# HER CHEE ATV Computer ACE-7XXX User Manual



Thanks for purchasing the ATV/Motorcycle computer; this manual is specifically designed for ACE-7XXX series. The ACE-7XXX series includes ACE-71XX/72XX, 75XX/76XX and ACE-77XX/78XX, descriptions with "\*" are for ACE-75XX/76XX and ACE-77XX/78XX only, functions and descriptions with "\*\*" are for ACE-77XX/78XX only. Each series has different models, each model has different LED indicators. You may find that the photo has a set of LED indicators different from your computer, the photo is for reference only.

PANEL DESCRIPTIONS				
1. Tachometer Scale	7. Bar Fuel gauge			
2. Bar Tachometer	8. Bar temperature gauge*			
3. 1st row: Speedometer	9. Gear indicator			
4. 2nd row: Other functions	10. LED Indicators			
5. RESET Button	11. External control indicators			
6. MODE Button	12. Internal/external control			
	indicators			
LED Indicators				
Left direction indicator	Right direction indicator			
<b>ID</b> High-beam headlamp	😁 Engine oil warning			
Low battery indicator	Low fuel indicator			
FEA	TUDEO			

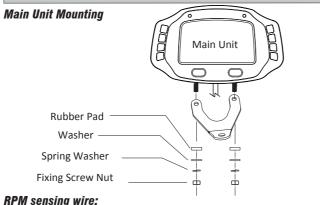
• Simultaneously displays tachometer, speedometer, gear indicator,

- fuel gauge and \*bar-graph temperature meter as well as one of the other functions.
- Built-in gear indicator which calculates gear by comparing speed and RPM. The gear indicator can be switched off for automatic vehicles.
- On some models the backlight can be controlled separately from the ignition power.
- Bar-graph tachometer has selectable scale of 10,000rpm or 20,000 rpm.
- End user is able to adjust odometer when the odometer is less than 30km /18.6 miles.
- \*Acceleration and deceleration timers as well as distance timer for racing practice.
- \*\* Features a 99 lap timer and an optional cable connected remote control switch.
- Built-in 6-8 or 6-10 LED warning lamps with different symbols depending on model.
- Fast processor so can connect to pulse type gearbox speed sensors.
- Universal wheel circumference setting range: 1-3999mm.
- Fuel gauge full and empty resistances are fully adjustable and it can connect to sender units with resistance range up to 990 ohms. In reserve mode, the fuel gauge is not displayed and fuel symbol lights when the input wire is connected to -ve. The gauge can be switched off entirely if not required
- Flexible battery warning voltage setting from 11.0 to 14.9V.
- Speedometer can show nearest 0.1 mph or km/h speed if required by user. E.g. 100 or 100.5
- Includes bracket, RPM sensing wire, speed sensor, \*temperature sensor(s), fitting kits, wiring harness and \*\*wired remote control switch.

- Excellent water resistance, anti-vibration structure and noise immunity design.
- \*\*EM & IR receivers and IR transmitter for automated lap timing are available as accessories.

available as accesso				
	SPECIFIC	ATIONS		
Function	Symbol	Specifications		
Bar Tachometer		500-10,000 rpm/1,000-20,000rpm options		
Speedometer	Km/h / MPH	2.4-399.9 km/h (248.5 MPH)		
Trip meter 1&2	TRIP 1&2	0.0-999.99 KM/Miles		
Odometer	ODO	0.0 – 999,999 KM, 0.0-621,387 Miles		
12/24 Hour Clock	Œ	0:00' - 11H59'59"/23H59'59"		
Digital Tachometer	rpm	10-19,990 rpm, 10rpm increment		
*Thermometer Meter		+25°C-180°C / 77°F-356°F		
Average speed	AVG SPD	2.4-399.9 KM/h (248.5 MPH)		
Riding timer	RT	0-99H59`59``		
Total Riding Timer	TT	0-9999H59'		
Hour meter	HRT	0-9999H59'		
*Voltage Meter	<u>-</u> +	8.0-18.0 Volt		
Maintenance reminder	مر	0-9999H / 0-9999km(6213Miles)		
Maximum speed	MAX SPD	2.4-399.9 Km/h (248.5 MPH),		
Maximum RPM	MAX RPM	10-19,990 rpm, 10rpm increment		
*Max. Temperature	MAX 🎿	+25°C-180°C / 77°F-356°F		
Gear Indicator		N, R, P, H, L, 1, 2, 8 gears and off mode		
*Distance timer	Trip RT	0-1/4 mile. 0-100M, 0-400M		
*Acceleration timer	SPD RT	0-100km/h, 50-70mph		
*Deceleration timer	d SPD RT	100kmh-0kmh		
Bar-Fuel gauge	Ð	Adjustable 0Ω -990Ω, reserve mode, or not displayed.		
Bar Temperature	_ <b>!</b>	1-7 Bar-graphic		
**Lap Timer	LAP	99 Laps		
Power Input	DC 12V			
Tachometer Sensor	CDI or Igr	CDI or Ignition Coil Signal		
Speed Sensor	Reed swit	Reed switch / 2 wire Hall-effect Sensor		
	& Magnet	& Magnet / Cable drive adaptor		
Wheel circumference sett	0	9mm (1mm increment)		
Speed input divider setup	0	( )		
Maximum frequency of div				
Dimensions		130.1mm x82.8mmx27.0 mm		
*Temperature Sensor		Thermo Resistor Sensor		
**Lap Timer Sensor		on or optional accessory spare parts of IR		
	receiver/N	Agnetic Field sensors		

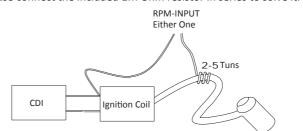
# **INSTALLATION & PARTS**



#### RPM sensing wire:

1. Signal intensity from ignition coil is dependent on vehicle type.

- 2. Coil 2-5 turns around spark plug lead, with more turns creating steadily stronger signal, fewer turns creating weaker signal.
- 3. The RPM circuit is designed for most bikes, however some bikes' signal is too strong if the RPM looks like much more than actual RPM and unstable, please connect the included 1M Ohm resistor in series to solve it.

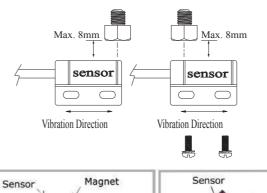


#### Speed Sensor Mounting:

ACEWELL has several speed sensors; the unit may include one of them. If the model is intended to be connected to a gearbox electronic speed output to obtain the speed reading, no speed sensor will be included.

#### **Reed Speed Sensor and Magnet:**

- 1. This sensor is universal sensor for motorcycle, find a rotating part to install magnet (for example disk, sprocket or driveshaft) and a location to install the sensor where it can be aligned to the magnet.
- Align the center of the magnet to either of the sensor marking lines or the side of the sensor. The magnet must not travel down the body of the sensor.
- 3. Installing the sensor parallel to the vibration direction creates optional anti-vibration effect.
- 4. Make sure the gap between the magnet and the sensor is within 8mm.





# Hall Effec Speed Sensor and Magnet:

- This is universal sensor for ATV front or rear wheel installation or motorcycle front wheel installation. For some fitments an accessory speed sensor holder may need to be purchased.
- Find a rotating part to install magnet (for example disk, sprocket or driveshaft) and a location to install the sensor where it can be aligned to the magnet.
- 3. Align the center of the magnet to center of side face of the sensor.
- 4. Make sure the gap between the magnet and the sensor is within 5mm.



#### Specific Hall sensors:

Cable drive adaptors for most bikes originally fitted with cable driven speedometers or milemeters are available. When using these cables it is necessary to divide the circumference setting by the number of rotations of the cable per rotation of the wheel or enter the number or rotations into the "P" screen in setup.

\*: 1.

2

B

Ti

### \*Thermo Sensor and Sensor Tube:

- The unit includes a water temperature sensor; you have to purchase a suitable water pipe temperature sensor tube to install the sensor easily.
  Cut the water pipe, insert the temperature tube into the pipe and secure it by attached pipe clamps.
- 3. Screw the sensor into the tube.
- 4. If your vehicle is fitted with a thermostat that stops water flowing to the radiator when the engine is cold, you will not get a reading until the thermostat opens.

### \*\*Wire Remote Control Switch Installation:

- 1. Install the switch arm on handlebar.
- 2. Install the switch box to one of 3 fixing holes and adjust switch box to a suitable angle.
- 3. Plug the switch box connector into the main unit matching connector.

#### FUNCTIONS

#### BAR RPM: Bar Graphic Tachometer

The bar tachometer has 10,000rpm and 20,000rpm options.

#### Km/H or MPH: Speedometer

- 1. Displays speed meter up to 399.9 Km/H or 248.5 MPH.
- 2. Decimal of speedometer can be optioned by user.
- 3. Maximum input frequency 7KHz .
- 4. If a frequency of 7KHz is reached before the speed reaches 399.9Km/h
- then the maximum speed will be lower. With a 1277mm diameter wheel and the speed input connected to an ABS sensor producing 105 pulses
- per revolution the maximum speed displayed at 7KHz would be 250Km/h.

## **RPM: Digital Tachometer**

- 1. It displays digital tachometer up to 19,990RPM and displays 19,999rpm when tachometer is over 20,000rpm..
- 2. Tachometer signal can pick up from either CDI or Ignition Coil Signal.

#### 🕹 : Shift Warning RPM

- 1. The function enables you to set up a shift warning RPM.
- 2. Shift warning LED indicator flashes when RPM reaches preset value, and stops flashing after you shift gear.

#### MAX RPM: Maximum Tachometer

Displays highest tachometer achieved since last Reset operation.

#### MAX SPD: Maximum Speed Meter

Displays highest speed achieved since last Reset operation.

#### AVG SPD: Average Speed Meter

It calculates average speed from last RESET. The AVG is calculated from TRIP be divided by RT.

#### **ODO: Odometer**

- 1. ODO accumulates total distance traveled.
- 2. ODO data is adjustable when it is less than 30km (18.6 Miles), after that it stored in memory and cannot be reset.

#### **RT: Riding Timer**

- 1. Calculates total running time since last RESET.
- 2. Counter automatically begins with movement.

# TT: Total Riding Timer

- 1. Calculates total running time since last RESET.
- 2. Counter automatically begins with movement.

# HRT: Hour Meter

- 1. Calculates total engine operation time since last RESET.
- 2. Counting automatically begins when revs are detected.
- 3. HRT data is stored in memory, and cannot be reset.

### (**b**: 12/24 hour Clock

Displays 12 or 24 hour current time.

#### 🚠 : Bar Thermometers

- 1. Has 7 bars to indicate engine temperature.
- The 4th bar counting from bottom is turned on when thermometer reaches the preset warning temperature, each 15°C increase lights another bar.
- 3. The bar-temperature flashes when the measured temperature is higher than the preset warning temperature.
- 4. The over temperature LED flashes when either temperature input 1 or input 2 exceeds preset warning temperatures or is connected to -ve.

#### **1&2 :** Digital Engine Temperature Meter \*(temperature inputs 1 &2)

1. It displays -L-°C or -L-°F when temperature is lower than 25°C or 77°F, **MODE BUTTON** and displays -H- °C or -H- °F when temperature is over 180°Cor 356°F. 1. Press the MODE button to move between all functions in sequence as

2. The LCD screen flashes the digits of temperature when the thermo sensor detects temperature higher than the maximum preset temperature.

#### MAX .....: Maximum Temperature\*

Displays highest temperature achieved since last Reset operation. **\***: Maintenance Reminders

- 1. It counts down the preset  $\checkmark$  entered time or distance since last RESET
- 2. It displays  $\checkmark$  when the count down reaches to "0", and symbol of " 🛹 " flash to remind you to perform a service.
- 3. Push and hold RESET button to reset and restart the maintenance reminder after service.

# 🖽 : Digital Voltage Gauge

- 1. Monitors the vehicle's battery and charging system.
- 2. User can set battery warning LED on and off voltages between 11.0V and 14.9VDC (not fitted to all models).

#### :Gear Indicator

- 1. The gear indicator has each one wire for N and R, connect wires to N and R gears firstly.
- 2. The gear indicator calculates gear comparing speed and RPM then displays gear position.
- 3. User has to train the gear indicator before use.
- 4. Some models also have P, H, L, 2x4, 4x4 and LOCK symbols. TRIP RT: Trip Timer Test
- 1. The Trip RT can be set 100 metre or 400 metre (1/4 mile).
- 2. The computer starts timing when the vehicle begins to move and stops when the preset distance is reached

### SPD RT 1: Acceleration Timer Test

- 1. The SPD RT 1 can be time a 0-100Km/H (0-62mph) acceleration test.
- 2. The computer starts timing when the vehicle begins to move and stops when the preset speed is reached.

# SPD RT 2: Deceleration Timer Test

- 1. The SPD RT 2 can be set 100 to 0Km/H (62-0mph) deceleration test.
- 2. The computer starts timing when the vehicle decelerates past 100km/h and stops two seconds after the vehicle stops. The computer then removes 2 seconds from the displayed time.

# 🗈 : Fuel Gauge

- 1. Has 7 bars to indicate how much fuel remains.
- 2. To use as a fuel gauge, the user enters the sender 'empty' resistance between 10 and 990 ohms and the sender 'full' resistance between 10 and 990 ohms. The computer produces a linear scale of bars between these two resistances. When less than 10% fuel remains the gauge will flash and the warning LED if fitted will light.
- 3. To use as a reserve indicator, connect the reserve swich to the input and put into "rEs" mode. When the switch pulls the input to -ve the LED warning will light. On vehicles with temperature based sensors a 68 ohm 5w resistor needs to be connected between the input wire and 12v (switched)
- 4. If the gauge and warning lamp are not required they can be switched off.

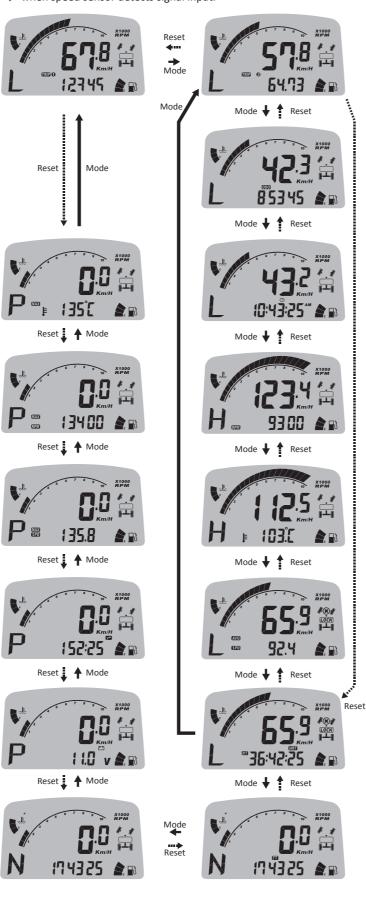
Bars	100Ω	250Ω	510Ω	-100Ω	-250Ω	-510Ω
7	0-10	0-25	0-50	100-90	250-230	510-460
6	11-20	26-50	51-100	89-75	229-200	459-380
5	21-35	51-85	101-180	74-60	199-150	379-300
4	36-45	86-110	181-230	59-45	149-110	299-230
3	46-60	111-150	231-300	44-35	109-85	229-180
2	61-75	151-200	301-380	34-20	84-50	179-100
1	76-90	201-230	381-460	19-10	49-25	99-50
0-Flash	91-100	231-250	461-510	9-0	24-0	49-0

# LAP\*\*: Lap Timer

- 1. It can keep up to 99 sets of lap timer.
- 2. The function must be operated by an additional wiring remote control switch or an accessory IR receiver/transmitter or a magnetic field sensor.

#### **BUTTON OPERATIONS**

- " $\rightarrow$ " from one function screen to another when the speed sensor does not detect any signal input.
- Trip 1-Trip2- ODO- CLK RPM TEMP AVG SPD RT TT HRT -VOLTG-Maintain reminder - MAX SPD - MAX RPM - MAX TEMP - Trip 1
- 2. Press the MODE button to move partial functions in loop sequence as "⇒"when speed sensor detects signal input.



# **RESET BUTTON**

- 1. Momentarily pressing the reset button cycles through functions as MODE button above.
- 2. Press MODE or RESET button to the desired screen then press RESET button for 2 seconds to reset TRIP 2, MAX SPD, MAX RPM and MAX "E data from stored values to zero individually. The maintain reminder data will be reset to the preset value rather than zero.
- 3. The data of Trip 1 and AVG SPD reset at the same time when either one data is being reset.
- 4. ODO, clock and HRT data cannot be reset.

## Shift Warning RPM Operation

- 1. Press MODE button to reach the RPM screen; pull on the throttle until the desired shift warning RPM.
- 2. Press RESET button to confirm and set up the shift warning RPM.
- 3. Bar-graphic tachometer and warning LED will flash to warning you shift gear.
- 4. Press RESET button for 2 seconds at the RPM screen to re-adjust the shift warning RPM.

# Gear Indicator training operations:

- 1. Connects grey wire to N and purple wire to R (optional).
- 2. Put vehicle to a rolling stand, start engine and keep at N gear.
- 3. Gear indicator shows "N" if grey wire is connected.
- 4. Change the LCD screen to digital RPM.
- 5. Press and hold MODE button for 2 seconds to go into the mode to choose the number of gears.
- 6. Gear indicator flashes the default 6 gears.
- 7. Press RESET button to select the number of gear, user can select 4-8 gears or "0" to disable the gear function. (N,R,P,H,L can still be displayed in "0" mode)
- 8. If option "0" is chosen, momentarily press MODE to save the change.
- 9. Press MODE button to confirm the number of gears and go to the number gear ratio setting mode.
- 10. It displays and flashes "1", shift into 1st gear, release the clutch and run the engine to between 2000-4000RPM.
- 11. Hold the speed and the RPM for about 5 seconds until the "-"flashes. The flashing "-"after the gear "1" means the 1st gear is set.
- 12. Press MODE button to confirm the setting and go to the 2nd gear setting.
- 13. It displays and flashes "2", shift into 2nd gear, run the engine to between 2000-4000RPM.
- 14. Hold the speed and the RPM for about 5 seconds until the "-"flashes. The flashing "-" after the gear "2" means the 2nd gear be set.
- 15. Press MODE button to confirm the setting and go to next gear setting.
- 16. Repeat 11-14 until all gears have been set. Press MODE button to return to normal mode.
- 17. To leave gear indicator training without saving changes press and hold MODE for 2 seconds before the last stage is reached
- \*TRIP RT (1-100/400m), SPD RT1(0-100km/h) and SPD RT2(100-0km/h) settina mode:
- 1. Press MODE or RESET button to the TT screen, press and hold MODE button for 2 seconds to go into the 3 test timers set mode.
- 2. It displays SELECt and flashes TRIP RT, press MODE button to move between SPD RT 1, SPD RT 2 and TRIP RT and press RESET to enter the mode
- 3. In TRIP RT set mode, it displays TRIP RT and flashes "100", press MODE to choose 100 or 400 metre then RESET. The screen then flashes 00:00:00, the timer counts automatically when it receives a speed signal and auto-stops when trip meter reaches preset 100 or 400 metres. Press RESET button to reset the tested timer ready for another test, it displays TRIP RT and flashes 00:00:00 again. Press and hold MODE button for 2 seconds to leave the TRIP RT test screen and return to TT screen.
- 4. In SPD RT 1 set mode, it displays SPD RT 1 and flashes "0-100", press MODE to choose 100 or 50-70mph then RESET. The screen then flashes 00:00:00, the timer counts automatically when it receive speed signal (or when it reaches 50mph in 50-70 mode) and auto-stops when speed reaches preset 100Km/H or 70mph. Press RESET button to reset the tested timer and restart a new test, it displays SPD RT 1 and flashes 00:00:00 again. Press and hold MODE button for 2 seconds to leave the SPD RT 1 test screen and return to TT screen.

5. In SPD RT 2 set mode, it displays SPD RT 2 and flashes "100-0", press RESET button to confirm the setting and go into the deceleration timer. The screen then flashes 00:00:00, speed the bike/vehicle up to more than 100km/h then decrease the speed, the timer counts automatically when speed is less than 100km/h and auto-stops 2 seconds after the bike/ vehicle stops then counts back 2 seconds automatically. Press RESET button to reset the tested timer and restart a new test, it displays SPD RT 2 and flashes 00:00:00 again. Press and hold MODE button for 2 seconds to leave the SPD RT 2 test screen and return to TT screen.

#### \*\*Remote Control Switch for LAP timer:

1. The remote control switch has 2 buttons, MODE and LAP buttons. The MODE button is the same function as it on the main unit. 2. Press and hold the LAP button for 2 seconds to go into the LAP mode. 3. LAP Record operations:

- A. In LAP mode, press LAP button to RESET recorded LAP data and start the LAP recording function, the LAP icon flashes when waiting at start line, the 1st lap timer will be counted automatically when the unit receives speed signal; each press of MODE button records a LAP timer and displays the former LAP timer for 3 seconds then changes to display the current lap and lap timer automatically.
- B. The 100th lap will replace the 1st lap when lap record reaches the maximum 99 laps, the 101st lap will replace the 2nd lap...etc.
- C. The unit will be suspended to detecting signal for 4 seconds after it received an IR signal in order to avoid mistake counting.
- D. Press LAP button to convert stop or start LAP record function.
- E. Press and hold the LAP button for 2 seconds to go out LAP mode and return to normal mode.



#### \*\*LAP review operations:

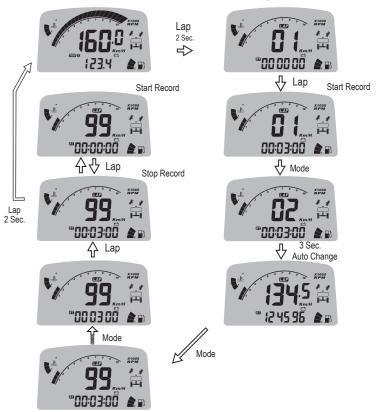
1. In the LAP mode, press MODE button to review the 1st storage data, it displays number of lap and lap timer.

2. Press the LAP button to switch between lap timer or average speed of the same LAP; each press of the MODE button displays data for the next lap.

3. Press and hold LAP buttons for 2 seconds to go out LAP mode and return to normal mode.

#### Normal Mode

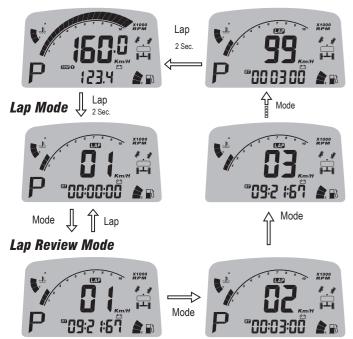
Lap Mode



#### \*\*LAP review operations:

- 1. In the LAP mode, press MODE button to review the 1st storage data, it displays number of lap and lap timer.
- 2. Press the LAP button to switch between lap timer or average speed of the same LAP; each press of the MODE button displays data for the next
- 3. Press and hold LAP buttons for 2 seconds to go out LAP mode and return to normal mode.

#### Normal Mode



WHEEL CIRCUMFERENCE TABLE

- 1. The details below have been calculated using following formula: Tire Diameter (inches) x 25.4(mm/inches) x 3.1416 = wheel circumference (in mm).
- 2. Identify the tire size (not wheel size) of your ATV/Motorcycle when you need to change different tire size and key in the corresponding number 9. It displays "SPD P-001" for signals to be divided. Follow item 2 of shown in the following chart.

Tire Size	Circumferen ce number (mm)	Tire Size	Circumferen ce number (mm)	Tire Size	Circumferen ce number (mm)
15 inch	1197	19 inch	1516	23 inch	1835
16 inch	1277	20 inch	1596	24 inch	1915
17 inch	1357	21 inch	1676	25 inch	1995
18 inch	1436	22 inch	1756	26 inch	2075

- 3. These values are approximate and will differ for different brands of tire. we would always recommend that you measure the distance travelled per revolution of the wheel in mm and enter this into the computer.
- 4. The computer calculates the wheel rotating length between 2 passes of the magnet; use this table to find the settings when you are using a reed sensor or an universal hall sensor with magnet to measure your speed.
- 5. If you are using a cable drive speed sensor then enter the number of turns of the speedo cable per turn of the wheel into the "p" screen.
- 6. You can use more magnets, but the number of magnets must be entered into the "p" screen.
- 7. The computer has a built-in software divider ("p" screen) setting from 1 to 199 for different speed signal application, refer to the divider setup, one means one wheel revolution creates one signal. You have to input the number of signal per wheel revolution to have a correct speed.

#### Clock, RPM, Wheel, Divider, Unit, Maintenance , Thermometer, fuel meter and ODO

- 1. Setup operations include 12/24hour clock, bar rpm scale, shift warning RPM, numbers of engine signal, wheel circumference, signal divider, units, decimal, maintain reminder, \*voltage warning, \*units of temperature, \*temperature warning, fuel meter input resistance selection, sensor type of \*\*LAP timer and odometer adjustment. These must be set up step by step. The computer will be automatically revert to normal mode if no button is pressed for 75 seconds at any setting screen.
- 2. Press both MODE & RESET buttons to go into setting mode. In setting mode, each press of the RESET button increments the flashing digit by 1 or converts units. Press MODE button to confirm the digit setting and jump to next digit or next setting screen to be set. Press MODE button for 2 seconds at any setting screen to finish the setting and go to normal mode
- 3. It displays "12 or 24H, ① and XX:XX-XX" symbols as well AM/PM in case you select 12H. Operates buttons as descriptions of item 2 to finish clock setting and jump to 10.000/20.000rpm scale setting.
- 4. It displays 10.000rpm scale, press RESET button to convert 10.000 or 20,000rpm. Press MODE button to confirm the setting and jump to shift RPM warning setting.
- 5. It displays the default "RPM r06500", the digit "0" flash. Follow the item 2 of button operation to finish the shift RPM warning setting and jump to engine specification setting.
- 6. It displays "RPM SP 1r1P", the default value is 1r1P; there are 6 options: 1r1P, 2r1P, 3r1P, 1r2P, 1r3P, 1r4P. "r" means the numbers of engine rotation, "P" means number of signals from engine. For example the value 2r1P means the engine rotate 2 turns to output one signal.
- 7. Press RESET button to move in loop sequence from one to another value of the 6 values. Press MODE button to confirm the setting and go to wheel circumference setting screen.
- 8. In "SPD cXXXX" display, "c" means "Circumference in mm", following 4 default digits; flashing digit is digit to be set. Follow the item 2 of button operation to finish the wheel circumference setting and jump to signal divider setting to set the number of pulses from the speed sensor per turn of the wheel.
- button operation to finish the setting and jump to unit setting.
- 10. It displays KM/H or MPH, each press of RESET button converts unit; press MODE button to confirm unit setting and jump to speedometer decimal point setting.
- 11. It displays "SPD 99.9Km/H" on or "SPD 99Km/H off", the decimal point will not be displayed when "off" is selected. Follow the item 2 of button operation to finish the decimal setting and jump to maintain reminder setting.
- 12. It displays  $\mathcal{A}$  and RT, TRIP or OFF. RT has default of 100 hours, TRIP has 1000km (621Miles) default. Follow the item 2 of button operation to finish the maintain reminder setting and jump to voltage warning setting. The maintain reminder function will be disappear when select "OFF".
- 13. It displays " 🔄 b-on and a flashing numbers of voltage" to be set, "b-on" means battery warning on voltage – when the voltage falls below this the LED will come on, setting range from 11.0 to 14.9V. It displays " 📩 b-off and a flashing numbers of voltage", "b-off" means battery warning off voltage, setting range from 11.0 to 14.9V to, but b-off voltage must larger than b-on voltage – when this voltage is exceeded the LED will go off. Follow the item 2 of button operation to finish the voltage warning setting and jump to temperature unit setting.
- 14. Thermometer 1 setting It displays " 🛵 1 °C , °F or oFF", each press of RESET button converts °C , °F or Off, the temperature bars will disappear when you select oFF mode; press MODE button to confirm temperature setting and jump to temperature warning setting.

- 15. It displays " £ 1 XXX" and the selected unit. Follow the item 2 of button operation to finish the temperature warning setting and go to thermometer 2 setting.
- 16. Thermometer 2 setting It displays " £ 2 °C , °F or oFF", each press of RESET button converts °C , °F or Off, the temperature bars will disappear when you select oFF mode; press MODE button to confirm temperature setting and jump to temperature warning setting.
- 17. It displays " £ 2 XXX" and the selected unit. Follow the item 2 of button operation to finish the temperature warning setting and go to fuel sensor resistance setting.
- 18. It displays "on, off or rES" and  $\mathbb{R}$ , the setting range of "on" from 10r to 990r, press and hold RESET button can change digits quickly, follow the item 2 to select a resistance same as your fuel sender and jump to sensor type of \*\*LAP timer setting. The fuel meter bar will disappear if you select oFF mode. In "rES" mode connecting the input wire to 0v can bring on the fuel symbol and/or LED indicator instantly.
- 19. \*\*It displays Ir, EF1, EF2 or EF3, Ir means you elect IR receiver as the sensor of LAP timer, and the selection of EF1, 2 or 3 is a magnetic field sensor for LAP timer, the number of 1, 2 or 3 is means the number of magnetic sensor in track. for example EF2 means the track has 2 magnetic sensor and it will combine 2 sensing signals in one. Follow the item 2 to set sensor type of LAP timer and jump to odometer setting.
- 20. It displays "ODO & 00000X km", the "X" is from odometer testing in factory, follow item 2 to setting a desired odometer and jump to clock setting or return to Normal Mode. This setting screen will disappear when the odometer is over 30km (18.6Miles) or your setting is over 30km.

Press 2 Seconds.

Mode Button, RESET Button, MODE Reset, Mode + Reset 2 seconds.

