

Current Transducer LA 200-SD/SP4

$$I_{PN} = 200 \text{ A}$$

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



Electrical data

I_{PN}	Primary nominal RMS current	200	A
I_{PM}	Primary current, measuring range	0 ... ± 600	A
R_M	Measuring resistance with $\pm 24 \text{ V}$	@ $T_A = 70 \text{ }^\circ\text{C}$	
		$R_{M \min}$	$R_{M \max}$
		@ $\pm 200 \text{ A}_{\max}$	0 383
		@ $\pm 500 \text{ A}_{\max}$	0 80
		@ $T_A = 85 \text{ }^\circ\text{C}$	
		$R_{M \min}$	$R_{M \max}$
		@ $\pm 600 \text{ A}_{\max}$	0 41
I_{SN}	Secondary nominal RMS current	40	mA
N_P/N_S	Turns ratio	1 : 5000	
U_C	Supply voltage ($\pm 10 \%$)	± 24	V
I_C	Current consumption (± 1.5)	$34 + I_S$	mA

Accuracy - Dynamic performance data

ϵ_{tot}	Total error @ $I_{PN}, T_A = 25 \text{ }^\circ\text{C}$	± 1	%
ϵ_L	Linearity error @ $I_{PN}, T_A = -40 \dots 85 \text{ }^\circ\text{C}$	< 0.1	%
I_O	Offset current @ $I_P = 0, T_A = 25 \text{ }^\circ\text{C}$	Typ	Max
			± 0.2
I_{OM}	Magnetic offset current @ $I_P = 0$ and specified R_M , after an overload of $3 \times I_{PN}$		± 0.2 mA
I_{OT}	Temperature variation of I_O referred to $25 \text{ }^\circ\text{C}$		
		$-30 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$	$\pm 0.1 \quad \pm 0.3$ mA
		$-40 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$	$\pm 0.15 \quad \pm 0.5$ mA
t_{D90}	Delay time to 90 % of the final output value for I_{PN} step ¹⁾	< 1	μs
BW	Frequency bandwidth (-3 dB)	DC ... 100	kHz

General data

T_A	Ambient operating temperature	$-40 \dots 85$	$^\circ\text{C}$
$T_{A \text{ st}}$	Ambient storage temperature	$-40 \dots 85$	$^\circ\text{C}$
R_S	Resistance of secondary winding @ $T_A = 70 \text{ }^\circ\text{C}$	120	Ω
		@ $T_A = 85 \text{ }^\circ\text{C}$	127 Ω
m	Mass Standard ²⁾³⁾	1.55	kg
		EN 50155: 2021	

- Notes:**
- ¹⁾ For a $di/dt = 100 \text{ A}/\mu\text{s}$
 - ²⁾ Standard IEC 61000-4-3 with criteria $< 10 \%$
 - ³⁾ Product has successfully undergone characterization according to EN 50155-2021 except "Cyclic Damp Heat test".

Features

- This transducer has a split core. It permits current measurement without cutting the primary circuit (high power)
- Closed loop (compensated) current transducer using the Hall effect
- Insulating plastic case recognized according to UL 94-V0.

Special features

- $I_{PM} = 0 \dots \pm 600 \text{ A}$
- $N_P/N_S = 1 : 5000$
- $U_C = \pm 24 (\pm 10 \%) \text{ V}$
- $T_A = -40 \dots 85 \text{ }^\circ\text{C}$
- Connection to secondary on AMP CPC 11/4 connector
- Base fastening
- Different potting.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized delay time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

Applications

- Single or three phase inverters
- Propulsion and braking choppers
- Propulsion converters
- Auxiliary converters
- Battery chargers.

Application Domain

- Railway (fixed installations and onboard).

Current Transducer LA 200-SD/SP4

Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	6	kV
		Min	
d_{cp}	Creepage distance	36.5	mm
d_{ci}	Clearance	36.5	mm
CTI	Comparative tracking index (group IIIa)	375	

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

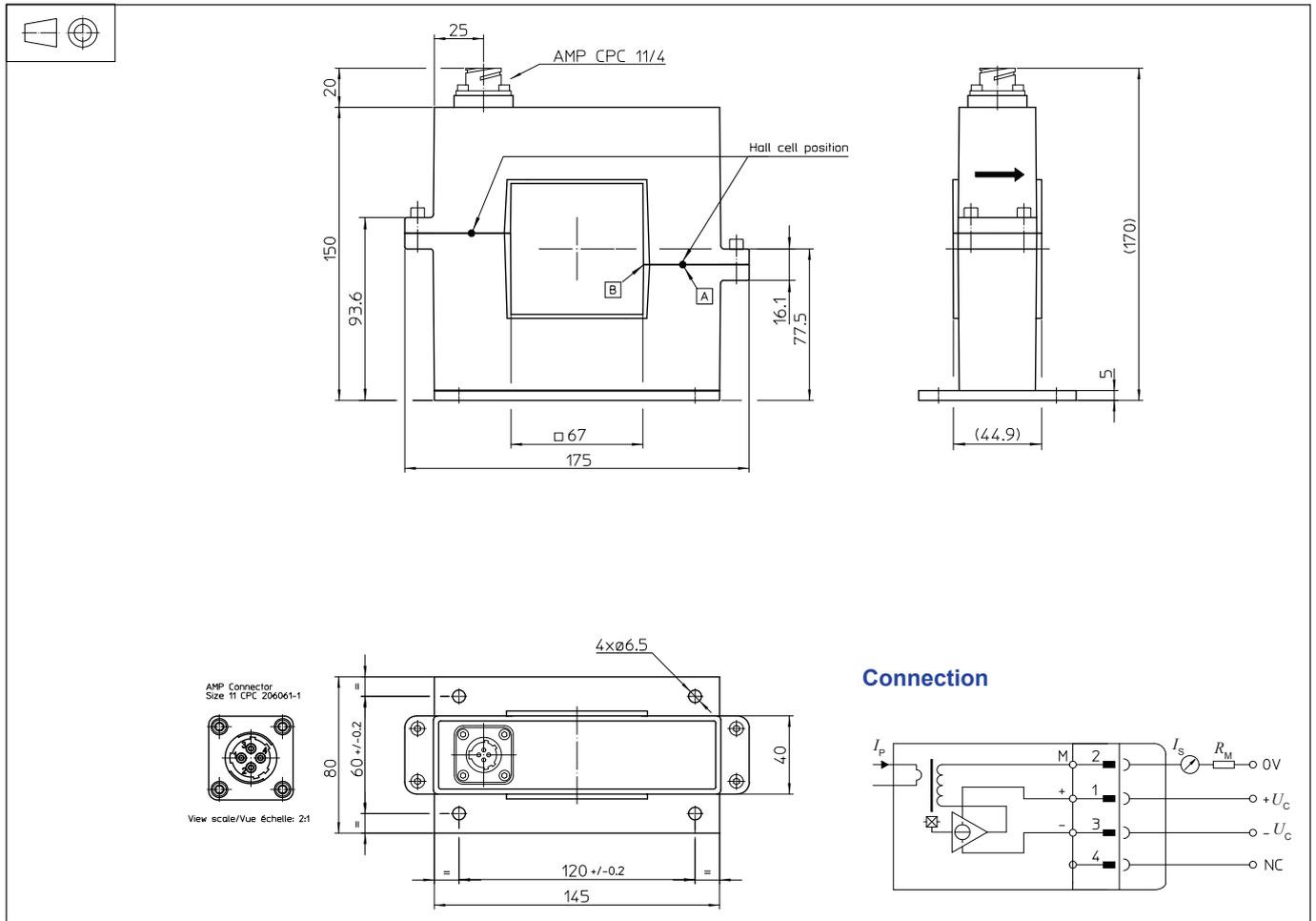
When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary busbar, power supply).

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 LA 200-SD/SP4 (in mm)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 4 holes $\varnothing 6.5$ mm
4 screws M6
Recommended fastening torque 4.7 N·m
- Primary through-hole $\square 67 \times 67$ mm
- Connection of secondary AMP CPC 11/4 connector
- Split core part 4 washers M4
4 screws M4 x 16
Recommended fastening torque 2 N·m

Remarks

- I_s is positive when I_p flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100 °C.
- Installation of the transducer must be done unless otherwise specified on the datasheet, according to LEM Transducer Generic Mounting Rules. Please refer to LEM document N°ANE120504 available on our Web site: <https://www.lem.com/en/file/3137/download>
- Dynamic performances (di/dt and delay time) are best with a single bar completely filling the primary hole.