Current Sensor CA1C-2000A/SP2

The CA1C-2000A/SP2 open-loop Hall current sensor is designed for the isolated and precise measurement of AC, DC, and pulsed currents. It features complete electrical isolation between the primary and secondary circuits. With high accuracy, good linearity, minimal temperature drift, strong anti-interference capability, fast response time, and zero insertion loss, it is ideal for demanding electrical applications.

Parameters

Electrical Specifications

- Rated Input Current I_{PN}: 2000A
- Measurement Range I_{PM}: ±5000A
- Supply Voltage V_C: DC±15 (1±5%) V
- Current Consumption I_C: ≤±25mA
- Rated Output Voltage V_{OUT} (@±I_{PN}, R_L=10kΩ,T_A=25°C): ±4V
- Output Internal Resistance R_{OUT}: 102Ω
- Load Resistance R_L: ≥10kΩ

Accuracy & Dynamic Performance

- Basic Error δ_i (I_{PN},T_A=25℃): ≤±1% of I_{PN}
- Non-Linearity δ_L (0...±I_{PN}): ≤±1% of I_{PN}
- Zero Output Offset δ_Z (T_A = 25℃): ≤±20mV
- Hysteresis Offset V_{OH} after 1×I_{PN} pulse: ≤±30mV
- Zero Drift with Temperature δ_{Zt} (T_A = -40℃~+85℃): ≤±1mV/℃
- Full-Scale Temp Drift δ_{FSt} (T_A =-40℃~+85℃): ≤±1mV/℃
- Full-Scale Temp Drift δ_{FSt} (T_A =+85℃~+105℃): ≤±1.5mV/℃
- Response Time T_R (90% of I_{PN} & di/dt > 50A/μS): ≤5μS
- Bandwidth (−3dB): DC...25kHz

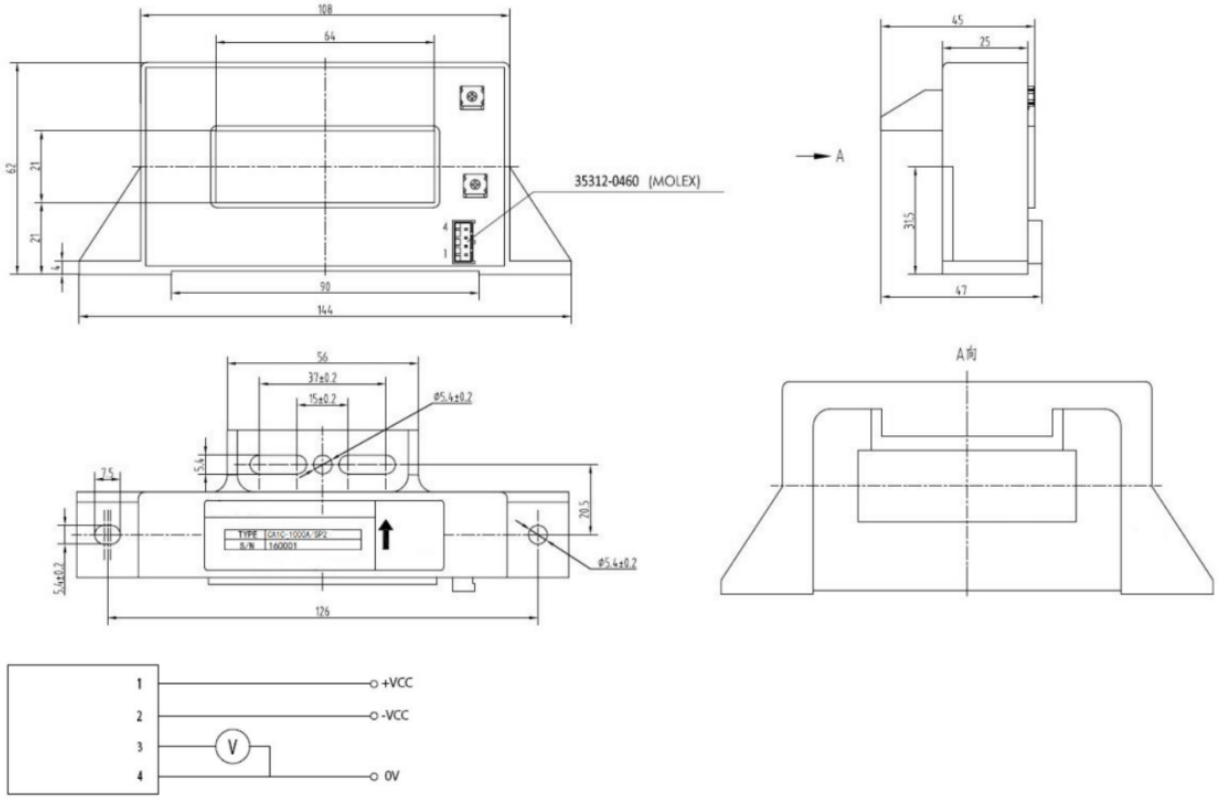
General Data

- Operating Temperature T_a: -40℃~+105℃
- Storage Temperature T_s: -45℃~+105℃
- Weight m: ≤300g

Insulation & Dielectric Strength

- Withstand Voltage: AC 50Hz,1min 5kV
- Insulation Resistance R_{IS}: ≥1000MΩ
- Creepage Distance: 16.73mm
- Clearance Distance: 11.61mm

Outline & Interface



Mechanical Characteristic

- Unspecified Tolerance：±1 mm
- Mounting Option 1： 1 hole and 1 notch ø5.5mm 2 M5 steel screws
- Mounting Option 2： 1 hole and 2 notches ø 4.5mm 3 M4 steel screws
- Recommended Torque：2.5 N·m
- Through-Hole Size：64×21mm
- Secondary Connection Interface：Molex 35312-0460

Notes

- The output VOUT is positive when the measured current flows in the direction of the arrow marked on the sensor housing.
- Use shielded wire for secondary side connections; ground the shield near the sensor (to housing, -VC, or 0V).
- Vertical tolerance of mounting holes must meet national level 8 standard or better (≤0.06mm).
- Only use the matching connector provided by the manufacturer—third-party alternatives are not allowed.
- Mounting surface flatness requirements：
  （a）For flat surfaces: national level 11 standard or better (surface waviness < 0.25mm)；
  （b）For raised circular boss designs: national level 12 standard or better (waviness < 0.5mm).