

ISO 19689
for
Motorcycle OBD connector

ISO TC22/SC38/WG4

Revised on 15th Mar. 2016

Background

The questions concerning the following performance requirements of the motorcycle OBD connector defined by ISO 19689 were raised at the 15th EPPR IWG meeting on 4th Mar. 2016.

1. Temperature performance
2. Vibration resistance
3. Chemical resistance

WG4 was asked to provide a technical statement comparing the car connector defined by ISO 15031-3.

Conditions of SC38/WG4 activity

WG4 activity is supported by the members from the several well experienced manufacturers worldwide, such as motorcycle OEMs (some are car OEMs also), connector, wire harness and scan tool manufacturers.

The target of this activity was focused on the dedicated performance requirements for motorcycle use compare to the car's which is used well for many years in the world.

The most significant difference of motorcycle use than the car is that the motorcycle does not have an independent and sealed compartment basically.

The following major requirements on the motorcycle OBD connector are necessary for the solution.

- 1) The connector shall be resistant from water and chemical fluids for typical automobile use, because the connector is likely to be exposed to such kind of fluids.
- 2) The connector shall be smaller size than the car's, because the space for connector installation must be very limited for small motorcycles/mopeds particularly.
- 3) Temperature and vibration around the engine shall be considered as severe condition, because EU regulation suggests to install the connector under the seating position and the connector is likely to be installed near the engine.

Statements for each requirements

1. Temperature performance;
-40°C to 85°C same as ISO 15031-3

WG4 has considered the same condition as the general automobile connectors installed in the engine room from the temperature aspect.

The reason 5.7.4 describe the specific room temperature ($23^{\circ}\text{C} \pm 5^{\circ}\text{C}$: median of temperature range) during the measurement is to define the specific value of each performance requirement of connector in 5.7.4 on ISO standard under the constant temperature condition, because the measurement could be affected by the temperature variation.

The connector shall be guaranteed up to 85°C of environmental temperature at least, because 5.7.2 clearly defines the environmental temperature range shall be -40°C to 85°C.

Statements for each requirements

2. Vibration resistance;
15G same as ISO 15031-3

WG4 has considered the same condition as the general automobile connectors installed on/nearby the engine from the vibration aspect.

3. Chemical resistance;
Table 7 of ISO 8092-2-2005 shows the target chemical fluids, such as lubricant oil, brake fluid, battery acid etc.
See ISO 8092-2-2005 in more detail.

WG4 added this requirement for motorcycle OBD connector.

Comparison with car connector

Requirement	6P Motorcycle connector (19689)	16P Car connector (15031-3)
Water tightness	Yes	No
Temperature	Same as 15031-3	-40°C ~ 85°C
Vibration	Same as 15031-3	15G
Chemical resistance	ISO 8092-2-2005 (table 7)	No requirement
Size	W 15.4mm	W 40.6mm
	H 14mm	H 17.7mm
	L 18.3mm(Minimum)	L 23.1mm