

Reliance Electric GV3000/SE Industrial AC Drive

RELIANCE
ELECTRIC 

*Multi-Purpose variable speed control of
0.75-200 kW three-phase motors, with Volts/Hertz or
Vector mode operation as standard*



Rockwell
Automation

FLEXIBLE Control

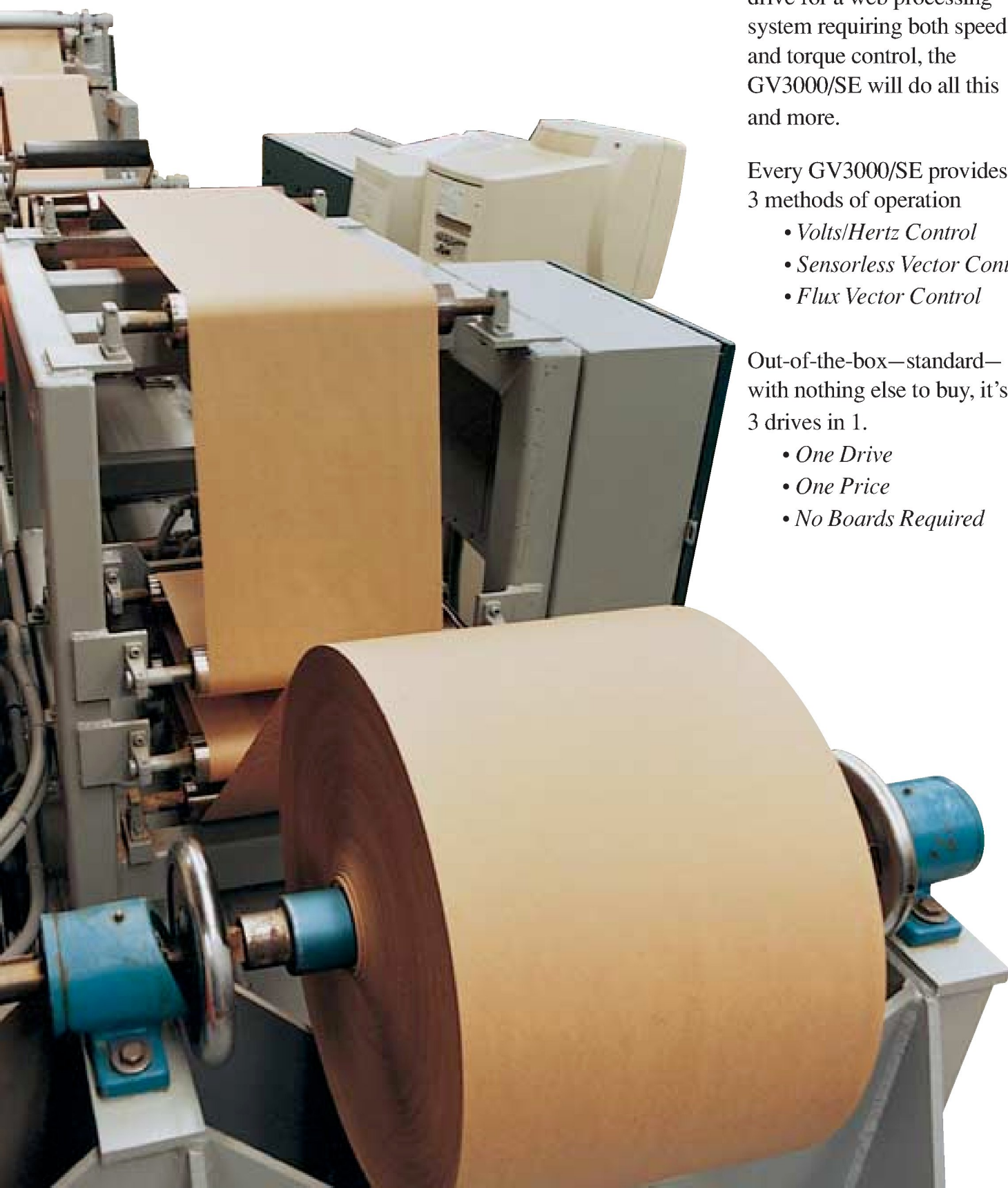
Whether you need a simple drive for operating fans and pumps, or a high performance drive for a web processing system requiring both speed and torque control, the GV3000/SE will do all this and more.

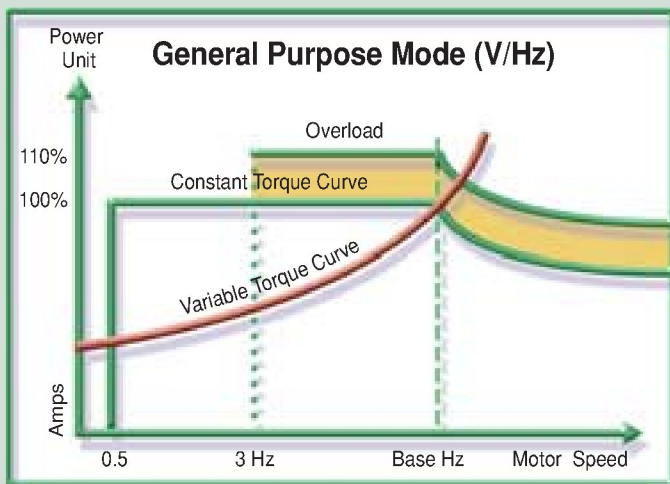
Every GV3000/SE provides 3 methods of operation

- *Volts/Hertz Control*
- *Sensorless Vector Control*
- *Flux Vector Control*

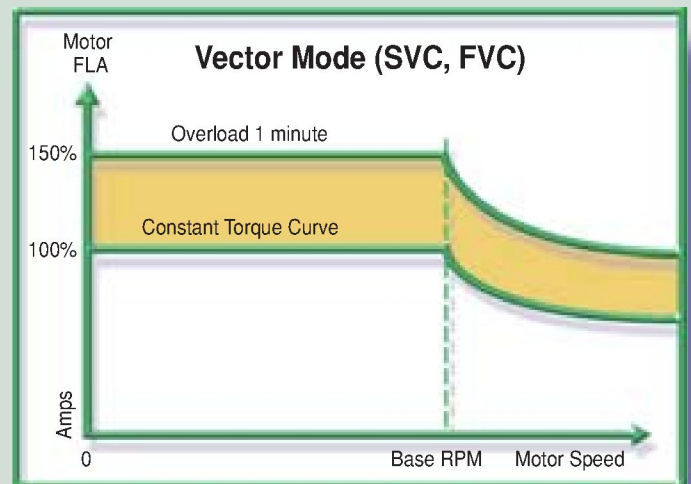
Out-of-the-box—standard—with nothing else to buy, it's 3 drives in 1.

- *One Drive*
- *One Price*
- *No Boards Required*





General Purpose Mode **Volts/Hertz** allows classical variable speed control of single or multiple motors from one drive. Operate either squirrel-cage induction or permanent magnet synchronous AC motors in this control mode. It's ideal for applications such as centrifugal fans and pumps, or conveyor applications.



Vector Mode allows operation in either open loop **Sensorless Vector** control or closed loop **Flux Vector** control. Selection between the two is done simply by selecting the Encoder PPR value. Choose a numerical PPR for closed loop operation, or choose "SE" for Sensorless Enhanced open loop operation. In most cases, tuning the drive isn't even necessary when switching between Sensorless and Flux Vector control due to the shared parameter set used for both methods of control.

RATINGS and Packaging



IEC-rated design for space optimization. Includes 7th IGBT for braking.



☐ **Bookshelf Packaging
for Panel Mounting**

IP20 Bookshelf Drives	
• 380 to 460 VAC	2.1 to 30 A



☐ **Standard Packaging
for Panel Mounting**

IP20 Drives	
• 380 to 460 VAC	38–360 A



Washdown duty – ideal for food processing environments.

NEMA 4X / IP54 Drives (Washdown)	
• 380 to 460 VAC	1–5 HP



Keep dust and dirt from contaminating the drive without the cost of a separate enclosure.

NEMA 12 / IP52 Drives (Dust Tight)	
• 380 to 460 VAC	1–20 HP

EMBEDDED Solutions

Option boards for various needs mount cleanly inside every GV3000/SE design. Network communications and I/O expansion cards connect directly to the GV3000/SE Regulator through a high-speed dual-port connection. With either of these options installed, you can take advantage of GV3000/SE's inner and outer control loops to adapt to any application.

Communicate to GV3000/SE on AutoMax®, DeviceNet™, ControlNet, Interbus, Profibus DP or other networks.

OR

Isolated digital & analog I/O expansion with Super RMI

A dual-port connection allows direct access to the 32-bit, Motorola 68332® processor for quick acknowledgement and response in networked applications.

I/O expansion allows terminal connections for more advanced drive control:

- PI setpoint control
- Outer loop trim of speed or torque for:
 - Inertia compensation
 - Current compounding
- Frequency input
- Additional preset speeds
- Assign relay outputs for:
 - Speed & torque setpoints
 - On-Delay logic



***mounted inside
the GV 3000***



SIMPLE

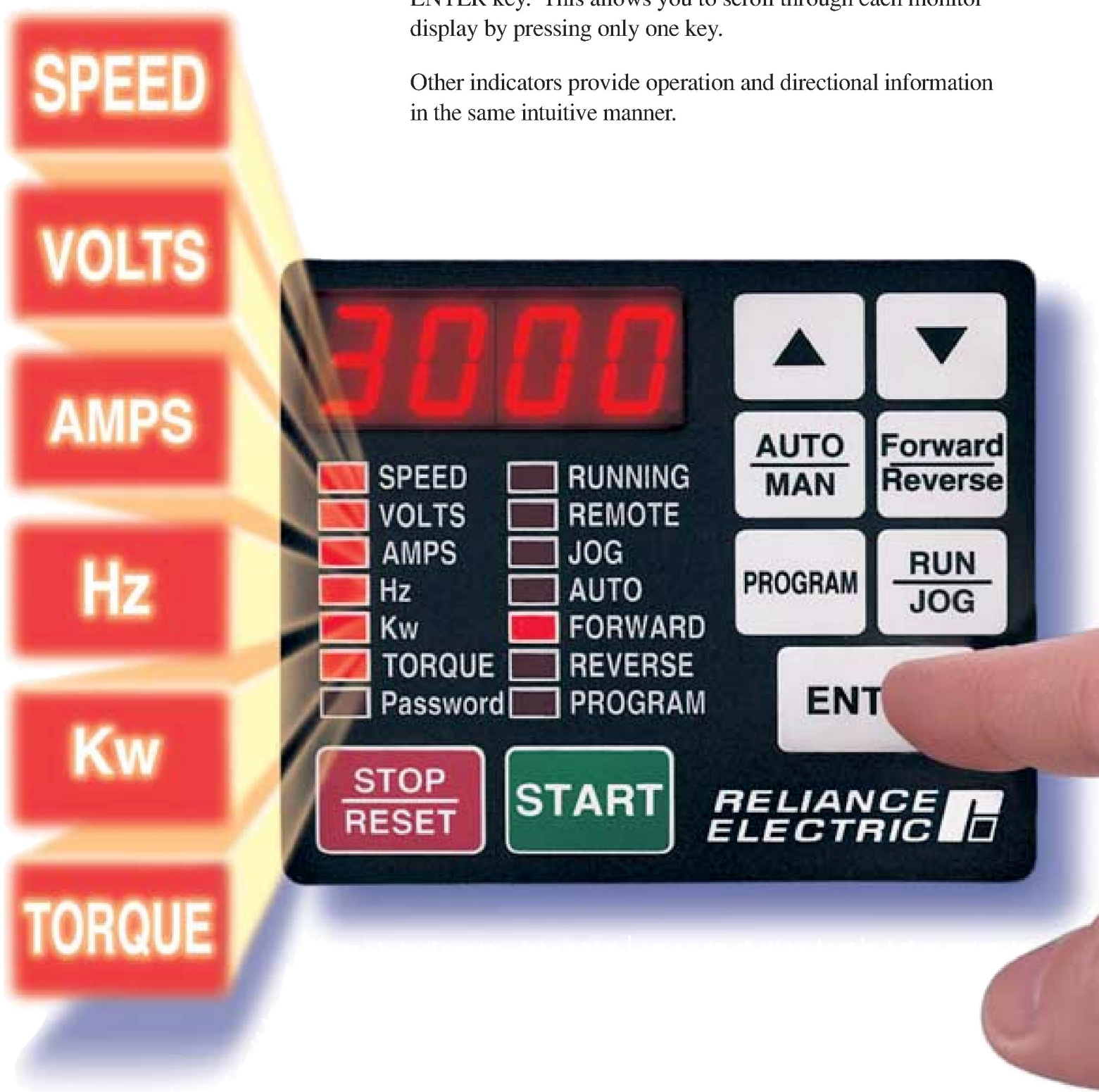
Operation and Setup

Built into every GV3000/SE is this simple to use display and keypad. Bright LEDs provide clear indication of programming, operating, and monitoring values.

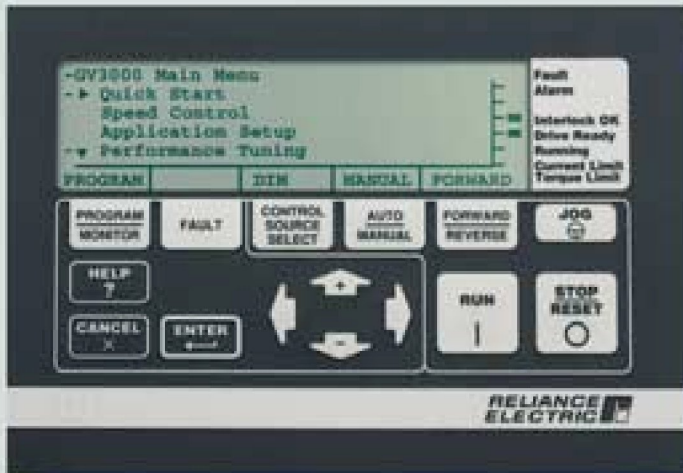
Arrow keys are used to change speed as well as to change data.

Monitoring of motor operation is done easily by pressing the ENTER key. This allows you to scroll through each monitor display by pressing only one key.

Other indicators provide operation and directional information in the same intuitive manner.



Optional Operator Interface Module



The Operator Interface Module (OIM) provides a remote-mounted drive interface.

The large, easy-to-read graphical display and function keys allow simple operator control, monitoring, and diagnostics.

A built-in help menu provides clear descriptions of drive setup and operation.



Help Menu

- Provides text description of parameter operation and use
- Eliminates the need to refer to instruction manuals
- Provides description of OIM operation



Monitor Operation

- Select 2, 4, or 6 lines of motor information
- Adjust text contrast for readability
- View intuitive status messages without selecting menus



Setup is made easy with self-prompting menus and parameter groupings.

Main Menu display allows selection

- Quick Start
- Speed Control
- Application Setup
- Performance Tuning
- Motor Data

- Drive Status
- Regulator Terminal Strip
- Option Port Configuration
- Memory Functions
- Additional Parameters



Displays can be shown in 5 languages.

Language Menu

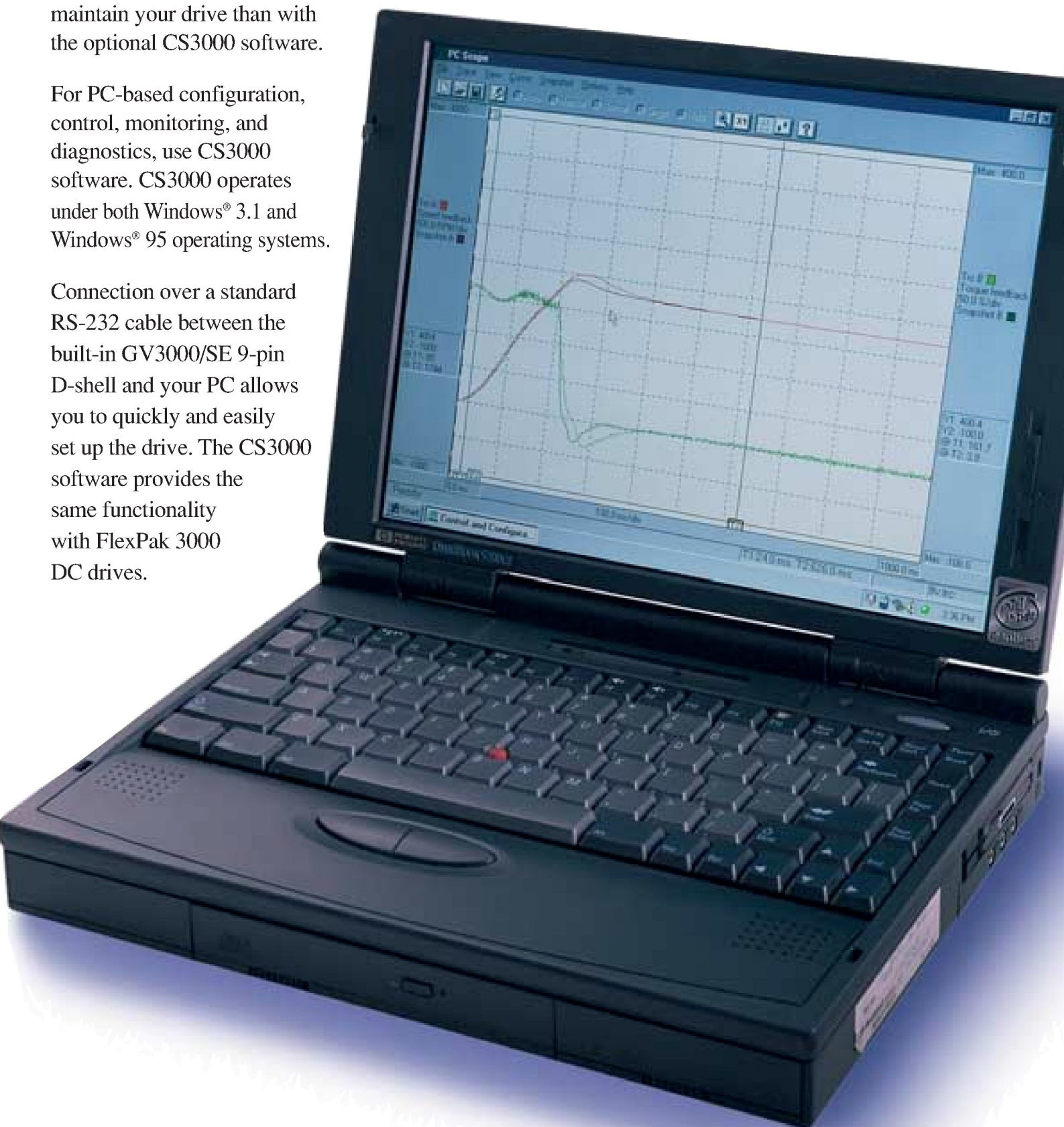
- English
- Deutsch
- Français
- Español
- Italiano

INTUITIVE Software

There's no easier way to configure, document, and maintain your drive than with the optional CS3000 software.

For PC-based configuration, control, monitoring, and diagnostics, use CS3000 software. CS3000 operates under both Windows® 3.1 and Windows® 95 operating systems.

Connection over a standard RS-232 cable between the built-in GV3000/SE 9-pin D-shell and your PC allows you to quickly and easily set up the drive. The CS3000 software provides the same functionality with FlexPak 3000 DC drives.



CS3000 Version 6.0 with PC Scope

Now, with the power of an oscilloscope on your PC, use the PC Scope™ feature to tune, diagnose, and analyze the performance of your application. Data can be saved as scope trace files or converted to ASCII for use in a spreadsheet. Overlay new scope traces over old with the Snapshot function to tune machine performance.

Configuration Editor

Assign OK Cancel Help

P.000 = Local	Control source
P.001 = 0.1 Sec	Accel time 1 (RAMP 1)
P.002 = 0.3 Sec	Decel time 1 (RAMP 1)
P.003 = 0 RPM	Minimum speed
P.004 = 1736 RPM	Maximum speed
P.005 = 150 %	Current limit
P.007 = 0	TS digital inputs config
P.008 = Analog	TS speed ref source

* Do not change parameters marked with * before reading understanding the Dangers, Warnings and Cautions in Instruction Manual.

The Configuration Editor allows you to select and configure drive parameters at the drive or at your desk. Upload and download parameter settings from drive to drive. Save parameters as files for future reference and for ease of printing. Upload and compare parameter file settings to identify possible parameter changes.

Parameter Monitor

Parameter Add Remove Assign Parameter List Save Recall Clear Close Help

P.001:0.1	Sec	Accel time 1 (RAMP 1)	U.004:1.6	Amps	Motor nameplate amps
P.002:0.3	Sec	Decel time 1 (RAMP 1)	U.005:1717	RPM	Motor nameplate RPM
P.003:0	RPM	Minimum speed	U.006:55.0	%	Magnetizing current
P.004:1736	RPM	Maximum speed	U.007:230	Volts	Motor nameplate volts
P.025:RAMP		Stop type	U.008:Off		Torque self-tune enable
	Sec	Line dip ride thru time	U.012:6.00		Speed reg preprot gain
	V/Hz or Vector reg	Encoder PPR	U.013:8.00	rad/s	Speed reg integral gain
	Motor poles	Encoder PPR	U.014:0.45		Torque reg preprot gain
	Hz	Motor nameplate freq	U.024:On		Hi bus fault avoid enable
			U.025:5.0	Sec	Zero speed braking time

Connected - Vector

Create a custom list of 20 tuning parameters to aid in application setup. Changes are downloaded immediately for you to observe in your application.

Drive Control

Manual reference Min 0 Max 1736 1675 RPM Set

Drive metering

Reference	1675	RPM
Motor Speed	1676	RPM
Motor Current	1.2	Amps
Motor Voltage	217	Volts
Motor Torque	63	%
Output Power	0.24	KW

Drive control

Manual mode Auto/Man Forward Ewd/Rev Running Run Jog reference 150 RPM Jog Jog Set Stop/Reset

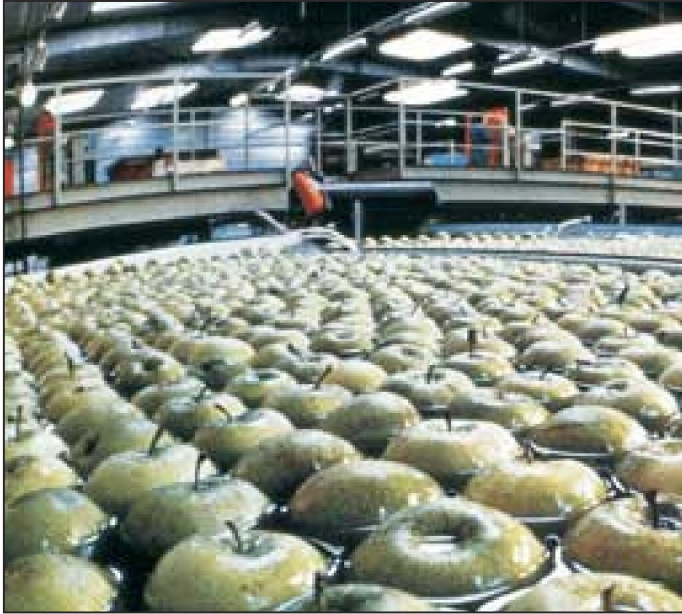
Control source

☐ Keypad ☐ Terminal block ☐ Network ☒ Serial (CS3000)

Close Help

From your PC you can operate the drive and monitor motor performance, including speed, current, voltage, torque, and kW.

ADAPTABLE in Application

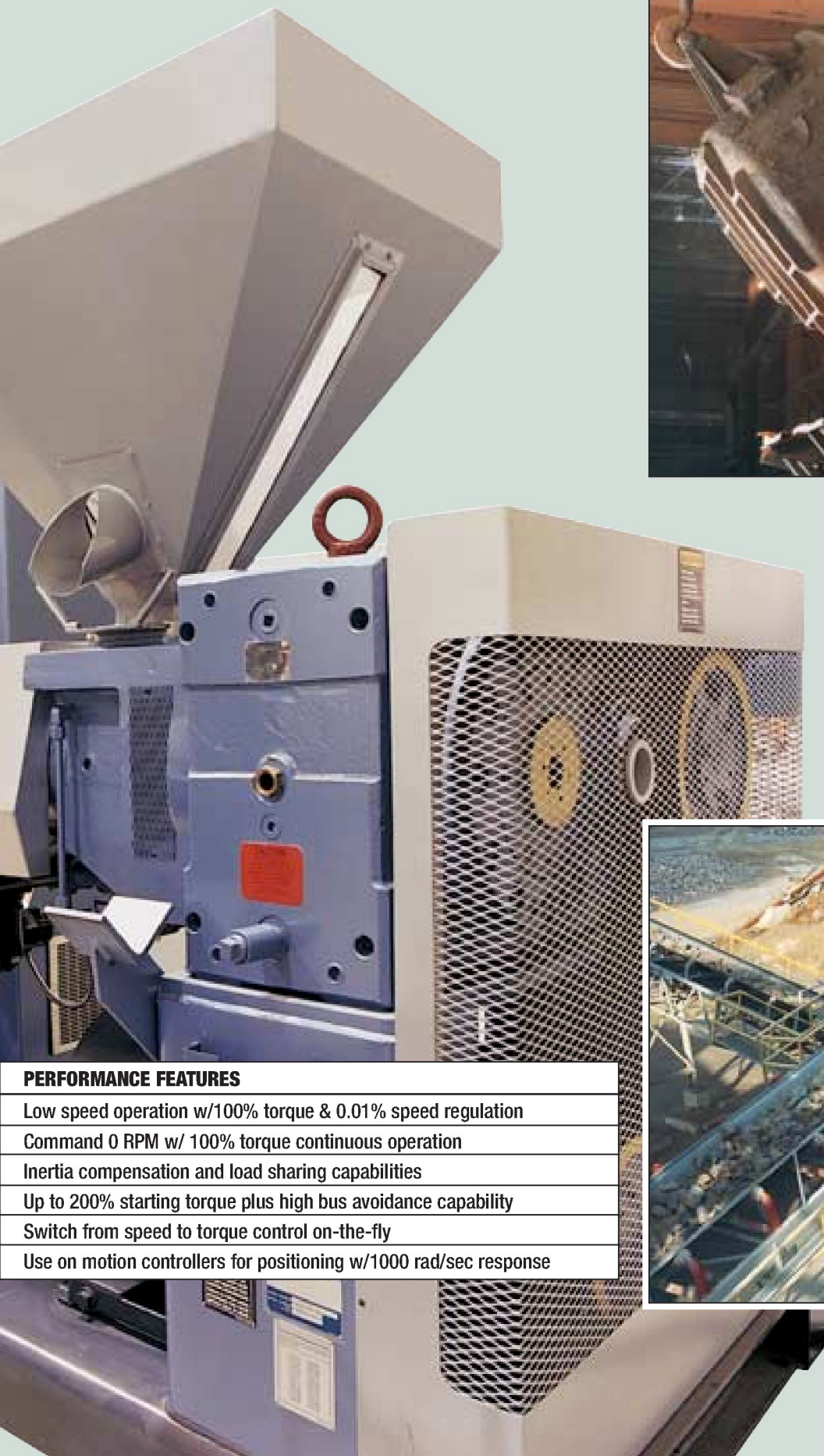


For demanding applications that were once dominated by DC drives and other control technologies, look to the GV3000/SE in Vector Mode for high performance along with reduced operating and maintenance costs.



APPLICATIONS

Extruders
Material Handling
Web Processing
Punch Presses
Test Stands
Metering Pumps



PERFORMANCE FEATURES

- Low speed operation w/100% torque & 0.01% speed regulation
- Command 0 RPM w/ 100% torque continuous operation
- Inertia compensation and load sharing capabilities
- Up to 200% starting torque plus high bus avoidance capability
- Switch from speed to torque control on-the-fly
- Use on motion controllers for positioning w/1000 rad/sec response

United Kingdom

Rockwell Automation Limited
Pitfield
Kiln Farm
Milton Keynes
Buckinghamshire, MK11 3DR
Tel: (44-1908) 838 800
Fax: (44-1908) 261 917

Ireland

Rockwell Automation Limited
Naas Road Industrial Park
Naas Road
Dublin 12
Tel: (353-1) 4508164
Fax: (353-1) 4565474

Republic of South Africa

Rockwell Automation (Proprietary) Limited
Lone Creek, Block D
Waterfall Park
Midrand
Tel: (27-11) 654 9700
Fax: (27-11) 654 9800

Belgium

Rockwell Automation SA/NV
De Kleetlaan 2b
1831 Diegem
Tel: (32-2) 716 84 11
Fax: (32-2) 725 07 24

Czech Republic

Rockwell Automation s.r.o.
Nad Vrsovskou horou 88/4
101 00 Prague 10
Tel: (420-2) 67 10 7413
(420-2) 67 10 7483
Fax: (420-2) 67 10 7415

Denmark

Rockwell Automation A/S
Vejlsoevej 51
DK-8600 Silkeborg
Tel: (45-89) 21 2144
Fax: (45-89) 21 2145

Netherlands

Rockwell Automation B.V.
Amsterdamseweg 15
1422 AC Uithoorn
Tel: (31-297) 543 500
Fax: (31-297) 560 701

Poland

Rockwell Automation
c/o Arconsulting Ltd.
ul. Smolenskiego 1/16
01-698 Warszawa
Tel: (48-22) 639 35 11
Fax: (48-22) 639 35 10

Portugal

Rockwell Automação Lda.
TAGUSPARK
Edifício Inovação II, No. 314 e 324
2780 Oeiras
Tel: (351-1) 422 55 00
Fax: (351-1) 422 55 28

Russia

Rockwell International Overseas Corporation
Bolshoi Strochenovskiy Pereulok No. 22/25
Fourth Floor, Suite 403
113054 Moscow
Tel: (7-095) 230 6010, -11, -12, -13
Fax: (7-095) 230 6014
(7-095) 230 6015

Sweden

Rockwell Automation AB
Finlandsgatan 52
S-164 74 Kista
Tel: (46-8) 477 40 00
Fax: (46-8) 477 40 40

United Arab Emirates

Rockwell Automation B. V.
Al Moosa Tower
Sheikh Zayed Road
P.O. Box 51022
Dubai
Tel: (971-4) 311 814
Fax: (971-4) 312 164

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Americas Headquarters: 1201 South Second Street, Milwaukee, WI 53204, USA, Tel: (1) 414 382-2000, Fax: (1) 414 382-4444
European Headquarters S.A.M.V.: avenue Hermine Debroux, 46, 1180 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Asia Pacific Headquarters: 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2987 4788, Fax: (852) 2508 1846



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