DATA SHEET

TECHNICAL INFORMATION

SHIELD®
TRUSTED WORLDWIDE

TRIDENT®

TOUCH CONTROL (2-16 LOOP)

ANALOGUE ADDRESSABLE FIRE ALARM CONTROL PANEL

LPCB
Cert/LPCB ref. 360b-(cl-4)

Overview

The Trident product range combines the latest hardware and software to produce a control and indication system, which is powerful and sophisticated, yet simple to use. The 7” full color touch screen provides a clear, uncluttered and intuitive interface, to minimize end user training requirements.

Available in 4 or 8 slot variants, with each slot supporting a 2-loop detection card, the Trident fire control panel ranges from 2 to 16 loops and easily supports more than 2000 detection devices.

Trident can be configured to suit all types of system, from the simplest to very complex, utilizing secure networking and powerful network-wide cause and effect capabilities. A wide array of outputs is provided as standard within the Trident control panel, however these can be expanded by adding Trident I/O cards in free slots, including:

- 16 channel input/output card.
- 8-way conventional zone card.
- 4-way sounder card.
- 8-way relay card.

Key Features

- EN54-2 / EN54-4 certified.
- 7” full color resistive touch screen displays Intuitive user interface.
- 2 to 16 detection loops.
- 4 slot or 8 slot versions, each slot supporting a 2-loop card.
- 500mA loop current.
- 0, 48, 96 or 144 zone LED indicators.*
- Enable control key switch as standard.
- Front loading printer option (0 and 48 zone panels).*
- Standard panel supports up to 26Ah batteries.
- 5.25A and 10.25A EN54-4 power supply options.
- Deep enclosure option for 45Ah batteries.
- Network up to 128 panels.
- Upto 3048 meters wiring length on SLC loop.
- 4 programmable sounder outputs.
- 5 programmable relays.
- 3 programmable inputs.
- 24 programmable soft “function keys”.
- 10000 event logs, with filtering.
- Connectivity enabled using the Media Gateway.
- Comprehensive day/night mode facility.
- Configuration application downloaded from a user specific account.
- The user is kept up to date with any new features and functions.
- Powerful and versatile cause and effect capability.
- 80-character zone location message per zone.
- 80-character device location message.
- Up to 64 user login accounts supported on the Trident panel.

* *Optional add-on features.*

System Components

Main Processor Board (Touch Control)

The Control Panel incorporates a 7" Touch Control display in its Main Processor Board along with the central processing and memory for the FACP.

The Main Processor Board mounted to the cabinet-lid of the FACP and includes hardware features such as connectors, ports, switches, LED indicators and a fixed volume internal buzzer to provide early warning smoke detection, to quickly identify the location of fire and provide user definable text informing the occupants of the building. Simultaneously, the system shall alert and evacuate the occupants, and control all necessary auxiliary command functions such as elevator control, air handling shut down, gas shut off & damper control, as per the cause and effects requirements of the building.

The Touch Control is the core of the Panel with Full colour 800 x 480 LCD resistive touch screen with an automatic backlight dimming feature with a Multilanguage Graphic User Interface which includes English & Arabic as well.

Messages and events are saved internally and can be viewed on the display at any time. A filterable event logs up to 10000 events could be stored on the control panel.

Making it more flexible, the Main Processor board has a built-in micro SD card connector slot for flash memory expansion & a USB type B port for PC connections and configuration data transfer.

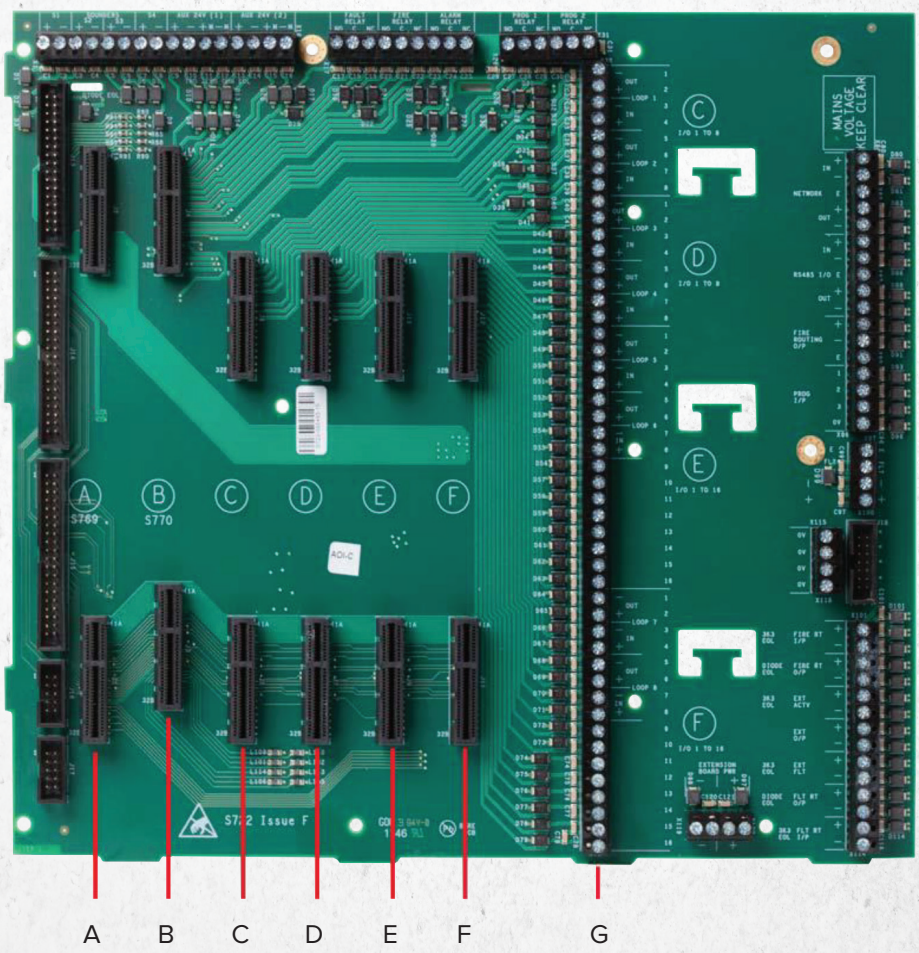
All programming shall be accomplished through the touch Control or via the P.C. based SE2 configuration Tool.

All field-defined programs will be stored in non-volatile memory in the processor board & will be functional for programing only with the access level 3.

Main Back Board

Trident control panels makes use of the main back board an ease to built a modular architecture with a number of mandatory & optional cards for field wiring & power supply termination which includes;

- System B Board Module
- Dual Loop Module
- Media Gateway Modules



KEY	DESCRIPTION
A	Slot A for System Board A Module
B	Slot B for System Board B Module
C	Slot C for Dual Loop Module or I/O Modules
D	Slot D for Dual Loop Module or I/O Modules
E	Slot E for Dual Loop Module or I/O Modules
F	Slot F for Dual Loop Module or I/O Modules
G	Field Wiring Terminals for Detection Loop Devices or I/O Modules Corresponding to Slots C,D, E and F

System Board A Module (TEN-9069)

System Board A Module fits into slot A of the Back Board and contains power supply monitoring, earth fault monitoring and four sounder output circuits. It also provides voltage reversal protection to all circuit boards of the Control

System Board B Module (TEN-9070)

The System Board B Module fits into slot B of the Main Back Board and controls the fire, fault and programmable relays, auxiliary 24 volts, fire routing, fault routing and extinguisher inputs and outputs.

Dual Loop Module (TEN-9058)

The Dual Loop Module provides two addressable loops on the FACP. The Dual Loop Module must be fitted in an available slot C through F of the Main Back Board for 2 to 8 loop versions of the panel. On 2 to 16 loop versions of the panel where the Extension Board is featured, Dual loop modules can be fitted to slots G through to K.

Network Module (TEN-9023)

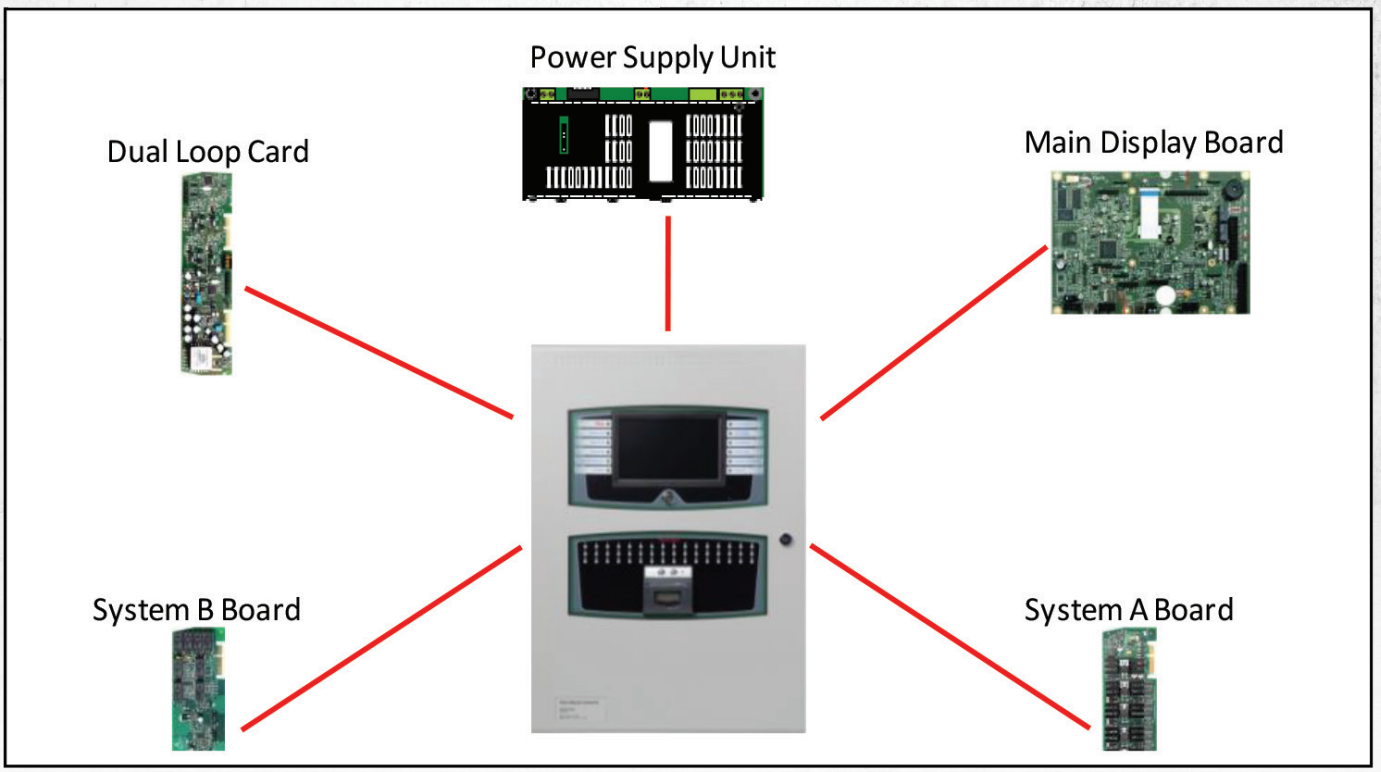
The Network Module provides enhanced high-speed communication for networking up to a maximum of 128 nodes The network provided by this module can support combinations of FACP's and Vision units.

FACP's can be configured for master/slave, multiple master / slave or peer to peer connections and receive events from other the FACP's in the network. The Loop networking used in conjunction with the Network Module provides tolerance against open and short circuit fault conditions.

Media Gateway Card (TEN-9088)

The Media Gateway Card is a communication device for the Trident Control Panel. The Card facilitates seamless integration with SHIELD GATEWAY Fire Alarm Management Solution, and the VEGA Graphic Solution.

The SHIELD Media Gateway Card also enables assimilation with third-party IP networks and equipment. Media Gateway Card features simple 'plug-in' connectivity and is fully configurable using Loop Explorer 2 software.



Panel Indications

The Trident Control Panel monitors the status of all devices on the addressable loops for fire, short circuit fault, open-circuit fault, incorrect addressing, unauthorized device removal or exchange, prealarm condition and contaminated detector condition. The status of internal connections and interfaces including charger and batteries are also monitored.

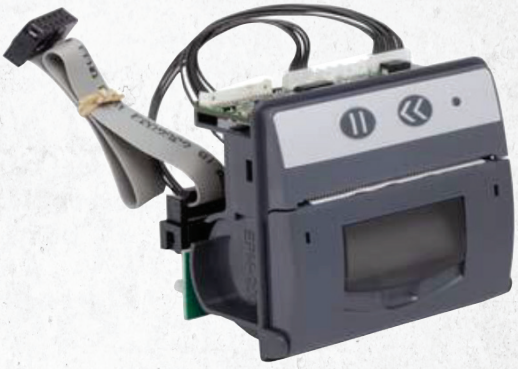
The Panel Fascia shall provide the following discrete visual LED indications on the either sides of the touch control:

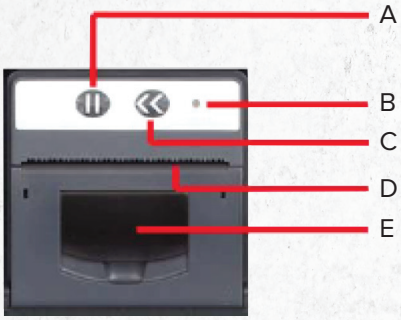
LED INDICATOR	ILLUMINATED COLOR
Fire	RED
General Fault	AMBER
System Fault	AMBER
General Disablement	AMBER
Fire Protection Activated	AMBER
Fire Protection Fault	AMBER
Fire Routing On	RED
Fire Routing Fault/Disabled	AMBER
Test Mode On	AMBER
Delays Active	AMBER
Sounder Fault/Disabled	AMBER
Power On	GREEN

Printer (TEN-9068)

The Printer is an optional feature located on the lower portion of the fascia. This automatic thermal type printer doesn't require an ink replacement & makes use of a 58 mm wide heat sensitive paper rolls accessible from the fascia of the trident control panels prints the event date and time, device location available on the Event log register.

However, it is possible to suspend or disable the printer via function at the primary controls of the Touch Control through an Access Level 3 Code.





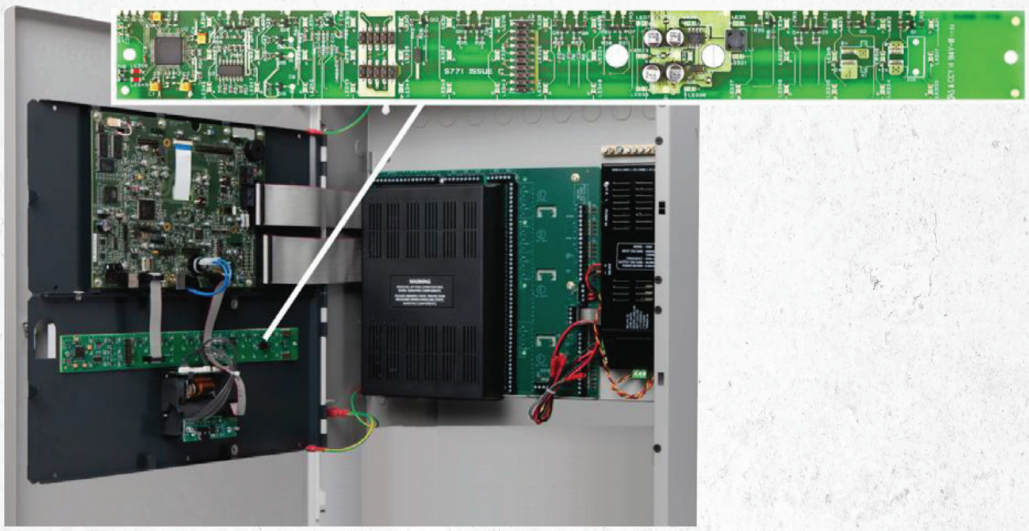
KEY	LED INDICATOR
A	Paper Pause
B	Power LED
C	Paper Feed
D	Paper Exit
E	Paper-Roll Lid Access

Zone Indicators

The Trident Control Panel support up to 144 zonal configurational LED to be interfaced with the main LCD panel motherboard to represent the system fire or fault status.

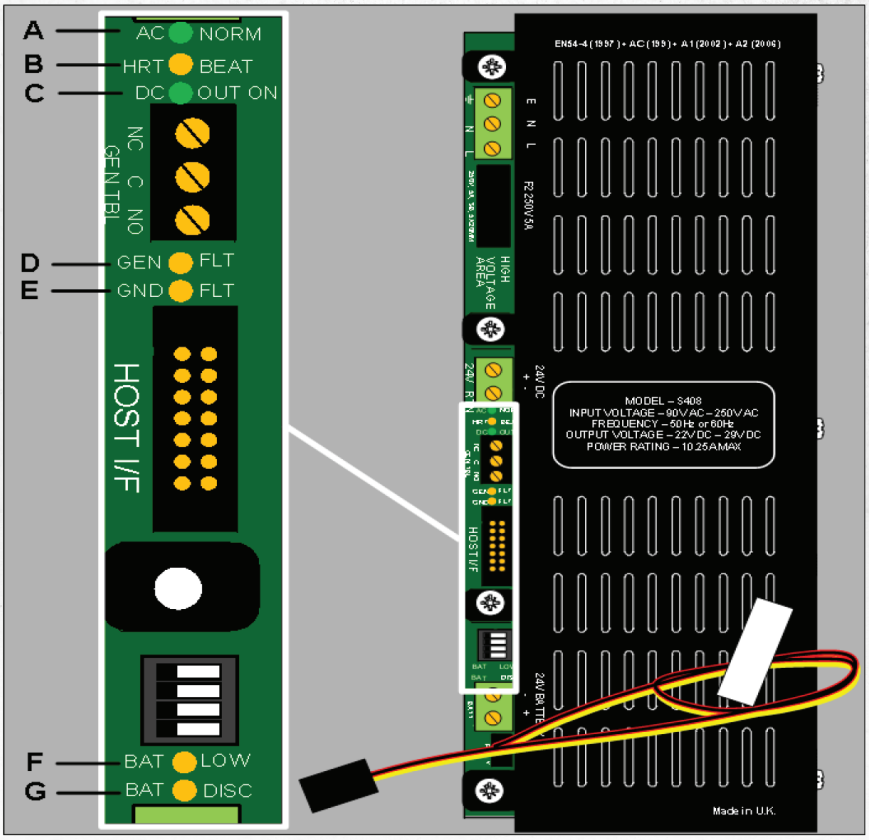
Zone indicators are provided on the fascia of the Control Pannel in single, two or three bank configurations. Single bank configurations contain 48 Fire Zone indicators. Two bank configurations contain 96 Fire Zone indicators and three bank configurations contain 144 Fire Zone indicators.

The component-side of the Zone LED Board is visible when the lid of the Control Pannel is open. Zone LED indicators are not present on the component-side of the Zone LED Board. The opposite side of the image shown contains Zone LED indicators.



Power Supply Modules

The Trident Control Pannel includes either a 5.25 Amp or 10.25 Amp power supply respective to the varients. The 5.25 Amp Power Supply can charge standby-batteries up to 26Ah. The 10.25 Amp power supply can charge standby-batteries up to 45Ah. Both power supplies provide an output voltage of 24V and accept input voltages of 115 VAC or 230 VAC.



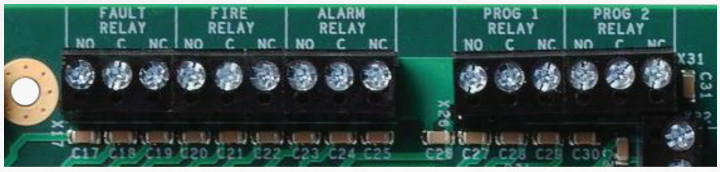
Status indicators of the 10.25 Amp Power Supply are identical to those of the 5.25 Amp Power Supply.

KEY	LED INDICATOR	LED COLOR	CONDITION
A	AC Normal	Green	Manis power is connected
B	Heartbeat	Amber	The processor is functioning when the heartbeat is flashing
C	DC Out on	Green	The 24V DC output is supplying power to the load
D	General fault	Amber	The battery charge voltage is too high
E	Earth fault	Amber	The24V DC supply is connected to earth
F	Battery low	Amber	The battery voltage is drops below 20.4V DC
G	Battery disconnected	Amber	Standby-batteries are disconnected from the load when the battery voltage drops below 19 +/- 1V DC

Relay Connections

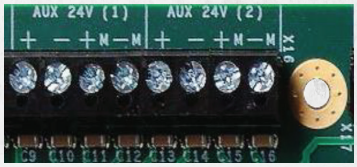
Trident Fire Alarm Control Panel provides a Five-volt free changeover relays, rated at 30V / 1A. These are fully programmable, but have the following default operations:

- **Fault Relay** - A normally energised relay that de-energises on any fault condition on the Panel
- **Fire Relay** - Activates on any fire event, remains energised until the Panel is reset
- **Alarm Relay** - Activates on any fire event, remains energised until the Sounders are silenced or the Panel is reset
- **Prog 1 Relay** - No default action, but is fully programmable
- **Prog 2 Relay** - No default action, but is fully programmable



AUX 24V Output Connections

Trident Control Panel has two auxiliary 24V outputs, each rated at 500mA. These are EN54-13 compliant outputs and need to be wired as a loop, with the return wired into the +M / -M terminals. This configuration provides warning of partial open or short circuit cable faults



Specific System Operations

The central processing unit of the control panel shall receive and analyze signals from fire sensors, providing audible and visual information to the user, initiating automatic alarm response sequences and providing the means by which the user interacts with the system.

User interaction with the system will be by means of an intuitive full colour resistive touch screen graphical display. User permissions to access the Control panel menu and control options will be provided by means of a key switch or a 5 or 6 digit passcode.

Smoke Sensor Sensitivity Adjust: Provision for adjusting the alarm and pre-alarm sensitivity of any or all analogue intelligent smoke sensors in the system via the PC Configuration tool. Sensitivity range shall be within the allowed EN54 limits and requirements.

Alarm Delays: Each of the intelligent/addressable smoke sensors in the system may be independently selected and enabled to be an alarm delayed sensor. The Alarm delay function shall be programmable for each sensor and shall be selected during the field programming of the system.

Disabling: Any device or zone of devices in the system may be enabled or disabled through the system keypad. When a device is disabled the control panel shall continue to monitor the device and shall log fire and fault events, but will not annunciate or act on those events. Such events shall be distinguishable from those of enabled devices. It is possible to enable/disable individual devices or their respective zones when they are in Fire or Pre-Alarm with a short cut method such that the user need only select from the list of zones or devices in that state at that time.

Test: It is possible to perform a one-person test by zone. Individual output devices shall be capable of being activated and de-activated from the control panel for test purposes.

Log/Display Reports: Upon command from an operator, a display of any device shall be provided showing the real time analogue value.

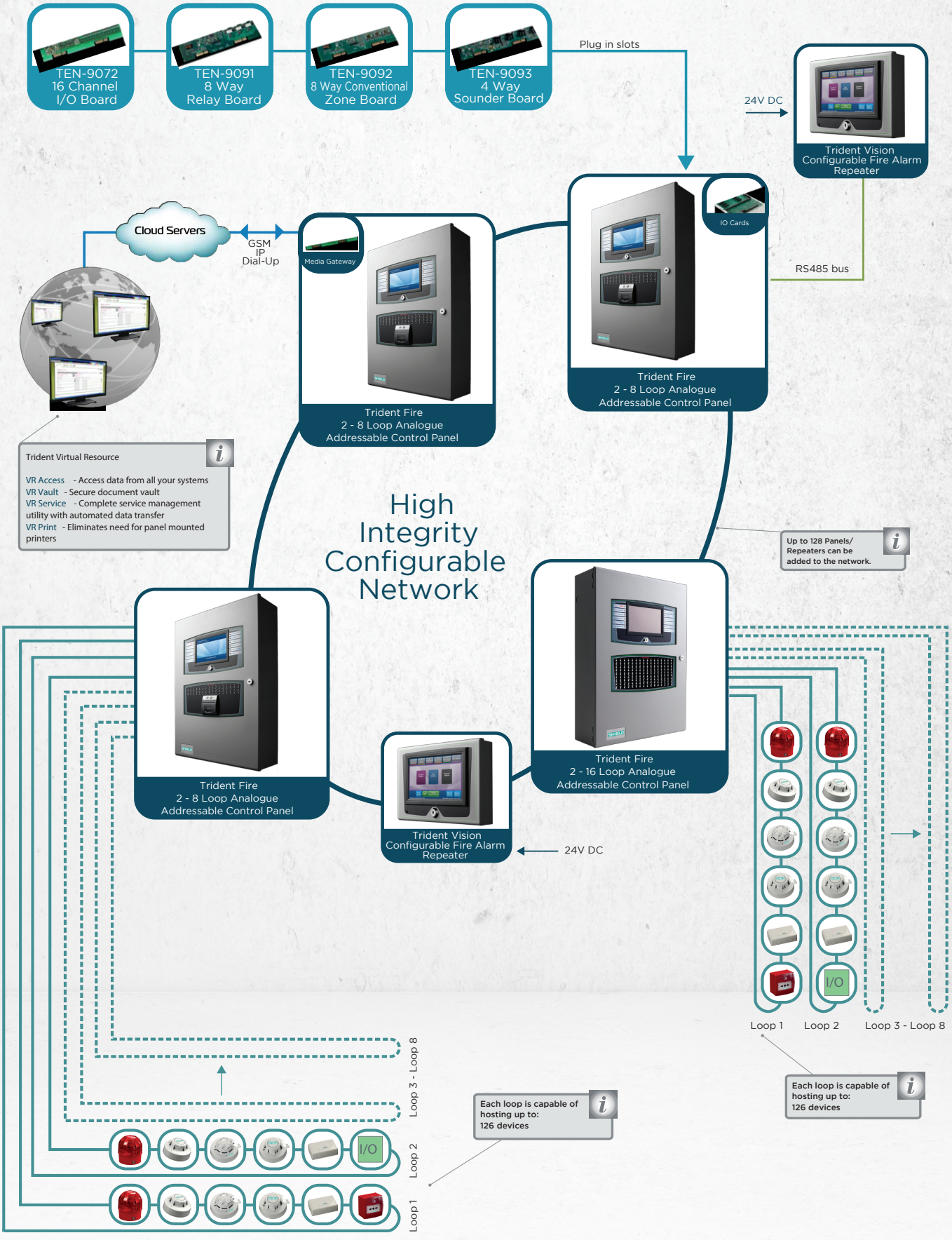
Non-Volatile Memory: The History Buffer shall use non-volatile memory. Systems that use volatile memory or battery backed memory for history storage are not acceptable.

Fail Safe Mode of Operation: Incase of failure of the main display card, the dual loop cards run autonomously and continue to poll devices and detect fire events. On fire event, a hard-wired control line from the loop card is used to operate the panel sounders, fire lamp, panel buzzer and fire contact.

Configuration: It shall be possible to perform configuration updates on site using the front panel controls via a portable personal computer and a configuration utility. This facility shall allow the following parameters to be set.

- Produce a configuration file which contains data for up to 128 control panels / network.
- Set cause and effect tables for any device to operate devices or functions of any panel or to the network.
- Upload and view graphically the configuration from a single panel or entire network of panels.
- Positive Alarm Sequence.
- Zone name (eighty characters' minimum).
- Change code numbers for up to 20 access levels.
- Select sounder ringing mode as common, zonal or two stage.
- Select first and second stage delay times for each sounder output to between zero and ten minutes.
- Set number of loops on panel (up to 16) and number of zones on panel (up to 2000).
- Set loop sounder volume globally.
- Set start and end times for day night mode for each day of the week.
- Configure up to 20 timers.

System Schematic



SPECIFICATIONS	
Finish	Epoxy powder coated
Colour - Lid & Box	BS 00 A 05 fine texture
Colour - Controls Plate	RAL7016
Power Supply Voltage	230 VAC or 115 VAC
Power Supply Rating at 24 VDC	5.25 A (charges up to 26 Ah) or 10.25 A (charges up to 45 Ah)
Display	Full colour 800 x 480 LCD with resistive touch screen and automatic backlight dimming
Printer	40 column, front loading thermal (optional)
Zone LED Indicators	Up to 3 banks of 48 (144) as standard (optional)
Software Zones	2000
Software Groups	5000
Event Log	10,000 events, 1 second resolution. Filterable and printable detection loops
Detection Loops	2 to 16 added 2 at a time (TEN-9058 dual loop cards)
Detection Loop Current	500 mA each
Sounder Circuits	4 each rated at 2.5 A, 24 VDC, programmable
Auxiliary 24 V supply 1	24 VDC fused at 500 mA
Auxiliary 24 V supply 2	24 VDC fused at 500 mA
Default Relays	Fault, Fire, Alarm, Programmable 1 and Programmable 2 (all re-programmable)
Programmable Inputs	3, activated by volt free contacts
Auxiliary Serial port A	RS232 programmable
Auxiliary Serial port B	RS232 programmable
Ancillary I/O Board Serial Port	RS485 programmable
Fire Routing (Ifam) **Serial Port**	RS485 programmable
USB Host Port	USB type A
USB Device Port	USB type B
Fire Routing Output	Monitored
Fire Routing Input	Monitored
Fault Routing Output	Monitored
Fault Routing Input	Monitored
Extinguisher Output	Monitored
Extinguisher Input	Monitored
Extinguisher Fault Input	Monitored
IP Ratings	IP30 rated
Loop Capacity	Loop capacity of 126 addressable field devices*

CURRENT RATINGS		
Standby (mA)	**Alarm (mA)**	Note: The data provided for standby and alarm current includes loads of the 2 loop FACP alone and excludes current loads from external devices or equipment. Two loop operation represents the minimum board configuration of the FACP.
220 mA @ 115 VAC	234 mA @ 115 VAC	
176 mA @ 230 VAC	181 mA @ 230 VAC	
550 mA @ 24 VDC	620 mA @ 24 VDC	

** Subjected to the current rating of the filed device*

ENCLOSURE DETAILS

	2 - 8 Loop Enclosure	2 - 16 Loop Enclosure
Size (W x H x D)	420 mm x 590 mm x 150 mm (Standard)	540 mm x 720 mm x 150 mm (Standard)
Construction	1.5 mm mild sheet steel	1.5 mm mild sheet steel
Cable Entry	28 knockouts top, 19 knockouts back, 1 knockout each side, 2 knockouts bottom (Standard)	38 knockouts top, 25 knockouts back, 2 knockouts each side, 2 knockouts bottom (Standard)
	38 knockouts top, 19 knockouts back, 1 knockout each side, 2 knockouts bottom (Deep)	50 knockouts top, 25 knockouts back, 2 knockouts each side, 2 knockouts bottom (Deep)
Battery Capacity	Up to 26 Ah (Standard), Up to 45 Ah (Deep)	Up to 26 Ah (Standard), Up to 45 Ah (Deep)

ORDERING INFORMATION

Product Code	Description
TEN-95512	2 Loop 5 A 240 V PSU, 0Z, Enable k/switch
TEN-95522	2 Loop 5 A PSU, 48 Z, Enable k/switch
TEN-95524	2 Loop 5 A PSU, 48 Z, Enable k/switch, Printer
TEN-95112	2 Loop 10 A PSU, 0 Z, Enable k/switch
TEN-95122	2 Loop 10 A PSU, 48 Z, Enable k/switch
TEN-95124	2 Loop 10 A PSU, 48 Z, Enable k/switch, Printer
TEN-96112	2 Loop 10 A PSU, 0Z, Enable k/switch in Deep Enclosure
TEN-96122	2 Loop 10 A PSU, 48 Z, Enable k/switch in Deep Enclosure
TEN-96124	2 Loop 10 A PSU, 48 Z, Enable k/switch, Printer in Deep Enclosure

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