STPS 02

1. Hardware - Particulars

Throttle position sensor TPS.
Input for standard motorbikes TPS sensors. Voltage range is 0 to 5V. Setting up for individual type of motorbikes is done by program STPS.EXE. The TPS is supplied by supply voltage + 5 V and SENSE GND.

Supply voltage +12 V.
Nominal supply voltage is 14 V. The supply voltage range is 8 to 16 V. In this range unit operates optimal.

Power ground GND
Sensor ground is used for connection and supply of unit and as ground for revolutions sensing.

Sensor ground SENSE GND.
Sensor ground is used for connection and supply of sensors.

Supply voltage + 5 V.
Supply voltage output + 5 V is used for supply of sensors.

Servo STPS1
1. Servomotor and sensing potentiometer (DC motor)

Servo STPS2
2. Servomotor and sensing potentiometer (DC motor)

Unit STPS02 is controller of two independent servos drives with potentiometer indication of position.
The STPS02 is supplied through fuse by supply voltage. (Range is 8 to 20 V. Plus is red wire, minus is blue wire).
Revolution is pick-up from active wire of inductive coil. (Yellow wire and ground blue wire).
6 pin connectors connect both of servos. First servomotor is connected to white/red wire and second one to white/blue.
First potentiometer is connected so: start to Sense GND green wire, active outlet to orange wire and end to +5V black wire.
Second potentiometer is connected so: start to Sense GND green wire, active outlet to white wire and end to +5V black wire.
Throttle position sensor TPS is connected so: start to Sense GND green wire, active outlet to "Sense TPS" violet wire and end to +5V black wire. If both of servo drives are used without TPS, TPS is not necessary to connect.

2. Functional description

Both of servo drives have two modes:
1. TPS off (check box TP enable is not checked). Servo drive position is dependent only on revolution.
2. TPS on (check box TP enable is checked). Servo drive position is dependent only on revolution and on throttle position.

Desired voltage in [mV] is in tab sheet servo 1 or servo 2. Between points is done interpolation. Hysteresis [mV] determine accuracy (max difference between desired and measured voltage). But to small value cause vibration of servo drives.
Hysteresis [RPM]: If the change of RPM is smaller then this value the position of servo drives is not changed. This is useful the avoid vibration if there is some big changes on desired voltage on small changes of RPM.

3. Software STPS

<u>Pull down menu</u>

File - items	**New**	- Set default parameters
	Open	- Open file with parameters
	Save	- Save parameters to file
	Print	- Print of parameters
	Exit	- End of program

Attention!!! After click to New, default parameters for this motorbike are set.

Com - items	**Com1 to 10**	- Set number of com
Device - items	**Read**	- Reading parameters from unit
	Verify	- Compare parameters on PC with parameters of ignition
	Program	- Programming set parameters to unit
Tools - items	**Minus F4**	- Desired voltage minus 20 mV
	Plus F5	- Desired voltage plus 20 mV
Language - items	**English**	- English language
	Czech	- Czech language
	German	- German language
Help - items	**Contents**	- open this file
	About	- version and date of program

Icon menu

  New   - Set default parameters

Attention!!! After click to New, default values set for all parameters.

  Open   - Open file with parameters

  Save   - Save parameters to file

  Print   - Print of parameters

  - Read, Verify, Program- (see pull down menu).

Tab sheet Miscellaneous

TPS   **- s**etting of terminal value TPS [mV]

   - measure and adjust 0 % TPS (power supply on, unit connected to PC, no gas)

   - measure and adjust 100 % TPS (power supply on, unit connected to PC, full gas)

Number of pulses   - Number of ignition (pulse) pro revolution of Crankshaft

File   - path to actual file with parameters

Number of programming   - Number of programming unit by this software.

Tab sheet Servo 1, Servo2

contains
- 15 columns for revolution, with adjustable revolution .
- 10 row for throttle position **[**%]
- Check box TP Enable determine if desired voltage is function of TPS
- Check box Servo Enable. It is possible to disable servo by software.
- Edit box Hysteresis [mV] determine accuracy (max difference between desired and measured voltage).
- Edit box Hystereze [RPM If the change of RPM is smaller then this value the position of servo drives is not changed.

- Button - (or key F4) Desired voltage in active cell minus 20 mV
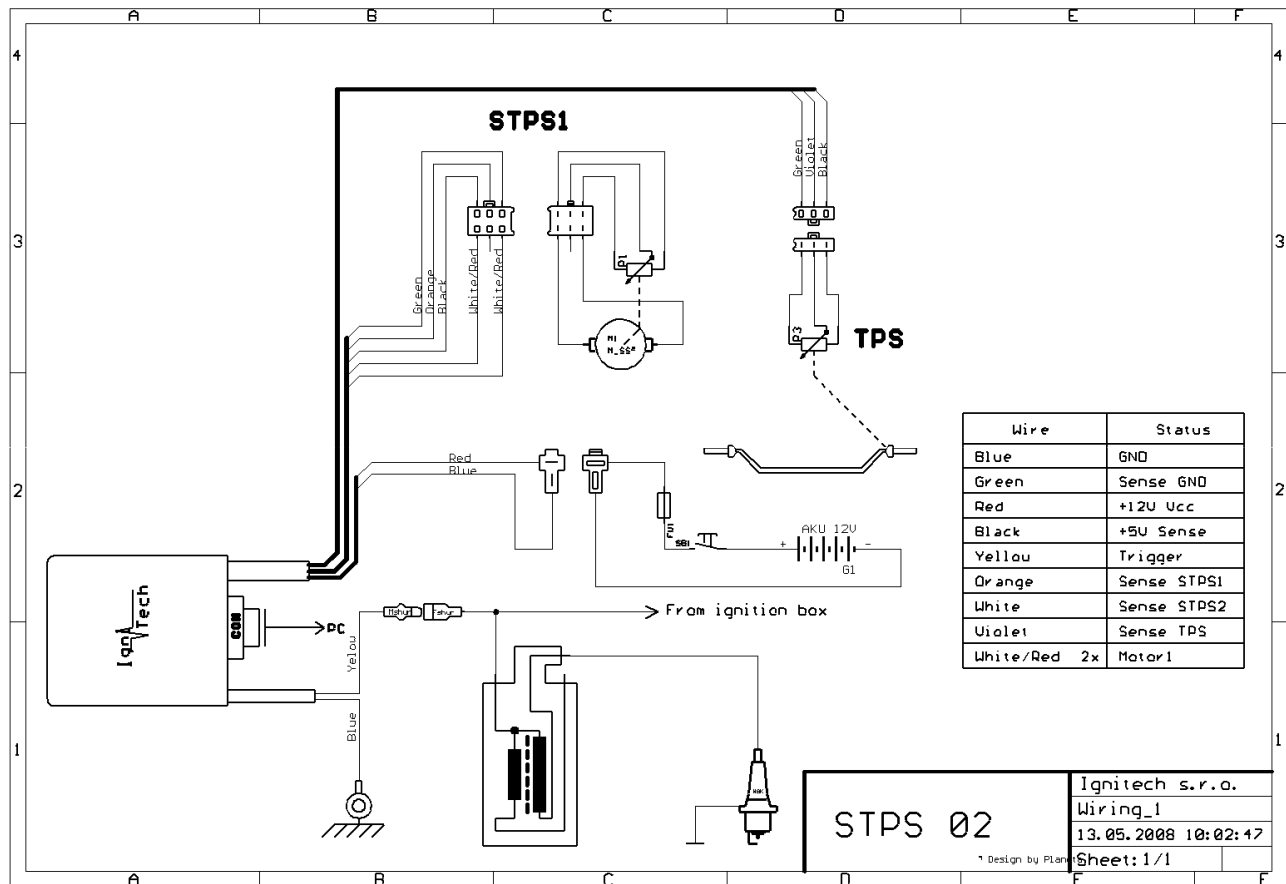- Button **+** (or key F5) Desired voltage in active cell plus 20 mV
- Check box All. If checked button, then button + or –or key F4 or F5 change all cell on active tab sheet.

Monitor

Monitor is situated in bottom of window. Monitor display sensors value and some operating value of motors. If there is label on the right side top corner **NO CONNECTION** the unit is not connect to PC.

RPM	- Revolution per minute [1/min]
TP	- Throttle position sensor [%]
U	- Supply voltage [V]
Servo1 Reqired	- Required voltage on servo 1 potentiometer
Servo1 Measured	- Measured voltage on servo 1 potentiometer
Servo2 Reqired	- Required voltage on servo 2 potentiometer
Servo2 Measured	- Measured voltage on servo 2 potentiometer

Wiring for one servomotor connect:

Wire	Status
Blue	GND
Green	Sense GND
Red	+12V Vcc
Black	+5V Sense
Yellow	Trigger
Orange	Sense STPS1
White	Sense STPS2
Violet	Sense TPS
White/Red 2x	Motor1

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Wiring_1
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Wiring for both servomotors connect:

STPS1

STPS2

TPS

Wire	Status
Blue	GND
Green	Sense GND
Red	+12V Ucc
Black	+5V Sense
Yellow	Trigger
Orange	Sense STPS1
White	Sense STPS2
Violet	Sense TPS
White/Red 2x	Motor1
White/Blue 2x	Motor2

AKU 12V

From ignition box

> PC

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STPS 02

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Wiring	
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° Design by Plane