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भारतीय मानक प्रारूप

सड़क वाहन - संपीड़ित प्राकृतिक गैस (सीएनजी) / जैव-संपीड़ित प्राकृतिक गैस (बायो-सीएनजी) और तरल पेट्रोलियम गैस (एलपीजी) ईंधन प्रणाली के घटक - करंट सीमित करने वाली युक्तियाँ

(आई एस 15723: 2006 का संशोधन)

Draft Indian Standard

**ROAD VEHICLES — COMPRESSED NATURAL GAS (CNG) / BIO- COMPRESSED NATURAL GAS (Bio- CNG) AND LIQUEFIED PETROLEUM GAS (LPG) FUEL SYSTEM COMPONENTS — CURRENT LIMITING DEVICES
(Revision of IS 15723: 2006)**

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Automotive Vehicles Running on Non-Conventional Energy Sources Sectional Committee,
TED 26

FOREWORD

(Formal Clause to be added later)

This standard was first published in 2006 to specify definitions, test methods and requirements of current limiting devices (fuse), of CNG on board fuel system component intended for use on motor vehicles defined in IS 14272. In this Revision, Bio- CNG is added to the scope of this standard keeping in view the technological advancements that have taken place since its last Publication. The new scope also covers Liquefied Petroleum Gas (LPG) to incorporate the Amendment-1 to earlier Standard.

In the formulation of this standard considerable assistance has been derived from the following standards issued by the Automotive Research Association of India:

AIS 024(Rev.1) (Part A):- Safety and Procedural Requirements for Type Approval of Gaseous Fuelled Vehicles - Part A (Automotive Application).

AIS 024(Rev.1) (Part B):- Safety and Procedural Requirements for Type Approval of Gaseous Fuel Agricultural Tractors - Part B (Agricultural Tractors Application).

AIS 024(Rev.1) (Part C):- Safety and Procedural Requirements for Type Approval of Gaseous Fuel Vehicles - Part C (CEV's Application).

AIS 028(Rev.1) (Part A):-Code of Practice for Use of Gaseous Fuels in Internal Combustion Engine Vehicles - Part A (Automotive Application)

AIS 028(Rev.1) (Part B):-Code of Practice for Use of Gaseous Fuels in Internal Combustion Engine Agricultural Tractors - Part B (Agricultural Tractors Application)

AIS 028(Rev.1) (Part C):-Code of Practice for Use of Gaseous Fuels in Internal Combustion Engine Construction Equipment Vehicles (CEV's) - Part C (CEV's Application).

AIS-025 (Version 3): Safety and Procedural requirements for Type Approval of LPG Operated Vehicles

AIS 026 (Version 3): Code of Practice for use of LPG Fuel in Internal Combustion Engine to Power 4 Wheeled Vehicles

AIS 027 (Version 3): Code of Practice for use of LPG Fuel in Internal Combustion Engine to Power 2 & 3 Wheeled Vehicles.

This standard is one of the series of Indian Standards published on CNG/Bio-CNG onboard fuel system components. Other standards in the series are:

IS No.

Title

- 15710: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components – General requirements & definition.
- 15711: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components –Performance and general test methods
- 15712: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components – Automatic valve
- 15713: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components–Pressure regulator
- 15714: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components – Gas Air mixer
- 15715: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) / Liquefied Petroleum Gas (LPG) Fuel system components – CNG/Bio-CNG/LPG Conduit (Ventilation Hose/Pipe)
- 15716: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components –CNG / Bio-CNG high pressure fuel line (rigid) with end connections (having pressure exceeding 2.15 MPa)
- 15717: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) / Liquefied Petroleum Gas (LPG) Fuel system components – Petrol valve (Automatic/Manual)
- 15718: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) fuel system components – CNG/Bio-CNG high Pressure fuel line(flexible hose)with end connections (having pressure exceeding 2.15 MPa)
- 15719: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG)/ Liquefied Petroleum Gas (LPG) fuel system components – Electrical Wiring kit
- 15720: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) /Bio-Compressed natural gas (Bio-CNG) /Liquefied Petroleum Gas (LPG) fuel system component – Compartments sub- Compartments

- 15721: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) / Bio-Compressed natural gas (Bio-CNG)/ Liquefied Petroleum Gas (LPG) fuel system components – Fire retardant material for seat, upholstery, roof and side lining
- 15722: XXXX¹⁾ Road vehicles - Compressed natural gas (CNG) / Bio-Compressed natural gas (Bio-CNG) fuel system components - CNG /Bio-CNG flexible fuel line with or without end connections (having pressure not exceeding 2.15 MPa)

Note — Standards Marked with superscript ‘1)’ are under the process of Revision. The year of publication of these standards will be updated at the time of printing of this draft standard.

The composition of the Committee responsible for the formulation of this standard is given at Annex A (Will be added later).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of test or analysis, shall be rounded off in accordance with IS 2:1960 ‘Rules for rounding off numerical values (revised)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

**ROAD VEHICLES — COMPRESSED NATURAL GAS (CNG) / BIO-
COMPRESSED NATURAL GAS (Bio- CNG) AND LIQUEFIED PETROLEUM GAS
(LPG) FUEL SYSTEM COMPONENTS — CURRENT LIMITING DEVICES**

1 SCOPE

1.1 This **draft** standard specifies definitions, test methods and requirements of current limiting devices (fuse), of CNG /Bio-CNG / LPG on board fuel system component intended for use on motor vehicles defined in IS 14272.

1.1.1 This **draft** standard is applicable to CNG/Bio-CNG / LPG fuel system components intended to use on vehicles using compressed natural gas / Bio- compressed natural gas / liquefied petroleum gas in accordance with IS 15320 Part 1 (mono-fuel or bi-fuel applications or dual fuel applications).

1.1.2 This **draft** standard is not applicable to the following:

- a) Liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer;
- b) Fuel containers;
- c) Stationary gas engines;
- d) Container Mounting hardware;
- e) Electronic fuel management;
- f) Refuelling receptacles;
- g) CNG / Bio- CNG / LPG fuel systems components for the propulsion of marine craft, and
- h) Hydrogen Natural Gas Blend (HCNG) Fuel system components.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
IS 14272:2011	Automotive Vehicles — Types — Terminology
IS 15710:XXXX ²⁾	Road Vehicles — Compressed Natural Gas (Cng) / Bio-Compressed Natural Gas (Bio- Cng) Fuel System Components — General Requirements And Definitions

15320 : Part 1:2012/
ISO 15403-1 : 2006

Natural gas - Natural gas for use as a compressed fuel for vehicles:
Part 1 designation of the quality (First Revision)

Note — Standards Marked with superscript '2)' are under the process of Revision. The year of publication of these standards will be updated at the time of printing of this draft standard.

3 DEFINITIONS

For the purpose of this standard definitions given in IS 15710 shall apply.

4 TYPE TEST (TYPE APPROVAL)

4.1 The current limiting devices or fuses used in the electrical systems of CNG / Bio-CNG / LPG operated vehicles shall comply with the following requirements:

4.1.1 Current limiting device (fuse) shall not blow within 60 min when 110 percent of rated current of the circuit is supplied.

4.1.2 Current limiting device (fuse) shall blow within 60s when 135 percent of the rated current is supplied.

5 MARKING

5.1 Each current limiting device shall be legibly and indelibly marked with the following:

- a) Manufacturer's name, initial or trade-mark; and
- b) Rated current.

5.1.1 Each package containing current limiting device shall be marked with:

- a) Manufacturer's name, initial or trade-mark,
- b) Rated current and voltage,
- c) Batch No. or date of manufacturing,
- d) IS No. of this standard, and
- e) Part No. or unique identification mark.

5.2 BIS Certification Marking

Each current limiting device or fuse may also be marked with the Standard Mark.

5.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 TECHNICAL INFORMATION TO BE SUBMITTED BY THE COMPONENT MANUFACTURER

Technical information to be submitted by the component manufacturer for component type approval/type test shall contain at least following information:

- a) Name of the manufacturer;
- b) Manufacturing plant address;
- c) Part number;
- d) Type of the current limiting device (for example, blade type or glass tube type etc.);
- e) Rated voltage of the current limiting device;
- f) Rated current of the current limiting device; and
- g) Drawings with relevant dimensions and materials

7 NUMBER OF SAMPLES FOR TESTING

Minimum 4 numbers of current limiting devices (fuse) shall be submitted to the test agency for testing.