Hall Effect Current Sensor HE050...300T04

I_{PN} = 50...300A

Features

. Low Amplitude Error & Phase Error.
. Closed Loop Hall effect Current Sensor.
. Isolated plastic case recognized according to UL 94-V0.

Advantage

. Excellent accuracy
. Very good linearity
. Low temperature drift
. Optimized response time
. Wide frequency bandwidth
. No insertion losses
. High immunity to external interference
. Current overload capability.

Applications

. AC variable speed drives and servo motor drives
. Static converters for DC motor drives
. Battery supplied applications
. Uninterruptible Power Supplies(Ups)
. Switched Mode Power Supplies(SMPS)
. Power suppliers for welding applications.

Application domain

. Commercial
. Industrial

Maximum ratings

Parameter	Symbol	Value	Unit
Maximum supply voltage (working) -40 to 85°C	±Uc	± 15V	V
Primary conductor temperature	T_s	85	°C
maximum steady state primary current) -40 to 85°C	I_{PN}	300	A
Rms Voltage For Ac Insulation Test,50hz,1 Min	U_d	3.5	KV
Comparative Tracking Index (CTI)		250	
Insulation Resistance	R_{is}	>100	MΩ

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Product Range

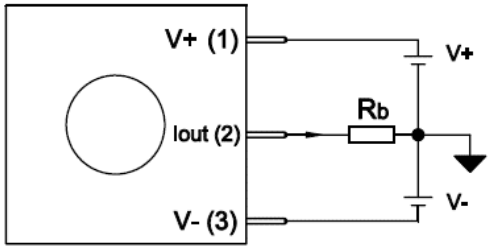
HE050…300T04

Product Code	Primary Nominal Current	Primary Measuring Range
HE050T04	50A	±75A
HE100T04	100A	±150A
HE200T04	200A	±240A
HE300T04	300A	±500A

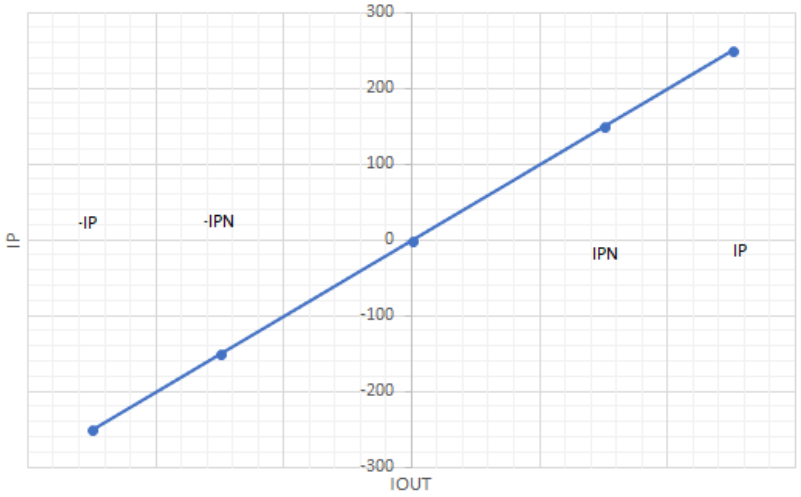
Electrical data

Parameter	Symbol	Condition	Min	Typ	Max		Unit
Primart Nominal Rms Current	I_{pn}		50		300		A
Primary Current, Measuring Range	I_P		75		500		A
Burden Resistance	R_b		**HE050T04**	**HE100T04**	**HE200T04**	**HE300T04**	
		with +/-12V @ I_{PN} A_{RMS}	384	177	71	37	Ω
		with +/-12V @ I_P ADC	247	107	14	10	Ω
		with +/-15V @ I_{PN} A_{RMS}	504	237	100	56	Ω
		with +/-15V @ I_P ADC	327	147	28	21	Ω
Resistance Of Secondary Winding	R_S	$R_S(T_A) = R_S$ x (1+0.004x(T_A+Δtemp-25)) Est temp increase @I_{PN} is Δtemp = 15 °C		25			Ω
Current Consumption at I_{PN}	I_{out}			20 + I_{OUT}			mA
Current Output @ I_{PN}	I_{OUT}		25	50	100	150	mA
Number Of Secondary Turns	N_S			2000			
Theoretical Sensitivity	G_{th}		0.025	0.05	0.1	0.15	A
Supply Voltage	$\pm U_C$		±12		±15		V
Offset Current, Referred To Primery	I_O			<±0.25			mA
Temperature Variation Of I_O, Referred To Primary	I_{OT}			± 0.15			mA
Linearity Error	Σ_L	25 to 70 to 85 °C -40 to 85 °C		< 0.1			% of I_{PN}
Overall Accuracy At I_{PN}	X_G	1Hz to 20KHz fig 4		± 0.8			% of I_{PN}
Reaction Time @ 90% Of I_{PN}	t_{ra}	0 to 1KA, 200A/µs		<1.0			µs
Frequency Bandwidth	BW	-3dB, small signal bw	0		100		KHz
di/dt accurately followed	di/dt			>100			A/µs
Ambient Operating Temperature	T_A		-40		+85		°C
Ambient Storage Temperature	T_S		-50		+90		°C
Mass	m			120			g

Connection Diagram

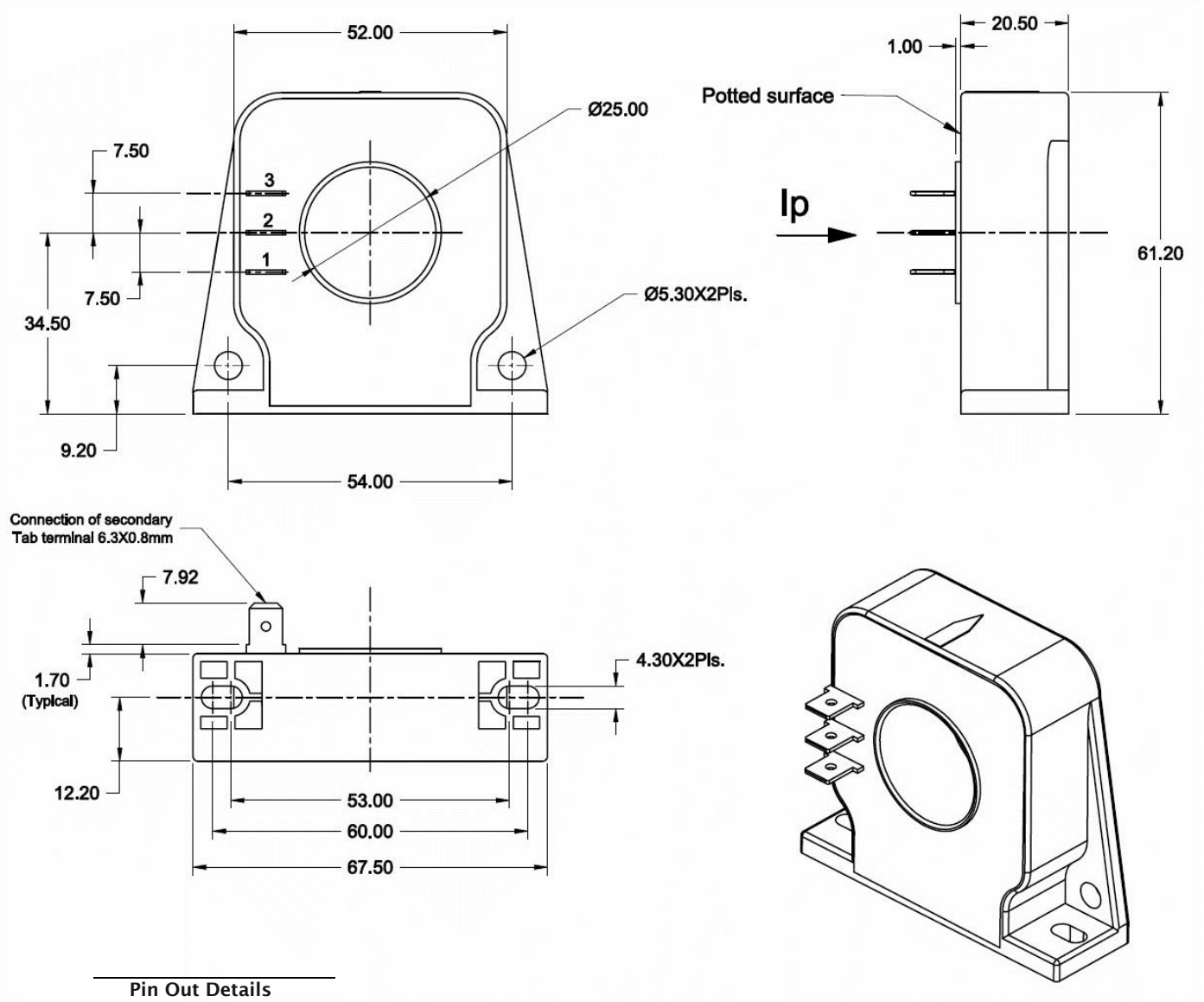


Input & Output Characteristics



Mechanical dimensions in mm

Tolerance: ±0.5mm



Pin Out Details	
Tab 1	+VCC (+V)
Tab 2	Output (I_{OUT})
Tab 3	-VEE (-V)

Safety

● This Current Transformer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

● Caution, risk of electrical shock
When operating the Current Transformer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
● Ignoring this warning can lead to injury and/or cause serious damage.
● A protective housing or additional shield could be used.
● Main supply must be to be disconnected.
● If IP flows in the direction of the Arrow I_{Sek} is positive
● Over currents (»I_{PN}) or the missing of the supply voltage can cause an additional remaining magnetic offset
● The temperature of the primary conductor may not exceed 100 ˚C
● This Sensors may only be used in electrical or electronic systems which fulfil the relevant regulations (Standards, EMC Requirements…)
● Pay attention to protect non-isolated high-voltage current carrying parts against direct contact (e.g. with a protective housing)
● When installing this sensor, you must ensure that the safe separation (between primary circuit and secondary circuit) is maintained over the whole circuits and their connections
● Disconnecting the main power must be possible