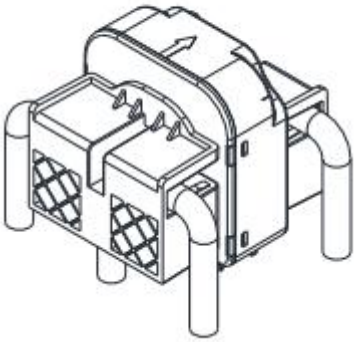
CS01N-A-PS series current sensor

Function description:

The primary and secondary sides of this series of sensors are insulated for DC, AC and pulse current measurement.

Features:

◆ Adopt fluxgate principle current sensor;
◆ Voltage output;
◆ 5V single power supply;
◆ The shell flame retardant meets the UL94-V0 standard;
◆ Adopt compact PCB circuit board welding installation method;
◆ Minimal temperature coefficient;



Application field;

◆ Residual current detection;
◆ Leakage current test of transformerless PV inverter;
◆ Power failure detection;
◆ Leakage current detection of DC system;
◆ Symmetry fault detection;

Model list:

Product model		
Model number	Rated current IPN (A)	Measuring Range IPM (A)
CS01N-0.6A-PS	0.6	±0.85
CS01N-1A-PS	1	±1.7

CS01N-0.6A-PS Parameter table:

argument	symbol	unit	Minimum value	Typical value	Maximum value	remark
Electrical parameter						
Rated measuring current	*I*PN	A	-	0.6	-	
Current measuring range	*I*PM	A	-0.85	-	0.85	
Supply voltage	*V*C	V	4.75	5.0	5.25	
Bias voltage	*V*REF	V	2.495	2.5	2.505	@TA =25℃, *V*C=5 且 *I*P=0A
sensitivity	*G*th	V/A	-	2.476	-	
Current consumption	*I*C	mA	-	17.5	21.6	
Performance parameter						
Sensitivity error	*Ɛ*G	%	-0.7	0.3	0.7	@*R*L>500 kΩ
Test coil sensitivity error	*Ɛ*G	%	-3	-	3	@*R*L>500 kΩ
Zero current	*I*OE	mA	-24	4.2	24	
Bias voltage temperature coefficient	*TCV*ref	ppm/K	-	-	±50	@TA -40℃~105 ℃
Temperature coefficient of zero voltage	*TCV*oe	ppm/K	-	-	±520	@TA -40℃~105 ℃ ppm/K of 2.5 V
Linear error	*Ɛ*L	% of *I*PN	-	0.4	1.3	
Test coil	*TTM*	mA	-42.5	-	-42.5	

measurement range						
Frequency band width (-3dB）	*BW*	kHz	-	9.5	-	
Response time	*tr*	μs	-	30	-	@RL > 500 kΩ, di/dt > 5 A/μs 90 % of I PN
Output noise	*Vno*	mV	-	4	-	@1 Hz...10 kHz, *R*L>500
precision	*X*	%	-	-	1.5	
Universal parameter						
Operating ambient temperature	TA	℃	-40 ..+105			
Storage ambient temperature	TS	℃	-40 ..+105			

CS01N-1A-PS Parameter table:

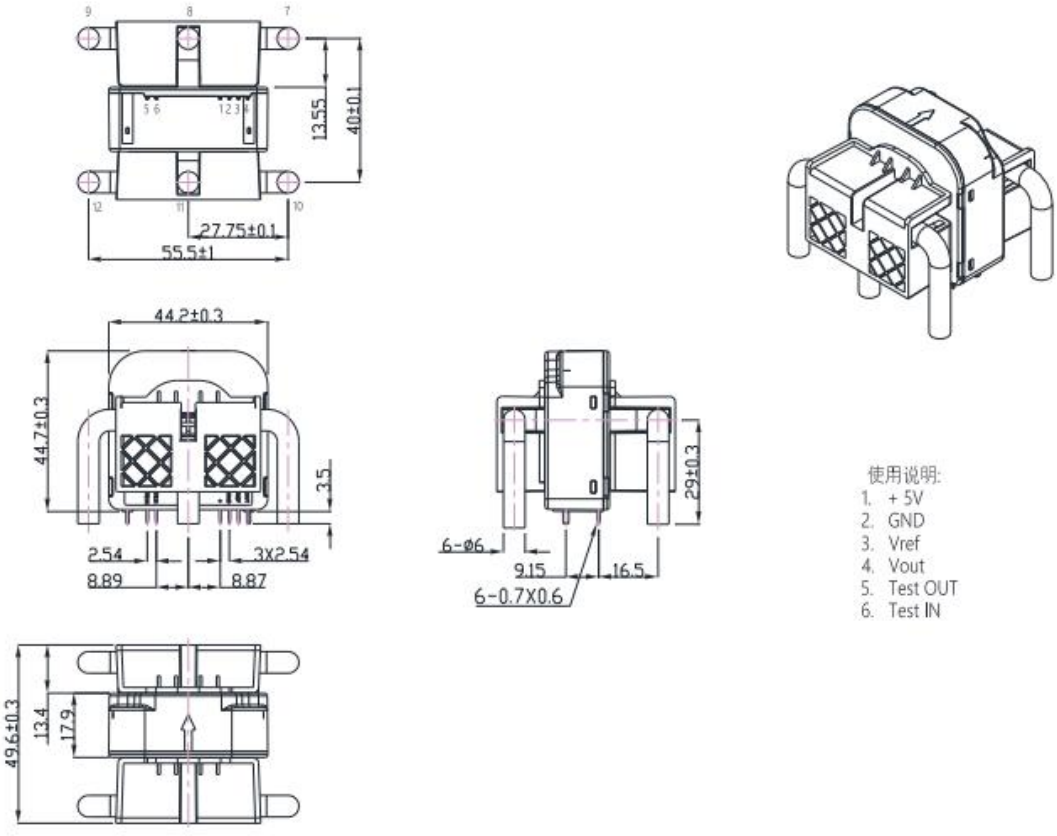
argument	symbol	unit	Minimum value	Typical value	Maximum value	remark
Electrical parameter						
Rated measuring current	*I*PN	A	-	1	-	
Current measuring range	*I*PM	A	-1.7	-	1.7	
Supply voltage	*V*C	V	4.75	5.0	5.25	
Bias voltage	*V*REF	V	2.495	2.5	2.505	@TA =25℃, *V*C=5 且 *I*P=0A
sensitivity	*G*th	V/A	-	1.2	-	
Current consumption	*I*C	mA	-	17.5	21.6	
Performance parameter						
Sensitivity error	*Ɛ*G	%	-1.6	0.3	1.6	@*R*L>500 kΩ
Test coil sensitivity error	*Ɛ*G	%	-3	-	3	@*R*L>500 kΩ
Zero current	*I*OE	mA	-24	7	24	
Bias voltage temperature coefficient	*TCV*ref	ppm/K	-	-	±50	@TA -40℃~105 ℃
Temperature coefficient of zero voltage	*TCV*oe	ppm/K	-	-	±520	@TA -40℃~105 ℃ ppm/K of 2.5 V
Linear error	*Ɛ*L	% of *I*PN	-	0.4	1.3	
Test coil	*TTM*	mA	-50	-	-50	

measurement range						
Frequency band width (-3dB）	*BW*	kHz	-	9.5	-	
Response time	*tr*	μs	-	30	-	@RL > 500 kΩ, di/dt > 5 A/μs 90 % of I PN
Output noise	*Vno*	mV	-	4	-	@1 Hz...10 kHz, *R*L>500
precision	*X*	%	-	-	1.9	
Universal parameter						
Operating ambient temperature	TA	℃	-40 ..+105			
Storage ambient temperature	TS	℃	-40 ..+105			

Insulation characteristics:

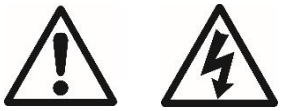
argument	symbol	unit	Numerical value	remark
Ac isolation withstand voltage test RMS @ 50Hz,1min	UD	KV	5.4	
Impulse withstand voltage 1.2/50uS	UW	KV	10.1	
Relative creepage resistance index	CTI	V	600	

Mechanical size: (Unit: mm, general tolerance: ±0.3mm)



Attention:

Sensors must comply with IEC61010-1 standards. Sensors must be installed in electronic or electrical equipment that meets application standards and safety requirements in accordance with the instructions for use.

Watch out. Watch out for shocks. 

When the sensor is working, some parts may be subjected to dangerous voltages (such as the primary busbar, power supply), and ignoring these will result in damage and serious danger. The sensor is a built-in device, and its conductive part must be guaranteed not to be touched by the outside world after installation. Protective case or shielding cover can be added if necessary. The main power supply must be able to be disconnected.