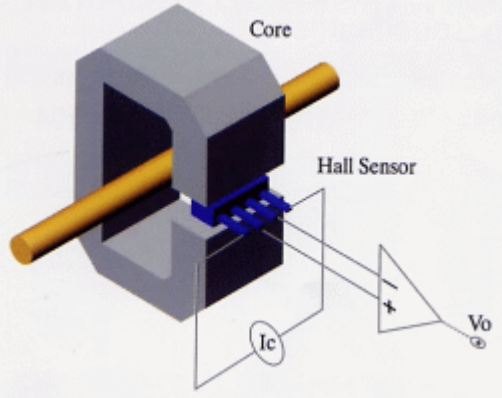
Open Loop Hall Effect Current Sensors/Transducers

1. Measuring Principle



- Primary current I_p applied on core, causing Hall voltage rise thanks to the magnetic induction generated on core.
- I_c is a constant current source to supply Hall sensor. It makes Hall sensor under constant operation condition.
- Output voltage V_o then is proportional to I_p. This means that the output can get a very good linearity before core and OP saturation.

2. Characteristics and Features

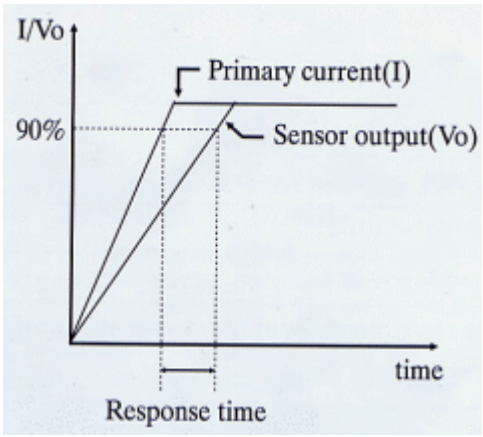
Measurable Current Range:	About 3 times of rated current
Output Signal:	It is directly proportional to the measured current, both DC and AC measurable. General voltage output V_o is 4V at the rated (nominal) current I_{rated}. Different V_o versions are also available
Measurement Accuracy:	Depends on ambient temperature, operating temperature and some other electrical parameters. Our current sensors are factory-calibrated (offset and gain voltage) at an ambient temperature of 25°C

3. Dynamic Properties

a. Response time

- **Definition:**
  The delay time between 90% of measurable current range (3 times of rated current) and sensor output reaches the coordinated voltage

- **specification:**
  Chenyang open loop current sensors have the Best performance thanks to our best design of layout and well selection of high slew Rate amplifier.



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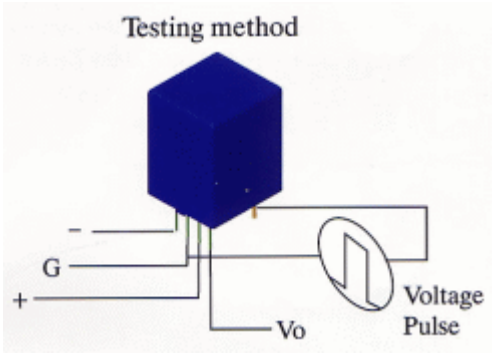
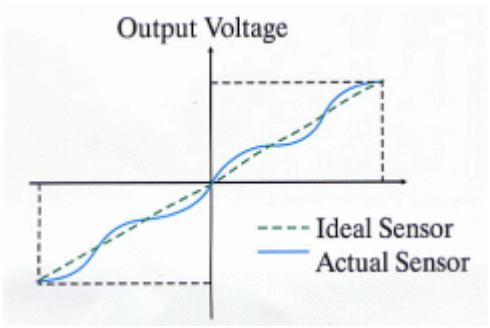
b. Noise Response

- Voltage pulse applied 300~600V/μs on primary conductor
- With control power supply
- Measuring output voltage (V_o), specification depends on the application situation. However the smaller, the better
- Chenyang open loop current sensors have the excellent low output voltage (V_o) in comparison with other sensors.



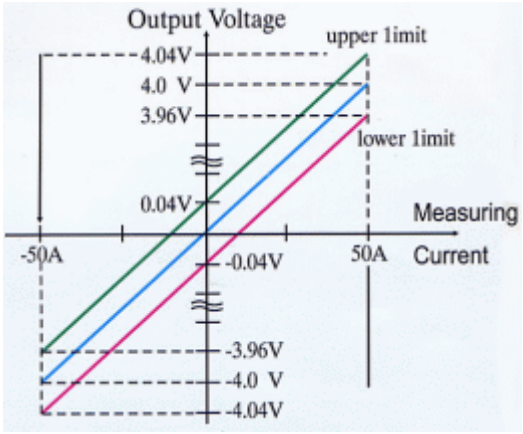
c. Output voltage (V_o) linearity:

- The output voltage versus input current relation of an ideal current sensor (without setting error in residual and output voltage) is indicated by the dot line in right figure
- The continuous line shows the output/input relation of an actual sensors.



4. Output Voltage (V_o) Performance (at Rated Current 50A)

- Offset standard specification:40mV
- Output voltage(Vo) standard specification: ±4V ±0.04V



5. Typical Applications

- General Purpose Inverter
- AC/DC Variable Speed Drivers
- Battery Supplied Applications
- Uninterruptible Power Supplies
- Switched Mode Power Supplies

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