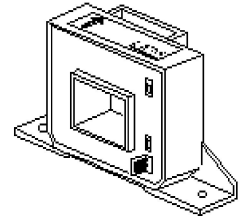


# Current Transducer HAT 200..1500-S

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 current rms $I_{PN}$ (A)	Primary current measuring range <sup>4)</sup> $I_{PM}$ (A)	Type	RoHS since date code
200	± 600	<b>HAT 200-S</b>	planned
400	± 1200	<b>HAT 400-S</b>	46115
500	± 1500	<b>HAT 500-S</b>	46129
600	± 1800	<b>HAT 600-S</b>	46115
750	± 2250	<b>HAT 750-S</b>	planned
800	± 2400	<b>HAT 800-S</b>	46115
1000	± 3000	<b>HAT 1000-S</b>	46097
1200	± 3000	<b>HAT 1200-S</b>	planned
1500	± 3000	<b>HAT 1500-S</b>	46158

$V_C$	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 (Analog) @ ± $I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$	± 4	V
$R_{OUT}$	Output internal resistance	100	Ω
$R_L$	Load resistance	> 10	kΩ

## Accuracy-Dynamic performance data

$X$	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (excluding offset)	< ± 1	% of $I_{PN}$
$e_L$	Linearity error <sup>1)</sup> (0 .. ± $I_{PN}$ )	< ± 1	% of $I_{PN}$
$V_{OE}$	Electrical offset voltage @ $T_A = 25^\circ\text{C}$	< ± 20	mV
$V_{OH}$	Hysteresis offset voltage @ $I_P = 0$ ; after an excursion of $1 \times I_{PN}$	< ± 10	mV
$TCV_{OE}$	Temperature coefficient of $V_{OE}$	< ± 1	mV/K
$TCV_{OUT}$	Temperature coefficient of $V_{OUT}$ (% of reading)	< ± 0.1	%/K
$t_r$	Response time to 90% of $I_{PN}$ step	< 5	μs
<b>BW</b>	Frequency bandwidth <sup>2)</sup> (- 3 dB)	DC .. 25	kHz

## General data

$T_A$	Ambient operating temperature	- 10 .. + 80	°C	
$T_S$	Ambient storage temperature	HAT 200-S, HAT 500..1500-S HAT 400-S	- 15 .. + 85 - 25 .. + 85	°C
$m$	Mass	300	g	

- Notes :**
- Linearity data exclude the electrical offset.
  - Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.
  - Please consult characterisation report for more technical details and application advice.
  - 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 ( $3 \times I_{PN}$ )
- Isolated plastic case recognized according to UL 94-V0

## Advantages

- Easy installation
- 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

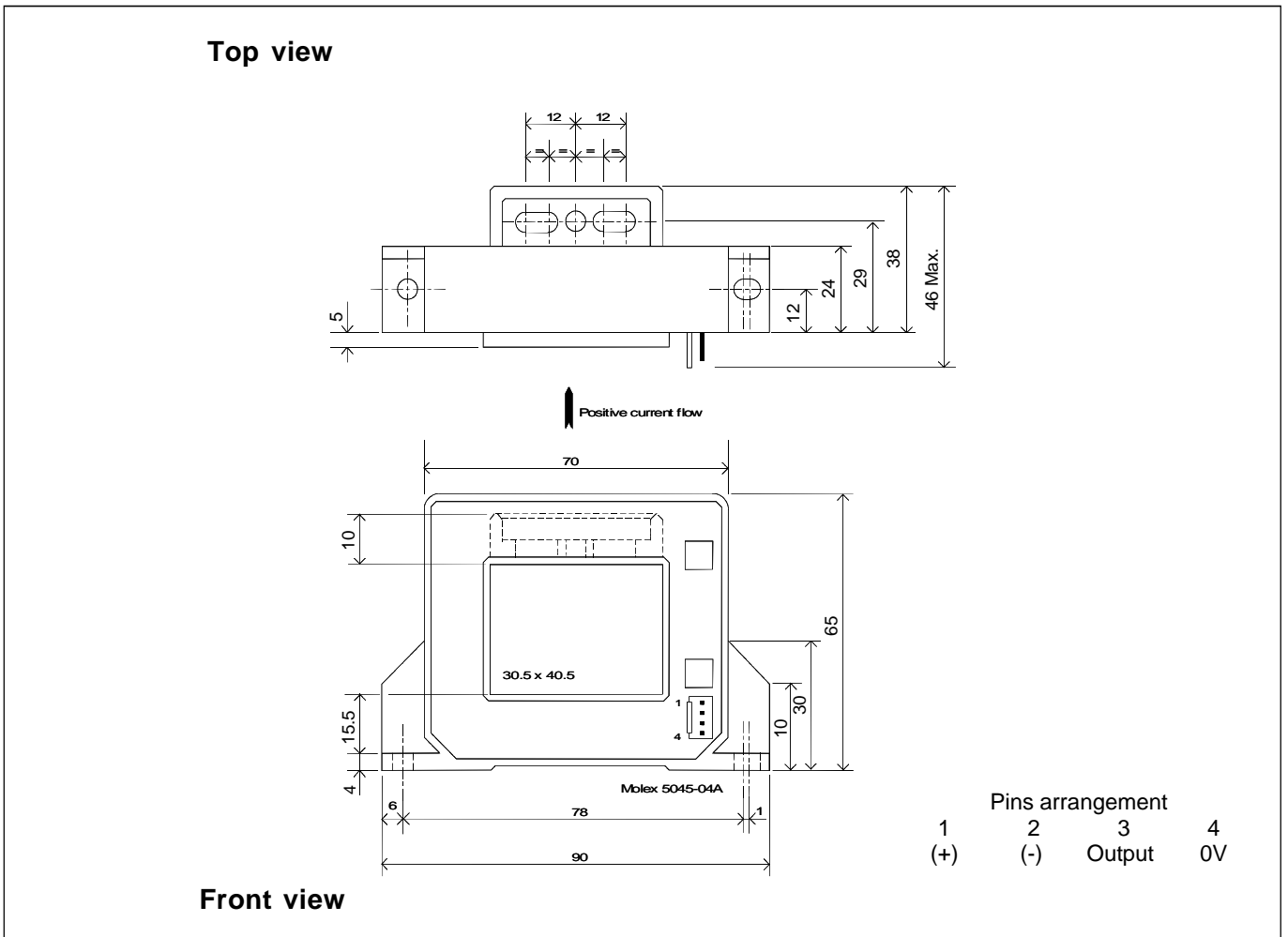
## Application domain

- Industrial

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

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

**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.
- Connection of secondary All slots  $\varnothing 4.5$  mm
- 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.