CE FCC IP68

Meridian

MTS-R1

Robotic Total Station

Precision in Motion, Efficiency in Every Point

1"
Angle Accuracy

±1mm+1ppm
Distance Accuracy

60°/s
DC Servo Motor

1200m
APR

450m
Prism Search

5.5-inch
Color and Touch Screen



Meridian MTS-R1 Robotic Total Station

The MTS-R1 Robotic Total Station combines an Android 11 platform with powerful automation for efficient one-person surveying. It features rapid prism search and lock up to 300m, automatic prism recognition for precise 1mm@100m measurements, and seamlessly integrates with RTK data. Designed for tough conditions, it offers long-range control and an intuitive workflow for maximum field productivity.

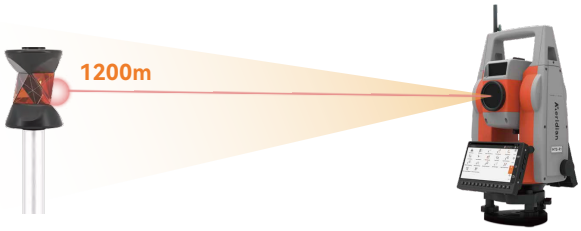


- Prism Tracking Lock
- High-performance Servo Motor
- Remotely Check Instrument Status
- Remote Automatic Search and Aiming
- Auto Pointing
- Remote Control Rotation and Face Changing



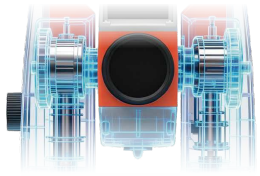
Fast Long-Range Lock & Reliable Precision

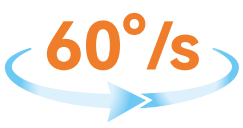
The Automatic Prism Recognition (APR) locates and measures prisms within a 1,200m line of sight, delivering a proven accuracy of up to 1mm at 100m even under tough conditions. Combined with Prism Search, it enables rapid and precise long-range targeting for efficient surveying.



DC Servo Motor & Smooth Positioning

Powered by a high-speed DC Servo Motor (60°/sec) and a direct worm-and-gear drive, the system ensures stable, rapid target tracking with consistent angular accuracy under 1″ for efficient field operations.





Easy to Use & Clear to See

Navigate with a simple tap on high-definition dual 5.5-inch touchscreens. The telescope features 5-level reticle brightness for clear viewing from low light to direct sun.





True One-Person Operation

Maximize efficiency with a single surveyor. Utilize the long-range remote control and the integrated Prism Plus Position (PPP) mode to operate the MTS-R1 entirely from the prism pole, supported by automated Prism Search, LockNTRack, and APR functions.

3500m
Standard Prism Mode



M-survey Software Operation

M-Survey is a professional surveying and stakeout software with a clean interface and fast learning curve, supporting TXT, DAT, DXF, and DWG formats with strong compatibility; CAD files can be directly imported for stakeout, and large files are handled smoothly to reduce human error and improve efficiency; the software supports online maps with real-time positioning, integrates common functions such as road stakeout, line stakeout, and eccentric measurement, and provides customizable code libraries with rapid coding measurement, enabling one-click code assignment and automatic drafting of identical codes to significantly improve office efficiency.



Application Scenarios

Automated Structural Monitoring
The MTS-R1 provides fully automated structural monitoring, delivering precise detection of minor displacement changes. It continuously recognizes, tracks, and records data, even in harsh environments, enabling efficient remote monitoring of bridges, dams, tunnels, and construction sites with minimal manual effort.


Dam Monitoring


Engineering Surveying


Bridge Surveying


Road Surveying

Meridian MTS-R1 Specification

Angle Measurement	Accuracy	1″
	Reading System	Absolute, continuous four-quadrant
	Display Resolution	0.1″/1″
	Angle Units	DEG 360°/GON 400/MIL 6.400
Telescope	Magnification/ Field of View	30X / 1°30′
	Tube Length	154mm
	Minimum focus Distance	1.2m
	Reticle	5 brightness levels adjustable
	Objective Aperture	45mm (EDM: 50mm)
	Pointer	Red Laser dot
Tilt Sensor	Type	Dual axis, liquid photoelectric sensor
	Compensation Range/ Accuracy	±4.0′/1″
Distance Measurement Range	Standard Prism Mode	3500m
	Reflectorless	1000m
Distance Measurement Accuracy	Standard Prism Mode	±1mm+1ppm
	Reflectorless	D<500m: ±2mm+2ppm I D>500m: +5mm+2ppm
Measurement Time	Standard Prism Mode (Tracking/Fine)	0.1/0.3 sec
	Reflectorless	0.3-3 sec
Distance Measurement	Distance Unit	m/US ft/INT ft
	Display Resolution	1280×720
Motorization	Technology	DC Servo Motor
	Max Rotation Speed	60°/sec
	Rotation Time F1/F2	2.9 sec
APR	Centering Range	3-1200m(Standard prism) 800m(360°prism)
	Time	3-5 sec
	Search Range	±1.5° (Support window search)
	AIM Accuracy	±1mm @ 100m
PS	Search Range	1.5-450m
	Search Time	Typically 90°: 3.5 s
	Angle	H: 360° V: ±18°
Laser Plummet	Laser Type	Red laser dot, 635nm
	Accuracy	±1.5mm at 1.5m
Level Vial Sensitivity	Plate Level	30″/2 mm
	Circular Level	8′/2 mm
Environmental Conditions	Operating Temperature	-30℃ to +50℃ (-22°F to 122°F)
	Storage Temperature	-40°C to +70°C (-40°F to 158°F)
	Waterproof/Dustproof	IP55
	Humidity	95% non-condensing
Physical Specification	Dimensions	217 x 198 x378 mm
	Weight (Battery and Tribrach Inclusive)	7 kg
Electrical	Battery Voltage/Capacity/Type	Li-ion rechargeable battery ×2, 5400mAh
	Operating Time	Up to 6 hours
	Battery Charger	110/220V, charging time 4h
Others	CPU	MTK6762
	Display	5.5-inch, TFT LCD screen, 720 x1280 px (2 displays)
	Keyboard	17 keys x2
	OS	Android 11
	Memory	RAM: 4GB, ROM: 64GB
	Interface	RS232, USB Type-C (OTG), Micro SIM, TF Card
	Data Transfer	Long range communication 450m, WLAN, USB-OTG, Network 4G, Temperature and pressure sensor

*The above technical parameters are for your reference. The company reserves the right to change the design and planning of the product based on the actual product.

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