Current Transducers HAZ 4000..20000-SBI

I_{PN} = 4000..20000 A

I_{OUT} = ± 20 mA

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 DC current or AC peak I_{PN} (A)	Primary current measuring range I_{PM} (A)	Type	RoHS since date code
4000	± 4000	**HAZ 4000-SBI**	planned
6000	± 6000	**HAZ 6000-SBI**	planned
10000	± 10000	**HAZ 10000-SBI**	46299
12000	± 12000	**HAZ 12000-SBI**	47026
14000	± 14000	**HAZ 14000-SBI**	-
20000	± 20000	**HAZ 20000-SBI**	47159

V_C	Supply voltage (± 5 %)		± 15	V
I_C	Current consumption		± 50	mA
$\hat{I}_P$	Overload capability		30,000	A
R_{IS}	Isolation resistance @ 500 VDC		> 1000	MΩ
I_{OUT}	Output current @ ± I_{PN}, T_A = 25°C		± 20	mA
R_{OUT}	Output internal resistance	approx.	20	Ω
R_L	Load resistance		< 300	Ω

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN}, T_A = 25°C (excluding offset)	< ± 1	%
ε_L	Linearity error [1] (0 .. ± I_{PN})	< ± 0.5	% of I_{PN}
I_{OE}	Electrical offset current @ T_A = 25°C, I_P = 0	< ± 0.08	mA
I_{OM}	Magnetic offset current @ I_P = 0 and specified R_M, after an overload of 1 x I_{PN}	< ± 0.025	mA
TCI_{OE}	Temperature coefficient of I_{OE}	< ± 0.05%	of I_{PN}/K
TCI_{OUT}	Temperature coefficient of I_{OUT} (% of reading)	< ± 0.05	%/K
t_r	Response time to 90% of I_{PN} step	< 10	µs
t_{ra}	Reaction time @ 10% of I_{PN}	< 2	us
di/dt	di/dt accurately followed	> 50	A/µs
BW	Frequency bandwidth, ± 3 dB, small signal [2]	DC .. 3	kHz

General data

T_A	Ambient operating temperature		- 25 .. + 85	°C
T_S	Ambient storage temperature		- 30 .. + 90	°C
	Housing PBT 30% glassfiber			
m	Mass	approx.	6	kg
	Standards [3]		EN 50178:1997	
			EN 50155:1995	

Notes : [1] Linearity data exclude the electrical offset.
[2] To avoid excessive core heating.
[3] Please consult characterisation report for more technical details and application advice.

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 17kV Rms/ 50 Hz / 1 min
- Low power consumption
- Package in PBT meeting UL 94-V0
- Instantaneous current output

Advantages

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

Applications

- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding and telecom applications.

Application domain

- Industrial
- Traction

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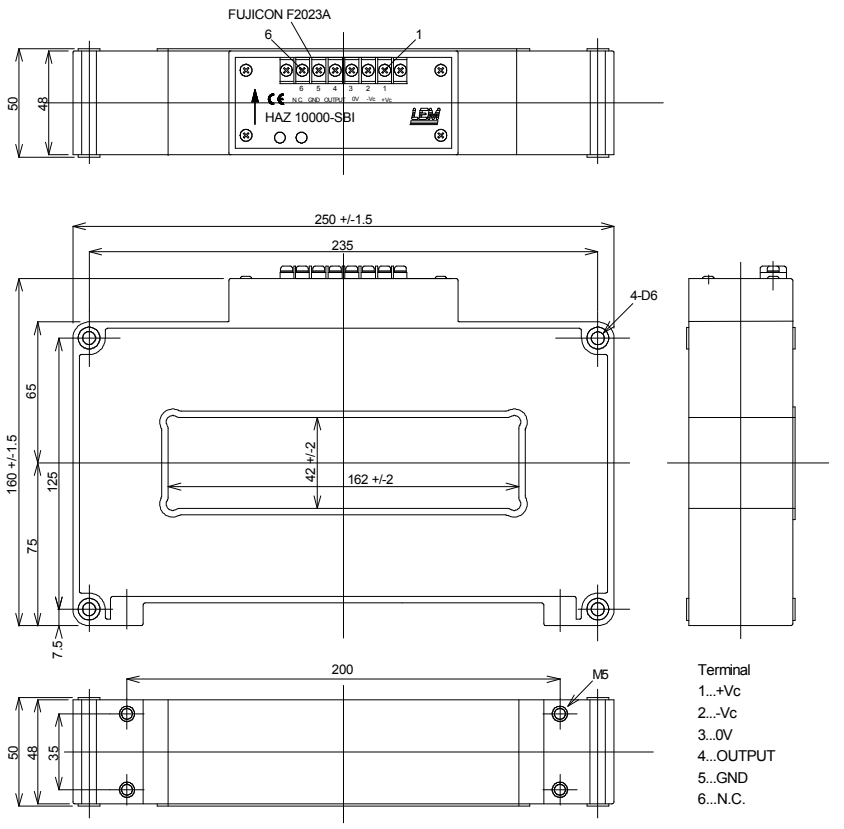
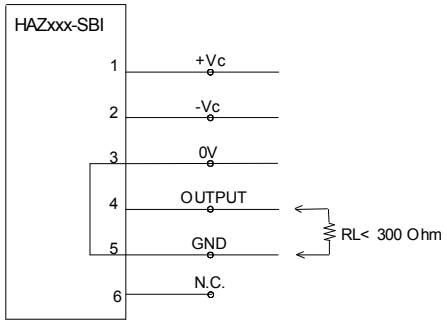
Isolation characteristics

$\mathbf{V}_b$	Rated isolation voltage rms with IEC 61010-1 standard and following conditions - Single insulation - Over voltage category III - Pollution degree 2 - Heterogeneous field	4000	V
$\mathbf{V}_b$	Rated isolation voltage rms with EN 50178 standard and following conditions - Reinforced insulation - Over voltage category III - Pollution degree 2 - Heterogeneous field	3000	V
$\mathbf{V}_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	17	kV
$\mathbf{V}_e$	Partial discharge extinction voltage rms @ 10pC	> 3.75	kV
$\hat{\mathbf{V}}_w$	Impulse withstand voltage 1.2/50 µs	32	kV
dCp	Creepage distance	> 45	mm
dCl	Clearance distance	> 45	mm
CTI	Comparative Tracking Index (Group IIIa)	> 600	V

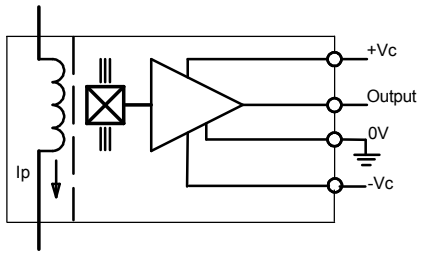
Dimensions HAZ 4000..20000-SBI (in mm. 1 mm = 0.0394 inch)



Connection Circuit



Operation Principle



Mechanical characteristics

• General tolerance	± 0.5 mm
• Aperture for primary conductor	162 mm x 42 mm (± 2 mm)
• Transducer fastening	4 x M5 (not supplied)
• Recommended fastening torque	< 5 Nm
• Connection of secondary	Fujicon F2023A (6 terminals)

Remarks

- **Temperature of the primary conductor should not exceed 120°C.**
- I_{OUT} is positive when I_P flows in the direction of the arrow.

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.