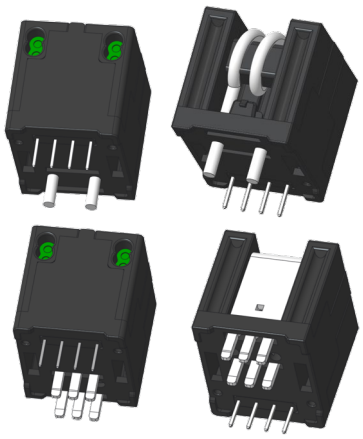
AN5V PB00 SERIES

CHIPSENSE

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



RoHS compliant

CE

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	℃	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	℃	-40		85	
Ambient storage temperature	T_S	℃	-45		105	
Mass	m	g		27 30		AN5V 10...30 PB00 AN5V 50...60 PB00

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

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 1.2/50μs	V_W	kV	6.0	
Clearance (pri.- sec.)	d_{Cl}	mm	9.8 8.1	AN5V 10...30 PB00 AN5V 50...60 PB00
Creepage distance (pri.- sec.)	d_{Cp}	mm	10 8.1	AN5V 10...30 PB00 AN5V 50...60 PB00
Comparative traking index	*CTI*	PLC	Group I	
Application example	-	V	300	Reinforced insulation,according to IEC 60664, IEC 61800
Application example	-	V	600	Basic insulation,according to IEC 60664, IEC 61800

Electrical data

※ With T_A = 25℃, V_C = ±15V, R_L = 10kΩ, 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	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	V_C	V	± 12		± 15	@ 5%
Current consumption	I_C	mA		15	20	
Load resistance	R_L	kΩ	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℃~85℃
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℃~85℃
Linearity error 0…I_{PN}	ε_L	% of I_{PN}	-1		1	Exclusive of V_{OE}
Hysteresis offset voltage@I_P=0 after 1 × 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			

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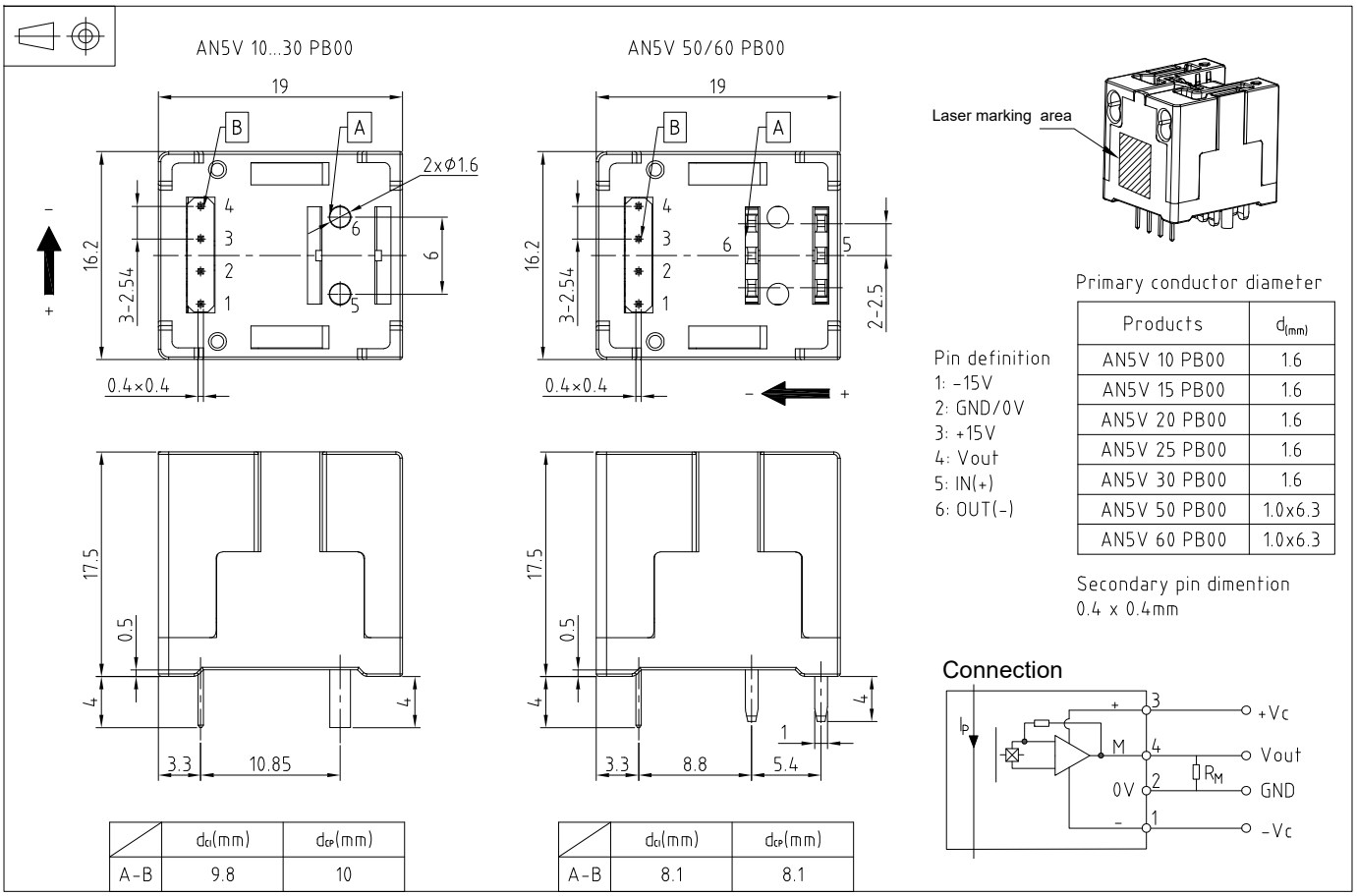
Dimensions（in mm. 1 mm = 0.0394 inch）



Products	$d_{(mm)}$
AN5V 10 PB00	1.6
AN5V 15 PB00	1.6
AN5V 20 PB00	1.6
AN5V 25 PB00	1.6
AN5V 30 PB00	1.6
AN5V 50 PB00	1.0x6.3
AN5V 60 PB00	1.0x6.3

	d_G(mm)	d_{CP}(mm)
A-B	9.8	10

	d_G(mm)	d_{CP}(mm)
A-B	8.1	8.1

✧ General tolerance ±0.5 mm

Remarks

✧ When I_P flows in the direction of the arrow, the current output is positive.

✧ Temperature of the primary conductor should not exceed 100℃.

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