



# 模块 12

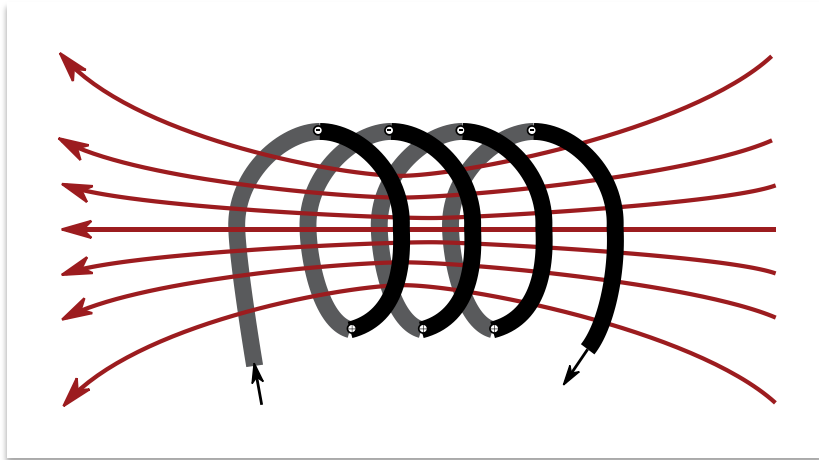
测验： 直流电机



# 测验：直流电机

## 问题 1 电磁体

您希望增加线圈来产生磁场强度。您增加了转数，并且有一段时间，力量会增加。然而，在越来越多地增加它之后，您注意到力量开始减少。为什么？



## 问题 2 能量转换

电机在电能和机械能之间转换。然而，有两种方式，一些能量也转换为热能（热量）？直流电机能否将热能转换为电能或机械能？

## 问题 3 直流电机的物理原理

在电压，电流，电阻，电感，电容，能量，力，磁场或电场中选出来填充横线。直流电机的基本原理是当带有\_\_\_\_\_的电线放置在具有\_\_\_\_\_的空间区域时，会经历\_\_\_\_\_。

## 问题 4 直流电机的部件

解释直流电机中电刷和换向器的用途。

## 问题 5 直流电机特性

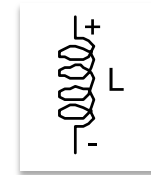
直流电机的静态电阻为 1 欧姆。5V 用于电机，10A 用于电流流动。什么是电机开发的 emf？这个 emf 从哪里出现？

## 问题 6 直流电机特性

直流电机的静态电阻为 1 欧姆。5V 用于电机，5A 电流实际上是向电压相反的方向流动。这种相反方向的电流如何发生？

## 问题 7 电感

考虑一个 0.1 mH 电感的直流电机。1A 直流电流在电机中流动，该电感上的电压降是多少（忽略此问题的电阻）？随后，该 1A 电流被关断并在 1 $\mu$ s 内从 1A 线性下降到 0。关闭此电流会产生多少电压？解释如何保护电子设备免受此电流的影响。



## 问题 8 H-bridge

在 DRV8838 上，EN 低电平和 nSLEEP 低电平的区别是什么？在这两种情况下，电机都不会旋转。

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