

## DS Isolating Base – Installation Guide

Item Numbers: 45681-505AMP

### Description:

DS Series Isolating base is designed to sense and isolate short-circuits on the addressable detection loops.

### Operating Principles

Under normal operating conditions the isolating circuit provides a low resistance of  $0.2\Omega$  in either direction. If the loop voltage falls to  $14\pm 0.4V$  the isolator will switch from the closed state to the open state in order to isolate the loop 'in' and 'out' lines.

The isolated section is tested every four seconds with a current pulse (Table 2) and is automatically re-connected when the load resistance is  $175\Omega$  or greater.

The current pulses are drawn from the loop and it is important for correct operation of the system that the pulse load be included in the loop calculation made for any system.

### Load Calculation

Up to 20 detectors or the equivalent load may be connected between two isolating circuits.

Interfaces and sounders are counted as one detector for every milliamp of switch-on surge current.

### Installation:

Isolating bases are loop powered and polarity sensitive and can be damaged if connected in reverse polarity. It is important to note the polarity indicated at the wiring terminal.

### Observe anti-static precautions at all times

1. Secure the base to an even surface.
2. Note that the base had a raised profile which serves as a detector LED locator.
3. Connect the wiring following the diagram overleaf.
4. Ensure earth continuity is maintained using the earth terminal on the base if required.
5. Program the detector by means of the address switch.
6. Fit the appropriate detector.

### Commissioning

1. It is important that the system be fully tested after installation. In normal operating conditions, apply short-circuits to the supply wiring at various points to confirm the isolators are functioning correctly. Ensure that BS5839 Part 1 and any applicable local codes are adhered to.
2. A self adhesive label is provided with each detector, use this to mark the detector address and affix to base.

**Note 1:** Under no circumstances connect an LED or any other device to the base terminals marked –R.

### LED Indicators

The Yellow LED is illuminated if a short circuit is detected either side of the isolator.

### Troubleshooting

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

Many fault conditions are the result of simple wiring errors.

### Fault Finding

Problem	Possible Cause
LED illuminated constantly	Short-circuit on loop wiring. Wiring reverse polarity. Too many devices between isolators.
Failure to isolate a short-circuit	Incompatible control panel. Incorrect wiring.

### Specifications

Supply Voltage	17 – 28VDC
Min Protocol Pulse	5V
Power Up Time	<10ms
Supply Current	See Table 1
Max Loop Current	1A Continuous 3A Short Circuit Switching
Max Load	20 Detectors or Equivalent Load
Max ON Resistance	$0.2\Omega$
Isolation Indication	Yellow LED
Isolation Voltage (Isolator Opens)	$14\pm 0.4V$
Reconnection Voltage	$15.8\pm 0.4V$
Reconnection resistance	See Table 2
Isolation Time	50us
Reconnection Test	See Table 2
Temperature range	$-20^{\circ}C$ to $+60^{\circ}C$
Humidity	0 -95% Non condensing
Base Material	White Polycarbonate UL94 to V-0
Environment	Indoor Use Only

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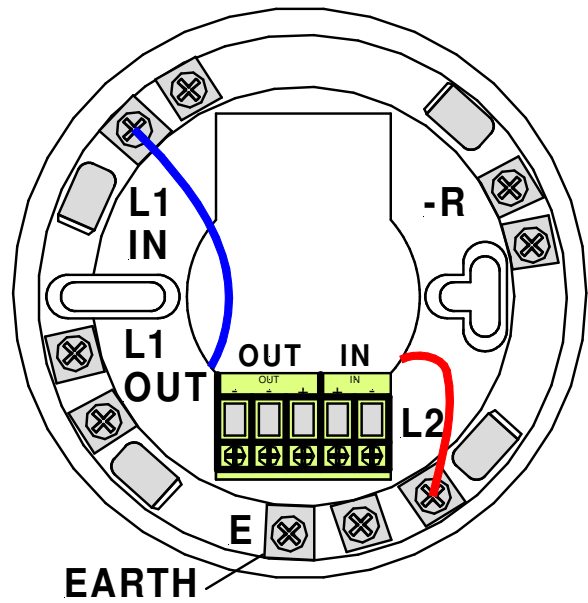
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	MIN	Nominal	MAX
Voltage	18V	24V	28V
Quiescent Current	23uA	35uA	43uA
Current in Isolated State	4.0mA	5.4mA	6.4mA

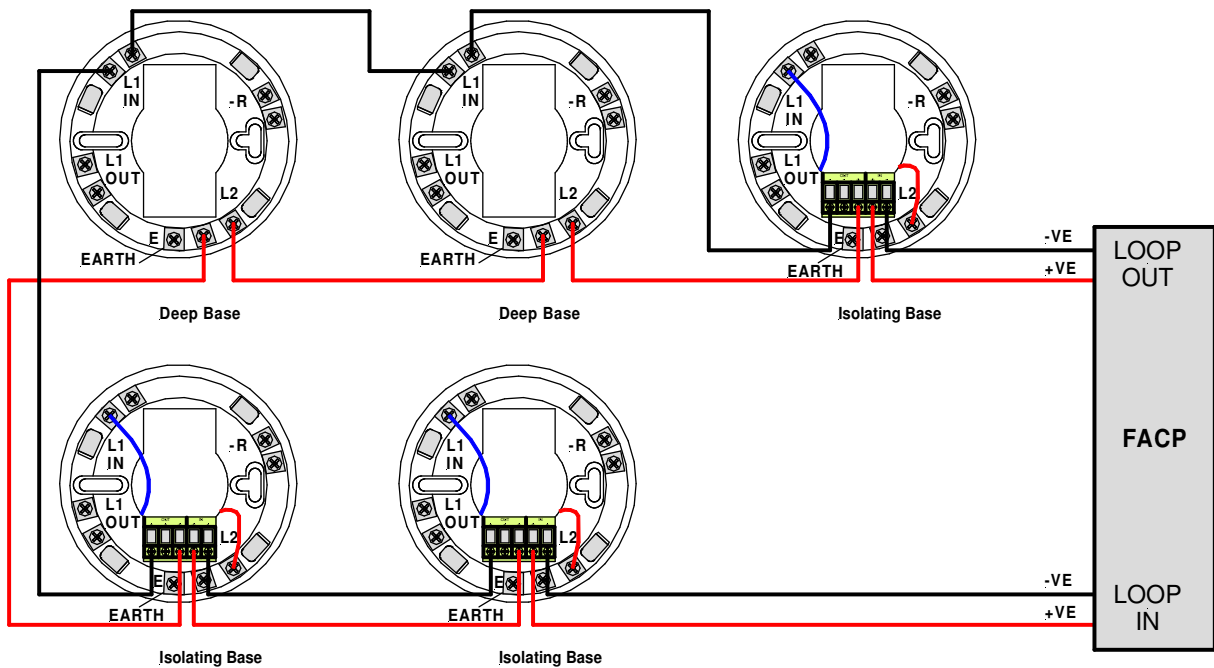
**Table 1**

	Spur Connection	Loop Connection
Re-connection current pulse amplitude	35 – 50mA	60 – 100mA
Re-connection current pulse duration	60 – 100ms	60 – 100ms
Re-connection current pulse spacing	4 -5 Sec	4 -5 Sec
Re-connection resistance limit	300 - 450Ω	150 - 225Ω

**Table 2**



*Figure 1: DS Series Addressable Isolating Base*



*Figure 2: DS Series Addressable Isolating Base General Wiring Diagram*