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End user liability disclaimer

The wiring details described in this document are intended to allow compliance with the statutory requirements of Australian fire alarm systems. Some aspects of compliance require corresponding settings in the configuration of the fire alarm system. Because this configuration will be customized by the User to define in detail the operation of particular 4100ES or 4100ESi systems, changes may be made by the User that prevent this installation from meeting statutory requirements.

Therefore, Johnson Controls cannot accept any responsibility as to the suitability of the functions generated by the User in any particular configured system.

Revision history

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Details</th>
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<tr>
<td>2.0</td>
<td>12-07-2016</td>
<td>Extensively revised for 4100ESi</td>
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<tr>
<td>2.2</td>
<td>23-01-2017</td>
<td>Revised sheet 207.</td>
</tr>
<tr>
<td>2.3</td>
<td>09-11-2017</td>
<td>Added sheets 109, 429-432. Revised sheets 600, 601, 606, 609</td>
</tr>
<tr>
<td>2.4</td>
<td>31-10-2018</td>
<td>Added sheets 433, 434. Revised sheets 429-432, 707.</td>
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About this guide
These diagrams show the wiring for particular modules or cards or detector bases which can be used with the 4100ES (AS4428.1) or 4100ESi (AS7240.2) Simplex Fire Alarm systems.

Organization
Each diagram has a 3 digit reference number from the drawing series 1976 - 181. This sheet numbering is divided into ranges, reflecting the type of device or module, as follows:

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</thead>
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</tr>
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<tr>
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<tr>
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</tr>
<tr>
<td>500-599</td>
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</tr>
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</tr>
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</tbody>
</table>
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPNET</td>
<td>Multi-Application Peripheral Network – early version of addressable device communication.</td>
</tr>
<tr>
<td>IDNet</td>
<td>Individual Device Network – later version of addressable device communication.</td>
</tr>
<tr>
<td>IAM</td>
<td>Individually Addressable Module.</td>
</tr>
<tr>
<td>ZAM</td>
<td>Zone Addressable Module – interfaces to conventional detectors.</td>
</tr>
<tr>
<td>RUI</td>
<td>Remote Unit Interface – connects 4100ES Master panel and Slave transponders.</td>
</tr>
<tr>
<td>RTU</td>
<td>Remote Transponder Unit – slave unit.</td>
</tr>
<tr>
<td>NAC</td>
<td>Notification Appliance Circuit – drives DC-powered sounders and visual warning devices, usually with supervision.</td>
</tr>
<tr>
<td>MX</td>
<td>Refers to detectors and devices using the MX DIGITAL communication protocol on an addressable loop. Not compatible with MAPNET/IDNet devices.</td>
</tr>
<tr>
<td>NC</td>
<td>Normally Closed Relay Contact.</td>
</tr>
<tr>
<td>NO</td>
<td>Normally Open Relay Contact.</td>
</tr>
</tbody>
</table>
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QUICKCONNECT SENSOR CONNECTIONS

NOTES:
1. MAXIMUM QUANTITY OF DEVICES IS 127 PER CIRCUIT FOR MANET MODULE AND 250 FOR 4190-3106 DNET MODULE.
2. DNET CIRCUIT VOLTAGE IS 18 TO 32 VDC, 0.08 AMPERES TYPICAL/0.13 AMPERES MAX.
3. 4098-9758 AND 4098-9717 QUICKCONNECT SENSORS USE THE 4098-9788 BASE.
**101: 2W Detector Bases - Conventional Detectors**

### Wiring Diagram

**MAX QTY OF DETECTORS PER CIRCUIT (SEE NOTE 5)**

<table>
<thead>
<tr>
<th>DETECTOR MODEL</th>
<th>DETECTOR TYPE</th>
<th>4100-5001/2/4</th>
<th>2190-9156</th>
<th>4090-9101</th>
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<tr>
<td>4098-9601EA</td>
<td>PHOTOELECTRIC</td>
<td>30</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>4098-9503EA</td>
<td>IONISATION</td>
<td>30</td>
<td>20</td>
<td>20</td>
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<tr>
<td>4098-9618EA</td>
<td>HEAT TYPE A</td>
<td>30</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>4098-9618EA</td>
<td>HEAT TYPE B</td>
<td>30</td>
<td>20</td>
<td>20</td>
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<tr>
<td>4098-9621EA</td>
<td>HEAT TYPE D</td>
<td>30</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Used in 4098-9780EA bases

**MAX QTY OF DETECTORS PER CIRCUIT (SEE NOTE 5)**

<table>
<thead>
<tr>
<th>DETECTOR MODEL</th>
<th>DETECTOR TYPE</th>
<th>4100-5001/2/4</th>
<th>2190-9156</th>
<th>4090-9101</th>
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<tbody>
<tr>
<td>6140</td>
<td>CC AND HEAT</td>
<td>37</td>
<td>25</td>
<td>25</td>
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<tr>
<td>6148</td>
<td>IONISATION</td>
<td>40</td>
<td>29</td>
<td>29</td>
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<tr>
<td>6140</td>
<td>PHOTOELECTRIC</td>
<td>28</td>
<td>19</td>
<td>19</td>
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<tr>
<td>6141</td>
<td>HEAT</td>
<td>30</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Used in 48/58/MUB bases

**NOTES:**
1. If used, remote indicators are polarized; observe colour-coded wiring.
2. Break wires before connecting to terminal 4 or L to maintain supervision. Do not loop wire underneath terminal 4 or L.
3. 2098-111X remote indicator cannot be used with Tyco bases, and 4090 remote indicator cannot be used with 4098-9780EA bases.
4. Multiple bases of the same type can drive a common remote indicator by linking bases as shown. However, do not interconnect remote indicator outputs of 4098-9780EA bases with 48/58/MUB bases, or the detector circuit will be short circuited.
5. When using multiple detector types on one circuit, the sum of each type's quantity as a proportion of its maximum must not exceed 1, e.g., 22 x 6144 and 16 x 4098-9601EA are not permitted on 4100-5001 as 22/40 + 16/30 is greater than 1.

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**UNLESS OTHERWISE STATED:** All dimensions in millimetres. Do not scale tolerances are to be 1 decimal place ±0.5, 2 decimal places ±0.3, 3 decimal places ±0.1.

**Tyco Fire Protection Products**

**4100ES**

**WIRING DIAGRAM**

**ISS/REV:** A3 | **DATE:** 8-12-99

**Drawing No:** 1976-181 | **Sheet:** 101 of N

**Tyco Fire Protection Products**

17 MARY MULLER DRIVE
P.O. BOX 19545
CHRISTCHURCH, PH: +64 3 3895096
NEW ZEALAND. FAX:+64 3 3899203
106: 4B-C MX Continuity Base

NOTES:
1. USE ONLY 850XX DETECTORS.
2. PROVIDES MX LOOP SHORT CIRCUIT ISOLATION.
3. MAX 15 UNITS BETWEEN ISOLATORS = 100 15 UNITS.
4. FIT ISOLATORS BETWEEN ZONES AND BETWEEN DEVICES OF DIFFERENT FUNCTIONS.
E.G. OUTPUTS FOR SECURITY AND PLANT.

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3rd ANGLE PROJECTION

<table>
<thead>
<tr>
<th>ISS/REV</th>
<th>AMENDMENTS</th>
<th>ECO</th>
<th>DRN</th>
<th>CHKD</th>
<th>Auth</th>
<th>APVD</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>ORIGINAL FROM 1863-71-105.</td>
<td>4800</td>
<td>RJS</td>
<td>LSC</td>
<td>RC</td>
<td>OK</td>
<td>02-11-15</td>
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</tbody>
</table>

TYCO 4B-C MX CONTINUITY BASE WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 106 of N

A3 ISS/REV A PART No:
802SB BASE (LOOP POWERED)

901SB BASE
(EXTERNAL 24V DC POWERED)

VOLUME ADJUSTMENT
(FIT LABEL AFTER ADJUSTMENT).

WIRING DIAGRAM

PREVIOUS DEVICE

NEXT DEVICE

VOLUME ADJUSTMENT
(FIT LABEL AFTER ADJUSTMENT).

24V DC TO NEXT DEVICE.
SUPRIVE WITH NORMALLY
ENERGIZED RELAY AT END
OF CABLE.

24V DC

2. 901SB BASE
SOUND LEVEL: 68-90 dB(A).
ISO 8201 TONE SWITCH SETTINGS: S1=ON, S2=OFF, S3=ON, S4=X.
24V DC:
6.8mA AT LOW VOLUME.
12.2mA AT FULL VOLUME.
22-28.5V DC.

3. ADJUST SOUND LEVEL WITH TRIMMER TOOL 517.050.015.

Notes:
1. 802SB BASE
SOUND LEVEL: 68-90 dB(A).
ISO 8201 TONE SWITCH SETTINGS: S1=ON, S2=OFF, S3=ON, S4=X.

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108: LPSB3000/LPAV3000 MX Addressable Sounder/Beacon Bases

NOTES:
1. BASES INCLUDE LOOP SHORT CIRCUIT ISOLATOR.
2. MX LOOP ADDRESS, SOUNDER LEVEL TONE AND FLASH RATE FOR BEACONS ARE PROGRAMMED VIA 8500EMT PROGRAMMING PORT INSIDE BASE.

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1 DECIMAL PLACE ±0.5, 2 DECIMAL PLACES ±0.3, 3 DECIMAL PLACES ±0.1

ISS/REV | AMENDMENTS | ECO | ORG | CH# | AUTH | APVD | DATE
--- | --- | --- | --- | --- | --- | --- | ---
A | ORIGINAL | 4959 | KUS | LC | RC | DP | 23-2-18
B | PART NUMBERS CHANGED TO USE NEW PART NUMBERS | 4936 | KUS | HH | RC | DP | 17-7-18

LPSB3000 Sounder Base
(Loop Powered)
NOTE 3

1. USE ONLY 850P DETECTOR.
2. 850P DETECTOR PROVIDES MX LOOP SHORT CIRCUIT ISOLATION.
3. WIRING IS FOR D51MX WITH VIGILANT 3626 RS OR LATER PCB. REFER TO BULLETIN PBG0202 FOR D51MX WITH EARLIER TYCO 3626 R4 TERMINATION PCB.
Zone module and detection cards
WIRING DIAGRAM

200: 8 Zone Module Motherboard (4100-5004)

STANDBY VOLTAGE RANGE AT DETECTOR...16.5 – 32VDC
MAXIMUM DETECTOR STANDBY LOAD CURRENT...3.0mA
MAXIMUM ALARM (SHORT) CIRCUIT CURRENT...60mA
MAXIMUM LINE RESISTANCE...50 OHMS
EOL RESISTANCE....3300 OHMS

NOTES:
1. IF ZONE IS NOT USED, CONNECT A 3.3K, 1W RESISTOR ACROSS ZONE TERMINALS AS SHOWN ON ZONE 13.
2. WIRE MUST BE 0.75 SQ.mm OR GREATER.
3. ALL DEVICE WIRING TO BE TERMINATED TO THE APPROPRIATE ZONE AS SHOWN ON ZONE 9.
4. CONDUCTORS MUST TEST FREE OF ALL GROUNDS.
5. EACH ZONE IS MARKED WITH ITS CIRCUIT NUMBER, ZN1, ZN2, ZN3,...ZN128. REFER TO "4100ESI PROGRAMMER REPORT" WHICH REFERENCES THE EXACT WIRES CONNECTED, PER JOB.
6. FOR ZONES THAT CONNECT TO CLEAN CONTACTS ONLY, MAX LINE RESISTANCE IS 800 OHMS.
7. ONLY ONE P&F ISOLATOR PER ZONE CIRCUIT. EACH ISOLATOR MUST HAVE ITS OWN ZN+ AND ZN- WIRING, BUT MULTIPLE ISOLATORS CAN SHARE A COMMON 24V/0V CONNECTION.
8. EX DETECTOR CIRCUIT - NOMINAL VOLTAGE 22VDC, SUPERVISION CURRENT 7.5mA, DETECTOR IDLE CURRENT 1.0mA MAX, ALARM CURRENT 38mA MAX. LINE DISTANCE IS 600M OR LINE RESISTANCE IS 10 OHMS, WHICHEVER IS LESS.

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UNLESS OTHERWISE STATED: ALL DIMENSIONS IN MILLIMETRES. DO NOT SCALE. TOLERANCES ARE TO BE:
1 DECIMAL PLACE ±0.5, 2 DECIMAL PLACES ±0.3, 3 DECIMAL PLACES ±0.1

3rd ANGLE PROJECTION

4100ESI
8 ZONE MODULE - CONVENTIONAL DETECTORS
WIRING DIAGRAM

TYCO FIRE PROTECTION PRODUCTS
17 MARY MULLER DRIVE
P.O. BOX 19545
CHRISTCHURCH, PH: +64 3 3895096
NEW ZEALAND. FAX: +64 3 3895098

DRAWING No: 1976-181 SHEET 200 of N
A3 ISS/REV C PART No:
201: Mapnet Monitor ZAM (2190-9156)

Each Zone Circuit Voltage Rating: 28 VDC
Line Supervision Current: 7.5 mA
Detector Idle Current: 2.0 mA
Total Supervision Current: 9.5 mA
Voltage Supplies: 12.8 to 25V
Max Alarm (Short) Circuit Current: 70 mA
Max Line Res. On Line Distance (Whichever comes first): 10 Ohms or 600m.

Mapnet II Lines are to be 0.75 Sqmm or greater twisted shielded pair. 2190-9156 does not work with IDNET.

Maximum total wire length (including all branches) on circuit not to exceed 600m.

Maximum quantity of devices per Mapnet circuit: 127.

Minimum wire gauge for 28 VDC wiring is 0.75 Sqmm.

If a zone is wired for alarm verification, wire only smoke or heat detectors to that zone. Do not use any other type of devices on the same zone.

If a zone is not used, connect a 3.3K 1/2W resistor across zone terminals TH1-11 and TH1-12.

**NOTES:**

<table>
<thead>
<tr>
<th>BS/REV</th>
<th>AMENDMENTS</th>
<th>ECO</th>
<th>DRN</th>
<th>CHKD</th>
<th>AUTH</th>
<th>APVD</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>ORIGINAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>DRAWING BORDER UPDATED WITH NON LAYING</td>
<td>4029</td>
<td>KJS</td>
<td>LSC</td>
<td>RC</td>
<td>OK</td>
<td>12-1-18</td>
</tr>
</tbody>
</table>

Tyco Fire Protection Products

4100ES

MAPNET MONITOR ZONE ADDRESSABLE MODULE (2190-9156)
WIRING DIAGRAM

Tyco Fire Protection Products
17 Mary Muller Drive
P.O. Box 19545
Christchurch, Ph: +64 3 3895096
New Zealand. Fax: +64 3 3895038

LTO432 Issue 2.4
202: IDNet Zone Addressable Module (ZAM) (4090-9101)

WIRE LEGEND:
- BLACK
- RED
- BROWN
- GREEN
- BLUE
- WHITE
- SHIELD

SUPPLEMENTAL CIRCUIT
NORMAL VOLTAGE 24 VDC
LINE SUPERVISION CURRENT 7.5 mA
DETECTOR RELAY CURRENT 2.0 mA
TOTAL SUPERVISION CURRENT 9.5 mA
VOLTAGE SUPPLIED 15.4 to 32V
MAX ALARM CURRENT CIRCUIT CURRENT 72 mA
MAX LINE RES. OR LINE DISTANCE (WHICHEVER COMES FIRST): 10 OHMS OR 500m

NOTES:
1. MAGNET 1 OR IDNET LINES ARE TO BE 0.75 50mm OR GREATER TWISTED SHIELDED PAIR.
2. MAXIMUM TOTAL WIRE LENGTH (INCLUDING ALL BRANCHES) ON CIRCUIT NOT TO EXCEED 600m.
3. MAXIMUM QUANTITY OF DEVICES PER MAGNET CIRCUIT: 127.
4. MINIMUM WIRE GAUGE FOR 24 VAC WIRING IS 0.75 50mm.
5. IF A ZONE IS WIRED FOR ALARM VERIFICATION, WIRE ONLY SMOKE OR HEAT DETECTORS TO THAT ZONE. DO NOT USE ANY OTHER TYPE OF DEVICES ON THE SAME ZONE.
6. IF A ZONE IS NOT USED, CONNECT A 3.3K 1/2W RESISTOR ACROSS ZONE TERMINALS 7 AND 8.

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UNLESS OTHERWISE STATED: ALL DIMENSIONS IN MILLIMETERS. DO NOT SCALE TOLERANCES ARE TO BE:
1 DECIMAL PLACE 0.5, 2 DECIMAL PLACES 0.1, 3 DECIMAL PLACES 0.01.

tyco
Fire Protection Products

ZONE ADDRESSABLE MODULE (4090-9101)
WIRING DIAGRAM

4100ES

ZONE: 4100ES
DATE: 21-7-06
DRAWING: 4908
DRAWING CONTROL: 4908

tyco fire protection products
17 mary muller drive
christchurch, n.z.
ph: +64 3 3895938
fax: +64 3 3895938

drawing no: 1976-181 sheet 202 of n
iss/rev b
part no:

lto432 issue 2.4
203: IDNet Module (4100-3101)

NOTES:

1. FIT A FERRITE TO EACH PAIR OF WIRES LEAVING THE 4100ES CABINET.
2. FIT ISOLATORS BETWEEN ZONES AND BETWEEN DEVICES OF DIFFERENT FUNCTIONS, E.G. OUTPUTS TO SECURITY AND PLANT.
3. THIS WIRING APPLIES TO IDNET CARDS AND TO THE IDNET PORT ON THE SYSTEM POWER SUPPLY.
4. CABLE MUST BE 0.75 SQmm OR HEAVIER.
5. LOOP ISOLATORS CAN BE ISOLATOR BASES OR ISOLATOR MODULES. SEE SHEET 102 OR 500 FOR ISOLATOR WIRING.
204: VESDA High Level Interface

WIRING DIAGRAM

NOTES:
1. SERIAL CABLE 733-571 IS 1.3m LONG.
   THIS CAN BE EXTENDED UP TO 6m LONG
   USING A SUITABLE 4-WAY CABLE AND
   CONNECTOR BLOCKS.
2. ONLY PORT A ON THE LEGACY OR PDI
   VESDA HI CARD CAN BE USED.
3. LEGACY CARD JUMPER SETTINGS SHOULD
   BE: P7, P8, P9, P10 = 1-2; P5, P6,
   P11, P12 = 2-3; P13 REMOVED.
4. PDI CARD JUMPER SETTINGS SHOULD BE:
   P1, P2, P3, P4, P5, P6 = 2-3.

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3rd ANGLE PROJECTION
205: IDNet ZAM (2190-9156) Ex Detectors

**WIRE LEGEND:**
- **B** = BLACK
- **R** = RED
- **S** = SHIELD

**MAX LOAD PER ZAM MONITOR:**
- 16 mA NORMAL
- 72 mA ALARM
- 0 - 24

**WIRING DIAGRAM**

**COMPATIBLE "Ex" DETECTORS**

<table>
<thead>
<tr>
<th>DETECTOR TYPE</th>
<th>QTY/CC</th>
<th>CIRCUIT DESIGN</th>
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</thead>
<tbody>
<tr>
<td>M0501Ex</td>
<td>(HEAT)</td>
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</tr>
<tr>
<td>M0601Ex</td>
<td>(HEAT &amp; CO)</td>
<td>15</td>
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<tr>
<td>M0601Ex</td>
<td>(IGN)</td>
<td>20</td>
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<tr>
<td>M0601Ex</td>
<td>(PHOTO)</td>
<td>9</td>
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<td>M0601Ex</td>
<td>(CO)</td>
<td>15</td>
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<tr>
<td>M0601Ex</td>
<td>(FLAME)</td>
<td>1</td>
</tr>
<tr>
<td>SHORT CIRCUIT DEVICE</td>
<td>(T5-48MC/ETC)</td>
<td>40</td>
</tr>
</tbody>
</table>

**NOTES:**
1. **MAXIMUM WIRE LENGTH ON CIRCUIT NOT TO EXCEED 600m, OR 10 OHMS RESISTANCE.**
2. **MAGNET II OR IDNET LINES ARE TO BE 0.75 SQMM OR GREATER TWISTED SHIELDED PAIR.**
3. **MAXIMUM QUANTITY OF ADDRESSABLE DEVICES PER MAGNET CIRCUIT: 127, MAXIMUM FOR IDNET IS 250.**
4. **MINIMUM WIRE GAUGE FOR 24 VCC WIRING IS 0.75 SQMM.**
5. **24V SUPPLY AT ZAM MUST BE 20.0 - 33V DC.**
6. **IF A ZONE IS NOT USED, CONNECT A 3.3K 1/2W RESISTOR ACROSS ZONE TERMINALS 7 AND 8 OF THE 4100-9101.**

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- 1 DECIMAL PLACE ±0.5
- 2 DECIMAL PLACES ±0.5
- 3 DECIMAL PLACES ±0.1

**4100ES**

**4090-9101 ZAM & "Ex" DETECTORS**

**WIRING DIAGRAM**

**DRAWING No:** 1976-181 **SHEET 205 of N**

**3rd ANGLE PROJECTION**
206: IDNet+ Loop Card (4100-3107)

NOTES:
1. FIT A FERRITE TO EACH PAIR OF WIRES LEAVING THE 4100 LOOP CABINET.
2. FIT ISOLATORS BETWEEN ZONES AND BETWEEN DEVICES OF DIFFERENT FUNCTIONS, E.G. OUTPUTS TO SECURITY AND PLANT. EACH SPUR MUST BE LIMITED TO ONE ZONE/FUNCTION.
3. TOTAL DEVICES ON IDNet+ IS 248. THESE CAN BE DISTRIBUTED OVER THE FOUR CIRCUITS IN ANY WAY.
4. CIRCUIT JUMPERS (P1-P8) MUST BE SET TO MATCH THE TYPE OF CIRCUIT. FOR LOOP WIRING (CLASS A), FIT BOTH JUMPERS TO POSITION 2-3. FOR SPUR WIRING (CLASS B), FIT BOTH JUMPERS TO POSITIONS 1-2. IF A CIRCUIT IS UNUSED, FIT JUMPERS TO POSITION 1-2 AS WELL.
5. CABLE MUST BE 1.0 50mm OR HEAVIER. FOR LOOP WIRING, MAX. LENGTH IS 1500m (126 DEVICES OR LESS) OR 750m (127 DEVICES OR MORE). FOR SPUR WIRING, TOTAL CABLE LENGTH MUST NOT EXCEED 3800m.
6. LOOP ISOLATORS CAN BE ISOLATOR BASES OR ISOLATOR MODULES, SEE SHEET 102 OR 500 FOR ISOLATOR WIRING.

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3rd ANGLE PROJECTION - O - -

<table>
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<td>-</td>
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<td>LSC</td>
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<td>KJS</td>
<td>LSC</td>
<td>RC</td>
<td>DK</td>
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</table>

TYCO FIRE PROTECTION PRODUCTS
17 MARY MULLER DRIVE
P.O. BOX 19645
CHRISTCHURCH, PH: +64 3 3895096
NEW ZEALAND. FAX:+64 3 3899938

TYCO  FIRE  PROTECTION  PRODUCTS
17  MARY  MULLER  DRIVE
P.O. BOX 19645
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NEW ZEALAND. FAX:+64 3 3899938
207: IDNet2/IDNet2+2 Loop Card (4100-3109/4100-3110)

NOTES:
1. FIT A FERRITE TO EACH PAIR OF WIRES LEAVING THE 4100ES CABINET.
2. FIT ISOLATORS BETWEEN ZONES AND BETWEEN DEVICES OF DIFFERENT FUNCTIONS, E.G., OUTPUTS TO SECURITY AND PLANT. EACH SPUR MUST BE LIMITED TO ONE ZONE/FUNCTION.
3. TOTAL DEVICES AND LOOP WIRING IS 250. THEY CAN BE DISTRIBUTED OVER THE FOUR CIRCUITS IN ANY WAY.
4. CIRCUIT JUMPERS (P1-P8) MUST BE SET TO MATCH THE TYPE OF CIRCUIT. FOR LOOP WIRING (CLASS A), FIT BOTH JUMPERS TO POSITION A, FOR SPUR WIRING (CLASS B), FIT BOTH JUMPERS TO POSITION B. IF A CIRCUIT IS UNUSED, FIT JUMPERS TO POSITION B AS WELL.
5. CABLE MUST BE 1.0 S00M OR HEAVIER PARA LOOP WIRING, MAX. LENGTH IS 1500m (125 DEVICES OR LESS) OR 250m (126 DEVICES OR MORE). FOR SPUR WIRING, TOTAL CABLE LENGTH MUST NOT EXCEED 3800m.
6. LOOP ISOLATORS CAN BE ISOLATOR BASES OR ISOLATOR MODULES. SEE SHEET 102 OR 500 FOR ISOLATOR WIRING.
7. IDNet2 (4100-3109) PROVIDES TWO LOOP/CIRCUIT TERMINALS. IDNet2+2 (4100-3110) PROVIDES 4 LOOP/CIRCUIT TERMINALS USING TWO ADD-ON CARDS.

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3rd ANGLE PROJECTION (-) (=)

tyco
Fire Protection Products

4100ES
IDNET2+2 LOOP CARDS
WIRING DIAGRAM

TYCO FIRE PROTECTION PRODUCTS
17 MARY MULLER DRIVE
CHRISTCHURCH, PH: +64 3 3895996
NEW ZEALAND. FAX:+64 3 3895938
208: Dual Loop Card (MX) (4100-6077)
211: DDM800 MX Monitor ZAM Loop Powered

<table>
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<tr>
<th>DETECTOR MODEL</th>
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<tr>
<td>5/7C</td>
<td>HARD CONTACT</td>
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Notes:
1. Refer to technical manual for other detector compatibility.
2. Cut wires before connecting to terminal L to maintain supervision. Do not loop wires underneath terminal L.
3. Multiple bases can drive a common remote indicator by linking bases as shown.
4. When using multiple detector types on one circuit, the sum of each type's quantity as a proportion of its maximum must not exceed 1, e.g.: 22 x 01H and 16 x 614T are not permitted as 22/40 + 16/29 is greater than 1.
5. Max detector current: 1.5mA PER CIRCUIT – LOW VOLTAGE MODE.
6. Max detector current: 2.5mA PER CIRCUIT – OTHER MODES.
7. Max detector current: 10mA PER CIRCUIT – E MODE.
9. Each circuit must not cover more than one zone.
Input devices
300: MapNet/IDNet Addressable MCP

MCP
4099-9701
4099-9702
4099-9032
4099-9032NL (MAPNET ONLY)

JOIN MCP WIRES TO LOOP WITH WIRE NUTS OR SIMILAR

IDNET OR MAPNET FROM PREVIOUS DEVICE OR PANEL
+ R
- B

IDNET OR MAPNET TO NEXT DEVICE OR PANEL
+ R
- B

NOTES:
1. MAPNET OR IDNET LINES ARE TO BE 0.75 SQmm OR GREATER TWISTED SHIELDED PAIR.
2. MAXIMUM CABLE LENGTH 4100m (4 SQmm).
3. MAXIMUM NUMBER OF DEVICES PER LOOP IS 127 FOR MAPNET, 250 FOR IDNET.
302: IDNet 4-20mA Analog Monitor AMZ (4190-9050)

**WIRING DIAGRAM**

**NOTES:**
1. SENSOR (POWER, SIGNAL, RETURN) WIRING IS INHERENTLY SUPERVISED IF USED TO GENERATE 20mA SIGNAL. MAXIMUM LINE RESISTANCE IS 27 OHMS.
2. USE WIRE NOTES TO INDICATE TERMINAL UNFINISHED WIRES. WIRE NUT, SPLICED, OR SOLDER THE SHIELD WIRE.
3. MAXIMUM CURRENT 25mA LOOP MONITOR IS 25mA ADD AN ADDITIONAL 3mA IN ALARM IF REMOTE LED IS USED.
4. MAXIMUM VOLTAGE ON MOUNT/EVENT LINES IS 40V, ALL OTHERS ARE 32V.

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**ISS/REV**

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**4100ES**

**4-20mA ANALOG MONITOR ZAM (4190-9050)**

**WIRING DIAGRAM**

**TYCO FIRE PROTECTION PRODUCTS**

17 MARY MULLER DRIVE

P.O. BOX 19545

CHRISTCHURCH, PH: +64 3 3895096

NEW ZEALAND. FAX:+64 3 3895938

**DRAWING NO:** 1976-181 **SHEET 302 OF N**

**ISS/REV B PART NO:**

**A3**
309: AAM2 with MX Devices

NOTES:
1. MMB800 IS LOCATED IN CAVITY BEHIND AAM2 FACEPLATE, CONFIGURE THE INPUT FOR MNG01 AND UTILITY TYPE.

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3rd ANGLE PROJECTION -

ISS/REV AMENDMENTS ECO DRN CHKD AUTH APV0 DATE
A ORIGIONAL FROM 1982-7,0,100 4609 KLS LSC RC DR 17-12-10
B SOUNDER BASE HAS 8023B, SECOND DETECTOR ADDED, NOTES UPDATED 4677 KLS LEO RC DP 2-11-10

4100ESI
AAM2 WITH MX DEVICES
WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 309 of N
A3 ISS/REV B PART No:

LT0432 Issue 2.4
Output devices and mixed I/O devices
401: MapNet2 Relay Module with Supervised Input (2190-9173)

**Notes:**
1. Do not mount device where it will experience shocks greater than 60g, vibration greater than 2.5mm (10 to 55 Hz double amplitude), or magnetic field greater than 7000A/m.
2. 2190-9173 CANNOT BE USED WITH IDNet.
WIRING TO RELAY CONTACTS IS UNSUPERVISED.
RELAY CONTACTS RATED AT 2A, 30 VDC.
(1A FOR INDUCTIVE LOAD).
THE OPERATION OF THE RELAY IS PROGRAMMABLE.

NOTES:

1. IF SHIELD IS PRESENT, IT SHOULD BE CONNECTED TO THE OUTGOING IDNet SHIELD TO PROVIDE A CONTINUOUS SHIELD OVER THE LENGTH OF THE IDNet CIRCUIT. DO NOT CONNECT THE SHIELD TO ANY METALWORK AT THE ZAM.
2. 4090–9002 CANNOT BE USED WITH MAPNET.
NOTES:
1. RELAY CONTACTS RATED 3A AT 30V DC. THE C CONTACT IS PROTECTED BY 3A FUSE.
2. RELAY OPERATION MUST BE PROGRAMMED.
3. WIRING TO RELAY CONTACTS IS UNSUPERVISED.
4. FB+ INPUTS MONITOR NO OR NC STATUS CONTACTS FROM CONTROLLED DEVICES WITHOUT SUPERVISION. STATUS CONTACT CIRCUIT MUST RETURN TO PANEL 0V AS IN THE EXAMPLES. FB1 EXAMPLE USES THE LOAD 0V WIRING TO RETURN.
406: 6 Point Signal Card (4100-4321)

**NOTES:**

1. ALL WIRING MUST BE 1.5 SQ.mm SHIELDED PAIR OR TO LOCAL CODE.
2. CONDUCTORS MUST BE FREE OF ALL GROUNDS.
3. ALL WIRING IS SUPERVISED UNLESS OTHERWISE NOTED. SUPERVISORY POWER: 2.4 mA @ 24V DC.
4. ALL SIGNAL POINTS HAVE IDENTICAL CHARACTERISTICS: CAPACITY IS AT 30V DC.
5. IF A CIRCUIT IS NOT USED, CONNECT 10K, 1/2W EUR FROM SIG+ TO SIG- TERMINALS.
6. BLOCKING DIODE – (IN5404, 3A) – REQUIRED WHEN SWITCHING NON-POLARIZED LOADS.
7. OUTPUT OPERATION MUST BE PROGRAMMED. THERE IS NO DEFAULT BEHAVIOUR.
8. DISTRIBUTION LOOMS AND CONNECTORS:
   - P2 CONNECTS TO THE FIRST TWO POINTS (SIGNAL 3 AND 4)
   - P3 CONNECTS TO THE NEXT TWO POINTS (SIGNAL 5 AND 6)
   - P4 CONNECTS TO THE NEXT TWO POINTS (SIGNAL 7 AND 8)
   - PINS 1 AND 4 CONNECT TO +24V.
   - PINS 2 AND 5 CONNECT TO 0V.
   - PINS 3 AND 6 ARE TO LOOP SHIELD THROUGH (IF USED).
   - JUMPER P5 TO P10 ON SIGNAL CARD ARE IN "S" POSITION.

**COMPONENT SIDE OF SIGNAL CARD**
560-453

**POWER DISTRIBUTION LOOMS**
ON SIGNAL DAUGHTER CARD
(USUALLY FACTORY FITTED)

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<th>AMENDMENTS</th>
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<th>CHID</th>
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<td>B</td>
<td>DRAWING BORDER UPDATED WITH NEW LAYERING</td>
<td>4059</td>
<td>IJS</td>
<td>LSC</td>
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**4100ESi**
6 POINT SIGNAL CARD (4100-4321)
WIRING DIAGRAM

**TYCO FIRE PROTECTION PRODUCTS**
17 MARY MULLER DRIVE
P.O. BOX 19545
CHRISTCHURCH, PH: +64 3 3895096
NEW ZEALAND. FAX:+64 3 3899938

4100ESi
6 POINT SIGNAL CARD (4100-4321)
WIRING DIAGRAM

**DRAWING No:** 1976-181 **SHEET 406 of N**

A3 **ISS/REV** B **PART No:**
407: SPS NAC Outputs (4100-9848AU)

**NOTES:**

1. EACH NAC CAN DRIVE UP TO 3A ALARM LOAD.
2. 1N5404 DIODES ARE SUITABLE FOR LOADS UP TO 3A.

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408: SPS NAC Connection to T-GEN50 Tone Generator

RELAY MODULE CONNECTION TO A T-GEN 50

NAC CONNECTION TO A T-GEN 50

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1 DECIMAL PLACE ±0.5, 2 DECIMAL PLACES ±0.3, 3 DECIMAL PLACES ±0.1

3rd ANGLE PROJECTION

ISS/REV AMENDMENTS ECO DRN CHD AUTH APVD DATE
A ORIGINAL 4815 KJS 21-7-15
B DRAWING BORDER UPDATED WITH NEW LAYERING 4809 KJS LSC RC DK 12-1-16

LTO432 Issue 2.4
NOTES:
1. FIT FERRITE BEAD TO EACH NAC CIRCUIT AT THE TERMINALS.
2. FIT FERRITE BEAD TO EACH MINI-GEN OUTPUT.
3. LEAVE 10K BETWEEN B+ AND B- OF UNUSED NAC OUTPUTS.
4. NAC WIRING TO MINI-GENS SHOULD BE 1.00 SQ mm OR HEAVIER.
5. ALLOW 1W LOSS OF POWER FROM EACH MINI-GEN IN THE EFL RESISTOR.
6. THIS WIRING IS APPLICABLE TO ALL VERSIONS OF MINI-GEN.
410: SPS NAC Connection to Strobe Driver:

Notes:
1. Fit ferrite bead to each NAC circuit.
2. Leave 1kΩ between B+ and B− of unused NAC outputs.
3. NAC wiring to strobe drivers should be 0.06 sq mm or heavier.
4. Each strobe driver is rated at 2A maximum. Each NAC output is rated at 3A maximum.
5. Multicanellla strobes and LED beacons cannot be mixed on the same circuit.
6. Fit ferrite bead to each strobe driver output.
411: SPS to Centaur/WA ASE

ON RELAY CARD
FIT THE LINKS P1, P2, P3 TO THE NO POSITION
FOR NORMALLY OPEN CONTACTS.
TROUBLE = FAULT
SUPERVISORY = ISOLATE
THE RELAYS ARE NORMALLY DE-ENERGISED
AND ENERGISE ON THE RESPECTIVE STATUS.

WIRING DIAGRAM

CENTAUR ASE FAS INTERFACE ALM/FLT/ISO

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3rd ANGLE PROJECTION

ISS/REV AMENDMENTS ECO D RN CHKD AUTH APVD DATE
A ORIGINAL KJS KJS KYS KJS DP 25-8-98
B UPDATED FOR NEW WA ASE 4333 KJS YEN RC DP 8-3-13
C 3U ASE Door Wiring Changed. 4704 KJS LSC LSC DP 24-2-15
D Drawing Border Updated with New Layering. 4839 KJS LSC LSC RC OK 12-1-16
412: Fan Controls with Relay IAMs

NOTES:
1. RELAY WIRING IS NOT SUPERVISED.
2. RELAY IAM CONTACTS RATED AT 1A INDUCTIVE AT 30V.
3. RELAY CONTROL AND STATUS DISPLAY MUST BE PROGRAMMED AT THE FIRE PANEL.
4. 6KB EOL RESISTOR ONLY FITTED FOR 4090–9118.

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3rd ANGLE PROJECTION

ISS/REV AMENDMENTS ECO DRN CHKD AUTH APVD DATE
A ORIGINAL – – – 22-8-06
B NOTE A ADDED – – ES 3-10-06
C DRAWING BORDER UPATED WITH NEW LAYING. 4009 ES LSC RC DK 3-12-15

4100ES
FAN CONTROLS WITH RELAY IAMs
WIRING DIAGRAM

TYCO FIRE PROTECTION PRODUCTS
17 MARY MULLER DRIVE
P.O. BOX 19545
CHRISTCHURCH, PH: +64 3 3896096
NEW ZEALAND. FAX:+64 3 3895938

DRAWING No: 1976-181 SHEET 412 of N
A3 ISS/REV C PART No:

LTO432 Issue 2.4
413: 24 Point I/O Card (002-124+4100-0302)

WIRING DIAGRAM

NOTES:
1. CARD IS SUPPLIED WITH RELAYS IN OUTPUT POSITIONS. THESE MUST BE INDIVIDUALLY MOVED TO THE INPUT POSITION WHERE REQUIRED.
2. INPUT CURRENT IN ACTIVE STATE IS 10mA AT 24V. THE "C" TERMINAL SHOULD BE (+)VE FOR INPUT.
3. CONTACT RATING FOR OUTPUTS IS 2A RESISTIVE, OR 1A INDUCTIVE AT 30V DC.
4. INPUT AND OUTPUT WIRING IS NOT SUPERVISORY.
5. INPUT AND OUTPUT FUNCTIONS MUST BE PROGRAMMED IN 4100ES. THERE IS NO DEFAULT ACTION.
6. 24 POINT DAUGHTERBOARD MUST BE CONFIGURED TO MATCH INPUT AND OUTPUT RELAYS. AN INPUT POINT IS CONFIGURED AS DEVICE TYPE = INPUT, POINT TYPE = UNLATCHED, AND THE PLUGGABLE RESISTOR MUST BE 2K. AN OUTPUT POINT IS CONFIGURED AS DEVICE TYPE = OUTPUT, POINT TYPE = RELAY, AND THE PLUGGABLE RESISTOR MUST BE 2K.

DETAIL A
NC NO 22B SELECTS WHICH CONTACTS OF THE ADJACENT RELAY ARE CONNECTED TO THE TERMINALS IN OUTPUT POSITION. THE RELAY NUMBERS (PLUS) CORRESPONDS TO THE GRAPHIC I/O CARD PART NUMBER.

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3rd ANGLE PROJECTION

ISS/REV | AMENDMENTS | ECO | DIN | OHNO | AUTH | APVD | DATE
--- | --- | --- | --- | --- | --- | --- | ---
A | ORIGINAL | KJS | NO- | 7-9-05
B | "ON" 3 PAGES WAS "413C" | KJS | ES1373 | 10-7-06
C | UPDATES FOR 4100ES | IJS | GEL | LSC | DP | 10-9-12
D | DRAWING BORDER UPDATED WITH NEW LAYOUT | IJS | LSC | RC | DK | 8-12-15

4100ESI
24 POINT I/O CARD (002-124)
WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 413 of N

A3 ISS/REV D PART No:

LTO432 Issue 2.4
414: 4100-3204/3206 PDI Relay Modules

4 POINT RELAY
4100-3204

8 POINT RELAY
4100-3206

Notes:
1. Fit a ferrite to each pair of wires leaving the 4100ESi cabinet.
2. Relay operation must be programmed.
3. Field wiring is unsupervised.
4. F0-11 inputs monitor NO or NC status contacts from controlled devices without supervision.

Contact rating is 3A resistive, 0.5A inductive at 30V

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ISS/REV | AMENDMENTS | ECO | DIRN | CHKD | AUTH | APVD | DATE
--- | --- | --- | --- | --- | --- | --- | ---
A | ORIGINAL | - | KJS | LSC | RC | DP | 13-4-12
B | DRAWING EDITED UPDATED WITH NEW LAYING | 0009 | KJS | LSC | RC | DR | 6-12-15

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4100ESi 4100-3204/3206 PDI RELAY MODULES WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 414 of N

A3 ISS/REV B PART No:
415: Signal ZAM (4090-9007)

Notes:
1. If shield is present on IDNET cable, connect as shown. Otherwise, leave terminal TB1-3 unconnected.
2. Notification device directly connected to the NAC circuit will not be affected by signal ZAM operation.
3. Signal ZAM operation must be programmed.
4. Signal ZAM relay is internally fused at 0.5A. A blown fuse will show as a permanent open circuit fault at the ZAM.
5. Signal ZAM is not suitable to switch 100V audio circuits.
416: MapNet/IDNet Relay IAM (4090-9008)

NOTES:
1. 4090-9008 CAN BE USED WITH MAPNET OR IDNET.
2. IF 4090-9008 IS USED TO REPLACE 2190-9184, THE 24V SUPPLY WILL NOT BE REQUIRED. ENSURE CONTINUITY IS MAINTAINED TO OTHER DEVICES.

WIRING DIAGRAM

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1 DEcimal PLACE 2.5, 2 DECIMAL PLACES 40.3, 3 DECIMAL PLACES 20.1

3rd ANGLE PROJECTION
419: 6 Signal Card Connection to Mini-Gen Tone Generator

NOTES:
1. FIT FERRITE BEAD TO EACH MINI-GEN OUTPUT.
2. LEAVE 10K BETWEEN R4 AND B- OF UNUSED SIGNAL OUTPUTS.
3. WIRING TO MINI-GENS SHOULD BE 1.00 SQ mm OR HEAVIER.
4. ALLOW 1W LOSS OF POWER FROM EACH MINI-GEN IN THE EOL RESISTOR.
5. THIS WIRING IS APPLICABLE TO ALL VERSIONS OF MINI-GEN.
6. SEE SHEET 406 FOR POWER DISTRIBUTION LOOMS DETAIL (USUALLY FACTORY FITTED).
420: 6 Signal Card Connection to Strobe Driver

NOTES:
1. LEAVE 10K BETWEEN B+ AND B- OF UNUSED SIGNAL OUTPUTS.
2. WIRING TO STROBE-DRIVERS SHOULD BE 1.00 SQ mm OR HEAVIER.
3. EACH STROBE DRIVER IS RATED AT 2A MAXIMUM. EACH NC OUTPUT IS RATED AT 3A MAXIMUM.
4. MULTICANDELLA STROBES AND LED BEACONS CANNOT BE MIXED ON THE SAME CIRCUIT.
5. FIT FERRITE BEAD TO EACH STROBE DRIVER OUTPUT.
6. SEE SHEET 406 FOR POWER DISTRIBUTION LOOMS DETAIL (USUALLY FACTORY FITTED).
NOTES:
1. INPUT CONTACTS MUST BE VOLTAGE FREE.
2. CIRCUIT RESISTANCE: 40 OHM MAX.
3. RELAYS ARE SINGLE POLE, UNSUPERVISED, VOLTAGE FREE CHANGE-OVER. CONTACT RATING: 2A @ 24V DC (RESISTIVE).
4. INPUT 1 CAN BE WIRED AS PER INPUTS 2 OR 3 AS SHOWN.
5. DO NOT USE 01 TO 04 OUTPUT TERMINALS.
6. INPUT CIRCUITS MUST NOT BE JOINED TOGETHER OR TO ANY OTHER WIRING.
7. FOR VI600 WIRING REFER TO SHEET 30B.
8. MODES REFER TO CONFIGURATION IN ES PROGRAMMER.

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ISS/REV  AMENDMENTS  ECO  DRN  CHNG  AUTH  APVD  DATE
4  ORIGINAL FROM 1985-77-110  4609  KJS  LSC  RC  DP  17-11-11
B  PART NUMBERS CHANGED TO USE MX PART NUMBERS  4636  KJS  NH  RC  DP  11-7-16
27k
0.5W
EOL

+ EXTERNAL
24V DC
POWER SUPPLY

+ 24V DC
TO POWER
- NEXT
DEVICE

MX LOOP
FROM PREVIOUS
DEVICE

MX LOOP
TO NEXT
DEVICE

SNM800 SIGNAL IAM

NOTES:
1. PSU: 20-30V DC.
2. SWITCHED OUTPUT: PSU VOLTAGE; 2A MAX. ELD: 27k.
3. LOAD DEVICES MUST HAVE SERIES DIODE AND BE
VOLTAGE FREE.
4. INDUCTIVE LOADS MUST HAVE BACK-EMF DIODE OR
SUPPRESSION.
5. DO NOT USE R+, R- TERMINAL.
NOTES:
1. RELAY IS SINGLE POLE CHANGEOVER, UNSUPERVISED, VOLTAGE-FREE OUTPUT.
2. CONTACT RATING: 2A @ 30V DC (RESISTIVE).
3. LEAVE 0+ AND 0- TERMINALS UNCONNECTED.
424: APS/LPS NAC Connection to T-GEN50 Tone Generator

NAC CONNECTION TO A T-GEN 50 (SINGLE)

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1 DECIMAL PLACE &0.5, 2 DECIMAL PLACES &0.5, 3 DECIMAL PLACES &0.1

4100ESI
APS/LPS NAC CONNECTION TO T-GEN50
WIRING DIAGRAM

ISS/REV
AMENDMENTS
ECO B x
DRN CHKD AUTY APVD DATE
A ORIGINAL 4909 RJS LDC HC 0C 15-11-18

424 N
4100ESI
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LT0432 Issue 2.4
425: APS/LPS NAC Connection to Mini-Gen Generator

**NOTES:**
1. LEAVE 10K BETWEEN B+ AND B- OF UNUSED NAC OUTPUTS.
2. NAC WIRING TO MINI-GENS SHOULD BE 1.00 SQ. MM OR HEAVIER.
3. ALLOW 1% LOSS OF POWER FROM EACH MINI-GEN IN THE EOL RESISTOR.
4. THIS WIRING IS APPLICABLE TO ALL VERSIONS OF MINI-GEN.

---

**Diagram:**

1 MINI-GEN ON OUTPUT

2 MINI-GENS ON 1 OUTPUT

---

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---

**Tyco 4100ESi Wiring Diagram**
NOTES:
1. LEAVE 1OK BETWEEN B+ AND B- OF UNUSED NAC OUTPUTS.
2. NAC WIRING TO STROBE-DRIVERS SHOULD BE 1.00 SQ mm OR HEAVIER.
3. EACH STROBE DRIVER IS RATED AT 2A MAXIMUM. EACH NAC OUTPUT IS RATED AT 2A MAXIMUM.
4. MULTICANDELA STROBES AND LED BEACONS CANNOT BE MIXED ON THE SAME CIRCUIT.

1 STROBE DRIVER ON OUTPUT

2 STROBE DRIVERS ON 1 OUTPUT

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3rd ANGLE PROJECTION
428: LPSx800x MX Loop Powered Sounders

LOOPS8000R LOOP POWERED SOUNDER, INDOOR, RED
LOOPS8000W LOOP POWERED SOUNDER, INDOOR, WHITE
LOOPS8005R LOOP POWERED SOUNDER, OUTDOOR, RED
LOPS8000R LOOP POWERED SOUNDER/BEACON, INDOOR, RED
LPA8000W LOOP POWERED SOUNDER/BEACON, INDOOR, WHITE
LPA8005R LOOP POWERED SOUNDER/BEACON, OUTDOOR, RED

NOTES:
1. ALL UNITS INCLUDE LOOP SHORT CIRCUIT ISOLATOR.
2. MX LOOP ADDRESS, SOUNDER LEVEL, TONE AND FLASH RATE FOR BEACONS ARE PROGRAMMED USING 850EVM AND PROGRAMMING PORT INSIDE BASE.
3. TO OPEN UNIT, INSERT TWO-PINNED TOOL INTO 2 SMALL HOLES IN SIDE OF BASE AND CAREFULLY PUSH, WHILE OPENING UNIT.

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4100ESi
LPSX800X LOOP POWERED SOUNDERS WIRING DIAGRAM
DRAWING No: 1976-181 SHEET 428 of N
A3 ISS/REV B PART No:
429: T-Gen 60 in 15U Panel

WARNING: Do not connect power to the T-Gen 60. A short circuit may occur.

T-GEN 60
ON 15U 4100ESi
GEAR PLATE SIDE FLANGE

NOTE 1:
- Select a suitable configuration for single T-Gen.
- Connect all three aux. wire outputs on the GAD to a single, 15U, 4100ESi panel to support the full load output rating. Use a 15U, 4100ESi panel.
- Wiring connected to the lower output must not be rated for mains voltage; must be double insulated from where it leaves the panel and double insulation is recommended where the panel is remote.
- The panel and T-Gen units must be connected for correct operation according to their respective manuals.
- Do not connect aux. wire until after the T-Gen is installed. Other aux. wires can be added if configured for alarm purposes.

NOTE 2:
- All dimensions in millimetres. Do not scale tolerances are to be read to full decimal place 0.1g 2. Decimal places 0.01.
- 3rd ANGLE PROJECTION

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4100ESi
T-GEN 60 IN 15U PANEL
WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 429 of N
A3 ISS/REV B PART No.
433: Dual 100V Switching Module

WIRING DIAGRAM

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DUAL 100V SWITCHING MODULE WIRING DIAGRAM

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ISS/REV AMENDMENTS ECD DRN CHID AUTH APVD DATE
A ORIGINAL 5140 RJ,5 PV RC GC 15-10-11

4100ESi

DRAWING No: 1976-181 SHEET 433 of N A3 ISS/REV A PART No:
Isolators
500: IDNet addressable Loop Isolator (4090-9116)

NOTES:
1. ISOLATORS ARE SYMMETRICAL A-B, BUT OBSERVE POLARITY.
2. DEVICES BETWEEN ISOLATORS OR ON A WIRING SPUR MUST BE RESTRICTED TO A SINGLE ZONE. ISOLATOR BASES ALSO COUNT AS ISOLATORS. SEE SHEET 102 FOR BASE WIRING.
3. 4090-9116 CANNOT BE USED WITH MAPNET.
4. AN ADDRESSABLE ISOLATOR OR ISOLATOR BASE (SEE SHEET 102) MUST BE INSTALLED AT THE START AND END OF EACH LOOP.

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ISS/REV | AMENDMENTS | ED | DR | CH | ID | AUTH | AP/VD | DATE
--- | --- | --- | --- | --- | --- | --- | --- | ---
A | ORIGINAL | - | KS/5 | PA | LSC | SP | 30-8-06 |
B | NOTE 4 ADDED | 3809 | KS/5 | PA | LSC | SP | 20-11-06 |
C | DRAWING BORDER UPDATED WITH NEW LAYERING | 4809 | KS/5 | LSC | RC | DK | 8-12-10 |
502: LIM800 Loop Isolator Module

NOTES:
1. LIM800 PROVIDES MX LOOP SHORT CIRCUIT ISOLATION.
2. PROVIDES SEPARATELY ISOLATED SPUR OUTPUT TO A SINGLE ZONE OR FUNCTION.
3. MAX 18 UNITS BETWEEN ISOLATORS = 100 IB UNITS.
4. FIT ISOLATORS BETWEEN ZONES AND DEVICES OF DIFFERENT FUNCTIONS, E.G. OUTPUTS TO SECURITY AND PLANT.

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ISS/REV | AMENDMENTS | ECO | DRN | CHNO | AUTH | APVD | DATE
---|---|---|---|---|---|---|---
B | PART NUMBERS CHANGED TO USE MX PART NUMBERS | 4930 | KJS | VH | RC | DP | 11-7-16

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Fire Protection Products
Communication devices
# Transponder Interface Card (4100-0620)

**NOTES:**

1. **FIT FEMALE HEAD TO EACH PAIR OF WIRES LEAVING THE CABINET.**
2. **LOOP MODE (CLASS A) PROVIDES BEST SECURITY SINCE A FAULT IN ONE SECTION WILL NOT PREVENT COMMUNICATION. IF LOOP MODE IS NOT USED, LINK B+ TO B+ AND B- TO B- ON CPU MOTHERBOARD.**
3. **THE CONSTRAINTS ON RUI CIRCUIT CABLES ARE:**
   - **CABLE USED MUST BE 0.75 50mm OR HEAVIER (AS 1670.1 REQUIREMENT).**
   - **THE TOTAL CABLE CAPACITANCE AND RESISTANCE MUST BE NO MORE THAN 0.05muF AND 2.5kQ RESPECTIVELY. IF VOLTAGE TRANSIENT SUPPRESSORS ARE USED, THE ADDITIONAL CAPACITANCE AND RESISTANCE FROM THESE DEVICES MUST BE CONSIDERED.**
   - **FOR CLASS 0/SPUR WIRING:**
     - **THE CABLE DISTANCE FROM THE MASTER 4100ESI TO ANY SLAVE RUI IS NO MORE THAN 760M, AND THE COLLECTIVE DISTANCE OF ALL SOURS ON THE RUI CIRCUIT IS NO MORE THAN 3000M.**
     - **ALL INPUTS AND OUTPUTS MUST BE ON THE SAME ZONE (AS 1670.1 REQUIREMENT).**
   - **FOR CLASS A/LOOP WIRING:**
     - **THE TOTAL CABLE DISTANCE AROUND THE LOOP IS NO MORE THAN 760M.**
     - **THERE IS NO SPECIFIC LIMIT FOR DETECTION DEVICES CONNECTED TO RUI FORMING PART OF THE LOOP.**
     - **RUI SERVED BY A SPUR FROM THE LOOP ARE LIMITED TO A SINGLE ZONE OR FUNCTION (AS 1670.1 REQUIREMENT).**
   - **RUI CABLES MUST NOT BE RUN CLOSER THAN 50MM TO 240V MAINS CABLES, OR CLOSER THAN 150MM TO HIGHER MAINS VOLTAGES (AS/ACIF 8009 REQUIREMENT).**
   - **IF RUI CABLE AND MARNET/EXT CABLE ARE RUN IN CLOSE PARALLEL E.G., IN CONTROL, EITHER THE RUI OR THE MARNET/EXT CABLE MUST BE SCREENED.**

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**4100ESI**

**TRANSPONDER INTERFACE (4100-0620)**

**WIRING DIAGRAM**

**DRAWING NO:** 1976-181 **SHEET 600 of N**

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**ISS/REV** | A3 | D | **PART No:**
--- | --- | --- | ---
601: Network Interface Card (Wired Media) (4100-6078)

NOTES:
1. FIT FERRITE BEAD TO EACH PAIR OF WIRES LEAVING THE CABINET.
2. ONLY CONNECT SHIELDS TO GROUND AT "RIGHT" PORTS.
3. THE "RIGHT" PORT OF ONE PANEL IS ALWAYS CONNECTED TO THE "LEFT" PORT OF THE NEXT PANEL. THE LAST PANEL MUST BE CONNECTED BACK TO THE FIRST PANEL TO FORM A CLOSED LOOP.
4. WIRE TO BE 0.75 2.50 mm SHELLED TWISTED PAIR (3000m MAX) OR 0.2 SHELLED OR UNSHELLED TWISTED PAIR (2000m MAX FOR EACH SPAN).
5. FIT 2 x 4100-6056 WIRED MEDIA CARDS TO 4100-6078 NETWORK CARDS.
6. IF USING OPTICAL FIBRE, REFER TO SHEET 602.
602: Network Interface Card (Fiber-optic) (4100-6078)

NOTES:
1. FIT 4100-6057 MULTI-MODE FIBRE MEDIA CARD TO 4100-6078 NETWORK INTERFACE CARD.
2. RUN MULTI-MODE FIBRE PAIR FROM U1 (TX) AND U2 (RX) OF THE RIGHT FIBRE CARD TO U2 AND U1 OF THE LEFT FIBRE CARD.
3. USE ST CONNECTORS WITH LONG STRAIN RELIEF BOOTS ON FIBRE LEADS.
4. IF ONLY SINGLE FIBRE CONNECTION AVAILABLE, USE 4150-9010 BI-DIRECTIONAL COUPLER AT EACH END TO COMBINE TX AND RX SIGNALS. REDUCED DISTANCE APPLIES.
5. USE 50/125 OR 62.5/125 MULTI-MODE FIBRE AND REFER TO LT0104 4100ESi INSTALLATION MANUALS FOR FIBRE LOSS CALCULATIONS AND TYPICAL MAXIMUM DISTANCES.
6. NETWORK LOOP CAN BE WIDEN WIRED COPPER PAIR AND FIBRE REFER TO SHEET 801 FOR WIRING CONNECTION DETAILS. RIGHT PORT MUST CONNECT TO LEFT PORT AROUND LOOP, REGARDLESS OF MEDIA TYPE.

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4100ESi
NETWORK INTERFACE (FIBRE OPTIC) (4100-6057, WIRING DIAGRAM)

DRAWING No: 1976-181 SHEET 602of N

A3 ISS/REV B PART No:

LT0432 Issue 2.4
604: Fiber-optic Modem (4100-6072/6073) - Style 4 (Spur)

NOTES:
1. DIP SWITCH SETTINGS ON ALL FIBEROPTIC MODEM CARDS AS FOLLOWS:
   a) SW~5 ON FOR 8 BIT, OFF FOR 7 BIT OPERATION.
   b) SWT~6 ON FOR 9600 BPS, OFF FOR 57.6 Kbps
   c) All other DIP switches on the Modems are OFF.
2. Optic Connectors are ST type.
605: Dual RS232 Card (4100-0113K legacy)

**NOTES:**
1. DUAL RS232 (BID 665-415) CAN BE FITTED TO 562-799 OR 566-227 MOTHERBOARD.
2. WIRING FOR RS232 SERIAL PORT CAN BE TO SCREW TERMINALS ON MOTHERBOARD OR TO D25 MALE/MALE CONNECTOR (P3 OR P2) ON DUAL RS232 ASSY (565-415).
3. CTS INPUT NEEDS TO BE ASSERTED (2K) FOR TRANSMIT.
4. SERIAL DEFINITIONS:

<table>
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<tr>
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<th>NAME</th>
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5. FIT JUMPERS TO RS232 POSITION OF P7, P8, P9, P10 ON RS232 CARD.
6. CPU MOTHERBOARD P10 AND P11, FIT LINKS TO 2-3 FOR RS232.
7. PORTS ARE ELECTRICALLY ISOLATED FROM EACH OTHER AND FROM THE 4100 SYSTEM.

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**4100ES DUAL RS232 CARD (4100-0113K) WIRING DIAGRAM**

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**DRAWING No:** 1976-181 **SHEET 605of N**

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LT0432 Issue 2.4
607: 4100MB Modbus Interface (4100-0113K legacy)

NOTES:
1. 4100MB IS MOUNTED ON LEGACY BRACKET IN 4100ES PANEL.
2. CONNECT SPS AUX 24V OUTPUT (OR SIMILAR) TO 4100MB V+ POS, V- NEG TERMINALS.
3. CONNECT 4100MB COM1 TO 4100 PANEL RS232 PORT. WIRING SHOWS USING PRINTER PORT A, TB2 ON MOTHERBOARD. COULD USE PORT A (TB1) OR WIRE TO DB25 MALE CONNECTOR TO PLUG INTO R3 OR P2 ON DUAL RS232 ASSY 565-415.

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- 4. EARTH 4100MB AS SHOWN.
- 5. CONNECT 4100MB COM2 TO PC DB9 FOR PROGRAMMING/DIAGNOSTICS USING SUPPLIED LEAD.

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3rd ANGLE PROJECTION

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4100ES
4100MB MODBUS INTERFACE
WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 607 of N

A3 ISS/REV A PART No:

LT0432 Issue 2.4
608: Dual RS232 PDI Card (4100-6046)

NOTES:
1. LV0612 ALLOWS THE 4100-6046 PORT TO BE CONNECTED DIRECTLY TO A PC, PRINTER, ETC WITH DB9 MALE CONNECTOR.
2. LV0612 CAN BE USED WITH EITHER PORT A OR B.
NOTES:
1. FIT FERRITE BEAD TO EACH PAIR OF WIRE LEAVING THE CABLE.
2. LOOP MODE (CLASS A) IS REQUIRED FOR REMOTE FBP.
3. WIRE TO BE 1.5 50mm TWISTED SHIELDED PAIR. MAXIMUM LOOP LENGTH IS 1200 METRES.
4. SUPPLIES INCLUDING REMOTE FBP CAN BE CONNECTED IN ANY ORDER.
5. 4100ESI SUPPORTS UP TO 9 REMOTE FBPS.
610: NT Brigade Door (FP1093) wiring to APS/LPS

NOTES:
1. DO NOT CONNECT FIELD WIRING TO SAME AUX POWER AS THE NTFAST UNIT.

<table>
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<tr>
<th>RELAY</th>
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<th>WIRE INPUT</th>
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<tr>
<td>PLY 1 (NO)</td>
<td>SPRINKLER PUMP RUNNING</td>
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<td>PLY 2 (NC)</td>
<td>MCP</td>
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<td>PLY 3 (NC)</td>
<td>TAMPER SWT 1 (FP DOOR)</td>
<td>12</td>
<td>GREEN</td>
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<tr>
<td>PLY 4 (NC)</td>
<td>TAMPER SWT 2 (SPRINKLER TAMPER)</td>
<td>13</td>
<td>VIOLET</td>
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<tr>
<td>PLY 5 (NC)</td>
<td>FP AC POWER FAILURE</td>
<td>14</td>
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<tr>
<td>COMMON</td>
<td>12 VOLTS</td>
<td>12V</td>
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PSU CONTROLLER ME0504 OR ME0508

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4100ESI NT BRIGADE DOOR TO APS WIRING DETAILS

DRAWING NO: 1976-181 SHEET 610a R N
A2 ASS/REV A PART NO: FP1093
612: 4100MB Modbus Interface (4100-6046 PDI)

WIRING DIAGRAM

NOTES:
1. 4100MB IS MOUNTED ON LEGACY BRACKET IN 4100ESI AND 4100ESI PANEL
2. CONNECT APS/LPS AUX 24V OUTPUT (ANY) TO 4100MB V+ POS, V- NEGS TERMINALS. DO NOT CONNECT ANY OTHER FIELD WIRING TO THIS 24V OUTPUT.
3. CONNECT 4100MB COM1 PORT TO 4100-6046 RS232 PORT, WIRING FOR PORT B IS SHOWN, BUT PORT A CAN BE USED INSTEAD. SET P1 OR P2 TO SUPV, AND P3/P4 OR P5/P6 TO 00, DEPENDING ON WHICH PORT IS USED.
4. EARTH 4100MB AS SHOWN.
5. CONNECT 4100MB COM2 TO PC DB9 FOR PROGRAMMING/DIAGNOSTICS USING SUPPLIED LEAD.
6. REFER TO 4100MB INSTALLATION AND CONFIGURATION MANUAL FOR 4100MB AND 4100ESI SETUP.

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Tyco Fire Protection Products

4100MB MODBUS INTERFACE (PDI) WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 612 of N

ISS/REV A PART No:

A3

LT0432 Issue 2.4
Power supplies
700: SPS Power Outputs (4100-9848AU)

**NOTES:**

1. **AUXILIARY POWER OUTPUT FROM SPS IS PROTECTED BY A PTC WITH 2A RATING.**
2. **ALL FUSES ON THIS BOARD ARE 1A 20 X 5mm TYPE DO NOT REPLACE WITH HIGHER RATINGS, EACH FUSE FEEDS TWO SETS OF TERMINALS.**
3. **NAC OUTPUTS CAN BE INDIVIDUALLY PROGRAMMED AS AUXILIARY POWER OUTPUTS, EACH NAC OUTPUT IS RATED AT 2A MAXIMUM, NAC B—TERMINAL MUST NOT BE LINKED TO DV SINCE THIS WILL BYPASS CURRENT LIMITING CIRCUITRY IN THE SPS.**
4. **DO NOT CONNECT LOADS DIRECTLY TO THE STANDBY BATTERIES, THIS WILL CONFUSE 4100ES SYSTEM MANAGEMENT OF BATTERY CHARGING AND MAY LEAD TO BATTERY DISCHARGE IN SOME SITUATIONS.**
5. **PTI FERRITE BEAD TO NAC OUTPUT AT TERMINALS IF WIRING EXTENDS OUTSIDE THE CABINET.**

**CONSIDERATION**

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**ISS/REV** | **AMENDMENTS** | **ECO** | **DRN** | **CHK** | **AUTH** | **APV** | **DATE**
---|---|---|---|---|---|---|---
A | ORIGINAL | | | | | | 20-08-08
B | NOTE 2 CHANGED | | | | | | 20-08-08
C | FERRITE ADDED TO NAC OUTPUT | 4352 | K/S | LSC | RC | DP | 15-4-12
D | DRAMMING BOARD UPDATED WITH NEW LAYING | 4809 | K/S | LSC | RC | DK | 12-1-16
701: 1948 2A PSU Outputs

NOTES:

1. PSU IS MOUNTED ON 4 X 202-050 SUPPORT POSTS SUPPLIED WITH THE KIT.

2. THE 4V8 OUTPUT FROM THE PSU IS BATTERY BACKED. THE 4VNB OUTPUT MUST ONLY BE USED FOR EQUIPMENT NOT REQUIRING BATTERY BACK UP. REFER TO LT0232 FOR PSU CONFIGURATION DETAILS.

3. THE PSU FLT- OUTPUT MUST BE MONITORED BY THE FIRE PANEL, USING A FEEDBACK INPUT OR SIMILAR. IF AN IAW IS USED, AN ISOLATING RELAY, SUCH AS PA0730, MUST BE WRIED BETWEEN THE PSU FLT- OUT AND IAW INPUT. THE RELAY OPERATES ON A FAULT.

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3rd ANGLE PROJECTION

ISS/REV | AMENDMENTS | ECO | DRN | CHK | AUTH | APVD | DATE
---|---|---|---|---|---|---|---
A | ORIGINAL | 4070 | KJS | LSC | RC | DP | 15-10-26
B | DRAWING BORDER UPDATED WITH NEW LAYERING. | 4805 | KJS | LSC | RC | DR | 12-1-16

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1948 2A PSU POWER OUTPUTS WIRING DIAGRAM

DRAWING No: 1976-181 SHEET 701 of N

A3 ISS/REV B PART No:
702: 4100U 5A PSU Outputs

Flattened View for Clarity

Wiring PSU Fault to an I&M
See Note 3 and 4

1. PSU IS MOUNTED ON 4 X 202-590 SUPPORT POSTS SUPPLIED WITH THE UNIT.
2. THE OUTPUT FROM THE PSU IS BATTERY BACKED (IF BATTERIES ARE CONNECTED TO THE BATTERY TERMINALS).
3. CHARGERS FAULT MONITORING OPTION 1: CONNECT CHOR FLT- TO AN FI INPUT OR ZONE INPUT ON THE TEMA INPUTS SEE SHEET 708. ON THE PSU, SET SW1-6 OFF AND SW1-7 ON. CHOR FLT- OUTPUT SWITCHES TO ON ON FAULT.
4. CHARGERS FAULT MONITORING OPTION 2: USE AN ISOLATING PAR230 RELAY AND 4980-8001 HM BETWEEN THE CHOR FLT- OUTPUT AND AN INPUT OR OUTPUT LOOP. ON THE PSU, SET SW1-6 ON AND SW1-7 OFF. THE RELAY IS NORMALLY ENERGIZED, RELEASING ON ANY FAULT. RELAY MOUNTING REQUIREMENTS 4 OFF 7mm PLASTIC PCS STAND-OFFS (H10252). I&M MOUNTING REQUIREMENTS 2 OFF M3 X 12 SCREWS, M3 WASHERS AND NUTS.
5. FUSE DISTRIBUTION BOARD FUSES ARE NOT DIRECTLY SUPERVISED. POWERED EQUIPMENT MUST PROVIDE FAULT SIGNAL ON POWER FAIL FUSES ARE 5A 20 X 5mm SLOW BLOW.

Notes:

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ISS/REV: 4100ESi
40470 24V 5A PSU WIRING DIAGRAM

Drawing No: 1976-181 SHEET 702 of N

3rd Angle Projection

LTO432 Issue 2.4
708: APS/LPS/SPS battery sharing

NOTES

1. ONLY ONE APS, LPS OR SPS SHOULD BE CONFIGURED TO CHARGE THE BATTERY. BATTERY CAN BE UP TO 80AHR.

2. LARGER STANDBY CAPACITY REQUIRES MULTIPLE SYSTEM BATTERY SETS. CONNECT TO SEPARATE APS, LPS OR SPS. ONLY ONE APS, LPS OR SPS SHOULD CHARGE EACH BATTERY.

3. AUXILIARY 24V PSU DOES NOT SHARE THE BATTERY, AND IS NOT BATTERY BACKED.

4. AUXILIARY 24V PSU FAULT OUTPUT IS MONITORED BY A SPARE FB INPUT ON APS/LPS OR RELAY CARD, OR TIC TMR. INPUT. TIC TMR INPUT DOES NOT REQUIRE THE 6KB EOLR. AN ADDRESSABLE DEVICE CAN BE USED IF NECESSARY (SEE SHEET 702).