

ME-20 Dual Channel Hall Encoder

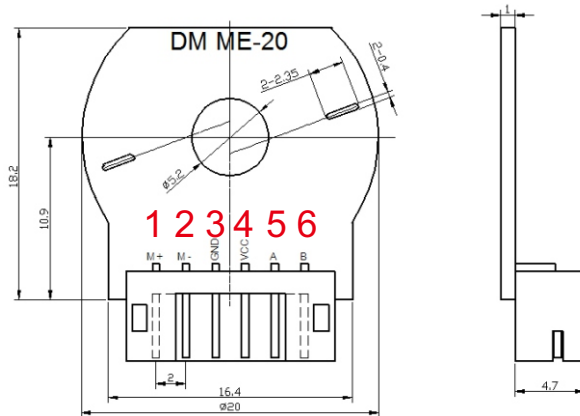
适用电机/Applicable motor : 180、2247

输出信号/Output signal : 5PPR、10PPR

磁铁尺寸/Magnet size : $\varphi 9.75 \times \varphi 2 \times 2 \text{mm}$



APPEARANCE SIZE



尺寸单位/Dimensional unit : mm

1. MOTOR +
2. MOTOR -
3. HALL SENSOR GND
4. HALL SENSOR Vcc
5. HALL SENSOR A Vout
6. HALL SENSOR B Vout

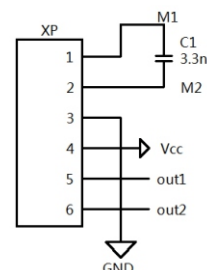
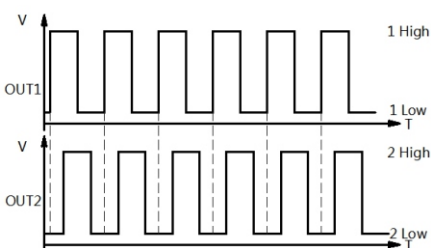
端子型号/Terminal model :
JST PHR-6 P=2.0-6P

电气特性/ Electrical Characteristics :

规格特性 Characteristics	符号 Symbol	测试条件 Test Conditions	值 Values			单位 Unit
			最小 Min.	基本 Typ.	最大 Max.	
工作电压 Supply Voltage	Vs		3.0	-	18	V
输出电压 Output Voltage	VQ		-0.7	-	18	V
温度 Temperature	Tj		-40	-	150	°C
输出电流 Output Current	Iq		0	-	20	mA
输入电流 Supply Current	Is	Vs = 3.0 V ... 18 V	2	4	6	mA
反向电流 Reverse Current	ISR	Vs = -18 V	0	0.2	1	mA
输出饱和电压 Output Saturation Voltage	VQSAT	Iq = 20 mA	-	0.3	0.6	V
输出漏电流 Output Leakage Current	IQLEAK	For VQ = 18 V	-	0.05	10	μA
输出下降时间 Output Fall Time	tf	RL = 1.2 k Ω ; CL = 50 pF	-	0.02	1	μs
输出上升时间 Output Rise Time	tr		-	0.4	1	μs

波形图/Waveform :

原理图，示意图/Schematic :



译码器应用/Using the Encoder :

双通道霍尔编码器可以通过安装在电机后出轴上的磁铁检测电机轴转数。编码器板检测磁盘的旋转, 当同时计算两个通道的两个高低边沿时, 正交编码器提供每转20个计数的分辨率。要计算变速箱输出轴的每转计数, 请将齿轮箱减速比乘以20 ;

A two-channel Hall effect encoder is used to sense the rotation of a magnetic disk on a rear protrusion of the motor shaft. The encoder board senses the rotation of the magnetic disc and provides a resolution of 20 counts per revolution of the motor shaft when counting both edges of both channels. To compute the counts per revolution of the gearbox output shaft, multiply the gear ratio by 20.

霍尔传感器通过VCC和GND引脚供电。VCC可以是3.0 V至18 V, 正交输出A和B是数字信号, 由传感器驱动为低电平(0 V)或通过10k Ω 上拉电阻拉至VCC, 具体取决于所施加的磁场。A和B输出是大约90°异相的方波。传感器的比较器具有内置滞后功能, 可防止电机在转换点附近停止时出现杂散信号。转换频率告诉您电机的速度, 转换顺序告诉您电机的旋向;

The hall sensors are powered through the VCC and GND pins. VCC can be 3.0 V to 18 V, and the quadrature outputs A and B are digital signals that are either driven low (0 V) by the sensors or pulled to VCC through 10 k Ω pull-up resistors, depending on the applied magnetic field. The A and B outputs are square waves approximately 90° out of phase. The sensors' comparators have built-in hysteresis, which prevents spurious signals in cases where the motor stops near a transition point. The frequency of the transitions tells you the speed of the motor, and the order of the transitions tells you the direction

通过计算A和B输出的上升沿和下降沿, 可以在电机轴的每转中获得20个计数。仅使用一个通道的单个边沿, 则可以在电机轴每转中获得5个计数.

By counting both the rising and falling edges of both the A and B outputs, it is possible to get 20 counts per revolution of the motor shaft. If using just a single edge of one channel (A or B) results in 5 counts per revolution of the motor shaft.