

AC/DC VOLTAGE SENSOR DATASHEET AND APPLICATION MANUAL

Salient Features

- Provides Galvanic Isolation with the help of Hall Effect Transducer
- Insulating plastic case
- Good Linearity
- Low disturbance in common mode

Application

- AC variable speed drives and servo motor drives
- Static converters used in MICROGRID
- Uninterrupted Power Supplies (UPS)
- Static converter for DC motor drives
- Battery supplied applications
- Application domain: Industrial and Academic

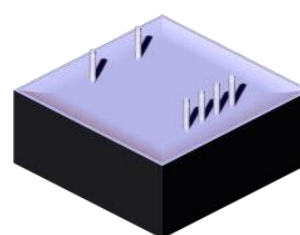


Fig.1 Voltage Sensor

Working

A series resistance must be placed into HV side of and current proportional to the measured voltage must be passed through this resistance, the value of the resistance can be calculated with the help of the data given above, under electrical specifications. This current produces a voltage at the output of the sensor, which is proportional to the measured voltage. The magnitude of the output always has an offset of 1V.

Sensor Parameter

Voltage Sensor Specifications

Parameter	Value	Description
Primary Maximum Voltage Range	1 - 600V	Nominal voltage measurement range
Measuring Range (Peak)	±900V	Maximum measurable peak voltage
Primary Turns	750	Number of primary winding turns
Secondary Turns	300	Number of secondary windings turns
Turns Ratio	750:300 (2.5:1)	Ratio of primary to secondary turns
Rated Secondary Current	50 mA	Current output corresponding to primary voltage
Supply Voltage	±15V	Required power supply for operation
Linearity Error	<0.1%	Maximum deviation from ideal linear response
Primary Resistance	200 Ω	Resistance of the primary winding
Secondary Resistance	28 Ω	Resistance of the secondary winding
Power Consumption	<100 mW	Typical power drawn from the supply
Temperature Range (Operating)	-20°C to +70°C	Ambient temperature range for operation
Temperature Range (Storage)	-40°C to +85°C	Safe temperature range for storage
Maximum Overvoltage	±1200V	Maximum transient voltage before damage

(Transient)		
Isolation Voltage	>3 kV	Maximum voltage isolation between primary and secondary
Bandwidth	≤150 kHz	Frequency range for accurate measurement
Response Time (Delay)	≤1 μs	Time taken for sensor to respond to voltage change
Output Voltage Scaling	1V/100V	Secondary voltage per 100V of primary voltage (if applicable)
Insulation Resistance	>100 MΩ	Minimum resistance between primary and secondary
Mounting Type	PCB Mount / Panel Mount	Installation method
Connection Type	Pin / Screw Terminal	Type of electrical connection
Compliance Standards	IEC 61010 / CE	Safety and performance standards met
Vibration Resistance	10g	Maximum vibration level sensor can withstand
Humidity Range	0 - 95% RH	Operating humidity without condensation
Mass	50 g	Sensor weight

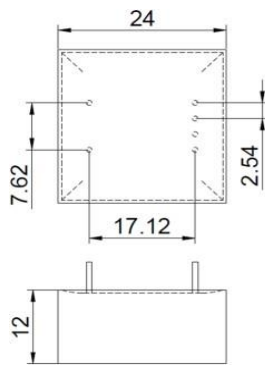


Fig.2 Voltage Sensor Packaging

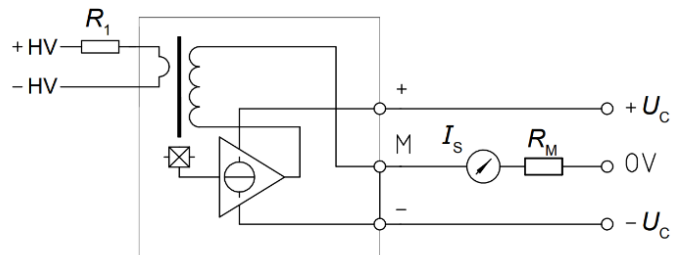
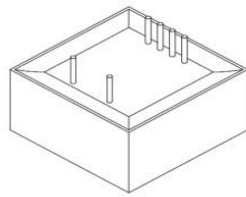


Fig.3 Voltage Sensor Dimension

Advantages

- Very High Accuracy
- Good linearity
- Low thermal drift
- Low response time
- High Bandwidth
- Immunity to external interference
- Low disturbance to common mode