

Current Transducers HAZ 4000..20000-SB

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).

$$I_{PN} = 4000..20000 \text{ A}$$

$$V_{OUT} = \pm 10 \text{ V}$$



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-SB	46177
6000	± 6000	HAZ 6000-SB	46177
10000	± 10000	HAZ 10000-SB	46177
12000	± 12000	HAZ 12000-SB	planned
14000	± 14000	HAZ 14000-SB	planned
20000	± 20000	HAZ 20000-SB	planned

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

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (excluding offset)	$< \pm 1$	%
e_L	Linearity error ¹⁾ ($0 \dots \pm I_{PN}$)	$< \pm 0.5$	% of I_{PN}
V_{OE}	Electrical offset voltage @ $T_A = 25^\circ\text{C}$, $I_p = 0$	$< \pm 50$	mV
V_{OH}	Hysteresis offset voltage @ $I_p = 0$; after an excursion of $1 \times I_{PN}$	$< \pm 12.5$	mV
TCV_{OE}	Temperature coefficient of V_{OE}	$< \pm 1$	mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)	$< \pm 0.05$	%/K
t_r	Response time to 90% of I_{PN} step	< 10	μs
t_{ra}	Reaction time @ 10% of I_{PN}	< 2	μs
di/dt	di/dt accurately followed	> 50	A/ μs
BW	Frequency bandwidth, $\pm 3 \text{ dB}$, small signal ²⁾	DC .. 3	kHz

General data

T_A	Ambient operating temperature	- 25 .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 30 .. + 90	$^\circ\text{C}$
	Housing PBT 30% glassfiber		
m	Mass	approx. 6	kg
	Standard ³⁾	EN 50178:1997	

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
- 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 installation
- 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

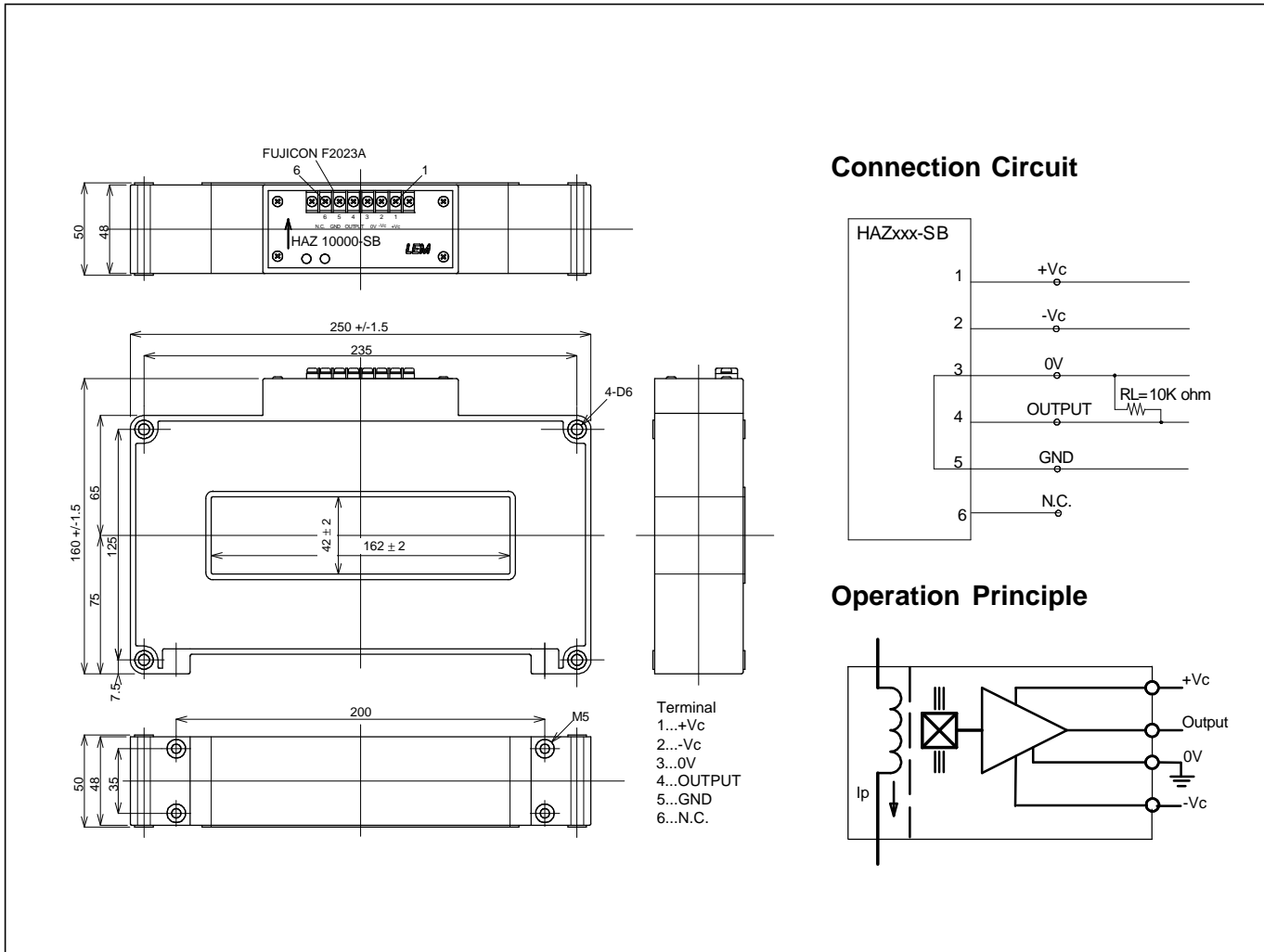
- Industrial

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Isolation characteristics

V_b	Rated isolation voltage rms with IEC 61010-1 standard and following conditions - Single insulation - Over voltage category III - Pollution degree 2 - Heterogeneous field	2000	V
V_b	Rated isolation voltage rms with EN 50178 standard and following conditions - Reinforced insulation - Over voltage category III - Pollution degree 2 - Heterogeneous field	2000	V
V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	12	kV
V_e[^]	Partial discharge extinction voltage rms @ 10pC	> 3	kV
V_w[^]	Impulse withstand voltage 1.2/50 μs	27	kV
dCp	Creepage distance	> 45	mm
dCl	Clearance distance	> 45	mm
CTI	Comparative Tracking Index (Group IIIa)	220	

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



Mechanical characteristics

- General tolerance $\pm 0.5 \text{ mm}$
- Aperture for primary conductor $162 \text{ mm} \times 42 \text{ mm}$ ($\pm 2 \text{ mm}$)
- Transducer fastening $4 \times M5$ (not supplied)
- Recommended fastening torque $< 5 \text{ Nm}$
- 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.