



International | Isolation transformer | 3 stage protection

**ILc model**

**9000-0338**

9 kVA  
9 kW  
400V delta  
3 phase input  
230/400V wye  
3 phase output

**16500-0338**

16.5 kVA  
16.5 kW  
400V delta  
3 phase input  
230/400V wye  
3 phase output

# Three Phase Low-Impedance Isolation Transformer Line Conditioner

TSi Power's ILc Series line conditioners provide the best all-round power conditioning and surge protection for sensitive electronic equipment. The integral isolation transformer provides 100% isolation from the input ac line, the secondary neutral-to-ground bond eliminates all surge voltages between neutral and ground. Surge protection and noise filtering are superior to conventional surge protection and filtering devices.

## Typical applications

Designed for situations where reliability and predictability matter to the enterprise. Examples include: sensitive telecommunications industrial and medical equipment, and other sensitive, specialized microprocessor-based equipment.

## Key benefits

ILc Series conditioners provide maximum equipment protection against surges, spikes and transients, for higher equipment reliability and maximum equipment operating life. In addition, improved repeatability, fewer reboots or system lock-ups. In addition, a reduction in equipment down time and service costs can be expected.

TSi's use of three separate transformers, one per phase, minimizes single phasing or lost phase problems associated with a common core three phase transformer.

## How ILc conditioners work

The integral isolation transformers provide complete isolation between the primary and secondary, and permits bonding its output neutral to ground, which completely eliminates all disturbances between neutral and ground. The leakage inductance of the isolation transformer in combination with capacitive elements and MOVs, provide superb noise filtering, as well as coordinated multi-stage surge protection in accordance with the principles of IEC-61312.



## Key features of the TSi isolation line conditioner

- Coordinated surge protection per IEC61312
- Three separate low-impedance isolation transformers (1 per phase) are used for maximum reliability
- Common-mode noise elimination
- Advanced noise and interference filter reduces dV/dt from 6kV/μS to less than 10V/μS
- Wall-fixing kit included
- High efficiency
- Quiet operation
- Five year warranty



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Isolation  
line  
conditioner



Left-side front view

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Specification	ILc-9000-0338	ILc-16500-0338
<b>Electrical</b>		
Capacity in VA (watts)	9 kVA (9,000W)	16.5 kVA (16,500W)
Transformer type	Three separate isolation transformers are used (1 per phase)	
<b>Input</b>		
Nominal voltage	400 volts ac three phase delta	
Operating range	400V(L-L), +30%,-20%	
Nominal frequency	50 Hz +/-3	
Input circuit breakers	3 x 30 amps (ganged)	3 x 40 amps (ganged)
Ac connections	Terminal block (L1, L2, L3 and ground wires) provided.	
<b>Output</b>		
Nominal voltage	230/400 volts ac three phase wye	
Power efficiency	96% at 400V(L-L), (typical)	
Operating range	230/400 volts +30%,-20%	
Matching AVR	VRp-9000-0338	VRp-16500-0338
Surge protection	A three-stage surge protection system consisting of isolation transformer, capacitor and MOV is included.	
Surge test conditions*	Class 2 and Class 3 simulated lightning surge (Combination wave) Per ANSI/IEEE C62.41-1991, Cat. C test waveform: 6kV, 3kA, 8x20µS. *Note: ILc is not a Primary (Class 1) surge arrester - customer must provide a separate primary surge arrester at service entry point.	
Surge let-through voltages	Single pulse: L-N: 50V, L-G: 50V, N-G: 0.5V Ring wave: L-N: 20V, L-G: 20V, N-G: 0.5V Combination wave: L-N: 250V, L-G: 250V, N-G: 0.5V The measured rate of voltage rise/fall (dV/dt) of the remnant waveform is less than 10V/µS with input test waveform dV/dt of 6kV/µS.	
Common mode filtering	Neutral-ground bond eliminates all noise or voltage on neutral (<0.5V)	
Normal mode filtering	A built-in inductor-capacitor filter attenuates EMI/RFI noise from output.	
Ac connections	Terminal block (L1, L2, L3, neutral and ground wires) provided.	
<b>Physical</b>		
Dimensions	610mm(24")W x 965mm(38")H x 305mm(12")D. Rubber mounting feet.	
Weight	140kg(309 lbs)	170kg(375 lbs)
<b>Safety</b>		
Standards	Designed to meet IEC 60950. Enclosure protection class: IP20.	
<b>Environmental</b>		
Ambient temperature	-5° to +35°C (23° to 95°F). 10 to 90% relative humidity(non-condensing).	
Cooling method	Fan cooled.	
<b>Warranty</b>		
Warranty	Five year limited warranty, parts and labor.	



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