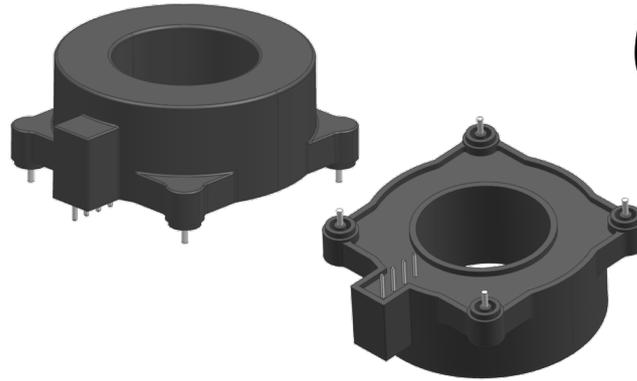


Current sensor

Model Number:

AR4V 200 P00
AR4V 400 P00
AR4V 600 P00
AR4V 800 P00



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

Features

- ✧ Open loop (compensated) current sensor using the Hall effect
- ✧ Galvanic insulation between primary and secondary
- ✧ Insulating plastic case recognized according to UL 94-V0
- ✧ No insertion loss
- ✧ Supply voltage : +5V
- ✧ 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
- ✧ 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	6.5
Primary conductor temperature	T_B	°C	100

※ Stresses above these ratings may cause permanent damage.

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	-45		125	
Mass	m	g		60		

※ Exposure to absolute maximum ratings for extended periods may degrade reliability.

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
Impulse withstand voltage 1.2/50 μ s	V_w	kV	3.2	According to IEC 60664-1
Clearance (pri.- sec.)	d_{ci}	mm	4.5	
Creepage distance (pri.- sec.)	d_{cp}	mm	5.5	
Comparative tracking index	CTI	PLC	Group II	
Application example	-	-	150V	Reinforced insulation, according to IEC61800-5-1, IEC 62109-1CATIII, PD2
Application example	-	-	300V	Basic insulation, according to IEC 61800-5-1, IEC 62109-1CATIII, PD2

Electrical data

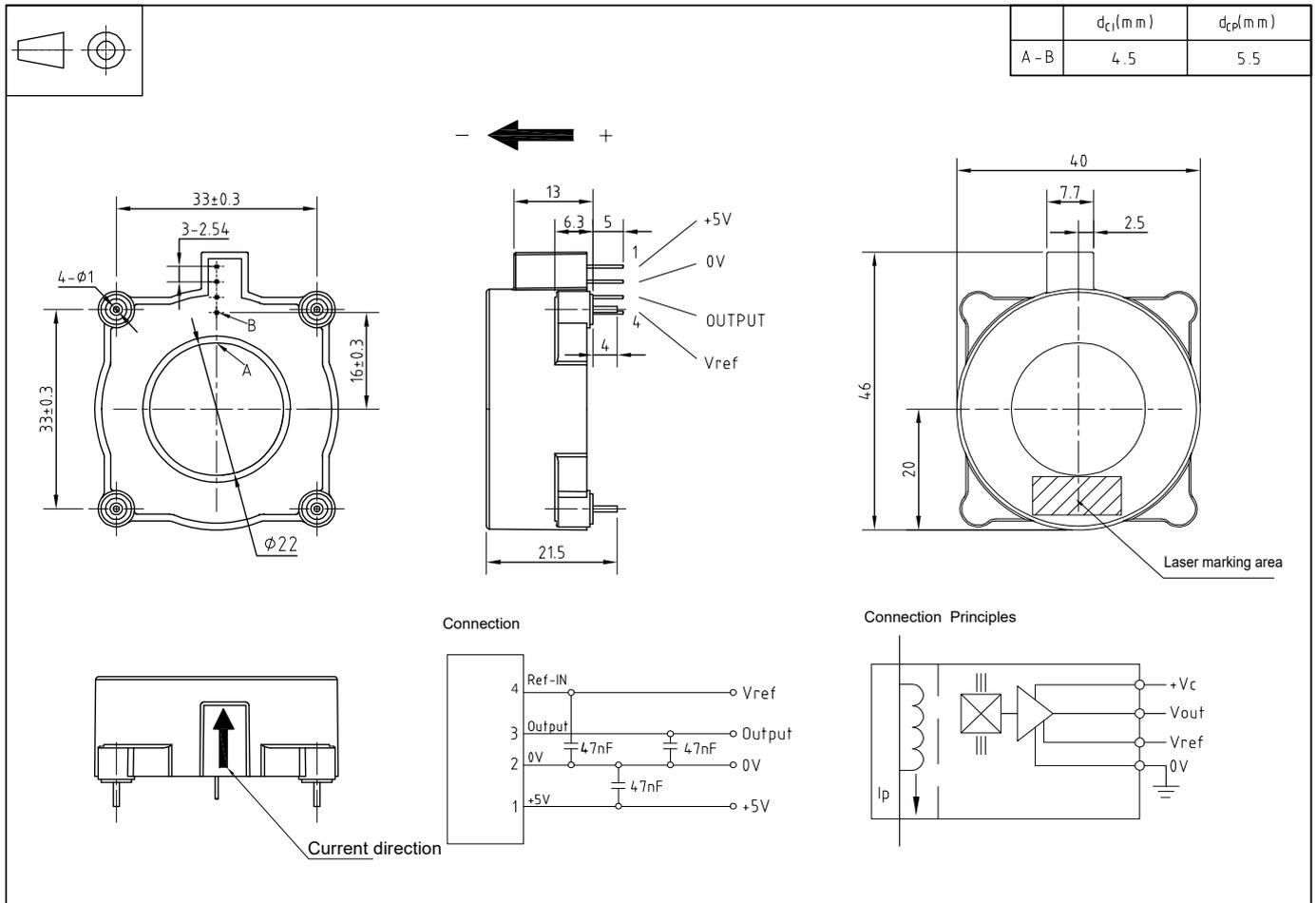
With $T_A = 25^\circ\text{C}$, $V_C = +5\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	I_{PN}	A	-200		+200	AR4V 200 P00
			-400		+400	AR4V 400 P00
			-600		+600	AR4V 600 P00
			-800		+800	AR4V 800 P00
Primary current measuring range	I_{PM}	A	-300		+300	AR4V 200 P00
			-600		+600	AR4V 400 P00
			-900		+900	AR4V 600 P00
			-1200		+1200	AR4V 800 P00
Supply voltage	V_C	V		+5		@ 5%
Current consumption	I_C	mA		10		
Load resistor	R_L	k Ω	10			
Output voltage (Analog)	V_{OUT}	V		$V_{ref} \pm 1.25 * I_{PN} / I_{PN}$		
Offset voltage	V_{OE}	mV	-25		25	
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	-0.1		0.1	
Theoretical sensitivity	G_{th}	mV/A		6.25		AR4V 200 P00
				3.125		AR4V 400 P00
				2.083		AR4V 600 P00
				1.56		AR4V 800 P00
Temperature drift of G	T_{CG}	ppm/K	-420		420	
Linearity error 0... I_{PN}	ϵ_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	μs			3.5	
Frequency bandwidth(-3dB)	BW	kHz			240	

AR4V P00 SERIES

CHIPSENSE

Dimensions (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- ◇ General tolerance ± 0.5 mm
- ◇ Primary hole $\Phi 22$

Remarks

- ◇ V_{OUT} is positive, when I_P flows in the direction of arrow.
- ◇ Temperature of the primary conductor should not exceed 100°C .
- ◇ 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.