STONEX

R180 Robotic Total Station

High precision
Robotic Total Station

suite cube

R180

High precision Robotic Total Station

The R180 is a highly accurate and fast Android robotic station. It features a rotation speed of 180°/sec and an EDM accuracy of 1 mm + 1 ppm, with a range of up to 1000 m without a prism. The R180 is available in two versions, 0.5" and 1" second. For both models, the quietness and smoothness in prism searches and rotations are among the most observed and appreciated features.

Equipped with the Android operating system, the R180 has Cube-a as onboard software. This enables users to navigate online and interact with the touch screen in an easy and familiar way.

The Cube-a onboard software includes all the classic functions of the program, as well as the integration of jobs done with GNSS and surveys done with the total station. This allows operators to achieve complex and professional work in a short time and with high accuracy.
Additionally, the R180 has a camera and a light guide to further facilitate field work.

TDRIVE MOTOR, FAST AND SILENT

The R180 Robotic total station boasts a rotation speed of 180°/sec, making it one of the fastest in its product category. Not only is it speedy, but it is also impressively quiet, with noise levels among the lowest in its class. Additionally, the Tdrive technology, with a very high speed motor, allows for high-speed pursuit, even with a prism installed on moving vehicles. Not using gear technology ensures frictionless movement, greater durability, and less maintenance.

HIGH ACCURACY AND PROFESSIONAL RESULTS

This instrument is top-of-the-line. Its detailed engineering allows for exceptional performance, achieving an accuracy of 1 mm + 1 ppm with a prism, at a measurement speed of significantly less than one second.

LONG DISTANCE REFLECTORLESS

1000m

R180 guarantees high accuracy long range measurements: up to 1000 m in reflectorless mode and up to 6000 m using a single prism, with millimeter accuracy.

BUILT-IN CAMERA

The R180 is further enhanced by the addition of a built-in camera, which can be utilized thanks to the presence of two 6-inch screens. This camera allows you to view the points operator have surveyed on the large screens, or to use the image to help with collimation.

ANDROID AND CUBE-A ON BOARD

R180 is equipped with an Android operating system and has Cube-a installed on board. The 6-inch touch screens allow you to have complete control of the station.

STONEX SURVEYING SYSTEMS

cube-a

The R180 is equipped with the Android operating system and comes pre-installed with the powerful Cube-a program. This onboard software allows operators to easily integrate data from GNSS and surveys conducted with the total station. Communication and data exchange between the station and the controller (GNSS) is made simple with a Bluetooth connection. This means that with the total station, surveys carried out with GNSS, can be loaded through an external controller via Bluetooth. These surveys then can be completed within the total station. With Cube-a, users can navigate the program easily and efficiently, accessing all the classic functions of a total station while enjoying the added benefits of the Android operating system. This integration allows for seamless and streamlined workflows, saving time and effort while achieving the highest level of accuracy.

Fast360

The state-of-the-art robotic total station features a cutting-edge 360° prism search technology that allows users to locate their target quickly and accurately from any angle. This advanced capability enables surveys to be completed with greater speed and precision, all while enjoying the convenience of a fully automated system.

APC

The innovative robotic total station is designed with **A**utomatic **P**rism **C**entering technology that takes the guesswork out of surveying. With this advanced system, users can easily and quickly center their prism with minimal effort. Thanks to the total station's automatic centering feature, surveying processes can be streamlined and made more efficient.

OnePole

The OnePole Solution is a surveying system that combines the high accuracy of prism measurements with the ability to measure points that are not visible from the Total Station (TS) using GNSS technology. While a TS requires reference points that must be visible from the station, an RTK GNSS receiver can quickly determine its position with centimeter-level accuracy using data from satellites. The OnePole Solution allows for the simultaneous use of TS and GNSS, and can easily switch between the two with a simple tap on a button. Additionally, the system reduces prism search times through auto-aiming to the current GNSS position.

R180 TECHNICAL FEATURES

ANGLE MEASUREMENT

Accuracy[1]	0.5”-1”
Reading system	Absolute four-quadrant
Display Resolution	0.1″
Angle Units	DEG 360°/GON 400/MIL 6.400

TELESCOPE

Magnification/ Field of view	30x / 1°30’
Tube length	164.5 mm
Minimum focus distance	1.5 m
Objective aperture	Ø 45 mm
Laser pointer	Red light, coaxial

TILT SENSOR

Type	Dual-axis liquid-electric sensor
Compensation range/accuracy	± 3.0'/1”

DISTANCE MEASUREMENT RANGE[2]

Standard prism mode	6000 m[3]
Reflectorless[5]	1000 m[4]

DISTANCE MEASUREMENT ACCURACY[6]

Standard prism mode	1 mm + 1 ppm
Reflectorless	2 mm + 2 ppm

MEASUREMENT TIME

Standard prism mode (Tracking/Single)	<0.3 / 0.7 sec
Reflectorless	Typically 0.8 sec (>500 m, >5 sec)

DISTANCE MEASUREMENT

Distance Unit	m/US ft/INT ft
Display Resolution	0.0001 m/0.001 m 0.001 ft/0.01 ft

MOTORIZATION

Technology	Tdrive
Max rotation speed	180°/sec
APC-Target Aiming Range	1.5 - 1000 m
APC-Measurement Time	<5 sec
Fast360°-Target Aiming Range	1.5 - 600 m
Fast360°-Angle	H: 360° - V: 20°

LEVEL VIAL SENSITIVITY

Circular level	8'/2mm

ENVIRONMENTAL CONDITIONS

Operating Temperature	-20° C +50° C (-4°F to 122°F)
Storage Temperature	-40° C +70° C (-40°F to 158°F)
Waterproof/Dustproof	IP54
Humidity	95% non-condensing

PHYSICAL SPECIFICATION

Dimensions	430 x 255 x 235 mm
Weight including battery and tribrach	9.3 Kg

POWER

Battery Voltage/Capacity/Type	14.4 V / 6400 mAh / Li-ion
Batteries number	2
Operating time	5 hours (one internal battery)[7]
Battery charger	100/240 V, charging time 4h

OTHER SPECIFICATIONS

CPU	MSM8953
Display	Two sides, 6” color LCD 720x1280 pixel touch screen
OS	Android
Memory	RAM: 3GB, ROM: 32GB
Interface	RS-232/Micro USB/ Bluetooth long range
Data transfer	4G (build-in), Bluetooth, WLAN, Hotspot
Camera	✓
Guide Light	✓
Laser plummet	✓
Sensor	Temperature/Pressure

ONBOARD FIELD APPLICATION PROGRAMS

Cube-a TS-GPS

1 Standard deviation based on ISO 17123-3
2 Good condition: no haze, visibility about 40km, no heat shimmer, breeze
3 Class 1
4 Class 3R
5 Under optimal conditions on good surface
6 Standard deviation based on ISO 17123-4
7 Battery duration depends also on display brightness

Illustrations, descriptions and technical specifications are not binding and may change
Android is a trademark of Google LLC

STONEX AUTHORIZED DEALER

STONEX®
Viale dell'Industria 53 - 20037 Paderno Dugnano (MI) - Italy
Phone +39 02 78619201
www.stonex.it | info@stonex.it

UNI EN ISO 9001:2015 - R180 - FEBRUARY 2023 - VER01 - REV-01