DL-02S BIGH-AL LCD speedometer INSTRUCTION

*Thank you for purchasing **KOSO DL-02S speedometer**, before operating the unit, please read the instruction thoroughly and retain it for the future reference.*

⚠ Notice

1. **DC 12V** applications only.
2. For installation, please follow the steps described in manual. Any damage caused by wrong installation shall be imputed to the users.
3. To avoid the short circuit, please don't pull the wire when installing. Don't break or modify the wire terminal.
4. Do not disassemble or change any parts excluding the manual description.
5. The interior examination or maintenance should be executed by our professionals.

MARK MEANING:

NOTE You could get the installation details from the information behind the mark.

⚠ Some processes must be followed to avoid the affection caused by wrong installation.

⚠ WARNING! Some processes must be followed to avoid damages to yourself or the public.

⚠ CAUTION! Some processes must be followed to avoid the damage to the vehicle.

PRESS THE BUTTON ONE TIME

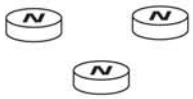
PRESS THE BUTTON 3 SECONDS

1-1 Accessory

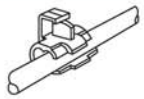
1 LCD meter X 1

2 Passive speed sensor X 1

3 D6 X 5L mm magnet X 6



4 Connect terminal X 4



5 M8/ S type speed sensor bracket X 1

6 M10/ S type speed sensor bracket X 1

7 Hexagon socket screw X 2

8 2.5 mm spanner X 1

9 Meter bracket X 1

10 Handle bar clamp X 1

11 Rubber X 1

12 M6 X 18L screw X 1

13 M5 X P0.8 nut X 2

14 M6 X P1.0 nut X 1

15 M5 washer X 2

16 M6 washer X 1

17 Aluminum bush X 1

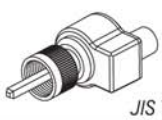
NOTE Please contact the local distributor if the items you open are not the same, with the above-listed one.

1 Disc magnet screw

5/16-18 X 22.1L
M5 X P0.8 X 12L
M6 X P1.0 X 12.6L
M6 X P1.0 X 19.7L
M6 X P1.0 X 24L
M8 X P1.25 X 22.5L M8 X P1.25 X 27.5L
M8 X P1.25 X 29L M10 X P1.25 X 28.3L

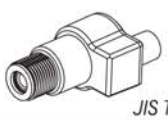
2 Active speed sensor

3 Digital speed signal sensor



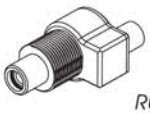
JIS TYPE a

4 Digital speed signal sensor



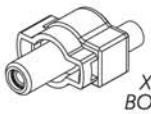
JIS TYPE A

5 Digital speed signal sensor



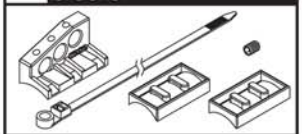
RUNNER

6 Digital speed signal sensor



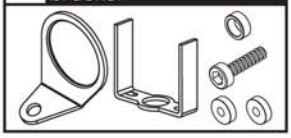
SR
X-FIGHT
BOOSTER

7 L type speed sensor bracket



8 U-type meter bracket

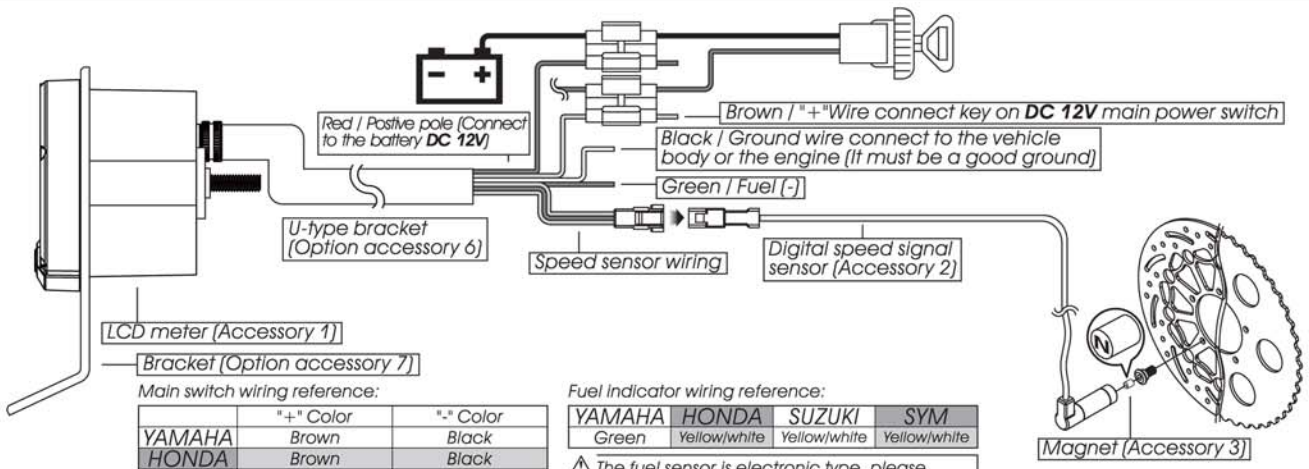
9 Mirror hole meter bracket



NOTE The advantage of the active speed sensor is as following, 1. You don't need to install the magnet in the opposite position of the speed sensor. 2. You could set up the sensor signal input up to 60 points, and the speed displayed will be more accurate. Please note that the speed sensor attached in the kit is passive speed sensor, and the maximum speed signal it could read is 6 points.

NOTE Some of the option accessories may not sell. For the details, please contact the local distributor.

2-1 Wiring installation instructions



Main switch wiring reference:

	"+" Color	"-" Color
YAMAHA	Brown	Black
HONDA	Brown	Black
SUZUKI	Black	Green
SYM	Black	Green

NOTE The color listed above may differ depending on the model.

Fuel indicator wiring reference:

YAMAHA	HONDA	SUZUKI	SYM
Green	Yellow/white	Yellow/white	Yellow/white

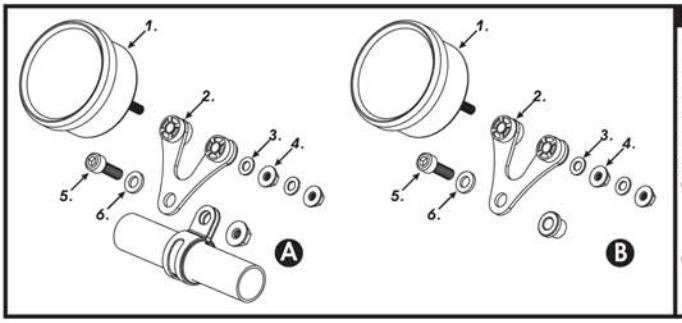
⚠ The fuel sensor is electronic type, please don't parallel connection with the original- otherwise the fuel gauge won't display. **The wrong installation of the fuel wiring may cause the meter break.**

⚠ The north (**N**) side of magnet must face to the sensor when installing.

NOTE If you don't connect the fuel wiring, the fuel gauge will not display.

NOTE When connecting the power wiring, please follow the instruction. If you connect the red & brown wiring in parallel will cause the meter work improperly.

2-2 Installation instructions



When installing, please follow the process.

1. Lcd meter (Accessory 1)
2. Meter bracket (Accessory 9)
3. M5 washer X 2 (Accessory 15)
4. M5 X P0.8 nut X 2 (Accessory 13)
5. M6 X P1.0 screw (Accessory 14)
6. M6 washer (Accessory 16)

Ⓐ Use the meter bracket (Accessory 9), handle bar clamp (Accessory 10), rubber (Accessory 11) and the nut to install the speedometer on the handle bar.

Ⓑ Use the aluminum bush(Accessory 17) to install the speedometer on the handle bar stem.

2-3 Installation instructions

Put the magnet into the brake disc screw hole.

Install the s type sensor bracket.

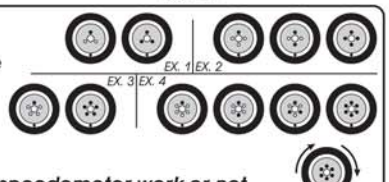
Adjust the sensor bracket position to make sure that the sensor could face the magnet to prevent bad speed signal or no signal!

Install the speed sensor on the bracket.

Adjust the distance between sensor and magnet. We suggest you to make sure the distance is under 8 mm for catching good speed signal.

P.S. Try it!

The more magnet sensor points are, the less the display interval is. when installing the magnet, please put the magnet with **N**-mark side face the outside and put them averagely to avoid wrong signal.
EX. 1: If your disk has 3 screws, you could install 1 or 3 magnets to catch the speed.
EX. 2: If your disk has 4 screws, you could install 1、2 or 4 magnets to catch the speed.
EX. 3: If your disk has 5 screws, you could install 1 or 5 magnets to catch the speed.
EX. 4: If your disk has 6 screws, you could install 1、2 、3 or 6 magnets to catch the speed.



After finishing the magnet installation and sensor point setting, please move your tire to test the speedometer work or not.

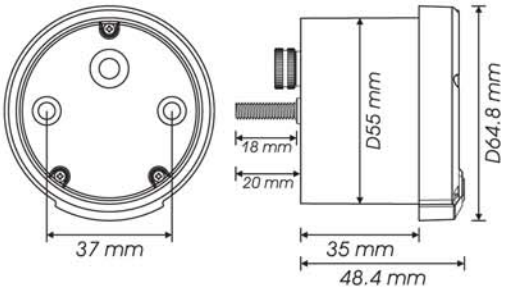
3-1 Basic function instruction

Bar graph speedometer
- Display range: 160, 260 km/h, 160 MPH.

Digital speedometer
- Display range: 0~360 km/h (0~223 MPH)
- Display unit: km/h & MPH for alternative.

Odo meter
- Display range: 0~99999 km (mile), reset automatically after 99999 km.
- Display unit: 1 km (mile).

Trip meter
- Display range: 0~999.9 km (mile), reset automatically after 999.9 km.
- Display unit: 0.1 km (mile).



3-2 Function, setting instruction

●Digital speedometer	Display range: 0~360 km/h (0~223 MPH) Display unit: km/h & MPH for alternative
○Display internal	<0.5 second
●Bar graph speedometer	Display range: 160, 260 km/h, 160 MPH
○Odometer	Display range: 0~99999 km (mile), reset automatically after 99999 km (mile) Display unit: 0.1 km (mile)
○Trip A, B	Display range: 0~999.9 km (mile), reset automatically after 0~999.9 km (mile) Display unit: 0.1 km (mile)
○Top speed record	Display range: 0~360 km/h (0~223 MPH)
○Ave. speed	Display range: 0~360 km/h (0~223 MPH)
○Riding time	Display range: 0~99'59"99
○Tire circumference	Setting range: 300~2,500 mm Setting unit: 1 mm · Sensor point: 1~60
●Fuel gauge	Display range: 0~100%
○Fuel resistance	Seting range: 100 Ω, 510 Ω, no dispaly
●**Supply voltage**	**DC 12 V**
●Effective temperature range	-10~+60°C
●Meter standard	JIS D 0203 S2
●Meter size	D55 X 48.4 mm
●Meter weight	Around 190 g

NOTE Design and specification are subject to change without notice!

NOTE If you enter the setting screen for 30 seconds and don't press the button, it will back to the main screen automatically.

4-1A Select button function instruction

- In main screen, press the **Select button** one time to switch to the Ave. Record.

- In the Ave. screen, press the **Select button** one time to switch to the Max. record screen.
- EX. The average speed is 60 Km/h, and the riding time is 10 minutes.

NOTE **Ave. speed:** The average speed after the trip B is reset.
Riding time: The riding time after the trip B is reset.
When the riding time is displayed as 00: 00, it means 00 (Hour): 00 (Minute).
When the riding time is displayed as 00-00, it mean 00 (Minute)- 00 (Second)

- press down the **Select button** for 3 seconds to reset the record.

NOTE The average speed and riding time is calculated by the trip B if you reset the average speed & riding time record, the trip B will be reset at the same time.

- In Max. record screen, press the **Select button** one time to switch to the main screen.
- Press the **Select button** for 3 seconds to reset the Max. record.

4-1B Adjust button function instruction

- In ODO function, press the **Adjust button** one time to switch to the trip A function.
- Press down the **Adjust button** for 3 seconds to switch the bar graph speedometer range.

- In trip A screen, press the **Adjust button** one time to switch to the trip B function.
- Press down the **Adjust button** for 3 seconds to reset the trip A.

- In trip B screen, press the **Adjust button** one time to switch to the fuel function.
- Press down the **Adjust button** for 3 seconds to reset the trip B.

NOTE The average speed and riding time is calculated by the trip B If you reset the trip B, the average speed & riding time record will be reset at the same time.

- In fuel function screen, press the **Adjust button** one time to return to the main screen.

4-2 Tire circumference, sensor point and fuel setting

●In main screen, press down the **Select & Adjust X 3 seconds** to enter the Tire circumference and sensor point setting.

⚠ CAUTION!

●Please measure the tire circumference (the tire you will install the sensor on) and make sure the number of magnet sensor point (You could install the magnet into the disc screw or the sprocket screw.)
●The speed displayed on the meter will be affected by the setting, please make sure the setting number is correct before you make the setting.

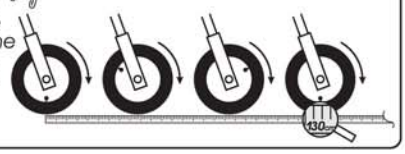
●**EX. The tire circumference is 1,300 mm.**
●Press the **Select button** to move to the digit you want to set.
●EX. Now the original setting is 1,000 mm.

⚠ Now the 1 is flashing!

NOTE The tire circumference setting range : 300~2,500 mm, and the digit you set is from left to right in order.

P.S. Try it!

You could define the valve as the starting point and the terminal point to measure the wheel circumference with a measuring tape.



●Press the **Adjust button** to change the setting.

●Press the **Select button** for three times to enter the sensor point setting.
●EX. The tire circumference setting is changed from 1,000 mm to 1,300 mm.

●**EX. The sensor point you want to set is 6.**
●Press the **Select button** to move to the digit you want to set.
●EX. Now the original setting is 1 point.

⚠ Now the 0 is flashing!

NOTE The sensor point setting range: 1~60 points. You could change the setting from left to right.

NOTE Only when you use the active speed sensor, then you could make the sensor point setting over 6 points.

P.S. Try it!

The active speed sensor could be installed besides the mental parts such as the disc screws, the brake disc to detect the gap of the disc, the gear plate to detect the frequency of the teeth on the gear. We will suggest you to use the method of detecting the disc screw for speed signal. The more the signals are, the better the speed accuracy is. Please note that the max signal the active speed sensor could read is 60 points per turn. **The LED on the active speed sensor will light up once the signal is detected.**

●Press the **Adjust button** to choose the setting number.

⚠ Now the sensor point setting number is flashing!

●Press **Select button**, to enter the fuel gauge resistance setting screen.
●EX. the sensor point setting is changed from 1 to 6.

●例：油量表阻抗值欲設定*510 Ω*。
●Press the **Adjust button** to choose the setting number.
●EX. Now the fuel gauge resistance setting is 100 Ω.

⚠ Now the resistance setting number is flashing!

NOTE The fuel gauge resistance setting range: 100 Ω, 510 Ω.
If you don't install the fuel wiring, the fuel gauge will not display.

NOTE Usually the fuel gauge resistance is 100 Ω on YAMAHA system, and 510 Ω on HONDA system.

●Press **Select button**, to back the main screen.
●EX. Now the fuel resistance setting is changed from 100 Ω to 510 Ω.

●The main screen.

5 Trouble shooting

The following situation do not indicate malfunction of the meter. Please check the following before taking it in for repair.

Trouble	Check item
The meter doesn't work when the power is on.	●The power doesn't supply to the meter. →Please make sure the wiring is connected. The wiring and fuse are not broken. →The battery is broken or the battery is too old to supply enough power **(DC 12V)** to make the meter work.
The meter shows wrong information.	●**Please check the voltage of your battery, and make sure the voltage is over DC 12V.**
Speed does not appear or appear incorrectly.	●Please make sure the speed sensor is connected correctly. ●Please check the tire-size setting. →please refer to the manual **4-2**.

Trouble	Check item
Fuel gauge does not appear or appear incorrectly.	●**Please check your fuel tank.** **→Is there any fuel inside ?** ●**Please check the wiring.** **→Do you connect the wiring correctly ?** ●**Please check the setting.** **→Please refer to the manual 4-2.**
The odometer and trip meter is not accumulated or accumulated wrong data. **The Max. and Ave. record is not recorded, the setting value is not recorded.**	●It is possible that the positive wire is connected wrongly. →Please check is the red positive wire connect to the permanent power or battery and the brown positive wire is connected to the key on switch positive pole. ●It is possible that the permanent power wire is not connected well. →Please check the red positive wire is connect well or not.

※If still can't solve the problems according to the steps above, please contact with distributors or us.