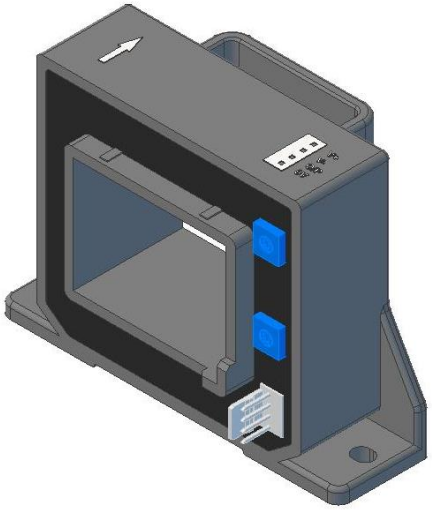
Hall Effect Current Sensor HSS200…1K5T01 I_{PN} = 200A…1500A



Features
. Low Amplitude Error & Phase Error.
. 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 85ºC	±Uc	±15V	V
Primary conductor temperature	T_s	85	ºC
maximum steady state primary current) -40 to 85ºC	I_{PN}	200 to 1500	A
Impulse withstand voltage 1.2/50µS	V_w	9.9	KV
RMS Voltage for AC Insulation Test,50hz,1 Min	U_d	4.9	KV
Comparative Tracking Index	CTI	275	V
Insulation Resistance @500 V DC	R_{IS}	>1000	MΩ

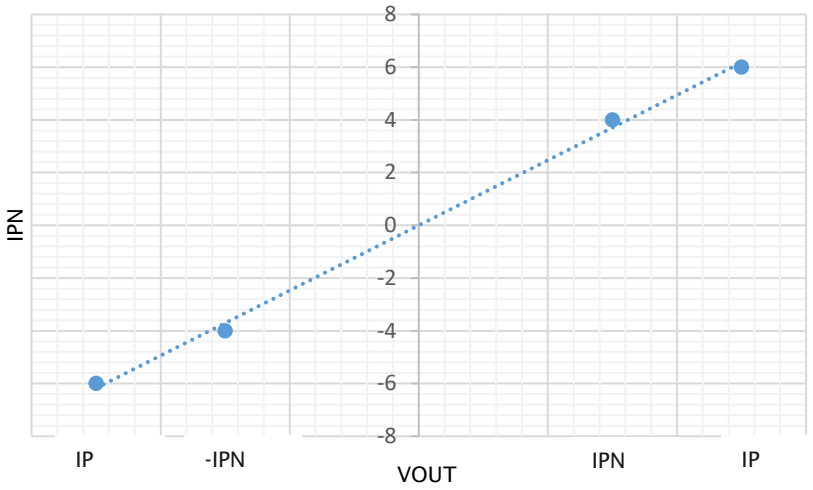
Product Range

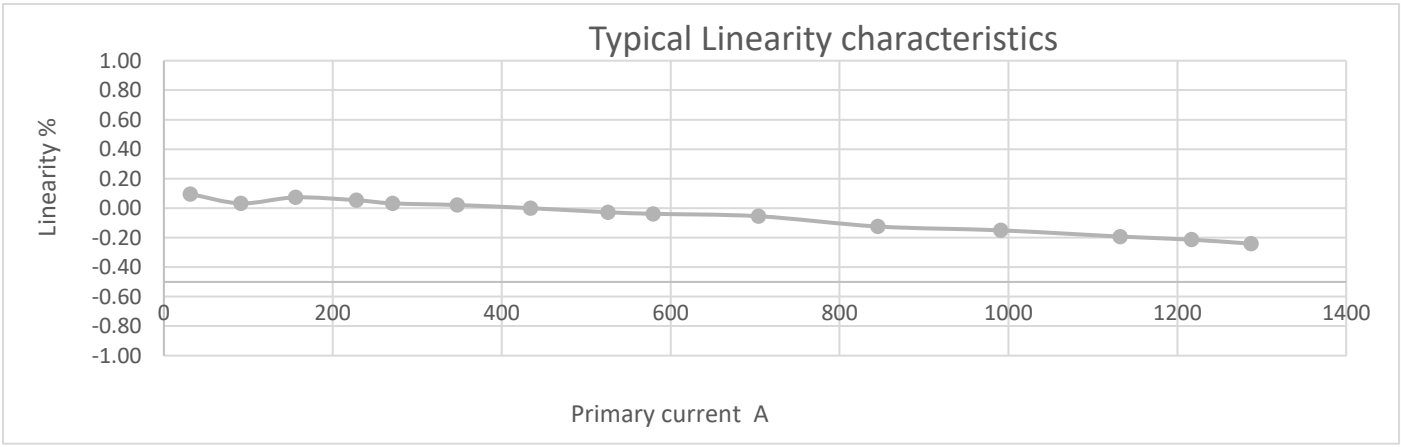
Product Code	Primary Nominal Current	Primary Measuring Range
HSS200T01	200A	±600A
HSS400T01	400A	±1200A
HSS500T01	500A	±1500A
HSS600T01	600A	±1800A
HSS800T01	800A	±2400A
HSS1K0T01	1000A	±2500A
HSS1K2T01	1200A	±2500A
HSS1K5T01	1500A	±2500A

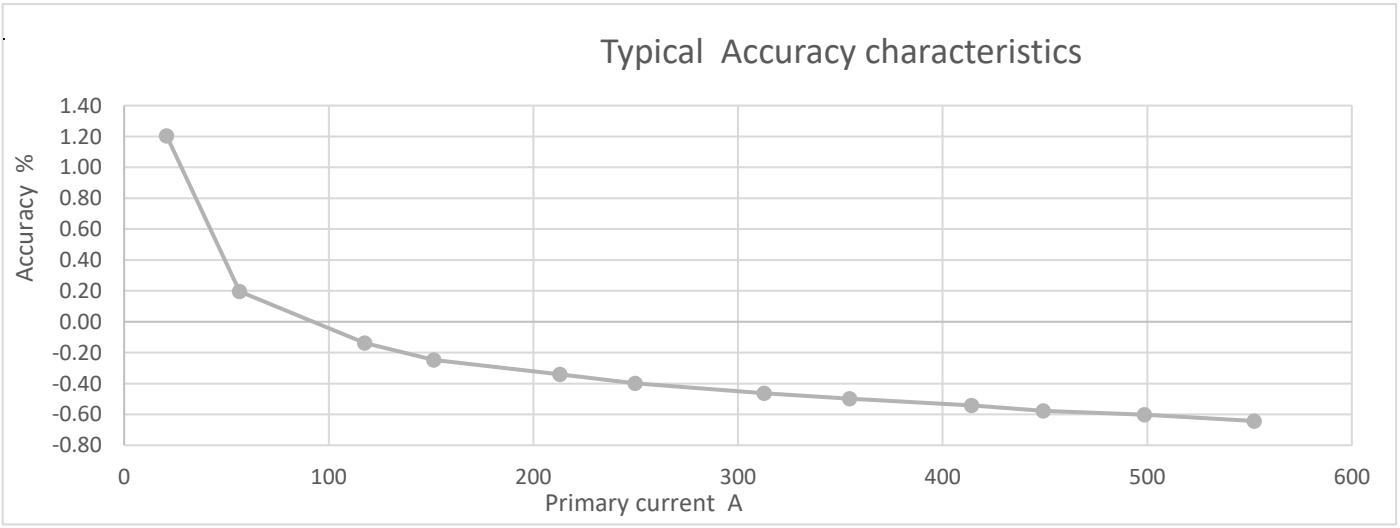
Electrical data

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Burden Resistance	R_b			>10K		Ω
OutPut Voltage	V_{out}	@±I_{PN},R_b = 10KΩ, @25˚C		±4		V
Supply Voltage (± 5%)	±U_C	Operating @12V reduces the measuring Range		±15		V
Current Consumption at I_{PN}	I_{out}			±15		mA
Output Internal Resistance	R_{out}			100		Ω
Overall Accuracy) At I_{PN} (Excluding offset)	X_G	s@25˚C		≤ ±1		%
Linearity Error (Excluding offset)	Σ_L	-40 to 85 °C		<1		%
Output offset Voltage	V_{off}			≤ ± 20		mV
Hysteresis offset Voltage	V_{OH}	@I_P = 0 after a primary current of I_{PN}		≤ ± 10		mV
Temperature coefficient of V_{out}	TV_{OE}	-40 to +85 °C		≤ ± 0.1		%/K
Reaction Time @ 90% Of I_{PN}	t_{ra}			<5		µs
Frequency Bandwidth	BW	-3dB, small signal bw	0		25	KHz
di/dt accurately followed	di/dt			>50		A/ µs
Creepage distance				11		mm
Clearance distance				11		mm
Ambient Operating Temperature	T_A		-40		+105	°C
Ambient Storage Temperature	T_S		-50		+105	°C
Mass	m			300		g
Standards EN 50178 UL 508						

Input & Output Characteristics

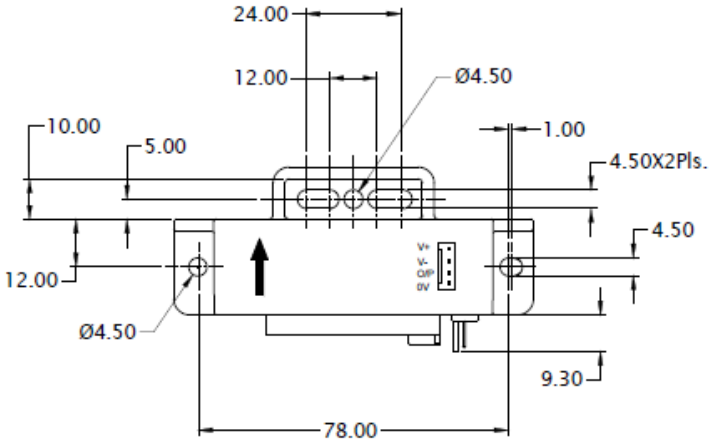


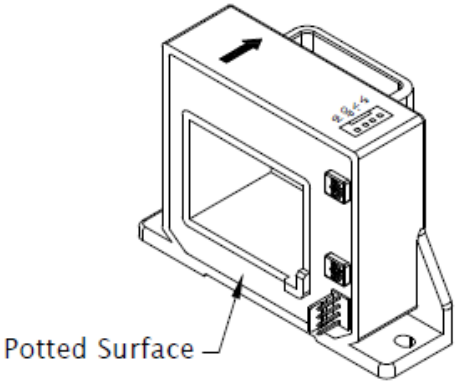


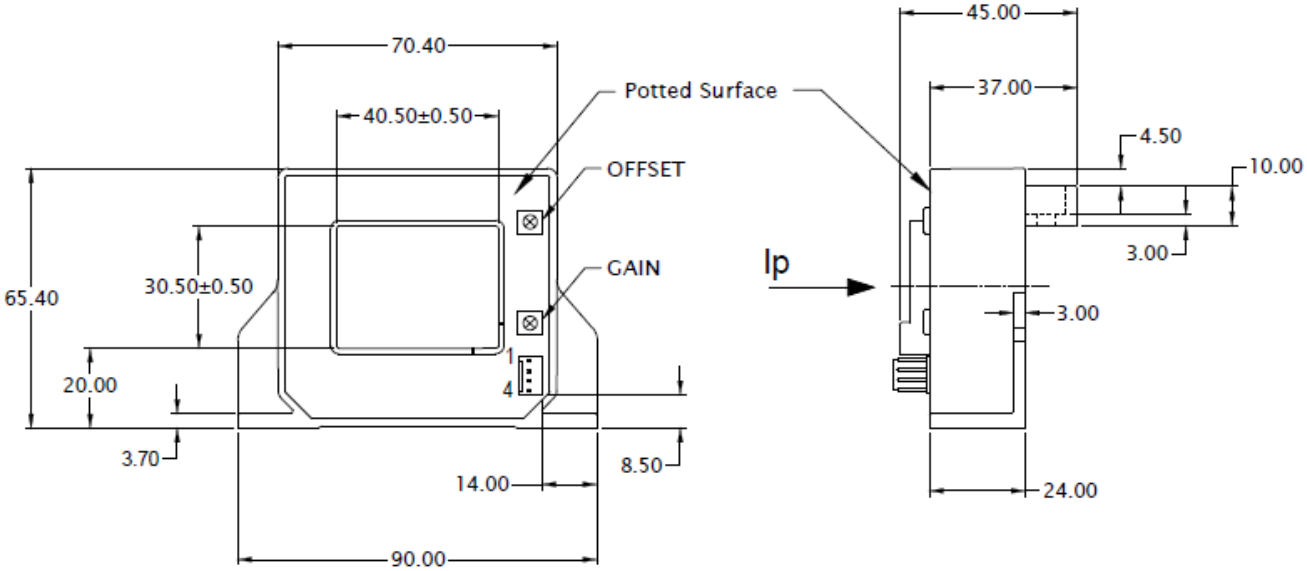


Mechanical dimensions

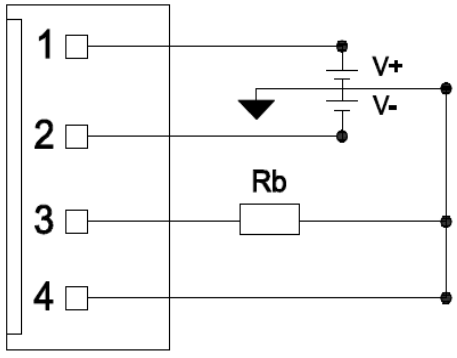
General Tolerance ± 1.0 mm	
All dimensions are in mm.	Scale - NTS







Connection Diagram



- Connector on the product: Connector header, Part no-22-04-1041, Molex
- Suggested mating connector: Connector housing, Part no-22-01-1042, Molex
- Sensor mounting: 2 holes X Ø 4.5mm, M4 steel screws, recommended fastening torque 3 N-m.
- It is recommended to centrally locate the current carrying conductor or completely fill the central opening for optimum performance.
- Output is positive when current (Ip) flows in the direction of arrow.
- Ensure proper connection of Power supply to avoid damage to the Sensor.

Safety

● This Sensor 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 Sensor, 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.

● Disconnecting the main power must be possible

● Over currents (»I_{PN}) can cause an additional voltage offset due to magnetic remanence.

● The temperature of the primary conductor shall 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 the sensor, ensure that the safe separation (between primary circuit and secondary circuit) is maintained over the
whole circuits and their connections.