

# TRIMBLE M1 DR TOTAL STATION

## KEY FEATURES

2" and 5" angle accuracies

Prism and DR measurements

Fast, accurate EDM provides fast, reliable measurements

Long life Li-ion Battery

Easy-to-use keypad

Rugged and lightweight system design



## DEPENDABILITY FOR YOUR SURVEY CREWS

The Trimble® M1 DR Total Station is a versatile, easy to use, conventional surveying instrument that provides Trimble dependability at an affordable price.

You work in demanding environments and require reliable and efficient equipment that will work as hard as you do. The Trimble M1 DR Total Station is a compact, lightweight, and rugged total station tough enough for everyday use.

## PROVEN RANGE, ACCURACY, AND QUALITY FROM TRIMBLE

Available in 2" dual face or 5" single face models, the Trimble M1 meets your specific accuracy requirements. Both Trimble M1 models provide 3000 m range to a single prism and up to 400 m DR (Direct Reflex) range to non-reflective surfaces.

The EDM in the M1 provides high precision measurements to both reflective and non-reflective surfaces and includes improved measurement speed for fast and accurate results in typical surveying environments.

Equipped with legendary Nikon optics, the Trimble M1 provides proven clarity, quality and precision. The result is efficient operation and comfort throughout the workday.

## SIMPLE, INTUITIVE ONBOARD SOFTWARE

The M1 includes easy-to-use dual or single face keypads to operate the instrument. The intuitive and field-proven interface and onboard data collection software is fast to learn so that you can have your crews up and running quickly. The backlit display is easy to see in low light environments. Two user-programmable measure keys allow you to separately configure measurement parameters, eliminating time switching between measurement modes.

## BLUETOOTH CONNECTIVITY TO EXTERNAL CONTROLLER

Each M1 instrument comes standard with an integrated wireless Bluetooth® connection. Through this connection, users can control the instrument using the power of Trimble Access™ field software on an external controller such as the Trimble TSC3. Measurements are stored directly in the Trimble Access job on the external controller. Use the Trimble M1 seamlessly right along with other Trimble solutions on the job site.

## RUGGED, LIGHTWEIGHT AND FEATURE PACKED FOR LONG DAYS IN THE FIELD

The Trimble M1 is small, lightweight, and durable, allowing for easy transport in and around the job site. Each system comes with two rechargeable long life Li-ion batteries and a dual battery charger providing enough power for even the longest of field days.

A visible coaxial red laser pointer is included for fast and easy aiming along with internal optical plummet for easy known point setups.

Packed with all these features and more, the Trimble M1 DR Total station is ready to become a trusted piece of your everyday surveying equipment set.

# TRIMBLE M1 TOTAL STATION

## DISTANCE MEASUREMENT

Range with specified prisms

Good conditions<sup>1</sup> (No haze, visibility over 40 km (25 miles))

With reflector sheet 5 cm x 5 cm (2 in x 2 in) . . . . . 1.5 m to 200 m  
(4.9 ft to 656 ft)

With single prism 6.25 cm (2.5 in) . . . . . 3,000 m (9,842 ft)

Reflectorless mode

	Good	Normal	Difficult
KGC (18%) <sup>1</sup>	250 m (820 ft)	200 m (656 ft)	150 m (492 ft)
KGC (90%) <sup>1</sup>	400 m (1312 ft)	350 m (1148 ft)	250 m (820 ft)

Accuracy ISO 17123-4 (Precise mode)

Prism<sup>2</sup> . . . . . ±(2+2 ppm x D) mm

Reflectorless/Reflector sheet<sup>3</sup> . . . . . ±(3+2 ppm x D) mm

Measuring interval<sup>4</sup>

Prism mode

Precise mode . . . . . 1.8 sec.

Normal mode . . . . . 0.8 sec.

Reflectorless mode

Precise mode . . . . . 1.8 sec.

Normal mode . . . . . 1.0 sec.

Least count

Precise mode . . . . . 1 mm (0.002 ft)

Normal mode . . . . . 10 mm (0.02 ft)

## ANGLE MEASUREMENT

ISO 17123-3 accuracy (horizontal and vertical) . . . . . 2"/0.6 mgon  
5"/1.5 mgon

Reading system . . . . . Photoelectric detection by incremental encoder

Circle diameter . . . . . 88 mm (3.46 in)

Horizontal angle . . . . . 2: Diametrical  
5": Single

Vertical angle . . . . . Single

Minimum increment (Degree, Gon, MIL6400) . . . . . Degree: 1/5/10"  
Gon: 0.2/1/2 mgon  
MIL6400: 0.005/0.02/0.05 mil

## TELESCOPE

Tube length . . . . . 125 mm (4.9 in)

Image . . . . . Erect

Magnification . . . . . 30x (18x/36x with optional eyepieces)

Effective diameter of objective . . . . . 45 mm (1.8 in)

EDM diameter . . . . . 50 mm (1.97 in)

Field of view . . . . . 1°20'

Resolving power . . . . . 3"

Minimum focusing distance . . . . . 1.5 m (4.9 ft)

Laser Pointer . . . . . Coaxial Red Light

1 Kodak Gray Card, Catalog number E1527795.

2 ±(2+3 ppm x D) mm -20 °C to -10 °C, +40 °C to +50 °C (-4 °F to +14 °F, +104 °F to +122 °F)

3 1.5 m to 5 m ± (5 + 3 ppm x D) mm.

4 1.5 m to 5 m ± (10 + 3 ppm x D) mm.

5 Measuring time may vary depending on measuring distance and conditions. Specification based on average of multiple measurements.

6 Battery life specification at 25 °C (77 °F). Operation time may be shorter if battery is not new. Operation time may be shorter in low temperatures.

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## TILT SENSOR

Type . . . . . Single-axis

Method . . . . . Liquid-electric detection

Compensation range . . . . . ±3'

Setting accuracy . . . . . 1"

## COMMUNICATIONS

Communication ports . . . . . 1 x serial (RS-232C)

Wireless communications . . . . . Integrated Bluetooth

Raw and coordinate data formats . . . . . Nikon, SDR2x, SDR33

## POWER

Clip-on Li-ion battery

Output voltage . . . . . 3.8 V DC

Operating time<sup>5</sup> . . . . . approx. 11 hours (distance/ angle measurement every 30 seconds)  
approx. 22 hours (continuous angle measurement)

Charging time, full charge . . . . . 4 hours

## GENERAL SPECIFICATIONS

Level vials

Sensitivity of Plate level vial . . . . . 30/2 mm

Sensitivity of Circular level vial . . . . . 10/2 mm

Optical plummet

Image . . . . . Erect

Magnification . . . . . 3x

Field of view . . . . . 5°

Focusing range . . . . . 0.5 m (1.6 ft) to ∞

Display . . . . . 2": Both sides, backlit, graphic LCD (128 x 64 pixel);  
5": Single side, backlit, graphic LCD (128x64 pixel);  
Optional 2nd face display available for 5" models.

Point memory . . . . . 10,000 records

Dimensions (W x D x H) . . . . . 168 mm x 173 mm x 355 mm  
(6.6 in x 6.8 in x 13.1 in)

Weight (approx.)

Main unit (without battery) . . . . . 4.9 kg (10.8 lb)

BC-65 battery . . . . . 0.1 kg (0.2 lb)

Carrying case . . . . . 2.5 kg (5.5 lb)

Dual charger and AC adaptor . . . . . 0.6 kg (1.3 lb)

## ENVIRONMENTAL

Ambient temperature range . . . . . -20 °C to +50 °C (-4 °F to +122 °F)

Atmospheric correction

Temperature range . . . . . -40 °C to +60 °C (-40 °F to +140 °F)

Barometric pressure . . . . . 400 mmHg to 999 mmHg/533 hPa to  
1,332 hPa/15.8 inHg to 39.3 inHg

Dust and water protection . . . . . IP54

## CERTIFICATION

Class B Part 15 FCC certification, CE Mark approval.

Laser safety IEC60825-1:2007

Reflectorless mode: Class 1

Laser Pointer : Class 2

Prism mode: Class 1

Bluetooth type approvals are country specific.

Specifications subject to change without notice.



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