

# CURRENT SENSOR

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PRODUCT SERIES: STB-LF/3

PRODUCT PART NUMBER: STB-366LF/3

VERSION: Ver 1.3



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Web site: [www.sinomags.com](http://www.sinomags.com)

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## 1. Description

STB-LF/3 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

- Static converters for DC motor drives
- AC variable speed and servo motor drives
- Power supplies for welding applications
- Switched model power supplies (SMPS)
- UPS
- Battery supplied applications

### General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	$T_A$	°C	-10 ~ 70
Storage temperature	$T_S$	°C	-40 ~ 85
Mass	m	g	95

### Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1500
Maximum surrounding air temperature	°C	70

### Isolation parameters

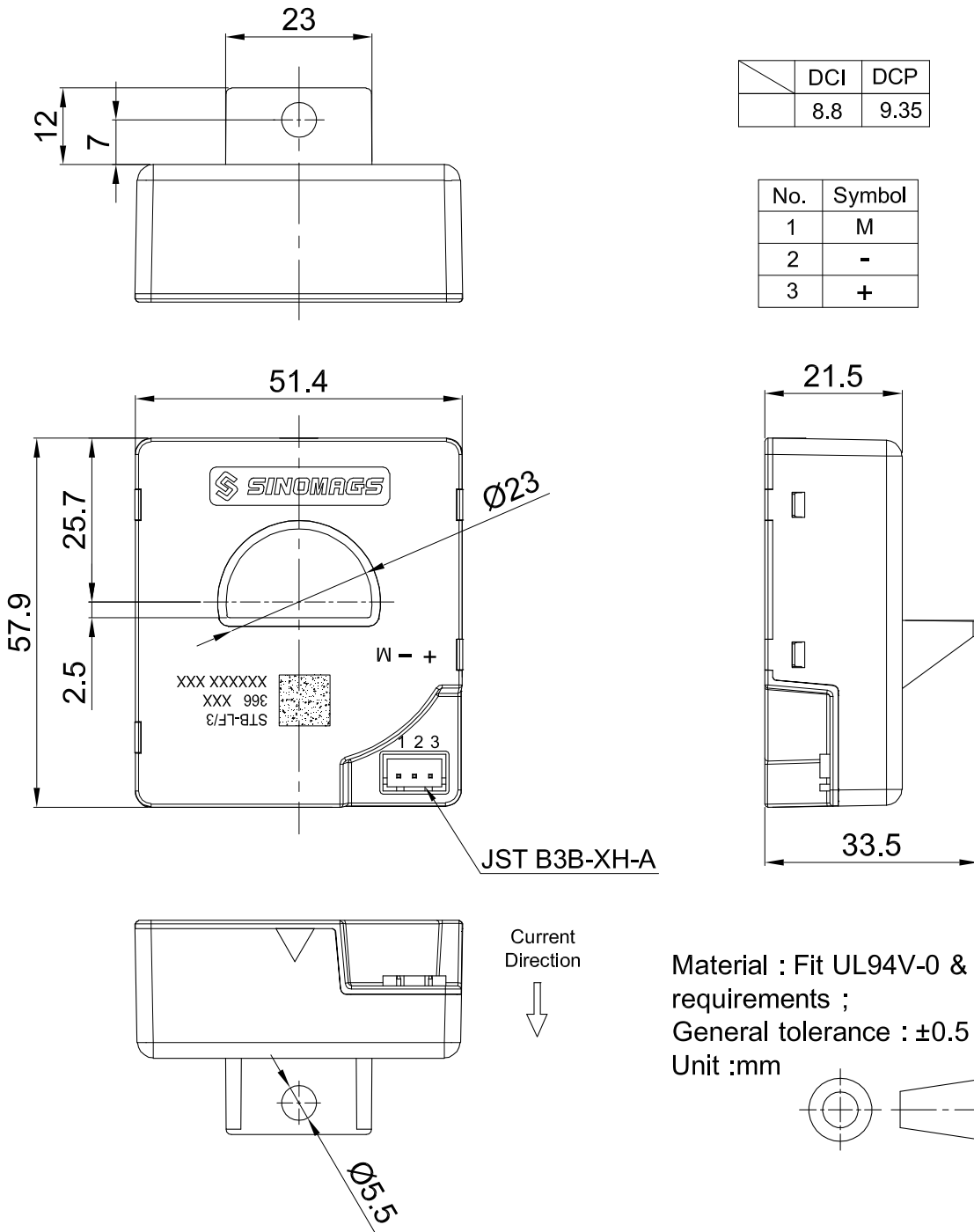
Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	$U_d$	kV	5	
Impulse withstand voltage 1.2/50μs	$U_w$	kV	>8	
RMS Voltage for partial discharge extinction @ 10pC	$U_e$	kV	>2	
Clearance distance (pri. -sec)	dCl	mm	8.8	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	9.35	Shortest path along device body
Case material	-	-	V0	According to UL 94 Shell material: PA66 Adhesive material: Polyurethane
Comparative tracking index	CTI		>600	
Insulation resistance	S	MΩ	>2000	

## 2. Electrical parameters

Condition:  $V_{CC} = \pm 15V$ ,  $T_A = 25^\circ C$ ,  $R_M = 3\Omega$  unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal r.m.s current	$I_{PN}$	A		366		
Primary current measuring range	$I_{PM}$	A	-950		950	$V_{CC} = \pm 15V$
Measuring resistance @ $\pm 15V$	$R_M$	$\Omega$	3		49	@ $\pm 366 A_{max}$
					3	@ $\pm 950 A_{max}$
Secondary nominal r.m.s current	$I_{SN}$	mA		183		
Resistance of secondary winding	$R_S$	$\Omega$		23		@ $T_A = 70^\circ C$
Supply voltage	$V_{CC}$	V	$\pm 14.1$	15	$\pm 15.9$	
Current consumption	$I_{CC}$	mA		$26 + I_S$		
Conversion ratio	$N_S$			1 : 2000		
Offset current @ $I_p = 0$	$I_{OE}$	mA			$\pm 0.20$	@ $T_A = 25^\circ C$
Residual current after $3 \times I_{PN}$	$I_{OM}$	mA			$\pm 0.20$	@ $I_p = 0$
Thermal drift of $I_O$	$I_{OT}$	mA		$\pm 0.1$	$\pm 0.30$	- $10^\circ C$ ...+ $70^\circ C$
Residual output Temp. Coef.	$I_{ORT}$	$mA/^\circ C$	-0.01		0.01	- $10^\circ C$ ...+ $70^\circ C$
Linearity error	$\varepsilon_L$	% of $I_{PN}$			0.1	
Output Temp. Coef.	$\varepsilon_{LT}$	$\%/^\circ C$	-0.02		0.02	- $10^\circ C$ ...+ $70^\circ C$
Reaction time @ 10 % of $I_{PN}$	$t_{d10}$	$\mu s$			0.5	
Reaction time @ 90 % of $I_{PN}$	$t_{d90}$	$\mu s$			1	
di/dt accurately followed	di/dt	A/ $\mu s$	100			
Frequency bandwidth	BW	kHz	DC		100	-1 dB bandwidth
Overall accuracy @ $I_{PN}$	$\varepsilon_{tot}$	%	-0.42		0.42	$T_A = 25^\circ C$

### 3. Dimensions:



	DCI	DCP
	8.8	9.35

No.	Symbol
1	M
2	-
3	+

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**Mechanical characteristics**

- General tolerance  $\pm 0.5$  mm
- Transducer fastening hole  $\varnothing 5.5$  mm  
steel screw M5  
Recommended fastening torque 3.4 Nm 2.5 Lb.-Ft.
- Primary through-hole  $\varnothing 23$  mm
- Connection of secondary JST B3B-XH-A