TBC-XN Series High Precision Closed Loop Mode Hall Effect Current Sensor

TBC-XN series high-precision current sensor is a closed loop device based on the measuring principle of the hall effect, with a galvanic isolation between primary and secondary circuit. It has strong anti-jamming ability, and it provides accurate electronic measurement of DC, AC or pulsed currents.

Electrical data ((Ta=25℃±5℃, RL=2KΩ,CL=10000PF)

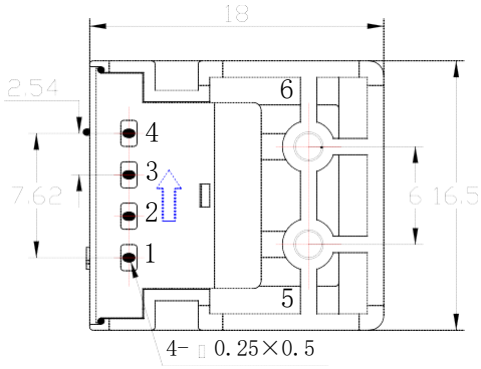
Parameter \ Type	TBC 03XN	TBC 05XN	TBC 10XN	TBC 15XN	TBC 20XN	TBC 25XN	TBC 30XN	TBC 50XN	TBC 60XN	TBC 100XN	Unit
Rated input (Ipn)	±3	±5	±10	±15	±20	±25	±30	±50	±60	±100	A
Measuring range (Ip)	±9	±15	±30	±45	±60	±75	±90	±150	±150	±150	A
Size of input pins	ø 0.8	ø 0.8	ø 1.4	ø 1.4	ø 1.6	ø 1.6	ø 1.6	ø6.38 ×1.2	ø6.38 ×1.2	ø6.38 ×1.2	mm
Turns ratio (Np/Ns)	7 : 2100	7 : 1750	2 : 2000	2 : 2000	1 : 2000	1 : 2500	1 : 2000	1 : 2000	1 : 2000	1 : 2000	T
Inside resistance	200± 0.1%	100± 0.1%	200±0.1	36± 0.1%	200± 0.1%	200± 0.1%	36± 0.1%	20± 0.1%	18± 0.1%	10± 0.1%	Ω
Rated output	@ Ip=±Ipn ±4±0.5%										V
Supply voltage	±15±5%										V
Power consumption	15+IpX(Np/Ns)										mA
Zero voltage	≤±30										mV
Offset drift	≤±0.5										mV/℃
Output drift	≤±0.5										mV/℃
Linearity	@ Ip=0-±Ipn ≤0.1										%FS
Response time	@ Ip=Ipn, 50 A/μS ,10%-90% < 1.0										μS
Band - wi dth	@-3dB DC-200										KHz
Galvanic isolation	@ 50Hz,AC,1min 3.0										KV

Applications

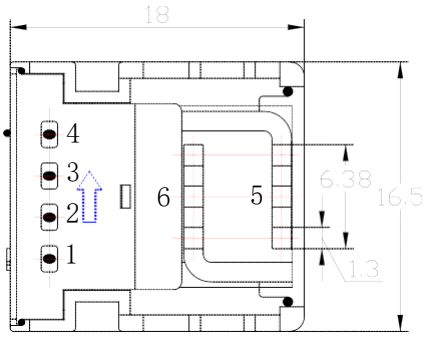
* Switched Mode Power Supplies (SMPS)
* AC variable speed drives
* Uninterruptible Power Supplies (UPS)
* Electrical appliances
* Battery supplied applications
* DC motor drives

Mechanical dimension (for reference only)

TBC 03-30 XN



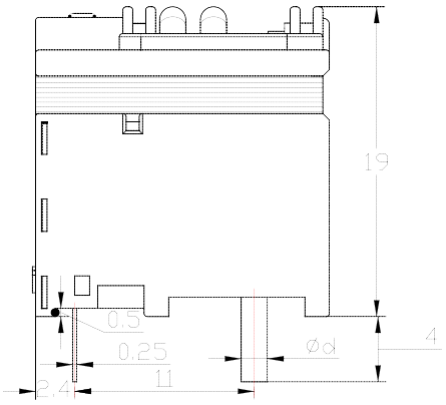
TBC 50-100 XN

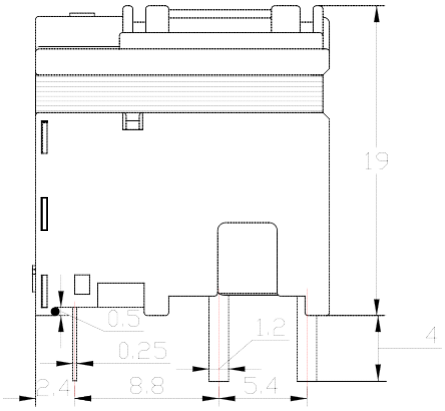


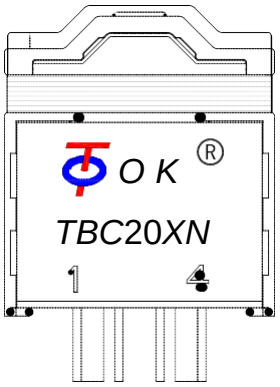
Terminal Pin

Identification 1 ..... -15V
2 ..... 0V
3 ..... +15V
4 ..... Output
5 ..... +IN
6 ..... -IN

	∅d
3A / 5A	∅ 0.8mm
10A / 15A	∅ 1.4mm
20A / 25A / 30A	∅ 1.6mm
50A / 60A / 100A	□ 6.38×1.2







Remarks :

1. All dimensions are in mm.
2. Secondary pin size and tolerance: width:0.5±0.1mm;thickness:0.25±0.05mm
3. General tolerance ±1mm

Directions for use

1 When the current will be measured goes through the primary pin of 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 are available.

Standards

UL94-V0.

EN60947-1:2004

IEC60950-1:2001

EN50178:1998

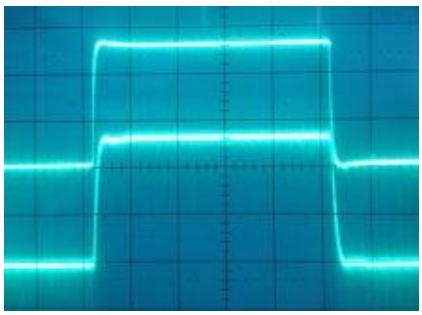
SJ 20790-2000

General data

	Value	Unit	Symbol
Operating temperature	-40 to +85	ºC	TA
Storage temperature	-40 to +125	ºC	TS
Mass(approx)	12	g	M

Characteristics chart

Pulse current signal response characteristic



(Input signal)

(Output signal)

Effects of impulse noise

(Output voltage)

Input current-Output Voltage characteristic