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Find the *TB Woods UVC4002-0H* at our website: ***Click HERE***



E-TRAC®

UVC

VECTOR CONTROL

TB Wood's

Powering Your Success

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INTRODUCING: UVC VECTOR CONTROL...AND MORE

Outstanding Versatility

The TB Wood's UVC vector control inverter is the newest addition to the E-trAC family. The closed loop flux vector UVC provides high performance control to handle a wide range of difficult applications. The power of the UVC also includes operational modes for brushless servo motors, sensorless vector control, and general purpose Volts Per Hertz(V/Hz) operation. The UVC is actually four drives in one package with outstanding versatility for your application requirements.

Application Flexibility

Models range from 2 to 150 HP and operate from 380 to 460 VAC. Designed in a compact bookshelf enclosure, the UVC allows for easy installation into existing applications. Application-specific software such as electronic gearbox with positioning for supervisory drive systems, crane control, dancing arm control and tension winder applications are standard. Special program modes multiply the versatility and make the UVC the solution to your inverter needs.

Key Capabilities:

- Four Drives in One—
  - V/Hz
  - Sensorless Vector (SVC)
  - Flux Vector (FVC)
  - Servo
- IP20 Metal enclosure
- Plug-in control terminals
- Motor PTC evaluation
- RS485 interface
- 2 x 16 character LCD alphanumeric display
- Extensive I/O for customer interface
- Encoder or Resolver feedback
- 12 bit analog resolution with encoder or resolver option boards
- 100 kHz, pulse input and pulse output for Master/Slave
- Injection & Dynamic Braking
- Auto-Tuning Vector modes
- (SVC) Natural Field Orientation (NFO) algorithms
- Four point V/Hz characteristic
- Program Sequencer
- Fault Memory – Last 5 faults
- Adjustable torque limits in each quadrant
- Carrier frequencies up to 10 kHz
- Switching between 3 sets of parameters
- 7 preset speeds
- Dual acceleration/deceleration ramps
- Inertia compensation during acceleration and deceleration
- Password protected programming
- UL, cUL, CE Marked



The TB Wood's Family

The UVC is a perfect fit into the E-trAC family of AC inverters. It features a 2 x 16 character LCD alphanumeric display for easy access to parameters, simple operation, and "Plain English" display of faults and programming. Two languages (English and German) are available as standard with other languages available as an option. When multiple UVC's are installed, regardless of operational mode, operators and technicians deal with common controls simplifying installation, operation, and service.

The TB Wood's Inverter Family

	HP	Enclosure Styles	Functionality/ Applications
XFC	1/2-5	Chassis NEMA 1 NEMA 4	Basic Functionality Speed Control Applications Economical NEMA 4
X2C	1/2-20	Chassis NEMA 1	Full Functionality Simple Process Control CE Sensitive Applications Noise Sensitive Applications Full Torque down to 3 Hz
WFC^{HT}	3/4-75	Chassis NEMA 1 NEMA 4	Advanced Functionality NEMA 4 Washdown Situations Small to Medium Systems High Torque/Low Speeds CE Sensitive Applications
WF2	1-75	NEMA 1 NEMA 12 IP66	IP66 NSF Certified Sensorless Vector Control Device Net/Modbus Communications Full Torque@Zero Speed
UVC	2-150	IP20	Four Drives In One Speed/Torque control Build-in PID Full Torque@Zero Speed
DVC	100-650	Chassis/IP00 IP20 NEMA 1/IP21 NEMA 12/IP54	High HP Applications ≥100 HP Advanced System Functions Custom Application Programming

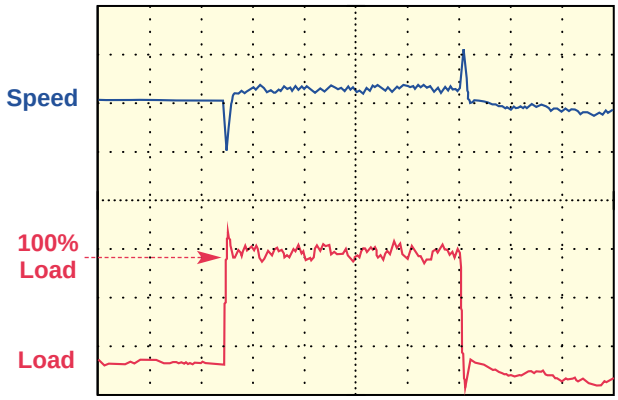
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HIGH PERFORMANCE FLUX VECTOR CONTROL

As a high performance, closed loop vector inverter, the UVC is perfectly matched with a TB Wood's vector duty motor with encoder enabling full torque at zero speed. The torque control capability makes the UVC ideal for use in difficult applications such as crane and hoist operation or tension control in web processes. Application specific software is standard to meet a wide range of applications. To further simplify installation and operation, the UVC automatically tunes itself to the no load motor parameters and does it without turning the motor shaft. For maximum flexibility, the unit includes an electronic gearbox for master slave operation with positioning.

Zero to 100% Load Response at 0 Hz



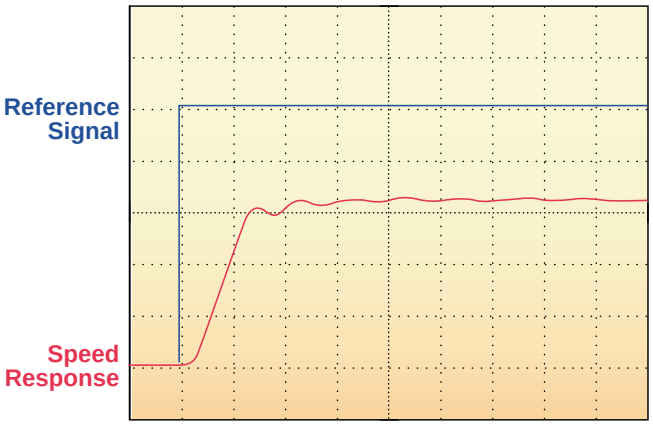
500 ms/Div

IDEAL APPLICATIONS
Crane and Hoist
Machine Tools
Tension Control
Grinders

VERSATILE SERVO OPERATION

A servo mode is incorporated for high dynamic speed or torque regulated applications with feedback from an encoder or resolver. The UVC, teamed with a Powertec **PACTORQ™** brushless servo motor, provides excellent dynamic response. Since the **PACTORQ™** motor is made with Rare Earth magnets, you get the lowest inertia and highest possible power density. The synchronous motor has no slip and speed control is highly accurate with speed regulation down to 0.005%.

Zero to 3000 RPM Step Response



20 ms/Div

IDEAL APPLICATIONS
Positioning
Machine Tools
Spindle Drives
High Speed Drives

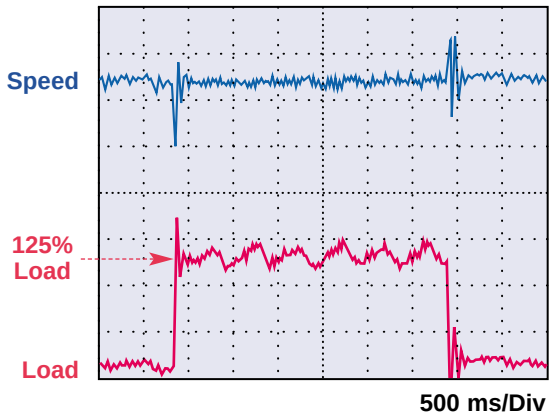
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SENSORLESS VECTOR CONTROL

An advanced sensorless vector algorithm, Natural Field Orientation (NFO), provides superior control for a variety of applications. The UVC regulates the speed of an AC induction motor with more precision through faster calculations of measured data and auto-tuned parameters. The NFO algorithm utilizes advanced temperature sensing circuitry for less speed drift than other available sensorless vector controls. This further adds to precise control and operation. The PWM waveform utilized allows the motor to run cooler with increased efficiency. In high torque demand applications, the UVC can handle 190% torque on a continuous basis. The SVC mode is perfect for applications where exceptional control is required but full torque at zero speed is not needed.

Zero to 125% Load Response at 0.5 Hz

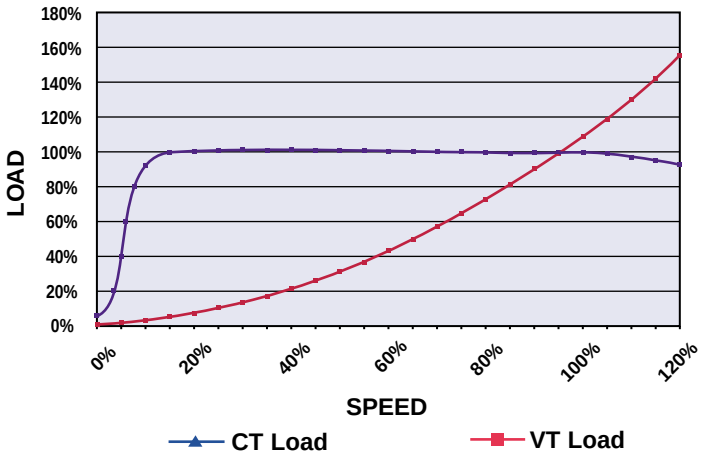


IDEAL APPLICATIONS
Extruders
Kneaders
Wood Processing
Centrifuges
Mills
Mixers

VOLTS PER HERTZ OPERATION

The UVC can handle the simplest to the most complex applications. In the V/Hz mode, it provides all the control necessary for basic installations along with the benefit of allowing advanced operational flexibility for future upgrades or easy retrofit into existing systems. It can also supply selectable carrier frequencies to eliminate irritating audible motor noise. Equipped with 7 preset speeds, dual accel/decel ramps, and extensive I/O for customer interface, the UVC provides a wide range of operational flexibility. The V/Hz mode is excellent for applications that do not require low-speed operation, less than 3 Hz, or quick dynamic response.

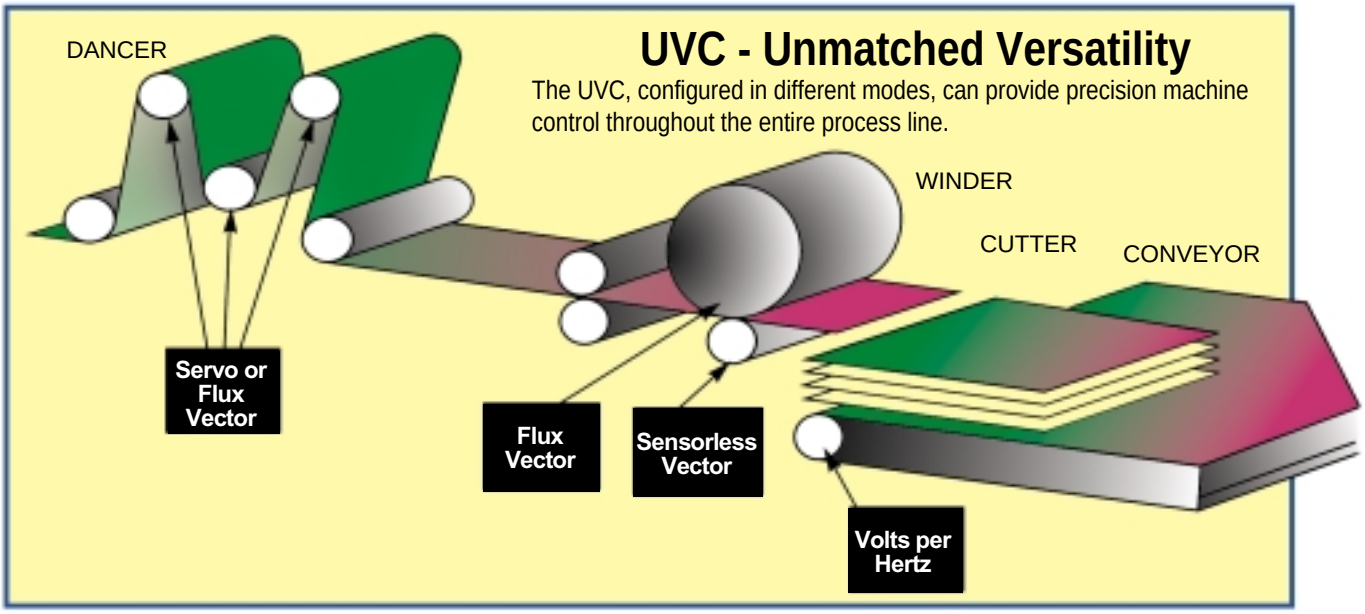
V/HZ Load Curve



IDEAL APPLICATIONS
Conveyors
Pumps
Blowers
Fans
Multi-Motor Control

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UVC 4 100-0 H 01

Constant Torque UVC Series

Input Voltage:
4 = 460 Vac

Horsepower:
For example, 100-0 = 100.0 HP

Enclosure:
H = IP20

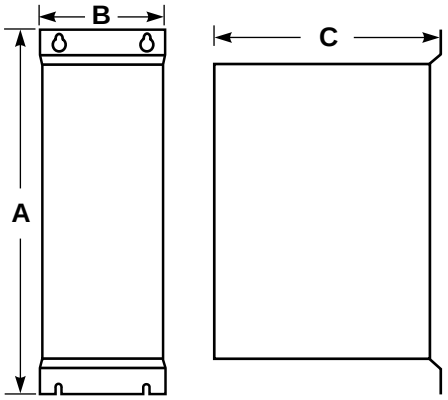
Horsepower Rating:
Dynamic Braking transistor for 100-150 HP Models
01 = Not Installed

(The dynamic braking transistor is standard and nonremovable on 2-75 HP models, and no code is shown for these models.)

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DIMENSIONAL DRAWINGS



Model Types	Output HP	Output kW	Input Supply	Input Phases	Maximum Motor Ratings AMPS	Dimensions			
						Height A	Width B	Depth C	Weight
UVC4002-0	2	1.5			3.7	15.55	3.94	9.92	12.54
UVC4003-0	3	2.2			5.2	15.55	3.94	9.92	12.54
UVC4004-0	4	3.0			6.8	15.55	3.94	9.92	12.54
UVC4005-0	5	4.0			9.2	15.55	3.94	9.92	12.54
UVC4007-5	7.5	5.5			11.7	15.55	3.94	9.92	12.54
UVC4010-0	10	7.5	380-460VAC	3	15.6	15.55	5.31	9.92	18.04
UVC4015-0	15	11.0	+/-15%		22.5	15.55	5.31	9.92	18.04
UVC4020-0	20	15.0			30.0	15.55	9.45	9.92	33.88
UVC4025-0	25	18.5			37.0	15.55	9.45	9.92	33.88
UVC4030-0	30	22.0			43.0	15.55	9.45	9.92	33.88
UVC4040-0	40	30.0			58.0	19.92	13.58	9.92	59.40
UVC4050-0	50	37.0			71.0	19.92	13.58	9.92	59.40
UVC4060-0	60	45.0			85.00	19.92	13.58	9.92	59.40
UVC4075-0	75	55.0			97.00	28.19	13.58	9.92	68.30
UVC40100-0	100	75.0			150.00	20.80	17.32	14.25	110.00
UVC40125-0	125	90.0			180.00	20.80	17.32	14.25	110.00
UVC40150-0	150	110.0			210.00	20.80	17.32	14.25	110.00

Note: Dimensions in inches; weight in lbs.

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UVC VECTOR CONTROL SPECIFICATIONS

Model Series	**UVC4000**
HP Range Constant Torque	 2-150 HP
Kilowatt Range Constant Torque	 1.5-110kW
Input Voltage	380-460VAC
Voltage Tolerance	±15% - 75 HP, + 10% 100-150 HP
Input Frequency	45-65 Hz
Output Voltage	Up to input line voltage - regulated
Running Torque	
V/Hz	150% @ 3 Hz
SVC	150% @ 1/2 Hz
FVC	150% @ 0 Hz
Servo	150% @ 0 RPM
Frequency Range	Programmable 0-875 Hz - 75 HP, 0-250 Hz - 150 HP
Frequency Resolution	0.01 Hz (0.1 @ above 100 Hz)
Overload Capacity	110% continuous 150% for 60 Seconds
Control System	V/Hz, Sensorless Vector (NFO), FVC, Servo
Ramp Times	0.1- 999.9 seconds Dual Accel & Decel ramps
Carrier Frequency	Programmable from 1 to 10 kHz in 10 Hz increments
Customer Interface	2 x 16 character LCD display Eight button keypad with tactile feel
Speed Reference	Digital Keypad 0-10 VDC, ±10 VDC, 0/4-20 mA, ±20 mA (50 ohm load), SIO RS485
Protection Features	Ground Fault — Output Short Circuit Motor Overload — Overvoltage Undervoltage — Overtemperature DB Failure — Phase Loss
Enclosure Type	Metal IP20
Ambient Conditions	-10°C to 45°C
Agency Listings	UL, cUL, CE Marked

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