

# SLC and Addressable Device Troubles

## SLC Distances and Wiring

The SLC on the MS-9200 can run twisted-shielded pair to the following limits:

Twisted Shielded Wire Maximum Distance Manufacturer Part Number

12 AWG 10,000 feet (3048) meters) Genesis 4410; Signal 98230, Belden 9583, WPW D999.

14 AWG 8,000 feet (2438 meters) Genesis 4408 & 4608; Signal 98430, Belden 9581, WPW D995.

16 AWG 4875 feet (1486 meters) Genesis 4406 & 4606; Signal 98360, Belden 9575, WPW D991.

18 AWG 3,225 feet (983 meters) Genesis 4402 & 4602; Signal 98300, Belden 9574, WPW D975.

\* For retrofit applications using existing open wire (untwisted, unshielded), maximum distance @ 12-18 AWG is 1,000 ft (900 meters).

## Addressable Device Troubles

### Addressable Detectors:

**Trouble 1 Smoke Detector:** Indicates an Invalid Reply or Communication Error, which may be due to:

- (a) incorrect pulse width received from a detector
- (b) no answer from a detector due to either a complete device failure or removal from the SLC loop
- (c) an incorrect identification code received, i.e. a photo detector replaced by an ion detector or vice-versa

**Troubleshoot:** Confirm proper connections of the SLC at the panel observing polarity on B+ and B- (A+ and A- for style 6 return.) You should see 15-28VDC at the detector. If voltage is present, make sure the detector is set to the proper address. If the address is correct, make sure that it's programmed as the right type of detector. If it's an ion detector, it needs to be programmed as an ion, if it's a photoelectric detector, it needs to be programmed as a photoelectric detector.

*Example: In the Point Edit section of programming, the display would read similar to this:*

*For a Photo Detector: Program Smoke Detector P01 (01 represents the address of the detector P=Photo)*

*For a Ion Detector: Program Smoke Detector 101 (01 represents the address of the detector I=10n)*

If the trouble still persists, bring the detector head back to the panel, disconnect the SLC and attach only the detector directly to the SLC terminal block. Verify that this is a Fire Lite Addressable Smoke Detector. If this does not clear the *Trouble 1* try replacing the detector.

\*Intermittent Trouble 1 conditions can be caused by intermittent opens, or shorts on the SLC, or a failure to follow the recommended wiring requirements. E.g.: exceeding the recommended maximum wiring distance.\*

**Trouble 2 Smoke Detector** Indicates a Maintenance Alert Condition that is caused by;

a detector that has been within 80% of its alarm threshold for 24 hours, indicating that the detector is dirty.

**Troubleshoot:** Clean the detector head following the instructions included on the product installation sheets.

**Trouble 3 Smoke Detector:** Indicates that a detector failed its Automatic Test, caused by a failure in

a detector's sensing chamber and electronics

**Troubleshoot:** Replacement of that particular detector.

**Trouble: When I trip a detector, the LED latches solid red, the panel still says "Systems All Normal, and I never get an alarm.**

**Troubleshoot:** This indicates that alarm verification has been enabled. Check programming level 1 (password 00000), select 3 for System Edit, if **V = Y**, then verification has been enabled. If this operation is not desired, set **V=N**. (refer to alarm verification in the MS 9200 manual.)

## **Addressable Modules;**

**Trouble 1 Monitor:** Indicates an Invalid Reply or Communication Error which may be due to:

- (a) incorrect pulse width received from a module
- (b) no answer from a module due to either a complete device failure or removal from the SLC loop
- (c) an incorrect identification code received, i.e. a monitor module replaced by a control module or vice-versa

**Troubleshoot:** Ensure that communications is reaching the detector by metering the voltage of the SLC at the detector. You should see 15-28VDC. If voltage is present, make sure the module is set to the proper address.

If the trouble still persists, bring the module back to the panel, disconnect the SLC and attach only the module directly to the SLC terminal block. If this does not clear the *Trouble 1* try replacing the module. Verify that this is a Fire Lite addressable module.

\*Trouble 1 conditions that seem to pop up and clear almost immediately at random intervals, can be caused by intermittent opens, or shorts on the SLC, or a failure to follow the recommended wiring requirements. E.g.: exceeding the recommended maximum wiring distance.\*

**Trouble 2 Control:** Indicates a Short Circuit on a Control Module that is caused by a short circuit across a control module's NAC circuit.

**Troubleshoot:** Place a 47k-ohm resistor across terminals 6 & 7 on the Control Module; this should clear the trouble condition. If it does, the NAC has a short across it, if it does not clear the trouble, replace it.

**Trouble 3 Monitor or Control:** Indicates an Open Circuit condition on a Monitor Module's IDC, or a Control Module's NAC

**Troubleshoot:** Place a 47k-ohm resistor (3.9k ohm for MMF 302) across terminals 6 & 7 on the Module; this should clear the trouble condition. If this clears the trouble the problem lies in the field wiring. If it does not clear the trouble, try another 47k-ohm resistor. If this doesn't clear the trouble, try a different module.

\*If the module with the Trouble 3 condition is a MMF 302, this can also indicate a loss of 24VDC power to that module. The MMF-302 requires 24 VDC resettable power to terminals 3 and 4.\*

\*If the module with the Trouble 3 condition is a C304 configured as a relay, or a CRF 300, this module needs to be programmed as a relay, not a control module. (When given the label of Control, Bell Ckt, Strobe Ckt, Horn Ckt, or Sounders, it looks for an EOL, which the relay does not require, therefore going into an open circuit trouble. \*

## SLC Loop Trouble:

**Trouble:** All Devices on the addressable loop have a Trouble 1 condition, indicating an invalid reply.

**Troubleshoot:** Confirm proper connections of the SLC at the panel observing polarity on B+ and B- (A+ and A- for style 6 return.) Next; meter the voltage between B+ and B- (and A+ and A- if applicable) There should be between 15 VDC to 28VDC across those terminals. If the voltage is significantly less, remove the SLC wiring, and cycle power to the control panel. Once power is reapplied, take another voltage reading. If the voltage is between 15 and 28VDC, the problem is coming from the loop either due to a short circuit, or open condition.

If the voltage fails to return to the normal 15 to 28 VDC, then the panel has an internal failure.

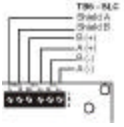
**Trouble:** When I run my autoprogram, the panel reads

Detectors: 0

Modules: 0

**Troubleshoot:** Confirm proper connections of the SLC at the panel observing polarity on B+ and B- (A+ and A- for style 6 return.) There should be between 15 VDC to 28VDC across those terminals. If one device has the polarity reversed, it will prevent the entire loop from being autoprogrammed into the system. If the voltage is significantly less, remove the SLC wiring, and cycle power to the control panel. Once power is reapplied, take another voltage reading. If the voltage is between 15 and 28VDC, the problem is coming from the loop due to a short circuit, or reversed polarity of the SLC. Attach one UL listed Fire Lite addressable device at the panel, and run the auto-program. If the panel recognizes the device, this confirms that the panel is operating correctly.

If the voltage fails to return to the normal this indicates a board problem, contact Fire Lite Tech Service.



## LCD 40 Troubles

### Mounting

**Trouble:** The LCD-40 literature states that it will fit into a standard 3-gang electrical box but I am having trouble doing so.

**Troubleshoot:** The LCD-40 may not easily fit into a standard 3-gang electrical box if locking clamps are used to secure wiring entering the rear or side knockouts. Use only the top or bottom knockouts on the box.

### Programming / Communication

**Trouble:** The LCD-40 display reads "Communications Fail" This indicates a data problem.

**Troubleshoot:** Make sure the panel is programmed to have an LCD-40 annunciator. This is done in program level 1 (password 00000) System Edit (option 3) and selection L/P needs to = L.

V=N I=N A=N P=N C=N

A/V=N L/P=L S=4 R=N

If the program options appear as below:

VF=N SI=N AS=N PS=N

then you have an earlier version of MS-9200 operating software that does not support the LCD-40. You will require software P/N 73750 or greater. Order **ROM1MS9200V2.0** to obtain the latest revision software for the MS-9200.

The next step would be to check the wiring between the panel, and the LCD-40. The EIA-485 circuit that the LCD-40 connects to must be terminated back at the panel (4-wire communication loop Out and Return). Check all connections and confirm terminal assignments at the panel and the annunciator. Out + connects to In +, and Out – connects to In -. (see the LCD-40 wiring section of this Troubleshooting guide)

**Trouble:** The panel reads "Trouble in System LCD 40 not responding" and the LCD 40 also reads "Trouble in System LCD 40 not responding."

**Troubleshoot:** Check DIP Switch Setting on the LCD-40. Make sure DIP switch 1 is set to - Receive-only - "OFF" (up) for all but the LAST or ONLY LCD-40 on the circuit. For the LAST or ONLY LCD-40, set the switch to "ON" (down)."

Next check the wiring between the panel, and the LCD-40. The EIA-485 circuit that the LCD-40 connects to must be terminated back at the panel (4-wire communication loop Out and Return). Check all connections and confirm terminal assignments at the panel and the annunciator. Out + connects to In +, and Out – connects to In -. (see the LCD-40 wiring section of this Troubleshooting guide)

Another cause can be a mismatch of software between the panel and the LCD 40. This is most common when adding an annunciator to an existing panel, or swapping out an old panel with a new one. To find the version software on the panel, reset it, and it will display it on the screen. It will appear as either "MS9200V2.0" or 73829. The LCD 40 must also have a corresponding software version, which can be seen on the EPROM chip located on the LCD 40's circuit board.

If the panel has version 2.0 software, then the LCD-40 must have version 2.0 or greater. The same goes if you have the version 2.0 software on the LCD-40 then the MS 9200 must have version 2.0 or greater.

If the panel has software version 73829, and the LCD-40 has version 2.0, then the panel must be upgraded by ordering **ROM1MS9200V2.0**.

**Trouble:** The 9200 panel reads "Trouble in System LCD 40 not responding" and the LCD-40 reads "Communications Fail"

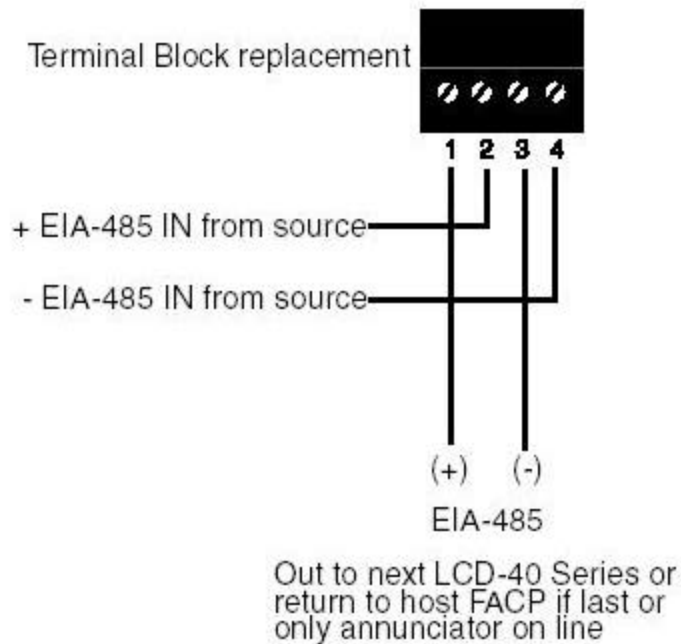
**Troubleshoot:** Check the wiring between the panel, and the LCD-40. The EIA-485 circuit that the LCD-40 connects to must be terminated back at the panel (4-wire communication loop Out and Return). Check all connections and confirm terminal assignments at the panel and the annunciator. Out + connects to In +, and Out – connects to In -. (see the LCD-40 wiring section of this Troubleshooting guide)

Another cause can be a mismatch of software between the panel and the LCD 40. This is most common when adding an annunciator to an existing panel, or swapping out an old panel with a new one. To find the version software on the panel, reset it, and it will display it on the screen. It will appear as either "MS9200V2.0" or as MS 9200 P/N 73829. The LCD 40 must also have a corresponding software version, which can be seen on the EPROM chip located on the LCD 40's circuit board. Software version 2.0 will work with version 2.1 or vice versa. The problem would appear when you have a version 73829 on the panel and an annunciator with version 2.0 or higher or vice versa. To solve this, an upgrade chip is needed to update the older software version (p/n73829) to be compatible with the newer version. (version 2.0 or 2.1)

### LCD-40 Wiring

The LCD-40 requires a total of 6 wires for proper operation. Two wires are needed for power, and 4 are needed for communication, out and return. This 4 conductor should be a minimum of 18AWG, twisted shielded.

The proper terminations for connecting a LCD 40 to the system shall look like this.



MS 9200	LCD-40
TB7 or DIM-485	P1 connector

Terminal 1 Out +	Terminal 2 In +
Terminal 2 In +	Terminal 1 Out +
Terminal 3 Out -	Terminal 4 In -
Terminal 4 In -	Terminal 3 Out -

The LCD-40 can be installed at a maximum distance of 6,000 between annunciators and 6,000 feet between the first or last annunciator and the control panel

## Ground Faults

**Trouble:** Trouble in System Ground fault.

**Troubleshoot.** Remove all field wiring from the panel, along with any option cards and the batteries. Reset the panel, and the ground fault light should go out. If the Ground Fault persists, it is internal on the board, and requires repair or replacement. If the Ground Fault disappears reattach one circuit at a time until the ground fault condition returns to find where your problem is coming from.

## DACT Trouble

**Trouble:** MS 9200 displays "Trouble in system DACT Trouble"

**Troubleshoot:** Check to see if a trouble condition is displayed on the 7-segment display of the UDACT-F. If no trouble condition exists, check to see that address 56 has been programmed properly. If you are reporting by point, address 56 should be set to a 4 (see note below) If you are reporting by zone, then address 56 should be set to a 2.(see note below)

\*Note 1:To set **address 56 for Zone Reporting** you will use a "1"(receive only) ONLY if there is another annunciator (excluding the LCD-40) using the EIA-485 output on TB-5 of the MS-9200. It will be set to a "2" (receive transmit) there are no other annunciators on the system. (Excluding the LCD-40)

\*Note 2: To set **address 56 for Point Reporting** you will use a "3" (**receive only**) ONLY if there is another annunciator (excluding the LCD-40) using the EIA-485 output on TB-5 of the MS-9200. It will be set to a "4" (**receive transmit**) there are no other annunciators on the system. (Excluding the LCD-40)

\*Note 3: If any other annunciators are used (excluding the LCD-40F), then their EIA-485 communication bus should be wired to TB-1 of the UDACT-F on terminals 3+ and 4-. Wiring to TB-5 of the MS-9200 will cause constant communication troubles, and be sure to set address 56 to a 3 for point reporting, or a 1, for zone reporting.

\*Note 4: make sure the Start and End monitoring addresses are set as follows:

For Point Reporting: Address 52=0, 53=1, 54=0, **55=4**, set address 56 accordingly

For Zone Reporting: Address 52=0, 53=1, 54=0, **55=1**, set address 56 accordingly

**Trouble: The EIA-485 led on the UDACT-F is lit I put the panel into alarm but the UDACT-F isn't calling the central station to report fire alarms, it only reports UDACT-F trouble conditions.**

**Troubleshoot:** You must program the panel for UDACT-F operation. Check programming under System Edit (password 00000), selection 3 for System Edit, confirm that A/U =N to A/U = PU ( point ID reporting,) or A/U = ZU (for zone reporting) If this doesn't work, check the connection from the 9200 to the UDACT-F.

**Trouble: When I trip a fire alarm, the UDACT-F only sends in a general fire alarm code, but not the corresponding zone/point identification numbers.**

**Troubleshoot.** You have to set the "Start and End Monitoring Address" in the UDACT-F. This is programmed in addresses 52-55.

For Point Reporting: Address 52=0, 53=1, 54=0, **55=4**, set address 56 accordingly

For Zone Reporting: Address 52=0, 53=1, 54=0, **55=1**, set address 56 accordingly

## Programming

**Trouble:** Panel Displays "Trouble in System Program Corrupted"

**Troubleshoot:** run the autoprogram feature on the panel. Go into program level 1 (password 00000), and select 1=Autoprogram. The panel should display : ( X = some number)

Detectors XX

Modules XX

Then back out of programming using the left arrow key. DO NOT clear the program or all of your point information will be lost!

**Trouble:** When I run my autoprogram, the panel reads

**Detectors: 0**

**Modules: 0**

**Troubleshoot:** Make sure the devices installed are the addressable devices that are UL listed compatible for the system. Next I would confirm the proper polarity has been observed throughout the SLC loop. If one device has the polarity reversed, it will prevent the entire loop from being autoprogrammed into the system. If the system still won't autoprogram, ensure that the SLC loop is installed on the B+ and B- terminals (if wiring style 4 or class B) or if using style 6/class A, that the positive side is across B+ and A+ and the negative side across A- and B-. Next; meter the voltage between B+ and B- (and A+ and A- if applicable) There should be between 15 VDC to 28VDC across those terminals. If the voltage is significantly less, remove the SLC wiring, and cycle power to the control panel. Once power is reapplied, take another voltage reading. If the voltage is between 15 and 28VDC, the problem is coming from the loop either due to a short circuit, or open condition. Then try wiring one device right at the panel, and running the auto-program. If the panel recognized the device, the panel is operating properly. Confirm that the devices are the Fire Lite Addressable Devices designed for use with this panel.

If the voltage fails to return to the normal 15 to 28 VDC, then the panel has an internal failure.

**Trouble:** After performing an Autoprogram and the display reads "Program Smoke Det 01" with no "I" or "P" to the left of it.

**Troubleshoot:** There is a problem with the SLC (data) loop. At this point, discontinue programming and check the SLC loop. The most likely problem will be a reversed positive and negative connection of a device. Try wiring one device directly at the panel, if it auto-programs correctly, the panel is operating properly.

**Trouble: The horns are sounding fine, but the strobes are not flashing like they should, or not flashing at all.**

**Troubleshoot:** Check the programming of the NAC's and make sure they are programmed as a steady output. Go into program level 1 (password 00000) selection 3 =System Edit, and set C = N (bell coding is "N" for none)

\*Note: Strobes require steady 24 VDC power to operate properly.\*

**Trouble: The 9200 panel display reads "Trouble 2 Bell Ckt Short"**

**Troubleshoot:** Remove the Bell circuit that is in trouble, and place a 4.7k-ohm resistor across the B+ and B- terminals of the bell circuit output on the panel. This should clear the Trouble 2 condition, and allow you to trace the short on the NAC circuit.

**Trouble: The 9200 panel display reads "Trouble 3 Bell Ckt Open"**

**Troubleshoot:** Remove the Bell circuit that is in trouble, and place a 4.7k-ohm resistor across the B+ and B- terminals of the bell circuit output on the panel. This should clear the Trouble 3 condition, and allow you to trace the open on the NAC circuit.

**Trouble: Bell circuit 1/Bell circuit 2 will not silence after pressing the "Silence" button.**

**Troubleshoot:** Confirm your Bell Circuit programming, program level 1 (password 00000), section 2=Point edit, Press the \* key, then the # key, press '1' for NAC 1 and '2' for NAC 2. Select either 'BELL\_CKT' for silenceable operation or 'STROBE' for non-silenceable operation. Coding is only possible if the NAC is programmed as 'BELL\_CKT'.

\* Note: You panel must have software P/N 73750 or greater to allow programming of NAC 1 and NAC 2 in Point Edit programming. With software versions prior to 73750, NAC 1 was silenceable and NAC 2 was non-silenceable.

\* Note: If you have a device programmed for Waterflow, it will cause the NAC outputs to be non-silenceable.. \*

**Trouble: On an alarm condition, the Alarm Silence switch will not silence the system.**

**Troubleshoot:** If a module with a type code label of "waterflow" is in alarm, all outputs are non-silenceable regardless of programming. If you do not wish for your "waterflow" devices to be non-silenceable, program the points as "monitor" which will allow you silenceable operation.

\*Both bell circuits would also have to be programmed as silenceable for this to work. See the section above to see how to do this.

## Uploading or Downloading a Program Using the PK9200W Software

**Trouble:** I am unable to connect to the panel using the PK9200W software program.

**Troubleshoot:** The panel has to be programmed to know there is a Printer/PC interface. Program level 1 (password 00000) selection 3 = System Edit, and set L/P =P. Then from the main menu, choose selection 5 =Load, and the screen will display "Connect Computer Now, Run Program, From PC." On the MS 9200 circuit board itself, SW3 must be in the Up position to enable the PC/Printer interface.(only applicable on newer MS 9200 boards that do not require a PIM-24 module). If using the PIM-24, the terminal screws should be on the top of the card when plugged into the 9200, and from left to right the wires should be Black on terminal 1, Green on terminal 2, and Red on Terminal 3. If you're wiring into TB-7 on the 9200 board (PIM-24 not needed) the wires should be from left to right, Black on terminal 1, Green on terminal 2, and Red on Terminal 3, and terminal 4 will be left open. On the DB-9 connector that plugs into the back of your PC, should have the red wire on terminal 5, green on terminal 3, black on terminal 2, and a jumper installed between terminal 4 and 6. Ensure you are connected to the correct Com. Port, and that no other programs are using it. Hit the Ctl.+Alt + Del, and End Task all programs running except Systray, Explorer, and PK 9200W program.

The communication port on your PC also must be configured in the following manner.

Baud rate = 2400 bits per second Parity = Even

Data Bits = 7 Stop Bits = 1

Flow Control = Xon /Xoff

## Walktest

**Trouble:** Certain control modules are not activating during the walktest.

**Troubleshoot:** During a Silent walktest, all sounding devices, control modules, and NAC 1 and NAC 2 outputs remain off. During Pulse Sounders walktest, only the silenceable control modules, and NAC 1, and NAC 2 (if programmed as "BELL CKT" in point edit programming) will activate. NOTE: Relay modules (CRF-300 and C-304's configured as a RELAY) are non-silenceable therefore DO NOT activate during either walktest mode. If you need to test the functionality of a non-silenceable output (control module)

## Sounder Bases

**Trouble:** The sounder in the B501BH Sounder Base goes off when there is no alarm.

**Troubleshoot:** If an alarm is detected from an addressable smoke detector programmed for Alarm Verification, the sounder will activate IMMEDIATELY because the MS-9200 latches the detector's LED during a verification cycle. If an alarm condition does not exist at the end of the verification cycle, the detector LED and the sounder will be turned off by the control panel.

## RTM-8 Module

**Trouble:** The RTM-8 module does not drop out voltage to the remote station connection when there is a trouble.

**Troubleshoot:** JP2 on the RTM-8 module needs to be installed on the top two pins, and JP-1 needs to be cut for Reverse Polarity Operation.

**Trouble:** If I hit the Relay Disconnect, or Transmitter Disconnect switch, my 9200 panel stays in a normal condition.

**Troubleshoot:** Cut JP4 on the MS-9200 motherboard must be cut to gain supervision of the RTM-8 module.

**Trouble:** I'm connected to my Remote Station Receiver, and my panel is in trouble.

**Troubleshoot:** Check to see that JP1 on the RTM-8 board is cut.

**Trouble:** I trip an alarm on the 9200, but the RTM-8 is not reversing polarity OR it's not tripping my Municipal/City Box.

**Troubleshoot:** Cut JP4 on the MS-9200 motherboard. If using the Remote Station Reverse Polarity Output, make sure that JP1 is cut and JP-2 is set for Reverse Polarity. Next check that both the Relay Disconnect, and Transmitter Disconnect Switches are in the normal (down) position. If tripping a Municipal Box, JP-2 must be set for Municipal Box, and JP-1 should **NOT** be cut.

**Trouble: The MS-9200 displays " Trouble in System Option Module".**

**Troubleshoot:** If an RTM-8 is not being used, make sure that JP4 has NOT been cut. If the RTM-8 is installed, check to see that both the Relay Disconnect, and Transmitter Disconnect Switches are in the normal (down) position. Assure that the Municipal Box is connected properly. Next check that the Local Energy Box has been reset after an alarm condition.

NOTE: When installing an RTM-8F, for either Local Energy Municipal Box or Polarity Reversal, jumper JP4 MUST be cut for proper supervision of the module.