

NCA1C-XXXX/SP10 Current Transducer

$I_{PN} = 50, 100, 200, 300, 400, 500, 600A$

The NCA1C-XXXX/SP10 Current Transducer is for the electronic measurement of DC, AC or pulsed currents, with galvanic separation between the primary circuit and the secondary circuit.

Features

- Open loop multi-range current transducer
- Voltage output
- Bipolar supply voltage.

Standards

- EN 50178: 1997
- IEC 61010-1:2010
- UL 508: 2010

Typical application

- DC motor drives
- Uninterruptible Power Supplies (UPS)
- Switched model power supplies (SMPS)
- AC variable speed drives
- Battery supplied application
- Power supplies for welding applications.

Absolute rating

| Parameter | Symbol | Unit | Specification | | | Conditions |
|-------------------------------|--------|------|---------------|---------|-----|------------|
| | | | Min | Typical | Max | |
| Ambient storage temperature | T_S | °C | -45 | | 90 | |
| Ambient operating temperature | T_A | °C | -40 | | 85 | |

Insulation coordination

| Parameter | Symbol | Unit | Specification | | | Conditions |
|------------------------------|-----------|------|---------------|---------|-----|------------------------------------|
| | | | Min | Typical | Max | |
| Dielectric withstand voltage | V_D | kV | | | 3 | RMS voltage for AC test 50Hz, 1min |
| Insulation resistance | R_{INS} | MΩ | 1000 | | | 2500V |
| Clearance distance | d_{CI} | mm | 7.08 | | | Shortest distance through air |
| Creepage distance | d_{CP} | mm | 6.23 | | | Shortest path along device body |
| Case material | - | - | | V0 | | According to UL 94 |

Electrical parameters

At $T_A = 25^\circ C$, $U_C = \pm 15 V$, $R_L = 10 k\Omega$.

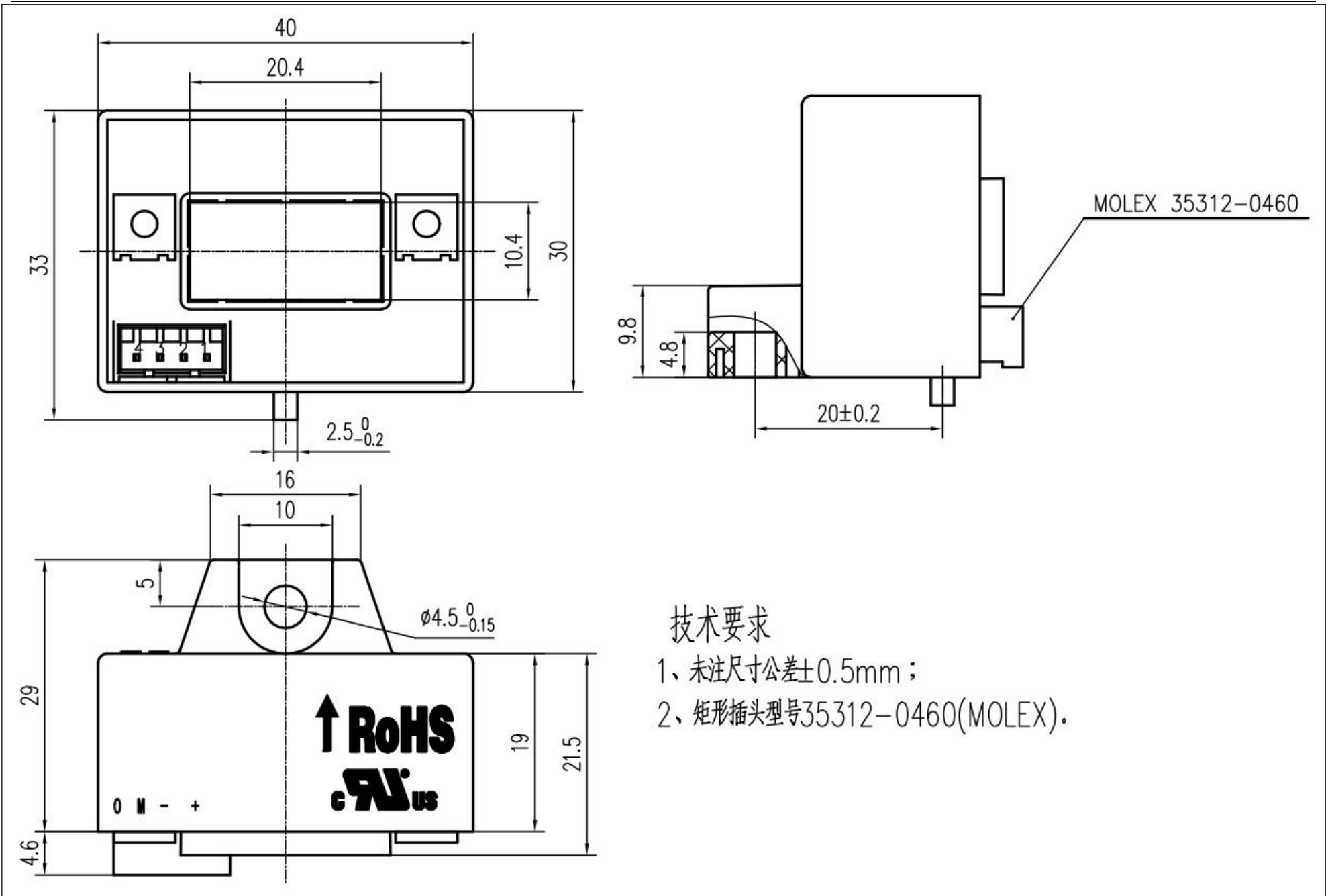
| Parameter | Symbol | Unit | Specification | | | | | | | Conditions |
|---------------------------------|----------|------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
| | | | 50 | 100 | 200 | 300 | 400 | 500 | 600 | |
| Primary current, nominal range | I_{PN} | A | 50 | 100 | 200 | 300 | 400 | 500 | 600 | RMS current |
| Primary current measuring range | I_{PM} | A | ± 150 | ± 300 | ± 600 | ± 900 | ± 900 | ± 900 | ± 900 | |

| Parameter | Symbol | Unit | Specification | | | Conditions |
|---|--------------|---------------|---------------|----------|-------------|----------------------|
| | | | Min | Typical | Max | |
| Supply voltage | U_C | V | ± 14.25 | ± 15 | ± 15.75 | |
| Current consumption | I_C | mA | -30 | | 30 | |
| Output voltage @ I_{PN} | V_{SN} | V | | 4 | | |
| Offset voltage @ $I_P = 0A$ | V_{OE} | mV | -40 | | 40 | |
| Temperature coefficient of V_{OE} (@ $-40^\circ C \sim +85^\circ C$) | TCV_{OE} | mV/°C | -1 | | 1 | |
| Temperature coefficient of V_S (@ $-40^\circ C \sim +85^\circ C$) | TCV_S | %/°C | -0.1 | | 0.1 | |
| Accuracy(excluding offset) | X | % of I_{PN} | -1 | | 1 | |
| Linearity error | ϵ_L | % of I_{PN} | -1 | | 1 | |
| Step response time to 90 % I_{PN} | t_r | μs | | | 3 | $di/dt > 50 A/\mu s$ |
| Frequency bandwidth ¹⁾ | BW | kHz | | 25 | | -3 dB |
| Load resistance | R_L | kΩ | 10 | | | |
| Output internal resistance | R_{OUT} | Ω | | 100 | | |

Notes:

- 1) The frequency bandwidth test is for small signal.
- 2) Please contact CRRC if current transducer is applied in some extreme cases, for example: high frequency ripple, high temperature, larger operating frequency.....

Dimensions (in mm)

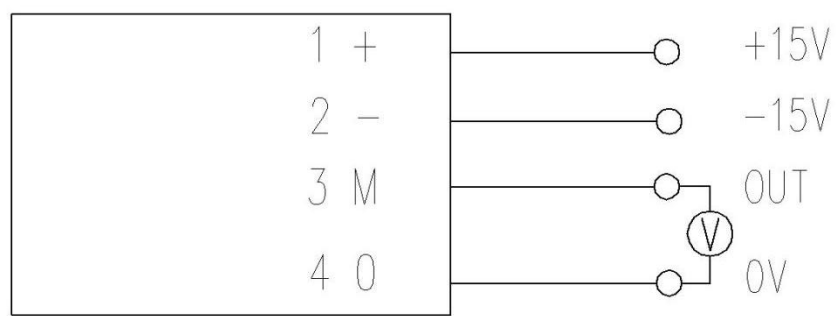


技术要求
 1、未注尺寸公差±0.5mm；
 2、矩形插头型号35312-0460(MOLEX)。

Mechanical characteristics

- Mass: 65g
- General tolerance: ± 0.5 mm
- Transducer fastening: 1 hole $\phi 4.5$ mm, 1 M4 steel screws
- Recommended fastening torque: 2.5 N·m
- Primary through-hole: 20.4×10.4mm
- Connection of secondary: MOLEX 35312-0460

Connection



| PIN NO. | PIN NAME | Function |
|---------|----------|-------------------------|
| 1 | + | Positive supply voltage |
| 2 | - | Negative supply voltage |
| 3 | M | Vout output voltage |
| 4 | 0 | Ground connection |

Remarks

- It is advised to use a primary conductor (busbar) that fills transducer through-hole.
- Be aware of the influence of the external field if nearby transducers are too close (relay, capacitor, choke...).

Comments:

- Items with "*" in this datasheet are recommended value for reference only. The final value must be determined by customer.
- CRRC reserves the right to carry out modifications on its transducers, in order to improve them.