

LV 7000 Drives

LV 7000-5: Inverter units for common DC bus

fact sheet

LV 7000-5 covers a number of inverter units for Common DC bus bar, in the entire power range from 1 to 2000 kW at 380 VAC to 690 VAC.

Technical Data			
DC Connection	Input voltage U _{in}	465 to 800 VDC (380-500 VAC)	
		640 to 1100 VDC (525-690 VAC)	
	Starting delay	FR4-FR8: 2s FI 9 and greater: 5s	
DC side charging circuit	FR4-FR8: integrated	FI 9 and greater: external	
	Cont. output current	High overloadability: I(H) at max. +50°C ambient temperature (FI 9 and up: +40°C)	
Motor Connection	Overloadability	Low overloadability: I(L) at max. +40°C ambient temperature High: 1.5 × I _H (1 min/10 min), Low: 1.1 × I _L (1 min/10 min)	
	Output frequency	0 to 320 Hz	
Control characteristics	Control method	Frequency control U/f	
		Open Loop Sensorless Vector Control	
		Closed Loop Vector Control	
	Control performance	Open loop vector control (5-150% of base speed):	<ul style="list-style-type: none"> • Speed control 0.5%, dynamic 0.3%sec • Torque lin.<2%, torque rise time ~5 ms
		Closed loop vector control (entire speed range):	<ul style="list-style-type: none"> • Speed control 0.01%, dynamic 0.2%sec, • Torque lin.<2%, torque rise time ~2 ms
	Frequency reference	Analog input: Resolution 0.1% (10-bit), accuracy ±1%	Keypad reference: Resolution 0.01 Hz
		Acceleration time	0 to 3000 sec
Ambient conditions	Deceleration time	0 to 3000 sec	
	Ambient operating temperature	-10°C (no frost) to +40°C	
	Storage temperature	-40°C to +70°C	
	Relative humidity	0 to 95% RH, non-condensing, non-corrosive, no dripping water	
	Altitude	100% load capacity (no derating) up to 1,000 m	1% derating for each 100m above 1000.; max 3000 m
		Air quality:	
	Chemical vapours	IEC 721-3-3, unit in operation, class 3C2	
	Mechanical particles	IEC 721-3-3, unit in operation, class 3S2	
	Cooling	Forced air cooling	
	Unit enclosure class	FR4 to FR7: IP21	FR8 to FI14: IP00

Technical Data			
Control connections	Analog input voltage	0 to +10V, R _i = 200 kΩ, (-10 V to +10 V joystick control)	
	Analog input current	0(4) to 20 mA, R _i = 250Ω differential	
	Digital inputs	(6) Positive or negative logic; 18 to 30 VDC	
	Auxiliary voltage	+24 V, ±15%, max. 250 mA	
	Output reference voltage	+10 V, +3%, max. load 10 mA	
	Analog output	0(4) to 20 mA; R _L max. 500Ω; Resolution 10 bits; Accuracy ±2%	
	Digital outputs	Open collector output, 50 mA/48 V	
Relay outputs	2 programmable change-over relay outputs, switching capacity: 24 VDC/8 A, 250 VAC/8 A, 125 VDC/0.4 A		
	Control	I/O	The standard I/O can easily be extended with I/O expanders and fieldbus boards (up to 3).
Communication	Flexibility in communication via multiple fieldbuses: Profibus DP, CANopen, Device Net, Modbus/TCP (Ethernet)		
	Keypad	Alphanumeric display: Multi-Monitoring, Default page, Back-up Function, RS-232 communication for PC connection	
Protections	Overvoltage trip limit	LV 7000-5: 911 VDC; LV 7000-6: 1200 VDC	
	Undervoltage trip limit	LV 7000-5: 333 VDC; LV 7000-6: 460 VDC	
	Motor protections	Overvoltage, undervoltage, earth fault, motor phase supervision, overcurrent, unit overtemperature, motor overload, motor stall, motor underload, short-circuit of +24 V and +10 V, reference voltages	
EMC	Immunity	Fulfil all EMC immunity requirements	
Safety	EN 50178 (1997), EN 60204-1 (1996), EN 60950 (2000, 3rd edition) (as relevant), CE, UL, CUL, FI, GOST R, IEC 61800-5		
Features	Controls induction and permanent magnet motors		
	Complete range of communications and I/O options		
	Capability for master/slave configurations		



INVERTERS UNITS

Motor voltage 460 VAC, 50/60Hz, 3 Phase

Type	High overload (2)			Low overload (1)			FR	W x H x D
	P [kW]	HP	I(H)	P [kW]	HP	I(L)		Power Module
								inches/lbs
LV7000-5-0004 5	2.1	3	3.3	2.8	2.1	4.3	FR4	5 x 11.5 x 7.5/11
LV7000-5-0009 5	4.9	7	7.6	5.8	4	9	FR4	5 x 11.5 x 7.5/11
LV7000-5-0012 5	5.8	8	9	7.7	6	12	FR4	5 x 11.5 x 7.5/11
LV7000-5-0016 5	7.7	10	12	10.3	8	16	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0022 5	10.3	14	16	14.8	11	23	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0031 5	14.8	20	23	19.9	15	31	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0038 5	19.9	27	31	24.4	18	38	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0045 5	24.4	33	38	29.6	22	46	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0061 5	30	40	46	39	29	61	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0072 5	39	53	61	46	34	72	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0087 5	46	62	72	56	42	87	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0105 5	56	75	87	68	50	105	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0140 5	68	91	105	90	67	140	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0168 5	90	121	140	109	81	170	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0205 5	109	147	170	132	98	205	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0261 5	132	178	205	168	125	261	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0300 5	158	212	245	193	143	300	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0385 5	193	260	300	248	184	385	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0460 5	248	333	385	296	220	460	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0520 5	296	398	460	335	249	520	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0590 5	335	450	520	380	282	590	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0650 5	380	511	590	418	311	650	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0730 5	418	563	650	470	349	730	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0820 5	470	632	730	528	392	820	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0920 5	528	710	820	592	440	920	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-1030 5	592	797	920	663	492	1030	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-1150 5	663	892	1030	740	550	1150	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1300 5	740	996	1150	836	621	1300	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1450 5	836	1126	1300	933	693	1450	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1770 5	1029	1385	1600	1139	846	1770	FI14	2 power modules each 27.9 X 40.6 X 21.8/675
LV7000-5-2150 5	1248	1680	1940	1383	1028	2150	FI14	2 power modules each 27.9 X 40.6 X 21.8/675
LV7000-5-2700 5	1480	1992	2300	1737	1291	2700	FI14	2 power modules each 27.9 X 40.6 X 21.8/675

(1) Low Overload = 110% Overloadability, 1 min/10 min

(2) High Overload = 150% Overloadability, 1 min/10 min

INVERTERS UNITS

Motor voltage 575 VAC, 50/60Hz, 3 Phase

Type	High overload (2)			Low overload (1)			FR	W x H x D
	P [kW]	HP	I(H)	P [kW]	HP	I(L)		Power Module
								inches/lbs
LV7000-5-0004 6	2.6	3	3.2	3.6	2.7	4.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0005 6	3.6	5	4.5	4.4	3	5.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0007 6	4.4	6	5.5	6.0	4	7.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0010 6	6.0	8	7.5	8.0	6	10	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0013 6	8.0	11	10	10.9	8	13.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0018 6	10.9	15	13.5	14.5	11	18	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0022 6	14.5	19	18	17.7	13	22	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0027 6	17.7	24	22	21.7	16	27	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0034 6	21.7	29	27	27.3	20	34	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0041 6	27.3	37	34	33	24	41	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0052 6	33	44	41	42	31	52	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0062 6	42	56	52	50	37	62	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0080 6	50	67	62	64	48	80	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0100 6	64	87	80	80	60	100	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0125 6	80	108	100	101	75	125	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0144 6	101	135	125	116	86	144	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0170 6	116	156	144	137	102	170	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0208 6	137	184	170	167	124	208	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0261 6	167	225	208	210	156	261	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0325 6	210	282	261	261	194	325	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0385 6	261	352	325	310	230	385	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0416 6	261	352	325	335	249	416	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0460 6	310	417	385	370	275	460	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0502 6	370	498	460	404	300	502	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0590 6	404	543	502	474	353	590	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0650 6	474	639	590	523	388	650	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0750 6	523	704	650	603	448	750	FI12	27.9 x 40.6 x 21.8/675
LV7000-5-0820 6	523	704	650	659	490	820	FI12	27.9 x 40.6 x 21.8/675
LV7000-5-0920 6	659	888	820	740	550	920	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1030 6	740	996	920	828	615	1030	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1180 6	828	1115	1030	949	705	1180	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1500 6	1045	1407	1300	1206	896	1500	FI14	2 power modules each 27.9 X 40.6 X 21.8/675
LV7000-5-1900 6	1206	1624	1500	1528	1135	1900	FI14	2 power modules each 27.9 X 40.6 X 21.8/675
LV7000-5-2250 6	1528	2056	1900	1809	1344	2250	FI14	2 power modules each 27.9 X 40.6 X 21.8/675

(1) Low Overload = 110% Overloadability, 1 min/10 min

(2) High Overload = 150% Overloadability, 1 min/10 min

INVERTERS UNITS								
Motor voltage 690 VAC, 50/60Hz, 3 Phase								
Type	High overload (2)			Low overload (1)			FR	W x H x D
	P [kW]	HP	I(H)	P [kW]	HP	I(L)		Power Module
								inches/lbs
LV7000-5-0004 6	3.1	4	3.2	4.3	3.2	4.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0005 6	4.3	6	4.5	5.3	4	5.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0007 6	5.3	7	5.5	7.2	5	7.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0010 6	7.2	10	7.5	9.7	7	10	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0013 6	9.7	13	10	13.0	10	13.5	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0018 6	13.0	18	13.5	17.4	13	18	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0022 6	17.4	23	18	21.2	16	22	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0027 6	21.2	29	22	26.1	19	27	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0034 6	26.1	35	27	32.8	24	34	FR6	7.7 x 20.4 x 9.3/35.3
LV7000-5-0041 6	33	44	34	40	29	41	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0052 6	40	53	41	50	37	52	FR7	9.3 x 23.3 x 10.1/64
LV7000-5-0062 6	50	68	52	60	44	62	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0080 6	60	81	62	77	57	80	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0100 6	77	104	80	97	72	100	FR8	11.4 x 29.8 x 13.5/106
LV7000-5-0125 6	97	130	100	121	90	125	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0144 6	121	162	125	139	103	144	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0170 6	139	187	144	164	122	170	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0208 6	164	221	170	201	149	208	FI9	9.4 x 40.6 x 14.6/148
LV7000-5-0261 6	201	270	208	252	187	261	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0325 6	252	339	261	314	233	325	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0385 6	314	422	325	372	276	385	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0416 6	314	422	325	401	298	416	FI10	9.4 x 40.6 x 21.7/220
LV7000-5-0460 6	372	500	385	444	330	460	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0502 6	444	597	460	484	360	502	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0590 6	484	652	502	569	423	590	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0650 6	569	766	590	627	466	650	FI12	18.8 x 40.6 x 21.7/441
LV7000-5-0750 6	627	844	650	724	538	750	FI12	27.9 x 40.6 x 21.8/675
LV7000-5-0820 6	627	844	650	791	588	820	FI12	27.9 x 40.6 x 21.8/675
LV7000-5-0920 6	791	1065	820	888	660	920	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1030 6	888	1195	920	994	739	1030	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1180 6	994	1338	1030	1139	846	1180	FI13	27.9 x 40.6 x 21.8/675
LV7000-5-1500 6	1255	1688	1300	1448	1076	1500	FI14	2 power modules each 27.9 X 40.6 X 21.8/675
LV7000-5-1900 6	1448	1948	1500	1834	1362	1900	FI14	2 power modules each 27.9 X 40.6 X 21.8/675
LV7000-5-2250 6	1834	2468	1900	2171	1613	2250	FI14	2 power modules each 27.9 X 40.6 X 21.8/675

(1) Low Overload = 110% Overloadability, 1 min/10 min
 (2) High Overload = 150% Overloadability, 1 min/10 min



imagination at work

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