SensorsX

SX-ECFNA-300ALDGH Series

High-Precision Fluxgate Current Transducer — 300 A

Industrial Current Measurement



±300 A Primary Nominal Current (DC)	**< 0.05%** Accuracy @ 25 °C (77 °F)	**±0.02% F.S.** Linearity
±150 mA Secondary Nominal Output	**DC – 100 kHz** Frequency Bandwidth (−3 dB)	**±12 – ±15 V** Supply Voltage (±5 %)

■ PRODUCT OVERVIEW

The SensorsX SX-ECFNA-300ALDGH current transducer uses fluxgate technology to measure DC, AC, pulsed and non-sinusoidal currents with galvanic isolation. It provides a secondary current proportional to the primary current at an output-to-input ratio of 1:2,000, with a nominal output of ±150 mA for a nominal DC input of ±300 A.The transducer requires a dual ±12 V to ±15 V supply and provides a frequency bandwidth of DC to 100 kHz (−3 dB). A green LED indicates normal operation.



■ KEY FEATURES

◆ **Accuracy: <0.05% at 25 °C**	◆ **Frequency bandwidth of DC–100 kHz (–3 dB)**
◆ **5 kV AC insulation withstand voltage (50 Hz, 1 min)**	◆ **Response time of ≤ 1 µs**
◆ **Output current thermal drift of < 10 ppm**	◆ **Green LED operating status indicator**

■ TYPICAL APPLICATIONS

- Precision DC and AC current measurement
- Pulsed and non-sinusoidal current monitoring
- Galvanically isolated current measurement in industrial systems

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■ PERFORMANCE SPECIFICATIONS

Primary Current	
Primary Nominal Input Current (I_{PN})	±300 A (DC)
Primary Nominal RMS Current (I_{PNAC})	212 A (AC)
Measuring Range of Primary Current (I_p)	−440 to +440 A (±15 V, 10 Ω)
Conversion Ratio (K_N)	1: 2,000
Accuracy	
Linearity (ε_L)	±0.02% F.S. @ IP = 0–±I_{PN}
Accuracy (X)	< 0.05% @ TA = 25 °C (77 °F)
Zero Offset Current (I_O)	< ±10 μA @ TA = 25 °C (77 °F)
Thermal Drift of I_O (I_{OT})	< ±10 μA @ I_{PN} = 0, TA = −40 to +85 °C (−40 to +185 °F)
Thermal Drift of I_{OUT} (I_{OUTT})	< 10 ppm @ TA = −40 to +85 °C (−40 to +185 °F)
Dynamic	
Response Time (T_R)	≤ 1 μs @ 100 A/μs, 10%–90%
Frequency Bandwidth (f)	DC–100 kHz @ −3 dB
Accurately Tracked Current Rate of Change (di / dt)	> 100 A/μs

■ ELECTRICAL SPECIFICATIONS

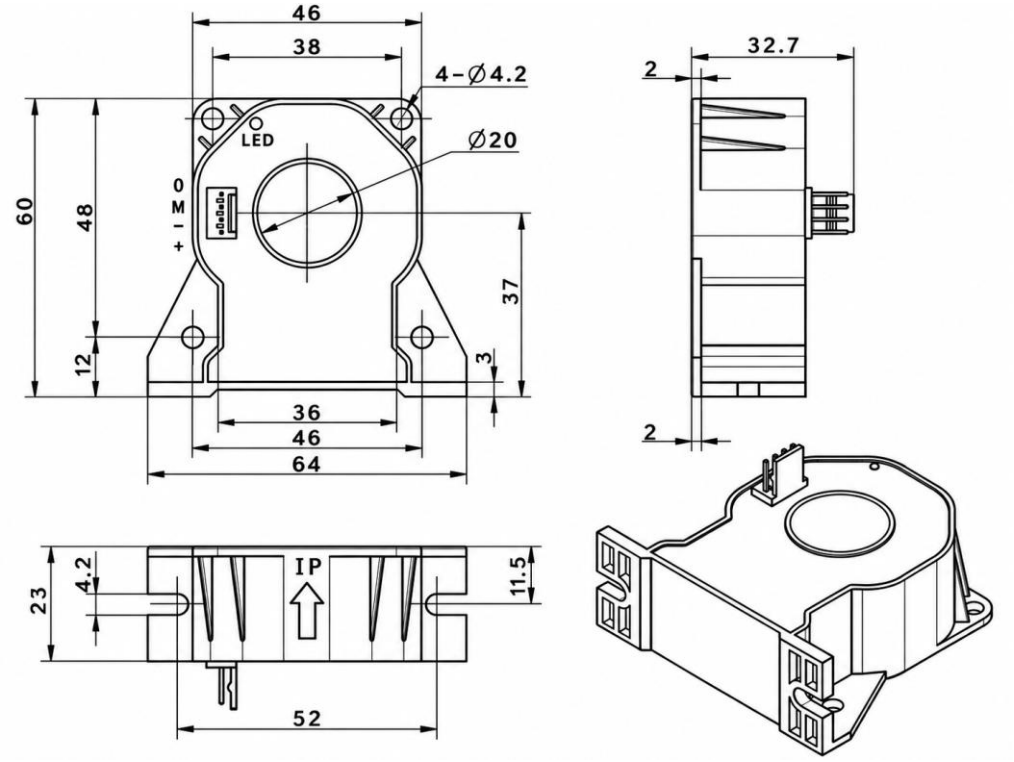
Power	
Supply Voltage (V_C)	±12–±15 V (±5%)
Current Consumption (I_C)	20 mA + I_p / K_n
Output Signal	
Secondary Nominal Output Current (I_{OUT})	±150 mA
Measuring Resistance (R_M)	0 Ω–21 Ω, with±12 V, @ ±300 A max.
Measuring Resistance (R_M)	0 Ω–40 Ω, with±15 V, @ ±300 A max.
Secondary Coil Resistance (R_S)	48 Ω @ T_A = 25 °C (77 °F)
Isolation	
Insulation Voltage (V_D)	5 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 +125 °C (−40 to +257 °F)
Primary Conductor Temperature	The temperature of the primary measuring cable or busbar should not exceed 100 °C (212 °F)
Weight	
Mass (m)	110 g (3.88 oz)

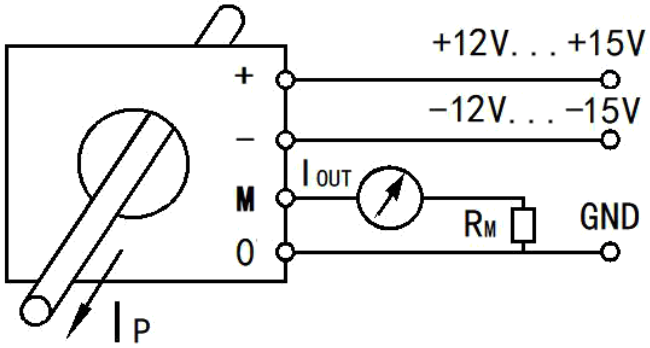
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■ MECHANICAL DIMENSIONS



Note: All dimensions are in millimeters unless otherwise specified.

■ WIRING DIAGRAM



Terminal Assignment

+	+15 V supply (+12 … +15 V)
−	−15 V supply (−12 … −15 V)
M	I output (I_{OUT}, via measuring resistor R_M)
0	GND

Remarks

- Incorrect connection may lead to damage of the transducer.
- I_{OUT} is positive when I_P flows in the direction of the arrow.

■ OPERATING STATUS

Operating Status Instructions:

- Normal status: The green LED is on during normal operation.
- Fault indication: The green LED is off.

Troubleshooting:

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a) If the green LED is off, check the power supply first.
b) If the power supply is normal, check whether the primary current exceeds the specified measurement range. Under overload conditions, the transducer operates in a non-zero-flux state, and the secondary current is no longer proportional to the primary current. Normal operation resumes when the primary current returns to the specified measurement range.

■ ORDERING INFORMATION — SX-ECFNA

Complete model number example: SX-ECFNA-300ALDGH11150

Rated Primary Current	
300A	±300 A
Housing	
LDGH	Ø20 mm (Ø0.79 in) aperture, 4-terminal electrical connection
Power Supply Type	
1	Dual (bipolar) supply
Supply Voltage	
1	±12–±15 V
Rated Output	
150	±150 mA
Customization Options	
D	Custom configuration — specify requirements when ordering

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