

#Netrol-NACF.XXXXJ-S5/SP2VN Current Transducer

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

#Netrol-NACF.XXXXJ-S5/SP2VN 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

- IEC 62109-1: 2010
- IEC 61010-1: 2010
- EN 50178: 2017



Typical application

- Solar inverter
- Auto - control

- Frequency converter
- Static converter for DC motor drives

Absolute rating

Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Ambient storage temperature	T_S	°C	-40		105	
Ambient operating temperature	T_A	°C	-40		105	

- Notes:
- 1) Stresses above these ratings may cause permanent damage.
 - 2) Exposure to absolute maximum ratings for extended periods may degrade reliability.

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	13.5			Shortest distance through air
Creepage distance	d_{CP}	mm	22			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(#Netrol-NACF.XXXXJ-S5/SP2VN)									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	
Nominal sensitivity	S_N	mV/A	8	6.667	4.706	4	3.333	2.667	2	1.6	1.333	

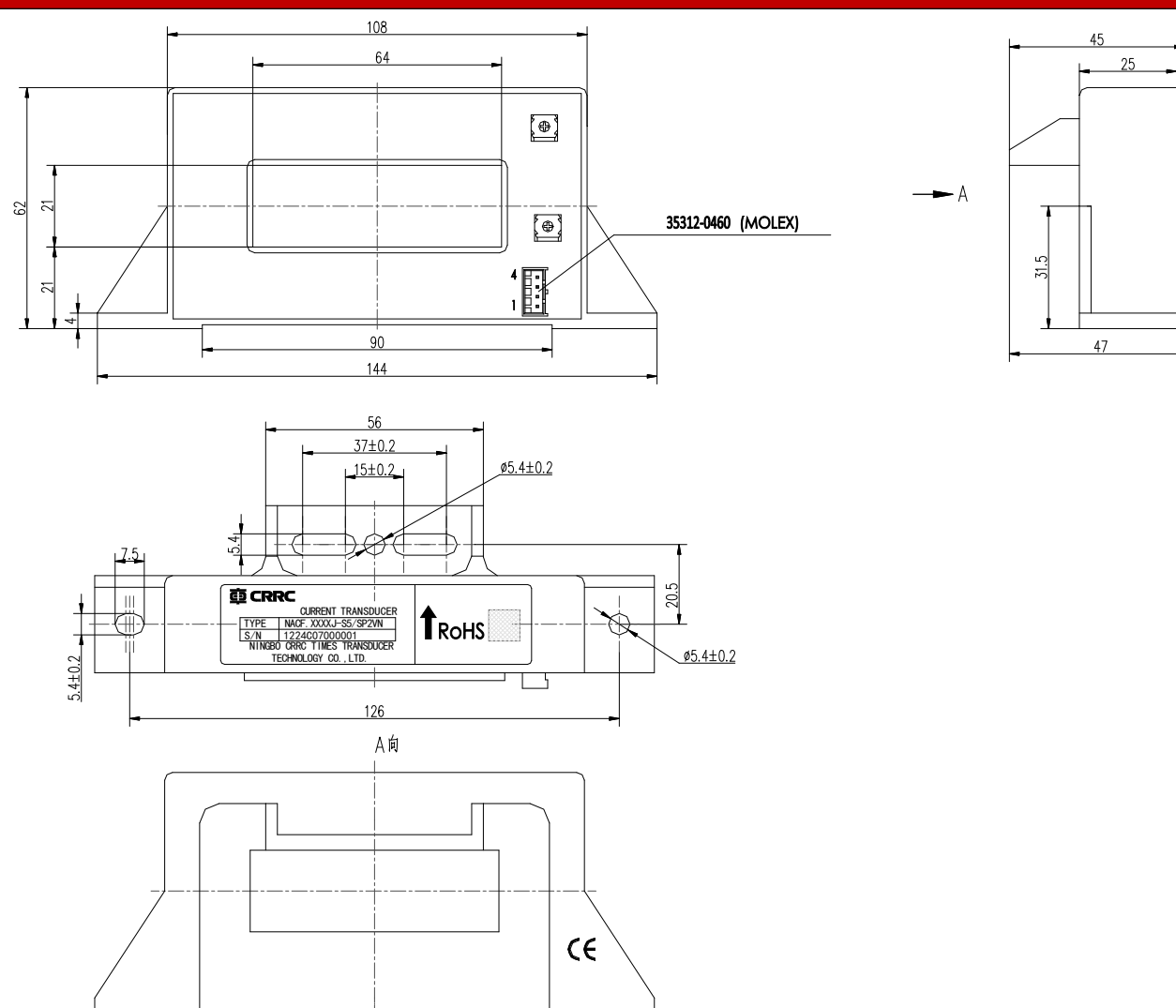
Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Supply voltage	U_C	V	±14.25	±15	±15.75	
Current consumption	I_C	mA			$28 + V_{out}/R_L$	
Output voltage @ I_{PN}	V_{out}	V		4		
Accuracy(excluding offset) @ I_{PN}	δi	% of I_{PN}	-1		1	$0 \sim I_{PN}$
Linearity error	δ_L	% of I_{PN}	-1		1	$0 \sim I_{PN}$
Step response time to 90 % I_{PN}	t_r	μs			5	90% of I_{PN} , $di/dt \geq 100\text{ A}/\mu\text{s}$

Parameter	Symbol	Unit	Specification			Conditions
			Min	Typical	Max	
Frequency bandwidth ¹⁾	BW	kHz	25			±3 dB
Electrical offset voltage	V _{OE}	mV	-20		20	IP=0
Hysteresis offset voltage	V _{OH}	mV	-15		15	IP=0,after an excursion of 1×IPN
Temperature coefficient of δ_z	TCV _{OE}	mV/°C	-1		1	T _A = -40°C~+105°C
Temperature coefficient of δ_i	TC δ_i _t	%/°C	-0.1		0.1	T _A = -40°C~+105°C
Load resistance	R _L	K Ω	10			

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)



Mechanical characteristics

- Mass: 850g
- General tolerance: ±0.5mm
- Transducer fastening: M5 with flat washer and spring washer
- Recommended fastening torque: 3.5 N·m
- Connection of secondary: Molex 35312-0460

Connection

1	—	+15V
2	—	-15V
3	—	M
4	—	0V

tNetrol-NACF. XXXXJ-S5/SP2VN

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...).
- V_{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.
- Product updates will not notified separately. The final version of the datasheet shall be confirmed through specific communication between both parties.