CURRENT SENSOR

PRODUCT SERIES： STB-LF/4

PRODUCT PART NUMBER： STB-300LF/4

VERSION： Ver 1.0

Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

CONTENT

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	℃	-40 ~ 85
Storage temperature	T_S	℃	-40 ~ 85
Mass	m	g	95

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage (-40℃…85℃)	Vcc_max	V	±20
Maximum primary conductor temperature	T_B_max	℃	100
Maximum steady state primary current (-40℃…85℃)	I_{PN}_max	A	300

Ratings

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

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	Ud	kV	3.8	
Impulse withstand voltage 1.2/50μs	Ûw	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
Comparaticve tracking index	CTI		175	

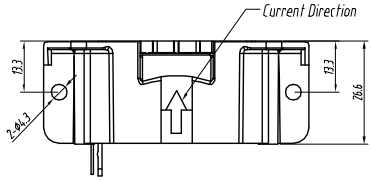
2. Electrical parameters

Condition: Vcc = ±12V~±20V , T_A = 25℃, unless specified.

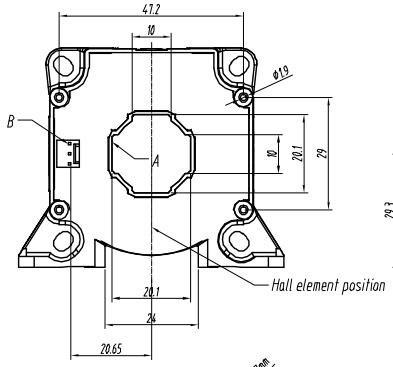
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A			300	
Primary current measuring range	I_{PM}	A	-500		500	
Measuring resistance	R_M	Ω	0		37	@±300A with±12V TA=70℃
	R_M	Ω	0		35	@±300A with±12V TA=85℃
	R_M	Ω	0		10	@±500A with±12V TA=70℃
	R_M	Ω	0		8	@±500A with±12V TA=85℃
	R_M	Ω	0		56	@±300A with±15V TA=70℃
	R_M	Ω	0		54	@±300A with±15V TA=85℃
	R_M	Ω	0		21	@±500A with±15V TA=70℃
	R_M	Ω	0		19	@±500A with±15V TA=85℃
	R_M	Ω	0		88	@±300A with±20V TA=70℃
	R_M	Ω	0		86	@±300A with±20V TA=85℃
	R_M	Ω	0		40	@±500A with±20V TA=70℃
	R_M	Ω	0		38	@±500A with±20V TA=85℃
Secondary nominal RMS current	I_{SN}	A	-0.15		0.15	
Turns ratio	N_s	NT		2000		

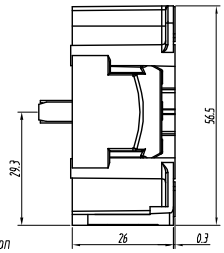
Resistance of secondary winding	R_S	Ω			30	@Ta=70℃
	R_S	Ω			32	@Ta=85℃
Supply voltage	Vcc	V	±12		±20	
Current consumption	Icc	mA		26 + I_s		I
Norminal sensitivity	S_N	mA/A		0.5		
Offset current	I_O	mA	-0.2		0.2	
Magnetic offset current @ IP = 0 and specified RM after an overload of 3 x IP N	I_{OM}	mA			0.2	
Offset current temperature drift	I_{OT}	mA	±0.1		±0.3	-10℃ ~ 70℃
	I_{OT}	mA	±0.2		±0.7	-40℃ ~ 85℃
Total error at I_{PN}	ξ_{tol}	% of I_{PN}	-0.5		0.5	-40℃…85℃
Linearity error	ξ_L	% of I_{PN}			0.1	
RMS noise current reffered to pri.	I_{no}	mA		20		1Hz to 100kHz
Delay time @ 10 % of I_{PN}	$t_{ra\ 10}$	μs			0.5	@10% of I_pn
Delay time @ 90 % of I_{PN}	$t_{ra\ 90}$	μs			1	@90% of I_pn
Frequency bandwidth（-1dB）	BW	kHz		100		

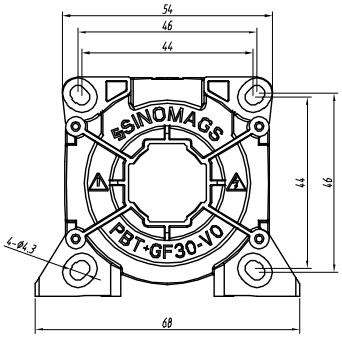
3. Dimensions:

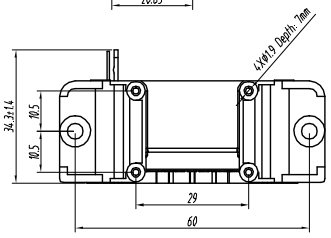


	d_{CI}	d_{CP}
A-B	10.6 mm	10.6 mm

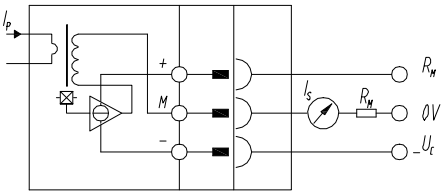




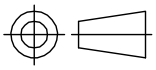




Connection



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



Mechanical characteristics

- General tolerance ±0.5 mm
- Transducer fastening
  Vertical position 2 holes ⌀ 4.3 mm
  2 M4 steel screws
  Recommended fastening torque 3.2 N·m
  or 4 holes ⌀ 1.9 mm,
  depth: 7 mm
  4 PTKA 25 screws
  length: 6 mm
  Recommended fastening torque 0.7 N·m
- Transducer fastening
  Horizontal position 4 holes ⌀ 4.3 mm
  4 M4 steel screws
  Recommended fastening torque 3.2 N·m
  or 4 holes ⌀ 1.9 mm
  crossing
  4 PTKA 25 screws,
  length: 10 mm
  Recommended fastening torque 0.75 N·m
- Primary through-hole ⌀ 20.1 mm
- Connection of secondary Molex 6410
  3 Tin plated pins