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**Nomenclature and terminology for automotive electrical
equipment, lighting and instrumentation**

汽车电器、灯具和仪表名词术语

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Nomenclature and terminology for automotive electrical equipment, lighting and instrumentation

This standard specifies the definitions of terms, for automotive electrical appliances (excluding batteries, spark plugs, other electrical appliances for special purposes), lamps and instruments, as well as their English comparisons.

1 General terminology

1.1 Nominal voltage, basic system voltage

Refers to the nominal voltage of the vehicle electrical system: 6 V, 12 V or 24 V.

1.2 Rated voltage

Terminal voltage during rated operation. For generators: 7 V for 6 V systems, 14 V for 12 V systems; 28 V for 24 V systems.

1.3 Single wire system

The wiring method which uses the metal part of the car body as the electrical circuit.

1.4 Earth, ground

In the single-wire system, the product casing is connected to the vehicle body, as a conductor of the electrical circuit.

Superseded synonym: grounding, iron-connection.

1.5 Negative earth

The negative pole of the battery is connected to the vehicle body.

1.6 Terminal post

Threaded (or unthreaded) terminals.

Superseded Synonym: Terminal screw.

1.7 Blade terminal

Blade-shaped terminals.

2 Charging system

2.1 DC generator, dynamo

The generator, which has a DC output current after, after commutated by the commutator.

2.1.1 Drive end bearing bracket

The support seat at the drive end of the generator (AC, DC), starter or small motor, to bear the motor rotor.

Superseded synonym: Drive end cap.

2.1.2 Commutator (slip ring) end bearing bracket

The support seat at the non-drive end of the generator (AC, DC), starter or small motor, to bear the motor rotor.

Superseded synonym: Brush end cap, commutator end cap.

2.1.3 Frame

The frame to accommodate the DC generator, starter or the magnetic pole of small motor, which is itself part of the magnetic circuit.

Superseded synonym: housing, base.

2.1.4 Stator assembly, field frame assembly

For DC generators and starters: It the whole of the magnetic field part, which is composed of the field winding, the magnetic pole, the frame;

For AC generators: It is the whole of the generator armature part, which is composed of three-phase windings.

2.1.5 Field coil, excitation winding

Field windings for generator (AC, DC) or starter poles.

2.1.6 Rotor assembly, armature

Integral armature part of a DC generator, starter or small motor.

2.1.7 Armature winding

2.1.8 Commutator

A metal plate, on which a diode or other component is mounted, to dissipate heat during operation.

Superseded synonym: component board, component holder.

2.2.4 Claw pole

Claw-shaped poles.

2.2.5 Slip ring, collector-ring

A conductive ring, which input the field current into the field winding.

2.2.6 Battery terminal

The alternator's output terminal, which is connected to the battery, OR the corresponding terminal of the alternator regulator.

Superseded synonym: "armature" terminal, "output" terminal.

2.2.7 Neutral terminal

The terminal of the neutral point of the alternator OR the corresponding terminal of the regulator, relay, etc.

Superseded synonym: "Neutral point" terminal.

2.3 Brushless alternator

Alternator of brushless, slip ring construction.

2.4 Integrate alternator

Alternator, which has built-in electronic regulator.

2.5 Output characteristic curve

When the generator's voltage maintains a certain value, the relationship curve of the output current changes with the speed.

2.6 Cut-in speed

The generator speed, when the generator load is zero AND the terminal voltage reaches the rated voltage.

2.7 Load speed

The speed of the generator, when it reaches the rated voltage and current.

2.8 Maximum current output

The value, at which the output current does not increase continuously with the increase of the rotation speed, when the alternator is at rated voltage.

2.9 Field current

The current through the field windings, when the generator is operating.

2.10 Internal earth

One end of the generator's field winding is connected with the generator frame.

2.11 External earth

One end of the generator's field winding is grounded, after passing through the regulator.

2.12 DC generator regulator

A device, which controls the output of the alternator. It is composed of a voltage regulator, a current limiter, a shut-off relay.

Superseded synonym: relay regulator.

2.12.1 Voltage regulator

A regulator, that controls the generator's output voltage within a specified range.

Superseded synonym: regulator.

2.12.2 Current limiter

A regulating device, that limits the generator's output current to a specified range.

Superseded synonym: restrictor.

2.12.3 Cutout relay

A device, that automatically connects and disconnects the generator and battery circuits.

Superseded synonym: backflow relay, cutoff.

2.13 Alternator regulator

A device, that controls the output voltage of an alternator within a specified range OR is combined with other auxiliary devices.

2.14.2.4 Compensating winding

A winding, which is connected in series in the excitation circuit of the generator, to improve the characteristics of the regulator.

2.14.2.5 Regulating resistor

In electromagnetic vibration regulators, the resistor which is connected in series in the field winding, to regulate the excitation current.

Superseded synonym: Additional resistor.

2.14.2.6 Accelerating resistor

A resistor, which is used to increase the vibration frequency of the contacts.

Superseded synonym: Vibration-assisting resistor.

2.14.2.7 Core

Magnetic conductive parts, that cooperate with coils, to generate magnetic force.

2.14.2.8 Armature

Magnetically conductive parts, that drive contacts by electromagnetic attraction.

Superseded synonym: Vibrating arm, tongue.

2.14.2.9 Earth screw

Superseded synonym: Ground screw.

2.14.2.10 Magnetic by-pass plate

A temperature-compensated part, that uses the magnetoresistance of the alloy to change with temperature, to achieve voltage regulation.

Superseded synonym: by-pass magnetic chip.

2.15 Transistor regulator

The device, which uses the switching characteristics of the transistor, to control the generator voltage.

2.16 IC regulator, solid state regulator

A device, that uses the switching characteristics of an integrated circuit, to control generator voltage.

2.17 Built-in voltage regulator

Voltage regulator, which is mounted on alternator.

2.18 Regulating voltage

Generator voltage, which is controlled by the voltage regulator.

2.19 Limiting current

The maximum output current of the generator, which is controlled by the current limiter.

Superseded synonym: regulating current.

2.20 Cut-in voltage

The voltage, at the moment when the electrical contacts are closed.

Superseded synonym: suction voltage.

2.21 Reverse current

The current, which flows from the battery to the generator, at the moment when the cutout relay's contacts are disconnected.

Superseded synonym: countercurrent.

3 Starting system

3.1 Starter, starting motor, cranking motor

A DC motor of the starting engine, which is powered by a battery.

Superseded synonym: starter motor, starter.

3.1.1 Overrunning clutch

Clutches that transmit torque in only one direction of rotation.

Superseded synonym: clutch, one-way clutch, overrunning clutch.

3.1.1.1 Roller-type overrunning clutch

A clutch, that transmits torque, when the rollers installed in the raceway of the one-way clutch are wedged.

3.1.1.2 Multi-disc clutch

Superseded synonym: return spring.

3.2 Starter relay

A relay, which is installed outside the starter, to connect the main current of the starter or the electromagnetic switch of the starter.

3.3 Mechanically engaged drive starter

A starter, which mechanically push the drive gear out to mesh with the flywheel's gear ring of engine.

3.4 Pre-engaged drive starter

The starter, which is controlled by the electromagnetic switch, pushes the drive gear to mesh with the flywheel's gear ring, through the shift lever.

3.5 Sliding armature starter

A starter, that pushes the drive gear to mesh with the flywheel's gear ring, by armature movement.

3.6 Sliding gear starter

A starter, which uses the electromagnetic switch to push the engaging rod, which is installed in the armature shaft hole, to make the drive gear mesh with the flywheel's gear ring.

3.7 Coaxial drive starter

The starter, which uses the electromagnetic switch installed coaxially with the starter, to directly attract the drive gear, to mesh with the flywheel's gear ring.

3.8 Inertia drive starter

A starter, that meshes with the flywheel's gear ring, by the inertial motion of the drive gear.

3.9 Gear-reduction starter

A starter which, when the armature rotates, transmits the torque to the output shaft of another one-way clutch, through gear reduction.

3.10 Intake air heater

A cold start support device, which is used for diesel engines, is installed on the intake pipe, preheats the intake air when starting.

Superseded synonym: preheating plug.

3.11 Glow plug

A cold start support device, which is used on diesel engines, extends into the combustion chamber, preheats the fuel, makes it easy to start.

Superseded synonym: preheating plug

3.12 Glow indicator

3.13 Lock torque

Under the specified conditions, the torque when the starter is fully braked.

Superseded synonym: lockup torque.

3.14 Running torque

The torque of the starter, at different loads and speeds.

3.15 Lock voltage

The terminal voltage of the starter, at full braking.

3.16 No-load speed

Under the specified terminal voltage, the speed of the starter when there is no load.

4 Ignition system

4.1 Classical ignition system, conventional ignition system

An ignition system, which is composed of an ignition coil, a circuit breaker with contacts (parallel with capacitors), a corresponding power supply.

Superseded synonym: Battery ignition system.

4.1.1 Ignition coil

An induction coil in an ignition system, that generates high voltage electricity.

4.1.1.1 High tension terminal

The socket for connecting the high voltage wire, in the ignition coil or distributor cover.

4.1.1.2 Primary winding

4.1.1.3 Secondary winding

engine load.

4.1.2.7 Point gap

The distance between the contacts, when the top of the contact breaker arm is in the highest position of the cam.

Superseded synonym: platinum clearance.

4.1.3 Anti-interference ignition cable

High-impedance high-voltage conductors, which are capable of suppressing radio interference from sparks.

4.1.4 Suppressor resistor

Resistors, which have the ability to suppress radio interference from sparks.

4.2 Semi-conductor ignition system, electronic ignition system, solid state ignition system

Ignition systems, which use the semiconductor devices as switches.

Superseded synonym: crystal ignition system.

4.3 Inductive ignition system

An ignition system, that stores primary energy in an ignition coil.

4.4 Capacitor discharge ignition system

Ignition system, that stores primary energy in capacitors.

4.5 Semi-conductor assisted ignition system

Semiconductor ignition systems, which use the contact breaker.

4.6 Breakless ignition system

Ignition system without contact breaker.

4.6.1 Timer rotor

In a breakless ignition system, the rotor on the distributor shaft which has a raised (or toothed) portion.

4.7 Distributorless ignition system

An ignition system, that does not require a rotating high-voltage distributor.

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