

NACF.XXXJ-S5/V 型电流传感器 Current Transducer

The NACF.XXXJ-S5/V 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: 1998
- IEC 61010-1:2010

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 <sub>S</sub>	°C	-40		85	
Ambient operating temperature	T <sub>A</sub>	°C	-45		90	

Insulation coordination

Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Dielectric withstand voltage	V <sub>D</sub>	kV			5	RMS voltage for AC test 50Hz, 1min
Insulation resistance	R <sub>INS</sub>	MΩ	1000			500V
Clearance distance	d <sub>CI</sub>	mm	12.7			Shortest distance through air
Creepage distance	d <sub>CP</sub>	mm	15.7			Shortest path along device body

Electrical parameters

At T<sub>A</sub> = 25°C, U<sub>C</sub> = +5 V, R<sub>L</sub> = 10 kΩ, unless otherwise noted.

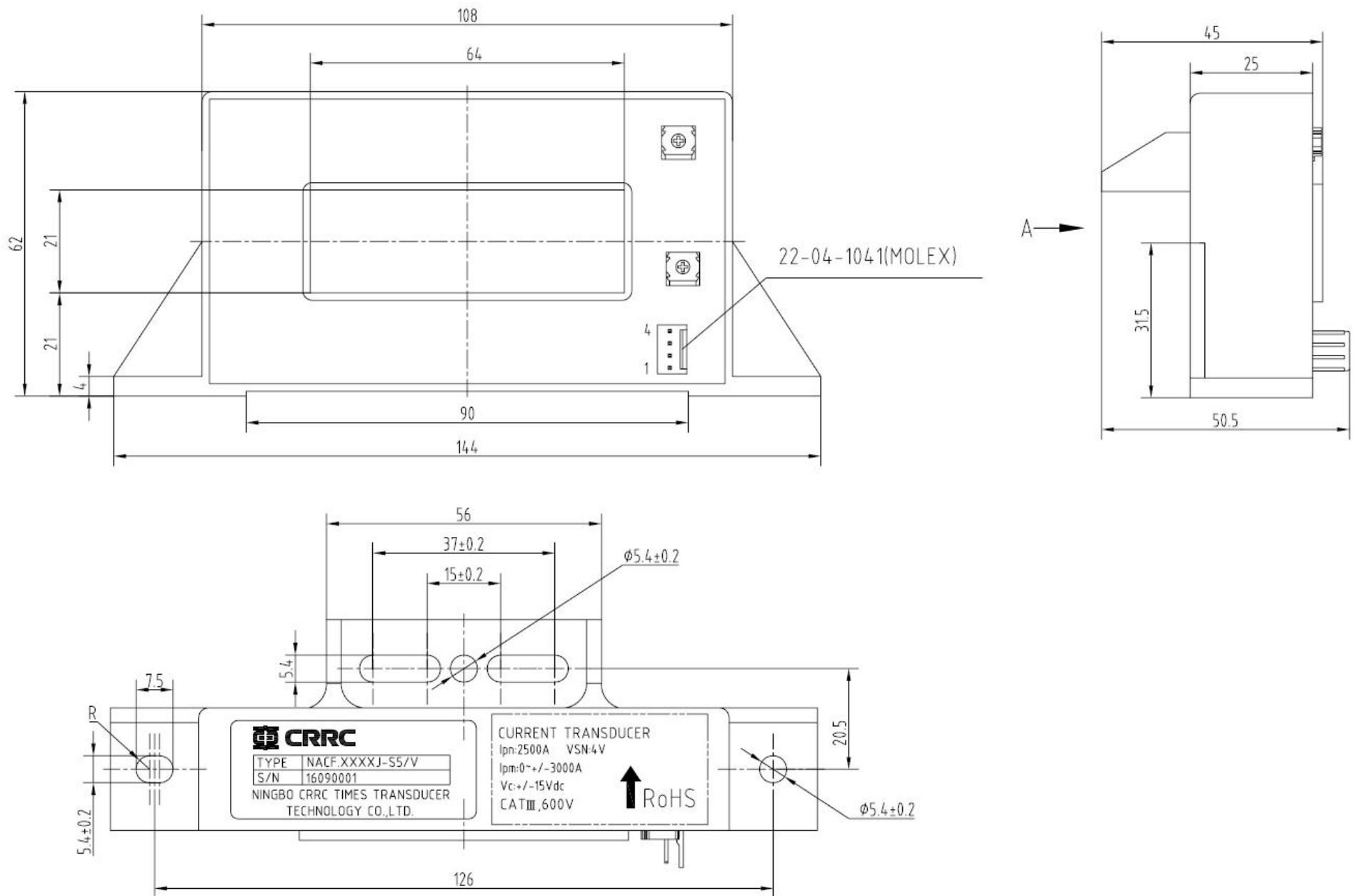
Parameter	Symbol	Unit	Specification									Conditions
Primary current, nominal range	I <sub>PN</sub>	A	500	600	850	1000	1200	1500	2000	2500	3000	RMS current
Primary current measuring range	I <sub>PM</sub>	A	±1500	±1800	±2550	±3000	±3600	±4500	±5500	±5500	±5500	

Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Supply voltage	U <sub>C</sub>	V	±14.25	±15	±15.75	
Current consumption	I <sub>C</sub>	mA		≤±20mA		+V <sub>out</sub> / R <sub>L</sub>
Output voltage @I <sub>PN</sub>	V <sub>out</sub>	V		4		
Accuracy(excluding offset) @I <sub>PN</sub>	δ <sub>i</sub>	% of I <sub>PN</sub>	-1		1	0~I <sub>PN</sub>
Linearity error	δ <sub>L</sub>	% of I <sub>PN</sub>	-1		1	0~I <sub>PN</sub>
Electrical offset voltage	δ <sub>Z</sub>	mV	-20		20	T <sub>A</sub> = 25°C
Hysteresis offset voltage	V <sub>OH</sub>	mV	-30		30	I <sub>P</sub> = 0,after an excursion of 1×I <sub>PN</sub>
Temperature coefficient of δ <sub>Z</sub>	δ <sub>Zt</sub>	mV/°C	-1		1	T <sub>A</sub> = -40°C~+85°C
Step response time to 90 % I <sub>PN</sub>	t <sub>r</sub>	μs			5	90% of I <sub>PN</sub> , di/dt ≥ 50 A/μs
Frequency bandwidth <sup>1)</sup>	BW	kHz	25			±3 dB
Load resistance	R <sub>L</sub>	KΩ	10			
Output internal resistance	R <sub>OUT</sub>	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.....
- 3) Operating at ±12 V < U<sub>C</sub> < ±15 V will reduce the measuring range

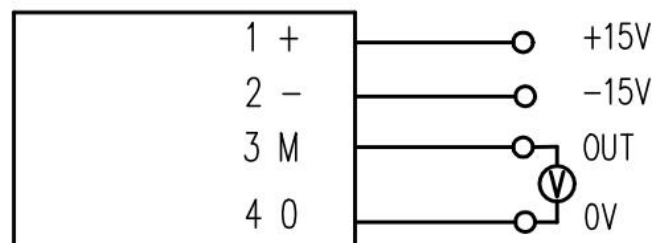
## Dimensions (in mm)



## Mechanical characteristics

- Mass: 500g
- General tolerance: ±1mm
- Transducer fastening: 1 hole and 2 notch ø5.4mm, 3 M5 steel screws
- Transducer fastening: 1 hole and 1 notch ø5.5mm, 2 M5 steel screws
- Recommended fastening torque: 1.5 N·m
- Primary through-hole: 64×21mm
- Connection of secondary: Molex 22-04-1041

## 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...).
- U<sub>out</sub> is positive when I<sub>p</sub> flows in the direction of the arrow.
- Product secondary side connecting line optimization shielding wire, cable shielding layer close to the product end can connect chassis, negative power or power 0V.
- Verticality requirements for sensor mounting screw holes: required to be in the national standard level 8 or above (or below 0.06).
- Sensor mounting flatness requirements:
  - 1) The national standard for flatness of large-plane installation is 11 or above (or the plane fluctuation is less than 0.25mm);
  - 2) If there is a small round boss on the installation surface, the flatness of the design is required to reach the national standard level 12 or above (or the plane fluctuation is less than 0.5mm).

## 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.