

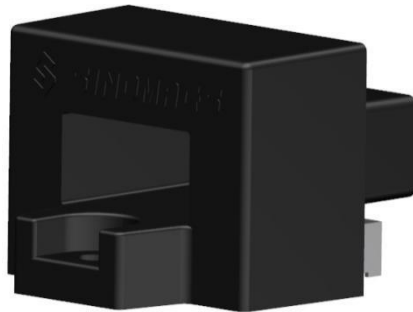
## Current Sensor

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Product Series: STK-BS2

Part number: STK-500BS2

Version: Ver 1.1



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## 1. Summary

STK-BS2 series current sensor is based on Hall and open-loop-design. It is suitable for DC, AC pulsed and any kind of irregular current measurement under the isolated conditions.

### Typical applications

- AC Variable speed drives
- Inverter
- Electric welder power supply
- Switched model power supplies (SMPS)

### General parameter

Parameter	Symbol	Unit	Value
Working temperature	T <sub>A</sub>	°C	-40 ~ 85
Storage temperature	T <sub>stg</sub>	°C	-40 ~ 85
Mass	m	g	40

### ABSolute maximum rating

Parameter	Symbol	Unit	Value
Supply voltage (not-destructive)	V <sub>C</sub>	V	±18
ESD rating (HBM)	U <sub>ESD</sub>	kV	4

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 <sub>d</sub>	kV	4	
Clearance distance (pri. -sec)	d <sub>Cl</sub>	mm	3.7	Shortest distance through air
Creepage distance (pri. -sec)	d <sub>Cp</sub>	mm	20.8	Shortest path along device body
Case material			V0 according to UL 94	

### Selection Guide

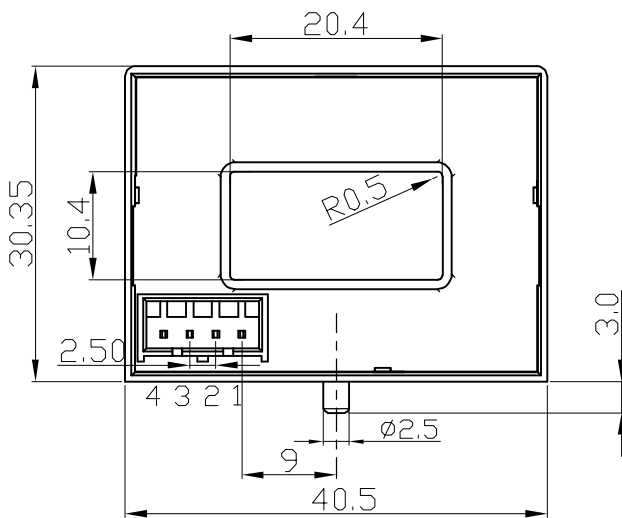
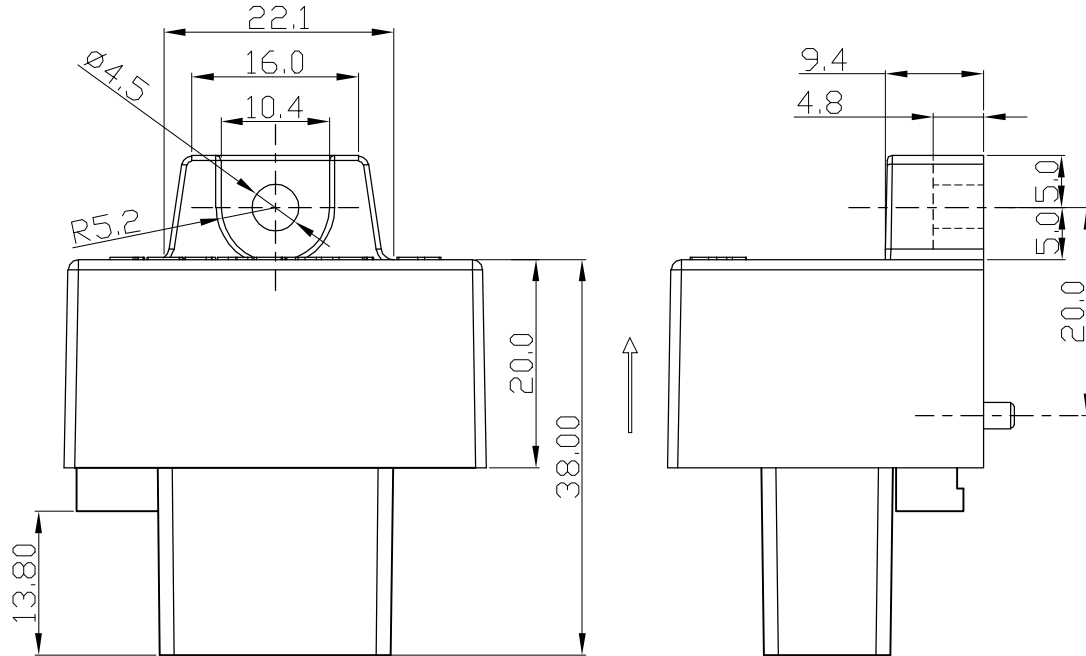
Product	Primary nominal current	Current range
STK-500BS2	500 A	900 A

## 2. Electrical data of STK-BS2

 Condition:  $T_A = 25^\circ\text{C}$   $V_{CC} = \pm 15\text{V}$ 

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	$I_{PN}$	A		500		STK-500BS2
Current range	$I_{PM}$	A	-900		900	STK-500BS2
Supply voltage	$V_{CC}$	V		$\pm 15 \pm 5\%$		
Current consumption	$I_{CC}$	mA		$\pm 15$		
Rated output voltage	$V_{FS}$	V		$\pm 4$		$(V_{out} @ \pm I_{PN}) - V_{off}$
Internal output resistance	$R_{out}$	$\Omega$		100		$V_{out}$
Quiescent voltage	$V_{off}$	V	-0.04	0	0.04	$V_{out} @ 0\text{A}$
Theoretical gain	$G_{th}$	mV/A		8		STK-500BS2
Rated linearity error	Non-L	% $I_{PN}$		$\pm 1$		$\pm I_{PN}$
Step response time	$t_{res}$	$\mu\text{s}$		5		@90% of $I_{PN}$
Frequency bandwidth (-3dB)	BW	kHz		50		No RC circuit
Output voltage noise DC ~ 10 kHz	$V_{noise}$	mVpp		50		STK-500BS2
				20		Others
Accuracy @ $T_A = 25^\circ\text{C}$	X	% of $I_{PN}$		$\pm 1$		@ $25^\circ\text{C}$
Temperature coefficient of $V_{OE}$	$TCV_{OE}$	mV/K		$\pm 2$		STK-500BS2
				$\pm 1$		Others
Temperature coefficient of $V_{OUT}$	$TCV_{OUT}$	%/K		$\pm 0.1$		All

### 3. Dimension & Pin definitions



#### Terminals

1	+(+U )
2	-(-U )
3	M(Output)
4	0(0V)

Material : Fit UL94V-0 & RoHS requirements ;

General tolerance :  $\pm 0.5$

Unit :mm

