

$I_{pn} = 500A$ 

Features

- Plastic outer case compliant to UL 94-V0

Advantage

- Very good linearity
- Excellent accuracy
- Low temperature drift
- Wide frequency bandwidth
- Optimized response time
- Current overload capability
- No insertion losses

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

Standards

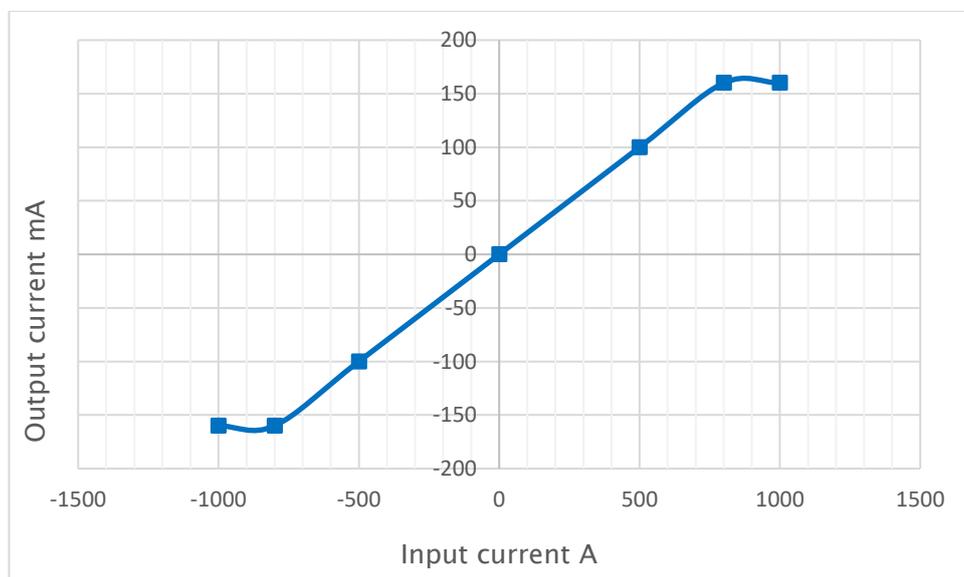
- EN 50178
- UL508*

Insulation characteristics

Parameters	Symbol	Value	Units
Dielectric strength between primary and secondary terminals, 50Hz 60 seconds	V_d	3.8	kVrms
Comparative tracking index	CTI	>250	V
Insulation resistance	R_{is}	>100	MΩ
Creepage distance		13.00	mm
Clearance distance		9.50	mm

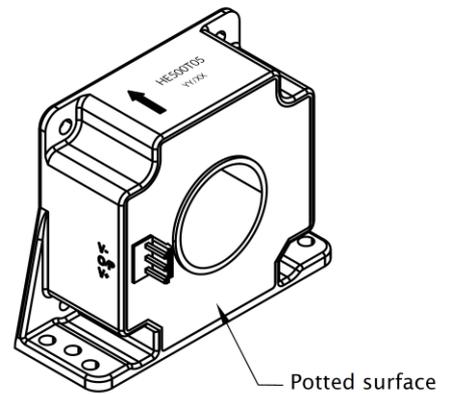
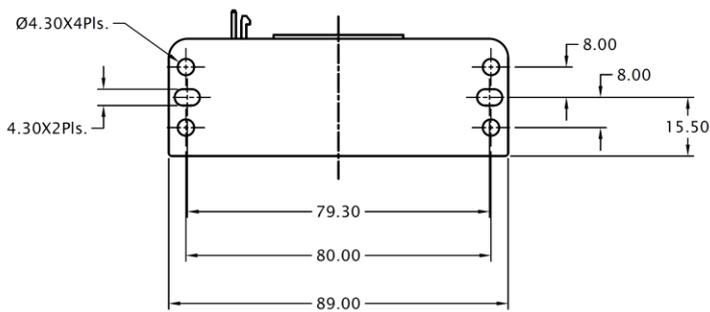
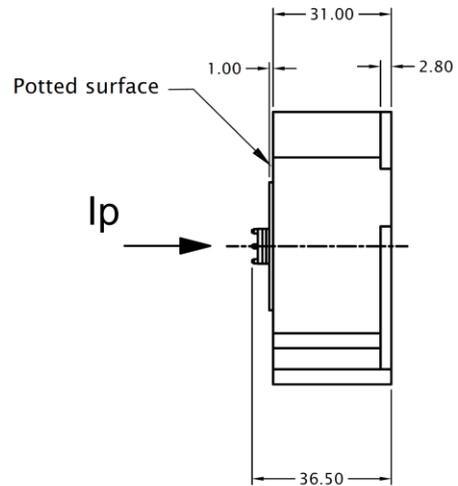
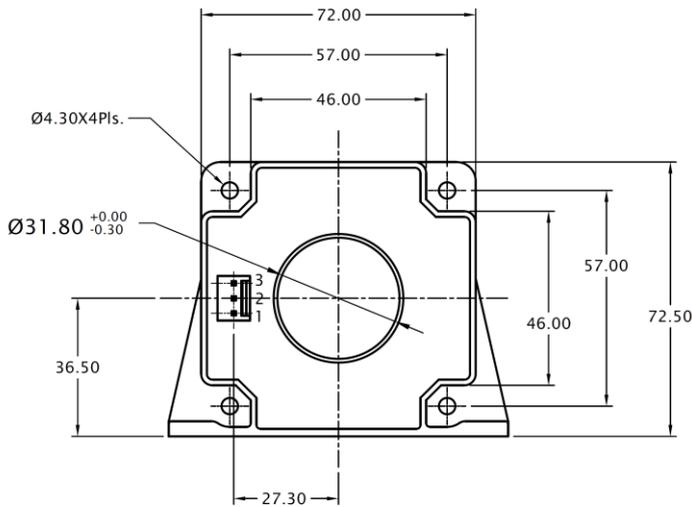
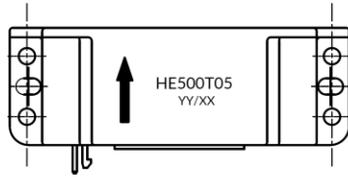
Specifications (Unless otherwise specified temperature is 25°C)

Parameters	Symbol	Condition	Min	Typ	Max	Units
Input current nominal	I_{pn}			500		A
Input current measuring range	I_p		-800		+800	A
Burden resistance	R_b	With $\pm 15V$ at $\pm 500A, 85^\circ C$	0		60	Ω
		with $\pm 15V$ at $\pm 600A, 85^\circ C$	0		15	Ω
		with $\pm 15V$ at $\pm 800A, 70^\circ C$	0		11	Ω
		with $\pm 24V$ at $\pm 500A, 70^\circ C$	5		149	Ω
		with $\pm 24V$ at $\pm 800A, 70^\circ C$	5		65	Ω
Resistance of secondary winding	R_s			58		Ω
Output current at I_{pn}	I_{out}			100		mA
Number of secondary turns	N_s			5000		
Theoretical sensitivity	G_{th}			0.2		mA/A
Supply voltage	V_s	$\pm 5\%$	± 15		± 24	V
Current consumption	I_c	$V_s = \pm 18 V$		$30 + I_{out}$		mA
Offset current	I_{off}		-0.35		+0.35	mA
Temperature variation of I_{off}	I_{OT}	-40 to $+70^\circ C$	-0.4		+0.4	mA
Linearity error	Σ_L			< 0.1		% of I_{pn}
Overall accuracy at I_{pn}	X_G		-0.6		+0.6	% of I_{pn}
Response time 90% of I_{pn}	t_{ra}	$100A/\mu s$		< 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		-25		+85**	$^\circ C$
Ambient storage temperature	T_S		-25		+85	$^\circ C$
Mass	m			300		g

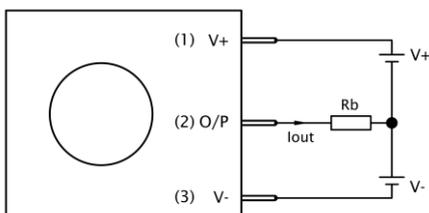
Input & Output Characteristics

Mechanical dimensions

GENERAL TOL. ±0.5 mm	
ALL DIMENSIONS ARE IN 'mm'	SCALE -NTS



Connection Diagram



Hall Effect Current Sensor HE500T05

- Connector on the product: Connector header, part no- B3P-VH(LF)(SN), JST Mfg.Co.Ltd.
- Suggested mating connector: Connector housing, part no- VHR-3N, & corresponding pin part no: SVH-21T-P1.1, JST Mfg.Co.Ltd.
- Sensor mounting: Base mounting, 6 holes X Ø 4.30mm, M4 steel screws, recommended fastening torque 3 N-m
Vertical mounting, 4 holes X 4.30mm, 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 (I_p) flows in the direction of arrow
- Ensure proper connection of power supply to avoid damage to the sensor
- * Designed to meet UL508.
- ** For temp range refer burden resistance in the specification above.

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.
- Over currents ($\gg I_{PN}$) can cause an additional voltage offset due to magnetic remanence.
- The temperature of the primary conductor shall not exceed 100 °C.
- This Sensors must be used in electrical or electronic systems as per the applicable standards.
- 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.

General information:

Electrohms reserves the right to make modifications on products for improvements without prior notice.