

ACEWELL™ ATV/Motorcycle Computer ACE-5XXX User Manual

Thanks for purchasing the ACEWELL™ motorcycle computer. This manual is specifically designed for ACE-5XXX series. The ACE-5XXX series includes ACE-5000/5200, 5500/5800 and ACE-5700/5800, models with "*" are for ACE-5000/5800 and ACE-5700/5800 only. Functions and descriptions with "*" are for ACE-5700/5800 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
 2. Bar-tachometer
 3. Bar temperature gauge
 4. 1st row: Speedometer
 5. 2nd row: Other Functions
 6. LED Indicators
 7. RESET Button
 8. MODE Button
 9. Gear Indicator
 10. Bar Fuel gauge
- Different models have different LED indicators, each indicator symbol means as below:

FEATURES

- Simultaneously displays tachometer, speedometer, gear indicator, fuel gauge and "bar-gauge" temperature meter as well as one of the other functions.
- Built in gear indicator which calculates gear comparing speed and RPM, and "gear indicator off" mode 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 air temperature sensor which installed outside the housings.
- Built-in 6-9 LED warning lamps with different symbols depending on mode!
- Fast processor so can connect to pulse type gear/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, 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.

SPECIFICATIONS

Functions	Symbol	Specifications
Bar Tachometer		500-10,000 rpm 1,000-20,000rpm options
Speedometer		0-399.9 km/h (248.5 MPH) options
1st row Meter	TRIP 1&2	0.0-999.99 KM/Miles
2nd row Meter	TRIP 3	0.0-999.99 KM/Miles
Odometer	ODO	0.0-999.999 KM/0.621-387 Miles
12/24 Hour Clock		0:00-11:59/59/23:49/59
Digital Tachometer		10-19,999 rpm, 10rpm increment
* Engine Temperature		-20°C-180°C / 77°F-356°F
* Air Temperature		-20°C-180°C / 77°F-356°F

	AVG SPD	2.4-399.9 km/h (248.5 MPH), 0.999/59.9
Average speed	AVG SPD	2.4-399.9 km/h (248.5 MPH), 0.999/59.9
Riding Timer	TT	0-9999/59.9
Total Riding Timer	TT	0-9999/59.9
Hour Meter	HM	0.0-18.0 h/24h
Output Meter	EM	0.9999/11.0-9999.9 (E21 Miles)
Maintenance reminder	MAINT	0.9999/11.0-9999.9 (E21 Miles)
Maximum speed	MAX SPD	2.4-399.9 km/h (248.5 MPH)
Maximum RPM	MAX RPM	10-19,999 rpm, 10rpm increment
*Max. Temperature	MAX. T	-20°C-180°C / 77°F-356°F
Gear Indicator	N, R, 1, 2, 3	8 gears and off mode
Distance timer	TRIP RT	0-14 miles, 0-1000.0-6000M
*Acceleration timer	SPD RT	0-1000/mph, 50-100mph
*Deceleration timer	d SPD RT	1000/mph, 50-100mph
Bar-Fuel gauge	F	Adjustable: 500-9999, or off mode
*Bar Temperature	T	-20°C-180°C / 77°F-356°F
*Lap Timer	LAP	99 Laps
Power Input	DC 12V	
Tachometer Sensor	CDI or Ignition Coil Signal	
Speed Sensor	Reed switch/2 Wire Hall-effect Sensor & Magnet / Cable drive adaptor	
Wheel circumference setting	1mm-3999mm (1mm increment)	
Speed input divider setup	1-199 Pulses	
Maximum frequency of slider	7K Hz	
Dimensions	130 mm x82.8mmx27.0 mm	
*Temperature Sensor	Thermo Resistor Sensor	
*Lap Timer Sensor	Push button or optional accessory	
	uses parts of IR receiver/Magnetic Field sensors.	

INSTALLATION PARTS

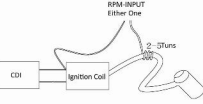
Main Unit Mounting



- Rubber Pad
- Washer
- Spring Washer
- Fixing Screw Nut

RPM sensor mounting: RPM Input, Either one

1. Signal intensity from ignition coil is dependent on vehicle type.
2. Coil 2-5 turns around spark plug lead, with more turns creating steady 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.

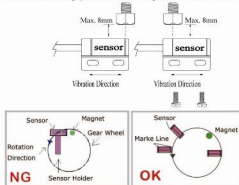


Speed Sensor Mounting:

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 Sensor and Magnet:

1. This sensor is universal sensor for motorcycle, find a rotating part to install the magnet (for example disk, sprocket or driveshaft) and a location to install the sensor where it can be aligned to the magnet.
2. Align the center of the magnet to either of the sensor marking lines on 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 optimal anti-vibration effect.
4. Make sure the gap between the magnet and the sensor is within 8mm.



Hall Effective Speed Sensor and Magnet:

1. This is universal sensor for ATV front or rear wheel installation or motorcycle front wheel installation. For some fittings an accessory speed sensor holder is needed to be purchased.
2. 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.



Cable Pin sensors:

Cable drive adaptors for most bikes are 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.

*Thermo Sensor and Sensor Tube:

1. The unit includes a water temperature sensor; you have to purchase a suitable water pipe temperature sensor tube to install the sensor easily.
2. 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.

**Air Temperature sensor:

1. ACE-5800 series includes an air temperature for outdoor temperature measurement.
2. Plug the sensor's connector to the relative connector from main unit.
3. Keep the sensor away from sunshine after installed.

**Wire Remote Control Switch Installation:

1. Install the switch arm on handbar.
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 or 20,000rpm options.

Knif or MPH: Speedometer

1. Displays speed meter up to 399.9 Km/h or 248.5 MPH.
2. Speedometer can show nearest 0.1 mph or km/h speed if required by user. E.g. 100 or 100.5
3. The maximum frequency of software divider is 7K Hz.
4. The speed can be less than 399.9 km/h in case the setup is using software divider for speedometer, for example the maximum speed is 250KM/H in case setup of software at 105P and the wheel circumference at 1277mm.

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 setting 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

Shows average speed from last RESET. The AVG is calculated from TRIP 1 divided by RT.

TRIP 1/2: Trip Meter 1 or 2

TRIP function accumulates trip distance since last RESET as long as bike/vehicle is moving.

TRIP 12: Trip Meter 12

LTRIP-12 function appears and starts to accumulate trip distance automatically after low fuel warning LED is turned on.

2. TRIP-12 is reset to zero automatically when fuel is added to over the low fuel warning level.

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 is stored in memory and cannot be reset.

RT: Riding Timer

1. Calculates total riding time since last RESET.

2. Counter automatically begins with movement.

TT: Total Hour Meter

Calculates total riding time from the beginning of the bike.

2. TT data is stored in memory, and couldn't be reset.

HRT: Hour Meter

1. Calculates total engine operation time from last RESET.

2. Count automatically begins when the preset warning temperature, each 1/2 degree is stored in memory, and couldn't be reset.

CD: 12/24 Hour Clock

It displays 12 or 24 hour current time.

.h: Bar Thermometer:

1. Have 7 bars to indicate engine temperature.
2. The 4th bar counts from bottom be turned on and over temperature LED flash automatically when thermometer reaches the preset warning temperature, each 1/2 degree lights on/off a bar base on the 4th bar.
3. The bar-temperature flashes when the measured temperature is higher than the preset warning temperature.

.t: Digital Engine Temperature Meter

1. It displays -L°C or -L°F when temperature is lower than 40°C or 104°F, and displays -H°C or -H°F when temperature is over 180°C or 356°F.
2. The LCD screen flashes the digits of temperature when the thermo sensor detects temperature higher than the maximum preset temperature.

.h: 2: Digital Temperature

It displays air temperature from -20°C(4°F) to 60°C(140°F)

Max .h: Maximum Temperature

Displays highest temperature achieved since last Reset operation.

↔: Maintenance Reminders

2. It counts down the preset entered time or distance since last RESET.
2. It accumulates ↔ when the count down reaches to "0", and symbol of

WHEEL CIRCUMFERENCE TABLE

- The details below have been calculated using following formula: Tire Diameter (inches) x 25.4(mm/inches) x 3.1416 = wheel circumference (in mm).
- Identify the tire size of your ATV/Motorcycle when you need to change different tire size and key in the corresponding number shown in the following chart.

Tire Size	Circumferen ce number	Tire Size	Circumferen ce number	Tire Size	Circumferen ce number
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

- 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.
- 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.
- If you are using a cable drive speed sensor, you need to find the number in the above table by the number of turns of the cable drive for each revolution of the wheel. For example if 1 wheel revolution equals 5 turns of speed cable then the wheel circumference has to be divided 5.
- You can use more magnets, but the wheel circumference setting must be divided by the number of magnet you installed.
- The computer has a built-in software divider 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, Odom, Maintain, Thermometer, fuel meter and ODD SET UP

- Setup operations include 12/24hour clock, bar rpm scale, shift warning RPM, numbers of engine rotation per signal, wheel circumference, signal divider, units, decimal, maintain reminder, warning voltage, units of temperature 1, temperature 1 warning, SCAN, 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.
- 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.
- It displays "12 or 24H, ☐ and XXX-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.
- 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.
- 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.
- It displays "RPM SP 1rP", the default value is 1rP; there are 6 options: 1rP, 2rP, 3rP, 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.
- 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.
- In "SPD CXXX" display, "c" means "Circumference", 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.
- It displays "SPD P-001" for signals to be divided. Follow item 2 of button operation to finish the setting and jump to unit setting.
- It displays KM/H or MPH, each press of RESET button converts unit; press MODE button to confirm unit setting and jump to decimal point setting.
- It displays "100.0km/H or on" or "100Km/H or off", the decimal point will be disappeared in case Off is selected. Follow the item 2 of button operation to finish the decimal setting and jump to maintain reminder setting.

- It displays RT, TRIP, 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".
- 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 thermometer 1 setting.
- Thermometer 1 setting: It displays "1.1°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 1 warning setting.
- It displays "1.1 XXX" and the selected unit. Follow the item 2 of button operation to finish the temperature warning setting and go to thermometer 2 setting.
- Thermometer 2 setting: It displays "1.1°C, °F or OFF", each press of RESET button converts "C, °F or Off", press MODE button to confirm temperature setting and jump to scan setting.
- It displays SCAN and on or off, Follow the item 2 of button operation to finish the SCAN setting and go to fuel sensor resistance setting.
- It displays "on, off or rES" and "0", 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.

- It displays Ir, EF1, EF2 or EF3, Ir means you select 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.
- 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

