Programming and firing User manual

DaveyTronic Edge®

Davey Bickford

Enaex

System		**DaveyTronic Edge®**	
Language		ENG	
Pack		1.01	
Date		06/2024	
Revision		1	
Equipment	PU	BM	DBD
User Interface	1.01	1.01	1.01

Read this manual

Content

WARNING: This user manual is for information only. The DaveyTronic Edge® system should only be used by personnel who have been trained and authorized to use this system.

I. System overview

DaveyTronic® detonator

Edge Surface Module

DaveyTronic Edge® Programming Unit

DaveyTronic Edge® DBD

Edge Blasting Machine

DaveyTronic Edge® Editor

	Version	**1.01**
	Type of product	DaveyTronic Edge®
	Release	June 2024
	System	
	Languages	EN - SPA
	DaveyTronic® detonator ms delay	0 - 14 000 ms for SP/UG detonators and 0 – 20 000 ms for SP-XD detonators
PROGRAMMING UNIT	**PU**	
	Programming	
	Max number of dets per blast plan	1 000
	Automatic programming	●
	Easy blast plan import from DaveyTronic Edge® Editor	●
	Functionalities	
	Test det network	●
	Global power ON/OFF	●
DBD - BLASTING MACHINE	**Firing capabilities**	
	Wireless blasting	●
	Monoblast	●
	Multiblast	○
	Max nb of dets per DBD	1 000
	Time between firing order and effective firing	< 10 s

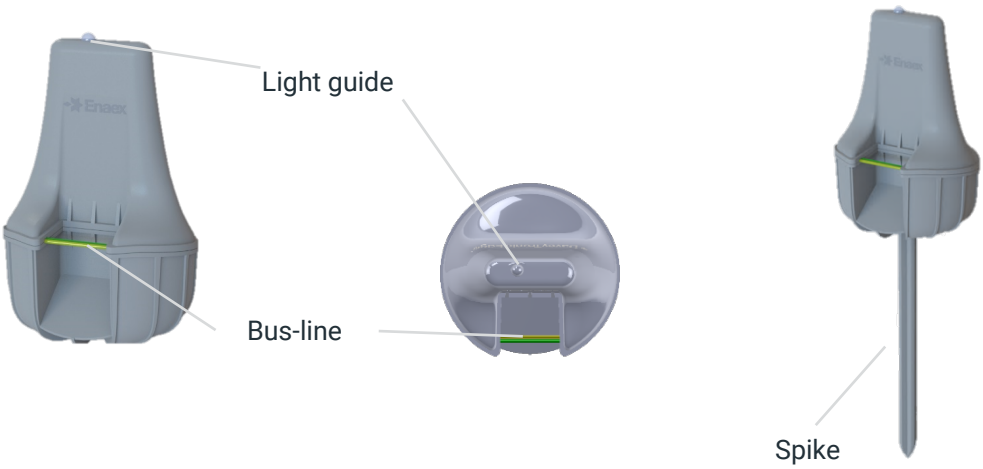
A. DaveyTronic Edge® Blast Driver

The DaveyTronic Edge® Blast Driver allows to fire up to 1 000 detonators.
The DBD communicates wirelessly with the PU and the Edge module and connects to the PC with a USB cable.

B. DaveyTronic Edge® Programming Unit

The DaveyTronic Edge® Programming Unit (PU) allows to teleactivate up to 1 000 Edge surface modules per blast plan.

C. Edge surface module



The integrated Edge detonator consists of an Edge surface module associated to a DaveyTronic® detonator equipped with a connector.

The Edge module can be contactless activated from a 1 - 5m distance with the DaveyTronic Edge® Programming Unit.

The module can report a communication status with the DBD and be electrically disconnected from the detonator.

Each module comes with a spike than can be taken off for placement if the ground is too hard.

D. DaveyTronic® detonator

The DaveyTronic® electronic detonator is fully programmable from 0 to 14 000 milliseconds for SP/UG detonators and from 0 to 20 000 milliseconds for SP-XD detonators.

Each unit is composed of a detonator shell (containing the electronic module, fusehead etc…), a wire and a connector.

Note: The SP-XD detonator is programmable from 0 to 20 000 ms but is limited to maximum 19 999 ms on the Edge system.

WARNING: The DaveyTronic® detonators are made of a different technology than conventional electric detonators. They can only be used with dedicated equipment approved by Davey Bickford Enaex and cannot be initiated by or with any other initiation systems (conventional or else).

The DaveyTronic Edge® Programming Unit, DBD and Blasting Machine can only be used with DaveyTronic® detonators and must never be connected to any other kind of detonator (conventional, from another manufacturer…).

An improper use of the system as described above can lead to misfires or unplanned initiation.

E. Blasting Machine

The DaveyTronic Edge® Blasting Machine allows to wirelessly control the DBD for Firing procedures.

A set of RFID tags for Testing and Firing are provided with the Blasting Machine.

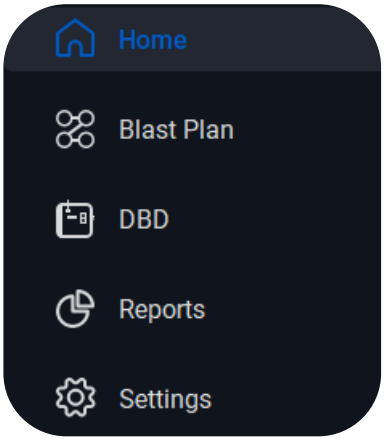
F. DaveyTronic Edge® Editor

DaveyTronic Edge® Editor is a Windows compatible software allowing to create blast plans, generate a blast report, and update equipment.

II. Programming

A. DaveyTronic Edge® Editor

1. Menu



Home: offers a global view of the principal functions regarding a blast plan.

Blast Plan: allows the user to create or import a blast plan.

DBD: allows the user to see and edit the blast plan that is currently on the connected DBD.

Reports: allows the user to generate the blast report of the last blast.

Settings: allows the user to change the language.

2. Creating a new blast plan

To create a blast plan that will be transferred to the DBD, follow the steps below:

1. Open DaveyTronic Edge® Editor.

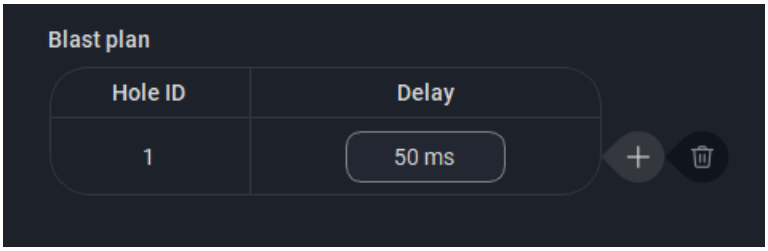
2. Turn a DBD ON and connect it to your PC with a USB cable.
The following icon shows if the connection was successful.

3. In the Home section, click on **New**.
Or, in the Blast Plan section, click on **New blast plan**.

4. Enter a blast plan name of maximum 16 characters in the Name text input field, using 0 - 9, a - z, A - Z, - and _.

5. Select the type of detonator (SP/UG or SP-XD).

6. Add the detonators indexes and their delays and press Enter for each detonator to validate the delay and create a new line or click on +.
Use the basket to delete a line.



7. Click on **Save as** if you wish to retrieve the blast plan file later.

8. Click on **Export to DBD**.
A window will open to notify the user that transferring a new blast plan will delete the previous blast plan on the DBD.

9. Click on Replace.

Notes:

The USB-A – USB-A 2.0 (or higher) cable is provided with the system.

The minimum delay of the blast plan cannot exceed 3 000 ms.

It is important to close DaveyTronic Edge® Editor. If it is kept open the PU will not be able to be used to teleactivate the modules and will show an error.

3. Importing a blast plan

To import an existing blast plan, follow the steps below:

1. In the Home section, click on **Import** and select a file.
Or, in the Blast Plan section, click on **Browse** or drag and drop a file.

Note: The file must be in .txt or .csv format.

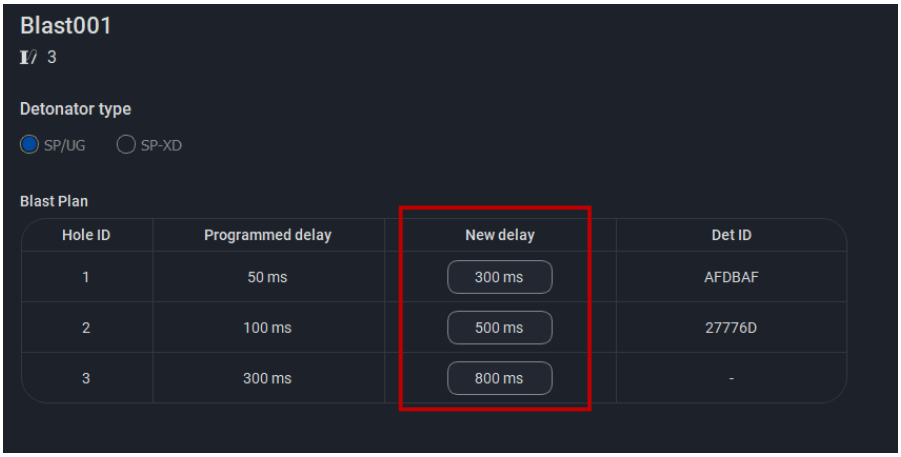
4. Editing a blast plan

To edit an existing blast plan, follow the steps below:

1. Select **DBD** in the menu.

2. Click on **Edit**.

3. Enter the new delays for the detonators.



4. Click on **Export to DBD**.
A window will open to notify the user that transferring a new blast plan will delete the previous blast plan on the DBD.

Notes:

Turn the PU OFF and turn it ON again if the blast plan was modified on DaveyTronic Edge® Editor.

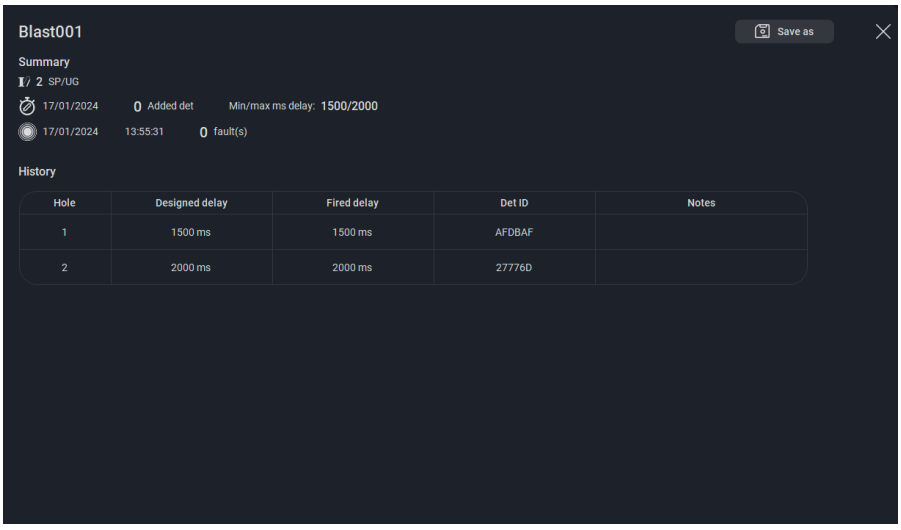
Keep the DBD connected until the blast plan has been exported.

The det IDs of the already teleactivated modules are present on the updated blast plan and can be deleted from the blast plan with the Delete det function.

5. Generating a blast report

To generate a blast report after a firing, follow the steps below:

1. Click on **Reports**.
The blast report shows the firing information of the last blast.



2. Click on **Save as** to generate a PDF version of the blast report.

Note: The DBD only stores the information of one blast at a time. If a blast report isn't downloaded directly after the blast, the data will be lost.

B. DaveyTronic Edge® Programming Unit

1. PU overview

2. Getting started

a) Turn ON/OFF

Press and hold the ON/OFF button for 3 seconds.

Note: It is only possible to turn OFF the PU when the menu or the "Press trigger to program detonator" functionality is displayed.

b) Status indicators

(1) **Action trackers**

Different icons are used as action trackers throughout the entire system. They should be understood as described below:

	Waiting: this icon appears when an action or a lag of more than a few seconds occurs
	Pending trigger: trigger must be pressed on
	Valid: no issue occurred during the last action
	Warning: the system requires the user's attention or validation on a matter
	Error: the system has encountered an event that cannot be bypassed
	Communication error: the system encountered a communication error
	Detonator error: the system encountered an issue with the detonator

	Valid detonator: the system encountered no issue with the chosen detonator

(2) **Wireless signal strength indicators**

The wireless communication between the Blasting Machine and the PU is qualified with the following 5 signal strength indicators. They should be understood as described below:

	Excellent signal reception: strong and stable connection.
	Good signal reception: slightly reduced but still reliable connection.
	Poor and moderate signal reception: maintained connection with possible instances of slower speeds or potential interruptions.
	Bad and weak signal reception: sporadic connectivity and slower data speeds.
	No signal reception: inability to establish any connection.

3. Connecting and teleactivating the modules

a) Connecting the detonators to the modules

1. Once the detonator is positioned in the hole and ready to be connected, clip the detonator's connector onto the module's wire.

Notes:

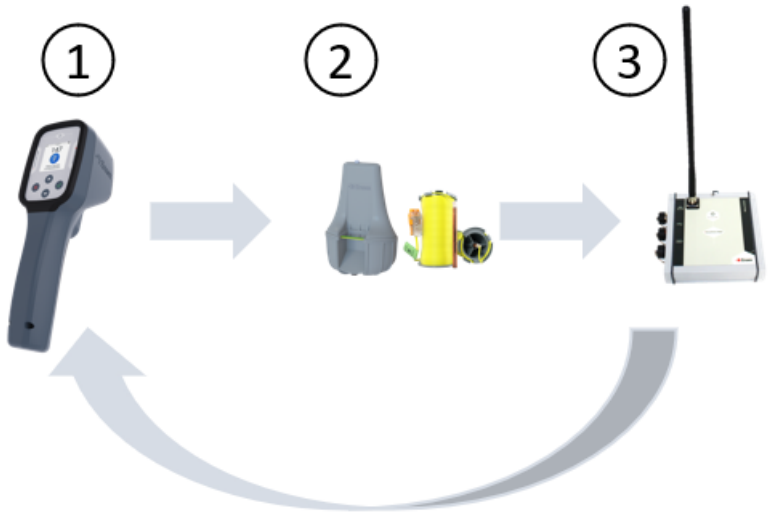
During connection it is important that the wire is placed flat into the connector and clipped in securely to ensure a good connection.

Only one detonator must be connected to a module.

b) Teleactivating a module

The detonators are assumed to be installed in the hole and connected to the surface Edge modules.

The following diagram shows how the activation of the modules is executed.



1	The PU teleactivates the module
2	The module sends the det ID of the detonator to the DBD
3	The DBD updates the delay table and sends the confirmation to the PU that the activation was successful

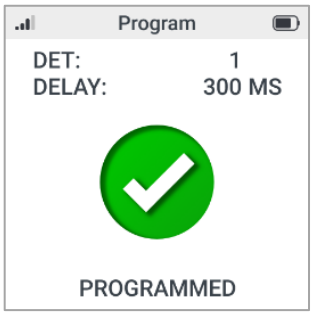
To teleactivate a module, follow the steps below:

1. Turn ON the PU and the DBD.
The PU will connect to the DBD.

2. Press on the trigger to teleactivate the surface module by pointing the PU's light beam at the light guide at the top of the module.

3. Once activated, the Edge surface module gets the attached detonator's det ID and sends it to the DBD through radio communication. The DBD updates the delay table every time a new module is activated.

4. The PU displays a confirmation and beeps to indicate if the module - detonator has been successfully timed or not. If the detonator has been successfully timed, the user can proceed to the next hole.



5. Press on the trigger to teleactivate the next surface module.

Note:

After timing the modules, the PU must be turned OFF.

If a module – detonator is teleactivated with the PU without a planned delay, no delay will appear on the timing confirmation on the PU or while using the Get det information function.

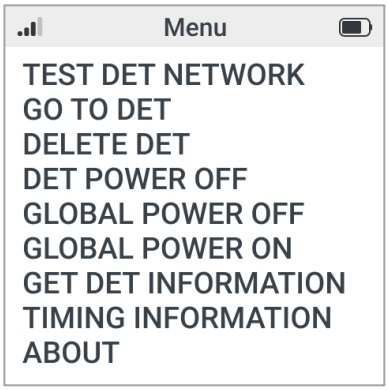
When the DBD is turned ON for the first time or after a software update, it may be empty of any blast plan. If programming activities are started in this state, without any planned delays for the detonators they must be added a posteriori via DaveyTronic Edge® Editor. If not, they will be flagged as Untimed Detonators (UT) by the Remote Blaster and a Special procedure will need to be launched to time and fire those units.

4. Menu

Press ✕ on the PU to access the menu.

Use the Up ▲ and Down ▼ buttons to navigate the menu.

The following functionalities are available on the PU:



Test det network: Allows the user to run a detonator communication test.

Go to det: Allows the user to choose another detonator to be programmed in the list.

Delete det: Allows the user to delete the det ID of a specific detonator from the delay list.

Det power off: Allows the user to turn OFF a module.

Global power off: Allows the user to turn OFF all modules at the same time.

Global power on: Allows the user to turn ON modules individually.

Get det information: Allows the user to see the information of the module – detonator.

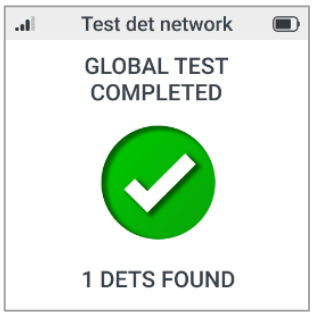
Timing information: Allows the user to see the minimal and maximal delays and gaps of the blast plan.

About: Allows the user to get the software version and frequency of the current PU.

a) Test det network

To run a network test, follow the steps below:

1. Select **Test det network** and press ✓.
2. The system starts the testing of the network and then displays the status.



3. Press the trigger to exit.

b) Go to det

To choose the next detonator to be timed in the list, follow the steps below:

1. Select **Go to det** and press ✓.
2. Move to the left with the ✗ button, to the right with the ✓ button and use the ▲▼ buttons to change the digits to the wanted index. The selected digit is highlighted in blue.

3. Press the trigger to validate.

Note: If you press ▼ while being on the index 1, the index 1000 will be displayed. You can go back to 1 with ▲.

c) Delete det

To delete a specific detonator from the delay list, follow the steps below:

1. Select **Delete det** and press ✓.
2. Move to the left with the ✗ button, to the right with the ✓ button and use the ▲▼ buttons to change the digits to the wanted index. The selected digit is highlighted in blue.

3. Press the trigger to validate.

4. Press the trigger to delete the selected detonator from the blast plan.

Notes:

The PU must be inside the DBD's radio range, but it doesn't need to be in range of the Edge module to delete it.

If you press ▼ while being on the index 1, the index 1000 will be displayed. You can go back to 1 with ▲.

d) Det power off

To individually turn OFF a module, follow the steps below:

1. Select **Det power off** and press ✓.
2. Point the PU light beam to a detonator to power it OFF.
3. Press the PU trigger to continue.

Notes:

A module that has been turned OFF must be turned ON again by the "Global power on" functionality or the detonator won't be fired.

The Det power off function remains active until the ✕ button is pressed.

Programming information remains intact in the DBD.

e) Global power off

To turn OFF all Edge modules at once, follow the steps below:

1. Select **Global power off** and press ✓.
A warning appears notifying the user of the required procedures once the modules are OFF.
2. Press the PU trigger to continue.

The system tests the communication with the modules and proceeds with the Global power off.

3. If the Global power off is successful, press the PU trigger to exit.

Notes:

After a Global power off it will be necessary to use the "Global power on" functionality or the detonators won't be fired.

The DBD remains ON and must be powered OFF manually after a Global power off.

The PU won't connect to the DBD after a Global power off occurred until the DBD has been turned OFF and turned ON again.

f) Global power on

To turn ON modules, follow the steps below:

1. Select **Global power on** and press ✓.

2. Press the PU trigger to continue.

3. Point the PU's light beam to a module's light guide to power it ON.
The PU keeps emitting the power on command until the trigger is pressed again.

g) Get det information

To get a module's information, follows the steps below:

1. Select **Get det information** and press ✓.

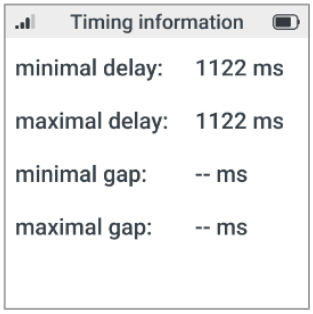
2. Point the PU's light beam at a module's light guide and press the trigger .
The PU displays the module's index, assigned detonator delay, software version, serial number, bandwidth, and battery voltage.

3. Press the trigger to get the information of another set - module with the **Get det command** or press the ✗ button to exit.

h) Timing information

To display the blast plan's timing information, follow the steps below:

1. Select **Timing information** and press ✓.
The screen shows the minimal and maximal delays chosen on the blast plan, and the minimal and maximal gaps between the already teleactivated modules.



i) About

To get a PU's information, follow the steps below:

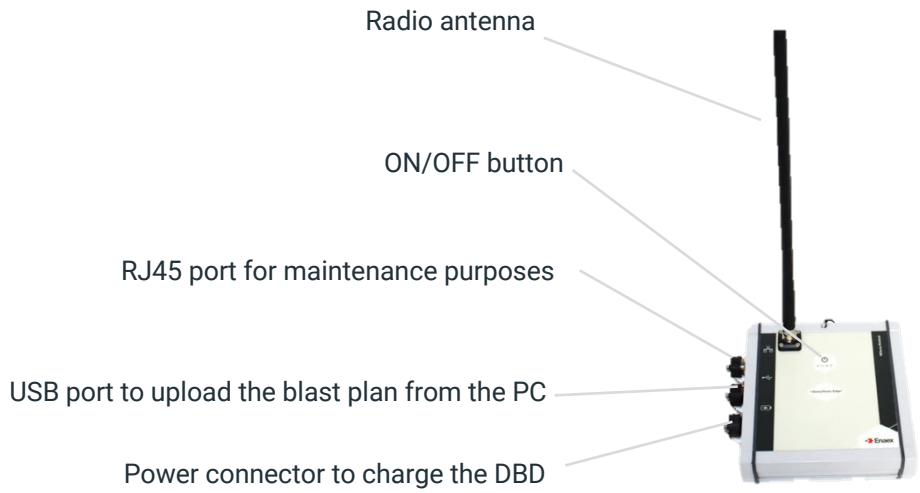
1. Select **About** and press ✓.

2. The screen shows the current PU's software version and the bandwidth.

III. Firing

A. DaveyTronic Edge® Blast Driver (DBD)

1. DBD overview



The DaveyTronic Edge® Blast Driver hosts the blast plan and programming information into a non-volatile memory.

While programming the detonators, the DBD constantly checks for new detonator - module communication and provides feedback to the PU.

While blasting, the DBD is controlled by the Blasting Machine.

Note: The only way to delete a blast plan and its associated programming data from a DBD is by uploading a new blast plan.

a) Getting started

(1) **Turn ON/OFF**

Press and hold the ON/OFF button for 3 seconds.

b) LED indicators

The DBD displays its status via colored LED indicators as presented below.

	Green - Orange – Red fast flashing: the unit is doing a self-test.
	Green: the unit is on, passed the self-test and is operational.
	Red: low battery.
 + …	Red + other color(s): error. The DBD didn't pass the self-test, an error occurred while starting up. Restart the DBD and try again. If the issue persists, contact your Davey Bickford Enaex representative.

Notes:

When the device is OFF, all LEDs will be OFF.

When charging, the battery LED will flash the  colors.

B. Blasting Machine

1. Blasting Machine overview

Note: The serial number serves as an identification of the Blasting Machine. It can be found on the unit label, located on the bottom edge of the device.

2. Getting started

a) Turn ON/OFF

Press and hold the ON/OFF button for 1 second.

b) Status indicators

(1) **Action trackers**

Different icons are used as action trackers throughout the entire system. They should be understood as described below:

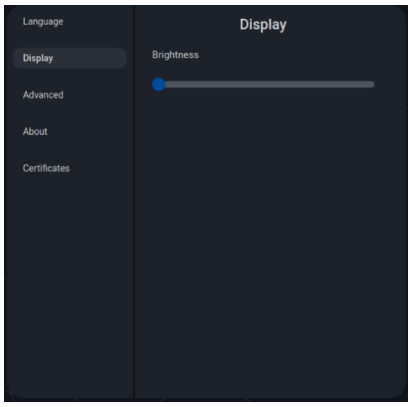
	Pending: the system awaits a user action
	Waiting: this icon appears when an action or a lag of more than a few seconds occurs.
	Valid: no issue occurred during the last action
	Warning: the system requires the user's attention or validation on a matter
	Error: the system has encountered an event that cannot be bypassed

(2) **Wireless signal strength indicators**

The wireless communication between the Blasting Machine and the DBD is qualified with the following 5 signal strength indicators. They should be understood as described below:

	Excellent signal reception: strong and stable connection
	Good signal reception: slightly reduced but still reliable connection.
	Poor and moderate signal reception: maintained connection with possible instances of slower speeds or potential interruptions.
	Bad and weak signal reception: sporadic connectivity and slower data speeds.
	No signal reception: inability to establish any connection.

3. Settings



Language: allows you to change the language.

Display: allows you to modify the brightness.

Advanced: allows you to pair the Testing and the Firing cards to the Blasting Machine.

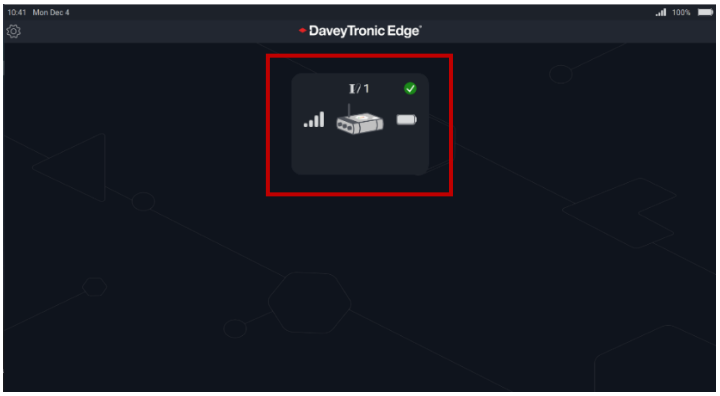
About: shows the Blasting Machine's software, hardware, and firmware versions.

Certificates: displays the Blasting Machine certificates.

C. Operations

1. Blast plan detection

1. Turn ON the DBD and the Blasting Machine.
Once the Blasting Machine has detected the DBD, tap on the blast plan.



2. Firing procedure

WARNING: Always ensure that the site has been fully evacuated before starting a Firing procedure according to the applicable local laws, regulations, and procedures.

Notes:

The modules must be turned ON and programmed.

The DBD must be turned ON.

1. Tag the paired **Testing card.** Upon validation of the card, the **Start Firing Procedure** button is enabled.

2. Tap **Start Firing Procedure.**

3. Tap **Start test and charge**. The blast plan is tested and charged at the same time. The Blasting Machine transmits the test and charge commands to the DBD which will execute them on the modules.

4. Upon validation of a successful test and charge, the 10 minutes time window of authorization to fire starts counting down. The blast plan must be fired within this time window, or the **Firing procedure** will be aborted.

5. Tag the paired **Firing card** to authorize the blast.

6. Press and hold both **Firing keys** for 2 seconds to initiate the blast plan.

7. The DBD transmits the encrypted firing commands to the modules, the blast is initiated.

Notes:

Once a Firing procedure has ended, the DBD will be disconnected from the Blasting Machine, and it will be necessary to turn OFF and turn ON the Blasting Machine to begin another Firing procedure.

It is possible to turn OFF all the modules by tapping on the ⏻ button. This option remains accessible until the Test operation is started.

An Edge module that has received the fire order cannot be reused in another Firing procedure.

3. Aborting

To abort a Firing procedure, tap on the ⊖ button on the top navigation bar.

The **Abort** option remains accessible during the procedure until both **Firing keys** have been pressed and held for 2 seconds.

If the procedure is aborted, a safety lock will occur, cancelling the Firing procedure and the DBD will be disconnected from the BM.

IV. Dealing with errors

A. Blasting Machine errors

1. System errors

Error name	Cause	Resolution & impact
No DBD detected	The Blasting Machine cannot find any DBD in range.	Make sure a DBD is in range and turned on to communicate with the Blasting Machine.
DBD disconnected	The Blasting Machine has lost the connection to the DBD.	Restart the Blasting Machine and try again. If the issue persists, contact your Enaex representative.
Blasting Machine malfunction	A hardware problem has caused the Blasting Machine to stop working correctly.	Restart the Blasting Machine and try again. If the issue persists, contact your Enaex representative. Restart the DBD and try again.
System malfunction	A critical malfunction has been detected on the Blasting Machine and the DBD.	Restart the Blasting Machine and DBD and try again. If the issue persists, contact your Enaex representative.
Add-on not detected	A hardware problem has caused the Blasting Machine to stop working correctly.	Restart the Blasting Machine and try again. If the issue persists, contact your Enaex representative.
System locked (after acknowledgement of the fire event has not been received)	The Blasting Machine has been locked.	Restart the Blasting Machine and the DBD and try again. If the issue persists, contact your Enaex representative.

B. PU errors

Error name	Cause	Resolution & impact
No dialogue	The module can’t communicate with the detonator. The detonator is poorly/not connected at all. The wires are cut. The detonator is defective. Current leakage.	If the detonator is defective, disconnect the detonator and replace it. Treat this unit as defective in accordance with applicable rules. If this detonator is given a firing order, it will be a potential misfire and must be reported as such.

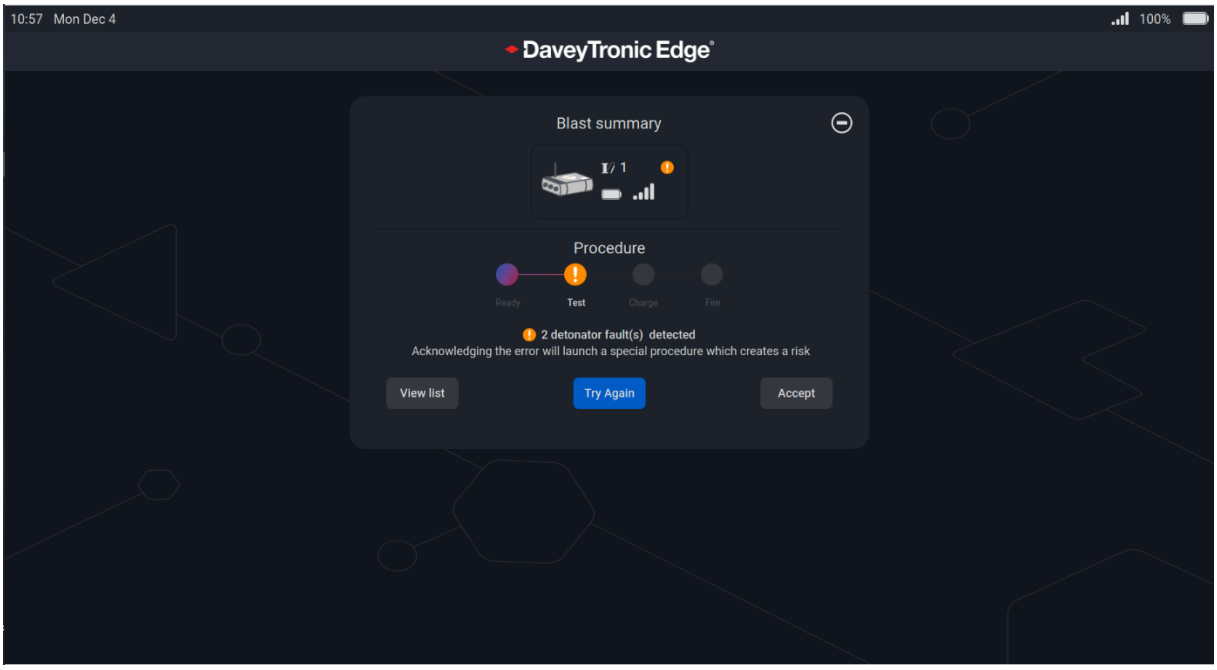
Communication error	The module is out of the DBD's range or has not been activated by the PU. PU is too far from the module. PU is not pointing at the module. The module is OFF.	Move the module inside the DBD's range or try again to teleactivate the module. Turn ON the module with the **Global power on** functionality.
Incompatible det	Mismatch between expected detonator type setup and actual connected detonator.	Replace the detonator with a compatible one.
Incoherent answer	Faulty detonator communication. The PU is receiving a response from the detonator but cannot understand it. The detonator could be defective. Several detonators are connected on the same module. Current leakage.	Use the **Test det network** and **Get det information** functionalities to identify the cause of the error. If the detonator is defective, disconnect the detonator and replace it. Treat this unit as defective in accordance with applicable rules.

Note: If the PU is not responding anymore press the ON/OFF button and the ✕ button at the same time for 4 seconds to reboot the PU.

C. Errors during the Firing Procedure

1. Special procedure

If detonator errors are discovered during the **Test** and **Charge** steps of the **Firing procedure**, they will be displayed as below:



The following options are available:

- **View list** offers details to locate the errors and better assess their importance.
- **Try again** will re-launch the **Test** and **Charge** of the blast plan.
- **Accept** will launch a **Special procedure**.

Selecting **Special procedure** allows the **Firing procedure** to carry on despite the errors detected on the line, they are in no way corrected.

WARNING: If 100 or more detonator defects are detected by the system, the Firing procedure will need to be aborted.

The errors, their potential risks or consequences must be assessed by the Blaster according to the applicable rules.

2. Detonator defects

Error name	Cause	Resolution & impact
Inaccurate detonator delay (CAL)	The detonator's calibration failed, or the detonator is defective.	Restart the procedure, if the same error happens, disconnect the detonator, and treat the detonator as defective in accordance with applicable rules. If this detonator is given a firing order, it will be initiated but the firing time will be incorrect.
Out of order detonator (OOO)	The detonator is properly connected but its firing circuit is defective.	Treat the detonator as defective, in accordance with applicable rules. If this detonator is given a firing order, it will be a potential misfire and must be reported as such.
Faulty detonator delay (DEL)	The delay read by the detonator is different from the programmed delay.	Restart the procedure, if the same error happens, disconnect the detonator, and treat the detonator as defective in accordance with applicable rules. If this detonator is given a firing order, it will be initiated but the firing time will be incorrect.
Faulty detonator communication (IA)	The Blasting Machine is receiving a response from the detonator but cannot understand it. The detonator could be defective.	Use the **Test det network** and **Get det information** functionalities to identify the cause of the error. If the detonator is defective, disconnect the detonator from the line and replace it. Treat this unit as defective in accordance with applicable rules. If this detonator is given a firing order, it will be a potential misfire and must be reported as such.
Firing energy low detonator (FEL)	The detonator has a defect in its firing circuit and cannot store the energy required for safe firing within the 14 000 / 20 000 ms range.	Treat the detonator as defective, in accordance with applicable rules. If this detonator is given a firing order, it will be a potential misfire and must be reported as such.
No detonator response (ND)	The detonator is not responding. It is either missing or misconnected.	Abort the procedure, turn off the DBD and identify the detonator. Treat the detonator as defective in accordance with the applicable rules.

		If this detonator is given a firing order, it will be a potential misfire and must be reported as such.
System detonator error (UNK)	The detonator is properly connected but its circuit is defective.	Treat the detonator as defective, in accordance with applicable rules. If this detonator is given a firing order, it will be a potential misfire and must be reported as such.
Untimed detonators (NT)	One or more detonators were added on the blast plan but no delay was assigned to them.	If a Special procedure is launched the untimed detonators will be timed as follows: Maximum blast plan delay + discovering order of the extra detonator x 19 ms. Example: Extra det n°1 = (max ms delay) + 1 x 19 ms; Extra det n°2 = (max ms delay) + 2 x 19 ms; Extra det n°3 = (max ms delay) + 3 x 19 ms; etc…

3. Edge Module errors

Error name	Cause	Resolution & impact
Module not detected	A communication error has occurred between the DBD and the module.	Make sure that the DBD hasn't moved and that there are no obstacles in the way. Check the connection. If the module - detonator is given a firing order, it will be a potential misfire and must be reported as such.
System module error	The module is properly connected but its circuit is defective.	Treat the module as defective, in accordance with applicable rules. If the module – detonator is given a firing order, it will be a potential misfire and must be reported as such.
Communication error	A communication error has occurred between the DBD and the modules.	Try again. If the issue persists, check, and restart the DBD and Remote Blaster.

4. Procedure errors

Error name	Cause	Resolution & impact
DBD communication overload	Too many devices are trying to communicate with the DBD.	Make sure that only one device at a time is connected to the DBD and try again.
System malfunction	A critical malfunction has been detected on the Blasting Machine and the DBD.	Restart the Blasting Machine and the DBD and try again. If the issue persists, contact your Enaex representative.
Too many errors	The maximum number of errors allowed in a Firing procedure is exceeded.	Abort and correct some errors to pass the 100 limit.
Unknown RFID card	This RFID card wasn't paired with the Blasting Machine.	Please tag the paired Testing or Firing card.
Invalid Testing card	This RFID card isn't the right one.	Please tag the paired Testing card.
Invalid Firing card	This RFID card isn't the right one.	Please tag the paired Firing card.

D. DaveyTronic Edge® Editor errors

1. Blast plan

Error name	Cause	Resolution & impact
Transfer error	Impossible to export the Blast Plan to the connected DBD.	Restart the DBD and try again.
DBD communication overload	Too many devices are trying to communicate with the DBD.	Make sure that only one device at a time is connected to the DBD and try again.
Import error	The maximum number of detonators allowed in a blast plan is exceeded.	Edit the original blast plan file to fall within the 1 000 detonators limit.
Import error	One or several delays are out of the detonator range.	Enter a value within the delay range of the SP/UG (0 - 14 000 ms) or SP-XD (0 – 20 000 ms) detonators. Note: The SP-XD detonator is programmable from 0 to 20 000 ms but is limited to maximum 19 999 ms on the Edge system.
Import error	The blast plan file contains at least one incompatible character.	Edit the original blast plan file and its name to ensure that it only contains authorized characters (0 - 9, a - z, A - Z)
Export error	The blast plan contains at least one error.	Make sure that all the entered and selected information is consistent with the systems.

2. Blast report

Error name	Cause	Resolution & impact
DBD communication overload	Too many devices are trying to communicate with the DBD.	Make sure that only one device at a time is connected to the DBD and try again.

Davey Bickford –RCS 720 501 410 0024 - 201002PM01ENG

www.daveybickford.com

Mining Quarrying Construction

Seismic Exploration

Customer Support

customersupport@daveybickfordenaex.com

T +33 (0)3 86 47 30 00

CONTACT US

https://www.enaex.com/
and click contact us