

JIS

JAPANESE INDUSTRIAL STANDARD

**Speedometers for
automobiles**

JIS D 5601—1992

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Speedometers for automobiles

D 5601-1992

1. Scope

This Japanese Industrial Standard specifies speedometers for automobiles (hereafter referred to as "speedometers").

Remarks: Applicable Standards to this Standard are shown in the following:

JIS D 0203 Method of Moisture, Rain and Spray Test for Automobile Parts

JIS D 0204 Method of High and Low Temperature Test for Automobile Parts

JIS D 1601 Vibration Testing Methods for Automobile Parts

JIS D 5602 Flexible Shafts for Speedometers and Tachographs of Automobiles

JIS Z 8703 Standard Atmospheric Conditions for Testing

2. Definitions

For the purposes of this Standard the following definitions apply:

- (1) machine type The system to move the pointer by transmitting the rotational speed by flexible shaft to the rotation of magnet and the like.
- (2) electrical type The system to move the pointer by converting the electrical signal from car-speed sensor to mechanical force.
- (3) electronic type The system to drive the indicating apparatus for the electrical signal from car-speed sensor by using an electronic circuit.

3. Classification

Speedometers shall be classified as given in Table 1 according to the working system, indicating system and nominal voltage.

Table 1. Classification of speedometers

Working system	Indicating system	Nominal voltage
Machine type	Analog indication	12 V or 24 V
Electrical type		
Electronic type	Digital indication	

4. Performance

The performance of speedometer, when tested according to the specification of 8., shall be as given in Table 2.

Table 2. Performance

Item	Performance	Test method clause	Applicable type
(1) Needle running	The amplitude of needle running is not more than equivalent 1 km/h.	8.2	Machine type Electrical type
(2) Indicating error	The indicating error satisfies the value of Table 3. However, the indicating error at the maximum scale is not specified.	8.3	Machine type Electrical type Electronic type
(3) Temperature - voltage characteristics	The indicating change is not more than equivalent 6 km/h.	8.4.1	Machine type
		8.4.2	Electrical type Electronic type
(4) Temperature resistance	Each part of speedometer is free from abnormalities and after testing, satisfies the performances of (1) and (2).	8.5	Machine type Electrical type Electronic type
(5) Water resistance (applicable to speedometer to be exposed to wind and rain.)	Each part of speedometer is free from abnormalities and after testing, is free from water remaining in inside and remarkable generation of clouding on glass inside.	8.6	Machine type Electrical type Electronic type
(6) Vibration resistance	Each part of speedometer is free from abnormalities and the change of indicating value relative to that before test is not more than 5 % of the maximum scale value.	8.7	Machine type Electrical type Electronic type
(7) Endurance	Each part of speedometer is free from abnormalities and the change of indicating value relative to that before test is not more than 5 % of the maximum scale value. Further, after testing, it satisfies the performance of (1).	8.8	Machine type Electrical type Electronic type
(8) Power-source resistant reverse connecting property	Each part of speedometer is free from abnormalities and after testing, it satisfies the performances of (1) and (2).	8.9	Electrical type Electronic type
(9) Overvoltage resistance	Each part of speedometer is free from abnormalities and after testing, it satisfies the performances of (1) and (2).	8.10.(1)	Electrical type Electronic type
		8.10.(2)	
(10) Transient-voltage resistance	Each part of speedometer is free from abnormalities and after testing, it satisfies the performances of (1) and (2).	8.11	Electrical type Electronic type

Table 3. Indicating error

Unit: km/h

Indicating value of standard speedometer	Indicating error of specimen speedometer
20	± 3
40	± 2.5
60	
80	
100	
120	± 3
140	± 3.5
160	± 4

5. Structure

5.1 Structure general The structure of speedometer shall be as follows:

- (1) The machine type speedometer is to be such structure to drive the indicating part by flexible shaft specified in JIS D 5602.

Further, the rotational direction of driving shaft is counter-clockwise when viewing from driving side.

- (2) The electrical and electronic type speedometers are such structure to drive the indicating part by the electrical signal from car speed sensor.
- (3) The speedometer, in order to secure the vision-confirming property at using during night, is provided with a lighting apparatus or coated with stored light paint on the letter board and pointer.

Further, this is not applicable to speedometers of the self-luminous type.