



**MCM-AS4 LOOP POWERED  
ZONE MONITOR/  
CONTROL MODULE  
INSTALLATION & TECHNICAL MANUAL**

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## **ZONE MONITOR/CONTROL MODULE MCM-AS4**

### **INTRODUCTION**

#### **DESCRIPTION**

The MCM-AS4 forms part of the Nittan (UK)'s **SENSORTEC-ANALOGUE** range of Analogue Addressable Devices.

This module is designed to perform a loop powered, zone monitoring function and a control relay output function from the detection signalling loop of an analogue-addressable fire detection system.

The MCM-AS4 may be used for a variety of purposes such as monitoring a zone of conventional smoke and heat detectors, sprinkler flow switches and interfacing conventional infrared beam detectors etc., and or controlling fire doors, plant machinery and smoke extraction systems.

Various combinations of MCM-AS4 modules or SCM-AS4 Sounder Control Modules may be used to interface with gas extinguishant systems, conventional fire detection systems or shopping precinct subsystems.

#### **OPERATION**

The fire alarm control equipment must be capable of communicating with the MCM-AS4 Zone Monitor/Control Module. If in doubt, check with panel manufacturer.

The MCM-AS4 is a loop powered, two-wire signalling device, it is connected onto the detection signalling loop's SIG+ and -S wires, exactly as any other 'AS' sensor or device.

#### **FEATURES**

\* A loop powered, monitored zone detection circuit for the connection of conventional smoke and heat detectors.

\* A relay control output for the switching of external equipment such as fire doors etc..

\* A transistor switch 'user output' (rated 10mA @ 24V d.c.) for signalling to external circuitry.

\* Up to 20 Nittan conventional smoke and heat detectors. (**SENSORTEC** or Low Profile Series may be connected.).

\* Up to 5 NFD-68P Ultra Violet Flame Detectors.

\* Short circuit fault and open circuit fault monitoring of the conventional detection circuit/zone.

#### **MCM-AS4 Zone Monitor/Control Module is made up as follows:-**

- 1 x Metal enclosure c/w 20mm knockouts
- 1 x MCM-AS4 PCB c/w internal plastic PCB enclosure with hinged lid.
- 1 x Earth point (on lid)
- 1 x Earth point (inside of enclosure)
- 1 x 200mm Earth Strap
- 1 x Label inside lid for product identification and device address identification.

#### **SENSORTEC-ANALOGUE FAMILY:-**

##### **SENSORS:-**

- ST-I-AS** - Analogue Ionisation Smoke Sensor
- ST-P-AS** - Analogue Photoelectric Smoke Sensor
- ST-H-AS** - Analogue Heat Sensor
- STB-4** - Standard Base for above sensors

##### **DEVICES:-**

- ST-NCP-AS** - Addressable Call Point
- BACK BOX** - Back Box for ST-NCP-AS
- MCM-AS4** - Zone Monitor/Control Unit
- SCM-AS4** - Addressable Sounder Control Module
- NAM-AS3** - Addressable Input Module
- OCM-AS3** - Output Control Module
- SCI-5** - Base mounted Short Circuit Isolator
- SCI-6** - Plate mounted Short Circuit Isolator
- 1-Gang Box** - Single gang box for SCI-6

##### **ADDRESSABLE SOUNDERS:-**

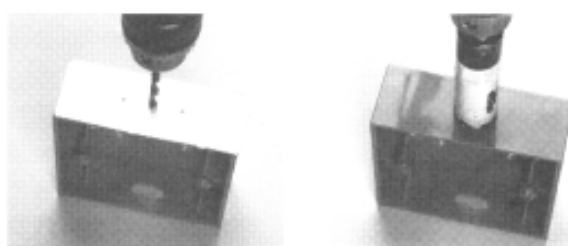
- VCT-03-AS-NB** - Addressable Wall Sounder c/w Vector Plate/Cap (R = Red, W = White Plate/Cap).
- VCT-03-CP(W)** - Spare Vector Plate/Cap (White)
- VCT-03-CP(R)** - Spare Vector Plate/Cap (Red)
- VCT-03-NT-AS** - Addressable Sounder c/w STB-4 Base pre-wired to the sounder.
- VPR-SA2-NTAS** - Addressable Sounder, IP65 rated, wall mounted.

## **ZONE MONITOR/CONTROL MODULE MCM-AS4**

### **INSTALLATION**

- 1)
- Remove the MCM-AS4 boxed unit from its packaging.*
  - Remove the 4 x posi-screws holding the lid to the main enclosure of the MCM-AS4.*
  - Completely remove the single top screw holding the P.C.B. enclosure to the rear of the main enclosure.*
  - Unscrew halfway the two remaining lower screws holding the PCB enclosure to the rear of the main enclosure.*
  - Gently tilt and lift out the P.C.B. enclosure and safely store the PCB enclosure until the wiring stage. (Note: Please take ESD precautions when removing the P.C.B. from the main enclosure.*

- 2)
- Using initially a 3-4mm 'pilot' drill and then a special 'knock out' drilling tool, as shown below, drill out the required amount of knockout holes for cable gland entry to the main enclosure of MCM-AS4.*



- Using the template on page 5 of this manual, mark and drill the main enclosure screw positions in the wall.*
- Position the MCM-AS4 enclosure to the wall and screw the 4 x fixing screws through the rear of the enclosure.*
- Terminate all the loop cables and glands as required into the knockouts in the main enclosure.*
- Insert the PCB enclosure in reverse order as per instructions above.*

- 3)
- Terminate all the loop cables and any IP/OP auxiliary switching cables where required into the terminals on the PCB, please see page 8 of this manual for connection details.*
  - Please note there is an earthing stud on the lid and on the rear of the main enclosure box if an earth is required on the fire system devices. An earthing cable/strap is provided with the MCM-AS4.*
  - When all the necessary commissioning has successfully been carried out, replace the lid onto the enclosure, replace the 4 x lid fixing posi-screws.*



Electro-static Sensitive Devices.

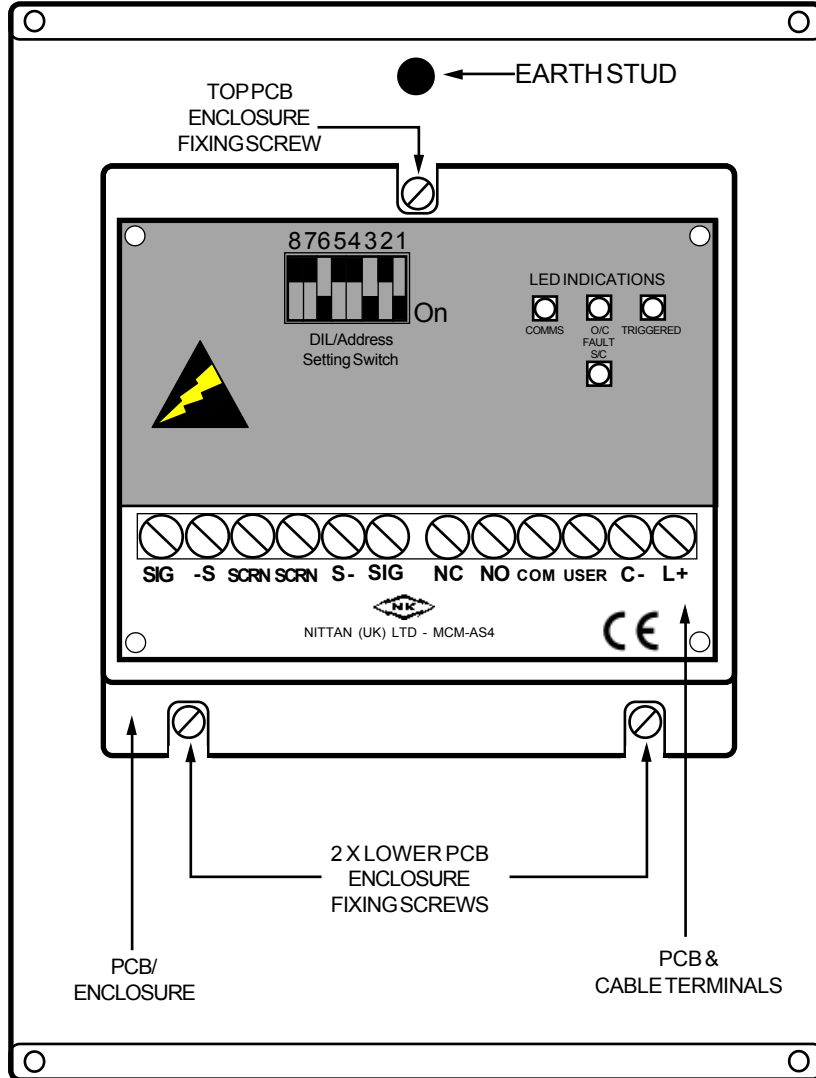
Take suitable ESD precautions when removing or installing printed circuit boards.



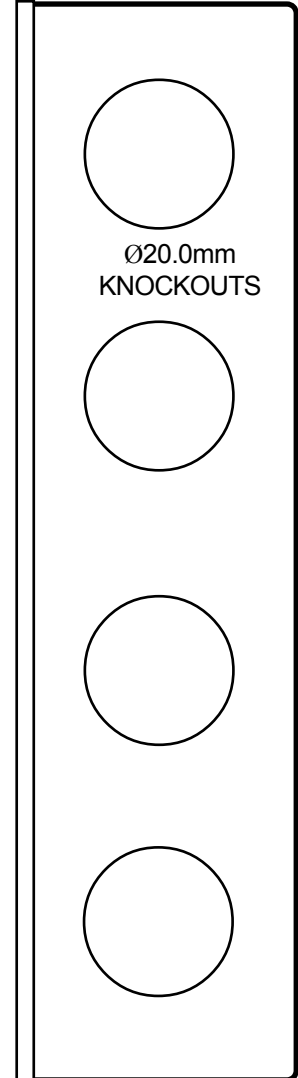
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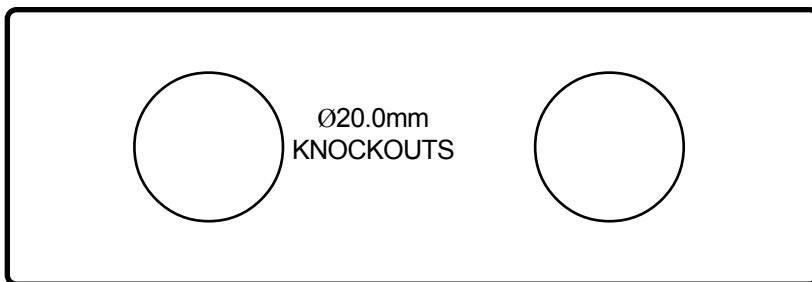
## ENCLOSURE DESCRIPTION



TOP VIEW WITH LID REMOVED



SIDE VIEW 1



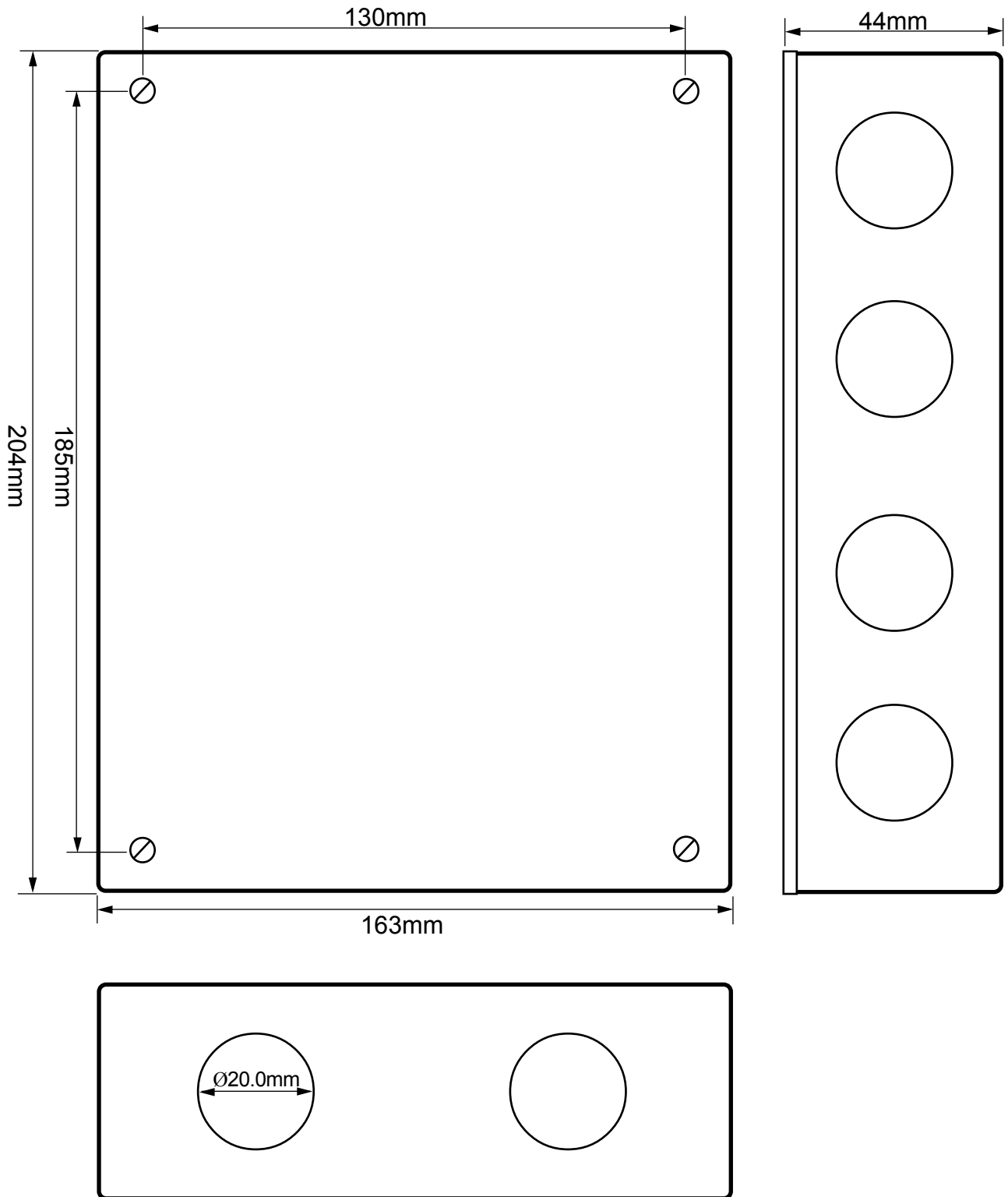
SIDE VIEW 2



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ENCLOSURE OUTER DIMENSIONS



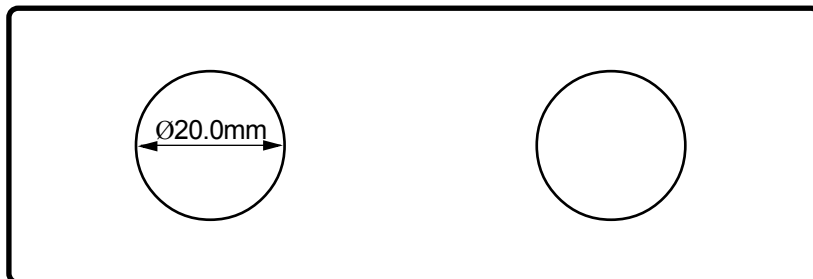
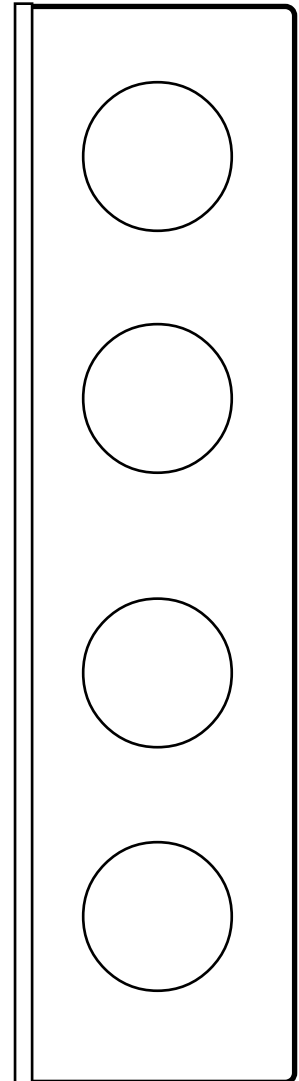
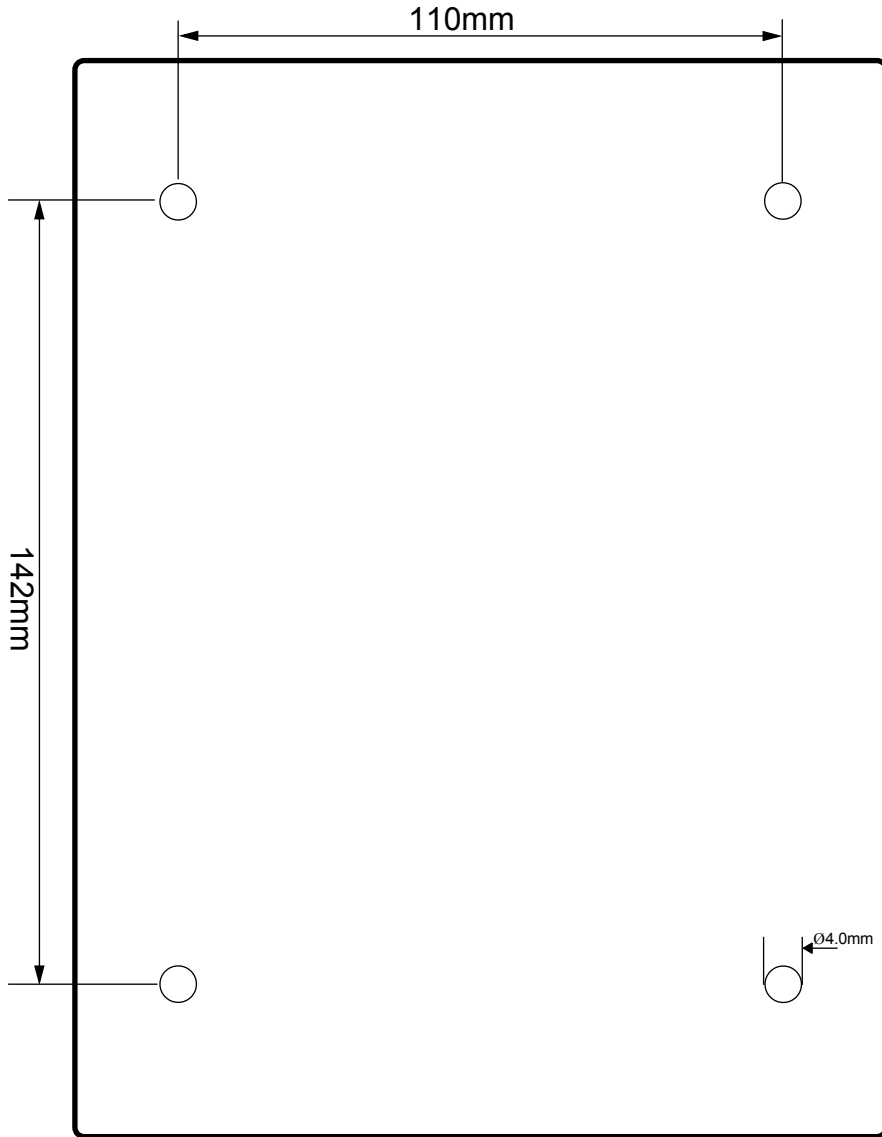
NOT TO SCALE



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ENCLOSURE DIMENSIONS (INTERNAL MOUNTING HOLES)





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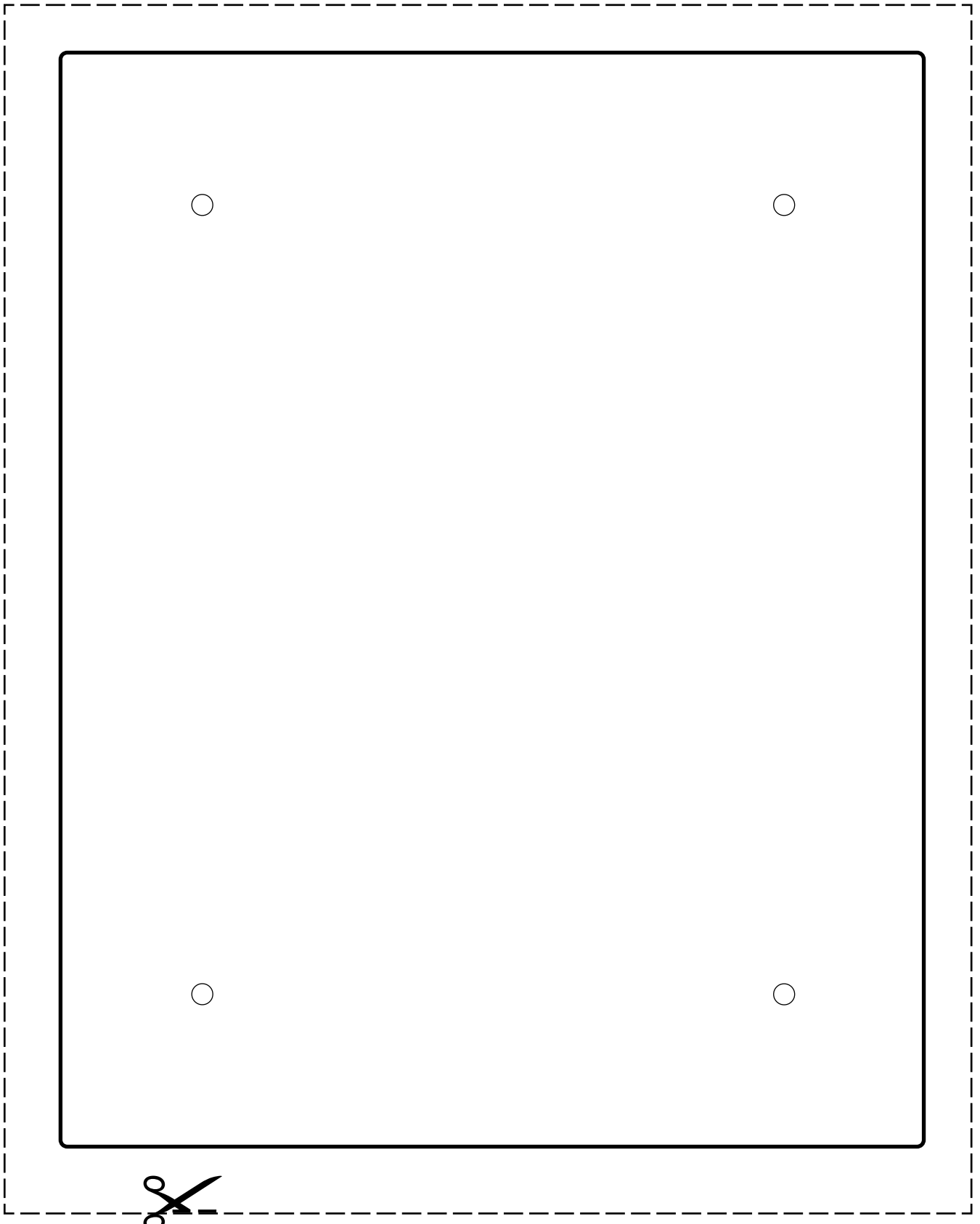
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**ENCLOSURE MOUNTING TEMPLATE**

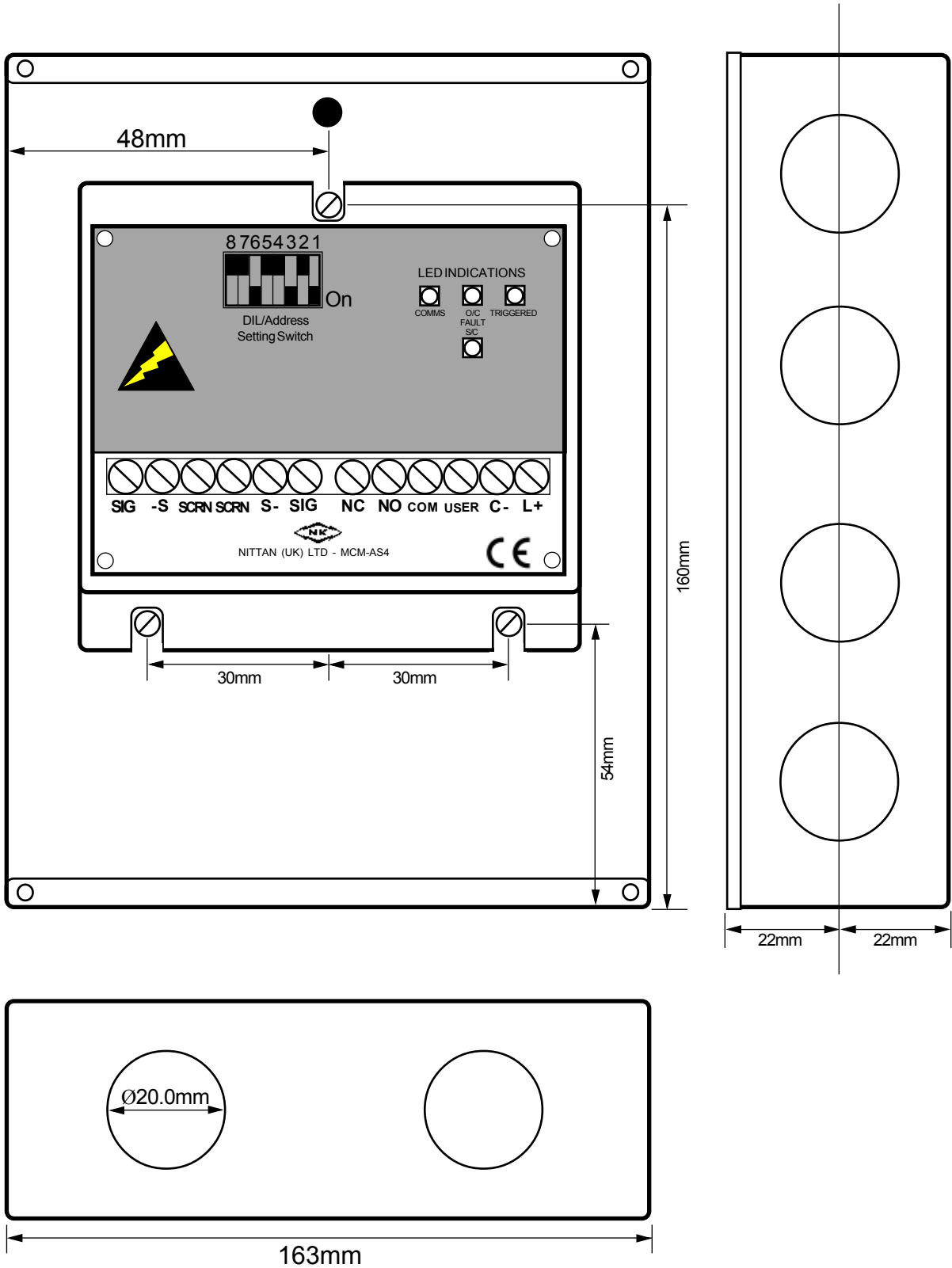




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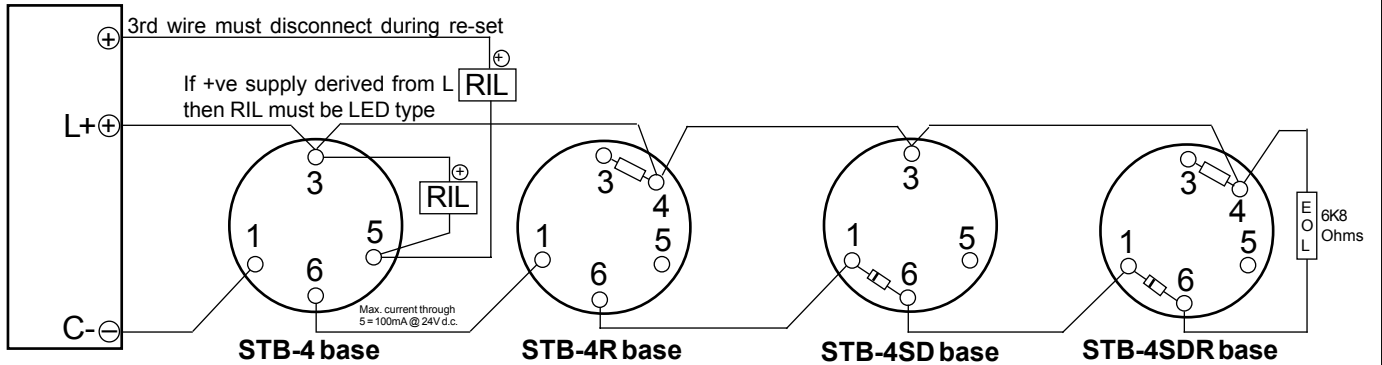
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**ENCLOSURE (INTERNAL ASSEMBLY DIMENSIONS)**



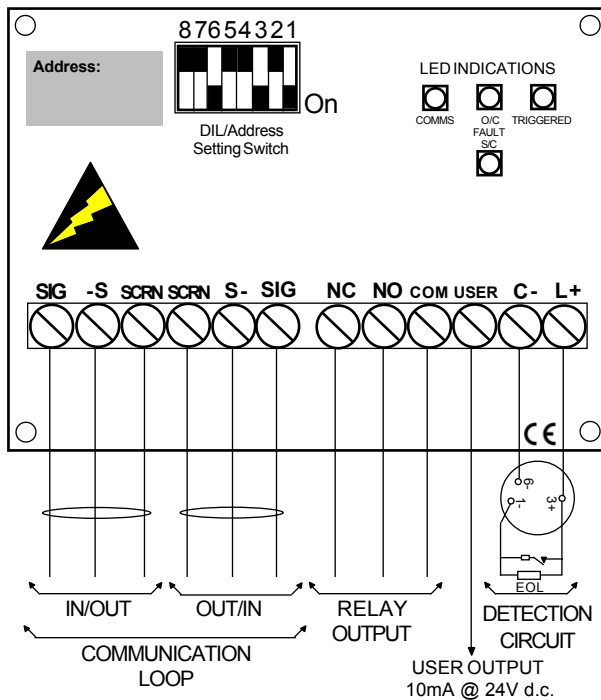
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**CONNECTION WIRING DETAILS FOR EXTERNAL CONVENTIONAL DETECTION ZONE CIRCUIT:-**

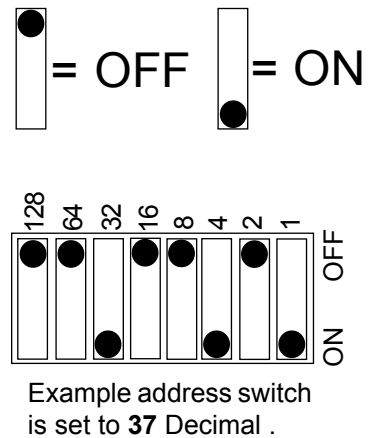


**CONNECTION DETAILS AND ADDRESS SETTING**

**CONNECTIONS TO MCM-AS4 PCB**



**ADDRESS SETTING**



**Electro-static Sensitive Devices.**  
Take suitable ESD precautions when removing or installing printed circuit boards.



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**MCM-AS4 - TECHNICAL/ENGINEER SPECIFICATION**

**Part Numbers:-**

Model Number	-	-	-	MCM-AS4.
Description	-	-	-	Zone Monitor/Control Module (Boxed).
Computer Reference Number	-	-	-	F16N85120.

**Protocol:-**

Communication Protocol	-	-	-	NISM/WFM/02 (Nittan AS Protocol).
Address Setting	-	-	-	8 Bit, DIL Switch
Type Identification Data	-	-	-	2 Bits Fixed.

**Ratings:-**

Current Consumption*	-	-	-	6.2mA (Quiescent) c/w conventional detector zone.
(*From loop @24v)	-	-	-	20mA (Max.) (When conventional detection zone in short circuit condition).

Relay Rating	-	-	-	2 Amps @ 24V d.c. Resistive.
Power Supply Requirements	-	-	-	Loop Powered, No external PSU required.

**LED Indications:-**

On Board LED Indication	a)	-	-	Red ' <b>COMMS.</b> ' LED:- ('Pulse's' when polled).
	b)	-	-	Red ' <b>TRIGGERED</b> ' LED:- ('Pulses' when Relay Operate's. <b>Note: 'COMMS' &amp; 'TRIGGERED' LEDs both 'Pulse' simultaneously when the relay operates).</b>
	c)	-	-	Yellow ' <b>S/C</b> ' LED:- Conventional Detection Short Circuit Fault.
	d)	-	-	Yellow ' <b>O/C</b> ' LED:- Conventional Detection Open Circuit Fault.

**General Specifications:-**

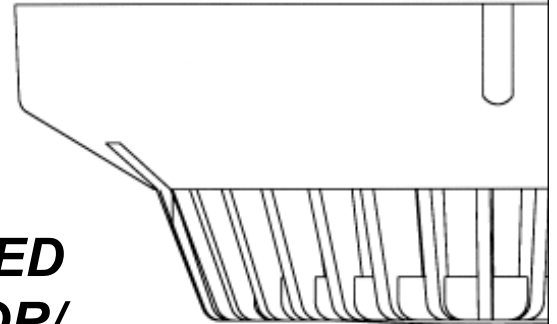
Mass	-	-	-	50g (PCB only).
	-	-	-	1.1Kg complete (Boxed).
20mm Knockouts	-	-	-	12 nos.
Operating Temperature	-	-	-	-10 Deg. C. to +50 Deg. C.
I.P. Rating	-	-	-	I.P. 43 (Boxed).
Transistor switch 'User Output'	-	-	-	10mA @ 24V d.c. (For signalling to external circuitry).
Loop Driver Cards	-	-	-	Rated 250mA: Max. Number of MCM-AS4 on loop = 3.
	-	-	-	Rated 500mA: Max. Number of MCM-AS4 on loop = 6.
Earth Strap	-	-	-	200mm length, 24/0.2Ø Green/yellow c/w 2 x 4.5-5mm ring crimp ends.

**Conventional Detector Zone/Circuit Specification:-**

Short Circuit	-	-	-	0 Ohms to 120 Ohms
Open Circuit	-	-	-	>10K Ohms
EOL Resistor	-	-	-	6K8 Ohms

From world leaders in **SENSOR TECHNOLOGY**  
comes **SENORTEC.....**

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**NITTAN (UK) LTD**



Quality System Certificate No. 041  
Assessed to BS EN ISO 9002

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