Leica TS13

Quick Guide

Version 2.0

English

- when it has to be **right**

Leica Geosystems

1 Important Information about your Instrument

Read and follow the User Manual on the accompanying USB card before using the product.

- This Quick Start Guide contains first use directions as well as initial, basic instructions for setting up the product and operating it.
- Keep all documentation for future reference!

Intended use

- Measuring horizontal and vertical angles
- Measuring distances
- Recording measurements
- Automatic target search, recognition and tracking
- Visualising the aiming direction and vertical axis
- Remote control of product
- Data communication with external appliances
- Measuring raw data and computing coordinates using carrier phase and code signal from GNSS satellites (GNSS systems)
- Recording GNSS and point related data
- Computing with software

Laser products

The TS13 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
ATR (Automatic Target Aiming)	Class 1
SpeedSearch*	Class 1
EGL (Electronic Guide Light)*	Exempt Group
Laser plummet	Class 2

* optional laser product

- The classification for the EDM, ATR, SpeedSearch, Laser Guide 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

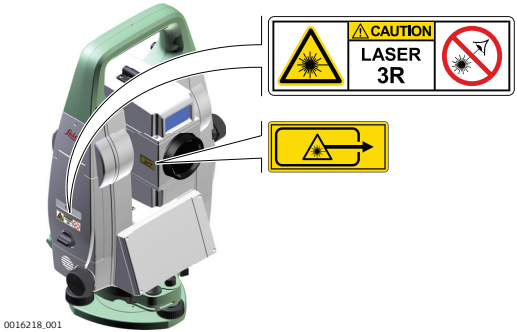
Class 2 laser product

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

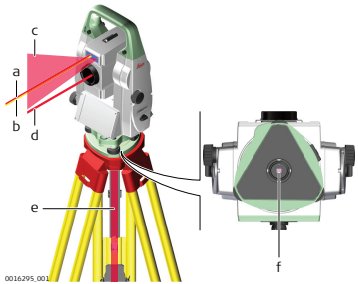
Precautions:

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

Labelling



Locations of laser apertures



a	LED beam red (EGL)
b	LED beam yellow (EGL)
c	Laser beam (SpeedSearch)
d	Laser beam (EDM, ATR)
e	Laser beam (Laser plummet)
f	Exit for laser beam (Laser plummet)

The product must not be disposed with household waste.

Conformity to national regulations

- FCC Part 15 (applicable in US)
- Hereby, Leica Geosystems AG declares that the radio equipment type TS13 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).

Conformity to national regulations

- Hereby, Leica Geosystems AG declares that the radio equipment type RadioHandle 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 European Directive 2014/53/EU has to be approved prior to use and operation.

Conformity to national regulations

- FCC Part 15, 22 and 24 (applicable in US)
- Hereby, Leica Geosystems AG declares that the radio equipment type LOC8 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, 22 and 24 or European Directive 2014/53/EU has to be approved prior to use and operation.

2 Instrument Components

Instrument components - part 1 of 2

a	Carry handle
b	Optical sight
c	Telescope with integrated EDM, ATR, EGL, SpeedSearch*
d	EGL flashing diode - yellow and red
e	SpeedSearch, transmitter
f	SpeedSearch, receiver
g	Coaxial optics for angle and distance measurement, and exit port of visible laser beam for distance measurements
h	SD Card and USB stick
i	Loudspeaker
j	Horizontal drive
k	Tribrach footscrew
l	Tribrach securing screw

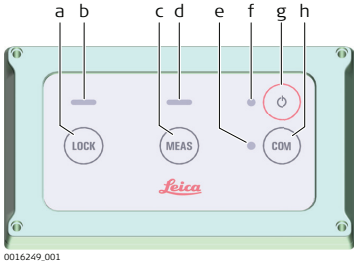
* optional

Instrument components - part 2 of 2

a Vertical drive
b Focusing ring
c Interchangeable eyepiece
d Circular level
e Battery compartment
f Four button keyboard unit*
g Keyboard display unit*

* Depending on instrument model

Four button keyboard



a	LOCK key
b	LED for locking status
c	MEAS key
d	LED for measurement status
e	LED for communication status
f	LED for power status
g	ON/OFF key
h	COM key

TS13 key functions and LED behaviour

The following description of key functions and LED behaviours applies to the TS13 being connected to a field controller.

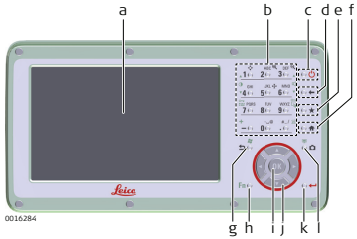
Key functions		
LOCK	•	Press to start prism search and lock onto prism.
	•	If already locked: Press to unlock from prism.
MEAS	•	Depending on the currently active settings and field controller application: Press to start a measurement or to store a measurement.

Key functions	
ON/OFF	• Press for 2 s to turn on the instrument. • Press and hold for more than 2 s to shut down the instrument. • Press and hold for more than 5 s to reset the sensor. • Press and hold for more than 8 s to do a hard shutdown.
COM	• To toggle through the communication modes, press the key repeatedly. Communication modes: - RS232 - Bluetooth - Long-range Bluetooth • Press and hold for more than 5 s to change between CS controller and Geocom connection. Once the change is completed, the LOCK and the MEAS LED flash green indicating the instrument is connected to the CS. The LOCK and the MEAS LED flash red indicating the instrument is in Geocom connection.

LED behaviours	
LOCK	• Off: Prism not locked. • Solid green: Prism found and locked.

LED behaviours		
MEAS	•	Off: No active measurement. • Solid green: Measurement is executed.
ON/OFF	•	Off: Instrument is switched off. • Solid red after switching on: Instrument is booting. • Solid green/yellow/red: Indicator for the battery status. - Green: More than 40% of battery charge remaining. - Yellow: More than 20% of battery charge remaining. - Red: Remaining battery charge is very low. • Flashing green: Instrument is shutting down.
COM	•	Off: RS232 Serial port selected. • Solid green: Internal Bluetooth selected. • Solid red: Long-range Bluetooth using RadioHandle is selected. • Solid blue: Bluetooth communication established to CS controller using Internal Bluetooth or long-range Bluetooth.
LOCK, MEAS and COM together	•	Solid green/red: Changing between CS controller and Geocom connection. • Solid red: Reset process of the system is started.

Keyboard display unit



a	Display
b	Alphanumeric keys
c	ON/OFF
d	Backspace
e	Favourites
f	Home
g	Esc
h	Fn
i	OK
j	Arrow keys
k	Enter
l	Camera*

* Not applicable

For more information on the key functions and key combinations refer to the User Manual.

3 Technical Data

Environmental specifications

Temperature

Type	Operating temperature [°C]	Storage temperature [°C]
All instruments	–20 to +50	–40 to +70
Leica SD cards	–40 to +80	–40 to +80
Battery internal	–20 to +55	–40 to +70

Protection against water, dust and sand

Type	Protection
All instruments	IP55 (IEC 60529)

Humidity

Type	Protection
All instruments	Max 95% non condensing The effects of condensation are to be effectively counteracted by periodically drying out the instrument.

4 Care and Transport

Transport in the field

When transporting the equipment in the field, follow one of these options:

- Carry the instrument in its original container
- Carry the tripod with its legs splayed across your shoulder, keeping the attached instrument upright
- Remove instrument from tripod and carry it by its handle

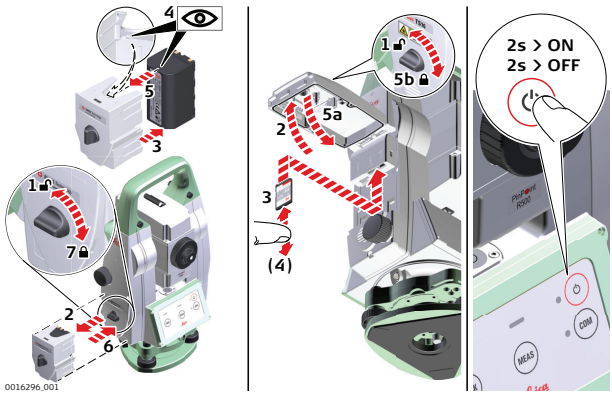
Field adjustment

Exposing the product to high mechanical forces, for example through frequent transport or rough handling, or storing the product for a long time may cause deviations and a decrease in the measurement accuracy. Periodically carry out test measurements and perform the field adjustments indicated in the User Manual before using the product.

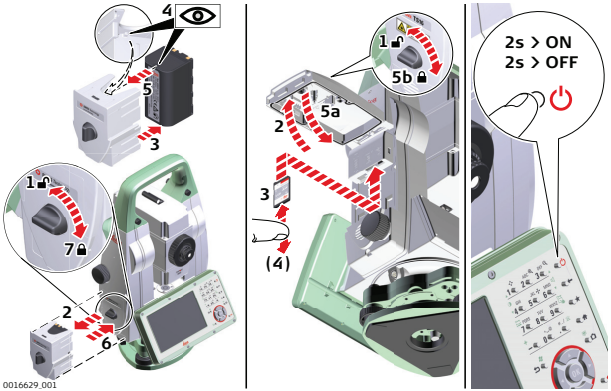
5 Operation

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

Turning on and off the instrument



Turning on and off the instrument



6 EU Declaration of Conformity

EU Declaration of Conformity

CE

This corresponds to EN ISO/ IEC 17050-1

The product **TS13**

following the provisions of Directive(s)

- **2014/53/EU Radio equipment (RED) (in accordance with annex III)**
- **2006/42/EC Machinery (MD)**
- **2011/65/EU Restriction of hazardous substances (RoHS)**

to which this declaration relates, is in compliance with the following standards:

- **AS/NZS 2772.2:2016**
- **EN 61010-1:2010**
- **EN 61010-1:2010/A1:2019**
- **EN 62311:2008**
- **EN 300 328 V2.1.1**
- **EN 301 489-1 V2.2.3**
- **EN 301 489-17 V3.2.3**
- **IEC 6010-1:2010:Amd1:2016**

For translations into the official EU languages please refer to:
http://www.leica-geosystems.com/ce

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