# Tactical Programming Card

# Manual

Version: v1.1

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# 1 Introduction

**Tactical Programming Card** is a very easy device that allows you for adjusting the TITAN Drop-in Module functions not only when you are preparing for a game at home but also in the field. Thanks to its small size, the device can be kept handy in a pocket.

The Programming Card is easy to use. It does not require any additional power source, because it is compatible with all the popular LiPo and LiFe batteries' versions. It is enough to connect one wire to the TITAN Drop-in Module and the second wire to the battery (Fig.1).

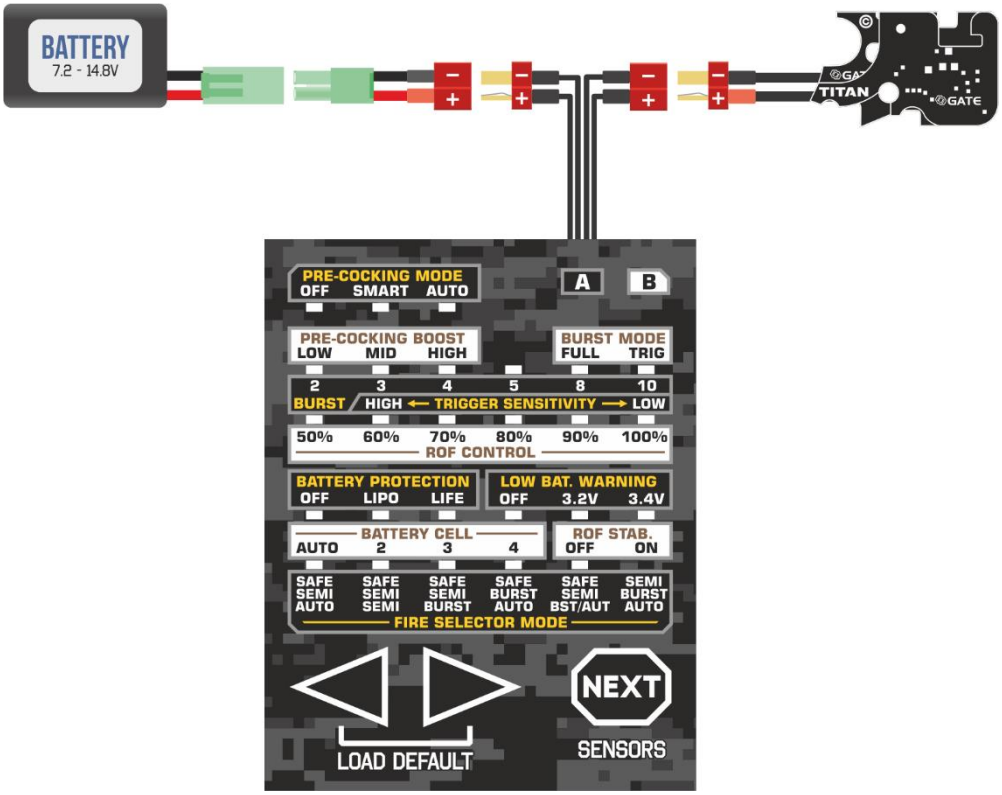


Fig.1

Technical parameters:

| | |
|---|---|
| Operating voltage: | 5 ÷ 17 V |
| Current consumption for 17V: | 38 mA |
| Dimensions: | 67 x 53 x 7 mm |
| Weight: | 27.6 g |
| Operating temperature: | -20 ÷ +70 °C |

The **TPC** communicates with the TITAN Drop-in Module automatically and will show its current configuration. The LEDs will glow informing on the set functions.

If the **Tactical Programming Card** is disconnected from the TITAN Drop-in Module, the animation 'waiting for connection' starts (all the LEDs are blinking simultaneously with one second frequency).

To minimize the device size and at the same time present the available functions clearly, the TITAN Drop-in Module configuration is represented on five displays (with **A** and **B** LEDs):

- **'A' display** – includes functions such as: PRE-COCKING MODE, BURST, TRIGGER SENSITIVITY, BATTERY PROTECTION, LOW BATTERY WARNING and FIRE SELECTOR MODE (Fig.2),
- **'B' display** – includes functions such as: PRE-COCKING BOOST, BURST MODE, ROF CONTROL, BATTERY CELL and ROF STAB. (Fig.3),
- **FUNCTIONS** – display with advanced functions such as: SNIPER DELAY, AUG MODE, GEAR RATIO, S.DELAY VIB, 30-RDS LIM and CYCLE DET (Fig.4),
- **SENSORS** – display with sensors (Fig.5),
- **DTC** – display with trouble codes (Fig.6).

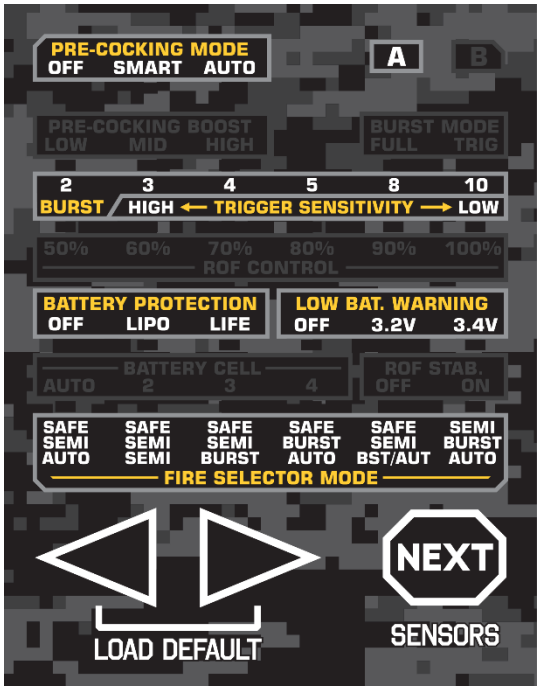


Fig. 2

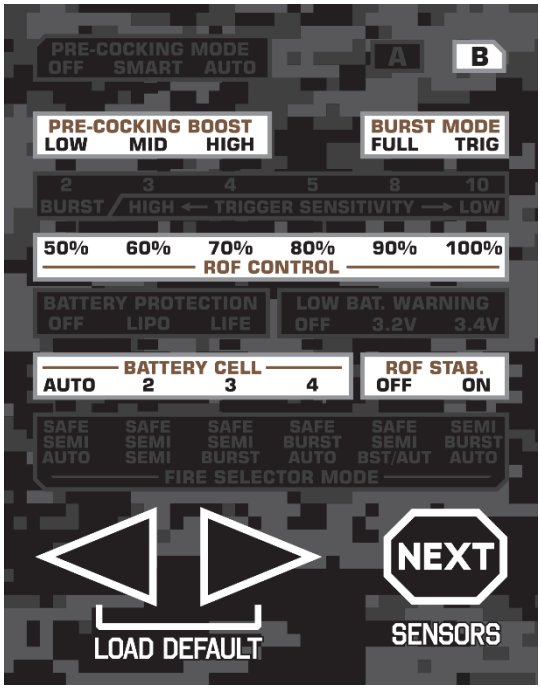


Fig.3

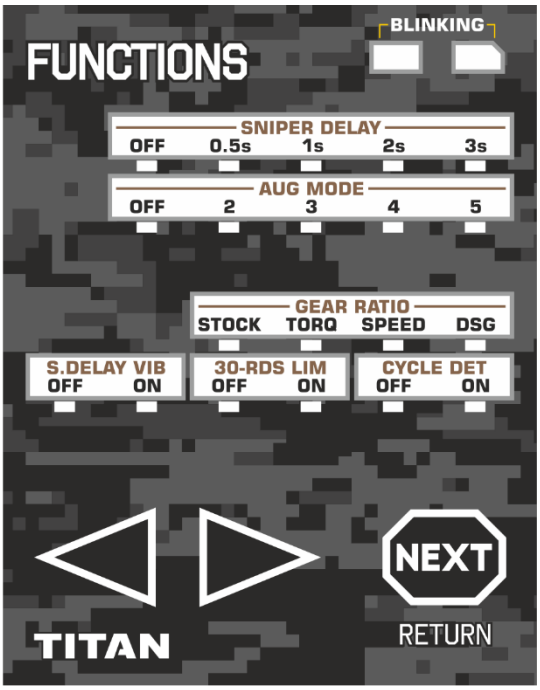


Fig.4

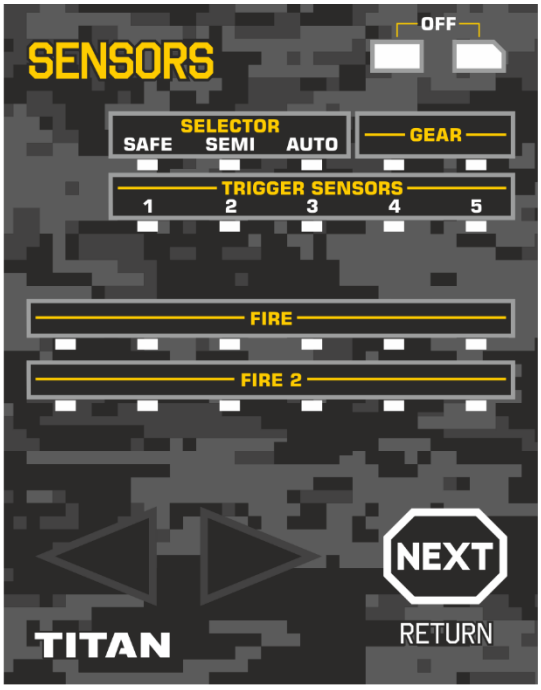


Fig.5

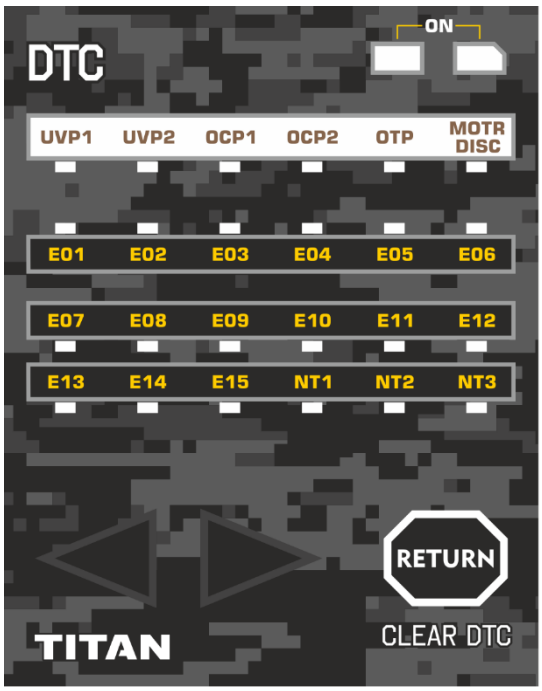


Fig.6

# 2 Using the Tactical Programming Card

You can manage the available functions using three buttons: **LEFT**, **RIGHT** and **NEXT** (Fig.7). A short animation starts after each action.

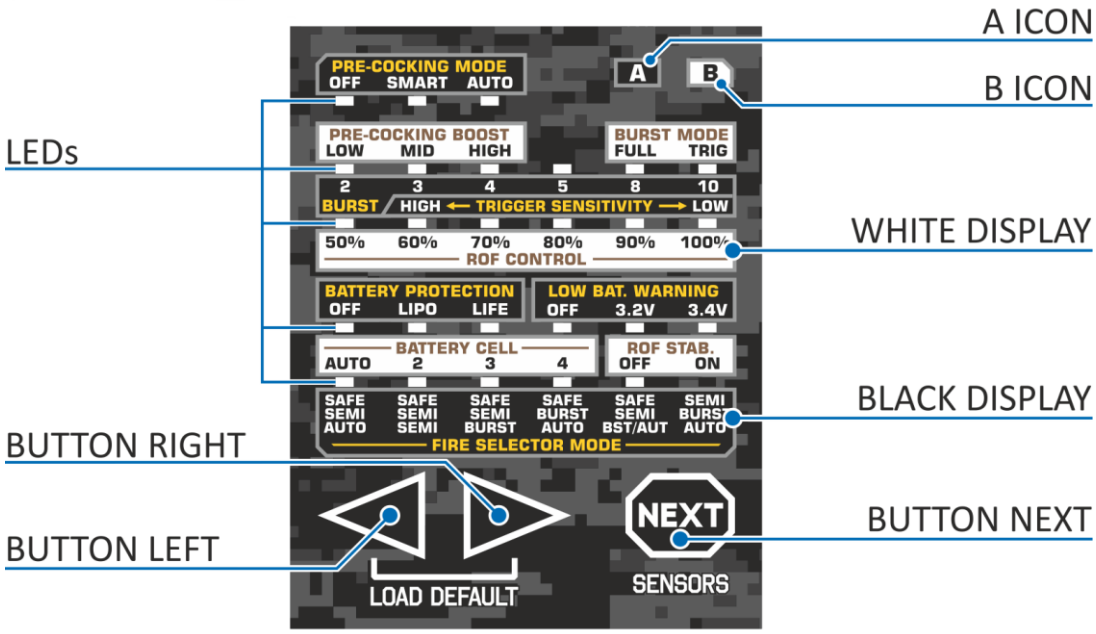


Fig.7

## 2.1 Buttons

Below you can find the description what happens after pressing the buttons.

- Short press on the **LEFT** or **RIGHT** button – navigation in the menu within the given parameter.
- Long press on the **LEFT** or **RIGHT** button – quick modification of the parameter value.
- Short press on the **NEXT** button – moving to the next parameter; or if you are in the sensors' display – exiting the function; or if you are in the trouble codes' display – exiting the function.
- Long press on the **NEXT** button – moving to the sensors' display; or if you are in the trouble codes' display – clear existing errors.

- Holding the **LEFT** and **RIGHT** buttons simultaneously for 1.5 second – restoring default settings. Afterwards, the short animation starts. This function works only with the **A**, **B** and **FUNCTIONS** displays.
- Holding the **LEFT** and **NEXT** buttons simultaneously for 1.5 second – moving to the **FUNCTIONS** display.
- Holding the **RIGHT** and **NEXT** buttons simultaneously for 1.5 second – restoring factory settings. After the action, the short animation starts. This function works only with the **A**, **B** and **FUNCTIONS** displays. The factory settings will restore the default settings for each function and will delete the adaptations. You are required to re-set the **GEAR RATIO.**
- Long press on the **LEFT**, **RIGHT** and **NEXT** buttons – moving to the trouble codes' display.

## 2.2 Animations of the display

- When the icon **A** is ON, the **'A' display** is activated. Check settings only on the black display of the TPC (Fig.2).
- When the icon **B** is ON, the **'B' display** is activated. Check settings only on the white display of the TPC (Fig.3).
- When the icons **A** and **B** are blinking, the **FUNCTIONS display** is activated. Check settings only on the FUNCTIONS display's cover of the TPC (Fig.4).
- When the icons **A** and **B** are OFF, the **SENSORS display** is activated. Check the sensors' state only on the SENSORS display's cover of the TPC (Fig.5).
- When the icons **A** and **B** are ON, the **Diagnostic Trouble Codes display** is activated. Check settings only on the DTC display's cover of the TPC (Fig.6).
- When one LED blinks (but the icons A or B do not), it indicates a parameter of the selected function.
- When the single LEDs in rows are ON, they indicate parameters of other functions.
- All LEDs blink continuously – TITAN Drop-In Module is not connected (Fig.8).

- All LEDs blink 3 times – default settings are restored or factory settings are restored (Fig.9).
- The LEDs lines turn ON and OFF one by one – it is necessary to update TPC firmware (Fig.10).
- The LEDs turn ON sequentially one by one – firmware update progress bar (Fig.11).

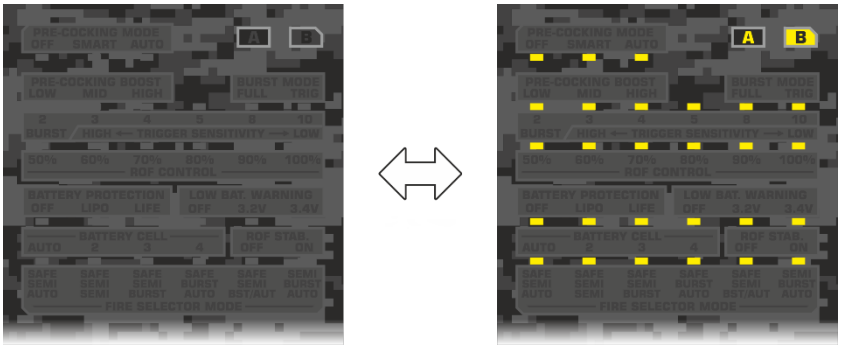

Fig.8

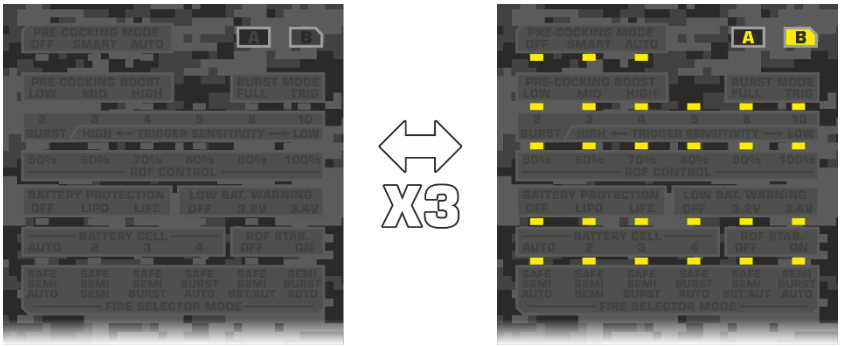


Fig.9

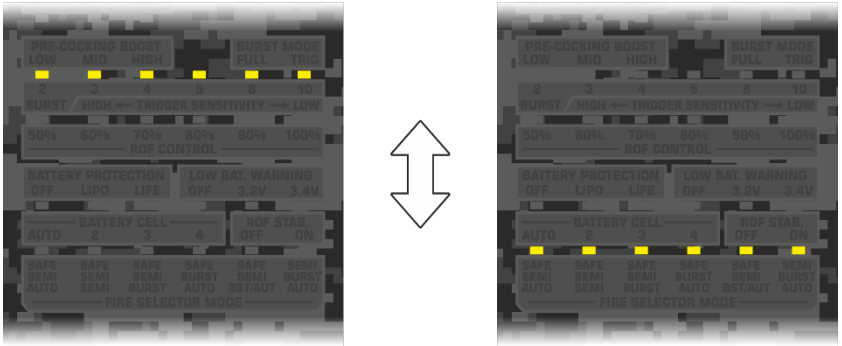

Fig.10

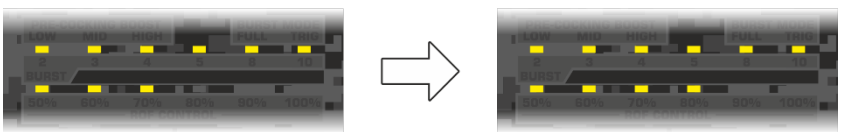

Fig.11

# 3 The available functions' description

**Tactical Programming Card** has a number of functions which are available directly on the **A** and **B** displays, as well as the advanced functions, trouble codes and sensors.

## 3.1 Basic functions (A and B display)

**PRE-COCKING** MODE – thanks to this function, you gain a trigger reaction similar to a real gun. It allows for initial spring compression, which speeds up the trigger response significantly. There are three modes:

1. **OFF** – PRE-COCKING is turned off.
2. **SMART** – slow trigger action compresses the spring, and fast trigger action fires the shot. If the spring is compressed, the slow trigger action does not produce any result.
3. **AUTO** – the spring is automatically compressed after each shot.

**PRE-COCKING** mode can be adjusted also without GATE Control Station. To do so, you must switch the selector to **SEMI** position and fire a shot. Do not release the trigger until you will have set the Pre-cocking and the vibration will have started.

The **SMART** mode is activated when you are switching the selector to **SEMI** while the trigger is held down.

The **AUTO** mode is activated when you are switching the selector to **AUTO** while the trigger is held down.

You turn the **PRE-COCKING** off if you switch the selector to **SAFE** while trigger is held down.

**Each change is signaled by long motor vibration.**

**PRE-COCKING** BOOST – if the PRE-COCKING function is turned on, it enables to determine the strength of spring compression.

**BURST** – enables you to shoot a pre-determined number of BBs, which is very useful in MILSLIM and when using low-caps. The BURST mode is available after adjusting the proper selector function.

**BURST MODE** – enables two BURST operating modes:

1. **FULL** – pulling the trigger results in shooting a pre-determined number of BBs,
2. **TRIG** – pulling the trigger results in starting shooting a pre-determined number of BBs, whereas releasing the trigger stops the sequence.

**TRIGGER SENSITIVITY** – it allows you to adjust the trigger to your preferences and level of skills. All trigger's sensors which are covered (eg. by trigger) when you connect the Drop-In Module to the TPC, are not available for the trigger sensitivity. The TRIGGER SENSITIVITY is also the first trigger stage (AUG1), if the AUG MODE is enabled.

**ROF CONTROL** - enables a reduction in a gun's rate of fire in the range from 50% to 100%.

**ROF STABILIZATION** – allows you to change the way the ROF Control works:

**ON** - ROF Control uses PWM to decrease ROF. Thanks to this, gearbox works smoothly what decreases wear and tear of AEG internal parts.

**OFF** - ROF Control adds breaks between shots to decrease ROF. It gives you more realistic experience.

**BATTERY CELL** – the TITAN drop-in Module detects the number of cells automatically. There is no need to reprogram TITAN every time you replace the battery. If you are not sure how many cells your battery has, just choose AUTO.
Please note that the AUTO option works well only when the battery if fully charged.

**BATTERY PROTECTION** – protection against over-discharge of the battery. You should specify your battery type and the TITAN Drop-in Module will automatically adjust the minimum voltage level for this kind of battery.

**LOW BATTERY WARNING** – when the battery voltage drops to a specified level (in relation to one cell), the motor will vibrate at regular intervals.
In case of LIPO batteries, the function can be activated for the voltage level **3.2V** or **3.4V**.
In case of LIFE batteries, the function can be activated for the voltage level **2.7V** or **2.9V**.

**FIRE SELECTOR MODE** – enables determining a firing mode for different selector positions.

## 3.2 Advanced functions

**CYCLE DETECTION** – Thanks to the gear sensor, TITAN precisely detects in which position the cycle should finish. Therefore, even the shortest trigger action produces at least one full cycle. Thanks to the cycle detection function you get:

- **Automatic BURST** – there is no need to set the burst time. You can set the burst between two and 10 shots;
- **Automatic PRE-COCKING** – Pre-cocking is fully operational in SEMI, BURST and AUTO modes and there is no need to set the pre-cocking boost manually. You can simply set the pre-cocking as **HIGH**, **MID** or **LOW**;
- **FULL CYCLE** - when the pre-cocking is off, TITAN ensures that the gearbox completes a full cycle. You gain a higher reliability.

Disabling the CYCLE DETECTION allows you to fire a shot even if the gear sensor is damaged. The drop-in module works well in safe mode.

**30-ROUNDS LIMIT** – when the trigger is jammed in AUTO mode, an AEG can fire max. 30 shots. To fire more shots, you should release the trigger. You can check the current state of the function on the sensors' display.

**GEAR RATIO** – it allows you to define the type of gear in AEG. Available types: **STOCK**, **TORQUE**, **SPEED DSG**.

**SNIPER DELAY –** it lets you to set delay between each SEMI shots to simulate the delay from reload or recoil. You can set **0.5s**, **1s**, **2s** or **3s** delay.

**AUG MODE –** it allows you to set two different trigger sensitivities. Pulling the trigger slightly produces SEMI or BURST fire and pulling the trigger further produces BURST or AUTO fire (depending on the fire selector mode). The first trigger stage is set as the TRIGGER SENSITIVITY.

## 3.3 Trouble codes and warnings

After choosing this option, every LED presents the trouble code.

- If a LED lights up, it means that a trouble code or a warning appeared.
- If a LED is off, there is no alarm.

Below you can find a description of the meaning of the trouble codes and warnings as well as assigning to a LED on the Programming Card. Each field reflects a LED on the card (Fig.12).

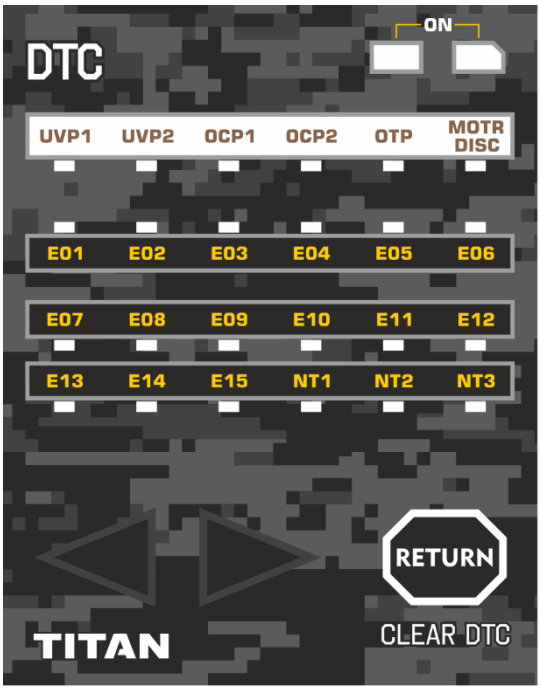


Fig.12

**UVP1** – your battery is discharged

**UVP2** – the voltage is lower than 3.8V

**OCP1** – overcurrent protection

**OCP2** – the motor power supply circuit is shorted

**OTP** – the drop-in module temperature is too high

**MOTOR DISC** – you pulled the trigger but the motor did not move

If you need to know how to interpret other trouble codes, please contact us at: **support@gatee.eu**.

## 3.4 Sensors

After choosing this option, every LED presents a sensor's state or warns about errors. If a LED lights up this means that the sensor is activated.

Below you can find a description of the LEDs on the Programming Card. Each field reflects a LED on the card (Fig.13).

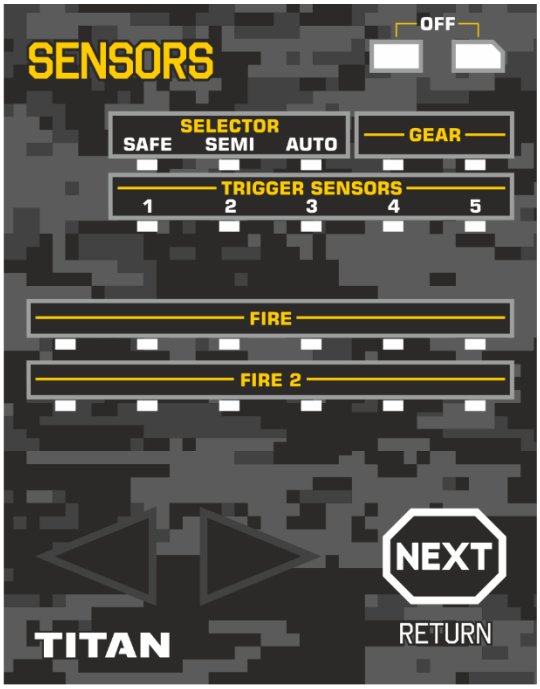


Fig.13

**GEAR** – shows the gear sensor's functioning

**SELECTOR** – shows the current selector position

**TRIGGER SENSORS** – trigger state

**FIRE** – all the LEDs are on when the trigger reaches the stage of sensitivity

**FIRE2** – all the LEDs are on when the trigger reaches the second stage of sensitivity (AUG2)