

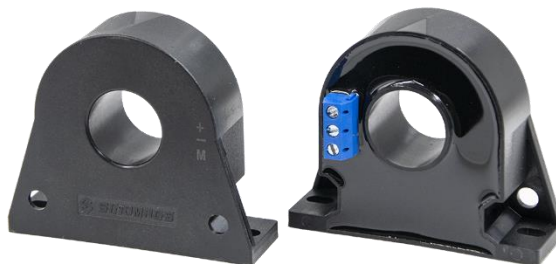
# CURRENT SENSOR

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PRODUCT SERIES: STB-LF9

PRODUCT PART NUMBER: STB-300LF9-A  
STB-300LF9-B

VERSION: Ver 1.0



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## 1. Description

STB-LF9 series current sensors are based on close loop principle. The sensor can detect the current with DC, AC, pulse and irregular wave shape with current output.

### Typical application

- Windmill inverters
- Test and measurement
- UPS
- AC variable speed and servo motor drives
- Switched model power supplies (SMPS)

### General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	$T_A$	°C	-40 ~ 90
Storage temperature	$T_S$	°C	-40 ~ 105
Mass	m	g	91g
Supply voltage (-40°C...105°C)	$V_{CC}$	V	±15

### Absolute parameters

Parameters	Symbol	Unit	Value
Maximum supply voltage (-40°C...105°C)	$V_{CC_{max}}$	V	±20
Maximum primary conductor temperature	$T_{B_{max}}$	°C	100

### Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1000
Maximum surrounding air temperature	°C	70
Primary current	A	0...1000

### Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	$U_d$	kV	3	
Impulse withstand voltage 1.2/50μs	$U_w$	kV	3	
Case material	-	-	V0	According to UL 94

## 2. STB-300LF9-A Electrical parameters

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

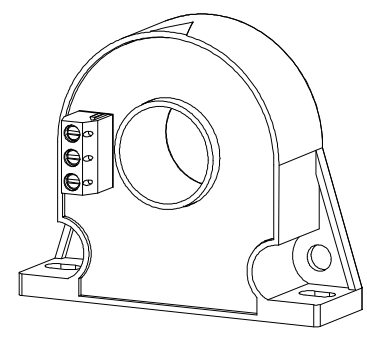
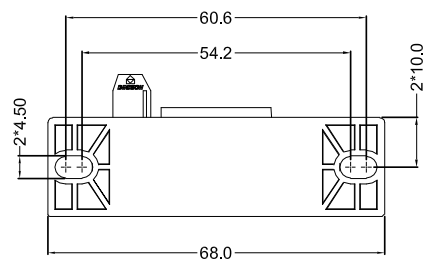
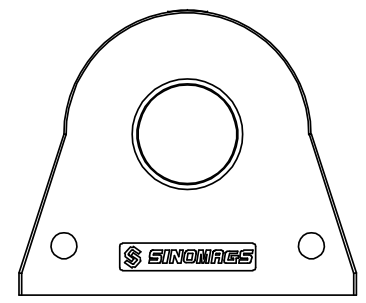
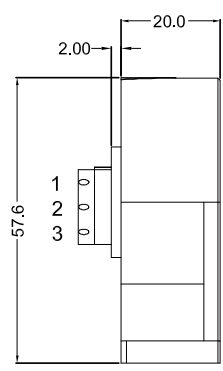
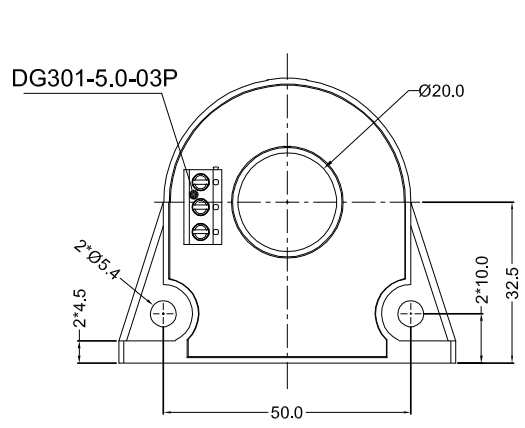
Parameters	Symbol	Unit	Min	Typ	Max	Remark
RMS Primary nominal current	$I_{PN}$	A		300		
Primary current measuring range	$I_{PM}$	A	-500		500	$V_{CC} = \pm 15V$
Measuring resistance	$R_S$	$\Omega$	0		26.67	$I_{PN} V_{CC} = \pm 15V$
					10	$I_{PM} V_{CC} = \pm 15V$
Secondary nominal current	$I_{SN}$	A	-0.15		0.15	$I_{PN}$
Secondary current measuring range	$I_S$	A	-0.25		0.25	$I_{PM}$
Supply voltage	$V_{CC}$	V	$\pm 14.25$	$\pm 15$	$\pm 15.75$	
Current consumption	$I_{CC}$	mA		$18 + I_S$		$V_{CC} = \pm 15V$ $I_S = I_P / N_S$
Turns ratio	$N_S$	NT		2000		
Nominal sensitivity	$S_N$	mA/A		0.5		
Offset current	$I_{OE}$	mA	-0.2		0.2	
Offset current temperature drift	$I_{OT}$	mA	-0.4		0.4	$-40^\circ C \sim 90^\circ C$
Linearity error	$\varepsilon_L$	% of $I_{PN}$	-0.1		0.1	
Delay time @ 10 % of $I_{PN}$	$t_{d10}$	$\mu s$			1	10% of $I_{PN}$
Delay time @ 90 % of $I_{PN}$	$t_{d90}$	$\mu s$			1	90% of $I_{PN}$
-3 dB band width	BW	kHz			100	
Accuracy@ $I_{PN}$	X	%	-0.3		0.3	$T_A = 25^\circ C$
Total error at $I_{PN}$	$\varepsilon_{tot}$	% of $I_{PN}$	-0.3		0.3	$-40^\circ C \dots 90^\circ C$

### 3. STB-300LF9-B Electrical parameters

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

Parameters	Symbol	Unit	Min	Typ	Max	Remark
RMS Primary nominal current	$I_{PN}$	A		300		
Primary current measuring range	$I_{PM}$	A	-700		700	
Measuring resistance	$R_S$	$\Omega$	0		26.67	$I_{PN} V_{CC} = \pm 15V$
					10	$I_{PM} V_{CC} = \pm 20V$
Secondary nominal current	$I_{SN}$	A	-0.15		0.15	$I_{PN}$
Secondary current measuring range	$I_S$	A	-0.35		0.35	$I_{PM}$
Supply voltage	$V_{CC}$	V	$\pm 15$		$\pm 20$	5% error
Current consumption	$I_{CC}$	mA		$21 + I_S$		$V_{CC} = \pm 15V$ $I_S = I_P / N_S$
Turns ratio	$N_S$	NT		2000		
Nominal sensitivity	$S_N$	mA/A		0.5		
Offset current	$I_{OE}$	mA	-0.2		0.2	
Offset current temperature drift	$I_{OT}$	mA	-0.4		0.4	$-40^\circ C \sim 90^\circ C$
Linearity error	$\varepsilon_L$	% of $I_{PN}$	-0.1		0.1	
Delay time @ 10 % of $I_{PN}$	$t_{d10}$	$\mu s$			1	10% of $I_{PN}$
Delay time @ 90 % of $I_{PN}$	$t_{d90}$	$\mu s$			1	90% of $I_{PN}$
-3 dB band width	BW	kHz			100	
Accuracy@ $I_{PN}$	X	%	-0.3		0.3	$T_A = 25^\circ C$
Total error at $I_{PN}$	$\varepsilon_{tot}$	% of $I_{PN}$	-0.3		0.3	$-40^\circ C \dots 90^\circ C$

**4. STB-300LF9-A& STB-300LF9-B Dimensions:**



Terminal pin	Function
1	+15V
2	-15V
3	M

