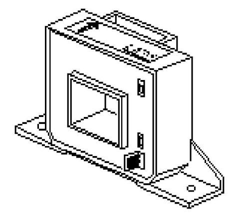
Current Transducer HAT 200..1500-S

I_{PN} = 200..1500 A
V_{OUT} = ± 4 V

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).



Electrical data

Primary nominal r.m.s. current I_{PN} (A)	Primary current measuring range [4] 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 %) [4]	± 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 kΩ, T_A = 25°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°C (without offset)	< ± 1	% of I_{PN}
e_L	Linearity error [1] (0 .. ± I_{PN})	< ± 1	% of I_{PN}
V_{OE}	Electrical offset voltage, T_A = 25°C	< ± 20	mV
V_{OH}	Hysteresis offset voltage @ I_P = 0; after an excursion of 1 x I_{PN}	< ± 10	mV
V_{OT}	Thermal drift of V_{OE}	< ± 1	mV/K
TCe_G	Thermal drift of the gain (% of reading)	< ± 0.1	%/K
t_r	Response time @ 90% of I_P	< 5	µs
f	Frequency bandwidth [2] (- 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	- 15 .. + 85	°C
		HAT 400-S	- 25 .. + 85	°C
m	Mass		300	g
	UL94 classification		V0	

Notes : [1] Linearity data exclude the electrical offset.
[2] Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.
[3] Please consult characterisation report for more technical details and application advice.
[4] Operating at ±12V ≤ Vc < ±15V 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

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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		
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3	kV
dCp	Creepage distance	> 11	mm
dCI	Clearance distance	> 11	mm
CTI	Comparative Tracking Index (Group IIIa)	275	

Notes :

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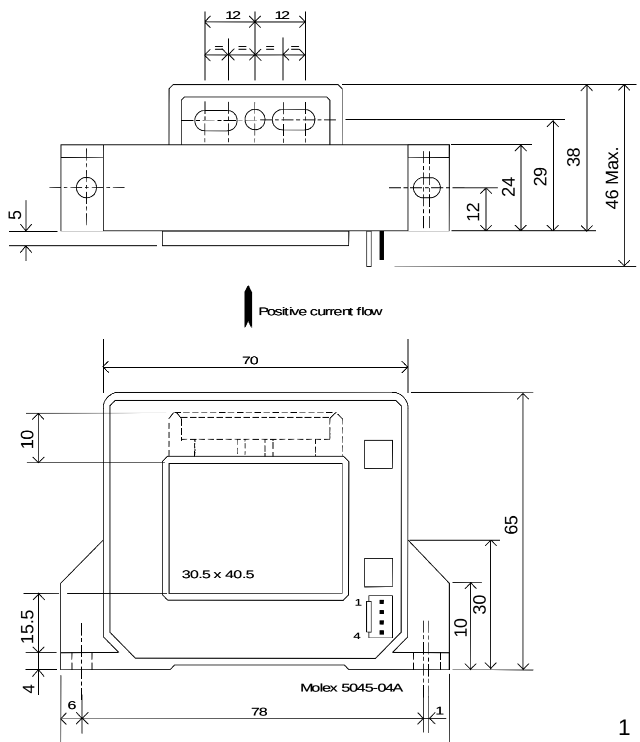
Dimensions HAT 200..1500-S (in mm. 1 mm = 0.0394 inch)

Top view



Front view

Pins arrangement

1	2	3	4
(+)	(-)	Output	0V

Mechanical characteristics

- General tolerance: ± 1 mm
- Transducer fastening: By base-plate or on bus bar with M4 screws. All slots ∅ 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.

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