

HBC300LTA Hall-effect Current Sensor Series

HBC300LTA series is a new generation of current sensor based on the principle of Hall-effect. It can be used for detecting DC、 pulse and various irregular waveform current under electrical isolation between output and input.

Electrical characteristics

	Type	HBC050LTA	HBC100LTA	HBC200LTA	HBC300LTA	
I_{PN}	Primary nominal input current	50	100	200	300	A
I_P	Measuring primary current range	$0 \sim \pm 150$	$0 \sim \pm 300$	$0 \sim \pm 600$	$0 \sim \pm 900$	A
I_{SN}	Nominal output current	25	50	100	100	mA
K_N	Turns ratio	1: 2000			1:3000	
R_M	Measurement resistance ($V_C = \pm 15V / I_{PN}$)	100(max)	110(max)	120(max)	100(max)	Ω
	($V_C = \pm 15V / I_P$)	50(max)	40(max)	30(max)	36(max)	Ω
V_C	Supply voltage	$\pm 12 \sim \pm 18 (\pm 5\%)$				V
I_C	Current loss	$V_C = \pm 15V$ 20+ I_S				mA
V_d	Insulation voltage	6KV AC/50Hz/1min				

Dynamic characteristics

ϵ_L	Linearity	<0.1			%FS
X	Precision	$T_A = 25^\circ C$ $V_C = \pm 15V$ ± 0.7			%
I_0	Offset current	$T_A = 25^\circ C$ $< \pm 0.20$			mA
I_{OM}	Residual current	$I_P \rightarrow 0$ $< \pm 0.20$			mA
I_{OT}	Offset current temperature drift	$I_P = 0$ $T_A = -25 \sim +85^\circ C$ $\pm 0.10 \sim \pm 0.65$			mA/ $^\circ C$
T_R	Response time	<1			μs
f	Band width (-3dB)	DC~100			KHz

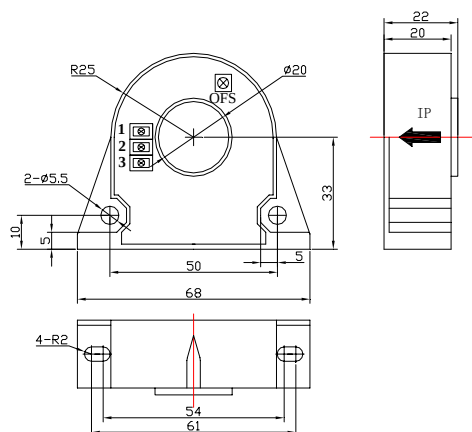
Generic characteristics

T_A	Operation temperature	$-40 \sim +85$				$^\circ C$
T_S	Storage temperature	$-40 \sim +125$				$^\circ C$
R_S	Secondary internal resistance $T_A = 25^\circ C$	29	25	21	32	Ω

Advantages

- ◆ excellent precision ,good linearity
- ◆ better anti-jamming capability
- ◆ low temperature drift, quick response time
- ◆ broad frequency band width
- ◆ good over-current capability

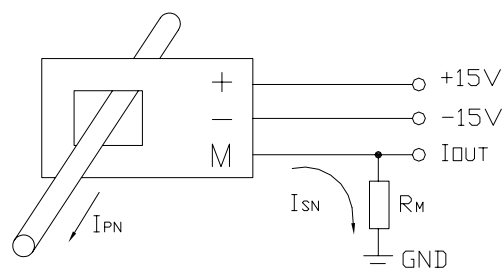
package outline (mm)



Typical applications

- ◆ alternating current variable-speed generator tracking
- ◆ welding equipment source
- ◆ DC generator static electricity commutation
- ◆ communication source 、 battery source
- ◆ UPS, switching power supplies

circuit connection diagram



Elucidation:

- 1: +15V 2: -15V
3: Iout OFS: zero adjustment