

Best in Class AC MicroDrives



NEW



V7N



V74X

1/8 to 5 HP

1/8 to 10 HP



Yaskawa has provided quality adjustable speed drives to industry for more than 50 years.

The J7 and V7* ac drives represent state-of-the-art designs in the microdrive class.*

We have also created two standard variations of the V7 drive for specific needs. For wet or dusty environments, the V74X has an integral enclosure with NEMA Type 4X/12 characteristics. The V7N has DeviceNet Communications interface integrated into the drive control card for significant cost reduction and wiring ease

Tested and confirmed to beat the competition in performance, features, options and support.

These drives are truly Best In Class . . . There are no better microdrive choices.

Reliability Through Design. The J7 and V7 drives set the standard worldwide for overall drive reliability. Stringent component selection and test criteria, along with superior design strategies and knowledge of real world installation requirements, result in one of the lowest failure rates in the industry.

Simplified Selection. These drives are designed to complement each other in their feature sets and capabilities, at the right price for the application and installation requirements. With the same reliability, cost basis, and warranty support, the selection process is as easy as matching drive features to the application needs.

No-Nonsense Warranty. Should a Yaskawa ac drive fail during the warranty period, we will provide a replacement drive via next day shipment at no charge. This applies to all standard ac drives up to 25 horsepower.

Technical Support. Simplified procedures enable programming and startup of drives like these within minutes. Owner manuals are available on paper, on CD-ROM, and the internet. And customers can always rely on our engineers and technicians for technical support – 24 hours a day, 7 days a week.

Application Engineering. Application experience embodies 50 years of drive specialization in all major industries. This experience enables unique Best in Class value-based capabilities such as CASE Application-Specific Software.

** J7 and V7 were previously marketed as GPD 305 and GPD 315 drives.*

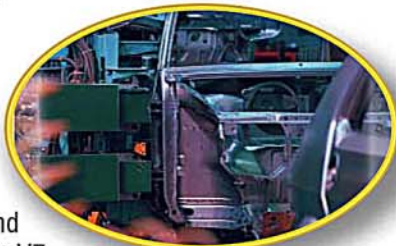
Food and Beverage. Yaskawa J7 and V7 drives support a diverse range of application and installation requirements including material handling, choppers, shredders, mixers, small extruders, pumps, and packaging. Superior acceleration, shock load/unload, and deceleration performance equate to trouble-free installation. These drives can be easily installed in all manufacturer's MCC packages. For washdown applications, special enclosures such as NEMA Type 4X can be provided to assure installation reliability. Network communication for the V7 includes DeviceNet, Profibus, and ControlNet.



Material Handling. These drives are ideal choices for palletizers, conveyors and monorails. Best In Class performance during acceleration, shock load/unload, and deceleration ensures reliable operation. V7 open loop vector control provides 40:1 constant torque turndown operation. Cascade control of multiple V7 conveyor drives can be accomplished via standard pulse train input and output. The V7 option, Bipolar Analog Input (+/- 10 volt) allows forward/reverse operation directly through input command.



Automotive. Reliability and overall lowest cost of ownership are critical to the automotive industry. This criteria is surpassed with both the J7 and the V7. Options such as Bipolar Analog Input, full range network communication interfaces, 115 VAC input and modulated DB – all make the V7 the Best in Class choice for applications such as material handling conveyors and monorails.



Packaging. Either drive can be the right drive for the right cost for use in bottling lines, canning lines, wrapping machines, and bagging machines.



Fiber and Textile. Yaskawa ac drives have become the industry standard for performance and reliability for applications in Fiber and Textile. For metering pumps, godet rolls, spinnerettes, and other applications in this industry, the V7 is the right drive. Reliable operation of synchronous motors is assured through proper regulator design with synchronous motor operation as a known design requirement. Frequency resolution of 0.01 Hz is standard. The drive can be connected in either common or shared bus configuration. Functions such as P-Jump/Traverse, Dancer Control, and other application specific software requirements, are available in CASE Software for the V7. Network communication solutions ensure connectivity with major PLCs.



Fan and Pump. Over 50% of all ac drive applications are for fans or pumps. The standard feature set of both these drives support centrifugal and constant torque loads. Carrier frequency operation to 10 kHz is standard for quiet motor operation. High instantaneous overload capability (200% for 1 second) provides high breakaway torque for high static friction loads (positive displacement pumps). The ability to start into a spinning motor provides reliable application and installation performance. V7 NEMA Type 4X and other enclosure options are available. The V7 is Plenum Rated for HVAC applications where the drive must be mounted in the air stream/duct work.

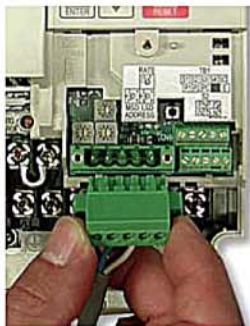


Network Communications.

Yaskawa offers many choices of network communication solutions. V7 drive interfaces allow communication between drives, PLCs, industrial computers and other devices to provide the benefits of reduced wiring costs, reduced maintenance costs, and improved productivity through diagnostics, accuracy, and informational flexibility. The V7 supports DeviceNet, Profibus-DP, and ControlNet. **Profibus** is the leading fieldbus in the world, providing open, standard, inter-operable and fully transparent networking. Data rates from 9.6 kbaud to 12 Mbaud are supported via shielded, twisted pair. A maximum of 125 nodes may be connected. **ControlNet** is a high-speed network for automation and control level communication. It runs on fiber-optic or RG6 quad coax cable at 5 Mbit/sec with 99 node addressability.



DeviceNet is a simple, open network that supports up to 64 nodes, at data rates up to 500 kbaud, over a shielded twisted pair, with a second pair providing power. The V7N model has DeviceNet interface integrated into the inverter control card. The V7N saves wiring space, cost and complexity.



CASE Application-Specific Software. The V7 provides 2K of on-board Flash ROM to accommodate customer-specific or application-specific software. The experience from over 400 software solutions makes this Best in Class capability both affordable and reliable. A few examples of the CASE Software Titles available for the V7 are P-Jump/ Traverse Functions For Fiber/Textile Applications, 800 Hz Output Frequency For Machining, S-Curve Acceleration, and Dancer Control With Trim.



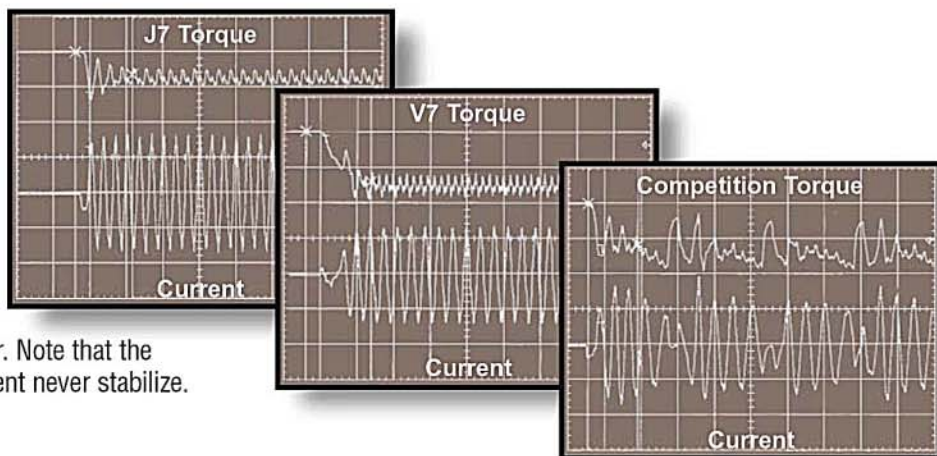
NEMA Type 4X. To provide the best solution for dusty and wet installations, the model V74X is provided in an integral enclosure that meets NEMA type 4X/12 indoor use requirements, UL type 4X/12 standards and IP66 rating of IEC 529.



Performance. Confirmed by load tests of competitor's microdrive products, the such as acceleration capability, low frequency torque at 100% and 150% load, and response

Starting Torque.

The J7 produces excellent starting torque for many applications. If the absolute maximum starting torque is required, such as for loaded conveyors, centrifuge, or extruders, the V7 is the only logical choice. Both drives out-perform a popular competitor. Note that the competitor drive torque and current never stabilize.





Keypad With Copy Function. The keypad operator on the V7 allows drive parameter settings to be read to the keypad EPROM. The keypad can then copy the settings to a similar V7, reducing programming time for drives with identical settings. This function is also possible with the J7 through use of the Separate Keypad Mounting kit. This capability is ideal for OEMs that need to program multiple drives or users with multiple identical lines.

Separate Keypad Mounting. Accessories are available to mount an operator keypad separate from the drive, such as when the drive is in an OEM enclosure.



- The appropriate cable adapter is attached to the drive.
- Connection cable is available in 1 and 3 meter lengths.
- The separate keypad may be either a NEMA 4 version (without pot) or the standard V7 keypad inserted into a mounting receptacle.

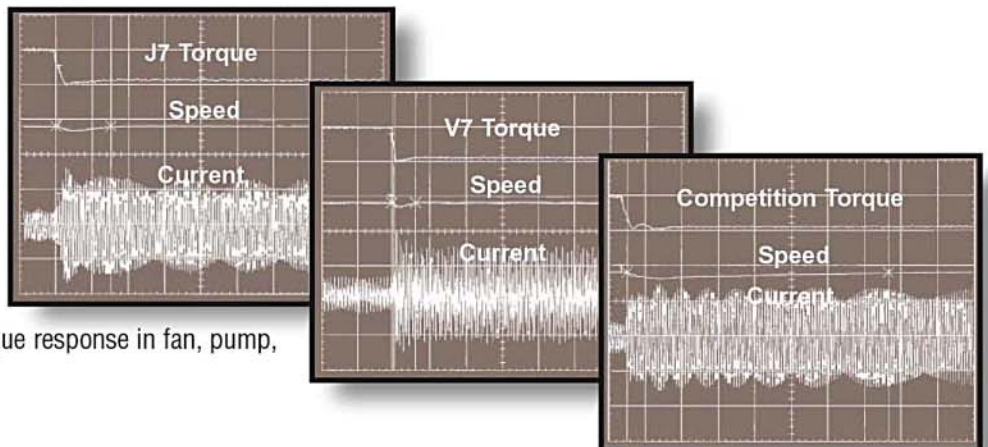
Drive Wizard™ Software. This optional software allows upload and download of parameters via PC for data storage and for programming multiple drives. The software also includes graphing and monitoring tools.



J7 and V7 truly demonstrate Best In Class performance characteristics to step load changes (shock load and unload). See document PD 4300 for details.

Torque Response.

The frequency regulator of the J7 and the V7 can be adjusted to provide the optimum torque response for any application. Some competitors models however, lack this capability to adjust torque response. This can result in less than optimum torque response in fan, pump, mixer or conveyor applications.



Characteristics	J7	V7 / V7N / V74X
■ 200 - 230 Vac, 3-Phase Input.....	0.125 hp (0.8A) to 5 hp (17.5A)	0.125 hp (0.8A) to 10 hp (33A)
■ 200 - 230 Vac, 1-Phase Input.....	0.125 hp (0.8A) to 2 hp (17.5A)	0.125 hp (0.8A) to 5 hp (17.5A) V7 / V7N 0.125 hp (0.8A) to 3 hp (10.5A) V74X by Derate
■ 380 - 460 Vac, 3-Phase Input.....	0.5 hp (1.2A) to 5 hp (8.6A)	0.125 hp (0.8A) to 10 hp (18A) V7 / V7N 0.125 hp (0.8A) to 15 hp (21A) V74X
■ Standard Enclosure.....	Protected Chassis (IP20)	NEMA 1 (IP21) V7 / V7N
■ Optional Enclosure.....	Not Available	NEMA Type 4X (IP66) V74X
■ Plenum Rating	Not Available	Standard V7 / V7N
■ Control Methods	V/Hz.....	V/Hz, Open Loop Vector (OLV)
■ Speed Regulation	0.5 To 1% with Slip Comp	0.2% in OLV
■ Dynamic Braking Transistor.....	Via Seperate Braking Module	Standard
■ Dynamic Braking Capability	Up to 100% with Braking Module	Up to 100%
■ Output Frequency Range.....	1.5 to 400.0 Hz.....	0.1 to 400.0 Hz
■ Constant Torque Turn Down	40:1 V/Hz Only	100:1 OLV mode; 40:1 V/Hz Mode
■ Keypad, Standard.....	LED with Pot; Isolated; Non-Removeable.....	LED with Pot; Isolated
■ Keypad, Optional.....	Remote, without Pot	With/without Pot, Remote
■ Keypad, Copy Function	Optional.....	Standard
■ Digital Inputs, 24 vdc, isolated, PNP/NPN	4 Multi-functional	7 Multi-functional, V7 V74X, 4 Multi-functional, V7N
■ Preset Speeds	8 plus Jog	16 plus Jog
■ Programmable Outputs Form C Relay	Quantity 1.....	Quantity 1 plus 2 Open Collector, V7 / V74X; 2 Open Collector, V7N *
■ Digital Pulse Train Input.....	Not available.....	30 kHz maximum *
■ Flash ROM Software	Not available.....	CASE Software Solutions
■ Serial Interface.....	RS 232 or 422/485 options.....	RS 422/485 Standard *
■ Network Communication option	Not available.....	Optional DeviceNet and Profibus
■ Accel/Decel Time, Separately Adjustable.....	(2), 999 Seconds Maximum.....	(2), 6000 Seconds Maximum
■ PID.....	Not available.....	Standard
■ Additional Analog Input.....	Not available.....	Optional 0-10 volt or 4 - 20 ma, 10 bit
■ Bipolar Analog Input, option	Not available.....	1, 10-0-10 volt, 10 bit
■ Analog Proportional output.....	1, 0-10 V or 4-20 mA, 10 Bit Resolution.....	1, 0-10 V or 4-20 mA, 10 Bit V7 / V74X *
■ 115 Vac Logic Input	Not available.....	Optional PCB *

* Not Available or Not Applicable to DeviceNet model, V7N.
For comparative performance such as Starting Torque, Acceleration, and Torque Response, see document PD 4300.

Characteristics Common to J7, V7, V7N, V74X

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|---|---|
| ■ DIN Rail Mount: Optional | ■ Overtorque Detection: Standard |
| ■ Flat Plate Mounting (without heatsink): Model Available | ■ Stall Prevention: Standard |
| ■ Motor Compatibility: Induction and Synchronous | ■ Stopping Modes: Selectable Decel Ramp or Coast-to-Stop |
| ■ Torque Boost: Standard | ■ Speed Search: Standard |
| ■ Analog Inputs: 1, 0-10 V or 4 - 20 mA, 10 Bit Resolution | ■ MOP: Standard |
| ■ Input Bias and Gain Adjustments: Standard | ■ Carrier Frequency: 2.5 -10 kHz range; No Derate @ 10 kHz |
| ■ Simultaneous Use Network/Serial Communications and Keypad: Standard | ■ Cable Charging: Use 5 kHz Max Carrier Frequency for Distances > 100 Meters Between Inverter and Motor |
| ■ Preset Accel/Decel Ramps: 2 each | ■ DC Braking: 100% for 0-25.5 secs, Current Based |
| ■ Hold Command: Standard | ■ Common or Shared Bus Capability: Standard |
| ■ Frequency Reference Bias/Gain: Analog | ■ UL Listed Motor Overload: Standard |
| ■ S-Curve Accel/Decel: 3 selectable times | ■ UL, cUL, CE Mark: Standard |

Data subject to change without notice. J7, V7 and GPD are trademarks of Yaskawa Electric America, Inc. All other trademarks remain the property of their respective owners.



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