TBC-HXS51 Series Multi-range Closed Loop Mode Hall Effect Current Sensor

TBC-HXS51 series multi-range current sensor is a closed loop device based on the principle of the hall effect, with a galvanic isolation between primary and secondary circuit, it provides accurate electronic measurement of DC, AC or pulsed currents.

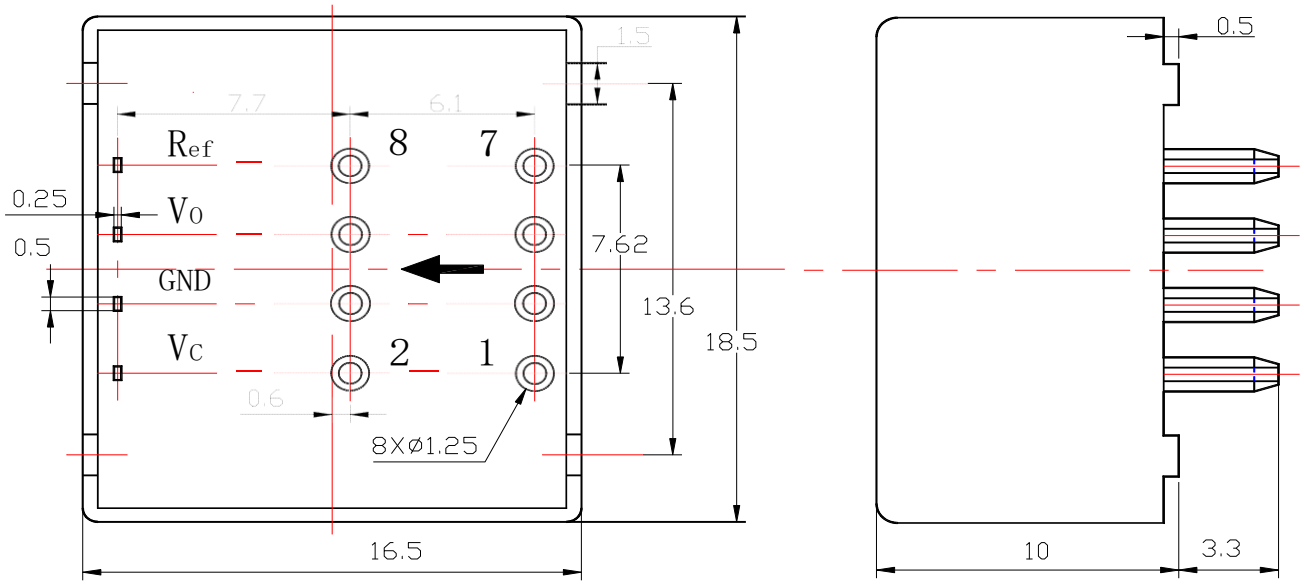
Electrical data (Ta=25℃±5℃)

Parameter \ Type	TBC10HXS51	TBC20HXS51	TBC30HXS51	TBC50HXS51	Unit
Rated input (Ipn)	±10	±20	±30	±50	A
Measuring range (Ip)	±20	±40	±60	±100	A
Secondary Turn's (Ns)	1000	1000	1200	1000	T
Internal measuring resister	25±0.1%	12.5±0.1%	10±0.1%	5±0.1%	Ω
Rated output voltage	1.0±0.5%	1.0±0.5%	1.0±0.5%	1.0±0.5%	V
Supply voltage	+5±5%				V
Power consumption	15+Ip/Ns				mA
Reference voltage	+2.5±0.4%				V
Zero voltage	@ Ip=0	+2.5±0.4%			V
Offset voltage drift	≤±0.1				mV/℃
Output drift	≤±0.1				mV/℃
Linearity	@ Ip=0-±Ipn	≤0.1			%FS
Magnetic offset voltage	@Ip=3XIpn-0	≤±0.25			%Ipn
di/dt accurately followed	> 50				A/μS
Response time	@100A/μS,10%-90%	≤500			nS
Bandwidth	@-3dB	DC-200			KHz
Galvanic isolation	@ 50/60HZ,1min	3.5			KV

Applications

- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical

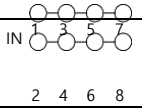
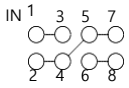
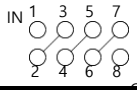
Mechanical dimension (for reference only)



Remarks :

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

Pin connections

Item	Turns	IPN (A) Primary rated current	Vout (V) Rated putout	[mΩ] Primary impedance	[uH] Primary Inductance	Connect point
Single Phase	1	±6.0(±20 , ±30 , ±50)	2.5±2.0±0.5%	0.05	0.025	
	2	±3(±10 , ±15 , ±25)	2.5±2.0±0.5%	0.20	0.1	
	3	±1.5(±5 , ±7.5 , ±12.5)	2.5±2.0±0.5%	1.00	0.4	

Directions for use

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

Standards

UL94-V0.

EN60947-1:2004

IEC60950-1:2001

EN50178:1998

SJ 20790-2000

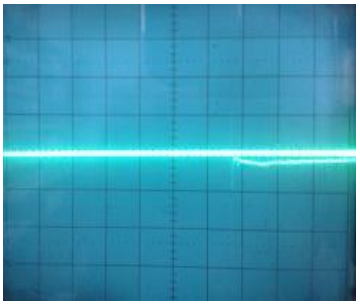
General data

	Value	Unit	Symbol
Operating temperature	40 to +105	ºC	TA
Storage temperature	-40 to +125	ºC	TS
Mass(approx)	7	g	M

Characteristics chart

Pulse current signal response characteristic

Effects of impulse noise



Input current-output voltage characteristic

Primary Current (Ip)--Output