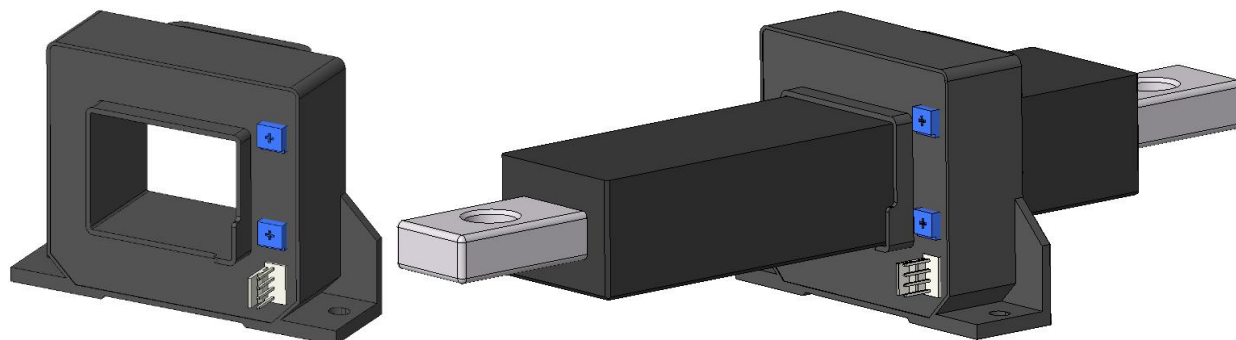


Current Sensor

Product Series: STK-BS/T

Part number: STK-xxxBS/T & STK-xxxBS/T5^[1]

VERSION: Ver V1.3 (宽温版)



Sinomags Technology Co., Ltd

Web site: www.sinomags.com

CONTENT

1.	Introduction	2
2.	Electrical Data	3
3.	Dimension & Pin Definitions	6

1. Introduction

STK-BS/T series current sensor is based on Hall, and it has an open-loop design. It is suitable for DC, AC pulsed and any kind of irregular current measurement under the isolated conditions.

Typical applications

- Battery supplied applications
- Electric welder power supply
- Motor driver
- UPS

General parameter

Parameter	Symbol	Unit	Value	Comment
Working temperature	T _A	℃	-40 ~ 105	ALL
Storage temperature	T _{stg}	℃	-40 ~ 105	ALL
Mass	m	g	300	STK-BS/T
			1140	STK-BS/T5

Absolute maximum rating

Parameter	Symbol	Unit	Value	Comment
Supply voltage (not-destructive)	V _{CC}	V	± 18	ALL
ESD rating (HBM)	U _{ESD}	kV	4	ALL

Remark: the unrecoverable damage may occur when the product works on the conditions over the absolute maximum ratings. Long-time working on the absolute maximum ratings may cause the degradation on performance and reliability.

Isolation parameter

Parameter	Symbol	Unit	Value	Comment
RMS voltage for AC test 50Hz/1 min	U _d	kV	4.9	
Clearance distance (pri. -sec)	d _{CI}	mm	7.9	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	16	Shortest path along device body
Case material			V0 according to UL 94	
Comparative Tracking Index	CTI	V	600	
Insulation resistance	R _{is}	MΩ	≥ 1000	at DC 500V

2. Electrical Data

 Condition: $T_A = 25^{\circ}\text{C}$, $V_{CC} = \pm 12 \sim \pm 15\text{V}^{[2]}$

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_{PN}	A		163		STK-163BS/T STK-163BS/T5
				200		STK-200BS/T
				233		STK-233BS/T STK-233BS/T5
				300		STK-300BS/T
				320		STK-320BS/T STK-320BS/T5
				400		STK-400BS/T
				481		STK-481BS/T STK-481BS/T5
				500		STK-500BS/T
				600		STK-600BS/T
				728		STK-728BS/T STK-728BS/T5
				750		STK-750BS/T
				800		STK-800BS/T
				1000		STK-1000BS/T
				1092		STK-1092BS/T STK-1092BS/T5
				1200		STK-1200BS/T
				1456		STK-1456BS/T STK-1456BS/T5
				1500		STK-1500BS/T
				2097		STK-2097BS/T STK-2097BS/T5
				2184		STK-2184BS/T STK-2184BS/T5
Current range (refer remark)	I_{PM}	A	-489		489	STK-163BS/T STK-163BS/T5
			-600		600	STK-200BS/T
			-699		699	STK-233BS/T STK-233BS/T5
			-900		900	STK-300BS/T
			-960		960	STK-320BS/T STK-320BS/T5
			-1200		1200	STK-400BS/T

			-1443		1443	STK-481BS/T STK-481BS/T5
			-1500		1500	STK-500BS/T
			-1800		1800	STK-600BS/T
			-2184		2184	STK-728BS/T STK-728BS/T5
			-2250		2250	STK-750BS/T
			-2400		2400	STK-800BS/T
			-2500		2500	STK-1000BS/T
			-2500		2500	STK-1092BS/T STK-1092BS/T5
			-2500		2500	STK-1200BS/T
			-2500		2500	STK-1500BS/T
			-2500		2500	STK-2097BS/T STK-2097BS/T5
			-2500		2500	STK-2184BS/T STK-2184BS/T5
Supply voltage	V _{cc}	V		± 12~ ± 15		All
Current consumption	I _{cc}	mA		± 20		All
Quiescent voltage V _{out} @ 0 A	V _{off}	V	-0.04	0	0.04	All
Peak output voltage (V _{out} @ ±I _{PN}) – V _{off} R _L =10kΩ	V _{FS}	V		± 4		All
Internal output resistance	R _{out}	Ω		100		V _{out}
Theoretical gain (Typ)	G _{th}	mV/A		24.54		STK-163BS/T STK-163BS/T5
				20		STK-200BS/T
				17.17		STK-233BS/T STK-233BS/T5
				13.33		STK-300BS/T
				12.5		STK-320BS/T STK-320BS/T5
				10		STK-400BS/T
				8.32		STK-481BS/T STK-481BS/T5
				8		STK-500BS/T
				6.66		STK-600BS/T
				5.49		STK-728BS/T STK-728BS/T5

				5.33		STK-750BS/T
				5		STK-800BS/T
				4		STK-1000BS/T
				3.66		STK-1092BS/T STK-1092BS/T5
				3.33		STK-1200BS/T
				2.75		STK-1456BS/T STK-1456BS/T5
				2.66		STK-1500BS/T
				1.91		STK-2097BS/T STK-2097BS/T5
				1.83		STK-2184BS/T STK-2184BS/T5
Rated linearity error	Non-L	% I _{PN}	-1		1	±I _{PN}
Step response time	t _{res}	μs			5	@90% of I _{PN}
Frequency bandwidth (-3dB)	BW	kHz		25		No RC circuit
Output voltage noise DC ~ 10 kHz DC ~ 100 kHz	Vnoise	mVpp		20 30		All
Accuracy @ 25°C	X	% of I _{PN}	-1		1	All
Temperature coefficient of V _{OE}	TCV _{OE}	mV/K	-1		1	@Working temperature
Temperature coefficient of V _{OUT}	TCV _{OUT}	%/K	-0.1		0.1	@Working temperature

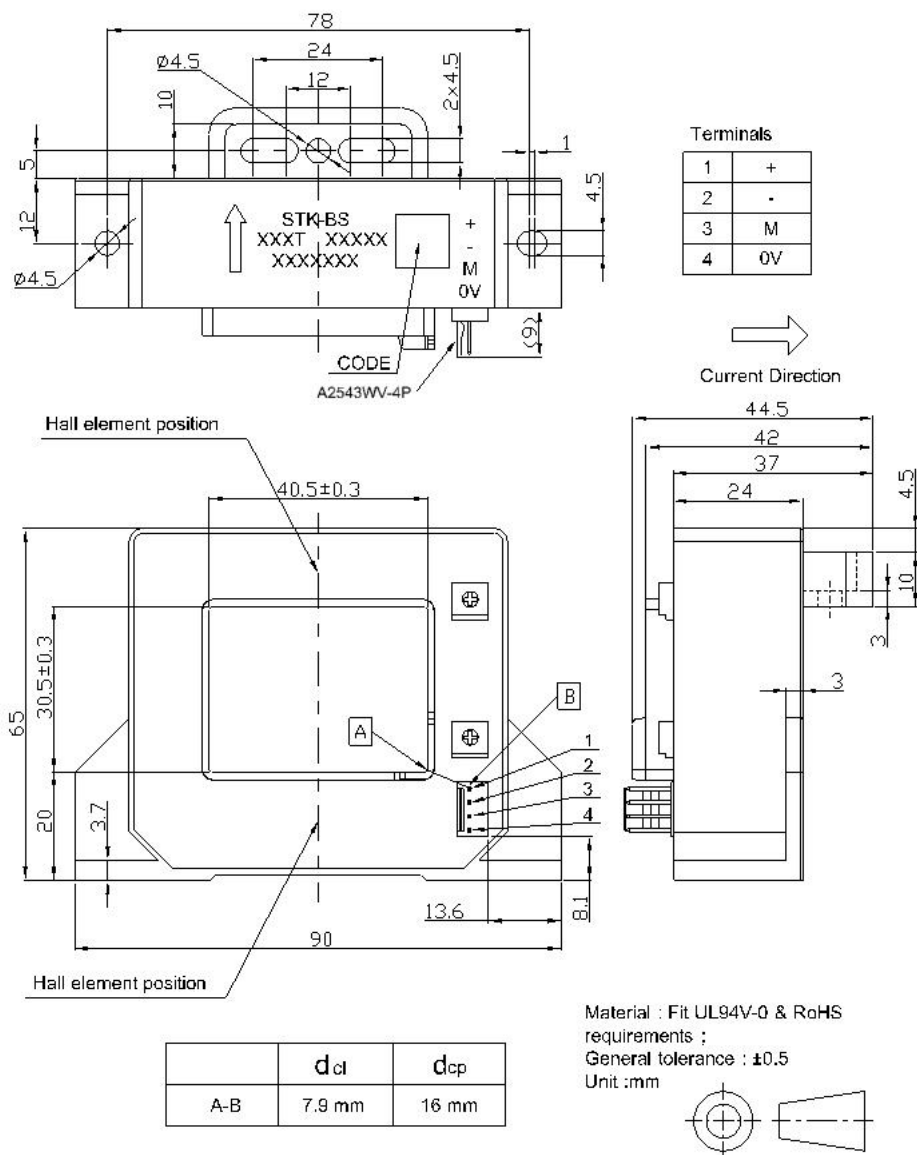
Notes ^[1] :STK-xxxBS/T and STK-xxxBS/T5 are the same product. The only difference is that STK-xxxBS/T5 is equipped with primary current line. Among them, STK-xxxBS/T series is the normal delivery version of our company, and we recommend using the product of STK-xxxBS/T version. If you need the current line version, please contact the market to apply for STK-xxxBS/T5 model.

Notes: ^[2] Operating at $\pm 12\text{ V} \leq V_{cc} < \pm 15(\pm 5\%) \text{ V}$ will reduce the measuring range. If the power supply voltage of the user side is $\pm 12\text{ V}$.

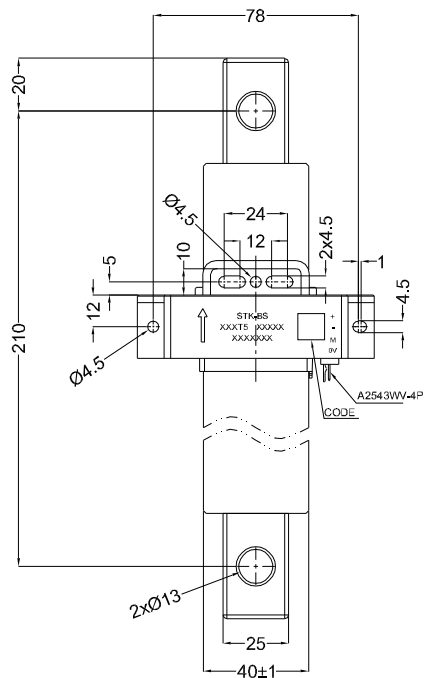
3. Dimension & Pin Definitions

Standard version:

Type of mark is STK-BS/T

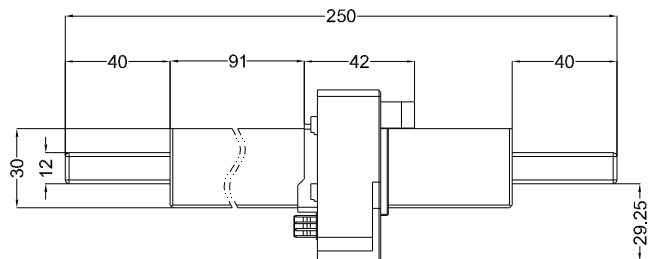


**Sensor Primary current hollowing hole have conductor version:
Type of mark is STK-BS/T5**

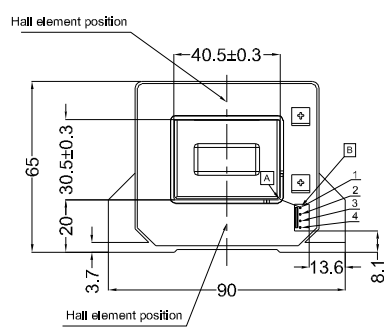
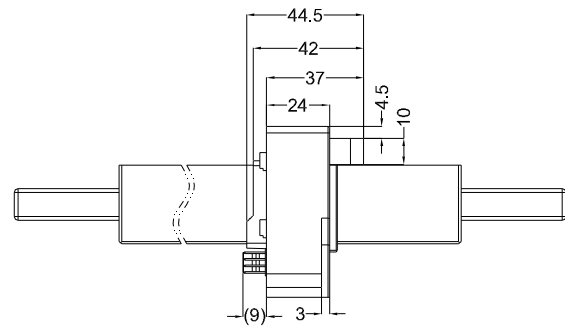


Terminals

1	+
2	-
3	M
4	0V



Current Direction



	dcl	dcp
A-B	7.9mm	16mm

Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ±0.5
Unit :mm

