# Photonis 0387 HSB MRTS Software User Manual

Micro-Key
Embedded Technology Experts

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# Document History

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| | | | |
| | | | |

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# 1 Introduction

## 1.1 Scope

This document dXribes the end-user functionality of the Photonis HSB module repair test set. It gives detailed overview over the menu structure and explains the interactivity between user and device.

## 1.2 References

[1] Document somename, vvv
Micro-Key, dd-mm-yyyy

## 1.3 Definitions

TBD To Be Defined

# 2 System overview

Interaction between user and system occurs via two devices which are part of the HSB module repair test set.

## 2.1 Display

Visual feedback and information is provided to the user through a display. It contains four row with 20 characters each.


Figure 1: New heaven display NHD-0420D3Z-FL-GBW-V3

Within this document the display content is related to by a table. Below represents the display seen from left to right and up to down as a matrix of 4x20.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

As example, the table below represents the same display content as in *Figure 1*.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | W | I | N | S | T | A | R | | D | I | S | P | L | A | Y | | | |
| 3 | | | | | | | W | E | H | 2 | 0 | 0 | 4 | A | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

## 2.2 Keypad

The system contains a keypad which represents the only possibility for the user to interact with the several functions of the system.


Figure 2: 16-key keypad

The keypad consists of a matrix of four by four keys, making it 16 keys totally. They are labelled as follows:

| | |
|---|---|
| 0-9 | Numeric keys |
| ← | Arrow left |
| ↑ | Arrow up |
| → | Arrow right |
| ↓ | Arrow down |
| ENT | Enter |
| X | Escape |

# 3 Service manual

## 3.1 Selection cursor

As soon as a menu with selectable items appears on the display there must be a cursor/selector to differ between the currently highlighted menu item and other items.
The cursor is character: >
The cursor is always in first position of the current row, followed by a blank (space character).
For example, the cursor active in third row with random text behind looks like:

| / | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | R | a | n | d |
| 2 | | | 1 | . |
| 3 | > | | 2 | . |
| 4 | | | 3 | . |

## 3.2 Start screen

After powering the system, the display will become active and print out a start message, containing the type of assemblage and version number.
There are three different types of assemblages, which will be represented on the display as follows:
For anode repair repair set:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | n | o | d | e | | r | e | p | a | i | r | | | | | | | | |

For cathode and MCP repair set:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | t | h | o | d | e | / | M | C | P | | r | e | p | a | i | r | | |

For tesla repair set:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | e | s | l | a | | r | e | p | a | i | r | | | | | | | | |

A full start message on display, containing the system version number, will look like:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | n | o | d | e | | r | e | p | a | i | r | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | S | W | | V | . | | 1 | 0 | 0 | 0 | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

There is no user-action needed at this point – the system will switch to the main menu as soon as the system is fully booted and functional.

## 3.3 Main menu

The main menu of the system is identical for all three assemblages and looks like:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | |
| 2 | | | 1 | . | T | u | b | e | | r | e | p | a | i | r | | | | | |
| 3 | | | 2 | . | O | p | e | r | a | t | o | r | | | | | | | | |
| 4 | | | 3 | . | C | a | l | i | b | r | a | t | i | o | n | | | | | |

The only difference between the three assemblages will be that their identification string from the start screen will remain in first row. So, for the anode repair assemblage, the main menu looks like:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | n | o | d | e | | r | e | p | a | i | r | | | | | | | | |
| 2 | > | | 1 | . | T | u | b | e | | r | e | p | a | i | r | | | | | |
| 3 | | | 2 | . | O | p | e | r | a | t | o | r | | | | | | | | |
| 4 | | | 3 | . | C | a | l | i | b | r | a | t | i | o | n | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| others | No function |

### 3.3.1 Anode repair - Tube repair menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | u | b | e | | r | e | p | a | i | r | | | | | | | | | |
| 2 | > | | 1 | . | | V | o | l | t | a | g | e | | | 8 | 0 | 0 | 0 | | V |
| 3 | | | 2 | . | | T | i | m | e | | | | | | | | | 8 | | h |
| 4 | | | 3 | . | | S | t | a | r | t | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

The pre-set and the timer menu item both show the current selection, which is always the first item available after each system (re)start.

#### 3.3.1.1 Voltage selection menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | V | o | l | t | a | g | e | | s | e | l | e | c | t | i | o | n | | | |
| 2 | > | | 1 | . | | P | r | e | s | e | t | 1 | | | 8 | 0 | 0 | 0 | | V |
| 3 | | | 2 | . | | P | r | e | s | e | t | 2 | | 1 | 0 | 0 | 0 | 0 | | V |
| 4 | | | 3 | . | | U | s | e | r | | | | | | | | | 0 | | V |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select current voltage (see list below for more details) |
| X | Leave current menu level and return to tube repair menu without selecting a (new) pre-set |
| others | No function |

Selecting defined pre-sets results in:

- Selection of the desired voltage for repair
- Return to tube repair menu, where the selected pre-set is mentioned.

Selecting the variable option results in:

- Enter variable voltage menu

#### 3.3.1.1.1 Variable voltage menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | U | s | e | r |  | v | o | l | t | a | g | e |  |  |  |  |  |  |  |  |
| 2 | I | n | s | e | r | t |  | v | o | l | t | a | g | e |  | i | n |  | V |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  | 0 |  | V |  |  |  |  |  |  |

This menu allows insertion of a desired voltage differently from the pre-defined voltages. When entering this menu, the insertion cursor will appear and allow insertion of the desired value.

| | |
|---|---|
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted value, leave menu and return to tube repair menu |
| X | Leave current menu level and return to pre-set menu without entering a new value |
| 0-9 | Value insertion |
| others | No function |

### 3.3.1.2 Timer menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | i | m | e |  | s | e | l | e | c | t | i | o | n |  |  |  |  |  |  |
| 2 | > |  | 1 | . |  |  | 8 |  | h | o | u | r | s |  |  |  |  |  |  |  |
| 3 |  |  | 2 | . |  | 1 | 6 |  | h | o | u | r | s |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select current timer and return to tube repair menu |
| X | Leave current menu level and return to tube repair menu without selecting a (new) timer |
| others | No function |

### 3.3.1.3 Start repair menu

#### 3.3.1.3.1 Error messages based on safety

Before starting the repair treatment, it will be verified that the cover of the drawer is closed correctly. For safety reason the cover must be closed before the repair treatment can be started.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S | t | a | r | t |  | r | e | p | a | i | r |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  | ! | ! | E | R | R | O | R | ! | ! |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  | C | O | V | E | R |  | O | P | E | N |  |  |  |  |  |

| | |
|---|---|
| ENT | Acknowledge error and return to main menu |
| others | No function |

Note: it is not sufficient to close the cover. The system will only react to the ENT key and return to the main menu. Closing the cover is, however, mandatory before starting a new repair.

#### 3.3.1.3.2 Repair in progress

When all conditions are met, the repair treatment starts. The display now acts as feedback

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | 1 | 6 | h | r | s |  | r | e | p | a | i | r |  | B | U | S | Y |  |  |
| 2 |  |  |  |  | h | h | : | m | m |  | r | e | m | a | i | n |  |  |  |  |
| 3 |  |  | R | 1 |  |  |  |  |  | R | 2 |  |  |  |  |  | R | 3 |  |  |
| 4 | a | b | , | c | k | V |  | a | b | , | c | k | V |  | a | b | , | c | k | V |

| | |
|---|---|
| X | Pause the current repair action |
| others | No function |

#### 3.3.1.3.3 Repair paused

When treatment is paused, the display will change its output to:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | 1 | 6 | h | r | s |  | r | e | p | a | i | r |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  | ! | ! | P | A | U | S | E | D | ! | ! |  |  |  |  |  |
| 3 |  | H | i | t |  | E | N | T |  | t | o |  | c | o | n | t | i | n | u | e |
| 4 |  | H | i | t |  | E | S | C |  | t | o |  | R | E | S | E | T |  |  |  |

| | |
|---|---|
| ENT | Continue the current repair |
| X | Reset/quit the treatment and return to the tube repair menu |
| others | No function |

### 3.3.2 Cathode/MCP repair - Tube repair menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | u | b | e | | r | e | p | a | i | r | | | | | | | | | |
| 2 | > | | 1 | . | | M | C | P | | r | e | p | a | i | r | | | | | |
| 3 | | | 2 | . | | C | a | t | h | o | d | e | | r | e | p | a | i | r | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| others | No function |

#### 3.3.2.1 MCP repair menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | C | P | | r | e | p | a | i | r | | | | | | | | | | |
| 2 | > | | 1 | . | | V | o | l | t | a | g | e | | | 1 | 8 | 0 | 0 | | V |
| 3 | | | 2 | . | | T | i | m | e | | | | | | | | | 8 | | h |
| 4 | | | 3 | . | | S | t | a | r | t | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

The pre-set and the timer menu item both show the current selection, which is always the first item available after each system (re)start.

3.3.2.1.1 Pre-set menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | V | o | l | t | a | g | e | | s | e | l | e | c | t | i | o | n | | | |
| 2 | > | | 1 | . | | P | r | e | s | e | t | 1 | | | 1 | 8 | 0 | 0 | | V |
| 3 | | | 2 | . | | P | r | e | s | e | t | 2 | | | 2 | 0 | 0 | 0 | | V |
| 4 | | | 3 | . | | U | s | e | r | | | | | | | | | 0 | | V |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select current pre-set (see list below for more details) |
| X | Leave current menu level and return to tube repair menu without selecting a (new) pre-set |
| others | No function |

Selecting defined pre-sets results in:

- Selection of the desired voltage for repair
- Return to tube repair menu, where the selected pre-set is mentioned.

Selecting the variable option results in:

- Enter variable voltage menu

#### *3.3.2.1.1.1 User variable voltage menu*

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | U | s | e | r |  | v | o | l | t | a | g | e |  |  |  |  |  |  |  |  |
| 2 | I | n | s | e | r | t |  | v | o | l | t | a | g | e |  | i | n |  | V |  |
| 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  | 0 |  | V |  |  |  |  |  |  |

This menu allows insertion of a desired voltage differently from the pre-defined presets. When entering this menu, the insertion cursor will appear and allow insertion of the desired value.

| | |
|---|---|
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted value, leave menu and return to tube repair menu |
| X | Leave current menu level and return to pre-set menu without entering a new value |
| 0-9 | Value insertion |
| others | No function |

### 3.3.2.1.2 Timer menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | i | m | e |  | s | e | l | e | c | t | i | o | n |  |  |  |  |  |  |
| 2 | > |  | 1 | . |  |  | 8 |  | h | o | u | r | s |  |  |  |  |  |  |  |
| 3 |  |  | 2 | . |  | 1 | 6 |  | h | o | u | r | s |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select current timer and return to tube repair menu |
| X | Leave current menu level and return to tube repair menu without selecting a (new) timer |
| others | No function |

### 3.3.2.2 Cathode repair menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | t | h | o | d | e | | r | e | p | a | i | r | | | | | | |
| 2 | > | | 1 | . | | U | o | l | t | a | g | e | | | | 6 | 0 | 0 | | U |
| 3 | | | 2 | . | | T | i | m | e | | | | | | | | | 8 | | h |
| 4 | | | 3 | . | | S | t | a | r | t | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

The pre-set and the timer menu item both show the current selection, which is always the first item available after each system (re)start.

3.3.2.2.1 Pre-set menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | U | o | l | t | a | g | e | | s | e | l | e | c | t | i | o | n | | | |
| 2 | > | | 1 | . | | P | r | e | s | e | t | 1 | | | | 6 | 0 | 0 | | U |
| 3 | | | 2 | . | | P | r | e | s | e | t | 2 | | | | 8 | 0 | 0 | | U |
| 4 | | | 3 | . | | U | s | e | r | | | | | | | | | 0 | | U |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select current pre-set (see list below for more details) |
| X | Leave current menu level and return to tube repair menu without selecting a (new) pre-set |
| others | No function |

Selecting defined pre-sets results in:

- Selection of the desired voltage for repair
- Return to tube repair menu, where the selected pre-set is mentioned.

Selecting the variable option results in:

- Enter variable voltage menu

*3.3.2.2.1.1 Variable voltage menu*

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | U | s | e | r | | v | o | l | t | a | g | e | | | | | | | | |
| 2 | I | n | s | e | r | t | | v | o | l | t | a | g | e | | i | n | | V | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | 0 | | V | | | | | | |

This menu allows insertion of a desired voltage differently from the pre-defined presets. When entering this menu, the insertion cursor will appear and allow insertion of the desired value.

| | |
|---|---|
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted value, leave menu and return to tube repair menu |
| X | Leave current menu level and return to pre-set menu without entering a new value |
| 0-9 | Value insertion |
| others | No function |

### 3.3.2.2.2 Timer menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | i | m | e | | s | e | l | e | c | t | i | o | n | | | | | | |
| 2 | > | | 1 | . | | | 8 | | h | o | u | r | s | | | | | | | |
| 3 | | | 2 | . | | 1 | 6 | | h | o | u | r | s | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select current timer and return to tube repair menu |
| X | Leave current menu level and return to tube repair menu without selecting a (new) timer |
| others | No function |

### 3.3.2.3 Start repair menu

#### 3.3.2.3.1 Error messages based on safety

Before starting the repair treatment, it will be verified that the cover of the drawer is closed correctly. For safety reason the cover must be closed before the repair treatment can be started.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S | t | a | r | t | | r | e | p | a | i | r | | | | | | | | |
| 2 | | | | | | ! | ! | E | R | R | O | R | ! | ! | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | C | O | V | E | R | | O | P | E | N | | | | | |

| | |
|---|---|
| ENT | Acknowledge error and return to main menu |
| others | No function |

Note: it is not sufficient to close the cover. The system will only react to the ENT key and return to the main menu. Closing the cover is, however, mandatory before starting a new repair.

#### 3.3.2.3.2 Repair in progress

When all conditions are met, the repair treatment starts. The display now acts as feedback

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1 | 6 | h | r | s | | r | e | p | a | i | r | | B | U | S | Y | | |
| 2 | | | | | h | h | : | m | m | | r | e | m | a | i | n | | | | |
| 3 | | | R | 1 | | | | | | R | 2 | | | | | | R | 3 | | |
| 4 | a | b | , | c | k | V | | a | b | , | c | k | V | | a | b | , | c | k | V |

| | |
|---|---|
| X | Pause the current repair action |
| others | No function |

#### 3.3.2.3.3 Repair paused

When treatment is paused, the display will change its output to:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 1 | 6 | h | r | s | | r | e | p | a | i | r | | | | | | | |
| 2 | | | | | | ! | ! | P | A | U | S | E | D | ! | ! | | | | | |
| 3 | | H | i | t | | E | N | T | | t | o | | c | o | n | t | i | n | u | e |
| 4 | | H | i | t | | E | S | C | | t | o | | R | E | S | E | T | | | |

| | |
|---|---|
| ENT | Continue the current repair |
| X | Reset/quit the treatment and return to the tube repair menu |
| others | No function |

### 3.3.3 Tesla repair

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | u | b | e |  | r | e | p | a | i | r |  |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | > |  | S | t | a | r | t |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| | |
|---|---|
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

Note: For tesla repair, there are no parameters to adjust. The repair can only be started and, once running, stopped.

#### 3.3.3.1 Start repair menu

3.3.3.1.1 Error messages based on safety

Before starting the repair treatment, it is crucial to verify that the system enclosure drawer is properly closed and that the safety tube is in place. If that is not the case, an error message will be shown:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S | t | a | r | t |  | r | e | p | a | i | r |  |  |  |  |  |  |  |  |
| 2 |  |  |  |  |  | ! | ! | E | R | R | O | R | ! | ! |  |  |  |  |  |  |
| 3 |  |  |  |  |  | C | O | V | E | R |  | O | P | E | N |  |  |  |  |  |
| 4 |  | S | A | F | E | T | Y |  | T | U | B | E |  | M | I | S | S | I | N | G |

| | |
|---|---|
| ENT | Acknowledge error and return to main menu |
| others | No function |

Note: it is not sufficient to close the drawer or place the tube. The system will only react to the ENT key and return to the main menu. Closing the drawer and placing the safety tube is, however, mandatory before starting a new repair.

Note: The screen above shows two different error messages at once. Only the appropriate message(s) will be shown.

3.3.3.1.2 Repair in progress

When all conditions are met, the repair treatment starts. The display now acts as feedback

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 |  | T | e | s | l | a |  | r | e | p | a | i | r |  | B | U | S | Y |  |  |
| 2 |  |  |  |  |  |  | V | o | l | t | a | g | e |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  | a | , | b | c |  | k | V |  |  |  |  |  |  |  |
| 4 |  |  | H | i | t |  | E | S | C |  | t | o |  | s | t | o | p |  |  |  |

| | |
|---|---|
| X | Stop tesla repair action and return to tube repair menu |
| others | No function |

## 3.4 Operator Menu

### 3.4.1 Password protection

#### 3.4.1.1 Password insertion screen

The operator menu is password protected. Prior to entering, the user must enter the password.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | O | P | e | r | a | t | o | r | | m | e | n | u | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | I | n | s | e | r | t | | P | I | N | | | | | |
| 4 | | | | | | | | | - | - | - | - | | | | | | | | |

| | |
|---|---|
| 0-9 | Insert number |
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted PIN |
| X | Return to main menu |
| others | No function |

#### 3.4.1.2 Password accepted

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | O | P | e | r | a | t | o | r | | m | e | n | u | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | P | I | N | | O | K | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| others | No function |

No action required. The screen will be left after three seconds and the operator menu will be entered.

#### 3.4.1.3 Password denied

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | O | P | e | r | a | t | o | r | | m | e | n | u | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | P | I | N | | D | E | N | I | E | D | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| others | No function |

No action required. The screen will be left after three seconds and the password insertion screen will appear again.

### 3.4.2 Operator main menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | O | p | e | r | a | t | o | r | | m | e | n | u | | | | | | | |
| 2 | > | | 1 | . | | C | h | a | n | g | e | | P | I | N | | | | | |
| 3 | | | 2 | . | | I | / | O | | c | o | n | t | r | o | l | | | | |
| 4 | | | 3 | . | | I | n | f | o | | & | | V | e | r | s | i | o | n | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

#### 3.4.2.1 Change PIN menu

3.4.2.1.1 Insert new Pin

| / | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | h | a | n | g | e | | P | I | N | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | I | n | s | e | r | t | | n | e | w | | P | I | N | : | | - | - | - | - |
| 4 | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| X | Leave current menu level and return to operator main menu without changing the PIN |
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted PIN |
| 0-9 | Insert number |
| others | No function |

When the 4-digit PIN has been entered, the screen automatically changes to:

| / | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | h | a | n | g | e | | P | I | N | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | R | e | p | e | a | t | | n | e | w | | P | I | N | : | | - | - | - | - |
| 4 | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| X | Leave current menu level and return to operator main menu without changing the PIN |
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted PIN |
| 0-9 | Insert number |
| others | No function |

When the 4-digit has been entered a second time, the system will verify that both entered PINs are equal.

### 3.4.2.1.2 New Pin OK

| / | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | h | a | n | g | e | | P | I | N | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | N | e | w | | P | I | N | | a | c | c | e | p | t | e | d | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| others | No function |

No action required. The screen will be left after three seconds and the operator main menu will appear again.

### 3.4.2.1.3 New Pin failed

| / | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | h | a | n | g | e | | P | I | N | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | N | e | w | | P | I | N | | d | e | n | i | e | d | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ENT | Confirm that PIN has not been changed |
| others | No function |

The screen will only be left when ENT is pressed. This way the user must confirm knowledge that the PIN has not been changed. Afterwards, the operator main menu will appear again.

### 3.4.2.2 I/O control menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | / | O | | c | o | n | t | r | o | l | | | | | | | | | |
| 2 | > | | 1 | . | | S | e | t | | v | o | l | t | a | g | e | | o | u | t |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to operator menu |
| others | No function |

#### 3.4.2.2.1 Set voltage out

This menu allows to apply a variable voltage to one of the power supply outputs.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S | e | t | | v | o | l | t | a | g | e | | o | u | t | | | | | |
| 2 | > | | 1 | . | | C | h | a | n | n | e | l | 1 | | | | | | | |
| 3 | | | 2 | . | | C | h | a | n | n | e | l | 2 | | | | | | | |
| 4 | | | 3 | . | | C | h | a | n | n | e | l | 3 | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to I/O control menu |
| others | No function |

##### *3.4.2.2.1.1 Channel*

Insert the desired voltage that should be applied to the selected channel.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | S | e | t | | v | o | l | t | a | g | e | | c | h | a | n | n | e | l | X |
| 2 | | | | I | n | s | e | r | t | | v | o | l | t | a | g | e | | | |
| 3 | | | | | | | | | | 0 | | V | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted value – voltage will be applied to channel output |
| X | Leave current menu level and return to channel selection menu |
| 0-9 | Value insertion |
| others | No function |

### 3.4.2.4 Information and version screen

A screen like the welcome/start screen at power-up of the system.

There are three different types of assemblages, which will be represented on the display as follows:
For anode repair repair set:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | n | o | d | e | | R | e | p | a | i | r | | | | | | | | |

For cathode and MCP repair set:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | t | h | o | d | e | / | M | C | P | | r | e | p | a | i | r | | |

For tesla repair set:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | T | e | s | l | a | | r | e | p | a | i | r | | | | | | | | |

The full screen on display, containing the system version number, will look like:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A | n | o | d | e | | r | e | p | a | i | r | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | S | W | | V | . | | 1 | 0 | 0 | 0 | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ENT | Leave screen and return to operator main menu |
| others | No function |

## 3.5 Calibration menu

### 3.5.1 Password protection

#### 3.5.1.1 Password insertion screen

The calibration menu is password protected. Prior to entering, the user must enter the password.

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | C | a | l | i | b | r | a | t | i | o | n | | m | e | n | u | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | I | n | s | e | r | t | | P | I | N | | | | | |
| 4 | | | | | | | | | - | - | - | - | | | | | | | | |

| | |
|---|---|
| 0-9 | Insert number |
| ← | Backspace – delete last entered digit |
| ENT | Confirm inserted PIN |
| X | Return to main menu |
| others | No function |

#### 3.5.1.2 Password accepted

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | C | a | l | i | b | r | a | t | i | o | n | | m | e | n | u | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | P | I | N | | O | K | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| others | No function |

No action required. The screen will be left after 3 seconds and the calibration main menu will be entered.

#### 3.5.1.3 Password denied

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | C | a | l | i | b | r | a | t | i | o | n | | m | e | n | u | | |
| 2 | | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | P | I | N | | D | E | N | I | E | D | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| others | No function |

No action required. The screen will be left after 3 seconds and the password insertion screen will appear again.

### 3.5.2 Calibration main menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | l | i | b | r | a | t | i | o | n | | m | e | n | u | | | | |
| 2 | > | | 1 | . | | C | a | l | i | b | r | a | t | e | | A | D | C | s | |
| 3 | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line (currently not implemented) |
| ↓ | Move cursor down one line (currently not implemented) |
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

The only calibration option at the moment is the analogue-to-digital converter, or analogue input.

#### 3.5.2.1 Calibrate ADCs menu

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | l | i | b | r | a | t | e | | A | D | C | s | | | | | | |
| 2 | > | | 1 | . | | C | h | a | n | n | e | l | 1 | | | | | | | |
| 3 | | | 2 | . | | C | h | a | n | n | e | l | 2 | | | | | | | |
| 4 | | | 3 | . | | C | h | a | n | n | e | l | 3 | | | | | | | |

| | |
|---|---|
| ↑ | Move cursor up one line |
| ↓ | Move cursor down one line |
| ENT | Select currently current item |
| X | Leave current menu level and return to main menu |
| others | No function |

3.5.2.1.1 Calibration procedure for an ADC channel

The following menu is similar for all ADC channels

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | l | i | b | r | a | t | e | | A | D | C | | # | 1 | | | | |
| 2 | | | | | | | P | r | o | v | i | d | e | | | | | | | |
| 3 | | | | | | | | | | 0 | | k | V | | | | | | | |
| 4 | | | | | a | n | d | | h | i | t | | E | N | T | | | | | |

| | |
|---|---|
| ENT | Confirm provided voltage and continue to next calibration point |
| X | Leave calibration procedure and return to calibrate ADCs menu |
| others | No function |

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | l | i | b | r | a | t | e | | A | D | C | | # | 1 | | | | |
| 2 | | | | | | | P | r | o | v | i | d | e | | | | | | | |
| 3 | | | | | | | | | | 1 | | k | V | | | | | | | |
| 4 | | | | | a | n | d | | h | i | t | | E | N | T | | | | | |

| | |
|---|---|
| ENT | Confirm provided voltage and continue to next calibration point |
| X | Leave calibration procedure and return to calibrate ADCs menu |
| others | No function |

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | l | i | b | r | a | t | e | | A | D | C | | # | 1 | | | | |
| 2 | | | | | | | P | r | o | v | i | d | e | | | | | | | |
| 3 | | | | | | | | | 1 | 0 | | k | V | | | | | | | |
| 4 | | | | | a | n | d | | h | i | t | | E | N | T | | | | | |

| | |
|---|---|
| ENT | Confirm provided voltage and continue to next calibration point |
| X | Leave calibration procedure and return to calibrate ADCs menu |
| others | No function |

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | C | a | l | i | b | r | a | t | e | | A | D | C | | # | 1 | | | | |
| 2 | | | | | C | a | l | i | b | r | a | t | i | o | n | | | | | |
| 3 | | | | | | | f | i | n | i | s | h | e | d | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | |

| | |
|---|---|
| ENT | Confirm and return to calibrate ADCs menu |
| others | No function |

**The exact calibration procedure is not defined, yet, so the menu definition, especially the calibration points mentioned, are subject to changes!**