



Desert Master

PWM Control Unit

SMART FAN MANAGEMENT SYSTEM

PWM CONTROL

SMART THERMAL MANAGEMENT

MULTI-FAN SUPPORT

AUTO PROTECTION



PART NUMBER

P/N: 10010

BRAND

DESERT MASTER



DM **DM-CV5** PWM Control Unit

01 PWM TECHNOLOGY

The DM-CV5 Control Unit was engineered to deliver intelligent and reliable motor management through advanced Pulse Width Modulation (PWM) technology. This approach enables precise, stepless control of fan motor speed in real time, dynamically responding to actual operating conditions to maintain optimal thermal performance at all times.

02 WIRELESS INTERFACE

The system offers exceptional flexibility in configuration and fine-tuning, with a fully wireless user interface that allows real-time monitoring, live adjustment, and complete control from any Android or iOS device. Additionally, the unit supports over-the-air (OTA) firmware updates, eliminating the need to physically remove the device or use specialized equipment for future software upgrades.

03 MAXIMUM DURABILITY

The DM-CV5 is built to withstand demanding operating environments and to deliver consistent, stable performance across both everyday driving and high-performance applications alike. By continuously regulating cooling fan behavior, it actively enhances the efficiency of the vehicle's thermal management system and helps maintain ideal operating temperatures under all load conditions.



- PWM Control**
Precise speed regulation
- Wireless Interface**
Real-time wireless monitoring
- OTA Updates**
Remote firmware upgrades

KEY SPECS	
DM-CV5	MODEL
PWM	TECHNOLOGY
Wireless	INTERFACE
10010	P/N



WIRE CONNECTIONS

Red Wire — Ignition Power (IG1) Pin 1

Connect to the Ignition line (IG1) through the supplied fuse. The IG1 line carries voltage only when the ignition is ON, and cuts off when switched OFF — protecting the unit from battery drain.

Black (Long) — Main Ground Pin 23

Connect directly to chassis ground or battery negative terminal.

Black (Medium) — Temperature Sensor Ground Pin 5

Connect to the black wire of the temperature sensor connector via the provided connector (see Image 107).

Black (Short) — Boost LED Ground Pin 19

Connect to the black wire of the Boost indicator light.

Yellow Wire — Boost Switch Terminal Pin 2

Connect to either terminal of the Boost momentary switch (the other terminal connects to the Blue wire).

Green Wire — Temperature Sensor Signal Pin 4

Connect to the green wire of the temperature sensor connector via the provided connector (see Image 107).

Brown Wire — A/C Compressor Signal Pin 8

Connect to the compressor wire to receive the A/C activation signal — see Image 108 (inverter compressor or clutch-type).

White Wire — PWM Channel 1 Output Pin 9

PWM signal output for fan or fan controller (for SPAL fans: connect to the yellow wire).

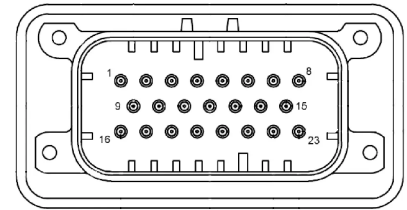
Orange Wire — Boost LED Positive Pin 14

Connect to the orange terminal of the Boost indicator light.

Blue Wire — Boost Switch Terminal Pin 16

Connect to either terminal of the Boost momentary switch (the other terminal connects to the Yellow wire).

CONNECTOR DIAGRAM — IMAGE 106



PIN REFERENCE

1	12V — Power (IG1)	13	Not Used
2	Boost Switch 1	14	Boost LED Positive
3	Not Used	15	Not Used
4	Analog Sensor Signal	16	Boost Switch 2
5	Sensor Ground	17	Not Used
6	△ Digital Sensor Power Only!	18	Not Used
7	△ Digital Sensor Signal	19	Boost LED Ground
8	A/C Signal	20	Not Used
9	PWM1 — Fan 1	21	Not Used
10	PWM2 — Fan 2	22	Not Used
11	PWM3 — Fan 3	23	Main Device Ground
12	Not Used		

CONNECTOR REFERENCES



IMAGE 107



IMAGE 108



Getting the App

Request access to the application via **WhatsApp**

Or, after connecting to the device, open your browser and navigate to:

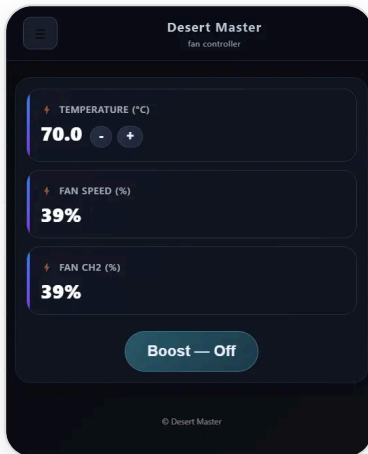
<https://192.168.4.1>

Connecting to the Device

- 1 Connect the device to power and wait one minute (first-time setup)
- 2 Open Wi-Fi settings on your Android or iOS device
- 3 Connect to the device network:

Network / SSID
Password

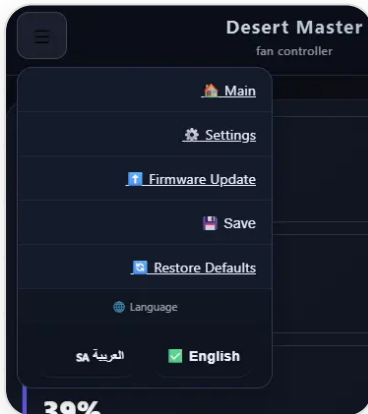
Desert Master XXXXX
12345678



SCREEN 01 · MAIN DASHBOARD

Main Interface

- Displays **current temperature** and fan speed for each channel in real time
- The **☰ (hamburger) button** at the top opens the navigation menu
- The **Boost button** at the bottom instantly adds extra fan speed with a single press
- The Boost increment value can be customized from the **Settings page**



SCREEN 02 · NAVIGATION MENU

Dropdown Menu

- **Main** — Returns to the main dashboard from any page
- **Settings** — Adjust control parameters for each channel
- **System Update** — View current firmware version and upload a new update
- **Save** — Save all settings after any modifications
- **Factory Reset** — Restore all settings to factory defaults (does not affect firmware updates)
- **Language** — Toggle between Arabic and English



SCREEN 03 · SETTINGS PAGE

Settings Menu Contents

01

Minimum Temperature

The temperature at which the fan motor begins to operate.

02

Maximum Temperature

At this temperature the motor reaches 100% speed (speed ramps gradually between min and max).

03

A/C Value

Speed increase applied the moment the A/C compressor activates — added on top of current fan speed.

04

A/C Enable

Choose whether this channel responds to the A/C activation command (Enable / Disable).

05

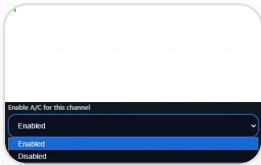
Boost Value

Speed increase triggered when the Boost button is pressed — via the app or the external button.

06

Boost Enable

Choose whether this channel responds to the Boost command (Enable / Disable).

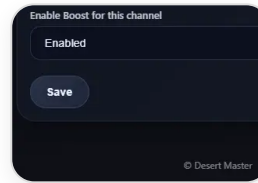


SCREEN 04 · Enable / Disable

Enabling or Disabling Features

In the Settings page, tap on the **A/C Enable** or **Boost Enable** field for any channel — a small selection prompt will appear:

- ✓ **Enable** — This channel will respond to the command
- ✗ **Disable** — This channel will ignore the command



SCREEN 05 · Save Settings

Save Button

At the **bottom of the Settings page** you will find the Save button.

Press it after completing any modifications to store your new values.

💡 You can also use the **Save** option from the dropdown menu at any time.



SCREEN 06 · SYSTEM UPDATE

Current System Information

Firmware Version

1.1.1

Build Date

06 / 06 / 2026

Check for newer firmware releases by visiting the Desert Master platform:

desert-master.com → DM-CV5 Controller Page

FIRMWARE UPDATE STEPS

- 1 Connect to the internet and visit desert-master.com
- 2 Navigate to the **DM-CV5** controller product page
- 3 Scroll to the bottom and click the System Update link
- 4 Note the latest available firmware version number
- 5 If it is newer than your current version — **download the file**
- 6 Connect to the controller via its dedicated Wi-Fi network
- 7 Open **System Update** from the navigation menu
- 8 Select the downloaded file and tap **Upload Update**

**IMPORTANT WARNING**

Do NOT disconnect power during the update upload or during the automatic reboot process. Wait until the message **"Update Uploaded Successfully"** appears and the device restarts on its own.



Terms & Conditions — Desert Master PWM Control Unit: By purchasing, installing, or using the Desert Master PWM Control Unit – Model DM-CV5, the customer acknowledges having read, understood, and agreed to the following Terms and Conditions.

1 Nature of the Product

This product is an electronic control unit designed specifically for managing PWM electric cooling fans in vehicles. It is an aftermarket product and is not an original equipment manufacturer (OEM) part. Desert Master makes no claim that this product is a direct replacement for any factory-installed system unless explicitly stated in writing in the sales offer, catalog, or customer invoice.

2 Intended Use

This product is designed exclusively for use in electric cooling fan systems, strictly in accordance with the provided wiring diagram and installation instructions. Use of this product in safety-critical systems or any application not described in the installation guide — such as brakes, steering, airbags, fuel systems, or any system whose failure could pose a direct risk to persons or property — is strictly prohibited.

3 Installation Responsibility

The device must be installed by a qualified automotive electrician or a certified workshop. Any incorrect installation, reverse polarity, non-compliant direct wiring, overloading, poor grounding, use of unsuitable wiring, or deviation from the approved wiring diagram will void the warranty and release Desert Master from any resulting liability.

4 Pre-Installation Vehicle Inspection

The customer or technician is responsible for verifying the integrity of the vehicle's cooling system, fans, fuses, relays, wiring harness, sensors, alternator, battery, and grounding prior to installation. This device does not remedy pre-existing mechanical or electrical faults in the vehicle.

5 Limitation of Liability

In the event of a confirmed manufacturing defect, Desert Master's liability is limited solely to repairing, replacing, or refunding the product, as determined by the technical inspection and warranty policy. Desert Master shall not be liable for any indirect or consequential damages, including but not limited to: engine damage, overheating, vehicle breakdown, towing fees, workshop charges, loss of use, commercial losses, or any modifications made to the vehicle.

6 Warranty

The warranty covers manufacturing defects and material faults in the control unit itself only, for a period of 12 months from the date of purchase unless stated otherwise on the invoice. To be eligible for warranty service, a valid purchase invoice or approved serial number must be provided, and the product must have been used and installed in accordance with the instructions.

7 Warranty Exclusions

The warranty does not cover:

- Incorrect installation or wiring that deviates from the approved diagram.
- Opening, tampering with, or attempting to repair the device outside of Desert Master.
- Damage caused by water, moisture, engine washing, submersion, excessive heat, fire, impact, breakage, or abnormal vibration.
- Damage caused by short circuit, reverse polarity, overvoltage, poor grounding, overloading, or use of an incorrect fuse.
- Unauthorized modification of wiring, harness, or sensors.
- Use in racing or in extreme conditions, or use contrary to the intended purpose.
- Any damage to fans, the vehicle, the engine, external wiring, or sensors unless proven to be a direct result of a manufacturing defect in the product itself.

8 Technical Warranty Inspection

Upon submission of a warranty claim, Desert Master reserves the right to inspect the product, verify the serial number, assess installation condition, and examine signs of damage. Acceptance of the product for inspection does not constitute automatic approval of the warranty claim. Warranty acceptance or rejection is determined solely following technical inspection.

9 Repair or Replacement

If a warranty claim is approved, Desert Master reserves the right to choose the appropriate course of action: repairing the product, replacing it with an identical or equivalent unit, or refunding its value, as appropriate. A repaired or replaced product continues the remaining period of the original warranty; a new warranty period does not commence unless specifically stated on the invoice.

10 Returns & Exchanges

For electronic commerce transactions, the consumer has the right to request cancellation of the purchase contract within the statutory period, provided the product has not been used or benefited from, subject to applicable exceptions for products manufactured or configured to customer specifications, or products that have been used, installed, or whose original condition has been compromised. The Saudi Electronic Commerce Law grants consumers a 7-day withdrawal right, with specific conditions and exceptions, including products manufactured per customer specifications.

11 Custom Products

If the product, wiring harness, settings, firmware, or accessories have been prepared based on the customer's specific request or vehicle specifications, returns will not be accepted once preparation or installation has commenced, unless the product is defective or does not conform to what was agreed upon in writing.

12 Firmware Updates & Programming

The product may contain an updatable internal firmware. Updates must be performed exclusively using files and instructions officially approved by Desert Master. Any unofficial update, modified file, cloning attempt, protection bypass, or use of unauthorized software will immediately void the warranty.

13 Intellectual Property Protection

All designs, schematics, software, user interface, the Desert Master name and logo, firmware files, and any technical or marketing content related to the product are owned by or licensed to Desert Master. Copying, disassembling, reverse engineering, selling firmware files, or using the trademark without written authorization is strictly prohibited.

14 Safety & Warnings

Disconnect the battery before installation. Use an appropriately rated fuse and a protected power source. Route all wiring away from heat sources, moving parts, water, and sharp edges. Test fan operation and verify temperature readings after installation and before returning the vehicle to the customer.

15 No Guarantee of Universal Compatibility

Although this product is designed to support a wide range of PWM fans, compatibility may vary depending on the fan type, vehicle system, original control method, temperature sensors, and any prior modifications. The customer or technician bears responsibility for confirming compatibility before final deployment.

16 Modified Vehicles & Racing Use

Use of this product in modified vehicles, race cars, extreme desert environments, or any application outside standard specifications is entirely at the customer's risk. Such applications may require custom configurations and additional inspection, and are not covered under the general performance warranty unless agreed upon in writing.

17 Product Data & Packaging

The product label, serial number, and purchase documentation must be retained. Any deliberate removal or damage to the serial number or product label may result in rejection of a warranty claim. Automotive parts technical regulations emphasize the importance of clear packaging data, including manufacturer name or trademark, country of origin, part name or number, and installation and safety instructions where applicable.

18 Complaints & Customer Service

Support and warranty requests must be submitted through the official channels listed in the catalog or on the invoice. The customer must provide Desert Master with the invoice number, serial number, installation photos, a description of the fault, and voltage or temperature readings when requested. The Ministry of Commerce regulations emphasize the importance of clearly communicated warranty, maintenance, and complaint policies for consumers.

19 Recalls & Manufacturing Defects

Should a manufacturing defect affecting safety or performance be identified in a specific production batch, Desert Master reserves the right to take appropriate action, including inspection, firmware updates, repair, or replacement. The company complies fully with applicable Saudi Arabian regulations concerning defective products and product recalls.

20 Governing Law & Jurisdiction

These Terms and Conditions are governed by the laws and regulations of the Kingdom of Saudi Arabia. In the event of a dispute that cannot be resolved amicably, the competent authorities within the Kingdom of Saudi Arabia shall have exclusive jurisdiction.

21 Acceptance of Terms

Purchasing, installing, or using this product constitutes the customer's explicit acceptance of these Terms and Conditions. The customer acknowledges that the product was delivered with usage and installation instructions, essential warnings, and all required documentation.

⚠ Important Notice: Nothing in these Terms and Conditions shall be construed as a waiver of any statutory consumer rights established under the laws of the Kingdom of Saudi Arabia.



DM-CV5 · P/N 10010

Desert Master PWM Control Unit

Smart Fan Management System

Intelligent Control · Proven Performance

ENGINEERED FOR THE DESERT. BUILT TO LAST.

⚙️ PWM Control

📱 Wi-Fi App

📉 Smart Temp Sensing

⚡ A/C Integration

🔄 OTA Updates



WEBSITE

desert-master.com



SUPPORT

Contact us via WhatsApp



ORIGIN

Kingdom of Saudi Arabia