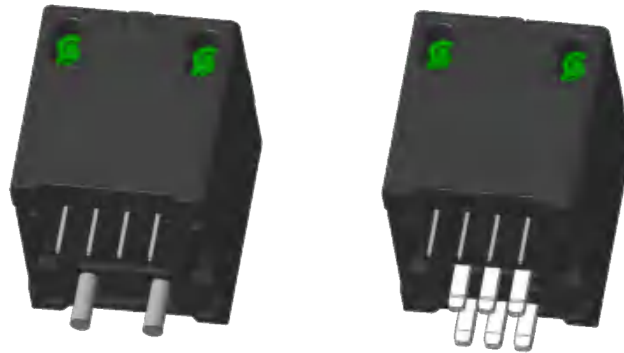


AN5V PB00 SERIES

Current Sensor

Model Number:

AN5V	10	PB00
AN5V	15	PB00
AN5V	20	PB00
AN5V	25	PB00
AN5V	30	PB00
AN5V	50	PB00
AN5V	60	PB00



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

Features

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

Applications

- ◇ AC variable speed
- ◇ Static converters for DC motor drives
- ◇ Uninterruptible Power Supply (UPS)
- ◇ Photovoltaic inverter
- ◇ Module power supply
- ◇ Switch Mode Power Supplies (SMPS)
- ◇ Battery Management

Safety

The sensor must be used according to IEC 61800-5-1.

The 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

Parameter	Symbol	Unit	Value
Supply voltage	V_C	V	± 15.75
Primary conductor temperature	T_B	$^{\circ}\text{C}$	100

- ✘ 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	$^{\circ}\text{C}$	-40		85	
Ambient storage temperature	T_S	$^{\circ}\text{C}$	-40		105	
Mass	m	g		27 30		AN5V 10...30 PB00 AN5V 50...60 PB00

Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test, 50 Hz, 1 min	V_d	kV	3.0	
Impulse withstand voltage 1.2/50 μs	V_w	kV	6.0	
Clearance (pri.- sec.)	d_{Cl}	mm	9.8	AN5V 10...30 PB00
			8.1	AN5V 50...60 PB00
Creepage distance (pri.- sec.)	d_{Cp}	mm	10	AN5V 10...30 PB00
			8.1	AN5V 50...60 PB00
	CTI	PLC	Group I	
Plastic case	-	-	UL94-V0	
Application example	-	V	300	Reinforced insulation, according to IEC 60664, IEC 61800
Application example	-	V	600	Basic insulation, according to IEC 60664, IEC 61800

AN5V PB00 SERIES

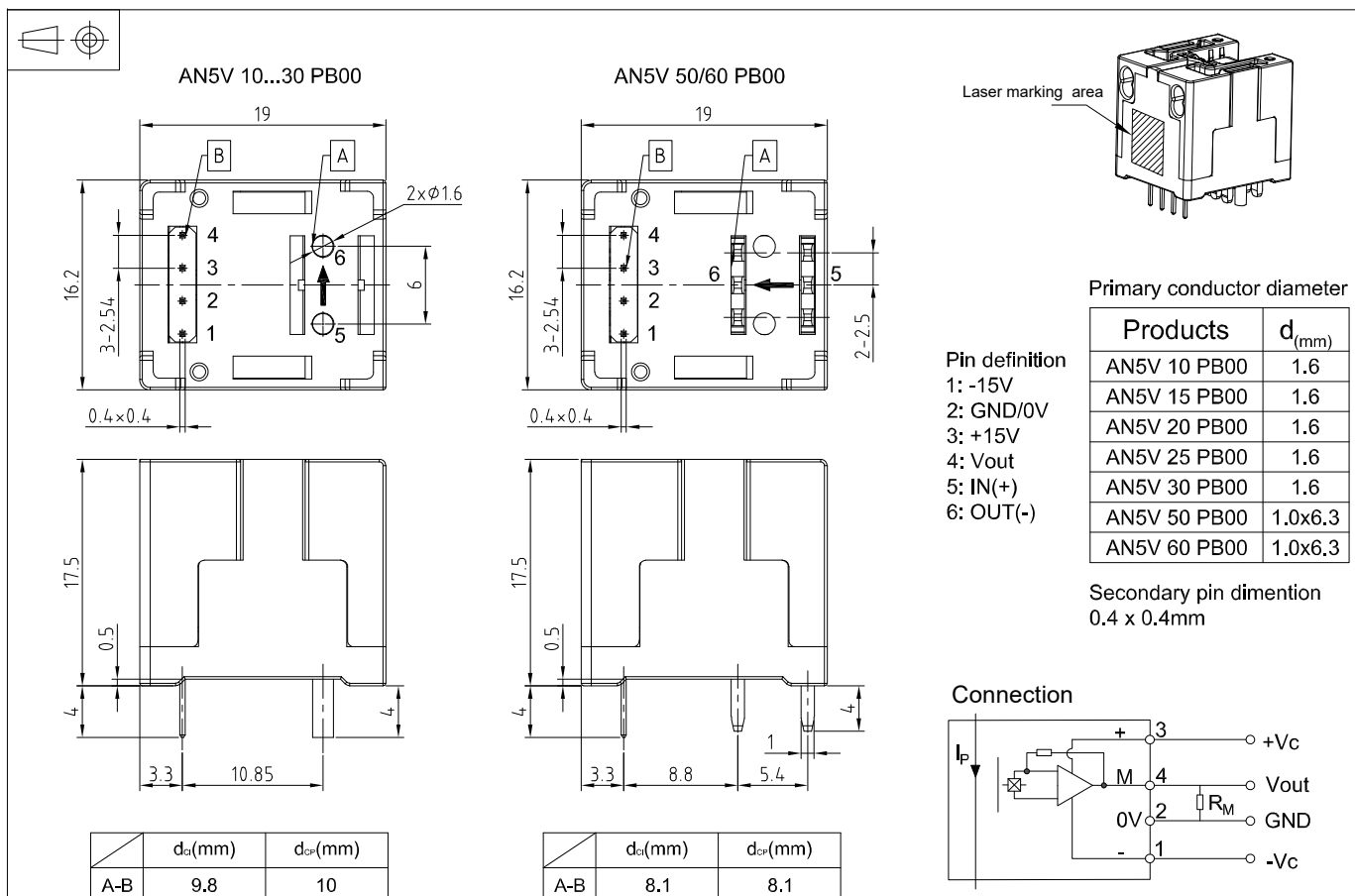
Electrical data

※ With $T_A = 25^\circ\text{C}$, $V_C = \pm 15\text{V}$, $R_L = 10\text{k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal RMS current	I_{PN}	A	-10		10	AN5V 10 PB00
			-15		15	AN5V 15 PB00
			-20		20	AN5V 20 PB00
			-25		25	AN5V 25 PB00
			-30		30	AN5V 30 PB00
			-50		50	AN5V 50 PB00
			-60		60	AN5V 60 PB00
Primary current, measuring range*1	I_{PM}	A	-30		30	AN5V 10 PB00
			-45		45	AN5V 15 PB00
			-60		60	AN5V 20 PB00
			-75		75	AN5V 25 PB00
			-90		90	AN5V 30 PB00
			-150		150	AN5V 50 PB00
			-180		180	AN5V 60 PB00
Supply voltage*1	V_C	V	± 12		± 15	@ 5%
Current consumption	I_C	mA		15	20	
Load resistance	R_L	k Ω	10			
Output voltage (Analog) @ I_{PN}	V_{OUT}	V	± 3.960	± 4.000	± 4.040	
Electrical offset voltage	V_{OE}	mV	-40		40	
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	-1		1	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Theoretical sensitivity	G_{th}	mV/A		400.00		AN5V 10 PB00
				266.67		AN5V 15 PB00
				200.00		AN5V 20 PB00
				160.00		AN5V 25 PB00
				133.33		AN5V 30 PB00
				80.00		AN5V 50 PB00
				66.66		AN5V 60 PB00
Sensitivity error	ε_G	%	-1		1	Exclusive of V_{OE}
Temperature coefficient of G	TCG	%/K	-0.05		0.05	@ $-40^\circ\text{C} \sim 85^\circ\text{C}$
Linearity error 0... I_{PN}	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Hysteresis offset voltage@ $I_P=0$ after $1 \times I_{PN}$	V_{OM}	mV	-15		15	
Accuracy@ I_{PN}	X	% of I_{PN}	-1		1	Exclusive of V_{OE}
Response time@ 90% of I_{PN}	t_r	μs			5	
Frequency bandwidth(-3dB)	BW	kHz	50			

AN5V PB00 SERIES

Dimensions (in mm. 1 mm = 0.0394 inch)



Remarks

± General tolerance ±0.5 mm

± X_{UW} 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°C.

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