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Automotive parts—Flasher units

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Descriptors : road vehicles, private cars, flashing lights, direction indicators

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS D 5707 : 1986** is replaced with **JIS D 5707 : 1998**.

In this revision, for the purpose of conformity to International Standards, **ISO 4082-1981, Road vehicles—Motor vehicles—Flasher units** and **ISO 7588-1983, Road vehicles—Relays and flashers—Mounting and positioning dimensions of male tabs and socket apertures for relays and flashers** are basically employed, and **ISO/TR 8857-1986, Road vehicles—Flashers—Functional allocation of terminals** is also employed.

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Automotive parts—Flasher units

Introduction This Japanese Industrial Standard has been prepared on the basis of the first edition of ISO 4082, *Road vehicles—Motor vehicles—Flasher units* published in 1981, the electric characteristic of the flasher unit has been prepared without any modification in technical contents, and additionally contains the provision item (designation of the product) and the provision contents (marking contents) which are not specified in the corresponding International Standard.

The terminal and mounting and positioning dimensions of the flasher unit which are specified in the first edition of ISO 7588, *Road vehicles—Relays and flashers—Mounting and positioning dimensions of male tabs and socket apertures for relays and flashers* published in 1983 are specified as Annex 1 without modification.

The parts underlined with dots in the test of this Standard and in Annex 1 (normative) show the matters not specified in the original International Standard.

1 Scope This Standard specifies the electric characteristic and other product requirements of the flasher unit (hereafter, referred to as “flasher”) intended for use on motor vehicles with 12 V or 24 V electric systems, which may or may not be equipped for a trailer.

This Standard also applies to the motorcycle.

Remarks : The International standards corresponding to this Standard are as follows.

ISO 4082 : 1981 *Road vehicles—Motor vehicles—Flasher units*

ISO 7588 : 1983 *Road vehicles—Relays and flashers—Mounting and positioning dimensions of male tabs and socket apertures for relays and flashers*

2 Normative references The following standard contains provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent edition (including amendments) of the standard indicated below shall be applied.

JIS C 7506 *Lamps for road vehicles*

Remarks : The cited matters from IEC 60809 *Lamps for road vehicles—Dimensional, electrical and luminous requirement* are equivalent to the corresponding matters of this Standard.

3 Definitions For the purposes of this Standard, the following definitions apply:

- a) **Lamp lighting starting time** The time required from the instant when the flasher circuit is switched to the time when the terminal voltage of the signal lamp reaches 11 V or 22 V.
- b) **Lamp putting-out starting time** The time required from the instant when the flasher circuit is switched to the time when the terminal voltage of the lamp in the first lighting of the signal lamp drops and reaches 3 V or 6 V.
- c) **Lamp lighting continuous time** The time when the terminal voltage of the signal lamp is kept 11 V or 22 V in the first lighting of the signal lamp by the operation of the flasher.

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- d) **Current "on"-time** In one cycle of on-and-off of the signal lamp, the ratio that the terminal voltage of the signal lamp is kept to be 11 V or 22 V to one cycle time by percentage.
- e) **Bulb burnout indicating function** The function to give an alarm by changing the indication frequency by the visual and/or audible signal lamp "operating" tell-tales or by stopping the indication action in a case of the visual device when the filament of a main signal lamp is burned out.

4 Kind The flashers shall be classified as shown in Table 1 by the kind, class and the rated voltage.

Table 1 Kind of flashers

Kind ⁽¹⁾	Class ⁽³⁾	Rated voltage
Turn signal (exclusive for lamp) flasher ⁽²⁾	Class A, Class B	12 V or 24 V
Hazard warning (exclusive for lamp) flasher		
(Turn signal and hazard warning) combination flasher		

Notes (1) The term of the flasher in () is usually omitted.

(2) This flasher has the bulb burnout indicating function.

(3) Class A shows the Standard class, and Class B shows the Heavy duty class.

5 Performance The performance of the flasher shall satisfy Table 2 when the flasher is tested in accordance with the requirement of 7 below.

Table 2 Performance

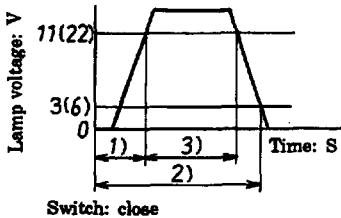
Item	Performance	Test method	Remarks
a) Starting time	1) Lamp lighting starting time: less than 1.0 s 2) Lamp putting-out starting time: less than 1.5 s 3) Lamp lighting continuation time: not less than 0.2 s	7.2	
b) Flashing frequency	60 cycles/min to 120 cycles/min	7.3	
c) Current "on"-time	30 % to 75 %		

Table 2 (continued)

Item		Performance	Test method	Remarks
d) Flashing function	In normal condition	The operation indication to be sensed visually or audibly, shall be synchronous to the flashing of the main bulb with the same or opposite phase.	7.4.1 and 7.4.2	Not applicable to hazard warning flasher
	When main lamp failed	The operation indication shall be changed to either of the followings. 1) The indication cycles are increased by not less than 75% of those in the initial condition to not less than 140 cycles/min. 2) The indication cycles are reduced by not less than 50% those in the initial condition to not more than 50 cycles/min. 3) In a case of the lamp indication, the flashing action is stopped, and the lighting condition or the putting-out condition is maintained. The rest of major bulbs shall continue the flashing with 40 cycles/min to 250 cycles/min, or shall be continuously lit.	7.4.1 and 7.4.3	
e) Voltage drop		To comply with Table 3.	7.5	
f) Dielectric strength		To comply with either one: 1) To withstand 1 000 V application at 50 Hz or 60 Hz for 1 min. 2) <u>Insulation resistance of 1 MΩ or over</u>	7.6	
g) Overload		To withstand 35 A-energization for 10 s.	7.7	
h) Vibration	Operational checking	The flashing frequency of the main bulb during the vibration shall be 60 cycles/min to 120 cycles/min. However, the flashing frequency may be temporarily fluctuated. The operation indicating function shall not be stopped during the vibration.	7.8.1 and 7.8.2	
	Vibration resistance	Not to be damaged. To satisfy the performance specified in a), b), c) and d) after the test.	7.8.1 and 7.8.3	
i) Impact		To satisfy the performance specified in a), b), c) and d) after the test. The change in the flashing frequency to be 12 cycles/min or under. If the flashing frequency is changed over this value, the impact test shall be repeated 5 times, and the performance specified in b) and c) shall be satisfied after the test.	7.9	
j) Heat and cold, and humidity		To satisfy the performance specified in a), b), c) and d) after the test.	7.10	

Table 2 (concluded)

Item	Performance	Test method	Remarks
k) Extreme temperatures	The flashing frequency during the test to be 30 cycles/min to 250 cycles/min.	7.11	
l) Endurance	To satisfy the performance specified in a), b), c) and d) after the test. However, for the performance in d), the result may exceed the specified value in Table 3 by 20 % for up to 2 out of 8 test samples.	7.12	

Table 3 Voltage drop

Unit : V

Kind Item Rated voltage	Turn signal flasher		Hazard warning flasher	
	Applicable load (except the load such as pilot lamps)	Voltage drop	Applicable load (except the load such as pilot lamps)	Voltage drop
12 V	2 lamps or less	0.4 or under	4 lamps or less	0.5 or under
	3 lamps or more	0.45 or under	5 lamps or more	0.8 or under ⁽⁴⁾
24 V	—	0.8 or under	—	1.0 or under

Note (4) Preferably 0.6 or under.

6 Shapes and Dimensions

6.1 Mounting and positioning dimensions Mounting and positioning dimensions shall comply with Annex 1 (normative).

6.2 Functional allocation of flasher terminals Annex 2 (informative) shall be referred to for functional allocation of flasher terminals.

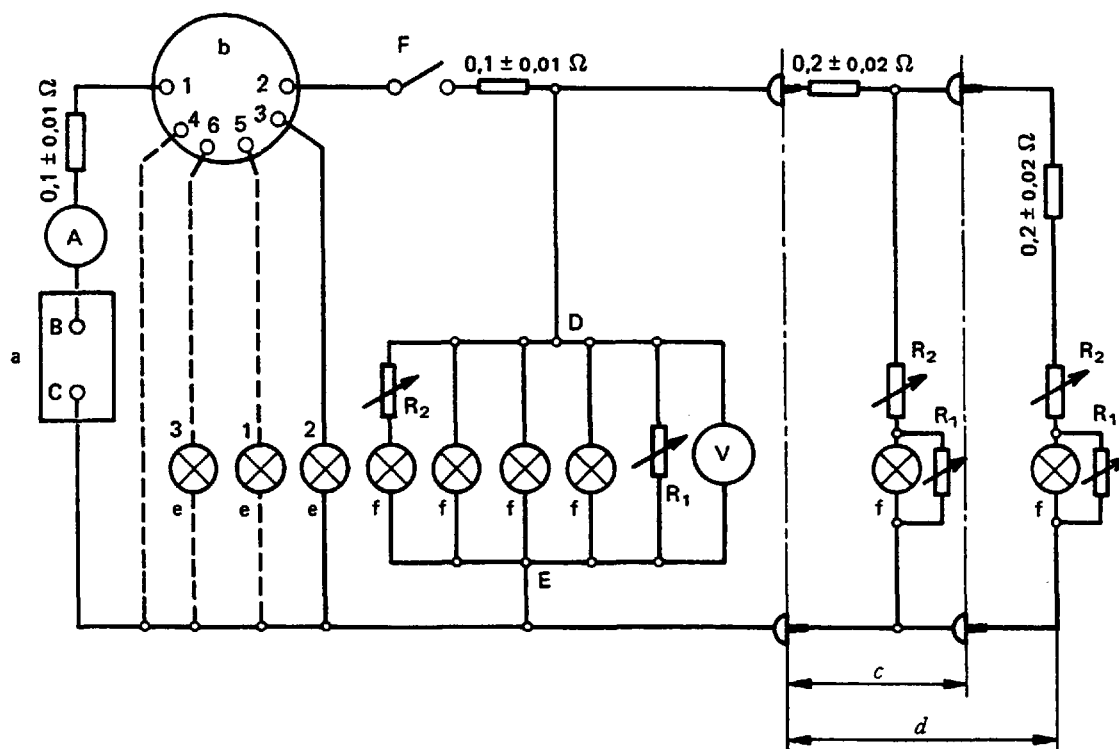
7 Test method

7.1 Test condition

7.1.1 General test condition If not otherwise specified, the flasher shall be tested in a room having an ambient temperature of $(23 \pm 5) ^\circ\text{C}$. The flashers shall be tested in the position (or positions) indicated by the manufacturer.

7.1.2 Test circuitry and equipment The wiring diagram of the flashers and each resistance in the circuitry shall comply with Fig. 1. The resistances of the cables and the ammeter are included in the resistances indicated in the wiring diagram. To check these resistances, the flasher and the filament lamps shall be short-circuited by two shunts with a resistance not exceeding 0.005Ω each.

7.1.3 Working voltage The working voltage of the flasher is the voltage existing between points D and E of the test circuit in Fig. 1, the flasher being short-circuited. The working voltage shall be 13 V or 26 V. The working voltage of 12.8 V or 25.6 V may be used.



- Remarks :
- | | |
|-----------------------------|--|
| a : Stabilized power supply | b : Flasher unit |
| c : First trailer | d : Second trailers |
| e : Pilot lamps | f : Signal lamps |
| V : Voltmeter | A : Ammeter |
| F : Switch | R ₁ , R ₂ : Trimming resistors |

Fig. 1 Wiring diagram for the testing of flashers
(example for a turn signal flasher)

7.1.4 Stabilized power supply The stabilized power supply for the measurements shall comply with the following requirements.

- a) The stabilized power supply to be used for all tests, except for the test conducted according to 7.12, shall comply with the following requirements.
 - 1) The stabilized power supply shall be capable of supplying the steady load current continuously and the inrush current, necessary for the tests.
 - 2) The voltage between terminals of the stabilized power supply shall not deviate by more than 1.0 V when the load is raised from 0 to the maximum load (inrush current included). The voltage variation shall not exceed 370 mV after 100 μs.
 - 3) The voltage between terminals of the stabilized power supply shall not deviate by more than 2 % with changes in static load from 0 to the maximum load (not including inrush current), or for static input line voltage variations.
 - 4) The ripple voltage shall be 75 mV, peak to peak.