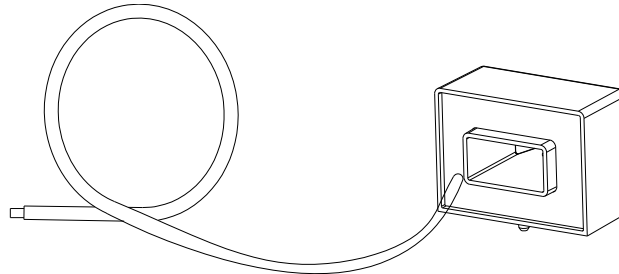


# AS1V H07 SERIES

## Current Sensor

### Model Number:

AS1V 100 H07  
AS1V 200 H07  
AS1V 500 H07



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

### Features

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

### Applications

- ◇ AC variable speed
- ◇ Uninterruptible Power Supplies (UPS)
- ◇ Static converters for DC motor drives
- ◇ Switch Mode Power Supplies (SMPS)
- ◇ Power supplies for welding applications
- ◇ Battery management

## Safety

This sensor must be used according to IEC61800-5-1.

This sensor must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacturer'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	+ 6 V
Primary conductor temperature	$T_B$	°C	105
ESD rating, Human Body Model (HBM)	$V_{ESD}$	kV	4

- ※ Stress 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	$T_A$	°C	-40		105	
Ambient storage temperature	$T_S$	°C	-40		125	
Mass	$m$	g		60		

## Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test @ 50Hz, 1min	$V_d$	kV	3.6	According to IEC 60664-1
Impulse withstand voltage 1.2/50 $\mu$ s	$V_w$	kV	6.6	
Clearance (pri.- sec.)	$d_{c1}$	mm	6.3	
Creepage distance (pri.- sec.)	$d_{cp}$	mm	7.3	
Plastic case	-	-	UL94-V0	
Comparative tracking index	$CTI$	PLC	3	
Application example	-	-	300V	Reinforced insulation, according to IEC 61800-5-1, IEC 62109-1CAT III, PD2
Application example	-	-	600V	Basic insulation, according to IEC 61800-5-1, IEC 62109-1CAT III, PD2

# AS1V H07 SERIES

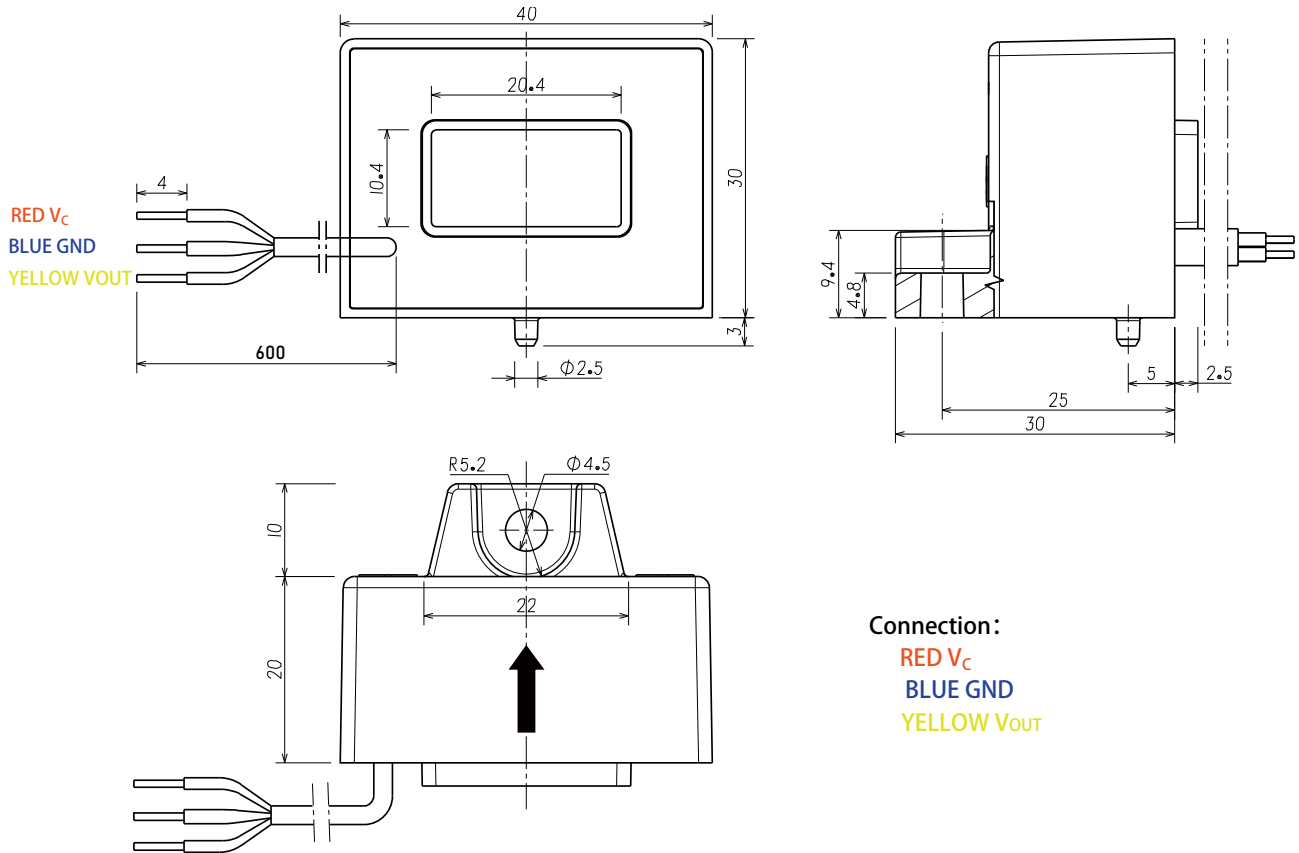
## Electrical data

※ With  $T_A = 25^\circ\text{C}$ ,  $V_C = +5\text{V}$ ,  $R_L = 10\text{k}\Omega$ , unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	$I_{PN}$	A	-100 -200 -500		100 200 500	AS1V 100 H07 AS1V 200 H07 AS1V 500 H07
Supply voltage	$V_C$	V	4.75	5.00	5.25	@ 5%
Current consumption	$I_C$	mA		12		
Output voltage (Analog) @ $I_{PN}$	$V_{OUT}$	V	$V_{OUT} = 2.5 + G_{th} \times I_{PN}$			@ $V_C$
Offset voltage	$V_{OUT}$	V	2.485	2.5	2.515	@ $I_P = 0\text{A}$
Load resistance	$R_L$	k $\Omega$	10			
Electrical offset voltage	$V_{OE}$	mV	-10		10	
Temperature coefficient of $V_{OE}$	$TCV_{OE}$	mV	-10	$\pm 6$	10	@ $-40^\circ\text{C} \sim 105^\circ\text{C}$
Hysteresis offset voltage @ $I_P = 0$ after $1 \times I_{PN}$	$V_{OM}$	mV	-10		10	
Theoretical sensitivity	$G_{th}$	mV/A		20 10 4		AS1V 100 H07 AS1V 200 H07 AS1V 500 H07
Sensitivity error	$\varepsilon_G$	%	-0.5		0.5	Exclusive of $V_{OE}$
Temperature of G	$TCG$	%	-0.5		0.5	@ $-40^\circ\text{C} \sim 105^\circ\text{C}$
Linearity error 0... $I_{PN}$	$\varepsilon_L$	% of $I_{PN}$	-0.5		0.5	Exclusive of $V_{OE}$
Accuracy @ $I_{PN}$	$X$	% of $I_{PN}$	-1		1	Exclusive of $V_{OE}$
Response time @ 90% of $I_{PN}$	$t_r$	$\mu\text{s}$		3	5	
Frequency bandwidth (-3dB)	$BW$	kHz	50			

# AS1V H07 SERIES

Dimensions (in mm. 1 mm = 0.0394 inch)



Connection:  
 RED V<sub>c</sub>  
 BLUE GND  
 YELLOW V<sub>out</sub>

## Mechanical characteristics

◇ General tolerance	±0.5 mm
◇ Secondary output	RVVP 3×0.3mm <sup>2</sup>
◇ Output line length	600 ±10mm
◇ Primary hole	20.5mm×10.5mm
◇ Sensor	1pc Φ4.5 mm through hole 1pc M4 metal screws

Recommended fastening torque 0.9 N•m (±10%)

## Remarks

- ◇ V<sub>OUT</sub> and I<sub>p</sub> are in the same direction, when I<sub>p</sub> flows in the direction of arrow.
- ◇ Temperature of the primary conductor should not exceed 105°C.
- ◇ Dynamic performances (di/dt and response time) are best with asingle bar completely filling the primary hole.

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