

Mss TCI-P

SPARKER TCI-P is an inductive ignition unit for road motorcycle. The ignition unit can be set by a computer PC with a program TCIP.EXE. Advance (time of ignition) can be set as a function of revolution Ignition contains outputs for tachometer, fuel pump relay. It contains also two inputs for blocking of ignition. It is by the time of programming connected with computer PC by serial port (COM). The program TCIP.EXE is included to ignition unit.

HARDWARE

Pick up system.

Ignition can have maximal four channels. Standard version has two channels (four-cylinder engine). Ignition can be programmed for many pickup systems. Most of them can be choose directly from list in program TCIP.EXE others can be set by special procedure (also by program TCIP.EXE).

Supply voltage +12 V input.

Supply voltage must be within 8 – 18 voltage range. In this range the unit is able to provide optimal control of all the processes. Supply voltage is connected by positive outlet to +12 V (red) and by negative outlet to GND (blue).

Crankshaft position sensor CKPS input.

An input is ready for standard pickup sensors used on motorbikes as CKPS.

One outlet of the CKPS should be connected to connector (yellow) and the other one should be connected to GND (blue). See following the chart. For system with two pick-ups should be one outlet of the second pick-up connected to connector (brown) and the other one should be connected to GND (blue). See following the chart.

Blocking input.

One outlet of blocking switch (for example side stand switch) should be connected to connector (green) and other one should be connected to GND (blue). If the blocking switch is active the ignition is blocked. Opposite polarity of blocking input can be set by software TCIP.EXE.

Induction coils IC 1, IC 2, IC 3, IC 4 outputs

One outlet of induction coil of cylinder 1, 4 should be connected to key switched + 12 V and the other one should be connected to corresponding connector IC 1, 4 (orange). One outlet of induction coil of cylinder 2, 3 should be connected to key switched + 12 V and the other one should be connected to corresponding connector IC 2, 3 (white).

Excitation (dwell time) of induction coil can be set to short or long). Short dwell time is for induction coil with primary coil resistance less than 2 Ohm. If long time is used for that one coil, coil can be destroyed. If it is used short time for coil that desire long dwell time, the energy of spark could be small especially in high rpm.

Markus Schmitt Am Frankengrund 1, 36093 Künzell
Tel.: 0661/93350031, FAX: 0661/93350032, Mobil: 0173/9438673

e-mail: info@mss-pro-mille.de
www.motor-sport-service.de

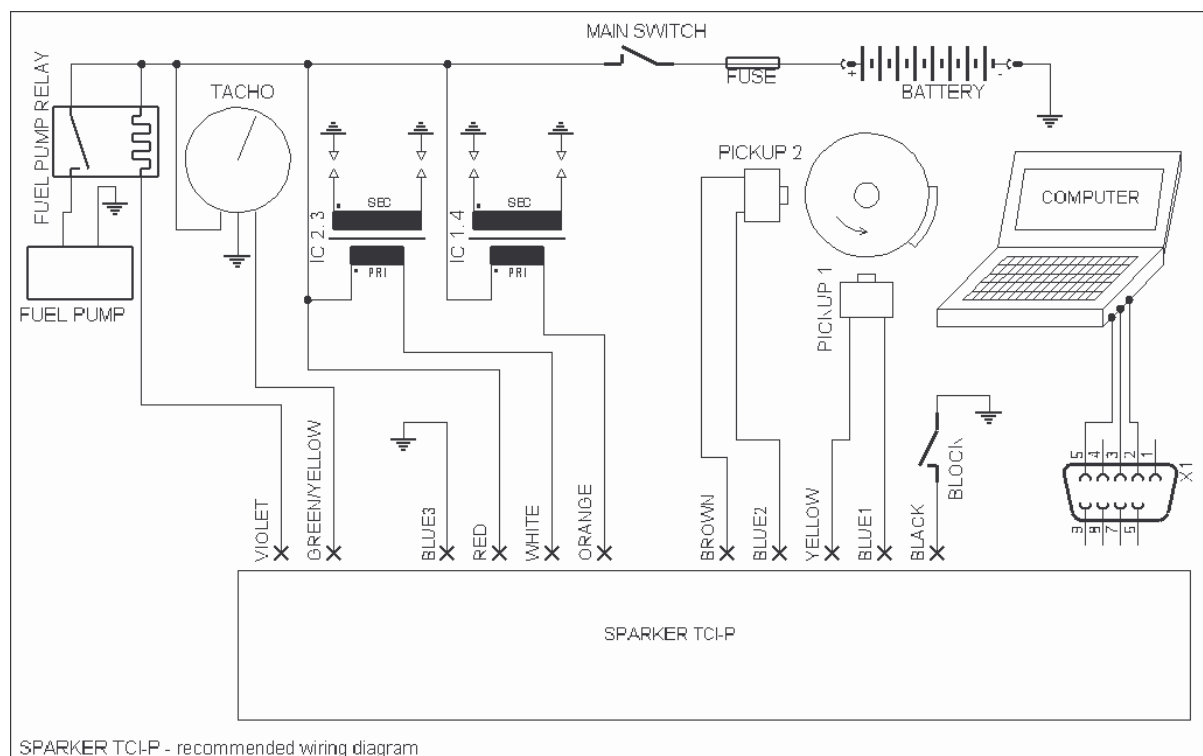
Revolution indicator - TACHO output.

The revolution indicator output is compatible with most of board devices used on motorbikes. Pulse number for one revolution is set within TCIP.EXE software. TACHO output should be connected to connector (green/yellow).

FUEL PUMP RELAY output.

Fuel relay is switch on while the motor is running, for about 4 s after the unit is switched on and for about 4 s after motor has stopped. One fuel pump relay outlet should be connected to connector (violet) and the other one should be connected to key switched + 12V. Connect the switched fuel pump relay circuit following the diagram.

COLOUR	NAME	DESCRIPTION
blue	GND	ground
orange	IC 1,4	inductive coil 1,4
white	IC 2,3	inductive coil 2,3
red	+ 12 V	supply 12 V
yellow	CKPS (1)	input for pick-up (1)
brown	CKPS (2)	input for pick-up (2)
blue	GND	ground for pick-up
blue	GND	ground for pick-up
black	BLOCK	blocking input
green/yellow	TACHO	output for tachometer
violet	FUEL PUMPE RELAY	output for fuel pump relay



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SOFTWARE TCIP_SET.EXE

Pull down menus

File – includes items

New	- default settings
Open	- opens data file
Save	- saves data file
Print	- prints the current settings
Print all	- prints the current settings all tab sheets
Exit	- exits the program

Clicking **New** results in default settings of all parameters. They value for four-stroke engine without TPS.

Port – includes items **Com1** to **Com10** - selection of communication line
For PC without COM (USB only) apply adapter USB/RS232.

Device – includes items

Read	- reads data from the unit
Verify	- compares data in PC with data in the unit
Program	- sends data to the unit and conducts verification

Tools – include items of collective settings

Language – language settings: **English, German, French and Czech**

Help – includes items

Help	- opens assembly guide (this file)
About the program	- data on the software (version, date)

Icons menus



- default settings

Warning!!! Clicking this icon results in automatic default settings of all parameters



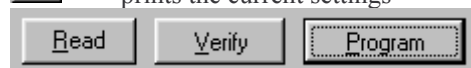
- opens data file



- saves data file



- prints the current settings



- see pull down menu **Device**

Tab sheet Miscellaneous

Limiter	- sets revolution of classic starting limiter
Revolutions without ignition	- sets number of starting revolution without ignition
Excitation long	- sets long excitation of induction coils
Programming after a change	- automatic programming settings (after every change)
No reading	- reading is not allowed (after programming with this option data cannot be retrieved from the unit)
Switch activation	- input logic settings (if the box is checked the function is activated by switch on input)

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File: - full path of using file

Tab sheet Motorcycle

Choice of pickup system	- Choice of pickup system for certain motorcycle
Pulses per revolution	- Setting of tacho output
Correction	- Correction of tacho in %

Tab sheet Advance map

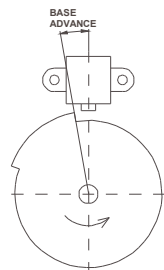
Advance map

TP map includes 100 adjustable advance options (in relation revolution and throttle position). Collective setting of the whole column is possible using the arrows under columns. Collective adjustment of the whole map can be done by collective change tool (+ and – buttons with selection **All**)

When the motor is running and PC connected with the unit current segment in the fuel map is highlighted. Use of collective change tool + and – button without selection **All** - just the current segment will be changed.

TPS - option advance map/advance curve

Base advance - setting of base advance



Monitor

Monitor is located on the right and lower side of the screen – sensor values and motor operational characteristics can be observed here. Should there be **No connection with PC** prompt displayed in the upper right corner, the unit is not connected.

RPM	- motor revolution [1/min]
TP	- Throttle position [%]
Advance	- Ignition advance [°]
Pick up 1	- display whether pick up 1 is running or stopped
Pick up 2	- display whether pick up 2 is running or stopped
U	- supply voltage [V]
Servo required	- Required value of servo position sensor
Servo measured	- Measured value of servo position sensor
Blocking	- Blocking activation signal
Number of programming	- Number of times the unit has been programmed