

TOSHIBA
Leading Innovation >>>



JK SERIES
MEDIUM VOLTAGE CONTROLLER FAMILY



COMPACT DESIGN, ADVANCED TECHNOLOGY

Toshiba's medium voltage JK Series motor controllers are manufactured under ISO 9001 standards in the same Houston, Texas facility as Toshiba motors and drives. The components of this series are arranged to produce a streamlined space-saving unit, using no internal power cables in the full-voltage type starters, for ease of maintenance and enhanced safety features. These state-of-the-art medium voltage controllers are available in full-voltage or reduced-voltage models for the control of induction, wound rotor or synchronous motors, transformers, and capacitors.

➤ JK4 & JK7 SERIES FEATURES

- JK4: 400 A, 2300 V to 6600 V
- JK7: 720 A, 2300 V to 6600 V
- JK4 Main Contactor/Fuse Assembly Available in Either Fix-Mounted or Drawout Design Enclosure Ratings: Type 1 & 12 Indoor, Type 3R Outdoor
- Reduced Footprint
- Rigid 11-Gauge Steel Frame
- Visible, Bolted Pressure, Isolation Switch
 - Less Resistance
 - Less Wear
 - No Insertion Pressure
 - Mechanical Interlocking System
- Toshiba-Made Contactors
 - Latched-Type Contactors Available
 - Vacuum Contactors Built & Tested in Houston Manufacturing Plant
 - Ensures Superior Technology, Quality, & Total Product Reliability
- Front Accessibility
 - Motor Connection Points in the MCC are 100% Front-Accessible with Removal of Vacuum Contactor
 - With Front Accessible Main Bus, Rear & Top Access is Not Required
 - Rear Access is Not Required for Any Installation or Maintenance Solutions
- Isolated Low Voltage Door & Swing-Out Sub Panel
 - Isolated Low Voltage Compartment Steel Barrier Protects Against Accidental Contact
 - Main Bus is Accessible through Hinged Low Voltage Sub Panel
 - Barrier Behind Low Voltage Door Opens to Fully Expose Main Horizontal & Vertical Busing, Allowing for Inspection of Bus or Connection to Adjacent Cubicle without the Need for Rear Access
 - Complies with EEMAC, NEMA, UL, & CSA Standards



> DRAWOUT-TYPE JK4 SERIES

- Built-In Service Drawer with Locating Pins
 - Contactor & Fuses are Mounted onto Built-In Service Drawer with Locating Pins
 - No Crane or Lifter Required for Normal Service
 - Rests on a Drawer Supported by Sliding Rails. Rails Lock in Fully Extended Position
 - Allows Partial Removal of Starter for Normal Routine Maintenance or Fuse Replacement
 - Allows Starter to be Withdrawn to Assist in Removal of the Complete Starter Assembly
- Vacuum Contactor & Power Fuses can be Completely Withdrawn
 - Provides Faster & Easier Preventive Maintenance
 - Locating Pins on Service Drawer Allow Positioning of Drawout Unit on Tray
 - Includes Isolation Switch with Main Power Supply Terminal, First-Bolted Pressure Line Contact, & Load Receptacle with Second-Bolted Pressure Contact
 - Includes Line Terminal for Engaging First-Bolted Pressure Contact and Load Terminal for Engaging Second-Bolted Pressure Contact when Drawout Unit is in an Inserted Position
 - Components are Specifically Arranged in a Compact Design, Requiring Significantly Less Space than Conventional Designs



> JK ISOLATION SWITCH (ALL MODELS)

- Patented Bolted Pressure Isolation Switch
 - Mechanical Interlock Provided between Contactor/Fuse Unit & Isolation Switch to Prevent Opening/Closing unless Main Contactor Contacts are Opened
 - Replaces Conventional Spring-Loaded Disconnecting Finger Assemblies
 - Conductors in Each Phase "Clamp" Onto Movable Line & Load Terminals of the Drawout Unit
 - Turning a Bolt provides Clamping Pressure, which Passes through the Connection Point
 - External Operating Handle Controls Turning of Bolt to Provide Contact Pressure
 - Handle/Lever Inside MV Compartment Controls Bolt Pressure Connection for Load Receptacle
 - Zero-Insertion Force Preserves Silver Plating on Connection Points
 - Reliable, Low Resistance Connection Results in Reduced Heat Losses & Extended Life



> JK420 & JK720 REDUCED VOLTAGE AUTOTRANSFORMER (RVAT) CONTROLLERS

- Three Vacuum Contactors
- Adjustable Solid State Transition Timer & Incomplete Sequence Timer
- JK420 Main Contactor Available Fix-mounted or Drawout
- Three Winding Copper-Wound Auto-Transformer with 50, 65, & 80% Voltage Taps
- Reliable, Low Resistance Connection Results in Reduced Heat Losses & Extended Life



> JKSSS SOLID STATE STARTER SERIES

Toshiba's JKSSS medium voltage motor starter series is designed to softly start and stop AC motors in any fixed speed application regardless of power condition, load condition, and the extremity of its environment. Rated at 500% for 60 seconds, the JKSSS motor starter series is one of the highest rated power devices in current-carrying capacity. It provides maximum protection with true thermal modeling, while allowing smooth, stepless control of acceleration and deceleration.

- JKSSS4 (400 A, 2300 to 6600 V) & JKSSS7 (720 A, 2300 to 4200 V) Models
- Voltage & Current Metering
- Advanced Features Programmable via Keypad or Computer
- Fiber-Optically Isolated Low Voltage Compartment
- Fully-Rated Bypass Contactor for Increased Thermal Capacity & Optional Across-the-Line Start
- Non-Load-Break Disconnect Switch with Door Safety Interlocking
- Line Isolation Vacuum Contactor (JKSSS4 Available Fix-Mounted or Drawout)
- Heavy Duty SCR Stack Assemblies with Ring Transformer Isolation
- Eight Programmable Relay Outputs for Control
- Flexibility without External Auxiliary Relays or Add-On Cards
- Two Programmable Analog Outputs (0 to 10 VDC or 4 to 20 mA)

The JKSSS series provides the system protection features found in expensive stand-alone motor protection relays, without costly add-on cards or discreet devices. Users can customize the level of protection for their specific use by setting their own warning levels, separating trip curves for start and run modes, using a learned overload curve, and activating the remote/automatic overload reset option.

- Overcurrent/Electronic Shear Pin Notification
- Undercurrent/Load Notification
- Short Circuit Trip Pre-Checks Motor to Prevent Starting into a Shorted Load
- Phase-Rotation, Phase-Loss, & Current Imbalance Protection
- Undervoltage, Overvoltage, Line Frequency Trips & Alarms
- RTD Input for Precision Thermal Management
- Real-Time Clock
- Ground Fault Option



JK SERIES

> JK MOTOR CONTROL CENTERS

JK MCC can combine all the various JK4 & JK7 control gear (e.g. FVNR, FVR, RVAT, SSS, Transformer Feeder, VFD Feeder, VFD Bypass & VFD Synchronous Transfer) into one lineup with:

Main Bus: 1200 A, 2000 A or 3000 A, Tin or Silver Plated, Non-insulated or Insulated.

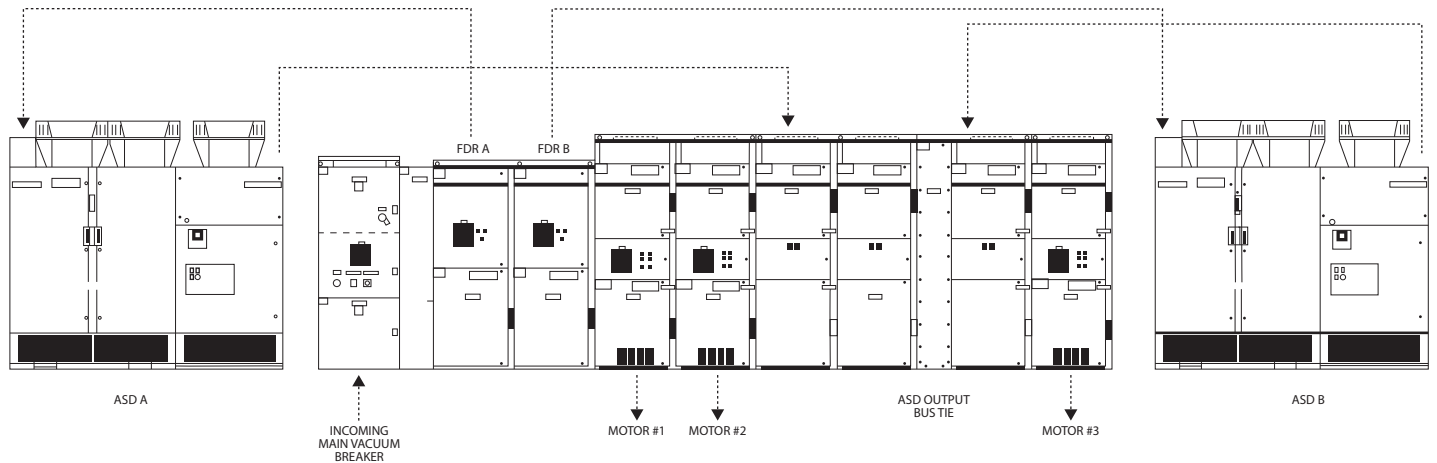
Incoming: Cable Pull Section, Load Break Switch (Non-Fused & Fused), Toshiba Vacuum Circuit Breaker (1200 A, 2000 A, 3000 A)



> SYNC-XFER MCC

Sync-Xfer is a solution that combines the proven reliability of a Toshiba T300MV2[®] adjustable speed drive (ASD) with the precision of Toshiba controlgear. With Sync-Xfer, the T300MV2 determines the utility line characteristics and transfers the motor supply power from variable speed to utility power via Toshiba vacuum contactors or vacuum circuit breakers. Additionally, the T300MV2 can pick up a motor from utility power and return it to variable speed. Sync-Xfer can have a significant impact in lowering a system's cost in applications where multiple motors are controlled by one or multiple T300MV2 ASDs and/or used for soft-starting duty only.

Whatever the industry or control needs, no one provides more solutions than Toshiba. Toshiba controlgear and the availability of multiple configurations ensure that every customer is allowed to meet or exceed their project requirements in a timely manner. Whether the project requires a single motor or multiple motors, single, multiple, or redundant Toshiba T300MV2 ASDs, Toshiba's combined T300MV2 ASD and controlgear system can be designed to fit the ever-revolving needs of the customer.



An illustration of the capability of a combined Toshiba T300MV2 ASD and controlgear solution is shown above.

APPLICABLE INDUSTRIES

- Aggregate
- Chemical
- Mining & Minerals
- Oil & Gas
- Pulp & Paper
- Power Plant
- Refinery
- Water/Wastewater

APPLICABLE APPLICATIONS

- Conveyors
- Extruders
- Blowers
- Mixers
- Test Stands
- Crushers
- Compressors
- Mills
- Fans
- Pumps
- Sync-Transfer
- Starting Duty



TOSHIBA MOTORS & DRIVES DIVISION

- Adjustable Speed Drives
- Motors
- Motor Controls

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