



Your prescription for
a healthy motor!

by **MOTORTRONICS**

The RX Series Specifications

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|-----------------------------|---|---|---|
| Design | Type of Load | 3-phase AC induction motors | |
| | AC Supply Voltage (Motor Voltage) | Direct: 200 - 600VAC, $\pm 10\%$, 50/60hz With 120V PTs: 690 - 15,000VAC | |
| | Current Range | 1 - 2000 Amps in 3 frame ratings | |
| | Service Factor | Programmable from 1.00 to 1.30 for NEMA design motors | |
| | Current Measurement | 3 window CTs on units up to 75A, external CTs for higher ratings (meets NEC requirements for 3-leg protection) | |
| | Power Wiring | Direct feed-through or external CT lead feed-through | |
| | LED Display and Keypad | 7-segment, 4-digit alpha-numeric display designed for use in high ambient light conditions. Full function, 4-quadrant navigation keys for easy access to status information and programmable functions. | |
| | LED Status Lights | 10 LED indicators on the front panel for relay status | |
| Control | Control Voltage | Universal voltage supply, 85 - 265VAC or DC, 50/60Hz | |
| | Multi-function Digital Input | One (1) dry contact input for Timer Start, Remote Start or Remote Trip | |
| | Fault Reset | Manual reset via the keypad or cycle control power for remote reset | |
| | Programmable Output Contacts | One (1) Form C (SPDT) 5A, 240VAC maximum One (1) Form A (SPST) 10A maximum, 1/2 HP @ 240VAC 29 programmable trip functions | |
| | Event Timer Control | 24 hr, 7 day, 7 event timer allows automatic start w/ batch run time control | |
| Protection | Batch Run Timer Control | Minimum run timer (resumes timing if stopped) or permissive run timer (only runs during set time). Time setting: 1 - 9999 minutes. | |
| | Overload Protection Method | Real-time Motor Thermal Modeling uses current sensors and microprocessor to continuously calculate motor temperature | |
| | Retentive Thermal Memory | Remembers the thermal condition of the motor even if control power is lost. Thermal register is adjusted for Off-time when power is restored. | |
| | Dual Overload Curve Settings | Two separately programmable overload trip curves; one for starting and one for running. OL trip range: Class 5 - 30. | |
| | Learned Dynamic Reset | OL trip will not reset unless motor has regained enough thermal capacity for successful restart (based on learned motor starting profile) | |
| | Programmable Service Factor | Automatically adjusts other settings to compensate for programmed Service Factory. Adjustment Range: 1.0 - 1.15 SF. | |
| | Current Imbalance Protection | Monitors phase-to-phase current levels and trips if imbalance exceeds setting. Setting: Off or 5 - 30% of FLA with 1-20 second delay. | |
| | Phase Loss / Sequence Protection | Trips if any phase < 20% FLA. Sequence selectable A-B-C, C-A-B or Off. | |
| | Current Trip | Over Current | Electronic shear-pin/shock relay. Off or 50-300% FLA, 1-20sec delay |
| | | Under Current | Load-loss/loss of prime. Setting: Off or 10-90% FLA, 1-60sec delay |
| | Over Voltage Trip (any phase) | Setting: Off or 1-10% of set voltage with 1-20 second delay | |
| | Under Voltage Trip | On Startup | Setting: Off or 1 - 20% of set voltage with 1-120 second startup time |
| | | At Full Speed | Setting: Off or 1 - 20% of set voltage with 1-20 second trip delay |
| | Load Monitor (True Motor Power) | Under or over kW trip or alarm. Setting: Off or 20 - 100% of motor kW with 1-20sec delay | |
| | Power Factor Monitor | Leading or lagging PF, trip or alarm. Setting: Off or 0.1 - 1.0PF (lead or lag) with 1-20 second delay | |
| | Frequency Monitor | Over or under programmed frequency. Setting: Off or 1-10Hz with 1-20sec delay | |
| | Equipment Ground Fault Protection | Electronic residual current protection method, no additional CTs needed. Setting: Off or 5-90% of CT with 1-60sec delay | |
| | Short Circuit / Shorted Load | Peak current quick trip (electronic fuse). Trip level: Off or 800-1400% FLA with 0.1 - 0.5sec delay | |
| | Restart Delay Timer | Programmable delay of restart after a power failure. Setting: 0 - 999 sec. | |
| | Starts-per-Hour Lockout | Program maximum starts-per-hour in adherence with motor design limitations. Setting: Off or 0 - 10 starts/Hr. | |
| Minimum Time Between Starts | Used with or without starts-per-hour protection to prevent short cycling of motor. Setting: Off or 1 - 60 minutes between starts | | |
| Coast-Down Timer | Back spin or anti-windmilling protection prevents restart after stop command has been given. Time setting: Off or 1 - 3600 seconds. | | |



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| Metering | Amp Meter (each phase) | Default is Phase A, scroll up or down for phases B, C and ground. 0 - 9999A (999A for ground), ± 2% accuracy |
| | Volt Meter (each phase) | 0-600V, or 1-15kV, ± 2% accuracy. Displays total voltage imbalance as %. |
| | Elapsed Time Meter | Running time from at-speed detection. Resettable only with passwrd. Range: 0 - 9,999,999.9 hours. |
| | Run Cycle Counter | Counts number of starts (at-speed) for maintenance, etc. Resettable only with password. Range: 0 - 99,999,999 counts. |
| | Power Metering | kW, kWhr, kVA, kVAR, or MW, MWhr, MVA, MVAR. 0 - 9999 units, ± 2% accuracy |
| | Power Factor Metering | Leading (inductive) or lagging (capacitive), 0.1 - 1.0 PF |
| Display | Fault Display | Fault code indicator plus 10 LEDs for phase and trip status. |
| | Fault Event Recorder | Records and displays previous three (3) fault trips (stored in non-volatile memory). Time and date stamped. Cleared only with password. |
| | Thermal Capacity | Real-time display of motor's remaining thermal capacity after starting or running. Value shown as 0 - 100% (counts upwards while cooling). |
| | Remaining Time | View values of lockout times such as time-between-starts or coast-down timer. View process timer or time clock values. |
| Environmental Conditions & Approvals | Standard Packaging | Protected Chassis (IP00) with DIN rail adaptor |
| | Remote Display Mounting | Built in operator interface can be remote mounted up to 10ft (3 meters) away. NEMA 4/12 mounting kit optional. |
| | Altitude | Up to 10,000 feet (3000 meters) without derating |
| | Ambient Temperature | 0° C to 50°C (32°F to 122°F), 0 to 95% relative humidity |
| | Approvals | UL, CUL, CE |