DATA SHEET
Hall Effect Voltage Sensor

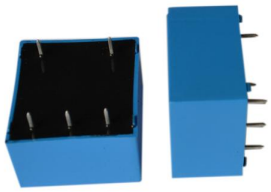
P/N: CHV10A15D25-T	I_{PN}=10mA U_{PN} = 10 ... 1500 V

Feature

- Closed- loop (compensated) voltage transducer
- Supply voltage: DC ±12 ~ 15 V
- Capable measurement of DC and AC voltage with galvanic isolation between primary circuit and secondary circuit.

Advantages

- High accuracy
- Easy installation
- Can be customized
- Low temperature drift
- High immunity to external interference
- Very good linearity



Applications

- The application of induction cooker
- AC/DC variable-speed drive
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Inverter applications

Electrical data：（Ta=25℃，Vc= ±15VDC）

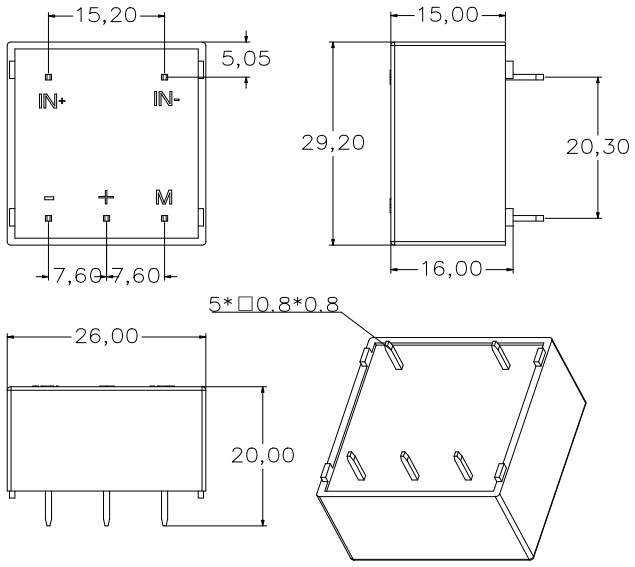
Parameter / Ref	CHV10A15D25-T
Rated input Ipn(mA)	10
Measuring range Ip(mA)	0 ~ ±14
Rated input voltage VPN(V)	10 ~ ±1500
Turns ratio Np/NS (T)	2500:1000
Primary coil resistance R_P (Ω)	200
Secondary coil resistance R_S (Ω)	60
Output current rms I_S(mA)	±25*I_P/I_{PN}
Inside resistance R_M (Ω)	[(V_C-3.0V)/（I_S*0.001）]-R_S
Supply voltage V_C(V)	(±12 ~ ±15) ±5%
Accuracy X_G(%)	@I_{PN},T=25°C < ±0.5
Offset current I_{OE}(mA)	@I_P=0,T=25°C < ±0.15
Temperature variation of I_{OE} I_{OT}(mA/°C)	@I_P=0,-40 ~ +85°C < ±0.5
Linearity error εr(%FS)	< 0.2
Response time tra(μs)	@90% of I_{PN} <40.0

Power consumption I_C(mA)	15+Is
Insulation voltage Vd(KV)	@50/60Hz, 1min, AC 6.0

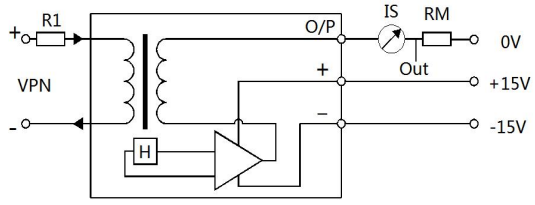
General data:

Parameter	Value
Operating temperature T_A(°C)	-40 ~ +85
Storage temperature T_S(°C)	-55~ +125
Mass M(g)	22
Plastic material	PBT G30/G15, UL94- V0;
Standards	IEC60950-1:2001
	EN50178:1998
	SJ20790-2000

Dimensions(mm):



Connection



General tolerance

General tolerance:< ±0.2mm
Size of Primary pin：2pin, 0.8*0.8±0.15mm；
Secondary 3pin:0.8*0.8±0.15mm

Instruction for use of the voltage sensor model CHV10A15D25-T:

- Primary resistance R1: the sensor’ s optimum accuracy is obtained at the nominal primary current. So R1 should be calculated so that the rated voltage to be measured corresponds to a primary current of 10mA.
- For example: Measuring rated voltage V_{PN}=250V:

R1=25K/3.0W, I_P=10mA Accuracy=±0.5% of V_{PN};

Operating range(recommended):taking into the resistance of the primary windings(which must remain low compared to R1.in order to keep thermal deviation as low as possible) and the isolation,the sensor is suitable for measuring nominal voltage from 10 to 1500V.

When the voltage measured by the sensor is relatively high, it is necessary to consider the highest working voltage of the resistor when selecting the resistance and design scheme. The selection suggestions and reference data are as follows:

1. Meet the basic power requirements, with a margin of at least 30%;
2. When the voltage changes frequently, it is recommended to choose high-power non-inductive resistors, especially

when the voltage is high;

3. It is necessary to pay attention to the maximum working voltage of the resistor itself. It is not the maximum withstand voltage, but the normal maximum working voltage. The general voltage withstand voltage value is:

Ordinary color ring resistor: maximum working voltage is 300V;
Non inductive cement resistance: maximum working voltage is 500V;
Special customized resistor: maximum working voltage is 700-1000V;

So when choosing a resistor, in addition to considering power issues, it is necessary to consider the maximum working voltage of the resistor, otherwise it may overheat and damage the resistor (even if the calculated power is sufficient);

Solution: When testing high voltage, adopt a multi way series parallel connection method to bear high voltage separately, improving the reliability of the product; When designing, try to leave a margin of 30% -50%. When the environment is harsh, in order to improve the product's service life, try to add TVS at the power supply end and input stage for anti-interference protection; The specific technical communication plan of our company is preferred;

Remarks:

- When the current goes through the primary pin of a sensor, the voltage will be measured at the output end.
- Custom design is available for the different rated input current and the output voltage.

WARNING : Incorrect wiring may cause damage to the sensor.