



## Product Type: ASC/3 Controller

Reference: AN2102  
Date: 15 August 2008

### New Features in Version 2.43.00

## Purpose

This document gives information about the new features that have been added to the software of the ASC/3-2100 and ASC/3-1000 Controllers with the Version 2.43.00 release.

## Introduction

The table that follows is a summary of the new features for the ASC/3 Controller, Version 2.43.00. For descriptions of the new parameters on the screens, refer to the online Help of the controller. After the table, you will find more information about Diagnostics (MM-7-7-x) and Warning Checks (MM-9-2-x).

### New Features in Version 2.43.00

Feature	Description
<b>New Product Support</b>	
ASC/3 RS232 Telemetry Board on 3B  NTCIP Parameter MM-1-5-4 (ECPIP Only)	The new optional Telemetry Board (Port 3B) can now be jumpered to act either as an FSK or RS232 module. There is an option to allow the ASC/3 software to recognize that RS232 Telemetry board is present. This allows the ASC/3 software to soft control Telemetry Response Delay (TRD). The TRD parameter in RS232 Telemetry setting is known to work when set at 1 ms.
<b>UI and Diagnostic support</b>	
New MM-7-7-x to improve cabinet/MMU diagnostic support  MM-7-7-1 MM-7-7-3 MM-7-7-4 MM-7-7-5 MM-7-7-6	Several new diagnostic features are available to make cabinet trouble shooting easier. <ol style="list-style-type: none"> <li>1. Simplified MM-7-7-1. Display only the relevant cause of flash. This is the first phase of revamping MM-7-7-1-3 Color mismatch. The next release will add diagnostics improvements to what is there.</li> <li>2. Simplified MM-7-7-3 (MMU Status) with real-time display and easy-to-read comparison of Controller and MMU Color</li> <li>3. Simplified MM-7-7-6 (MMU Compatibility) with real-time display and easy-to-read comparison of Controller and MMU Compatibility Programming.</li> <li>4. Added MMU Extended Status to MM-7-7-4 and MM-7-7-5 <ul style="list-style-type: none"> <li>• Real-time display of MMU Field check information, fault, AC status.</li> <li>• Only Econolite, EDI, and Reno MMU types are supported so far with Extended Status.</li> <li>• In order to see MM-7-7-4 and MM-7-7-5, Set "ENABLE MMU EXTENDED STATUS" on MM-1-4-1 to YES. Please do not turn on this feature with MMU other than the above-mentioned supported MMU types.</li> </ul> </li> </ol>
Warning Check  NTCIP Parameter MM-9-2-1 MM-9-2-2 MM-9-2-3	This useful feature analyzes and highlights possible irregularities in programming timing plans/configurations, keeping the user on the safe side when he/she changes the configuration. User can turn on and off groups of warnings or individual warnings on MM-9-2-1 and MM-9-2-3. Warning Checks are turned off by default because they can create possible annoyance to unfamiliar users. If turned on, the warning check runs automatically at power up only. User can manually run warning check to check their database by going to MM-9-2-2.



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Feature	Description
Show I/O Difference MM 7-8-9	Added MM 7-8-9, showing the I/O difference between the Econolite default DB(x3000.db) with the active database.
New Hyperlinks MM-3-3, MM-4-4 MM-7-7-2	New hyperlinks between MM-3-3 (SPLIT PATTERN) to MM 4-4 (SPLIT PATTERN) since it is the same split pattern associated with either the coordinator or TSP. New hyperlinks from MM 7-7-2 (SDLC Frame Status) to MM-1-4-1 (SDLC PORT 1 CONFIG)
<b>Coordination &amp; TSP</b>	
Report early green status during TSP.  NTCIP Status MM-7-3-2 (TSP fields) Main Status Display (TSP fields)	Added logic to report early green status for a second to indicate that it has reached the TSP phase when: <ol style="list-style-type: none"> <li>1. Check-out happens</li> <li>2. TSP phase has started</li> <li>3. In FREE mode, before any extension</li> <li>4. Report back to Central SW via NTCIP</li> <li>5. <b>Display 'G' in TSP input status</b> in (MM-7-3-2 and main status screens) to indicate that a TSP phase is timing in early/extended green.</li> </ol>
Changed cycle counter display to base on offset measurement MM-7-3-2 (LC field) Main Status Display (LC field)	The previous controller status display cycle counter was based on split measurement. It is more appropriate to base all cycle display counters in status screens on offset measurement.
<b>Data Collection</b>	
Intersection Data Collection	Ability to collect Intersection data for Traffic Analysis. Feature is disabled by default and requires a special turn-on sequence. The following data are collected if this feature is turned on. <ul style="list-style-type: none"> <li>• Detector information</li> <li>• Phase transition information</li> <li>• Overlap transition information</li> <li>• Preemption inputs / completion</li> <li>• Phase events: <ul style="list-style-type: none"> <li>• End of Initial Green</li> <li>• Gap Out / Hold</li> <li>• Reason for termination:, Gap Out, Max Out, Force Off</li> </ul> </li> <li>• Cycle events: Coordinated Phase Yield Point, Local Zero, Begin / End Coordinated Transition</li> <li>• Pattern Changes: Cycle, Offset, Splits</li> </ul>
<b>Overlaps</b>	
Enhanced Phase Overlap (EPO)  Internal Configuration. MM-1-3 (Reassignment of Load Switch) MM-2-2, MM-2-3, MM-2-5, MM-4-1, & MM-7-1 (Overlap Label Change)	This feature provides additional overlaps to drive the output and allow user to turn off load switch/overlap per phase. Use this feature with the special EPO database (designated to be N3200.db) that has been pre-mapped for 1-to-1 Phase Overlap assignments. If enabled with the ASC/3 Configurator, the following will happen. <ul style="list-style-type: none"> <li>• Change Overlap A-P labels to Overlap 1-12 and A-D labels in several menus.</li> <li>• If Track Clearance, Dwell, and Cycle phases are turned on, automatic turning on includes Overlaps on MM-4-1. User can turn off individual overlap manually.</li> </ul>



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Feature	Description
<b>Communication</b>	
NTCIP upload controller, detector, and MMU logs	There is the ability for Central SW to get logs uploaded. Check to see if your central SW supports this ability.
NTCIP upload and download ASC/3 configuration data files	There is the ability for Central SW to get all configuration data files uploaded, including ASC3.DB, ASC3.DT, ASC3.EXT, USERCFG.DB
SDLC Peer-to-Peer MM-1-4-1	Allows support for SDLC based devices that can talk peer to peer. None are identified at this moment.
<b>Sequencer</b>	
Enhanced Walk operation Feature for Canada	The software is enhanced to provide a main street GREEN-WALK operation such that the WALK will be displayed for the duration of the MAX I time setting, when main street is recalled. A special database set up is required to accomplish this feature.
Flashing Green Phase MM-2-6-1	<ul style="list-style-type: none"> <li>Added in MM-2-6-1 Flashing Green Phase option, to allow Flashing Green per phase with selectable frequencies: 1, 2, or 5 pps.</li> <li>Flashing Green can cause intermittent (less than 1 second) Red Fail or other intermittent failures reported from the MMU status display (MM7-7-3), due to the Green signal flashing. Intermittent failures in this feature that are less than 1 second can usually be ignored.</li> </ul>
Disallow MMU Enable/Disabling in ASC/3-1000	ASC/3-1000 always assumes MMU's presence. For work around, connect pin 2 to pin 10 on SDLC Port 1, which makes the controller appear as an ASC/3-2100

## Improved Diagnostic Support with MM-7-7-x

### Flash/SDLC/MMU Status Display, MM-7-7

FLASH/SDLC/MMU STATUS
1. FLASH STATUS
2. SDLC STATUS
3. MMU STATUS
4. MMU EXTENDED STATUS
5. MMU AC STATUS
6. MMU COMPATIBILITY STATUS



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#### Flash Status Display, MM-7-7-1

```
FLASH STATUS:
AUTOMATIC FLASH

    AUTO FLASH REMOTE INPUT

RING 1
RING 2
```

MM-7-7-1 shows the cause of a cabinet Flash condition. The example above is for an Automatic Flash condition. If there is no flash condition, MM-7-7-1 shows NO FLASH ACTIVE.

#### SDLC (Port 1) Status. MM-7-7-2

```
SDLC STATUS

MMU 128  DISABLED  TF  138  DISABLED
    129  DISABLED  TF  139  DISABLED
    131  DISABLED  TF  140  DISABLED
                                141  DISABLED

MMU STATUS:MMU DISABLED

DET 148  DISABLED  DET 152  DISABLED
    149  DISABLED  DET 153  DISABLED
    150  DISABLED  DET 154  DISABLED
    151  DISABLED  DET 155  DISABLED

TEST 158  DISABLED
```

Parameter	Description
SDLC STATUS	<b>NOTE:</b> This is a hyperlink field, linked to MM-1-4-1, which configures Port 1 (SDLC).
MMU TF MMU STATUS DET TEST	<p>MMU = Malfunction Management Unit  TF = Terminal and Facilities  MMU STATUS = Shows what was programmed in MM-1-4-1, for ENABLE MMU EXTENDED STATUS.  DET = Detector  TEST=Diagnostics Frame</p> <p>The real time status for each SDLC response frame.</p> <p><b>0-5:</b> There has been the indicated number of Response</p>



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Parameter	Description
	<p>Frame Errors in the past 10 transmissions.</p> <p><b>6-10:</b> There has been the indicated number of Response Frame Errors in the past 10 transmissions. The SDLC command response is failed.</p> <p><b>DISABLED:</b> The Command is not enabled.</p>

### MMU Status, MM-7-7-3

Line	MMU STATUS	MFG: .....
1	CHANNEL 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6	
2	RED.....	
3	YELLOW..	
4	GREEN...	
5	FAULT...	
6	ENA-Y-CK X . X . X . X . . X . X . X . X	
7	FAIL STATS . RLY TRANFR . CONFLICT...	
8	SPARE 1... SPARE 2... SPARE 3....	
9	SPARE 4... SPARE 5... SPARE 6....	
10	PORT 1 FL. . RED FAIL.. . MIN CL FAIL .	
11	CVM..... MMU DIAG.. . STRUP FL CL .	
12	24V MON 1. . 24V MON 2. . 24V MON INH .	
13	MMU RESET. . RED ENABLE . LOCAL AU/FL .	
14	FL TIME. 5s 24V LATCH. X CVM LATCH.. X	
15		

Line(s)	Parameter—MMU Status	Description
1	MFG	Name of the manufacturer of the MMU.
3 thru 5	RED YELLOW GREEN	<p>This data shows a comparison of channel colors sent by the ASC/3 controller (CU) and channel colors reported by the MMU. Each channel color may have one the following four values:</p> <p><b>.</b> : The CU did not set a channel color and none was reported by the MMU.</p> <p><b>C</b>: The CU set this channel color, but it was not reported by the MMU.</p> <p><b>M</b>: The MMU reported this channel color, but it was NOT set by the CU.</p> <p><b>X</b>: The CU channel color matches the channel color reported by the MMU.</p>



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Line(s)	Parameter—MMU Status	Description
6	FAULT	These are MMU detected-and-reported channel (not phase) faults. This information is a summary of all channel faults. The user must examine other information returned by the MMU to determine the exact fault source.
7	ENA-Y-CK	<b>Enabled Yellow Check</b> SDLC Response Frame 131, bits 129-144, returns an exact image of the Minimum Yellow Change Disable status programmed in the MMU. We have chosen to show the inversion of this channel data: <b>X</b> : The feature is enabled. . : The feature is disabled.
8	FAIL STATS	Type 129 Response Frame Immediate Response to Failure detected.
8	RLY TRANFR	<b>X</b> : The Fail Output Relay of the MMU is closed.
8	CONFLICT	<b>X</b> : The MMU senses two or more signals in conflict.
9	SPARE 1	<b>X</b> : The Reno A&E or Eberly Design MMU is reporting a Field Check Fault. Refer to the help text for FC/RED, FC/YELLOW, and FC/RED. This information is returned in SDLC Response Frame 129, bit 67.
9	SPARE 2	<b>X</b> : The Reno A&E or Eberly Design MMU is reporting a Dual Indication Fault (multiple colors on the same channel). This information is returned in SDLC Response Frame 129, bit 68.
9	SPARE 3	<b>X</b> : The Eberly Design MMU is reporting a Recurrent Pulse Detection Status. Refer to the help text for RP/RED, RP/YELLOW and RP/RED. This information is returned in SDLC Response Frame 129, bit 69.



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Line(s)	Parameter—MMU Status	Description
10	SPARE 4	<b>X:</b> The Reno A&E or Eberly Design MMU is reporting the External Watchdog Fault.  This information is returned in SDLC Response Frame 129, bit 70.
10	SPARE 5	<b>X:</b> The Reno A&E or Eberly Design MMU is reporting a Yellow/Red Clearance Fault (short yellow or short yellow/red).  This information is returned in SDLC Response Frame 129, bit 71.
10	SPARE 6	Currently not used. This information is returned in SDLC Response Frame 129, bit 72.
11	PORT 1 FL	Type 129 Response Frame. Port 1 Timeout Failure detected.
11	RED FAIL	<b>X:</b> One or more channels do not display a green or yellow or red as sensed by the MMU.
11	MIN CL FAIL	<b>X:</b> The minimum clearance between greens was less than 2.6 seconds, as sensed by the MMU.
12	CVM	<b>X:</b> The MMU is reporting a Controller Voltage Monitor/Fault Monitor condition. This information is returned in SDLC Response Frame 129, bit 57.
12	MMU DIAG	<b>X:</b> The MMU is reporting an internal diagnostic failure. This information is returned in SDLC Response Frame 129, bit 73.
12	STRUP FL CL	<b>X:</b> The MMU is about to transfer the Output relay to the NO FAULT state. To allow the CU to revert to its out-of-flash state, the signal is generated for ½ second before the Output relay changes state. This information is returned in SDLC Response Frame 129, bit 80.
13	24V MON 1	<b>X:</b> +24 VDC Monitor Input 1 is less than +18 VDC, as measured by the MMU.
13	24V MON 2	<b>X:</b> The +24 VDC Monitor Input 2 is less than +18 VDC, as



# Application Note



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Line(s)	Parameter—MMU Status	Description
		measured by the MMU.
13	24V MON INH	<b>X:</b> The +24 VDC Monitor Inhibit input to the MMU is active.
14	MMU RESET	<b>X:</b> The reset input to the MMU is active.
14	RED ENABLE	<b>X:</b> The red enable input to the MMU is active.
14	LOCAL AU/FL	<b>X:</b> The MMU's local/cabinet flash input is TRUE. This information is returned in SDLC Response Frame 129, bit 79. <b>NOTE:</b> This NEMA label is misleading because the status has nothing to do with Automatic Flash.
15	FL TIME	<b>X:</b> The value, in seconds, of the MMU Flash Time (6-16 seconds) programmed in the MMU. This information is returned in SDLC Response Frame 131, bits 145-148.
15	24V LATCH	<b>X:</b> This row shows +24 Volt Latch programming in the MMU.
15	CVM LATCH	This is the status of the CVM/Fault Monitor latch option that is programmed in the MMU. <b>X:</b> The MMU is programmed to latch these failure conditions. This information is returned in SDLC Response Frame 131, bit 150.





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Parameter	Description
	For more information, refer to the Eberly MMU operations manual.
RY GON	<p>These faults are reported only by the Eberly Design MMUs. The Red + Yellow Gon Status indicates the channel(s) that caused the MMU to detect a Minimum Yellow Plus Red Clearance fault (TS2 clause 4.4.5.1). Fault Status will report the channels that the Yellow Plus Red Clearance fault occurred on (channel terminating). The Red + Yellow Gon Status report the channels that caused the clearance fault (channel going active/Green).</p> <p>For all other fault types the Red + Yellow Gon Status is not relevant and will be zero.</p> <p><b>EXAMPLE:</b> If phase 2 Walk (channel 13) terminates, and phase 8 Green (channel 8) goes active in less than 2.8 seconds, the fault status bytes for this Minimum Yellow Plus Red Clearance fault will indicate channel 13, and the Red + Yellow Gon Status will indicate channel 8.</p>
FAULT	These are MMU detected and reported channel (not phase) faults. This information is a summary of all channel faults. The user must examine other information returned by the MMU to determine the exact fault source.
LAST FAULT REPORT	<p>There are two items associated with this input: 1) Time-of-day and date. This value shows current time and date as long as there is no MMU detected fault. If the MMU is reporting a fault, the time and date will report the exact time and date the fault occurred. 2) There is a message below the time and date line that describes the fault. Possible messages:</p> <p>NO FAULT, CVM, 24V MON 1, 24VMON 2, CVM AND 24V MON 1, CVM AND 24V MON 2, 24V MON 1 AND 2, CVM, 24V MON 1 AND 2, EXTERNAL WATCHDOG, PROGRAM CARD, CONFLICT, RED FAIL, SHORT YELLOW, SKIPPED YELLOW, SHORT RED+YELLOW, PORT 1 FAULT, MMU DIAGNOSTIC, DUAL INDICATION, FIELD CHECK, TYPE FAULT, LOCAL FLASH, CONFIGURATION CHANGE, BROWNOUT, RECURRENT PULSE CONFLICT, RECURRENT PULSE RED FAIL, RECURRENT PULSE DUAL INDICATION, UNKNOWN FAULT</p>

### MMU AC Status, MM-7-7-5

```

MMU AC STATUS REPORT      MFG: ...
RED  0  0  0  0  0  0  0  0  0  1-8
YEL  0  0  0  0  0  0  0  0  0  1-8
GRN  0  0  0  0  0  0  0  0  0  1-8
CH--1/9 2/0 3/1 4/2 5/3 6/4 7/5 8/6-----
RED  0  0  0  0  0  0  0  0  0  9-16
YEL  0  0  0  0  0  0  0  0  0  9-16
GRN  0  0  0  0  0  0  0  0  0  9-16
AC LINE:  0 VRMS AT N/A HZ,TEMP: -40 F
RED ENABLE: 0VRMS
LAST FAULT REPORT: 00/00/00 00:00:00
NO FAULT

```



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If this feature is disabled, the display below will come into view.

```

EXTENDED MMU STATUS DISPLAY IS DISABLED.
GO TO MM-1-4-1 TO ENABLE IF MMU IS
COMPATIBLE WITH THIS FEATURE.

SUPPORTED MMU FOR EXTENDED MMU STATUS:

ECONOLITE
EDI
RENO A&E

```

Parameter	Description
MFG	Name of the manufacturer of the MMU.
RED YEL GRN	RED (1-8), YELLOW (1-8), GREEN (1-8), RED (9-16), YELLOW (9-16), GREEN (9-16)  These are the AC RMS voltages on each channel color input. The information is returned by Reno A&E (SDLC Response Frame 192) or Eberly Design MMU (SDLC Response Frame 202).  <b>NOTE:</b> The top section of the display is for Channels 1 thru 8, followed by Channels 9 thru 16. The line in between, CH--1/9 2/0 3/1 4/2 5/3 6/4 7/5 8/6-----, labels the channels in both sections. For example, 5/3 labels Channel 5, above, and Channel 13, below.
AC LINE	This is the AC line RMS voltage. The information is returned by Reno A&E (SDLC Response Frame 192) or Eberly Design MMU (SDLC Response Frame 202).
VRMS AT ____ HZ	This is the AC line frequency in Hertz with a resolution of 0.1 Hz (for example, 60.2 Hz). The information is returned by Reno A&E (SDLC Response Frame 192) or Eberly Design MMU (SDLC Response Frame 202).
TEMP, °F	This is the cabinet temperature in degrees Fahrenheit (-40 to 214), where N/A indicates data is not available). The information is returned by Reno A&E (SDLC Response Frame 192) or Eberly Design MMU (SDLC Response Frame 202).
RED ENABLE , VRMS	This is the RMS voltage value of the RED ENABLE input to the MMU. The information is returned by Reno A&E SDLC Response Frame 192 or Eberly Design SDLC Response Frame 202.



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Parameter	Description
LAST FAULT REPORT	There are two items associated with this input: 1) Time-of-day and date. This value shows current time and date as long as there is no MMU detected fault. If the MMU is reporting a fault, the time and date will report the exact time and date the fault occurred. 2) There is a message below the time and date line that describes the fault. Possible messages: NO FAULT, CVM, 24V MON 1, 24VMON 2, CVM AND 24V MON 1, CVM AND 24V MON 2, 24V MON 1 AND 2, CVM, 24V MON 1 AND 2, EXTERNAL WATCHDOG, PROGRAM CARD, CONFLICT, RED FAIL, SHORT YELLOW, SKIPPED YELLOW, SHORT RED+YELLOW, PORT 1 FAULT, MMU DIAGNOSTIC, DUAL INDICATION, FIELD CHECK, TYPE FAULT, LOCAL FLASH, CONFIGURATION CHANGE, BROWNOUT, RECURRENT PULSE CONFLICT, RECURRENT PULSE RED FAIL, RECURRENT PULSE DUAL INDICATION, UNKNOWN FAULT

### MMU Compatibility Status, MM-7-7-6, ECPI Feature

```

MMU COMPATIBILITY STATUS MFG:
CH|6 5 4|3 2 1|0 9 8|7 6 5|4 3 2
1 . . . . . X . . . . X X . . .
2 . . . . . X . X . C X X . . .
3 . . . . X . . . . X X . . . .
4 . . . M X . X . X X . . . .
5 . . . . . . . X . . . . .
6 . . . . . X . X . . . . .
7 . . . . . X . . . . . . .
8 . . . . X . X . . . . . .
9 . . . . . X . . . . . . .
10 . . . . X . . . . . . . .
11 . . . . . . . . . . . . .
12 . . . . . . . . . . . . .
13 . . . . . . . . . . . . .
14 . . . . . . . . . . . . .
15 . . . . . . . . . . . . .

```

This display shows the real time comparison between the controller INTERNAL Compatibility (MM-1-4-2) and the MMU programming card, as reported by SDLC communications.

- . : Neither the Controller Unit (CU) or the MMU is programmed.
- C : The CU is programmed but the MMU is not.
- M : The MMU is programmed but the CU is not.
- X : Both the CU and the MMU are programmed.



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## Diagnostics Information with Warning Checks (MM-9-2-x).

### Diagnostics Submenu, MM-9

```
DIAGNOSTICS SUBMENU  
1. DIAGNOSTICS INFORMATION  
2. WARNING CHECKS
```

### Diagnostics Information, MM-9-1

```
DIAGNOSTICS INFORMATION  
  
HARDWARE DIAGNOSTICS ARE PERFORMED WHILE  
THE CONTROLLER IS NOT OPERATIONAL.  
  
REFER TO APPENDIX F IN THE PROGRAMMING  
MANUAL FOR INSTRUCTIONS ON LOADING THE  
DIAGNOSTIC FILE AND ITS OPERATION.
```

### Warning Check Submenu, MM-9-2

```
WARNING CHECK SUBMENU  
1. ENABLE WARNING CHECK CATEGORIES  
2. COMPILE & VIEW ACTIVE WARNINGS  
3. VIEW/EDIT DISABLED WARNINGS
```

## What is a Warning Check?

In the ASC/3 controller, following a database download or object data alteration via key board, the controller runs Consistency Checks look for critical errors. If it detects errors, they must be corrected or all database changes are discarded.

After you program the controller, it may appear that a certain feature does not operate correctly, but it may be because of incorrect programming. To call attention to a possible incorrect programmed entry, the controller generates a Warning. The controller generates a Warning if, in the opinion of Econolite, you override the programmed parameter setting from a database with an unusual selection, or select a combination of programmed values that may not give you the operation you probably expect. Warning Checks are intelligent diagnostics designed to tell you of data entries that, by themselves or in combination with other entries, *may* result in unexpected operation.



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One thing to keep in mind: A WARNING IS NOT AN ERROR. Occasionally, it could be that programming results in “incorrect” operation, but is acceptable to you because it provides a benefit to you that compensates for an occasional operational anomaly. For example, some users routinely program Walk and Pedestrian Clearance times that exceed phase split times in coordinated operation because there are very few pedestrian calls and the user does not mind the occasional coordinator resynchronization that follows the service of a pedestrian call. Since we cannot possibly anticipate what you have in mind, it is left to you to decide what action, if any, to take to correct the situation that caused a Warning message.

Initially, the software framework and a limited set of diagnostics will be available. Warning Checks are viewed as a long-term “work-in-progress”. These checks will be expanded as users and developers find situations that cause an unexpected controller operation.

### Enable Warning Check Categories, MM-9-2-1

```

WARNING CHECK SELECTION - DISABLE ALL
WARNING CHECK          ENABLED
1. CONFIGURATION      NO
2. CONTROLLER         NO
3. COORDINATOR        NO
4. PREEMPTOR/TSP     NO
5. TIME BASE          NO
6. DETECTORS          NO

NOTE: Controller automatically performs
Warning Check at power up only.
User should run Warning Check with
MM-9-2-2 after data entry changes.
Individual Warnings can be disabled
at MM-9-2-3

```

Use this display to select the warning check categories:

- To enable or disable *all* the warning check categories, on the first line, toggle to select ENABLE ALL or DISABLE ALL.

OR

- To individually enable/disable the warning check categories:
  1. On the first line, toggle to select COMMANDS.
  2. Cursor to the respective line to individually select YES to enable or NO to disable the six warning check categories:
    1. Configuration
    2. Controller
    3. Coordinator
    4. Preemptor/TSP
    5. Time Base
    6. Detectors

**NOTE:** The default is DISABLE ALL.



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## Compile and View Active Warnings, MM-9-2-2

When you select this display, the controller runs all enabled Warning Checks. If any warning(s) is detected, it is shown on the display. An example display is shown below.

### Example Warnings Display

```

ACTIVE DIAGNOSTIC WARNING CHECKS (WC)
1201 Inactive Exclusive Ped Phase
1202 In-use phase not in sequence
3101 Manual Pattern enabled
4104 Preempt MAX Presence time enabled

```

When you move the cursor to one of the warning messages and press [HELP], you will see more information about the warning. For example, text associated with “Yellow Clear Override” might reference the relevant NEMA and/or NTCIP paragraph, explain why the message was generated and show a list of the phases with this apparent error—remember that a warning check is not an error, just something that does not look correct. You can scroll through this help text. Below is an example of a help display for a warning.

### Example Help Display for a Warning

```

2103 Ped Clear Override

Phase Ped Clear timing (MM-2-1) will be
Overridden by Guaranteed Minimum Ped
Clear (MM-2-4) on the following

PHASES:
2

The indicated problem may be on any of
four possible timing plans - be sure to
check each timing plan.

```

If no warning diagnostics are generated, “THERE ARE NO WARNINGS TO BE DISPLAYED” is shown.

If you want to disable a warning check in the future runs:

Move the cursor to the warning message.

Press [SPEC FUNC] and [NEXT DATA] at the same time.

MM-9-2-3 comes into view with the specified warning number selected.

Use the DISABLE command to suppress this warning check in future runs.

The first two digits of the warning number indicate the first two levels of the display in which the associated data is programmed.

**EXAMPLE:** 3101 = Manual Pattern Enabled—and the manual pattern is enabled in MM-3-1.

Warning Checks are a “work-in-progress” so we anticipate the number of Warning Checks will grow over time. The current list of Warning Checks is described in the tables that follow.



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### AN2102: New Features in Version 2.43.00

There are five categories of Warning Checks, each listed in a separate table:

- Configuration
- Controller
- Coordinator
- Preemptor/TSP
- Time Base
- Detector

Warning No.	Configuration Checks	Help Notes
1201	Inactive Exclusive Ped Phase	The phases below are programmed for Exclusive Pedestrian operation, but are not programmed as active (in-use) in MM-1-2.
1202	In-Use Phase Not In Sequence	The phases below are set as In-Use in MM-1-2, but do not appear in any of the sequences programmed in MM-1-1-1. Please keep in mind that this warning is acceptable if the purpose of the In-Use Phase feature is to cause the controller to ignore sequence phases programmed via MM-1-1-1.
1501	Intersection Monitor feature not enabled	The Port 2/C50S is enabled to run Intersection Monitor (IM) in MM-1-5-2, but no valid Datakey is detected. A valid Datakey is required to enable IM feature.
1502	Invalid Local System Detectors	Local System Detector programming in MM-1-5-6 is ignored because ECPIP is not selected as the Port 3B/C22S protocol on MM-1-5-4.
1503	No Expanded System Detector Address	The Port 3B/C22S protocol is programmed as ECPIP on MM-1-5-4. However, local detectors assigned to System Detectors 9 through 16 in MM-1-5-6 are ignored because the Expanded System Detector Address in MM-1-5-6 is not programmed.
1504	No Detector for Expanded Speed Detector Address	The Port 3B/C22S protocol is programmed as ECPIP on MM-1-5-4 and an Expanded System Detector Address is programmed in MM-1-5-6, but no local detectors are assigned to System Detectors 9-16 in MM-1-5-6.



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Warning No.	Controller Checks	Help Notes
2101	Min Green Override	Phase Minimum Green timing (MM-2-1) will be overridden by Guaranteed Minimum Green (MM-2-4) The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2102	Walk Override	Phase Walk timing (MM-2-1) will be overridden by Guaranteed Minimum Walk (MM-2-4)
2103	Ped Clear Override	Phase Ped Clear timing (MM-2-1) will be overridden by Guaranteed Minimum Ped Clear (MM-2-4) The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2104	Yellow Clear Override	Phase Yellow timing (MM-2-1) will be overridden by Guaranteed Minimum Yellow (MM-2-4) The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2105	Red Clear Override	Phase Red timing (MM-2-1) will be overridden by Guaranteed Minimum Red (MM-2-4) The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2106	Invalid Pedestrian Time Setting	Walk AND Pedestrian timing should both be set (MM-2-4) The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2107	Invalid Exclusive Ped Timing	Exclusive Pedestrian phases (MM-1-2) require non-zero Walk and Pedestrian Clear times (MM-2-1) or the Exclusive Pedestrian phase will not time. The phases do not have valid timing entries. The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2108	Delay Green will extend Walk	If Walk time is less than Delay Green time (MM-2-1), Walk timing is automatically extended so it terminates with Delay Green. Delay Green is controlling Walk timing



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Warning No.	Controller Checks	Help Notes
		The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2109	Delay Green will extend Walk2	If Walk2 time is less than Delay Green time (MM-2-1), Walk2 timing is automatically extended so it terminates with Delay Green. Delay Green is controlling Walk2 timing. The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2110	Phase Yellow & Guaranteed Yellow are BOTH ZERO	No YELLOW will be timed since Phase Yellow timing (MM-2-1) and <b>Guaranteed Min Yellow</b> (MM-2-4) are both set to ZERO. The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.
2201	Included Phase is an Exclusive Ped Phase	An Included Phase is also an XPED phase. Verify programmings in MM-2-2.
2202	Included Phase Not In-Use	An Included Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2.
2203	Modifier phase not in-use	A Modifier Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2.
2204	Protected Phase Not In-Use	A Protected Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2.
2205	Pedestrian Protected Phase Not In-Use	A Ped Protect Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2.
2206	Lag phase Not In-Use	A Lag Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2.
2207	Not Overlap Phase Not In-Use	A Not Overlap Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2.
2208	Flashing Green Phase Not In-Use	A Flash Green Phase is not part of the current sequence (MM-1-2). Verify programming in MM-2-2
2209	Lead Phase Can NOT be a Protected Phase	A Lead Phase is also programmed as a Protected Phase. Verify programming in MM-2-2.
2210	A Lag Phase Can NOT be a Protected Phase	A Lag Phase is also programmed as a Protected Phase. Verify programming in MM-2-2.
2211	Lead Phase is NOT In-Use	A Lead Phase is not part of the current



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Warning No.	Controller Checks	Help Notes
		sequence (MM-1-2). Verify programming in MM-2-2.
2213	Modifier Phase = Included Phase	A Modifier Phase may not also be an Included Phase. Verify programming in MM-2-2.
2214	Not Overlap Phase = Included Phase	A Not Ovlp Phase may not also be an Included Phase. Verify programming in MM-2-2.
2215	Modifier Phase Must Use Type GRN-YEL	Modifier Ph programmed but Overlap Type is not set to GRN-YEL. Verify programming in MM-2-2.
2216	Protected Phase Must Use Type OTHER	Protected Ph programmed but Overlap Type is not set to OTHER. Verify programming in MM-2-2.
2217	Lag Phase Must Use Type OTHER	Lag Phase programmed but Overlap Type is not set to OTHER. Verify programming in MM-2-2.
2218	Lead Phase Must Use Type OTHER	Lead Phase programmed but Overlap Type is not set to OTHER. Verify programming in MM-2-2.
2219	Not Overlap Phase Must Use Type OTHER	Not Olp Phase programmed but Overlap Type is not set to OTHER. Verify programming in MM-2-2.
2220	Ped Protect Phase Must Use Type OTHER	Ped Protect Ph programmed but Overlap Type is not set to OTHER. Verify programming in MM-2-2.
2221	Lag Phases Programmed with Invalid Timing	Lag Ph programmed but both LAG GRN and LAG YEL are not set. Verify programming in MM-2-2.
2222	Lag GRN or YEL Programmed with No Lag Phase	Lag GRN or YEL time prog'd but no Lag Phase selected. Verify programming in MM-2-2.
2223	Lead Phases with No Advance Green Time	Lead Ph programmed but without ADV GRN time. Verify programming in MM-2-2.
2224	Lag Phase Must be an Included Phase	A Lag phase is programmed that is not also selected as an included phase in MM-2-2.
2225	No Lead Phase with ADV GRN Time	ADV GRN time programmed but no Lead Phase selected. Verify programming in MM-2-2.
2501	Inactive Startup Phase	The startup phase(s) shown below, programmed in MM-2-5, are invalid because they have not been programmed as IN-USE in MM-1-2.
2502	No Startup Phase	There are no startup phases programmed in MM-2-5 for the rings shown below OR the startup phase is not programmed as



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Warning No.	Controller Checks	Help Notes
		IN-USE in MM-1-2.
2503	No Startup Overlap	The overlaps listed below include start-up phases programmed in MM-2-5, but are not programmed as startup overlaps on that same menu. This means the overlap(s) will start in RED and revert to normal overlap operation following the first phase change.
2504	Inactive Flash Entry Phase	The phase(s) listed below are programmed as flash entry phases in MM-2-5, but are not programmed as IN-USE in MM-1-2.
2505	Invalid Flash Exit Phase	The phase(s) listed below are programmed as flash exit phases in MM-2-5, but are not programmed as IN-USE in MM-1-2.
2506	No Flash Exit Overlap	The overlaps below do not have flash exit programming in MM-2-5. On flash exit the overlaps will display RED until a phase change.
2507	Invalid Power Start Sequence	The programmed PWR START SEQ in MM-2-5 is invalid. It should be set to a value 1 through 16 for normal operation and 17 through 20 for Diamond phasing.

Warning No.	Coordinator Checks	Help Notes
3101	Manual Pattern Enabled	Coordinator manual pattern is enabled in MM-3-1. Other pattern commands will be ignored.
3201	Pattern Cycle Length < 30 seconds	Cycle length (MM-3-2) is less than 30 seconds.
3202	Invalid Pattern Offset	Offset (MM-3-2) is larger than the cycle length.
3203	Split Sum < Cycle Length	Sum of phase splits (MM-3-3) is less than the cycle length (MM-3-2)
3204	Split Sum > Cycle Length	Sum of phase splits (MM-3-3) is greater than the cycle length (MM-3-2)
3205	FLASH Option Enabled In Action Plan	FLASH option enabled in action plan, FLASH option (MM-5-2) is found enabled in the following patterns' action plan (MM-3-2). It will not take effect when the programmed pattern is active.
3206	Xartery Split Pattern Not Programmed	Phase splits (MM-3-3) are not programmed patterns (MM-3-2) with Xartery split pattern programmed. Xartery split pattern is programmed in a coordinated pattern but all phase splits are 0.



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Warning No.	Coordinator Checks	Help Notes
3207	Split Demand Pattern Not Programmed	Phase splits (MM-3-3) are not programmed patterns (MM-3-2) with split demand pattern programmed. Split demand pattern is programmed in a coordinated pattern but all phase splits are 0.
3301	Invalid Coordinated Phases	Coordinated phases (MM-3-3) are not compatible with each other
3302	Missing Coordinated Phase	At least one ring does not have a Coordinated phase (MM-3-3)
3303	Split phases Not In-Use	Phase split (MM-3-3) is programmed but the phase is not programmed as an active phase in the sequences (MM-1-2)
3304	Phase with Zero Split	Setting phase split (MM-3-3) to zero will omit the phase in coordination. Zero phase splits are found.
3305	Phase Split < Phase Minimum Time	Phase split (MM-3-3) is less than the phase minimum time. The indicated problem may be on any of four possible timing plans - be sure to check each timing plan.

Warning No.	Preemptor/TSP Checks	Notes
4101	Preempt Inhibit Time > Delay Time	Inhibit Time will not be honored since it must be LESS THAN the Delay Time. Verify programming in MM-4-1.
4102	Linked Preemptor Not Enabled	PMT run links to another PMT (MM-4-1) which is not enabled
4103	Maximum Presence Enabled for Railroad Preempt	Max Presence Time (MM-4-1) is not checked for HIGH priority (Railroad) preempts. A non-ZERO value is prog'd.
4104	Maximum Presence Not Programmed for LOW Priority Preempt	Min Pres Time is not prog'd for LOW Pri (EVT) preempts. Without this option, PMT will never exit if input gets stuck ON. Verify programming in MM-4-1.
4105	Track Clear MinGrn Programmed with No Track Clear Phases	Trk Clr Min Grn prog'd but no without TC phases. Verify programming in MM-4-1.
4106	Dwell Ped on Phase with No Ped time	Dwell Ped selected on phase with no PED time programmed. Verify programming in MM-4-1.
4107	Cycle Ped on Phase with No PED Time	Cycle Ped selected on phase with no PED time programmed. Verify programming in MM-4-1.
4108	PMT MN GRN Entry time < Guar MinGrn	PMT Min Grn Entry time less than Guar Min Green. Verify programming in MM-4-1.



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Warning No.	Preemptor/TSP Checks	Notes
4109	Preempt Minimum Green Track Clear < Guaranteed Minimum Green	PMT Min Grn TrkClr time less than Guar Min Green. Verify programming in MM-4-1.
4110	Preempt YELLOW Entry time < Guaranteed Yellow	PMT Yellow Entry time less than Guar Yellow. Verify programming in MM-4-1.
4111	Preempt YELLOW Track Clear Time < Guaranteed Yellow	PMT Yellow TrkClr time less than Guar Yellow. Verify programming in MM-4-1.
4112	Preempt RED Entry Time < Guaranteed Red	PMT Red Entry time less than Guaranteed Red. Verify programming in MM-4-1.
4113	Preempt RED Track Clear Time < Guaranteed Red	PMT Red TrkClr time less than Guaranteed Red. Verify programming in MM-4-1.
4114	Preempt WALK Entry Time < Guaranteed WALK	PMT Walk Entry time less than Guaranteed Walk. Verify programming in MM-4-1.
4115	Preempt Ped Clear Entry time < Guaranteed PED CLEAR	PMT Ped Clear Entry time less than Guaranteed Ped Clr. Verify programming in MM-4-1.
4116	Preempt YELLOW Entry Time < 3 seconds	PMT Yellow Entry time less than 3 secs. Verify programming in MM-4-1.
4117	Preempt YELLOW Track Clear Time < 3 seconds	PMT Yellow Trk Clr time less than 3 secs. Verify programming in MM-4-1.
4118	GateDown Incorrectly Enabled	GateDown Ext and Max TC GRN must BOTH be non-zero for Gate Down feature to operate.
4119	PMT: MAX Trk Clr GRN is TOO SMALL	MAX Trk Clr Grn must be GREATER THAN Trk Clr Grn plus Trk Clr Gate Down Ext for the Gate Down feature to work. Verify programming in MM-4-1.
4120	PMT Track YEL > prog phase YEL	PMT Track YEL (MM-4-1) is greater than the prog'd phase YEL time (MM-2-1). Prog'd Phase YEL time, NOT PMT TRACK YEL, will be used.
4121	PMT Track RED > Prog Phase REDCLR	PMT Track RED (MM-4-1) is greater than the prog'd phase RED time (MM-2-1). Prog'd Phase RED time, NOT PMT TRACK RED, will be used.
4122	PMT Dwell YEL > Prog Phase YEL	PMT Dwell YEL (MM-4-1) is greater than the prog'd phase YEL time (MM-2-1). Prog'd Phase YEL time, NOT PMT DWELL YEL, will be used.
4123	PMT Dwell RED > Prog Phase REDCLR	PMT Dwell RED (MM-4-1) is greater than the prog'd phase RED time (MM-2-1). Prog'd Phase RED time, NOT PMT DWELL RED, will be used.
4301	TSP Feature Not Enabled	A TSP plan is enabled in MM-4-3 but no valid Datakey is detected. A valid Datakey is required to enable TSP feature.



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### AN2102: New Features in Version 2.43.00

Warning No.	Preemptor/TSP Checks	Notes
4302	No TSP Phases in TSP Plan	TSP plan is enabled in MM-4-3 but no active phase is programmed as TSP phase.

Warning No.	Time Base Checks	Help Notes
5401	No Day Plan in Schedule	Day plan (MM-5-4) is not programmed.
5402	No Date is Specified in Schedule	The month, day of month or day of week (MM-5-4) is not specified.
5501	No Day Plan in Exception Day Plan	Day plan (MM-5-5) is not programmed.
5502	Invalid Day in Exception Day Plan	The month, day of month or day of week (MM-5-5) is not specified correctly.

Warning No.	Detector Checks	Notes
6101	Veh Detector on Exclusive Ped phase	The vehicle detectors below are assigned to Exclusive Ped phases in MM-6-1 or MM-6-2. The assigned vehicle detector inputs have no effect on Exclusive Ped phases. The detector assignment may be on any of four possible detector plans - be sure to check each vehicle detector plan.
6401	Invalid Speed Detector Assignment	The local detector assigned to two-detector speed calculations in MM-6-4 MUST be an odd-numbered detector. The next even-numbered detector is automatically assigned as the second detector. The following two-detector speed detectors have an invalid even-numbered detector assignment.