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PROGRAMMING MANUAL
ZeelProg PSR-S02

Supported control units: **PSR-S02**

PSR-S02 is single channel AC-CDI with 2 switchable ignition maps and two programmable rev limits. CDI is designed to work with Selettra 80 ohm stator and 36 mm diameter rotor (KTM SX50 2024). Recommended ignition coil is ZK3550 (ZEELTRONIC/PVL).

TECHNICAL DATA

Limit values:

- minimum revs	500 RPM
- maximum revs	20000 RPM

Features:
- two ignition maps
- external switch for changing ignition map while riding
- two rev limits
- programming with PC
- monitoring of revs and ignition advance

Very important!
Resistor spark plugs must be used, to reduce electromagnetic disturbances.

Very important!
CDI is protected against static discharge, but too high static charge can damage CDI.
Be careful when using programmer on the dyno, because static charge can build up on the bike and static discharge can damage CDI unit, or programmer. Make ground connection between dyno and bike frame to prevent static discharge through programmer and CDI.

ZeelProg SOFTWARE INSTALLATION GUIDE

ZeelProg is PC application for programming ZEELTRONIC engine *control units*.
For programming special PC-USB-HRS programmer is needed.

➲ ***ZeelProg*** automatically detects PC-USB-HRS programmer connection and enables all functions (without PC-USB-HRS programmer, ***ZeelProg*** application is locked).
➲ ***ZeelProg*** automatically detects type of engine *control unit* connected to PC-USB-HRS programmer.

Software can be downloaded from web site: http://www.zeeltronic.com/page/zeelprog.php

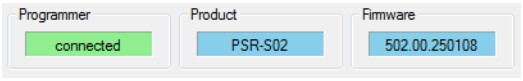
ZeelProg application can be installed on Windows XP/Vista/7/8/10/11.

ZeelProg USER INTERFACE

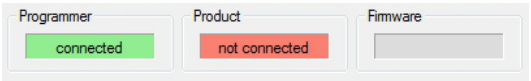
Auto detection

Zeelprog automatically detects USB-Programmer and type of *control unit*.

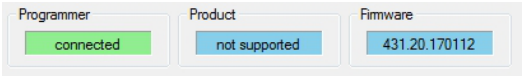
⇨ Programmer connected, product (*control unit*) connected:



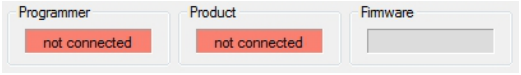
⇨ Programmer connected, product (*control unit*) not connected:



⇨ Programmer connected, product (*control unit*) not supported:



⇨ Programmer not connected, product (*control unit*) not connected:

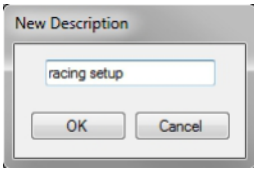


Menu structure

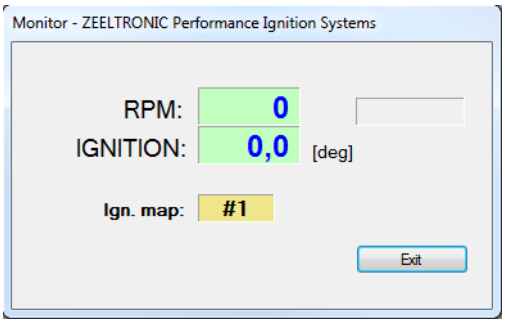
⇨ **File menu** is active when PC-USB-HRS programmer is connected

Open → Open an existing *.zee file
Save As → Save all parameters to *.zee file
Print → Print ignition maps and misc parameters

⇨ **Description** can be added to the settings. Description is added to the saved file and also while programming to the product (ECU).

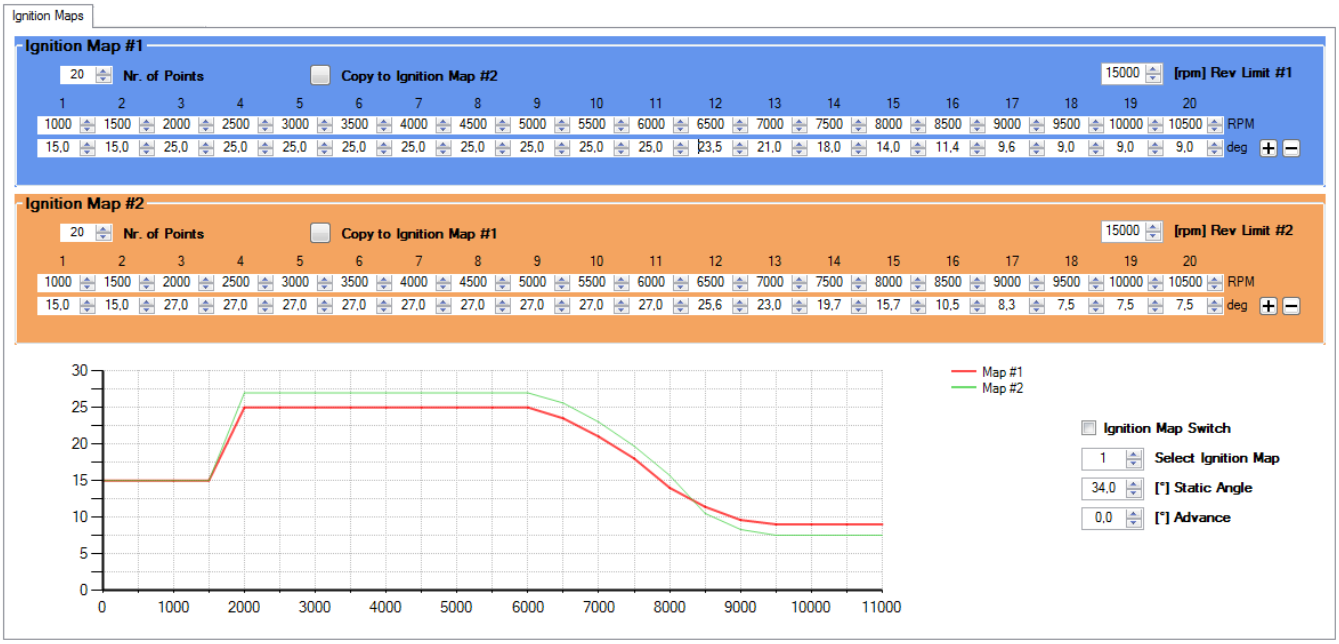


⇨ **Monitor** is active when *control unit* is connected to PC-USB programmer.
Clicking on the **Monitor** opens Monitor window.



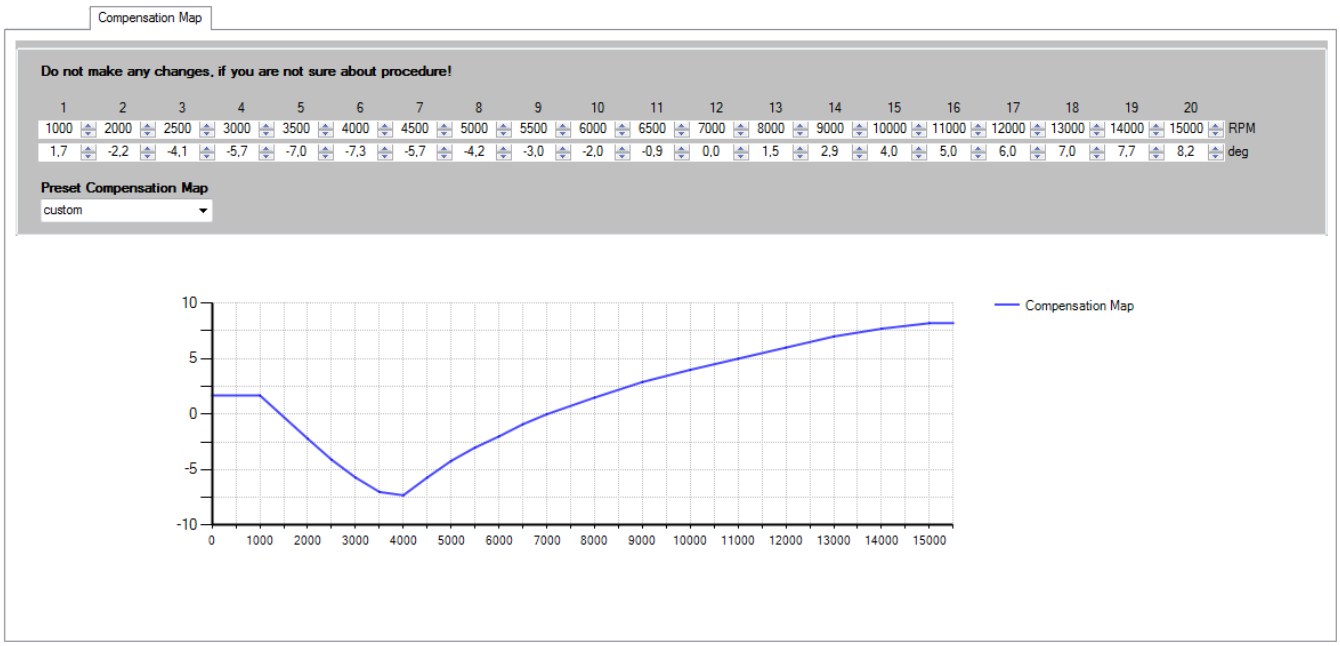
⇨ Clicking on **About** opens About window and show some basic information about ***ZeelProg*** application.

Ignition Parameters

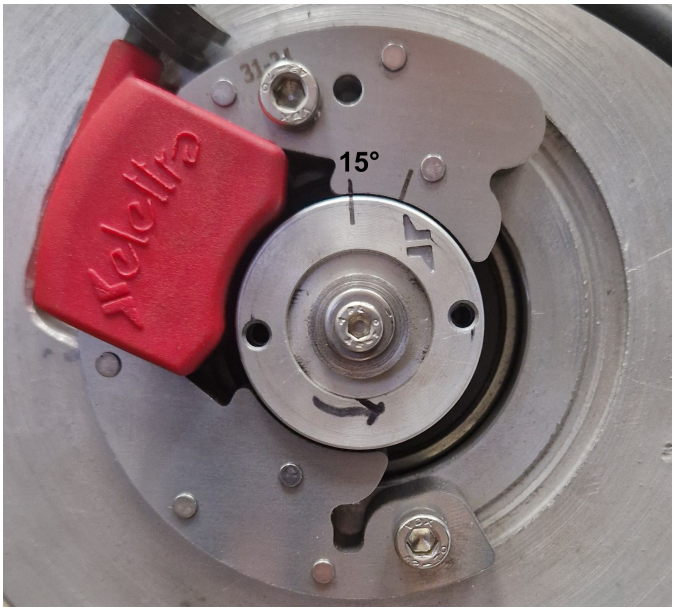


- ⇨ **Nr. of Points** for each ignition map can be set from 4 to 20.
- ⇨ **RPM** of each ignition point can be set from 500 rpm to 20000 rpm in 10 rpm steps. At the left side must be lowest RPM value and each next point must have higher value then previous...
- ⇨ **deg**...advance of each ignition point can be set from 0 deg to 85 deg in 0,1 deg steps
- ⇨ ⊞ ... increment all ignition points
- ⇨ ⊟ ... decrement all ignition points
- ⇨ **Static Angle** is pickup advance position from TDC (Top Dead Centre). Instructions for measuring static angle are later in the manual.
- ⇨ **Advance** ... advances, or retards whole ignition map from -10 deg to 10 deg in 0,1 deg steps. Positive value advances and negative value retards.
- ⇨ **Ignition Map Switch** ... enables, or disables ignition map switch. Ignition map can be selected with simple on/off switch when function is enabled.
- ⇨ **Select Ignition Map** ... selection is active only when **Ignition Map Switch** is not enabled.
- ⇨ **Rev limit** #1 ... rev limit for ignition map #1
- ⇨ **Rev limit** #2 ... rev limit for ignition map #2

Compensation Map



Stator has charging coil and no pickup. Trigger timing is not constant, because trigger signal is taken from charging coil. Compensation map is needed to correct ignition timing error.
To check, if ignition timing is correct flat ignition map must be programmed at 15 deg and checked with strobe light.
Make mark at the stator and rotor at 15 deg. If marks at the rotor and stator are not aligned through revs, then new compensation map must be created.



Preset compensation map for KTM SX50 2024 can be selected.

PROGRAMMING AND SETTING NEW PARAMETERS

Changing control unit parameters

① Read parameters from connected *control unit*, by pressing **Read** button.

Progress bar indicates read and verify process.

Successful reading is indicated as: 

Error while reading is indicated as: 

If error occurs, then repeat reading.

② Change parameters

③ Program parameters to connected *control unit*, by pressing **Program** button.

Progress bar indicates program and verify process.

Successful programming is indicated as: 

Error while programming is indicated as: 

If error occurs, then repeat programming.

Make new *.zee file without connecting control unit

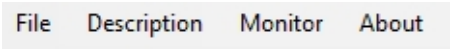
① Connect PC-USB-HRS programmer to PC.

② Set parameters

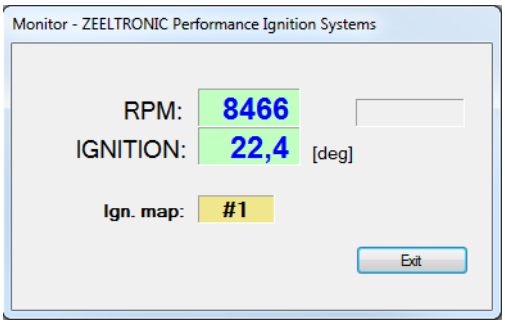
③ Save parameters by clicking **Save As** from **File menu**.

MONITOR FUNCTION

⇨ **Monitor** function is active when *control unit* is connected to PC-USB-HRS programmer.



Clicking on **Monitor** opens Monitor window.

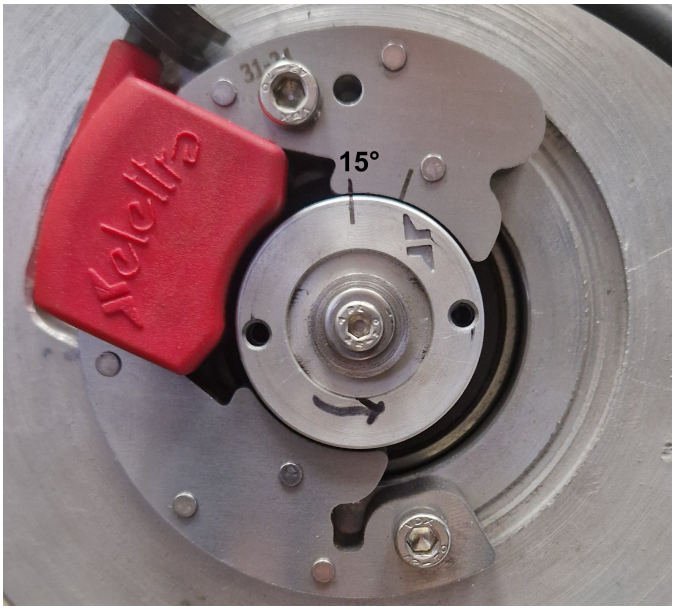


⇨ Monitor shows engine revolution, ignition advance angle and rev limit operation.

MEASURING STATIC ANGLE

Measuring correct static angle is very important. Wrong static angle will cause inaccurate ignition advance. If static angle is programmed larger than mechanical static angle then ignition advance will be smaller than programmed, or vice versa.
The most accurate procedure of measuring static angle is with dial gauge and strobe light.

- program CDI with 35 deg static angle
- program CDI with flat ignition curve...15 deg advance is suitable for most engines
- make mark at the stator and rotor at the 15 deg
- run engine at constant revs of 4000 rpm and check mark alignment with strobe light. If marks are not aligned then adjust static angle value to align marks.
- check ignition timing through all rev range and if marks are not aligned, then compensation map must be adjusted



Default static angle for KTM SX50 2024 is 35,5 deg.