Current Transducers HAZ 4000..20000-SB

I_{PN} = 4000..20000 A

V_{OUT} = ± 10 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).

Preliminary

Electrical data

Primary nominal DC current or AC peak I_{PN} (A)	Primary current measuring range I_P (A)	Type
4000	± 4000	**HAZ 4000-SB**
6000	± 6000	**HAZ 6000-SB**
10000	± 10000	**HAZ 10000-SB**
12000	± 12000	**HAZ 12000-SB**
14000	± 14000	**HAZ 14000-SB**
20000	± 20000	**HAZ 20000-SB**

V_C	Supply voltage (± 5 %)	± 15	V
I_C	Current consumption	± 30	mA
I_{OC}	Overload capacity	30,000	A
V_d	R.m.s. voltage for AC isolation test, 60 Hz, 1 mn	12	kV
V_b	R.m.s. rated voltage, safe separation	2000[1)]	V
R_{IS}	Isolation resistance @ 500 VDC	> 1000	MΩ
V_{OUT}	Output voltage @ ± I_{PN}, R_L = 10 kΩ, T_A = 25°C	± 10	V
R_{OUT}	Output internal resistance	approx. 100	Ω
R_L	Load resistance	> 10	kΩ

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN}, T_A = 25°C (without offset)	< ± 1	%
ε_L	Linearity error [2)] (0 .. ± I_{PN})	< ± 0.5	% of I_{PN}
V_{OE}	Electrical offset voltage, T_A = 25°C, @ I_P = 0	< ± 50	mV
V_{OH}	Hysteresis offset voltage @ I_P = 0; after an excursion of 1 x I_{PN}	< ± 12.5	mV
V_{OT}	Thermal drift of V_{OE}	< ± 1	mV/K
TCE_G	Thermal drift of the gain (% of reading)	< ± 0.05	%/K
t_r	Response time @ 90% of I_{PN}	< 10	µs
t_{ra}	Reaction time @ 10% of I_{PN}	< 2	us
di/dt	di/dt accurately followed	> 50	A/µs
f	Frequency bandwidth, ± 3 dB, small signal [3)]	DC .. 3	kHz

General data

T_A	Ambient operating temperature	- 25 .. + 85	°C
T_S	Ambient storage temperature	- 30 .. + 90	°C
m	Mass	approx. 6	kg
	Standards [4)]	EN 50178:1997	
	Minimum creepage & clearance distances	45	mm
	Housing PBT 30% glassfiber	CTI IIIa, UL94-V0	

Notes : [1)] Pollution class 2, overvoltage category III, reinforced insulation
[2)] Linearity data exclude the electrical offset.
[3)] To avoid excessive core heating
[4)] Please consult characterisation report for more technical details and application advice.

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Instantaneous voltage output
- Isolation voltage 12kV Rms /50 Hz /1min
- Low power consumption
- Package in PBT meeting UL 94-V0
- Instantaneous voltage 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

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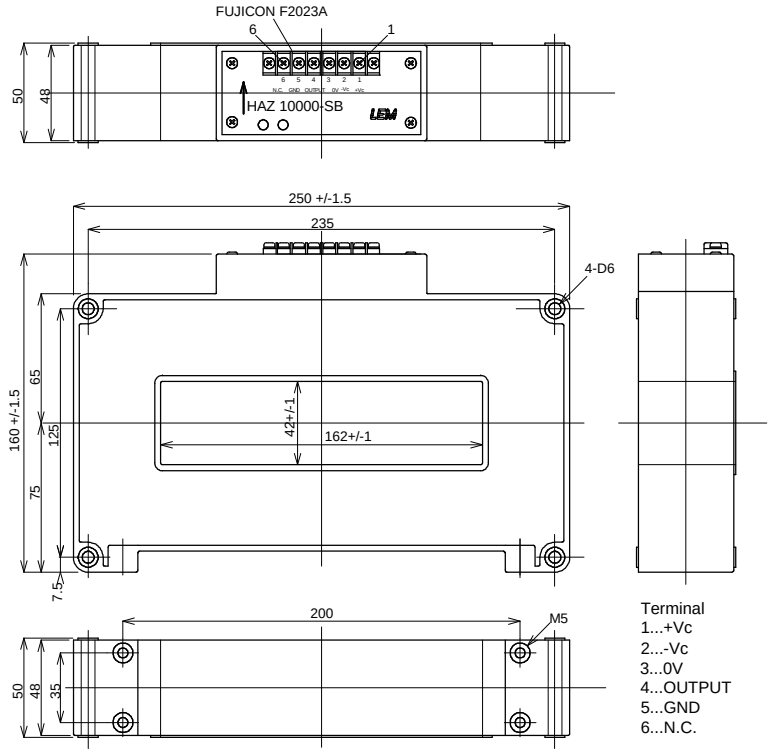
Isolation characteristics

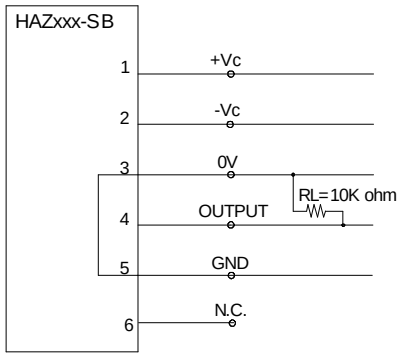
V_b	Nominal Voltage with IEC 61010-1 standard and following conditions - Single insulation - Over voltage category III - Pollution degree 2 - Heterogeneous field	2.25	kV r.m.s.
V_b	Nominal Voltage with EN 50178 standard and following conditions - Reinforced insulation - Over voltage category III - Pollution degree 2 - Heterogeneous field	2.25	kV r.m.s.
V_d	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	2.5	kV
V_e	R.m.s. voltage for partial discharge extinction @ 10pC	> 3	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50µs	18.1	kV

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

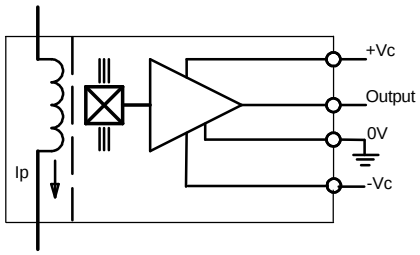
Preliminary



Connection Circuit



Operation Principle



Mechanical characteristics

- General tolerance ± 0.5 mm
- Aperture for primary conductor 40mm x 160mm
- 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.**
- V_{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.

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