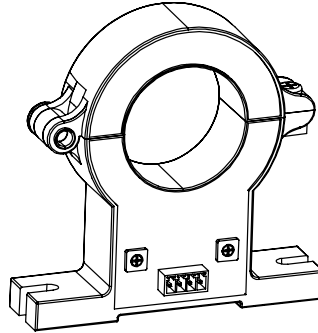


HK1V H01 SERIES

Current Sensor

Model Number:

HK1V 200 H01
HK1V 400 H01
HK1V 500 H01
HK1V 600 H01
HK1V 800 H01
HK1V 1000 H01
HK1V 2000 H01



For the electronic measurement of current:DC,AC,pulsed...,with galvanic insulation between the primary and the secondary circuit.

Features

- ✧ Open loop sensor using the Hall Effect
- ✧ Galvanic insulation between primary and secondary
- ✧ Insulating plastic case recognized according to UL 94-V0
- ✧ No insertion loss
- ✧ Small size
- ✧ Standards:
 - IEC 60664-1:2020
 - IEC 61800-5-1:2022
 - IEC 62109-1:2010

Applications

- ✧ AC variable speed drives
- ✧ Uninterruptible power supplies (UPS)
- ✧ Static converters for DC motor drives
- ✧ Switch mode power supplies (SMPS)
- ✧ Power supplies for welding applications
- ✧ Battery management
- ✧ Wind energy inverter

Safety

This sensor must be used according to IEC 61800-5-1.

This sensor must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacture's operating instructions.

Caution, risk of electrical shock!



When operating the sensor, certain parts of the module can carry hazardous voltage (e.g., Primary busbar, power supply). Ignore this warning can lead to injury and/or cause serious damage.

This sensor is a built-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.

Main supply must be able to be disconnected.

HK1V H01 SERIES

Absolute maximum ratings(not operating)

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	± 18
Primary conductor temperature	T_B	$^{\circ}\text{C}$	100
ESD rating, Human Body Model (HBM)	V_{ESD}	kV	4

- ※ Stresses above these ratings may cause permanent damage.
- ※ Exposure to absolute maximum ratings for extended periods may degrade reliability.

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	$^{\circ}\text{C}$	-40		85	
Ambient storage temperature	T_S	$^{\circ}\text{C}$	-40		125	
Mass	m	g		300		

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test @ 50Hz, 1min	V_d	kV	5	
Plastic case	-	-	UL94-V0	
Comparative tracking index	CTI	PLC	3	
Application example	-	-	400V	Reinforced insulation, according to IEC 61800-5-1, IEC 62109-1CAT III, PD2
Application example	-	-	800V	Basic insulation, according to IEC 61800-5-1, IEC 62109-1CAT III, PD2

HK1V H01 SERIES

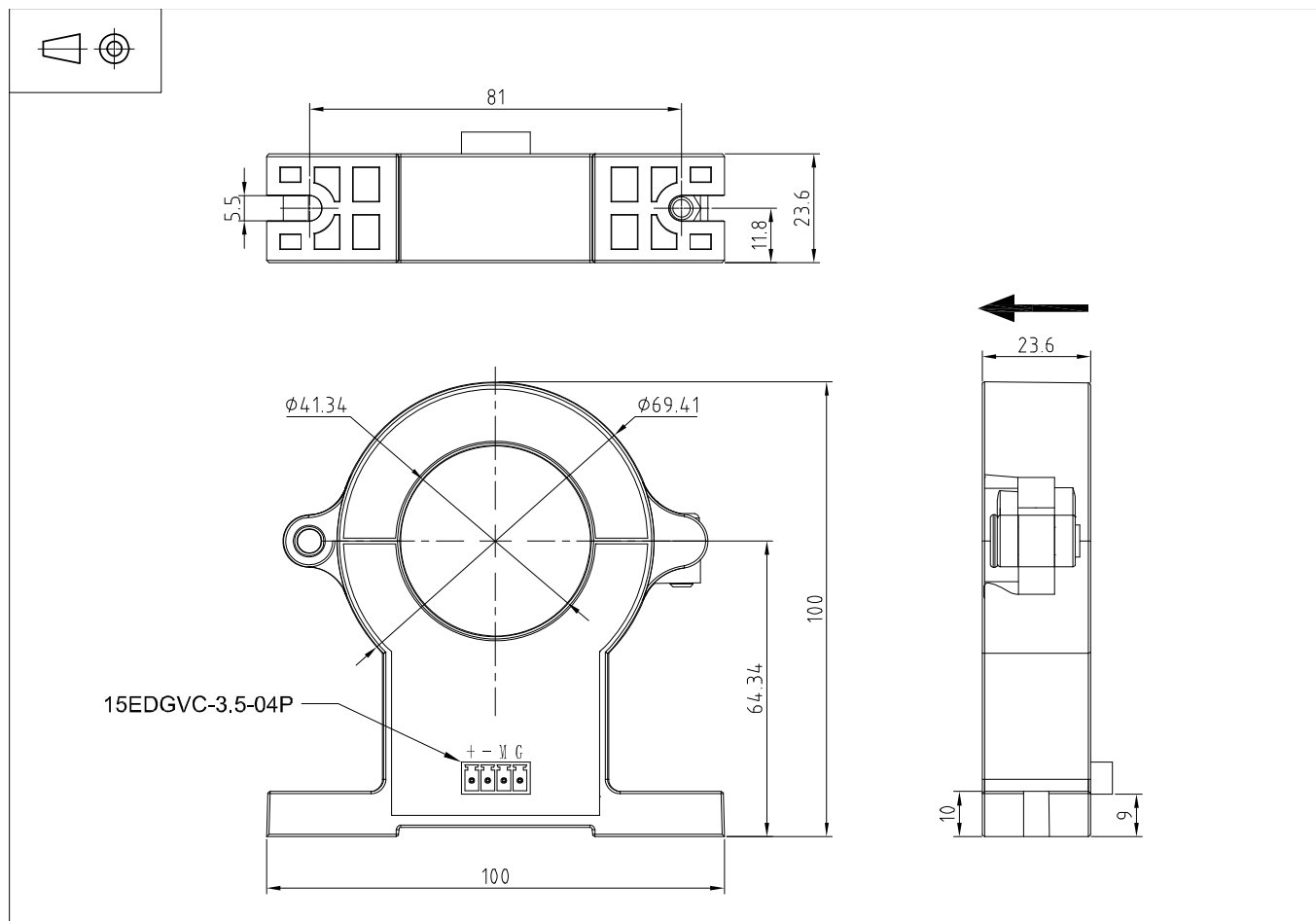
Electrical data

※ With $T_A = 25^\circ\text{C}$, $V_C = \pm 15\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A	-200		-200	HK1V 200 H01
			-400		-400	HK1V 400 H01
			-500		-500	HK1V 500 H01
			-600		-600	HK1V 600 H01
			-800		-800	HK1V 800 H01
			-1000		-1000	HK1V 1000 H01
			-2000		-2000	HK1V 2000 H01
Primary current, measuring range	I_{PM}	A	-400		400	HK1V 200 H01
			-800		800	HK1V 400 H01
			-1000		1000	HK1V 500 H01
			-1200		1200	HK1V 600 H01
			-1600		1600	HK1V 800 H01
			-2000		2000	HK1V 1000 H01
			-4000		4000	HK1V 2000 H01
Supply voltage	V_C	V	± 12		± 15	@ 5%
Current consumption	I_C	mA		25		
Load resistance	R_L	k Ω	10			
Output voltage (Analog) @ I_{PN}	V_{OUT}	V		± 5.000		
Electrical offset voltage	V_{OE}	mV	-20		20	
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	-1		1	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Theoretical sensitivity	G_{th}	mV/A		25.0		HK1V 200 H01
				12.5		HK1V 400 H01
				10		HK1V 500 H01
				8.33		HK1V 600 H01
				6.25		HK1V 800 H01
				5.0		HK1V 1000 H01
				2.5		HK1V 2000 H01
Sensitivity error	$\mathcal{E}_G$	%	-0.5		0.5	Exclusive of V_{OE}
Temperature of G	TCG	mV/K	-1		1	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Linearity error $0 \dots I_{PN}$	$\mathcal{E}_L$	% of I_{PN}	-1		1	Exclusive of V_{OE}
Accuracy@ I_{PN}	X	% of I_{PN}	-1		1	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Hysteresis offset voltage@ $I_P=0$ after $1 \times I_{PN}$	V_{OM}	mV	-20		20	
Response time@ 90% of I_{PN}	t_r	μs			5	
Frequency bandwidth(-1dB)	BW	kHz	10			

HK1V H01 SERIES

Dimensions (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

General tolerance	±1mm
Connection of secondary	15EDGVC-3.5-04P
Primary hole	Φ40.5mm
Sensor	2pc Φ6.0 mm through hole 2pc M6 metal screws

Recommended fastening torque 2.1 N•m (±10%)

Remarks

- ◇ V_{OUT} and I_P are in the same direction, when I_P flows in the direction of arrow.
- ◇ Temperature of the primary conductor should not exceed 100℃.
- ◇ Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.

This is a standard model. For different applications (measurement, secondary connections...), please contact CHIPSENSE.