

# SOKKIA

MADE TO FIT YOUR WORLD.

## NET AXII Series

3D Monitoring Stations





## Ultra-high-precision Distance Measurement

These fully robotic monitoring stations offer a superior level of performance compared to conventional systems that simply lock on to the nearest targets. The NET AXII series excels at precision-intensive tasks such as monitoring, bridge construction, and other highly detailed engineering projects.

- Precise angle accuracies 0.5" (NET05 AXII) / 1" (NET1 AXII)
- 1" Auto-pointing accuracy
- Remote control through on-line PC
- Exclusive reflector prescan technology
- Enforced durability for long-term deformation / monitoring applications

## For Monitoring

The NET AXII series provides superior measuring precision for high-precision monitoring applications and can be utilized to configure a high-precision monitoring system.

## For Industrial Measurement

Achieve sub-millimeter accuracy using the NET05 AXII and reflective sheet targets. It's excellent for measuring the shape and alignment of large-scale structures, such as various plants and bridges, as well as for precise measurement of ships, railroad cars and airplanes.

## For First Order Survey

You get high-precision angle accuracy (NET05 AXII: 0.5", NET1 AXII: 1"), which can be applied for a wide range of precise measurements. The high-precision 3D station is equipped with an automatic tracking system and can be configured by remote control.

## Ultra-high-precision Distance Measurement

### NET05 AXII

Using reflective sheet targets, the NET05 AXII provides sub-millimeter accuracy (0.5 mm + 1 ppm) in a range of up to 200 m.

### NET1 AXII

The reflectorless measurement range of the NET1 AXII model is doubled to 400 m (1,310 ft.) when using a Kodak white side (90% reflective).

## Advanced Accuracy

Our IACS (Independent Angle Calibration System) technology provides “best-in-class” angle accuracy. With a biaxial level compensation mechanism that has a wide adjusting range of  $\pm 6$  feet, which is twice as wide as the previous models. This enables highly accurate measuring performance.

The auto-pointing accuracy\* with the standard prism is 1" (1 mm at 200 m), and 4" (1 mm at 50 m) with a reflective sheet.

*\*Auto-pointing accuracy is verified using the methods specified by ISO 17123-3.*



# NET AXII Series

## 3D Monitoring Stations

### Advanced Auto-pointing Algorithm for Multiple Prisms\*

The NET series incorporates an advanced auto-pointing algorithm\* optimized for monitoring applications. Your instrument automatically sights the prism closest to the telescope center regardless of the distance. This works even if multiple prisms or other reflective objects are in the field-of-view. The feature dramatically enhances the reliability in periodic monitoring of predetermined prism locations.

*\*With a regular auto-pointing algorithm, the instrument normally sights the nearest target with the strongest reflection.*

### TSShield™

Every NET total station is equipped with a telematics-based multifunction communications module, providing the ultimate security and maintenance capabilities for the investment. If an activated instrument is lost or stolen, a coded signal can be sent to the instrument to disable it – making the total station secure anywhere in the world. Software updates and firmware enhancements are available through daily connectivity with the cloud-based Sokkia servers.

### Specifications

MODEL	NET05 AXII	NET1 AXII
<b>Telescope</b>		
Magnification / Resolving power	30x / 2.5"	
Objective aperture: 45 mm (1.8 in.) (50 mm (2.0 in.) for EDM), Image: Erect, Field of view: 1°30' (26 m / 1,000 m), Minimum focus: 1.3 m (4.3 ft.)		
<b>Angle Measurement</b>		
Display Resolution (selectable)	0.1" / 0.5" (0.00002 / 0.0001 gon, 0.0005 / 0.002 mil)	
Accuracy (ISO 17123-3:2001)	0.5"	1"
Dual-axis compensator/collimation compensation	Dual-axis liquid tilt sensor, working range: ±6' / Collimation compensation available	
IACS (Independent Angle Calibration System)	Provided	
<b>Distance Measurement</b>		
Laser output <sup>1</sup>	Reflectorless mode	Class 3R / Prism / sheet mode: Class 1
Measuring range (under good conditions <sup>2</sup> )	One prism <sup>3</sup> Reflective sheet R550N-R <sup>4</sup> Reflectorless <sup>5</sup>	1.3 to 3,500 m (4.3 to 11,480 ft.) 1.3 to 200 m (4.3 to 640 ft.) 0.5 to 100 m (1.64 to 320 ft.)   0.5 to 400 m (1.64 to 1,310 ft.)
Minimum display		0.00001 m / 0.0001 m (0.0001 ft. / 0.001 ft., 1/64 in. / 1/16 in.)   0.00001 m / 0.0001 m (0.0001 ft. / 0.001 ft., 1/64 in. / 1/16 in.)
Accuracy <sup>2</sup> (ISO 17123-4:2001) (D=measuring distance in mm)	Prism <sup>3</sup> Reflective sheet <sup>4</sup> Reflectorless <sup>5</sup>	(0.8 + 1 ppm x D) mm (0.5 + 1 ppm x D) mm (1 + 1 ppm x D) mm   (1 + 1 ppm x D) mm (1 + 1 ppm x D) mm (2 + 1 ppm x D) mm <sup>6</sup>
Measuring time (Fine mode) <sup>7</sup>		0.9s (initial 1.5s)
<b>Auto-Collimating</b>		
Working range (under average conditions <sup>8</sup> )	One prism <sup>3</sup> Reflective sheet R550N-R <sup>2</sup>	1.3 to 1,000 m (4.3 to 3,280 ft.) 5 to 50 m (16 to 160 ft.)
Sighting accuracy (ISO 17123-3)	Prism <sup>3</sup> Reflective sheet <sup>9</sup>	1" (1 mm at 200 m) 4" (1 mm at 50 m)
<b>OS, Interface and Data Management</b>		
Operating system	Windows® Embedded CE 6.0	
Display <sup>10</sup>	3.5", transmissive TFT QVGA color LCD with LED backlight, Touch screen, Automatic brightness control	
Keyboard <sup>10</sup>	25 keys with backlight	
Trigger key	On right of instrument support	
Data storage	Internal: 500 MB (includes memory for program files) / External: USB flash memory up to 8 GB	
Interface	Serial RS-232C, USB 2.0 (Type A / mini B)	
Bluetooth® <sup>11</sup>	Bluetooth Class 1, Ver.2.1+EDR, Operating range: up to 600 m (1,960 ft.) <sup>12</sup>	
<b>General</b>		
Target searchlight	LED (white), Blink / On, selectable	
Laser-pointer	Coaxial red laser using EDM beam, ON / OFF, selectable	
Levels	Graphic: 6' (Inner Circle) / Circular level: 10' / 2 mm	
Optical plummet	Magnification: 3x, Minimum focus: 0.3 m (11.8 in.) from tribrach bottom	
Dust and water protection / operating temperature	IP65 (IEC 60529:2001) / -20°C to 50°C (-4 to 122°F)	
Size with handle <sup>10</sup> (w x d x h)	Single face: 230 x 196 x 393 mm / Dual face: 230 x 207 x 393 mm	
Weight with battery and tribrach <sup>10</sup>	Single face: 6.8 kg (15.0 lb) / Dual face: 7.0 kg (15.4 lb)	
Motor type / rotation speed	DC motor drive / 85°/s	
<b>Power supply</b>		
BDC70 standard battery	7.2V, 5.2Ah / Li-ion rechargeable battery	
Operating time (20°C) <sup>13</sup>	Approx. 4 hours <sup>5</sup>	
External battery (option)	BDC60: approx.7 hours / BDC61: approx.14.5 hours	

<sup>1</sup>IEC60825-1:Ed.2.0:2007 / FDA CDRH 21 CFR Part 1040.10 and 11. <sup>2</sup>Good conditions: No haze, visibility about 40km (25 miles), overcast, no scintillation. <sup>3</sup>Face the prism to the instrument during the measurement with the distance at 10 m or less. <sup>4</sup>Face the reflective sheet target to the instrument. <sup>5</sup>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. <sup>6</sup>Measuring range: 0.5 to 200 m. <sup>7</sup>Fastest time under good atmospheric conditions<sup>8</sup>, no compensation, EDM ALC at appropriate setting, slope distance. <sup>8</sup>Average conditions: Slight haze, visibility about 20 km (12 miles), sunny periods, weak scintillation. <sup>9</sup>Figures when the Auto Pointing beam strikes within 15° of the reflective sheet target. <sup>10</sup>Control panel and keyboard location may vary depending on region or model. <sup>11</sup>Usage approval of Bluetooth wireless technology varies according to country. Please consult your local office or representative in advance. <sup>12</sup>Paired with RC-PRS, with instrument height to be more than 1.5 m, no obstacles (like building structures, trees or vehicles) causing interrupting/reflecting radio wave, few sources of radio emissions/interference in the near vicinity of the instrument, no rain. <sup>13</sup>Fine distance measurement (single) using Auto Pointing, repeated every 30 seconds.

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