

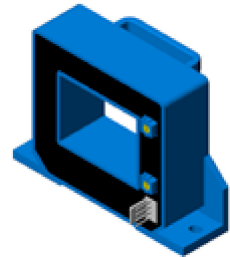
Current Transducer HAT 200..1500-S

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 ⁴⁾ I_{PM} (A)	Type	RoHS since date code
200	± 600	HAT 200-S	47143
400	± 1200	HAT 400-S	46115
500	± 1500	HAT 500-S	46129
600	± 1800	HAT 600-S	46115
800	± 2400	HAT 800-S	46115
1000	± 2500	HAT 1000-S	46097
1200	± 2500	HAT 1200-S	planned
1500	± 2500	HAT 1500-S	46158

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 (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}
ϵ_L	Linearity error ¹⁾ (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 x 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
BW	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 HAT 400-S - 25 .. + 85	°C
m	Mass	300	g

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})
- 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

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 $\pm 12\text{V} \leq V_C < \pm 15\text{V}$ will reduce the measuring range.

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Isolation characteristics

V_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
V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	3	kV
dCp	Creepage distance	> 11	mm
dCI	Clearance distance	> 11	mm
CTI	Comparative Tracking Index (Group IIIa)	275	

Safety



This transducer 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 transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

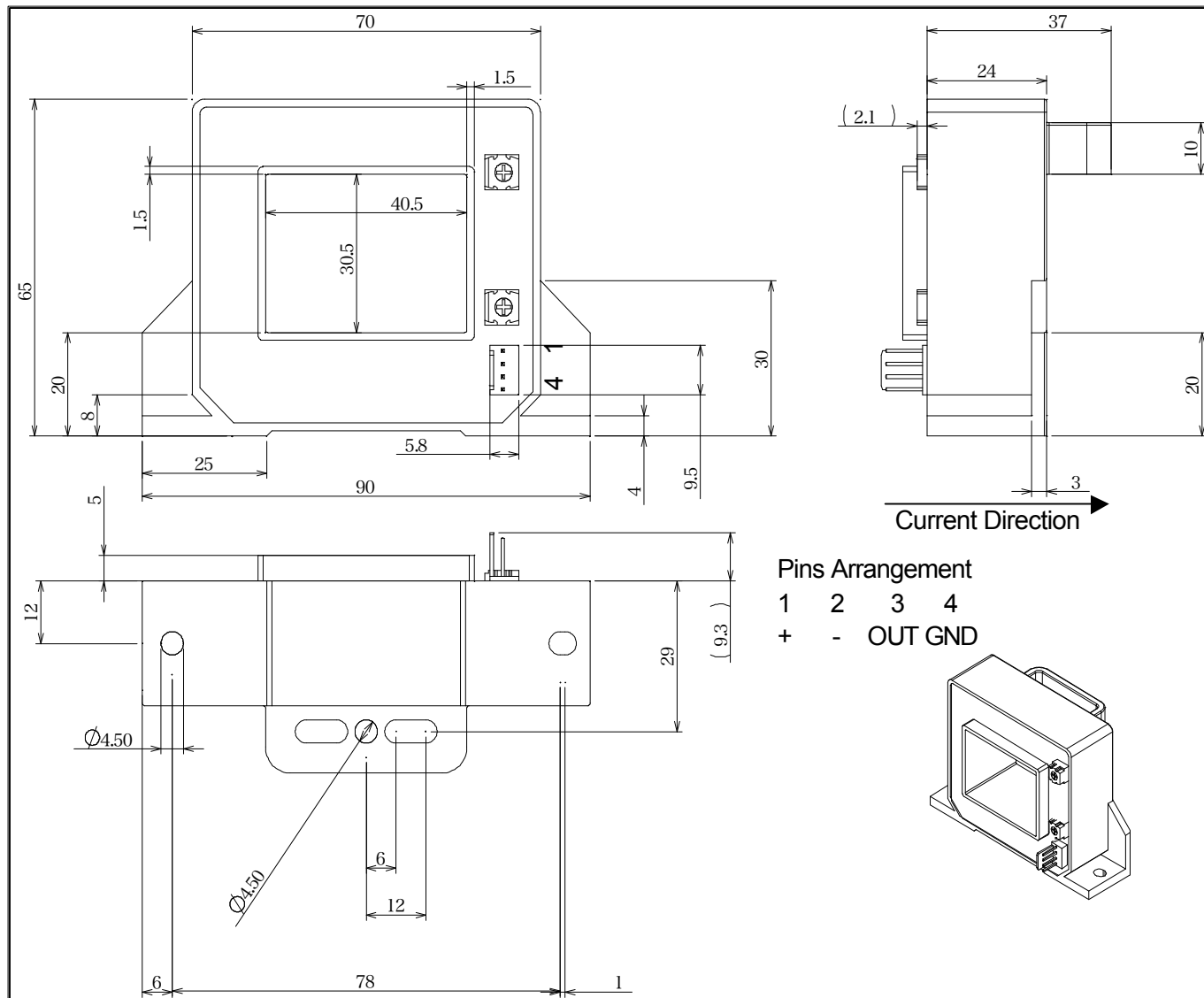
Ignoring this warning can lead to injury and/or cause serious damage.

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.

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



Mechanical characteristics

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

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.**