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Art. 600355

ANDROTEC
Laser Detection at its Best

Digital Laser Receiver Metor

Model: MTR-90RF

Instruction Manual



www.androtec.com

For Your Safety



Please read this instruction manual before using the device for the first time and comply with it.

Retain this instruction manual for future reference or for subsequent owners.

This instruction manual is available online under:
www.androtec.com/manuals/meteor



CAUTION

Prior to the first start-up, it is definitely necessary to carefully read the **Safety instructions!**

Failure to adhere to this instruction manual and the safety instructions may result in damage to the device and cause dangerous situations for the operator and other people.

In case of transport damage please inform your vendor immediately.

Safety Instructions



CAUTION

Do not modify the device. Modifications can cause injuries and malfunctions.

- **Only authorised and trained personnel are allowed to repair the device.** Only use genuine spare parts from AndroTec GmbH. This ensures continuous device safety.
- **Do not look directly into the laser beam.**
- **Laser receiver should not be used in the vicinity of pacemakers.** The magnets produce a field which can affect the function of the pacemaker.
- **Keep the laser receiver away from data media and devices that react sensitive to magnetic force.** Exposure to magnets can result in irreversible data loss.
- **Noise emission**
The a-rated sound pressure level of the acoustic signal is >80 db (A) at a distance of one meter.
- **Do not hold the laser receiver directly to your ear!**
- **Keep the laser receiver away from children.**
- **Do not use the laser receiver in explosive atmospheres or near flammable liquids, gases or dust.** The device may produce sparks that can ignite vapours or dust.
- Please remove the battery if the device is not in use for a prolonged period of time.
- **Use only genuine AndroTec accessories.** When using non-recommended accessories, you may receive incorrect measuring values.

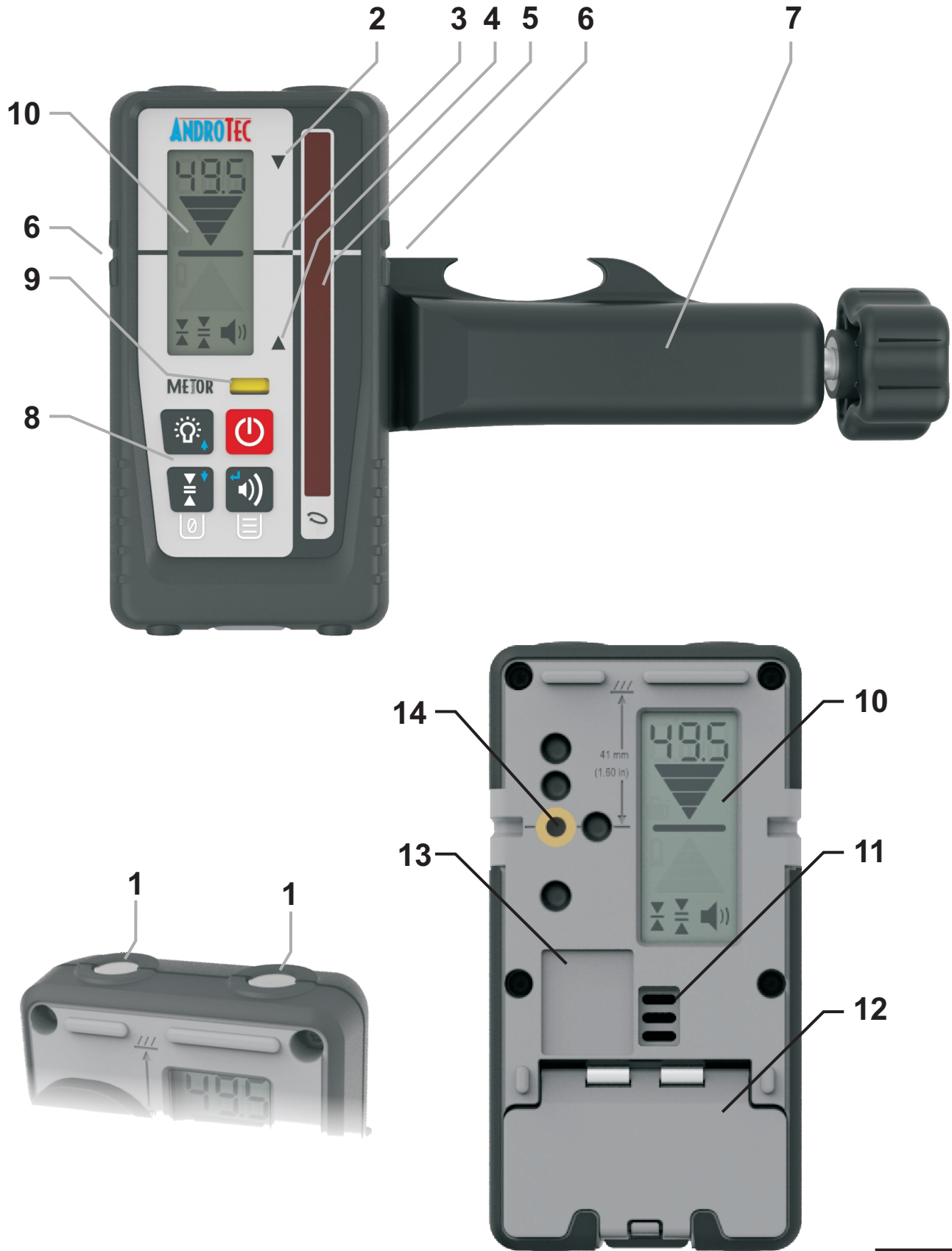
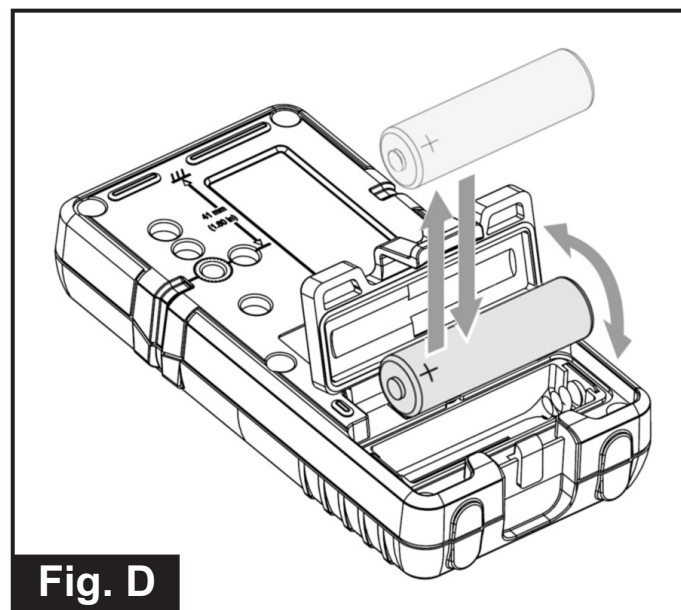
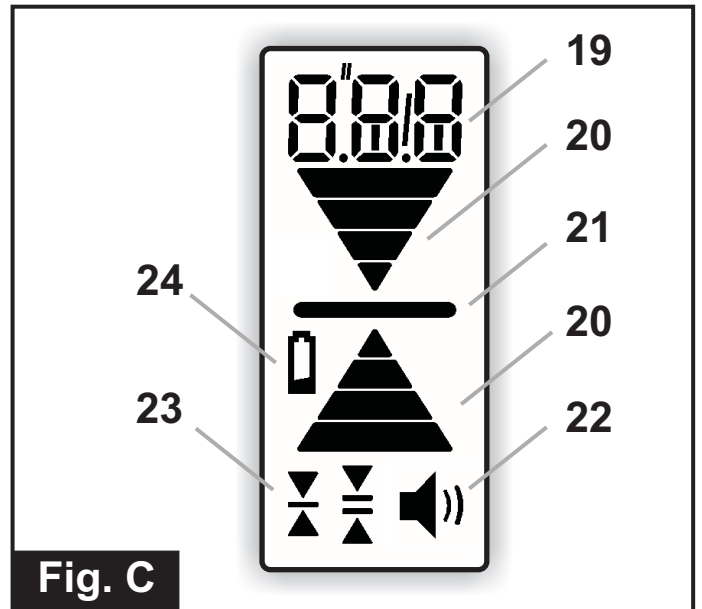
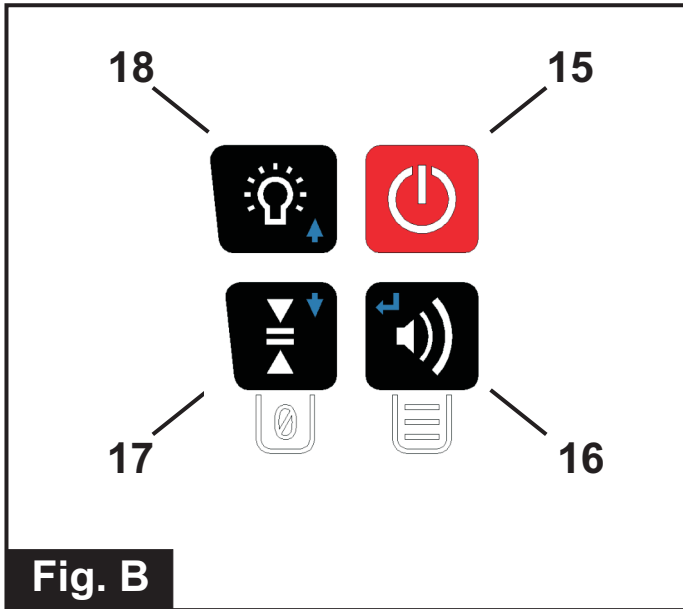


Fig. A



Technical Specifications

Capture height	90 mm
Numeric readout height	80 mm
Reception angle	± 45°
Detectable spectrum	620nm to 800nm
Working radius	Up to 400m (depending on laser transmitter)
Accuracy (Deadband)	See table at page 5
Beeper volumes	High (> 100 dBA) / Low (> 75 dBA) / off
Automatic shutoff	After 30min without key stroke / laser reception
Filter against	Flash / Sun light / LED / Fluorescent lamps
Marking notch	41mm from top edge
Physical dimensions	135mm x 69mm x 25mm
Weight without clamp	0,19kg
Protection class	IP 67 (waterproof)
Power supply	1 x AA
Battery life	> 45h
Operating temperature	-20°C to +50°C
Storage temperature	-40°C to +70°C

Proper Use

The receiver detects the laser beams of rotating laser transmitters emitting red laser light. Any other use than the described above shall be deemed to be improper use.

The user is liable for damage resulting from improper use.

Device Elements (Fig. A)

- 1 Magnet
- 2 LED grade indicator (yellow)
- 3 LED grade indicator (green)
- 4 LED grade indicator (red)
- 5 Laser-sensitive area
- 6 Marking notch
- 7 Clamp
- 8 Keypad
- 9 Bubble vial
- 10 Display
- 11 Beeper
- 12 Battery door and latch
- 13 Type plate with serial number
- 14 Fixing thread for the clamp

Keypad (Fig. B)

- 15 On / Off
- 16 Beeper volume
- 17 Accuracy (Deadband)
- 18 Grade LEDs

Display (Fig. C)

- 19 Numeric digits / text display
- 20 Grade indication arrows
- 21 On grade indicator
- 22 Beeper volume
- 23 Accuracy (Deadband)
- 24 Low battery

Numeric digits / text display

Three digits display either the numeric elevation or simple text messages. Numeric elevation can be displayed in *mm*, *cm*, *inch* or *fractional inch*. Resolution and decimal point will be determined by the units of measure and the accuracy selected.

Grade indication arrows

Four individual levels of grade information for above and below grade. Arrow size increases, as distance from on-grade increases. Arrow bars represent steps of the selected deadband. Horizontal bar indicates on-grade.

Out-of-beam display: A sequence of arrows indicates if the receiver has moved beyond the vertical reception range and will indicate in which direction to move to get back to the laser beam.


Subsequent presses will cycle through seven accuracy options.

	mm	cm	inch	F.In.	Display
Ultra ultra fine*	0.1	0.01	-	-	⚡ flashing
Ultra fine	0.5	0.05	0.02	-	⚡ flashing
Fine	1.0	0.1	0.05	1/8	⚡ non-flash.
Medium	2.0	0.2	0.1	1/4	⚡ non-flash.
Coarse	5.0	0.5	0.2	1/2	⚡ non-flash.
Ultra coarse	10.0	1.0	0.5	-	⚡ flashing
Ultra ultra coarse	20.0	2.0	1.0	-	⚡ flashing

*Option can be activated through menu. See page 6 for details.

Battery (Fig. A/D)

Inserting / changing the battery

- Change the battery if  is displayed .
- Open the battery compartment by unlatching the battery door [12].
- Remove the battery and insert a new one (observe correct polarity!).
- Dispose of the used battery (see chapter on environmental protection).

Activate / deactivate LEDs

Press the LED button [18] to change the LED display. If activated, the measurements are shown by the LEDs in addition to the display.

Operation



NOTE: Make sure that the device is in vertical position and that the laser-sensitive area [5] is not partially covered during measurement. This can entail false measuring results.

Switching the device on / off

- Press the On / Off button [15]

Adjusting the volume

- Pressing the beeper volume button [16] cycles Low / High / Off
 - ▶ High: Beeper symbol permanently displayed; text "Hi" for one second
 - ▶ Low: Beeper symbol permanently displayed; text "LOW" for one second
 - ▶ Off: No Beeper symbol displayed; text "OFF" for one second

Adjusting the accuracy

- Press accuracy button [17] once to numerically display current accuracy setting on the LCD. Press again, while the accuracy is displayed (within one second), to change the current selection.

User defined on-grade level:

An arbitrary level **within -10 and +40mm** around the marking notch can be used as on-grade level. The user defined on-grade level is set by pressing the accuracy button [17] for **two seconds** while the device is in the laser beam. If successful, you will hear a confirmation beep and an asymmetric arrow symbol is shown on the display. Outside the allowed area you will hear an error beep and error code **E30** is shown.

When the accuracy button [17] is pressed for **two seconds** while out of beam, the on-grade level is reset to default. If the device is switched off, the on-grade level is automatically reset to default. If you want to save the user defined on-grade level permanently, you can choose this option in the menu (see *Menu Entries - .OFS*).

Using the menu

The menu functions can be used to edit various options. For most applications the factory defaults are best choice. We recommend to change settings only in special applications.

- Pressing the volume [16] key for more than two seconds enters the menu functions.
- Menu items (e.g. *SEn* are shown non-flashing and may be browsed by using the ARROW keys [17] and [18].
- Menu items are selected by pressing the ENTER key [16]

- Item values (e.g. *On*) are shown flashing and may be browsed by using the ARROW keys [17] and [18].
- Exit the Menu by pressing the ESC key [15].

NOTE: All menu settings will be retained when the receiver is turned off.

Menu Entries:

- **Sen - Sensitivity: Hi(gh)/Low**

Default: *High*. Set it to *Low* if you have problems with disturbing sources like fluorescent or strobe lights.

- **AvG - Averaging: Hi(gh) / Low**

Default: *Low*. Set it to *High* if you need to have more stable readings under difficult *atmospheric* conditions.

- **rdo - Submenu Radio**

See description on the right side.

- **Pwr - Submenu Power**

See description on page 7.

- **G.AL - Grade alert: OFF / On1 / On2**

Default: OFF.

Option *On1*: If the device volume is not muted, you hear the normal sound outside *on grade*. If the laser reaches *on grade*, the sound is muted.

Option *On2*: Same as *On1*. Additionally, there is an alarm sound, if the laser beam is lost. The alarm can be stopped by pressing a key.

- **Unt - Unit: mm / cm / in(ch) / f(ract). in(ch)**

Default: *mm*. Choose desired numeric elevation display unit.

- **o.o.b - Out of beam display: On/OFF**

Default: *OFF*. Switch Out-of-beam display on and off. For a description see chapter *Display*.

- **User-defined ob-grade level: OFF / tmP (temporary) / PEr(manent)**

Default: *temporary*. To deactivate the function, choose *OFF*. To save the user-defined on-grade level permanently, choose *PEr*.

- **InF - Device Information**

Find Information about Firmware Version (*Fw*), Device Code (*dc*) and Serial Number (*Sn*) here.

- **Fdb - Ultra ultra fine deadband: OFF / On**

Switches the option of the 0,1 mm deadband off or on. For details, see options for the deadband on page 5.

Submenu Radio:

- **md - Mode: OFF / mt (Metor) / GL (grade laser) / bt (Bluetooth)**

Default: OFF.

NOTE: You need to pair the device before the first use. See menu entry *Pairing* for details.

The following radio modes are available:

- **Metor**: Communication between two Metor MTR-90RF or MTR-125RF. One device can be used as a remote control and remote display. To use activate the remote display mode on one of the two paired devices, switch on both devices consecutively. The second device gets radio messages from the first device and offers the remote display mode with *rmd*. Confirm it with pressing the volume key [16]. A confirmation beep sounds. On the display appears OK. All settings will be synchronized between the two devices. E.g, if you change the deadband on one device, it will be also changed on the other.
- **Grade laser**: Communication between a Metor and a grade laser. The measurements will be sent to the laser. The laser can change its grade to follow the on-grade level of the Metor. For a list of compatible devices and handling, contact the manufacturer.
- **Bluetooth**: Measurements will be sent via Bluetooth. You can use it as a remote display on a compatible smartphone with the app MTR-RDAB. Contact your local dealer or the manufacturer for details and prices.

- **PAr - Pairing**

Select the radio mode as described above. Start pairing on both devices. The letters on the display are blinking. If pairing is successful, *OK* appears on the display. It can take several seconds for the pairing to finish. Error E54 means, that this feature is not available in the selected radio mode. To stop pairing press any button.

- **Fw - Firmware**

Shows the firmware version of the radio module.

- **tSt - Radio test mode**

Select the radio mode and pair the devices as described above. Start the test mode. The device sends radio messages to the remote device. The percentage of successful delivered packages is shown on the display.

Error E54 means, that this feature is not available in the selected radio mode. To stop testing press any button.

NOTE: In radio mode *Metor*, the remote device has to be in remote display mode. To start this mode, see description of mode *Metor*.

- **Upd - Update radio module**

The manufacturer provides updates for the integrated radio module of the device. Follow the instructions provided with the update.

Submenu power:

- **A.On - auto on: OFF / On**

Default: OFF.

Defines, if the device automatically switches on, if the battery is inserted.

NOTE: After inserting the battery, there is a delay of about 10 seconds till the device switches on.

- **A.OF - auto off: OFF / 30 (minutes)**

Default: 30 minutes.

Defines, whether the device switches off after 30 minutes without laser beam or key press.

Maintenance and Care

Keep the device always clean, especially the laser-sensitive area!

- Do not use aggressive cleaning solvents.
- If soiled heavily, the device can be cleaned under running water.
- Do not use high-pressure cleaner.
- Allow the device to dry completely before storing it in a closed container. Residual moisture can result in corrosion of the battery contacts. In this case our warranty expires.
- In the unlikely event of a failure or defect, have the appliance examined and repaired by AndroTec.
- In all your queries and spare part orders, always quote the 8-digit serial number (see type plate) of your device.

Environmental Protection



Do not dispose of the device with domestic waste. Have the device disposed of by an authorised waste management company or your municipal waste management organization.

Adhere to the applicable regulations. In case of doubt contact your waste management organization. Recycle all packaging material in an environmentally friendly manner.

Batteries:

Do not dispose of batteries with domestic waste, do not expose them to fire or water. Collect and recycle batteries or dispose of them with due care for the environment.

Warranty

AndroTec Metor and clamp are warranted to be free of defects in material and workmanship according to the statutory warranty regulations.

The user of the product is expected to follow all operating, maintenance and care instructions. Any evidence of misuse, alteration, or an attempt to repair products by unauthorized personnel, or use of parts other than those provided by AndroTec GmbH automatically voids the warranty.

AndroTec grants an extended warranty for a period of three years, if within six weeks from the date of purchase, the warranty registration card is filled out and returned to AndroTec or the product is registered via Internet at www.androtec.com. Please make sure that the registration is filled out properly and on file with AndroTec.

This warranty period is thirty-six months from the date the new product is delivered from the dealer to the purchaser or is put into service by a dealer as a demonstration unit or rental unit. Competitor purchased and tested units are excluded from this warranty.

AndroTec may choose to repair or replace, at its discretion, any Metor in the event of a failure for any reason, during the warranty period. In case of a warranty claim, return the product and a proof of purchase to AndroTec.

AndroTec's liability under this warranty is limited to repairing or replacing any product returned to its factory for that purpose. The foregoing states the entire liability of AndroTec GmbH regarding the purchase and use of its product and they shall not be held responsible for any consequential loss or damage of any kind. This warranty is in lieu of all other warranties, expressed or implied, and constitutes all of AndroTec GmbH liability with respect to merchandise sold by it.

Warranty is strictly related to repair or substitution of defective parts according to AndroTec's discretion. The warranty does not cover any other damage that may occur directly or indirectly using defective parts.

Manufacturer

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WEEE-Reg.No.: DE37015608

CE Declaration of Conformity

We herewith declare that this product conforms with the following standards and directives:

Standards

DIN EN 61000-6-1
DIN EN 61000-6-3

in accordance with the regulations stipulated in the directives:

EC Directive

2014/30/EU
2014/35/EU

Technical Documentation at:
AndroTec GmbH



Mirko Eßling
General Manager

AndroTec GmbH
Waldfishbach-Burgalben, 20.06.2017

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