

GD5000-L Series

Medium Voltage Drive





Introduction

GD5000-L is INVT new designed medium voltage VFD (smaller dimension compared to standard model, same functions and high performance features). One complete cabinet integrated control, transformer and power cells brings easy transportation and commissioning. Build-in manual bypass cabinet saves MCC space.

Features



Compact dimension
2850 mm *1500 mm *2355mm (L*D*H)



Quick install
no extra wiring work



User friendly touch screen HMI



Easy maintenance
one cabinet for all VFD



Multi functions temperature monitor



Build-in system bypass safe and flexible

Applications



Sugar



Cement



Paper



Chemical



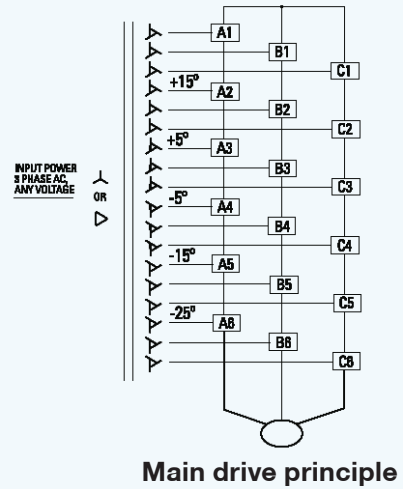
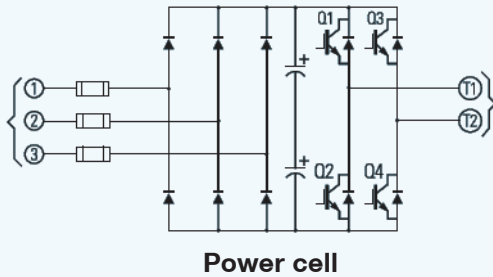
Metallurgy



Petrochemical

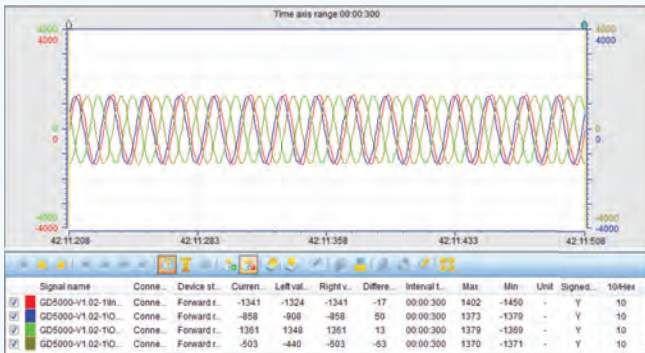
Main Principle

INVT GD5000-L series medium voltage drive integrated with isolate transformer, a series of 690V power cells are linked together to build the MV power output, Drawer design provides convenient and fast maintenance experience.



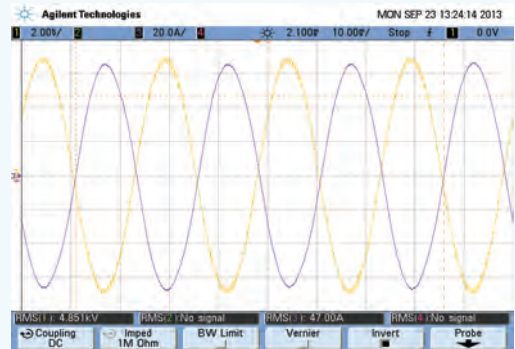
Higher Overload Ability

Compare to most of other MV Drive, INVT GD5000-L series provide higher overload ability, for 120% rated current last 120 seconds, max 200% rated current overload protect immediately. Higher overload, higher reliability.



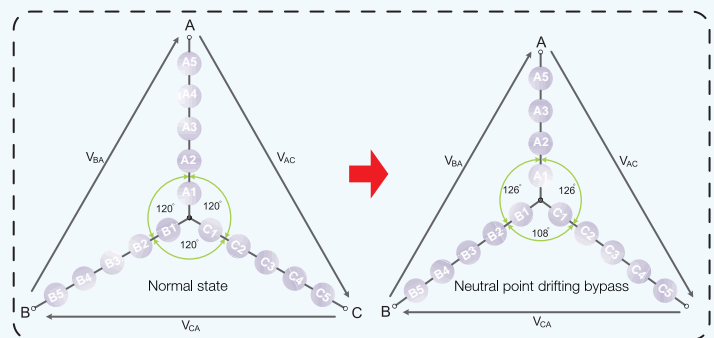
Excellent Output Wave less THD

For 3kV/ GD5000-L series was designed as 18 pulses harmonic not above 4%, 6.6kV 36 pulses and 10kV 48 pulses harmonic less than 2%, excellent harmonic control and nearly perfect output wave. Meets IEEE519-1992 Standards.



Advanced Cell Bypass

With unique technology, GD5000-L series provide 2 types of automatic cell bypass method: Same level bypass and neutral point shift bypass. Keep working even cell fault, ensure automatic bypass action less 200 microsecond.



Technical specification

	Voltage level	AC 3PH					
		3kV	3.3kV	4.16kV	6kV	6.6kV	10kV
Input	Voltage fluctuation	-15%~+10% (Max. support: -35%~+20%, derating power output)					
	Input frequency	50/60Hz; $\pm 5\%$					
	Power factor	≥ 0.97 (full load)					
	Efficiency	Converter Efficiency $\geq 98\%$, system Efficiency $\geq 96\%$ (full load)					
	Current harmonic	$\leq 4\%$			$\leq 2\%$		
	Output	Voltage range	0~rated input voltage				
Output frequency		0~120Hz (customized)					
Current harmonic		$\leq 4\%$			$\leq 2\%$		
Control performance	Control mode	V/F; SVC; VC					
	Speed ratio	1:50 (VF); 1:100 (SVC); 1:200 (VC)					
	Speed control precision	$\pm 1\%$ (VF); $\pm 0.4\%$ (SVC); $\pm 0.2\%$ (VC)					
	Torque response time	<200ms (SVC); <100ms (VC)					
	Starting torque	0.5Hz 150% of the rated torque (SVC); 0Hz 180% of the rated torque (VC)					
	Overload capacity	120%: 120s; 150%: 5s; 200%: protect immediately					
	ACC/DEC time	0-3600s (customized)					
User terminals	Digital input	8 channels digital input (extensible and programmable)					
	Digital output	8 channels relay output (extensible and programmable)					
	Analog input	3 channels: AI1, AI2: 0~10V/0~20mA; AI3: -10V~10V					
	Analog output	4 channels: AO1, AO2, AO3, AO4: 0~10V/0~20mA					
	High-speed pulse input	1 channel: input range: 0~50kHz					
	High-speed pulse output	1 channel: output range: 0~50kHz					
Protection function	System protection	Overcurrent, overvoltage, undervoltage, motor overload, VFD overload, phase loss, overheating, temperature controller fault, access fault, communication fault, etc.					
	Cell protection	Undervoltage, overvoltage, power supply, overheating, input phase loss, VCE fault, power supply fault, communication fault, bypass failure, etc.					
Others	HMI	Touch screen					
	Communication mode	Support Modbus protocol (with standard RS485 interface), Profibus, Profinet, and Ethernet					
	Installation method	Complete cabinet mounting					
	Protection level	IP30					
	Noise degree	$\leq 75\text{dB}$					
	Feed in and out method	Bottom in and out; other methods are optional					
	Cooling	Forced-air cooling					
	MTBF	100000h					
	Environment temperature	-5C~+40C, derate 1.5% for every additional 1C if the temperature is above 40C and the maximum temperature is 50C; run without load if the temperature reaches 60C.					
	Environment humidity	5%~95%, no condensation					
	Altitude	Below 1000m; derate 1% for every additional 100m if the altitude is above 1000m					
	Storage	Keep away from dust, direct sunlight, flammable or corrosive gas, oil, steam and vibration					
Vibration amplitude	0.59g below						

Power Ratings

Voltage level	Model	Rated power (kW)	Rated current (A)	Dimension (mm)	Weight (kg)
3.3kV	GD5000-A0280-3.3-L-06	220	49	2500X1500X2270	1946
	GD5000-A0315-3.3-L-06	250	55	2500X1500X2270	2072
	GD5000-A0355-3.3-L-06	280	62	2500X1500X2330	2112
	GD5000-A0400-3.3-L-06	315	70	2500X1500X2330	2172
	GD5000-A0450-3.3-L-06	355	79	2850X1500X2355	2364
	GD5000-A0500-3.3-L-06	400	87	2850X1500X2355	2444
	GD5000-A0560-3.3-L-06	450	98	2850X1500X2355	2514
	GD5000-A0630-3.3-L-06	500	110	2850X1500X2355	2664
	GD5000-A0710-3.3-L-06	560	124	2850X1500X2355	2714
	GD5000-A0800-3.3-L-06	630	140	2850X1500X2355	2714
6kV	GD5000-A0400-06-L-06	315	38	2500X1500X2270	2255
	GD5000-A0500-06-L-06	400	48	2500X1500X2270	2405
	GD5000-A0560-06-L-06	450	54	2500X1500X2330	2300
	GD5000-A0630-06-L-06	500	61	2500X1500X2330	2385
	GD5000-A0710-06-L-06	560	68	2500X1500X2330	2480
	GD5000-A0800-06-L-06	630	77	2850X1500X2355	2633
	GD5000-A0900-06-L-06	710	87	2850X1500X2355	2713
	GD5000-A1000-06-L-06	800	96	2850X1500X2355	2793
	GD5000-A1120-06-L-06	900	108	2850X1500X2355	2923
	GD5000-A1250-06-L-06	1000	120	2850X1500X2355	3053
	GD5000-A1400-06-L-06	1120	135	2850X1500X2355	3243
6.6kV	GD5000-A0400-6.6-L-06	315	35	2500X1500X2270	2224
	GD5000-A0450-6.6-L-06	355	39	2500X1500X2270	2374
	GD5000-A0500-6.6-L-06	400	44	2500X1500X2330	2374
	GD5000-A0560-6.6-L-06	450	49	2500X1500X2330	2224
	GD5000-A0630-6.6-L-06	500	55	2500X1500X2330	2466
	GD5000-A0710-6.6-L-06	560	62	2500X1500X2330	2561
	GD5000-A0800-6.6-L-06	630	70	2500X1500X2330	2621
	GD5000-A0900-6.6-L-06	710	79	2850X1500X2355	2701
	GD5000-A1000-6.6-L-06	800	87	2850X1500X2355	2781
	GD5000-A1120-6.6-L-06	900	98	2850X1500X2355	2911
	GD5000-A1250-6.6-L-06	1000	109	2850X1500X2355	3041
	GD5000-A1400-6.6-L-06	1120	122	2850X1500X2355	3231
	GD5000-A1600-6.6-L-06	1250	140	2850X1500X2355	3431
10kV	GD5000-A0500-10-L-06	400	29	2500X1500X2270	2622
	GD5000-A0560-10-L-06	450	32	2500X1500X2270	2672
	GD5000-A0710-10-L-06	560	41	2500X1500X2270	2872
	GD5000-A0800-10-L-06	630	46	2500X1500X2270	2922
	GD5000-A0900-10-L-06	710	52	2500X1500X2330	3014
	GD5000-A1000-10-L-06	800	58	2500X1500X2330	3124
	GD5000-A1120-10-L-06	900	65	2500X1500X2330	3244
	GD5000-A1250-10-L-06	1000	72	2500X1500X2330	3324
	GD5000-A1400-10-L-06	1120	81	2850X1500X2355	3343
	GD5000-A1600-10-L-06	1250	92	2850X1500X2355	3573
	GD5000-A1700-10-L-06	1400	98	2850X1500X2355	3663
	GD5000-A2000-10-L-06	1600	115	2850X1500X2355	4093
	GD5000-A2240-10-L-06	1800	129	2850X1500X2355	4323
	GD5000-A2500-10-L-06	2000	144	2850X1500X2355	4578