

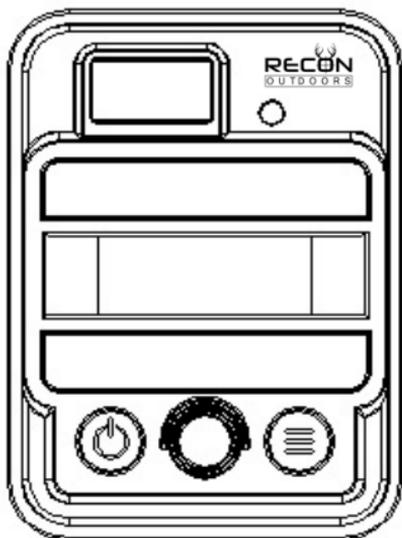


HS Series 100

User's Manual



HS100 Series Camera Instructions



1.1 Introduction

Congratulations on choosing one of the most rugged and value packed cameras on the market today. Recon Outdoors is known for being one of the pioneers in the infra-red digital camera industry. Over the years we have provided thousands of our customers with outstanding field cameras and personalized customer service to match.

In a continuing tradition Recon Outdoors has developed the new HS100 series cameras to provide you with years of service. These are cameras capable of capturing digital photos in some of the worst weather environments possible. This 8 megapixel, high-definition digital camera has been engineered based on feedback and requirements from our customers. We hope you will find this camera a useful tool in many applications from scouting wild game to surveillance and security monitoring applications.

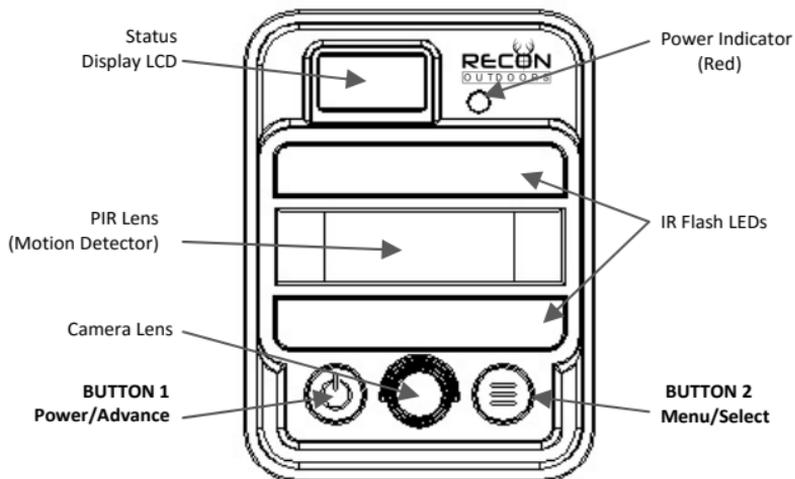
1.2 Uses For Your New Digital Camera

Not only is your HS Series digital camera an ideal product for scouting wild game, it is also useful for security and surveillance. It has one of the smallest package sizes on the market and the dark camouflage appearance helps keep it hidden. There are several convenient methods to mount it. The image capturing capabilities include taking photographs using PIR movement sensing, manual exposure, time lapse and video capture.

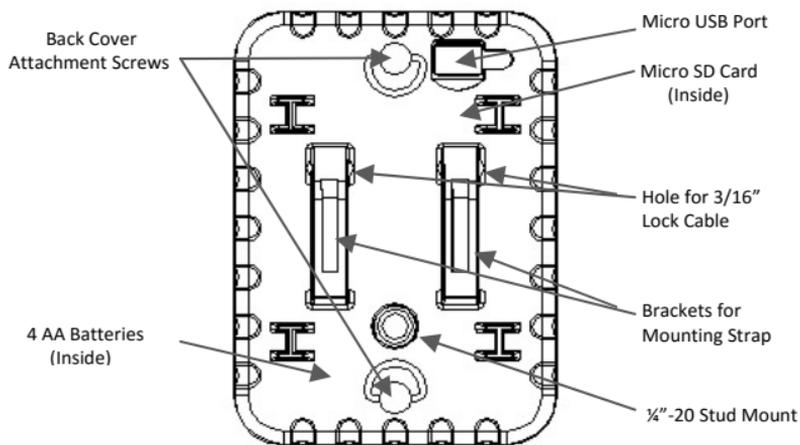
1.3 Key Features

1. An impressive quick trigger time: 0.8 - 1.0 second
2. Selectable picture resolution 2, 5 or 8 Megapixel
3. Adjustable PIR (motion) sensitivity
4. Burst, multi-capture picture option (up to 7 pictures per trigger)
5. Color pictures during day; black and white at night
6. Adjustable time delay between trigger events
7. Cold temperature operation, down to -28°C [-20°F] with high operation up to 60°C [140°F]
8. Time Lapse for automatically taking pictures/videos
9. Operation Schedule to automatically pre-set on/off by time of day
10. Time Stamp of custom user defined label, date, time, temperature and moon phase on every picture enables identification of photo history
11. Micro USB connection to a PC for reviewing and transferring pictures
12. Mounting options of using a strap, 3/16" locking cable, or ¼-20 camera stud mount

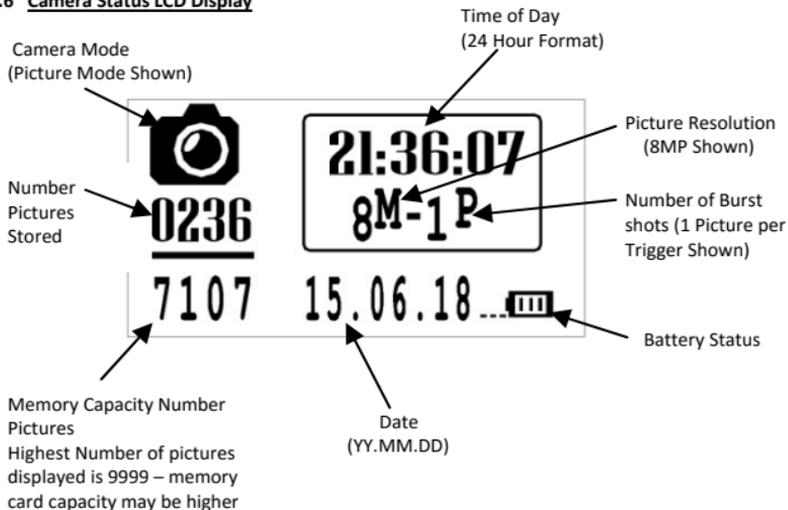
2.1 Camera Layout - Front



2.2 Camera Layout - Back



1.6 Camera Status LCD Display



3.1 Set Up Guide

1) **Install Batteries**

Remove back cover by unscrewing the attachment screws. Install 4 AA Batteries according to the marking in the bottom of each pocket.

2) **Turning Power ON**

Press and hold Power/Advance Button 5 seconds until red indicator starts flashing slowly on the front of the camera. When the LED stops blinking the camera is in picture capture mode with the factory default settings.

3) **Turning Power OFF**

Press and hold Power/Advance Button until red indicator starts flashing fast on the front of the camera (about 5 seconds). Note: If camera is busy and the LED does not flash, release the Button and press again.

4) **Opening Menu and Navigation**

A. With the camera powered on, press Button 2 (Menu/Select Button) to open status screen. With the status screen showing on the LCD, press Button 2 again to enter menu/setup mode.

B. Make desired changes to camera settings. See sections 4.1 and 4.2 below.

Always navigate the settings menu by pressing the 2 buttons:

Button 1 will move to the next menu screen or menu item.

It will also increase the value in input screens

Button 2 will select highlighted item screen. Then it is used to select the setting and exit to the higher menu.

C. Always advance to "Exit" screen with Button 1 then select it with Button 2 to exit the features menu. NOTE: The camera will automatically go into picture capture mode after 1 minute of inactivity while in the features menu.

5) **To Remove MicroSD Memory Card (Card is installed at factory)**

Remove back cover by unscrewing the attachment screws. Next, remove the MicroSD memory card by gently pushing it inward until it releases and pops out. To install slide it into the slot with the **gold contacts facing up** and press it in until the card latches in place.

3.2 Accessing and viewing Pictures

USB Cable

With the camera on and the status screen showing, plug the micro USB cable into the micro USB port in the back of the camera. Then plug the other end into a USB port on a PC computer. The DC/PC screen will appear on the status LCD display as shown below. The DC setting is for running the camera on an external 5 Volt USB DC source.



Use button 1 to move selection to "PC". Then use button 2 to select. When a PC connection is made, a window will appear on the PC monitor that displays the main DCIM camera folder. Captured pictures and video will be in a media sub-folder under the DCIM folder.

Card Removal

The microSD card may also be removed and accessed in any standard card reader or PC slot.

4.1 Top Level Menus 1-7 to 7-7



Camera Name ID



Picture Mode



Video Mode



Picture and Video Mode



Feature Settings



Picture delete and
memory card format

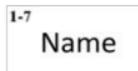


Exit setup menu

4.2 Menu Guide

1-7 Camera Name ID

The camera Name or ID will be shown in the picture stamp.
At the Camera Name screen press Button 2, then press Button 1 to turn Camera name ID on and off. When "ON" is selected a 4 alpha-numeric character can be entered.



2-7 to 4-7 Camera Tri-Function Mode Select



Press Button 2 to select picture only mode
NOTE: "OK" in lower right indicates camera is in this mode.
Menu 2-7, Picture Only, is shown as being selected.



Press Button 2 to select video only mode
NOTE: "OK" in lower right indicates camera is in this mode.



Press Button 2 to select picture and video mode
NOTE: "OK" in lower right indicates camera is in this mode.

5-7 Feature Settings

There are 13 set up feature options numbered 1-13 to 13-13.



Press Button 2 then press Button 1 to move through the feature menu options.

1-13 Picture Options There are 3 picture option menus numbered 1-3 to 3-3.



Press Button 2 then press Button 1 to move through picture options

2-13 Video Options



Press Button 2 then press Button 1 to move through video setting options



Picture Resolution (Default is 2MP)

Press Button 2 to enter. Then press Button 1 to select a picture resolution of 2MP, 5MP or 8MP. Button 2 again to select time and exit.



Burst Mode (multiple pictures when triggered) (Default is 1 picture – 1P)

Press Button 2 to enter. Then press Button 1 to select 1 to 7 pictures at each trigger event. Press Button 2 to exit.



Exit

Press Button 2 to exit up to Features Menu.



Video Resolution (Default is 640 x 480)

Press Button 2 to enter. Then press Button 1 to select 1280x720, 640x480, or 320x240. Press Button 2 again to select and exit.



Video Length (Default length is 05 seconds)

Press Button 2 to enter. Then press Button 1 to increment the length of video taken from 5 seconds to 1 minute in time. Press Button 2 again to select time and exit.



Video Speed (Default is 30 Frames Per Second)

Press Button 2 to enter
Then press Button 1 to select 30 frames per second (FPS) or 15 frames per second.
Press Button 2 again to select time and exit.



Video Frequency (Default is 60Hz)

Press Button 2 to enter
Then press Button 1 to 50 Hz or 60 Hz for video playback. NOTE: North American standard is 60Hz. Press Button 2 again to select frequency and exit.



Video Sound (Default is ON)

Press Button 2 to enter
Then press Button 1 to select ON or OFF for video sound. Press Button 2 again to select and exit.



Exit

Press Button 2 to exit up to Features Menu.

3-13 Operation Schedule (Default is OFF)



Press Button 2 to enter then press Button 1 to select ON or OFF. When ON is selected Button 2 will enter the time entry screen. Use Button 1 to set the hours, minutes and seconds that is desired for turning the camera operation on and off. Button 2 will save and exit to the Features Menu.

4-13 Time Lapse Setting (Default is OFF)



Press Button 2 to enter then press Button 1 to select ON or OFF. When ON is selected Button 2 will enter the time entry screen. Use Button 1 to set the hours, minutes and seconds that is desired for automatically taking pictures. Button 2 will save and exit to the Features Menu.

5-13 Trigger Delay (Default is OFF)



Press Button 2 to enter then press Button 1 to select ON or OFF. When ON is selected Button 2 will enter the time entry screen. Use Button 1 to set the hours, minutes and seconds that is desired for the delay between pictures. Button 2 will save and exit to the Features Menu.

6-13 Picture Stamp (Default is ON)



Press Button 2 to enter then press Button 1 to select ON or OFF. When ON is selected the Name of the camera (if entered per 1-7 above), battery condition, moon phase, temperature, date, and time will appear at the bottom of each picture. Button 2 will save and exit to the Features Menu.

7-13 Surveillance Mode (Default is OFF)



Press Button 2 to enter then press Button 1 to select ON or OFF. When ON is selected the oldest picture will be deleted from a full memory card. This allows the latest picture to be stored for maintaining surveillance. Button 2 will save and exit to the Features Menu.

8-13 Camera Button Sound (Default is ON)



Press Button 2 to enter then press Button 1 to select ON or OFF. When ON is selected there will be an audio beep when a button on the camera is pressed. Button 2 will save and exit to the Features Menu.

9-13 PIR - Motion Sensitivity (Default is HIGH)



Press Button 2 to enter then press Button 1 to select High, Normal or Low for the motion sensitivity of the camera. Button 2 will save and exit to the Features Menu.

10-13 Date and Time Setting (Default is not set)



Press Button 2 to enter then press Button 1 to increment the Month, Day, Year, Hour and Minute values for the date and time. Button 2 saves value and moves to the next field and exits to the Features Menu.

11-13 Camera Password (Default is OFF)



Press Button 2 to enter then press Button 1 to turn Camera password on and off. When camera is "ON" press MENU button to enter 6 character password.

12-13 Default Settings



Press Button 2 to enter then press Button 1 to "YES" to reset the camera to its factory default settings

13-13 Features Menu Exit



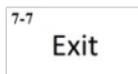
Exit
Press Button 2 to exit up to Main Menu.

6-7 Delete and Format



Press Button 2 to enter then press Button 1 to chose option to delete the latest picture, all pictures or reformat to reset the entire MicroSD Card.

7-7 Top Menu Exit



Exit
Press Button 2 to exit and return to status screen.

5.0 Operation Tips & Guidelines

- 1) Always make certain the sealing surface and the seal are clean around the camera front lid. Clean with a soft cloth, dampened with soap and water if necessary.
- 2) Never store the camera with batteries in the battery tray. Batteries can corrode and leak over time destroying the camera.
- 3) Make sure the lens is clean and free of dirt and debris. Clean with a soft cloth or cotton tip dampened with mild detergent.
- 4) Insert the SD memory card while camera is off. Be certain to insert the SD memory card correctly. Do not force the card into its slot. Push in until it catches into place. Push again to make it pop out for removal.
- 5) Don't insert or pull out the SD Memory card, batteries, or power adapter plug when the camera is on.

NOTICE: Most repairs are associated with items 1 and 2 above.

Always check the sealing surfaces when setting camera out in the weather.

And never store the camera with batteries installed.

- 6) Always face camera away from the sun. This prevents silhouetted or dark objects in the pictures.
- 7) Always mount the camera at least 3 to 5 feet above the ground pointing to the anticipated height of the targets.
- 8) Optimum trigger distance is 20-25 feet. Place camera in a location where traffic area is at this distance.
- 9) Avoid having repetitive waving or moving objects in the PIR movement detection area, such as traffic, tree branches, wave action, or swinging objects. These will create "false triggers" as the motion of these inanimate objects causes the camera to capture pictures with no field subject.
- 10) Don't have heat generating devices within the detection zone of the camera. Examples of these can be automobile traffic, air conditioner or exhaust vents.
- 11) For surveillance applications mount the camera high, above head level to avoid detection of the device.
- 12) Motion sensitivity should be set to "HIGH" for best results in warmer weather.
- 13) Night flash pictures that use the IR LEDs will be optimized with the Image Size set to 2MP (2 megapixel).

6.0 IR Flash Technology

Recon Outdoors provides camera models using two different types of infra-red flash.

The HS110 Dark IR Flash produces light at a 940nm wavelength. This is virtually invisible to the human eye making the HS110 ideal for covert surveillance applications. The subjects will not be aware of the camera operation and placement. The 940nm flash provides a flash range of 35 feet or less. The Dark IR Flash cameras may be used for all applications, but the setup should have the subject at 25 feet or less distance from the camera for best results.

The HS120 Extended IR Flash camera uses flash sources providing 850nm of light. The LEDs emit a low pinkish glow when activated. The low glow has been found not to spook wild game. And because of its efficiency the flash range is much longer at up to 90 feet. This makes the HS120 ideal for scouting wild game and applications where a deeper flash field is desired.

7.0 Troubleshooting

IF CAMERA DOES NOT POWER UP

- Check batteries, make sure they are installed and seated correctly.
- Check that batteries are inserted in the right direction (polarity).
- Make sure batteries are new and have a full charge.
- If camera was busy or in the middle of an operation, the start process may need to be repeated.

IF PICTURES ARE NOT CLEAR

- Check lens, make sure it is clean. Clean with soft cloth, or cotton tip, and mild detergent.

NIGHT PICTURES ARE BLACK WITH NO SUBJECT

- Subjects may be triggering camera outside of flash range. Set PIR sensitivity to normal or low setting. Make certain subject distance is 25 feet or less.

IF NOT STORING PICTURES / SD CARD

- Make certain the MicroSD memory card is not full.
- Make certain the MicroSD memory card is installed correctly in camera.
- Verify the camera recognizes the card and that the card capacity (picture count) shows in the lower left LCD screen.
- If card capacity or picture count does not show, format or replace the card.

NUMBER OF PICTURES TAKEN IS LOW

- The PIR sensitivity may be set too low. Change sensor level to "HIGH".

Typical SD Card Storage Capacity Chart

SD Card Size	2 GB	8 GB	16 GB	32 GB
Image Size	Number of Pictures			
2MP	4,500	18,000	36,000	72,000
5 MP	2,900	11,600	23,200	46,400
8 MP	875	3,550	7,150	14,300
Video Size	Video Time			
720P (HD)	18min	1hr 16min	2hr 31min	5hr
640x480	50min	3hr 27min	6hr 52min	14hr
320x160	2hr 23min	9hr 49min	19hr 30min	40hr

8.0 Limited Warranty

Pentar, LLC (“Recon Outdoors”) warrants to the original retail purchaser that product(s) made by Recon Outdoors and related Recon Outdoors accessories (individually a “Product” and collectively the “Products”) that were purchased directly from Recon Outdoors or an authorized distributor will be free from defects in materials and workmanship under normal use and service for the time periods and terms set below. If any Product proves to be defective, the customer must return the defective Product to the address listed below, following the procedure set forth below. However, it is recommended that the customer first call Recon Outdoors’ Consumer Support Department at 1-866-647-3266, to attempt to determine the nature of the problem. Recon Outdoors, at its sole discretion, will repair, replace, or adjust the defective Product, provided that Recon Outdoors investigation and factory inspection disclose that (a) such defect developed under normal and proper use and (b) the Product is covered under this limited warranty. Repair, replacement, or adjustment of defective Products shall be Recon Outdoors’ sole obligation and the customer’s sole remedy hereunder. The customer shall pay for shipment of the Products to the Recon Outdoors Service Center. When service is completed, the Product will be returned to you via ground service freight prepaid. Recon Outdoors shall not be obligated to perform preventive maintenance, installation, de-installation, upgrades, or maintenance. Recon Outdoors reserves the right to (i) use reconditioned, refurbished, and/or serviceable used parts for warranty or any other repairs and (ii) make any internal or external design and/or feature changes on or to its products without any liability to incorporate such changes on or to the Products.

Excluded from this limited warranty and not warranted by Recon Outdoors in any fashion, either express, implied, or by statute, are:

- (a) products and accessories not manufactured by Recon Outdoors and/or not bearing the “RECON OUTDOORS” brand label (the warranty coverage for products and accessories of other manufacturers, which may be distributed by Recon Outdoors, is the responsibility of the manufacturers of such products and accessories in accordance with the terms and duration of such manufacturers’ warranties);
- (b) any Product which has been disassembled, repaired, tampered with, altered, changed, or modified by persons other than Recon Outdoors’s own authorized service personnel unless repair by others is made with the written consent of Recon Outdoors;
- (c) defects or damage to the Products resulting from wild animals, wear, tear, misuse, abuse, negligence, modification, accident, dirt, sand, liquids, impact, excessive heat, improper storage, improper installation, non-performance of scheduled operator and maintenance items, battery leakage, or use of non-“RECON OUTDOORS” brand accessories, consumables, or supplies;
- (d) supplies and consumables (including but not limited to batteries and memory cards); and/or
- (e) Products which do not contain a validly placed and recorded Recon Outdoors serial number.

Terms: Up to 1 year Limited Warranty when product is registered online at www.reconoutdoors.com and original sales receipt or proof of purchase is presented with returns per service returns procedure below.

EXCEPT FOR THE LIMITED WARRANTY SET FORTH ABOVE, RECON OUTDOORS MAKES NO, AND DISCLAIMS, ALL OTHER REPRESENTATIONS, GUARANTEES, CONDITIONS, AND WARRANTIES CONCERNING THE PRODUCTS, WHETHER DIRECT OR INDIRECT, EXPRESS OR IMPLIED, OR ARISING UNDER ANY STATUTE, ORDINANCE, COMMERCIAL USAGE OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OR REPRESENTATION AS TO THE SUITABILITY, DURABILITY, DESIGN, OPERATION, OR CONDITION OF THE PRODUCTS (OR ANY PART THEREOF) OR THE MERCHANTABILITY OF THE PRODUCTS OR THEIR FITNESS FOR A PARTICULAR PURPOSE, OR RELATING TO THE INFRINGEMENT OF ANY PATENT, COPYRIGHT, OR OTHER PROPRIETARY RIGHT USED OR INCLUDED THEREIN. IF ANY IMPLIED WARRANTIES APPLY AS A MATTER OF LAW, THEY ARE LIMITED IN DURATION TO THE LENGTH OF THIS LIMITED WARRANTY. SOME STATES MAY NOT RECOGNIZE A DISCLAIMER OR LIMITATION OF WARRANTIES AND/OR LIMITATION OF LIABILITY SO THE ABOVE DISCLAIMERS AND EXCLUSIONS MAY NOT APPLY. THE CUSTOMER MAY ALSO HAVE DIFFERENT AND/OR ADDITIONAL RIGHTS AND REMEDIES THAT VARY FROM STATE TO STATE.

THE CUSTOMER ACKNOWLEDGES AND AGREES THAT RECON OUTDOORS SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES THAT THE CUSTOMER MAY INCUR FROM DELAYED SHIPMENT, PRODUCT FAILURE, PRODUCT DESIGN, SELECTION, OR PRODUCTION OR FROM ANY OTHER CAUSE, WHETHER LIABILITY IS ASSERTED IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY) OR OTHERWISE. IN NO EVENT SHALL RECON OUTDOORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND (INCLUDING WITHOUT LIMITATION LOSS OF PROFITS OR LOSS OF USE), WHETHER OR NOT RECON OUTDOORS SHALL BE OR SHOULD BE AWARE OF THE POSSIBILITY OF SUCH POTENTIAL LOSS OR DAMAGE.

Representations and warranties made by any person, including but not limited to dealers, representatives, salespersons, or agents of Recon Outdoors, which are inconsistent or in conflict with or in addition to the terms of this limited warranty, shall not be binding upon Recon Outdoors unless reduced to writing and approved by an expressly authorized officer of Recon Outdoors.

This limited warranty is the complete and exclusive statement of warranty which Recon Outdoors agrees to provide with respect to the Products and it shall supersede all prior and contemporaneous oral or written agreements, understandings, proposals, and communications pertaining to the subject matter hereof. This limited warranty is exclusively for the benefit of the original customer and cannot be transferred or assigned.

9.0 Service and Returns

When eligible service is needed, package the Product carefully using ample padding material to prevent damage in transit and ship it postage prepaid and insured to the Recon Outdoors Service Center at:

Recon Outdoors
Attention: Camera Service Center
2102-A West Ferry Way, SW
Huntsville, Alabama 35801

When returning Products for service, your package must include the following:

1. Original sales receipt showing date and place of purchase.
This will be required for in-warranty service.
2. A detailed description of the problem.
3. A contact name, telephone number and email address.
4. Owner's name and street address where repaired camera is to be shipped.