

## High Accuracy Measuring Station



- Half Arc Second Angle Accuracy (MS05AX)
- 0.5mm EDM Accuracy (MS05AX)
- Rapid 2D Monitoring
- Reflector Prescan
- Exclusive LongLink™ Communications
- 400m Non-Prism Range (MS1AX)

# MS Series High Accuracy Measuring Station

## Reflector Prescan\* for Monitoring Setup

This function dramatically improves the initial setup efficiency for structural monitoring applications. The MS-AX models, in combination with the external control system, automatically search the predetermined area to quickly locate the approximate positions of reflectors. This function works even in low light or dark conditions where the reflectors cannot be recognized by the human eye. The approximate reflector positions obtained with this function greatly increase efficiency in reflector search for precise collimation.

## Rapid 2D Monitoring®

This function was specifically developed to reduce measurement time for real-time two-dimensional monitoring applications. The MS-AX models can be operated by the external control system to quickly obtain vertical and horizontal angles, enabling faster recognition of 2D (vertical and horizontal) movements. Employing advanced image processing technology, the MS-AX measures the vertical and horizontal angles to the reflectors located within the telescope's field of view. This function requires neither precise collimation to the reflector nor distance measurement, significantly increasing measurement speed. Ideal for subsidence, displacement or deformation monitoring where vertical or horizontal movements are critical.

\* "Reflector Prescan" and "Rapid 2D Monitoring" are available when operating the MS-AX via command operation from an external PC or other devices.



## Sub-millimeter EDM

- Sub-millimeter 0.5mm + 1ppm accuracy
- MS05A measures prisms with 0.8mm + 1ppm precision up to 3,500m
- Reflectorless measurement can be performed with 1mm + 1ppm in the 100m range



## Auto-Tracking

- Tracks a moving prism up to 90km/h at a distance of 100m, or 18km/h at 20m
- Continuous measurement of moving objects
- Precise position and attitude control of tunnel shield machines
- High-precision setting-out tasks



## Auto-Pointing

- Realizes automatic measurement for applications such as unmanned deformation monitoring with a 1,000m Auto-Pointing range using a standard prism
- Reliable measurement to the predetermined prisms in periodic monitoring applications



## Target Illumination

- Targets can be located easily in dim lighting conditions using the high-intensity white LED built into the telescope
- Brightness and illumination patterns can be selected according to the environment

## 400m Non-Prism Range (MS1AX)

The non-prism measurement range of the MS1AX model is doubled to 400m with Kodak white side (90% reflective).

## Increased Rotation Speed

Incorporating the new servo-motors and driving mechanism, the maximum rotation speed is increased by 33 percent to 60° per second. The increased rotation speed reduces the total measurement time, especially in large-scale monitoring applications.

## Enlarged LCD with Automatic Brightness Control

The LCD touch-screen display is enlarged to 3.7 inches. Incorporating a built-in light sensor, the MS-AX models automatically optimize the LCD brightness level.



## PRIMARY FEATURES



### Auto-Collimation Accuracy

The auto-collimation accuracy with the standard prism is increased to 1", and the accuracy with a reflective sheet is also improved to 1mm at 50m.



## KIT COMPONENTS

### System Components

- MS Measuring Station
- Batteries (2) and Charger
- Lens Cap and Hood
- Tool Kit
- Plumb Bob
- Digital Manual
- Vinyl Cover
- Carry Case and Straps



## SPECIFICATIONS

	MS05AX	MS1AX
<b>Angle Measurement</b>		
Accuracy	0.5"	1"
(ISO 17123-3)	(0.15mgon)	(0.3mgon)
Minimum reading	0.1" / 0.5"	
	(0.02 / 0.1mgon)	
<b>Distance Measurement</b>		
Maximum range		
Non-prism	100m	400m
Reflective sheet	100m	400m
1 prism	3,500m	3,500m
Accuracy (ISO 17123-4)		
Non-prism	1mm + 1ppm	2mm + 1ppm*
Reflective sheet	0.5mm + 1ppm	1mm + 1ppm
Prism	0.8mm + 1ppm	1mm + 1ppm
Minimum reading	0.01mm / 0.1mm	0.1mm / 1mm
<b>Auto-Collimation</b>		
Range		
AP Prism	1.3m to 1,000m	
Reflective Sheet	5m to 50m	
Accuracy**		
AP Prism	1" (0.3mgon)	
	(1mm at 200m)	
Reflective Sheet	1mm at 50m	

\* Up to 200m range.

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

For more specification information:  
[topconpositioning.com/ms-series](http://topconpositioning.com/ms-series)

## OPTIONAL SOFTWARE

### MSP Automated Deformation Monitoring

Software solutions for monitoring and deformation measurements.

#### RAPID PC

Installs on the local jobsite PC, RAPID PC offers full onsite control of the MS AX total stations, scheduling monitoring epochs, collecting, and archiving measurement data.



#### RAPID WM

Designed for use on rugged Windows Mobile devices such as our FC-236 or Topcon Tesla, RAPID WM takes control of all onsite instrument control and site measurements. Upon completion of each monitoring cycle, RAPID Mobile automatically activates its GPRS modem to transmit the data to the office server for processing.

#### RAPID SiteComs and OffComs

Installs on a jobsite PC or server and support multiple communication methods, such as UHF Radio, GSM, and GPRS modems. The AutoScan will pick up any cycle data and send raw data to the office. OffComs is the companion software to SiteComs, which receives and organizes the incoming data.



#### RAPID On-board

MSP, our solution partner, has designed their software to operate onboard the Topcon MS-05AX for smaller localized projects where remote control of the measuring station is not required. Running onboard the MSAX total station, RAPID software allows the user to set up autonomous monitoring solutions for all types of applications.

## Topcon TotalCare

This online resource comes with real live people ready to help. Get expert training from Topcon University's large collection of online materials, and expert help directly from Topcon Technical Support.

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7400 National Drive • Livermore • CA 94550  
 (925) 245-8300

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Your local Authorized Topcon dealer is:

SYNERGY POSITIONING SYSTEMS  
 3/52 Arrenway Drive, Albany  
 Auckland, New Zealand

Free Call: 0800-867-266

Fax: +64-9-476-5140

Website: [www.synergypositioning.co.nz](http://www.synergypositioning.co.nz)



Phone: +64-9-476-5151

Email: [info@synergypositioning.co.nz](mailto:info@synergypositioning.co.nz)