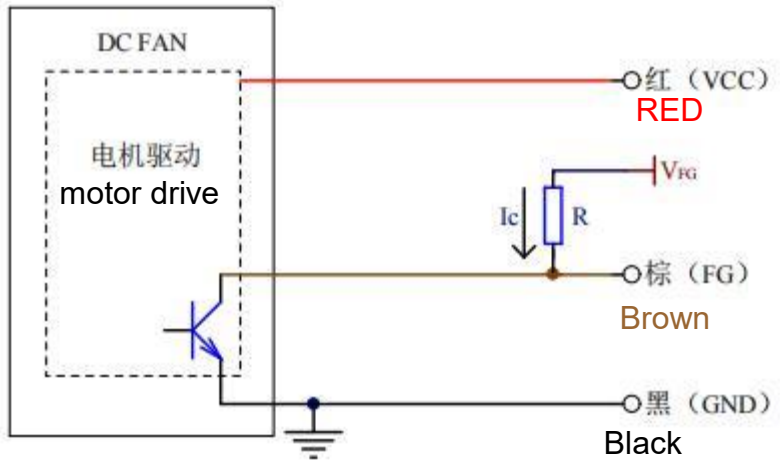
Regular Function Introduction

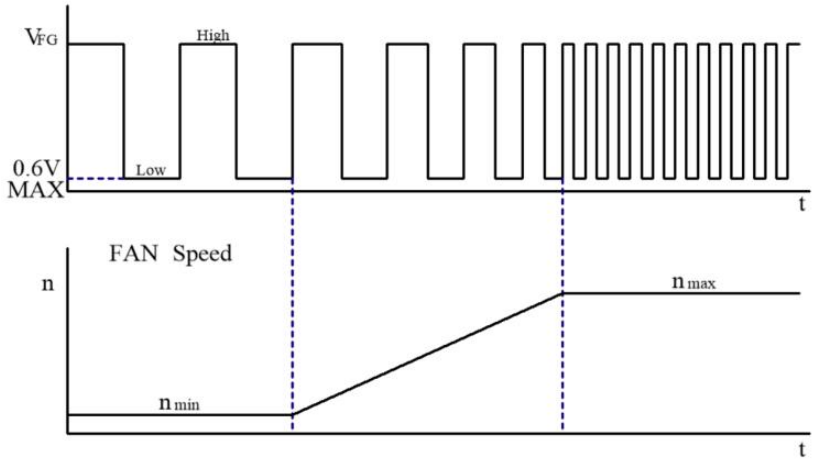
1. Line Indicator Function (Different Colored Leads)

FG: **Speed Feedback Signal** (Brown Lead)
The **FG signal** is output through a collector open circuit. The signal wire is inserted into a current-limiting resistor **R**, and then connected to the pull-up voltage **VFG** of the external collection circuit. A square wave signal can be monitored from the signal line, and the fan's real-time speed can be calculated based on the signal frequency.



Pull-up Parameter Settings:

- **V_{FG} = 5.0V** (12V MAX)
- **I_c = 5mA** (10mA MAX)
- **R ≥ V_{FG} / I_c**

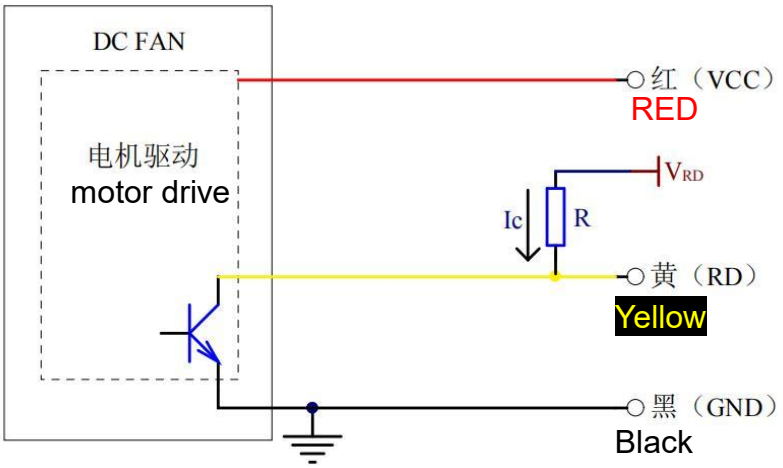


Signal Output Mode:

For each rotation of the fan blade, **2 cycles of a square wave** are output.
Calculation Formula:
Speed (RPM) = Signal Frequency (Hz) × 30

RD: Rotation Detection Signal (Yellow Lead)

The **RD signal** is output through a collector open circuit. The signal wire is inserted into a current-limiting resistor **R**, and then connected to the pull-up voltage **VRD** of the external collection circuit. A level signal can be monitored from the signal line. When the fan is running, it outputs a **low level** signal, and when stopped, it outputs a **high level** signal.



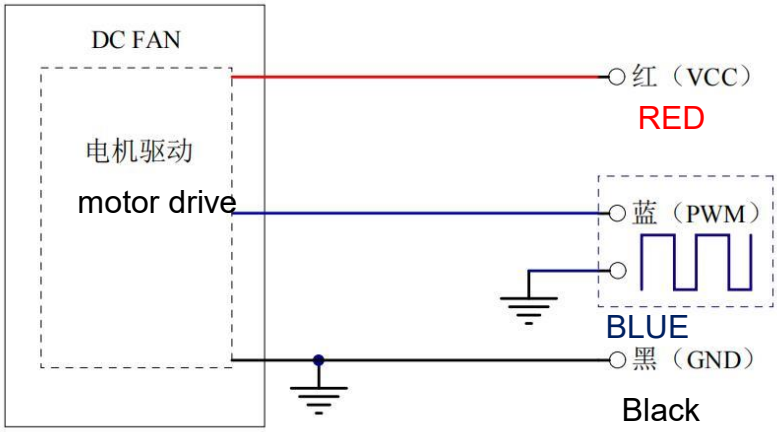
Pull-up Parameter Settings:

- **V_{FG} = 5.0V** (12V MAX)
- **I_c = 5mA** (10mA MAX)
- **R ≥ V_{FG} / I_c**

(Note: The default fault signal is RDH high level locking. If the fault signal needs to be RDH low level locking, please consult separately).

PWM: Duty Cycle Speed Control (Blue Lead)

PWM speed control adjusts the fan speed by external **Pulse Width Modulation (PWM)** signals. By modifying the duty cycle of the pulse width modulation signal, the fan's speed can be increased or decreased.



PWM Parameter Settings:

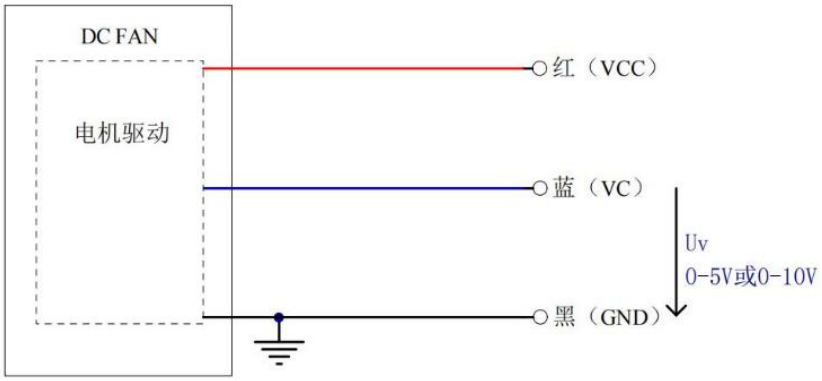
- V_{HS} = 3.3V to 8.0V f_{PWM} = 10kHz to 50kHz
- V_{LS} = 0V to 0.8V Drive Current I = 5 to 10mA

Recommended Parameters:

- Pulse Square Wave Amplitude V_{H-L} = 5V
- Pulse Square Wave Frequency f_{PWM} = 25kHz

VC: Voltage Speed Control (Blue Lead) Special requirement, selection needs to be discussed with our technical team)

VC speed control adjusts the fan speed by externally inputting an analog voltage signal. By changing the input voltage signal, the fan speed is linearly varied. The speed control voltage range is 0 to 5V **or** 0 to 10V**.**



2. Built-in Functions (No Lead Wires)

RP: Reverse Polarity Protection (Default Function)

When the positive and negative terminals of the fan power supply are connected incorrectly, the fan will not operate, and no current will flow, protecting the fan from damage.

LP: Locked Rotor Protection (Default Function)

When the fan blades are blocked by foreign objects, the fan will stop working, and the current will approach zero, preventing the fan from being damaged by excessive current.

AS: Auto Restart (Default Function)

When the fan blades are locked, the fan will automatically attempt to restart after a delay of **3 to 6 seconds**, and the cycle continues until the blades are cleared and the fan resumes operation.

SS: Soft Start (Special requirement, selection needs to be discussed with our technical team)

When the fan is powered on, the current gradually increases from zero and stabilizes to the rated operating current within **8 seconds** (the time can be set as needed).