V74X Drive, NEMA Type 4X/12, 1/8 - 15 HP

V74X This AC drive is a version of the standard V7, in an integral enclosure that meets NEMA type 4X/12 indoor use requirements, UL type 4X/12 standards, and the IP66 rating of IEC 529. This enclosure provides the protection required in tough washdown or dust-tight environments, common in Food and Beverage Processing, Packaging, Metal Machining, Woodworking, Pumping, Refrigeration, and Printing. The cast enclosure is powder-coated to protect against the harmful effects of sanitizing chemicals commenly used in food industries.

Performance and features are identical to the standard V7, in NEMA 1 enclosure. Two control methods, V/Hz and open loop vector, allow speed/torque performance to suit the application. In addition to tighter speed regulation, open loop vector control provides higher torque at lower speeds.

The digital operator provides 4-digit LED status display and programming of almost 200 parameters. The digital pulse train input provides a precise frequency input, and is the perfect solution for speed / follower applications. Seven standard multifunction inputs can be programmed to allow for 17 preset speeds. This drive also has an analog input, a multifunction relay output, two multifunction open collector outputs, and an analog output as standard.

An RS485 Modbus RTU communication port is standard, allowing 32 nodes on a single network. Plug-in interface option boards enable communications with major networks such as DeviceNet, Profibus, and others. The option board is installed directly on the drive via simple snap-in connectors.

Another version of the V7 drive, called V7N, is available with DeviceNet embedded in the drive control board, reducing cost and installation time.

One of the outstanding options for the V74X is DriveWizard. This software enables upload, download, and monitoring of parameters. Another software, CASE, can add functionality to the drive by reconfiguring drive defaults, establishing presets for OEM equipment, and by eliminating peripheral controls and PLCs.

The V74X is available from 1/8 to 10 HP at 230 VAC and 1/2 to 15 HP at 460 VAC. (This V74X was previously named GPD 315/V74X)

With the same performance characteristics as the NEMA 1 enclosed drive, the V74X benefits the User by having only one drive to learn and support, factory-wide.

The V7 family of microdrives:
V7 NEMA 1, 1/8 - 10 HP, Plug-in Comms
V7N NEMA 1, 1/8 - 10 HP, Embedded DeviceNet
V74X NEMA 4X/12, 1/8 - 15 HP, Plug-in Comms

YASKAWA
The Drive for Quality™

Performance Features

- Ratings: 1/8 to 10 HP at 230 VAC, 1/2 to 15 HP at 460 VAC
- Constant torque overload rating: 150% for 1 min. (250% peak)
- DC injection braking, ramp to stop
- Electronic reversing
- Adjustable accel/decel: 0.01 to 6000 seconds
- Controlled speed range: 40:1[1] 100:1[2]
- Speed Regulation ± 0.5 to 1% with slip compensation[1] ± 0.2%[2]
- Drive efficiency: 95%
- Displacement power factor: 0.98
- Output frequency: 0.1 to 400 Hz
- Frequency resolution: 0.01 Hz with digital reference 0.06 / 60 Hz with analog reference
- Frequency accuracy: 0.01% with digital command 0.5% with analog command
- Volts / hertz ratio: infinitely adjustable pattern
- Open loop vector control
- DC Injection braking: adjustable amplitude, duration, current limited
- Torque boost: full range, auto
- Power loss ride-thru: 0.5 sec.
- Speed search
- Auto restart
- 3 Critical frequency rejection settings
- Slip Compensation
- Energy Savings Function
- PID with loss of feedback function

Design Features

- 16-bit microprocessor logic
- Digital keypad operator
- LED status display
- Copy Keypad Function
- Remote Mount Keypad Capability
- RJ-45 Style Digital Operator Connector
- 7 multifunction digital inputs
- Programmable form C output contact for customer use: 1A at 250 VAC or 30 VDC
- 24 VDC control logic compatible with sourcing or sinking outputs (PNP or NPN)
- Carrier frequency: 10 kHz maximum
- 16 multi-speed settings plus jog speed
- Remote speed reference: 0-10 VDC (20 kohms) or isolated 4-20 mA (250 ohms)
- Signal follower: bias and gain
- 2 programmable open collector outputs
- Analog monitor output: 0-10 VDC proportional to output frequency or output current
- Approximately 200 parameters
- Digital pulse train input (30 kHz max.)
- Cooling fan controlled by drive run/stop
- RS485/RS422 serial communication port (up to 32 nodes)
- Baud rate of 19.2 kbps
- UL and cUL listed; CE approved
- UL recognized electronic overload
- MTBF: exceeds 28 years
- Dynamic Braking Transistor
- NEMA type 4X/12 enclosure

[1] V/Hz Mode
[2] Open Loop Vector Mode

Protective Features

- Current limit, stall prevention during accel, decel, and run
- Motor and drive overload
- Over voltage
- Instantaneous over current
- Short circuit
- Under voltage
- Heatsink overheat
- Ground fault protection
- Over/under torque

Service Conditions

- Ambient service temperature: -10° to 40°C (14° to 105°F)
- Ambient storage temperature: -20° to 60°C (-4° to 140°F)
- Humidity: to 95% non-condensing
- Altitude: to 3280 ft; higher by derating
- Service factor: 1.0
- Input voltage: -15% to +10% 200 to 230 VAC, 380 to 460 VAC
- Input frequency: +/-5%; 50/60 Hz
- Phase sequence insensitive

Options

- Remote operator station, NEMA 4
- Network Communications
- CASE Software
- DriveWizard Software
- 800 Hz output via software
- Bi-polar Input

Other Products

V7 Drive General purpose, V/Hz or open loop vector, NEMA 1, 1/8 - 10 HP.
Flyer FL.V7.01

V7N Drive General purpose, V/Hz or open loop vector, NEMA1, embedded DeviceNet, 1/8 - 10 HP.
Flyer FL.V7N.01

J7 Drive General purpose, V/Hz, microsize, 1/8 - 5 HP.
Flyer FL.J7.01

F7 Drive Industrial Workhorse, Normal and Heavy Duty, 1/2 - 500 HP.
Flyer FL.F7.01

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V74X

YEA Document Number: FL.V74X.01 09/01/03