LV8 platform

High performance modular drive for industrial applications

GE´s LV8 platform is the drive choice for a wide range of industrial applications. It can significantly cut energy costs and lowers grid disturbances with a reduced environmental impact.

With its active front end (AFE) variant and regenerative capability, its designed for variable speed and a power range from 250 kVA up to 4 MVA. LV8 platform comes as air-cooled or liquid-cooled. The liquid-cooled variant features a more compact design eliminating additional costs or equipment for room air conditioning.

Diversity to meet customer requirements

For more than 20 years GE´s Power Conversion Business is delivering equipment being used for testing automobiles and automobile components. The newly modified LV8 drive has been widely used for test bench applications.

The successful testing of future technologies in E-drives with LV8 test bench systems provides comprehensive, reliable and relevant measuring results for alternative drives. This also encompases simulation & testing of battery systems.

Grinding mill operations require high currents during starting and running, when driven by wound rotor induction motors, resulting in high operational costs. Therefore, our Slip Energy Recovery (SER) – based on LV8 drive – improves energy efficiency and lowers operating costs in grinding mill operations.

High performance & flexibility

- **Modular design**
- **Adaptable to the most varied special requirements**
- **High efficiency**
- **Advanced control structures for line converter, induction motors and permanent magnet synchronous motors**

Thanks to its modular design, the LV8 can be very easily adjusted to customer demands such as specific power ratings and dimensions. It is designed for input voltages from 400 V to 690 V and handles dynamically adaptable pulse frequencies of up to 12kHz. These characteristics allow the converter to supply an almost sinusoidal motor voltage. When paired with a suitable filter, the LV8 converter also is well-suited for drive-revamping applications because it permits the continued use of existing machines not designed for converter operation. Real time ethernet control components in combination with high output frequencies make the LV8 the option of choice for dynamic high-speed applications.

LV8 Platform, System Data

The LV8 platform can be fitted, and customized in order to meet your unique requirements and to help drive the operational efficiency of your assets.

As part of the solution the LV8 offers advanced control structures for:

- Line converter
- Induction motors
- Permanent magnet synchronous motors
- DC applications

The modular design allows individual configurations - optimized in terms of flexibility and efficiency requirement

Parameter	Value
Mains supply voltage	**3 AC 380 – 440 V ±10%** **3 AC 480 V ±10%** **3 AC 690 V ±10%**
Mains frequency	**50/60 Hz ± 2%**
Max. short-circuit current of the mains supply	**40 kA (50kA on request)**
Power factor	**cos Φ = 1 or adjustable (depending on the power reserves)**
Auxiliary voltage	**400 / 230 VAC**
Output frequency induction motors	**0 – 300 Hz (up to 600 Hz on request)**
Output frequency PM synchronous motors	**0 – 1500 Hz**
Efficiency at rated power	**> 95%**
Pulse frequency	**2,5 – 12 kHz**
Frequency accuracy	**0,01%**
Speed accuracy	**0,05% (in steady state, with encoder)**
Torque accuracy	**2-3% (for torque control)**
Active current rise time	**≤ 2 ms (within the nominal range)**
Environmental temperature	**During operation: +5 ... +40°C (55°C optional with derating)** **Storage: -20 ... +65°C**
Environmental class	**EN 60721-3-3: 3K3 / 3M2 / 3C2 / 2K2, but no occurrence of salt fog**
Insulation coordination	**Pollution Degree 2 according to DIN EN 60664-1 and UL840**
Installation altitude	**≤ 1000 m above sea level**
Installation side	**Indoor installation**
Cubicles	**Fa. Rittal, Type VX25, with double-bit key and rod lock**
Air humidity	**5 – 85% (condensate in the converter room must be avoided)**
Noise level	**≤ 75 dB (A) measured at 1m distance**
Degree of protection	**IP23**
Cooling	**Air-cooled, partially liquid-cooled**
Color	**RAL 7035**
Dimensions and weights	**Project specific**
Approvals	**CE, UL (under development)**

LV8 Platform, Type Data

Deviating pulse frequencies and other variations available on request.

Line converter, air-cooled at ambient temperature 40°C at 2.5 kHz										
Type Designation	Line Voltage	Motor Voltage	Rated Power	Rated Current	Max. Current	Rated Current	Max. Current	Rated Current	Max. Current	DC-Link Voltage
				Load Cycle 60s / 600s		Load Cycle 30s / 180s		Load Cycle 3s / 15s		
	[V]	[V]	[kVA]	[A]	[A]	[A]	[A]	[A]	[A]	[VDC]
LV8404A-AFE	400	400 – 440	381	550	660	510	694	480	750	720
LV8405AX-AFE	400	400 – 440	416	600	720	565	760	555	870	720
LV8407A-AFE	400	400 – 440	637	920	1104	920	1250	900	1404	720
LV8504A-AFE	400	460 – 500	367	530	636	490	666	470	737	790
LV8504AX-AFE	400	460 – 500	388	560	670	525	715	515	800	790
LV8506A-AFE	400	460 – 500	589	850	1020	820	1115	800	1248	790
LV8604A-AFE	690	690	388	325	390	275	370	265	410	1070
LV8610A-AFE	690	690	910	762	914	680	925	655	1028	1070
2 converters in parallel										
LV8408A-AFE (2p)	400	400 – 440	762	1100	1320	1020	1388	960	1500	720
LV8409AX-AFE (2p)	400	400 – 440	831	1200	1440	1130	1520	1110	1740	720
LV8413A-AFE (2p)	400	400 – 440	1274	1840	2208	1840	2500	1800	2808	720
LV8508A-AFE (2p)	400	460 – 500	734	1060	1272	980	1332	940	1474	790
LV8508AX-AFE (2p)	400	460 – 500	776	1120	1340	1050	1430	1030	1600	790
LV8512A-AFE (2p)	400	460 – 500	1177	1700	2040	1640	2230	1600	2496	790
LV8608A-AFE (2p)	690	690	776	650	780	550	740	530	820	1070
LV8619A-AFE (2p)	690	690	1820	1524	1828	1360	1850	1310	2056	1070
3 converters in parallel										
LV8412A-AFE (3p)	400	400 – 440	1142	1650	1980	1530	2082	1440	2250	720
LV8413AX-AFE (3p)	400	400 – 440	1246	1800	2160	1695	2280	1665	2610	720
LV8420A-AFE (3p)	400	400 – 440	1910	2760	3312	2760	3750	2700	4212	720
LV8512A-AFE (3p)	400	460 – 500	1101	1590	1908	1470	1998	1410	2211	790
LV8512AX-AFE (3p)	400	460 – 500	1163	1680	2010	1575	2145	1545	2400	790
LV8518A-AFE (3p)	400	460 – 500	1765	2550	3060	2460	3345	2400	3744	790
LV8612A-AFE (3p)	690	690	1164	975	1170	825	1110	795	1230	1070
LV8628A-AFE (3p)	690	690	2729	2286	2742	2040	2775	1965	3084	1070

LV8 Platform, Type Data

Deviating pulse frequencies and other variations available on request.

Line converter, liquid-cooled at inlet temperature 40°C at 2.5 kHz										
Type Designation	Line Voltage	Motor Voltage	Rated Power	Rated Current	Max. Current	Rated Current	Max. Current	Rated Current	Max. Current	DC-Link Voltage
				Load Cycle 60s / 600s		Load Cycle 30s / 180s		Load Cycle 3s / 15s		
	[V]	[V]	[kVA]	[A]	[A]	[A]	[A]	[A]	[A]	[VDC]
LV8405W40-AFE	400	400 – 440	416	600	720	600	810	590	920	720
LV8405W40X-AFE	400	400 – 440	416	600	720	600	810	600	940	720
LV8407W40-AFE	400	400 – 440	637	920	1104	920	1250	920	1435	720
LV8505W40-AFE	400	460 – 500	416	600	720	590	800	570	890	790
LV8505W40X-AFE	400	460 – 500	416	600	720	600	810	600	940	790
LV8507W40-AFE	400	460 – 500	637	920	1104	920	1250	920	1435	790
LV8606W40-AFE	690	690	514	430	516	385	520	365	570	1070
LV8611W40-AFE	690	690	1100	920	1104	920	1250	920	1435	1070
2 converters in parallel										
LV8409W40-AFE (2p)	400	400 – 440	831	1200	1440	1200	1620	1180	1840	720
LV8409W40X-AFE (2p)	400	400 – 440	831	1200	1440	1200	1620	1200	1880	720
LV8413W40-AFE (2p)	400	400 – 440	1274	1840	2208	1840	2500	1840	2870	720
LV8509W40-AFE (2p)	400	460 – 500	831	1200	1440	1180	1600	1140	1780	790
LV8509W40X-AFE (2p)	400	460 – 500	831	1200	1440	1200	1620	1200	1880	790
LV8513W40-AFE (2p)	400	460 – 500	1274	1840	2208	1840	2500	1840	2870	790
LV8611W40-AFE (2p)	690	690	1027	860	1032	770	1040	730	1140	1070
LV8622W40-AFE (2p)	690	690	2200	1840	2208	1840	2500	1840	2870	1070
3 converters in parallel										
LV8413W40-AFE (3p)	400	400 – 440	1246	1800	2160	1800	2430	1770	2760	720
LV8413W40X-AFE (3p)	400	400 – 440	1246	1800	2160	1800	2430	1800	2820	720
LV8420W40-AFE (3p)	400	400 – 440	1910	2760	3312	2760	3750	2760	4305	720
LV8513W40-AFE (3p)	400	460 – 500	1246	1800	2160	1770	2400	1710	2670	790
LV8513W40X-AFE (3p)	400	460 – 500	1246	1800	2160	1800	2430	1800	2820	790
LV8520W40-AFE (3p)	400	460 – 500	1910	2760	3312	2760	3750	2760	4305	790
LV8616W40-AFE (3p)	690	690	1540	1290	1548	1155	1560	1095	1710	1070
LV8633W40-AFE (3p)	690	690	3295	2760	3312	2760	3750	2760	4305	1070

LV8 Platform, Type Data

Deviating pulse frequencies and other variations available on request

Motor inverter, air-cooled at ambient temperature 40°C at 2.5 kHz									
Type Designation	Motor Voltage	Rated Power	Rated Current	Max. Current	Rated Current	Max. Current	Rated Current	Max. Current	DC-Link Voltage
			Load Cycle 60s / 600s		Load Cycle 30s / 180s		Load Cycle 3s / 15s		
	[V]	[kVA]	[A]	[A]	[A]	[A]	[A]	[A]	[VDC]
LV8404A-T IB	400	381	550	660	510	690	480	750	720
LV8405AX-T IB	400	416	600	720	565	760	555	870	720
LV8407A-T IB	400	637	920	1104	870	1180	840	1310	720
LV8505A-T IB	500	459	530	636	490	660	470	730	790
LV8505AX-T IB	500	485	560	670	525	710	515	800	790
LV8508A-T IB	500	736	850	1020	820	1115	800	1250	790
LV8604A-T IB	690	388	325	390	275	370	265	410	1070
LV8610A-T IB	690	910	762	914	680	920	655	1020	1070
2 inverters in parallel									
LV8408A-T IB (2p)	400	762	1100	1320	1020	1380	960	1500	720
LV8409AX-T IB (2p)	400	831	1200	1440	1130	1520	1110	1740	720
LV8413A-T IB (2p)	400	1274	1840	2208	1740	2360	1680	2620	720
LV8510A-T IB (2p)	500	917	1060	1272	980	1320	940	1460	790
LV8510AX-T IB (2p)	500	969	1120	1340	1050	1420	1030	1600	790
LV8515A-T IB (2p)	500	1471	1700	2040	1640	2230	1600	2500	790
LV8608A-T IB (2p)	690	776	650	780	550	740	530	820	1070
LV8619A-T IB (2p)	690	1820	1524	1829	1360	1840	1310	2040	1070
3 inverters in parallel									
LV8412A-T IB (3p)	400	1142	1650	1980	1530	2070	1440	2250	720
LV8413AX-T IB (3p)	400	1246	1800	2160	1695	2280	1665	2610	720
LV8420A-T IB (3p)	400	1910	2760	3312	2610	3540	2520	3930	720
LV8514A-T IB (3p)	500	1376	1590	1908	1470	1980	1410	2190	790
LV8515AX-T IB (3p)	500	1454	1680	2010	1575	2130	1545	2400	790
LV8623A-T IB (3p)	500	2206	2550	3060	2460	3345	2400	3750	790
LV8612A-T IB (3p)	690	1164	975	1170	825	1110	795	1230	1070
LV8628A-T IB (3p)	690	2729	2286	2743	2040	2760	1965	3060	1070
4 inverters in parallel									
LV8416A-T IB (4p)	400	1523	2200	2640	2040	2760	1920	3000	720
LV8417AX-T IB (4p)	400	1661	2400	2880	2260	3040	2220	3480	720
LV8426A-T IB (4p)	400	2547	3680	4416	3480	4720	3360	5240	720
LV8519A-T IB (4p)	500	1834	2120	2544	1960	2640	1880	2920	790
LV8520AX-T IB (4p)	500	1938	2240	2680	2100	2840	2060	3200	790
LV8530A-T IB (4p)	500	2941	3400	4080	3280	4460	3200	5000	790
LV8616A-T IB (4p)	690	1552	1300	1560	1100	1480	1060	1640	1070
LV8637A-T IB (4p)	690	3639	3048	3658	2720	3680	2620	4080	1070

LV8 Platform, Type Data

Deviating pulse frequencies and other variations available on request

Motor inverter, liquid-cooled at inlet temperature 40°C at 2.5 kHz									
Type Designation	Motor Voltage	Rated Power	Rated Current	Max. Current	Rated Current	Max. Current	Rated Current	Max. Current	DC-Link Voltage
			Load Cycle 60s / 600s		Load Cycle 30s / 180s		Load Cycle 3s / 15s		
	[V]	[kVA]	[A]	[A]	[A]	[A]	[A]	[A]	[VDC]
LV8405W40-T IB	400	416	600	720	600	810	590	920	720
LV8405W40X-T IB	400	416	600	720	810	810	600	940	720
LV8407W40-T IB	400	637	920	1104	920	1250	920	1435	720
LV8506W40-T IB	500	519	600	720	590	800	570	890	790
LV8506W40X-T IB	500	519	600	720	600	810	600	940	790
LV8508W40-T IB	500	796	920	1104	920	1250	920	1435	790
LV8606W40-T IB	690	514	430	520	385	520	365	570	1070
LV8611W40-T IB	690	1100	920	1104	920	1250	920	1435	1070
2 inverters in parallel									
LV8409W40-T IB (2p)	400	831	1200	1440	1200	1620	1180	1840	720
LV8409W40X-T IB (2p)	400	831	1200	1440	1620	1620	1200	1880	720
LV8413W40-T IB (2p)	400	1274	1840	2208	1840	2500	1840	2870	720
LV8511W40-T IB (2p)	500	1038	1200	1440	1180	1600	1140	1780	790
LV8511W40X-T IB (2p)	500	1038	1200	1440	1200	1620	1200	1880	790
LV8516W40-T IB (2p)	500	1592	1840	2208	1840	2500	1840	2870	790
LV8611W40-T IB (2p)	690	1027	860	1040	770	1040	730	1140	1070
LV8622W40-T IB (2p)	690	2200	1840	2208	1840	2500	1840	2870	1070
3 inverters in parallel									
LV8413W40-T IB (3p)	400	1246	1800	2160	1800	2430	1770	2760	720
LV8413W40X-T IB (3p)	400	1246	1800	2160	2430	2430	1800	2820	720
LV8420W40-T IB (3p)	400	1910	2760	3312	2760	3750	2760	4305	720
LV8516W40-T IB (3p)	500	1557	1800	2160	1770	2400	1710	2670	790
LV8516W40X-T IB (3p)	500	1557	1800	2160	1800	2430	1800	2820	790
LV8524W40-T IB (3p)	500	2388	2760	3312	2760	3750	2760	4305	790
LV8616W40-T IB (3p)	690	1540	1290	1560	1155	1560	1095	1710	1070
LV8633W40-T IB (3p)	690	3300	2760	3312	2760	3750	2760	4305	1070
4 inverters in parallel									
LV8417W40-T IB (4p)	400	1661	2400	2880	2400	3240	2360	3680	720
LV8417W40X-T IB (4p)	400	1661	2400	2880	3240	3240	2400	3760	720
LV8426W40-T IB (4p)	400	2547	3680	4416	3680	5000	3680	5740	720
LV8521W40-T IB (4p)	500	2076	2400	2880	2360	3200	2280	3560	790
LV8521W40X-T IB (4p)	500	2076	2400	2880	2400	3240	2400	3760	790
LV8532W40-T IB (4p)	500	3184	3680	4416	3680	5000	3680	5740	790
LV8621W40-T IB (4p)	690	2054	1720	2080	1540	2080	1460	2280	1070
LV8644W40-T IB (4p)	690	4400	3680	4416	3680	5000	3680	5740	1070

Ease of servicing & high availability

- IGBT technology that can withstand alternating loads
- Long-life foil capacitors
- Ease of servicing

The separate implementation of the capacitor, power and fan modules means that every part can be replaced simply and quickly. Because of their low weight and compact design, the components can be handled by a single person.

The LV8 platform uses high-quality and particularly long-life components, such as IGBT modules with a high alternating load withstand capability and more than 75 percent less wear than standard solutions, which makes the converter attractive for applications that need maximum availability and high performance

Minimizing risk, maximizing productivity

Power Conversion services include all support for utilities and farm operators to protect assets, keep critical processes running, minimize risk and maximize productivity. We deliver original equipment spares around the world as well as repair, refurbish and upgrade customer systems with the latest technology.

We offer risk protection through performance-based contracts based on our system experience and sophisticated application calculations. Through advanced digital platforms, we deliver expert onsite and remote emergency 24/7 support, interventions and planned maintenance customized to meet unique customer requirements.

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Key benefits of GE's support contracts:

- *Single point of contact*
- *Reduced call-out rates*
- *24/7 availability*
- *Rapid mobilization of engineers*
- *Routine maintenance visits*
- *Training*
- *System health checks*
- *Spares management*
- *Obsolescence management*