

## EPAC 300 Family - EPAC M50



Model 3608M50 Shown

The EPAC M50 Series Controller Unit is a fully actuated controller unit with a full complement of operational, programming, and diagnostics capabilities.

The M50 Series Controller Unit EXCEEDS both NEMA TS-1 1989, NEMA TS-2 -2003 and NEMA /AASHTO/ITE. Actuated Controller Unit Standards. Exceeds NEMA TS 2-2003 Standard for Traffic Controller Assemblies with NTCIP Requirements.

Exceeds NEMA/AASHTO/ITE Rev 5.2 Standard for Advanced Transportation Controller (with next generation engine board).

The M50 Series Controller Unit has a removable LCD alphanumeric backlit display unit (8-line x 40 char/line). Programming is easy and error free using English Language Menus. Within a menu, each parameter can be viewed and a cursor moved to that parameter for changes. Related parameters are visible simultaneously, making verification an easy matter. The screen provides both programming area identification and editing prompts. The M50 can also be utilized as a master control unit using SE-MARC Master software.

### SPECIFICATIONS

Physical Dimensions	Temperature	Power Consumption	Weight
177mm H x 394mm W x 241mm D 7" H x 15.5" W x 9.5" D	-34°C to +74°C -30° F to +165° F	25Watts (typical) • 120 Watts (max) 89 to 135 VAC • 57 to 63 Hz	4 kg (typical) 8 lbs. (typ.)

### Hardware Features

- Exceeds NEMA TS-1 and TS-2 standards for traffic controllers
- Removable Hand-Held Front Panel multi-line alphanumeric backlit display for all operational parameters and states
- 8MB of flash memory is used to retain all timing and control parameters even during power outages. No replacement of EPROMs necessary
- Built-in 10-Base T Ethernet and Infrared ports
- Datakey option -- carries timing data easily from controller to controller

### Six Modes of Coordination

- Permissive Mode
- Yield Mode

- Permissive Yield Mode
- Permissive Omit Mode
- Sequential Omit Mode
- Full Actuated Mode

### Adaptive Traffic Control

- 16 Vehicle Phases
- 16 Pedestrian Phases
- 4 Timing Rings
- 16 Overlaps
- 80 Detectors
- Adaptive Maximum Routines
- Adaptive Protected/Permissive Routines
- Coordination Virtual Split Routine

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### Reports

The M50 Series Controller Unit provides extensive reporting capability. Each report entry includes the Date and Time of occurrence.

- Local Alarm Log, stores up to 120 events
- Comm Fault Log, stores up to 60 events
- Detector Fault Log, stores up to 60 events
- System Detector Log, stores up to 96 events
- MOE Log, stores up to 24 events
- Speed Log, stores up to 24 events
- Volume Count Log, stores up to 72 events
- Cycle MOE Log, stores up to 60 events
- MMU Fault Log, stores up to 10 events

### Preemption/Priority

- 6 Preempt Routines
- 6 Priority Routines

### Diagnostics & Status Displays

- Monitor Compatibility Diagnostics
- Monitor Field Status Diagnostics
- Cycling Diagnostics
- Detector Diagnostics
- Port 1 Message Display
- Port 2 Comm Status Display
- Port 3 Comm Status Display
- Hardware I/O Status Display
- MMU Status Display

### Time Base Control

- 250 Events
- 99 Day Programs
- 10 Week Programs

### Preemption Priority

Internal Preemption is a highly flexible routine operating within the M50 Series Controller Unit. Included are:

- 6 Preempt Routines providing complete signal control
- 6 Priority Routines providing complete phase control and in-sync return to coordination

Preempt activity can be monitored on a Preempt Status display which denotes:

- Preempt In Control, Interval Timing, & Interval Countdown
- Individual Preempt Status & Timing
- Individual Priority Status & Timing

### Diagnostics and Status Displays

A resident diagnostic program is standard in the M50 Series Controller Unit. In addition to the extensive displays to aid in intersection setup, monitoring, and operation, the

resident diagnostic program enhances the maintenance and troubleshooting of the controller assembly.

- Monitor Compatibility Diagnostics
- Monitor Field Status Diagnostics
- Cycling Diagnostics
- Detector Diagnostics
- Port 1 Message Display
- Port 2 Comm Status Display
- Port 3 Comm Status Display
- Hardware I/O Status Display
- MMU Status Display

### Time Base Control

Internal Time Base Control is a highly flexible routine operating within the M50 Series Controller Unit. Included are:

- 250 Events for the control of Pattern Selection, Free, Flash, Dimming, Detector Diagnostic Parameters, System Detector Logging, 3 Auxiliary Functions, 8 Special Functions, 16 Traffic functions
- 99 Day Programs
- 10 Week Programs

### Hardware Design

The M50 Series Controller Unit is designed for efficient operation and ease of maintenance. The chassis is made of injection molded, high impact polycarbonate and is designed for easy access to the boards for testing without disassembly. A molded handle makes the lightweight controller easy to carry.

The controller is convection cooled with vent slots in the back and openings along the bottom. Adjustable rubber feet along the front allow users to change the angle of the display and create more or less space around the controller. Grounding metal feet in the rear stabilize the controller.

The M50 features a removable, hand-held LCD alphanumeric backlit display unit, with 8-line, 40 characters per line display capability. The display unit connects to the controller via a dedicated C60 port.

### TS-2 Advantages

Controller assemblies with TS-2 Detector Racks provide increased capability, consume less power, and provide additional diagnostic data to the Controller Unit via the SDLC port. The Controller Unit can take corrective action much earlier than one based on internal diagnostics.

Controller assemblies with TS-2 Monitors provide additional diagnostic data to the Controller Unit via the SDLC port.



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### Six Modes of Coordination

**Permissive Mode** provides non-actuated coord phase, vehicle and pedestrian, with permissive windows opened phase by phase to the non-coord phases.

**Yield Mode** provides non-actuated coord phase, vehicle and pedestrian, with a single permissive window for all non-coord phases.

**Permissive Yield Mode** provides for actuated coord phase, vehicle and pedestrian, with permissive windows opened phase by phase to the non-coord phases.

Additionally, the coord phase vehicle may extend its green time at the beginning of the first permissive window.

**Permissive Omit Mode** provides operation similar to the Permissive Yield Mode, except that the coord phase, once terminated, is prevented from occurring prior to the end of the last permissive.

**Sequential Omit Mode** provides operation similar to the Permissive Yield Mode, except the permissive is a phase by phase sliding window (only one phase in a ring will be allowed service at any time).

**Full Actuated Mode** provides operation similar to the Permissive Yield Mode, except that any phase may be serviced and reserviced in the standard sequence following the first permissive and through the last permissive.

### Adaptive Traffic Control

Simple or highly complex control including:

- 16 Vehicle Phases
- 16 Pedestrian Phases
- 4 Timing Rings
- 16 Overlaps
- 80 Detectors

**Adaptive Maximum Routines** which are enabled via Time Base, offer three separate Step values to cause the running maximum to increase or decrease smoothly based on current traffic conditions. Separate Dynamic Maximum parameters are available for each Step value.

**Adaptive Protected / Permissive Routines** measure the volume of Left Turn vehicle traffic and available gap windows in the conflicting Through-Vehicle traffic to determine whether the Left Turn should operate protected or permissive.

**Coordination Virtual Split Routine** provides for actuated coord phase vehicle and pedestrian modes. This control provides for a period of time of each cycle which is distributed to the Coord Phase(s) or non-coord phases, based on Coord Phase vehicle traffic activity.

**Coordination Adaptive Split Routines** which are enabled via Time Base adjust split times smoothly based on current traffic conditions.

### Security

The M50 Series Controller Unit provides for a user specified security code entry before data may be altered. This security code entry is not required to view any parameters. The M50 Series Controller Unit can also disable security code requirements for perpetual access.

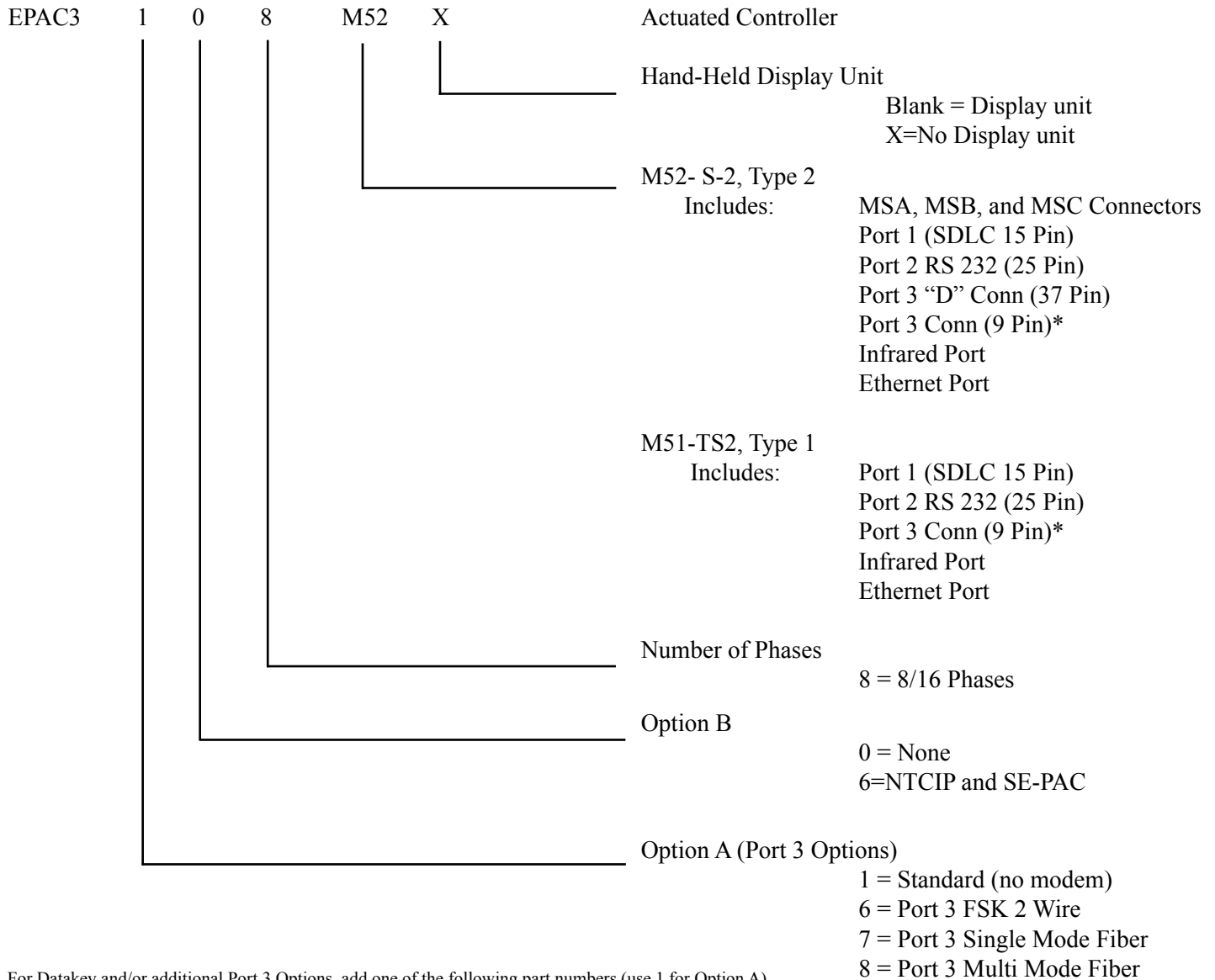
The next generation engine board, standard on the ATCNx and available as an option for the other M50 models, provides advanced functionality and software support.

- Faster, more powerful engine board with substantial increase in flash memory drive and RAM.
- Runs both Linux and OS-9 operating systems, providing more options for third-party development.
- Preloaded with the SafeSuite software package, which includes NextPhase, SEPAC, SeMARC, NTCIP, Monitor, Enforce and more, making it a comprehensive intersection control and monitoring system.
- Can run multiple-concurrent transportation software applications, offering true multitasking traffic control.



Models

## EPAC 300 Family - M50



For Datakey and/or additional Port 3 Options, add one of the following part numbers (use 1 for Option A)

Part Number	Description	Part Number	Description
AAD15288P001	Datakey*, Port 3 RS-232	AAD15288P007	Datakey*, Port 3 RS-232, Single Mode Fiber
AAD15288P002	Datakey*	AAD15288P008	Datakey*, Port 3, Single Mode Fiber
AAD15288P003	Port 3 RS-232	AAD15288P009	Port 3 RS-232, Single Mode Fiber
AAD15288P004	Datakey*, Port 3 RS-232, FSK	AAD15288P0010	Datakey*, Port 3 RS-232, Multi-Mode Fiber
AAD15288P005	Datakey*, Port 3 FSK	AAD15288P0011	Datakey*, Port 3, Multi-Mode Fiber
AAD15288P006	Port 3 RS-232, FSK	AAD15288P0012	Port 3 RS-232, Multi-Mode Fiber

\* Datakey reader ONLY. Datakeys must be purchased separately.

Hand-held display can be ordered as a separate item (AAD14767P001). Unit can also be ordered with NextPhase firmware (MBU13995P100). Please contact TAPCO or order SCOOT enabled controllers.



Order by Phone 1-262-814-7000 Toll-free 1-800-236-0112  
or Order by Fax 1-262-814-7017 Toll-free 1-800-444-0331

