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

TBC-LTHC 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 not affect test precision, no matter the location of primary in the hole of current sensor, It can really measure resolution 1000:1 and it uses for precision measurement of DC, AC and pulse current.

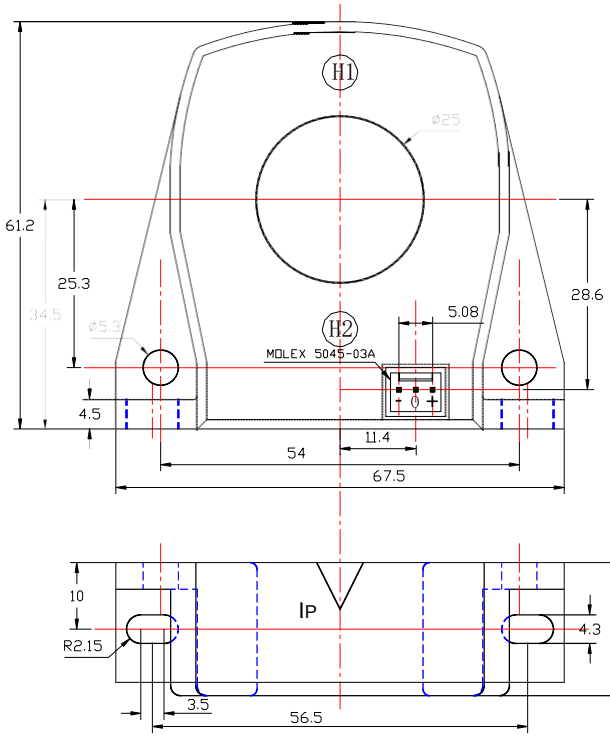
Electrical data (Ta=25℃±5℃)

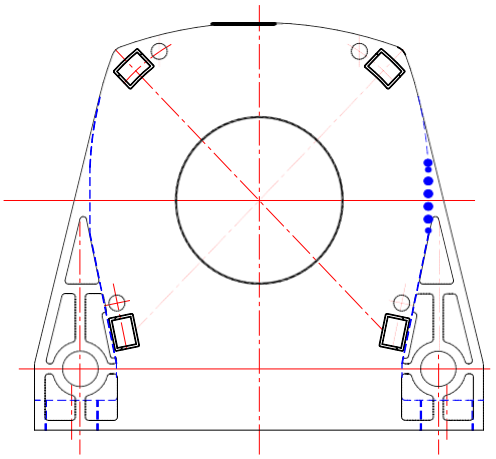
Parameter \ Type	TBC100LTHC	TBC200LTHC	TBC300LTHC	Unit
Rated input (Ipn)	±100	±200	±300	A
Measure range(Ip)	±300（±18V，60.0Ω）	±600（±18V，15.0Ω）	±900（±18V，3.0Ω）	A
Turns ratio (Np/Ns)	1:2000	1:2000	1:2000	T
Measure resister with ±15V	@±100Amax	@±200Amax	@±300Amax 62(max)	Ω
	@±300Amax 40 (max)	@±600Amax 10(max)	@±750Amax 3.0(max)	Ω
Measure resister with ±18V	@±100Amax	@±200Amax	@±300Amax 75(max)	Ω
	@±300Amax 60(max)	@±600Amax 15(max)	@±900Amax 3.0(max)	Ω
Rated output (Isn)	±50±0.1%	±100±0.1%	±150±0.1%	mA
Supply voltage	±12～±18			V
Power consumption	≤24+IpX (Np/Ns)			mA
Offset current	@Ip=0 ≤±0.2			mA
Offset drift	≤±0.5（Typ），≤±0.75（Max）			mA
Response time	@100A/μS,10%-90% < 1			μs
Linearity	@Ip=0-±Ipn ≤0.1			%FS
Galvanic isolation	@ 50Hz, AC,1min 6			KV
di/dt accurately followed	> 100			A/μs
Band-width	@-3dB DC-200			KHz
Coil resister (@ 85℃)	35	30	25	Ω

Applications

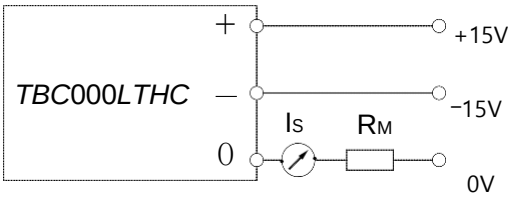
- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical

Mechanical dimension (for reference only)





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≤120℃.
3. The dynamic performance (di/dt and the response time) is the best when the primary hole is fully filled with the bus bar.
4. 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

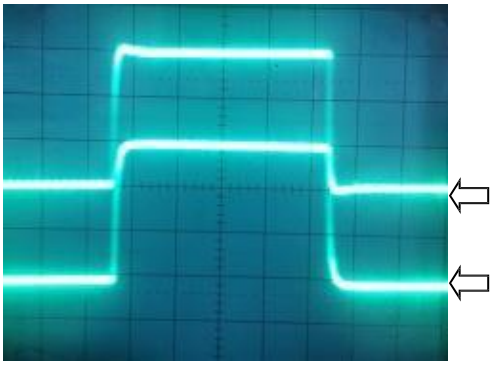
SJ 20790-2000

General data

	Value	Unit	Symbol
Operating temperature	-40 to +85	ºC	TA
Storage temperature	-40 to +125	ºC	TS
Mass(approx)	100	g	M

Characteristics chart

Pulse current signal response characteristic



Effects of impulse noise