



FOCUS

Resistors & Regulators



Over 100 Active References



Our Premium Quality

A superior quality range, guaranteed by direct control of the entire process.

Design and production are supervised by the Group's engineers, in compliance with the original equipment specifications. Subsequently, each component undergoes end-of-line validation testing by the Quality team, with the aim of offering a product that always stands out for its quality, reliability, and durability.



Design



Fleet Coverage



Testing



After-Sales Support

What They Are

Electrical resistors are components used to regulate the rotational speed of electric motors in two key vehicle systems: the **cabin fan** (climate control) and the **radiator fan** (engine cooling).

They control airflow, allowing the selection of different speeds and ensuring both comfort and safety.





These are electronic components that:

Modulate the voltage supplied to the motors, reducing it to achieve lower speeds.

Allow multi-level operation (low, medium, high speed).

Operate within the circuits to ensure precise control of airflow and temperature.

Why They Are Important

Cabin Fans

Ensure proper distribution of hot or cold air inside the cabin.

Radiator Fan Valves

Keep the engine temperature within optimal limits, preventing overheating.

A resistor failure may cause:

-  Fans operating **only at maximum speed**.
-  Fans **not starting**.
-  **Error codes** in the ECU (e.g., P0480–P0483 for the radiator).

Operation

The principle is the same for both applications:

1 Voltage Regulation

- The resistors are integrated into the motor's electrical circuits.
- At lower speeds, the current flows through one or more resistors, reducing the voltage and therefore the speed.

2 Speed Selection

- **High speed:** the current flows directly to the motor (no resistance).
- **Medium/Low speed:** the current passes through resistors that dissipate energy.

3 Protection and Safety

- Some resistors include thermal fuses that cut the circuit in case of overheating.



Preventive Maintenance

- Periodically activate the cabin fans and check the radiator fan operation.
- Test all speed levels (low, medium, high).
- Inspect ducts and cabin filters to prevent dust buildup.
- Ensure radiators are clean to maintain cooling efficiency.



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Recommended Checks

1 Electrical Tests

- Use a multimeter to check resistor continuity.
- If fans only operate at maximum speed, the resistors may be faulty.

2 Visual Inspections

- Inspect electrical connectors for signs of oxidation or damage.
- Check for burn marks or blown thermal fuses.

3 Diagnostic Tests

- You can temporarily bypass the resistor to check if the motors start (for testing purposes only).

4 Preventive Replacement

- If the resistors are more than 8–10 years old or show signs of malfunction, replacement is recommended.

Main Causes of Malfunction

Symptom	Cause	Solution
Fan does not work at low speeds	Burnt or open resistor	Replace resistor module
Fan works only at maximum speed	Faulty resistor bypassed by relay	Check and replace resistor
Fan speed irregular	Oxidized or loose electrical connections	Clean and tighten the connectors.
Radiator fan does not start or activates only at very high temperature	Burnt resistor or open circuit	Check and replace resistor

Symptom	Cause	Solution
Fan does not start	Blown fuse or faulty relay	Check and replace fuse/relay
Burning smell from dashboard	Resistor overheating	Check the module and ventilation
Unusual fan noise	Partially damaged resistor or defective fan	Inspect and replace damaged parts
Fan stops after a few seconds	Thermal protection triggered due to overheating	Check airflow and resistor

Most Common Error Codes (DTCs)

Code	Description	Control Unit Affected
B10A9	Fan speed regulator fault	Climate control / BCM
B10B0	Cabin fan – open circuit	Climate control
U1F00	No LIN communication with fan module	BCM / Climate control
P0480–P0483	Fan control fault	Engine ECU / Climate control

Related Products

Condensers



Meat&Doria **991034**
Hoffer Products **991034**

Cabin Fans



Meat&Doria **994041**
Hoffer Products **994041**

Wiring Repair Kits



Meat&Doria **K26211**
Hoffer Products **K26211**

Cabin Temperature Sensors



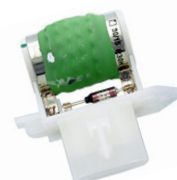
Meat&Doria **K103055**
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Cabin Air Filters



Meat&Doria **17020**
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Radiator Fans



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