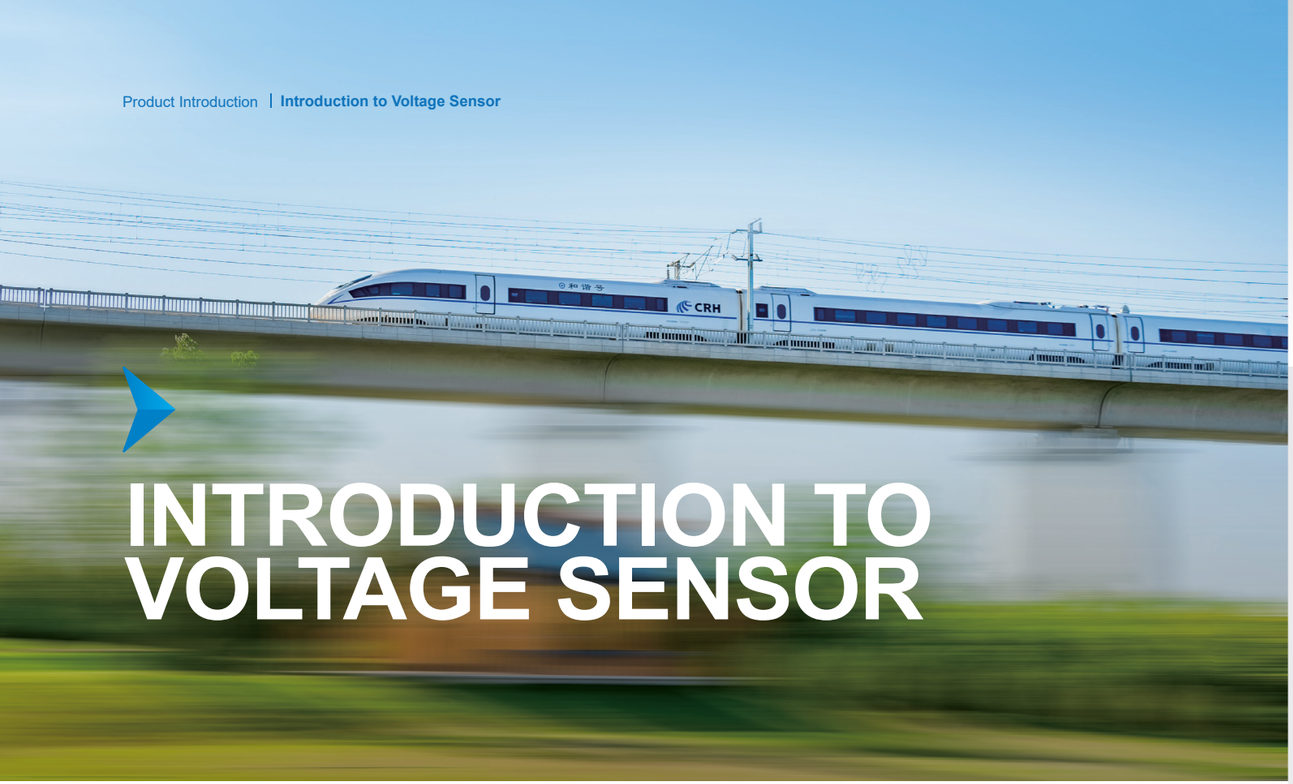


INTRODUCTION TO VOLTAGE SENSOR

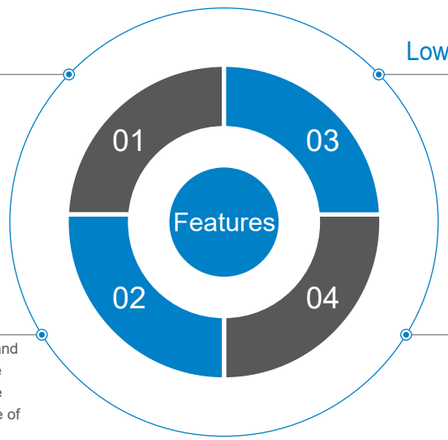
Hangzhi's high-precision voltage sensor is a fluxgate-based voltage measurement and control component that precisely measures DC, AC, pulse, and various irregular voltages under perfect primary and secondary isolation. It is one of the most accurate voltage sensors in the industrial area. The fundamental principle is as follows: Connect the positive and negative poles of the high-voltage DC source in series with a megaohm level resistor to limit the current to the microampere level; the microampere current is indirectly accurately detected by using magnetic modulation technology to detect the magnetic field generated by microampere current accurately, and then the voltage of the high-voltage DC source is accurately calculated based on Ohm's law. It is primarily utilized in metrological verification and calibration applications requiring high accuracy, rail transit, power quality analysis, power analyzers, medical equipment, aerospace, naval vessels, and other applications requiring high sensitivity, stability, and reliability.

High precision

0.1% measurement accuracy, 0.05% linearity, and 0.02% customized product accuracy.

Low primary power consumption

The primary current is less than 1mA, and for customized models, it is as low as 0.1mA, and the primary power consumption is low.



High reliability

the primary and secondary insulation withstand voltages beyond 10KV, with low-temperature drift, low zero drift, high and low-temperature resistance, and a working temperature range of -40-85 ° C.

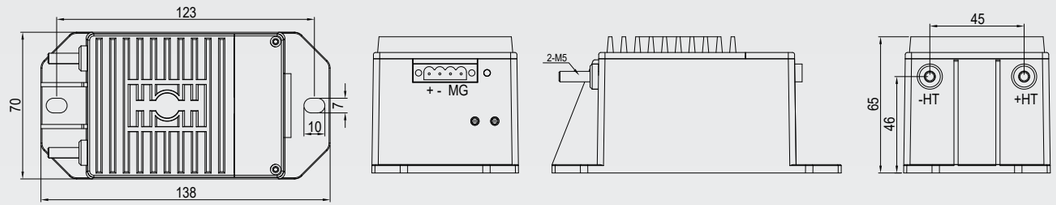
Customizable

Power supply voltage, signal output voltage, primary and secondary insulation strength, and primary current limiting resistance can all be modified to meet the customer's needs.

High precision voltage sensor

HCV SERIES

HCV50~HCV1000

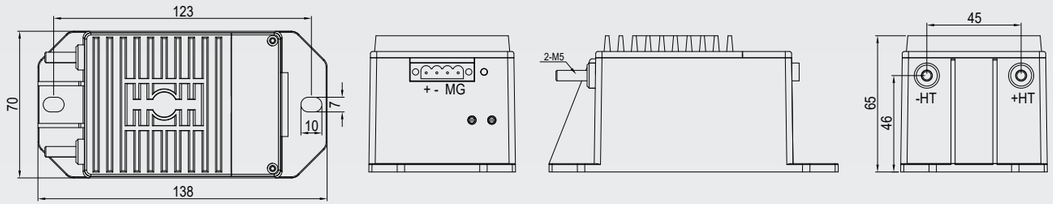


Product model	HCV50	HCV200	HCV500	HCV1000
Primary RMS voltage/V_{PN}	35V	140V	350V	707V
Measurement voltage/V_{PM}	±50V	±200V	±500V	±1000V
Working voltage/V_C	15V	15V	15V	15V
Power consumption/I_C	130+VS/RL	130+VS/RL	130+VS/RL	130+VS/RL
Transformation ratio (input: output)/K_N	50：10	200：10	500：10	1000：10
Secondary rated output voltage/V_S	±10V	±10V	±10V	±10V
Secondary output internal current limiting resistor/R_{Lin}	100Ω	100Ω	100Ω	100Ω
Secondary output load/R_L	>2kΩ	>2kΩ	>2kΩ	>2kΩ
Accuracy/X_G	0.2%	0.2%	0.2%	0.2%
Linearity/ε_L	0.05%	0.05%	0.05%	0.05%
Zero offset voltage/V_O	±5mV	±5mV	±5mV	±5mV
Response time/t_r	±10μs	±10μs	±10μs	±10μs
Bandwidth/BW(3dB)	300kHz	300kHz	300kHz	300kHz
Operating temperature/T_A	-40℃~75℃	-40℃~75℃	-40℃~75℃	-40℃~75℃
Installation method	Screws	Screws	Screws	Screws
Weight	610±5g	610±5g	610±5g	610±5g

High precision voltage sensor

HCV SERIES

HCV1500~HCV3000



Product model	HCV1500	HCV2000	HCV3000
Primary RMS voltage/V_{PN}	1050V	1400V	2100V
Measurement voltage/V_{PM}	±1500V	±2000V	±3000V
Working voltage/V_C	15V	15V	15V
Power consumption/I_C	130+VS/RL	130+VS/RL	130+VS/RL
Transformation ratio (input: output)/K_N	1500：10	2000：10	3000：10
Secondary rated output voltage/V_S	±10V	±10V	±10V
Secondary output internal current limiting resistor/R_{Lin}	100Ω	100Ω	100Ω
Secondary output load/R_L	>2kΩ	>2kΩ	>2kΩ
Accuracy/X_G	0.2%	0.2%	0.2%
Linearity/ε_L	0.05%	0.05%	0.05%
Zero offset voltage/V_O	±5mV	±5mV	±5mV
Response time/t_r	±10μs	±10μs	±10μs
Bandwidth/BW(3dB)	300kHz	300kHz	300kHz
Operating temperature/T_A	-40ºC~75ºC	-40ºC~75ºC	-40ºC~75ºC
Installation method	Screws	Screws	Screws
Weight	610±5g	610±5g	610±5g

TYPICAL APPLICATION

HCV Series - Typical applications

◎ Motor voltage test of new energy vehicles

The motor, which is the heart of electric vehicles, is the vehicle's power source. As a result, motor testing is particularly important. In addition, the DC voltage stabilization system must stabilize the voltage within a specific range at both ends of the battery at a stable DC bus voltage for direct application or other voltage conversions.

Additionally, the mass load power supply system converts the stable high-voltage power output from the DC bus of the electric vehicle's battery into low-voltage output, supplying power to the vehicle's low-voltage DC load.

Hangzhi high-precision voltage sensors can handle low voltage measuring requirements.

◎ Power system protection device

The power system protection device continuously monitors the operation of the power grid and detects voltage and current. The Hangzhi high-precision voltage sensor is highly stable and can meet the voltage detection requirements of the power grid.

◎ Other applications

The core converters of urban transportation systems (subway - tramcar - trolleybus), track locomotive monitoring, subway stations, inverters, converters, rectifiers, etc.