



MX250 MICROPROCESSOR CONTROLLER

The MX250 microprocessor is standard with the entire CTS product family. The MX250 Series includes all the standard features of the MX150 Controller while offering expanded programmability and field adaptability. The high reliability and ease of unattended operation makes it ideal to use in a wide range of mission critical applications.

FEATURES AND BENEFITS

- Available to support ALL transfer modes:
 - Open, Delayed and Closed Transition
- User-friendly programmable engine exerciser, with or without load, at ANY interval in a one-year period
- A wide variety of operating voltages available in a single controller for most domestic and international applications
- Real-time display of ATS status, including active timer(s)
- Multiple levels of user-defined password protection
- Serial communications allowing connectivity with other ATS's, Caterpillar® Switchgear, and SCADA systems
- Time-tested synchronous logic automatically measures phase angle and frequency allowing disturbance-free transfer
- Unsurpassed statistical ATS/System monitoring available in real-time
- Elevator pre-signal contacts automatically bypassed if the selected source fails, minimizing time an elevator is without power
- Universal Motor Disconnect (UMD) sends a pre-signal, post-signal or both to any motor control center. Not bypassed in an outage, the UMD ensures safety in the event of a single phase loss
- Voltage unbalance detection standard
- Also includes all standard MX150 features
- Back-lit/temperature compensated LCD display (includes the display of source voltage and frequency, exercise time, delay options and source condition)
- Close differential 3-phase under-voltage sensing of source 1, factory standard setting 90% pickup, 80% dropout; under-frequency sensing of source 1 factory setting 95% pickup; voltage and frequency sensing of source 2, factory standard setting 90% pickup voltage, 95% pickup frequency. All factory settings are operator adjustable (see table on next page).
- LED indicators for ATS position and source availability
- Plant exerciser clock (configured for 1, 7, 14 or 28 day run selections)
- Built-in time delays with count-down display
- Pushbutton to bypass time delay transfer/retransfer
- Transfer/commit/no commit selection

In-phase monitor

- Event logging (last 16 events)
- A test is standard (fast test/load/no load) to simulate source 1 failure – automatically bypassed should source 2 fail.

MX250 MICROPROCESSOR BASED ATS CONTROLLER

PERFORMANCE FEATURES

- UL, CSA and IEC listed
- Ringing wave immunity per IEEE 472 (ANSI C37.90A)
- Conducted and Radiated Emissions per EN55022 Class B (CISPR11) (Exceeds EN55011 & MILSTD 461 Class 3)
- ESD immunity test per EN61000-4-2 Class B (Level 4)
- Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
- Electrical fast transient/burst immunity test per EN61000-4-4
- Surge immunity test per EN61000-4-5 IEEE C62.41
- Conducted immunity test per EN61000-4-6 (ENV50141)
- Voltage dips and interruption immunity EN61000-4-11

USER-FRIENDLY OPERATION

- Multipurpose display: LEDs for continuous monitoring of switch position and source availability; a four line by twenty character LCD display for settings, functions, programming and annunciation
- Through-the-door programming and display
- Simplified keypad entry – menu-driven system is designed for ease of use
- Built-in diagnosis with displays for ease of troubleshooting
- Weather and tamper resistant touchpad

ADDITIONAL FEATURES

- Built-in programmable exerciser uses separate microcontroller with independent battery back-up to serve as clock/calendar – battery failure will not affect switch operation
- User settings are unaffected by power outages
- Separate line voltage components for controller isolation
- Inputs are optoisolated for high electrical immunity to transients and noise
- Built-in electrical operator protection
- Watchdog circuit for microprocessor operation
- Source connection and transfer data logging

CONTROL SETTING RANGES

Control Function		MX250	
		Range	Factory Setting
S1 Line Sensing – Under-voltage	Fail	75-98%	80%
	Restore	85-100%	90%
S1 Line Sensing – Under-frequency	Fail	88-98%	90%
	Restore	90-100%	95%
S2 Line Sensing – Under-voltage	Fail	75-98%	80%
	Restore	85-100%	90%
S2 Line Sensing – Under-frequency	Fail	88-98%	90%
	Restore	90-100%	95%
Time Delay S2 Start	(P1)	0-10 seconds	3 seconds
S2 Stop Delay	(U)	0-60 minutes	5 minutes
Time Delay S2 Stable Timer	(W)	0-5 minutes	1 second
Time Delay S1 Stable Timer	(T)	0-60 minutes	30 minutes
Universal Motor Disconnect*	(UMD)	0-5 minutes	15 seconds
Elevator Transfer Presignal*	(T3/W3)	0-60 seconds	20 seconds
Delay Transition Time Delays	(DT, DW)	0-10 minutes	5 seconds

* Form C Double Throw

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