

DATA SHEET

Hall Effect Current Sensor



PN: CHB_HXS5S

IPN=10~50A

Feature

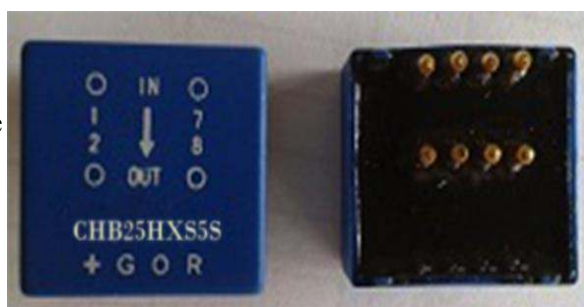
- Closed- loop (compensated) current transducer
- Capable measurement of currents: DC, AC,pulse with galvanic isolation between primary circuit and secondary circuit.
- Supply voltage: DC+5V±5%

Advantages

- High accuracy
- Easy installation
- Low temperature drift
- Optimized response time
- High immunity to external interference

Applications

- Variable speed drives
- Welding machine
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Electrochemical



RoHS



Electrical data $T_a=25^{\circ}\text{C}$ $V_c= \pm 15\text{VDC}$

Parameter	Ref	CHB25 HXS5S	CHB50 HXS5S	CHB100 HXS5S	CHB200 HXS5S
Rated input $I_{pn}(A)$		10	20	30	50
Measuring range $I_p(A)$		30	60	90	150
Turns ratio N_p/N_s (T)		1600±2	1600±2	1200±1	1000±1
Rated output voltage (V)		0.625±0.5%	0.625±0.5%	0.625±0.5%	0.625±0.5%
Internal measuring resistor (Ω)		100±0.1%	50±0.1%	25±0.1%	12.5±0.1%
Supply voltage $V_C(V)$		+5±5%			
Power consumption (mA)		20+ I_p/N_s			
Reference voltage(V)		+2.5±0.4%			
Zero voltage(V)	@ $I_p=0$	2.5±0.4%			
Offset voltage drift(mV/C)	@ -40~+85°C	≤±0.5			
Accuracy $X_G(\%)$	@IPN,T=25°C	< ±0.1			
Linearity(%FS)	@ $I_p=0\sim I_{pn}$	≤0.1			

Magnetic offset voltage(%I _p n)	@I _p =3XI _p n-0	≤±0.5
di/dt accurately followed(A/μS)		>50
Response time(nS)	@100A/μS,10%-90%	≤500
Bandwidth(KHz)	@ -1db	DC~100
Galvanic isolation(KV)	@ 50/60HZ,1min	2.5

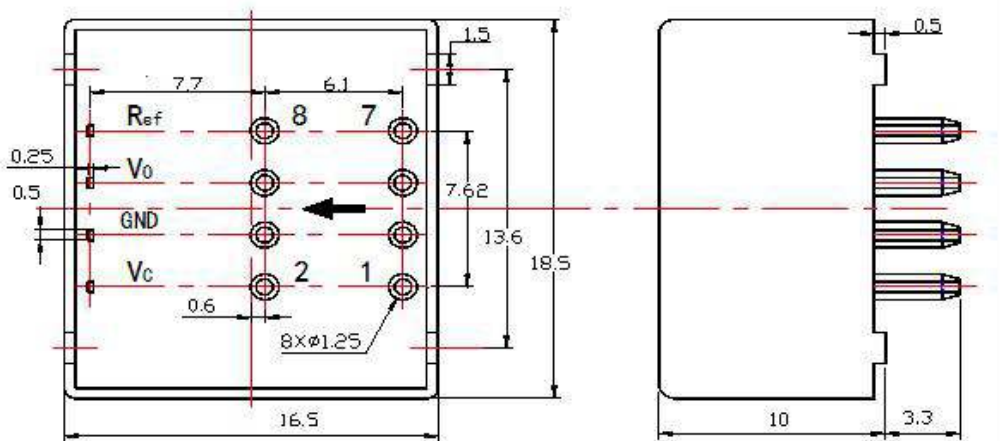
General data

Parameter	Value
Operating temperature TA(°C)	-40 ~ +85
Storage temperature TS(°C)	-40~ +125
Mass M(g)	7
Plastic material	UL94-V0.
Standards	EN60947-1:2004
	EC60950-1:2001 Test Voltage: 1000V
	EN50178:1998 Test Voltage: 1000V
	SJ 20790-2000

Pin connections

item	Turns	Primary rated	Rated putout Voltage	Primary impedance	Primary Inductance	Connect point
Single Phase	1	±10(±20, ±30, ±50)	2.5±0.625±0.5%	0.05	0.025	
	2	±5(±10, ±15, ±25)	2.5±0.625±0.5%	0.20	0.1	
	3	±2.5(±5, ±7.5, ±12.5)	2.5±0.625±0.5%	1.00	0.4	

Dimensions(mm):



Remarks

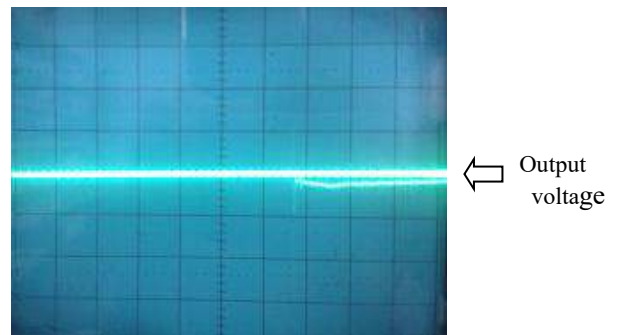
1. All dimensions are in mm.
2. General tolerance ± 1 mm.

Characteristics chart:

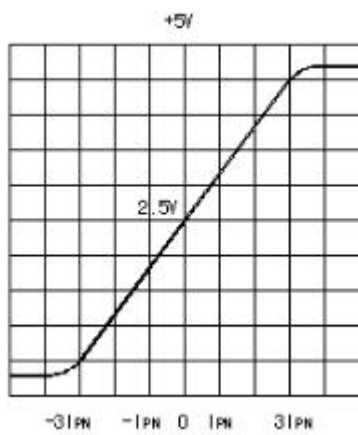
Pulse current signal response characteristic



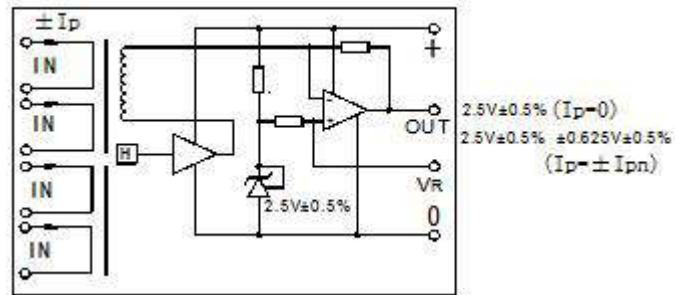
Effects of impulse noise



Input current-output voltage characteristic



Operation Principle



Directions for use

- When the current goes through the primary pin of a sensor, the voltage will be measured at the output end.
- Custom design is available for the different rated input current and the output voltage

WARNING : Incorrect wiring may cause damage to the sensor.