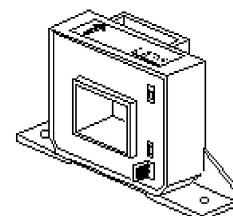


# Current Transducer HAT 200..1500-S

For the electronic measurement of currents: DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).

$$I_{PN} = 200..1500 \text{ A}$$

$$V_{OUT} = \pm 4 \text{ V}$$



## Electrical data

Primary nominal r.m.s. current $I_{PN}$ (A)	Primary current measuring range <sup>4)</sup> $I_p$ (A)	Type
200	± 600	HAT 200-S
400	± 1200	HAT 400-S
500	± 1500	HAT 500-S
600	± 1800	HAT 600-S
750	± 2250	HAT 750-S
800	± 2400	HAT 800-S
1000	± 3000	HAT 1000-S
1200	± 3000	HAT 1200-S
1500	± 3000	HAT 1500-S

$V_C$	Supply voltage (± 5 %) <sup>4)</sup>	± 15	V
$I_C$	Current consumption	± 15	mA
$R_{IS}$	Isolation resistance @ 500 VDC	> 1000	MΩ
$V_{OUT}$	Output voltage @ ± $I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$	± 4	V
$R_{OUT}$	Output internal resistance	100	Ω
$R_L$	Load resistance	> 10	kΩ

## Accuracy-Dynamic performance data

<b>X</b>	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (without offset)	< ± 1	% of $I_{PN}$
<b>e<sub>L</sub></b>	Linearity error <sup>1)</sup> (0 .. ± $I_{PN}$ )	< ± 1	% of $I_{PN}$
<b>V<sub>OE</sub></b>	Electrical offset voltage, $T_A = 25^\circ\text{C}$	< ± 20	mV
<b>V<sub>OH</sub></b>	Hysteresis offset voltage @ $I_p = 0$ ; after an excursion of $1 \times I_{PN}$	< ± 10	mV
<b>V<sub>OT</sub></b>	Thermal drift of $V_{OE}$	< ± 1	mV/K
<b>TCE<sub>G</sub></b>	Thermal drift of the gain (% of reading)	< ± 0.1	%/K
<b>t<sub>r</sub></b>	Response time @ 90% of $I_p$	< 5	μs
<b>f</b>	Frequency bandwidth <sup>2)</sup> (- 3 dB)	DC .. 25	kHz

## General data

<b>T<sub>A</sub></b>	Ambient operating temperature	- 10 .. + 80	°C
<b>T<sub>S</sub></b>	Ambient storage temperature	HAT 200-S, HAT 500..1500-S	- 15 .. + 85 °C
		HAT 400-S	- 25 .. + 85 °C
<b>m</b>	Mass	300	g
	UL94 classification	V0	

**Notes :** <sup>1)</sup> Linearity data exclude the electrical offset.

<sup>2)</sup> Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.

<sup>3)</sup> Please consult characterisation report for more technical details and application advice.

<sup>4)</sup> Operating at  $\pm 12\text{V} \leq V_C < \pm 15\text{V}$  will reduce the measuring range.

## Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 3000 V
- Low power consumption
- Extended measuring range (3 x  $I_{PN}$ )
- Insulated plastic case recognized according to UL 94-V0

## Advantages

- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

## Applications

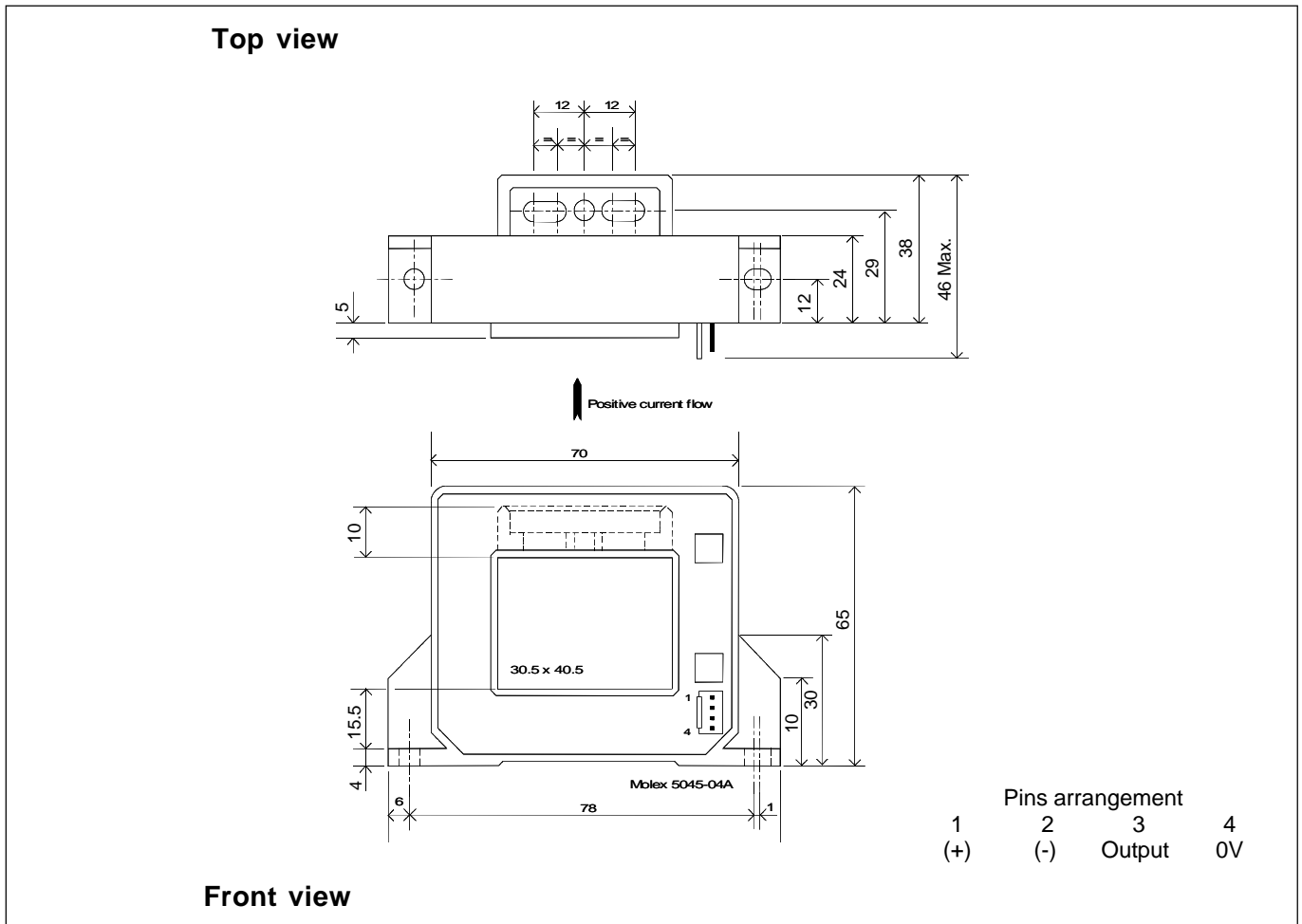
- DC motor drives
- Switched Mode Power Supplies (SMPS)
- AC variable speed drives
- Uninterruptible Power Supplies (UPS)
- Battery supplied applications
- Power supplies for welding applications

**Current Transducer HAT 200..1500-S****Isolation characteristics**

	Rated Voltage	1000	V
	with IEC 61010-1 standards and following conditions		
	- Reinforced insulation		
	- Over voltage category III		
	- Pollution degree 2		
	- Heterogeneous field		
<b>V<sub>d</sub></b>	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3	kV
<b>dCp</b>	Creepage distance	> 11	mm
<b>dCI</b>	Clearance distance	> 11	mm
<b>CTI</b>	Comparative Tracking Index (Group IIIa)	275	

Notes :

## Dimensions HAT 200..1500-S (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 1$  mm
- Transducer fastening By base-plate or on bus bar with M4 screws.  
All slots  $\varnothing 4.5$  mm
- Connection of secondary Molex 5045-04A

### Remarks

- $I_s$  is positive when  $I_p$  flows in the direction of the arrow.
- **Temperature of the primary conductor should not exceed 100°C.**

### Safety



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



Caution, risk of electrical shock

When operating the transducer, 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.

This transducer 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.