ViX Series

Winner of Control Engineering Magazine's Editors' Choice Award 2002

Small, Intelligent and Powerful Digital Servo/ Stepper Drives and Drive/Controllers

With its all-digital, DC-powered design, the ViX family of award-winning drives and drive/controllers offers a new level of economical servo performance. Available in both drive-only and intelligent-drive/controller platforms, the ViX family gives users a robust and cost-effective DC product, particularly in multi-axis applications.

Designed for easy set-up and tuning, the ViX uses wizards-based software that enables users to implement a fully configured system within minutes of unpacking the unit. Its small size–just 4.9 x 1.65 x 3.35 inches–makes it ideal for narrow applications and for direct-panel mounting, or for attachment to a standard DIN rail using an optional adapter.

ViX General Features

- Up to 80VDC bus voltage
- Compact size: 4.9 x 1.65 x 3.35 inches
- Standard RS232C ASCII interface
- 5 digital inputs and 3 digital outputs (software configurable)
- CE (EMC & LVD), UL compliant
- Auto-correction of motor phase/feedback wiring (servo only)

Servo-Specific Features

- Accepts analog (±10V), step/direction, CW/CCW signals
- Encoder following
- Current outputs of 2.5A RMS continuous and 5A RMS continuous
- Resolver or encoder feedback

Stepper-Specific Features

- Integer selectable resolution from 200 to 51,200 steps/rev
- Anti-resonance circuitry suppresses mid-range instability
- Recommended motor inductance range of 0.5 mH to 20 mH

Servo and Stepper Optional Controller-Specific Features

- Storage of up to 16 sequences
- Encoder following, registration, feed-rate override
- 5 digital inputs, 3 digital outputs, 1 analog input
- Conditional statements
- Optional RS485/CANbus interface

ViX Part Numbering System

ViX — **500** — **I** — **E**

ViX Digital Drive Series

Example: ViX500IE

Continuous Current Level

Servo
- 250 - 2.5A continuous, 7.5A peak (RMS)
- 500 - 5A continuous, 15A peak (RMS)

Stepper
- 250 - 4.0A peak, (2.8A RMS)
- 500 - 8.0A peak, (15.6A peak RMS)

Drive Type

- A - Drive only*
- I - Drive/controller
- C - Drive/controller with CANopen/RS485

Drive Type

- E - Servo with encoder or resolver feedback
- H - Servo with high-resolution rotary encoder or linear encoder feedback
- M - Microstepper

* Available in servo version only

Parker Hannifin Corporation
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parkermotion.com

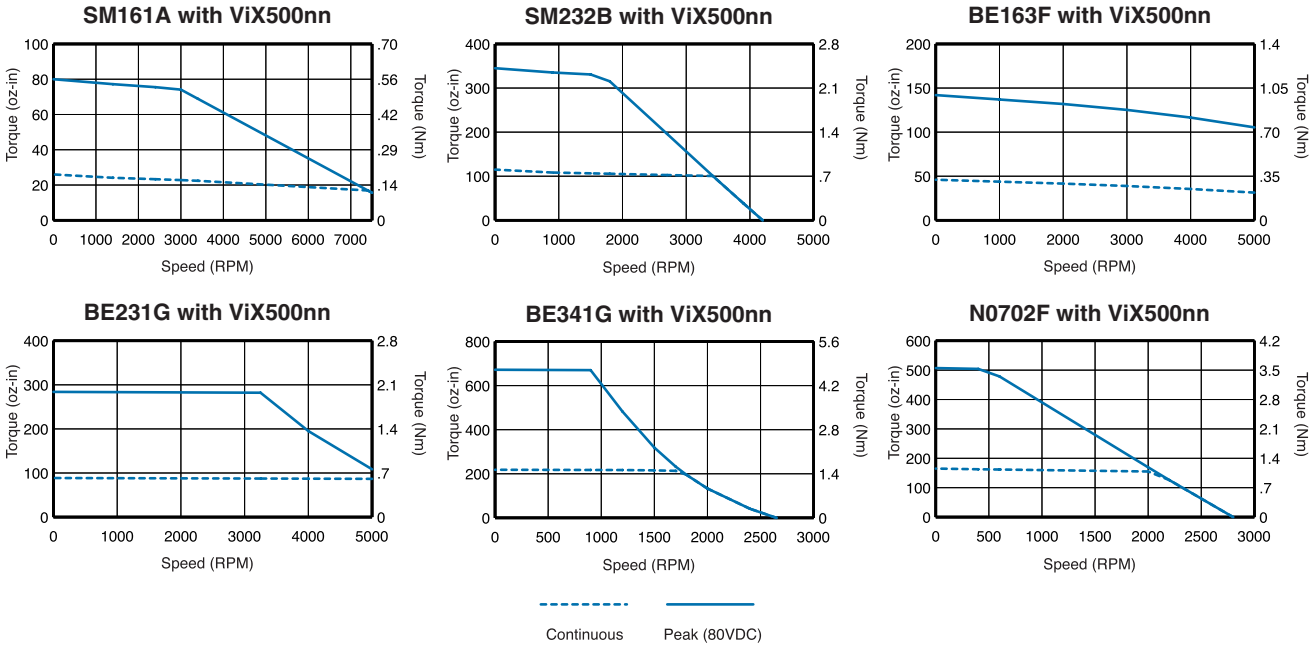
ViX Common Specifications

Drive Input Power		
Voltage		
ViX500	48-80VDC +5%, -15%	
ViX250	24-80VDC +5%, -15%	
Controller input power	24VDC, 250mA (no outputs loaded)	
Drive Output Current	Servo	Stepper
ViX500	5A RMS continuous, 15A RMS peak*	8.0A pk (5.6 Arms)
ViX250	2.5A RMS continuous, 7.5A RMS peak*	4.0A pk (2.8 Arms)
Physical		
Compumotor motors	See table on page 3	
Motor inductance range	0.5-10mH recommended (speed range reduced if >10mH)	
Motor current limit	Selectable by software	
PWM/Motor ripple frequency	20 KHz/40 KHz	
Protection	Short-circuit, brownout, over-voltage, under-voltge, drive/motor over-temperature I^2t, feedback fault	
Performance		
Feedback device (servo only)	Resolver or quadrature encoder (selected by software)	
Resolver feedback (servo only)	12-bit A-to-D input (gives 4096 counts/rev), absolute accuracy 30 arc-min	
Encoder feedback	5V differential, 400 KHz max. input frequency (pre-quadrature), resolution 1000, 1024, 2000 or 5000 lines (i.e., up to 20,000 counts/rev). The H series has fully variable resolution and will support up to 2.5 MHz pre-quadrature encoder input.	
Encoder supply	5V output for feedback and following encoder, 250mA maximum loading	
Drive Command Inputs (AE, AH models only)		
Velocity and Torque modes	±10V differential, 12-bit resolution	
Position mode	Step/direction, step+/step- or quadrature encoder** input with resolution equivalent to feedback device	
Digital Inputs	5, of which 4 are configurable as Home, Limits and Registration. Operating range 5V to 24V. Software configurable 4K7 pull-up/active low or 4K7 pull-down/active high	
Encoder following input	Compatible with feedback resolution, max. input frequency 2.5MHz. Also configurable as step/direction or step+/step- input	
Outputs		
Digital outputs	3 - 1 is configurable as Drive OK. Software-configurable active-low/sinking (5V-24V) or active-high/sourcing (24V only). 50mA maximum per output	
Encoder output	Fixed resolution (dependent on feedback device)	
Fault output	NPN open-collector output, normally low, active high	
Analog output	10-bit filtered PWM monitor output, torque or velocity	
Motor brake output	24V, 2A maximum, energized to release	
Communication		
Communication interface	9-pin D-shell (female) connector for RS232 (standard); combined RS485 & CANopen option available	
High-speed interface	Dual RJ45 connectors for CANopen, RS485 option, etc., also provide daisychain ports for multi-drop RS232 connections	
Diagnostics		
LEDs	3 LEDs for feedback, drive and communication status	
Environmental		
Drive temperature range	32-122°F (0-50°C) local environment fan (fan cooling required about 104°F (40°C)	
Humidity	0-95% non-condensing	

* Maximum duration at peak current - 2 seconds; maximum duty cycle - 10%. The time limit is set by an I^2t circuit and will be reduced if the motor is stationary.

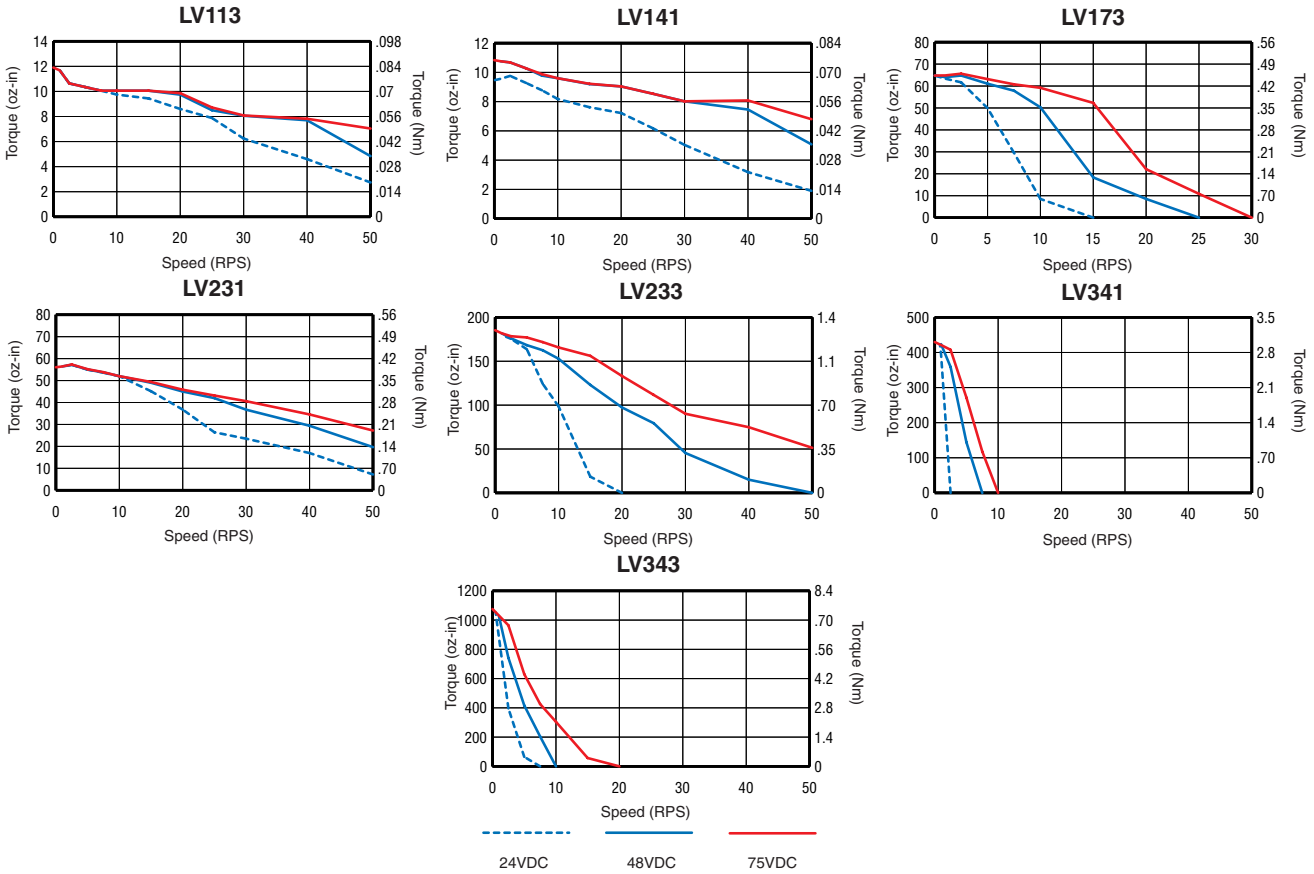
** ViX drive/controller versions (IE, IH) also accept quadrature encoder signals for following.

Servo Motor Speed-Torque Performance Curves



Stepper Motor Speed-Torque Performance Curves

Note: Motors in speed-torque curves are wired in series.



For a comprehensive display of all ViX drive/motor speed-torque curves, please log on to parkermotion.com

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ViX Compatible Motors & Accessories

Servo Drives	Servo Motors	Servo Drives	Servo Motors
ViX250AE **ViX250AH** **ViX250IE** **ViX250IH**	SM160An-nPSn SM161An-nPSn SM162An-nPSn SM230An-nPSn SM231An-nPSn SM232An-nPSn SM233An-nPSn BE161Cn-nPSn BE162Cn-nPSn BE163Cn-nPSn BE164Cn-nPSn BE230Gn-nPSn BE231Gn-nPSn BE232Gn-nPSn BE233Gn-nPSn N0701Dn-nPSn N0702En-nPSn	**ViX500AE** **ViX500AH** **ViX500IE** **ViX500IH**	SM160An-nPSn SM161An-nPSn SM162An-nPSn SM230An-nPSn SM231An-nPSn SM231Bn-nPSn SM232Bn-nPSn SM233Bn-nPSn BE161Fn-nPSn BE162Fn-nPSn BE163Fn-nPSn BE164Fn-nPSn BE230Gn-nPSn BE231Gn-nPSn BE232Gn-nPSn BE233Gn-nPSn BE341Gn-nPSn BE342Hn-nPSn N0701Fn-nPSn N0702Fn-nPSn

ViX Stepper Drive/Controller Compatible Motors & Accessories

Stepper Drives	Stepper Motors
ViX250IM **ViX500IM**	LV113 LV141 LV173 LV231 LV233 LV341 LV343

ViX Accessories	
XL-PSU	80 VDC, 250 W Power Supply Module
ViX RS232-08	8' RS232 Communication Cable (CE)
ViX RS232-16	16' RS232 Communication Cable (CE)
VM15-PF	ViX Breakout Module and Cable for I/O Connector
VM15-PM	ViX Breakout Module and Cable for Analog/Encoder Connector
DIN Rail Kit	ViX DIN Rail Mounting Kit

ViX Dimensions in inches (mm) – all models