Closed loop hall effect voltage sensor

HCB–V-50V~ 25KV(10mA)

Used to measure DC, AC, pulse voltage.... The measured voltage on the primary side is electrically isolated from the output current (output votlage) on the secondary side

Feature:

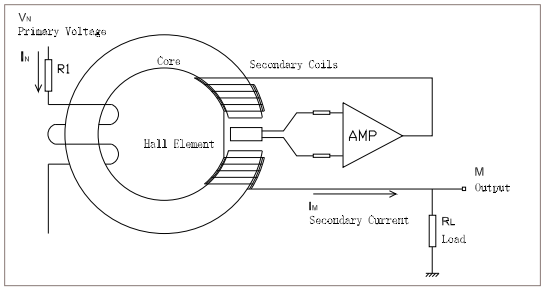
Test frequency: 0~20KHz
Response time: 20~200uS
Linearity: 0.1%

No insertion loss measured

Measure AC, DC and pulse current

The primary voltage is highly isolated from the secondary output signal

Closed-loop Hall magnetic compensation principle manufacturing



Working principle:

The principle of Hall magnetic compensation is that the measured current VN flows through the magnetic field generated by the conductor, and the compensation current IM controlled by the Hall element output signal flows through the secondary coil to compensate for the magnetic field. When the primary and secondary magnetic fields reach balance, the compensation current Im can accurately reflect the primary voltage value.

Note

The standard output of the models given in the table is 5V voltage. If 0-25mA current output is selected, the models listed in the table are followed by the symbol "A".

HCB-V Series hall effect voltage sensor

Part No	I_N(mA)	I_P(mA)	I_M(mA)	Accuracy Ta=25℃	Turns ratio	Load Resistance Ωmin	Load Resistance Ωmax	Ioff(mA)	Vc(V)	Ic(mA)	Vi(KV)	Ta(℃)	W(g)	Fig. No.
HCB-V-20L	100	±120	5V	1.0%	200:1000	…	…	±100mV	±12~15	10+I_M	2.5	-25~+70	18	10
HCB-V-25P	10	±14	25	1.0%	2500:1000	30	350	±0.2	±12~15	10+I_M	2.5	-25~+70	24	1
HCB-V-50P	10	±20	50	1.0%	5000:1000	0	350	±0.3	±12~15	10+I_M	3	-25~+70	90	2
HCB-V-100	10	±20	50	0.6%	10000:2000	0	150	±0.3	±12~15	10+I_M	6	-25~+70	360	6
HCB-V-200	20	±40	100	0.5%	10000:2000	12	170	±0.3	±15~24	30+I_M	10	-25~+70	1600	12

HCB-V Series hall effect voltage sensor (primary contion resistance R1)

Part No	I_N(mA)	I_P(mA)	I_M(mA)	Accuracy Ta=25℃	Turns ratio	Load Resistance Ωmin	Load Resistance Ωmax	Ioff(mA)	Vc(V)	Ic(mA)	Vi(KV)	Ta(℃)	W(g)	Fig. No.
HCB-V-25P/30 HCB-V-25P/50 HCB-V-25P/100	30 50 100	±45 ±75 ±150	5V(25mA)	1.0%	2500:1000	>10K (0Ω)	… (350Ω)	±30mV (±0.2mA)	±12~15	10+I_M	2.5	-25~+70	50	3
HCB-V-25P/300 HCB-V-25P/500	300 500	±450 ±750	5V(25mA)	1.0%	2500:1000 (5000:1000)	>10K (0Ω)	… (350Ω)	±30mV (±0.2mA)	±12~15	10+I_M	2.5	-25~+70	50	3
HCB-V-50VD HCB-V-100VD HCB-V-300VD HCB-V-600VD	50 100 300 600	±75 ±150 ±450 ±900	5V	1.0%	2500:1000	>10K	…	±30mV	±12~15	35	2.5	-25~+70	90	11
HCB-V-50P/200 HCB-V-50P/400 HCB-V-50P/600 HCB-V-50P/800 HCB-V-50P/1000	200 400 600 800 1000	±300 ±600 ±900 ±1200 ±1500	5V(25mA)	0.8%	5000:1000 (10000:1000)	>10K (0Ω)	… (350Ω)	±30mV (±0.3mA)	±12~15	10+I_M	3	-25~+70	110	4
HCB-V-100/100 HCB-V-100/300 HCB-V-100/500	100 300 500	±150 ±450 ±750	5V(25mA)	0.5%	10000:2000	>10K (0Ω)	… (150Ω)	±30mV (±0.3mA)	±12~15	10+I_M	6	-25~+70	360	8(6)
HCB-V-100/600 HCB-V-100/800 HCB-V-100/1000 HCB-V-100/2000	600 800 1000 2000	±900 ±1200 ±1500 ±3000	5V(25mA)	0.5%	20000:2000	>10K (0Ω)	… (150Ω)	±30mV (±0.3mA)	±12~15	10+I_M	6	-25~+70	650	9(5)
HCB-V-100/2500 HCB-V-100/3000 HCB-V-100/4000	2500 3000 4000	±3750 ±4500 ±6000	5V(25mA)	0.5%	30000:2000	>10K (0Ω)	… (150Ω)	±30mV (±0.3mA)	±12~15	10+I_M	6	-25~+70	650	9(5)
HCB-V-1KV HCB-V-3KV HCB-V-5KV	1000 3000 5000	±1500 ±4500 ±7500	80mA	0.5%	20000:2000 80000:2000 160000:2000	30	125	±0.3	±15~24	80+I_M	10	-25~+70	2000	12
HCB-V-6KV HCB-V-9KV	6000 9000	±9000 ±13500	80mA	0.5%	160000:2000	30	125	±0.3	±15~24	80+I_M	15	-25~+70	2500	7
HCB-V-10KV HCB-V-12KV	10000 12000	±15000 ±18000	80mA	0.5%	160000:2000	30	125	±0.3	±15~24	80+I_M	20	-25~+70	2500	7
HCB-V-10KV1 HCB-V-15KV1	10000 15000	±15000 ±22500	80mA	1.0%	160000:2000	10	80	±0.3	±15~24	80+I_M	35	-25~+70	17500	13

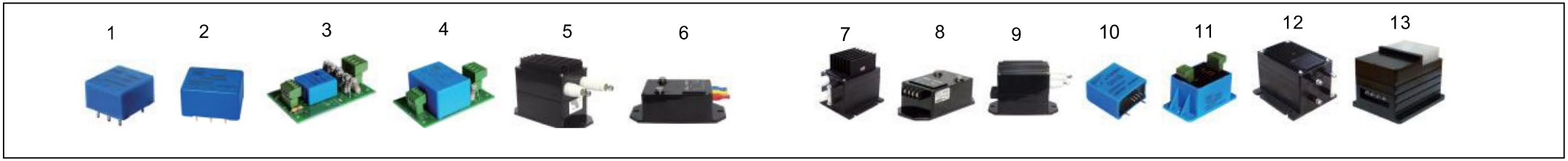


Fig. 1

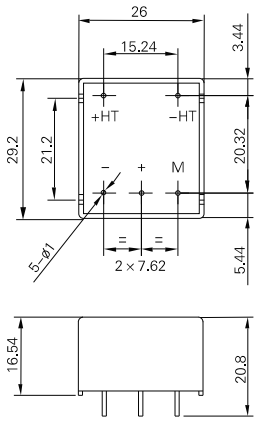


Fig. 2

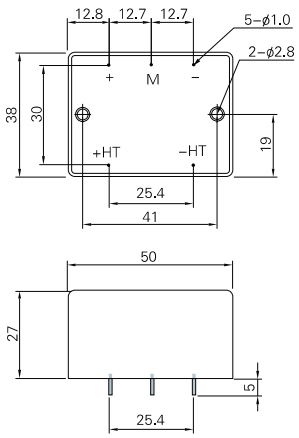


Fig. 3

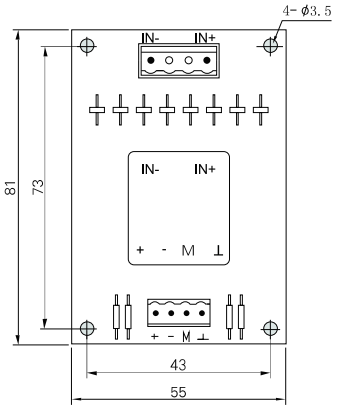


Fig. 4

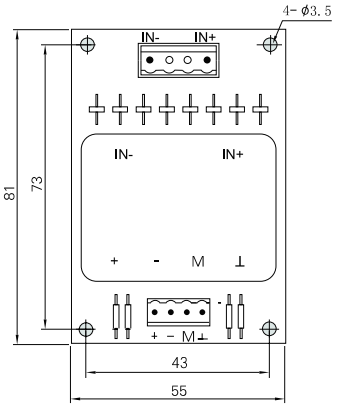


Fig. 5

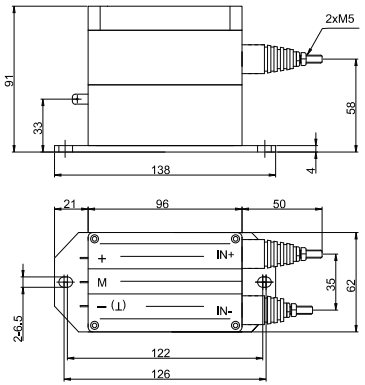


Fig. 6

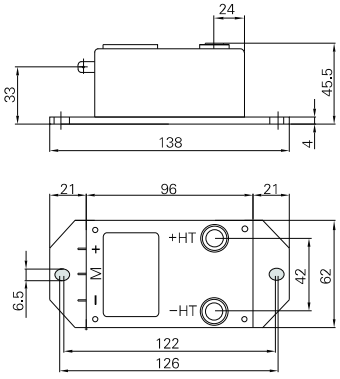


Fig. 7

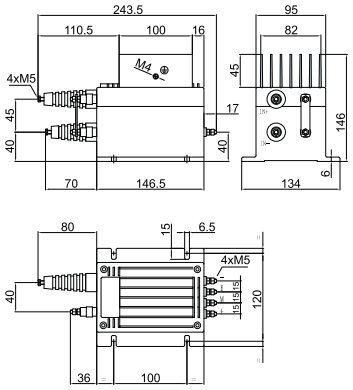


Fig. 8

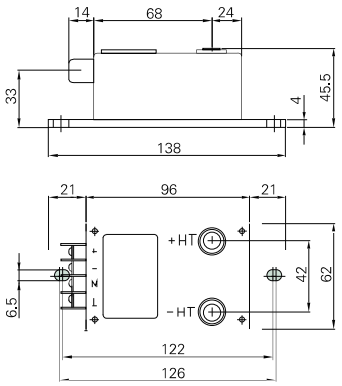


Fig. 9

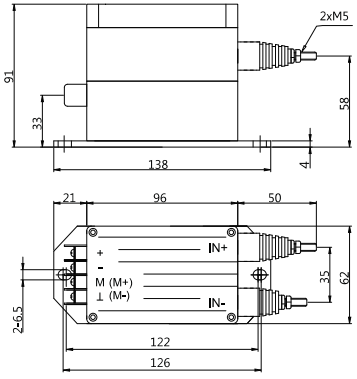


Fig. 10

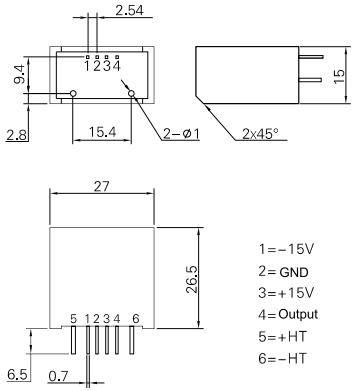


Fig. 11

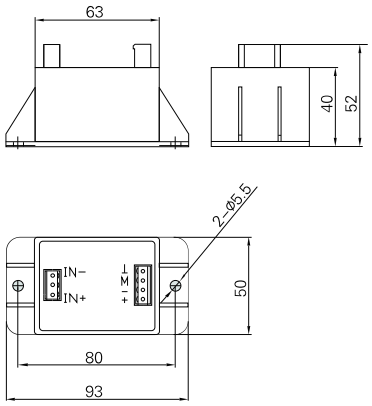


Fig. 12

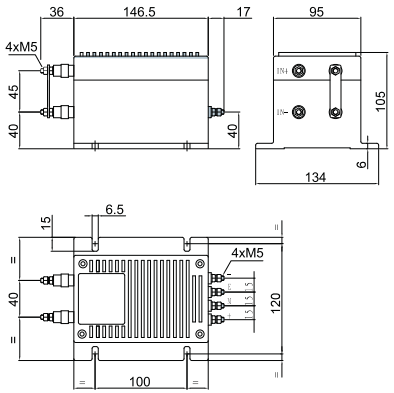
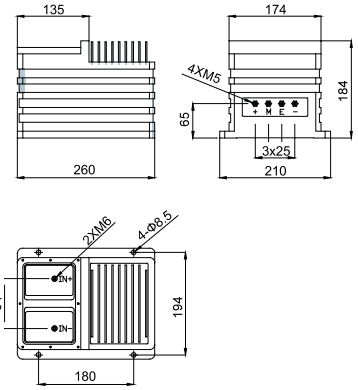


Fig. 13



M	Output
M+	Output+
M-	Output-
NC	NO
IN	Input
IN+(+HT)	Input+
IN-(-HT)	Input-
+VN	Input voltage+
-VN	Input voltage-

I_N	Nominal current	Voff	Offset voltage
V_N	Nominal voltage	Td	Temperature drift
I_P	Measuring range	L	Linearity
R_M	Measuring resistance	Tr	Response time
I_M	Output current	f	Frequency bandwidth
V_M	Output voltage	Ta	Operating temperature
K_N	Turns ratio	Ts	Storage temperature
X	Accuracy	Ic	Current consumption
Vc	Supply voltage	Rs	Secondary resistance
Vi	Isolation voltage	R_N	Primary resistance
Ioff	Offset current	W	Weight