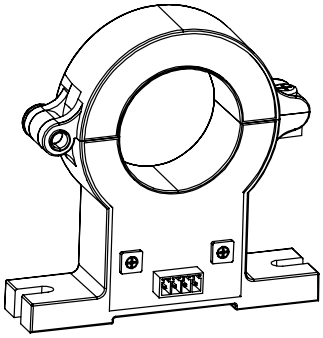
HK1V H00 SERIES

Current Sensor

Model Number:

HK1V 200 H00
HK1V 400 H00
HK1V 600 H00
HK1V 800 H00
HK1V 1000 H00
HK1V 2000 H00



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

Features

- Open loop sensor using the Hall Effect
- Galvanic separation between primary and secondary
- Insulating plastic case recognized according to UL 94-V0
- No insertion loss
- Small size
- Standards:
  - EN50178: 1997
  - IEC 61010-1: 2000
  - UL 508: 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 61010-1.
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.

Absolute maximum ratings(not operating)

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	± 18
Primary conductor temperature	T_B	℃	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	℃	-40		85	
Ambient storge temperature	T_S	℃	-40		125	
Mass	m	g		300		
Standards	EN 50178, IEC 61010-1, UL 508C					

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test @ 50Hz,1min	V_d	kV	5	
Plastic case	-	-	UL94-V0	
Comparative traking index	*CTI*	PLC	3	
Application example	-	-	400V CAT Ⅲ PD2	Reinforced insulation,according to EN 50178, EN 61010-1
Application example	-	-	800V CAT Ⅲ PD2	Basic insulation,according to EN 50178, EN 61010-1

Electrical data

※ With T_A = 25℃, V_C = ±15V, R_L = 10kΩ,unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A	-200		200	HK1V 200 H00
			-400		400	HK1V 400 H00
			-600		600	HK1V 600 H00
			-800		800	HK1V 800 H00
			-1000		1000	HK1V 1000 H00
			-2000		2000	HK1V 2000 H00
Primary current, measuring range	I_{PM}	A	-400		400	HK1V 200 H00
			-800		800	HK1V 400 H00
			-1200		1200	HK1V 600 H00
			-1600		1600	HK1V 800 H00
			-2000		2000	HK1V 1000 H00
			-4000		4000	HK1V 2000 H00
Supply voltage	V_C	V	± 12		± 15	@ 5%
Current consumption	I_C	mA		25		
Load resistance	R_L	kΩ	10			
Output voltage（Analog）@ I_{PN}	V_{OUT}	V	± 3.980	± 4.000	± 4.020	
Electrical offset voltage	V_{OE}	mV	-20		20	
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	-1		1	@ -40℃~85℃
Theoretical sensitivity	G_{th}	mV/A		20.0		HK1V 200 H00
				10.0		HK1V 400 H00
				6.67		HK1V 600 H00
				5.0		HK1V 800 H00
				4.0		HK1V 1000 H00
				2.0		HK1V 2000 H00
Sensitivity error	ε_G	%	-0.5		0.5	Exclusive of V_{OE}
Temperature of G	TCG	mV/K	-1		1	@ -40℃~85℃
Linearity error 0…I_{PN}	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Hysteresis offset voltage@I_P=0 after 1 × I_{PN}	V_{OM}	mV	-20		20	
Response time I_{PN}	t_r	μs			5	
Frequency bandwidth(-1dB)	BW	kHz	10			

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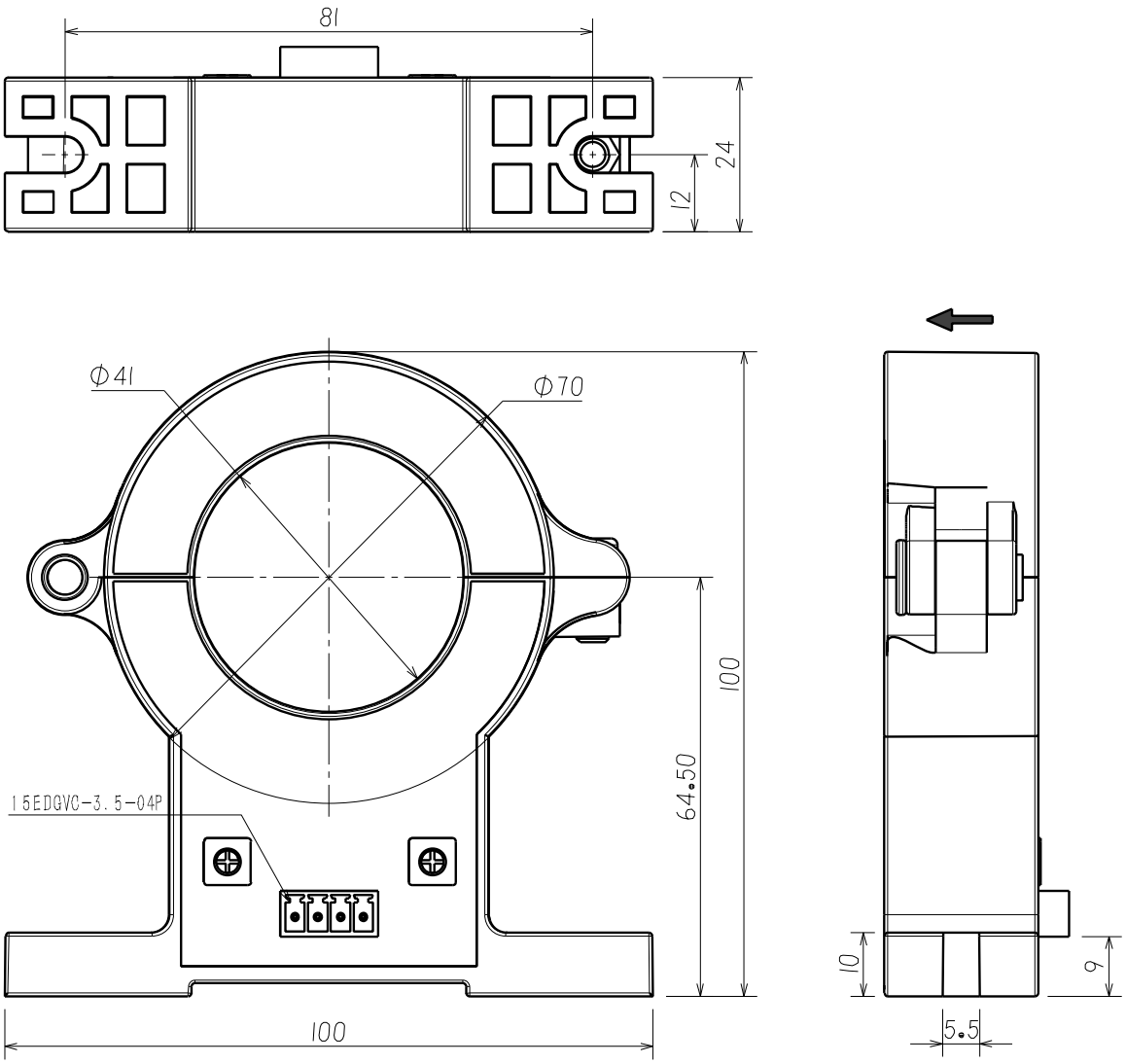
Dimensions（in mm. 1 mm = 0.0394 inch）



Mechanical characteristics

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