



General Purpose AC Variable Frequency Drives (VFDs)



DURA
PULSE




IRONHORSE

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General purpose variable frequency AC drives (VFDs).

The workhorses of industry.

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

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

These drives typically offer more features and a larger selection of horsepower and voltage choices than an AC microdrive but at a lower cost than high performance drives. With advancements in drive technology the only features usually lost when selecting a general purpose drive over a high performance drive are some very specialized features such as closed-loop flux vector control.



Why should I select 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 and saves wear and tear on drive components.
- Variable Speed - Gaining the ability to control the motor speed to fit your application as well as controlling Accel and Decel times and direction.
- Many modern general purpose variable frequency AC drives (VFDs) offer features that were previously 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 provide a great return on investment. 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 save you money.

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

Most applications that use a VFD fall into the general purpose category. Exceptions are applications requiring smaller, minimalist drives or situations requiring high performance.

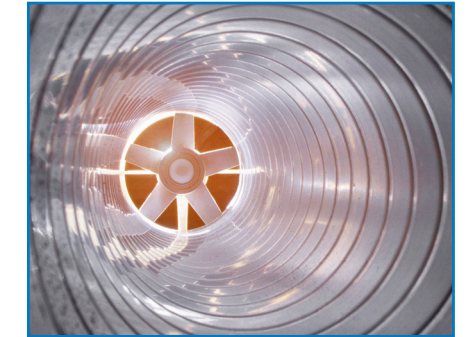
Some examples of applications where you might see a general purpose VFD are conveyors, pumps, fans, mixers, palletizers, HVAC systems, elevators, and compactors.



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 we 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 45-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 here 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

Select the Best General Purpose AC Drive Series for Your Application

GENERAL PURPOSE AC DRIVES		
<div></div>	<div></div>	<div></div>
General purpose VFD available in horsepower ratings up to 30 hp	General purpose AC VFD that includes many features only found on more expensive and high-performance drives	Still compact yet very powerful with built-in PLC and sensorless vector control
Input/Output Voltages hp Range	Input/Output Voltages hp Range	Input/Output Voltages hp Range
-	120VAC 1-Phase/230VAC 0.25 - 1 hp	120VAC 1-Phase/230VAC 0.25 - 1.5 hp
230VAC/230VAC 0.5 - 20 hp (1-Phase derate 1/6 - 10 hp)	230VAC 1-Phase/230VAC 0.25 - 3 hp	230VAC 1-Phase/230VAC 0.25 - 3 hp
-	230VAC/230VAC 0.25 - 20 hp	230VAC/230VAC 0.25 - 5 hp
460VAC/460VAC 0.5 - 30 hp (1-Phase derate 1/6 - 15 hp)	460VAC/460VAC 0.5 - 30 hp	460VAC/460VAC 0.5 - 10 hp
-	575VAC/575VAC 1 - 10 hp	-
Supported Control Modes	Supported Control Modes	Supported Control Modes
V/F, Slip Compensation	V/F (1:50)	V/F
Sensorless Vector	Sensorless Vector (1:50)	Sensorless Vector
-	Field Oriented Control (FOC, 1:100)	-
-	Torque (+/-15%)	-
Built-in I/O	Built-in I/O	Built-in I/O
5 digital inputs	7 digital inputs	4 digital inputs
2 relay outputs	3 digital outputs, 1 relay output	1 relay output
2 analog inputs	2 analog inputs	1 analog input
1 analog output	1 analog output	-
Optional I/O	Optional I/O	Optional I/O
-	Control Power backup card	4 digital input , 3 relay outputs combo card
-	-	1 analog input, 1 analog output, 3 relay outputs combo card
-	-	CFW320-IOP Potentiometer Module
-	-	Encoder (400hz). 1 analog input, 2 analog output combination card
-	-	3 high-speed input/3 high-speed outputs combo card
Keypad	Keypad	Keypad
Fixed mount, remote keypad option available	Removable and remote mountable. Advanced keypad option.	Fixed mount, remote keypad option available
Communication Supported	Communication Supported	Communication Supported
Modbus RTU over RS485	Modbus RTU over RS485	-
Optional Communications	Optional Communications	Optional Communications
EtherNet/IP and Modbus TCP with option card	EtherNet/IP and Modbus TCP with option card	Optional EtherNet/IP, Modbus TCP, RS232, RS485, Modbus RTU, and USB programming modules
Safety Ratings	Safety Ratings	Safety Ratings
-	Safe Torque Off (STO) SIL2	-
Environmental Ratings	Environmental Ratings	Environmental Ratings
IP20 rating, optional conduit box to rate assembly for NEMA 1	IP20 rating, optional conduit box to rate assembly for NEMA 1	IP20 rating
Additional Features	Additional Features	Additional Features
Built-in dynamic braking	Built-in dynamic braking	Built-in dynamic braking on 230V frame size B units and all sizes of 460V units
Built-in din rail mount	Built in PLC, Optional Din Rail mount	Built-in PLC
-	-	Built-in DIN rail mount
PID Control	PID Control	PID Control
Free VFD Suite software for configuration, programming and monitoring	Free GSoft2 software for configuration and GSLogic software for PLC programming	Free WPS programming software for drive configuration and monitoring as well as PLC programming



DURAPULSE® GS20 AC Drives



DURAPULSE GS20 AC Sensorless Vector Drives

The DURAPULSE GS20 series AC drives have all of the features of the GS10 series, plus internal PLC, optional Ethernet communications and other new features not found on other drives. And all at a great price.

EtherNet/IP™



	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:

Input Volts:

Model Line:

Input Phase:

Series Name:

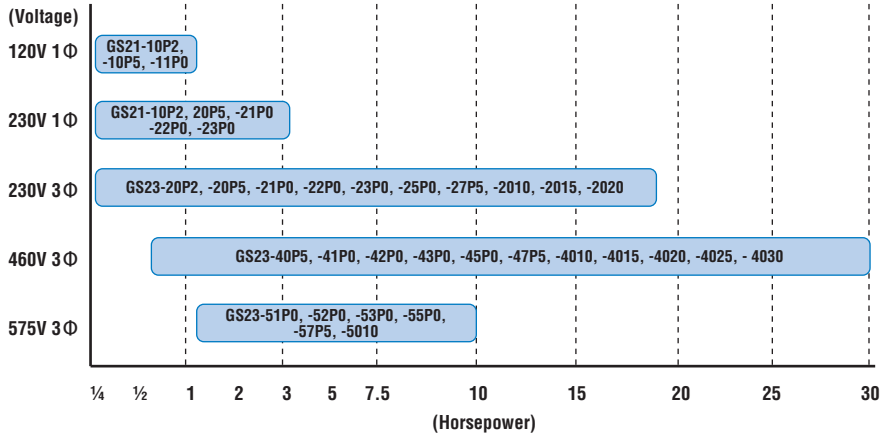
OP2: 0.25hp, OP5: 0.5hp, 1P0: 1.0hp, 2P0: 2.0hp, 3P0: 3.0hp, 5P0: 5.0hp, 7P5: 7.5hp, 010: 10hp, 015: 15hp, 020: 20hp, 025: 25hp, 030: 30hp

1: 120VAC, 2: 230VAC, 4: 460VAC, 5: 575VAC

blank: Std GS20, X: NEMA 4X, A: Accessory

1: single phase, 3: three phase

GS2_ = GS20

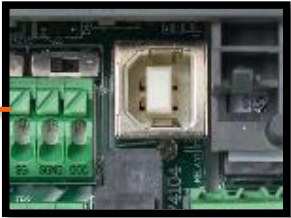


Removable Keypad can be remotely mounted.
5-digit, 7 segment LED display;
Speed control potentiometer



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)

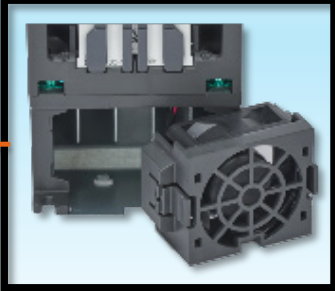


Built-in USB port for fast
& easy programming



QR Code for remote
access to product
details (online)

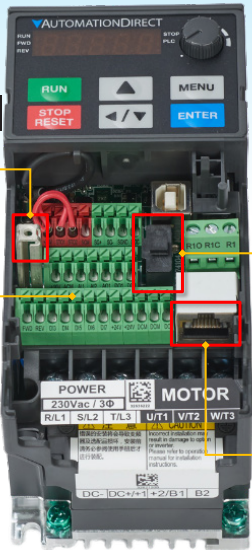
Removable fan, fast &
easy to replace



Option card mount

Spring clamp
terminal blocks

Option card
connector



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.



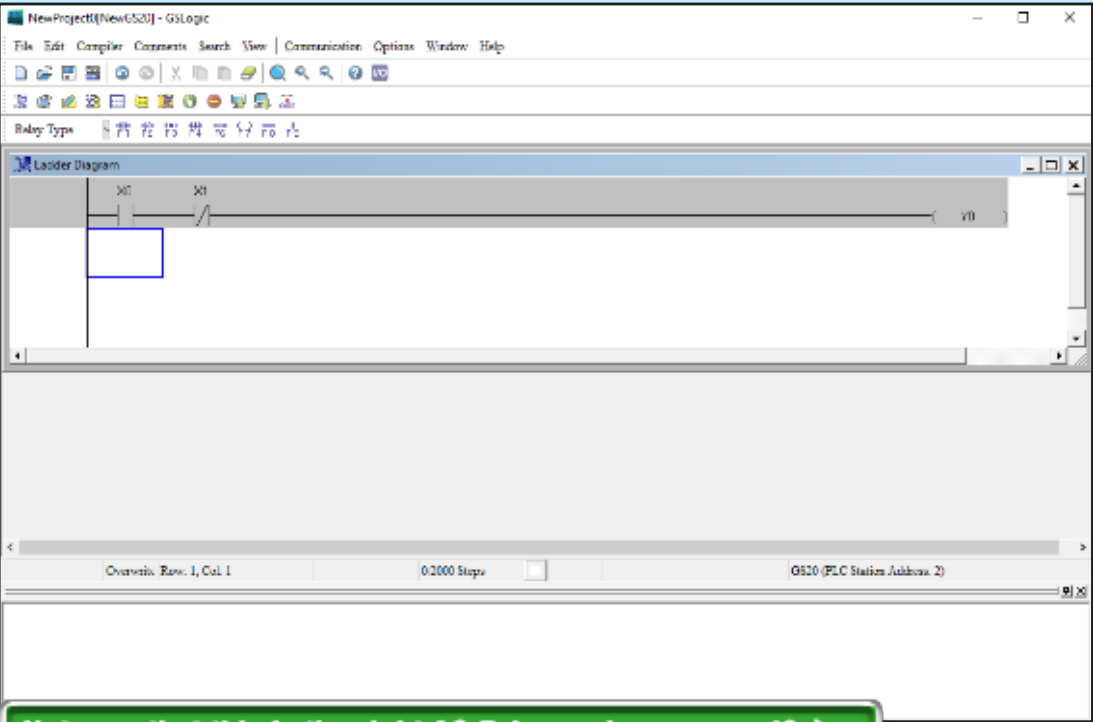
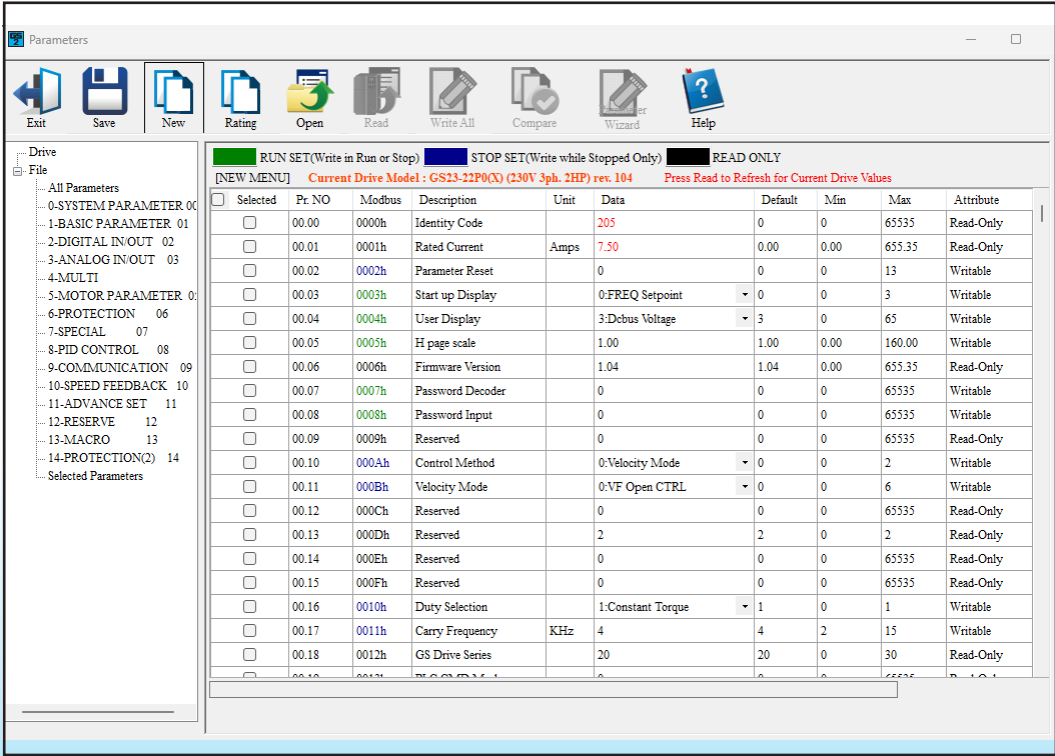
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Click for a complete selection guide

GS20 Programming

The GS20 VFDs support parameter configuration, setup and troubleshooting via the GSOF2 software. Easy software connection via built in USB port, or connect using the Ethernet communications option card. 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.



GSOF2 – for parameter configuration, setup, troubleshooting & FW upgrade



GSLOGIC – for the built-in PLC ladder program



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)	Torque Control	SVC Mode	FOC Mode
Induction Motor (IM)	Torque	150% @ 3Hz	150%	150% @ 3Hz	200% @ 0.5Hz
	Accuracy	1:50 speed control	+/- 15%	1:50 speed control	1:100 speed control
Permanent Magnet (PM)	Torque	NA	150% +/- 15%	100% @ 1/20 rated Hz	NA
	Accuracy			1:20 speed control	

GS20 Additional Features

You will be hard-pressed to find a drive for the same price with all of the features it supports. In addition to the features already described, the GS20 also supports:

- V/Hz, sensorless vector, and 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
- Also available in a NEMA 4X version the GS20X

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



IronHorse® ACG Series AC Drives

The ACG series of sensorless vector AC drives bridge the gap between a micro drive and high-performance VFD. The ACG series AC drives have features normally only found on more expensive drives but at a great price.



Internal cooling fans on all models. Additional external forced fans on larger frame sizes.



Built-in keypad with display and potentiometer. Remote keypad is optional.

QR Code for remote access to product details (online).

Built-in dynamic braking circuitry supporting 150% braking torque. No need for an external braking unit.

IP20 enclose protects internal electronics. NEMA 1 conduit boxes are optional.

Screw terminals for reliable wiring termination.

RJ45 connection for built-in Modbus RTU communications. (Optional Ethernet module for Modbus TCP and EtherNet/IP support).

2 relay outputs

Spacious power wiring terminals



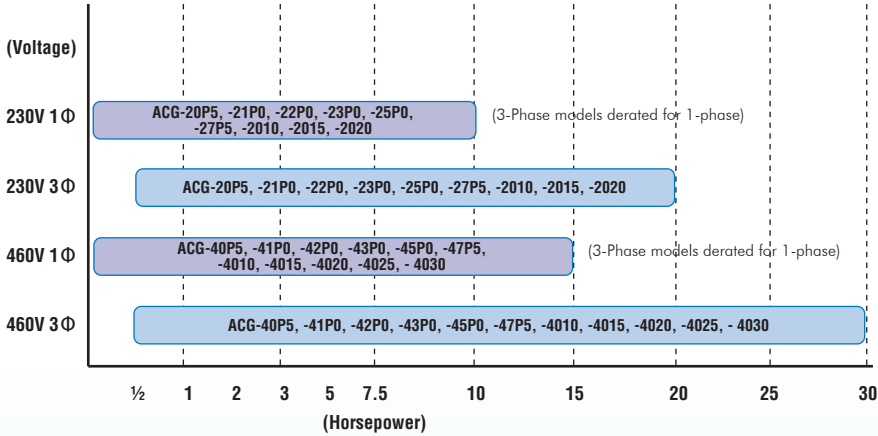
	230V 3-ph	460V 3-ph
Frame A - HP	1/2, 1	1/2, 1
Frame B - HP	2, 3	2, 3
Frame C - HP	5	5
Frame D - HP	7.5, 10	7.5, 10
Frame E - HP	15, 20	15, 20
Frame F - HP		25, 30
Part #s	ACN/ACNND-2	ACN/ACNND-2 ACN/ACNND-4 ACN/ACNND-4

ACG-47P5

Motor HP: 0P5: 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: 2: 230VAC, 4: 460VAC,

Series Name: ACG_ = IP20 AC Drive



Robust Construction

The ACG series meets UL 61800-5-1 standards. Modern Military (MIL 217Plus) design based methodology provides great reliability.

Option Modules

For remote interface, ACG has you covered with, a keypad for remote mounting or an Ethernet card for ModbusTCP or EtherNet/IP communications protocols.

Optional Conduit Boxes

Optional conduit box accessories upgrade the environmental protection rating of the ACG drives from IP20 to NEMA 1.

Zero-Stack Installation

This space-saving feature allows the ACG drives to be installed right next to each other without overheating.



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

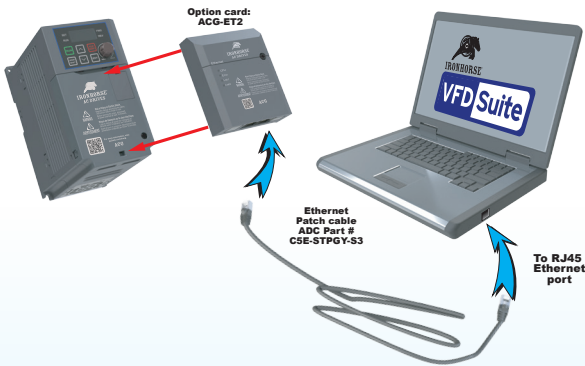
Additional ACG Series Features

These are just some of the features for the ACG series drives. You will be hard-pressed to find a drive for the same price with all of the features it supports.

- Single-phase UL Ratings - 230 or 460 VAC input
 - Supports several different control modes including V/Hz, slip compensation, and sensorless vector
 - Flexible carrier frequency to 15khz
 - Output frequency to 400Hz (120Hz sensorless vector)
 - Built-in RJ45 port for fast & easy programming
 - Free downloadable software for drive configuration
 - Local/Remote control mode selection or digital/comm input with Hand/Off/Auto control
 - Momentary power loss restarts
 - PCB conformal coating
 - 100kA Short Circuit Current Rating
 - DC Bus Connection Terminals
- Discrete I/O - 5 inputs and 2 relay outputs
 - Analog I/O - configurable 2 inputs and 1 output (voltage)
 - 2-motor control
 - Built-in dynamic braking
 - PID Controller - including sleep and wake
 - Password protection
 - High speed communication interfaces with MODBUS RTU built-in, with optional EtherNet/IP and Modbus TCP Communication Card
 - Fire Mode - Run fire mode during emergencies to have uninterrupted smoke removal and system pressure
 - 2-year warranty
 - CE, UL, cUL
 - Also available in NEMA 4X versions as the ACN and ACNND

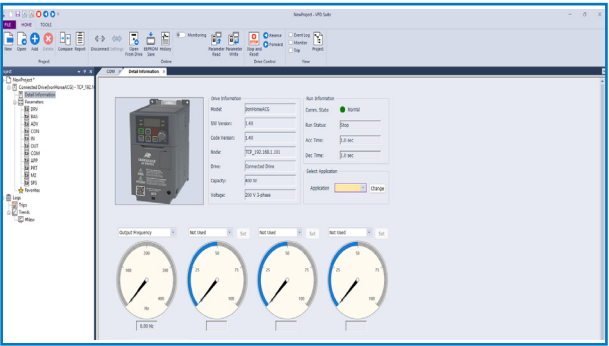
EtherNet/IP™
Optional Ethernet Capability

A low cost drive doesn't have to sacrifice modern communications. The ACG-ET2 module is easily mounted on the front of the drive, and provides Ethernet communications through Modbus TCP or EtherNet/IP. Dual ports allow point to point or daisy chain wiring configurations. Connect a laptop to the same Ethernet network, and seamlessly connect VFD suite software for easy configuration and monitoring of your ACG drive.

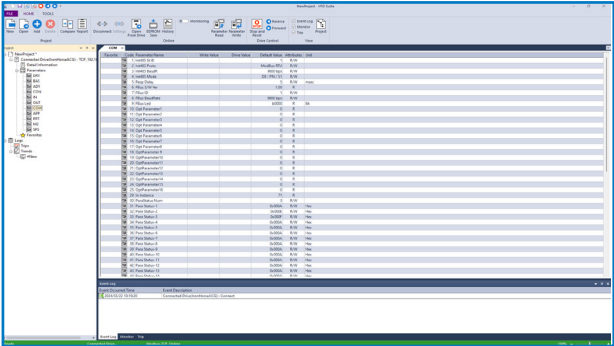


ACG Series Programming

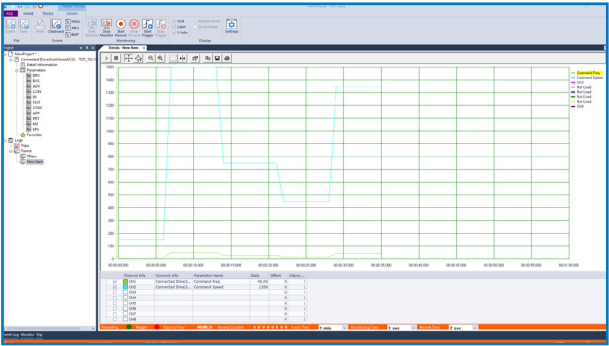
The ACG series VFDs support creating new drive configurations, uploading/downloading new drive configurations, editing/comparing drive configurations and more using VFD Suite (available as a free download). The software is also available on a USB card if needed.



VFD Suite allows you to see everything there is to know about the connected drive



See all parameters available in the connected ACG series drive



VFD Suite supports advanced functionality such as trending

Additional Features of VFD Suite

- Utilize Parameter Wizard for easy configuration
 - Archive/Store multiple drive configurations on your PC
 - Trend drive operation parameters
 - Tune the drive PID loop
- View real-time key operating parameters
 - Start/Stop drive and switch directions, provided drive is set up for remote operation
 - View drive faults



The USB-485M cable allows for a quick and simple connection for programming the ACG series drives. Programming the drives is also supported over Ethernet if an ACG-ET2 module is installed.

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

WEG CFW320 AC Drives

EtherNet/IP™ CFW320 Series VFDs



Starting at
\$165.00

Typical Applications

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

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

- 1/4 to 1.5 hp, 120V (single-phase input)
- 1/4 to 3 hp, 230V (single-phase input)
- 1/4 to 5 hp, 230V (three-phase input)
- 1/2 to 10 hp, 460V (with or without dynamic braking)
- Scalar (V/Hz) or sensorless vector control modes
- Built-in keypad display (with optional remote keypad)
- Optional memory module for easy project transfer
- DIN-rail or surface mount
- Generous built-in I/O:
 - 4 digital input points
 - 1 relay output point
 - 1 analog output channel
- Four expansion I/O modules available
- Optional communications modules
 - Ethernet—Dual-port EtherNet/IP or Modbus TCP
 - RS-232 Modbus RTU
 - RS-485 Modbus RTU
 - USB (config & programming only)
- Zero-Stack mounting; no heat dissipation space required beside/between adjacent drives
- cUL, CE
- **For 120V/230V applications that don't require Ethernet communications, the CFW300 provides all the same features at a reduced price point.**

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, updating, 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



[Click here to download](#)

Welcome screen takes new users right to the most common activities

Changed parameters (awaiting download) are highlighted

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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

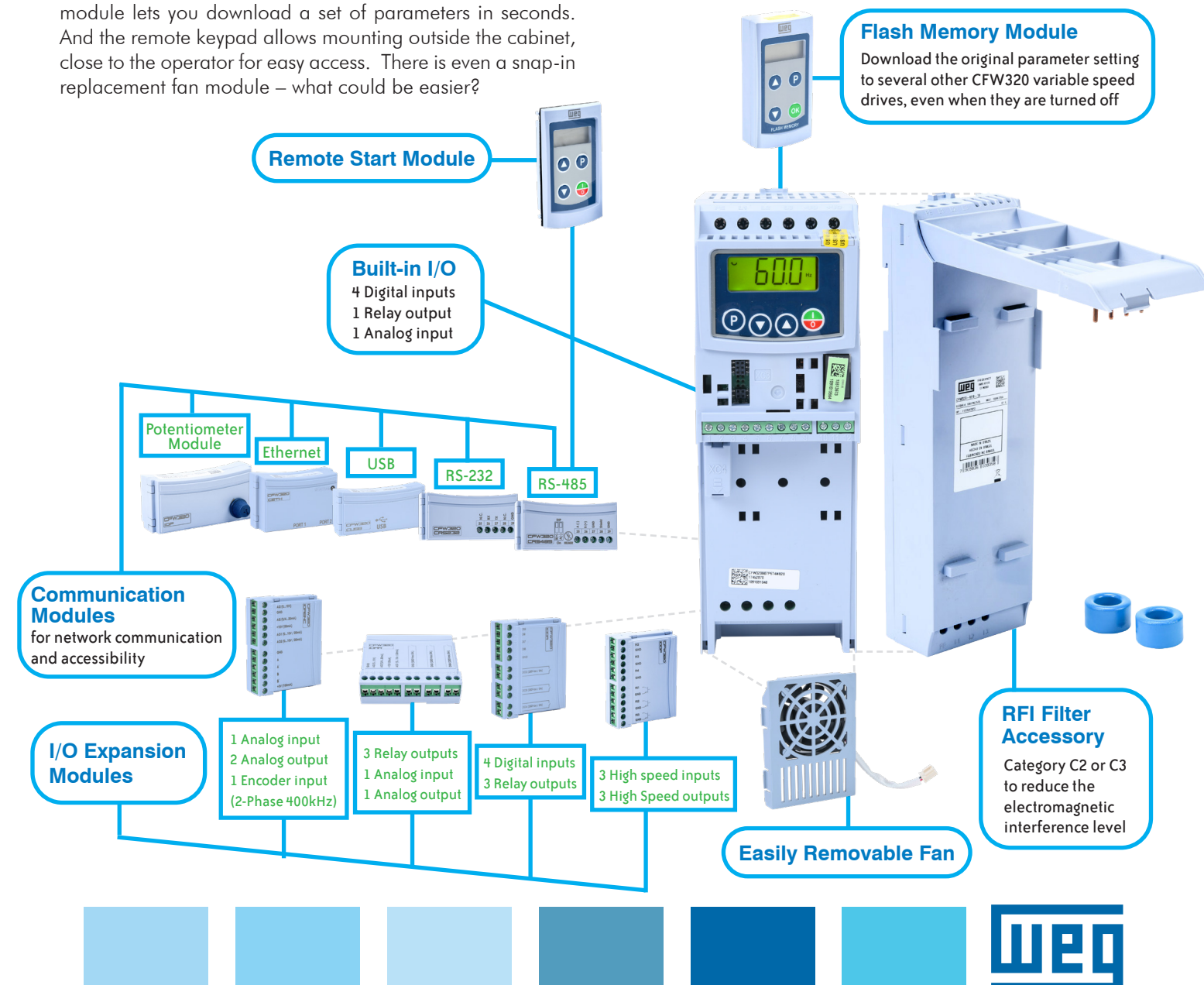
Add communications option cards, I/O option cards, an RFI filter, and more – it all just snaps together. The flash memory module lets you download a set of parameters in seconds. And the remote keypad allows mounting outside the cabinet, close to the operator for easy access. There is even a snap-in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



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

Communicate with other factory devices

Use the Ethernet, RS-232, and RS485 communications option cards to communicate with other AC drives, PLCs, and other devices over EtherNet/IP, Modbus TCP, or Modbus RTU. Each card allows 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.



www.automationdirect.com/drives

General Purpose AC Drives

mGAD-15

mGAD-14 General Purpose AC Drives

AUTOMATIONDIRECT.com

1-800-633-0405

WEG CFW300 AC Drives



CFW300 Series VFDs

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- 1/4 to 3 hp, 230V (single-phase input)
- 1/4 to 5 hp, 230V (single- or three-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)
- DIN-rail or surface mount
- Generous built-in I/O:
 - 4 digital input points
 - 1 relay output point
 - 1 analog output channel
- Three expansion I/O modules available
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 - RS-485
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- cUL, CE

Typical Applications

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[Click here to download](#)



Other great Quick Start features include:

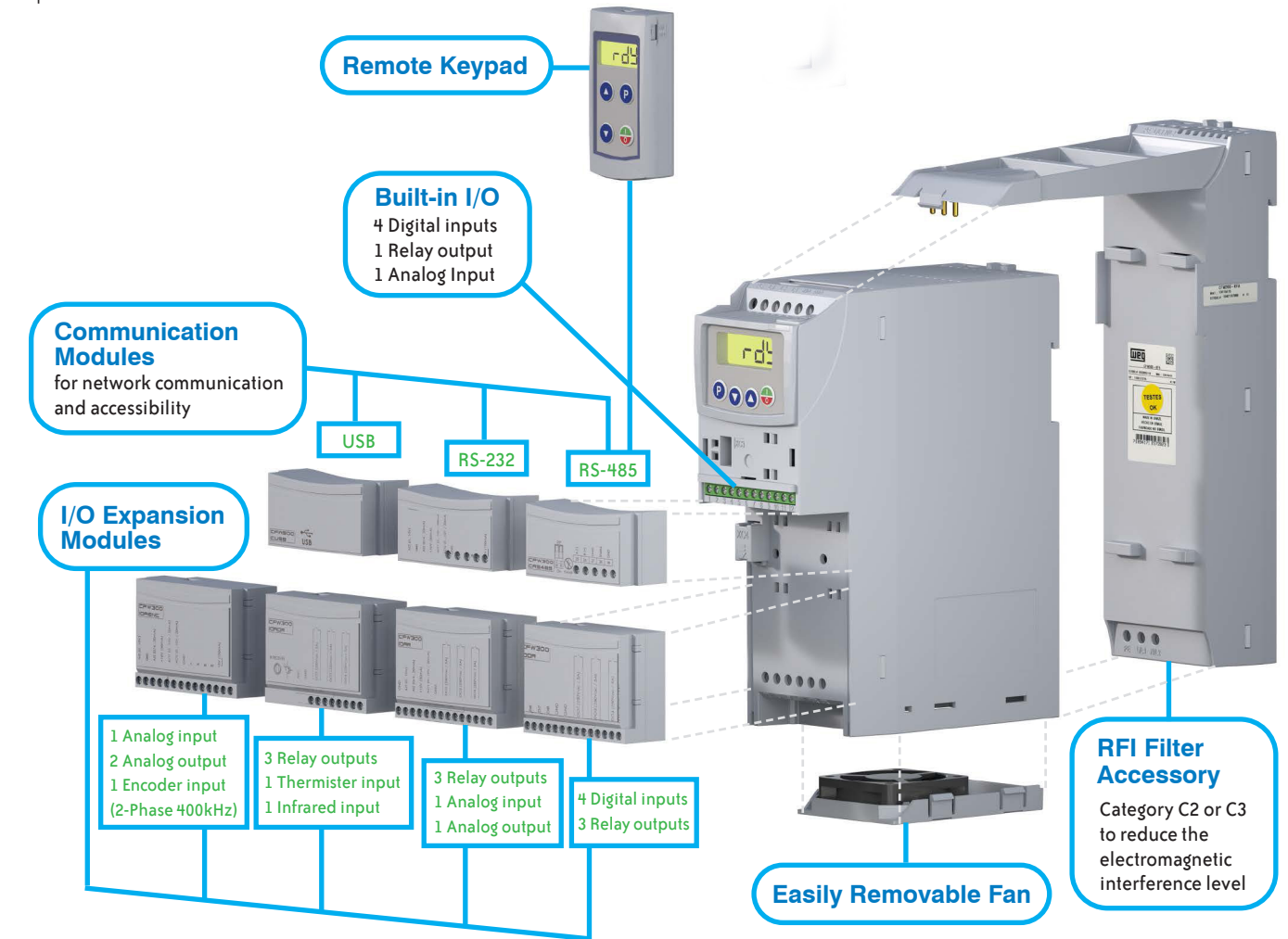
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Communicate with other factory devices

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.

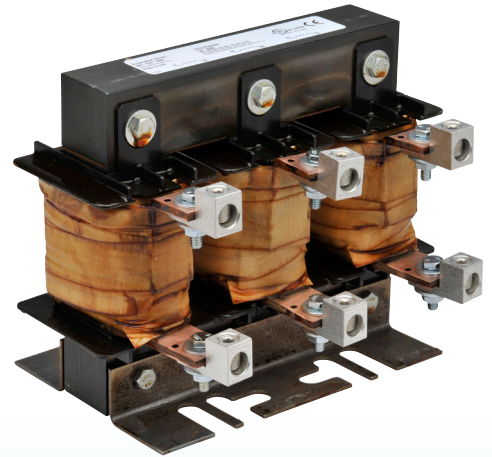
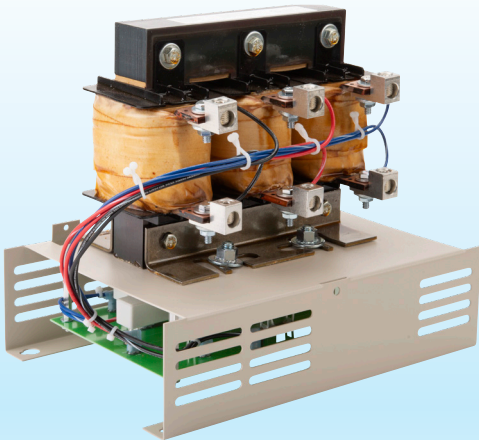
AC Drive Accessories

AC Line Reactors

Line reactors are an option to protect and optimize any AC drive and motor installation. Input line reactors provide many benefits to AC drives, including less nuisance tripping, reduced drive downtime, improved power factor, increased drive life, and sensitive equipment protection.

When used on the load side between the AC drive and the motor, reactors decrease voltage spikes between the motor and drive, increasing the reliability and longevity of both. Recommended for load-side applications with wiring lengths of 100 feet or less.

- Voltage support of 120 VAC and 230 VAC single-phase; 230, 460, and 575 VAC three-phase
- Sizes up to 361 Amps



VFD Output Filters

VTF series output (dV/dt) filters provide protection against harmful reflected waves between the VFD output and AC motor. These are recommended for any application when motor protection is critical or for any motor wiring distance from 100-1,000 feet. The filters ensure voltage spikes are limited to below 1,000 V.

Output filters also provide other benefits, such as reduced motor heating, increased motor bearing life, and reduced common mode current.

- Voltage support of 208-600 VAC
- Sizes up to 362 Amps
- NEMA1 versions available for mounting outside of the panel

GS Brake Resistors

Brake resistors are used to increase the braking torque of the AC drive, for frequently repeated ON-OFF cycles of the AC drive, or for decelerating a load with large inertia. Brake resistors are compatible with various AC drives (check specifications for selection).

- Available power ratings from 80 W to 9.6 kW
- Resistance ratings from 3.3 to 750 Ohms
- Available in encapsulated, panel mount, and in a NEMA 1 enclosure with temperature switch



CROHM Brake resistors

CROHM brake resistors are designed and manufactured in the USA with ISO 9001 certification. They can be used with any AC drive up to 600 V (check specifications for selection). These resistors come enclosed in a NEMA 1 enclosure and include a built-in temperature switch.

- Available power ratings from 240 W to 18 kW
- Resistance ratings from 3.7 to 400 Ohms
- Stainless steel bus bars
- Pre-wired terminal blocks
- CSA compliance to CSA 22.2 and UL 508 standard
- CE compliant

