

**LTX-16 LOCAL DISPLAY UNIT
INSTALLATION & OPERATION MANUAL
1924-18**

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The VIGILANT LTX-16 Local Display Unit is a product of

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LTX-16 LOCAL DISPLAY UNIT VIGILANT FIRE & EVACUATION SYSTEMS
INSTALLATION & OPERATION MANUAL

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AMENDMENT RECORD

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Original Issue	1.0	16/04/93

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1

DESCRIPTION

1.1 GENERAL

The LTX-16 Local Display Unit (LDU) is designed to provide output status indication for up to 16 Private Fire Alarms (PFAs) connected via Signal Generating Devices (SGDs) to an LTX-16 concentrator. The LDU receives status information via an RS-485 connection from the LTX-16 Local Indication Port (LIP). This information is then decoded to drive output status LEDs or to provide open collector outputs as required.

The LDU is supplied as a printed circuit board module for incorporation into the user's equipment.

It can operate from 12 or 24 volt supplies (link selected).

There are two types of display arrangement available with the LDU.

1. 8 Open Collector Outputs

The LDU provides 8 open collector outputs that turn on (pull down to 0V) when the assigned state is true. See Fig 1.1. There are a variety of output state combinations selectable, ranging from Common Alarm, Common Default, etc, to individual SGD fire states.

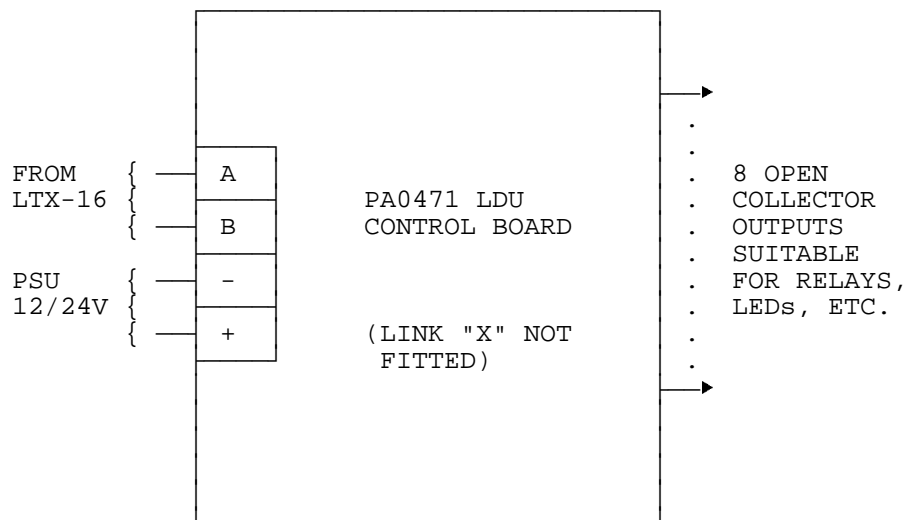
The different output combinations are shown in Table 2.3.3 and one of these is selected by the fitting of jumpers to links "Seg 1/2", "1", "2" and "4". The open collector outputs are suitable for driving LEDs or relays directly.

2. F4000 LED Display Boards

The LDU connects to a number of F4000 LED display or relay driver boards via flat ribbon cable. Each LED display board can show up to 16 groups of 3 LEDs - 1 x red and 2 x yellow.

The first LED display board can be arranged to show the PFA state (fire, defect and isolate) for each of the (up to) 16 PFAs connected. Additional display boards, or relay driver boards (no LEDs), can be added to output individual PFA test, defect, isolate and relay information for driving additional mimic or relay outputs. Refer Fig 1.2.

Multiple LDU Control boards can be connected to the output of 1 LTX-16, wired in a parallel fashion. Each LDU could be in different locations, or multiple LDUs could be at the same site, but programmed for different output combinations.



REFER TABLE 2.3.3 FOR OUTPUT OPTIONS

FIG 1.1
LDU - 8 OUTPUT ARRANGEMENT

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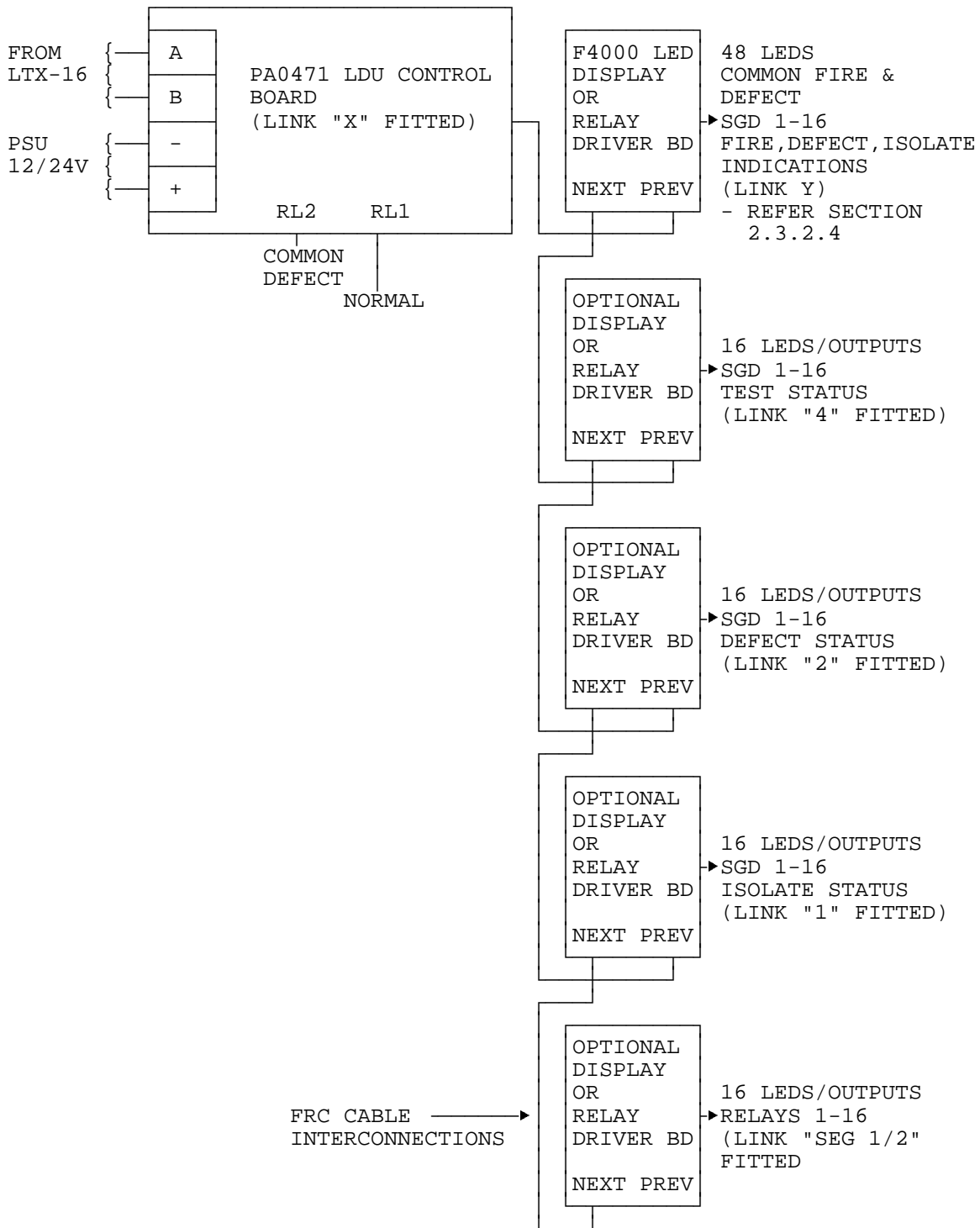


FIG 1.2
 LDU - F4000 DISPLAY OUTPUT ARRANGEMENT

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1.2 SPECIFICATIONS

1.2.1 LDU CONTROL BOARD

Part Number : PA0471
PCB Size : 119 x 95mm
Mounting Holes : 4 @ 87 x 85mm, Φ 4mm
Operating Voltage : 12V Typ (9.6-13.8V)
24V Typ (19.2-28.3V)
Current Consumption : 15mA @ 12V - excludes output current
20mA @ 24V - excludes output current
Operating Temperature : 0°C-45°C
Baud Rates : 2400, 4800, 9600 (link selectable)
Output Modes : 2 - 8 Open Collector Outputs
- F4000 LED Display Boards
+V Output Current : 12V - 1A max
24V - 100mA max
Open Collector Outputs : 200mA max, 30V
LTX-16 LDU Cable : 400m 1mm² TPS
1km Twisted Pair

1.2.2 F4000 LED DISPLAY BOARD

Part Number : PA0488 (12V)
PA0454 (24V)
PCB Size : 98 x 250mm
Mounting Holes : 4 @ 31 x 220.5mm, Φ 4mm
Operating Voltage : 12V (9.6-13.8V)
24V (19.2-28.3V)
Current Consumption : No LEDs - 1mA @ 12V
1mA @ 24V
Each LED On - 16mA @ 12V
16mA @ 24V
Mimic Output : 200mA Max, 30V

1.2.3 F4000 RELAY/MIMIC DRIVER BOARD

Part Number : PA0461
PCB Size : 98 x 250mm
Mounting Holes : 4 @ 31 x 220.5mm, Φ 4mm
Operating Voltage : 9.6 - 28.3V
Current Consumption : 1mA
Mimic Outputs : 200mA max, 30V

1.2.4 16 WAY TERMINATION BOARD

Part Number : PA0480
PCB Size : 93 x 140mm
Mounting Holes : 4 @ 31 x 95mm, Φ 4mm
Operating Voltage : 30V Max
Current Consumption : Nil

1.2.5 16 WAY RELAY BOARD

Part Number : PA0489 (12V)
PA0470 (24V)
PCB Size : 93 x 269mm
Mounting Holes : 6 @ 31 x 110 + 110mm, Φ 4mm
Operating Voltage : 12V Typ (9.6-13.8V)
24V Typ (19.2-28.3V)
Current Consumption : Each relay on 17mA @ 12V
Each relay on 11.5mA @ 24V
Relay Contacts : 1A @ 30Vdc Resistive
Relay Isolation : 500Vdc

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1.3 ORDERING INFORMATION

Along with the LDU itself, it is sometimes necessary to order a number of LED Display or Relay Driver modules to go with it.

The following gives the part numbers and descriptions of the parts available to go with the LDU.

PA0471 LTX-16 LOCAL DISPLAY UNIT CONTROL CARD

The LDU itself. Sufficient for 8 open collector output mode but requires some of the following for F4000 LED Display Board mode.

PA0488 16 WAY X 3 LED DISPLAY BOARD (12V)

PA0454 16 WAY X 3 LED DISPLAY BOARD (24V)

These F4000 LED Display Boards contain 16 rows of 3 LEDs (1 x red, 2 x yellow) and can be used to display SGD data. An FRC (LM0044-46) is required to connect this to the LDU. 16 Open collector outputs slaved off the red LEDs are available on the mimic FRC connector.

PA0461 16 WAY RELAY/MIMIC DRIVER BOARD

This module is a cut-down PA0454 with no LEDs - only the 16 open collector outputs on the mimic FRC connector. These are suitable for driving external LEDs or relays. An FRC (LM0044-46) is required to connect this board to the LDU.

PA0480 16 WAY OUTPUT TERMINATION BOARD

This board provides screw terminals for 16 open collector outputs and is connected to the mimic output of the PA0461 Relay/Mimic Driver Board or PA0488/454 LED Display Board by flat ribbon cable (LM0044-46).

PA0489 16 WAY RELAY BOARD C/W FRC (12V)

PA0470 16 WAY RELAY BOARD C/W FRC (24V)

These two boards contain 16 changeover contact relays driven by the open collector mimic outputs of the PA0461 Relay Mimic Driver or PA0488/PA0454 LED Display Boards. These boards include a 1.4M FRC for connection to the Display/Relay Driver Board.

LM0044 2 METRE FRC CABLE

LM0045 5 METRE FRC CABLE

LM0046 0.5 METRE FRC CABLE

These FRC cables are suitable for joining LED Display or Relay/Mimic Driver Boards to the LDU or each other in a daisy-chained fashion. They can also be used to connect the mimic output of these boards to the Output Termination or Relay Boards.

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INSTALLATION & SETUP

2.1 INSTALLATION

The LDU is supplied as one or more loose printed circuit boards, and so needs to be installed in a suitable enclosure and provided with power. This can usually be the housing for the mimic panel or wiring interface cabinet.

The Control Board has four 4mm diameter mounting holes on a 87mm x 85mm arrangement. These are suitable for pcb standoffs or screws.

The F4000 Display/Relay Driver boards have four 4mm diameter mounting holes on a 220.5mm x 31.0mm arrangement. These are suitable for pcb standoffs or screws.

2.2 12/24 VOLT PSU

The LDU Control Board can operate off a 12 volt or 24 volt DC power supply (link selected on the pcb). The F4000 LED Display Board and the 16 Way Relay Board are available in separate 12 volt and 24 volt versions (correct type must be ordered). The Relay Driver Module can operate off 12V or 24V without link changes.

On the LDU Control Board link LK10 should be fitted for 12V operation and removed for 24V.

Where housing in an old sector panel cabinet, the existing PSU may be able to be re-used. Calculate total loading using current consumption figures in Section 1.2.

2.3 LINK SETTINGS

NOTE	All the "mini-jump" link settings are only read on power up. Therefore it is necessary to power the LDU down and up again for any link changes to take effect.
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2.3.1 8 OPEN COLLECTOR OUTPUT ARRANGEMENT

2.3.1.1 DISPLAY ARRANGEMENT - "X" LINK

The "X" link should be NOT FITTED to select the 8 open collector output mode.

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2.3.1.2 BAUD RATE - "16" & "8" LINK

The "16" and "8" links select the baud rate for the LTX-16 to LDU communication line as per Table 2.3.1.

The LTX-16 is set up for 9600 by default, so it is probably easiest to set the LDU to 9600 as a change to the LTX-16 may involve a Telecom change.

Baud Rate	"8"	"16"
2400	Not Fitted	Not Fitted
2400	Not Fitted	Fitted
4800	Fitted	Not Fitted
9600	Fitted	Fitted

TABLE 2.3.1
BAUD RATE - "16" & "8" LINKS

2.3.1.3 OUTPUT OPERATION DURING TEST - "Z" LINK

The "Z" link selects operation, or not, of the individual SGD Fire, Defect and Isolate outputs during test.

If the "Z" link is FITTED then a particular SGD's Fire, Defect and Isolate outputs will operate when the condition is true, irrespective of whether the SGD is in Test or not. Thus, for example, if an SGD is put into Test and then a Fire signal sent through, the SGD Fire output will operate.

If the "Z" link is NOT FITTED then the SGD Fire, Defect and Isolate outputs will not operate during Test.

"Z" LINK	FIRE, DEFECT, ISOLATE OPERATION
Fitted	SGD outputs operate during Test
Not Fitted	SGD outputs DO NOT operate during Test

TABLE 2.3.2
OUTPUT OPERATION DURING TEST - "Z" LINK

2.3.1.4 OUTPUT MODE - "SEG 1/2", "1", "2" & "4" LINKS

The LDU supports 16 different output modes when operating in the 8 open collector output arrangement. These are selected by links "SEG 1/2", "1", "2" and "4" and are shown in Table 2.3.3.

Any Fire	=	Fire on any SGD that is not in Test.
Any Defect (1)	=	Any SGD Defect (and NOT in Test) <u>OR</u> Any SGD Fault <u>OR</u> Any LTX Fault
Any Defect (2)	=	Any SGD Defect (and NOT in Test)
Any Test	=	Any SGD in Test
Any Isolate	=	Any SGD in Isolate (and NOT in Test)
Any SGD Fault	=	Any SGD in COMMS ERROR or ADDRESS ERROR - as defined by the SGD to LTX-16 communications link.
		On power-up the LDU notes which SGDs are already in COMMS ERROR and removes these from the "Any SGD Fault" equation. Thus any SGDs not connected to the LTX-16 on power-up of the LDU will not contribute to "Any SGD Fault" unless they are subsequently connected and then disconnected - in which case they generate an "SGD Fault".
Any LTX Fault	=	LTX-16 to LDU link fail <u>OR</u> ATS Poll Lost <u>OR</u> LTX-16 Battery Fail <u>OR</u> LTX-16 Mains Fail <u>OR</u> LTX-16 Lid Open <u>OR</u> LTX-16 Inner Lid or Cabinet Tamper <u>OR</u> LTX-16 Internal Communications Fault
NORMAL	=	NOT (Any Fire OR Any Defect OR Any Isolate OR Any SGD Fault or Any LTX Fault).
SGD Defect O/P	=	SGD Defect operated <u>OR</u> SGD COMMS Error <u>OR</u> SGD Address Error

Relay 1-16 are controllable from the ATS system via the LTX-16, but at the time of writing are not supported within the ATS network.

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O/P	MODE 0	MODE 4	MODE 2	MODE 6
1	ANY FIRE	ANY FIRE	ANY FIRE	FIRE SGD 4
2	ANY DEFECT(1)	ANY DEFECT(2)	ANY DEFECT(2)	FIRE SGD 5
3	FIRE SGD 1	ANY TEST	ANY TEST	FIRE SGD 6
4	FIRE SGD 2	ANY ISOLATE	ANY ISOLATE	FIRE SGD 7
5	FIRE SGD 3	ANY SGD FAULT	NORMAL	FIRE SGD 8
6	FIRE SGD 4	ANY LTX FAULT	FIRE SGD 1	FIRE SGD 9
7	FIRE SGD 5	NORMAL	FIRE SGD 2	FIRE SGD 10
8	FIRE SGD 6	FIRE SGD 1	FIRE SGD 3	FIRE SGD 11
O/P	MODE 1	MODE 5	MODE 3	MODE 7
1	FIRE SGD 1	DEFECT SGD 1	ISOLATE SGD 1	TEST SGD 1
2	FIRE SGD 2	DEFECT SGD 2	ISOLATE SGD 2	TEST SGD 2
3	FIRE SGD 3	DEFECT SGD 3	ISOLATE SGD 3	TEST SGD 3
4	FIRE SGD 4	DEFECT SGD 4	ISOLATE SGD 4	TEST SGD 4
5	FIRE SGD 5	DEFECT SGD 5	ISOLATE SGD 5	TEST SGD 5
6	FIRE SGD 6	DEFECT SGD 6	ISOLATE SGD 6	TEST SGD 6
7	FIRE SGD 7	DEFECT SGD 7	ISOLATE SGD 7	TEST SGD 7
8	FIRE SGD 8	DEFECT SGD 8	ISOLATE SGD 8	TEST SGD 8
O/P	SEG 1/2-MODE 0	SEG 1/2-MODE 4	SEG 1/2-MODE 2	SEG 1/2-MODE 6
1	FIRE SGD 9	DEFECT SGD 9	ISOLATE SGD 9	TEST SGD 9
2	FIRE SGD 10	DEFECT SGD 10	ISOLATE SGD 10	TEST SGD 10
3	FIRE SGD 11	DEFECT SGD 11	ISOLATE SGD 11	TEST SGD 11
4	FIRE SGD 12	DEFECT SGD 12	ISOLATE SGD 12	TEST SGD 12
5	FIRE SGD 13	DEFECT SGD 13	ISOLATE SGD 13	TEST SGD 13
6	FIRE SGD 14	DEFECT SGD 14	ISOLATE SGD 14	TEST SGD 14
7	FIRE SGD 15	DEFECT SGD 15	ISOLATE SGD 15	TEST SGD 15
8	FIRE SGD 16	DEFECT SGD 16	ISOLATE SGD 16	TEST SGD 16
O/P	SEG 1/2-MODE 1	SEG 1/2-MODE 5	SEG 1/2-MODE 3	SEG 1/2-MODE 7
1	NORMAL	FIRE SGD 7	RELAY 1	RELAY 9
2	ANY DEFECT(2)	FIRE SGD 8	RELAY 2	RELAY 10
3	FIRE SGD 1	FIRE SGD 9	RELAY 3	RELAY 11
4	FIRE SGD 2	FIRE SGD 10	RELAY 4	RELAY 12
5	FIRE SGD 3	FIRE SGD 11	RELAY 5	RELAY 13
6	FIRE SGD 4	FIRE SGD 12	RELAY 6	RELAY 14
7	FIRE SGD 5	FIRE SGD 13	RELAY 7	RELAY 15
8	FIRE SGD 6	FIRE SGD 14	RELAY 8	RELAY 16

"SEG 1/2" - LINK FITTED

BLANK - "SEG 1/2" LINK NOT FITTED

MODE 0-7	"1"	"2"	"4"
0	NOT FITTED	NOT FITTED	NOT FITTED
1	FITTED	NOT FITTED	NOT FITTED
2	NOT FITTED	FITTED	NOT FITTED
3	FITTED	FITTED	NOT FITTED
4	NOT FITTED	NOT FITTED	FITTED
5	FITTED	NOT FITTED	FITTED
6	NOT FITTED	FITTED	FITTED
7	FITTED	FITTED	FITTED

TABLE 2.3.3 OUTPUT MODE - LINKS "SEG 1/2", "1", "2" & "4"

2.3.2 F4000 DISPLAY OUTPUT ARRANGEMENT

2.3.2.1 DISPLAY ARRANGEMENT - "X" LINK

The "X" link should be FITTED to select the F4000 Display Board Output arrangement.

2.3.2.2 BAUD RATE - "16" & "8" LINKS

The "16" and "8" links select the baud rate for the LTX-16 to LDU communication line as per Table 2.3.4.

The LTX-16 is set up for 9600 by default, so it is probably easiest to set the LDU to 9600 as a change to the LTX-16 may involve a Telecom change.

Baud Rate	"8"	"16"
2400	Not Fitted	Not Fitted
2400	Not Fitted	Fitted
4800	Fitted	Not Fitted
9600	Fitted	Fitted

**TABLE 2.3.4
BAUD RATE - "16" & "8" LINKS**

2.3.2.3 OUTPUT OPERATION DURING TEST - "Z" LINK

The "Z" link selects operation, or not, of the individual SGD Fire, Defect and Isolate outputs during test.

If the "Z" link is FITTED then a particular SGD's Fire, Defect and Isolate outputs will operate when the condition is true, irrespective of whether the SGD is in Test or not. Thus, for example, if an SGD is put into Test and then a Fire signal sent through, the SGD Fire output will operate.

If the "Z" link is NOT FITTED then the SGD Fire, Defect and Isolate outputs will not operate during Test.

"Z" LINK	FIRE, DEFECT, ISOLATE OPERATION
Fitted	SGD outputs operate during Test
Not Fitted	SGD outputs DO NOT operate during Test

**TABLE 2.3.5
OUTPUT OPERATION DURING TEST - "Z" LINK**

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2.3.2.4 COMMON INFORMATION DISPLAY BOARD - "Y" LINK

In the F4000 Display Output Arrangement there must always be at least 1 F4000 LED Display/Relay Driver board connected to the LDU Control board. This shows the common information and SGD 1-14 Fire, Defect and Isolate, or SGD 1-16 Fire, Defect and Isolate Information, depending on the "Y" link.

With the "Y" link NOT FITTED the first Display board (nearest the LDU Control Board), shows the "COMMON" or "Any" Fire, Defect, Isolate and SGD/LTX fault indications along with the Fire, Defect and Isolate indication for SGDs 1-14. This is shown in Fig 2.3.1.

With the "Y" link FITTED the first Display board (nearest the LDU Control board) shows the Fire, Defect and Isolate indications for SGDs 1-16. This is shown in Fig 2.3.2.

Any Fire = Any SGD in Fire (and NOT Test)

Any Defect = Any SGD Defect I/P Active (and NOT Test)

Any Isolate = Any SGD in Isolate (and NOT Test)

Any SGD/LTX Fault = Any SGD in COMMS ERROR or ADDRESS ERROR OR Any LTX Fault.

On power-up the LDU notes which SGDs are already in Comms Error and shows these as SGD Defects for 15 seconds.

After this these SGDs are removed from the "Any SGD Fault" equation. Thus, any SGDs not connected to the LTX-16 on power-up of the LDU will not contribute to "Any SGD Fault" unless they are subsequently connected and then disconnected - in which case they will generate an SGD Fault.

Any LTX Fault = LTX-16 to LDU link fail OR
ATS Poll Lost OR
LTX-16 Battery Fail OR
LTX-16 Mains Fail OR
LTX-16 Lid Open OR
LTX-16 Inner Lid or Cabinet Tamper OR
LTX-16 Internal Communications Fault

SGD Defect = Defect input active on SGD OR
SGD COMMS/ADDRESS ERROR from LTX-16
Also for the first 15 seconds after power-up the LDU shows Defect for those SGDs in COMMS/ADDRESS ERROR and then treats these as disabled - unless a subsequent valid response is received.

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LED ROW	FIRE COLUMN (R) (ALSO OUTPUTS)	DEFECT COLUMN (Y)	ISOLATE COLUMN (Y)
1	ANY FIRE	ANY DEFECT	ANY ISOLATE
2		ANY SGD/LTX FAULT	
3	SGD 1 FIRE	SGD 1 DEFECT	SGD 1 ISOLATE
4	SGD 2 FIRE	SGD 2 DEFECT	SGD 2 ISOLATE
5	SGD 3 FIRE	SGD 3 DEFECT	SGD 3 ISOLATE
6	SGD 4 FIRE	SGD 4 DEFECT	SGD 4 ISOLATE
7	SGD 5 FIRE	SGD 5 DEFECT	SGD 5 ISOLATE
8	SGD 6 FIRE	SGD 6 DEFECT	SGD 6 ISOLATE
9	SGD 7 FIRE	SGD 7 DEFECT	SGD 7 ISOLATE
10	SGD 8 FIRE	SGD 8 DEFECT	SGD 8 ISOLATE
11	SGD 9 FIRE	SGD 9 DEFECT	SGD 9 ISOLATE
12	SGD 10 FIRE	SGD 10 DEFECT	SGD 10 ISOLATE
13	SGD 11 FIRE	SGD 11 DEFECT	SGD 11 ISOLATE
14	SGD 12 FIRE	SGD 12 DEFECT	SGD 12 ISOLATE
15	SGD 13 FIRE	SGD 13 DEFECT	SGD 13 ISOLATE
16	SGD 14 FIRE	SGD 14 DEFECT	SGD 14 ISOLATE

R = RED LED
 Y = YELLOW LED

FIG 2.3.1
FIRST LED DISPLAY BOARD "Y" LINK NOT FITTED

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LED ROW	FIRE COLUMN (R) (ALSO OUTPUTS)	DEFECT COLUMN (Y)	ISOLATE COLUMN (Y)
1	SGD 1 FIRE	SGD 1 DEFECT	SGD 1 ISOLATE
2	SGD 2 FIRE	SGD 2 DEFECT	SGD 2 ISOLATE
3	SGD 3 FIRE	SGD 3 DEFECT	SGD 3 ISOLATE
4	SGD 4 FIRE	SGD 4 DEFECT	SGD 4 ISOLATE
5	SGD 5 FIRE	SGD 5 DEFECT	SGD 5 ISOLATE
6	SGD 6 FIRE	SGD 6 DEFECT	SGD 6 ISOLATE
7	SGD 7 FIRE	SGD 7 DEFECT	SGD 7 ISOLATE
8	SGD 8 FIRE	SGD 8 DEFECT	SGD 8 ISOLATE
9	SGD 9 FIRE	SGD 9 DEFECT	SGD 9 ISOLATE
10	SGD 10 FIRE	SGD 10 DEFECT	SGD 10 ISOLATE
11	SGD 11 FIRE	SGD 11 DEFECT	SGD 11 ISOLATE
12	SGD 12 FIRE	SGD 12 DEFECT	SGD 12 ISOLATE
13	SGD 13 FIRE	SGD 13 DEFECT	SGD 13 ISOLATE
14	SGD 14 FIRE	SGD 14 DEFECT	SGD 14 ISOLATE
15	SGD 15 FIRE	SGD 15 DEFECT	SGD 15 ISOLATE
16	SGD 16 FIRE	SGD 16 DEFECT	SGD 16 ISOLATE

R = RED LED
 Y = YELLOW LED

FIG 2.3.2
FIRST LED DISPLAY BOARD "Y" LINK FITTED

2.3.2.5 OUTPUT SGD TEST LEDS - "4" LINK

The "4" link controls whether the LDU Control board outputs individual SGD Test information on the red "Alarm" LED of an additional F4000 LED Display/Relay Driver board.

If the "4" link is FITTED then the LDU outputs this information to the second Display board from the Control board.

If the "4" link is NOT FITTED then the SGD Test information is not output.

Refer Fig 1.2.

2.3.2.6 OUTPUT SGD DEFECT LEDS - "2" LINK

If the "2" link is FITTED the LDU Control board will output the individual SGD Defect states to the red Alarm LED of an additional F4000 LED Display/Relay Driver board.

If the "2" link is NOT FITTED the SGD Defect information is not output.

Refer Fig 1.2.

2.3.2.7 OUTPUT SGD ISOLATE LEDS - "1" LINK

If the "1" link is FITTED the LDU Control board will output the individual SGD Isolate states to the red Alarm LED of an additional F4000 LED Display/Relay Driver board.

If the "1" link is NOT FITTED the SGD Isolate information is not output.

Refer Fig 1.2.

2.3.2.8 OUTPUT RELAY 1-16 LEDS - "SEG 1/2" LINK

If the "SEG 1/2" link is FITTED the LDU Control board will output the 16 Relay bits under control from the ATS system to an additional F4000 LED Display/Relay Driver board.

If the "SEG 1/2" link is NOT FITTED the Relay information is not output.

Refer Fig 1.2. (Note ATS does not currently support this option).

2.3.2.9 COMMON DEFECT & NORMAL O/Ps

In the F4000 LED Display board output arrangement the RL1 and RL2 outputs on the LDU Control board are not necessary for controlling the Display bds. They have been allocated to common defect and normal output conditions:

RL1 = NORMAL

RL2 = ANY DEFECT (SGD Defect OR SGD FAULT OR LTX-16 FAULT)

These can be used to drive LEDs or relays as desired.

2.4 WIRING

2.4.1 PSU & LTX-16 CONNECTIONS

The 12V or 24V PSU should be wired to the "+" and "-" terminals of J3.

The 2-wire RS485 connection from the LTX-16 should be wired to the "A" and "B" terminals of J3.

Note the A-A and B-B polarity is critical.

The cable type can be 1mm² TPS for distances less than 400m between the LTX-16 and LDU. Above this (<1 km) screened twisted pair wiring should be used.

Multiple LDUs may be connected to the same LTX-16, wired in parallel fashion. Up to 4 may be connected without modification. For more than this, the RS485 terminating resistor RL6 (470E) should be removed from all boards but 1 at each location.

The PSU and wiring at the LDU should not be earthed or directly connected to any other system. Isolating devices (optocouplers or relays) should be used to interface the LDU to other systems.

2.4.2 8 OUTPUT RELAY ARRANGEMENT

Typical wiring for the LDU relay outputs is shown in Fig 2.4.1.

Note the 4 10k resistors supplied loose are not required and that R1 on the LDU I/F board (1924-15) should be cut out.

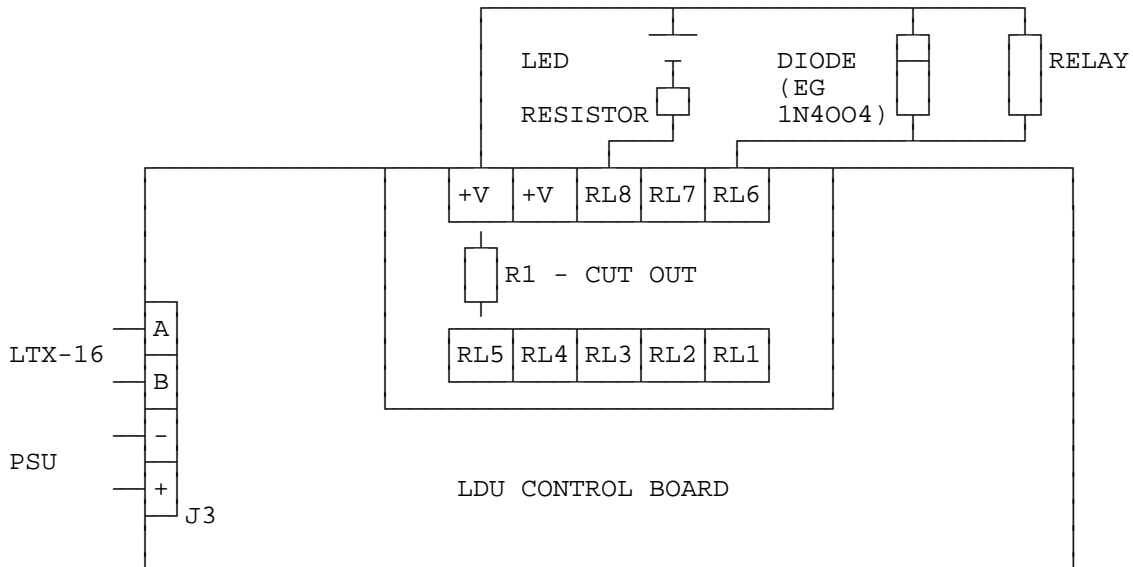


FIG 2.4.1
8 OUTPUT WIRING

2.4.3 F4000 LED DISPLAY BOARD ARRANGEMENT

2.4.3.1 LDU CONTROL BOARD

The PSU and LTX-16 "A" and "B" connections are made as per Fig 2.4.1.

The 4 x 10k resistors need to be fitted to the screw terminals of the 1924-15 Interface board as per Fig 2.4.2. The junction of the 4 resistors should be soldered to the OE link adjacent to R1.

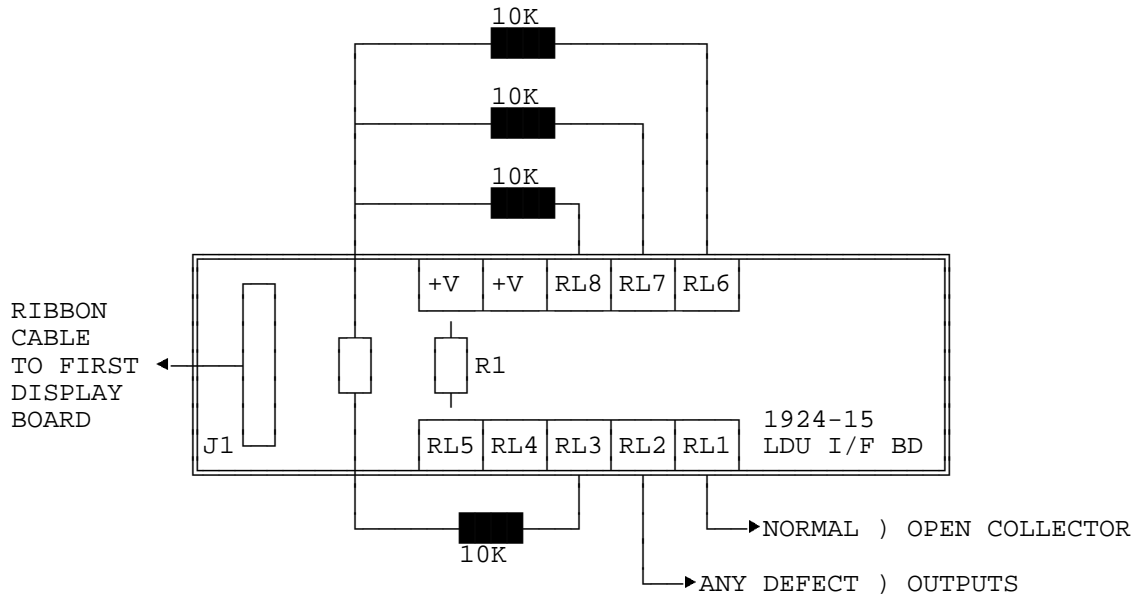


FIG 2.4.2
FITTING 10K RESISTORS TO 1924-15

2.4.3.2 FRC CABLING

The flat ribbon cable from the LDU Control board to the LED Display/Relay Driver boards is from J1 on the LDU I/F board to J1 "FROM PREVIOUS" on the first Display/Relay Driver. The cable to the next board goes from the J2 "TO NEXT" connector to the J1 "FROM PREVIOUS" connector of the next board as per Fig 1.2. Similar cabling connects further Display/Relay Driver boards in daisy-chain style.

2.4.3.3 POWER WIRING OF LED DISPLAY/RELAY DRIVER

It is necessary to provide separate power wiring to the F4000 LED Display/Driver boards and thus to any Output Termination or 16 Way Relay boards that are connected.

On each F4000 LED Display/Relay Driver board remove Lk2 and wire +12V or +24V as appropriate to the +VEXT terminal. This will provide power to the LEDs and to any Output Termination or Relay board connected to the "mimic connector" J3.

This is shown in Fig 2.4.3.and 2.4.4.

The pinout for the Mimic connector J3 on the LED Display/Relay Driver board is shown in Table 2.4.1.

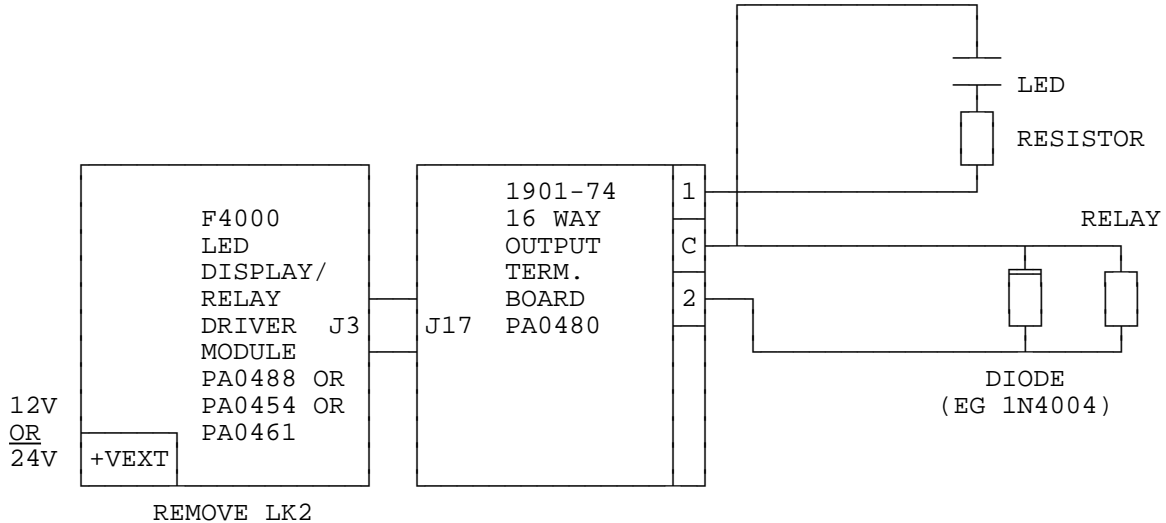


FIG 2.4.3
F4000 LED MIMIC OUTPUT WIRING

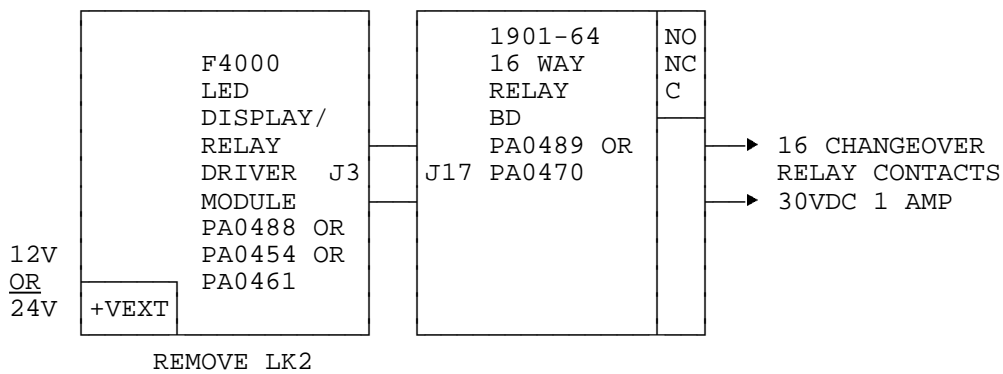


FIG 2.4.4
F4000 16 WAY RELAY CONNECTION

LTX-16 LOCAL DISPLAY UNIT VIGILANT FIRE & EVACUATION SYSTEMS
INSTALLATION & OPERATION MANUAL

J3-1	OUTPUT 6
J3-2	OUTPUT 5
J3-3	OUTPUT 7
J3-4	OUTPUT 4
J3-5	OUTPUT 8
J3-6	OUTPUT 3
J3-7	0V
J3-8	OUTPUT 2
J3-9	0V
J3-10	OUTPUT 1
J3-11	0V
J3-12	0V
J3-13	0V
J3-14	0V
J3-15	+24V
J3-16	+24V
J3-17	+24V
J3-18	+24V
J3-19	OUTPUT 9
J3-20	OUTPUT 16
J3-21	OUTPUT 10
J3-22	OUTPUT 15
J3-23	OUTPUT 11
J3-24	OUTPUT 14
J3-25	OUTPUT 12
J3-26	OUTPUT 13

TABLE 2.4.1
F4000 DISPLAY/RELAY DRIVER "MIMIC OUTPUT" J3