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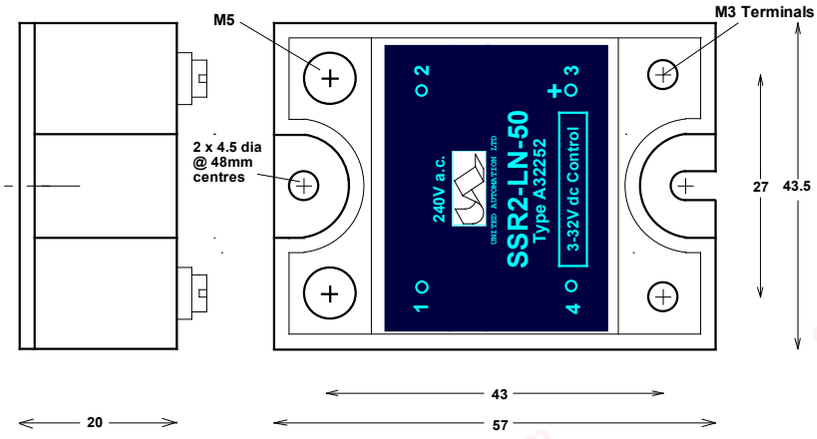
LN Series

EMC COMPLIANT SOLID STATE RELAYS

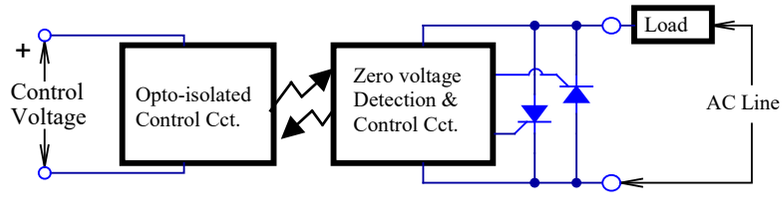
The LN series of ***EMC Compliant*** Solid State Relays* are designed to provide switching of high current loads with a minimum of conducted electrical noise, (well within the EN50081-1 Emission Standard) plus immunity to EN50082-2 Standard. No additional EMC filters are needed to comply with EU Directive 2004/14/EU.
The efficient switching also minimises power loss allowing the device to run cooler at a higher loading. The use of ***Direct Copper Bonding*** Technology and high-grade thyristors ensures long life and reliability.



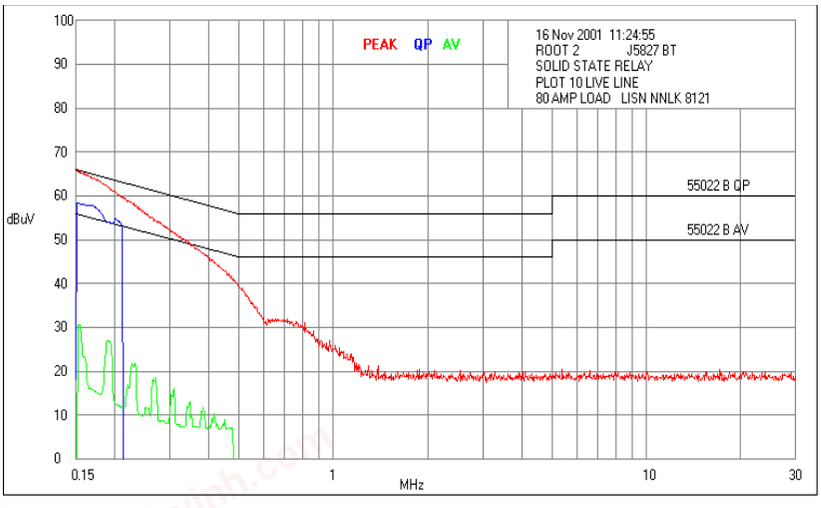
MECHANICAL SPECIFICATION



BLOCK DIAGRAM



TYPICAL CONDUCTED RF NOISE EMISSION @ 240V 80A



All SSR are **RoHS compliant**. **EMC certifications** for EN5081-1, EN5082-2, EN61000-3-2, EN60945:2002:2008 and 47CFR Part 15B.
UL Certification numbers, (single phase relays only):
UL-US-2013894-0 and UL-CA-2011013-0

STANDARD FEATURES:

- **Industry Standard Package** - Power,('Puck') is interchangeable with standard SSR types.
- **EMC** - complies with EN50081-1 at **80amps**, plus EN50082-2 and EN61000-3-2
- **Reduced Support Components** - requires no external components such as snubbers or in-line EMC filters. Reduced wiring/installation costs. Reduction in weight and size of final assembly. Improved reliability.
- **Greater efficiency:** requires smaller heat sink for the same load current.
- **True 'zero-crossing'** at On and Off switching points which is advantageous with inductive loads.
- **Power ranges:** 25 to 75 A @ 240Vac
  25 to 80A @ 530Vac
- **Supply Frequency** operating range: 45 to 1KHz.
- **Control Voltage:** 3 to 32V dc
- **Maximum Peak voltage:** 1,000Volts ac.
- **Maximum Surge Current**: 300A/10mS @ 240V
  520A/10mS @ 530V
- **Optical isolation** ensures complete protection of control circuitry from output voltage fluctuations, (2.5kV standard separation).

SPECIAL OPTIONS:

- Alternative terminal types.
- LED's to indicate Control and/or Load status.
- Instant switch-off.
- Resettable over-current protection.
- Load monitoring with Alarm

TYPICAL APPLICATIONS:

Switching of high power electrical apparatus, e.g. Motors, Heating, Air conditioning, Humidifiers, UPS's, Lighting, Solenoid valves, Signalling, Industrial process control, Building services, etc.

* ***Patent No. 1130777B***

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LN Series Low Noise Solid State Relays

ELECTRICAL CHARACTERISTICS Typical at +45°C Ambient

Input Specification

Control voltage	3.0 to 28Vdc
Max. reverse voltage	-32Vdc
Impedance, (nominal)	1,500Ω
On voltage, (Max)	+3.0Vdc
Off voltage, (Min)	+1Vdc
Input current, (typical @ 12Vdc) (typical @ 5Vdc)	11mA 4mA
On threshold	2mA
Isolation, Input-Output	2,500Vac
Input status LED	Optional

Output Specification

		120V, 1 phase			240V, 1 phase					440V, 1 phase				530V, 3 phase		
SSR Type: *LN*		*3025*	*3040*	*3075*	*6025*	*6030*	*6040*	*6050*	*6075*	*10015*	*10025*	*10040*	*10050*	*3P10015*	*3P10030*	*3P10050*
Operating Voltage **V_T** @ 47-63hz,	V rms	**24 to 120V**			**24 to 240V**					**48 to 530V**				**48 to 530V**		
Max. Average Forward Current, $I_{T,(AV)M}$	Amps	*25*	*40*	*75*	*25*	*30*	*40*	*50*	*75*	*15*	*25*	*40*	*50*	*15*	*30*	*50*
Min. Load Current,	mA rms	130	130	130	140	140	140	140	140	250	250	250	250	250	250	250
Transient Over-voltage, **V pk**	V	500	500	500	600	600	600	600	600	900	900	900	900	1200	1200	1200
Max On-state Surge Current for 10mSec,	A pk	300	300	300	520	520	520	520	520	520	520	520	520	520	520	520
Max. On-state volt drop @ rated current		1.55V	1.55V	1.55V	1.55V	1.55V	1.55V	1.55V	1.55V	1.35V	1.35V	1.35V	1.35V			
Max. Off-state leakage current @ rated voltage		3mA	3mA	3mA	3mA	3mA	3mA	3mA	3mA	5.5mA	5.5mA	5.5mA	5.5mA			
Max I^2t at 45°C (t = 10mS)	A^2s	1310	1310	1310	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
Internal over-voltage protection		-	-		-	-	-	-	-					TVS & VDR		
Input status LED														Green LED		
Max. Turn-On time		1 cycle maximum														
Max. Turn-Off time		1 cycle maximum														
Operational Temperature range		-20 to +85°C														
Storage Temperature range		-40 to +110°														
Operating frequency range		50 to 400Hz														
Input – Output Capacitance		<130pF														
Case Material		Flame Retardant to UL94V-0														
Conducted Emission		Within **EN55022 Class B** Quasi-Peak and Average Emission Limits at 80 amps rms, (peak noise below 60dbuV)														
		UL Certification numbers, (single phase relays only): UL-US-2013894-0 and UL-CA-2011013-0														

11th November 2022