

General Purpose AC Variable Frequency Drives (VFDs)



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General purpose variable frequency AC drives (VFDs).

The workhorses of industry.

AutomationDirect.com is a trusted source for general purpose AC drives. General purpose AC drives are the middle of the road drive that is suitable for the bulk of applications needing an AC variable frequency drive.

Typically more features and a larger selection of horsepower and voltage choices than a microdrive and at a lower cost than high performance drives. Nowadays the only thing that is usually lost when going with a general purpose drive over a high performance drive are a few of the very specialized features such as closed-loop flux vector control.



What are the benefits of general purpose AC variable frequency drives?

Why would I need an AC drive?

- For reducing start-up current - controlling the inrush current at motor start-up allows the use of smaller fuses, and reduces electrical peak load
- Variable Speed - trimming the motor speed lower or higher than base speed as well as ramp the accel and decel time when changing speed or directions is their primary function
- Many modern general purpose variable frequency AC drives (VFDs) offer features that are normally only found on high performance drives. Such as dynamic braking, sensorless vector control, advanced communications protocol support and an integrated PLC
- Integrated functionality – most general purpose VFDs can vary motor speed and direction by operator input (keypad buttons/speed control knob) or by digital and analog inputs (from pushbuttons/switches/pots or PLC outputs) some support communication from a PLC or master controller. Today, most general purpose VFDs support some type of advanced industrial communication network and multiple drives can be connected on this same network for ease of integration and control
- Cost – general purpose drives can tackle most applications that require a VFD. Pricing is right in a sweet spot and are well worth their price. The chances are good that unless you need a high tech feature or have a high horsepower requirement that a general purpose VFD will do the job and cost less than a high-performance AC drive

What type of applications use general purpose AC variable frequency drives (VFDs)?

Most applications that use or need a VFD fall into the general purpose category unless they are smaller, minimalist or high complexity/performance.

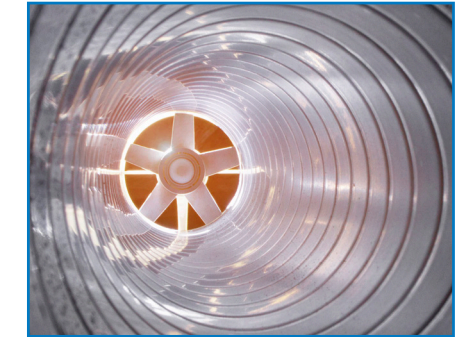
Some examples of applications where you might see a general purpose VFD being used are: Conveyors, pumps, fans, mixers, palletizers, HVAC systems, elevators, compactors and the list goes on and on.



Pallet Conveyor



Pumps



Fans

Why buy drives from us?

There are several distinct advantages to purchasing a general purpose AC variable frequency drive from AutomationDirect:



Price

As with all of our product lines, our prices are often well below the list prices of traditional automation suppliers. Our direct business model allows us to operate more efficiently than other suppliers and pass the savings on to you.



Quality

All of the general purpose AC variable frequency drives we sell have a 2-year warranty and a 30-day moneyback guarantee. If for any reason you are not satisfied with your purchase, send it back and we will refund your money.



Service

We give you options for self-service but at the same time, we are there when you need us. You can place your order online or call our customer service. Have a technical question about one of our products or need help gathering up a bill of materials for one of your projects? You can call our Free Technical Support.

Not sure that this is the right AC Drive series you need? 

Click for a complete selection guide

CFW300 Series AC Variable Frequency Drives



CFW300 Series VFDs

These high-performance variable frequency drives (VFDs) are super compact and easy to install, configure and program.

- 1/4 to 1.5 hp, 115V (single/three-phase input)
- 1/4 to 3 hp, 230V (single-phase input)
- 1/4 to 5 hp, 230V (single-phase input)
- Scalar (V/Hz) or Sensorless vector control modes
- Single phase and three phase input power
- Built-in keypad display (with optional remote keypad)
- Memory module for easy project transfer
- DIN-rail or surface mount
- Generous built-in I/O:
 - 6 Digital input points
 - 1 Relay output point
 - 1 Analog output channel
- Three expansion I/O modules available
- Optional communications modules
 - RS-232
 - RS-485
 - USB (config & programming only)
- Zero-Stack mounting; no heat dissipation space required beside/between adjacent drives
- cUL, CE

Typical Applications

- Blenders / mixers
- Centrifugal pumps
- Centrifuges
- Commercial dryers
- Compressors
- Conveyors
- Fans / blowers
- Granulators
- Roller tables
- Rotary filters

Free WPS Programming Suite Software

That's right! The WPS software is a free download. This is a fully featured software suite for drive configuration, monitoring AND for programming the built-in PLC – it's all in one easy-to-use package.

Filter and download parameters by group, or use the powerful search function to create your own parameter groups



Changed parameters (awaiting download) are highlighted

Other great Quick Start features include:

- Monitoring wizards
- Configuration wizards
- Custom monitoring windows
- Trending
- Diagnostics
- And MORE!



Our How-To Videos explain everything you need to know – FAST!

Check out the Family Overview to see all the drive options, or use the Getting Started video to kick-start your project. We also have specific videos that help you avoid common mistakes, learn the software quickly and use enhanced software features for configuration and diagnostics. We are creating new videos all the time, so check back often to see the latest additions.

Plug-and-Play accessories add functionality and speed setup

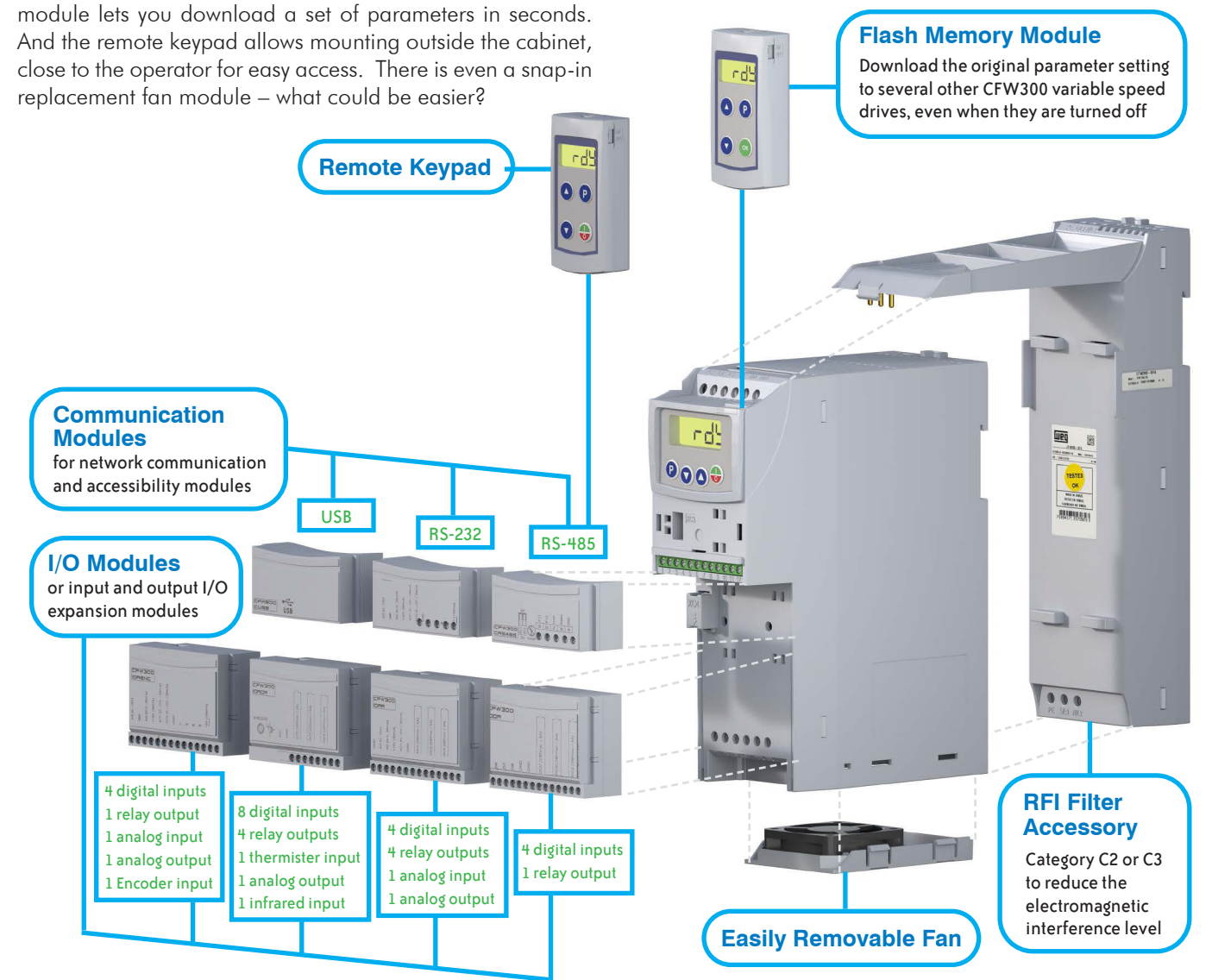
Add communications option cards, I/O option cards, an RFI filter, and more – it all just snaps together. The flash memory module lets you download a set of parameters in seconds. And the remote keypad allows mounting outside the cabinet, close to the operator for easy access. There is even a snap-in replacement fan module – what could be easier?



View our How-To videos at <http://go2adc.com/wegvideo>

Communicate with other factory devices

Use the RS-232 and RS485 communications option cards to communicate with other AC drives, PLCs, and other devices. Both cards also allow PC connectivity for programming, monitoring, and to upload and download drive parameters and the PLC program. The USB option module also allows configuration, programming and monitoring from your PC, along with upload and download of parameters sets and your PLC program.



DURAPULSE® GS20 AC Drives

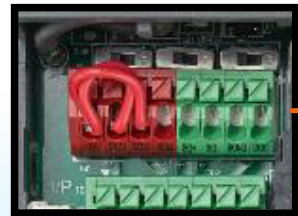
DURA III PULSE **GS20**
DURA III PULSE **GS20X**

DURAPULSE GS20 AC Sensorless Vector Drives

The DURAPULSE GS20 series AC drives have all of the features of the GS2, as well as many of the features offered on the GS3 and some new features not found on the other series all at a great price.

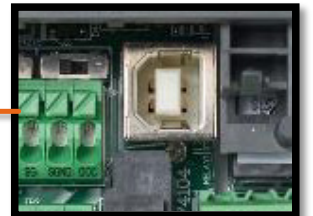


Removable Keypad can be remotely mounted.
 5-digit, 7 segment LED display;
 Speed control potentiometer



Safe Torque Off (STO) provides an additional level of safety
 EN 61508 SIL2
 EN 62061 SIL CL2
 ISO 13849-1:2015 Cat3

Removable RFI jumper (depends on application needs)

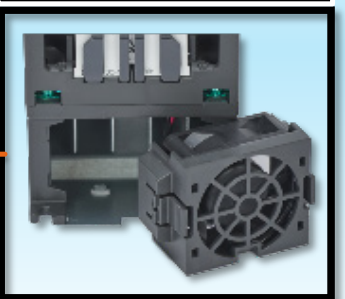


Built-in USB port for fast & easy programming

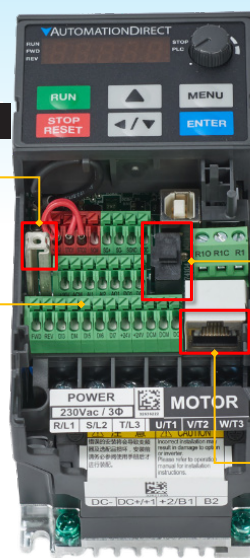


QR Code for remote access to product details (online)

Removable fan, fast & easy to replace



Option card mount



Option card connector

Spring clamp terminal blocks

Built-in RS-485 w/ Modbus RTU

Zero-Stack Installation

Zero-stack installation saves time, money and panel space by allowing the GS20 drives to be mounted right up next to each other.

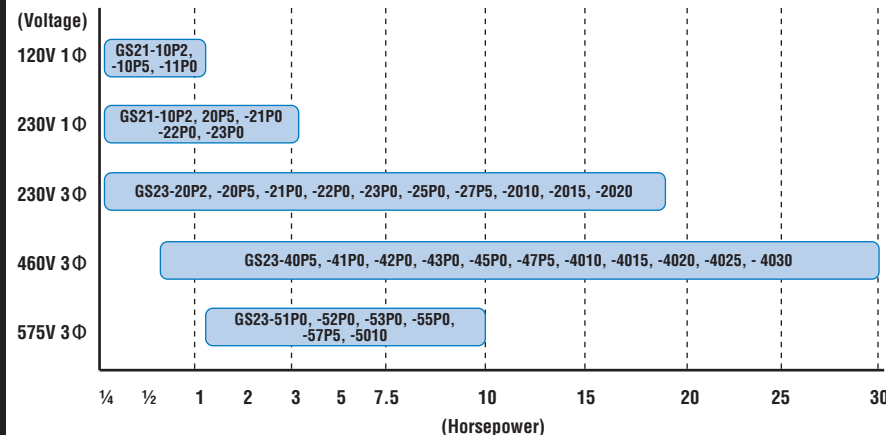


Not sure that this is the right AC Drive series you need?
 Click for a complete selection guide

	120V 1-ph	230V 1-ph	230V 3-ph	460V 3-ph	575V 3-ph
Frame A - HP	¼, ½	¼, ½	¼, ½, 1	½, 1	1
Frame B - HP		1	2	2	2
Frame C - HP	1	2, 3	3, 5	3, 5	3, 5
Frame D - HP			7.5	7.5, 10	7.5, 10
Frame E - HP			10, 15	15, 20	
Frame F - HP			20	25, 30	
Part #s	GS21-1xxx	GS21-2xxx	GS23-2xxx	GS23-4xxx	GS23-5xxx

GS23(X)-47P5

- Motor HP: OP2: 0.25hp, OP5: 0.5hp, 1P0: 1.0hp, 2P0: 2.0hp, 3P0: 3.0hp, 5P0: 5.0hp, 7P5: 7.5hp, 010: 10hp, 015: 15hp, 020: 20hp, 025: 25hp, 030: 30hp
- Input Volts: 1: 120VAC, 2: 230VAC, 4: 460VAC, 5: 575VAC
- Model Line: blank: Std GS20, X: NEMA 4X, A: Accessory
- Input Phase: 1: single phase, 3: three phase
- Series Name: GS2_ = GS20

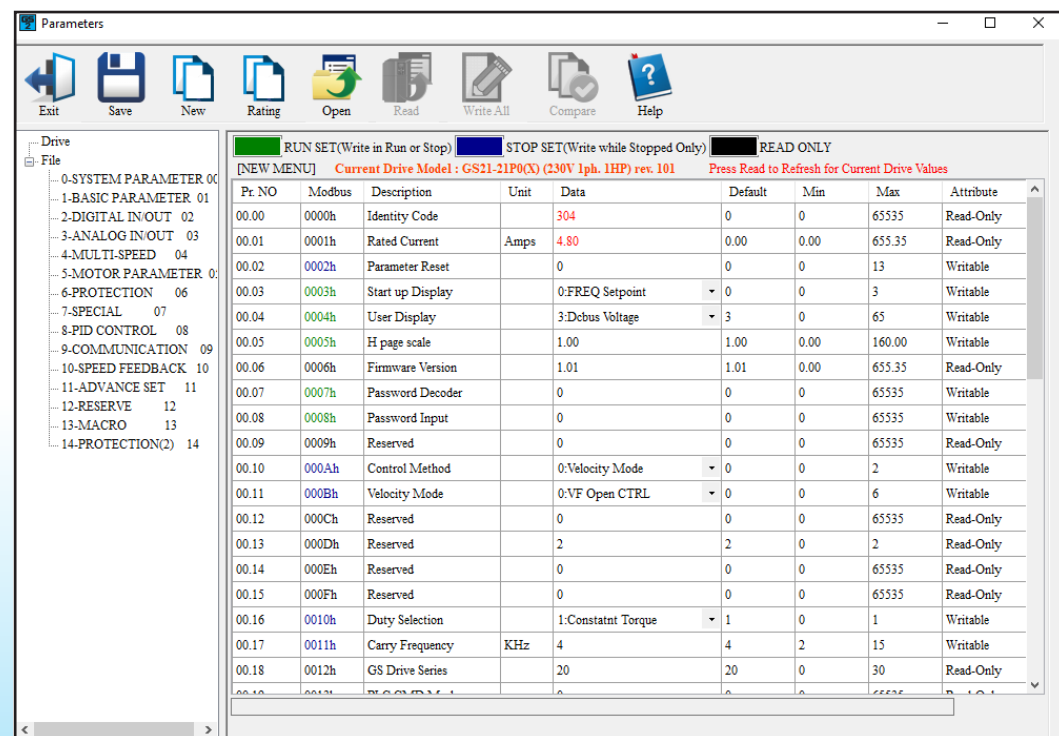


Option Cards

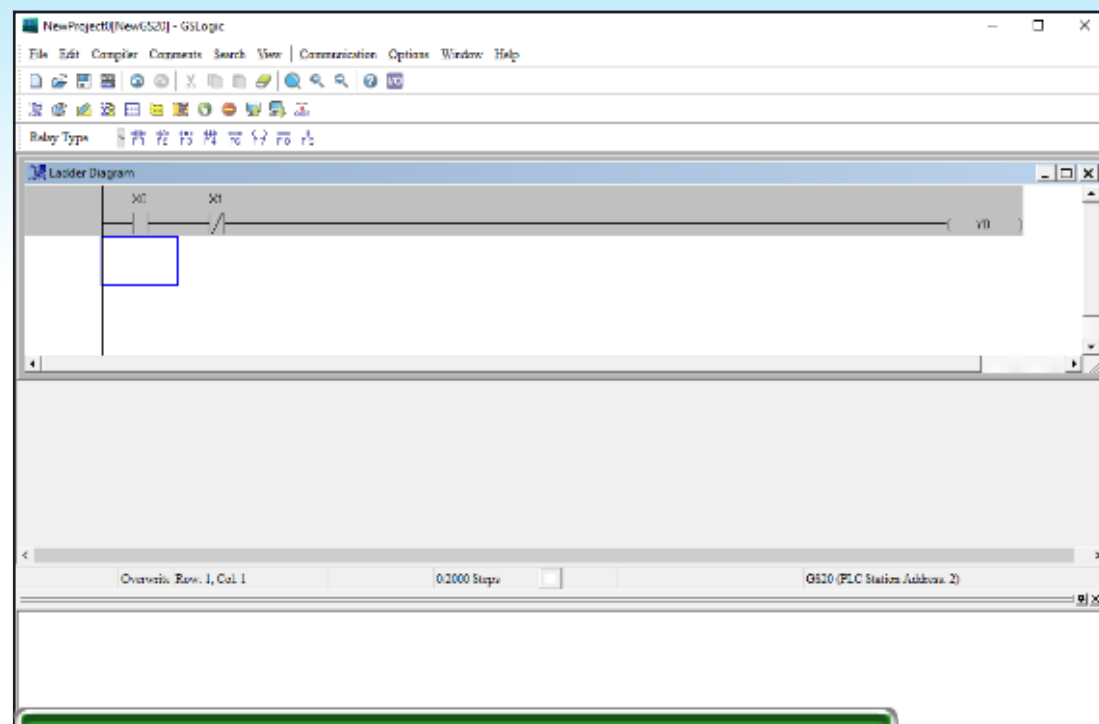
Option cards are available for the GS20 to add features like Ethernet communications over Ethernet/IP and Modbus TCP or add a backup to the built-in 24VDC power supply.

GS20 Programming

The GS20 VFDs support parameter configuration, setup and troubleshooting via the GSOFT2 software. In addition to this, the GS20 has a built-in PLC that is programmed with GSLOGIC software. To make migration from the older generation GS2 drives, the GS20 has a GS2 mode that allows the drive to be programmed using the same parameter set as the GS2.



GSOFT2 – for parameter configuration, setup, troubleshooting & FW upgrade



GSLOGIC – for the built-in PLC ladder program

Not sure that this is the right AC Drive series you need?
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GS20 Control Modes

The GS20 supports three different control modes offering various levels of torque output control at different speed ranges. Also available is torque control mode that allows the drive to control the level of torque as opposed to speed. Torque control mode is a feature usually only found on higher cost drives.

		V/F Mode (+encoder)	SVC Mode	FOC Mode
Induction Motor (IM)	Torque	150% @ 3Hz	150% @ 3Hz	200% @ 0.5Hz
	Accuracy	1:50 speed control	1:50 speed control	1:100 speed control
Permanent Magnet (PM)	Torque	NA	100% @ 1/20 rated Hz	NA
	Accuracy	NA	1:20 speed control	NA

GS20 Additional Features

These are just some of the features that the GS20 has. You will be hard-pressed to find a drive for the same price with all of the features it supports. In addition to what was mentioned the GS20 also supports:

- V/Hz Control, Sensorless Vector Control, Field Oriented Control
- Torque Control Mode
- Maximum frequency 0-599Hz
- Multiple motor support, supports up to 4 induction motor switching control from a single VFD
- Built-in braking chopper
- DEB, deceleration energy backup, controls motor deceleration during power loss
- 100kA short circuit current rating
- STO – Safe Torque Off
- 100% Conformal coating (IEC 60721-3-3 class 3C2) on PCBs provides moisture, corrosion & dustproof in critical environments
- Built-in PLC (up to 2,000 steps)
- USB programming
- Built-in RS485 communications (Modbus RTU)
- Optional Ethernet communications Modbus TCP and Ethernet/IP
- Generous built-in I/O
- Analog inputs +/- 10VDC, 0-10VDC, 0-20mA/4-20mA
- Digital IO: 7 inputs, 3 outputs
- Pulse in/out 33KHz pulse input & output
- Mounting, NEMA1 conduit box; DIN rail adapter; EMC shield plate; Top-wire mounting plate (all optional)
- Compact size
- GS2 mode to ease with migration from GS2 VFDs
- Two-year warranty
- UL, CE listed

GS Drive Accessories

- Line reactors
- VTF output filters
- High speed Class J fuses and fuse holders
- Dynamic braking resistors and DBUs
- EMI and RFI filters
- Replacement cooling fans



GS20X NEMA 4X AC Drives

The GS20X delivers all of the features and performance of the GS20 drive* including PID, sensorless vector and field oriented control modes but adds a washdown rating up to 10hp. The GS20X comes in a NEMA 4X/IP66 enclosure to withstand the rigors of extreme environments. The GS20X also offers an optional NEMA 4X disconnect to make installation simple.



Find the GS20 drive interesting, but need a washdown rated drive? [Click for the NEMA 4X drives brochure](#)

*GS2 mode not supported on GS20X models