



FAQ

Frequently asked questions

Technical parameters:

Is ignition somehow protected against dust, vibrations, abnormal temperature...?

- Ignition is mechanically protected by epoxy varnish (Jawa-Cz-Trabant Ignition, Jawa 500, Velorex) or sealing compound elastic polymer (Direct a Universal Ignition). All of components are SMD, which are beared up under vibrations. Varnish fixates all components and absolutely prevents against damaging by oil, water or dust.

What are decreases on switched semiconductor triode in on-state of MOSFET?

- Tension decrease on switched semiconductor triode of MOSFET is given by circulated amperage. Static tension decrease can be calculated from formula $U = R \cdot I$, where $R = 0,085$ ohm. Than while amperage is 2A, tension decrease on switched semiconductor triode is 0,17V.

Is it possible to use ignition for left-handed engine?

- Ignition can't differentiate engine turning direction, so it is possible to build it into the left-handed engine.

Is it possible to build the contactless ignition even into the two stroke engine with three cylinders (wartburg)?

- Ignition enables actuating one or two inductors only. Wartburg engine uses three inductors, so it isn't possible to use our contactless ignition.

What pre-ignition is generated by ignition near first impulsion of sensor?

- Ignition has set up default values for minimum engine revolutions from set table, which is used near first impulsion of sensor.

Is it possible to use inductors from Škoda Favorit car?

- Inductor from Škoda Favorit has 1,2 ohm resistance. Condition of inductor using is 2,5 ohm resistance and higher, so this inductor can't be used.
- It's possible to connect the coil to ignition of type CDI, which works perfectly with coils of resistance about 1 ohm and less.

Is it possible to install Universal ignition or Direct ignition to car Š120 or Favorit?

- Yes, it is possible to install ignition to car Š120 or Favorit. It's useful to use original contact-maker Favorit with star inductive sensor, where is necessary to get out centrifugal spark advance adjustment from. Sensor connecting is possible to contacts P and G, PA and G or PB and G (according to ignition type). It's useful to use type of inductive coil from Š120, or other Magneton coil with primary winding resistance 2,5 ohm and bigger while using ignition of type TCI, for CDI is possible even using of coil Favorit. It's possible to leave original subpressure timing or to use electronical pressure sensor working in range of 0-5V and to connect it to input Ex, AI1 or AI2 (according to ignition type).

What is failure rate of Ignition?

- With increase of number of sold pieces and with new versions of Ignition is failure rate from production start markedly eliminated. To decrease of fault liability contributes changes in production technology, new production versions and adding information necessary for doing correct installation.

Conductor connection, supply and failure solutions:

Which pole is taken as an earth pole?

- Standardly is pole "+" taken as an earth pole by the motorcycle. This ignition can take as an earth pole "+" even "-". If pole "+" was earthed, it is necessary to change inductor power supply (coil tag 15) from minus to plus. Minus terminal, which led to this coil is possible to use as minus pole for ignition supply, which is detached through supply box. Plus for coil supply and ignition is possible to take directly from earth.

Is ignition easygoing with 6V. electric, i.e. there is no need for rebuilding to 12V.?

- Ignition works from 3,5V. to 25V., so it is possible to use it for 6V. even for 12V. electric without reconstructions.

I'd like to ask you, if it is possible to build ignition into the motorcycle without battery?

- Ignition doesn't work without battery, because of minimum tension 3,5V necessity (lower tension evokes processor reset). Installation is possible, but with necessity of charge regulation complement and battery attachment (NiCd, Pb).

Are there some special requirements for conductors and method of their conducting during ignition install?

- During ignition install can be used original conductors, but it is better to use their substitution, especially if they're visible damaged, used or if they doesn't have enough profile.
- It's not good to lead supply and signal conductors concurrently with VN conductors.

Does greed ignition LED blink when starting?

- Too discharged or damaged battery. Problem can be too in damaged dynamo, alternator, switch, safety box or damaged cabling, which does serious failures in ignition supply. LED blinking is because of decrease supply voltage under 3,5V, when comes reset of ignition processor.
- It's used unfit induction coil with too low resistance of primary winding. For TCI (induction) ignition must be resistance $> 2,5$ ohm, for 12V and $> 1,5$ ohm for 6V. For capacitive ignition CDI fits coil with resistance < 1 ohm.
- Ignition coil can be damaged by original activity of gavel ignition, when can happen too long coil exciting from battery in switched-off engine. Thus goes through coil much stronger current and so it happens in gavel ignition in short time to partial or full damage of induction coil. Damaged coil then can easily damage MOSFET transistors of electronic ignition. So we recommend even coils changing to new 6V or 12V of MAGNETON, BOSCH (or other fit types) during installation of electronic ignition.
- There's not used fit cap on plug, which makes unacceptable disturbance. Best solution is using of metal shielded cap for every plug. By this way you can prevent disturbance of ignition, configuration computer and other surrounding equipment.
- Function of optical sensor can be affected by direct sunlight. This can surprise, when engine runs in garage without problems and after going out to sunlight can happen engine omitting. So it's useful to cover ignition by original engine shroud before ride.

What is power consumption of contactless ignition?

- Power consumption of Ignition is insignificant (c. 20 mA) with regard to consumption of induction coils. Consumption depends on chosen mode of their excitation (minimum - 50%, middle 75%, maximum almost 100%).
- Field excitation control allows rise of excitation energy during starting, decrease of energy during free running and again increase of energy during revolutions rising. Ignition TCI (induction) can eliminate disadvantage of induction ignitions namely decreasing spark energy with rising engine revolutions.

Does ignition include even tension regulator?

- Ignition doesn't include tension regulator, even it would be very easy to implement it.

Communication and ignition settings:

Does happens interruptions of communication with ignition during engine run?

- There's not used acceptable plug cap and this evokes interruptions. The best result is using of metal shielded cap for every plug.
- Communication cable line is too near by plug VN cable or line is too long.

How to launch function for curves switching?

- For curves switching is used external input DI1, whose grounding or supply connecting (according to ignition type) evokes change of this signal's position. Change of DI1 signal position is possible to see in Online Visualisation in Ignition Control application.
- It's necessary to enter two curves behaviours [1] and [2] in application Ignition Control, where it's possible to use functions for curve edit or copy.
- For curves switching permitting is necessary to tick off function Switch Curve 1 / Curve 2. Invert option serves to change of signal logic level inversion.

At reading of ignition curve is curve in the lowest revolutions biased.

- At overfulfilment of time which is countable by ignition come about limitation and then to distortion of curve. This event can shown for very big ignition delay only and in range from 180 to 250 rev/min. (revolutions for start) only.

Which pins from serial port are used for communication with PC?

- For communication are used pins 2, 3, 5. Used communication cable pro connection with PC has prolongation fuction only, that means pins 2-2, 3-3, 5-5 connection.

Please, can you give me protocol which provides communication between Ignition and PC in online mode? I'd like to get revolutions for digital speed counter from Ignition.

- Description of communication protocol is possible to send for Your request.

Pre-ignition options and rotation sensor:

What pre-ignition value has to be set up pre-ignition sensor for?

- Pre-ignition control is based on exact ignition delay from primary signal of rotation sensor. Delay period for pre-ignition control is in whole range converted from entered pre-ignition curve. By this principle is evident, that on sensor has to be set maximum value of pre-ignition, required by engine. Set pre-ignition value is then entered in Ignition Control application to Pre-ignition sensor item. Entered value impacts accuracy of Online visualisation and conversion of pre-ignition curve.

Is it somehow possible to convert pre-ignition from [mm] to [°] ?

- Value of pre-ignition sensor's position is entered in [°], but there's possible conversion from [mm] to [°] with help of Pre-ignition editor, which can be activated by double-click to pre-ignition sensor's value. For conversion is necessary to enter length of pre-ignition [mm], engine stroke [mm] and length of piston rod [mm]. If you're not able to measure length of piston rod, it's possible to choose it's length as from one and half to double of engine stroke.

How can be changed value of pre-ignition in comparison with original gavel ignition?

- Engine pre-ignition is for common motorcycle engines set on middle revolutions, where engine runs most often. When you use ignition with pre-ignition control, it's necessary to extend pre-ignition for 1 or 2 mm in comparison with original value to create space for possible expansion of pre-ignition in high engine revolutions. For middle and free-running revolutions ignition lowers pre-ignition by entered pre-ignition curve.

Is it possible to use only one sensor for independent control of two coils?

- Yes, all types of ignition allows detection of rising and declining ignition signal edges. On their base ignition divides sparks to individual coils. But this principle is possible to use with Hall and Optical sensor only.

Is it possible to compensate pre-ignition in case of unsymmetric storage of twin-cylinder engine crank-shaft?

- Yes, correction of pre-ignition is allowed by function „Pre-ignition correction A“ or „Pre-ignition correction B“. Correction is possible in range of $\pm 15,5^\circ$. But for correction to + is necessary reserve in actual value of pre-ignition and set value of pre-ignition sensor.

How are sensors supplied?

- Direct ignition and Universal ignition works with external rotation sensors only. Hall sensor and Optical sensor needs supply 5V, which can be taken directly from 5V output.

What serves correction of pre-ignition curve for?

- There's showing mistake during impulsion from pre-ignition sensor processing and spark generating. Mistake is created by sum of sensor's delay, input filter, digital processing and ignition coil delay. Mistake is showed by gradual lowering of pre-ignition in rising revolutions. Pre-ignition control mistake is about from 2 to 4° according to type of sensor by revolutions over 10.000 rev./min.

What serves pre-ignition sensor's filter for?

- Filter allows limitation of eventually undesirable disturbance, which could produce mistake of engine rotation metering and so even mistake in pre-ignition control. For most of cases fits filter value set to 5°.

General questions:

Is it possible to determine absolute output from the function of acceleration brake?

- Function of acceleration brake makes it possible only to determine relative output value, its proportion change and log up process of revolutions in set time.

Can you send me wiring scheme and list of components? I'd like to create my own printed circuit in compliance with my vision at home.

- We don't publish ignition scheme. It is possible to order complete serial product only. Eventually we can do some small modifications etc.

Will be adjustment of Ignition saved even after separation of battery?

- advance curve and other adjustments are saved in microprocessor in EEPROM memory which warrants duration of data saving 200 years.

I'd like to ask if you have a hand in the article in "Practical electronic 2003/7" (Transistorized ignition for motorcycles with advance control) and if program Ignition Control is compatible with this ignition.

- Author of the article *Dipl.Ing. Radek Taraba* is author of ignitions offered by us, but application Ignition Control isn't compatible with this ignition, because it's very simple construction based on absolutely different programme principle. Nowadays ignition compared to previous construction of PE allows communication with PC in real time, independent exciting of two coils, table of advance with 256 points, extended operating range even advance range, curve saving straight into processor and many other new features.