

Liebert® 80-eXL TR, Secure Power and Maximized Energy Quality for Railway Applications

Liebert 80-eXL Traction Rectifier (TR) is the innovative solution for railway applications based on Liebert EXL UPS. It is specifically designed to deliver continuous, safe and high quality power under the most severe conditions to always protect rail network critical loads.

Innovative Design

Based on a product platform with a wide installed base, the new Liebert 80-eXL TR is a monolithic product that combines a modern transformer free design with an innovative state-of-the-art three-level topology full IGBT rectifier able to provide clean and reliable power from overhead contact lines and catenary sources.

Liebert 80-eXL TR features a fully integrated energy management system with priority based source selection which optimizes operation costs while ensuring maximum availability.

Thanks to the innovative IGBT rectifier control, Liebert 80-eXL TR is able to maximize battery life, filtering out all catenary disturbances thus optimizing the overall total cost of ownership.

Furthermore, its unique design allows for easy and concurrent serviceability still maintaining the highest reliability levels on the market.

Availability - Uptime Enhancement:

- Advanced diagnostic; making your mission critical space a peaceful place
- Enhanced DSP control board and intelligent colored multi-language touch-screen display
- Enhanced event analysis and waveform capturing highlights external phenomena that may impact availability
- Vertiv™ LIFE™ Services remote diagnostic and preventive monitoring service increases system uptime and operational efficiency.

Capacity - Installation Flexibility

- Compact footprint for optimum space utilization
- Maximized power factor operation permits compatibility with modern mission critical loads - both leading and lagging - without derating
- UPS power ratings: 30, 40, 60 and 80 kVA.

Performance - Serviceability

- 1-phase input rectifier from catenary in combination with 3-phase bypass input
- Easy serviceability of building blocks
- Suitable for both L-N and L-L catenary derived input
- Extremely low inrush current for effective sizing of cables/breakers
- Adoption of three-level full IGBT NPC2 inverter and rectifier topology
- Excellent input performances allow for significant electrical infrastructure saving.



Liebert 80-eXL TR

Technical Specifications

UPS RATING (kVA)	30	40	60	80
Nominal output active power (kW)	27	36	54	72
INPUT				
Nominal DNO (Distribution Network Operator) AC input voltage / voltage range* (Vac)	400±15% @100% load, 3Ph + N + G, TN TT IT power distribution system compatibility			
Nominal OHL (OverHead Line) input voltage (Catenary) / voltage range* (Vac)	400 (-24% +16% @100% load), 2Ph or 230 (-24% +16% @100% load), 2Ph, Earthed/Unearthed power distribution system compatibility			
Nominal bypass input voltage / voltage range* (Vac)	400±10%, 5% to 15% selectable, 3Ph + N + PE			
Nominal DNO and OHL input frequency / frequency tolerance (Hz)	50±6%			
Nominal bypass input frequency / frequency tolerance (Hz)	50±1% (2%, 3%, 4% selectable)			
Input Power Factor	≥ 0.99			
DNO AC Input current distortion (THDi) (%)	≤4 at full linear load			
OHL input current distortion (THDi) (%)	≤3 at full linear load			
OUTPUT				
Nominal output voltage (V)	400 (380/415 selectable), 3Ph or 3Ph + N			
Nominal output frequency (Hz)	50			
Output voltage stability by load variation 0-100% (%)				
• static	±1			
• dynamic	Complies with IEC/EN 62040-3, Class 1			
Output frequency stability				
• synchronized with bypass mains (%)	±1			
• synchronized with internal clock (%)	±0.01			
Inverter Overload Capacity	125% for 10mins, 150% for 1min			
Short circuit current in battery mode (%)	2 In			
Load crest factor handled without derating the ups (Ipk/Irms)	3:1			
Compatibility with loads	0.6 lag to 0.9 lead handled without Apparent Power derating			
BATTERY				
Nominal battery voltage (Vdc)	480V			
Float voltage for VRLA @ 20 °C (V/cell)	2,27			
End cell voltage for VRLA (V/cell)	1.65			
Ripple voltage (%C10)	≤0.05			
GENERAL AND SYSTEM DATA				
Classification according to IEC/EN 62040-3	VFI-SS-111			
Operating Temperature (°C)	0-40			
Maximum relative humidity @ 20 °C (non condensing) (%)	up to 90			
Protection degree with open doors	IP 20			
Frame colour (RAL scale)	7021			
Noise @ 1 metre as per ISO 3746 (dBA ± 2dBA)	70 52 dBA @partial load			
Access	Front and Top (no rear access required)			
AC/AC efficiency in normal mode, DNO input (%)	Up to 94%	Up to 94.5%	Up to 95%	Up to 95.5%
DIMENSION AND WEIGHT				
Height (mm)	1950		On request	
Width (mm)	1000		On request	
Depth (mm)	900		On request	
Net Weight (kg)	670 (without batteries)		On request	

*Conditions apply

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