

Split Core Hall Effect AC Current Sensor CYHCS-C3TV

This Hall Effect current sensor is based on open loop principle and designed with a split core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC current, pulse currents etc. The output of the transducer reflects the rectified average value of the current in the carrying conductor.

Product Characteristics	Applications
<ul style="list-style-type: none"> • Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability 	<ul style="list-style-type: none"> • Photovoltaic equipment • Frequency conversion timing equipment • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipment • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data

Primary Nominal Current I_r (A), rms	Primary Current Measuring Range I_p (A)	DC Output Voltage (V)	Part number
50A	0 ~ 50A	x=0: 0-4V $\pm 1.0\%$ x=3: 0-5V $\pm 1.0\%$ x=8: 0-10V $\pm 1.0\%$	CYHCS-C3TV-50A-xnC
100A	0 ~ 100A		CYHCS-C3TV-100A-xnC
200A	0 ~ 200A		CYHCS-C3TV-200A-xnC
300A	0 ~ 300A		CYHCS-C3TV-300A-xnC
400A	0 ~ 400A		CYHCS-C3TV-400A-xnC
500A	0 ~ 500A		CYHCS-C3TV-500A-xnC
800A	0 ~ 800A		CYHCS-C3TV-800A-xnC
1000A	0 ~ 1000A		CYHCS-C3TV-1000A-xnC
1500A	0 ~ 1500A		CYHCS-C3TV-1500A-xnC
2000A	0 ~ 2000A		CYHCS-C3TV-2000A-xnC

(n=2, $V_{cc} = +12VDC$; n=3, $V_{cc} = +15VDC$; n=4, $V_{cc} = +24VDC$)

(Connector: Molex connector C=M; Phoenix Connector: C=P)

Supply Voltage:

$V_{cc} = +12V, +15V, +24V \pm 5\%$

Current Consumption

$I_c < 25mA$

Isolation Voltage

5kV, 50/60Hz, 1min

Output Impedance:

$R_{out} < 150\Omega$

Load Resistor:

$R_L > 10k\Omega$

Accuracy at I_r , $T_A = 25^\circ C$,

$X < 1.0\% FS$

Linearity from 0 to I_r , $T_A = 25^\circ C$,

$E_L < 1.0\% FS$

Electric Offset Voltage, $T_A = 25^\circ C$,

$V_{oe} < 50mV$

Magnetic Offset Voltage ($I_r \rightarrow 0$)

$V_{om} < \pm 20mV$

Thermal Drift of Offset Voltage,

$V_{ot} < \pm 1.0mV/^\circ C$

Thermal Drift ($-10^\circ C$ to $50^\circ C$),

T.C. $< \pm 0.1\% /^\circ C$

Response Time at 90% of I_p ($f = 1k Hz$)

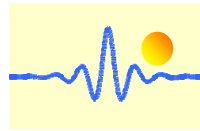
$t_r < 200ms$

Frequency Bandwidth (-3dB),

$f_b = 20Hz - 20 kHz$

Case Material:

PBT, heat resistant $125^\circ C$ flame retardant

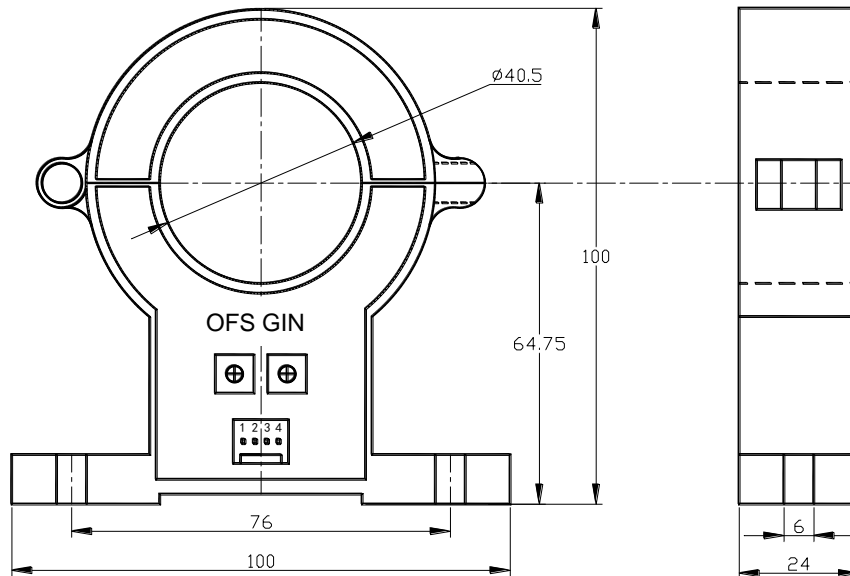


General Data

Ambient Operating Temperature,
Ambient Storage Temperature,

$T_A = -25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
 $T_S = -40^{\circ}\text{C} \sim +100^{\circ}\text{C}$

PIN Definition and Dimensions



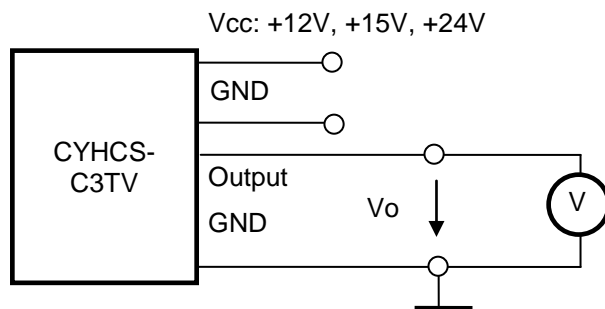
OFS: Offset Adjustment

GIN: Gain Adjustment



1(+): Vcc
2(G): GND
3(O): Output
4(G): GND

Connection



Notes:

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer