

Appendix C: Annunciators

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*Indicates those sections where changes have occurred since the last printing.

Annunciators

Terminal Mode (LCD-80) Annunciation Interface (TB5 on CPU)

In Terminal mode, the control panel annunciates all point information to remote LCD-80 displays. Each LCD-80 mirrors the front panel display and includes Acknowledge, Silence, and Reset switches. A LCD-80 will display all 198 intelligent points without being programmed. Switch SW2 on the control panel must be set for TERM, and the control panel must be programmed for Terminal mode.

ACS Annunciation Interface (TB5 on CPU)

In ACS mode, the control panel annunciates its 99 software zones. The use of software zones allows the user to freely map any number of modules or detectors to a single LED (Light-Emitting Diode). The ACS uses a standard EIA-485 interface, capable of two-way, high speed communications with multiple annunciators located up to 6,000 feet from the panel.

Modules Supported

When programmed for ACS mode, the control panel will support the following ACS-compatible modules:

Point Annunciators

- ACM-8R
- ACM-16AT, AEM-16AT
- ACM-32A, AEM-32A
- AFM-16A, AFM-32A, AFM-16AT
- LDM-32, LDM-E32, LDM-R32

LCD-80

The LCD-80 must be set to ACS mode (refer to the *LCD-80 Liquid Crystal Display Technical Bulletin [LIT-445151]*).

ACM-8R

This module may be used to increase the relay capacity of the control panel by providing mappable dry contact relays. The control panel can support 99 detectors, 99 modules, 4 Notification Appliance Circuits, 8 internal relays, and 99 external relays, for a total of over 300 points. The ACM-8R may be powered by the regulated/high-ripple notification appliance power from the control panel. For detailed information, refer to *ACM-8R Annunciator Control Module Technical Bulletin (LIT-445125)*.

Note: Similar point capacity extension is possible using the LDM-R32, but the LDM-32 series must use filtered, regulated power and is, therefore, more limited than the ACM-8R.

**Annunciator
Capacity**

ACS annunciation displays the 99 software zones of the control panel plus 8 system points, for a total point count of 107. Information is transmitted using annunciator Addresses 1 and 2. The EIA-485 interface will allow up to 32 annunciators (all but 2 must be in Receive-Only mode), over distances of up to 6,000 feet (check power limitations).

**Data Formats
Address 1**

The use of a Universal Digital Alarm Communicator/Transmitter (UDACT) and an ACM, AFM, or LDM Series annunciator on the same control panel will alter the assignments of the yellow LEDs on ACS Points 3, 4, 5, 6, 7, and 8.

Assignments with the UDACT are:

- Point 3=Program Mode
- Point 4=Supervisory
- Point 5=Bell Trouble
- Point 6=Pre-Alarm/Maintenance Alert
- Point 7=Low Battery
- Point 8=AC Fail

Table 1: Data Formats-Address 1

ACS Point Number	I/O	Red LED	Yellow LED	Yellow LED (with UDACT)	Switch	Comments
1	Input	System Alarm	System Trouble ¹	System Trouble ¹	Acknowledge	
2	Output	Not Used	Signals Silenced	Signals Silenced	Signal Silence	
3	Output	Not Used	Not Used	Program Mode	System Reset	
4	Output	Not Used	Not Used	Supervisory	Drill	
5	Input	Not Used	Supervisory	Bell Trouble	Not Used	Panel Supervisory LED On
6	Input	Not Used	Pre-Alarm	Pre-Alarm/ Maintenance Alert	Not Used	Trouble
7	Input	Not Used	Panel Trouble	Low Battery	Not Used	Trouble
8	Input	Not Used	AC Fail	AC Fail	Not Used	Battery/Earth Trouble
9	Input	Z1 Active	Z1 Trouble		Not Used	
10	Input	Z2 Active	Z2 Trouble		Not Used	
11	Input	Z3 Active	Z3 Trouble		Not Used	
12	Input	Z4 Active	Z4 Trouble		Not Used	
13	Input	Z5 Active	Z5 Trouble		Not Used	
14	Input	Z6 Active	Z6 Trouble		Not Used	
15	Input	Z7 Active	Z7 Trouble		Not Used	
16	Input	Z8 Active	Z8 Trouble		Not Used	
17	Input	Z9 Active	Z9 Trouble		Not Used	
18	Input	Z10 Active	Z10 Trouble		Not Used	
19	Input	Z11 Active	Z11 Trouble		Not Used	
20	Input	Z12 Active	Z12 Trouble		Not Used	
21	Input	Z13 Active	Z13 Trouble		Not Used	
22	Input	Z14 Active	Z14 Trouble		Not Used	
23	Input	Z15 Active	Z15 Trouble		Not Used	
24	Input	Z16 Active	Z16 Trouble		Not Used	
25	Input	Z17 Active	Z17 Trouble		Not Used	
26	Input	Z18 Active	Z18 Trouble		Not Used	
27	Input	Z19 Active	Z19 Trouble		Not Used	
28	Input	Z20 Active	Z20 Trouble		Not Used	
29	Input	Z21 Active	Z21 Trouble		Not Used	
30	Input	Z22 Active	Z22 Trouble		Not Used	
31	Input	Z23 Active	Z23 Trouble		Not Used	
32	Input	Z24 Active	Z24 Trouble		Not Used	
33	Input	Z25 Active	Z25 Trouble		Not Used	
34	Input	Z26 Active	Z26 Trouble		Not Used	
35	Input	Z27 Active	Z27 Trouble		Not Used	
36	Input	Z28 Active	Z28 Trouble		Not Used	
¹ SYSTEM TROUBLE excludes AC power fail.						
Continued on next page . . .						

ACS Point Number (Cont.)	I/O	Red LED	Yellow LED	Yellow LED (with UDACT)	Switch	Comments
37	Input	Z29 Active	Z29 Trouble		Not Used	
38	Input	Z30 Active	Z30 Trouble		Not Used	
39	Input	Z31 Active	Z31 Trouble		Not Used	
40	Input	Z32 Active	Z32 Trouble		Not Used	
41	Input	Z33 Active	Z33 Trouble		Not Used	
42	Input	Z34 Active	Z34 Trouble		Not Used	
43	Input	Z35 Active	Z35 Trouble		Not Used	
44	Input	Z36 Active	Z36 Trouble		Not Used	
45	Input	Z37 Active	Z37 Trouble		Not Used	
46	Input	Z38 Active	Z38 Trouble		Not Used	
47	Input	Z39 Active	Z39 Trouble		Not Used	
48	Input	Z40 Active	Z40 Trouble		Not Used	
49	Input	Z41 Active	Z41 Trouble		Not Used	
50	Input	Z42 Active	Z42 Trouble		Not Used	
51	Input	Z43 Active	Z43 Trouble		Not Used	
52	Input	Z44 Active	Z44 Trouble		Not Used	
53	Input	Z45 Active	Z45 Trouble		Not Used	
54	Input	Z46 Active	Z46 Trouble		Not Used	
55	Input	Z47 Active	Z47 Trouble		Not Used	
56	Input	Z48 Active	Z48 Trouble		Not Used	
57	Input	Z49 Active	Z49 Trouble		Not Used	
58	Input	Z50 Active	Z50 Trouble		Not Used	
59	Input	Z51 Active	Z51 Trouble		Not Used	
60	Input	Z52 Active	Z52 Trouble		Not Used	
61	Input	Z53 Active	Z53 Trouble		Not Used	
62	Input	Z54 Active	Z54 Trouble		Not Used	
63	Input	Z55 Active	Z55 Trouble		Not Used	
64	Input	Z56 Active	Z56 Trouble		Not Used	

**Data Formats
Address 2**

Table 2: Data Formats-Address 2

ACS Point Number	I/O	Red LED	Yellow LED	Switch	Comments
1	Input	Z57 Active	Z57 Trouble	Not Used	
2	Input	Z58 Active	Z58 Trouble	Not Used	
3	Input	Z59 Active	Z59 Trouble	Not Used	
4	Input	Z60 Active	Z60 Trouble	Not Used	
5	Input	Z61 Active	Z61 Trouble	Not Used	
6	Input	Z62 Active	Z62 Trouble	Not Used	
7	Input	Z63 Active	Z63 Trouble	Not Used	
8	Input	Z64 Active	Z64 Trouble	Not Used	
9	Input	Z65 Active	Z65 Trouble	Not Used	
10	Input	Z66 Active	Z66 Trouble	Not Used	
11	Input	Z67 Active	Z67 Trouble	Not Used	
12	Input	Z68 Active	Z68 Trouble	Not Used	
13	Input	Z69 Active	Z69 Trouble	Not Used	
14	Input	Z70 Active	Z70 Trouble	Not Used	
15	Input	Z71 Active	Z71 Trouble	Not Used	
16	Input	Z72 Active	Z72 Trouble	Not Used	
17	Input	Z73 Active	Z73 Trouble	Not Used	
18	Input	Z74 Active	Z74 Trouble	Not Used	
19	Input	Z75 Active	Z75 Trouble	Not Used	
20	Input	Z76 Active	Z76 Trouble	Not Used	
21	Input	Z77 Active	Z77 Trouble	Not Used	
22	Input	Z78 Active	Z78 Trouble	Not Used	
23	Input	Z79 Active	Z79 Trouble	Not Used	
24	Input	Z80 Active	Z80 Trouble	Not Used	
25	Input	Z81 Active	Z81 Trouble	Not Used	
26	Input	Z82 Active	Z82 Trouble	Not Used	
27	Input	Z83 Active	Z83 Trouble	Not Used	
28	Input	Z84 Active	Z84 Trouble	Not Used	
29	Input	Z85 Active	Z85 Trouble	Not Used	
30	Input	Z86 Active	Z86 Trouble	Not Used	
31	Input	Z87 Active	Z87 Trouble	Not Used	
32	Input	Z88 Active	Z88 Trouble	Not Used	
33	Input	Z89 Active	Z89 Trouble	Not Used	
34	Input	Z90 Active	Z90 Trouble	Not Used	Presignal Time Run
35	Input	Z91 Active	Z91 Trouble	Not Used	Started/Release Time
36	Input	Z92 Active	Z92 Trouble	Not Used	Started/Release Time
37	Input	Z93 Active	Z93 Trouble	Not Used	Started/Release Time
Continued on next page . . .					

ACS Point Number (Cont.)	I/O	Red LED	Yellow LED	Switch	Comments
38	Input	Z94 Active	Z94 Trouble	Not Used	Time Started/Release
39	Input	Z95 Active	Z95 Trouble	Not Used	Time Ctl Active
40	Input	Z96 Active	Z96 Trouble	Not Used	Time Ctl Active
41	Input	Z97 Active	Z97 Trouble	Not Used	Holiday Active
42	Input	Z98 Active	Z98 Trouble	Not Used	Tornado Active
43	Input	Z99 Active	Z99 Trouble	Not Used	Pre-Alarm Active
44	Input	Not Used	Not Used	Not Used	
45	Input	Not Used	Not Used	Not Used	
46	Input	Not Used	Not Used	Not Used	
47	Input	Not Used	Not Used	Not Used	
48	Input	Not Used	Not Used	Not Used	
49	Input	Not Used	Not Used	Not Used	
50	Input	Not Used	Not Used	Not Used	
51	Input	Not Used	Not Used	Not Used	
52	Input	Not Used	Not Used	Not Used	
53	Input	Not Used	Not Used	Not Used	
54	Input	Not Used	Not Used	Not Used	
55	Input	Not Used	Not Used	Not Used	
56	Input	Not Used	Not Used	Not Used	
57	Input	Not Used	Not Used	Not Used	
58	Input	Not Used	Not Used	Not Used	
59	Input	Not Used	Not Used	Not Used	
60	Input	Not Used	Not Used	Not Used	
61	Input	Not Used	Not Used	Not Used	
62	Input	Not Used	Not Used	Not Used	
63	Input	Not Used	Not Used	Not Used	
64	Input	Not Used	Not Used	Not Used	

Notes: • The National Standard of Canada (CAN/ULC-5527) requires a dedicated display to use yellow visual indicators to show the status of supervisory inputs.

Notifier® annunciators intended for Canadian Supervisory Service are:

- ACM-16ATCS4
- ACM-16ATCS
- ACM-16ATY
- ACM-32ACS8
- ACM-32ACS
- ACM-32AY

- On Address 2, LED number = point number - 56

**EIA Connection
for LCD-80
Terminal Mode**

LCD-80s can be employed in the Terminal mode by using the connections prescribed in Figure 1. The following specifications apply when implementing LCD-80s in Terminal mode.

- Power-limited and supervised.
- Maximum of four LCD-80s may be connected to this circuit when powered by the control panel.
- Maximum of 32 LCD-80s may be connected to this circuit when powered by a UL (Underwriters Laboratories®) Listed power supply.
- 6,000 feet maximum distance (16 AWG) between the control panel and the first or last LCD-80 and between each LCD-80.
- Use overall foil/braided-shield twisted pair cable suitable for EIA-485 applications.
- EIA-485 circuit rated 5.5 VDC maximum, 60 mA maximum.
- See the *LCD-80 Liquid Crystal Display Technical Bulletin (LIT-445151)* for additional information.
- Set SW2 on the control panel to the TERM position.
- Set SW 4 and 5 on the LCD-80 to the TERM position: SW1-7 ON.
- For non-English language systems, LCD-80 standby current is the same as the alarm current (100 mA).

Note: The LCD-80s require connection of operating power. Connect 24V power to the IFC-200 TB1 Terminal 3 (+) and TB1 Terminal 4 (–). Power connections are supervised and power-limited.

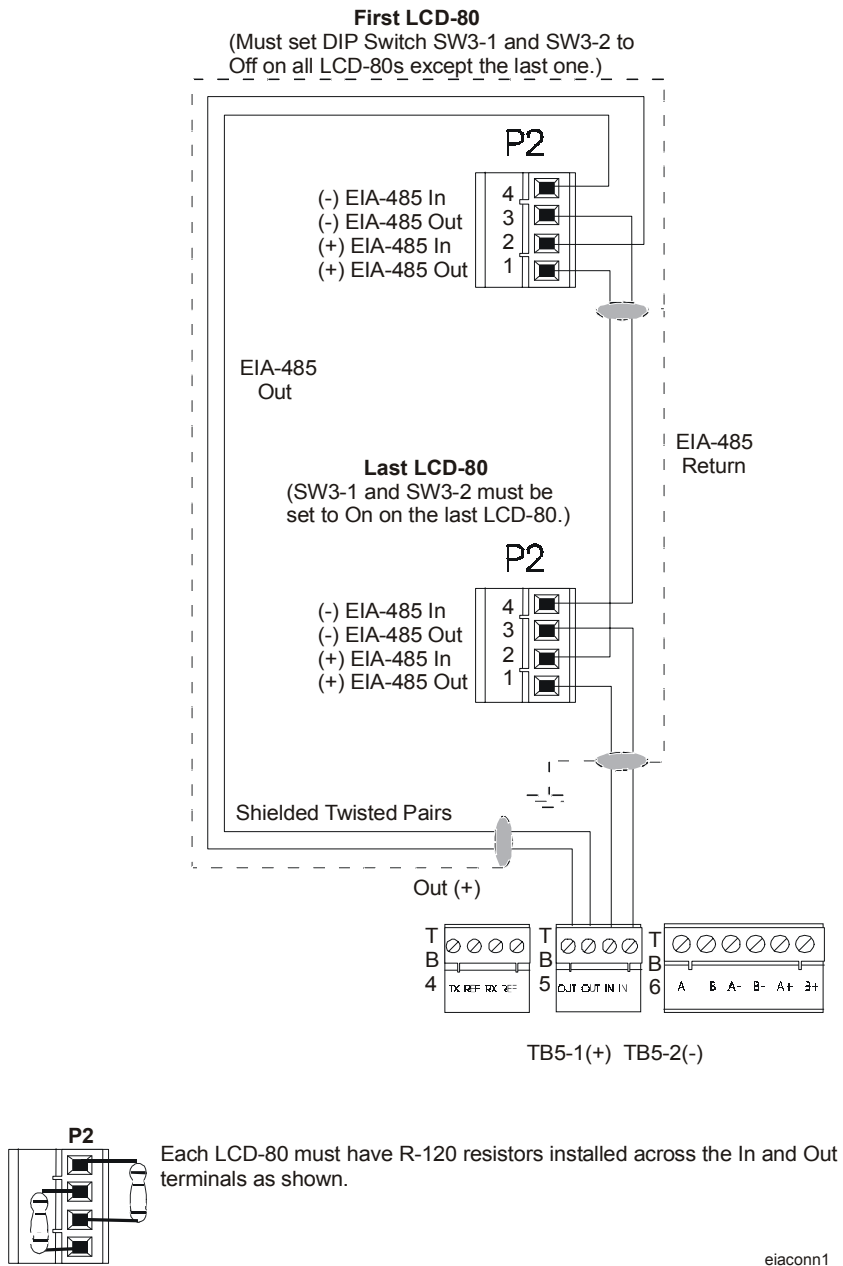


Figure 1: Terminal Mode EIA-485 Connection

**EIA Connection
for LCD-80
ACS Mode**

LCD-80s can be employed in the ACS (Annunciator) mode by using the connections prescribed in Figure 2. The following specifications apply when implementing LCD-80s in ACS mode.

- Power-limited and supervised.
- Maximum of four LCD-80s may be connected to this circuit when powered by the control panel.
- Maximum of 32 LCD-80s may be connected to this circuit when powered by a UL Listed power supply.
- There must be 6,000 feet maximum distance (16 AWG) between the control panel and the first or last LCD-80 and between each LCD-80.
- Use twisted pair cable with a characteristic impedance of approximately 120 ohms.
- EIA-485 circuit rated 5.5 VDC maximum, 60 mA maximum.
- See the *LCD-80 Liquid Crystal Display Technical Bulletin (LIT-445151)* for additional information.
- Set SW2 on the control panel to the ACS position.

Notes:

- The LCD-80s require connection of operating power. Connect 24 VDC power to the IFC-200 TB1 Terminal 3 (+) and TB1 Terminal 4 (–). Power connections are supervised and power-limited.
- The LCD-80 start address must be set to Address 01. Switch SW2 must be set to 1, and SW3-1 and SW3-2 must be set to Off. Set the LCD-80 to a size of 128 points. To use a 40-character display, set SW5 Off and SW6 On. To use a 20-character display, set SW5 On and SW6 Off.

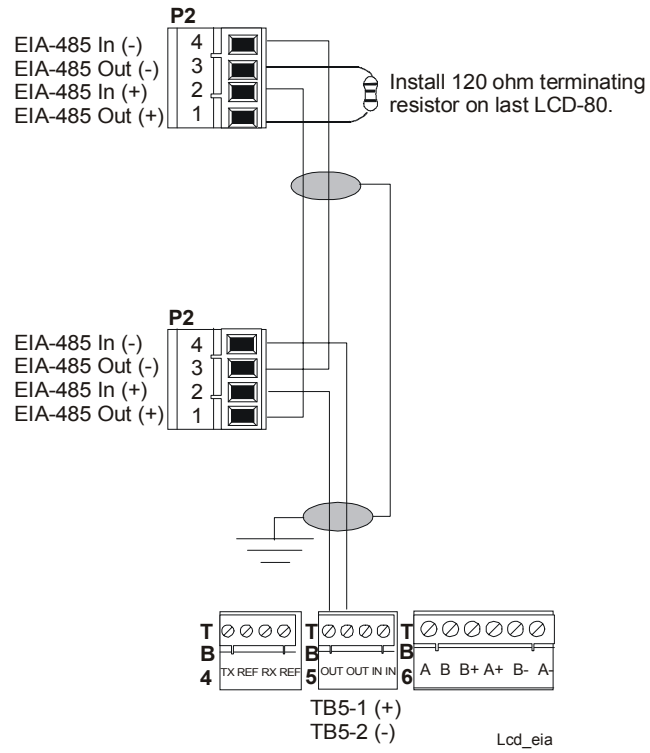


Figure 2: LCD-80 ACS Mode EIA-485 Connection

***Power
Connections
for LCD and
ACS Type
Annunciators***

Figure 3 shows the power connections used for ACS annunciators or for LCD-80s in ACS mode. The following specifications apply for these connections.

- Connections are power-limited.
- The power run to the LCD-80 or ACS annunciator does not require a Power Supervision Relay because loss of power is inherently supervised through communication loss.
- Maximum LCD-80 current draw from power supply is 500 mA.

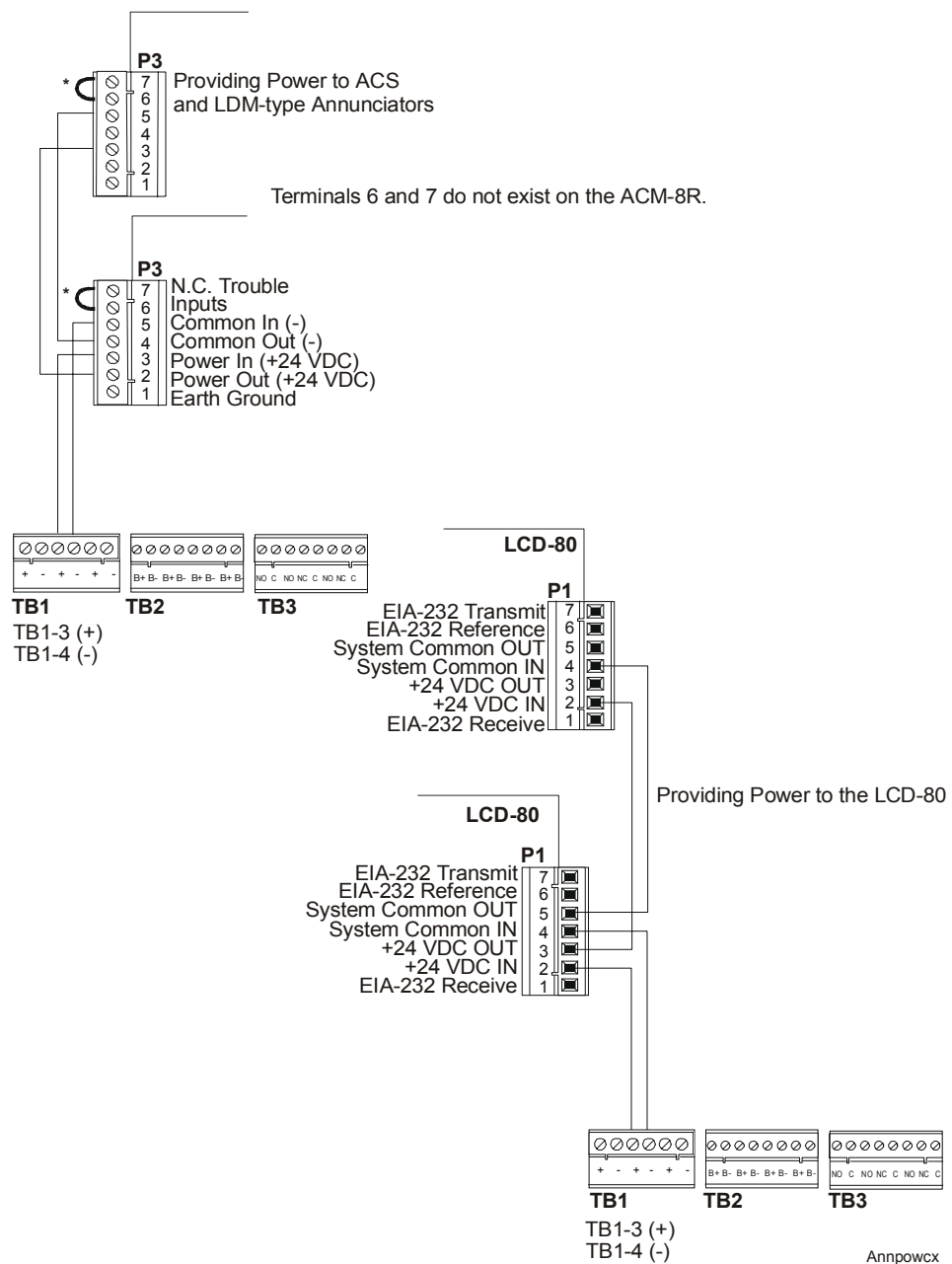


Figure 3: Power Connections for LCD, ACS Type Annunciators

EIA Connection for ACS and LDM Devices

Figure 4 displays the configuration used when wiring an ACS or LDM device to an EIA-485. The following specifications apply when wiring these devices.

- Connections are power-limited and supervised.
- Maximum of ten devices may be connected to this circuit (ACM, LDM, AFM, etc.).
- There is a 6,000 foot maximum distance (16 AWG) between the control panel and the furthest annunciator.
- Use twisted-pair cable with a characteristic impedance of approximately 120 ohms.
- EIA-485 circuit rated 5.5 VDC maximum, 60 mA maximum.
- Refer to the *ACM-16 and ACM-32 Annunciator Control Modules Technical Bulletin (LIT-445121)* and the *LDM Lamp Driver Modules Technical Bulletin (LIT-445161)* for additional information.
- Set SW2 on the control panel to ACS position.

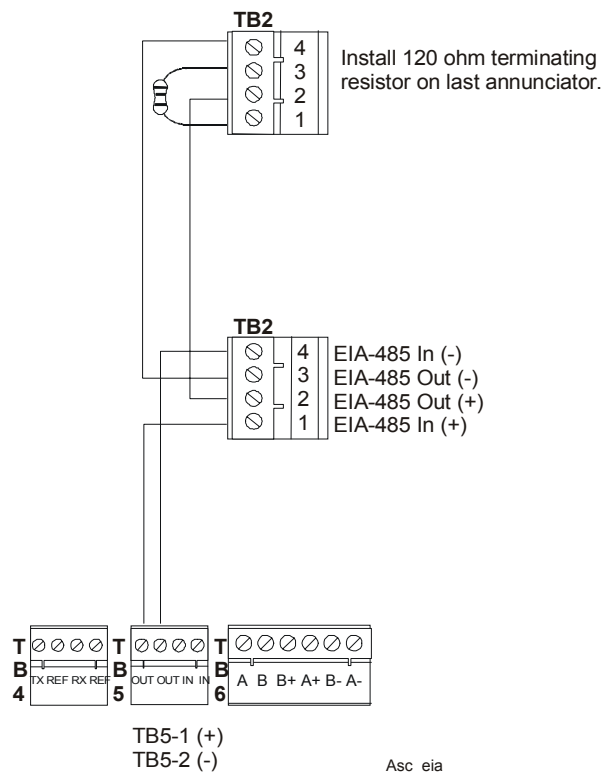


Figure 4: ACS and LDM Series EIA-485 Connection

Notes



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