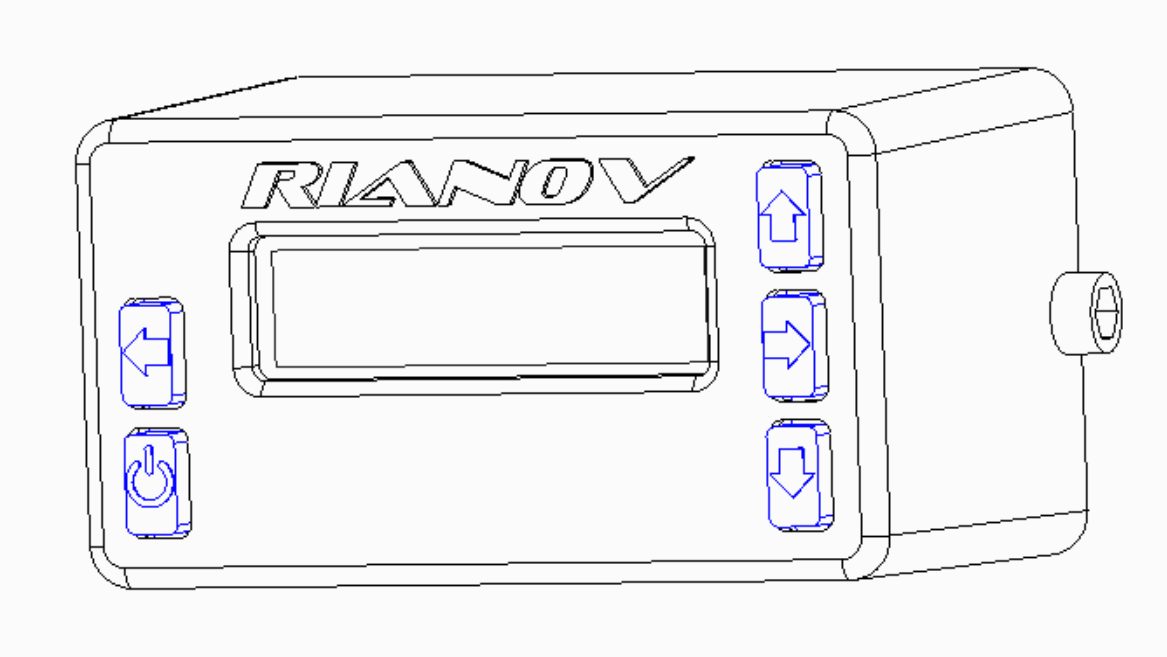


RIANOV™

OPTICAL RANGING DEVICE

SOLO

Operator's Manual

10 November 2012

Table of Contents

USE OF THIS MANUAL

Prior to use or installation of the RIANOV ™ Optical Ranging Device, read this manual in its entirety and make sure you are familiar with the use and care requirements. It is important that you, and all users of your RIANOV ™ Optical Ranging Device, understand the principles of its operations. Keep this manual with the RIANOV ™ Optical Ranging Device, and transfer it to any future owner. If you require additional copies of this manual, a copy can be downloaded from our web site.

The RIANOV ™ Optical Ranging Device is not a safety device and normal firearm safety procedures should be maintained during the installation and usage of the RIANOV ™ Optical Ranging Device. Failure to follow safety guidelines may result in bodily injury or death.

WARRANTY (LIMITED) AND SERVICE

ZRF, LLC, warrants that this product was manufactured free of defects in materials and workmanship and for a period of twelve months from the date of purchase by the original owner, ZRF, LLC agrees to correct any defect for the original purchaser by repair or replacement with the same or comparable model, at the sole discretion of ZRF, LLC. The warranty does not cover abuse, misuse, lost items, batteries, and consequential and incidental damages are not recoverable under this warranty. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This written warranty is the only warranty provided and any implied warranty of merchantability or fitness is limited to the same twelve month period.
Technical specifications are subject to change without notice.
If your RIANOV ™ Optical Ranging Device requires service, whether made under warranty or not, please contact ZRF, LLC for instructions on how to have your RIANOV ™ Optical Ranging Device repaired.

ZRF, LLC
P.O. Box 81644
Atlanta, GA 30366
(770) 657-7855
www.RIANOV.com

Technical Specifications

RIANOV™ Optical Ranging Device - SOLO

Weight: 2.8 oz. (80 grams)
Display: LCD with Graphics - 16 Character x 3 Row
User Interface: 5 Button Keypad
Operating Temperature Range: -13°F to 140°F (-25°C to 60°C)
Altitude Range: -1,600ft to 29,600ft (-300m to 9,000m)
Barometric Pressure Resolution: 0.01InHg
Optical Ranging: >3,000 Yards
Angular Ranges: ±73° Slope (Look Angle)
±80° CANT
Angular Resolution: <0.1°
Battery Type: CR-123
Battery Life: 2 Years (based on average use case)

Product Description

The **RIANOV™ Optical Ranging Device - SOLO** is a ballistic calculating device that works in conjunction with your rifle scope, regardless of manufacturer or reticle marking type, thereby making all scopes Range Finding Scopes and at any magnification the user's scope can be set.

The **RIANOV™SOLO,** which easily mounts to your scope, calculates the Range to your intended target and provides accurate real-time calculated ballistic solutions - based on the JBM Ballistics solver - for Elevation and Windage adjustments with the push of a button and the aiming of your rifle.

The **RIANOV™ SOLO** internal sensors monitor and compensate for barometric pressure, temperature, CANT and look angle (Slope) in the ballistic solutions provided, allowing the user to remain focused down range and no longer worry about offset charts or calculating adjustment factors.

The **RIANOV™ SOLO** can be installed in under five (5) minutes to nearly any scope (with Optional Scope Mount Kit) and it does not interfere with the zero settings of the rifle, making getting started user friendly.

Section 2 -

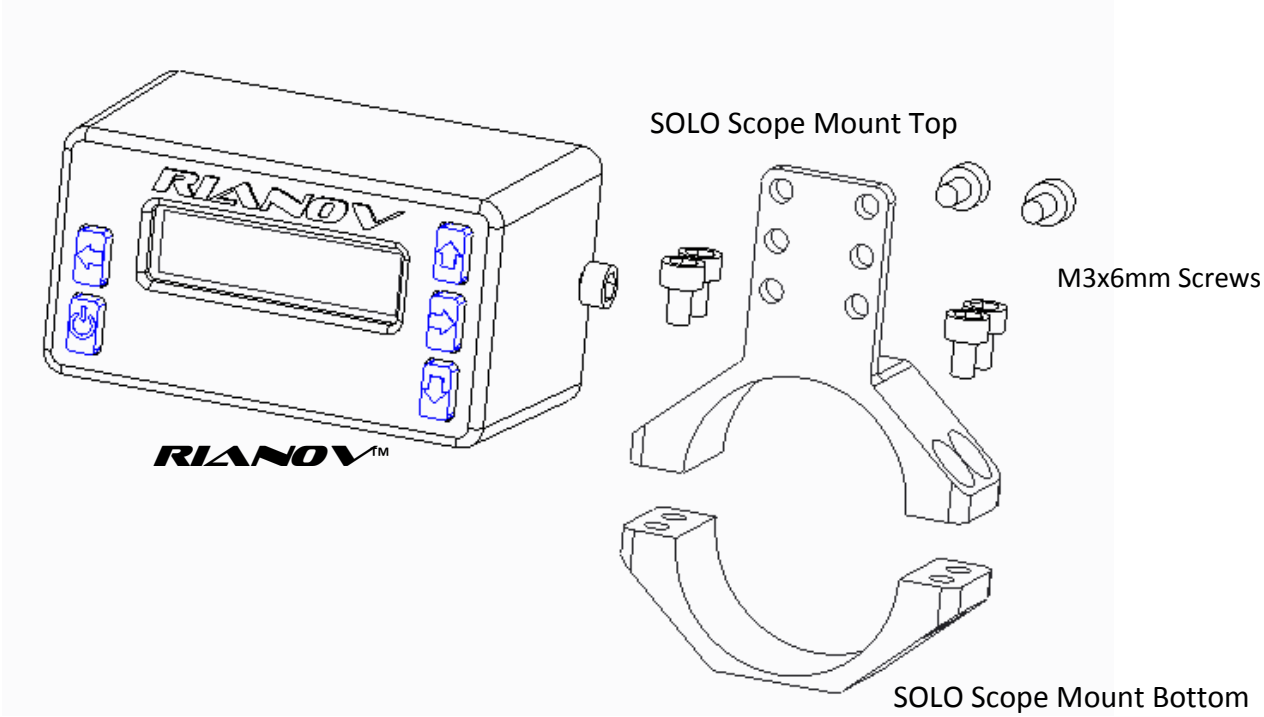


Figure 2.1

System Contents

The RIANOV™ SOLO Kit, shown above in Figure 2.1, contains the following:

- 1 - RIANOV™ SOLO Optical Ranging Device
- 1 - CR123A Lithium Battery (installed – not shown)
- 1 - RIANOV™ SOLO Optical Ranging Device Quick Start Guide (not shown)

Also shown is the SOLO Scope Mount Kit:

- 1 - Scope Mount Top
- 1 - Scope Mount bottom
- 1 - Long Arm Hex Key (not shown)
- 8 - M3x6mm Screws (2 spares – not shown)

Section 3 -
Replacing the battery

PRIOR TO INSTALLING YOUR RIANOV™ TO YOUR RIFLE, MAKE CERTAIN THAT IT IS UNLOADED. REFER TO YOUR FIREARM OWNER'S MANUAL TO ENSURE THE FIREARM IS SAFE

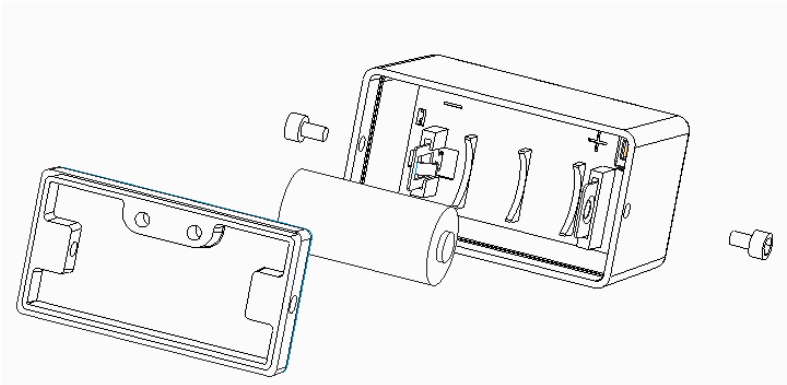


Figure 3.1

Remove the two (2) M3x6mm screws and the Battery Cover/Battery Seal as shown in Figure 3.1. Remove the old battery, dispose of it properly and replace it with a new CR123A Battery.

Align the battery with the battery compartment between the battery contacts and press the battery into the unit. Make sure the positive terminal of the battery is to the right (starboard side for you naval types). The RIANOV™ SOLO unit will not operate with the battery installed backwards.

Do not attempt to modify the battery contacts. Doing so will void the warranty.

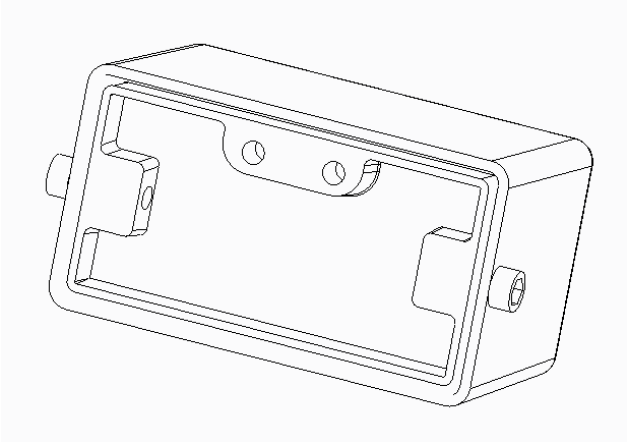


Figure 3.2

Align the Battery Cover and the two (2) M3x6mm screws and tighten as shown in Figure 3.2.

CR123A batteries are commonly used in flashlights and cameras.

Section 4 -
Installing on your Scope
(Optional Scope Mount Kit)

PRIOR TO INSTALLING YOUR RIANOV™ TO YOUR RIFLE, MAKE CERTAIN THAT IT IS UNLOADED. REFER TO YOUR FIREARM OWNER'S MANUAL TO ENSURE THE FIREARM IS SAFE

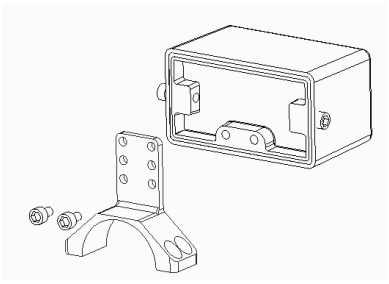


Figure 4.1

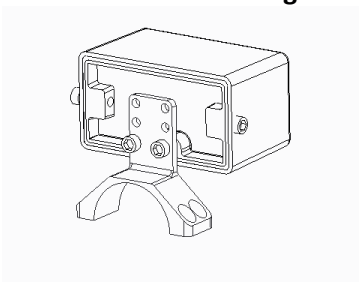


Figure 4.2

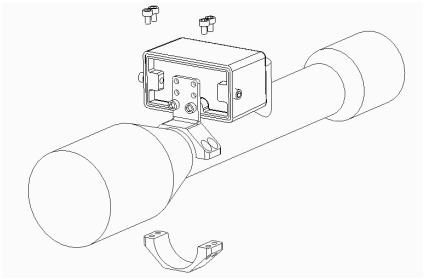


Figure 4.3

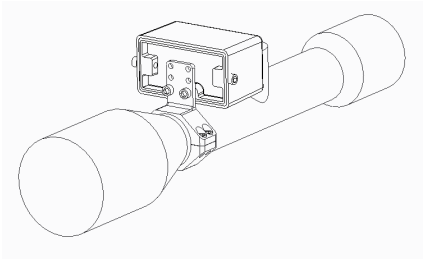


Figure 4.4

Attach the Top half of the Scope Mount Kit to the Cover of the SOLO as shown in Figure 4.1 & 4.2 using two of the M3x6mm screws that are with the Optional Scope Mount Kit.

Position the Scope Mount behind the elevation turret on your scope at the desired position as shown in Figure 4.3.

Attach the Bottom half of the Scope Mount Kit to the Top half of the Scope Mount Kit as shown in Figure 4.3 & 4.4 using two of the M3x6mm screws that are with the Optional Scope Mount Kit.

To ensure that you can view the SOLO display, use the appropriate holes when attaching the Top half of the Scope Mount Kit to the Cover of the SOLO as shown in Figure 4.1 & 4.2 such that the display is above the elevation turret as shown in Figure 4.5.

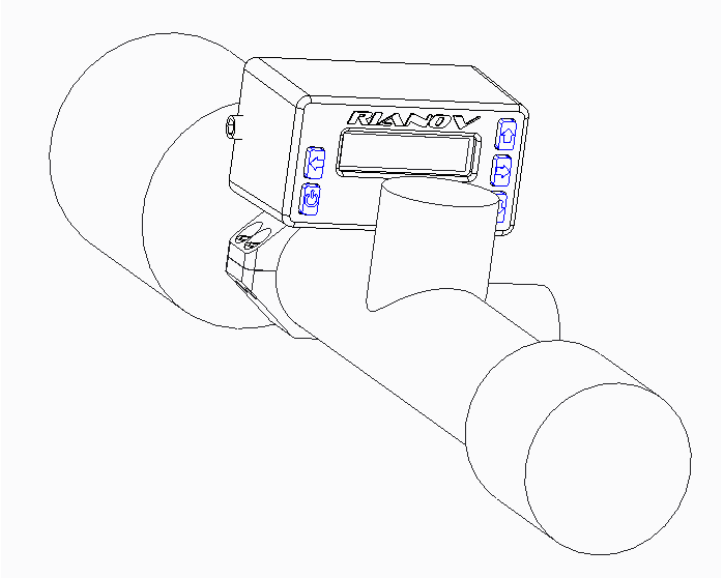


Figure 4.5

Section 5 – Screen Navigation
Keypad & Display

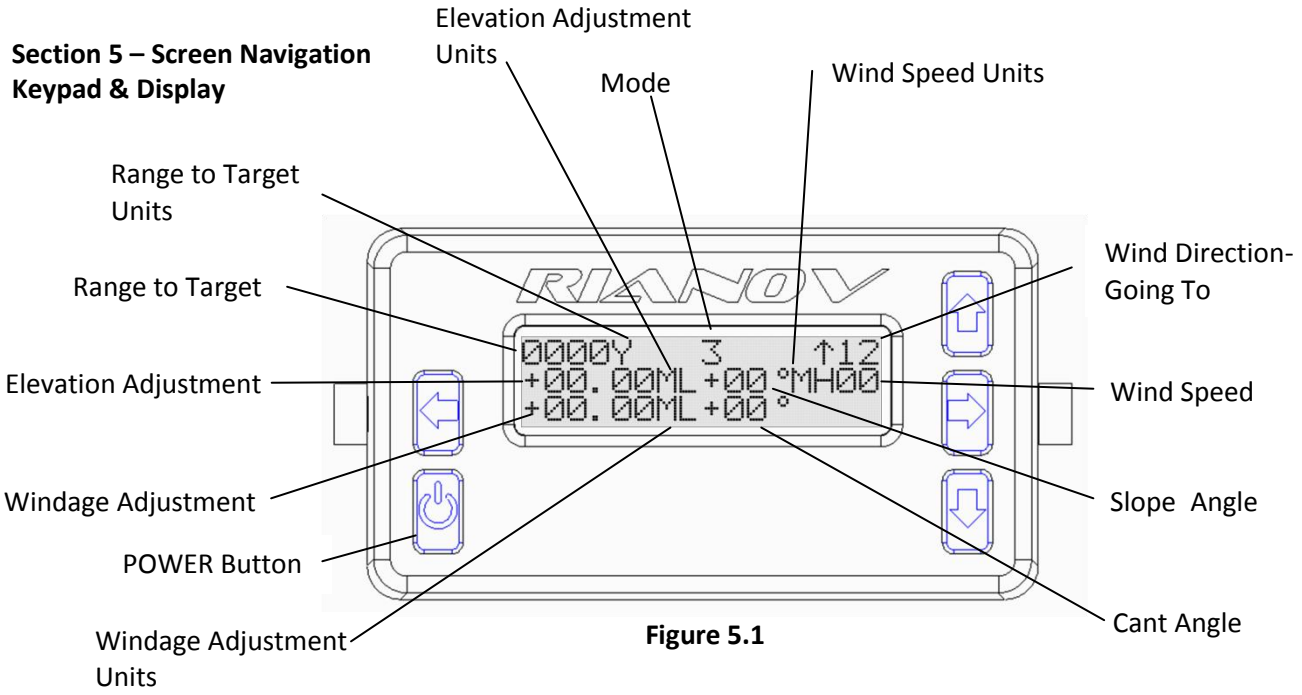


Figure 5.1

Each of the Display Fields above has its own purpose in determining the firing solution and is explained in detail in the sections below

Keypad – There are two ways to use the buttons on the keypad -

Press and Release – P/R - Press the button and release in less than 1 second

Press and Hold – P/H - Press the button and hold for more than 1 second

Power:

If the RIANOV™ SOLO unit is off, P/R this button to turn the device on

If the RIANOV™ is on, P/R this button to initiate a Ranging operation. You will be prompted for different inputs based on the Ranging Mode of the RIANOV™ SOLO unit (see pages 14-15 for more information).

P/H this button to move to the CONFIGURATION Screen

Arrow Buttons:

Use these four (4) buttons to navigate (move) up/down/right/left on the screen and to increase/decrease values

The RIANOV™ SOLO unit shown in figure 5.1 is displaying the HOME Screen. This is the screen that will be displayed during most of the operation of the device. There are several items that can be modified from this screen and you can navigate to the other screens from the HOME Screen. To navigate around this screen press and release the Right or Left Arrow Button that corresponds to the direction you wish to navigate (move). To edit fields on this screen, navigate to the field you wish to change and press the Up or Down Arrow Button to change the value of the field you are on.

In this manual the screen layouts will be displayed as shown below in the normal 3 rows by 16 character format. The screen layout shown below matches the information as shown in Figure 5.1.

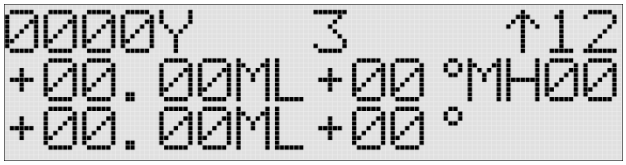


Figure 5.1A

Special characters –
There is one special character that appears on most screens. The “HOME” characters, as shown below in Figure5.1B.

Figure 5.1B

Any screen on which you find this special character will redirect you as follows:
HOME - ⌂ - return you to the HOME Screen

You can move to the CONFIGURATION Screen, as shown in Figure 5.2 Screen by pressing and holding (P/H) the POWER Button for one (1) second while on any screen. From the CONFIGURATION Screen you will be able to access the following screens:

WEAPON
ENVIRONMENT
MODE
SYSTEM
RATIO SETUP
CALIBRATION

Figure 5.2

Section 6 - Setup of the RIANOV™

Viewing the WEAPON Screen -

To view the WEAPON Screen on your RIANOV™ SOLO unit, navigate to the "WEAPON" field on the CONFIGURATION Screen (see Figure 5.2) and P/R the POWER Button. You will be shown the current option for entering data.

TWIST RATE	Rate of twist inside the barrel
TWIST DIRECTION	Direction of the twist inside the barrel
CALIBER	Caliber of the weapon
BC	Ballistic Coefficient of the bullet
WEIGHT	Weight of the bullet
LENGTH	Length of the bullet
RETICLE	Type of reticle marking inside the scope
SCPHEIGHT	Distance between the scope centerline and the barrel centerline
SCPOFFSET	Distance the scope is offset (left (-) or right (+)) from the barrel centerline
ELEV*	The number of clicks per MIL (or MOA/IPHY) of your elevation turret
WIND*	The number of clicks per MIL (or MOA/IPHY) of your windage turret
MUZ VEL	The muzzle velocity of your bullet
MVCORR§	The amount your muzzle velocity varies with changing temperature
CHRONO DIST	The distance to your chronograph (enter 0 if you are estimating MUZ VEL)
ELEV ADD¤	The amount you currently have dialed into your elevation turret
RANGE	The range at which your weapon is zeroed
TEMP	The temperature at which your weapon is zeroed
BP	The barometric pressure at which your weapon is zeroed
HUMD	The humidity at which your weapon is zeroed
BEARING	The bearing at which your weapon is zeroed
LATITUDE	The latitude at which your weapon is zeroed

To select an option or enter data in one of these fields, navigate to the desired field and P/R the POWER Button to enter edit mode. Use the Right Arrow or Left Arrow Button to move the value you want to change and use the Up Arrow or Down Arrow Buttons to change the value. When you have completed making all of the changes in a field P/R the POWER Button to exit edit mode. Complete these steps for all fields that you want to change and navigate to the "HOME Icon" on the top line of the screen, P/R the POWER Button to return to the HOME Screen.

*- Entered as number of clicks per MIL (for example – a ¼ MIL per Click is entered as 4.000 Clicks / MIL). This is also valid for MOA/IPHY or other units.

§ - MVCORR – By taking Chronograph data of the same ammunition fired from the same rifle at different temperatures (but at the same or nearly the same Barometric Pressure) you can easily determine your MVCORR – see the example below:

Case 1) MV1 = 2558 Feet per Second and Temp1 = 15 °F

Case 2) MV2 = 2600 Feet per Second and Temp2 = 85 °F

} The larger the temperature difference the better

(MV2-MV1)/(Temp2-Temp1) = (2600-2558)/(85-15) = 42/70 = 0.60 Feet per Second / °F

¤ - ELEV ADD is used to have the required elevation adjustment display by the RIANOV™ SOLO unit automatically corrected for targets at a given distance. After you have dialed-in a given value on your elevation turret and entered in the same value into the SOLO, the solution you are provided is now a hold over or hold under. Make sure you set this value to 0.00 if you return your elevation turret to its zero point.

Viewing the ENVIRONMENT Screen -

To view the ENVIRONMENT Screen on your RIANOV™ SOLO unit, navigate to the "ENVIRONMENT" field on the CONFIGURATION Screen (see Figure 5.2) and P/R the POWER Button. You will be shown the current option for entering data.

HUMIDITY	The current Relative humidity
TEMP	The current temperature – automatically measured - non-editable
BP	The current barometric pressure – automatically measured - non-editable
LATITUDE	Your current latitude
BEARING	Your current bearing (direction the barrel is pointed – towards the target)

To select an option or enter data in one of these fields, navigate to the desired field and P/R the POWER Button to enter edit mode. Use the Right Arrow or Left Arrow Button to move the value you want to change and use the Up Arrow or Down Arrow Buttons to change the value. When you have completed making all of the changes in a field P/R the POWER Button to exit edit mode. Complete these steps for all fields that you want to change and navigate to the "HOME Icon" on the top line of the screen, P/R the POWER Button to return to the HOME Screen.

Viewing the MODE Screen -

To view the MODE Screen on your RIANOV™ SOLO unit, navigate to the "MODE" field on the CONFIGURATION Screen (see Figure 5.2) and P/R the POWER Button. You will be shown the current option for entering data.

From the MODE Screen, you will be able to select from one of four modes of data entry:

2 - MEAS SLP + MILS - In Mode 2 the RIANOV™ SOLO unit will automatically enter into measuring the Slope and Cant angles when you initiate a ranging operation. Once the RIANOV™ SOLO unit has determined the Slope and Cant angles you will be prompted to enter the two variables require for MILDOT ranging (MILS and SOT). MILS is the measurement of the target inside your scope and SOT is the Size of Target (actual size of target).

The MILS measurement is valid at a single magnification, unless you have a First Focal Plane reticle (FFP) scope. If you do not have an FFP reticle, you must use the scope manufacturers ranging magnification or use the RIANOV™ SOLO Ratio Screen to establish a new Ratio for ranging. See page 12 for further details.

3 - MEAS SLP + DTT - In Mode 3 the RIANOV™ SOLO unit will automatically enter into measuring the Slope and Cant angles when you initiate a ranging operation. Once the RIANOV™ SOLO unit has determined the Slope and Cant angles you will be prompted to enter the Distance to Target (DTT).

4 - ENTER SLP + MILS - In Mode 4 the RIANOV™ SOLO unit you will be prompted to enter the Slope angle and the two variables require for MILDOT ranging (MILS and SOT).

5 - ENTER SLP + DTT - In Mode 5 the RIANOV™ SOLO unit you will be prompted to enter the Slope angle and Distance to Target (DTT).

To select the Mode of data entry, navigate to the current Mode and P/R the POWER Button and use the Up Arrow or Down Arrow Button to select the desired Mode. When completed, P/R the POWER Button to indicate your selection. The current Mode is shown on Line 1 of the HOME Screen as shown in Figure 5.2.

Viewing the SYSTEM Screen -

To view the SYSTEM Screen on your RIANOV™ SOLO unit, navigate to the "SYSTEM" field on the CONFIGURATION Screen (see Figure 5.2) and P/R the POWER Button. You will be shown the current option for entering data.

AUTO OFF	Time in seconds to turn the unit off after the last key press
DELAY TMR	Time in seconds for the delay before starting a Slope / Cant measurement
BACKGROUND	Color of the background
BRIGHTNESS	Screen brightness level
BATTERY	Percent battery life remaining - non-editable
SERNUM	Unit serial number - non-editable

To select an option or enter data in one of these fields, navigate to the desired field and P/R the POWER Button to enter edit mode. Use the Right Arrow or Left Arrow Button to move the value you want to change and use the Up Arrow or Down Arrow Buttons to change the value. When you have completed making all of the changes in a field P/R the POWER Button to exit edit mode. Complete these steps for all fields that you want to change and navigate to the "HOME Icon" on the top line of the screen, P/R the POWER Button to return to the HOME Screen.

-- NOTE -- The longer the Display remains on after each button press will reduce the battery life of the RIANOV™ SOLO unit. The battery life of 2 years is based on a 30 seconds Display On Time setting and the average use of 2 reads/hour, 6 hours/day and 2 days/week.

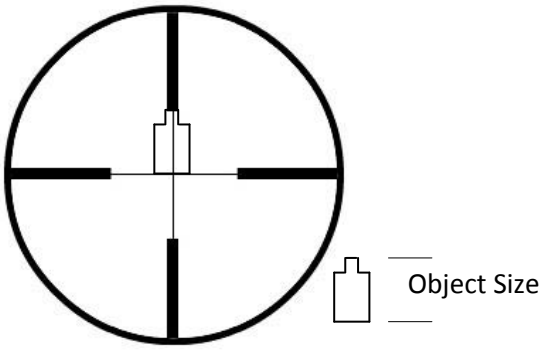
-- NOTE -- If you set the brightness low for low light conditions and forget to change back to a daylight setting, you may have difficulty reading the display in daylight conditions.

Viewing the RATIO Screen -

To view the RATIO Screen on your RIANOV™ SOLO unit, navigate to the "RATIO" field on the CONFIGURATION Screen (see Figure 5.2) and P/R the POWER Button. You will be shown the current option for entering data. You will need to adjust these values to match the scope you will be mounting to the RIANOV™ SOLO unit. The information entered here will be used in range estimating using MILDOT /MOA/IPHY techniques.

RANGE	Distance to the target being measured
OBJSIZE	Size of the object being measured
DIVISION	User defined parameter – see below Fig 6.1
RATIO	System Parameter - non-editable
RNG MAG	Magnification being used

You will now need to complete the following steps:
1) Place a known sized object at a known range from your scope. A large object (9"-36") at a close range (less than 100 yards) on a level surface (Slope close to 0°) works best.
2) Enter the Range and Object Size in the fields as shown on the RATIO Screen. Be very accurate with these values, as this is the basis for all future range estimating. For this example we will use 9" as the value for Object Size and 50 yards as the value for Range.
3) Look through your scope and determine the DIVISIONS you consider this object to be, as shown in Figure 6.13. You can use any value you like, just remember this for future use. For this example we will use 1 as the value for Divisions.
4) Enter the selected value in the Divisions field.
Once you have entered each of the three values, the Ratio will automatically calculate and display the value based on your inputs, replacing the default value. For this example the new Ratio value would be 5.55556.



RATIO		
PARAMETER	VALUE	UNITS
RANGE§	0050	Y
OBJSIZE§	009.0	IN
DIVISION§	01.00	
RATIO	05.55556	
RNG MAG§	10	X

Figure 6.1

§ - Entered by the user

HINT -- You may want to change the Range or Object Size so that the object exactly fills the spacing between two reticle markings. Take care to keep track of the exact values of the Range and Object Size.

Viewing the CALIBRATION Screen -

To view the CALIBRATION Screen on your RIANOV™ SOLO unit, navigate to the "CALIBRATION" field on the CONFIGURATION Screen (see Figure 5.2) and P/R the POWER Button. You will be shown the current option for entering data.

From the CALIBRATION Screen, you will be able to calibrate your RIANOV™ SOLO unit to your rifle. After you have mounted your RIANOV™ SOLO unit to your rifle, place the rifle on a level surface. The rifle scope should have no uphill or downhill angle and it should be upright (scope directly above the barrel with no Cant angle). You can validate this by placing a leveling device on the scope and making adjustment until the leveling device shows zero angle in both the Slope and Cant directions. This process is required to correct for possible variations in the mounting of the RIANOV™ SOLO unit to your rifle.

To calibrate your RIANOV™ SOLO unit, navigate to the Initiate field and P/R the POWER Button. The RIANOV™ SOLO unit will wait the amount of time set on the SYSTEM Screen, DELAY TMR, and begin measuring the Slope and Cant angles. **DO NOT TOUCH THE RIFLE OR RIANOV™ SOLO UNIT WHILE THE MEASUREMENTS ARE BEING TAKEN**. The RIANOV™ SOLO unit will make several hundred measurements (3-5 seconds) to determine the position and complete the calibration process. When the Slope and Cant values stop changing, the calibration process is completed and you may move the rifle and/or continue with the setup up or use of your RIANOV™ SOLO unit.

To return to the HOME Screen, navigate to the "HOME Icon" on the top line of the screen, P/R the POWER Button.

The RIANOV™ SOLO unit can be used in four modes of operation:

Mode 2) - Measure Slope + Enter MILS

The RIANOV™ SOLO unit automatically measures the Slope (and Cant) angle and the user enters the known Size of Target and MILS (Also works with MOA/IPHY and custom defined RIANOV™)

Mode 3) - Measure Slope + Enter DTT (Distance to Target)

The RIANOV™ SOLO unit automatically measures the Slope (and Cant) angle and the user enters the known Distance to Target

Mode 4) - Enter Slope + Enter MILS

The user enters Slope angle and the known Size of Target and MILS (Also works with MOA/IPHY and custom defined RIANOV™)

Mode 5) - Enter Slope + Enter DTT (Distance to Target)

The user enters Slope angle and the known Distance to Target

Based on the Mode select by the user, the RIANOV™ SOLO unit will display a different data entry screen when the ranging function is initiated by the user. The information below will explain the information presented to the user by the RIANOV™ SOLO unit when a ballistic solution is requested:

Mode 2) - Measure Slope + Enter MILS

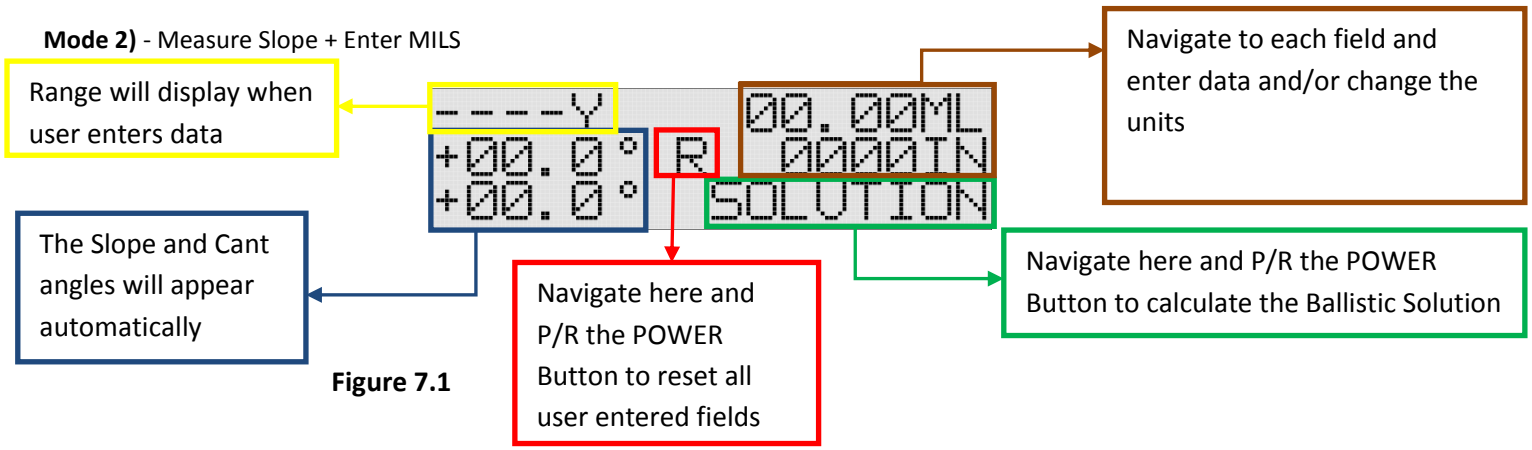


Figure 7.1

Mode 3) - Measure Slope + Enter DTT (Distance to Target)

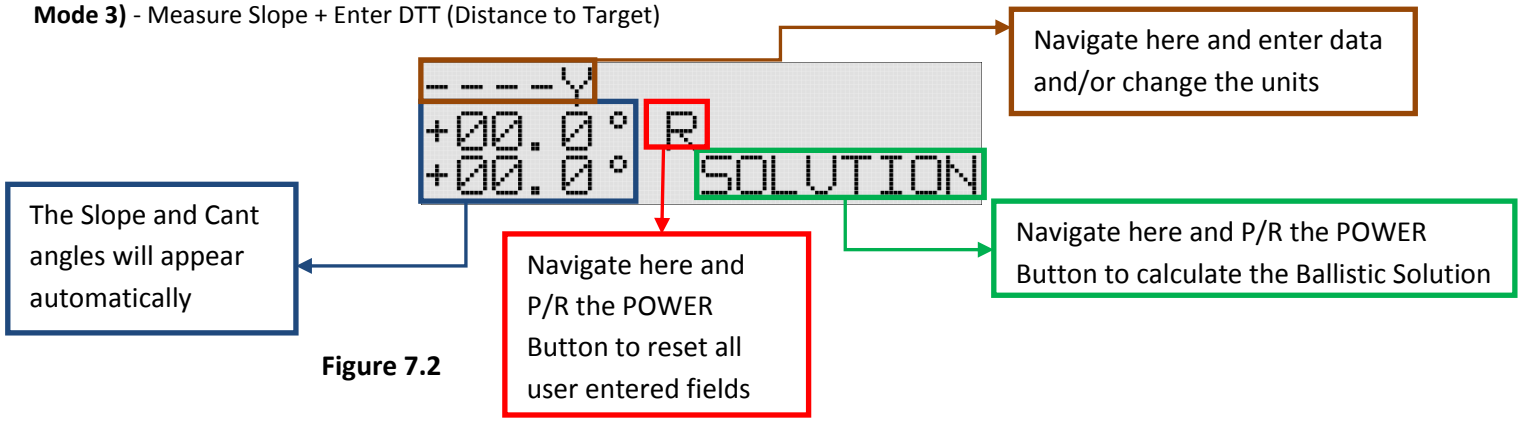


Figure 7.2

Mode 4) - Enter Slope + Enter MIL

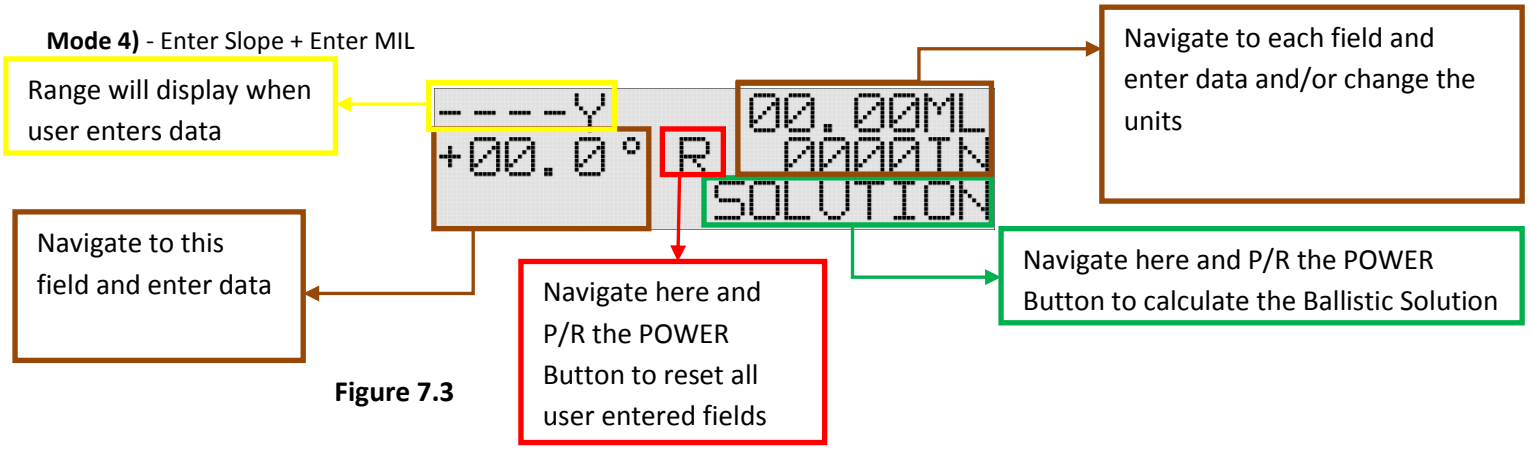


Figure 7.3

Mode 5) - Enter Slope + Enter DTT (Distance to Target)

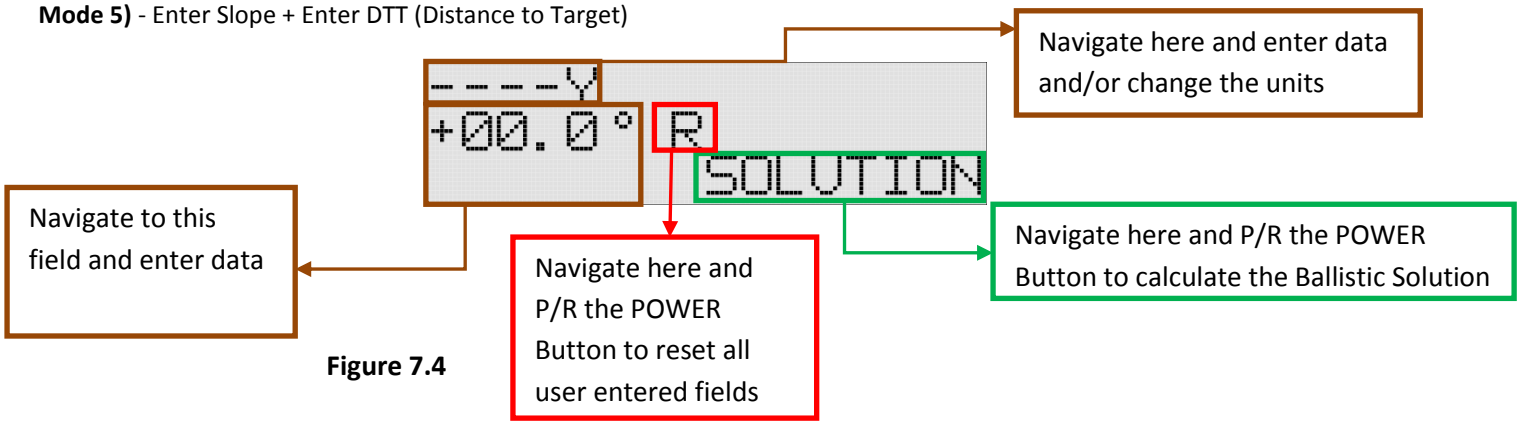


Figure 7.4

Error Screen

If during the usage of your RIANOV™ SOLO unit, you range a target that is outside of the effective range of your defined Weapon System at the current environmental conditions, such that the velocity of the round goes below 0.4*SoS (Speed of Sound) before reaching the target, the Home Screen will appear as shown in Figure 7.5.

This screen may also appear if you have yet to complete adding all of the parameters required to fully define a Weapon System or if you measure or input an invalid Slope or Cant angle. Please see Page 19 for the complete list of information required.

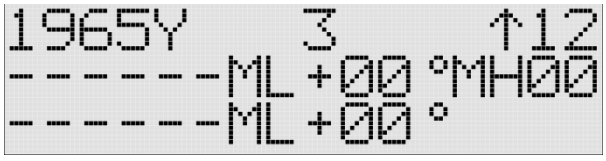


Figure 7.5

Inputting Wind Conditions

To input the current wind conditions navigate to either the Wind Speed or Wind Direction field on the HOME Screen using the Left Arrow or Right Arrow Button. Once on the field you wish to change, use the Up Arrow or Down Arrow Button to change the value shown. The Direction field is selected by numerical values ranging from 1 to 12, where each value represents the numbers on an analog clock and is the direction the wind is going to. The Wind Speed field is where you indicate the magnitude of the wind with unit options of MH (Miles Per hour), MS (Meter Per Second) and FS (Feet Per Second).

The RIANOV™ user interface takes into consideration the requirements of shooting in real world conditions and is designed to allow inputs to be added and results displayed with sufficient time remaining to allow the user to make the adjustments necessary and take the shot before the conditions change.

From this screen, as shown in Figure 7.6, you will be able to quickly input the changing wind conditions and have the results displayed with enough time remaining to make the adjustments before the wind changes.

The Windage adjustment shown is the combined Windage adjustment from all sources (Spin Drift, Coriolis Effect, Wind, etc).

You may also see changes in the Elevation Adjustment as you change the Wind Speed and Wind Direction. This change is due to the impact of Aerodynamic Jump which is a function of Wind Speed and Wind Direction.

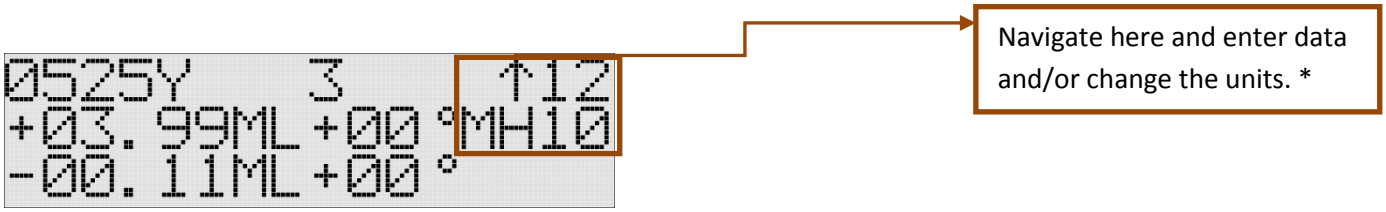


Figure 7.6

* - On the HOME Screen, navigation is with the Right Arrow and Left Arrow Buttons. To change the value, use the Up Arrow and Down Arrow Button.

Changing Units/Setting

Table 7.1

List of Terms	
Term	Definition
CK	Clicks
CM	Centimeters
FC	Feet Per Second /°C
FF	Feet Per Second /°F
FT	Feet
FS	Feet Per Second
GM	Grams
GR	Grains
HUMD	Humidity
IN	Inches
PH	Inches / Hundred Yards
HG	Inches Mercury
KP	Kilopascals
LT	Left
M	Meters
MA	Minutes of Angle*
MB	Millibars
MC	Meter Per Second /°C
MF	Meter Per Second /°F
ML	Miliradians
MH	Miles Per Hour
MS	Meter Per Second
N	North
RT	Right
RV	RIANOV Units
S	South
SEC	Seconds
Y	Yards
°F	Fahrenheit
°C	Celsius

The RIANOV™ SOLO unit is highly versatile in many ways. It can be used with any caliber rifle; any scope type and it can be used at any magnification that your scope can be set to. Additionally, the RIANOV™ SOLO unit can display its input and output values in many different units to meet the needs of the individual shooter (See Table 7.1). Below is a table of parameters and their associated unit options (See Table 7.2). The units can be easily changed by navigating to the units' field and P/R the POWER Button. With the use of the Up Arrow and Down Arrow Buttons, you can page through the options available for the units' field you have selected to modify. As you page through the unit options the value associated with the units' field will be converted to show the new value with the new units. When you have reached the units you would like to show on the display for this units' field, simply P/R the POWER Button.

*** - Also known as Minutes of Arc**

Definition of Terms –
Caliber – Diameter of the bullet in Inches or CM
Bullet Weight – Weight of bullet in Grains or Grams
Bullet Length – Length of bullet in Inches or CM
Drag Function – A drag function (or G function) provides the forces on a standard bullet for which the drag function was derived. A bullet's ballistic coefficient then relates the drag on any bullet to that of the standard bullet.
Ballistic Coefficient – The ballistic coefficient represents the ratio of the drag of the standard (e.g. G1 standard bullet) bullet to that of the bullet you are shooting. A ballistic coefficient of 0.100 means that your bullet has 10 times the drag of the standard bullet.
Zero Range – The range at which you wish the bullet to cross the line of sight.
Zero BP – The Barometric Pressure when the Zero was set.
Zero Temp – The temperature when the Zero was set.
Zero Humd – The humidity when the Zero was set.
Distance to Chronograph – The distance from the muzzle of the firearm to the chronograph used for muzzle velocity measurements. If the muzzle velocity is estimated, leave the 000 for this value.
Muzzle Velocity – The velocity of the bullet as either (1) measured at some distance from the muzzle or (2) as estimated from reloading data in FPS, MPH or MPS. The RIANOV™ SOLO unit can correct for the distance to chronograph. (The velocity lost traveling to the chronograph.)
Chronograph – A device used to measure the velocity of a bullet.

Table 7.2

	Default Units	Optional Units/Settings							
Barometric Pressure	HG	MB	KP						
Barrel Twist Direction	RT (RIGHT)	LT (LEFT)							
Barrel Twist Rate	IN/TWIST	CM/TWIST							
Bearing	° (Degrees)								
Bullet Caliber	IN	CM	MM						
Bullet Length	IN	CM	MM						
Bullet Weight	GR	GM							
CANT	° (Degrees)								
Clicks - Elevation	CK / MA	CK / ML	CK / PH						
Clicks - Windage	CK / MA	CK / ML	CK / PH						
Distance to Chronograph	FT	Y	M						
Drag Function	G1	G2	G5	G6	G7	G8	GI	GL	RA
Drop	MA (MOA)	ML (MIL)	CK	IN	PH	RV			
Elevation Adjustment	MA (MOA)	ML (MIL)	CK	IN	PH	RV			
Humidity	1-30%	30-40%	40-60%	60-70%	70-99%				
Latitude	° (Degrees)								
Latitude Magnitude	N	S							
Muzzle Velocity	FS	MS	MH						
Muzzle Velocity Correction	FF	FC	MF	MC					
Range	Y	M							
Reticle Type	ML (Milliradians)	MA (MOA)	PH	RV					
Scope Height	IN	CM							
Scope Offset	IN	CM							
Size of Target (SoT)	IN	FT	Y	CM	M				
Slope	° (Degrees)								
Temperature	°F	°C							
Wind Speed	MH	FS	MS						
Zero Range	Y	M							
Zero Barometric Pressure	HG	MBAR	KPA						
Zero Temperature	°F	°C							

Changing Numerical Values

To change numeric values on any screen (except the HOME Screen) on your RIANOV™ SOLO unit, navigate to the field you want to change and P/R the POWER Button. Use the Up Arrow Button or Down Arrow Button to change the value. When you have reached the desired numeric value in one place and you want to move to a different place, press the Right Arrow button or Left Arrow Button until you reach the desired place. Complete these steps until all places have the desired values. P/R the POWER Button to exit editing in this field. Depending on the field changed, this may initiate a recalculation of the Range and Ballistic solution.

Ballistics Calculations

The RIANOV™ SOLO unit has an internal Ballistics Calculator, utilizing on the JBM Ballistics solver, for the determination of a ballistics solutions based on rifle, scope and ammunition parameters entered and selected by the user. If you are in need of certain parameters to complete the required fields for the RIANOV™ SOLO unit, specifically ammunition parameters (including bullet length), review the information at www.jbmballistics.com for your selected ammunition type. There is a large library of bullet types to select from and all required information is available there.
The program will run, and display the ballistic solution, when the minimum fields are completed. A ballistic solution will be displayed solely from calculated values from the user entries. The user assumes all risk for the data entered.

Additionally, with a few onetime data entries, your ballistic solution will include the effects of Spin Drift, the aerodynamic impact of a spin stabilized projectile and Aerodynamic Jump, the impact to elevation adjustment due to a cross wind. And for long range shots that need that extra bit of accuracy, correction for Coriolis Effects (Horizontal and Vertical) can be added by inputting two simple data points on the Environment Screen.

The RIANOV™ SOLO unit offers you the levels of data input needed to give you the confidence that your Ballistic Solution is as accurate as you need it to be and calculates to higher precision with the addition of the optional variable inputs.

The RIANOV™ SOLO unit requires the following data fields to be completed in order to generate a ballistic solution:

WEAPON Screen:

Twist Rate – Barrel Twist Rate
Twist Dir – Barrel Twist Direction
Caliber
BC – Ballistic Coefficient
Drag Function
Weight – Bullet Weight
Length – Bullet Length
Reticle – Reticle Type
SCPHeight – Scope Height
SCPOffset – Scope Offset
Elev
Wind
Muz Vel – Muzzle Velocity
MV Corr – Muzzle Velocity Correction Factor (the muzzle velocity temperature correction factor for your ammunition)
Distance to Chronograph
Elev Add
Range – Zero Range
Temp – Zero Temperature
BP – Zero Barometric Pressure
Humd – Zero Humidity
Bearing – Zero Bearing (the direction your rifle was pointed when you zeroed)
Latitude – Zero Latitude (your position north or south of the equator when you zeroed)

ENVIRONMENT Screen:

Humidity – Current Humidity
Latitude – Current Latitude (the position north or south of the equator)
Bearing – Current Bearing (the direction your rifle is pointed)

RATIO Screen:

RNG MAG – Ranging Magnification