



updated 06.10.2016
application version: 02.160906

USER MANUAL ZeelProg PSR-X-T

Supported control units: **PSR-X-T25, PSR-X-T100**

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

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

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ZeelProg SOFTWARE INSTALLATION GUIDE

CD content:

- driver (USB programmer driver)
- NET Framework
- ZeelProg

Software can be also downloaded from web site:

<http://www.zeeltronic.com/page/zeelprog.php>

ZeelProg application can be installed on Windows XP/Vista/7/8/10.
"NET Framework 3.5" needs to be installed.

Installation:

- ① Insert CD-ROM and browse content.
- ② Install USB programmer driver with running "CDM20600.exe" from CD-ROM "driver" directory.
- ③ Install **ZeelProg** with running "setup ZeelProg.exe" from CD-ROM "ZeelProg" directory.

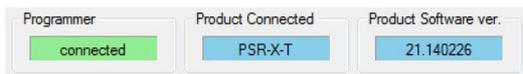
If **ZeelProg** does not start, install "NET Framework" from CD-ROM "NET Framework" directory.

ZeelProg USER INTERFACE

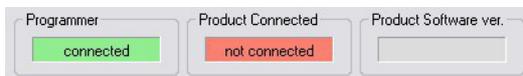
Auto detection

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

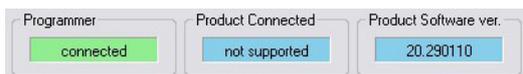
⇒ Programmer connected, product (*control unit*) connected:



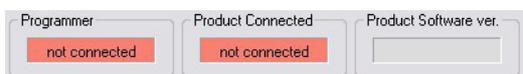
⇒ Programmer connected, product (*control unit*) not connected:



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



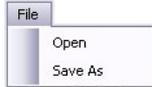
⇒ Programmer not connected, product (*control unit*) not connected:



Menu structure

File Monitor About

⇒ **File** menu is active when PC-USB programmer is connected



Open → Open an existing *.zee file

Save As → Save all parameters to *.zee file

⇒ **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

Ignition Parameters

Ignition Map #1

Nr. of Points: 10 + - deg

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	RPM	deg
500	1500	3000	4000	5000	7000	8000	9000	10000	12000		
18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		

Ignition Map #2

Nr. of Points: 10 + - deg

Point 1	Point 2	Point 3	Point 4	Point 5	Point 6	Point 7	Point 8	Point 9	Point 10	RPM	deg
500	1500	3000	4000	5000	7000	8000	9000	10000	12000		
18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		

1 Select Ignition Map 40,0 Static Angle [°] 30 Delay Compensation [us]

13000 Rev Limit [rpm] 0,0 Advance [°] 1 Pulses per Rev

Ign. Map Switch

Trigger Mode

only [+] signal

[+] and [-] signal

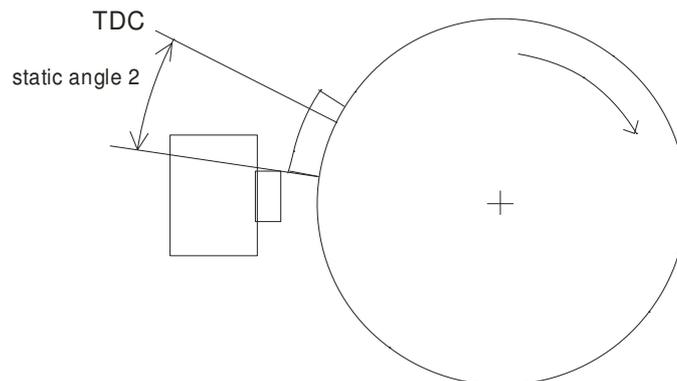
Kickback Protection

250 Minimum Starting Rpm [rpm]

0,0 Starting Retard [°]

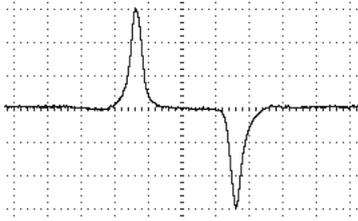
10,0 Static Angle 2 [°] (starting)

- ⇒ **Nr. of Points** for each ignition map can be set from 4 to 10.
- ⇒ **RPM** of each ignition point can be set from 100rpm to 20000rpm in 100rpm steps.
- ⇒ **deg**...advance of each ignition point can be set from 0deg to 85deg in 0,1deg steps
- ⇒ **+ - deg**...increasing, or decreasing advance of all ignition points in same ignition map
- ⇒ **Static Angle** is pickup advance position from TDC (Top Dead Centre)
- ⇒ **Static Angle 2** is ignition point for engine starting...setting is important for correct operation of kickback protection.



- ⇒ **Advance**...advances, or retards whole ignition map from -10deg to 10deg in 0,1deg steps. Positive value advances and negative value retards.
- ⇒ **Delay Compensation**...ensure correct ignition angle through whole revs. Default value is 30us.
- ⇒ **Pulses per Rev**...set to 1 for single cylinder and set to 2 for wasted spark twin cylinder.
- ⇒ **Rev limit**...limits maximum revolutions. Set to maximum 20000rpm in 100rpm steps.
- ⇒ **Select Ignition Map**...selection is active only when **Ignition Map Switch** is not enabled.

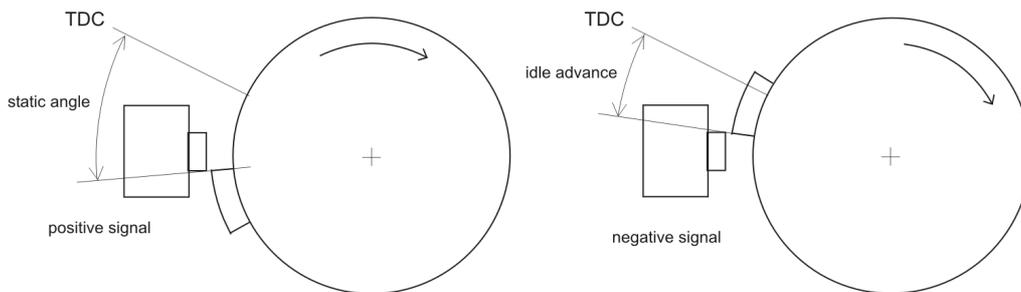
- ⇒ **Ignition Map Switch**...enables, or disables ignition map switch. Ignition map can be selected with switch, when function is enabled.
- ⇒ **Minimum Starting Retard**...No spark below programmed revs(kickabck protection)
- ⇒ **Trigger Mode:**



Trigger signal from pickup consist of positive and negative pulse. Positive pulse must be first and is generated by leading edge of trigger bar...negative pulse must be second and is generated by trailing edge of trigger bar.

If trigger signal is opposite (first negative and second positive), then wires from the pickup need to be switched...that changes polarity of signal from pickup.

Positive pulse defines static angle position and negative pulse defines idle running timing position.



- ⇒ When **"only [+] signal"** is checked, then only positive signal is detected and ignition timing is calculated with all revs as programmed with ignition map.
- ⇒ When **"[+] and [-] signal"** is checked, then both signals are detected. Revs of first ignition point define switching point between, programmed ignition map and idle running timing position.
 - Ignition timing is defined with trailing edge of trigger bar, at revs lower then first ignition point (idle advance...se drawing above).
 - Ignition timing is defined with programmed map, at revs higher then first ignition point.

Example: if first ignition point is programmed at 1500rpm, then below 1500rpm, ignition timing is defined with trailing edge of trigger bar (idle advance...see drawing above) and above 1500rpm, ignition timing is defined by programmed ignition map.
- ⇒ Set **"only [+] signal"** when using custom, or modified trigger rotor, or upgrade from static ignition timing CDI.
- ⇒ Set **"[+] and [-] signal"** when using original trigger rotors, or flywheels. First ignition point should be programmed somewhere between 1000-2000rpm.

PROGRAMMING AND SETTING NEW PARAMETERS

- While programming or reading, *control unit* does not need to be connected to power supply, because it is supplied through PC-USB programmer.

Changing control unit parameters

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



Progress bar indicate 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 indicate program and verify process.

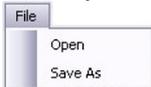
Successful programming is indicated as: 

Error while programming is indicated as: 

If error occurs, then repeat programming.

Make new *.zee file without connecting control unit

- ① Connect PC-USB 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 programmer.

File Monitor About

Clicking on **Monitor** opens Monitor window.



⇒ Monitor show engine revolution, ignition advance angle, selected ignition map, rev limit activation.