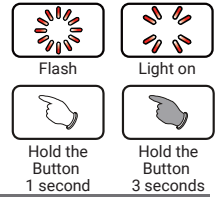




Thank you for purchasing our product. Before installing/operating the product, read the instructions carefully and retain them for future reference.

**⚠ Attention!**

- For installation, follow the steps described. Any damage caused by wrong installation shall be imputed to the users.
- To avoid a short circuit from occurring do not pull or modify the wires during installation.
- Do not disassemble or change any parts. Opening and disassembling this unit will void any warranty.
- Maintenance and repairs should be executed by our professionals only.



**Symbol description:**

**NOTE**

⚠ Some procedures must be followed to avoid damages to the product.

⚠ **WARNING!** Certain procedure must be followed to avoid damages to yourself, to the vehicle or to others.

**1 Accessories**

<b>1</b> Meter X1 	<b>2</b> Main wiring harness X1 	<b>3</b> RPM wire (TYPE A) X1 	<b>4</b> RPM wire (TYPE B) X1 
<b>5</b> External button X1 	<b>6</b> Gasket X1 	<b>7</b> Washer X1 	<b>8</b> Nut X1 
<b>9</b> Meter bracket X1 	<b>10</b> M5 washer X2 	<b>11</b> M5 Anti-slip nut X2 	<b>12</b> Oxygen sensor X1  Bosch LSU 4.9
<b>13</b> Sensor bung X 1 	<b>14</b> V type Meter bracket x 1 set 	<b>15</b> Handle bar clamp and rubber x 1 	<b>16</b> M6 x 18L mm screw x 1 
<b>17</b> M6 x P1.0 mm nut x 1 	<b>18</b> M6 washer x 1 	<b>19</b> Aluminum bushing x 1 	<b>1-2 Optional accessory</b> <b>1</b> Sensor adapter X1 (For 2 strokes engine only!) 

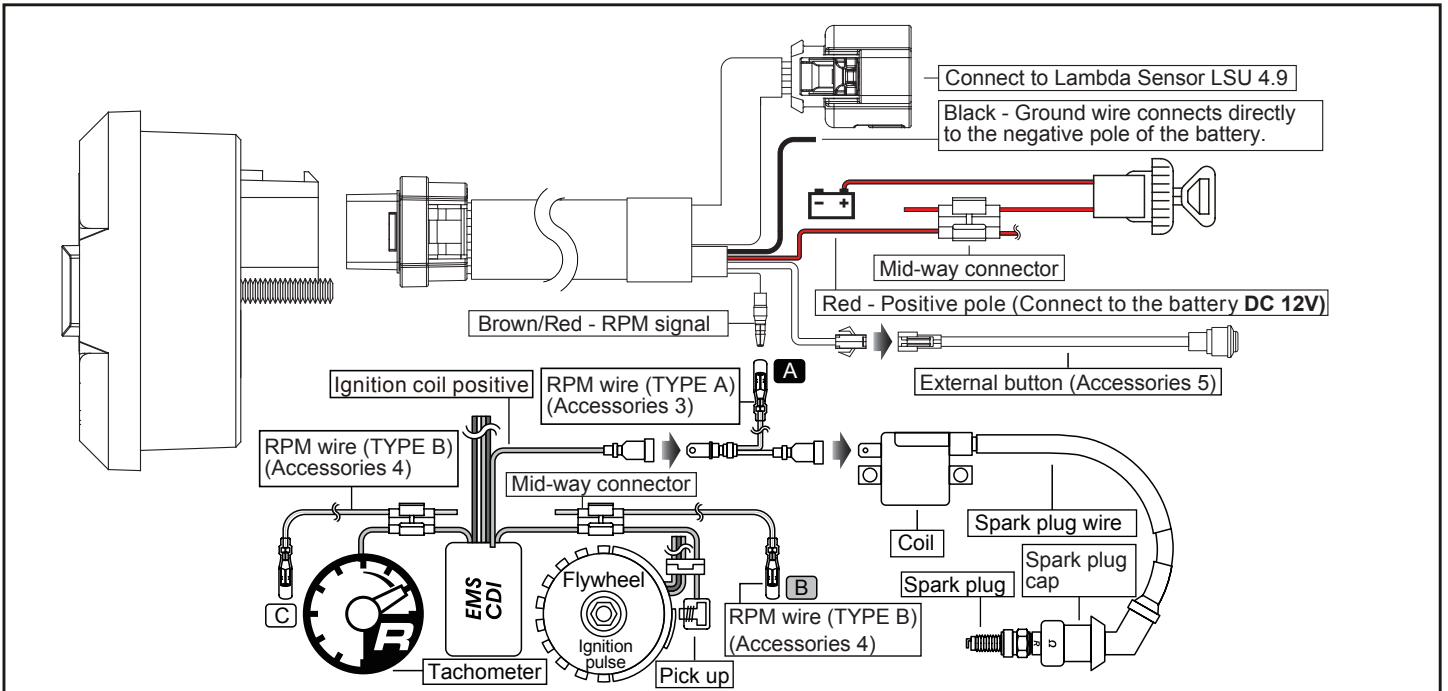
**NOTE** During each start up, the gauge will display "CAL". In this phase, the gauge will be going through a calibration process, which will last approximately 25 seconds. This calibration phase increases longevity of the sensor by eliminating any moisture that may be in the exhaust system.

**2-0 Oxygen sensor installation**

1. Drill a 22mm (7/8") hole in the exhaust system at 20cm (+/- 8") away from the exhaust flange.
2. Weld the sensor adapter to the muffler.
3. Install the oxygen sensor adapter. (For 2-stroke engine only)
4. Install the oxygen sensor into the adapter.

**NOTE** If the meter is used on a 4-stroke engine, skip step3.

## 2-1 Wiring installation instructions



**NOTE** When connecting the power wire, follow the instructions carefully.  
If the red & brown wires are connected in parallel, the meter will not work properly.

### ⚠ The RPM wire installation

We recommend installing R type spark plugs or low-resistance spark plug caps at the same time.

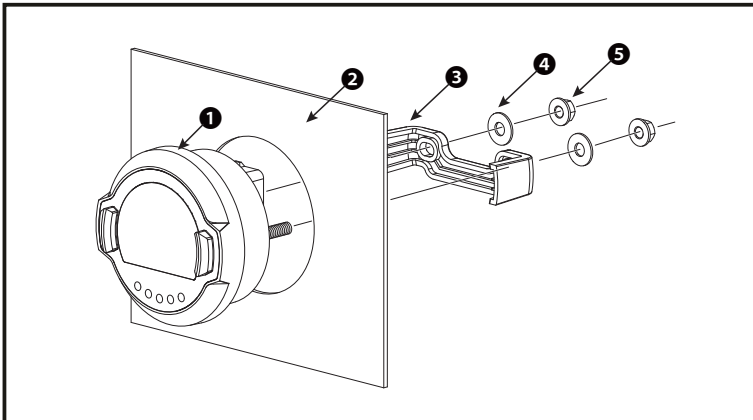
A. Connect the RPM wire (Type A) on the spark plug wire by connecting the male and female connectors.

B. Connect the RPM wire (Type B) to the pick up sensor.

C. Connect in parallel the RPM wire (Type A) with the original tachometer signal wire.

**The best signal source will be in order as C>B>A, we suggest that you try a different way if you have problems getting the RPM signal.**

## 2-2 Installation instructions - U type Meter bracket



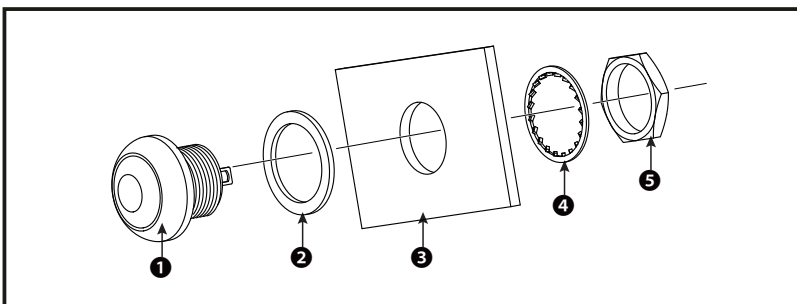
**When installing, follow the steps below.**

1. Meter x1 (Accessory 1)
2. Vehicle

**NOTE** An opening must be made in the vehicle, with a size  $\geq 64$  mm.

3. Meter bracket x1 (Accessory 9)
4. M5 washer x2 (Accessory 10)
5. M5 Anti-slip nut x2 (Accessory 11)

## 2-3 Installation instructions



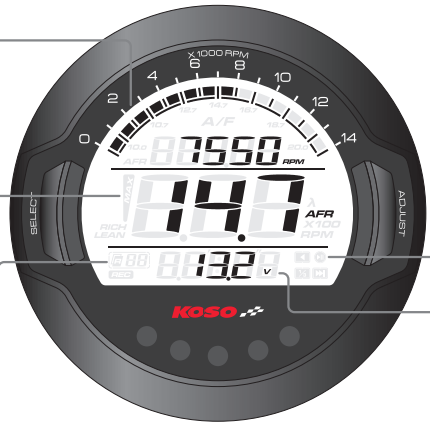
**When installing, follow the steps below.**

1. External button x1 (Accessory 5)
2. Gasket x1 (Accessory 6)
3. Vehicle

**NOTE** An opening must be made in the vehicle, with a size  $\geq 12$  mm.

4. Washer x1 (Accessory 7)
5. Nut x1 (Accessory 8)

### 3-1 Basic function instruction







**Tachometer**

- Display Range : 0 ~ 14,000 RPM
- Display unit : 100 RPM
- Tachometer (Displays in segments)
- Display Range : Displays in 14 segments (100 RPM each segment)
- Air-fuel ratio
- Display Range : 9.0 ~ 24.0
- Display unit : 0.1
- Air-fuel ratio (Displays in segments)
- Display Range : Displays in 12 segments

**Max. RPM**

- Display Range : 0 ~ 14,000 RPM
- Max. Air-fuel ratio (value of ratio) record
- Display Range : 9.0 ~ 24.0
- Max. Air-fuel ratio (  $\lambda$  ) record
- Display Range : 0.61 ~ 1.63

**Play mode Speed**

- 1x play/pause 
- 1/3x play/pause 
- 3x play/pause 
- 1x rewind/pause 

**Type of RPM signal**

- Setting range : Hi Act \ Lo Act
- Warning for RPM
- Setting range : 1,000 ~ 14,000 RPM
- Setting unit : 100 RPM
- Warning for low voltage
- Setting range : 8.0 ~ 13.0 V
- Setting unit : 0.1 V
- Backlight brightness
- Setting range : 1 - 5 (darkest)~ 5 - 5 (brightest)

**Record**

- Maximum number of recorded runs: 50 runs
- Maximum recording time for a single record run: 99m 59s 90; the recording will stop upon reaching the maximum time.
- Total recording time: Approximately 3.15 hours

**Maximum RPM and air-fuel ratio for a single run**

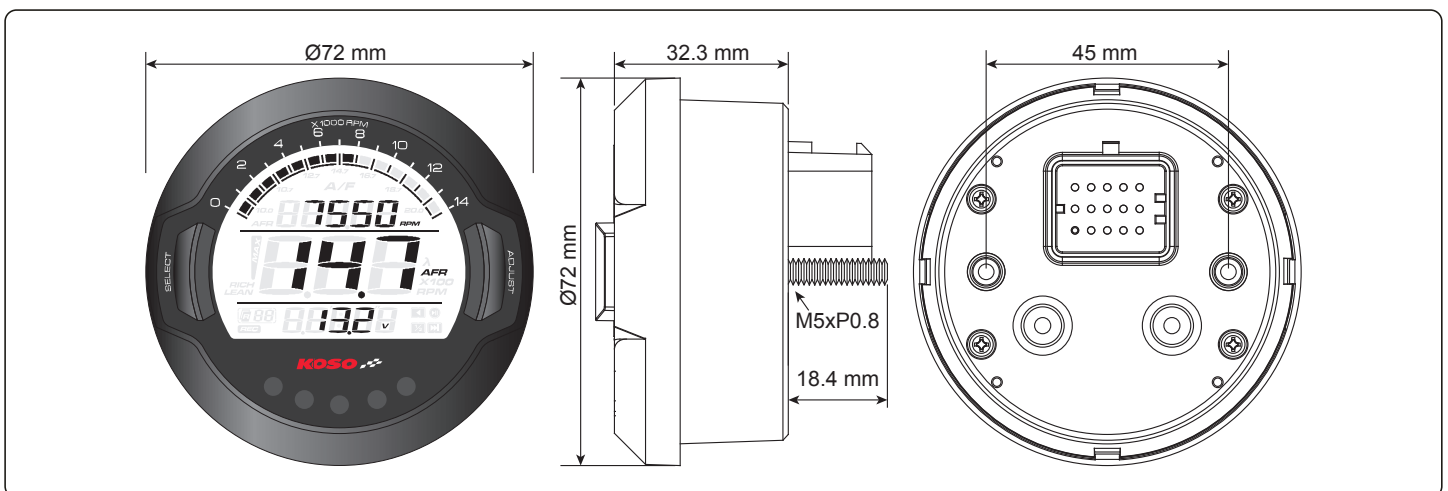
- Scope of recording for RPM : 0 ~ 14,000 RPM
- Air-fuel ratio (value of ratio) record : 9.0 ~ 24.0
- Air-fuel ratio (  $\lambda$  ) record : 0.61 ~ 1.63

### 3-2 Features and settings description

● Tachometer	Display Range : 0 ~ 14,000 RPM Display unit : 100 RPM	● Air-fuel ratio	Display Range : 9.0 ~ 24.0 Setting unit : 0.1
● Tachometer (Display in segments)	Display Range : Displays in 14 segments (100 RPM each segments)	● Warning for Rich air-fuel ratio	Setting range : 9.0 ~ 14.7 Setting unit : 0.1 Default value : 14.4
● RPM input pulse	Setting range : 0.5 \ 1 \ 1.5 \ 2 \ 2.5 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8 \ 9 \ 10 \ 11 \ 12 \ 13 \ 14 \ 15 \ 16 \ 17 \ 18 \ 19 \ 20 \ 21 \ 22 \ 23 \ 24	● Warning for Lean air-fuel ratio	Setting range : 14.7 ~ 24.0 Setting unit : 0.1 Default value : 15.0
● Type of RPM signal	Setting range : Hi Act \ Lo Act Default value : Hi Act	● Air-fuel ratio (display segments)	Display Range : Displays in 12 segments
● Warning for RPM	Setting range : 1,000 ~ 14,000 RPM Setting unit : 100 RPM Default value : 8,000	○ Operating voltage	DC 12V
● Warning for low voltage	Setting range : 8.0 ~ 13.0 V Setting unit : 0.1 V Default value : 11.5 V	● Temperature range	-10 ~ +60°C
● Backlight brightness	Setting range : 1 - 5 (darkest)~ 5 - 5 (brightest) Default value : 5	○ Specifications	JIS D 0203(S2)
		● Meter Size	72 X 32.3 mm
		○ Meter Weight	± 100 g

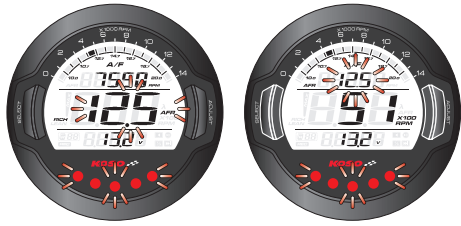
**NOTE** Design and specifications may change without further notice.

### 3-3 Meter size

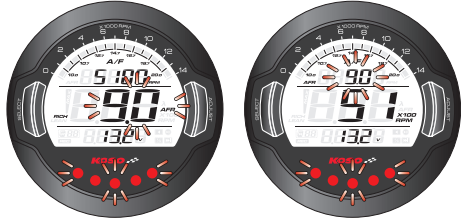


## 4-1 Description of Warnings

### • Warning for rich air-fuel ratio

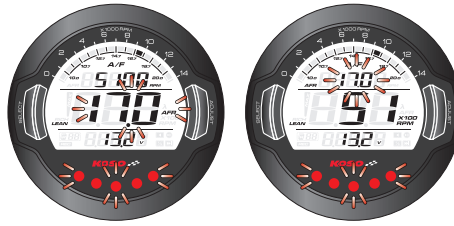


$\leq$  Warning value  
Default value : 14.4

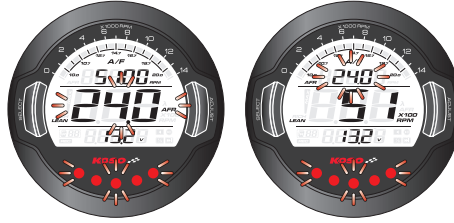


$\leq$  Minimum display value 9.0

### • Warning for lean air-fuel ratio



$\geq$  Warning value  
Default value : 15.0

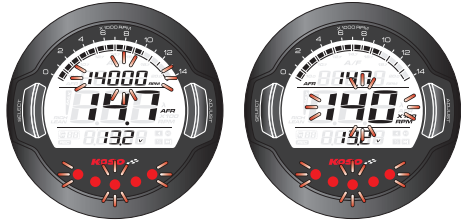


$\geq$  Maximum display value 24.0

### • Warning for RPM



$\geq$  Warning value  
Default value : 8,000 RPM



$\geq$  Maximum display value 14,000 RPM

### • Warning for low voltage



$\leq$  Warning value 10 seconds  
Default value : 11.5 V

## 4-2 Description of Select Button Function



- |                |
|----------------|
| RPM            |
| Air-fuel ratio |
| Voltage        |

 screen, press the select button once to switch to
 

Air-fuel ratio
RPM
Voltage

- Hold the select button for 3 seconds, and the display of air-fuel ration shifts from the value of ratio to  $\lambda$  value.



- |                |
|----------------|
| Air-fuel ratio |
| RPM            |
| Voltage        |

 screen, press the select button once to switch to
 

MAX
RPM
Air-fuel ratio
X



- |                |
|----------------|
| MAX            |
| RPM            |
| Air-fuel ratio |
| X              |

 screen, press the select button once to return to
 

RPM
Air-fuel ratio
Voltage

- Hold the adjust button for 3 seconds, to clear the MAX recording screen.



- |                |
|----------------|
| RPM            |
| Air-fuel ratio |
| Voltage        |

 screen.

### 4-3 Description of Adjust Button Function



- Air-fuel ratio screen, **press the adjust button once** to switch to the recording screen.
- Hold the adjust button for 3 seconds, and the Bar display shifts from RPM to air-fuel ratio.



- At the recording screen, **press the adjust button once** to switch to the play screen.
  - Press the external button once, to enter the setting for the recording screen.
- NOTE** Refer to 3-6 Setting.



- The playing screen, **press the adjust button once** to return to Air-fuel ratio screen.
  - Press the select button once to enter the play screen.
- NOTE** Refer to 3-7 Setting.



- RPM Air-fuel ratio Voltage screen.

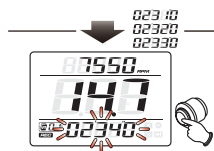
### 4-4 Operating Description of the Recording Screen



- Main screen, **press the adjust button once** to enter the recording screen.



- The recording screen, **press the external button once** to start recording.
- NOTE** Hold the External button for 3 seconds, to enter the operating screen for clearing records.



- At the screen during recording, **press the External button once** to stop recording.
- The first run has been recorded.



- To stop the recording screen, **press the External button once** to enter the recording screen for the second entry.



- Prepare to enter the recording screen for the second entry.



- Currently it is in the recording screen for the second entry.



- Currently it is in the recording screen for the third entry.



- Currently it is in the recording screen for the fourth entry.



- At the recording screen for the fifth entry, press the External button twice to return to the main screen.



- Main screen.

### 4-5 Operating Description for the Play Screen



- Main screen, **press the adjust button twice** to enter the play screen.



- The playing screen, **press the select button once** to enter the screen of the highest RPM for the period of the recorded run.



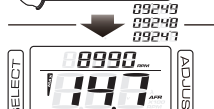
- At the screen of the highest RPM, **press the adjust button once** to choose the run to be played.
- NOTE** Hold the select button for 3 seconds, to immediately slow down the play screen.



- To select the fourth run for playing, **press the adjust button once** to enter the play / stop screen.
- NOTE** At any point, hold the adjust button for 3 seconds, to return to the main screen.



- At the recording screen of the fourth run, **press the select button once** to start playing at normal speed.



- At the end of playing the entry at normal speed, **press the adjust button once** to enter the screen of playing at 1/3 speed.



- At the end of playing at 1/3 speed, **press the adjust button once** to enter the screen of playing at 3x speed.



- At the end of playing at 3x speed, **press the adjust button once** to enter the reverse screen.



- At the end of playing the reverse screen, **press the adjust button once** to return to the screen for maximum RPM.

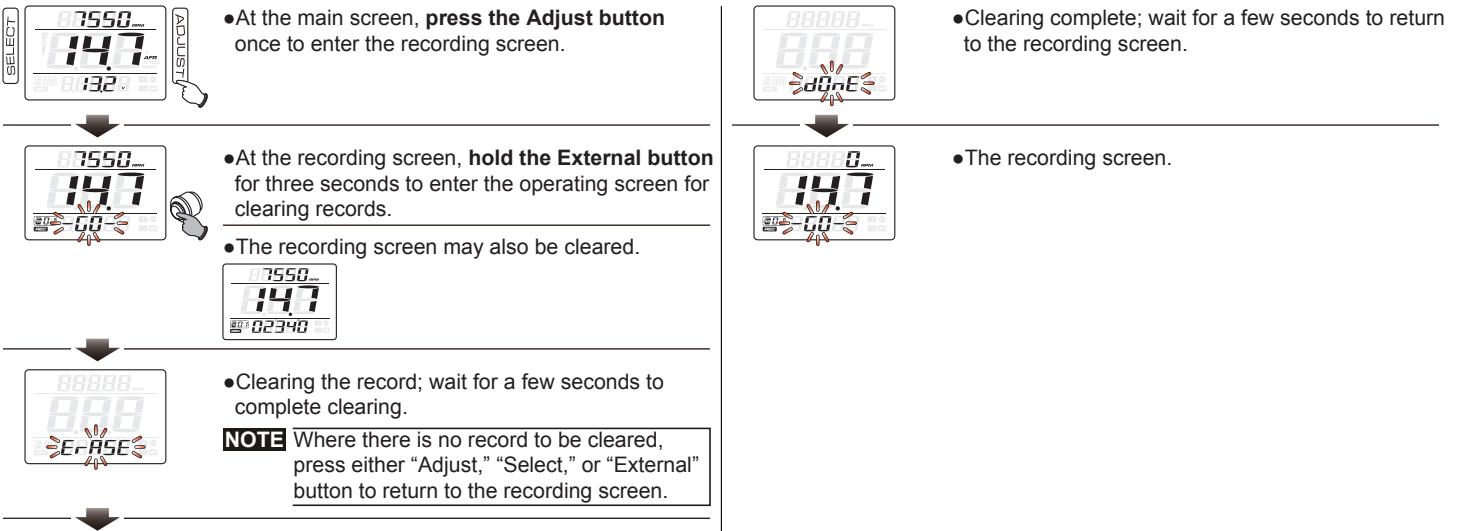


- At the screen of maximum RPM, hold the adjust button for 3 seconds to return to the main screen.

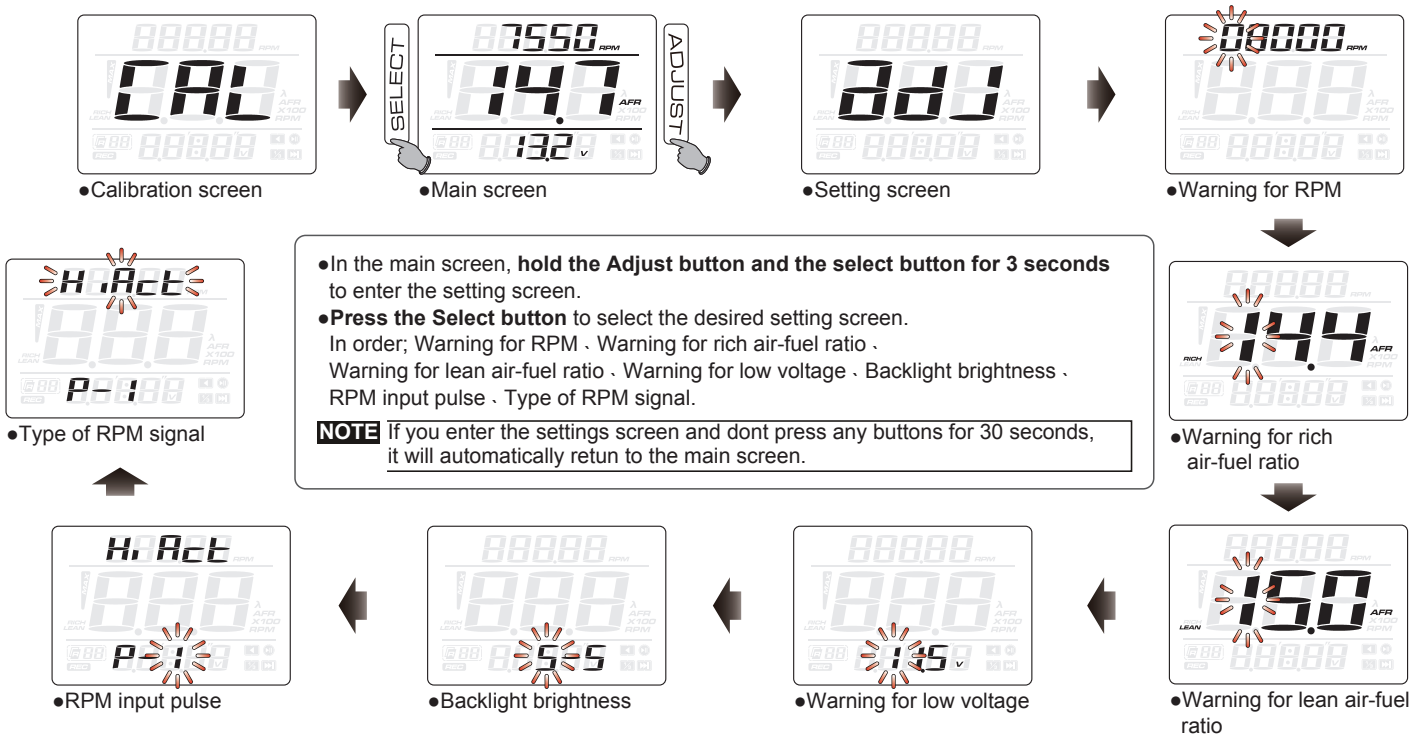


- Main screen.

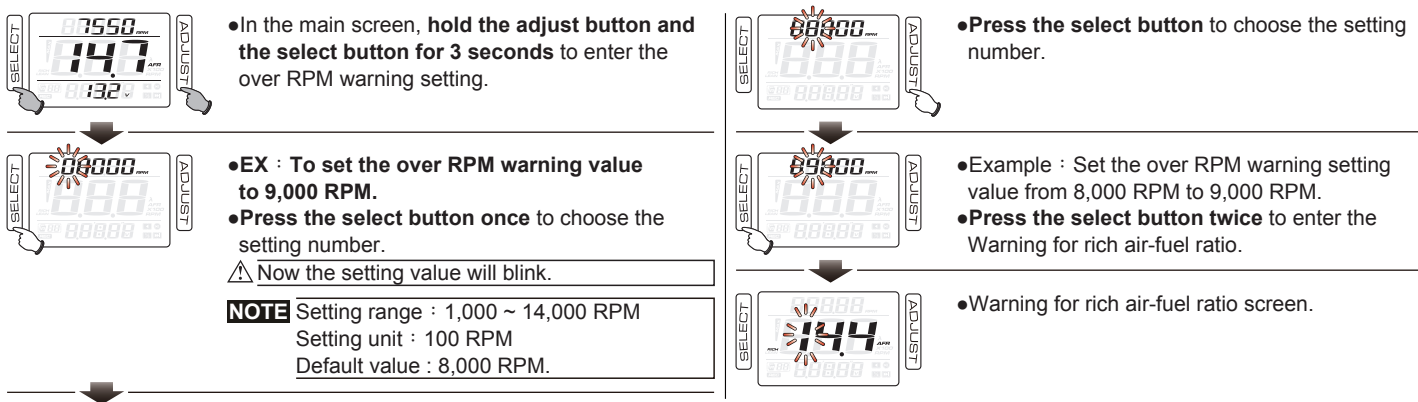
## 4-6 Operating Description for Clearing Records



## 5 The Settings Screen Description



### 5-1 Over RPM Warning Setting



## 5-2 Warning For Rich Air-Fuel Ratio Setting

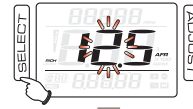


- **EX** : To set the warning for rich air-fuel ratio value to 12.5.
  - Press the **select button once** to choose the setting number.
- ⚠ Now the setting value will blink.

**NOTE** Setting range : 9.0 ~ 14.7  
Setting unit : 0.1  
Default value : 14.4



- Press the **adjust button** to choose the setting number.



- Example : Set the warning for rich air-fuel ratio value from 14.4 to 12.5.
- Press the **select button twice** enter the warning for lean air-fuel ratio.



- Warning for lean air-fuel ratio screen.

## 5-3 Warning for lean air-fuel ratio Setting

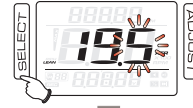


- **EX** : To set the warning for lean air-fuel ratio value to 19.5
  - Press the **select button once** to choose the setting number.
- ⚠ Now the setting value will blink.

**NOTE** Setting range : 14.7 ~ 24.0  
Setting unit : 0.1  
Default value : 15.0



- Press the **adjust button** to choose the setting number.



- Example : Set the warning for lean air-fuel ratio ratio value from 15.0 to 19.5.
- Press the **select button once** enter the warning for warning for low voltage.



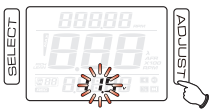
- Warning for low voltage screen.

## 5-4 Warning For Low Voltage Setting

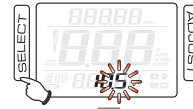


- **EX** : To set the warning for low voltage value to 10.5.
  - Press the **select button once** to choose the setting number.
- ⚠ Now the setting value will blink.

**NOTE** Setting range : 8.0 ~ 13.0 V  
Setting unit : 0.1 V  
Default value : 11.5 V



- Press the **adjust button** to choose the setting number.



- Example : Set the warning for low voltage value from 11.5 V to 10.5 V.
- Press the **select button once** to enter the warning for backlight brightness.



- Backlight brightness screen.

## 5-5 Backlight Brightness Setting



- **EX** : To set backlight brightness value to 3/5.
  - Press the **adjust button once** to choose the setting number.
- ⚠ Now the setting value will blink.

**NOTE** Setting range : 1/5 ~ 5/5  
Setting unit : 1/5  
Default value : 5/5



- Example : Set the backlight brightness value from 5/5 to 3/5.
- Press the **select button once** to enter the warning for RPM input pulse



- RPM input pulse screen.

## 5-6 RPM Input Pulse Setting



- **EX.** You want to connect the RPM signal wire to the pick up signal and there are 12 flywheel signals per turn.
- Press the adjust button once to choose the setting number.

⚠ Now the setting value will blink.

**NOTE** Setting range : P-0.5 , P-1 , P-1.5 , P-2 , P-2.5 , P-3 , P-4 , P-5 , P-6 , P-7 , P-8 , P-9 , P-10 , P-11 , P-12 , P-13 , P-14 , P-15 , P-16 , P-17 , P-18 , P-19 , P-20 , P-21 , P-22 , P-23 , P-24  
Default value : P-1



- Example : Set the RPM input pulse value from P-1 to P-12.
- Press the select button once enter the type of rotation speed signal.



- Type of RPM signal screen.

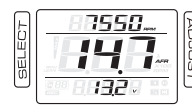
## 5-7 Type Of RPM Signal Setting



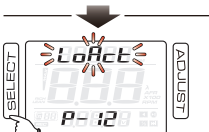
- **EX :** To set type of RPM signal value to Lo Act.
- Press the adjust button once to choose the setting number.

⚠ Now the setting value will blink.

**NOTE** Setting range : Hi Act , Lo Act  
Default value : Hi Act



- Main screen.



- Example : Set the type of RPM signal from Hi Act to Lo Act.
- Press the select button once to return to the main screen.

## 6 Trouble shooting

The following situations do not indicate malfunctions of the product. Check the following before taking it in for repair.

Trouble	Check item	Trouble	Check item
<p>The meter doesn't work when the power is on.</p> <p>The meter shows wrong information.</p> <p>Tachometer doesn't appear or appears incorrectly.</p>	<ul style="list-style-type: none"> <li>● The power isn't supplied to the meter. → Make sure the wiring is connected. The wiring and fuse are not broken.</li> <li>→ The battery is too old to supply needed power (DC 12 V).</li> <li>● Check the voltage of your battery, and make sure the voltage is over DC 12 V.</li> <li>● May be due to poor connection of wires. → Check whether the wiring is disconnected or has fallen off.</li> <li>● May be due to the failure to change to the type R spark plug.</li> <li>● May be wrong settings. → Check the settings menu to confirm whether the setting for RPM is correct.</li> </ul>	<p>Voltage doesn't appear or appears incorrectly.</p> <p>A / F does not display or displays error.</p>	<ul style="list-style-type: none"> <li>● Wiring for the connector may be poorly installed. → Confirm whether the wires for the connector are properly installed.</li> <li>● May be due to poor connection of wires. → Check whether the wiring is disconnected or has fallen off.</li> <li>● May be due to the wrong setting of AFR. → Check the settings menu to confirm whether the setting is correct.</li> </ul>

※ If the problems still cannot be solved, contact our technical department for assistance.