

User Manual

PLRF10C / PLRF15C

Pocket Laser Range Finder with
Compass

English, Version 2.0
III 2008

vectronix 

PLRF10C/15C - Pocket Laser Range Finder with Compass

Purpose of Equipment

The PLRF10C/15C is a pocket size, handheld, button operated laser rangefinder with integrated digital magnetic compass and sighting optic.

The PLRF10C/15C is capable to provide distance, azimuth and inclination information.



For safe use of the device, please note the safety directions included in the User Manual.

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General Information

Safety Notices

Safety Class: 1

according to IEC60825-1 (2001-08)



Nominal Ocular Hazard Distance

Unaided eye 0 meter

Aided (7 x 50 binocular) 0 meter

Intended purpose

The device

- is designed as a navigation aid;
- it can be used in addition to other instruments or techniques;
- must never be used as a sole navigation instrument.

Limitations of use

The device must not be used in the vicinity of sensitive electrical equipment.

All other usage limitations are mentioned in the technical specifications.

Inappropriate use

- Device deployment without prior knowledge of the operating instructions and safety notices.
- Changes and modifications to the device by the customer.
- Use of third-party accessories not expressly approved by Vectronix AG.

Inappropriate use brings the risk of

- injuries;
- instrument errors;
- damage to property;
- malfunction;

Blinding hazard

- Do not look into powerful light sources with the device.
- Do not open the device. The built-in laser can cause eye injuries.

Explosion hazard

The battery must not be

- short-circuited;
- recharged;
- mechanically modified;
- placed in fire or heated above +85°C with the device.

Caution:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Care and cleaning

The devices performance and serviceability are conditional on regular care and immediate attention to problems:

- Do not touch glass lenses with fingers.
- Do not soil the operating keys with oil or grease.
- Avoid abrupt temperature transition, since these can cause condensation moisture to develop inside the device.

The device does not need special care or cleansers.

Therefore

- do not use any kind of impregnated cloth intended for cleaning spectacle lenses,
- do not use any solvent except water, e.g. no alcohol or cleansers.

Lens cleaning

Particles of dirt should be blown off or removed using a soft brush.

Finger prints may be cleaned first by wiping with a damp cloth, followed by soft, clean optical tissue or chamois leather.

Cleaning the casing

Wipe the casing with a damp cloth. Pay special attention to dirt and grease around the keys.

Blow out the device interface cable socket, and clean it carefully.

Allow the device to dry fully before packing.

Cleaning the interface cable

Protect the cable from damp and dirt as much as possible! Wipe the cable with a damp cloth. Blow out soiled cable plugs with clean air, and leave them to dry.

Technical Data

Optics

Configuration	monocular
Magnification	6x
Objective diameter	27 mm
Field of view	106mil / 6°
Focus	fixed
Dioptric setting	>+2dpt to -4dpt

Magnetic Compass (azimuth and inclination)

Azimuth range	360° / 6400mil
Accuracy (1 σ)	
Azimuth	$\pm 10\text{mil} / \sim 0.6^\circ$
Inclination	$\pm 3\text{mil} / \sim 0.2^\circ$
Display resolution	1° / 1 mil
Max. inclination and bank angle	$\pm 45^\circ$
Compass compensation	menu driven
Declination	
Array (adjustable)	$\pm 99^\circ / 999\text{mil}$
Increment	1° / 1mil

Rangefinder	PLRF10C	PLRF15C
Laser type: IR diode	905 nm	1550 nm
Eye safety	Class 1	Class 1
Standard	IEC60825-1 Ed. 1.2 (2001-08)	IEC60825-1 Ed. 1.2 (2001-08)
Range Performance	5m - 2500m	5m - 3000m
Specified Performance	1800m*	2500m*
Accuracy (1 σ)	± 2 m	± 2 m (>50m to <1500m) ± 5 m (<50m / >1500m)
Beam divergence	0.3 x 1.5mil	0.5 x 2.0mil
Display Resolution	1m / 1ft / 1yd	1m / 1ft / 1yd

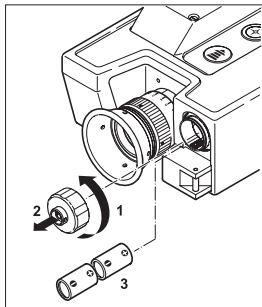
* at visibility 15km, 2.3 x 2.3m target size, albedo 0.4, detection probability >90%

Miscellaneous

Power supply	2x 3V lithium battery, type CR123A, (IEC 60086-2(2004-02))
Battery capacity	> 5000 measurements
Immersion	1m, 30min
Operational temperature range	-35°C to +63°C -31°F to +145°F
Storage temperature range (without battery)	-40°C to +85°C -40°F to +185°F
Weight with batteries and rubberized cover	< 670g / 1.5lbs
Dimensions with rubberized cover	
length	125mm / 5.0in
width	101mm / 4.0in
height	65mm / 2.6in
Tripod interface	1/4 inch thread
Data interface:	RS 232

Getting started

Changing the batteries



Open the battery compartment.

Insert two lithium batteries type CR123 with +(positive) pole ahead.

Refit the battery cover. **Tighten it completely until it stops.**

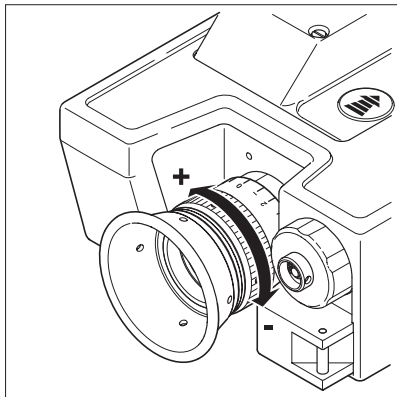
The device monitors the condition of the batteries. If the display shows "LobA", this indicates that the batteries are used up. You can still get readings, but the batteries need to be replaced.

The "LobA" display may also appear under cold conditions, since low temperature reduces the performance of the batteries.



Remove batteries before storing.

Diopter adjustment

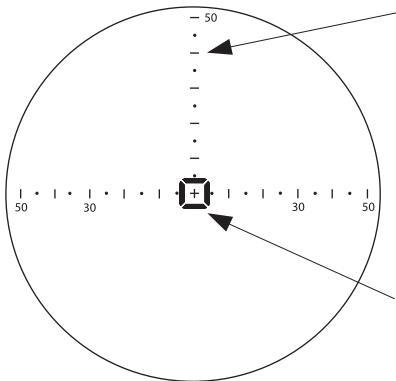


Sight on an object farther than 100 m away and rotate the eyepiece to obtain a sharp image.
Standard setting: 0



If the device is being used by different people, remember your personal diopter setting.

Reticle



Glass reticle

An engraved reticle can be used in place of the electronic aiming mark.

Line spacing: 10 mils

Line-point spacing: 5 mils

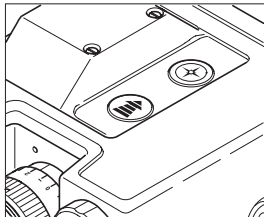


1 mil corresponds to 1 m spacing at a distance of 1 km.

Electronic reticle

An illuminated aiming mark can be activated for the use under poor lighting conditions.

General Operations



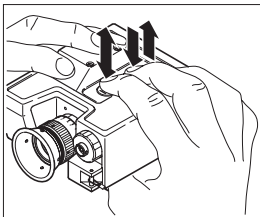
The device is operated entirely by means of the two keys.



: azimuth key



: distance key



Key operation is indicated by the following symbols:



press and hold key



release key



press and release key (click)

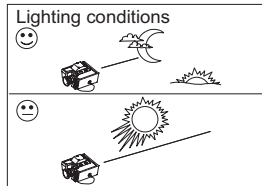
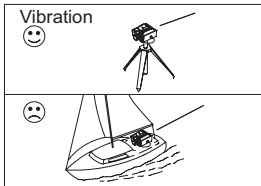
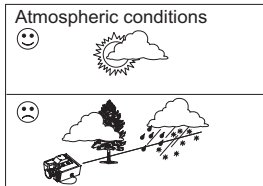
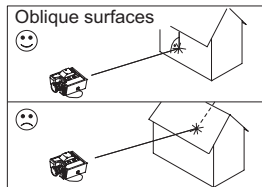
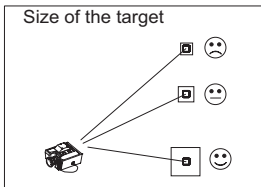
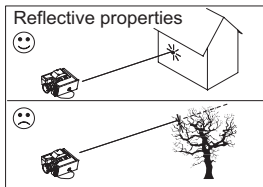
Hold the device steady during measurement.
The device displays the measurement result, then switches itself off automatically after a few seconds.



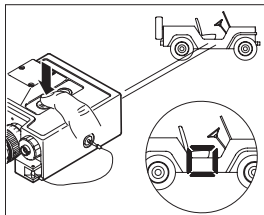
You can prolong the display period by holding down the range key while the result is displayed.

Distance Measurements

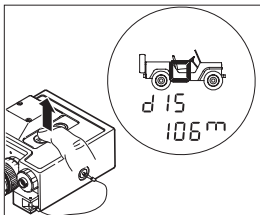
Factors affecting measurement range



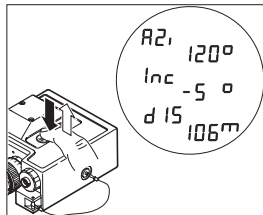
Complete measurement with data transfer (slope distance, azimuth, inclination)



Press and hold the distance key.
Sight the object with the aiming mark



Hold the instrument steady as you release the key.
"dIS" appears briefly followed by the slope distance.
"- - - -" is displayed when no distance could be detected.

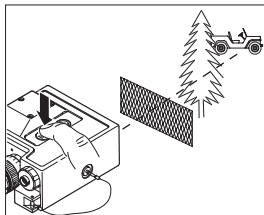


While the display is on, press and hold the distance key to get the azimuth "AZi". Do the same again to get the inclination "Inc". Repeat above step to obtain the distance "dIS" again.

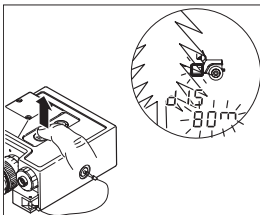


The measurement data is transmitted to the serial interface after a measurement is taken.

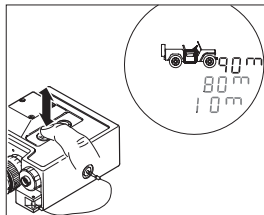
Multiple object measurement



Up to three separate distances in the line of sight can be obtained with a single measurement.



To use this feature, "3dOn" must be activated in the configuration menu (see page 24). A flashing display after „DIS“ indicates that more than one distance has been detected.

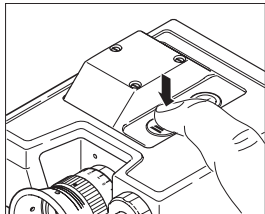


Press and hold the distance key repeatedly to scroll through all obtained distances. The order of the displayed ranges is: strongest, second strongest and third strongest detected echo.

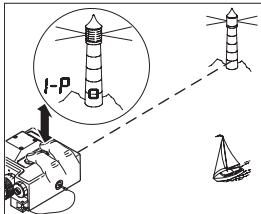


Always the distance with the strongest signal will be transmitted to the serial interface.

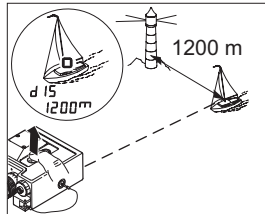
Distance between two objects



Press and hold the distance key.

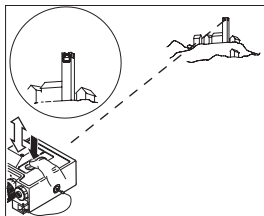


Sight the first object with the aiming mark. Click the azimuth key (> 0.5s) while holding the device steady. The first object measurement is confirmed with "1-P" (first point).

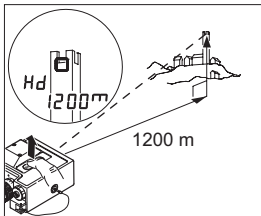


Sight the second object with the aiming mark. Release the distance key while holding the device steady. "dIS" appears briefly, followed by the distance between the two object.

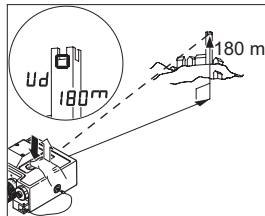
Horizontal and vertical distance from own position to an object



Click the distance key once, then immediately press and hold it down. Sight the object with the aiming mark.



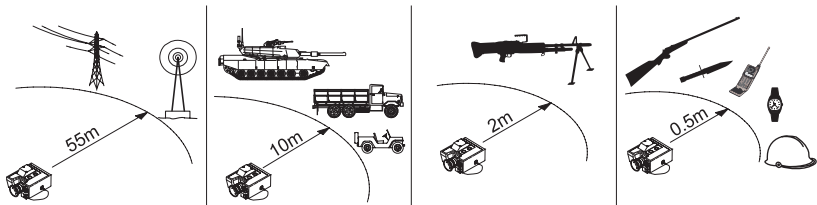
Release the distance key while holding the device steady. The horizontal distance is displayed, indicated with "Hd".



Press and hold distance button while the display is on to obtain the upright (vertical) distance, indicated with "Ud". Repeat it to get the horizontal distance again.

Azimuth and inclination measurements

Factors influencing azimuth accuracy



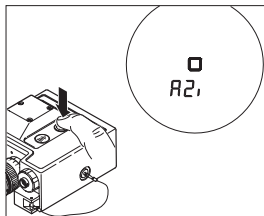
The device has a digital compass that works similar to a magnetic compass. Metal objects, magnetic fields and electronic devices (e.g. radio) can cause error in directional readings. Nonmagnetic metals and alloys do not affect the compass readings.



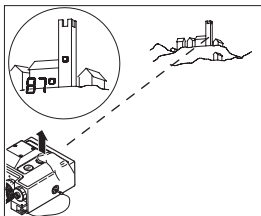
Countermeasures

- Compensate the compass after every battery change (see page 33)
- Observe the minimum safe distances shown above when making azimuth measurements or compass compensation.

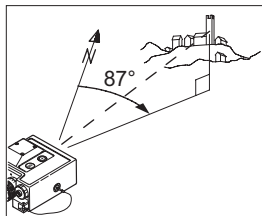
Azimuth measurement



Press and hold the azimuth key. "AZI" appears for a short instance followed by the current azimuth. The display updates continuously.

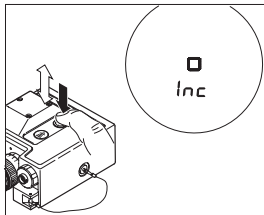


Sight the object with the aiming mark, then release the azimuth key while holding the device steady.



The most recently measured azimuth is displayed.

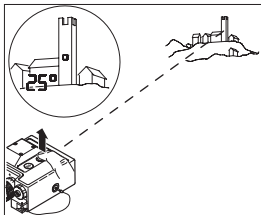
Inclination measurement



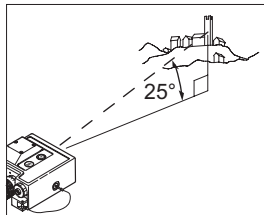
Click the azimuth key once then immediately press and hold it down.

"Inc" appears for a short instance followed by the current inclination.

The display updates continuously.



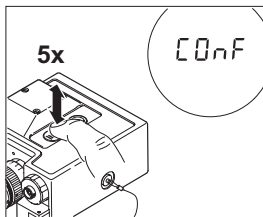
Sight the object with the aiming mark, then release the azimuth key while holding the device steady.



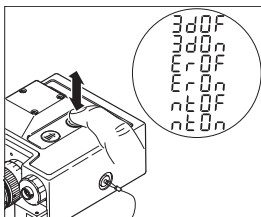
The most recently measured inclination is displayed.

Configuration

Making adjustments



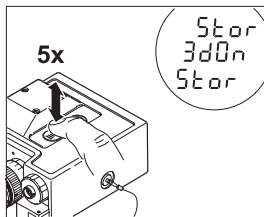
Various instrument functions are switched on and off via the configuration menu. Click the distance key five times in rapid succession. "ConF" appears for a short instant.



Click the azimuth key until the desired function status appears.

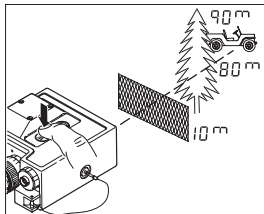


The various functions are described in detail on the following pages.



Click the distance key five times in rapid succession to save your setting. The setting is not changed when "OldC" is displayed.

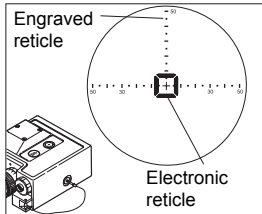
Measuring 3 distances



Function: 3dOn / 3dOF

"3dOn" allows to obtain up to three distances in the line of sight with a single measurement (see page 18)

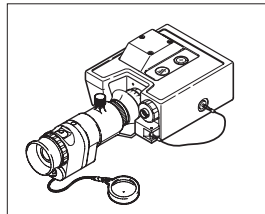
Electronic reticle



Function: ErOn / Er OF

"ErOn" activates the electronic aiming mark which is useful for poor lightning conditions.

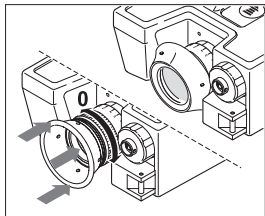
Night vision device



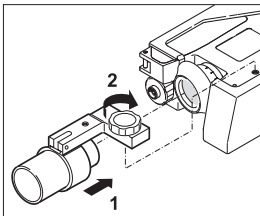
Function: ntOn / ntOF

"ntOn" reduces the display brightness, which is needed only in combination with an attached night vision device.

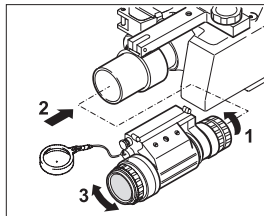
Night vision operation - Mount



Activate "ntOn" in the configuration menu (see page 24, 25)
Set the diopter to "0".
Turn the eyecup inside out.

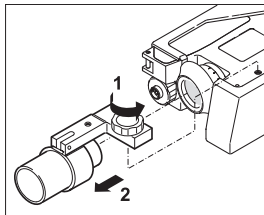


1. Attach the night vision adapter.
2. Tighten the screw.

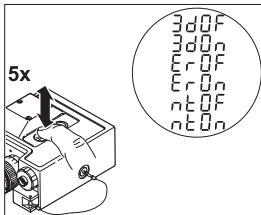


1. Rotate the lens on the night vision device to infinity position.
2. Attach the night vision device.
3. Adjust the eyepiece to suit your eyesight.

Night vision operation - Remove



1. Loosen the screw and remove night vision adapter.
2. Turn the eyecup outside in.



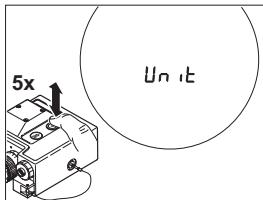
Set "ntOF" in the configuration menu for use without night vision device (see page 24, 25).



If the function is set to "ntOn" and the device is used in daylight conditions, the message "ntOn" is displayed for a short instant.

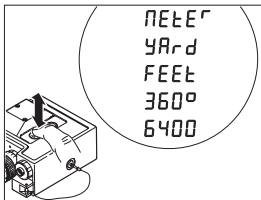
Settings

Measurement units



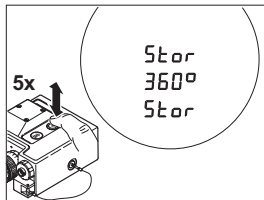
Various angle and distance measurement units may be set.

Click the azimuth key five times in rapid succession.
"Unit" appears briefly.



Click the distance key until the desired unit appears.

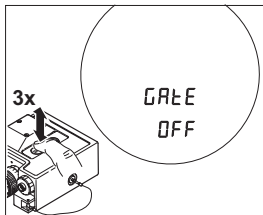
"MEtEr": Meter
"YAr d": Yard
"FEEt": Feet
"360°": 360 Degree
"6400": 6400 mil



Click the azimuth key five times in rapid succession to store the selection.

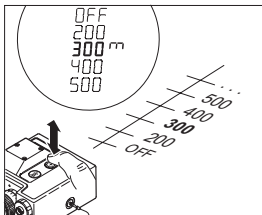
The setting is not changed when "OldC" is displayed.

Distance gate



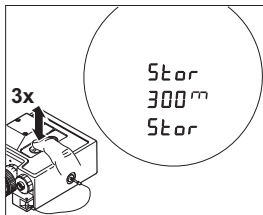
In certain cases, it may be useful to limit the closest distance the device will measure.

Click the distance key 3 times in rapid succession. "GAtE" appears briefly followed by the current setting. (e.g. "OFF")



Click the azimuth key until the desired minimum distance appears (e.g. 300m)

Setting "OFF" disables the distance gate



Click the distance key three times in rapid succession to store the setting. The setting is not changed when "OldC" is displayed.



"GAtE" is displayed briefly when closer ranges are measured.

Declination compensation

Declination represents the deviation between magnetic north and grid north.

Declination:

- varies from location to location
- varies from time to time
- is specified on most maps

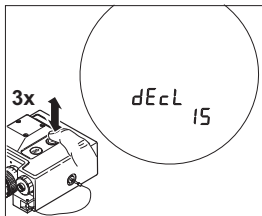
To refer the azimuth angle to grid north:

enter the local declination value into the device.

To refer the azimuth angle to magnetic north:

enter the value "0" into the device.

Declination display



Click the azimuth three times in rapid succession.

"dECL" appears briefly followed by the current setting.

"OldC" is displayed before the device switches itself off.

Positive value stands for easterly set declination. Negative value stands for westerly set declination.

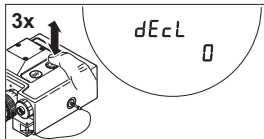


The declination is displayed in the currently selected angular unit (see page 28)

The stored declination value:

- is reset to "0" when the measurement units are changed.
- is retained when the battery is exhausted or replaced
- is factory set to "0"

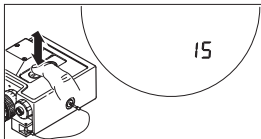
Declination setting / correction



Click the azimuth key three times in rapid succession. "dEcL" appears briefly followed by the current setting.



Click on azimuth key to change between increasing (0,1,2,...) and decreasing (0,-1,-2,...)

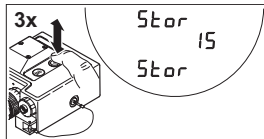


Short click on distance key:

- the declination value changes by one unit per click.

Hold down distance key (>0.5s):

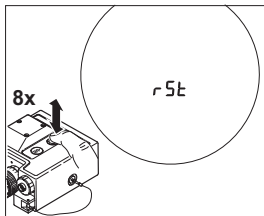
- the declination value changes continuously



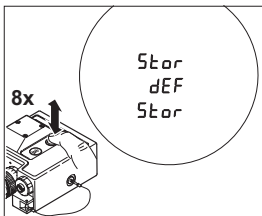
Click the azimuth key three times in rapid succession to store the new declination value.

The setting is not changed when "OldC" is displayed.

Set Factory Settings - Reset to default



Click the azimuth key eight times in rapid succession. "rSt" for reset appears.



Click the azimuth key eight times again to store the default factory settings. "Stor" - "dEF" - "Stor" appears.
If not done correctly, the settings remain unchanged and "Old C" is displayed.

The default factory settings are:
Electronic aiming mark "off"
Distance gate "off"
Night mode "off"
Multiple object measure. "Off"
Distance unit "meter"
Angular unit "degree"
Interface setting "PC".

Compass compensation

General instructions

How?

There is a choice of two compensation procedures

- **12 point compensation**
(recommended)
provides good precision.
- **4 point compensation**
May achieve adequate precision for many applications if time does not permit a 12 point compensation

When?

- After every battery change
- After the device has been exposed to strong magnetic fields.
- When metallic parts have been attached to the device (e.g. night vision device)
- After movement greater than 20km and / or to a different terrain type
- After a temperature change of more than 20°C



Check the stored declination after every compass compensation and correct if necessary.

Where?

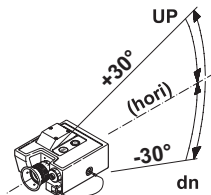
In an open area (e.g. a field) at an adequate distance from buildings and metallic objects (see page 21).

Ensure that there are no buried pipes, cables, etc. in the vicinity.



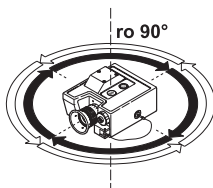
Never compensate the compass inside a building or in the vicinity of disruptive magnetic fields.

Compensation instructions



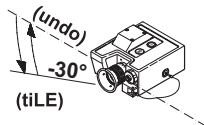
The device needs to be swivelled in various directions during compensation. Instructions for the movements appear successively in the display:

StOP: hold still
UP: turn up
dn: turn down
ro90°: rotate by 90°



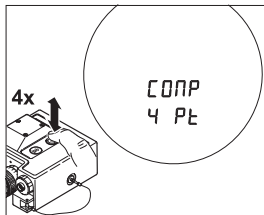
hori: return to horizontal
tiLE: Tilt the left side of the device downwards
undo: undo tilt, return to horizontal
tFAr: too far, reverse direction

Always turn in the same direction for all "ro90°" instructions.

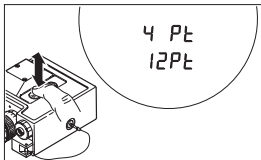


Important:
When the "StOP" instruction is displayed, immediately hold the device still and wait for the next instruction. Perform each movement slowly and steadily, until the next instruction is displayed.

Perform compass compensation

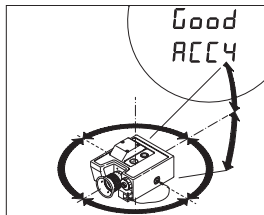


Point the device roughly northwards.
Click the azimuth key four times in rapid succession.
"COMP" appears briefly followed by "4 Pt", standing for the 4 point compensation procedure.



If you want to perform the 12 point compensation, click the distance key until "12Pt" is displayed.

The selected procedure starts automatically after a few moments. Move the device according to the displayed instructions (see page 34).



After the last instruction, analysis begins and the electronic reticle blinks for a few seconds.
The result and accuracy of the compensation appears (see page 36).

Results

Magnetic interferences can still lead to inaccurate measurements, even if compensation was successful.

For this reason the compass accuracy should be verified after a successful compensation by performing several azimuth measurements on known landmarks and compare the results.

After compensation, the device acts on the measurement results as follows:

Acc (mil)	Display	Process
1-20	"Good" "ACC xx"	The newly determined constants are stored.
21-90	"bAdC" "ACC xx"	The newly determined constants are stored.
> 90	"bAdC" "rESC"	The constants are reset to factory values.

Possible causes of compensation failures:

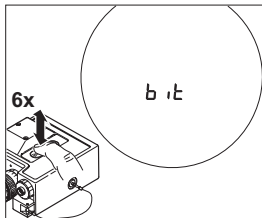
- the device was moved while "StOP" was displayed

- movements were performed to fast or jerkily

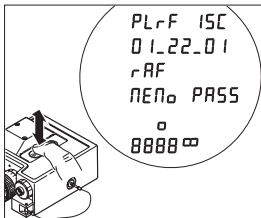


If "bAdC" appears, reattempt compensation until "Good" is displayed. Consider moving to an alternative position.

Built-in-Test



Click the distance key six time in rapid succession. "bit" appears briefly, the built in test starts automatically.



The distance key can be used to scroll through the test. Keeping the distance key pressed prolongs the display time.

1. Model (e.g. PLRF15C)
2. Software version (e.g. 01-22-01)
3. Enable options
"r" = PLGR; "A" = Garmin, "F" = Fall of Shot
4. Memory test
"MEMo" "PASS" or "FAIL"
5. Display Test
all segments on

Troubleshooting

Problem	Possible cause	Solution
Measurements can not be taken - no function at all	The batteries have run out Battery contacts corroded Low temperature reduces performance of batteries Extreme heat shortens batteries life	Replace batteries (see page 12) Clean battery contacts Warm up batteries Do not store the batteries at temperature over +70°C
"- - -" is displayed after distance measurement	Distance is outside the specified range Object too small or inaccurately targeted Bad weather conditions	Respect specified measurement range (see page 10) Respect factors affecting measurement range (page 16)

Problem	Possible cause	Solution
"GAtE" is displayed after distance measurement	Measured distance is below selected distance gate	Reduce or turn off the distance gate (see page 29)
<p>The following symbols are displayed during azimuth measurements:</p> <pre> _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ </pre>	<p>The allowed inclination and / or tilt angle has been exceeded</p> <p>tilted too far upwards</p> <p>tilted too far downwards</p> <p>tilted too far to the right</p> <p>tilted too far the the left</p>	Stay within specified inclination and / or tilt angle (see page 9)

Problem	Possible cause	Solution
Inaccurate azimuth values	Incorrect declination setting	Set correct declination (see page 30, 31)
	Disruptive magnetic fields at measuring position	Respect factors affecting azimuth measurement accuracy (see page 21)
	Bad compensation constants	Perform compass compensation (see page 33)
	Altered magnetic conditions within the instrument (e.g. battery change)	Perform compass compensation (see page 33)
Compass compensation can not be completed	Timing out of compensation	Follow the instructions slightly faster (see page 34)
The electronic reticle is not visible	"ErOF" is set in the configuration menu	Select "ErOn" in the configuration menu (see page 24)

Problem	Possible cause	Solution
"LobA" is displayed	The battery is almost used up	Replace battery (see page 12)
The device measures objects in front or behind the intended object	"3dOF" is set in the configuration menu, only the distance with the highest return signal is displayed	Select "3dOn" in the configuration menu (see page 24)
"ntOn" is displayed after a measurement	The device is used during daylight conditions with "ntOn" selected in the configuration menu	Select "ntOF" in the configuration menu (see page 24)

Connecting the interface cable

On the side of the device is a socket for sending data to:

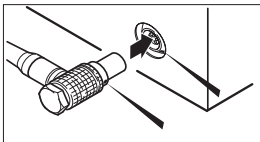
- personal computers or laptops
- modems
- fire control systems
- C4I systems



Our customer service will be pleased to inform in details about the different possibilities.

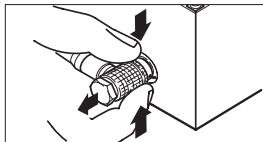
Caution:

Incorrect handling can damage the socket or optional interface cable.



To plug:

1. Remove protection cap.
2. Align the respective markings on the plug and socket.
3. Slide the plug carefully into the socket until the locking mechanism engages.



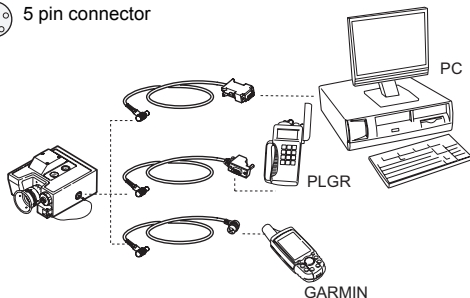
To unplug:

1. Grasp the plug grip between two fingers,
2. draw it carefully back to the stop to disengage the locking mechanism,
3. pull back a little harder until the plug slips out of the socket.
4. Attach the protection cap.

Data transfer format to PC, PLGR and GARMIN



5 pin connector

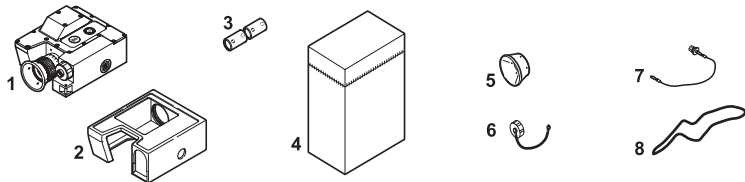


Interface parameters

Interface. RS 232
Data
transmission bidirectional
Baud rate 9600 bps
Parity none
Data bits 8
Stop bits. 1
Handshake none

Equipment

Parts List



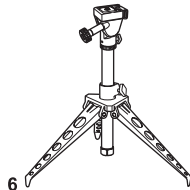
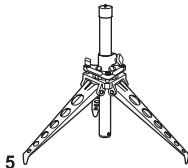
Standard extent of delivery:

- | | |
|-----------|---|
| 1 | PLRF10C / PLRF15C |
| 2 903 590 | Rubberized cover |
| 3 667 002 | SEB51 lithium battery, 3V, CR123A (2x required) |
| 4 724 828 | Pouch for PLRF |

Spare parts:

- | | |
|-----------|--|
| 5 723 791 | Eye cap |
| 6 727 539 | Battery cover |
| 7 703 228 | Protection cap for interface connector |
| 8 725 020 | Lanyard |

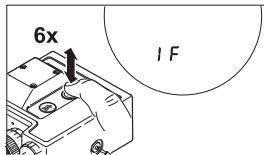
Accessories



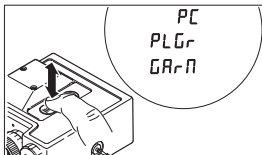
Optional:

- 1 706 271 SEV48 data cable to PC
- 2 721 951 SEV63 data cable to PLGR
- 3 902 984 SEV83 data cable to GARMIN 12/12XL
- 4 Night vision adapter PLRF (upon request)
- 5 664 868 SST3-1 mini-tripod, non magnetic
- 6 729 452 SST3-2 mini-tripod, non magnetic with pan/tilt head

Interface Settings



Various interface settings can be set. Click the azimuth key six times in rapid succession. "IF" appears briefly in the field of view, followed by the current setting.
If "IF" doesn't appear, no options are enabled.




Click the distance key until the desired interface setting appears. The choice depends on enabled options. The various settings are described in detail on the following pages.



Click the azimuth key six times in rapid succession to store the setting.
The message "OldC" is displayed if the setting was not stored.

Overview Interface Settings

- PC** Setting for communication with PC. Data transfer via PC cable. Interface parameters (RS232) and data transfer format (see page 43).
- PLGr** Setting for communication with PLGR +96 / PLGR II / DAGR. Data transfer via PLGR cable.
- GARM** Setting for communication with GARMIN GPS 60, 76, 72 and 12 series. Data transfer via GARMIN cable.
-  Use the function **Complete Measurement with data transfer** to transmit measurement data (see page 17).

PLGR+96 / PLGR II Settings

Setting the PLRF10C/15C

- Store the Interface setting "PLGr".



When used with PLGR declination must be set at "0" (see pages 30)

Setting the PLGR+96 / PLGR II

- Set the tracking mode to CONT.
- Select the position format which corresponds to the map being used.
- Select the appropriate ELEV units.
- Select the appropriate ELEV reference.
- Select the appropriate ANG units.
- Select the ANG reference (Grid).
- Select the datum which corresponds to the map being employed.



The proper datum must be selected. Improper datum selection will result in poor target position accuracy.

- Set the AUTOMATIC OFF TIMER to OFF.
- Set the SERIAL mode to standard.

Additional setting for PLGR II

- Configure port C to IP.
- Configure the remaining ports to IP (or RTCM-NMEA).
- Set the port C baud rate at 9600-9600.
- Change the LRF mode to **TARGETING**.



Azimuth in PLRF10C/15C and Azimuth on PLGR+96 / PLGR II will be different due to declination angle.

If attempting to use PLGR while "PC" is set, the warning "PC" flashes in the field of view.

GARMIN Settings

Setting the PLRF10C/15C

- Store the interface setting "**GArM**"



Declination in PLRF10C/15C will be considered and must be set according the current location.

Setting the GARMIN

The PLRF is able to transfer data to the following GARMIN models: GARMIN 60, 76, 72 and 12 series.

System Setup:

- Set the mode to NORMAL.

Navigation Setup:

- Select the position format which is corresponding to the map being used(UTM / UPS). Select the map datum which corresponds to the map being used (WGS84).
- Select the appropriate units (METRIC)
- Select die appropriate heading reference (GRID) and heading unit (MILS)

Interface Setup:

- Set the data protocol to GRMN / GRMN
(Set the GARMIN GPS as HOST)



The proper datum must be selected. Improper datum selection will result in poor target position accuracy.

Operation

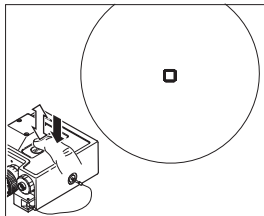
Perform a complete measurement with data transfer.

A waypoint "TGT" in the GARMIN will be created, provided that a valid measurement was taken.

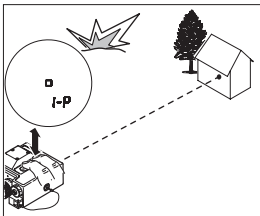
Enter the waypoint menu to get grid coordinates and height of the measured object. Depending on the GARMIN model, an new measurement will overwrite the existing waypoint "TGT" or create a new waypoint (TGT1, TGT2,...)

Look up the corresponding GARMIN user manual for waypoint functionalities.

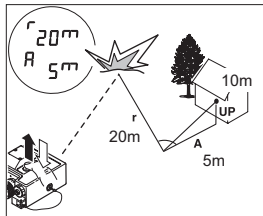
Fall of shot - FOS



Click the distance key once, then immediately press and hold it down.

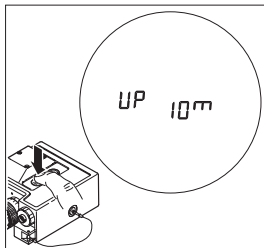


Sight the target with the aiming mark.
Click the azimuth key (> 0.5S) while holding the device steady.
The first measurement is confirmed with "1-P".

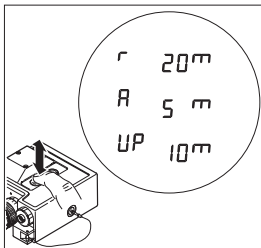


Sight the Fall of Shot and release the distance key while holding the device steady.
The first correction value appears. "L" for left, "r" for right.
Press and hold the distance key while the display is on to get the second correction value.
"A" for add, "d" for drop.

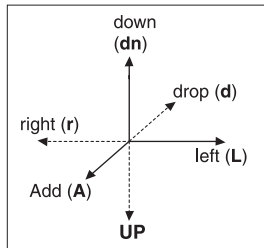
Fall of shot - FOS (continued)



Press and hold the distance key again while the display is on to obtain the last correction value. "UP" for up, "dn" for down. The corrections are given from the Fall of Shot position.



Click distance key repetitive to obtain the corrections again.



Example:
Is a shot left, short and to low,
the corrections given are:
r.. for right, **A** .. for add
and **UP** for up.

Customer service

Our customer and information service will be glad to offer assistance if your instrument requires maintenance, if it sustains damage, or if you require any other information:

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CH-9435 Heerbrugg
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