

TOSHIBA

ADJUSTABLE SPEED DRIVES



QX7 Series

Reliability in motion[®]

CT

**HVAC
18-Pulse**

Toshiba QX7

The Toshiba QX7 adjustable speed drive is designed for HVAC applications where harmonic content is critical to the power grid. The QX7's patented 18-pulse design is the most sensible solution for the high demands of the HVAC industry. The QX7 eliminates the need to add other filters and costly isolation transformers.

- Patented 18-Pulse Design*
- Small Footprint
- Powerful, User-Friendly Operator Interface
- Variety of Communication Options

1. Small Footprint with Uniform 24" Depth

2. User-Friendly Electronic Operator Interface (EOI)

3. Variety of User-Configurable Options

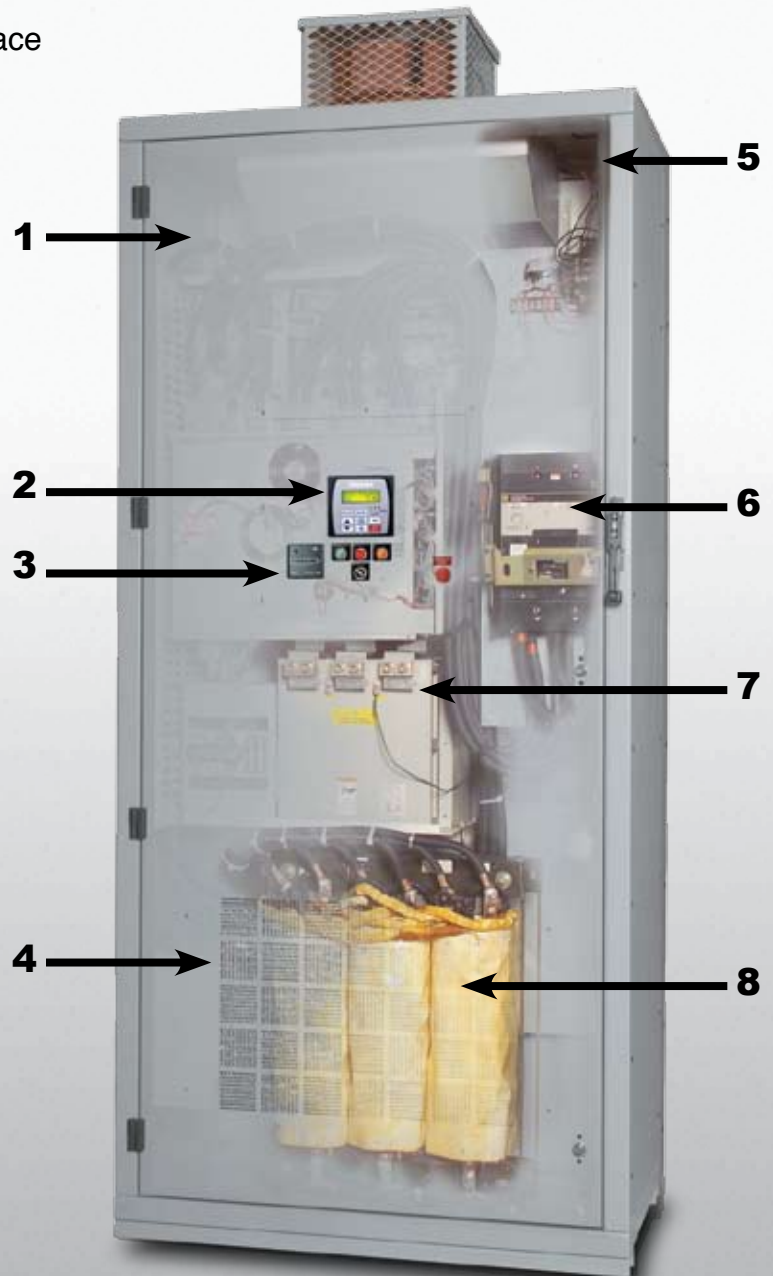
4. Gasketed and Filtered Enclosure Force Ventilated

5. Top or Bottom Cable Entry/Exit

6. 65 KAIC Breaker

7. Proven Toshiba ASD Technology

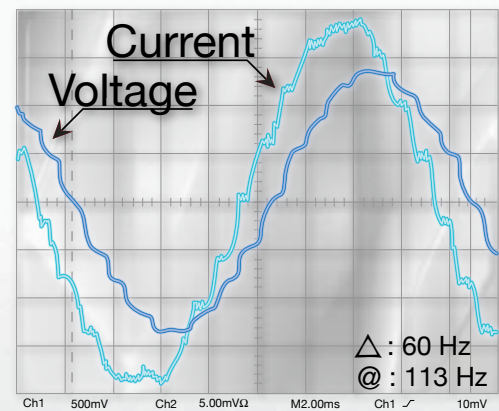
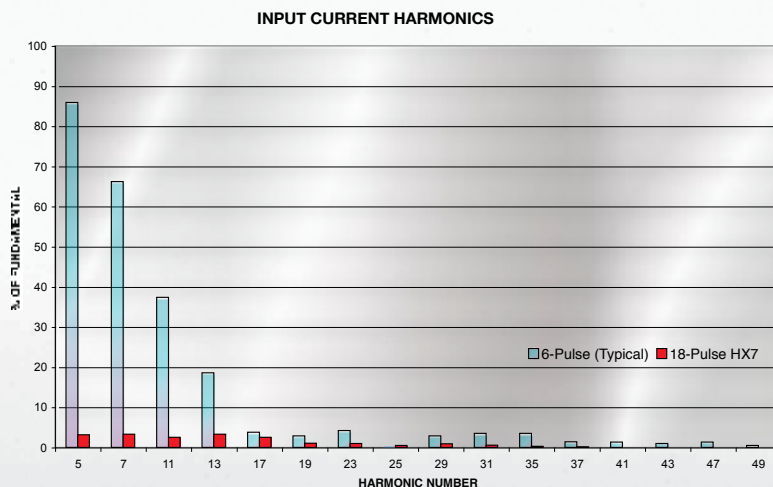
8. Integrated Phase-Shifting Transformer



Truly Designed for

Total Harmonic Distortion (THD) can be caused by multiple factors including: computers, fluorescent lights, copiers, and six-pulse drives. With Toshiba's patented 18-Pulse Autotransformer design, the QX7 removes distortion that would normally be generated by a six-pulse drive.

- Meets IEEE-519 Guidelines without Adding Filters
- Produces a Ripple-Free Voltage on DC Bus
- Clean Sinusoidal Input Current Waveform
- Up to 60% Reduction in Transformer Losses

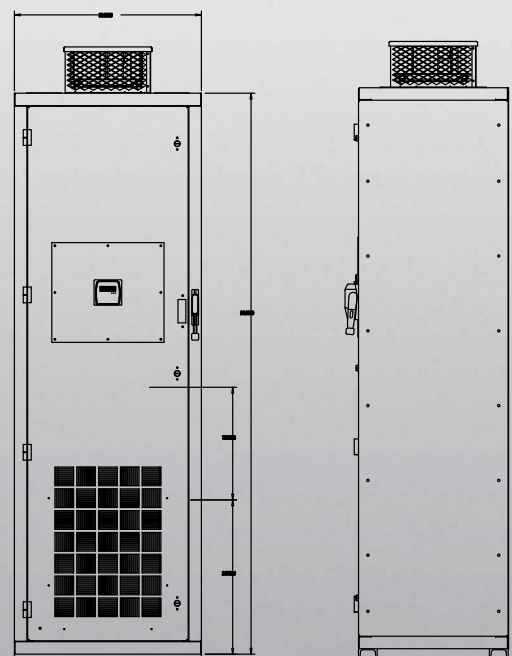


Small Footprint

The high cost of real estate and constraints of existing facilities make size an important consideration in drive selection.

- 100" Height and 24" Depth on All Sizes
- Integrated Phase-Shifting Autotransformer
- Saves Real Estate on New Designs
- Easy Replacement for Older Drives in Existing Facilities

(Addition of a bypass option will increase enclosure size.)



Your HVAC System

User-Friendly

The QX7 keypad is rugged and reliable, but also easy to use. The LCD true-English display makes it easy to read and program. Menu-driven parameters and quick set-up keys allow the operator to program the drive with the smallest amount of keystrokes possible. On top of all these great keypad features, the QX7 also comes with Toshiba windows-based software.



*Monitor Over 30 Parameters
15 Alarms and 41 Faults Displayed*

Inputs:

YOU Control

- Eight Digital Inputs
- Three Analog Inputs
- All Fully Programmable

Outputs:

What YOU Want to Know

- Three Digital Relay Outputs
- Two 4 to 20 mA Analog Outputs
- All Fully Programmable

The Fire Speed Circuit allows you to run at a preset speed during a smoke purge. The Damper Permissive Function can be utilized to protect your ductwork from over pressuring. In addition, the PID settings will keep your system balanced.

Communication Options

The QX7 is easily integrated into your control system, giving you powerful information access and control capabilities while reducing installation costs.

Drive Information: Integrating the drive into your control system allows you access to monitor, control, and diagnostic data.

QX7 External

Networks Include:

- RS485/RS232
- Modbus RTU
- Modbus Plus
- Profibus DP
- DeviceNet
- Ethernet TCP/IP
- Ethernet IP
- Johnson Controls
- Metasys N2



Internally Mounted Nanocom Card

Networks Include:

- Modbus RTU
- Johnson Controls
- Metasys N2
- Siemens FLN



Meets or Exceeds Your Specifications

| QX7 Standard Specifications | | | | | | | | | | | | | | | |
|------------------------------------|--|----|------------------|-----|-----|-----|------------------|-----|-----|-----|------------------|-----|-----|-----|--|
| Voltage Class | 460 V | | | | | | | | | | | | | | |
| Maximum HP | 60 | 75 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 | 700 | 800 | |
| Drive Rating | 77 | 96 | 124 | 156 | 190 | 240 | 302 | 370 | 450 | 492 | 600 | 740 | 900 | 960 | |
| AA Dimensions | 100" x 30" x 24" | | | | | | 100" x 42" x 24" | | | | 105" x 76" x 24" | | | | |
| AE Dimensions | 100" X 54" X 24" | | | | | | 100" X 66" X 24" | | | | Consult Factory | | | | |
| AS Dimensions | 100" X 54" X 24" | | 100" X 60" X 24" | | | | 100" X 84" X 24" | | | | Consult Factory | | | | |
| Power Requirements | | | | | | | | | | | | | | | |
| Output Frequency | 0 to 299 Hz | | | | | | | | | | | | | | |
| Main Circuit | Three-Phase, 460 V Input Auto-Transformer, 18-Pulse, IGBT Output | | | | | | | | | | | | | | |
| Power Terminals | Input (L1,L2,L3); Output (T1,T2,T3); DCL (PA,PB);Dc Bus (PA,PC) | | | | | | | | | | | | | | |
| Control Power | DC Bus Control Power | | | | | | | | | | | | | | |
| Voltage Tolerance | ±10% | | | | | | | | | | | | | | |
| Frequency Tolerance | ±2% | | | | | | | | | | | | | | |
| Control Specifications | | | | | | | | | | | | | | | |
| Control Method | Sine Wave PWM System | | | | | | | | | | | | | | |
| V/Hz Control | Variable Torque, Constant Torque | | | | | | | | | | | | | | |
| Overload Rating | 120% for 60 Seconds, 100% Continuous | | | | | | | | | | | | | | |
| Frequency Setting | EOI Interface, 0 to 10 VDC, -10 to +10 VDC, 4 to 20 mA, Binary and Motorized Potentiometer Input | | | | | | | | | | | | | | |
| Frequency Precision | Analog Input is 2% of Maximum Output; Digital Input is 0.01 Maximum Output | | | | | | | | | | | | | | |
| Frequency Resolution | 0.01 Hz Operation Panel, 0.1 Hz Analog Input; 0 to 12-Bit A to D Converter | | | | | | | | | | | | | | |
| Accel./Decel. Time | 0.1 to 6000 Seconds | | | | | | | | | | | | | | |
| Set Point Control | PID Loop Control | | | | | | | | | | | | | | |
| Analog Inputs | Four Programmable | | | | | | | | | | | | | | |
| Analog Outputs | Two Programmable to 66 Functions | | | | | | | | | | | | | | |
| Inputs Terminals | Eight Programmable to 33 Functions | | | | | | | | | | | | | | |
| Output Contacts | Three Output Terminals Programmable to 66 Functions; One Form-C, Two 250 VAC Form-A | | | | | | | | | | | | | | |
| Communications Port | RS232/485 and TTL Ports Standard | | | | | | | | | | | | | | |
| Protocol | Optional Profibus, Devicenet, Modbus RTU, Metysys, TCP/IP Ethernet | | | | | | | | | | | | | | |
| Soft Stall | Auto Load-Reduction Control Durring Overload Conditions | | | | | | | | | | | | | | |
| Retry | Up to Ten Retries with Up to Ten Seconds Between Each Retry | | | | | | | | | | | | | | |
| Restart | Able to Restart to Catch a Spinning Motor | | | | | | | | | | | | | | |
| Interface | | | | | | | | | | | | | | | |
| EOI Display | 4 Line X 20 Character LCD, Backlit Screen, Flash-Upgradeable Software | | | | | | | | | | | | | | |
| Keypad | Local/Remote, Manual/Auto, Speed Control, Setup/Program/Monitor, Run, Stop/Reset | | | | | | | | | | | | | | |
| Monitoring | Monitors Over 30 Parameters | | | | | | | | | | | | | | |
| Display Units | Display in Voltage, Amps, or Percent with Scaling Factor Multiplier | | | | | | | | | | | | | | |
| EOI Ports | RS232/485 and TTL Ports Standard | | | | | | | | | | | | | | |
| Remote Mounting | Up to 1000 Feet | | | | | | | | | | | | | | |
| Construction | | | | | | | | | | | | | | | |
| Enclosure | NEMA 1 Gasketed and Filtered | | | | | | | | | | | | | | |
| Panel Construction | Free Standing, Front-Access Maintenance, Top/Bottom Cable Access | | | | | | | | | | | | | | |
| Ambient Conditions | | | | | | | | | | | | | | | |
| Temperature | 10 to 40°C or 14 to 104°F | | | | | | | | | | | | | | |
| Humidity | Maximum 95% (Non-Condensing) Without Derating | | | | | | | | | | | | | | |
| Altitude | Up to 1000 Meters or 3300 Feet Above Sea Level Without Derating | | | | | | | | | | | | | | |

TOSHIBA INTERNATIONAL CORPORATION



North American Headquarters and Manufacturing Facility (Houston, TX)

TOSHIBA – Quality by Design

Toshiba's culture and history are strongly rooted in quality. Our designs are technologically innovative, and our products are manufactured from start to end using only the highest quality domestic and foreign parts.

Product Warranty

Toshiba offers a comprehensive warranty program on its full line of industrial products. Consult your salesperson or the factory for specific information.

Need to Know More?

Be sure to visit our website located at www.toshiba.com/ind for the latest information on Toshiba products and services.

Customer Support Services

Toshiba offers 24-hour service nationwide. For assistance of any type call: 1-800-231-1412.



ADJUSTABLE SPEED DRIVES MOTORS CONTROLS UPS INSTRUMENTATION PLC

TOSHIBA

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