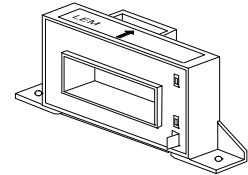


Current Transducer HAX 500..2500-S

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).



$I_{PN} = 500..2500 \text{ A}$



Electrical data

Primary nominal current rms I_{PN} (A)	Primary current measuring range I_{PM} (A)	Type
500	± 1500	HAX 500-S
600	± 1800	HAX 600-S
850	± 2550	HAX 850-S
1000	± 3000	HAX 1000-S
1500	± 4500	HAX 1500-S
2000	± 5500	HAX 2000-S
2500	± 5500	HAX 2500-S

V_C	Supply voltage ($\pm 5\%$) ⁴⁾	± 15	V
I_C	Current consumption	$< +20/-15$	mA
$\hat{I}_P$	Overload capability	30,000	At
R_{IS}	Isolation resistance @ 500 VDC	> 1000	M Ω
V_{OUT}	Output voltage @ $\pm I_{PN}$, $R_L = 10k\Omega$, $T_A = 25^\circ\text{C}$	± 4	V
R_{OUT}	Output internal resistance	approx. 100	Ω
R_L	Load resistance	> 1	k Ω

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (excluding offset)	$< \pm 1$	%
ϵ_L	Linearity error ¹⁾ ($0 \dots \pm I_{PN}$)	$< \pm 1$	% of I_{PN}
V_{OE}	Electrical offset voltage @ $T_A = 25^\circ\text{C}$	$< \pm 20$	mV
V_{OH}	Hysteresis offset voltage @ $I_P = 0$; after an excursion of $1 \times I_{PN}$	$< \pm 30$	mV
TCV_{OE}	Temperature coefficient of V_{OE}	$< \pm 1$	mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)	$< \pm 0.1$	%/K
t_r	Response time to 90% of I_{PN} step	< 5	μs
di/dt	di/dt accurately followed	> 50	A/ μs
BW	Frequency bandwidth ²⁾ (-3 dB)	DC .. 25	kHz

General data

T_A	Ambient operating temperature	-25 .. +85	$^\circ\text{C}$
T_S	Ambient storage temperature	-25 .. +85	$^\circ\text{C}$
m	Mass	approx. 450	g
	Standards ³⁾	EN 50178: 1997	

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

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- Isolated plastic case recognized according to UL 94-V0

Advantages

- Easy installation
- Small size and space savings
- Only one design for wide current ratings range
- High immunity against external interference

Applications

- AC motor speed control
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding, cable TV and telecommunication applications.

Application domain

- Industrial

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Isolation characteristics

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	5.0	kV
V_e	Partial discharge extinction voltage rms @ 10 pC	> 660	Vrms
$\hat{V}_w$	Impulse withstand voltage 1.2/50 μ s	8.3	kV
dCp	Creepage distance	>8.5	mm
dCI	Clearance distance	>8.5	mm
CTI	Comparative Tracking Index (group IIIa)	>275	

Applications examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	EN 50178	IEC 61010-1
dCp, dCI, $\hat{V}_w$	Rated insulation voltage	Nominal voltage
Basic insulation	800 V	800V
Reinforced insulation	400V	300V

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.

