

CURRENT SENSOR

PRODUCT SERIES: STB-LF/2
STB-300LF/2-D
PRODUCT PART NUMBER: STB-500LF/2
STB-500LF/2-D
VERSION: Ver 1.5



Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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1. Description

STB-LF/2 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
- AC variable speed and servo motor drives
- Test and measurement
- Switched model power supplies (SMPS)
- Battery supplied applications
- UPS
- Static converters for DC motors drives

General parameters

Parameter	Symbol	Unit	Value
Supply voltage (-10°C...70°C)	V_{CCmax}	V	±18
Sensor operating temperature	T_A	°C	STB-300LF/2-D: -40 ~ 85 STB-500LF/2: -10 ~ 70 STB-500LF/2-D: -40 ~ 85
Storage temperature	T_S	°C	STB-300LF/2-D: -40 ~ 90 STB-500LF/2: -25 ~ 80 STB-500LF/2-D: -40 ~ 90
Mass	m	g	400 max

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	4.95	
Impulse withstand voltage 1.2/50μs	U_W	kV	9.1	
Clearance distance (pri. -sec)	dCl	mm	25	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	11.5	Shortest path along device body
Case material	-	-	V0	According to UL 94
Comparative tracking index	CTI		275	

2. STB-300LF/2-D Electrical parameters

Condition: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$, $R_M = 1\Omega$ 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	
Secondary nominal RMS current	I_{SN}	A	-0.1		0.1	I_{PN}
Secondary current	I_S	A	-0.1667		0.1667	I_{PM}
Resistance of secondary winding	R_S	Ω				
Measuring resistance	R_M	Ω			8.5	
Supply voltage	Vcc	V	± 15		± 18	
Current consumption	I_{CC}	mA		$25 + I_S$		
Turns ratio	N_S	NT		3000		
Overall accuracy @25°C	X	%	-0.4		0.4	
Offset current	I_O	mA	-0.13		0.13	
Magnetic offset current	I_{OM}	mA	-0.14		0.14	
Offset current temperature drift	I_{OT}	mA		± 0.15	± 0.64	-40°C ~ 85°C
Sensitivity error	ε_S	%	-0.15		0.15	
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
RMS noise current referred 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}	$t_{ra\ 10}$	μs		1		@90% of I_{PN}
-3 dB band width	BW	kHz		100		

3. STB-500LF/2 Electrical parameters

Condition: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$, $R_M = 1\Omega$ unless specified.

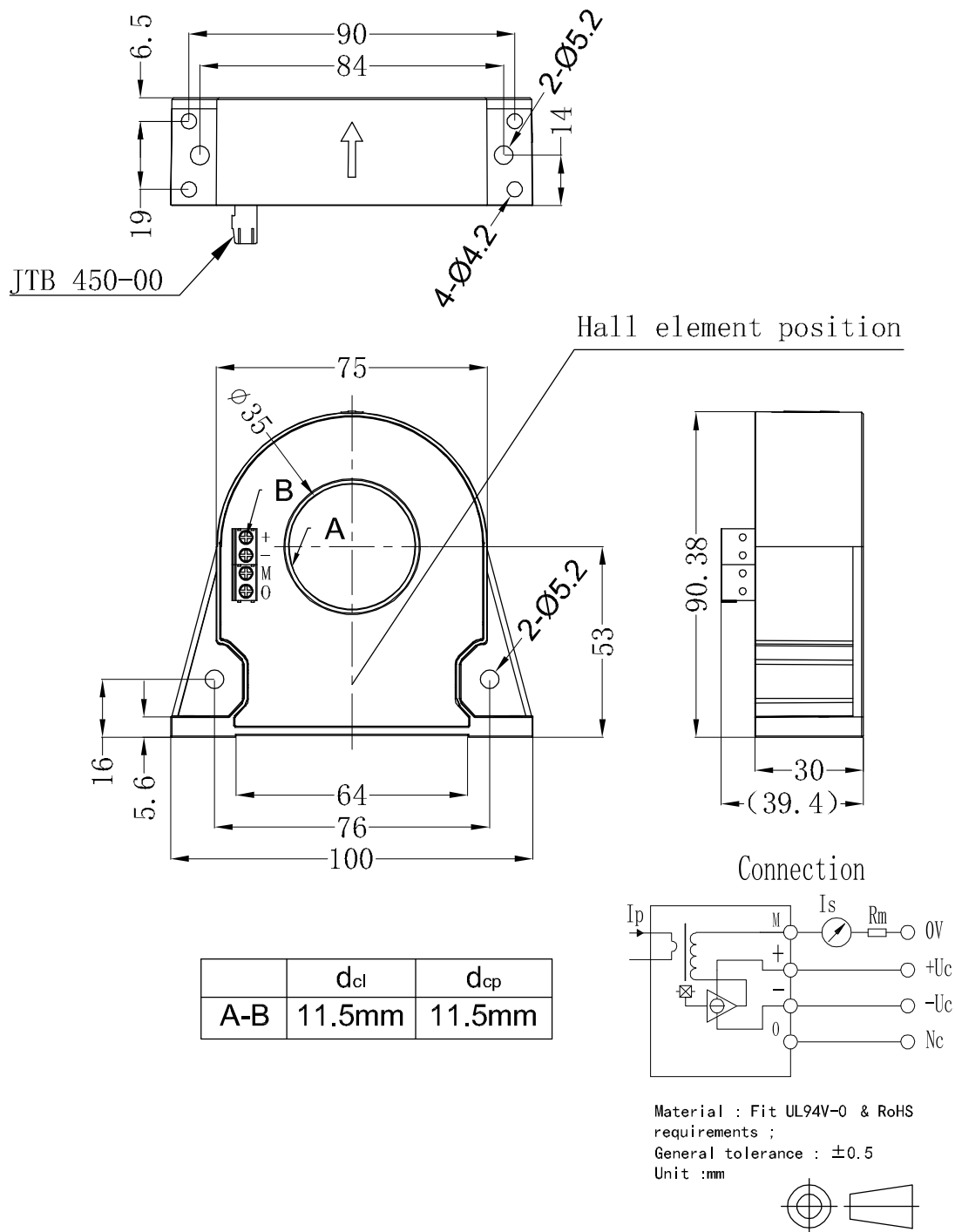
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A		500		
Primary current measuring range	I_{PM}	A	-800		800	
Secondary nominal RMS current	I_{SN}	A	-0.1		0.1	I_{PN}
Secondary current	I_S	A	-0.16		-0.16	I_{PM}
Resistance of secondary winding	R_S	Ω			8.5	
Measuring resistance	R_M	Ω			8.5	
Supply voltage	V _{CC}	V	± 15		± 18	
Current consumption	I_{CC}	mA		$25 + I_S$		
Turns ratio	N_S	NT		5000		
Overall accuracy @25°C	X	%	-0.4		0.4	
Offset current	I_O	mA	-0.13		0.13	
Magnetic offset current	I_{OM}	mA	-0.14		0.14	
Offset current temperature drift	I_{OT}	mA		± 0.15	± 0.64	-10°C ~ 70°C
Sensitivity error	ε_S	%	-0.15		0.15	
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
RMS noise current referred 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}	$t_{ra\ 10}$	μs		1		@90% of I_{PN}
-3 dB band width	BW	kHz		100		

4. STB-500LF/2-D Electrical parameters

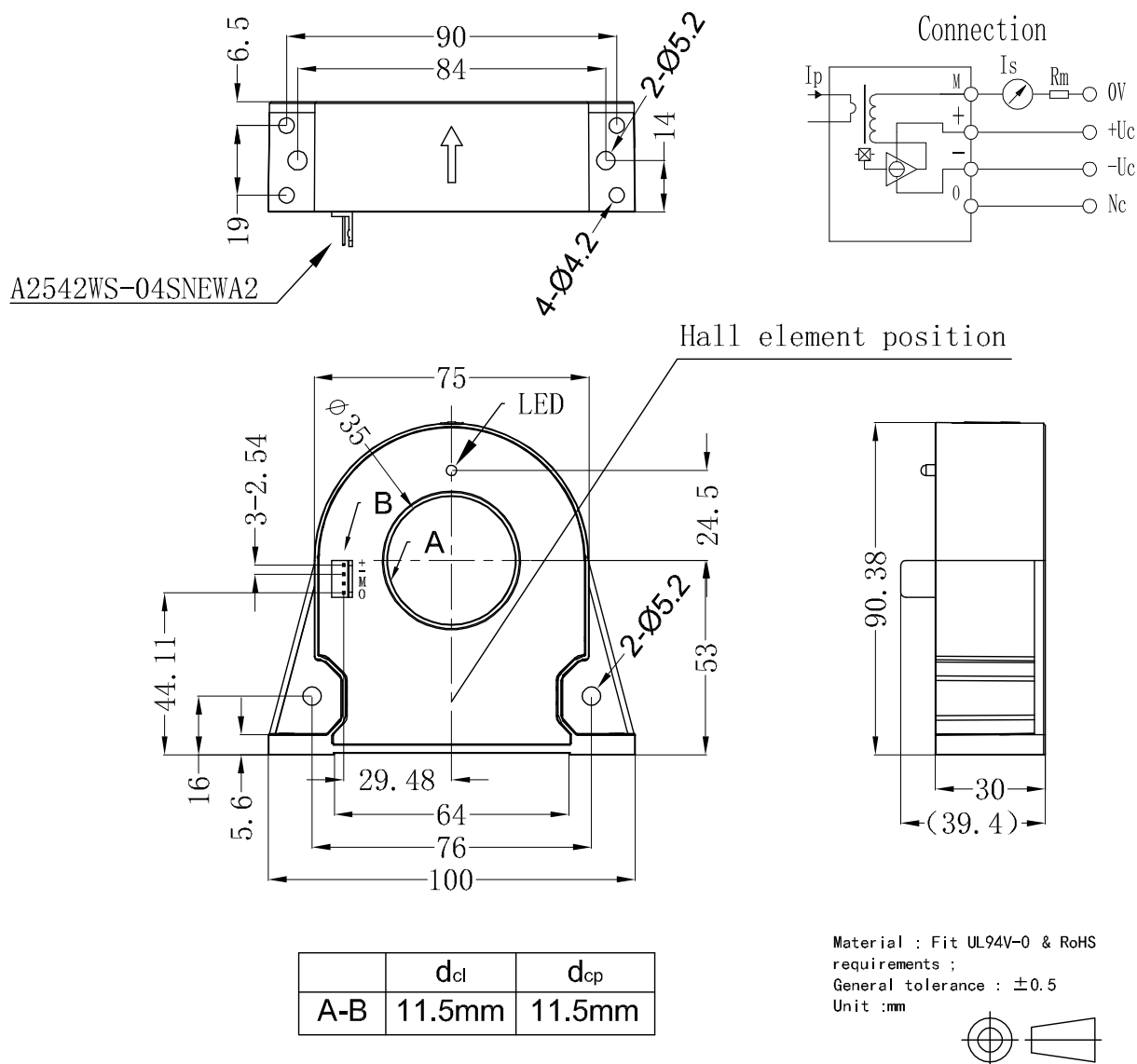
Condition: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$, $R_M = 1\Omega$ unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A		500		
Primary current measuring range	I_{PM}	A	-800		800	
Secondary nominal RMS current	I_{SN}	A	-0.1		0.1	I_{PN}
Secondary current	I_S	A	-0.16		-0.16	I_{PM}
Resistance of secondary winding	R_S	Ω			8.5	
Measuring resistance	R_M	Ω			8.5	
Supply voltage	Vcc	V	± 15		± 18	
Current consumption	I_{CC}	mA		$25 + I_S$		
Turns ratio	N_S	NT		5000		
Overall accuracy @25°C	X	%	-0.4		0.4	
Offset current	I_O	mA	-0.13		0.13	
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Sensitivity error	ε_S	%	-0.15		0.15	
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Delay time @ 90 % of I_{PN}	$t_{ra\ 10}$	μs		1		@90% of I_{PN}
-3 dB band width	BW	kHz		100		

5. STB-300LF/2-D Dimensions



6. STB-500LF/2 Dimensions:



7. STB-500LF/2-D Dimensions:

