

Proshot Dual Multi-shot surveying



USER MANUAL CTPS200

This user manual explains how to use, configure and maintain the Proshot downhole surveying system. Please read and ensure you understand these guidelines before using the product.

Disclaimer

While every effort has been made to ensure that the information contained in the guide is accurate and complete, no liability can be accepted for any errors or omissions. Camteq reserves the right to change the specifications of the hardware and software described herein at any time without prior notice.

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Camteq make no warranties for damages resulting from corrupted or lost data due to mistaken operation or malfunction of the Proshot system.

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Introduction

Congratulations! You are using the latest in digital survey instrumentation for down-hole exploration.

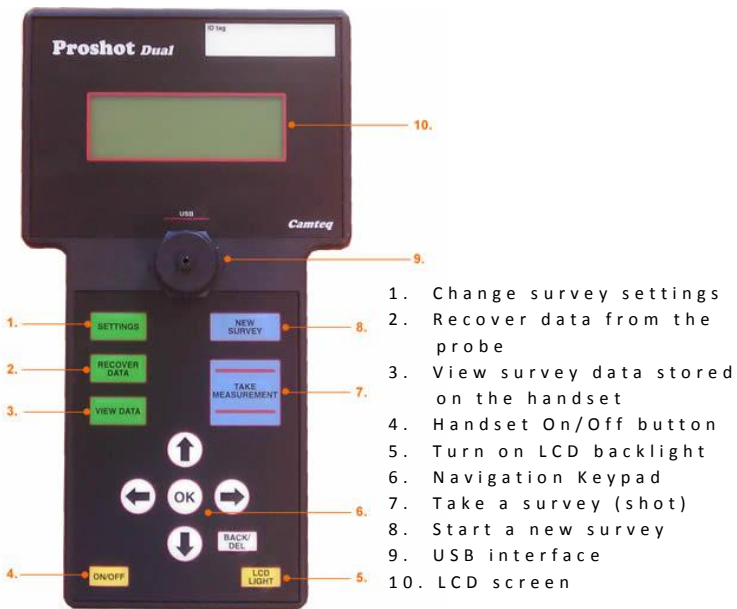
This user guide provides all the information you will need to use and care for your product.

Proshot System

The Proshot handset provides wireless connectivity to the CTPS200 Proshot camera probe. You can configure survey options, start a down-hole survey and download survey data effortlessly.

Handset

The Proshot handset layout and key button functions are shown below.

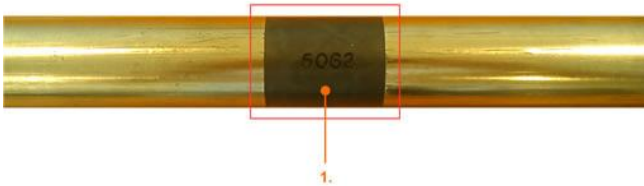


Proshot probe

The Proshot probe is assembled as a single unit with two brass sleeves attached to a black centre piece (the communications window). The centre piece has the probe serial number (also referred to as the pairing number) engraved into it.

The communications window enables the probe to communicate to the handset using wireless technology.

Please ensure the communications window is clearly visible when initiating a survey or downloading survey data (i.e. not covered or underground).



1. Wireless communications window with engraved serial number.

Menu Options

Probe Pairing

The Proshot probe can be used with any Proshot handset by following the pairing process. To pair a handset to a probe, please follow these steps:

1. Press the <Settings> button.
2. Select “Probe pairing” from the menu.
3. Select “Manual SN entry”.
4. Enter the probe pairing number. The probe pairing/serial number can be found engraved into the black centre piece.
5. Press <OK>.
6. On successful pairing the display will show “Probe pairing successful”.

The handset is now paired to the probe and can be used to conduct down-hole surveys. If you receive an error message while pairing, please go to the “No Response message” section at the back of this user manual.

If you receive a probe “Not Activated” message while pairing, please see the section on [Probe Activation](#) for details on how to activate your probe.

Survey Options

The Proshot system provides a number of options to customise your down-hole surveys. These options can be configured in the “Survey options” menu.

Survey options include:

- **Default name:** *Change the default name of each survey to enable easy identification and to save manual entry at the beginning of each new survey.*
- **Start depth:** *Set the default start depth for each survey.*
- **Depth Interval:** *Set the default depth interval for each survey shot.*
- **Direction of survey:** *Select direction of the survey, either into the hole or out of the hole.*
- **Depth m-survey:** *Enable multiple shots at a single survey depth.*
- **Operator Info:** *Enter in your company name and the operator name. This information will appear in the uploaded data.*

To reset the survey options back to factory defaults select “Factory reset”. This will **not** erase any survey data stored on the handset.

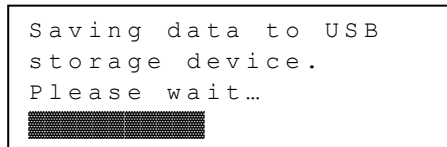
Upload to USB

The Proshot system supports the uploading of survey to a USB storage device. Survey data is saved in standard CSV (comma delimited file) format allowing viewing using software such as Microsoft® Excel®.

To save survey data to a USB key, please follow these steps:

1. Press the <Settings> button.
2. Select “Upload to USB” from the menu.
3. Insert USB storage device into USB port on front panel of the handset.
4. Survey data will now be saved to the USB storage device.

The following screen will be displayed:



Please note: *Do not remove the USB device from the USB interface until the handset is finished uploading data.*

Zero Roll Adjust

The Proshot probe can be zeroed to any roll angle. To zero the Proshot probe, please follow these steps:

1. Press the <Settings> button.
2. Select “Zero Roll Adjust” from the menu.
3. Rotate the probe to the intended zero roll position.
4. Press <OK> to perform a zero roll adjustment. The probes ROLL will now read zero at the current position.

Please note: *The communication range between probe and handset is typically up to 1.5 metres (depending on usage environment). Please ensure the probe and handset are within this range whenever configuring the system or starting / stopping surveys.*

System Options

Date and Time

To set the date and time of the Proshot system, please follow these steps:

1. Press the <Settings> button.
2. Select “System” from the menu.
3. Then select “Date and Time” from the menu.
4. Set the date and time using the <Arrow> keys, press the up and down keys to increase/decrease, press the left and right keys to select the fields you wish to edit.
5. Press <OK> when you have finished.

The following screen will be displayed:

```
Set Date and Time
dd mm yy  hh mm ss
03 / 01 / 00  20 : 46 : 52
```

Information

To view the current software version of the handset or probe, please follow these steps.

1. Press the <Settings> button.
2. Select “System” from the menu.
3. Then select “Information” from the menu.
4. Select “Handset Info” or “Probe Info”.

The following screen will be displayed:

```
Handset Info
SW version 4.4.1.0
23/01/2010 09:59:31
SN:201023220
```

Set Password (Data protection)

To protect survey data stored in the handset from accidental erasure you can set a data protection password.

To set or change a password, please follow these steps:

1. Press the <Settings> button.
2. Select "System" from the menu.
3. Then select "Set Password" from the menu.
4. Enter your password and press <OK>.

Data protection is now enabled.

To disable data protection, simply repeat the above steps and type **0000** as the password (default value).

Reset Password (Data protection)

In the event that you are unable to recall the data protection PIN, please follow these steps:

1. Press the <Settings> button.
2. Select "System" from the menu.
3. Then select "Reset password" from the menu.
4. The handset will ask you to enter in a master PIN to reset the password, please contact customer support to receive

the master PIN. You will need to provide the CODE number displayed on the handset.

Erase Data

The Proshot handset stores survey data in memory for viewing or downloading to a USB storage device. Even after downloading data to a USB storage device the survey data remains on the handset as a backup.

To erase stored survey data, please follow these steps:

1. Press the <Settings> button.
2. Select "System" from the menu.
3. Then select "Erase Data" from the menu.
4. If a data protection code as been set the handset will display "Please enter PIN to erase survey data:" enter in the correct PIN to proceed.
5. The handset will display the following warning message "Are you sure? All survey data will be erased."
6. Press <OK> to erase the survey data or <BACK> to cancel.

Please note: *Erasing survey data will not modify any of your custom survey settings.*

Battery Level

To check the battery level of the handset, please follow these steps:

1. Press the <Settings> button.
2. Select "System" from the menu.
3. Then select "Battery Level" from the menu.
4. Battery level will be displayed for the selected device.

The following screens will be displayed:

```
Handset battery  
remaining: 100%
```

```
Probe battery  
remaining: 100%
```

Starting a new survey

To start a new survey simply press the <New Survey> button on the handset and follow the on-screen instructions.

After pressing <New Survey>, please follow these steps:

1. Type in Hole ID: Type in the unique name of this survey.
2. Press <OK> to initiate the survey.
3. Press <Take Measurement> each time you wish to take a shot. Ensure that the probe is stationary while a shot is being taken. If the probe is not completely still, the reliability and accuracy of the survey data will be affected.

If you receive the message “Probe outside operating temperature” while initiating a survey, please allow the probe to return to the correct operating temperature for maximum accuracy before reinitiating the survey.

```
To take shot press  
TAKE MEASUREMENT  
To stop survey  
Press RECOVER DATA
```

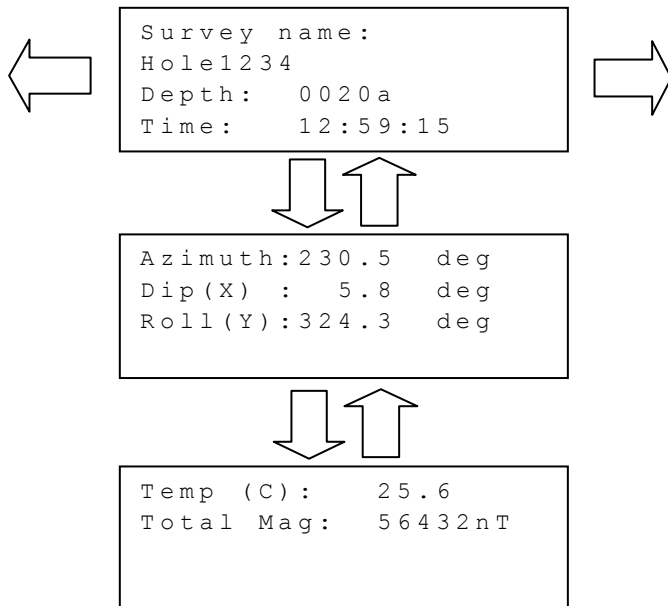
When the survey has been completed pull the probe out of the hole and press <Recover Data>. The handset will now download survey data from the probe ready for viewing.

Please note: *The communication range between probe and handset is typically up to 1.5 metres (depending on usage environment). Please ensure the probe and handset are within this range whenever configuring the system or starting / stopping surveys.*

Viewing Survey data

To view survey data press the <View Data> key and scroll through the survey shots using the arrow keys.

The following screens will be displayed as you press the <Up> and <Down> keys to view survey data:



Press the <Left> and <Right> keys to scroll through the surveys stored on the handset.

Data Format

Survey data can be downloaded to a USB storage device for further analysis.

The data is stored in CSV format and can be imported into any spreadsheet software for analysis. The below table is an example of the data layout when imported into a spreadsheet.

Probe SN	Name	Depth	Date	Time	DIntegrity	Azimuth	Dip	Roll	TotMag	Temp
5031	Hole1	0a	17/09/09	9:42:30		116.9	49.2	6.8	59,835.4	21.1
5031	Hole1	30a	17/09/09	9:42:58	D* !	117.2	46.5	276.8	59,857.1	21.2
5031	Hole1	60a	17/09/09	9:43:28		117.4	49.3	179.9	59,786.0	21.3

Table: Data format

The file naming format is: Camteq_Data_<yyyymmdd>_<n>.csv

Analysis

The Proshot system analyses all survey data and identifies data which may be inaccurate due to incorrect use or environmental factors. Analysis is shown on the handset and is also present in the uploaded survey data.

- An asterisk * next to the data indicates that the data point lies outside the expected survey range based on a large change in TotMag, Azimuth or DIP.
- An exclamation mark ! next to the data indicates that the probe may have been moving during the survey shot.
- A hash # indicates that the Proshot probe was not within its operating temperature when the survey shot was conducted.

Other Information

Handset Backlight

During times of low visibility press the <LCD Light> button to illuminate the handset screen. The screen will illuminate for 5 seconds each time the button is pressed.

Handset Auto-Off

The handset automatically turns-off the screen after 2 minutes of inactivity. This does not affect the survey.

Press the <ON/OFF> button to turn-on the screen and resume normal operation.

Probe Activation

The Proshot probe may require activation. If activation is required the following screen will be displayed during pairing:

```
CODE number :  
224-364  
Please input PIN :  
xxx-xxx
```

Please call customer support if this screen is displayed. You will be provided with a PIN which can be used to activate the Proshot probe. You will need to provide the CODE number displayed on the handset.

No Response message

The Proshot system uses wireless technology between the handset and the probe. This enables communication without the need for wires or for the user to disassemble the probe to download survey data.

In some circumstances the handset may not be able to communicate to the probe, when this occurs the following screen is displayed.

```
Unable to connect to  
probe <serial>.  
Press OK to retry or  
BACK to cancel.
```

This may be caused by a number of reasons. If you see this message please review the following checklist and press <OK> to retry:

- Ensure the distance between the handset and the probe is no more than 1.5 meters – move closer to the probe to see if communication resumes.
- Ensure there are no obstacles between the handset and the probe.
- Ensure the communications window is clearly visible (i.e. not covered or underground).
- After performing the above checks, if you're still unable to communicate to the probe please replace the battery pack.

Changing batteries

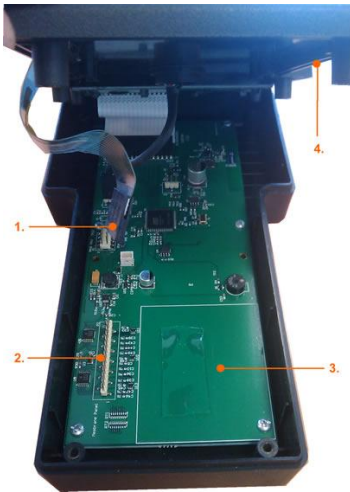
The Proshot has been designed to allow the user to change the handset and probe batteries.

Please note: Batteries must be purchased from Camteq or an approved distributor. The use of unapproved batteries will void the product warranty and may damage the Proshot Dual's internal circuitry.

Handset

To change the handset battery, please follow these steps:

1. Unscrew the six screws.
2. Gently open the handset, disconnecting the keypad cable from the keypad connector.
3. Disconnect the battery.
4. Remove the old battery and replace with the new battery.
5. Connect the keypad cable and fasten screws.



1. Keypad cable
2. Keypad connector
3. Area reserved for battery
4. Gasket seal channel

Please ensure that the battery is secure with little movement and that the gasket seal is in place before fastening screws.

Probe

To change the probe battery, please follow these steps:

1. Unscrew the brass cover from the probe.
2. Loosen the grub screw.
3. Disconnect the existing battery and replace with the newly supplied battery.
4. Fasten the grub screw.
5. Pair to the probe using the handset to ensure the system is working correctly after the battery replacement.
6. Ensure O-rings are in place and fasten brass cover.

Please note: *The probe may require activation after battery replacement. Please see the section on [Probe Activation](#) for details on how to active your probe.*



1. Battery connector
2. Camteq approved battery
3. Wireless Communications window
4. Grub screw

Calibration and Handling

The Proshot camera probe has been calibrated to a high level of precision – please see Specifications for more details.

The Proshot probe is a precision instrument and therefore should be treated with care. Extreme temperatures, heavy impacts, severe vibrations or general rough handling will affect the accuracy of the probe and may cause permanent damage.

It is recommended that the probe be returned for maintenance and recalibration **every 12 months** to ensure the highest precision and reliability possible.

Final Word

Thank-you for choosing the Camteq Proshot camera system.

The Proshot system has been designed for accuracy, ease of use, and low maintenance.

If you have any queries or comments about the Proshot system or wish to learn more about our range of mining instrumentation, please visit our website at www.camteq.com.au.

We hope you enjoy using the Proshot camera system.

The Camteq Team.

Specifications

Proshot Camera Probe	
Part Number	CTPS200 - Standard precision
Operational temperature	-10°C to +70°C (+14°F to +158°F)
Storage temperature	-10°C to +120°C (14°F to +248°F)
Operating time	2 years (depending upon use)
Inclination accuracy	± 0.20 RMS*
Azimuth accuracy	± 0.50 RMS*
Power source	Alkaline battery (Non-rechargeable)
Communication	Wireless ISM 2.4GHz
Communication distance	1.0 – 1.5 meters
Ingress Rating	IP67

**It is recommended that the Proshot Camera is calibrated every 12 months to ensure accuracy is maintained.*

Proshot Handset	
Part Number	CTH100
Operational temperature	0°C to +60°C (+32°F to +140°F)
Storage temperature	-10°C to +120°C (14°F to +248°F)
Operating time	2 years (depending upon use)
Survey Storage	2,000 survey shots
Power source	Alkaline battery (Non-rechargeable)
Communication	Wireless ISM 2.4GHz
Ingress Rating	IP65

NOTE: Specifications subject to change without notice.