

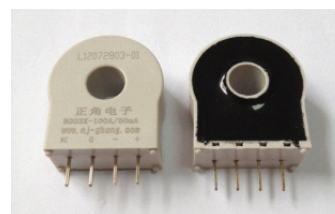
B203XT 系列高精度闭环型霍尔电流传感器
B203XT Series High Precision Closed Loop Mode
Hall Effect Current Sensor

正角电子™



B203XT 系列高精度霍尔电流传感器是应用霍尔效应原理开发的新一代电流传感器，无位置误差，能真正分辨测量1000:1，能在电隔离条件下精密测量直流、交流、脉冲以及各种不规则波形的电流。

B203XT Series current sensor is a closed loop device based on the measuring principle of the hall effect and null balance method, with a galvanic isolation between primary and secondary circuit, the size of primary doesn't affect test precision, no matter the location of primary in the hole of current sensor. It can really measure resolution 1000:1 and uses for precision measurement of DC, AC and pulse current.



电参数 Electrical data (Ta=25°C ± 5°C)

| Type | B203XT-10A | B203XT-25A | B203XT-50A | B203XT-75A | B203XT-100A | 单位 Unit |
|--|---|------------|------------|------------|-------------|------------|
| 额定输入电流 (I _{pn}) Rated current (I _{pn}) | ±10 | ±25 | ±50 | ±75 | ±100 | A |
| 测量电流范围 (I _p) Measure range (I _p) | 0—±15 | 0—±37 | 0—±75 | 0—±90 | 0—±120 | A |
| 匝比 (N _p /N _s) Turns ratio(N _p /N _s) | 1: 1200 | 1: 1200 | 1: 1200 | 1: 1500 | 1: 2000 | T |
| 内接测量电阻 Inside measuring resistance | 30±0.1% | 12±0.1% | 6±0.1% | 5±0.1% | 5±0.1% | Ω |
| 额定输出电压 Rated output | @I _p =±I _{pn} ±1±0.2% | | | | | V |
| 电源电压 Supply voltage | +5V | | | | | V |
| 功耗电流 Power Consumption | 20+ I _p X(N _p /N _s) | | | | | mA |
| 参考电压 Reference voltage | +2.5±0.4% | | | | | V |
| 零点电压 Zero voltage | @I _p =0 | | +2.5±0.4% | | | V |
| 失调电压温漂 Offset drift | @ -40~+85°C | | ≤±0.05 | | | mV /°C |
| 输出电压温漂 Output drift | @ -40~+85°C | | ≤±0.05 | | | mV /°C |

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| | | | |
|----------------------------|------------------------|------------|---------|
| 线性度 Linearity | @ $I_p=0-\pm I_{pn}$ | ≤ 0.1 | %FS |
| 响应时间 Response time | @100A/ μ S,10%-90% | ≤ 0.5 | μ S |
| 绝缘电压 Galvanic isolation | @ 50HZ,AC,1min | 3 | KV |
| 带宽 Bandwidth | @ -3db | 0~200 | KHZ |

应用 Applications

- 变频调速系统

Variable speed drives

- 电焊机

Welding machine

- 通讯电源

Battery supplied applications

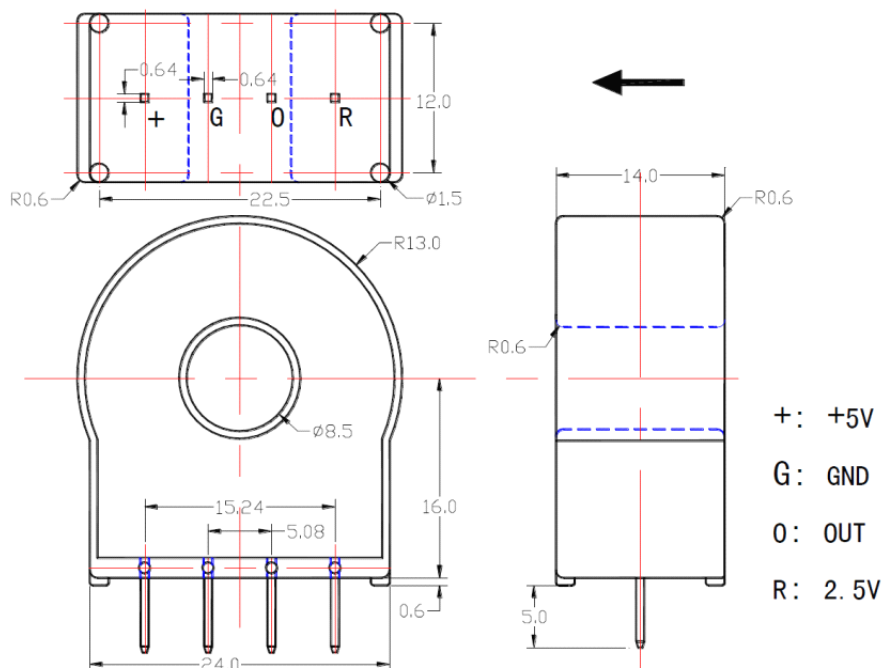
- 不间断电源 UPS

Uninterruptible Power Supplies (UPS)

- 电化学

Electrochemical

结构参数 Mechanical dimension(for reference only)



Remarks:

1. All dimensions are in mm.
2. General tolerance ± 1 mm.

使用说明 Directions for use

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1. 产品箭头的方向为 I_p 方向。

I_s will be in a forward direction when the I_p flows according to the direction of the arrowhead.

2. 初级导体温度不应超过 120°C 。

The primary conductor should be $\leq 120^{\circ}\text{C}$.

3. 母排完全充满初级穿孔时动态表现 (di/dt 和响应时间) 为最佳。

The dynamic performance (di/dt and the response time) is the best when the primary hole is fully filled with the bus bar.

4. 为了达到最佳的磁耦合, 初级线匝应绕在传感器顶部。

The primary turns should be at the top of the sensor for the best magnetic coupling.

5. 当待测电流从传感器穿过, 即可在输出端测得电压大小。(注意: 错误的接线可能导致传感器损坏)。

When the current will be measured goes through a sensor, the voltage will be measured at the output end. (Note: The false wiring may result in the damage of the sensor)

6. 可按用户需求定制不同额定输入电流和输出电压的传感器。

Custom design in the different rated input current and the output voltage are available.

执行标准 Standards

- UL94-V0.
- EN60947-1:2004
- IEC60950-1:2001
- EN50178:1998
- SJ 20790-2000

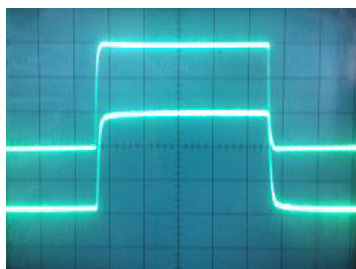
总体参数 General date

| | 数值 Value | 单位Unit |
|------------------------------------|-------------|--------------------|
| 工作温度 (TA) Operating temperature | -40 to +85 | $^{\circ}\text{C}$ |
| 储存温度 (TS) Storage temperature | -40 to +125 | $^{\circ}\text{C}$ |
| 毛重(约) (M) Mass(approx) | 15 | g |

特性图 Characteristics chart

脉冲电流信号响应特性

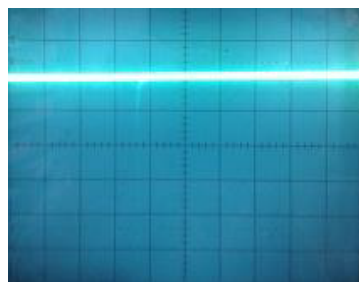
Pulse current signal response characteristic



输入信号
(Input signal)
输出信号
(Output signal)

抗脉冲电压干扰特性

Effects of impulse noise



输出电压
(Output voltage)