

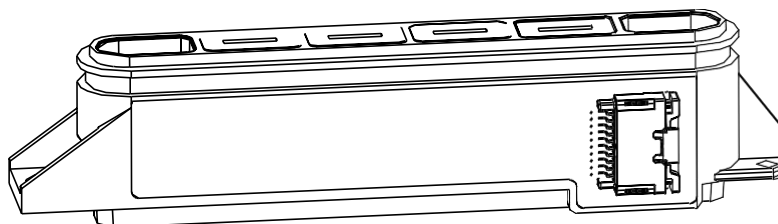
HS78-600A/900A-C Current sensor

Function description:

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

peculiarity

- ◆ Open-loop Hall ASIC principle;
- ◆ Primary side and secondary side isolation;
- ◆ Low power consumption;
- ◆ Wide range;
- ◆ No insertion loss
- ◆ Raw material conforms to UL 94-V0



Application field

- ◆ Motor controller
- ◆ Uninterruptible power supply (UPS)
- ◆ Static converter driven by DC motor
- ◆ Switching Power Supply (SMPS)
- ◆ Power supply for welding machine

Model

list:

Product model		
Model number	Rated input current I_{PN} (A)	Measuring Range IPM (A)
HS78-600A/900A-C	600/900	$\pm 600/\pm 900$

HS78-600A/900A-C Parameter list

Parameter	symbol	unit	Minimum value	ypical value	Maximum value	remark
1; 2; 3 Electrical specifications of the channel						
Primary side rated current	I_{PN}	A	-	600	-	
Primary current measurement range	I_{PM}	A	-600	-	600	
Supply voltage	V_C	V	4.75	5.0	5.25	
Output voltage	V_{OUT}	V	$V_{OUT}=(V_C/5) \cdot (2.5+G_{th} \cdot I_{PN})$			@ $V_C=5V$
Zero output voltage	V_{QOV}	V	2.48	2.5	2.52	@ $V_C=5V$ and $I=0A$
Theoretical gain	G_{th}	mV/A	-	3.33	-	
Current consumption	I	mA	-	60	70	@ $V_C=5V$
Load resistance	R_L	k Ω	10	-	unlimited	@ V_{OUT} to GND
Load capacitance	C_L	nF	-	-	2.2	
Power filter capacitance	C	μF	-	-	-	
4; 5; 6 Electrical specifications of the channel						
Primary side rated current	I_{PN}	A	-	900	-	
Primary current measurement range	I_{PM}	A	-900	-	900	
Supply voltage	V_C	V	4.75	5.0	5.25	
Output voltage	V_{OUT}	V	$V_{OUT}=(V_C/5) \cdot (2.5+G_{th} \cdot I_{PN})$			@ $V_C=5V$
Zero output voltage	V_{QOV}	V	2.48	2.5	2.52	@ $V_C=5V$ and $I=0A$
Theoretical gain	G_{th}	mV/A	-	2.22	-	
Current consumption	I	mA	-	60	70	@ $V_C=5V$
Load resistance	R_L	k Ω	10	-	unlimited	@ V_{OUT} to GND
Load capacitance	C_L	nF	-	-	2.2	
Power filter capacitance	C	μF	-	-	-	



Performance parameter						
Gain error	$\mathcal{E}_G$	%	-	± 2	-	@ $T_A=25^\circ\text{C}$
Temperature drift of gain error	T_{GG}	%/ $^\circ\text{C}$	-0.03	± 0.01	0.03	@ $T_A -40^\circ\text{C}\sim 125^\circ\text{C}$
Zero error	V_{OE}	mV	-	± 20	-	@ $V_C=5\text{V}$ and $I=0\text{A}$
Zero error of temperature drift	T_{OE}	mV/ $^\circ\text{C}$	-0.08	± 0.01	0.08	@ $T_A -40^\circ\text{C}\sim 125^\circ\text{C}$
Magnetic offset voltage	V_{OM}	mV	-4	-	4	@ $T_A=25^\circ\text{C}$, $V_C=5\text{V}$
Nonlinear error	$\mathcal{E}_L$	% of I_N	-0.5	-	0.5	Zero free V_{OE}
Response time	t	μs	3	6	10	
Band width (-3dB)	BW	kHz	30	-	-	
Current following	dt	A/us		100		
Output noise	V_{opp}	mV	-	-	10	
Universal parameter						
Operating ambient temperature	T_A	$^\circ\text{C}$	-40....+125			
Storage ambient temperature	T_S	$^\circ\text{C}$	-40....+125			
weight	m	g	-			

Attention:

- (1) The output voltage U_{out} , offset voltage U_{QOV} , sensitivity G_{th} are completely proportional to the power supply V_c ;
- (2) The frequency of the current to be measured should be limited to the sensor frequency band, otherwise it will cause overheating of the magnetic core and chip;
- (3) The wrong wiring method may damage the sensor;

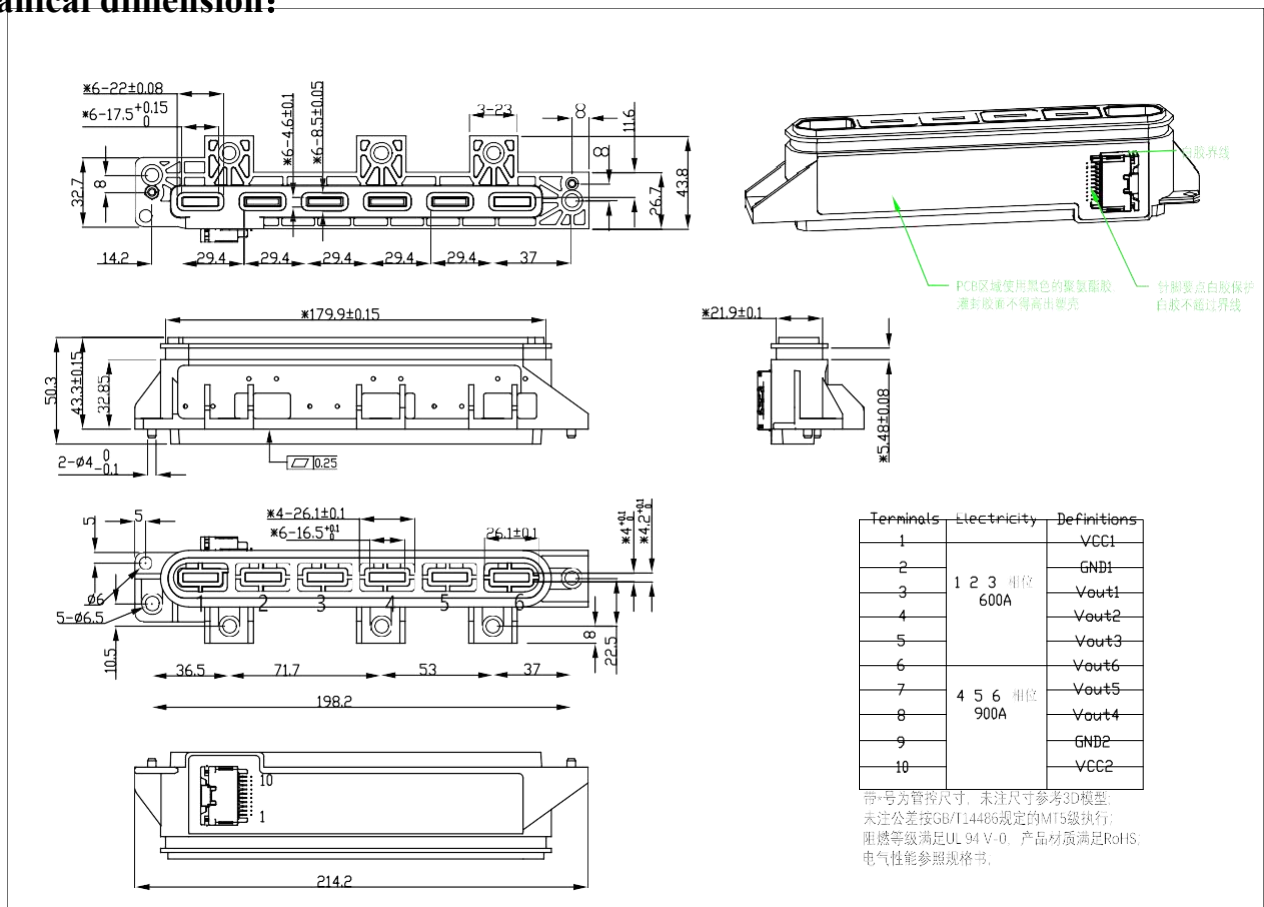
Insulation characteristics:

Parameter	symbol	unit	Numerical value	remark
Ac isolation withstand voltage test RMS @ 50Hz, 1min	U_D	KV	2.5	
Impulse withstand voltage 1.2/50uS	U_W	KV	5	
Housing material	-	-	UL94-V0	PPS+ GF40
Relative creepage resistance index	CTI	V	-	
Creepage distance	d_{CP}	mm	25	
Electrical clearance	d_{CI}	mm	20	

Maximum limit:

Parameter	symbol	unit	Numerical value
Supply voltage	V_C	V	8
Continuous output current	I_{out}	mA	-
Electrostatic discharge - Contact discharge	V_{ESD}	KV	4

Mechanical dimension:



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 operating, some parts may be subjected to dangerous voltages (e.g. primary busbar, power supply), and neglect of these will result in damage and serious hazards. 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.