

Functional Test Data

| Output Bit | Function | Input Bit | Function |
|------------|---|-----------|--|
| 2 | illumination of integral led 1 = on 0 = off | 2 | confirmation of led status 1 = on 0 = off |
| 1 | self test 1 = on 0 = off | 1 | self test confirmed 1 = test on 0 = test off |
| 0 | opto output 1 = on 0 = off | 0 | opto output confirmed 1 = on 0 = off |



For further information on protocol bit usage refer to the Switch Monitor Plus PIN sheet, PP2083.

Troubleshooting

Before investigating individual units for faults, it is very important to check that the system wiring is fault free. Earth fault on a data loop or any ancillary zone wiring may cause communication errors.

Many fault conditions are the result of simple wiring errors. Check all connections to the unit and make sure that the correct value resistors are fitted where necessary.

Fault finding

| Problem | Possible Cause |
|-----------------------------|---|
| No response or missing | Incorrect address setting Incorrect loop wiring |
| Fault condition reported | Incorrect input wiring |
| Analogue value unstable | Dual address Loop data fault, data corruption |
| Constant alarm or pre-alarm | Incorrect wiring Incorrect end-of-line resistor fitted |
| No opto output | Incorrect connection or faulty external circuitry |
| Isolator LED on | Short-circuit on loop wiring Wiring reverse polarity Too many devices between isolators |

Switch Monitor Plus Installation Guide

General

The Switch Monitor Plus, part no 55000-841, incorporates a monitored input circuit for connection to remote switches. It has an output for resetting a remote detector and a selectable alarm delay. It is supplied with a backbox for surface mounting and has an integral isolator as standard.

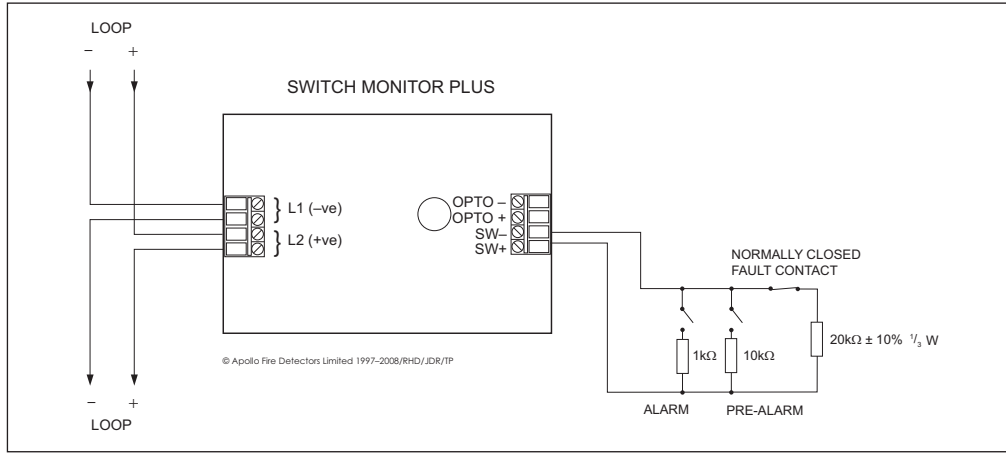
Note: The Switch Monitor Plus is not designed for outdoor use unless it is mounted in a suitable weatherproof enclosure.

Installation

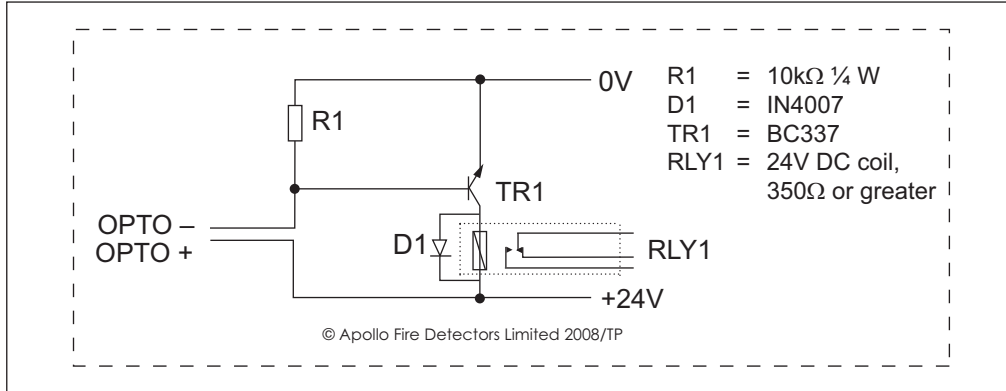
1. Mount the backbox as required and install all cables for termination. Ensure that earth continuity is maintained.
2. Remove the cover plate (if secured) from the Switch Monitor Plus assembly by inserting the blade of a terminal screwdriver into each of the four securing clips in turn, gently prising the outer edge of the cover plate over the clips underneath. DO NOT USE EXCESSIVE FORCE.
3. Terminate all cables.
4. Gently push the completed assembly towards the back box until the mounting holes are aligned and secure with the two mounting screws provided. DO NOT OVERTIGHTEN.
5. Set the address of the unit as shown on page 3.
6. Finally, when commissioning is complete, fit the cover plate by placing it in position, observing the correct orientation (LEDs on the PCB must be aligned with viewing holes). Apply pressure to the cover plate until all four clips are holding it in position.

Wiring Details

All wiring terminals will accept solid or stranded cables up to 2.5mm²



To connect a beam detector, first check to see if the device has a factory-fitted Apollo-compatible connection for the reset. If it has not, it will be necessary to devise a circuit for remote resetting of the beam detector. The circuit diagram below shows a typical method of connection.



Current consumption at 28V

| | |
|---|-------|
| switch-on surge, max 300 ms | 3.5mA |
| quiescent, 20kΩ EOL fitted | 1mA |
| switch input short circuit (fault) LED on | 4mA |
| switch input closed (alarm) LED on | 4mA |

For a full technical specification of the Switch Monitor Plus, please refer to the Switch Monitor Plus PIN Sheet, PP2083. For further information on isolators, please refer to PP2090.

Address Setting

The address of the Switch Monitor Plus is set using the first seven segments of the eight-segment DIL switch. Each segment of the switch must be set to "0" or "1", using a small screwdriver or similar tool. A complete list of address settings is shown below. (The eighth segment of the switch is used to select a delay on the input.)

| addr | DIL switch setting 1234567 | addr | DIL switch setting 1234567 | addr | DIL switch setting 1234567 | addr | DIL switch setting 1234567 | addr | DIL switch setting 1234567 |
|------|-------------------------------|------|-------------------------------|------|-------------------------------|------|-------------------------------|------|-------------------------------|
| 1 | 1000000 | 11 | 1101000 | 21 | 1010100 | 31 | 1111100 | 41 | 1001010 |
| 2 | 0100000 | 12 | 0011000 | 22 | 0110100 | 32 | 0000010 | 42 | 0101010 |
| 3 | 1100000 | 13 | 1011000 | 23 | 1110100 | 33 | 1000010 | 43 | 1101010 |
| 4 | 0010000 | 14 | 0111000 | 24 | 0001100 | 34 | 0100010 | 44 | 0011010 |
| 5 | 1010000 | 15 | 1111000 | 25 | 1001100 | 35 | 1100010 | 45 | 1011010 |
| 6 | 0110000 | 16 | 0000100 | 26 | 0101100 | 36 | 0010010 | 46 | 0111010 |
| 7 | 1110000 | 17 | 1000100 | 27 | 1101100 | 37 | 1010010 | 47 | 1111010 |
| 8 | 0001000 | 18 | 0100100 | 28 | 0011100 | 38 | 0110010 | 48 | 0000110 |
| 9 | 1001000 | 19 | 1100100 | 29 | 1011100 | 39 | 1110010 | 49 | 1000110 |
| 10 | 0101000 | 20 | 0010100 | 30 | 0111100 | 40 | 0001010 | 50 | 0100110 |
| 51 | 1100110 | 61 | 1011110 | 71 | 1110001 | 81 | 1000101 | 91 | 1101101 |
| 52 | 0010110 | 62 | 0111110 | 72 | 0001001 | 82 | 0100101 | 92 | 0011101 |
| 53 | 1010110 | 63 | 1111110 | 73 | 1001001 | 83 | 1100101 | 93 | 1011101 |
| 54 | 0110110 | 64 | 0000001 | 74 | 0101001 | 84 | 0010101 | 94 | 0111101 |
| 55 | 1110110 | 65 | 1000001 | 75 | 1101001 | 85 | 1010101 | 95 | 1111101 |
| 56 | 0001110 | 66 | 0100001 | 76 | 0011001 | 86 | 0110101 | 96 | 0000011 |
| 57 | 1001110 | 67 | 1100001 | 77 | 1011001 | 87 | 1110101 | 97 | 1000011 |
| 58 | 0101110 | 68 | 0010001 | 78 | 0111001 | 88 | 0001101 | 98 | 0100011 |
| 59 | 1101110 | 69 | 1010001 | 79 | 1111001 | 89 | 1001101 | 99 | 1100011 |
| 60 | 0011110 | 70 | 0110001 | 80 | 0000101 | 90 | 0101101 | 100 | 0010011 |
| 101 | 1010011 | 111 | 1111011 | 121 | 1001111 | | | | |
| 102 | 0110011 | 112 | 0000111 | 122 | 0101111 | | | | |
| 103 | 1110011 | 113 | 1000111 | 123 | 1101111 | | | | |
| 104 | 0001011 | 114 | 0100111 | 124 | 0011111 | | | | |
| 105 | 1001011 | 115 | 1100111 | 125 | 1011111 | | | | |
| 106 | 0101011 | 116 | 0010111 | 126 | 0111111 | | | | |
| 107 | 1101011 | 117 | 1010111 | | | | | | |
| 108 | 0011011 | 118 | 0110111 | | | | | | |
| 109 | 1011011 | 119 | 1110111 | | | | | | |
| 110 | 0111011 | 120 | 0001111 | | | | | | |

Commissioning

It is important that the Switch Monitor Plus be fully tested after installation. An XP95 Test Set, part no 55000-870, may be used to carry out functional testing of individual units. It can also be used to perform data integrity tests of an entire loop.

LED Indicators

| | | |
|---|-------------|---|
| ⊙ | Isolator | Illuminated yellow when a short circuit on the loop causes the integral isolator to operate |
| ⊙ | Input Fault | Illuminated yellow when input wiring is open or short circuit |
| ⊙ | Alarm | Illuminated red when output bit 2 is set to logic 1. |