LOOP CARD MODULE INSTRUCTION MANUAL

SCM-LCM

General

The plug-in loop card module provides power for and handles communications to the analogue addressable devices. The loop card continuously monitors the analogue values of all devices and displays this value on the control panel as a percentage of the alarm threshold value. Up to 250 addresses (450mA max load) can be connected to a single loop card. The addressable devices can be hard addressed using the device dip-switches or soft addressed using the MKII-TOOL handheld programmer which helps minimise the potential for error and reduce the installation time associated with traditional hard addressing. The AUTO-LEARN facility provided in the Smart Connect Multi-loop control panel saves considerable time and effort when installing a new loop or when changing device configuration. It allows the system to learn for itself what devices have been installed on the loop.

Installation

The Smart Connect Multi-loop panel uses an expansion port number to reference modules. It is recommended that any LCM modules are fitted first to the first expansion ports, so that the loop circuit numbers follow a logical sequence (loop 1 in port 1, loop 2 in port 2 etc.)

> ⚠️ **ATTENTION:** THE PANEL MUST BE POWERED DOWN AND DISCONNECTED FROM THE BATTERIES BEFORE INSTALLING OR REMOVING ANY MODULES.

1. Ensure that the installation area is free from any cables or wires that may get caught, and that there is enough space on the DIN rail to mount the module. Also ensure that the DIN clip underneath the module is in the open position.
2. Place the module onto the DIN rail, hooking the metal earth clip underneath onto the rail first.
3. Once the earth clip is hooked, push the bottom of the module onto the rail so that the module sits flat.
4. Push the plastic DIN clip (located at the bottom of the module) upwards to lock and secure the module into position.
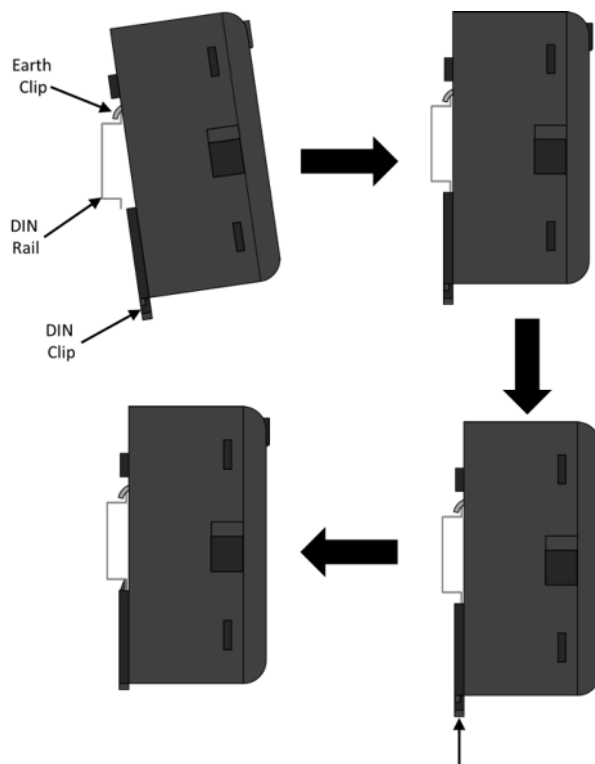
5. Once the module is secured to the DIN rail, simply connect the supplied CAT5E cable to the module's RJ45 port.

6. Connect the other end of CAT5E cable to the nearest unoccupied RJ45 port on the termination PCB.

TRM RJ45 Port Address Designation

Each RJ45 port on the Smart Connect Multi-loop termination has its own unique port address. This port address is important to keep note of as it is displayed on Alarm/Fault messages and is used when configuring or setting up cause and effects on the panel (See SCM operation manual GLT-261-7-10).

Securing the modules

The modules are designed to clip together to make them more secure. In addition, the SCM panel is supplied with Din rail stoppers. These should be fitted before the first module, and after the last module on each rail.
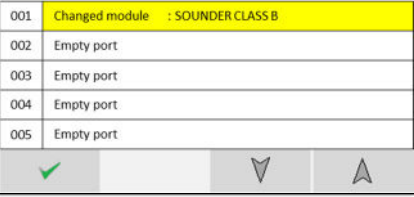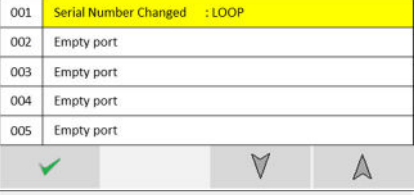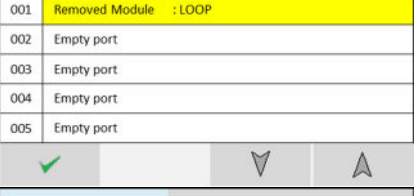
Before Powering the Panel On

1. To prevent the risk of a spark, do not connect the batteries. Only connect the batteries after powering on the system from its main AC supply.
2. Check that all external field wiring is clear from any open, shorts and ground faults.
3. Check that all the modules have been installed properly, with correct connections and placement
4. Check that all switches and jumper links are at their correct settings.
5. Check that all interconnection cables are plugged in properly, and that they are secure.
6. Check that the AC power wiring is correct.
7. Ensure that the panel chassis has been correctly earth grounded.

Before powering on from the main AC supply, make sure that the front panel door is closed

Power on Procedure

1. After the above has been completed, turn the panel on (Via AC Only). The panel will follow the same power up sequence described in initial power up section above
2. The panel will now display one of the following messages

Message	Meaning
No Modules	Panel has not detected any modules fitted during its power up check. Power down the panel and check that the expected modules are fitted, and that all module cables are correctly inserted. Note that the panel will need at least one module fitted to run.
001 New module : SOUNDER CLASS B	The panel has detected a new module added to a port that was previously empty. This is the usual message seen the first time a panel is configured
001 Changed module : SOUNDER CLASS B	The panel has detected a different type of module fitted to a port that was previously occupied.
001 Serial Number Changed : LOOP	The panel has detected a module fitted to a port that is the same type, but it`s serial number has changed. This could happen if a loop module was swapped with another one, for example.
001 Removed Module : LOOP	The panel has detected no module fitted to a port that was previously occupied.
System healthy Example Panel 2019/02/19 09:33	The panel has detected no module changes, so has powered up and started running.

1. Check that the module configuration is as expected using the ⋀ and ⋁ to navigate the through the port numbers. Press the ✔ icon to confirm the changes.

2. The new module is now configured into the panel and is ready for use.
3. Since the batteries are not connected, the panel will report them as removed, lighting the yellow "Fault" LED, intermittently sounding the Fault buzzer, and displaying battery removed message on the screen.
4. Connect the batteries, ensuring that the polarity is correct (Red wire = +ve) & (Black wire = -ve). Acknowledge the Fault event via the display screen, and reset the panel to clear the battery fault.
5. The panel should now remain in the "System healthy" condition, and you can configure the panel as normal.
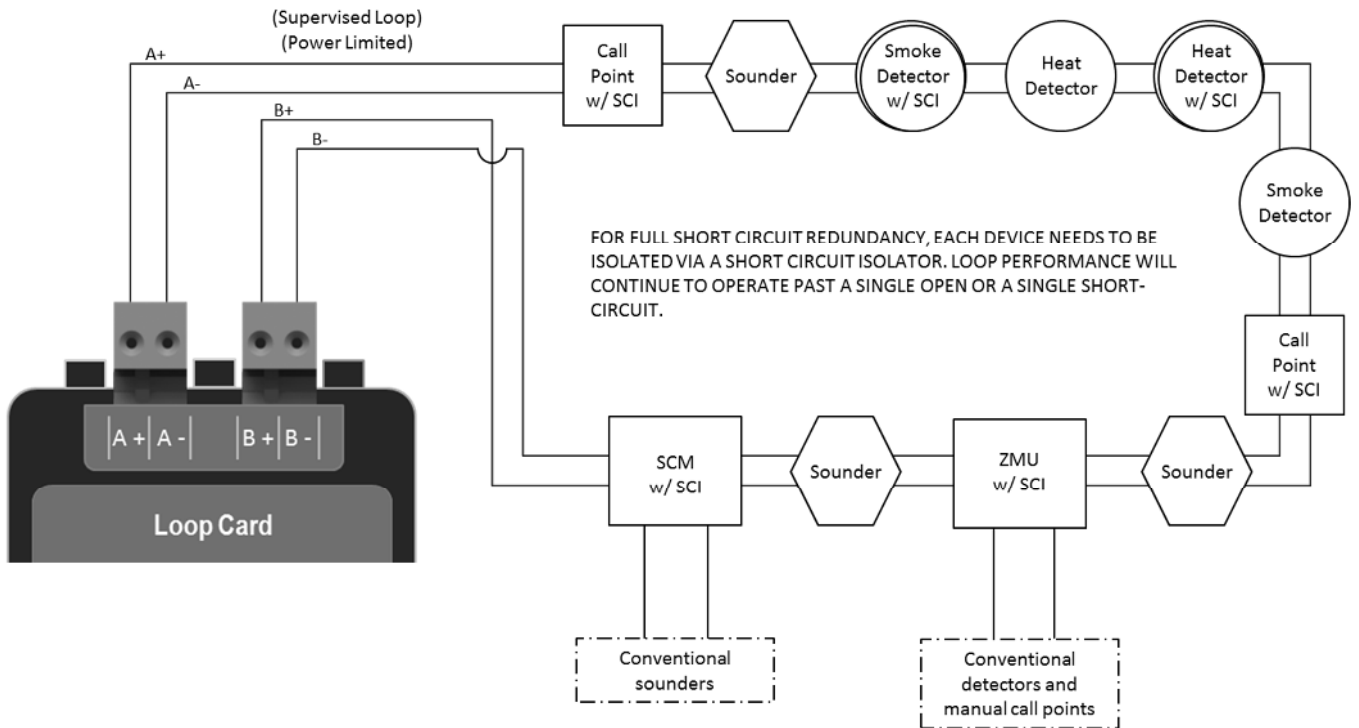
Field Wiring

NOTE: *The terminal blocks are removable to make wiring easier.*
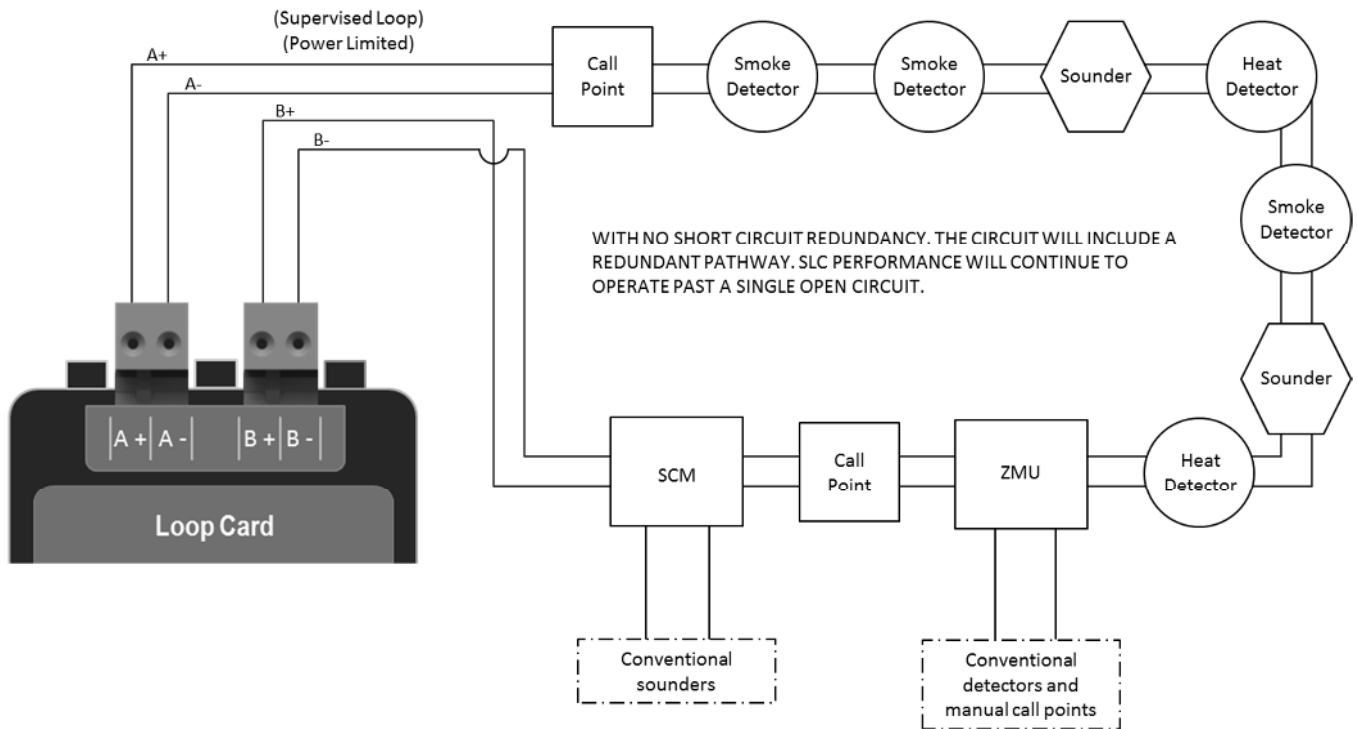
ATTENTION: DO NOT EXCEED POWER SUPPLY RATINGS, OR MAXIMUM CURRENT RATINGS.

Class X Wiring

Note: *Detectors can be fitted to isolator bases, or fitted between isolator interfaces for Class X wiring. Zeta CP3/AD call-points have inbuilt isolators and should be utilized if possible.*

Class A Wiring

> **Note:** *If a loop using Class A wiring is used for 2 or more detection zones, short circuit isolators, or devices with built in short circuit isolators (such as interfaces) should be fitted to the zone boundaries to prevent a single short circuit affecting more than one zone.*

Wiring recommendations

The SCM-LCM's are rated for 450mA each, but it is recommended that you leave an allowance ~100mA for any future loop expansion.

Wire Gauge (AWG)	Maximum Wiring Run (Metres)
18	861
16	1290
14	2000

> **NOTE:**
>
> • *Line capacitance shall not exceed 0.1µf (100nF)*
>
> • *Inductance shall not exceed 1mH*
>
> • *Resistance shall not exceed 50 Ohms.*

> **RECOMMENDED CABLE:** *The general recommendation would be to use a standard fire resistant cable, such as Firetuf™, FP200 or an equivalent, 1.0mm^2 to 2.5mm^2. These cables are screened, and will provide good EMC shielding when properly grounded at the panel.*

Front Unit LED Indications

LED Indication	Description	LED Indication	Description
⊕	Illuminated yellow when a loop break on the positive line is detected.	B	Illuminated yellow when a short circuit on the loop B side is detected.
⊖	Illuminated yellow when a loop break on the negative line is detected.	TX	Flashing Green when the loop card is transmitting information.
A	Illuminated yellow when a short circuit on the loop A side is detected.	RX	Flashing Green when the loop card is receiving information.
⇄	Pulses to show communication between the module and the motherboard.		

Specifications

Specification	SCM-LCM
Design Standard	EN54-2
Approval	LPCB (Pending)
Circuit Voltage	28V + 9V Data (Nominal)
Protocol Data	Address Phase: Pulse Width Modulation Reply Phase: Synchronous 20mA Current Pulses
Standby Current	*87mA
Alarm Current	*87mA
Circuit Type	Power limited & Supervised
Maximum Loop Current	450mA
Maximum Loop Capacity	250 Addresses
Maximum Loop Resistance	25Ω per core @ 200mA / 10Ω per core @ 450mA
Maximum Loop Capacitance	500nF
Maximum Loop Baud Rate	1024 bits per second (typical)
Maximum Loop Distance	**2KM
Operating Temperature	-5°C (23°F) to 40°C (104°F)
Max Humidity	93% Non-Condensing
Size (mm) (HxWxD)	105mm x 57mm x 47mm
Weight	0.15KG
Recommended Cable Sizes	$1mm^2$ to $2.5mm^2$ (18 AWG to 14 AWG)

*Loop device current and alarm current not included. On batteries use 1.5x current to allow for DC-DC step up voltage

**Depending on what cable size is used. A 2KM maximum loop distance is assuming $2.5mm^2$ (14AWG) cables is used.