SensorsX

SX-ECMNA-200ALAP Series

Closed-Loop Hall-Effect Current Sensor — 200 A

Industrial Current Measurement



200 A Primary Nominal Current	**< ±0.5%** Accuracy @ 25 °C (77 °F)	**< 0.15% F.S.** Linearity
100 mA Secondary Nominal Output	**DC – 100 kHz** Frequency Bandwidth (−1 dB)	**±12 – ±15 V** Supply Voltage (±5%)

■ PRODUCT OVERVIEW

The SensorsX SX-ECMNA-200ALAP model is a closed-loop Hall-effect current sensor for measuring AC, DC, pulsed and mixed currents with galvanic isolation. It provides a nominal secondary output of 100 mA at a nominal primary input of 200 A, corresponding to an output-to-input current ratio of 1:2,000. The primary current measuring range is −300 to +300 A.The sensor operates from a dual ±12 V to ±15 V supply and provides a frequency bandwidth of DC to 100 kHz (−1 dB). The primary conductor should be centered in the aperture for optimal dynamic performance.



■ KEY FEATURES

◆ **Accuracy: <0.5% at 25 °C**	◆ **Frequency bandwidth of DC–100 kHz (−1 dB)**
◆ **Fast response time of <1 µs with di/dt tracking >200 A/µs**	◆ **3 kV AC insulation withstand voltage (50 Hz, 1 min)**

■ TYPICAL APPLICATIONS

● Industrial AC and DC current measurement ● Pulsed and mixed-current monitoring

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■ PERFORMANCE SPECIFICATIONS

Primary Current	
Primary Nominal Input Current (I_{PN})	200 A
Measuring Range of Primary Current (I_P)	−300 to +300 A
Conversion Ratio (K_N)	1:2,000
Accuracy	
Linearity (ε_L)	< 0.15% F.S.
Accuracy (X)	< ±0.5% @ T_A = 25 °C (77 °F)
Zero Offset Current (I_O)	< ±0.2 mA @ T_A = 25 °C (77 °F)
Residual Current (I_{OM})	< ±0.15 mA @ $I_P \rightarrow 0$
Thermal Drift of I_O (I_{OT})	≤ ±0.005 mA/°C (≤ ±0.0028 mA/°F) @ I_P = 0, T_A = −40 to +85 °C (−40 to +185 °F)
Dynamic	
Accurately Tracked Current Rate of Change (di/dt)	> 200 A/μs
Response Time (T_R)	< 1 μs @ I_P = I_{PN}, 10%–90%
Frequency Bandwidth (−1 dB) (f)	DC–100 kHz

■ ELECTRICAL SPECIFICATIONS

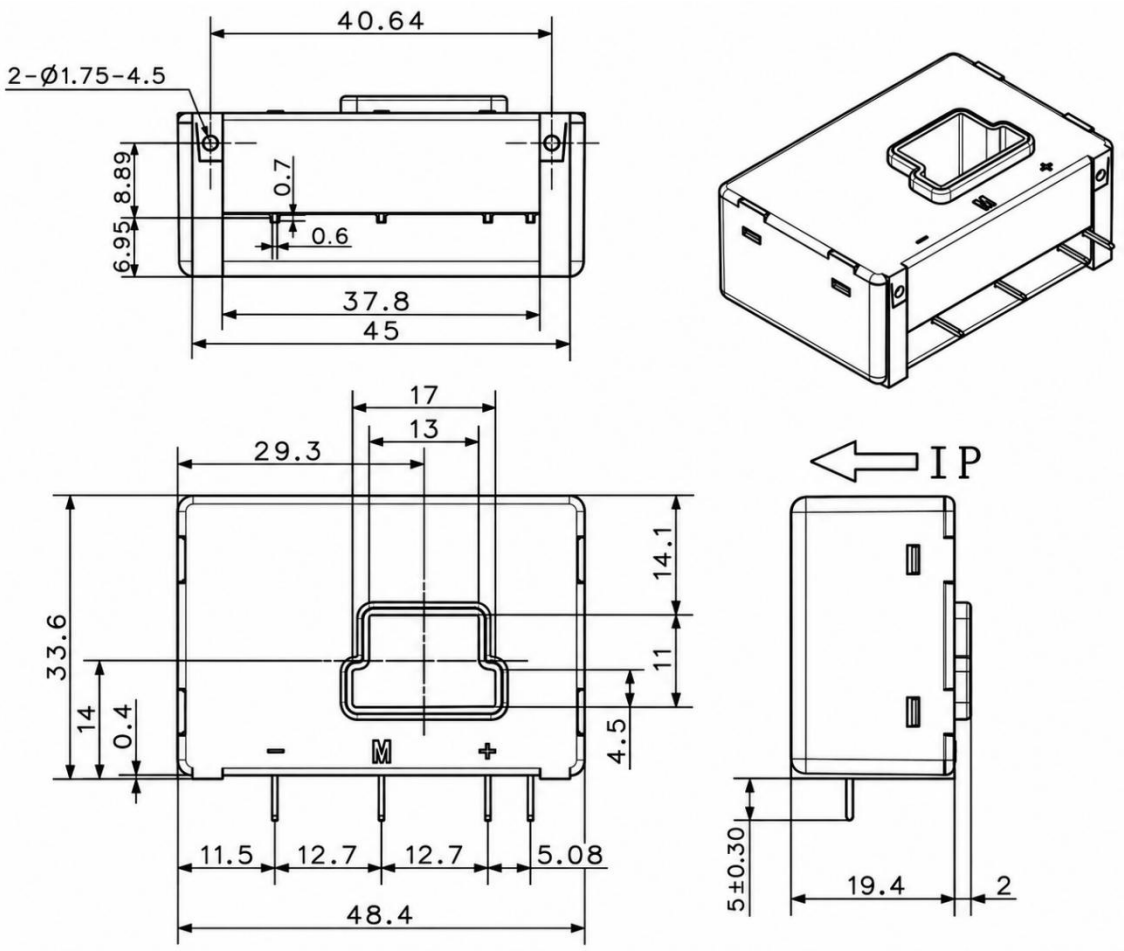
Power	
Supply Voltage (V_C)	±12–±15 V (±5%)
Current Consumption (I_C)	15 mA + I_S @ V_C = ±15 V
Output Signal	
Secondary Nominal Output Current (I_{OUT})	100 mA
Measuring Resistance (R_M) @ V_C = ±12 V	0–28 Ω @ I_{PN}; 0–5 Ω @ I_P
Measuring Resistance (R_M) @ V_C = ±15 V	0–58 Ω @ I_{PN}; 0–9 Ω @ I_P
Secondary Coil Resistance (R_S)	81 Ω @ T_A = 85 °C (185 °F)
Isolation	
Insulation Voltage (V_D)	3 kV AC, 50 Hz, 1 min

■ ENVIRONMENTAL SPECIFICATIONS

Temperature	
Ambient Operating Temperature (T_A)	−40 to +85 °C (−40 to +185 °F)
Ambient Storage Temperature (T_S)	−40 to +100 °C (−40 to +212 °F)
Weight	
Mass (m)	40 g (1.41 oz)

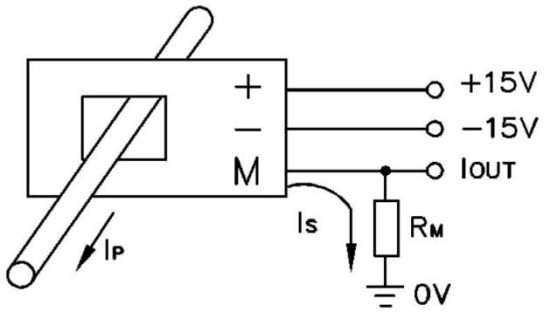
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■ MECHANICAL DIMENSIONS



Note: All dimensions are in millimeters unless otherwise specified.

■ WIRING DIAGRAM



Terminal Assignment

+	+15 V supply
–	−15 V supply
M	I_{OUT} (measuring output, via R_M to 0 V)

Remarks

- Incorrect wiring may damage the sensor.
- The secondary nominal output current (I_{SN}) is positive when the primary current (I_P) flows in the direction indicated by the arrow.
- For optimal dynamic performance (di/dt tracking and response time), position the primary conductor at the center of the aperture.

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■ ORDERING INFORMATION — SX-ECMNA

Complete model number example: SX-ECMNA-200ALAP11100

Rated Primary Current	
200A	200 A
Housing	
LAP	PCB mount, 48.4 × 33.6 × 19.4 mm
Power Supply Type	
1	Dual (bipolar) supply
Supply Voltage	
1	±12–±15 V
Rated Output	
100	100 mA
Customization Option	
D	Custom configuration — specify requirements when ordering

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