



Replacing BCU Components | UTM-00203 | Rev 5

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Herman van der Walt yyyy/mm/dd

APPROVED

TABLE OF CONTENTS

1	USERS OF THIS MANUAL	3
1.1.	End User.....	3
1.1.1.	Requirements	3
1.2.	Training	3
1.3.	Information.....	3
2	BLASTWEB SYSTEM PRODUCT SAFETY	4
2.1.	DetNet Safety Philosophy	4
2.2.	User Safety.....	4
2.3.	Transportation, Storage and Handling.....	4
2.4.	Maintenance Schedule	4
2.5.	Information in case of emergency	4
2.6.	Warning, Caution, and Note Statements.....	5
2.7.	DISCLAIMER	5
2.8.	RF compliance - FCC (USA) and ICES (Canada)	6
2.8.1.	Unauthorised Changes.....	6
2.8.2.	Radio Interference	6
2.8.3.	FCC Class A digital device notice	6
2.8.4.	Labelling Requirements for the Host device.....	6
2.8.5.	CAN ICES-3 (A) / NMB-3 (A)	6
3	REPLACE CONTROL UNIT (UI).....	7
4	REPLACE POWER SUPPLY UNIT	8
5	REPLACE THE BACKUP BATTERY OF POWER SUPPLY UNIT	10
6	EXTRACTING EVENT LOGS FROM BCU	11

1 USERS OF THIS MANUAL

DetNet endeavours to upgrade BlastWeb software annually to comply with new challenges and needs faced by Centralized Blasting users in the market. As new software becomes available, the DetNet version control policy requires that all control equipment be upgraded to ensure support is provided on the latest software version installed on Surface Blast Controllers as deployed on customer sites.



This manual is only to be used for the BlastWeb System and the applicable software version as displayed.

1.1. End User

1.1.1. Requirements

- Only trained personnel, and personnel found competent, are allowed to operate the system.
- Users of the system shall be aware of the recommended procedures for using the BlastWeb BCU System as per manufacturer's recommendations.
- These recommendations do not supersede the method as required by local mine, explosives or statutory regulations/procedures/codes of practise regarding the use of detonators. In such cases, the MOST STRINGENT set of rules between the mine, explosives or local regulations/procedures/codes of practise and the manufacturer must be followed.

1.2. Training

Training and software upgrades shall only be performed by a DetNet SA subject matter expert. Contact the DetNet head office for additional information.



ALL USERS OPERATING THE BCU SYSTEM SHALL HAVE SUCCESSFULLY COMPLETED THE SPECIFIC TRAINING BEFORE PERFORMING ANY WORK WITH THE DEVICE(S).

1.3. Information

Refer to <http://www.detnet.com/> for additional detail and documentation.

2 BLASTWEB SYSTEM PRODUCT SAFETY



ELECTRONIC DETONATORS ARE TOTALLY DIFFERENT TO CONVENTIONAL ELECTRIC DETONATORS AND ABSOLUTELY NO CONNECTION WITH CONVENTIONAL ELECTRIC DETONATORS OR ANY OTHER ELECTRONIC DETONATORS IS POSSIBLE AS IT CAN LEAD TO UNINTENDED INITIATION. ALL USERS OPERATING THE ELECTRONIC INITIATION SYSTEM SHALL HAVE SUCCESSFULLY COMPLETED THE SPECIFIC TRAINING BEFORE PERFORMING ANY WORK WITH THE DEVICE(S). DO NOT USE ANY DEVICES OTHER THAN THOSE SPECIALLY DESIGNED FOR THIS TYPE OF ELECTRONIC DETONATOR.

2.1. DetNet Safety Philosophy

DetNet safety philosophy is to design, manufacture and provide control equipment, detonators and accessories to the highest safety standards.

- SmartKeys remains in possession of the accountable person, and should only be used to authorize the blast process at such a time as stipulated by the Mine after completion of the required Risk Assessment.
- All products must conform to local and international standards before it is sold for use.
- DetNet complies to ISO 9001, SANS 551:2009, CEN/TS 13763-27 which is acceptable to countries we operate in; in countries not subscribing to the above marks, we advise users to engage with DetNet to ensure that all equipment comply to local regulations.

2.2. User Safety

Safety is ensured when the user supplements the product's in-built safety systems through adequate training in the safe use of the product:

- Induction training
- Refresher training

DetNet continuously upgrades software to make our products more user friendly and to ensure that users stay abreast on latest developments, it is important that users get trained on the relevant changes before their equipment is updated.

2.3. Transportation, Storage and Handling

BlastWeb equipment must be transported, stored, handled and used in conformity with all federal, state, provincial and local laws and regulations. Control equipment and accessories should be handled with due care and not dropped, mishandled, subjected to excessive vibration or exposed to any chemical agents. Connectors should be kept clean and the equipment must be kept in a safe environment to avoid misappropriation or misuse.

2.4. Maintenance Schedule

All equipment in the field will need to be returned to DetNet, or its repair centres, for service at the following intervals:

- Handheld Equipment (Tagger, etc.) – 18 Months.
- Other equipment (Excluding accessories) – 24 Months.

2.5. Information in case of emergency

Refer to <http://www.detnet.com/> for additional detail and documentation.

2.6. Warning, Caution, and Note Statements

WARNING, **CAUTION**, and **NOTE** statements are used throughout this manual to emphasise important and critical information. Observe these statements to ensure safety and to prevent product damage. The statements are defined as follows:



A WARNING MEANS THAT INJURY OR DEATH IS POSSIBLE IF THE INSTRUCTIONS ARE NOT OBEYED.

Warnings draw special attention to anything that could injure or kill the reader/user. *Warnings* are generally placed before the step in the procedure they relate to. Warning messages are repeated wherever they apply.



A CAUTION MEANS THAT DAMAGE TO EQUIPMENT IS POSSIBLE.

Cautions draw special attention to anything that could damage equipment or cause the loss of data and will normally describe what could happen if the caution is ignored. *Cautions* are generally placed before the step in the procedure they relate to.



Notes are added to provide additional information.

Notes are used to emphasise important information by visually distinguishing this from the rest of the text. Notes can contain any type of information except safety information, which is always placed in cautions or warnings.

Refer to <http://www.detnet.com/> for additional detail and documentation.

2.7. DISCLAIMER

This document forms part of the User Manual for the BlastWeb System and is considered to be confidential. This document contains restricted information for company and channel partners' application only.

Should any of the restricted information contained in this document be disclosed to any third party either intentionally or unintentionally, DetNet South Africa will not be held responsible, accountable or liable for any resulting event and or issue.

2.8. RF compliance - FCC (USA) and ICES (Canada)

2.8.1. Unauthorised Changes

DetNet South Africa has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

DetNet South Africa *n'approuve aucune modification apportée à l'appareil par l'utilisateur, quelle qu'en soit la nature. Tout changement ou modification peuvent annuler le droit d'utilisation de l'appareil par l'utilisateur.*

2.8.2. Radio Interference

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

2.8.3. FCC Class A digital device notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

2.8.4. Labelling Requirements for the Host device

The host device shall be properly labelled to identify the modules within the host device. The certification label of the module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the FCC ID and IC of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

Contains FCC ID: 2ARNH-0743337A

L'appareil hôte doit être étiqueté comme il faut pour permettre l'identification des modules qui s'y trouvent. L'étiquette de certification du module donné doit être posée sur l'appareil hôte à un endroit bien en vue en tout temps. En l'absence d'étiquette, l'appareil hôte doit porter une étiquette donnant le FCC ID et le IC du module, précédé des mots « Contient un module d'émission », du mot « Contient » ou d'une formulation similaire exprimant le même sens, comme suit:

Contains IC: 24476-0743337A

2.8.5. CAN ICES-3 (A) / NMB-3 (A)

This Class A digital apparatus complies with Canadian ICES-003.

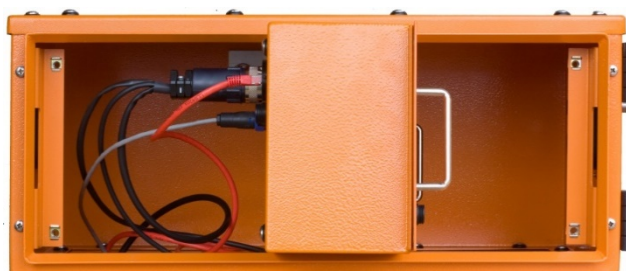
Cet appareil numérique de classe A est conforme à la norme canadienne ICES-003.

3 REPLACE CONTROL UNIT (UI)

- Lock out main power supply of the mine at source
- Switch Power Supply Unit Main Input Switch 'off at BCU'.
- Remove the four M6x20 Screws holding the UI Unit.
- Using the handles on the side of the unit, slowly pull the unit until the faceplate is protruding the outside of the Blast Control Unit.



- Slightly turn the Control Unit by pushing with your right hand and pulling with your left hand, allowing the Control Unit to rest on the support rail and the housing.



Version 3 Hardware and older



Version 4 Hardware and newer

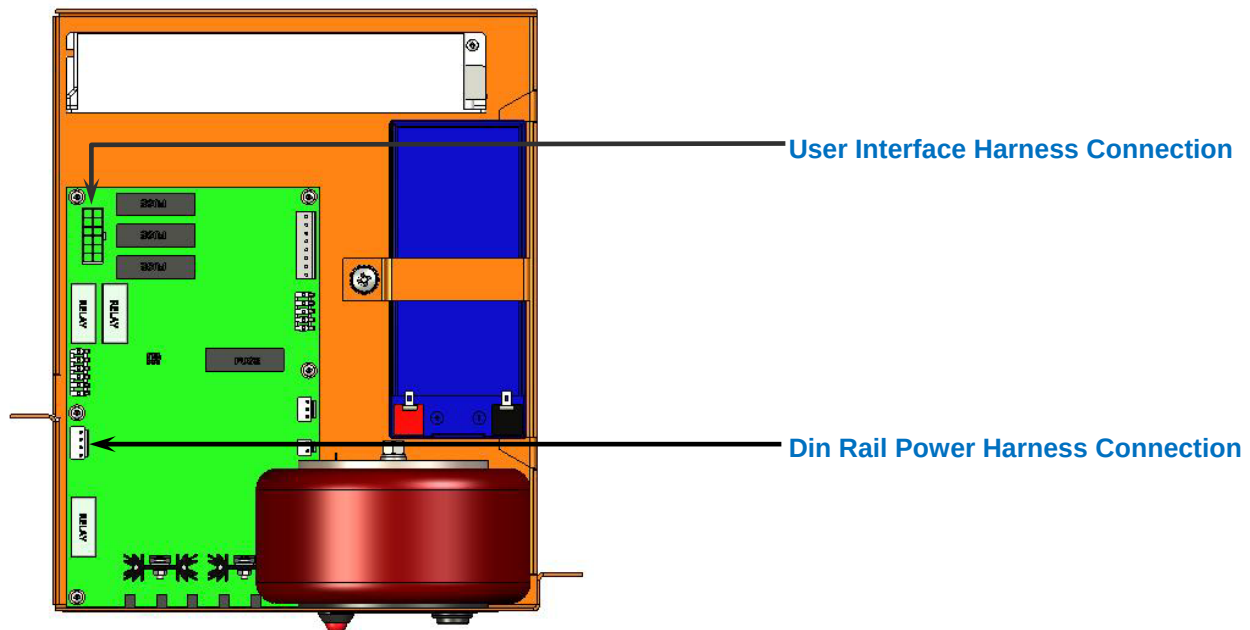
- Disconnect all the cables/harnesses connecting the Control Unit to the rest of the Blast Control Unit.
- Ensure all cables are disconnected before fully removing the unit.
- Insert replacement unit at an angle.
- Connect all cables. All cable connections are unique to each other, thus ensuring that no connections are incorrectly connected.
- DO NOT force any connection.
- Align Control Unit and slide into housing.
- Replace the four Screws
- Lock In by Switch on Main Power Supply at the source
- Switch Blast Control Unit Main Switch "ON".
- Test the Blast Control Unit to ensure it is fully functional.



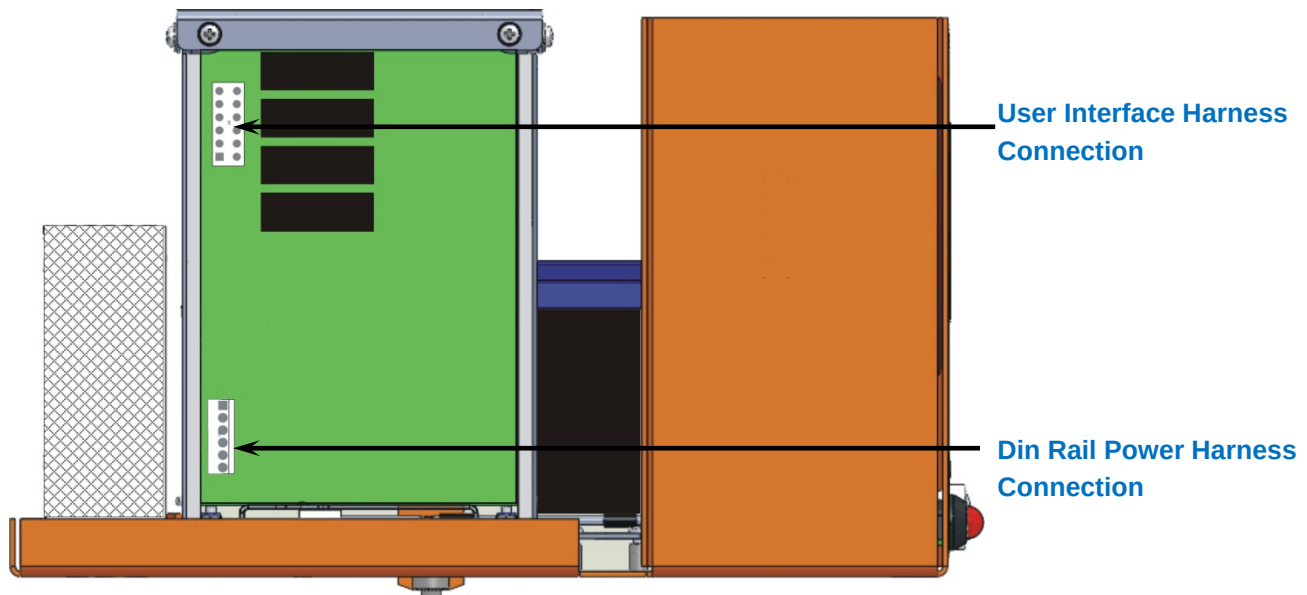
DO NOT ATTEMPT TO FIX THE UNIT, RETURN TO THE MANUFACTURER FOR REPAIRS.

4 REPLACE POWER SUPPLY UNIT

- Lock out Main power supply at the source
- Switch of Main power supply switch at BCU
- Remove four Screws with Plastic washer's holding Power Supply Unit.
- Holding the sides of Power Supply Unit, pull the unit out until half the unit is exposed.



PCB Version 3 and older



PCB Version 4 and newer

- Through the top of the Power Supply Unit, disconnect the all harness connections on the PC Board.
- Pull Power Supply Unit completely out.
- Place at a safe place

- Insert replacement unit halfway.
- Connect all harness connections on the PC Board. All cable connections are unique to each other, thus ensuring that no connection is incorrectly connected.
- Push Power Supply completely home.
- Replace four Screws with Plastic washers.
- Lock in Main power supply at source
- Switch Blast Control Unit Main Switch “on” at BCU.
- Test BCU to ensure it is fully functional.

5 REPLACE THE BACKUP BATTERY OF POWER SUPPLY UNIT

- Lock out main power supply at the source
- Switch the Power Supply Unit Main Input Switch 'off' at the BCU.
- Remove the four holding Power Supply Unit.
- Holding the sides of the Power Supply Unit pull until half the unit is exposed.
- Through the top of the Power Supply Unit, disconnect the all harness connections on the PC Board.
- Pull the Power Supply Unit completely out and put in a safe place.
- Carefully disconnect the two spade-terminals from the battery, noting the colour and position of the battery terminals.
- Loosen the Retaining -screw holding down the battery bracket, taking care to recover the screw's washers.
- Shift the battery a few millimetres towards the left of the Power Supply Unit's chassis to disengage the bracket from its retaining slot.
- The battery may now be replaced.
- When fastening the bracket, ensure that the bracket locks properly into its retaining slot before inserting the screw. Ensure that the battery is firmly seated against the right-hand side lip of the Power Supply Unit chassis before tightening the screw.
- Replace the connecting wire's spade terminals onto their proper corresponding colour-coded battery terminals.
- Insert the Power Supply Unit back into the BCU.
- Connect the all harness connections back onto the PC Board. All cable connections are unique to each other, thus ensuring that no connection is incorrectly connected.
- Push the Power Supply completely home.
- Replace the four Screws securing the Power Supply Unit in the BCU..
- Log in Mines power supply at the source
- Switch Main Power Supply On at BCU
- Test the Control Unit to ensure it is fully functional.

6 EXTRACTING EVENT LOGS FROM BCU

To extract the logs to a memory-stick the following hardware is required:

- A memory-stick formatted with either a FAT-16 or FAT-32 file system.
- A cable adaptor that is a Mini USB A-plug on the one side, and a USB A-socket on the other side.

To extract the logs to a memory-stick the following procedure must be followed:

1. Use the cable adaptor as mentioned above and connect the memory-stick to the USB port on the BCU.
2. Enter the DEBUG screen from the DEFAULT screen that displays the detonator counts.
3. Key in the password (9949).
4. From the DEBUG screen select the LOGS soft-key.
5. The BCU will attempt to communicate with the memory-stick over the USB interface. "CONNECTING TO THE STORAGE DEVICE" message will be displayed on the screen.
6. Allow at least 10 seconds for the BCU to negotiate the connection to the memory-stick. If the memory stick has a LED, the LED should flash shortly after the device is inserted.
7. After 10 seconds or sooner, the BCU will display the message "FOUND STORAGE DEVICE".



DO NOT REMOVE MEMORY STICK DURING "WRITING TO STORAGE DEVICE" AS ALL DATA WILL BE LOST.

8. If the negotiation has been successful, the memory-stick is functioning properly, and there is sufficient space to write the log, the message "WRITING TO STORAGE DEVICE" will appear. At this point the logs will be written to a file on the memory-stick.
9. During the writing process a "PROGRESS" indication will be displayed on the screen.
10. Once all the logs have been written to the memory-stick, the message "DONE – FILE WRITE COMPLETE. REMOVE FLASH STICK" will be displayed on the screen.
11. Remove the memory-stick and press the EXIT key to exit the log-extraction screen.



The EXIT key can be pressed at any point to exit the log-extraction process.