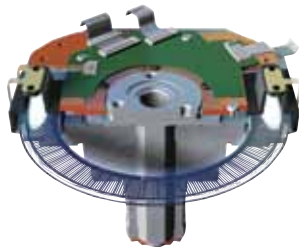


- The FX series of total stations features Bluetooth Class1 wireless technology for reliable data communications.
- All FX data is instantly available at the Bluetooth-equipped controller.

\*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.



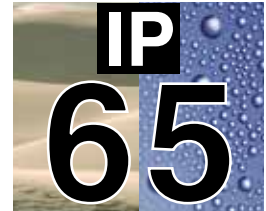
## ■ Long-lasting Battery

- 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<sup>2</sup> and high temperature models up to +60°C.<sup>2</sup>
- 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.<sup>2</sup>
- USB type A / mini B as well as serial ports.



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



- Built-in laser plummet with five brightness levels is equipped for quick instrument setting in all lighting conditions.<sup>3</sup>

\*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.

Model	FX-101	FX-102	FX-103	FX-105	FX-107
<b>Telescope</b>					
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				
<b>Angle Measurement</b>					
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				
<b>Distance Measurement</b>					
Laser output <sup>*1</sup>	Reflectorless mode: Class 3R / Prism / sheet mode: Class 1				
Measuring range (under average conditions <sup>*2</sup> )	Reflectorless <sup>*3</sup>	0.3 to 500m (1.0 to 1,640ft.)			
	Reflective sheet <sup>*4/*5</sup>	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 <sup>*6</sup> : 5,000m (16,400ft.)			
	Three AP prisms	to 5,000m (16,400ft.) / Under good conditions <sup>*6</sup> : to 6,000m (19,680ft.)			
Display Resolution	Fine/Rapid: 0.001m / 0.01ft. / 1/8in. Tracking: 0.01m / 0.1ft. / 1/2in.				
Accuracy <sup>*2</sup> (ISO 17123-4:2001) (D=measuring distance in mm)	Reflectorless <sup>*3</sup>	(3 + 2ppm x D) mm <sup>*7</sup>			
	Reflective sheet <sup>*4</sup>	(3 + 2ppm x D) mm			
	AP/CP prism	(2 + 2ppm x D) mm			
Measuring time <sup>*8</sup>	Fine: 0.9s (initial 1.7s), Rapid: 0.7s (initial 1.4s), Tracking: 0.3s (initial 1.4s)				
<b>OS, Interface and Data management</b>					
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 <sup>*9</sup>	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) <sup>*10</sup>	Bluetooth Class 1, Ver.2.1+EDR, Operating range: up to 300m (980ft.) <sup>*11</sup>				
<b>General</b>					
Laser-pointer <sup>*12</sup>	Coaxial red laser using EDM beam				
Guide light <sup>*12</sup>	Green LED (524nm) and Red LED (626nm), Operating range: 1.3 to 150m (4.3 to 490ft.) <sup>*2</sup>				
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 <sup>*13</sup>	-20 to +50°C (-4 to +122°F)				
Size with handle <sup>*9</sup>	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.)				
<b>Power supply</b>					
Battery	BDC70 detachable battery	Li-ion rechargeable battery			
Operating time (20°C)	BDC70	Approx. 20 hours (single distance measurement every 30 seconds)			
	External battery <sup>*14</sup> (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



# SOKKIA

SOKKIA CORPORATION

16900 W. 118th Terrace Olathe, KS 66061  
Phone (800) 4-SOKKIA Fax: (913) 492-4900  
www.sokkia.com

Specifications subject to change without notice  
©2011 Topcon Corporation All rights reserved. P-138-2 GE

- Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.  
- Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Topcon is under license.  
- Other trademarks and trade names are those of their respective owners.  
- Designs and specifications are subject to change without notice.  
- Product colors in this brochure may vary slightly from those of the actual products owing to limitations of the printing process.

**Your local Authorized Dealer is:**