

# CURRENT SENSOR

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PRODUCT SERIES: STB-LF2

PRODUCT PART NUMBER: STB-200LF2-D  
STB-300LF2

VERSION: Ver 1.8



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## 1. Description

STB-LF2 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	$T_A$	$^{\circ}\text{C}$	STB-200LF2-D :-40 ~ 85 STB-300LF2 :-40 ~ 70
Storage temperature	$T_S$	$^{\circ}\text{C}$	STB-200LF2-D :-40 ~ 90 STB-300LF2 :-40 ~ 85
Mass	m	g	130
Supply voltage (-40 $^{\circ}\text{C}$ ...105 $^{\circ}\text{C}$ )	Vcc	V	$\pm 15$

### Absolute parameters

Parameters	Symbol	Unit	Value
Maximum supply voltage (-40 $^{\circ}\text{C}$ ...105 $^{\circ}\text{C}$ )	Vcc_max	V	$\pm 16$
Maximum primary conductor temperature	$T_{B\_max}$	$^{\circ}\text{C}$	100

### Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1500
Maximum surrounding air temperature	$^{\circ}\text{C}$	70
Primary current	A	0...600

### Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	Ud	kV	5	
Impulse withstand voltage 1.2/50 $\mu\text{s}$	$\hat{U}_w$	kV	5	
Clearance distance (pri. -sec)	dCl	mm	10.2	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	11	Shortest path along device body
Case material	-	-	V0	According to UL 94
Comparative tracking index	CTI		600	

## 2. STB-200LF2-D Electrical parameters

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

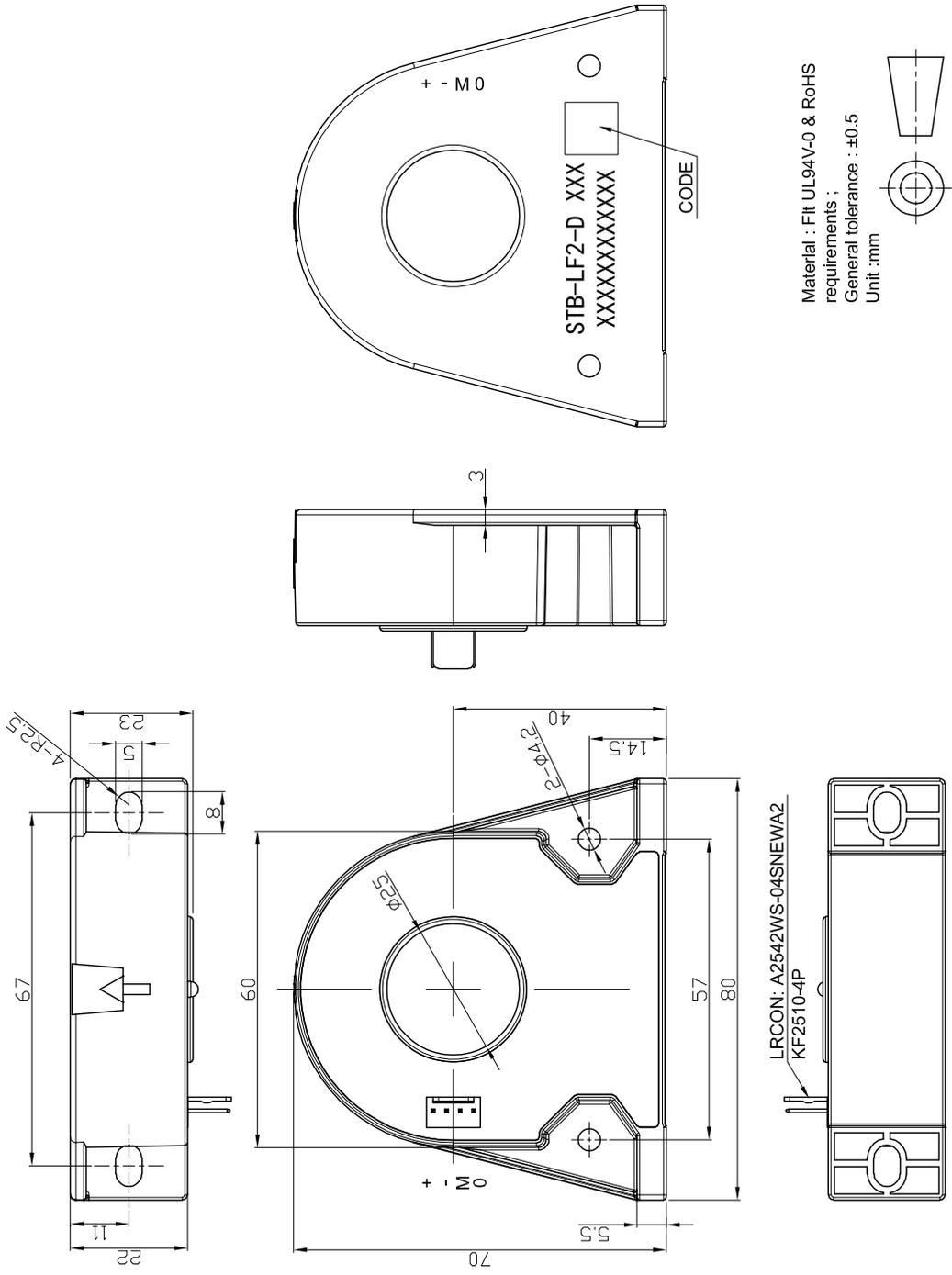
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	$I_{PN}$	A		$\pm 200$		
Primary current measuring range	$I_{PM}$	A	-500		500	$V_{CC} = \pm 15V$
Measuring resistance	$R_M$	$\Omega$	0		10	$I_P: \pm 300$
			0		5	$I_P: \pm 500$
Secondary nominal current	$I_{SN}$	A	-0.1		0.1	$I_P = \pm 200$
Secondary current measuring range	$I_S$	A	-0.25		0.25	$I_P = \pm 500$
Supply voltage	$V_{CC}$	V	$\pm 12$		$\pm 15$	
Current consumption	$I_{CC}$	mA		$16 + I_S$		$I_S = I_P / N_S$
Turns ratio	$N_S$	NT		2000		
Norminal sensitivity	$S_N$	mA/A		0.5		
Offset current	$I_O$	mA	-0.1		0.1	
Offset current temperature drift	$I_{OT}$	mA	-0.2		0.2	$-40^\circ C \sim 90^\circ C$
Sensitivity error	$\xi_S$	%	-0.15		0.15	
Linearity error	$\xi_L$	% of $I_{PN}$	-0.1		0.1	
Delay time @ 10 % of $I_{PN}$	$t_{ra 10}$	$\mu s$			1	10% of $I_{pn}$
Delay time @ 90 % of $I_{PN}$	$t_{ra 90}$	$\mu s$			1	90% of $I_{pn}$
-3 dB band width	BW	kHz			100	
Total error at $I_{PN}$	$\xi_{tol}$	% of $I_{PN}$	-0.2		0.2	$-40^\circ C \dots 90^\circ C$
Resistance of secondary winding	$R_S$	$\Omega$		17		$T_A = 70^\circ C$
Resistance of secondary winding	$R_S$	$\Omega$		14		$T_A = 25^\circ C$

### 3. STB-300LF2 Electrical parameters

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

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	$I_{PN}$	A		$\pm 300$		
Primary current measuring range	$I_{PM}$	A	-600		600	$V_{CC} = \pm 15V$
Measuring resistance	$R_M$	$\Omega$	0		10	$I_P: \pm 300$
			0		5	$I_P: \pm 600$
Secondary nominal current	$I_{SN}$	A	-0.15		0.15	$I_P = \pm 300$
Secondary current measuring range	$I_S$	A	-0.3		0.3	$I_P = \pm 600$
Supply voltage	$V_{CC}$	V	$\pm 12$		$\pm 15$	
Current consumption	$I_{CC}$	mA		$16 + I_S$		$I_S = I_P / N_S$
Turns ratio	$N_S$	NT		2000		
Norminal sensitivity	$S_N$	mA/A		0.5		
Offset current	$I_O$	mA	-0.1		0.1	
Offset current temperature drift	$I_{OT}$	mA	-0.2		0.2	$-40^\circ C \sim 70^\circ C$
Sensitivity error	$\xi_S$	%	-0.15		0.15	
Linearity error	$\xi_L$	% of $I_{PN}$	-0.01		0.01	
Delay time @ 10 % of $I_{PN}$	$t_{ra 10}$	$\mu s$			1	10% of $I_{pn}$
Delay time @ 90 % of $I_{PN}$	$t_{ra 90}$	$\mu s$			1	90% of $I_{pn}$
-3 dB band width	BW	kHz			100	
Accuracy	X	%			0.1	$T_A = 25^\circ C$
Total error at $I_{PN}$	$\xi_{tol}$	% of $I_{PN}$	-0.2		0.2	$-40^\circ C \dots 70^\circ C$
Resistance of secondary winding	$R_S$	$\Omega$		17		$T_A = 70^\circ C$
Resistance of secondary winding	$R_S$	$\Omega$		14		$T_A = 25^\circ C$

4. STB-200LF2-D Dimensions:



### 5. STB-300LF2 Dimensions:

