受 控
2025-01-14

SINOMAGS 希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES： STB-LF

PRODUCT PART NUMBER： STB-100LF
STB-200LF

VERSION： Ver 1.2

Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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CONTENT

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1. Description

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

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	˚C	-40 ~ 85
Storage temperature	T_S	˚C	-50 ~ 90
Mass	m	g	75

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage (-40˚C…85˚C)	Vcc_{max}	V	±15.75
Maximum primary conductor temperature	$T_{B_{max}}$	˚C	100
Maximum steady state primary current (-40˚C…85˚C)	$I_{PN_{max}}$	A	STB-100LF:100 STB-200LF:200

Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1500
Maximum surrounding air temperature	˚C	85
Primary current	A	STB-100LF:0…100 STB-200LF:0…200

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	4	
Impulse withstand voltage 1.2/50μs	U_W	kV	8	
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	

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2. STB-100LF Electrical parameters

Condition: V_{CC} = ±15V , T_A = 25℃, R_M=1Ω unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A			100	
Primary current measuring range	I_{PM}	A	-200		200	V_{CC}=±15V
Secondary nominal RMS current	I_{SN}	A	-0.1		0.1	
Secondary current	I_S	A	-0.2		0.2	
Resistance of secondary winding	R_S	Ω			8.5	
Supply voltage	V_{CC}	V	±11.4		±15.75	
Current consumption	I_{CC}	mA		14+I_S 18+I_S		V_{CC}=±12V V_{CC}=±15V
Turns ratio	N_S	NT		1000		
Nominal sensitivity	S_N	mA/A		1		
Offset current	I_{OE}	mA	-0.15		0.15	
Offset current temperature drift	I_{OT}	mA	-0.2		0.2	-40℃ ~ 85℃
Sensitivity error	ε_S	%	-0.15		0.15	
Linearity error	ε_L	% of I_{PN}	-0.05		0.05	
RMS noise current referred to pri.	I_{NO}	mA		20		1Hz to 100kHz
Delay time @ 10 % of I_{PN}	$t_{d\,10}$	μs		0.5		
Delay time @ 90 % of I_{PN}	$t_{d\,90}$	μs		0.5		
-3 dB band width	BW	kHz		100		
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.2		0.2	-40℃…85℃

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3. STB-200LF Electrical parameters

Condition: V_{CC} = ±15V , T_A = 25℃, R_M=1Ω unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A			200	
Primary current measuring range	I_{PM}	A	-420		420	Vcc=±15V
Secondary nominal RMS current	I_{SN}	A	-0.1		0.1	
Secondary current	I_S	A	-0.21		0.21	
Resistance of secondary winding	R_S	Ω			27	
Supply voltage	V_{CC}	V	±11.4		±15.75	
Current consumption	I_{CC}	mA		14+I_S 18+I_S		V_{CC}=±12V V_{CC}=±15V
Turns ratio	N_S	NT		2000		
Nominal sensitivity	S_N	mA/A		0.5		
Offset current, referred to primary	I_{OE}	A	-0.15		0.15	
Temperature variation of I_{OE}, referred to primary	I_{OT}	A	-0.2		0.2	-40℃ ~ 85℃
Magnetic offset current (@ 3 × I_{PN}), referred to primary	I_{OM}	A		±0.2		
Sensitivity error	ε_S	%	-0.1		0.1	
Linearity error	ε_L	% of I_{PN}	-0.05		0.05	
RMS noise current referred to pri.	I_{NO}	mA		20		1Hz to 100kHz
Delay time @ 10 % of I_{PN}	$t_{d\,10}$	μs		0.5		
Delay time @ 90 % of I_{PN}	$t_{d\,90}$	μs		0.5		
-3 dB band width	BW	kHz		100		
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.2		0.2	-40℃…85℃

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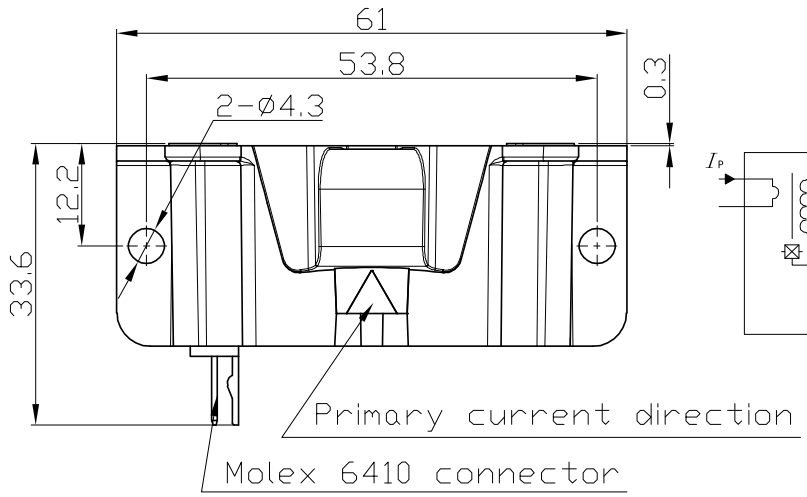
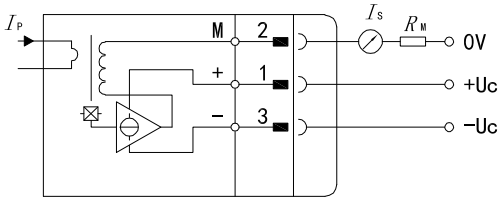
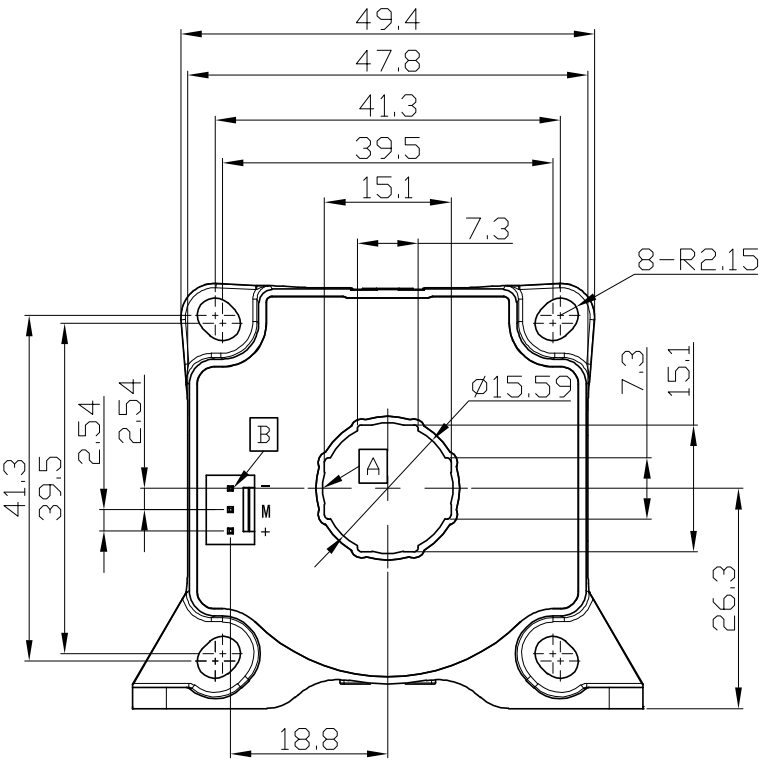
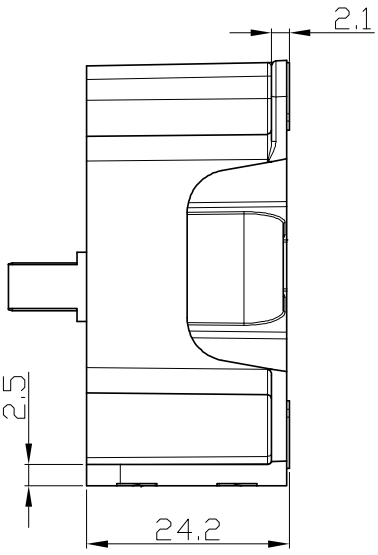
4. Dimensions:

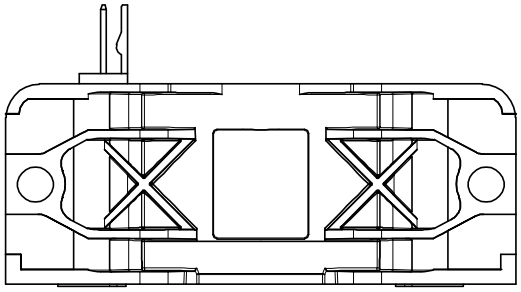


Connection









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