

# SOKKIA

# GYRO X II

Automated Gyro Stations

## Determine Azimuth Anywhere, Anytime.

Backsight, traverse, and solar observation are no longer required for seeking true north when Gyro X II is at your job site. It operates anywhere, any time, even where other technologies do not work or even when no known station is available.



**Directional controls for tunnel construction**



**Internal baseline setup for enclosed spaces –inside buildings or hull blocks**



**Directional controls for parabola antennas or power line**

## Acquire true north anytime and anywhere

GYRO X II uses a suspended gyromotor that oscillates around the earth's meridian (true north) due to the principle of precession caused by the rotation of the earth. This principle realizes faster and more precise measurement than other solutions.

## Comparison with Other Solutions

	Restriction by Location	Restriction by Weather	Restriction by Time	Accuracy	Speed
GYRO STATION	None	None	None	High	Fast
RTK-GPS/GNSS	Yes	None	None	High	Fast
GPS/GNSS Static	Yes	None	None	High	Slow
Total Station	Yes	Yes	Yes	High	Slow
Astronomical	Yes	Yes	Yes	High	Slow
Magnetic Compass	None	None	None	Low	Fast

## Only 19 minutes\* for measurement

While the conventional type of instruments requires more than 40 minutes for measurement, GYRO X II requires only 19 minutes for a measurement, effectively doubling your work efficiency,\* and decreasing operators' stress anytime and anywhere, on every job.

\* Combination of preliminary measurement and regular measurement. In the regular measurement, users have a choice of follow-up or time measurement. When measured at 35° latitude area. Measurement time differs by the latitude due to the nature of gyro motor.

## 15" Azimuth Accuracy

The combination of special application software and advanced motor drive system allows the true north direction to be automatically calculated in accuracy of ±15" (5mgon/0.074 mil). GYRO X II increased accuracy by 25 percent compared to the conventional manual type.

## Eliminates the chance of human error

Freedom from human error is another advantage of GYRO X II. It eliminates floating index reading error and timing measurement error. With GYRO X II, even unpracticed operators can produce consistent and accurate results.

## Easy operation even for unskilled operators

Only three steps are required for the measurement.

- Point the Gyro Station roughly to the direction of true north
- Release the clamp
- Push measurement button

## Auto-pointing total stations

Gyro X II incorporates a gyroscope unit on auto-pointing total stations. These total stations are equipped with the gyro calculation programs as well as functions for ordinary surveying works to enhance efficiency and productivity on all survey projects after the measurement of true north.



\*1 Follow-up measurement: When telescope pointed to within ±2° of true north.

Time measurement: When telescope pointed to within ±20' of true north.

\*2 For the specifications of the SX Series, see SX Series operator's manual

\*3 Under good conditions: No haze with visibility about 40km, overcast with no heat shimmer.

\*4 Fine mode: With Kodak Gray Card White Side (90% reflective). Brightness level at object surface: <=500 lx. 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.

# GYRO X II

AUTOMATED GYRO STATIONS

## SPECIFICATIONS

Gyroscope	
Accuracy of azimuth determination*1	15"/5mgon/0.074mil (standard deviation)
Running-up time	Approx. 60 seconds
Half period (at 35° latitude area)	Approx. 3 minutes
Operating area	Up to latitude 75°
Operating temperature	-4 to +122°F (-20 to +50°C)
Size	W5.7 x D7.3 x H16.4 in. (W145 x D186 x H416mm)
Weight	8.8 lb. (4.0kg)

Power supplies		
Inverter	Input	12V DC
	Output	115V AC, 400Hz/12V DC
	Size	W5.1 x D2.2 x H9.4 in. (W130 x D55 x H240mm)
BDC7A Battery	Weight	3.5 lb. (1.6kg)
	Type	Ni-MH external rechargeable battery
	Output	12V DC
	Operating time	5 hours at 68°F (20°C)
	Size	W5.5 x D2.0 x H9.8 in. (W140 x D50 x H250mm)
	Weight	4.7 lb. (2.2kg)

SX Series Total Station for GYRO X II**		
	SX-101P	SX-103P
Angle measurement	Rotary absolute encoder scanning	
Minimum Reading (selectable)	0.5"/1"	1"/5"
Accuracy (ISO 17123-3:2001)	1"	3"
Tilt Compensation	Dual Axis, Compensation Range: ±6'	

Distance measurement		
Prism	Measuring range	ATP1/ATP1S 360° Prism: 1.3m to 1,000m (4.3 to 3,281 ft.) CP01 mini prism: 1.3 to 2,500m (4.3 to 8,200 ft.) OR1PA mini prism: 1.3 to 500m (4.3 to 1,640 ft.) AP prism: 1.3m to 6,000m <sup>3</sup> (4.3 to 19,685 ft.)
	Accuracy	(1.5mm + 2ppm x D) mm (D=measuring distance in mm)
Reflective sheet target	Measuring Range	1.3 to 500m (4.3 to 1,640 ft.) w/ RS90N-K reflecting sheet
	Accuracy	(2 + 2ppm x D) mm
Reflectorless*4	Measuring Range	0.3 to 1,000m (1 to 3,281 ft.) <sup>3</sup>
	Accuracy	(2 + 2ppm x D) mm (D: 0.66 ~ 200m)

Auto-Pointing	
Operating range	ATP1/ATP1S 360° Prism: 2 to 600m (6.6 to 1,969 ft.) CP01 mini prism: 1.3 to 700m (4.3 to 2,297 ft.) OR1PA mini prism: 1.3 to 500m (4.3 to 1,640 ft.) AP prism: 1.3 to 1,000m (4.3 to 3,281 ft.)
Rotation speed	85°/s

General	
Signal source / Laser output	Red laser diode (690nm) / Reflectorless mode: Class 3R, Prism / Reflective sheet mode: Class 1 equivalent
Laser pointer	Coaxial red laser pointer using EDM measuring beam, Class 3R laser
Guide light	Green and Red LEDs Working range: 1.3 to 150m (4.3 to 492 ft.)
Size (with handle)	W9.1 x D8.2 x H15.8 in. (W230 x D207 x H401mm)
Weight (with handle and battery)	Approx. 15.7 lb. (7.1kg)

## Standard Configuration

- SX main unit (SX-101P or SX-103P)
- Gyroscope unit with bridge
- Battery, Charger, and AC plug
- 5-pin cable and 3-pin cable
- Lens hood
- Vinyl cover
- Operator's manual (USB)
- Communication cable
- Inverter
- Fuse
- Clamp lock
- Tubular compass\*
- Cleaning cloth
- Carrying case

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# SOKKIA

Sokkia Corporation • Essebaan 11  
2908 LJ - Capelle a/d IJssel • The Netherlands  
(+31) 10 4585077  
www.sokkia.com

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