



# Consultant Specification

**Scope of work:**

To design, supply, install and commission an Analogue Addressable Fire Alarm Control System in accordance with the details specified herein and in accordance with supplied drawings

## Introduction

The system shall include all materials, equipment and wiring required to install the complete Fire Detection and Alarm System. The system shall include but not be limited to one or more control panels, repeater panels, sensors, call points, audible and visual alarm indicating devices and relays.

The installation shall include the laying of all cables required for connection of the detection, alarm indicating and other devices along with connections to the power supply as appropriate to the design. All cabling shall conform to the requirements and recommendations of the Fire Alarm Control Panel manufacturer. Any openings /chasings in walls, ceilings or floors shall be made good.

The system shall be designed such that no more than 80% of the available signalling / detection loop capacity is employed to allow for future requirements.

It shall be possible to incorporate one or more graphical touch control terminals in the system in accordance with the requirements detailed in this specification.

### Normative References

EN 54-1:2011	Introduction
EN 54-2:1997 +A1:2006	Control and Indicating Equipment
EN 54-3:2001 +A1:2002 +A2:2006	Audible Alarm Devices
EN 54-4:1997 +A1:2002 +A2:2006	Power Supply Equipment
EN 54-5:2000 +A1:2002	Heat Detectors – Point Detectors
EN 54-7:2000 +A1:2002 +A2:2006	Smoke Detectors – Point Detectors
EN 54-11:2001 +A1:2005	Manual Call Points
EN 54-13:2005	Compatibility Assessment of System Components
EN 54-17:2005	Short Circuit Isolators
EN 54-18:2005	Input / Output Devices
EN 54-23:2010	Visual Alarm Devices
EN 54-25:2008	Components using Radio Links
BS 5839-1:2013	Code of practice – Design, Installation and Maintenance
ISO 7240-14:2014	Design, Installation and Maintenance

## Standards

The fire detection and fire alarm system shall be designed, installed and commissioned in accordance with, and all elements shall meet the requirements of, the relevant national or international installation standards (e.g. BS5839-1 Code of Practice or ISO 7240-14). The responsible company should be able to demonstrate their competence to design, install and commission the system by certification to national standards (e.g. BAFE SP203, LPS1014 or other relevant standard).

The equipment manufacturer shall operate a quality management system in accordance with ISO 9001. In addition, the equipment shall be manufactured under a recognised factory control procedure such as the Vertrauen durch Sicherheit (VDS) or Kitemark (BSI) schemes.

All detection devices shall be independently certified as complying with the relevant EN54 standard.

The Fire Alarm Control Panel shall be independently certified as complying with requirements of EN54 Part 2, EN54 Part 4 and EN54 Part 13. The Independent approvals body shall be an EU Notified Body in accordance with EU Regulation 305/2011 and be accredited to EN 45011 and EN 17025 for the relevant product standards.

In addition to the basic requirements of EN54, the Fire Alarm Control Panel shall offer the following EN54 optional features with requirements:

Optional Functions:	EN54-2 Clause
Indication - Fault signals from points	8.3
Outputs -Outputs to fire alarm devices	7.8
Outputs -Outputs to fire alarm routing equipment	7.9
Outputs -Outputs to fire alarm protection equipment	7.10
Controls -Investigation delays to outputs	7.11
Co-incidence detection	7.12
Alarm Counter	7.13
Disablement of points	9.5
Test condition	10
Standardised I/O	11
Power Supply Equipment Functions:	EN54-4 Clause
Operation from a main power supply	5.1
Operation from a standby battery	5.2
Monitor and charge the standby battery	5.3
Recognise and notify supply faults	5.4
Compatibility of system components	EN54-13 Clause
Basic System Requirements	4.2
Network Systems	4.3
Components	4.4
Transmission Path	4.5
Input and Output Devices linked to fire protection systems	4.6

## Functional description

### Touch Control Remote Terminal

A Fire Alarm Touch Terminal shall be provided employing a graphical touch screen for the purposes of indication and control of the complete fire alarm installation.

### Panel construction

The Fire Alarm Touch Terminal shall be of metal construction. It shall be capable of semi-flush mounting. When semi-flush mounted, the unit shall protrude no more than 15mm from the wall face. It shall be possible to mount the back box enclosure to the wall for easy first fix. The control electronics shall slide into the back box.

Wiring terminations for field wiring shall be situated in the back box such that they are readily accessible during installation and maintenance.

The housing shall meet IP30 minimum ingress protection classification and be finished in RAL 9005. It shall not be possible to open the enclosure without a key or tool.

The Fire Alarm Touch Terminal shall provide the option for up to two separate power feeds with the option for monitoring a signal for the state of a remote power supply. The monitoring of the input shall meet the requirements for EN54-13 partial open and short circuits.

A facility shall be provided for the storage of additional user configurable information such as logos and maps utilising a micro SD card.

### Panel indications

The Fire Alarm Touch Terminal shall be equipped with a backlit 10.1" graphic display (1280x800 pixels).

The display shall be simultaneously capable of indicating the presence of Fire Alarms, Faults, Disablements and Tests in accordance with the requirements of EN54-2. It shall also provide separate fields for the indication of specific EN54-2 activation and fault conditions that shall be indicated during the fire alarm condition.

The following minimum LED indicators shall be provided in accordance with the requirements of EN54-2:

Power On	Green
Fire Alarm	Red
Fault	Yellow
Disabled	Yellow
Test	Yellow
System Fault	Yellow

The graphical display shall be visible at a distance of 1m in ambient light conditions of 5 lux to 500 lux and at angles of up to 45° from the normal plane of the display. The LED indicators shall be visible at a distance of 3m in ambient light conditions of up to 500 lux and at angles of up to 45° from the normal plane of the display

In addition, the display shall be capable of showing interactive zone maps. These shall be presented in a graphical format to make it easier to locate the origin and spread of fire for users and for the fire and rescue services. It shall be possible to view the zone maps at any time.

It shall be possible to configure the display to show presentations or other information during normal quiescent conditions. This function shall be automatically cancelled to show fire alarm and other non-normal operating conditions.

## Panel Controls

Panel controls shall be achieved by means of a full touch screen panel. Controls shall be interactive and context sensitive.

The controls shall operate with and without the use of a fireman's glove.

The Fire Alarm Touch Terminal shall be provided with the following minimum manual controls:

Mute

Evacuate (Sound Alarms)

Silence Alarms

Resound Alarms

Reset

## Networking

The Fire Alarm Touch Terminal shall network to the fire alarm control and indicating panels and shall be capable of indicating the status of the complete system.

The Touch Terminal shall be provided with in-built network function to be compatible with a standard (fig.1.) or secure fault tolerant (fig.2.) networks.

A zoning facility to allow the networked system to share up-to 2000 zones giving non-confusing indication and allowing true peer-to-peer cross panel report, control and site-wide cause and effect functionality shall be provided.

It shall be simple to add one or more Touch Control Panels to the network. All other nodes on the system shall be instantly aware of a panel as soon as it is given a valid network node address, allowing additional panels to be added at any time with a minimum amount of reprogramming. A facility shall be provided to prevent the transmission of fires or faults during commissioning on network systems.

For more complex systems, a Windows based PC configuration software (see below) shall allow sector based programming for Mute, Silence, Resound and Reset control keys as well as investigation delays, group disablement and test instructions. All panels within the same sector will share common controls and it shall be possible for each panel or remote terminal to be programmed to show specific network information on a zonal basis.

For cause and effect, it shall be possible for any input device to be programmed to operate any output device on any panel and, to simplify the programming, all the configuration data shall be contained within one user-friendly network configuration file.

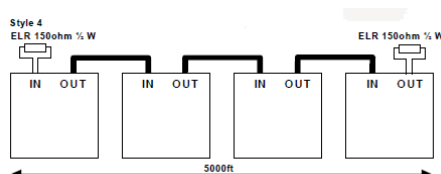


Fig.1.

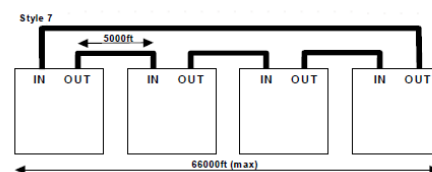


Fig.2.

## Configuration

It shall be possible to configure ALL basic configuration parameters and settings from either the Touch Terminal front panel or from the PC Configuration Tool. USB connections from the Touch Terminal to the PC are to be available. It shall be permitted to configure enhanced / extended features and functions from the PC Configuration Tool only.

## Software

A PC Configuration Tool shall be available for configuration of the Touch Terminal in conjunction with the other panels in the network and for retention of this configuration data.

The PC Configuration Tool shall be graphically based and operate under Windows™ operating systems, ME, XP, Vista and Windows 7.

Additional tools shall also be provided

Software features shall include:-

### Configuration Tool

- Permanent/timed disablements
- Re-sound buzzer daily
- Timeout from Level 2 to Level 1
- 5000 memory event log
- Investigation delays
- Disable/enable logging
- Disable by Purpose
- Disable across the network
- Sector programming
- 1500 allowable logic lines

## Maps

An essential integral feature shall be the ability to import site plans, building outlines and maps with the ability to create zonal boundaries for graphical indication of the location of fire alarms, faults and disablement conditions.

Software shall be provided comprising easy to use features and functions for the creations of the graphical images.

The maps shall be stored on a micro SD card to allow simple and easy upgrades.

It shall be possible to create and display maps in multiple layers with hot-spot navigation.

## Customer Logo

It shall be possible to display a customer, installer or other logo on the display during quiescent conditions.

The logo shall be in PNG format. The logo image shall ideally be included in a file with size 1280x800 to suit the graphical screen. It shall be possible for the Touch Terminal to automatically scale files of other sizes to the size of the graphical screen.





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