

# Leica MS50/TS50/TM50

Nova



Quick Guide  
Version 3.0  
English

- when it has to be **right**

*Leica*  
Geosystems

# 1 Important Information about your Instrument



Read and follow the User Manual on the accompanying data storage device before using the product.



Keep for future reference!

## Intended use

- Measuring horizontal and vertical angles.
- Measuring distances.
- Visualising the aiming direction and vertical axis.
- Measuring raw data and computing coordinates using carrier phase and code signal from GNSS satellites.

## Laser products

The MS50/TS50/TM50 instrument contains the following laser products:

Laser product	Laser class
EDM (Electronic Distance Measurement) module	
• measurements with reflectors	Class 1
• measurements without reflectors	Class 3R
Autofocus (in certain focussing modes)**	Class 1

<b>Laser product</b>	<b>Laser class</b>
Red laser pointer	Class 3R
ATR (Automatic Target Aiming)	Class 1
PS (PowerSearch) <sup>*</sup>	Class 1
EGL (Electronic Guide Light) <sup>*</sup>	Exempt Group
Laser plummet	Class 2

\* For MS50 and TS50 I only

\*\* For MS50, TS50 and TM50 I

- The classification for the EDM, Autofocus, red laser pointer, ATR, PS and laser plummet is in accordance with IEC 60825-1 (2014-05).
- The classification for the EGL is in accordance with IEC 62471 (2006-07).

 **CAUTION****Class 3R laser products**

From a safety perspective, class 3R laser products should be treated as potentially hazardous.

**Precautions:**

- ▶ Prevent direct eye exposure to the beam.
  - ▶ Do not direct the beam at other people.
- 

 **CAUTION****Class 2 laser product**

From a safety perspective, class 2 laser products are not inherently safe for the eyes.

**Precautions:**

- ▶ Avoid staring into the beam or viewing it through optical instruments.
  - ▶ Avoid pointing the beam at other people or at animals.
-





Class 1 equipment according European Directive 1999/5/EC (R&TTE) can be placed on the market and be put into service without restrictions in any EU Member state.

- The conformity for countries with other national regulations not covered by the FCC part 15 or European directive 1999/5/EC has to be approved prior to use and operation.
- Japanese Radio Law and Japanese Telecommunications Business Law Compliance.
  - This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法).
  - This device should not be modified (otherwise the granted designation number will become invalid).

### Conformity to national regulations

- FCC Part 15 (applicable in US)
- Hereby, Leica Geosystems AG declares that the radio equipment type TM50 is in compliance with Directive 2014/53/EU and other applicable European Directives.  
The full text of the EU declaration of conformity is available at the following Internet address: <http://www.leica-geosystems.com/ce>.



Class 1 equipment according to European Directive 2014/53/EU (RED) can be placed on the market and be put into service without restrictions in any EEA member state.

- The conformity for countries with other national regulations not covered by the FCC part 15 or European Directive 2014/53/EU has to be approved prior to use and operation.
- Japanese Radio Law and Japanese Telecommunications Business Law Compliance.
  - This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法).
  - This device should not be modified (otherwise the granted designation number will become invalid).

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## Dangerous Goods Regulations

Many products of Leica Geosystems are powered by Lithium batteries. Lithium batteries can be dangerous under certain conditions and can pose a safety hazard. In certain conditions, Lithium batteries can overheat and ignite.



When carrying or shipping your Leica product with Lithium batteries onboard a commercial aircraft, you must do so in accordance with the **IATA Dangerous Goods Regulations**.



Leica Geosystems has developed **Guidelines** on “How to carry Leica products” and “How to ship Leica products” with Lithium batteries. Before any transportation of a Leica product, we ask you to consult these guidelines on our web page (<http://www.leica-geosystems.com/dgr>) to ensure that you are in accordance with the IATA Dangerous Goods Regulations and that the Leica products can be transported correctly.



Damaged or defective batteries are prohibited from being carried or transported onboard any aircraft. Therefore, ensure that the condition of any battery is safe for transportation.

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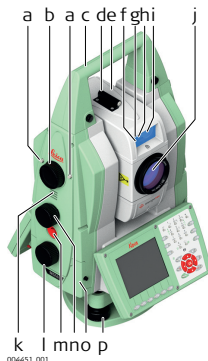


## 2

## Instrument Components

### Instrument components part 1 of 2

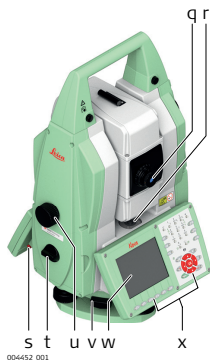
A MS50/TS50 instrument is shown.



- a Autofocus button
- b Servofocus drive
- c Carry handle
- d Optical sight
- e Telescope with EDM, ATR and, if available, camera sensors. For MS50/TS50 also EGL and PS.
- f EGL, for MS50/TS50
- g Overview camera, for MS50/TS50/TM50 I
- h PowerSearch, transmitter, for MS50/TS50
- i PowerSearch, receiver, for MS50/TS50
- j Coaxial optics for angle and distance measurements, telescope camera and exit port for visible laser beam for distance measurement
- k Loud speaker
- l Horizontal drive
- m User defined SmartKey
- n Vertical drive

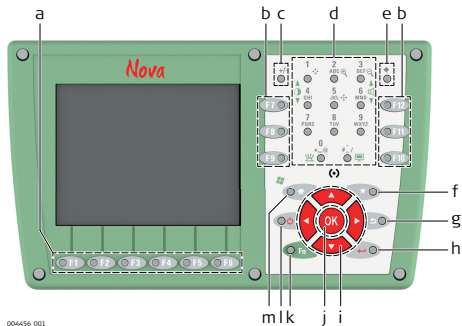
- o SD card and USB stick compartment
- p Tribrach footscrew

### Instrument components part 2 of 2



- a Interchangeable eyepiece
- b Circular level
- c Stylus for touch screen
- d Battery compartment
- e Vertical drive
- f Tribrach securing screw
- g Screen
- h Keyboard; for TM50 second keyboard optional

## Keyboard MS50/TS50/TM50



004456\_001

- |   |                               |   |            |
|---|-------------------------------|---|------------|
| a | Function keys <b>F1 - F6</b>  | h | ENTER      |
| b | Function keys <b>F7 - F12</b> | i | Arrow keys |
| c | ± key                         | j | <b>OK</b>  |
| d | Alphanumeric keys             | k | <b>Fn</b>  |
| e | Backspace                     | l | ON/OFF     |
| f | Favourites                    | m | Home       |
| g | ESC                           |   |            |

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**3****Technical Data**

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**Environmental specifications****Temperature**

Operating temperature [°C]	Storage temperature [°C]
-20 to +50	-40 to +70

**Protection against water, dust and sand**

IP65 (IEC 60529)

**Humidity**

Max 95 % non condensing.

The effects of condensation are to be effectively counteracted by periodically drying out the instrument.

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## 4

# Care and Transport

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### Care and transport

- Carry the product in its original container or carry the tripod with the attached product upright, to protect it against shock and vibration.
  - Periodically carry out test measurements and perform the field adjustments indicated in the User Manual, particularly after the product has been dropped, stored for long periods or transported.
-

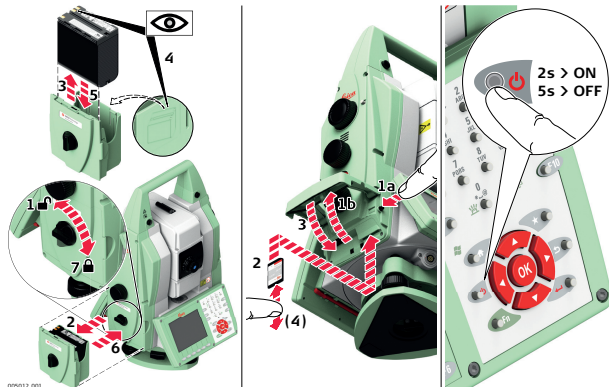
## 5

## Operation



The battery must be charged before using it for the first time.

### Turning on and off the instrument





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