

DESCRIPTION OF FAN SERIES & FUNCTIONS

Series and Functions

PELKO Motors offers 6 series of DC Fans to satisfy most of the customer needs, price, performance, power savings and functions. The available models can be grouped in 3 groups all of which include the Auto Start function.

1. C and R series: STANDARD series

- a. C series uses a 2 coil complementary type drive offering low cost and limited functions such as FG, RD, and RDb. This series ranges from 40mm to 92mm.
- b. R series uses a 2 coil complementary type drive offering low cost, applicable for higher power demanding applications and have more functions, such as FG, RD, RDb and CL (current limiting function). This series ranges from 60mm to 120mm.

2. D and G series: High Performance series

- a. D series uses single coil differential type drive with higher efficiency and more functions (depending on the specific model). Such as FG, RD, RDb for sizes 25x10 to 60x10mm and large models with the complete function range in sizes from 60x20 to 92x25mm.
The complete range of functions consists of AS, FG, RD, RDb, LD, IR, CL, (V,P,R,I,T)PWM (V: Voltage signal input, P: PWM input, R: variable resistance input, I: current signal input, and T: NTC thermistor input).
- b. G series uses a single coil, differential type drive with higher efficiency and for higher power demanding applications, offering the basic functions FG, RD, RDb, CL.
This is a medium cost series that ranges from 120x25mm to 172x51mm.

3. K and P series: Multifunction Extra High Performance

- a. P series use a single coil differential type drive with higher efficiency performance and for higher power demanding applications offering the complete line of functions. This series ranges from 92x25 to 172x51mm.
- b. K series use a single coil differential type drive with the highest efficiency and the maximum airflow performance with the complete line of functions and with Airflow and Pressure higher than the P series. This series range from 80x38 to 120x38mm.

START VOLTAGE / OPERATING VOLTAGE RANGE

The start voltage depends on:

- The minimum voltage required to maintain sufficient BIAS to operate the control circuit of the fan.
- The minimum voltage must be higher than the trigger voltage of the output drivers.

For example:

If the MCU used works at 5V/10mA, the supply voltage must be higher than 5V, plus about 3V required for the regulator, i.e. 8V. Lower operating voltage may make the fan to run but this does not mean that the fan can necessarily meet all the specifications. The minimum voltage of operation should be set 15%–20% lower than the rated voltage. The maximum voltage of operation can be controlled by the CS function at low cost of efficiency, but at the additional cost of power which is equal to: $(\text{Max operating Voltage} - \text{Rated Voltage}) \times \text{BIAS current}$.

As a rule:

- For small operating voltage range: The operating voltage range is $\pm 20\%$ of the rated voltage.
- For upper wide operating voltage range: The max operating voltage can be set up to $-5\%+50\%$ of the rated voltage.
- For lower wide range: The max operating voltage can be set a $-50\%+10\%$ of the rated voltage.

On single function fans (without PWM restrictions) the fan ranges offered, and in order to minimize power losses are:

- Fans rated at 12V have operating voltage range from 7 to 14V.
- Fans rated at 24V have operating voltage range from 15 to 27V.
- Fans rated at 48V have operating voltage range from 36 to 57V.

NOTE: Please note that other wider voltage ranges may be offered at the customer's request.