Kit Plug&Play – Suzuki GSX-R K5

GSX-R 600 2006/2007
GSX-R 750 2006/2007
GSX-R 1000 2005/2006

User Manual
PRESENTATION

AIM: a world leader in data acquisition for racing applications.

Established in 1976, nowadays AIM is a world leader in producing high performing loggers for racing application: dashboards, data loggers, digital displays, lap timers.

AIM established new standards in a lot of motor sports: from karts to car, bikes, dragsters, Formula 1 Boat, offshore and even snowboards!

AIM products merges the functionalities of traditional tachometers, RPM, temperature and pressure indicators and lap timers with compact units, high performing and easy to use. Different products for different applications but with a shared characteristics: the great innovation.

Each AIM system is completely designed, realised and tested by its technicians. The Research and Development board is made of Electronic and mechanic engineers, physics and other specialists that develop software, firmware and the related documentation. Our reputation is build on quality products, innovative technologies and on the steady engagement in customer support.
Introduction

MXL Plug&Play kit for Suzuki GSX-R K5 is the dashboard, with data acquisition in Pista version, designed for an easy and quick installation: with the minimum effort it will be possible to connect directly to the bike ECU and show - without additional sensors and depending on the model:

**MXL Strada**
- RPM
- Speed
- Water temperature
- Oil pressure Alarm
- Fuel level alarm
- Turning Lights
- High Beam ON/OFF
- Engaged gear
- 4 free channels

**MXL Pista**
- RPM
- Speed
- Water temperature
- Oil pressure alarm
- Engaged gear
- Lateral acceleration
- 6 free channels

The logger, like the stock dashboard, is powered by the bike master switch.

**MXL Strada/MXL Pista** kits for Suzuki GSX-R K5 have been developed for the following bike models:

<table>
<thead>
<tr>
<th>Displacement</th>
<th>Year 2005</th>
<th>Year 2006</th>
<th>Year 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>See K3 Manual</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>750</td>
<td>See K3 Manual</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>See K7 manual</td>
</tr>
</tbody>
</table>

✓ = supported.

Note: thanks to the infrared transmitter/receiver (included in **MXL Pista** kit, optional to **MXL Strada** kit), it is possible to sample/record lap times.

For anything not expressly explained in this user manual, please refer to **MXL** or to **Race Studio Configuration** user manual.

**WARNING:** The information concerning installation and configuration of MXL Strada/MXL Pista Plug&Play kits for Suzuki GSX-R K5 included in this user manual distinguish the kits depending on their wiring codes. Kit identified by 04.554.54 and 04.554.55 wiring codes are currently produced and sold while kits identified by 04.554.13 and 04.554.14 wiring codes are not produced and sold anymore: these instructions have an only explicative function. This means that any kit bought after the publishing of this user manual, release 1.07 or later, includes a wiring whose identification code can only be 04.554.54 or a 04.554.55.
The composition of Plug&Play kits for Suzuki GSX-R K5 varies depending on the chosen MXL version and on the bike production year. Each kit includes only some of the items showed in the figure here above, numbered to be more clear.

**MXL Strada kit**

N.1 – MXL Strada (1)
N.1 – Wiring for MXL Strada Plug&Play GSX-R K5/K7 (2)
N.1 – USB cable for MXL (5)
N.1 – Accessories/optional leaflet (8)
N.1 – Race Studio 2 Software CD (9)
N.1 – Bracket kit (10), including:
   1 – MXL bracket
   2 – Spacing collars for Suzuki GSX-R
   4 – M4*8 Phillips recess cup head screws
   2 – M5*20 Phillips recess cup head screws
   1 – Black EPDM washer
   2 – M5 washer
MXL Pista kit

N.1 – MXL Pista (1)
N.1 – Wiring for MXL Pista Plug&Play GSX-R K5/K7 (2)
N.1 – Infrared transmitter (3)
N.1 – Infrared receiver (4)
N.1 – Transmitter Power cable (6)
N.1 – TPS – throttle position sensor – cable (7)
N.1 – USB cable for MXL (5)
N.1 – Accessories/optional leaflet (8)
N.1 – Race Studio 2 Software CD (9)
N.1 – Bracket kit (10), including:
  1 – MXL bracket
  2 – Spacing collars for Suzuki GSX-R
  4 – M4*8 Phillips recess cup head screws
  2 – M5*20 Phillips recess cup head screws
  1 – Black EPDM washer
  2 – M5 washer
Universal kit (for customers that already own an MXL Strada/Pista):

N.1 – Wiring for MXL Strada/MXL Pista Plug&Play GSX-R K5/K7 (2)
N.1 – Bracket kit (10), including:
  1 – MXL bracket
  2 – Spacing collars for Suzuki GSX-R
  4 – M4*8 Phillips recess cup head screws
  2 – M5*20 Phillips recess cup head screws
  1 – Black EPDM washer
  2 – M5 washer

Optional to MXL Strada kit:

N.1 – Infrared transmitter (3)
N.1 – Infrared receiver (4)
N.1 – Transmitter power cable (6)
N.1 – TPS – throttle position sensor – cable (7)

Note: before installing the kit it is suggested to check that the kits contains all specified items.

1.1 – Part Numbers (see also appendix “A”)

Plug&Play kit **MXL Strada for Suzuki GSX-R600/750 K5**: code: X16MXLSGS0567 (CAN connection and analog channels; technical drawing nr. 04.554.55 – f1/f2).

Plug&Play kit **MXL Strada for Suzuki GSX-R1000 K5**: code: X16MXLSGS5610 (CAN connection and analog channels; technical drawing nr. 04.554.55 – f1/f2).

Universal kit **MXL Strada Suzuki GSX-R600/750/1000 K5** (wiring+bracket) codes: V02554550K5+DNKTSTMXLK5 (to transform an MXL Strada in a Suzuki GSX-R K5 application; technical drawing 04.554.55 f1/f2).

Plug&Play kit **MXL Pista for Suzuki GSX-R600/750 K5**: code: X16MXLCGS0567 (CAN connection and analog channels; technical drawing nr. 04.554.54 – f1/f2).

Plug&Play kit **MXL Pista for Suzuki GSX-R1000 K5**: code: X16MXLCGS5610 (CAN connection and analog channels; technical drawing nr. 04.554.54 – f1/f2).

Universal kit **MXL Pista Suzuki GSX-R600/750/1000 K5** (wiring+bracket) codes: V02554540K5+DNKTSTMXLK5 (to transform an MXL Pista in a Suzuki GSX-R K5 application; technical drawing 04.554.54 f1/f2).

Optional to MXL Strada Suzuki GSX-R600/750/1000 K5 Plug&Play kit:

Infrared transmitter with 90 cm cable: code: X41RX12090
Infrared transmitter: code: X02TXKMA01
Transmitter power cable: code: V02POWTX0
2 – Plug&Play kit installation for MXL Strada wiring code 04.554.55 and MXL Pista wiring code 04.554.54

The instructions included in this user manual are intended for an MXL Strada/MXL Pista with **firmware version 14.86.33 or later** and **Race Studio 2 release 2.30.04 or later**.

Suzuki GSX-R K5 Plug&Play wiring has been expressly designed and developed to be absolutely easy to install.

**Warning: this kit has been tested to be absolutely compatible with a bike identical to the stock one sold by the manufacturer.**

Thanks to the back fixing points of MXL it is possible to replace the stock dash in an easy and quick way.

The logger has to be connected to the chassis of the stock front screen using the bracket included in the kit. The bracket is in black anodized aluminium light weight and mechanically resistant.

**GENERAL NOTES – Read these notes before installing the system.**

- Do not cut any cable: the cable supplied with the kit is Plug&Play.
- Pay attention not to damage the stock connectors while plugging/unplugging them. In the following pages it’s described how to correctly manage them.
- Do not install the system when the engine is hot. The stock connectors are near to the engine and there is burning risk.
- The space under the fuel tank is quite small: pay attention while demounting/mounting it.
- Pay attention not to loose screws and washers.
- Pay attention not to damage the fairing while demounting/mounting them.
2.1 – Removing the lateral mirrors and fairings and the front fairing.

To disconnect the stock dash and install MXL on Suzuki GSX-R K5 bike it is necessary to remove:

- front screen
- lateral mirrors
- lateral fairings
- fuel tank

Note: refer to the bike user manual for further information concerning this step.

2.2 – Removing the stock dash, unplugging the stock connectors

The second installation step is removing the stock dash and disconnecting the stock connectors.

The stock dash is fixed through 3 fixing points red circled in Figures 1a and 1b.

![Figure 1a: stock dash fixing points rear view.](image1)

![Figure 1b: particular of fixing point labelled “3” front view.](image2)

Once the stock dash has been removed, unplug the 16 pins AMP bike stock connector from the dash back.

Remove the cover as shown in Figure 2 and pull down the tongue (highlighted in red): unthread the dash connector.

![Figure 2: unplugging the 16 pins AMP connector from the stock dash.](image3)
2.3 – Milling the chassis that supports the stock dash

The lap connector is under the chassis that supports the stock dash. This is why the third installation step is milling a part of this chassis to connect “Lap” cable to the stock connector. In figure 3 the part of the chassis to be milled is highlighted (2). Pay attention not to damage the anti-vibration mounting (1) while milling the chassis.

![Figure 3: Chassis to be milled (2) and anti-vibration mounting (1).](image)

2.4 – Assembling the kit

The fourth installation step is assembling the kit. It has four anti-vibration mounting already mounted on the back of MXL. Install MXL on its bracket and fix this last one in correspondence of the four anti-vibration mountings using the Phillips recess cup head screws and the washers included in the kit.

![Figure 4: Anti-vibration mounting particular.](image)

Figure 5 shows MXL correctly assembled with bracket and washers (rear view).

![Figure 5: MXL and bracket – rear view.](image)

2.5 – Connecting the cables

The fifth installation step is installing the wiring supplied with the kit. The wiring is wrapped in a plaited protective covering. Bent it and let it pass on the bike right side.

![Figure 6: Wiring installation.](image)
Connect the 16 pins connector (previously unplugged from the stock dash) to the male connector placed in the black aluminum box of MXL wiring as shown in figure 7: press until you hear a click. Use the stock dash plastic cover to make the connection waterproof.

Let the wiring run between the high beam and the front fairing (figure 8).

Note: the 2 AMP connectors, the wiring labelled “Lap” and the stock wiring (ending with a channel interface wiring) are too big to pass between the high beam and the front fairing. It is suggested to insert the wiring from above.
2.6 – Installing the wiring

To install the wiring follow this procedure. It shows a black ground cable labelled “GND” that needs to be directly connected to the negative pole of the bike battery, as shown in the images below.

The cable highlighted by the arrow in figure 14 is external to the wiring.

Let it run along the bike chassis, as indicated in figure 10, until the bike battery.

Once reached the battery connect it to the negative pole (figure 11).

In figure 12 the external ground cable correctly connected to the battery negative pole is shown.
2.7 – Installing the TPS cable (included in the kit for MXL Pista)

Warning: before installing this cable it is necessary to demount the bike fuel tank. Refer to the bike user manual for further information on the subject.

Figure 13: TPS cable installation.

Unplug the original Suzuki wiring from TPS sensor and connect it to the male connector of MXL wiring for TPS sensor (as indicated in the box of figure 13).

Connect the female connector of MXL wiring for TPS sensor to the same sensor (as highlighted by the blue arrow).

Connect the 4 pins male plastic Binder connector to one of the free channels depending on the model of MXL (see “Channels” chapter).

For further information concerning the configuration of the channel the TPS sensor is installed on, refer to the related chapter of this user manual.
3 – Plug&Play kit installation for MXL Strada wiring code 04.554.14 and MXL Pista wiring code 04.554.13

**WARNING:** kit whose wiring is identified by codes 04.554.13 and 04.554.14 is no more in production and this chapter - like the one concerning the logger configuration - has just an explicative function for customers owning this kit.

Suzuki GSX-R K5 Plug&Play wiring has been expressly designed and developed to be absolutely easy to install.

**Warning:** this kit has been tested to be absolutely compatible with a bike identical to the stock one sold by the manufacturer.

Thanks to the back fixing points of MXL it is possible to replace the stock dash in an easy and quick way: each component is Plug&Play.

The logger has to be connected to the chassis of the stock front screen using the bracket included in the kit. The bracket is in black anodized aluminum light weight and mechanically resistant.

**GENERAL NOTES – Read these notes before installing the system.**

- Do not cut any cable: the cable supplied with the kit is Plug&Play.
- Pay attention not to damage the stock connectors while plugging/unplugging them. In the following pages it’s described how to correctly manage them.
- Do not install the system when the engine is hot. The stock connectors are near to the engine and there is burning risk.
- The space under the fuel tank is quite small: pay attention while demounting / mounting it.
- Pay attention not to loose screws and washers.
- Pay attention not to damage the fairing while demounting/mounting them.
3.1 – Removing the lateral mirrors and fairings and the front fairing.

To disconnect the stock dash and install MXL on Suzuki GSX-R K5 bike it is necessary to remove:
- front screen
- lateral mirrors
- lateral fairings
- fuel tank

Note: refer to the bike user manual for further information concerning this step.

3.2 – Remove the bike seat and the fuel tank

To reach stock connectors (water, gear and TPS) it is necessary to remove the bike seat and the fuel tank.

Note: refer to the bike user manual for further information concerning this subject.

3.3 – Removing the stock dash, unplugging the connectors

The third installation step is removing the stock dash and unplugging its connectors.

The stock dash is fixed to the bike through three fixing points.

In figure 14 the back and the front anchor points of the stock dash are red circled.

When the stock dash has been removed it is needed to unplug the 16 pins AMP connector from the same dash back side.

Remove the protective cover as shown in figure 15 and pull down the tongue (highlighted in red): unthread the connector from the dash.
Figure 16 shows the position of gear and water temperature stock connectors. For further information concerning the stock connectors refer to figures from 17 to 19.

The stock gear connector is a 3 pins white one placed on the bike left side (figure 16). Here below male and female gear connectors are drawn. **Note**: cable colours correspond to the real ones.

How to unplug a 3 pins connector.

3 pins male and female connectors are strictly fixed. To disconnect the male from the female use a flat screwdriver: pull down the tongue and unplug the connectors. **Warning**: to unplug the connectors unplug the plastic cases and not the cables, that could disconnect seriously damaging the wiring.

Stock water temperature connector, shown in figure 19, is green, has 2 pins and is placed on the left part of the engine cylinder block of the bike. (figure 16). Here below the stock water temperature connector is drawn. **Note**: cable colours correspond to the real ones.
3.4 – Milling the chassis that supports the stock dash

The lap connector is under the chassis that supports the stock dash. This is why the fourth installation step is milling a part of this chassis to connect “Lap” cable to the stock connector. In figure 20 the part of the chassis to be milled (2) is highlighted. Pay attention not to damage the anti-vibration mounting (1) while milling the chassis.

3.5 – Assembling the kit

The fifth installation step is assembling the kit for Suzuki GSX-R. It has four anti-vibration mounting already installed on the back of MXL.

Install the logger on its aluminium bracket in correspondence of the four anti-vibration mounting, using screws and washers included in the kit.

Figure 22 shows MXL correctly assembled with bracket and washers (rear view).

3.6 – Connecting the cables

The sixth installation step is installing the wiring included in the kit. The wiring is all wrapped in a plaited protective covering. Bent it and let it run along the bike right side.
Connect the 16 pins black AMP connector (previously unplugged from the stock dash) to the male one placed in the black aluminum box of MXL wiring shown in figure 24: press until you hear a click. Use the plastic cover of the stock dash to make the connection waterproof.

Connect male and female water and gear connectors (these green and white previously disconnected) to the related connectors of MXL wiring. Let cables labelled “Gear”, “Water Temp” etc… run along the bike chassis as shown in figure 25. Use plastic wrappers to fix them to the bike stock wiring. “Gear” and “water temperature” stock connectors are under the fuel tank: let them enter the engine compartment as shown in figure 25.

Let all cables (except for “Lap” one”) run between the high beam and the front fairing (figure 26).

Note: the 2 AMP connectors, cable labelled “Lap” and stock wiring (the one ending with a black channels interface box) are too big to pass between the high beam and the chassis. It is suggested to insert the wiring from above.
3.7 – Installing TPS cable (included in the kit for MXL Pista)

**Warning:** before installing this cable it is necessary to demount the bike fuel tank. Refer to the bike user manual for further information on the subject.

Unplug the original Suzuki wiring from TPS sensor and connect it to the male connector of MXL wiring for TPS sensor (as indicated in the box of figure 27).

Connect the female connector of MXL wiring for TPS sensor to the same sensor (as highlighted by the blue arrow).

Connect the 4 pins male plastic Binder connector to one of the free channels - depending on the model of MXL (see “Channels” chapter).

For further information concerning the configuration of the channel the TPS sensor is installed on, refer to the related chapter of this user manual.
4 – MXL inputs

Thanks to interface cables included in Suzuki GSX-R K5 Plug&Play kit, data acquisition is really easy and quick. The image below shows all inputs that allow data visualization on MXL.

Figure 28: MXL Strada/MXL Pista: rear view.

- Lap connector (1): allows lap time detection;
- External expansion Modules connector (2): allows the connection with all expansion modules that communicate through the CAN bus (GPS, lambda probe);
- AMP 12 pins female connector (3) AIM wiring supplied with the kit;
- AMP 16 pins female connector (4) AIM wiring supplied with the kit.
5 – MXL Suzuki GSX-R firmware

MXL Strada/MXL Pista for Suzuki GSX-R K5 is equipped with a special firmware version that supplies the logger with a second virtual dashboard.

**Note:** **MXL firmware** version has to be **14.86.33 or later**.

On the street the display is set on “street mode” and shows the following parameters:

- Bar graph with configurable scaling: **black**;
- RPM digital value/ battery voltage/ total and partial odometer/ date and time: **fuchsia** (use VIEW/QUIT button to switch between the options).
- Speed: **red**
- Engaged gear: **green**.
- Analog channels always on top, depending on **MXL model**: **bleu**.
- Up to 4 fields shown on demand and selectable by the drop down menu of System Configuration window of **Race Studio 2**. Use “>>>” button to switch between the fields.

![Figure 29 – Display on street mode.](image)

On track, passing by a switched on transmitter, the display switches automatically on “track mode” and shows lap time in spite of odometer.

![Figure 30 – Display on track mode.](image)

Visualization mode (street/track) is set via software and stored by the logger. Default setting is show odometer (street mode). If user sets show lap time (track mode) via software, this setting is restored at each switch on, no matter if the bike is on track or not.

**Note:** for further information concerning display management and its configuration refer to **MXL** and/or **Race Studio Configuration** user manual.
6 – Suzuki GSX-R kits configuration: MXL Strada wiring code 04.554.55 and MXL Pista wiring code 04.554.54.

When MXL has been installed it is ready to work thanks to the default configuration. In case a custom configuration is needed, follow these instructions.

- Run Race Studio 2 software (release 2.30.04 or later).
- Press “AIM system manager” button on the left vertical toolbar.
- Select MXL icon from the panel that appears on the right of the vertical keyboard.

Press “new” and this window appears.
Fill in the window below with:

- **Data logger type**: select MXL Pista (or MXL Strada) depending on the owned logger and paying attention to select the correct displacement (600, 750 or 1000) and the correct wiring identification code.
- **New configuration name**: fill in a name for the new configuration.
- **Vehicle name**: fill in a vehicle name.
- **Unit of measure**: select the desired units of measure for speeds, temperatures and pressures.

Click on “OK” to create the new configuration. Select “Channels” layer to enter the configuration of MXL sampled channels.
In case an **MXL Strada** is being configured this window appears:

<table>
<thead>
<tr>
<th>Channel</th>
<th>Enabled/Disabled</th>
<th>Channel name</th>
<th>Sampling frequency</th>
<th>Sensor type</th>
<th>Measure unit</th>
<th>Low scale</th>
<th>High scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>Enabled</td>
<td>Speed</td>
<td>No/Nan</td>
<td>Speed Type</td>
<td>rpm</td>
<td>0</td>
<td>10000</td>
</tr>
<tr>
<td>CH2</td>
<td>Enabled</td>
<td>OIL PRESS</td>
<td>No/Nan</td>
<td>Generic Type</td>
<td>V</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>CH3</td>
<td>Enabled</td>
<td>Fuel Level</td>
<td>No/Nan</td>
<td>Fuel Type</td>
<td>%</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>CH4</td>
<td>Enabled</td>
<td>Engine Speed</td>
<td>No/Nan</td>
<td>Speed Type</td>
<td>rpm</td>
<td>0</td>
<td>10000</td>
</tr>
<tr>
<td>CH5</td>
<td>Disabled</td>
<td>Channel 5</td>
<td>No/Nan</td>
<td>Generic Type</td>
<td>V</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>CH6</td>
<td>Disabled</td>
<td>Channel 6</td>
<td>No/Nan</td>
<td>Generic Type</td>
<td>V</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>CH7</td>
<td>Enabled</td>
<td>Engine Speed</td>
<td>No/Nan</td>
<td>Speed Type</td>
<td>rpm</td>
<td>0</td>
<td>10000</td>
</tr>
<tr>
<td>CH8</td>
<td>Disabled</td>
<td>Channel 8</td>
<td>No/Nan</td>
<td>Generic Type</td>
<td>V</td>
<td>0</td>
<td>50</td>
</tr>
<tr>
<td>CALC/GEAR</td>
<td>Disabled</td>
<td>Calculated Gear</td>
<td>No/Nan</td>
<td>Calculated Gear</td>
<td>RPM</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>LOG TEMP</td>
<td>Enabled</td>
<td>Temperature</td>
<td>No/Nan</td>
<td>Temperature Type</td>
<td>°C</td>
<td>0</td>
<td>120</td>
</tr>
<tr>
<td>BATT</td>
<td>Enabled</td>
<td>Battery</td>
<td>No/Nan</td>
<td>Battery Type</td>
<td>V</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>BATT</td>
<td>Enabled</td>
<td>ECT</td>
<td>No/Nan</td>
<td>ECT Type</td>
<td>°C</td>
<td>0</td>
<td>120</td>
</tr>
<tr>
<td>BATT</td>
<td>Enabled</td>
<td>GEAR</td>
<td>No/Nan</td>
<td>GEAR Type</td>
<td>°C</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
</table>

Note: all additional channels are disabled by default; for any information concerning their configuration refer to **Race Studio Configuration** user manual.

Both show the channels sampled by the logger and speed panel labelled “Speed” and highlighted in the images above.
**Speed panel:** Suzuki GSX-R speed sensor is installed on the jackshaft that connects the gearbox to the pinion. The number of magnets installed on this jackshaft is 4. The wheel circumference used in this panel is an “Equivalent Circumference” computed using this formula:

\[
\text{EquivCircumf} = \frac{\text{WheelCircumf} \times Np}{Nc}
\]

where:
- \(Np\) = pinion teeth number
- \(Nc\) = Crown teeth number

Using default values computed for a Suzuki GSX-R750, the equivalent circumference value is 747 mm (29.4 inches). Changing the pinion or the crown with one that has a different teeth number equivalent circumference needs to be re-computed. For further information on this computation refer to the related chapter of this user manual.
It is now necessary to configure MXL display. Select “System Configuration” layer.

The window shown here below appears. Default values differ depending on the model of MXL selected when creating the configuration.

Set fields are: RPM, Shift lights, Speed, Lap; some alarms and the gear sensor.
RPM: high scale can be set to a value included between 14000 and 16000 RPM depending on the bike displacement.

Lap: obscuring time 8 seconds and 1 lap segment (no split times).

Shift Lights: each displacement has different threshold values, computed considering the stock engine limiter threshold value. In case the bike engine limiter has an higher threshold value than the stock one, default values need to be modified so that the last red light switches on just before limiter intervention.

Default visualization is:

- **ECT**: water temperature; threshold value “>” (more than) 105 °C.
- **OIL PRESS**: oil pressure; threshold value “<” (less than) 2 bar.
- **BATTERY**: battery voltage; alarm threshold value “<” (less than) 13 volts.
- **FUEL LEVEL**: fuel level: threshold value “<” (less than) 20. This value is expressed in percentage and corresponds to the bike reserve value (around 4.5 litres – 1 gallon).
- **ODOMETER**: run kilometres. This default setting changes automatically once on the track (with infrared transmitter and receiver). The logger switches on “show lap time” if detects a lap signal. Switching OFF/ON the logger it shows again odometer.

Note: to modify and customize the shown channels with the related alarms, refer to Race Studio Configuration user manual.

The configuration is now ready to be transmitted to the logger. Press “Transmit” button on the software top keyboard.
7 – Suzuki GSX-R kits configuration: MXL Strada wiring code 04.554.14 and MXL Pista wiring code 04.554.13

**WARNING:** this kit version is not produced anymore: these instructions have just an explicative function for customers that already own the kits.

When MXL has been installed it is ready to be used thanks to the default configuration. In case a custom one is needed, follow these instructions.

- Run **Race Studio 2** software.
- Press “AIM system manager” button on the left vertical keyboard.
- Select MXL icon on the panel that appears right of the vertical keyboard.

Press “New” and this window appears:
Fill in the window below with:

- **Data logger type**: select **MXL Pista** (or **MXL Strada**) depending on the owned logger and paying attention to select the correct displacement (600, 750 or 1000) and the correct wiring identification code.
- **New configuration name**: fill in a name for the new configuration.
- **Vehicle name**: fill in a vehicle name.
- **Unit of measure**: select the desired units of measure for speeds, temperatures and pressures.

Press “OK” to create the new configuration. Select “Channels” layer to configure the channels sampled by **MXL**.
In case an **MXL Strada** is being configured, this window appears:

Both show the channels sampled by the logger and speed panel – labelled “Speed” and highlighted in the figures above.

**Note:** additional channels are disabled by default. Refer to **Race Studio Configuration** user manual for further information concerning their configuration.
Speed panel: Suzuki GSX-R speed sensor is installed on the jackshaft that connects the gearbox to the pinion. The number of magnets installed on this jackshaft is 4. The wheel circumference used in this panel is an “Equivalent Circumference” computed using this formula:

$$\text{EquivCircumf} = \frac{\text{WheelCircumf} \times N_p}{N_c}$$

- $N_p$ = pinion teeth number
- $N_c$ = Crown teeth number

Using default values computed for a Suzuki GSX-R750, the equivalent circumference value is 801.4 mm (31.55 inches). Changing the pinion or the crown with one that has a different teeth number equivalent circumference needs to be re-computed. For further information on this computation refer to the related chapter of this user manual.
It is now necessary to configure MXL display.
Select “System configuration” layer:

The window below appears. Default values are different depending on the model of MXL selected while creating the configuration.

Set fields are: RPM, Shift lights, speed, lap, some alarms and the gear sensor.
RPM: high scale value is set on 14000 RPM.
Lap: obscuring time: 8 seconds and number of segments: 1 (no split times).
Shift lights: each displacement has different threshold values, computed considering the stock engine limiter threshold value. In case the bike limiter has a threshold value higher than the stock one, default values need to be modified so that the last red light switches on just before limiter intervention.

Default visualization is:
- **ECT**: water temperature alarm threshold values: “>” (max) 90°C; “<” (min) 50°C.
- **ODOMETER**: run kilometres. This default setting changes automatically once on the track (with infrared transmitter and receiver). The logger, in fact, switches on “Show lap time” if detects a lap signal. Switching OFF/ON the logger it shows again odometer.

Note: refer to **Race Studio Configuration** user manual for further information about the modification and customization of sampled channels.

The configuration is now ready to be transmitted to **MXL**: press “Transmit” button on the software top keyboard.
7.1 – Gear Calibration

Gear calibration is the last step to finish system configuration; it is to perform only in case the default one does not allow visualization of the correct engaged gear number and can be done only through a PC with Microsoft Windows XP or Microsoft Window Vista 32 bit operating system and Race Studio 2 software (included in the kit).

The logger needs to be connected to the PC using the proper USB cable included in the kit.

Connect MXL to the PC and switch both on (firstly the PC and then MXL); run Race Studio 2 and follow this procedure:

- press “AIM System manager” button on the left vertical keyboard and select “MXL” on the panel that appears right of the vertical keyboard (MXL Strada/MXL Pista Suzuki GSX-R).
- press “Calibration” button on the menu bar or on the vertical keyboard (highlighted in the figure below).

This window appears: press “calibrate” button corresponding to the sensor to calibrate (in this case gear potentiometer).
Calibration panel appears.

- Select the higher gear number enabling the corresponding checkbox and press “CONTINUE”.
- Engage one by one all gears, also with the engine off but with the ignition on and click on “CONTINUE” after each gear, as for the instruction that appears on the panel right to “raw value” column.
- When calibration is over the window below appears. Press “END CALIBRATION”.

![Gear sensor calibration window]

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- The system comes back to the previous window and shows sensor status “calibrated” in red and “Transmit calibration” button enabled. Press it to transmit the calibration to the logger.

**Warning:** the configuration transmitted to the logger is not automatically stored in the software configurations database. This means that, once transmitted to the logger, the configuration is not inserted in the available configurations database.

### 7.1.1 – Saving the configuration with calibrated gears

To save the new configuration with calibrated gears in **Race Studio 2** configurations database, activate “Select Configurations” layer and press “Receive” button on the top keyboard.

The configuration of the logger connected to the PC, previously transmitted, is received, saved as the last one on bottom of available configurations database and highlighted in yellow.

**Note:** for any further information concerning **Race Studio 2** installation and configuration refer to the related user manual.
8 – Equivalent circumference compute

The equivalent circumference can be computed using “Bike.exe” software, included in Race Studio 2 CD, utilities folder. Browse the CD and double click on “Bike.exe” icon.

Fill in “Drive gear teeth number”.
Fill in “Driven gear teeth number”.
Select the circumference unit of measure.
Fill in the circumference value.
Press “Compute”.

The software computes the equivalent circumference value and shows it in the related cell (red circled here on the right).

Fill in this value in the related case of Race Studio 2 “Channels” layer.
9 – TPS Sensor configuration

After having installed the sensor on the bike (see the related chapter for further information), it is necessary to calibrate it so that it samples correct data. This procedure can be performed only using a PC with Microsoft Windows Xp or Microsoft Windows Vista 32 bit operating system and Race Studio 2 software (included in the kit).

The logger needs to be connected to the PC through the USB cable supplied with the kit and switched on.

Run Race Studio 2 software and press “AIM system manager” button on the left vertical keyboard. Select “MXL” on the panel that appears right of the vertical keyboard.

To set TPS sensor on a channel follow this procedure:

- Activate “Channels” layer.
- Select the channel where the sensor has been physically installed on.
- Enable the checkbox corresponding to it in “Enable/Disable” column.
- Set, if desired, a channel name.
- Select “Zero based potentiometer” in the drop down menu of “Sensor Type” column.
- Set the desired unit of measure in “Unit” column
- Set high scale value (recommended 110%)
- Press “Transmit” button on the top keyboard to transmit the configuration to the logger.
When TPS sensor has been set on a channel, it needs to be calibrated. Click on “Calibration” button on the left vertical keyboard or on the menu bar (red circled in the figure below).

This window appears.

Click on “Calibrate” button corresponding to the sensor to calibrate (in this case “Zero based potentiometer”).

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This window appears:

Follow the instruction that appears on the PC monitor.

- with the gas completely opened press “Get raw data” button corresponding to High Position.
- with the gas in its zero position press “Get raw data” button corresponding to Zero position.
- Match raw data with custom values to insert in “Measure” box. For example match raw data sampled with gas completely opened with 100 value and raw data sampled with gas closed to “0” value.
- Press “OK”
- The system comes back to the previous window.
The window shows sensor status turned to “calibrated” in red and “Transmit calibration” button enabled. Pressing it the calibration is transmitted to the logger.

Warning: the configuration with TPS sensor calibrated, once transmitted to the logger, is not saved in Race Studio 2 configurations database. This means that to have it stored it is necessary to receive it as previously explained.
## 10 – Channels

Default channels setting of **MXL Strada**/**MXL Pista** for Suzuki GSX-R is:

### MXL Strada Suzuki GSX-R K5 (wiring code 04.554.55)

<table>
<thead>
<tr>
<th>Channel identification</th>
<th>Channel name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>Engine</td>
<td>RPM Value</td>
</tr>
<tr>
<td>SPD_1</td>
<td>Speed1</td>
<td>Speed Value</td>
</tr>
<tr>
<td>Ch_1</td>
<td>Oil_Press</td>
<td>Oil Pressure</td>
</tr>
<tr>
<td>Ch_2</td>
<td>Fuel_level</td>
<td>Fuel level</td>
</tr>
<tr>
<td>Ch_3</td>
<td>Turning_Light</td>
<td>Turning_Lights ON/OFF</td>
</tr>
<tr>
<td>Ch_4</td>
<td>Hi_Beam</td>
<td>High Beam ON/OFF</td>
</tr>
<tr>
<td>Ch_5</td>
<td>Channel_5</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_6</td>
<td>Channel_6</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_7</td>
<td>Channel_7</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_8</td>
<td>Channel_8</td>
<td>Free Channel</td>
</tr>
<tr>
<td>LOG_TMP</td>
<td>Datalogger_TEMP</td>
<td>Logger internal temperature</td>
</tr>
<tr>
<td>BATT</td>
<td>Battery</td>
<td>Battery voltage</td>
</tr>
<tr>
<td>ECU1</td>
<td>ECT</td>
<td>Temperature Sensor</td>
</tr>
<tr>
<td>ECU2</td>
<td>Gear</td>
<td>Gear Sensor</td>
</tr>
</tbody>
</table>

### MXL Pista Suzuki GSX-R K5 (wiring code 04.554.54)

<table>
<thead>
<tr>
<th>Channel identification</th>
<th>Channel name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>Engine</td>
<td>RPM Value</td>
</tr>
<tr>
<td>SPD_1</td>
<td>Speed1</td>
<td>Speed Value</td>
</tr>
<tr>
<td>Ch_1</td>
<td>Oil_Press</td>
<td>Oil Pressure</td>
</tr>
<tr>
<td>Ch_2</td>
<td>Fuel_level</td>
<td>Fuel level</td>
</tr>
<tr>
<td>Ch_3</td>
<td>Channel_3</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_4</td>
<td>Channel_4</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_5</td>
<td>Channel_5</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_6</td>
<td>Channel_6</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_7</td>
<td>Channel_7</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_8</td>
<td>Channel_8</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Acc1</td>
<td>LatAcc</td>
<td>Lateral Accelerometer</td>
</tr>
<tr>
<td>LOG_TMP</td>
<td>Datalogger_TEMP</td>
<td>Logger internal temperature</td>
</tr>
<tr>
<td>BATT</td>
<td>Battery</td>
<td>Battery voltage</td>
</tr>
<tr>
<td>ECU1</td>
<td>ECT</td>
<td>Temperature Sensor</td>
</tr>
<tr>
<td>ECU2</td>
<td>Gear</td>
<td>Gear Sensor</td>
</tr>
</tbody>
</table>
### MXL Strada Suzuki GSX-R K5 (wiring code 04.554.14)

<table>
<thead>
<tr>
<th>Channel identification</th>
<th>Channel name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>Engine</td>
<td>RPM Value</td>
</tr>
<tr>
<td>SPD_1</td>
<td>Speed1</td>
<td>Speed Value</td>
</tr>
<tr>
<td>Ch_1</td>
<td>Water_Temp_ECT</td>
<td>Suzuki Water temperature</td>
</tr>
<tr>
<td>Ch_2</td>
<td>Channel_2_free</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_3</td>
<td>Oil_Press_signal</td>
<td>Oil Pressure</td>
</tr>
<tr>
<td>Ch_4</td>
<td>Channel_4_free</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_5</td>
<td>Fuel_level</td>
<td>Fuel level</td>
</tr>
<tr>
<td>Ch_6</td>
<td>Turning_Light</td>
<td>Turning Lights ON/OFF</td>
</tr>
<tr>
<td>Ch_7</td>
<td>Hi_beam</td>
<td>High Beam ON/OFF</td>
</tr>
<tr>
<td>Ch_8</td>
<td>Gear_Pot</td>
<td>Calculated Gear</td>
</tr>
<tr>
<td>LOG_TMP</td>
<td>Datalogger_Temp</td>
<td>Logger internal temperature</td>
</tr>
<tr>
<td>BATT</td>
<td>Battery</td>
<td>Battery voltage</td>
</tr>
</tbody>
</table>

### MXL Pista Suzuki GSX-R K5 (wiring code 04.554.13)

<table>
<thead>
<tr>
<th>Channel identification</th>
<th>Channel name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>Engine</td>
<td>RPM Value</td>
</tr>
<tr>
<td>SPD_1</td>
<td>Speed1</td>
<td>Speed Value</td>
</tr>
<tr>
<td>Ch_1</td>
<td>Water_Temp</td>
<td>Suzuki Water Temperature</td>
</tr>
<tr>
<td>Ch_2</td>
<td>Channel_2</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_3</td>
<td>Channel_3</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_4</td>
<td>Channel_4</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_5</td>
<td>Channel_5</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_6</td>
<td>Channel_6</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_7</td>
<td>Channel_7</td>
<td>Free Channel</td>
</tr>
<tr>
<td>Ch_8</td>
<td>Gear</td>
<td>Calculated Gear</td>
</tr>
<tr>
<td>Acc1</td>
<td>LatAcc</td>
<td>Lateral Accelerometer</td>
</tr>
<tr>
<td>LOG_TMP</td>
<td>Datalogger_Temp</td>
<td>Logger internal temperature</td>
</tr>
<tr>
<td>BATT</td>
<td>Battery</td>
<td>Battery voltage</td>
</tr>
</tbody>
</table>

According to the wiring you got, free channels can be freely configured to connect additional sensors like suspension potentiometers, brake and pressure sensors, etc.

Note: for further information concerning additional sensors installation and configuration refer to **Race Studio Configuration** and to **MXL user manual**.
11 – Data download and analysis

Once a test session is over it is possible to download data stored in the logger memory and save them in a database.

Note: data download and analysis is only available on MXL Pista. For further information on these subjects refer to the related user manuals.
12 – MXL expansions

Thanks to the wide range of AIM products, expressly dedicated to the needs of any biker, MXL is a modular and expandable system.

**GPS Module**

GPS Module allows to sample a lot of important information: brake analysis, information concerning the chassis, analysis of the behaviour of the biker in any point of the track.

This allows to view trajectories, the related speed and evaluate driving errors. Exporting all the information on Google Earth® it will thereby be possible to over impose real images to the run trajectories.

**LCU-ONE CAN**

LCU-ONE CAN controls and allows to optimize the Stoichiometric ratio (Air/Fuel) with extreme precision.

To obtain the maximum engine performance, LCU-ONE uses a wide band Bosch LSU 4.9 probe and can detect punctual Lambda values in a 0.65-1.6 range.
Appendix “A” – Suzuki GSX-R K5 wiring for MXL Strada with code 04.554.55 and MXL Pista with code 04.554.54
### Binder 719 female connector table

<table>
<thead>
<tr>
<th>Label</th>
<th>Binder pin</th>
<th>Cable colour</th>
<th>Cable type</th>
<th>AMP 12 pin</th>
<th>AMP 16 pin</th>
<th>Connection</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch. 5</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>3 x 0.35 mm²</td>
<td>10 11 12</td>
<td>16 15 14</td>
<td>Analog Input 5 Analog GND V Reference</td>
<td>300 mm</td>
</tr>
<tr>
<td>Ch. 6</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>3 x 0.35 mm²</td>
<td>10 11 12</td>
<td>13 11 14</td>
<td>Analog Input 6 Analog GND V Reference</td>
<td>340 mm</td>
</tr>
<tr>
<td>Ch. 7</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>4 x 0.35 mm²</td>
<td>9</td>
<td>12 13 14</td>
<td>Analog Input 7 Analog GND +VB V Reference</td>
<td>380 mm</td>
</tr>
<tr>
<td>Ch. 8</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>4 x 0.35 mm²</td>
<td>11</td>
<td>9 10 11</td>
<td>Analog Input 8 Analog GND +VB V Reference</td>
<td>400 mm</td>
</tr>
</tbody>
</table>

### 10 pins Hirose female connector table

<table>
<thead>
<tr>
<th>Label</th>
<th>Pin AMP 12 pin</th>
<th>Pin AMP 16 pin</th>
<th>Cable colour</th>
<th>Pin Hirose</th>
<th>Connection</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASG07 o ASG05A Board</td>
<td>2 3 4 5 6 7 8 9 10 11 12</td>
<td></td>
<td>Green Red Yellow Brown Black Orange Purple White Bleu</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Oil P Ch. 1 VB Ext Fuel Ch. 2 Speed RPM High Beam Ch. 4 CAN+ CAN-</td>
<td>440 mm</td>
</tr>
</tbody>
</table>
MXL Pista - Plug & Play Suzuki GSXR K5-K7 wiring

- N. 1 - 10 pins Hirose female connector
- N. 4 - 3 x 0.35 mm² cables
- N. 2 - 4 pins Binder 719 female connectors
- N. 1 - 12 x 0.25 mm² cables
- N. 4 - 4 pins Binder 719 female connectors
- N. 4 - 4 pins Binder 719 female connectors

- 4 pins - Binder female connector
- Contact insertion view
- Solder termination view

- 16 pins AMP female connector pinout
- 12 pins AMP female connector pinout

- 16 pins AMP female connector
- 12 pins AMP female connector

- N. 1 - 12 x 0.25 mm² cable
- N. 4 - 3 x 0.35 mm² cables
- N. 2 - 4 x 0.35 mm² cables

- 12 pins AMP female connector pinout
- Contact insertion view
- Solder termination view

- 4 pins - Binder female connector pinout

Racing Data Power

www.aim-sportline.com 47
### Binder 719 female connector table

<table>
<thead>
<tr>
<th>Label</th>
<th>Binder pin</th>
<th>Cable colour</th>
<th>Cable type</th>
<th>AMP 12 pin</th>
<th>AMP 16 pin</th>
<th>Connection</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch. 3</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>3 x 0.35 mm²</td>
<td>4 7 6</td>
<td>Analog Input 3 Analog GND V Reference</td>
<td>300 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bleu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ch. 4</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>3 x 0.35 mm²</td>
<td>1 3 2</td>
<td>Analog Input 4 Analog GND V Reference</td>
<td>340 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bleu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ch. 5</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>3 x 0.35 mm²</td>
<td>16 15 14 14</td>
<td>Analog Input 5 Analog GND V Reference</td>
<td>380 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bleu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ch. 6</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>3 x 0.35 mm²</td>
<td>13 11 14 14</td>
<td>Analog Input 6 Analog GND V Reference</td>
<td>420 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bleu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ch. 7</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>4 x 0.35 mm²</td>
<td>9</td>
<td>Analog Input 7 Analog GND +VB V Reference</td>
<td>460 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Bleu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ch. 8</td>
<td>1 2 3 4</td>
<td>White Black</td>
<td>4 x 0.35 mm²</td>
<td>11</td>
<td>Analog Input 8 Analog GND +VB V Reference</td>
<td>500 mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Red Bleu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 10 pins Hirose female connector table

<table>
<thead>
<tr>
<th>Label</th>
<th>AMP 12 pin</th>
<th>AMP 16 pin</th>
<th>Cable colour</th>
<th>Hirose pin</th>
<th>Connection</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASG 07 o ASG 05/A Board</td>
<td>2 12 1 8 -- 4 3</td>
<td>8 5</td>
<td>Green Red Yellow Brown Black Orange -- -- White Bleu</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>Oil P Ch. 1 VB Ext Fuel Ch. 2 Speed GND RPM n.c. n.c. CAN+ CAN-</td>
<td>540 mm</td>
</tr>
</tbody>
</table>
Appendix “B” – Suzuki GSX-R K5 wiring for MXL Strada with code 04.554.14 and MXL Pista with code 04.554.13

WARNING: kits whose wiring identification codes are 04.554.14 (for MXL Strada) and 04.554.13 (for MXL Pista) are not produced anymore: this chapter - like these concerning MXL Installation and configuration - have just an explicative function for customers that already own these kits.
### 10 pins Hirose connector table

<table>
<thead>
<tr>
<th>Channel</th>
<th>AMP 12 pin</th>
<th>AMP 16 pin</th>
<th>Cable colour</th>
<th>Hirose pin</th>
<th>Signal</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>On board</td>
<td>2</td>
<td>4</td>
<td>Red</td>
<td>1</td>
<td>n.c.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>12</td>
<td>Black</td>
<td>2</td>
<td>12 V / +VB Ext</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>13</td>
<td>Yellow</td>
<td>3</td>
<td>Oil F / Ch.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>16</td>
<td>Green</td>
<td>4</td>
<td>OND</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>1</td>
<td>Grey</td>
<td>5</td>
<td>High Beam / Ch. 7</td>
<td>420 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>Violet</td>
<td>6</td>
<td>+ VB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>13</td>
<td>White</td>
<td>7</td>
<td>Speed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>Blue</td>
<td>8</td>
<td>Turning Light / Ch. 6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Red</td>
<td>9</td>
<td>Fuel / Ch. 5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Black</td>
<td>10</td>
<td>RPM</td>
<td></td>
</tr>
</tbody>
</table>

#### Split 1: Gear channel - Cable label "Ch. 9 - Gear"

3 pins Sumitomo female connector
Contact insertion view

#### Split 2 Water temperature channel - Cable label "Ch.1 - Water T."

2 pins AMP male connector
Contact insertion view

2 pins AMP female connector
Contact insertion view
### 4 pins Binder 719 connector table

<table>
<thead>
<tr>
<th>Channel</th>
<th>Binder pin</th>
<th>Cable colour</th>
<th>AMP 12 pin</th>
<th>AMP 16 pin</th>
<th>Connection</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch. 2</td>
<td>1</td>
<td>White</td>
<td></td>
<td></td>
<td>Analog input 2</td>
<td>330 mm</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Black</td>
<td>9</td>
<td>5</td>
<td>Analog GND</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Rosso</td>
<td></td>
<td>7</td>
<td>V reference</td>
<td></td>
</tr>
<tr>
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<td>4</td>
<td>Bleu</td>
<td></td>
<td>6</td>
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</tr>
<tr>
<td>Ch. 4</td>
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<td>White</td>
<td></td>
<td>1</td>
<td>Analog input 4</td>
<td>380 mm</td>
</tr>
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<td>2</td>
<td>Black</td>
<td>9</td>
<td>3</td>
<td>Analog GND</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Rosso</td>
<td></td>
<td>2</td>
<td>+ VB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Bleu</td>
<td></td>
<td></td>
<td>V reference</td>
<td></td>
</tr>
<tr>
<td>USB</td>
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<td>White</td>
<td></td>
<td>10</td>
<td>USB D+</td>
<td>1080 mm</td>
</tr>
<tr>
<td></td>
<td>2</td>
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<td>10</td>
<td>7</td>
<td>GND</td>
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<td></td>
<td>3</td>
<td>Rosso</td>
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<td>USB D-</td>
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<td>Bleu</td>
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</table>

---

Cavo MXL Strada Plug & Play Suzuki GSX R5

Racing Data Power

Número diagno: 04.554.14
MXL Pista - Plug & Play Suzuki GSX-R K5 wiring

16 pins AMP female connector

1 - 2 pins AMP male connector
See Split 1

1 - 3 pins Sumitomo male connector

1 - 3 pins Sumitomo female connector
See Split 1

1 - 10 pins Hirose female connector

1 - 6 pins Hirose female connector

12 pins AMP female connector

4 pins Binder 719 female connector pinout
Contact insertion view

12 pins AMP female connector pinout
Contact insertion view

4 pins Binder 719 female connector pinout
Sensor termination view

16 pins AMP male connector

1 - 2 pins AMP male connector

1 - 3 pins Sumitomo female connector

1 - 2 pins AMP male connector
See Split 2

10 - 12 pins Hirose female connector

1 - 10 pins Hirose male connector

1 - 3 pins Sumitomo male connector

1 - 2 pins AMP male connector

4 pins Binder 719 female connector pinout
Sensor termination view

16 pins AMP female connector

1 - 2 pins AMP female connector

1 - 3 pins Sumitomo female connector

1 - 2 pins AMP female connector
See Split 2

10 - 12 pins Hirose female connector

1 - 10 pins Hirose male connector

1 - 3 pins Sumitomo male connector

1 - 2 pins AMP male connector

4 pins Binder 719 female connector pinout
Sensor termination view

16 pins AMP female connector

1 - 2 pins AMP female connector

1 - 3 pins Sumitomo female connector

1 - 2 pins AMP female connector
See Split 2

10 - 12 pins Hirose female connector

1 - 10 pins Hirose male connector

1 - 3 pins Sumitomo male connector

1 - 2 pins AMP male connector

4 pins Binder 719 female connector pinout
Sensor termination view

16 pins AMP female connector

1 - 2 pins AMP female connector

1 - 3 pins Sumitomo female connector

1 - 2 pins AMP female connector
See Split 2

10 - 12 pins Hirose female connector

1 - 10 pins Hirose male connector

1 - 3 pins Sumitomo male connector

1 - 2 pins AMP male connector

4 pins Binder 719 female connector pinout
Sensor termination view

16 pins AMP female connector

1 - 2 pins AMP female connector
10 pins Hirose female connector table

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<th>Channel</th>
<th>AMP 12 pin</th>
<th>Cable colour</th>
<th>Hirose pin</th>
<th>Signal</th>
<th>Cable length</th>
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<tbody>
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<td>On-board rev counter</td>
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<td>1</td>
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<td>12 V+=Vb Ext.</td>
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<tr>
<td></td>
<td>1</td>
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<td>n.c.</td>
<td>GND</td>
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<tr>
<td></td>
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<td>n.c.</td>
<td>+Vb</td>
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<tr>
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<td>Grey</td>
<td>5</td>
<td>n.c.</td>
<td>Speed</td>
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<td>8</td>
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<td>6</td>
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<td>RPM</td>
</tr>
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Split 1: Gear channel - cable label "Ch.8 - Gear"

Split 2: Water temperature channel - cable label "Ch.1 - Water Temp."
## Binder 719 female connector table

<table>
<thead>
<tr>
<th>Channel</th>
<th>Binder pin</th>
<th>Cable colour</th>
<th>AMP 12 pin</th>
<th>AMP 16 pin</th>
<th>Connection</th>
<th>Length</th>
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</thead>
<tbody>
<tr>
<td>Ch. 2</td>
<td>1</td>
<td>White</td>
<td>5</td>
<td>7</td>
<td>Analog input 2</td>
<td>330 mm</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Black</td>
<td></td>
<td></td>
<td>Analog GND</td>
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</tr>
<tr>
<td></td>
<td>3</td>
<td>Red</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Bleu</td>
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<td></td>
<td>V Reference</td>
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</tr>
<tr>
<td>Ch. 3</td>
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<td>White</td>
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<td>3</td>
<td>Analog input 3</td>
<td>330 mm</td>
</tr>
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</tr>
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<td></td>
<td>V Reference</td>
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<tr>
<td>Ch. 4</td>
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<td>White</td>
<td>9</td>
<td>2</td>
<td>Analog input 4</td>
<td>380 mm</td>
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</tr>
<tr>
<td></td>
<td>3</td>
<td>Red</td>
<td></td>
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<td>+VB</td>
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</tr>
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<td>Red</td>
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<td>+VB</td>
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<td>V Reference</td>
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<td>Ch. 6</td>
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<td>Red</td>
<td></td>
<td></td>
<td>+VB</td>
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<td>Bleu</td>
<td></td>
<td></td>
<td>V Reference</td>
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<td>Ch. 7</td>
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<td>430 mm</td>
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<td></td>
<td>3</td>
<td>Red</td>
<td></td>
<td></td>
<td>+VB</td>
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<td>4</td>
<td>Bleu</td>
<td></td>
<td></td>
<td>V Reference</td>
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</tr>
<tr>
<td>USB</td>
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<td>White</td>
<td>10</td>
<td>7</td>
<td>USB D+</td>
<td>1080 mm</td>
</tr>
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<td>Black</td>
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<td></td>
<td>GND</td>
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<td>3</td>
<td>Red</td>
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<td>USB D-</td>
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<tr>
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<td>n.c.</td>
<td></td>
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</tr>
</tbody>
</table>

**Note:**

- **Binder:** 719 female connector
- **Cable colours:** White, Black, Red, Bleu
- **Connection types:** Analog input, Analog GND, Analog +VB, V Reference
- **Lengths:** 330 mm, 380 mm, 430 mm, 1080 mm
Appendix “C” – TPS cable for all MXL kits code 04.550.69

TPS Cable

Cable split particular

TPS cable for Plug & Play MXL kits