

## Total drive solutions for every industry and application. That's Eaton's Electrical Business.

Eaton's GVX9000 Adjustable Frequency Drives meet the needs of every user and application—for every reason. It all starts with a commitment to building the right product for unique applications, with capability matched to individual needs. Whether it is a standard solution available from the catalog or a custom solution, Eaton can deliver what you need. You can't just call a product the total solution for every application. You have to prove it. And that's exactly what you'll find in every product we bring to market. The GVX9000 is truly a global product that offers OEMs the flexibility to deliver their equipment worldwide.



**GVX9000 AF Drive  
is your global solution.**

GVX9000, your global AF vector drive solution, is available with both open-loop and closed-loop capability enabling speed control of three-phase motors. Ideal for 0.75 kW to 160 kW applications, this programmable microprocessor drive suits a wide variety of applications from simple fans and pumps, to complex applications such as manufacturing and material handling.

Customers no longer have to choose between power and functionality as Eaton's newest drive strikes a balance between the two, offering accurate speed and torque control for smooth motor starting and stopping as well as precise operation of associated machinery.

- High- and low-overload settings (150% overload or 110% overload for 1 minute, respectively)
- IP21-rated for installation flexibility
- Small size facilitates fast and easy mounting in open or enclosed applications
- Easy-to-use programming: automatic restart, full motor protection, torque compensation, electronic motor overload, and a built-in EMI filter
- Configurable start and stop ramps save energy and reduce motor and machinery wear
- 32-bit microprocessor and insulated gate bipolar transistors enable smooth, low-speed motor performance



## Open Drives

## Technical Data and Specifications

## Output Ratings

- Horsepower;
  - 200 – 240V: 0.75 – 37 kW
  - 380 – 480V: 0.75 – 75 kW
  - 500 – 600V: 0.75 – 75 kW
- Frequency Range: 0.1 – 400 Hz
- Overload Rating: 150% for 60 seconds
- Frequency Resolution:
  - Digital: 0.1 Hz
  - Analog: Max. (Set Frequency/1000) Hz
- Frequency Accuracy
  - Digital:  $\pm 0.01\%$  of max. frequency
  - Analog:  $\pm 0.2\%$  of max. frequency
- Undervoltage Carryover Limit: 0.3 to 25 seconds

## Motor Performance

- Motor Control: Sensorless Vector
- Constant and Variable Torque: Standard
- Speed Regulation: 0.5% of base speed

## Input Power

- Voltage at 50/60 Hz  $\pm 3$  Hz
  - 200V – 240V, -10% +5% / 3-phase
  - 380V – 480V, -10% +10% / 3-phase
  - 500V – 600V, -15% +10% / 3-phase
- Displacement Power Factor: Better than 0.95
- Efficiency: Typically greater than 95%

## Design Type

- Microprocessor: 32-Bit
- Converter Type: Diode
- Inverter Type: Insulated Gate Bipolar Transistor
- Waveform: Sensorless Vector

## Environment

- Operating Temperature:
  - -10°C to +50°C
- Humidity: 0 to 90% non-condensing
- Maximum Elevation: 1000 meters

## Codes and Standards

- NEMA, IEEE, NEC: Design Standards
- UL Listed
- cUL Listed
- CE Marked (Requires EMI filter)

## Enclosure

- Standard: Protected Chassis (IP20)

## Protective Features

- Ground Fault: Standard
- Overload Protection: Standard
- Overcurrent: Standard
- Overvoltage: Standard
- Undervoltage: Standard
- Overtemperature: Standard
- Overload Limit: Standard

## Set Up Adjustments, Performance Features, Operator Control and External Interface

## Keypad

- Alphanumeric Display: Standard, 1 x 4 character
- Digital Indications: Frequency (Hz), Motor Current (amps), User-Defined RUN/STOP, FORWARD/REVERSE and Parameters
- Diagnostics: Last 3 trips with cause
- LED Status Indicators: 5 (RUN/STOP, FORWARD/REVERSE and LOCAL/REMOTE)
- Operator Functions: START/STOP, Speed control (digital) RESET, SETUP Keys, ENTER, FORWARD/REVERSE and LOCAL/REMOTE

## I/O Terminal Block

- Analog Inputs:
  - 3 Inputs: 0 – 10V DC, 4 – 20 mA
  - Analog Voltage: Nominal 10V DC (10K ohm input impedance)
  - Analog Current: Nominal 4 – 20 mA (250 ohm)
- Digital Inputs: 10 Programmable Inputs
- Digital Outputs: 2 Programmable
- Relay Outputs: 2 Programmable

- Analog Monitor Output:
  - Analog meter – frequency or output current
- Dynamic Brake Chopper

## Programmable Parameters

- Out of the Box: Factory settings loaded for quick start-up.
- Accel. and Decel.: 2 separately adjustable Linear or S Curve times: 0.1 – 3000 seconds
- Auto Restart: Overcurrent, overvoltage and undervoltage with 4 selectable retry restart modes
- DC Injection Braking
- External Fault: Terminal input
- Jog: Terminal input
- Fault Reset: STOP/RESET or terminal input
- I/O: NO/NC Selectable
- Jump Frequencies: 3 (with adjustable width)
- Parameter Security: Programmable software lock
- Preset Speeds: 7 preset speeds
- PID Controller: PID process control
- Reversing: Keypad or terminal
- Speed Setting: Keypad, terminal or pot
- START/STOP Control: Keypad or terminal
- Stop Modes: Decel, coast or DC injection

## Reliability

- Pretested Components: Standard
- Surface Mount Technology: Standard (PCBs)
- Computerized Testing: Standard
- Final Test with Full Load: Standard
- Eaton's Cutler-Hammer Engineering Systems and Service: National network of AF drive specialists

Table 1. Fuse Specifications — 575V

Model	I (A) Input	I (A) Output	Line Fuse		MMP	Recommend
			I (A)	Bussmann P/N		
GVX001A1-5	2.0	1.7	6	JJS-6	Consult factory	Consult factory
GVX002A1-5	3.6	3.5	6	JJS-6		
GVX003A1-5	4.9	4.5	10	JJS-10		
GVX005A1-5	9.9	7.5	20	JJS-20	Consult factory	Consult factory
GVX007A1-5	10.8	10	20	JJS-20		
GVX010A1-5	14.3	13.5	30	JJS-30		
GVX015A1-5	19.8	19	40	JJS-40	Consult factory	Consult factory
GVX020A1-5	22	22	40	JJS-40		
GVX025A1-5	27.7	27	50	JJS-50		
GVX030A1-5	37	34	70	JJS-70	Consult factory	Consult factory
GVX040A1-5	41	41	70	JJS-70		
GVX050A1-5	52	52	100	JJS-100		
GVX060A1-5	62	62	125	JJS-125	Consult factory	Consult factory
GVX075A1-5	95	80	175	JJS-175		
GVX100A1-5	117	100	200	JJS-200		

**Note:** Smaller fuses than those shown in the table are permitted.

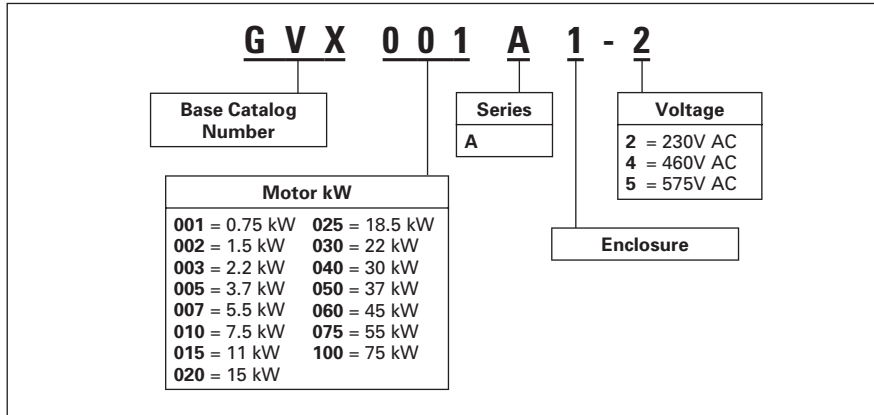
## Dimensions

**Table 5. GVX9000 Approximate Dimensions**

kW	Width (mm)	Height (mm)	Depth (mm)
<b>230V</b>			
0.75	150.0	260.0	173.7
1.5	150.0	260.0	173.7
2.2	150.0	260.0	173.7
3.7	150.0	260.0	173.7
5.5	200.0	323.0	196.6
7.5	200.0	323.0	196.6
11	200.0	323.0	196.6
15	250.0	403.8	219.4
18.5	250.0	403.8	219.4
22	250.0	403.8	219.4
30	370.0	589.0	260.0
37	370.0	589.0	260.0
<b>460V</b>			
0.75	150.0	260.0	173.7
1.5	150.0	260.0	173.7
2.2	150.0	260.0	173.7
3.7	150.0	260.0	173.7
5.5	200.0	323.0	196.6
7.5	200.0	323.0	196.6
11	200.0	323.0	196.6
15	250.0	403.8	219.4
18.5	250.0	403.8	219.4
22	250.0	403.8	219.4
30	370.0	589.0	260.0
37	370.0	589.0	260.0
45	370.0	589.0	260.0
55	370.0	589.0	260.0
75	370.0	589.0	260.0
<b>575V</b>			
0.75	150.0	260.0	173.7
1.5	150.0	260.0	173.7
2.2	150.0	260.0	173.7
3.7	150.0	260.0	173.7
5.5	200.0	323.0	196.6
7.5	200.0	323.0	196.6
11	200.0	323.0	196.6
15	250.0	403.8	219.4
18.5	250.0	403.8	219.4
22	250.0	403.8	219.4
30	370.0	589.0	260.0
37	370.0	589.0	260.0
45	370.0	589.0	260.0
55	370.0	589.0	260.0
75	370.0	589.0	260.0

**Catalog Number Selection**

Table 7. GVX9000 Catalog Number Selection



**Product Selection**

Table 8. GVX9000 Product Selection

kW	Input Amp. Single-/3-Phase Rating	Continuous Output Amp Rating	Catalog Number	*
<b>230V</b>				
0.75	11.9/7.0	5	GVX-001A1-2	
1.5	15.3/9.4	7	GVX-002A1-2	
2.2	22/14.0	11	GVX-003A1-2	
3.7	—/20.6	17	GVX-005A1-2	
5.5	—/26	25	GVX-007A1-2	
7.5	—/34	33	GVX-010A1-2	
11	—/50	49	GVX-015A1-2	
15	—/60	65	GVX-020A1-2	
18.5	—/75	75	GVX-025A1-2	
22	—/90	90	GVX-030A1-2	
30	—/110	120	GVX-040A1-2	
37	—/142	145	GVX-050A1-2	
<b>460V</b>				
0.75	—/3.2	2.7	GVX-001A1-4	
1.5	—/4.3	4.2	GVX-002A1-4	
2.2	—/5.9	5.5	GVX-003A1-4	
3.7	—/11.2	8.5	GVX-005A1-4	
5.5	—/19	13	GVX-007A1-4	
7.5	—/25	18	GVX-010A1-4	
11	—/33	24	GVX-015A1-4	
15	—/46	32	GVX-020A1-4	
18.5	—/56	38	GVX-025A1-4	
22	—/70	45	GVX-030A1-4	
30	—/75	60	GVX-040A1-4	
37	—/95	73	GVX-050A1-4	
45	—/110	91	GVX-060A1-4	
55	—/150	110	GVX-075A1-4	
75	—/180	150	GVX-100A1-4	
<b>575V</b>				
0.75	—/2.0	1.7	GVX-001A1-5	
1.5	—/3.6	3.5	GVX-002A1-5	
2.2	—/4.9	4.5	GVX-003A1-5	
3.7	—/9.9	7.5	GVX-005A1-5	
5.5	—/10.8	10	GVX-007A1-5	
7.5	—/14.3	13.5	GVX-010A1-5	
11	—/19.8	19	GVX-015A1-5	
15	—/22	22	GVX-020A1-5	
18.5	—/27.7	27	GVX-025A1-5	
22	—/37	34	GVX-030A1-5	
30	—/41	41	GVX-040A1-5	
37	—/52	52	GVX-050A1-5	
45	—/62	62	GVX-060A1-5	
55	—/95	80	GVX-075A1-5	
75	—/117	100	GVX-100A1-5	

\* Consult Sales Office for Pricing.