

TBC25LAH 多量程闭环型霍尔电流传感器

TBC25LAH Multi-range Closed Loop Mode Hall Effect Current Sensor



TBC25LAH 多量程闭环型电流传感器的初、次级之间是绝缘的，可用于测量直流、交流和脉冲电流。

The TBC25LAH multi-range mode current sensor is a closed loop device based on the principle of the hall effect and null balance method. The output from the current sensor is the balancing current which is a perfect image of the primary current reduced by the number of secondary turns at any time. This current can be expressed as a voltage by passing it through a resistor. It provides accurate electronic measurement of DC, AC or pulsed currents.

电参数 Electrical data (Ta=25°C ±5°C)

参数 Parameter	型号 Type	TBC25LAH	单位 Unit
额定输入电流 (I _{pn}) Rated input (I _{pn})		25	A
测量电流范围 (I _p) Measure range (I _p)		0~±100	A
测量电阻 Measure resister with ±12V		@ I _{PN} (DC) R _{min} =100, R _{max} =420	Ω
		@ I _{PN} (RMS) R _{min} =75, R _{max} =300	Ω
测量电阻 Measure resister with ±15V		@ I _{PN} (DC) R _{min} =120, R _{max} =535	Ω
		@ I _{PN} (RMS) R _{min} =82, R _{max} =385	Ω
匝比 (N _p /N _s) Turns ratio (N _p /N _s)		1-2-3:1000	T
额定输出电流 (I _{sn}) Rated output (I _{sn})	@I _p =±I _{pn}	±25±0.5%FS	mA
电源电压 Supply voltage		±12~±15	V
功耗电流 Power consumption		20+I _p X(N _p /N _s)	mA
失调电流 Offset current	@I _p =0	±0.2	mA
失调电流温漂 Offset current drift	@ -40~+85°C	±0.5	mA
响应时间 Response time	@50A/μs, 10%-90%	<1	μs
线性度 Linearity	@I _p =0-±I _{pn}	≤0.1	%FS
绝缘电压 Galvanic isolation	@ 50, AC, 1min	5.0	KV
di/dt 跟随精度 di/dt accurately followed		>100	A/μs
带宽 Bandwidth	@ -3dB	DC~200	KHz
次级线圈电阻 Secondary coil resister	@ +70°C	35	Ω

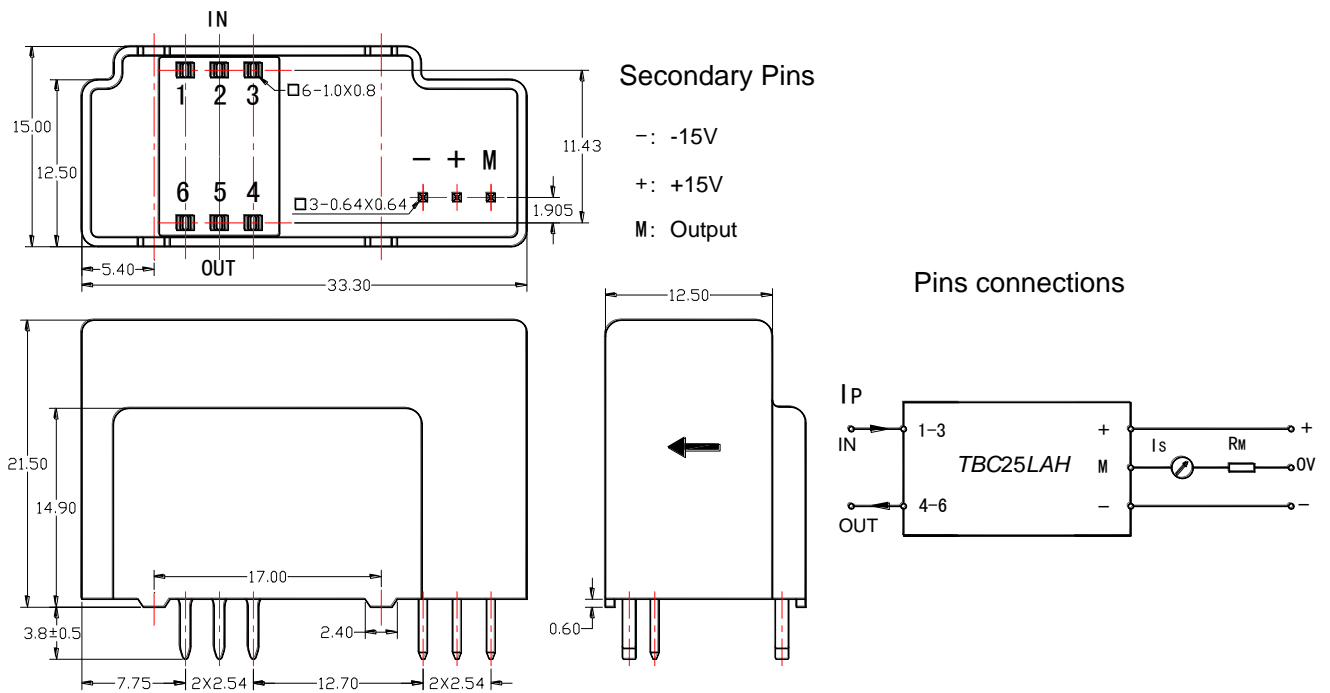
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应用 Applications

- 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
- 交换式电源供应
Switched Mode Power Supplies (SMPS)

结构参数 Mechanical dimension(for reference only)



Remarks:

1. All dimensions are in mm.
2. General tolerance $\pm 1\text{mm}$

接线图 Pin connections

Primary turns	Rated current I_{PN} (A)	Rated output I_S (mA)	Primary resistance [m Ω]	Primary inductance [μH]	Pins connections
1	25	25	0.15	0.01	
2	12	24	0.75	0.05	
3	8	24	1.45	0.14	

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使用说明 Directions for use

1. 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).
2. 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 Test Voltage: 1000V
- EN50178:1998 Test Voltage: 1000V
- SJ 20790-2000

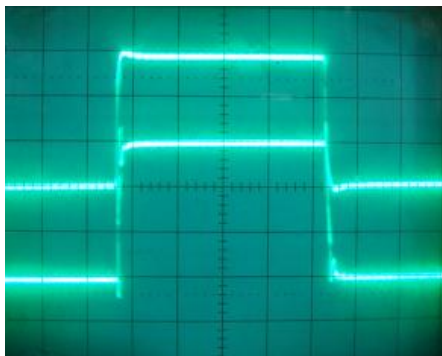
总体参数 General date

	数值 Value	单位 Unit	符号 Symbol
工作温度 Operating temperature	-40 to +85	°C	TA
储存温度 Storage temperature	-40 to +125	°C	TS
毛重(约) Mass (approx)	15	g	M

特性图 Characteristics chart

脉冲电流信号响应特性

Pulse current signal response characteristic

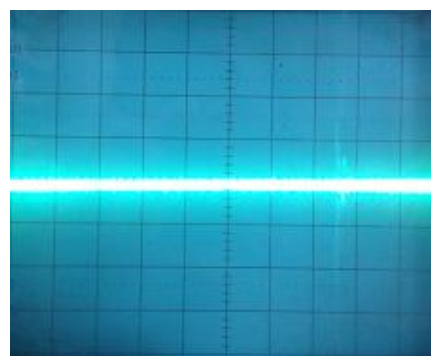


输入信号
(Input signal)

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)