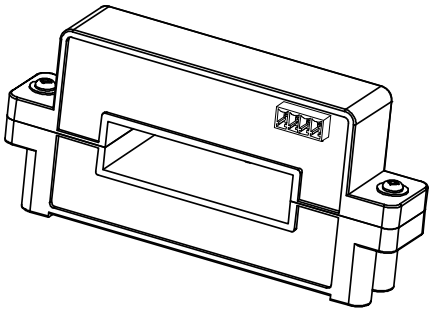
HK5V H20 SERIES

Current Sensor

Model Number:

HK5V 200 H20
HK5V 400 H20
HK5V 600 H20
HK5V 800 H20
HK5V 1000 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 design
- Open installation
- Battery pack current detection
- Smart power grid
- Standards:
  - IEC 60664-1:2020
  - IEC 62109-1:2010
  - IEC 61800-5-1:2022

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.

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		525		

Insulation coordination

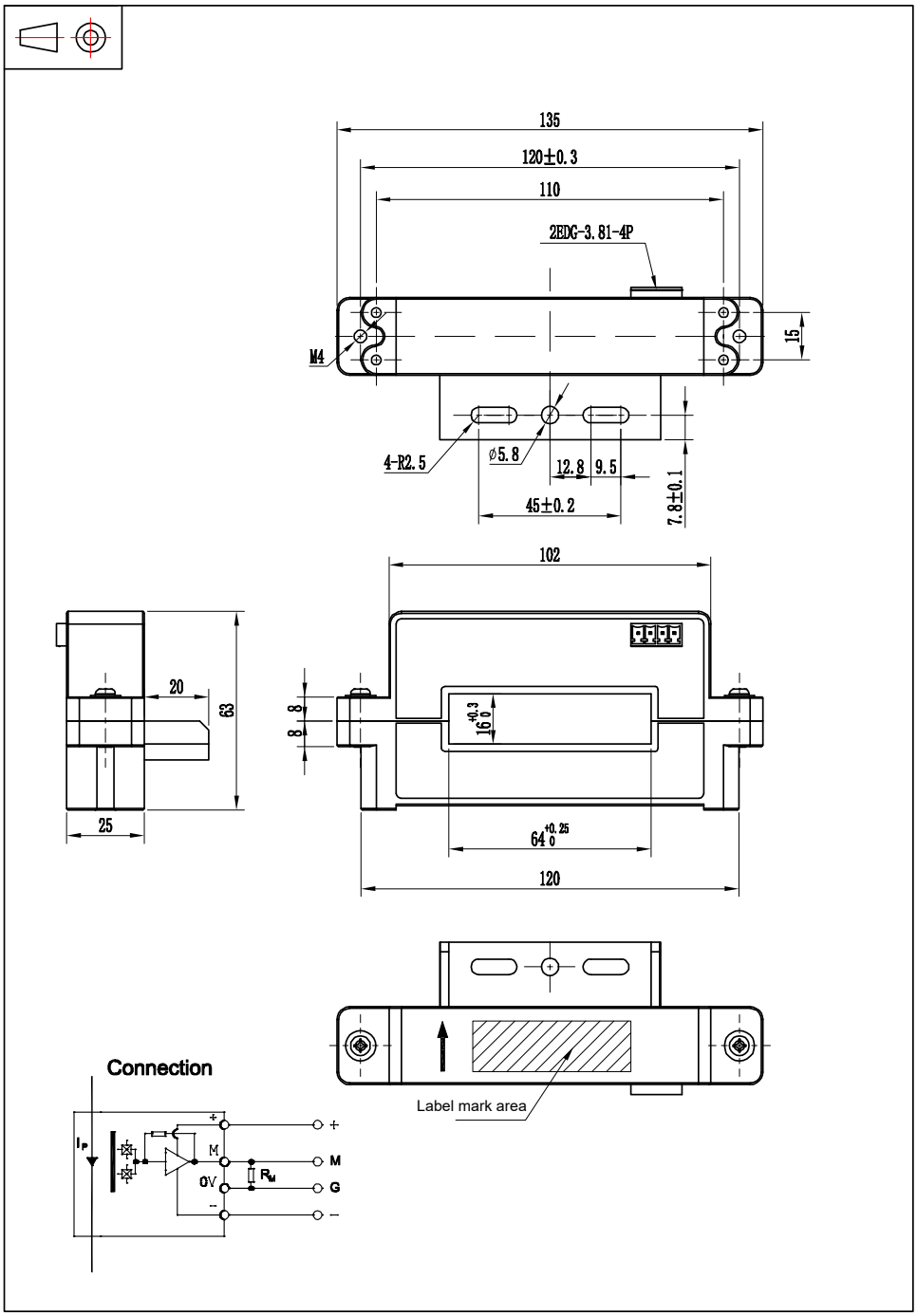
Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test @ 50Hz,1min	V_d	kV	2.5	According to IEC 60664-1
Plastic case	-	-	UL94-V0	

Electrical data

※ With TA = 25℃, VC = ±12V,unless otherwise noted.

Parameter	Symbo	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A	-200 -400 -600 -800 -1000		200 400 600 800 1000	HK5V 200 H20 HK5V 400 H20 HK5V 600 H20 HK5V 800 H20 HK5V 1000 H20
Primary current, measuring range	I_{PM}	A	-300 -600 -900 -1200 -1500		300 600 900 1200 1500	HK5V 200 H20 HK5V 400 H20 HK5V 600 H20 HK5V 800 H20 HK5V 1000 H20
Supply voltage	V_C	V	± 12		± 15	@ 5%
Current consumption	I_C	mA			20	
Load resistance	R_L	kΩ	10			
Output voltage（Analog）@ I_{PN}	V_{OUT}	V	-4		4	
Electrical offset voltage	V_{OE}	mV	-40		40	@ I_{PN} =0
Temperature coefficient of V_{OE}	TCV_{OE}	mV/℃	-2		12	@ -25℃~70℃
Theoretical sensitivity	G_{th}	mV/A		20 10 6.67 5 4		HK5V 200 H20 HK5V 400 H20 HK5V 600 H20 HK5V 800 H20 HK5V 1000 H20
Temperature of G	TCG	%/℃	-0.1		0.1	@ -25℃~70℃
Linearity error 0…I_{PN}	ε_L	% of I_{PN}	-1		1	@±5%
Hysteresis offset voltage@ I_P=0 after 1×I_{PN}	$_{PN}$	mV	-40		40	
Accuracy@ I_{PN}	X	%	-1		1	
Response time@ 90% of I_{PN}	t_r	μs			5	
Frequency bandwidth (-1dB)	BW	kHz	20			

Dimensions（in mm. 1 mm = 0.0394 inch）



Mechanical characteristics

✧	General tolerance	±1mm
✧	Connection of secondary	2EDG-4P-3.81

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.