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

TBC-LTHA Series 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, 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, it uses for precision measurement of DC, AC and pulse current.

Electrical data (Ta=25℃±5℃)

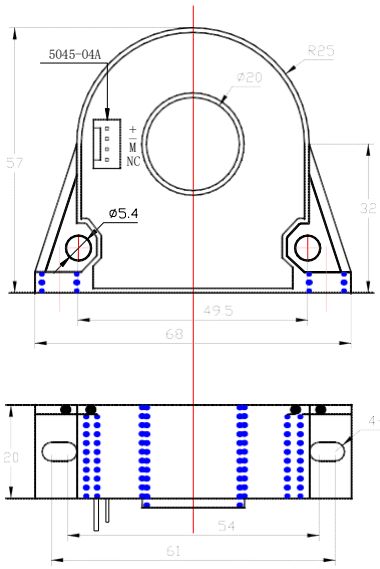
Parameter \ Type	TBC100LTHA1 TBC100LTHA2	TBC200LTHA1 TBC200LTHA2	TBC300LTHA1K2 TBC300LTHA2K2	TBC300LTHA1K3 TBC300LTHA2K3	Unit
Rated input (Ipn)	±100	±200	±300	±300	A
Measure range(Ip)	±300 (±18V , 75Ω)	±600 (±18V , 20Ω)	±750 (±18V , 10Ω)	±900 (±18V , 3Ω)	A
Turns ratio (Np/Ns)	1:2000	1:2000	1:2000	1:3000	T
Measure resister with ±12V	@100Amax 190(max)	@200Amax 68(max)	@300Amax 39(max)	@300Amax 56(max)	Ω
	@200Amax 80(max)	@500Amax 7.5(max)	@500Amax 12(max)	@600Amax 2.0(max)	Ω
Measure resister with ±15V	@100Amax 250(max)	@200Amax 100(max)	@300Amax 62(max)	@300Amax 91(max)	Ω
	@200Amax 110(max)	@500Amax 20(max)	@700Amax 10(max)	@750Amax 2.0(max)	Ω
Secondary resister	25	30	30	52	Ω
Rated output (Isn)	±50±0.2%	±100±0.2%	±150±0.2%	±100±0.2%	mA
Supply voltage	±12 ~ ±18				V
Power consumption	≤20+IpX (Np/Ns)				mA
Zero offset current	@Ip=0	≤±0.2			mA
Offset current drift	≤±0.5 (Typ) , ≤±0.75 (Max)				mA
Response time	@100A/μS, 10%-90%	< 1.0			μs
Linearity	@Ip=0-±Ipn	≤0.1			%FS
Galvanic isolation	@ 50Hz, AC,1min	6			KV
di/dt accurately followed	> 100				A/μs
Bandwidth	@-3dB	DC-200			KHz

Applications

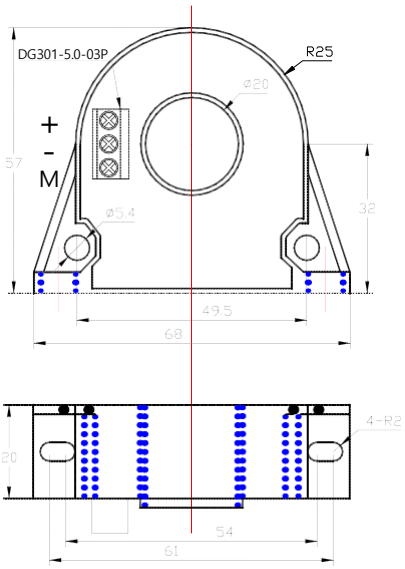
- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical

Mechanical dimension (for reference only)

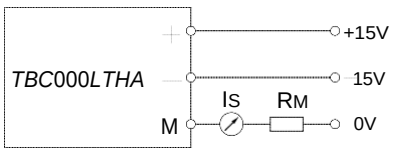
TBC-LTHA1



TBC-LTHA2



Secondary terminals



Remarks :

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

Directions for use

1. Is will be in a forward direction when the Ip flows according to the direction of the arrowhead.
2. The primary conductor should be≤100℃.
3. The dynamic performance (di/dt and the response time) is the best when the primary hole is fully filled with

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

Standards

UL94-V0

EN60947-1:2004

IEC60950-1:2001

EN50178:1998

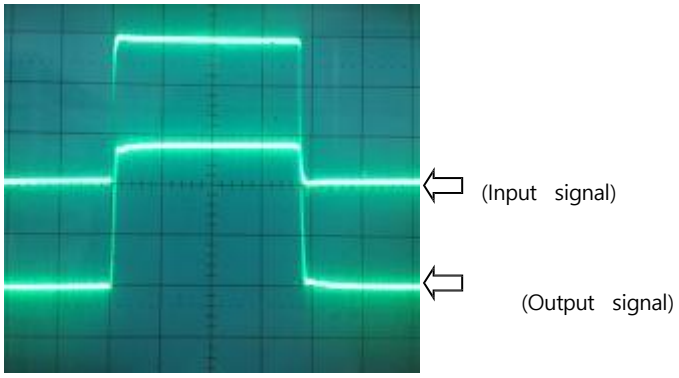
SJ 20790-2000

General data

	Value	Unit	Symbol
Operating temperature	-40 to +85	ºC	TA
Storage temperature	-40 to +125	ºC	TS
Mass(approx)	79	g	M

Characteristics chart

Pulse current signal response characteristic



Effects of impulse noise