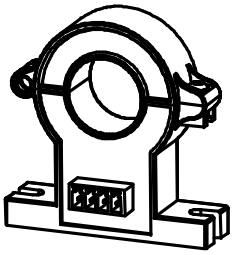
HK3V H20 SERIES

Current Sensor

Model Number:

HK3V 50 H20
HK3V 100 H20



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
- Double hall effect design
- Open mounting
- Standards:
  - IEC 60664-1:2020
  - IEC 61800-5-1:2022
  - IEC 62109-1:2010

Applications

- Battery monitoring motor
- Battery pack current detection
- Smart Power Grid

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.

Absolute maximum ratings(not operating)

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	15.75

※ 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	℃	-25		85	
Ambient storge temperature	T_S	℃	-40		85	
Mass	m	g		65		

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test@50H_Z 1min	V_d	kV	2.5	According to IEC 60664-1
Plastic case	-	-	UL94-V0	

Electrical data

HK3V 50 H20

※ With T_A = 25℃, V_C = ±12V unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A		±50		
Primary measuring range	I_{PM}	A	-100		100	
Supply voltage	V_C	V	±12		±15	@ ±5%
load resistance	R_L	kΩ	10			
Current consumption	I_C	mA			20	
Output voltage	V_{OUT}	V	-4		4	@ I_{PN}
Offset current	V_{OE}	mV	-40		40	@ I_{PN} =0
Temperature drift of offset voltage	TCV_{OE}	mV/°C	-2		2	@-25~70°C
Hysteresis offset voltage	V_{OM}	mV	-40		40	@ I_{PN}=0
Theoretical sensitivity	G_{th}	mV/A		80		
Sensitivity Temperature drift	TCG_{th}	%/°C	-0.1		0.1	@-25~70°C
Linearity error	ε_L	%FS	-1		1	@±5%
Accuracy@ I_{PN}	X	%FS	-1		1	
Response time@ 90% of I_{PN}	t_r	us			100	-

Electrical data

HK3V 100 H20

※ With T_A = 25℃, V_C = ±12V unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A		±100		
Primary measuring range	I_{PM}	A	-200		200	
Supply voltage	V_C	V	±12		±15	@ ±5%
load resistance	R_L	kΩ	10			
Current consumption	I_C	mA			20	
Output voltage	V_{OUT}	V	-4		4	@ I_{PN}
Offset current	V_{OE}	mV	-40		40	@ I_{PN} =0
Temperature drift of offset voltage	TCV_{OE}	mV/°C	-2		2	@-25~70°C
Hysteresis offset voltage	V_{OM}	mV	-40		40	@ I_{PN} =0
Theoretical sensitivity	G_{th}	mV/A		40		
Sensitivity Temperature drift	TCG_{th}	%/°C	-0.1		0.1	@-25~70°C
Linearity error	ε_L	%FS	-1		1	@±5%
Accuracy@ I_{PN}	X	%FS	-1		1	
Response time@ 90% of I_{PN}	t_r	us			100	-

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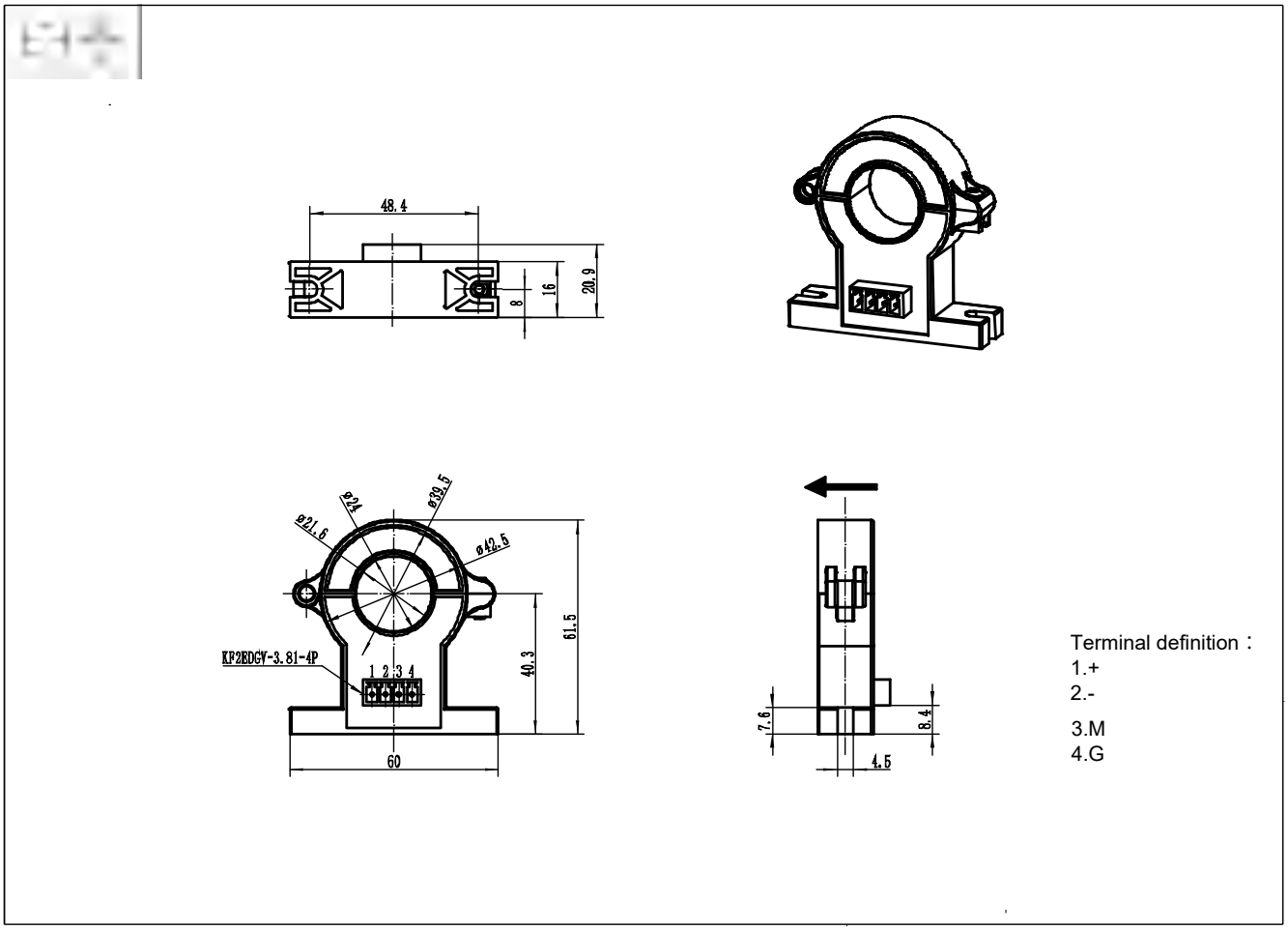
Dimensions（in mm. 1 mm = 0.0394 inch）



Mechanical characteristics

- ✧ General tolerance ±1mm
- ✧ Connection of secondary KF2EDGV-3.81-4P

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.