

TECHNICAL DATASHEET

NEENJAS ELECTRIC PVT LTD

EV Charger | 24V | 150W | Multi stage charging

Model: NEV-150WP-LX-24

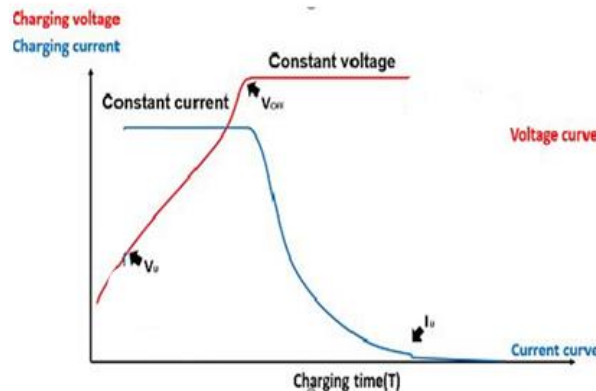


KEY FEATURES

1. 3 Stage Charging (Pre charge, CC, CV) with Equalization.
2. Wide Input Range. (90V – 280V)
3. Automatic Output current De-rating at Lower Input Voltage.
4. LCD Display for Charging Status and Error Status.
5. >91% efficiency at full load.
6. OCP, SCP, OVP, OTP, Reverse Battery Protection, Surge 4KV and EMI.
7. Fit for indoor as well as outdoor applications (IP 67 / IP65)

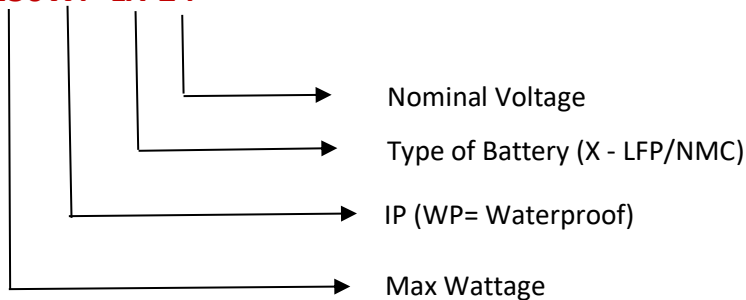
CHARGING PROFILE

1. Charging profile is configurable as per battery needs.
2. The deep discharge wake-up algorithm is part of pre-charger stage and wake-up sequence of the battery from deep discharger can be programmed as per battery needs.




MODEL ENCODING

NEV-150WP-LX-24



GENERAL SPECIFICATIONS

SECTION	PRODUCT CODE	NEV-150WP-LX-24
<u>OUTPUT</u>	Battery Type	NMC
	DC Voltage	24V
	Output Current	3A
	Max Cut-off Voltage	29.4V
	No. of cells in series	10S
	Maximum Rated Power	89W
	Current Precision	<3%
	Voltage Precision	<2%
	Modes	Pre-Charge-CC-CV
	Connectors	0.5mm sq Single Pin PVC Connector (can be modified as per requirement) 
<u>INPUT</u>	Input AC Voltage	90-280VAC Under Voltage cut off @90VAC Power Derating 180/190VAC Over Voltage cut off @290VAC
	Input Frequency	47-63Hz
	Efficiency at 230VAC Full Load	> 91%
	Surge L/N, L/E	4 KV
	Connection	0.5mm sq. with Indian Standard 3 Pin Plug
<u>PRTOTECTIONS</u>	Output Over Current	Yes, above 110% of full load
	Output Short Circuit	Yes (built in)
	Output Over Voltage	Yes
	Reverse Polarity	Yes (built in)
	Input Over Voltage (up to 440VAC)	Yes (built in)
<u>SAFETY & EMC</u>	Withstand Voltage	I/P-O/P: 3 KV, I/P-Earth: 2 KV, O/P-Earth: 2 KV
	Isolation Resistance	I/P-O/P, I/P-Earth, O/P-Earth: 20M Ohm/ 500VDC
	EMI & EMC	Inbuilt EMI Filter
<u>OTHERS</u>	Casing Dimensions(mm)	200 x 51 x 35
	Weight	900gms
NOTE: Unless otherwise stated, the data are based on 25°C ambient temperature, 230VAC input voltage and full load. Specification is subject to change without notice		

LED INDICATIONS

2 LED Indication		
Stage	LED 1 (D1 Charging)	LED 2 (D3 Fault)
Standby Mode (No Battery Connected)	ON	ON
Trickle or 0 to 50 % Charging	Slow Blinking	ON
50 to 100 % Charging	Slow Blinking	ON
Battery Fully Charge	ON	ON
Over Temperature Protection (OTP)	ON	ON
Over Time	ON	ON
Error Code	ON	ON
Reverse Battery	ON	ON

PROTECTION RESPONSE

SECTION	PARAMETER
OVER CURRENT PROTECTION	Output is limited to 110% of rated output current.
SHORT CIRCUIT PROTECTION	When output is being shorted, The charger will stop charging and will automatically recover when short is removed.
OVER TEMPERATURE PROTECTION	When the internal temperature exceeds the defined limits, the charger does over temperature detection and the output charging current shall be limited. Once the temperature comes down charger will recovery to normal mode.
REVERSE BATTERY PROTECTION	If Battery connections are wrong, the charger will not give output.
INPUT OVER/UNDER VOLTAGE PROTECTION	When the input voltage exceeds the defined limits, the charger will not give output, once the voltage is normal the charger goes to normal mode.
OUTPUT OVER VOLTAGE PROTECTION	When battery voltage exceeds max voltage, charger will shut down. Charger needs to be AC Power cycled to recover.

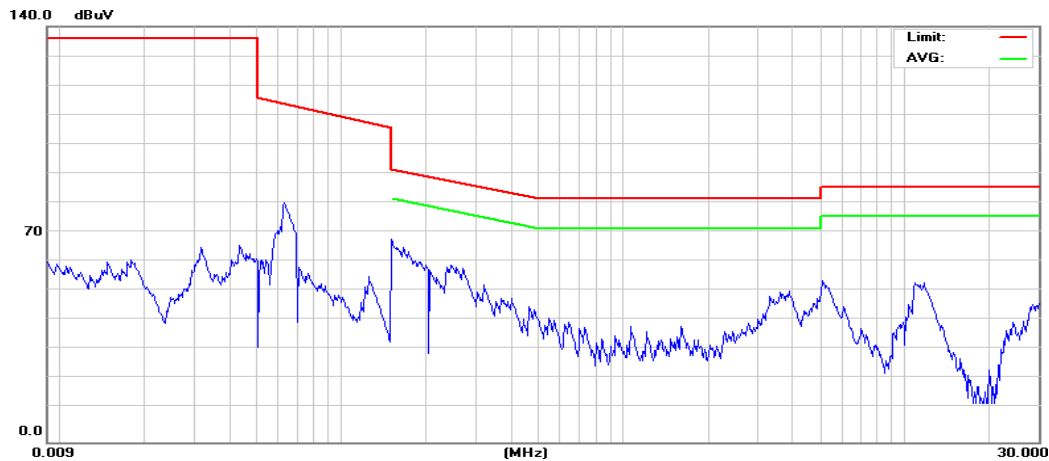
Surge Report at Full Load

Line to Neutral L / N	4 KV : CLASS A					6 KV : CLASS A			
	Phase/Polarity	90	180	270	0	90	180	270	0
	Positive	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Negative	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Line to Earth L / E	6 KV : CLASS A					10 KV : CLASS A			
	Phase/Polarity	90	180	270	0	90	180	270	0
	Positive	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Negative	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Isolation Report – Megger Test

Withstand Voltage Test (MEGGER TEST) 60W NON PFC Without Epoxy With Casing			
	Voltage	Result	Leakage Current (mA)
Input to Output for 1 minute			
Sample 1	0.5 KV	Pass	0.27
	1 KV	Pass	0.42
	1.5 kV	Pass	0.51
	2 KV	Pass	0.58
	2.5 KV	Pass	0.63
	3 KV	Pass	0.67
	3.75 KV	Pass	0.68
L/E for 1 minute			
Sample 1	1 KV	Pass	1
	2 KV	Pass	1.1
N/E for 1 min			
Sample 1	1 KV	Pass	1
	2 KV	Pass	1.1
O/P to earth for 1 min			
Sample 1	1 KV	Pass	1.2
	2 KV	Pass	1.5

EMI: Conduct Emission Measurement

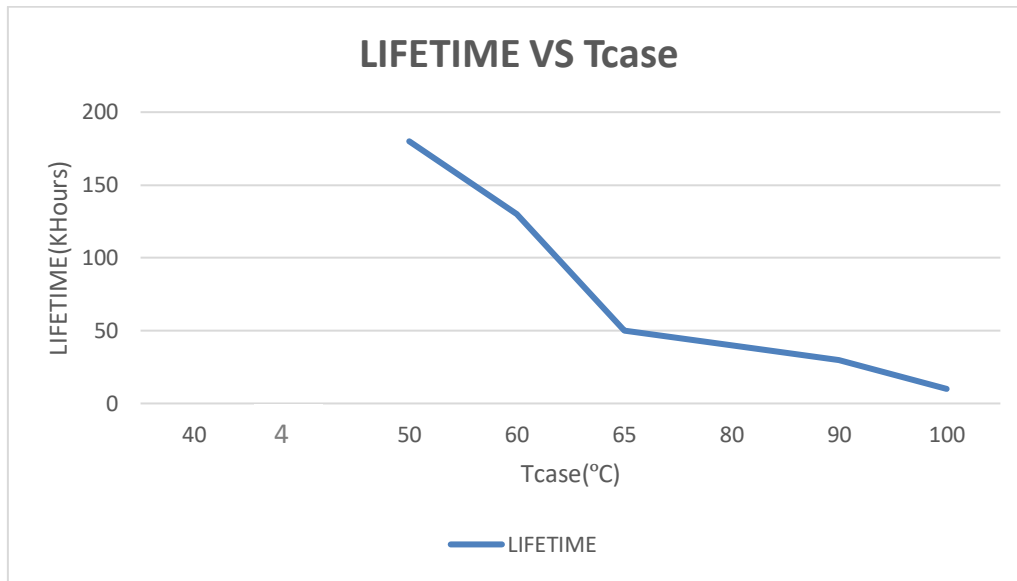


Limit	CISPR 15_QP_Electrical Power supply	Phase	L-1
Power	AC 230V/50Hz	Temperature	26 C
EUT	Control Gear	Humidity	60 %

Electro Magnetism: Emission & Immunity

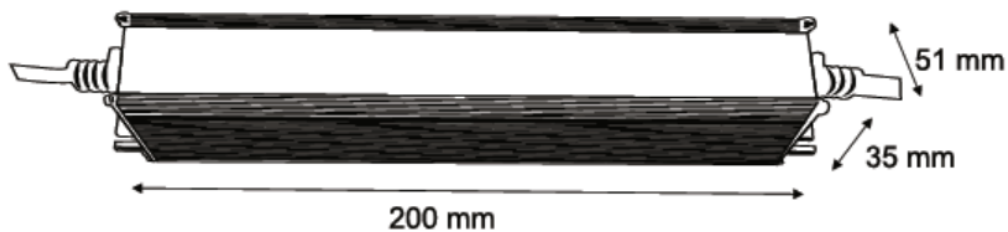
EMC Emission		EMI Immunity (EN61547)	
Parameter	Standard	Parameter	Standard
Conducted	EN55015 (CISPR15)	EFT / Burst	EN61000-4-4
Radiated	EN55015 (CISPR15)	Surge	EN61000-4-5
Harmonic Current	EN61000-3-2	Magnetic Field	EN61000-4-8
		Voltage Dips & Interruptions	EN61000-4-11
Safety Standards	IP67		
Withstand Voltage	I/P – O/P: 3.75KVAC, I/P – FG: 2KVAC, O/P – FG: 1.5KVAC		
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC @ 25°C		

Lifetime Vs Case Temperature



- Lifetime $\geq 30,000$ hrs. @ 65°C case temperature checked at ambient 50°C refers to lifetime vs. case temperature graph

Mechanical Drawing



CAD Drawing

