



VG10

1/2 - 600 HP, 460 Volts, 3-Phase, 50/60 Hz
1/4 - 125 HP, 230 Volts, 3-Phase, 50/60 Hz
NEMA-4, NEMA-12, NEMA 1,
and Open Chassis

Dynamic Torque Vector AC Drive

The VG10 is Safronics latest generation of Flux Vector AC Drive. The VG10's proven power section has been improved by incorporating the latest IGBT technology. This new technology allows for a unique "Soft-Switching" output. The benefits of this breakthrough offer reduced RFI/EMI and a 50% reduction in dv/dt voltage spikes. The VG10 has also expanded its horsepower ratings in both 230 VAC (1/4-125 HP) and 460 VAC (1/2-600HP) for even greater flexibility.

The VG10's performance has been greatly increased using the latest 32-bit microprocessor technology. This has allowed for the capability of performing "Auto-Tuning" without spinning the motor where situations do not allow for uncoupling the load. The "Online Auto-Tuning" feature has been improved to continuously monitor the motor's characteristics during running, and adjust the internal motor parameter settings for the most precise speed and torque control. The VG10 has an improved digital keypad which includes a graphical LCD/LED back-lit display for ease of setup and maintenance.

DESIGN

- Three control methods:
 - Closed loop vector
 - Open loop vector
 - Volts/Hertz
- Motor auto-tuning for optimum performance
 - Full dynamic tuning (spinning motor)
 - Static tuning (loaded motor, not spinning)
 - Online tuning (continuous while running)
- Keypad: graphic backlit LCD combined with digital LED, copy function, 5 line x 13 characters
- Uniform programming parameters with GP10, PC10 and VM10
- Soft Switching Technology eliminates output filters
- RS485 ModBus serial communications standard; Lon Works, Device Net, Metasys N2, Profibus-DP, Interbus-S and Ethernet optional
- Built-in dynamic braking includes 3% DB resistor up to 10 HP Rating
- Dual motor parameter table
- Numerous option boards and accessories
- Saflink programming & maintenance software compatible

ENCLOSURE

- NEMA-4 enclosure 1/2 HP through 10 HP
- NEMA-12 enclosure 15 HP through 30 HP
- NEMA-1 enclosure 1/2 through 600 HP
- Open chassis 40 HP through 600 HP
- "Side-by-Side" mounting with zero clearance to optimize panel space (1/2 HP through 30 HP)
- Optional configurations available

ADJUSTMENTS

- Multi-use digital input and output terminals
- Voltage, current, terminal and serial reference signal control
- Adjustable momentary power loss ride-through
- Standard PID algorithm for process control
- Dynamic Torque Vector Control with torque limit control
- MOP digital reference command
- Zero speed command
- Multiple accel and decel settings
- Independent forward and reverse jog functions
- Programmable pattern operation (up to six stages, multiple cycle settings)
- Adjustable carrier frequency with silent pattern setting to Reduce audible motor sound
- Auto and manual torque boost

PERFORMANCE

- Operating temperature -10°C to +50°C (14°F to 122°F)
- Maximum altitude without derating 3,300 ft.
- Output frequency accuracy (stability):
 - Analog setting: +0.02% or less of max freq
 - Digital setting: +0.01% or less of max freq
- Overload rating up to 150% of rated current for 60 seconds

APPROVALS

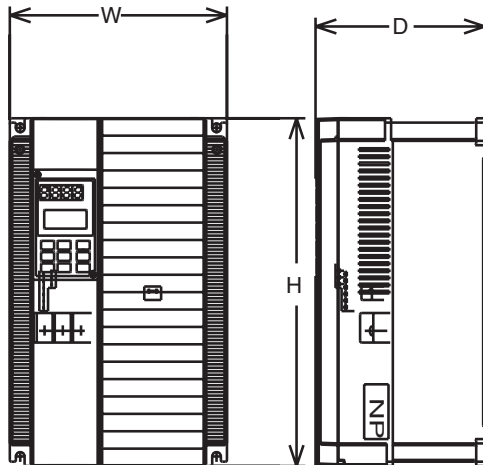
- UL and cUL listed



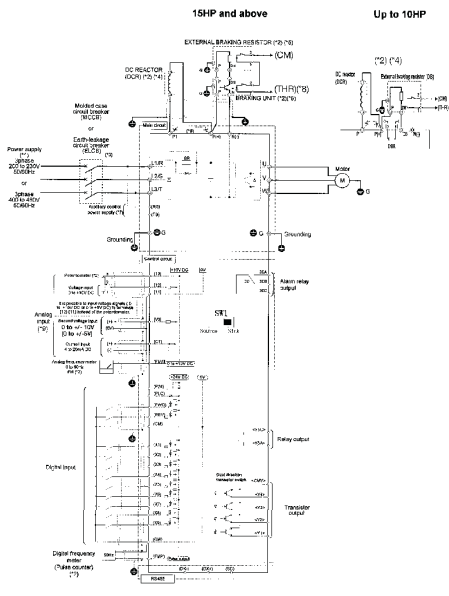
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VOLT	HP	AMPS	PART NUMBER VG10-	DIMENSIONS (in inches)			WEIGHT (lbs)	VOLT	HP	AMPS	PART NUMBER VG10-	DIMENSIONS (in inches)			WEIGHT (lbs)
				W	H	D						W	H	D	
230 V	0.25	1.5	2F25-1	4.33	10.24	5.12	4.8	460 V	0.5	1.5	4F50-1	4.33	10.24	5.12	4.8
	0.5	3	2F50-1	4.33	10.24	5.12	4.8		1	2.5	4001-1	4.33	10.24	5.71	5.5
	1	5	2001-1	4.33	10.24	5.71	5.5		2	3.7	4002-1	5.91	10.24	5.71	8.4
	2	8	2002-1	5.91	10.24	5.71	8.4		3	5.5	4003-1	5.91	10.24	5.71	8.4
	3	11	2003-1	5.91	10.24	5.71	8.4		5	9	4005-1	5.91	10.24	5.71	8.4
	5	17	2005-1	5.91	10.24	5.71	8.4		7.5	13	4007-1	8.66	10.24	7.68	14.3
	7.5	25	2007-1	8.66	10.24	7.68	13.4		10	18	4010-1	8.66	10.24	7.68	14.3
	10	33	2010-1	8.66	10.24	7.68	13.4		15	24	4015-1	9.84	10.24	7.68	22
	15	46	2015-1	9.84	15.75	7.68	22.0		20	30	4020-1	9.84	15.75	7.68	22
	20	59	2020-1	9.84	15.75	7.68	22.0		25	39	4025-1	9.84	15.75	7.68	23.1
	25	74	2025-1	9.84	15.75	7.68	23.1		30	45	4030-1	9.84	15.75	7.68	23.1
	30	87	2030-1	9.84	15.75	7.68	23.1		40	60	4040-1	13.5	15.75	10.0	70
	40	115	2040-1	13.5	29.7	10.0	70		50	75	4050-1	14.9	29.7	10.6	82
	50	145	2050-1	14.9	33.1	10.6	86		60	91	4060-1	14.9	29.7	10.6	95
60	180	2060-1	14.9	38.0	10.6	106	75	112	4075-1	14.9	34.6	10.6	97		
75	215	2075-1	14.9	38.0	10.6	110	100	150	4100-1	14.9	34.6	10.6	115		
100	283	2100-1	21.0	41.3	11.2	172	125	176	4125-1	21.0	38.0	12.4	174		
125	346	2125-1	26.9	50.4	14.2	282	150	210	4150-1	21.0	38.0	12.4	245		
							200	253	4200-1	21.0	38.0	14.2	245		
							250	304	4250-1	21.0	53.1	14.2	245		
							300	377	4300-1	26.9	53.1	14.2	337		
							350	415	4350-1	26.9	55.1	14.2	337		
							400	520	4400-1	26.9	55.1	17.7	562		
							450	585	4450-1	26.9	57.1	17.7	562		
							500	650	4500-1	34.6	57.1	17.7	804		
							600	740	4600-1	34.6	57.1	17.7	804		



ITEM	RATINGS
Output Rating	3-Phase, 200-230 V, 50/60 Hz, 380-480 V, 50/60 Hz
Voltage Fluctuation	+10%, -15%
Frequency Fluctuation	±5%
Control Method	Sinusoidal PWM Control (V/F, Dynamic Torque Vector, Flux Vector with optional Encoder Card)
Frequency Control Range	0.1 to 400 Hz
Accel/Decel Time	0.1 to 3600.0 seconds - Independent
Braking Torque	1/4 - 1 HP = 150%, 2 - 10 HP = 100%, 15 - 30 HP = 20% 40 HP and higher 15%
Overload	150 %, 1 Minute
Carrier Frequency	0.75 - 15 kHz - 75 HP or less 0.75 - 10 KHz - 100 HP or more
Keypad	Backlit LCD / English Language, LED Monitor Display with Copy Function
Ambient Temperature	-10°C to 50°C (+14°F to 122°F)
Storage Temperature	-25°C to 65°C (-13°F to 149°F)
Starting Torque	200%, 30 Hp and below, 180% 40 Hp and above, below 1 Hz
Fuse Protection	Motor coast to a stop at blown fuse
Ground Fault	Provided by electronic circuit
Power Charge	Charge LED stays on until voltage drops below 25 Vdc
Speed Control Accuracy	±0.2% (±0.02% with PG)