

#Netrol-NACF.XXXJ-S5/V Current Transducer

$I_{PN} = 0.5, 0.6, 0.85, 1, 1.2, 1.5, 2, 2.5, 3\text{kA}$

The #Netrol-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_S	°C	-40		85	
Ambient operating temperature	T_A	°C	-45		90	

Insulation coordination

Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Dielectric withstand voltage	V_D	kV		5		RMS voltage for AC test 50Hz, 1min
Insulation resistance	R_{INS}	MΩ	1000			500V
Clearance distance	d_{CI}	mm	12.7			Shortest distance through air
Creepage distance	d_{CP}	mm	15.7			Shortest path along device body

Electrical parameters

At $T_A = 25^{\circ}\text{C}$, $U_C = \pm 15\text{ V}$, $R_L = 10\text{ k}\Omega$, unless otherwise noted.

Parameter	Symbol	Unit	Specification										Conditions
Primary current, nominal range	I_{PN}	A	500	600	850	1000	1200	1500	2000	2500	3000		RMS current
Primary current measuring range	I_{PM}	A	± 1500	± 1800	± 2550	± 3000	± 3600	± 4500	± 5500	± 5500	± 5500		

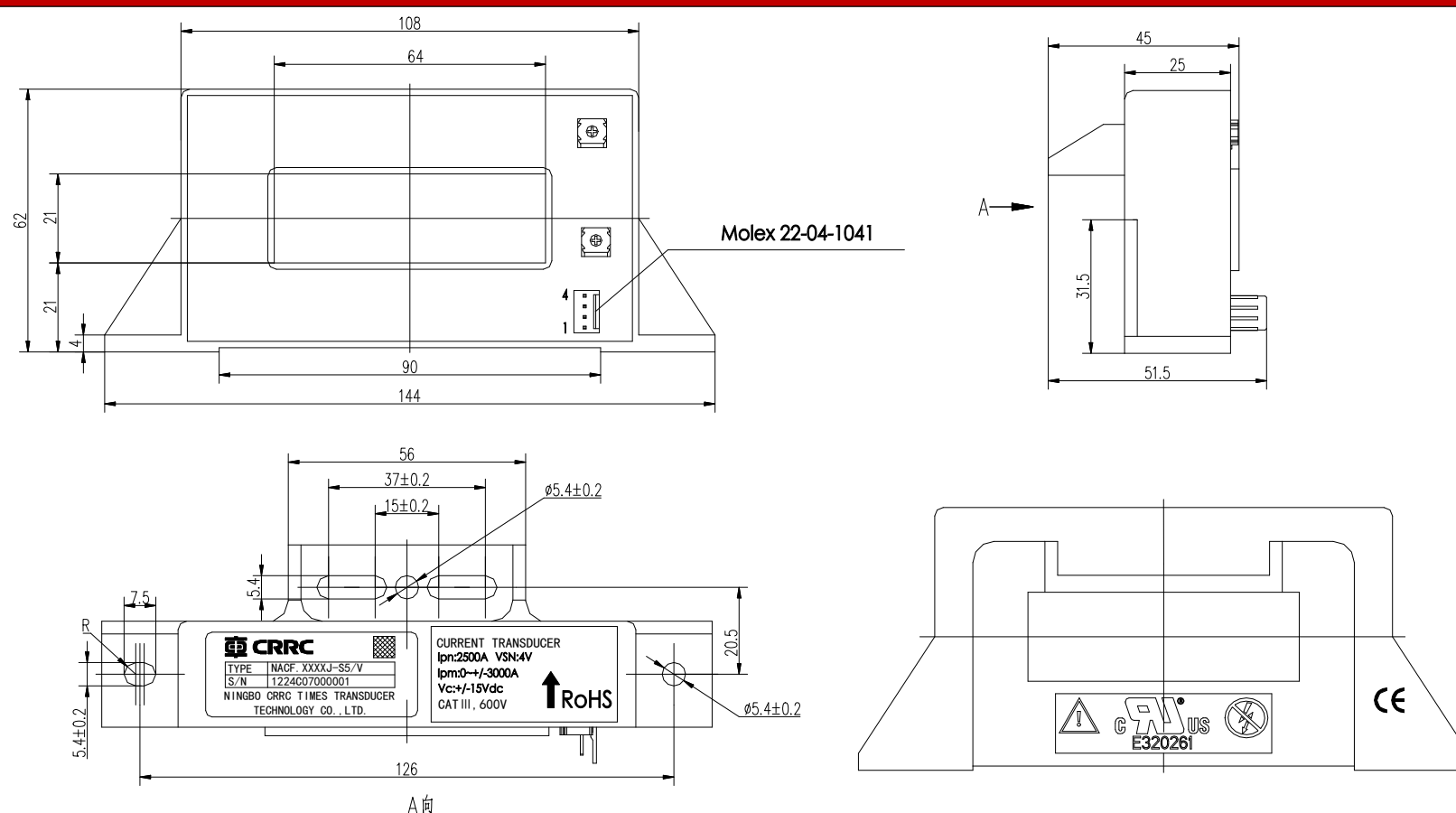
Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Supply voltage	U_C	V	± 14.25	± 15	± 15.75	
Current consumption	I_C	mA		$\leq \pm 20\text{mA}$		$+V_{out} / R_L$
Output voltage @ I_{PN}	V_{OUT}	V		4		
Accuracy(excluding offset) @ I_{PN}	X	% of I_{PN}	-1		1	$0 \sim I_{PN}@25^{\circ}\text{C}$
Linearity error	ϵ_L	% of I_{PN}	-1		1	$0 \sim I_{PN}@25^{\circ}\text{C}$
Electrical offset voltage	V_{OE}	mV	-20		20	$T_A = 25^{\circ}\text{C}$
Magnetic offset voltage	V_{OM}	mV	-30		30	$I_p = 0$, after an excursion of $1 \times I_{PN}$

Temperature coefficient of V_{OE}	TCV_{OE}	mV/°C	-1		1	$T_A = -40^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Temperature coefficient of V_{out}	TCV_{OUT}	%/°C	-0.1		0.1	
Step response time to 90 % I_{PN}	t_r	μs			5	$di/dt \geq 50 \text{ A}/\mu\text{s}$
Frequency bandwidth ¹⁾	BW	kHz	25			$\pm 3 \text{ dB}$
Load resistance	R_L	K Ω	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……
- 3) Operating at $\pm 12 \text{ V} < U_c < \pm 15 \text{ V}$ will reduce the measuring range

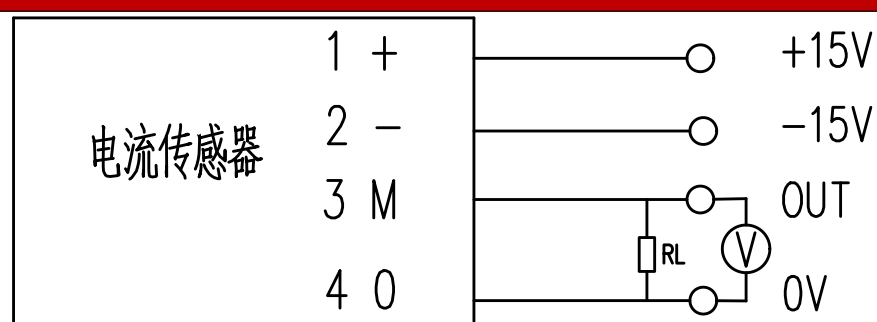
Dimensions (in mm)



Mechanical characteristics

- Mass: $\leq 460\text{g}$
- General tolerance: $\pm 1\text{mm}$
- Transducer fastening: 1 hole and 2 notches $\phi 5.4\text{mm}$, 3 M5 steel screws
- Transducer fastening: 1 hole and 1 notch $\phi 5.4\text{mm}$, 2 M5 steel screws
- Recommended fastening torque: $2.5 \text{ N} \cdot \text{m}$
- Primary through-hole: $64 \times 21\text{mm}$
- 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_{out} is positive when I_p 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.
- Please contact CRRC if current transducer is applied in some extreme cases, for example: high frequency ripple, high temperature, larger operating frequency.....
- Product updates will not notified separately. The final version of the datasheet shall be confirmed through specific communication between both parties.