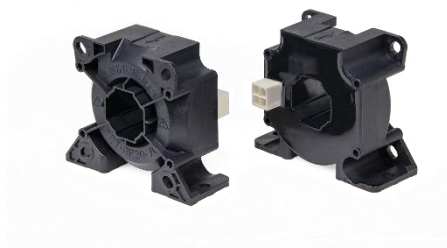


CURRENT SENSOR

PRODUCT SERIES: STB-LF4
STB-300LF4
PRODUCT PART NUMBER: STB-300LF4-A
STB-300LF4-B
VERSION: Ver 1.3



Sinomags Technology Co., Ltd.

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1. Description

STB-LF4 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

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

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	°C	-40 ~ 85
Storage temperature	T_S	°C	-40 ~ 85
Mass	m	g	STB-300LF4: 95 STB-300LF4-A: 95 STB-300LF4-B: 95

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage (-40°C...85°C)	V_{CCmax}	V	STB-300LF4: ±21V STB-300LF4-A: ±26V STB-300LF4-B: ±21V
Maximum primary conductor temperature	T_{Bmax}	°C	100
Maximum steady state primary current (-40°C...85°C)	I_{PNmax}	A	1000

Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1500
Maximum surrounding air temperature	°C	85
Primary current	A	0...300

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	3.8	
Impulse withstand voltage 1.2/50μs	U_W	kV	10	
Clearance distance (pri. -sec)	dCl	mm	10.6	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	11.1	Shortest path along device body
Case material	-	-	V0	According to UL 94
Comparative tracking index	CTI		175	

Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - Vertical position
 - 2 holes $\varnothing 4.3$ mm
 - 2 M4 steel screws
 - Recommended fastening torque 3.2 N·m
 - or
 - 4 holes $\varnothing 1.9$ mm,
 - depth: 7 mm
 - 4 PTKA 25 screws
 - length: 6 mm
 - Recommended fastening torque 0.7 N·m
 - Horizontal position
 - 4 holes $\varnothing 4.3$ mm
 - 4 M4 steel screws
 - Recommended fastening torque 3.2 N·m
 - or
 - 4 holes $\varnothing 1.9$ mm
 - crossing
 - 4 PTKA 25 screws,
 - length: 10 mm
 - Recommended fastening torque 0.75 N·m
- Primary through-hole $\varnothing 20.1$ mm
- Connection of secondary
 - Molex 6410 3 Tin plated pins (STB-300LF4)
 - A3963WV-3P (STB-300LF4-A)
 - C4201WVD-2x2P-V0 (STB-300LF4-B)

2. STB-300LF4 parameters

Condition: $V_{CC} = \pm 12V \sim \pm 20V$, $T_A = 25^\circ C$, unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A			300	
Primary current measuring range	I_{PM}	A	-500		500	
Measuring resistance	R_M	Ω	0		40	$V_{CC} = \pm 15V$ $@I_{PN} 25^\circ C$
Secondary nominal RMS current	I_{SN}	A	-0.15		0.15	
Turns ratio	N_S	NT		2000		
Resistance of secondary winding	R_S	Ω			20	$@T_a = 70^\circ C$
					22	$@T_a = 85^\circ C$
Supply voltage	V_{CC}	V	± 12		± 20	
Current consumption	I_{CC}	mA		$15 + I_S$		$V_{CC} = \pm 15V$
Norminal sensitivity	S_N	mA/A		0.5		
Offset current	I_{OE}	mA	-0.2		0.2	$@I_p = 0, T_a = 25^\circ C$
Magnetic offset current @ $I_p = 0$ and specified RM after an overload of $3 \times I_{PN}$	I_{OM}	mA			0.2	
Offset current temperature drift	I_{OT}	mA	± 0.1		± 0.3	$-10^\circ C \sim 70^\circ C$
			± 0.2		± 0.7	$-40^\circ C \sim 85^\circ C$
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.5		0.5	$-40^\circ C \dots 85^\circ C$
Linearity error	ε_L	% of I_{PN}			0.1	
Delay time @ 10 % of I_{PN}	t_{d10}	μs			0.5	@10% of I_{pn}
Delay time @ 90 % of I_{PN}	t_{d90}	μs			1	@90% of I_{pn}
Frequency bandwidth (-1dB)	BW	kHz		100		

3. STB-300LF4-A parameters

Condition: $V_{CC} = \pm 22.8 \sim \pm 25.2V$, $T_A = 25^\circ C$, unless specified.

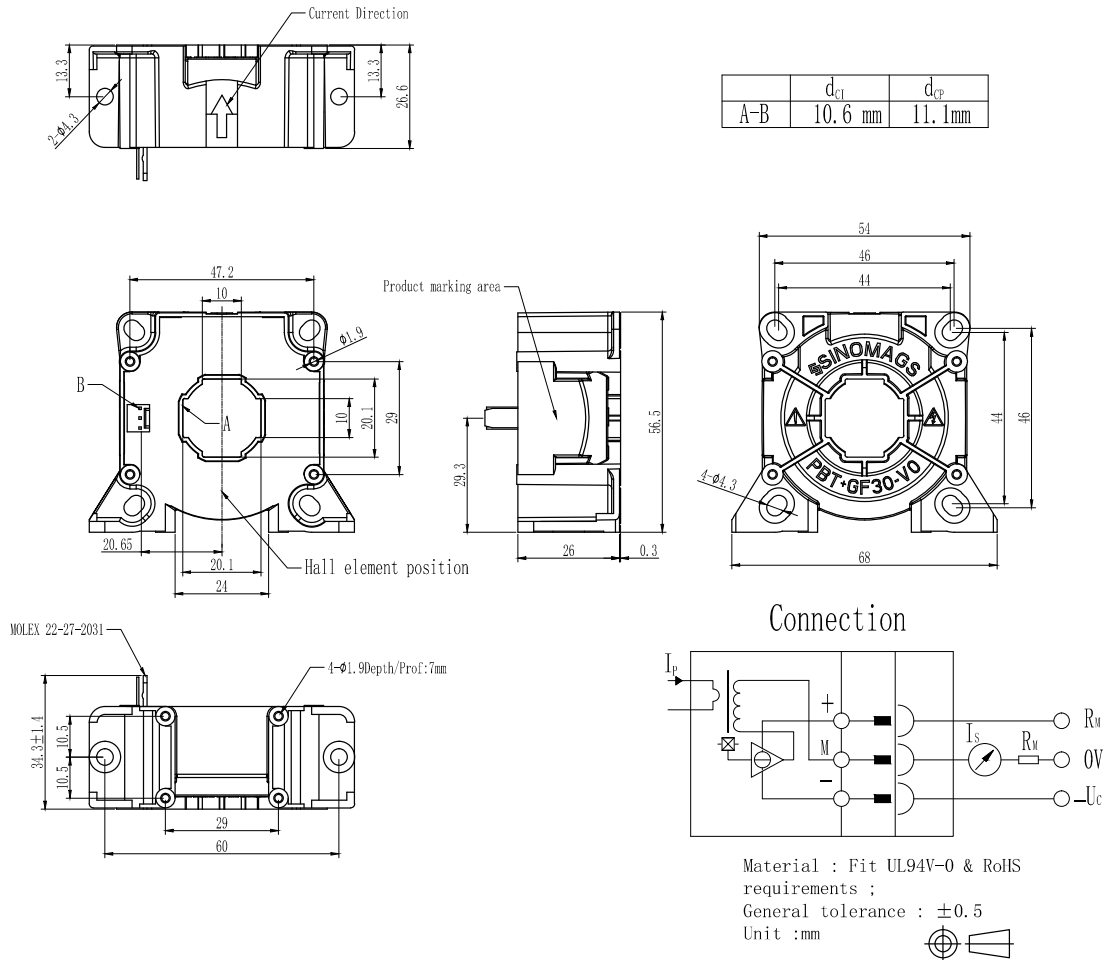
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A			300	
Primary current measuring range	I_{PM}	A	-860		860	
Measuring resistance	R_M	Ω	0		40	$V_{CC} = \pm 22.8V$ $@I_{PN} 25^\circ C$
Secondary nominal RMS current	I_{SN}	A	-0.12		0.12	
Turns ratio	N_S	NT		2500		
Resistance of secondary winding	R_S	Ω			27	$@T_a = 70^\circ C$
					29	$@T_a = 85^\circ C$
Supply voltage	V_{CC}	V	± 22.8		± 25.2	
Current consumption	I_{CC}	mA		$19 + I_S$		$V_{CC} = \pm 22.8V$
Norminal sensitivity	S_N	mA/A		0.4		
Offset current	I_{OE}	mA	-0.17		0.17	$@I_p = 0, T_a = 25^\circ C$
Magnetic offset current @ $I_p = 0$ and specified RM after an overload of $3 \times I_{PN}$	I_{OM}	mA			0.15	
Offset current temperature drift	I_{OT}	mA	-0.25		± 0.25	$-10^\circ C \sim 70^\circ C$
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.47		0.47	$-40^\circ C \dots 85^\circ C$
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time @ 10 % of I_{PN}	t_{d10}	μs			0.5	@10% of I_{pn}
Delay time @ 90 % of I_{PN}	t_{d90}	μs			1	@90% of I_{pn}
Frequency bandwidth (-1dB)	BW	kHz		100		

4. STB-300LF4-B parameters

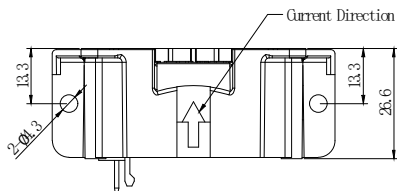
Condition: $V_{CC} = \pm 12 \sim \pm 20V$, $T_A = 25^\circ C$, unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A			300	
Primary current measuring range	I_{PM}	A	-500		500	
Measuring resistance	R_M	Ω	0		40	$V_{CC} = \pm 15V$ $@I_{PN} 25^\circ C$
Secondary nominal RMS current	I_{SN}	A	-0.15		0.15	
Turns ratio	N_S	NT		2000		
Resistance of secondary winding	R_S	Ω			20	$@T_a = 70^\circ C$
					22	$@T_a = 85^\circ C$
Supply voltage	V_{CC}	V	± 12		± 20	
Current consumption	I_{CC}	mA		$15 + I_S$		$V_{CC} = \pm 15V$
Norminal sensitivity	S_N	mA/A		0.5		
Offset current	I_{OE}	mA	-0.2		0.2	$@I_P = 0, T_a = 25^\circ C$
Offset current temperature drift	I_{OT}	mA	-0.7		± 0.7	$-10^\circ C \sim 70^\circ C$
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.47		0.47	$-40^\circ C \dots 85^\circ C$
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time @ 10 % of I_{PN}	t_{d10}	μs			0.5	@10% of I_{pn}
Delay time @ 90 % of I_{PN}	t_{d90}	μs			1	@90% of I_{pn}
Frequency bandwidth (-1dB)	BW	kHz		100		

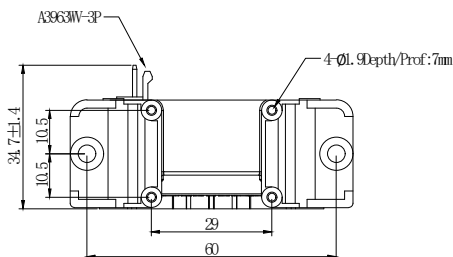
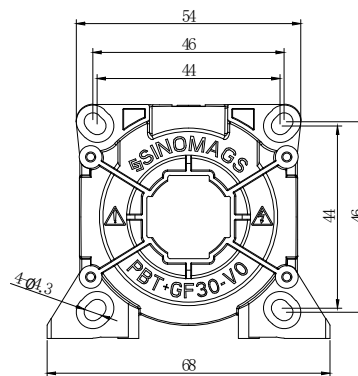
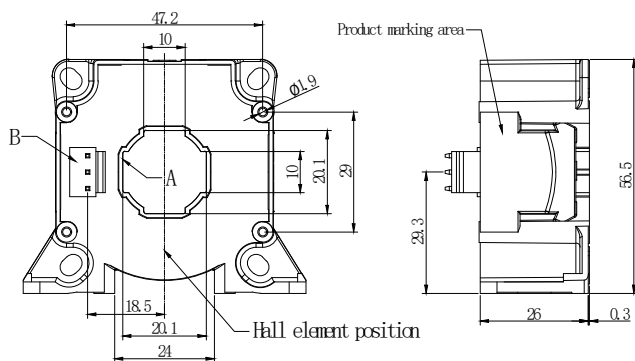
5. STB-300LF4 Dimensions:



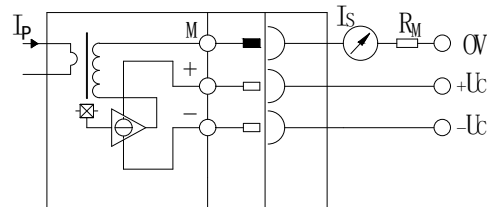
6. STB-300LF4-A Dimensions:



	d_1	d_p
A-B	8 mm	9.5mm



Connection



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



7. STB-300LF4-B Dimensions:

