

JIS

JAPANESE INDUSTRIAL STANDARD

Warning Lamp Switches of Lubricating Oil Pressure for Automobiles

JIS D 5803—1987

Translated and Published

by

Japanese Standards Association

In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Warning Lamp Switches of
Lubricating Oil Pressure
for Automobiles

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1. Scope

This Japanese Industrial Standard specifies hydraulic switches used to indicate lubricating oil pressure in engines for automobiles by indicating lamps or other indicators, hereinafter referred to as the "switch".

Remark: The units and numerical values given in { } in this Standard are based on the traditional unit system and are appended for informative reference.

2. Class and Symbol

Classes and symbols of switches shall be as shown in Table 1 according to working pressure.

Table 1. Classification

Class	Symbol	Maximum load W	Rated voltage V	Working pressure kPa {kgf/cm ² }	Tolerance on working pressure kPa {kgf/cm ² }
Class 1	P 15	5	12 and 24	15 {0.153}	± 5 {± 0.051}
Class 2	P 20			20 {0.204}	
Class 3	P 25			25 {0.255}	
Class 4	P 30			30 {0.306}	± 10 {± 0.102}
Class 5	P 50			50 {0.510}	
Class 6	P 70			70 {0.710}	± 20 {± 0.204}
Class 7	P 100			100 {1.020}	

Applicable Standards: See page 8.

3. Performance

3.1 Insulation Resistance When the switch is tested in accordance with the test method shown in 6.2, insulation resistance across the terminal and the case shall be 1 M Ω or more.

3.2 Contact Resistance When switch is tested in accordance with the method shown in 6.3, voltage drop according to contact resistance shall be not over the value before endurance test in Table 2.

Table 2. Voltage Drop

Unit: V

Item	Voltage drop
Before endurance test	0.45
After endurance test	0.75

3.3 Working Pressure When switch is tested in accordance with the method shown in 6.4, it shall surely work within a range of tolerance on working pressure shown in Table 1.

3.4 Pressure Resistance When switch is tested in accordance with the method shown in 6.5, each part of switch shall not have oil leak and other abnormality and the working pressure shall satisfy the specification of above sub-clause 3.3.

3.5 Temperature Resistance Switch shall not have abnormality on each part when tested in accordance with the method shown in 6.6 and shall work within a range of temperature of -30 to 120°C. Variation of working pressure within a range of temperature of -10 to 120°C shall be in ± 20 kPa (± 0.204 kgf/cm²) from the measured value at normal temperature.

The working pressure of switch of Class 1 to 4 shall be not less than 2 kPa {0.020 kgf/cm²}.

3.6 Water Resistance Switch for which waterproof is required shall not have abnormality on each part when tested in accordance with the method shown in 6.7 and the insulation resistance and the contact resistance shall satisfy the specifications of 3.1 and 3.2 respectively.

3.7 Vibration Resistance The switch shall not have any fluctuation of the contact point and harmful abnormal noise when tested in accordance with the method shown in 6.8.

And after the test, contact resistance shall satisfy the specification of 3.2, and work pressure shall satisfy the specification of 3.3.

3.8 Durability When switch is tested in accordance with the method shown in 6.9, insulation resistance shall satisfy the specification of 3.1, voltage drop according to contact resistance shall be the value not more than that after the endurance test shown in Table 2, pressure resistance shall satisfy the specification of 3.4 and variation of working pressure shall be in ± 20 kPa (± 0.204 kgf/cm²) from the value before the endurance test. Working pressure shall be not less than 2 kPa {0.02 kgf/cm²} for the switch of Class 1, and 5 kPa {0.051 kgf/cm²} for that of Class 2 to 4.