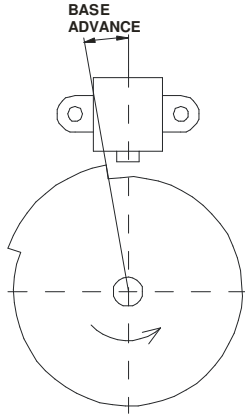# SPARKER DC-CDI-P

- capacitive ignition for bikes - detailed description

SPARKER DC-CDI-P is programmable capacitive ignition. It is designed for pick-up system, that is on next figure (drawing in TOP position). It can also be used by motorbike XT600 older model, KLR600 older model and CBF250.

1. Hardware

Ignition is suffused by PU plastic into plastic box. The ignition is terminated with harness of wires with connectors (2 + 3 + 4 pins connectors 2,8).

yellow	inlet for crankshaft position sensor (**CKPS**)
blue	ground (for CKPS)
green	**input 1 (INPUT 1)**
black	**input 2 (INPUT 2)**
grey	**input 2b**
violet	**output for Gear shift light (GEAR SHIFT LIGHT)**
rot	**supply +12 V**
blue	ground
orange	output to inductive coil **IC**
yellow/green	output to tachometer **TACHO**

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

Input 1 (green)
It possible to choose one of the following functions:
1) OFF – no function.
2) KILL SWITCH – If the input is connected to ground, the ignition is blocked.
3) CLUTCH MASTER - If the input is connected to ground, the ignition is blocked for by software-preset time.
4) RETARD - If the input is connected to ground, the advance is decreased by preset value.
5) START LIMITER - If the input is connected to ground, the limiter is working with value of start limiter.

Input 2 (black)
1) OFF - no function.
2) BLOCKING - If the input is not connected to ground, the ignition is blocked.
3) CLUTCH MASTER - If the input is connected to ground, the ignition is blocked for by software-preset time.
4) RETARD - If the input is connected to ground, the advance is decreased by preset value.
5) START LIMITER - If the input is connected to ground, the limiter is working with value of starting limiter.

State of inputs is displayed by software DCCDIP.EXE.

Input 2b (grey)
This input is for separate connection of side stand switch and neutral switch by blocking.

Supply +12 V.
Nominal Supply voltage is 14 V. It must be within 8 - 16 V range. In this range the unit is able to provide optimal control of all the processes. If supply is greater than 18 V, ignition is OFF.

Inductive coil IC.
Induction coils outputs are ready for standard types, designed for capacitive ignition and used on motorbikes (primary coil resistance approx. 0.5 Ohm).

Revolution indicator output TACHO.
The tachometer indicator output is compatible with major part of board devices used on motorbikes (1 puls / rev.).
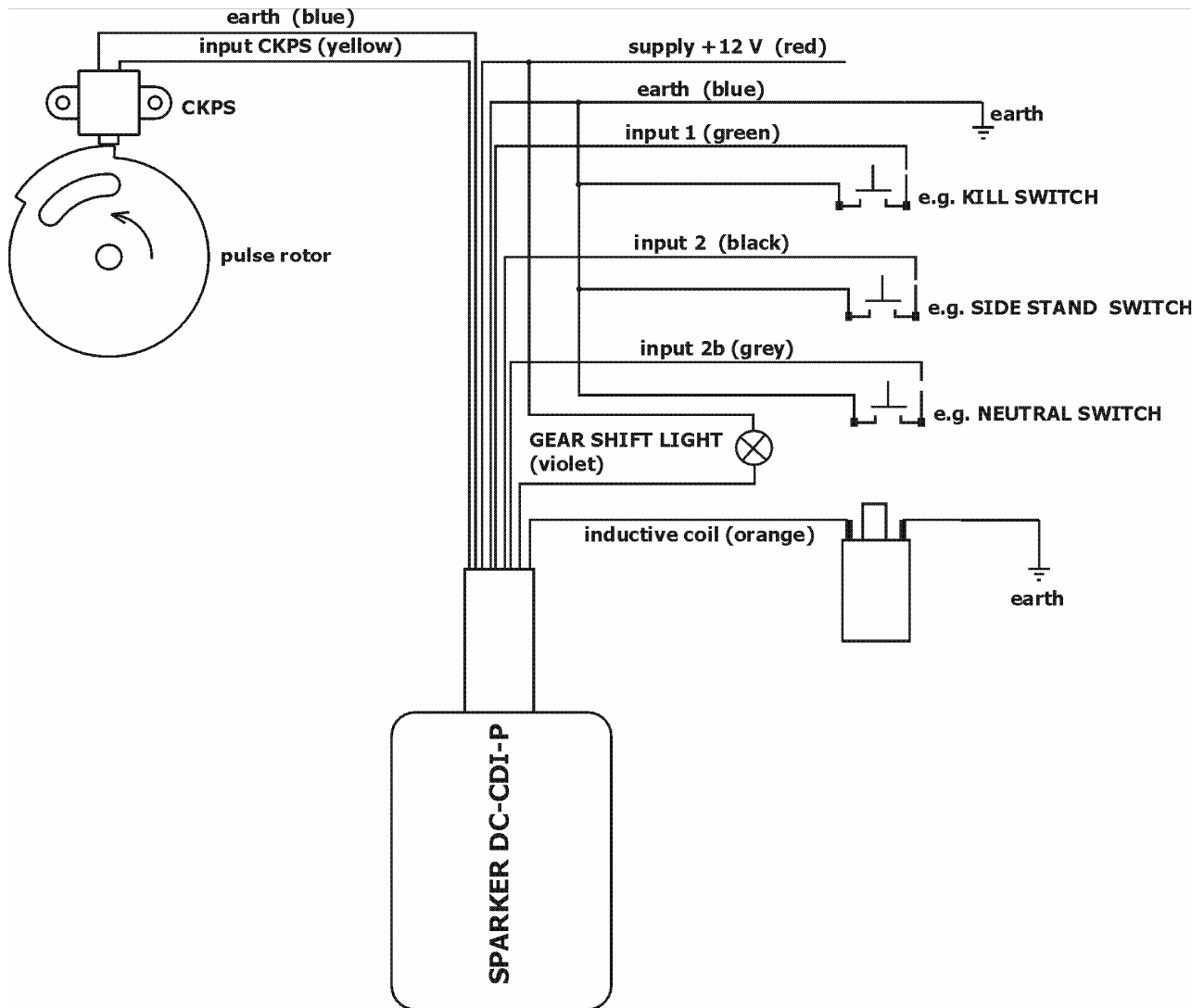
Output for GEARSHIFT LIGHT (violet)
Maximal current is 5 A (lamp max. 50 W). Revolution for gearshift light is set by software DCCDIP.EXE.
One outlet of gearshift light should be connected to connector (violet) and other to switched +12 V.

Connection to PC.
Connection to PC is realized by 9-pin serial port (COM).

2. Software DCCDIP.EXE

Pull down menus

File - includes items	**New**	- default settings
	Open	- opens data file
	Save	- saves data into file
	Print	- prints the current settings
	Exit	- exits the program

Port - includes items	**Com1 to Com10**	- selection of communication line

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, Czech, and German**

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**

Setting element

15 adjustable options for revolution/advance
Collective adjustment of the whole advance curve can be done by collective change tool (**+** and **–** buttons with selection **All**)
When the motor is running current segment is highlighted in the advance curve. Use of collective change tool **+** and **–** button without selection **All** - just the current segment will be changed.

|	
Number of items	- here is it possible to set number points of advance curve
Base advance	- here is necessary inscribe value of base advance (by figure 1)
Setting of pick up system	- standard, Kawasaki KLR 600 older model or Yamaha XT 600 older model
Ignitions per revolution	- setting of engine configuration
	One cylinder, parallel two cylinder, engine with opposed cylinders=1
	Two cylinder 2x 180° =2
	Three cylinder 3x 120° =3
Limiter	- setting of maximal revolution.
Start limiter	- setting of maximal revolution for start limiter
Retard	- setting of value for reduction advance by retard.
Clutch master time	- setting of clutch master time
Clutch master pause	- setting of clutch master off time.
Programming after a change	- automatic programming settings (after every change)

Option for CKPS polarity.
Ignition can work with both polarities of CKPS (**Positive** or **Negative**). Appropriate polarity can be set by software DCCDIP.EXE.

Positive polarity of CKPS:
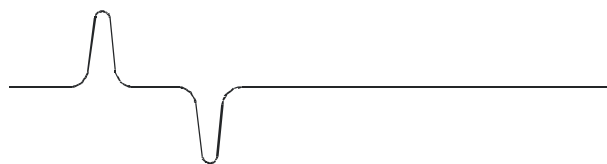
Negative polarity of CKPS:
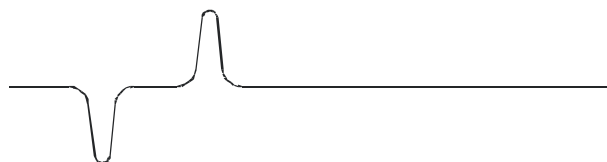
If is impossible to determine polarity, third option **Self search** can be used. This option bat can bring some problems, especially for engines without starter.

Number of programming: - number of times the unit has been reprogrammed
File: - full path of using file

Monitor

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

RPM   - engine revolution [1/min]
Advance   - ignition advance [°]
Pick up   - displaying whether pick up is running or stopped
U   - supply voltage [V]
Kill switch   - displaying whether kill switch is on or off
Retard   - displaying whether retard is on or off
Blocking   - displaying whether blocking is on or off
Start limiter   - displaying whether start limiter is on or off
Clutch master   - displaying whether clutch master is on or off
Polarity of CKPS   - displaying polarity CKPS