

Product Overview

The remote display assembly is a remote Flexible User Interface fitted in a specially sized box and connected to the master controller. These instructions cover the following units:

- 4100-9401 Remote Display Assembly, Domestic, Red
- 4100-9402 Remote Display Assembly, Domestic, Beige
- 4100-9421 Remote Display Assembly, Canadian/French, Red
- 4100-9422 Remote Display Assembly, Canadian/French, Beige
- 4100-9441 Remote Display Assembly, International, Red
- 4100-9442 Remote Display Assembly, International, Beige

Cautions and Warnings



STATIC HAZARD - Static electricity can damage components. Therefore, handle as follows:

- Ground yourself before you open or install components.
- Prior to installation, keep components inside anti-static packages at all times.

DO NOT INSTALL A SIMPLEX PRODUCT WITH APPARENT DAMAGE - As you unpack your product, ground yourself and inspect the contents of the carton for damage. If you see any damage, immediately file a claim with the carrier and notify an authorized Simplex product supplier.

WARNING - Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate equipment

ELECTRICAL HAZARD - Always turn off electrical power before you make any internal adjustments or repairs. Servicing should only be performed by qualified technical representatives.

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Reference

For instructions on programming the Flexible User Interface refer to *574-849 4100U Fire Alarm - Programmer's Manual*.

Overview

Specifications

Refer to the following environmental and power specifications:

Voltage	24V
Current Draw	186 mA Normal Standby
	214 mA alarm
Temperature	32 to 120 F (0 to 49 C)
Humidity	Up to 93% (non-condensing) relative humidity at 90 F (32 C)

Overview

The remote display assembly (RDA) is a surface-mounted version of the Flexible User Interface. The unit is mounted remotely from the FACP and wired back to it via remote unit interface (RUI) wiring. Since the printed circuit boards and LCD are factory-installed within the RDA enclosure, hardware installation consists of surface mounting the enclosure to the wall, and completing the RUI circuit connection. The 4100-9401 Flexible User Interface remote display assembly contains the following:

- **Flexible User Interface panel assembly**
- **566-141 transponder interface card (TIC)**
- **Remote box 13”X20.5”**

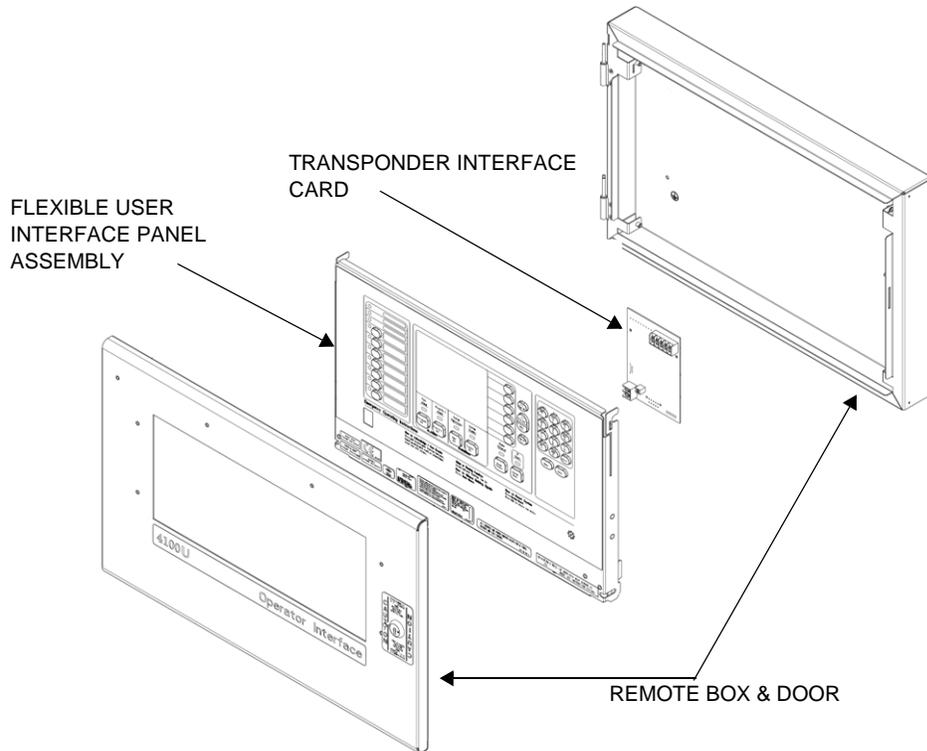


Figure 1. 4100-9401 Flexible User Interface Remote Display Assembly

Overview, continued

Flexible User Interface Controller Board

The Flexible User Interface Controller Board has three main functions: it stores and runs the control software used to manage the display, communicates with the 4100U master controller via internal or external RUI, and processes front panel operator input.

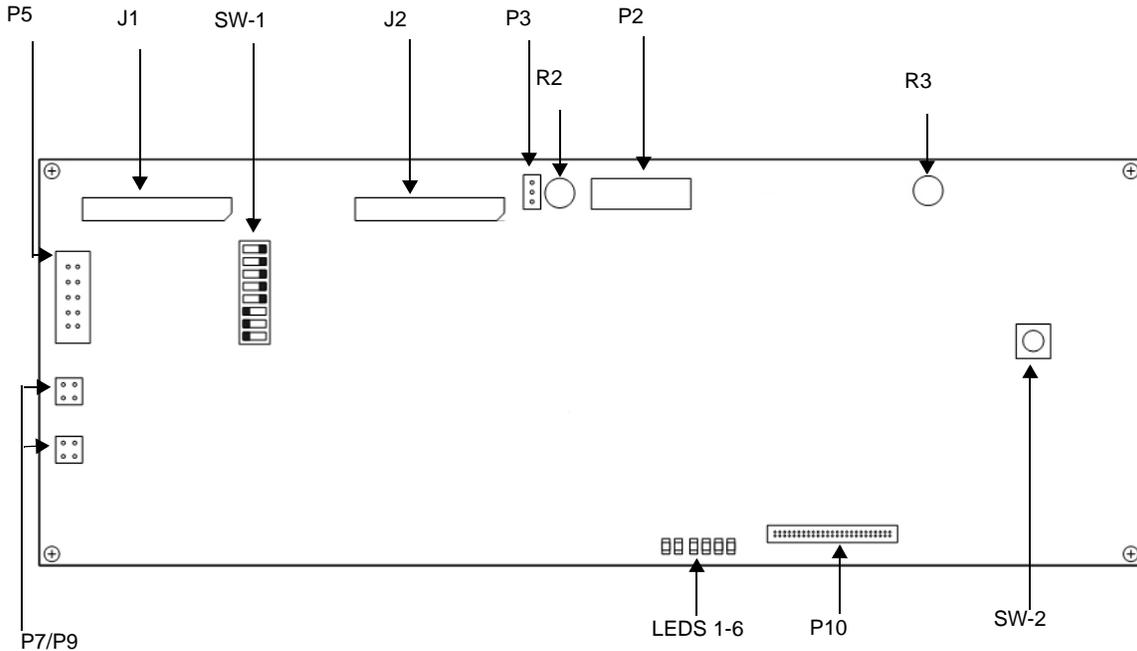


Figure 2. Flexible User Interface Controller Board Components

Flexible User Interface Panel Assembly Components

Flexible User Interface controller board components include:

J1	Connects to P2 on Flexible User Interface keyboard using harness 166-226.
J2	Connects to P3 on Flexible User Interface keyboard using harness 166-226.
P2	Connects to LCD with matching connector.
P3	Connects to LCD to provide power.
P5	Allows direct connection of PC to Flexible User Interface controller for downloading fonts and MSGLIB information.
P7/P9	<ul style="list-style-type: none"> If Flexible User Interface is installed in the master controller cabinet, use harness 734-008 to connect P7 or P9 on the Flexible User Interface controller with either P4, P5, or P6 on the CPU motherboard. If Flexible User Interface is installed in remote cabinet, use harness 734-008 to connect P7 or P9 on the controller with P2 on the transponder interface card.
P10	Connects to 637-909 memory add-on module
R2	Adjusts backlight intensity.
R3	Adjusts screen contrast.
SW-1	Sets 4100U address and communications baud rate.
SW-2	Resets controller card.
LED 1-6	Indicates communication status with master.

Overview, continued

Transponder Interface Card (TIC)

The transponder interface card housed in the Flexible User Interface remote display assembly is a variation of the TICs used in the 4100U Miniplex, and follows the same wiring guidelines as the Miniplex TIC. Refer to *574-848 4100U Fire Alarm System - Installation Guide* for the TIC wiring guidelines.

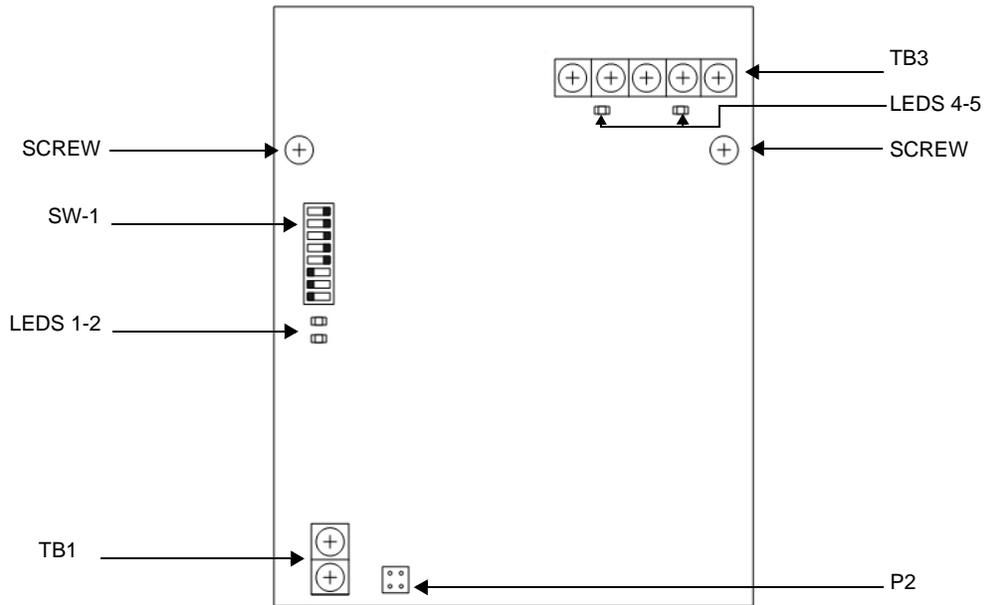


Figure 3. Transponder Interface Card

The transponder interface card includes the following components:

LED 1	Reports communication loss with 4100U Master when lit.
LED 2	Illuminates when a RUI ground fault search is active.
LED 4	Illuminates to indicate an RUI Style 7 primary trouble.
LED 5	Illuminates to indicate an RUI Style 7 secondary trouble.
P2	Uses harness 734-008 to connect to either P7 or P9 on the Flexible User Interface controller card.
SW-1	Sets the RUI address for the card.
TB1	Connects to the master controller to power the remote display assembly.
TB3	Connects to 4100U master through RUI wiring.

Installing the Remote Display Assembly

Prepare the Remote Box

In order to install the RDA, the back box must be prepared for installation. The contents of the box must be removed and a wiring hole must be drilled into the back of the box.

1. Unscrew the grounding wire from the door of the box. The wire is held in the inside top right corner of the door by a nut and washer.
2. Remove the door from the box. The door sits on the hinge, and must be lifted in order to separate it from the hinge.
3. Locate the panel release tabs that extend past the top corners of the Flexible User Interface assembly. Press the panel release tabs in, and pull the Flexible User Interface panel assembly forward. The panel is now set perpendicularly to the back box.
4. Remove all wires and cables connecting the panel to either the back box or the TIC. The harness connecting the TIC to the controller card can be unplugged by pressing the tab at the end of the wire. The nut and washer holding the grounding cable must be unscrewed.
5. To completely remove the panel, press the latches at the bottom of the assembly in, and lift the door assembly off the swivel standoffs extending from the side of the bay. See Figure 8.
6. Remove the nuts and washers from the corners of the TIC module (the card and the sheet metal bracket), and remove the module.
7. Drill a 1/2 inch diameter wiring hole through the back of the box, above the TIC. This serves to connect the TIC to the 4100U master.
8. File the drilled location to remove any sharp edges before running any field wiring through the hole.

Install the Remote Box

Figure 4 specifies the dimensions of the remote box, and identifies the location of the mounting holes. Follow the instructions below to install the remote box.

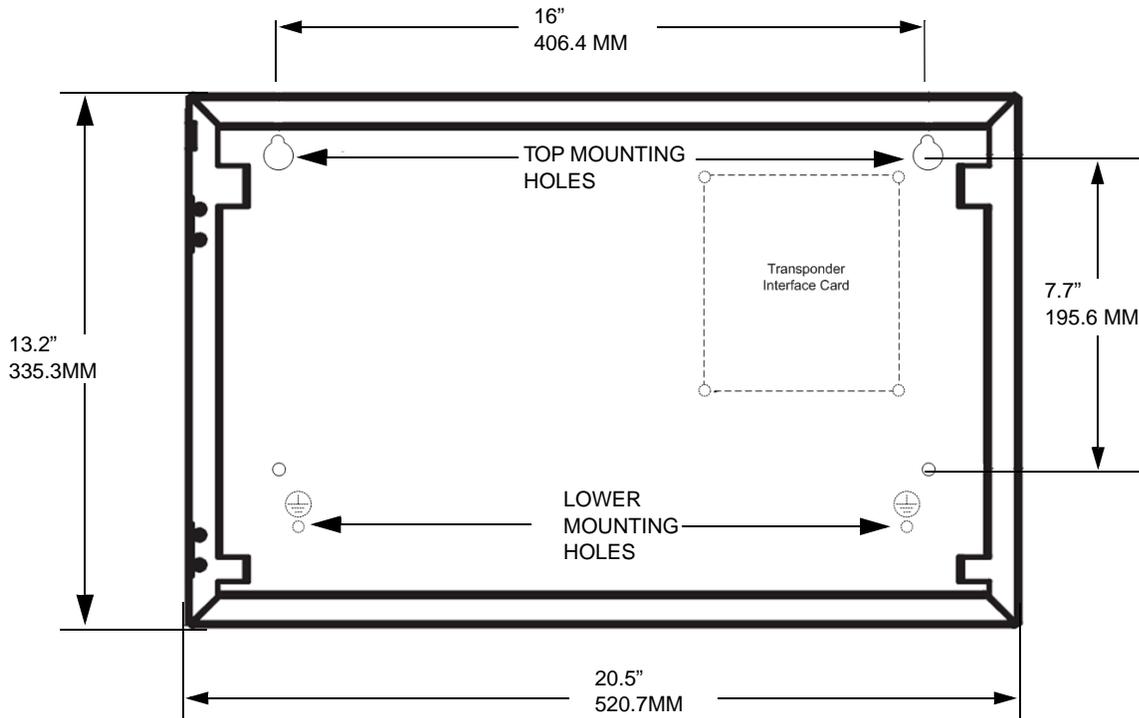


Figure 4. Remote Display Unit Dimensions

Installing the Remote Display Assembly, *continued*

Install the Remote Box (continued)

1. Insert a mounting screw in both the top right and top left mounting holes in the back box.
2. Tighten the two mounting screws, but leave a 1/8-inch (3-mm) gap from the seated position of each screw.
3. Insert the remaining mounting screws through the screw holes in the box
4. Tighten all mounting screws securely.

Re-attach Assembly

1. Re-attach the TIC module to the back box.
2. Attach the Flexible User Interface by slotting the bottom tabs through the swivel standoffs at the bottom of the back box, and pressing the latch in to secure the panel assembly.
3. Re-attach the grounding wires between the panel assembly and the back box
4. Connect harness 734-008 from either P7 or P9 on the Flexible User Interface controller card to P2 on the TIC card.
5. Replace the door on its hinge and reattach grounding strap.

Configure Switch Address

Switches SW1 on the Flexible User Interface Controller Board and the TIC are each a bank of eight dip switches. From left to right (see Figure 5 below) these switches are designated as SW1-1 through SW1-8. The function of these switches is as follows:

- SW1-1. This switch sets the baud rate for the internal 4100U communications line running between the card and the 4100 CPU. **Set this switch to ON.**
- SW1-2 through SW1-8. These switches set the card address for the 4100U FACP. Refer to Table 1 for a complete list of the switch settings for all of the possible card addresses.

Note: Each card must be set to the address assigned in the 4100U programmer.

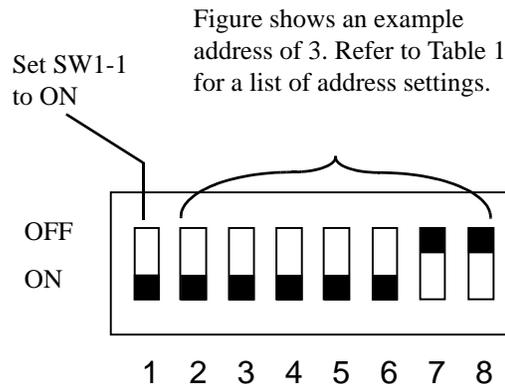


Figure 5. Internal Baud/Address DIP switch

Installing the Remote Display Assembly, *continued*

Table 1 : SW1 Switch Address Configurations

Address	SW 1-2	SW 1-3	SW 1-4	SW 1-5	SW 1-6	SW 1-7	SW 1-8		Address	SW 1-2	SW 1-3	SW 1-4	SW 1-5	SW 1-6	SW 1-7	SW 1-8
1	ON	ON	ON	ON	ON	ON	OFF		61	ON	OFF	OFF	OFF	OFF	ON	OFF
2	ON	ON	ON	ON	ON	OFF	ON		62	ON	OFF	OFF	OFF	OFF	OFF	ON
3	ON	ON	ON	ON	ON	OFF	OFF		63	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	ON	ON	ON	ON	OFF	ON	ON		64	OFF	ON	ON	ON	ON	ON	ON
5	ON	ON	ON	ON	OFF	ON	OFF		65	OFF	ON	ON	ON	ON	ON	OFF
6	ON	ON	ON	ON	OFF	OFF	ON		66	OFF	ON	ON	ON	ON	OFF	ON
7	ON	ON	ON	ON	OFF	OFF	OFF		67	OFF	ON	ON	ON	ON	OFF	OFF
8	ON	ON	ON	OFF	ON	ON	ON		68	OFF	ON	ON	ON	OFF	ON	ON
9	ON	ON	ON	OFF	ON	ON	OFF		69	OFF	ON	ON	ON	OFF	ON	OFF
10	ON	ON	ON	OFF	ON	OFF	ON		70	OFF	ON	ON	ON	OFF	OFF	ON
11	ON	ON	ON	OFF	ON	OFF	OFF		71	OFF	ON	ON	ON	OFF	OFF	OFF
12	ON	ON	ON	OFF	OFF	ON	ON		72	OFF	ON	ON	OFF	ON	ON	ON
13	ON	ON	ON	OFF	OFF	ON	OFF		73	OFF	ON	ON	OFF	ON	ON	OFF
14	ON	ON	ON	OFF	OFF	OFF	ON		74	OFF	ON	ON	OFF	ON	OFF	ON
15	ON	ON	ON	OFF	OFF	OFF	OFF		75	OFF	ON	ON	OFF	ON	OFF	OFF
16	ON	ON	OFF	ON	ON	ON	ON		76	OFF	ON	ON	OFF	OFF	ON	ON
17	ON	ON	OFF	ON	ON	ON	OFF		77	OFF	ON	ON	OFF	OFF	ON	OFF
18	ON	ON	OFF	ON	ON	OFF	ON		78	OFF	ON	ON	OFF	OFF	OFF	ON
19	ON	ON	OFF	ON	ON	OFF	OFF		79	OFF	ON	ON	OFF	OFF	OFF	OFF
20	ON	ON	OFF	ON	OFF	ON	ON		80	OFF	ON	OFF	ON	ON	ON	ON
21	ON	ON	OFF	ON	OFF	ON	OFF		81	OFF	ON	OFF	ON	ON	ON	OFF
22	ON	ON	OFF	ON	OFF	OFF	ON		82	OFF	ON	OFF	ON	ON	OFF	ON
23	ON	ON	OFF	ON	OFF	OFF	OFF		83	OFF	ON	OFF	ON	ON	OFF	OFF
24	ON	ON	OFF	OFF	ON	ON	ON		84	OFF	ON	OFF	ON	OFF	ON	ON
25	ON	ON	OFF	OFF	ON	ON	OFF		85	OFF	ON	OFF	ON	OFF	ON	OFF
26	ON	ON	OFF	OFF	ON	OFF	ON		86	OFF	ON	OFF	ON	OFF	OFF	ON
27	ON	ON	OFF	OFF	ON	OFF	OFF		87	OFF	ON	OFF	ON	OFF	OFF	OFF
28	ON	ON	OFF	OFF	OFF	ON	ON		88	OFF	ON	OFF	OFF	ON	ON	ON
29	ON	ON	OFF	OFF	OFF	ON	OFF		89	OFF	ON	OFF	OFF	ON	ON	OFF
30	ON	ON	OFF	OFF	OFF	OFF	ON		90	OFF	ON	OFF	OFF	ON	OFF	ON
31	ON	ON	OFF	OFF	OFF	OFF	OFF		91	OFF	ON	OFF	OFF	ON	OFF	OFF
32	ON	OFF	ON	ON	ON	ON	ON		92	OFF	ON	OFF	OFF	OFF	ON	ON
33	ON	OFF	ON	ON	ON	ON	OFF		93	OFF	ON	OFF	OFF	OFF	ON	OFF
34	ON	OFF	ON	ON	ON	OFF	ON		94	OFF	ON	OFF	OFF	OFF	OFF	ON
35	ON	OFF	ON	ON	ON	OFF	OFF		95	OFF	ON	OFF	OFF	OFF	OFF	OFF
36	ON	OFF	ON	ON	OFF	ON	ON		96	OFF	OFF	ON	ON	ON	ON	ON
37	ON	OFF	ON	ON	OFF	ON	OFF		97	OFF	OFF	ON	ON	ON	ON	OFF
38	ON	OFF	ON	ON	OFF	OFF	ON		98	OFF	OFF	ON	ON	ON	OFF	ON
39	ON	OFF	ON	ON	OFF	OFF	OFF		99	OFF	OFF	ON	ON	ON	OFF	OFF
40	ON	OFF	ON	OFF	ON	ON	ON		100	OFF	OFF	ON	ON	OFF	ON	ON
41	ON	OFF	ON	OFF	ON	ON	OFF		101	OFF	OFF	ON	ON	OFF	ON	OFF
42	ON	OFF	ON	OFF	ON	OFF	ON		102	OFF	OFF	ON	ON	OFF	OFF	ON
43	ON	OFF	ON	OFF	ON	OFF	OFF		103	OFF	OFF	ON	ON	OFF	OFF	OFF
44	ON	OFF	ON	OFF	OFF	ON	ON		104	OFF	OFF	ON	OFF	ON	ON	ON
45	ON	OFF	ON	OFF	OFF	ON	OFF		105	OFF	OFF	ON	OFF	ON	ON	OFF
46	ON	OFF	ON	OFF	OFF	OFF	ON		106	OFF	OFF	ON	OFF	ON	OFF	ON
47	ON	OFF	ON	OFF	OFF	OFF	OFF		107	OFF	OFF	ON	OFF	ON	OFF	OFF
48	ON	OFF	OFF	ON	ON	ON	ON		108	OFF	OFF	ON	OFF	OFF	ON	ON
49	ON	OFF	OFF	ON	ON	ON	OFF		109	OFF	OFF	ON	OFF	OFF	ON	OFF
50	ON	OFF	OFF	ON	ON	OFF	ON		110	OFF	OFF	ON	OFF	OFF	OFF	ON
51	ON	OFF	OFF	ON	ON	OFF	OFF		111	OFF	OFF	ON	OFF	OFF	OFF	OFF
52	ON	OFF	OFF	ON	OFF	ON	ON		112	OFF	OFF	OFF	ON	ON	ON	ON
53	ON	OFF	OFF	ON	OFF	ON	OFF		113	OFF	OFF	OFF	ON	ON	ON	OFF
54	ON	OFF	OFF	ON	OFF	OFF	ON		114	OFF	OFF	OFF	ON	ON	ON	OFF
55	ON	OFF	OFF	ON	OFF	OFF	OFF		115	OFF	OFF	OFF	ON	ON	OFF	OFF
56	ON	OFF	OFF	OFF	ON	ON	ON		116	OFF	OFF	OFF	ON	OFF	ON	ON
57	ON	OFF	OFF	OFF	ON	ON	OFF		117	OFF	OFF	OFF	ON	OFF	ON	OFF
58	ON	OFF	OFF	OFF	ON	OFF	ON		118	OFF	OFF	OFF	ON	OFF	OFF	ON
59	ON	OFF	OFF	OFF	ON	OFF	OFF		119	OFF	OFF	OFF	ON	OFF	OFF	OFF
60	ON	OFF	OFF	OFF	OFF	ON	ON									

Wiring the Remote Display Assembly

Overview

The remote display assembly is wired as shown in Figure 6. To connect the remote display assembly to the host panel, the TIC must be wired to the host panel via RUI cabling. This section explains how to wire the RDA to the FACP, and how to set up a system with multiple transponders connected to the same host panel. A single 4100U FACP can support up to 10 Flexible User Interface units. Refer to *579-848 4100U Fire Alarm - Installation Instructions* for more detailed instructions.

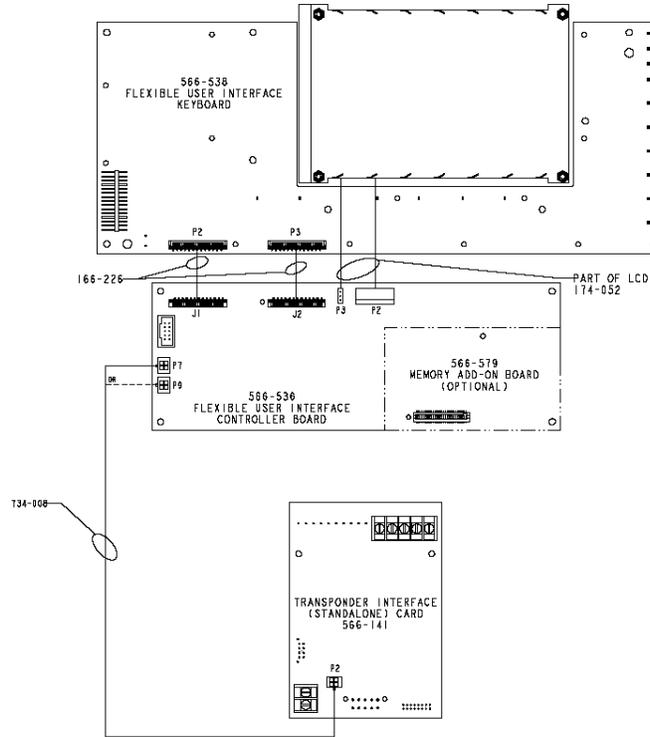


Figure 6. Remote Display Unit Interconnection Diagram

RUI Wiring Guidelines

RUI can be wired either Class A or Class B. RUI comms are wired to the remote Flexible User Interface box from the CPU motherboard to the TIC.

- All wiring is between 18 AWG and 12 AWG.
- All wiring is supervised and power-limited.
- Maximum distance from the RUI controller to any RUI device is 2500 feet. Maximum total cable load is 10,000 feet, or .58uF, whichever comes first.
- Maintain the correct polarity on all terminal connections.
- T-tapping is only permitted on Style 4 wiring.

P9 on the CPU motherboard determines whether the RUI SHIELD signal is connected to 24 C or Earth. Some devices that connect to RUI have inherently grounded shield terminals, in which case 24 C cannot be used. If 24 C is used, a Negative Ground Fault will occur.

- Position 1 – 2: SHIELD to 24 C (default).
- Position 2 – 3: SHIELD to Earth.

Note: Use the supplied ferrite beads with the TICs. Loop wires once through the supplied ferrite bead(s). Refer to *579-848 Fire Alarm - Installation Instructions*.

Wiring the Remote Display Assembly, *continued*

Wiring Instructions

Refer to Figure 7 for the wiring diagram to connect one or more Flexible User Interface(s) to a FACP. Power must be supplied to the Flexible User Interface by connecting TB1 of the TIC to an auxiliary power tap.

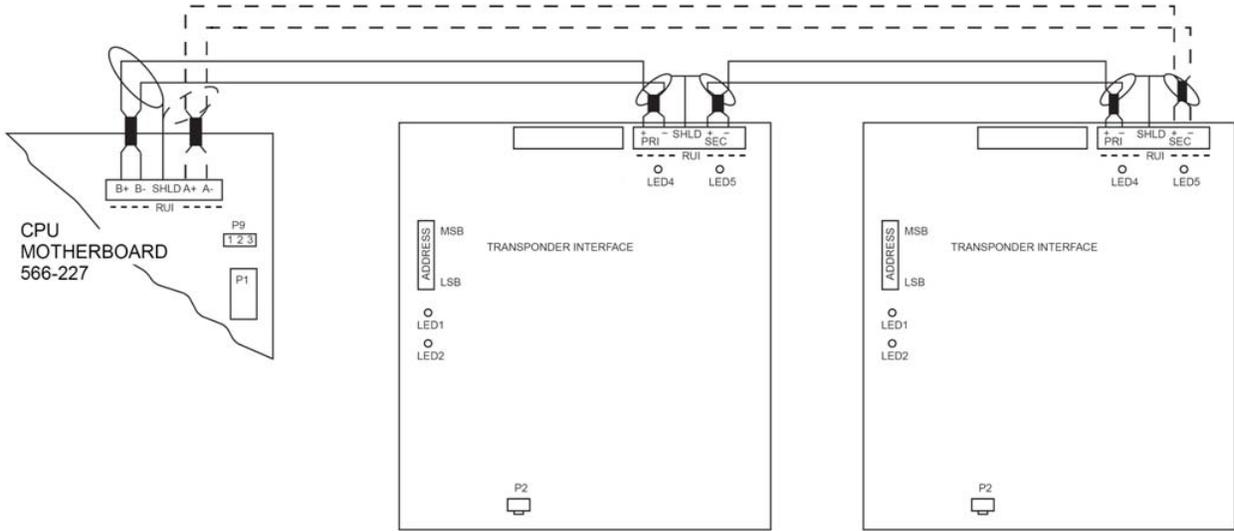


Figure 7. RUI Wiring Diagram.

Note: DASHED LINES REPRESENT CLASS A WIRING

Replacing the Remote Display Assembly

Overview

If the Flexible User Interface panel on the remote display assembly stops functioning properly then it must be replaced. Follow these steps to first remove the malfunctioning panel, and install the new panel.

Removing the Old Panel Assembly

Before installing the new remote display assembly, the old door assembly must be removed.

1. Remove the power to the remote box.
2. Lower the Flexible User Interface door assembly.
3. Detach harness 734-008 from P2 of the TIC.
4. Detach the green grounding straps connected to the studs on the back of the panel assembly by removing the nut and washer from each stud and unhitching the strap.
5. Press the latches at the bottom of the door assembly toward each other and lift it off the swivel standoffs extending from the side of the remote box (see Figure 8).

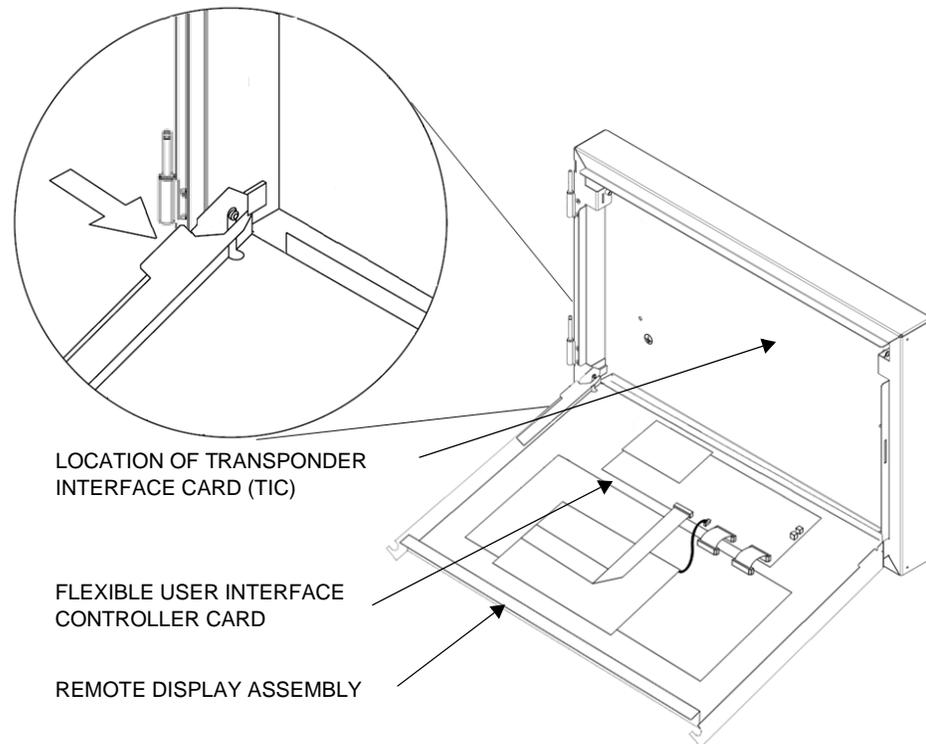


Figure 8. Close Up of Door Assembly Latch (Enclosure Door Not Shown)

Replacing the Remote Display Assembly, *continued*

Installing the New Remote Display Assembly

With the old assembly removed, the remote box is ready for the new remote display assembly.

1. Orient the new remote display assembly so that the graphic overlay and LCD screen face downward, and the bottom of the assembly is set against the bottom edge of the remote box. (see Figure 8)
2. Depress the latches at the bottom of the door assembly and hook the door onto the swivel standoffs extending in from the side panels of the bay (see Figure 8).
3. Loop the ring at the end of each grounding strap to the corresponding studs extending from the back of the door assembly. Fasten each strap to the stud with the supplied #8 washer and nut.
4. Connect the harness 734-008 from either P7 or P9 on the Flexible User Interface controller card to P2 on the TIC. Dress the harness so that there will be no abrasion or binding when the door closes.
5. Set SW-1 on the Flexible User Interface controller card (see Figure 8) to the address assigned in the 4100U Programmer.
6. Close the panel assembly, and apply power to the system.

