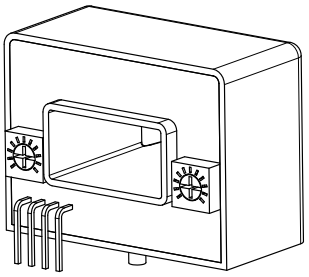
Current Transducer HAS 50 .. 600-P

I_{PN} = 50 .. 600 A

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic isolation between the primary circuit and the secondary circuit.



Electrical data

Type	Primary nominal current rms I_{PN} (A)	Primary current, measuring range I_{PM} (A)	RoHS since date code
HAS 50-P	50	± 150	46065
HAS 100-P	100	± 300	46062
HAS 200-P	200	± 600	76273
HAS 300-P	300	± 900	76273
HAS 400-P	400	± 900	46131
HAS 500-P	500	± 900	46216
HAS 600-P	600	± 900	76273

V_C	Supply voltage (± 5 %) [1]		± 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 kΩ, T_A = 25°C		± 4 V ± 40	mV
R_{OUT}	Output internal resistance	approx	100	Ω
R_L	Load resistance [2]		> 1	kΩ

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN}, T_A = 25°C (excluding offset)		< ± 1	%
ε_L	Linearity error [3] (0 .. ± I_{PN})		< ± 1	% of I_{PN}
V_{OE}	Electrical offset voltage, T_A = 25°C		< ± 20	mV
V_{OH}	Hysteresis offset voltage @ I_P = 0, after an excursion of 1 x I_{PN}		< ± 20	mV
TCV_{OE}	Temperature coefficient of V_{OE}	HAS 50-P	< ± 2	mV/K
		HAS 100 .. 600-P	< ± 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		< 3	µs
di/dt	di/dt accurately followed		> 50	A/µs
BW	Frequency bandwidth [4] (small signal, - 3 dB)		DC .. 50	kHz

General data

T_A	Ambient operating temperature	- 10 .. + 80	°C
T_S	Ambient storage temperature	- 25 .. + 85	°C
m	Mass	80	g
	Standard	EN 50178:1997	

Notes: [1] Operating at ± 12 V ≤ V_C < ± 15 V will reduce the measuring range

[2] If the customer uses 1 kΩ of the load resistor, the primary current has to be limited as the nominal. To measure the full defined measuring range, the load resistor should be at minimum 10 kΩ

[3] Linearity data exclude the electrical offset

[4] Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.

Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- Extended measuring range (3 x I_{PN})
- Isolated plastic case made of polycarbonate PBT recognized according to UL 94-V0
- Right angle pins for direct PCB mounting.

Advantages

- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

Applications

- AC variable speed drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

Application domain

- Industrial.

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without prior notice

Current Transducer HAS 50 .. 600-P

Isolation characteristics

$\mathbf{V}_d$	Rms voltage for AC insulation test, 50 Hz, 1 min	3.6	kV
$\hat{\mathbf{V}}_w$	Impulse withstand voltage 1.2/50 µs	> 6.6	kV
		Min	
dCp	Creepage distance	7.08	mm
dCl	Clearance	6.23	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, **dCl**, $\hat{\mathbf{V}}_w$	Rated insulation voltage	Nominal voltage
Basic insulation	600 V	600 V
Reinforced insulation	300 V	300 V

Safety



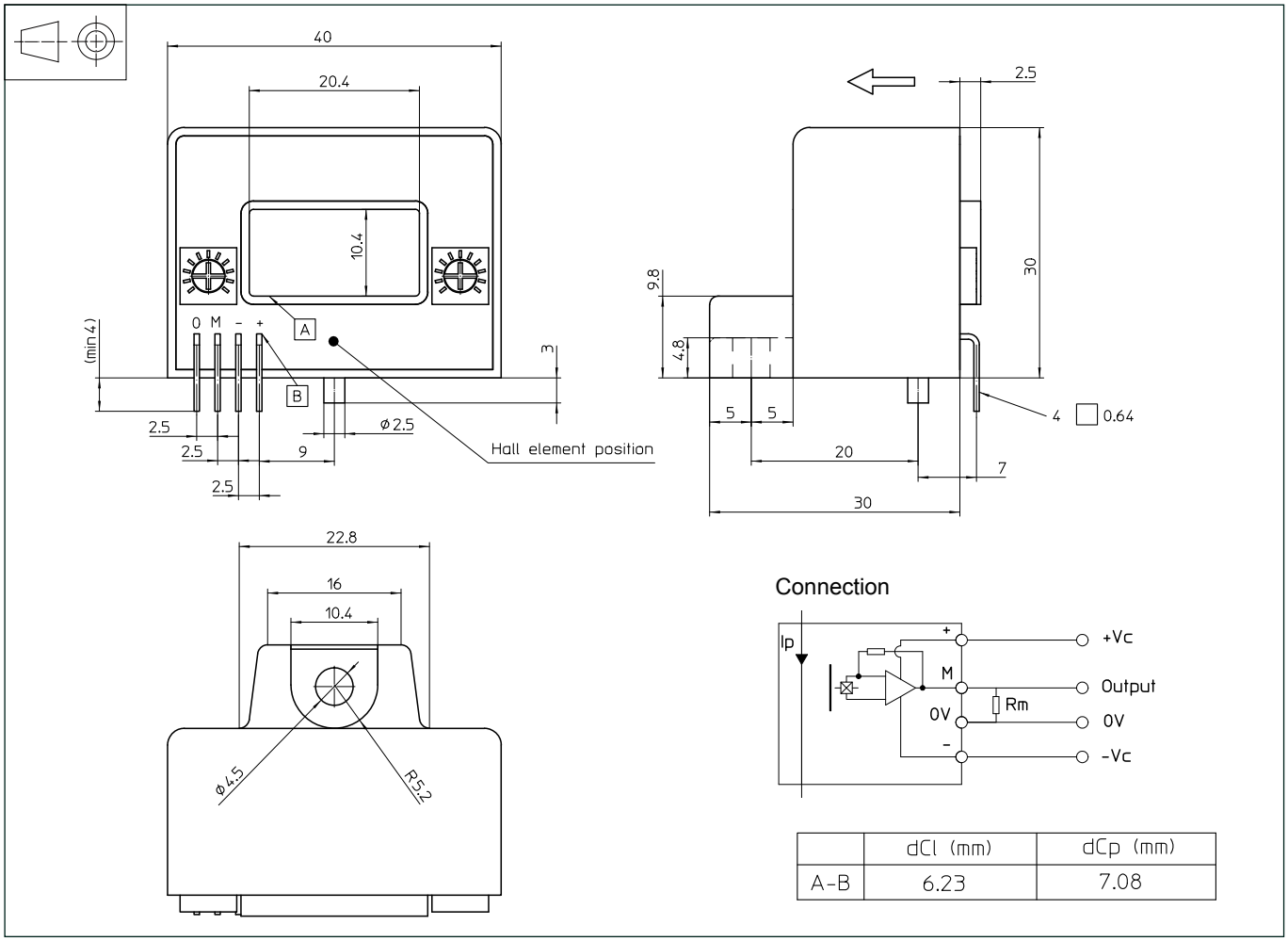
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



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 build-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 HAS 50 .. 600-P (in mm)



	dCl (mm)	dCp (mm)
A-B	6.23	7.08

Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 1 hole Ø 4.5 mm
  1 M4 steel screw
  Recommended fastening torque 0.75 Nm (± 10 %)
- Connection of secondary JST MB4P-90H

Remarks

- $\mathbf{V}_{OUT}$ is positive when $\mathbf{I}_P$ flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100°C.
- Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

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