Fire Alarm Interface

Vizulinx

Product Manual

Man-1428 Rev.04

Safety

Suppliers of articles for use at work are required under section 6 of the Health and Safety at Work act 1974 to ensure as reasonably as is practical that the article will be safe and without risk to health when properly used.
An article is not regarded as properly used if it is used 'without regard to any relevant information or advice' relating to its use made available by the supplier.

This product should be installed, commissioned and maintained by trained service personnel in accordance with the following:

- EE regulations for electrical equipment in buildings
- Codes of practice
- Statutory requirements
- Any instructions specifically advised by The Manufacturer

According to the provisions of the Act you are therefore requested to take such steps as are necessary to ensure that you make any appropriate information about this product available to anyone concerned with its use.

The mains powered version of this equipment is designed to be operated from 230V 50Hz mains supplies and is of class 1 construction. As such it **must** be connected to a protective earthing conductor in the fixed wiring of the installation and a readily accessible double pole disconnect device shall be incorporated in the fixed wiring.

Failure to ensure that all conductive accessible parts of this equipment are adequately bonded to the protective earth will render the equipment unsafe.

Disclaimer

In no event shall The Manufacturer be liable for any damages or injury of any nature or kind, no matter how caused, that arise from the use of the equipment referred to in this manual.
Strict compliance with the safety procedures set out and referred to in this manual, and extreme care in the handling or use of the equipment, are essential to avoid or minimise the chance of personal injury or damage to the equipment.

The information, figures, illustrations, tables, specifications, and schematics contained in this manual are believed to be correct and accurate as at the date of publication or revision. However, no representation or warranty with respect to such correctness or accuracy is given or implied and The Manufacturer will not, under any circumstances, be liable to any person or corporation for any loss or damages incurred in connection with the use of this manual. The information, figures, illustrations, tables, specifications, and schematics contained in this manual are subject to change without notice.

Unauthorised modifications to the fire detection system or its installation are not permitted, as these may give rise to unacceptable health and safety hazards.

By installing this equipment on a computer network, the owner accepts full and unequivocal responsibility for ensuring that it is protected against all cyber threats and illegal tampering during the lifetime of the equipment.Any software forming part of this equipment should be used only for the purposes for which The Company supplied it. The user shall undertake no changes, modifications, conversions, translations into another computer language, or copies (except for a necessary backup copy).In no event shall The Manufacturer be liable for any equipment malfunction or damages whatsoever, including (without limitation) incidental, direct, indirect, special, and consequential damages, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss, resulting from any violation of the above prohibitions.

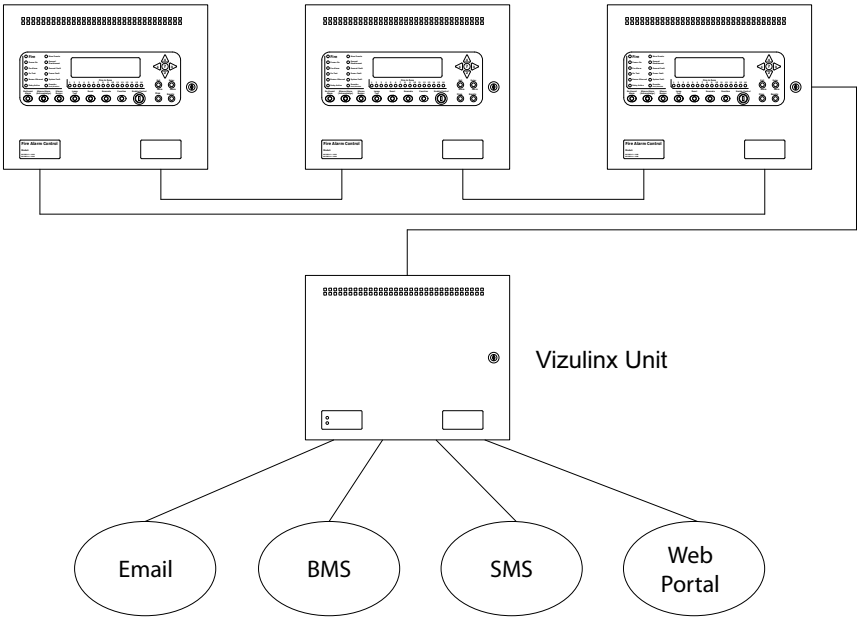
Vizulinx should not be used as primary notification and is to support and provide additional means of communication only.

Section 1
Introduction

Vizulinx is a standalone, low power module which adds expanded connectivity to Kentec fire alarm control and extinguishant panels. The module reports fire alarm behaviour on site, over email, SMS and communicates with building management systems (using BACNet/Modbus protocols).

The diagram below shows Vizulinx module capabilities ('M2' enclosure version):

Example Fire Alarm Control Panel Network



Email

Provides fire and an optional fault notification via email. Requires an internet based email service or local web server access.

BACnet or MODBUS (for BMS Integration)

Vizulinx can connect to a panel (or network of panels) to building management or building automation systems using Modbus (TCP/IP) or BACnet (IP) protocols.

Mobile Text Messaging

Sends fire and fault message via GSM or 'Text Magic' internet service (requires third-party USB GSM/WiFi dongle).

Web Portal

Provides local network access via web browser to real time and provides access historic fire and fault events.

Backup/Restore

Downland panel configuration, store multiple versions and restore on demand. Downloads via the web portal.

Section 2
Overview

This manual covers the installation and operation of the following products:

Vizulinx - Module Only

- Part number – K85000.
- DIN rail mountable Vizulinx module only.
- Ribbon cable (x2) to connect to 8 outputs, giving up to 16 programmable input channels, which may be used for common fire/fault or zonal signalling from conventional panels.
- Ribbon cable for serial connection to Syncro and Elite model control panels.
- Ribbon cable for PSU fault monitoring.

Vizulinx Housed - M2 Enclosure

- Part Number – K85000 M2.
- Vizulinx module fitted.
- Housed in an sheet steel enclosure complete with S407 2.5A power supply and space for up to 2 x 7Ah sealed lead acid batteries (9.5Ah high capacity batteries).
- Enclosure finish - Grey (Bs-oo-A-05)

Vizulinx Housed - AM3 Enclosure 110V AC

- Part Number – K85110 AM3.
- Vizulinx module fitted.
- Housed in an sheet steel enclosure complete with S407 2.5A power supply and space for 2 x 12Ah sealed lead acid batteries.
- Enclosure finish - Red (RAL 3002)

Vizulinx Housed - AM3 Enclosure 230V AC

- Part Number – K85240 AM3.
- Vizulinx module fitted.
- Housed in an sheet steel enclosure complete with S407 2.5A power supply and space for 2 x 12Ah sealed lead acid batteries.
- Enclosure finish - Red (RAL 3002)

Supported Kentec Electronics Panels

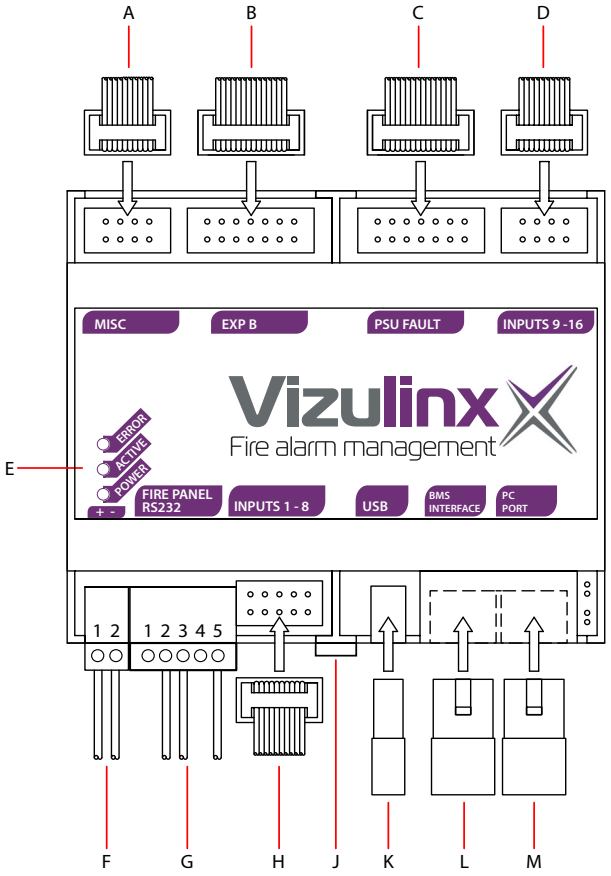
This document provides installation and set-up information for the following Kentec products:

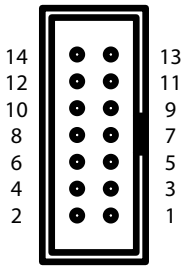
Product	Connection Type
Taktis EN	IP via Media Gateway Card
Taktis UL	IP via Media Gateway Card
Syncro	Serial via PC Port
Syncro AS	Serial via PC Port
Elite	Serial via PC Port
Elite RS	Serial via PC Port
Sigma CP	GPIO (General Purpose Inputs & Outputs)
Sigma XT	GPIO (General Purpose Inputs & Outputs)
Sigma A-CP	GPIO (General Purpose Inputs & Outputs)
Sigma A-XT	GPIO (General Purpose Inputs & Outputs)

Product	Connection Type
Sigma XT+	GPIO (General Purpose Inputs & Outputs)

Note: Vizulinx is compatible with all OEM branded variants of the above listed products.

Figure 2-1
Overview of Vizulinx Module features



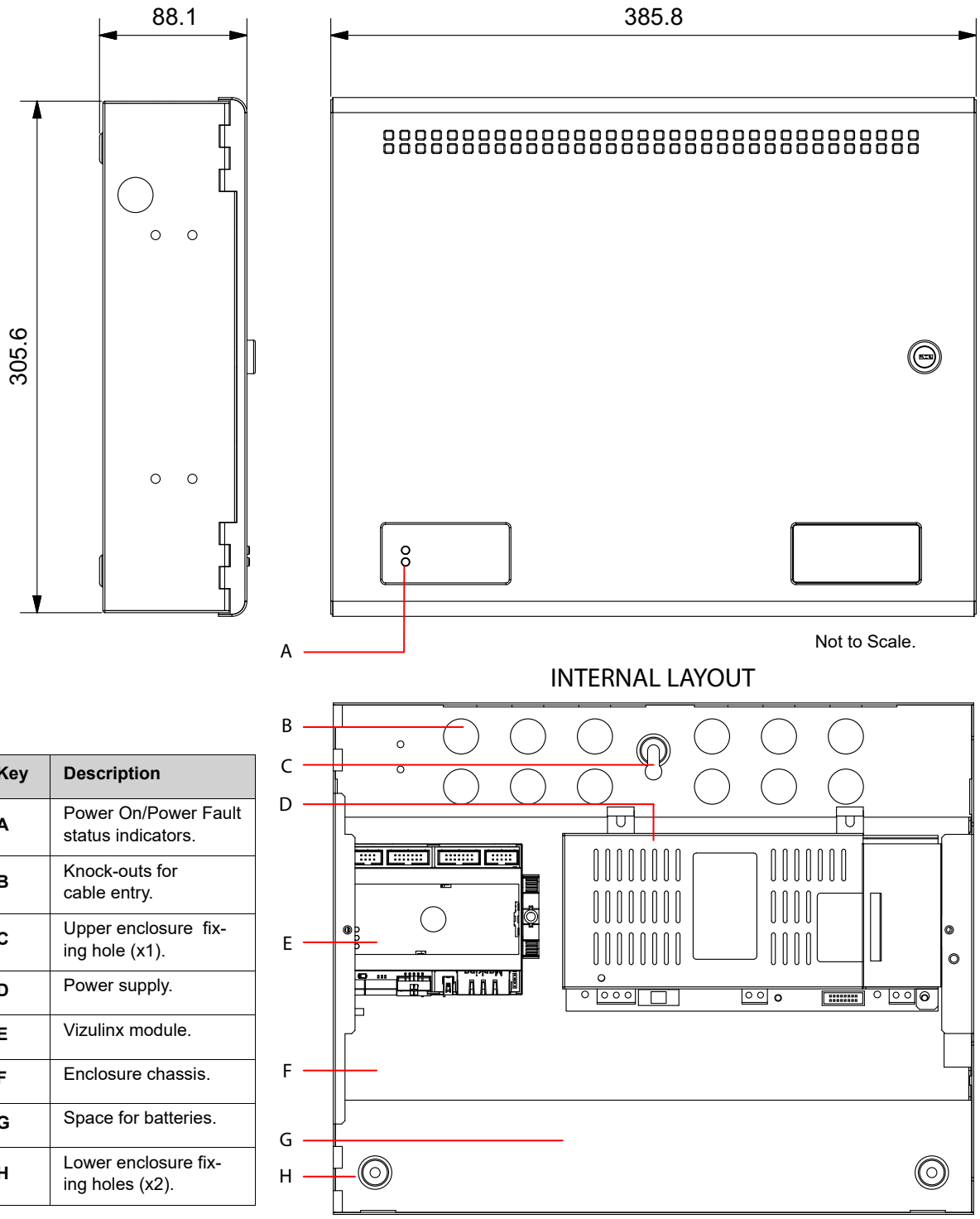


Example header numbering format (For information).

External Dimensions:
106mm (W) X 90mm (H) X 32mm (D)
Not to Scale.

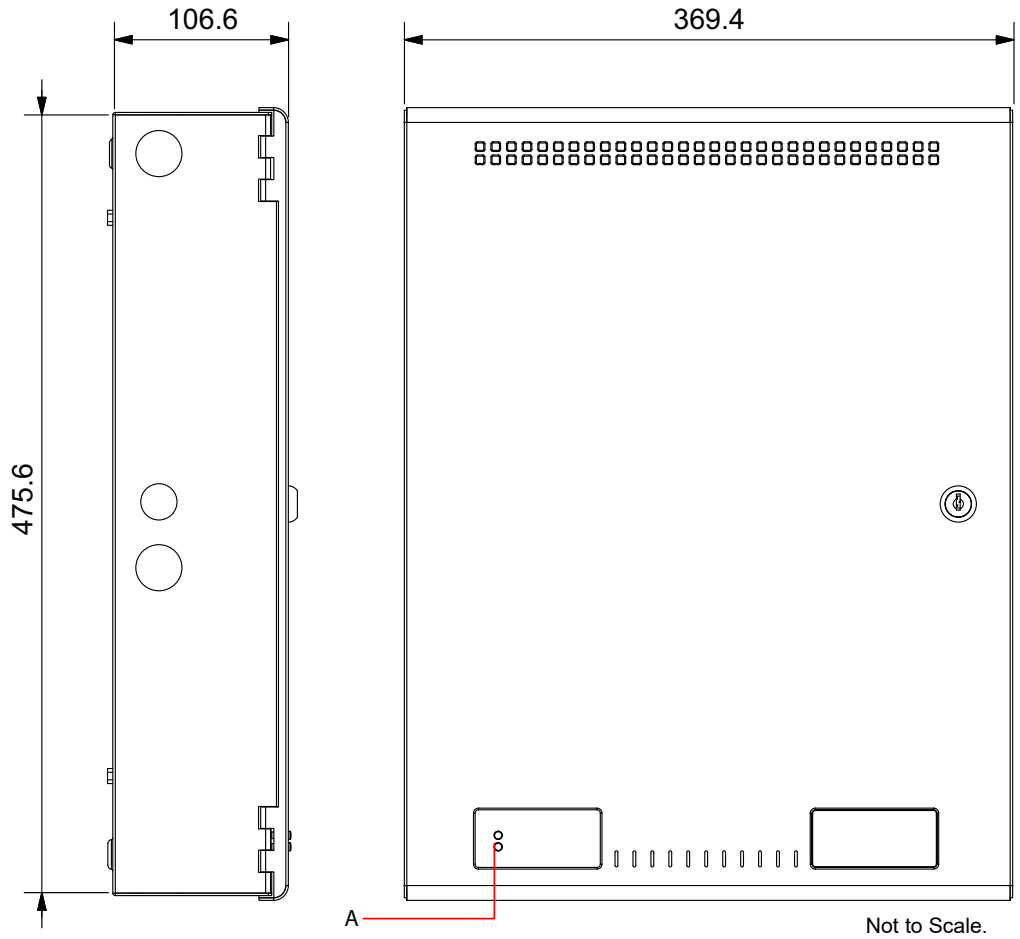
Key	Feature	Description
A	MISC	Not used.
B	EXP B	Not used.
C	PSU FAULT	Power supply unit fault monitoring input.
D	GPIO 9-16	Connection for Sigma CP, A-CP, XT, A-XT, XT+ (and other GPIO).
E	ERROR	When illuminated denotes an error
	ACTIVE	When illuminated denotes activity: >15 seconds during boot up. 0.25 second flash every10 seconds, denoting data being passed.
	POWER	When illuminated denotes power healthy.
F	POWER INPUT	Terminal 1: 9 - 30V DC.
		Terminal 2: 0V.
G	RS232 INPUT	For Syncro, Syncro AS, Elite and Elite RS connection.
H	GPIO 1 - 8	Connection for Sigma CP, A-CP, XT, A-XT, XT+ (and other GPIO).
J	DIN Rail release tab	Pull down to release module.
K	USB	For USB A connectivity (GSM dongle, WIFI etc).
L	BMS INTERFACE	Ethernet connection to BMS or Taktis.
M	PC PORT	Ethernet connection to PC for programming or LAN.

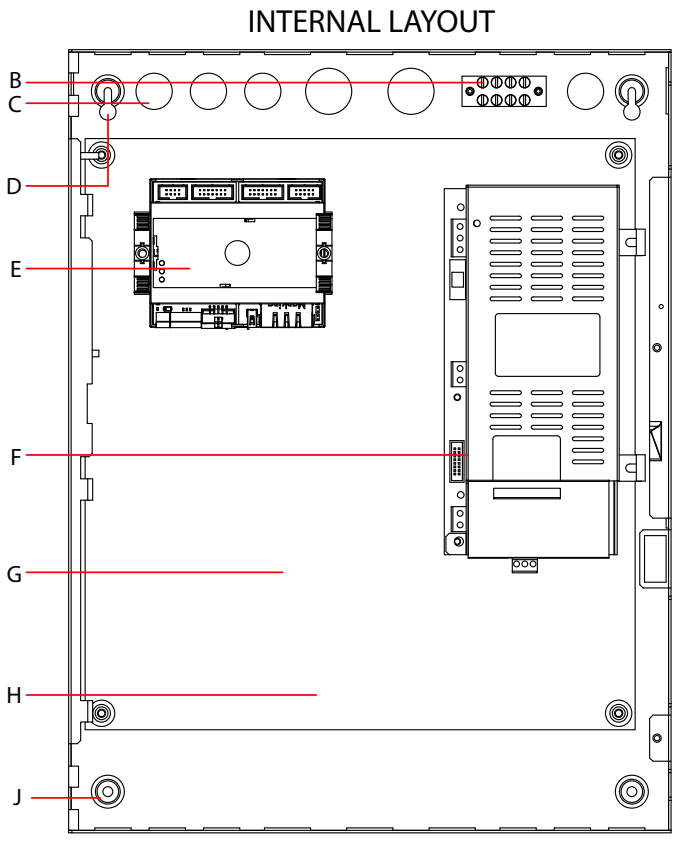
Figure 2-2
Overview of Vizulinx module housed - M2



Key	Description
A	Power On/Power Fault status indicators.
B	Knock-outs for cable entry.
C	Upper enclosure fixing hole (x1).
D	Power supply.
E	Vizulinx module.
F	Enclosure chassis.
G	Space for batteries.
H	Lower enclosure fixing holes (x2).

Figure 2-3
Overview of Vizulinx module housed - AM3





Key	Description
A	Power On/Power Fault status indicators.
B	Enclosure earth block.
C	Knock-outs for cable entry.
D	Upper enclosure fixing holes (x2).
E	Vizulinx module.
F	Power supply.
G	Enclosure chassis.
H	Space for batteries.
J	Lower enclosure fixing holes (x2).

Section 3
Installation

This section provides installation instructions for mounting the enclosure and connecting cables. This product should be installed, commissioned and maintained by trained service personnel in accordance with the terms outlined at the beginning of this document.

General Installation Process

1. Create a plan and checklist for the installation.
2. Remove the panel packing and check the contents.
3. Mount the enclosure.
4. Connect cables.
5. Apply power.
6. Configuration.
7. Test.

Mounting Vizulinx (module only version)

- The module can be mounted using 35mm DIN rail (allowing for fixings, approximately 150mm long).
- The module is secured to the DIN rail by the black tab, the tab can be eased outwards to facilitate mounting or dismounting.
- Appropriate DIN rail end stops must be used to prevent the module sliding along the DIN rail.
- The module must be mounted/fixed in a suitable third party enclosure.

Mounting Vizulinx (housed versions)

- Enclosure should be mounted adjacent the Fire Alarm Control Panel (FACP).
- Enclosure should be positioned in an accessible place agreed with the end user.
- Enclosures should be mounted on a dry, clean, flat surface and in a level position such that the enclosure is not distorted.
- Screws or bolts of 5mm diameter and suitable wall fixings must be used to mount the enclosure using all mounting holes.
- This enclosure should not be mounted in another enclosure or near sources of excessive heat.
- Cables should be connected using suitable metal cable glands fitted to the knock-outs provided. If additional cable entry points are required, all debris caused by drilling of additional cable entries must be cleared before power is applied to the module.
- The equipment is of Class1 construction so must be permanently and reliably connected to the fixed earth of the installation.
- The primary earth of the end use application must be permanently marked with the protective earth symbol (IEC415 No. 5017). A suitable primary disconnecting device must be provided in the end use application.
- Battery and load connections must be considered for connection to SELV (safety extra low voltage) circuits only.
- The maximum leakage current of the completed and installed equipment must not exceed 3.5mA.

Enclosure Fixing Centres

The following diagrams show enclosure fixing centres.

Diagrams show the chassis and associated components removed.

Verify enclosure type prior to commencing works.

Figure 3-1
Vizulinx 'M2' housed module fixing centres

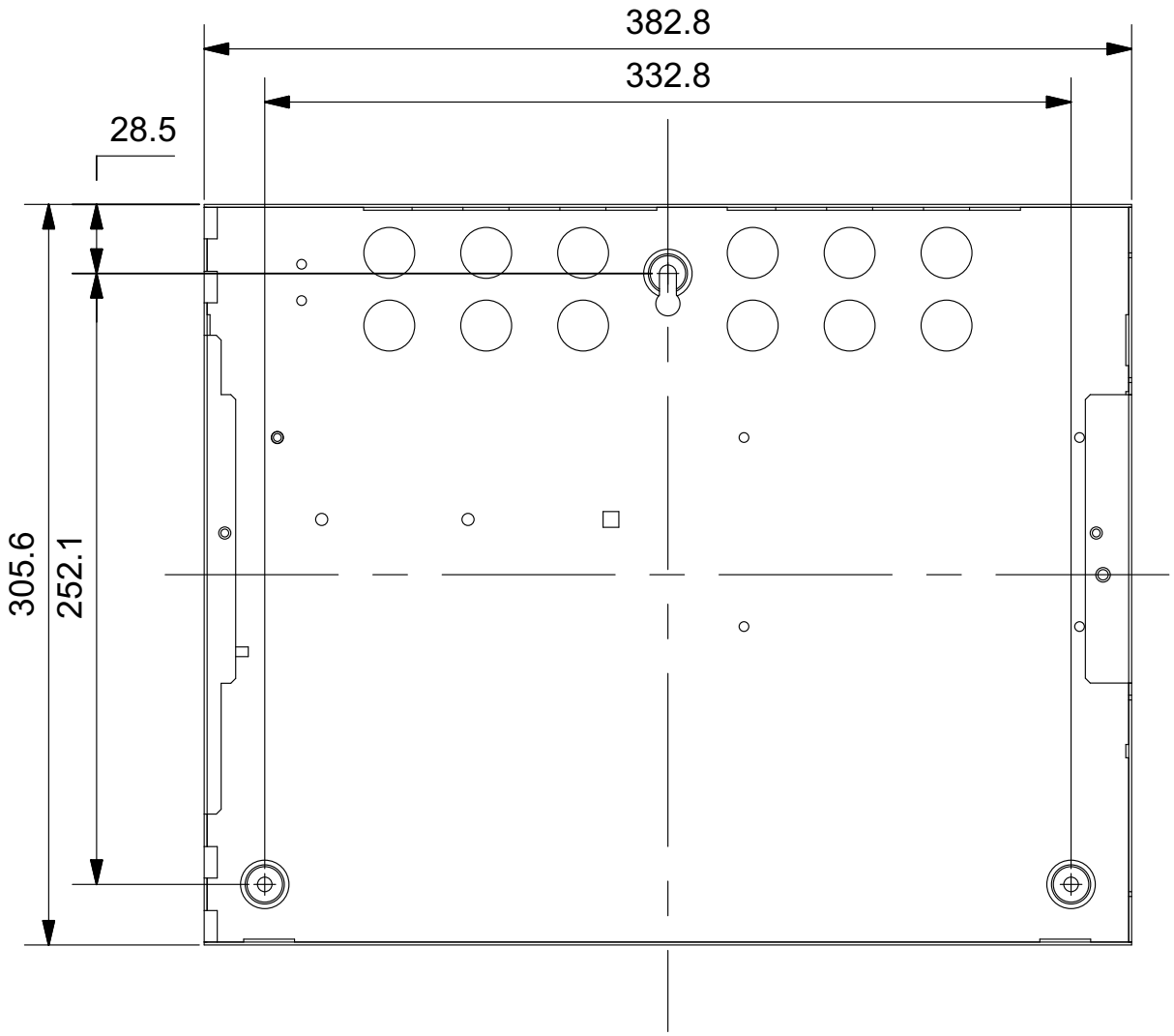
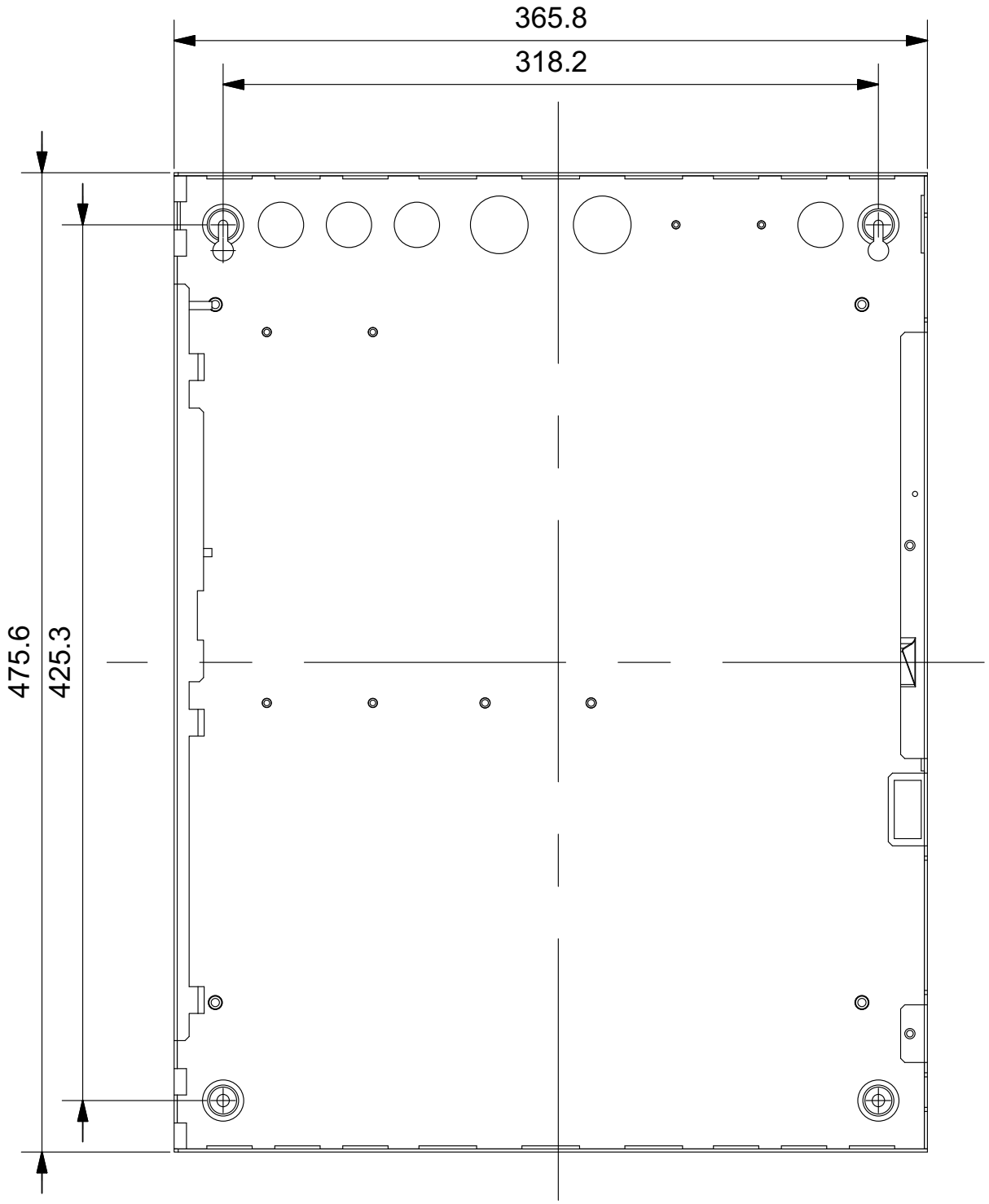


Figure 3-2
Vizulinx 'AM3' housed modules fixing centres



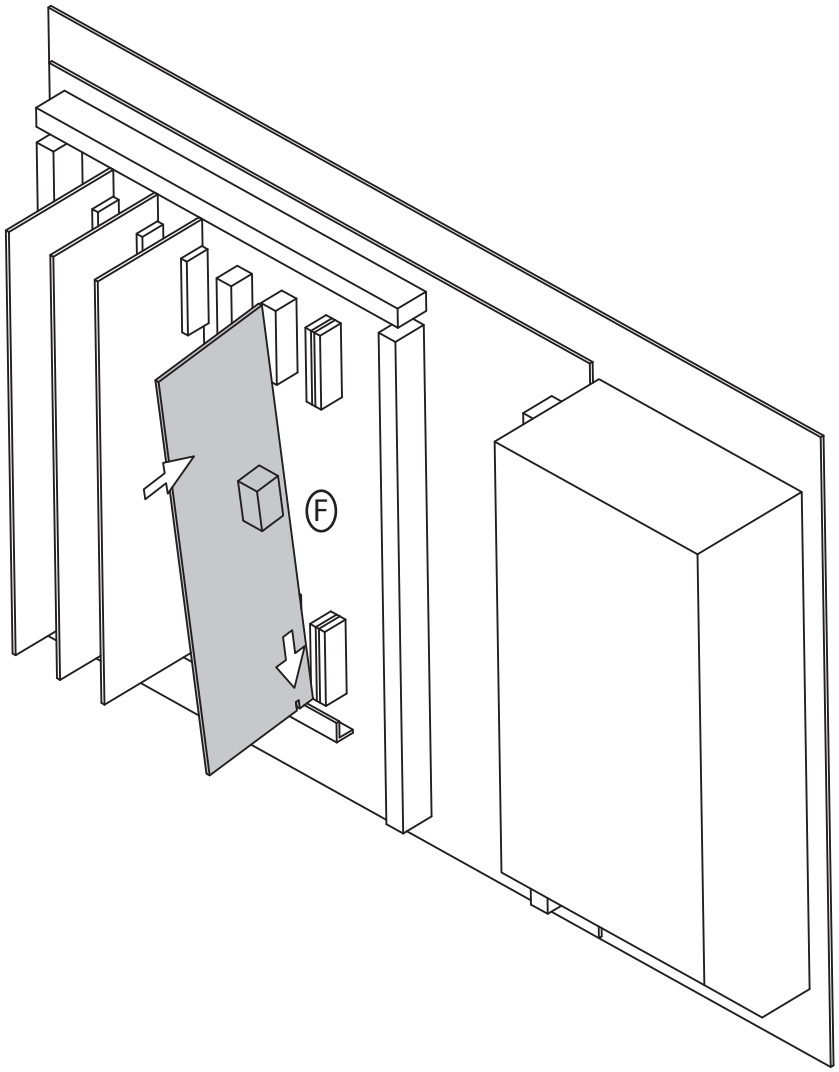
Taktis Fire Alarm Control Panel Connection

- Taktis EN
- Taktis UL

Communication between a Vizulinx module and a Taktis fire alarm control panel is by Ethernet IP. This can be a direct connection or via an IP network, to provide IP connectivity in the Taktis panel a Media Gateway card must be installed in slot ‘F’ on the Taktis backboard as shown below.

Note: Ethernet cable must be straight through connection cable NOT a crossover connection.

Figure 3-3
Inserting Media Gateway Card



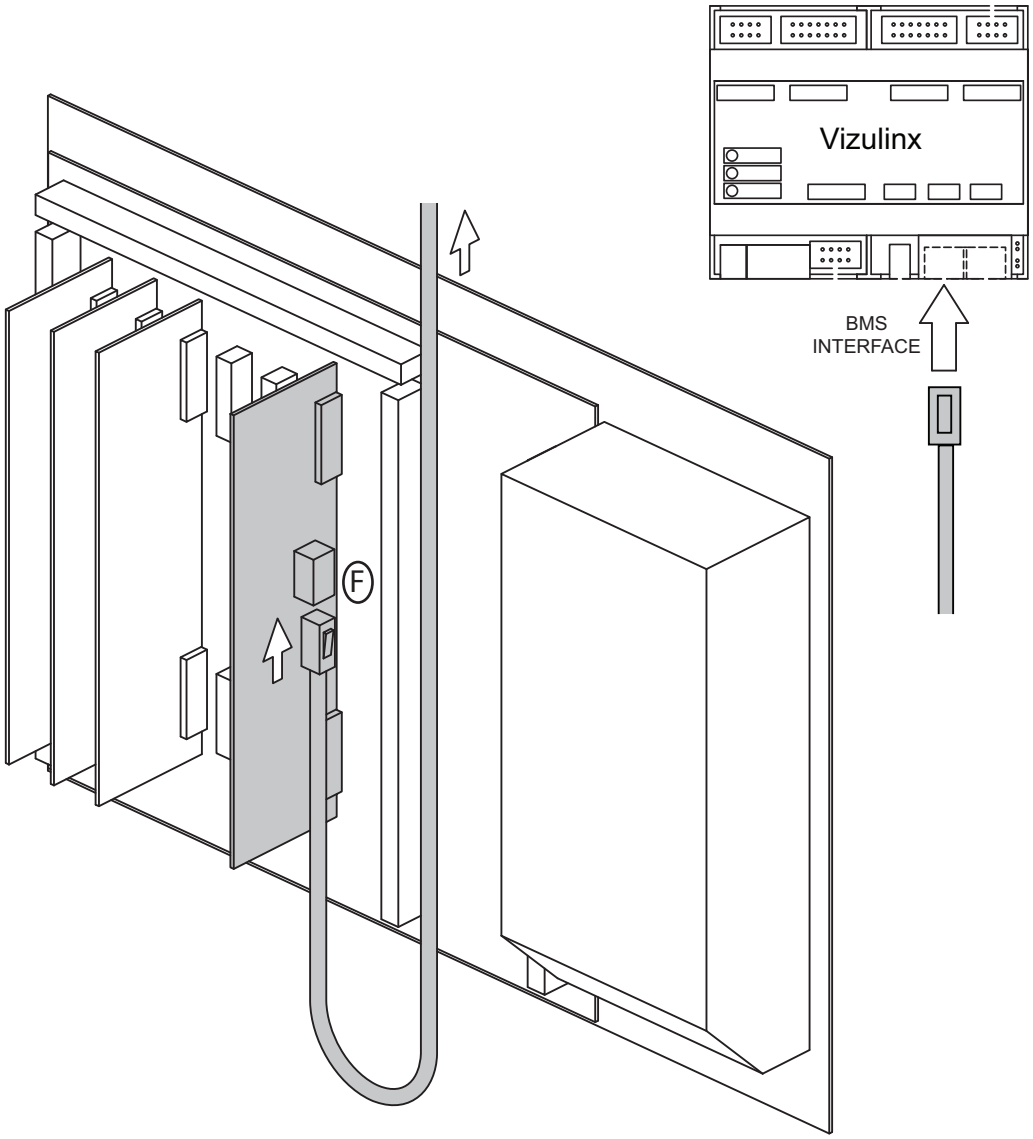
Direct Ethernet connection

This requires an Ethernet patch cable between the Ethernet socket on the panels media gateway card and the Ethernet 1 socket “BMS interface” on the Vizulinx unit.

The IP address of the media gateway card and the Vizulinx must be in the same range to be able to communicate, see the network configuration section of this manual on how to set the Vizulinx IP address.

Note: Ethernet cable must be a straight through connection cable NOT a crossover connection.

Figure 3-4
Ethernet Connection

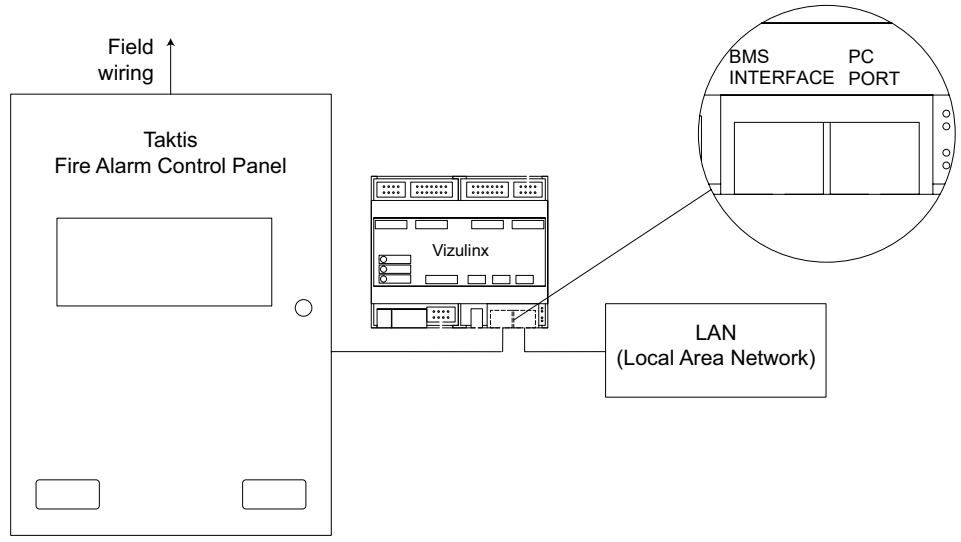


IP Network Connection

Connection between Taktis and Vizulinx can be done across a Local Area Network (LAN) if required. Ethernet cables will be required to connect the panel and the Vizulinx unit to the LAN. IP addresses of the panel and the Vizulinx must be set so the first 4 numbers match the network and the fourth number is the unique address for that device on the network.

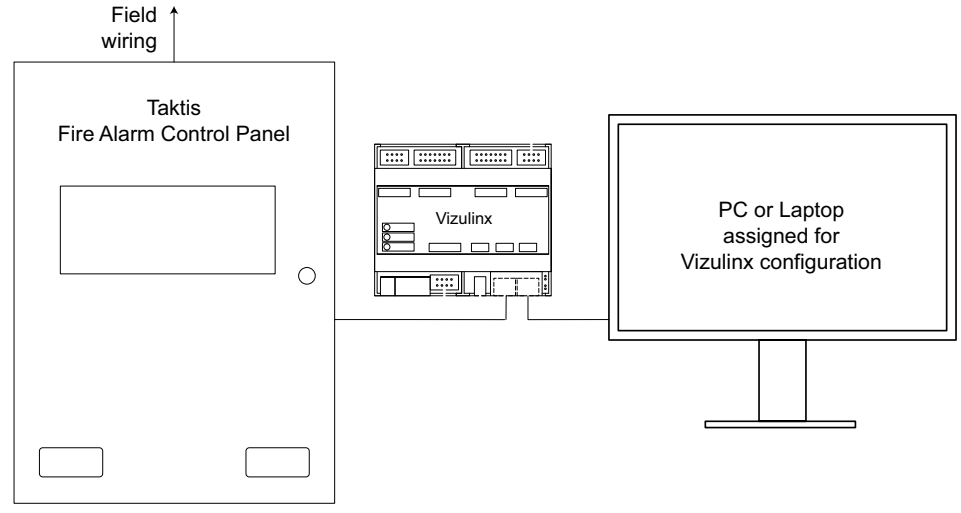
Note: Ethernet cable must be a straight through connection cable NOT a crossover connection.

Figure 3-5
Taktis LAN Configuration



Diagrams not to scale.

Figure 3-6
Taktis Panel PC Configuration



Diagrams not to scale.

Syncro/Elite Fire Alarm Control Panel Connection

- Syncro/Syncro AS
- Elite/Elite RS

Vizulinx connection to these panels is by way of an RS232 serial communication link to the panels PC port. A 10 way ribbon cable is provided with an IDC connector at one end and 3 ferruled connections at the other end.

The IDC connector plugs into the control panels PC port and the ferruled connections are terminated in the "FIRE PANEL RS232" connection, the connections must be terminated as shown in Figure 3-7.
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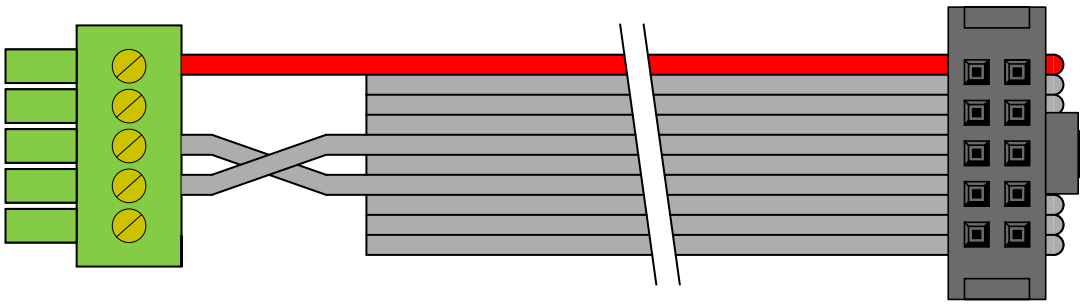
Figure 3-7
RS232 to PC port interface cable connections



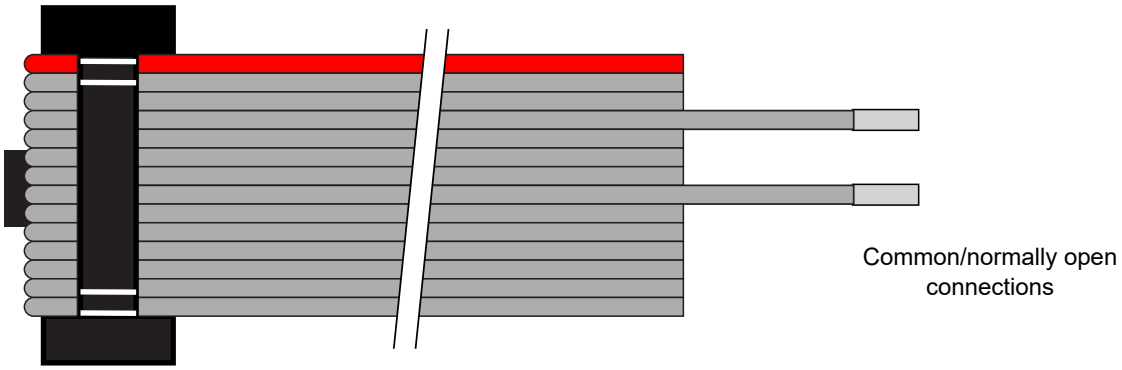
Power Supply Fault Monitoring Connection

- Supplied with all versions
- Note: Factory wired in housed versions

The power supply fault monitoring ribbon cable is connected to the normally open and common connections on the power supply.

Where the unit is supplied as module only, the cable can be used to work with normally open/common monitoring contacts found on other power supply units.

Figure 3-8
Power supply fault monitoring ribbon cable



Conventional & Extinguishant Control Panel Connection

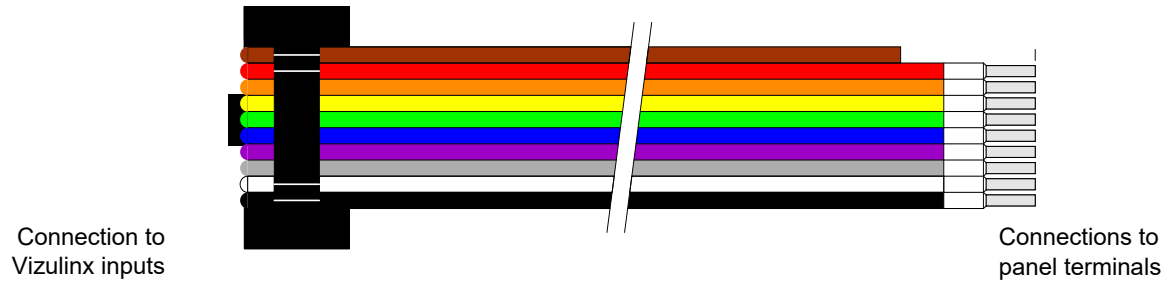
- Sigma CP (2,4 & 8 zone) conventional panels
- Sigma XT 3 zone, single area extinguishant control panel
- Sigma CP-A (2,4 & 8 zone) conventional panels (UL)
- Sigma A-XT 3 zone, single area extinguishant control panel (UL)
- Sigma XT+ multi area conventional extinguishant panel EN

Vizulinx connects to the above listed panels using its General Purpose Input Outputs (GPIO). 16 GPIO pins are provided across 2 x IDC connectors which allow monitoring of switched outputs such as volt free relays or open collector outputs. GPIO pins as default are held high and must be activated by applying a 0v.

Selection of a panel from the above list, in the Vizulinx setup wizard, will allocate a default monitoring status and ID to each of the GPIO pins. Two multi-coloured ribbon cables are provided to be able to connect the relevant status outputs of the panel and ancillary boards (if used). The below table details which colour core of the ribbon cable should be connected to which status output to match the default GPIO pin ID.

The black core of each ribbon cable is connected to 0v on the Vizulinx module, this must be linked to the common terminal of each status output on the control panel and ancillary board as shown in Figures 3-5, 3-6 and 3-7.

Figure 3-9
Input (GPIO interface) to panel cable



The table below shows default functions for inputs:

Wire Colour	GPIO Input	Default Settings	Sigma CP/ A-CP (Up to 8 Zones plus ancillary card)	Sigma XT/ A-XT (Plus ancillary card)	Sigma XT+ (Up to 8 zones, 4 area)
Inputs 1 -8					
Red	1	Fire	Fire	Fire	Fire
Orange	2	Fault	Fault	Fault	Fault
Yellow	3	Not Used	Zone 1 Fire	1st Stage	Zone 1 Fire
Green	4	Not Used	Zone 2 Fire	2nd Stage	Zone 2 Fire
Blue	5	Not Used	Zone 3 Fire	Zone 1 Fire	Zone 3 Fire
Violet	6	Not Used	Zone 4 Fire	Zone 2 Fire	Zone 4 Fire
Grey	7	Not Used	Zone 5 Fire	Zone 3 Fire	Zone 5 Fire
White	8	Not Used	Zone 6 Fire	Manual Mode	Zone 6 Fire
Black	Common (0V)				

Wire Colour	GPIO Input	Default Settings	Sigma CP/ A-CP (Up to 8 Zones plus ancillary card)	Sigma XT/ A-XT (Plus ancillary card)	Sigma XT+ (Up to 8 zones, 4 area)
Inputs 9 -16					
Red	9	Not Used	Zone 7 Fire	Extinguishant Disabled	Zone 7 Fire
Orange	10	Not Used	Zone 8 Fire	Gas Released	Zone 8 Fire
Yellow	11	Not Used	Coincidence mode	Activated	Area 1 2nd Stage
Green	12	Not Used	Not Used	Hold off operated	Area 2 2nd Stage
Blue	13	Not Used	Not Used	Extract Fan Started	Area 3 2nd Stage
Violet	14	Not Used	Not Used	Manual Release Operated	Area 4 2nd Stage
Grey	15	Not Used	Not Used	Not Used	Not Used
White	16	Not Used	Not Used	Not Used	Not Used
Black	Common (0V)				

Connection Diagrams

Figure 3-10
Typical default Sigma CP/CP-A connections

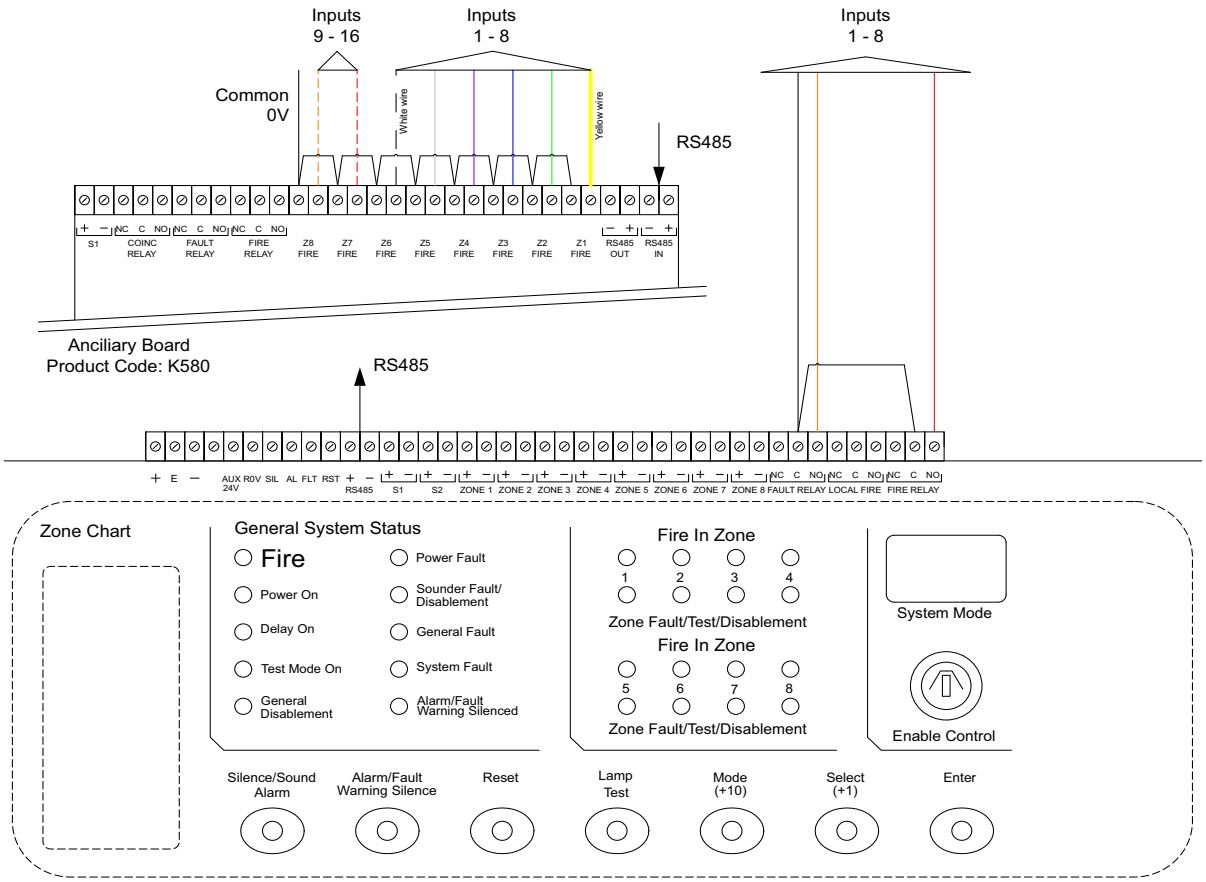


Figure 3-11
Typical default Sigma XT connections

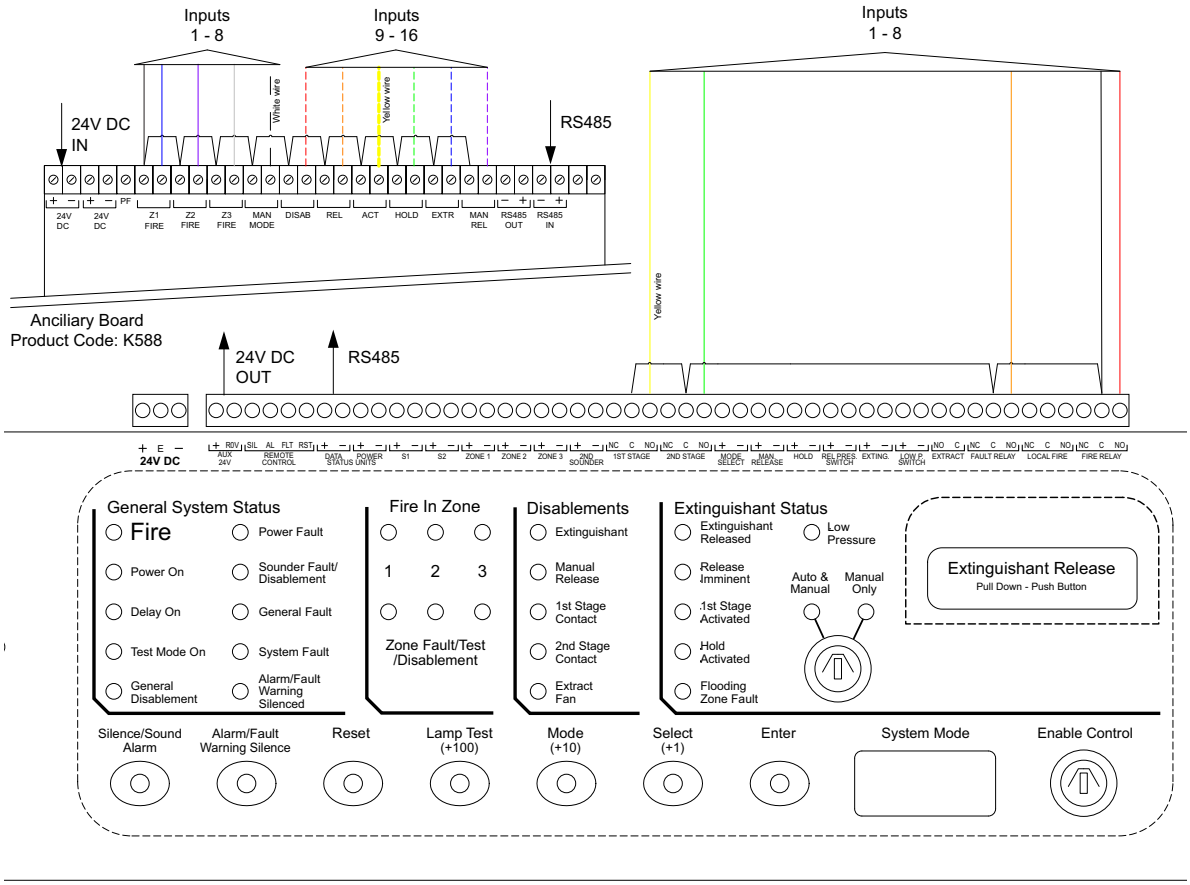
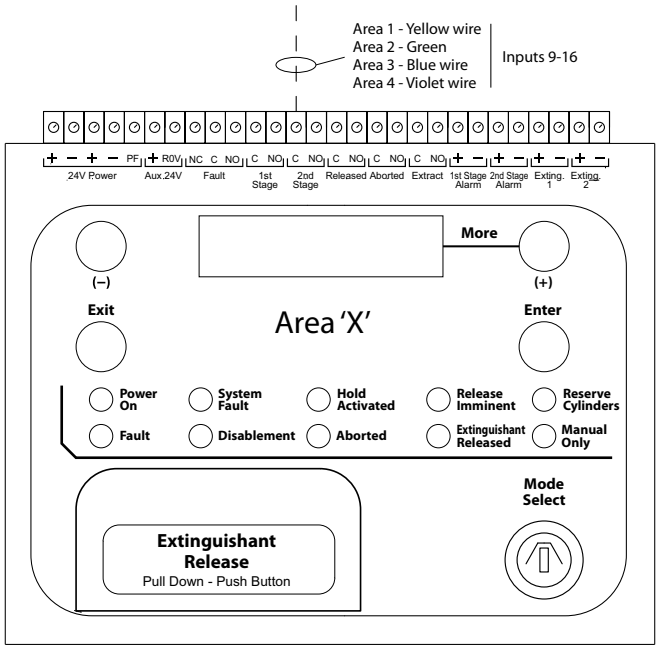


Figure 3-12
Sigma XT+ connections

Refer to Figure 3-5 and the following:



GSM & Wi-Fi Connectivity

Connection of a Vizulinx module to a GSM or Wi-Fi network requires the addition of a USB dongle with a sim card which is inserted into the USB slot on the module.

Depending on the type of dongle used the unit will provide GSM only or it can provide GSM and Wi-Fi.

GSM Only

GSM only enables the Vizulinx to send notification messages via text using the mobile network.
This requires a specific USB dongle type, either Huawei E1750 – Stick mode or Huawei E3372S – Stick mode.

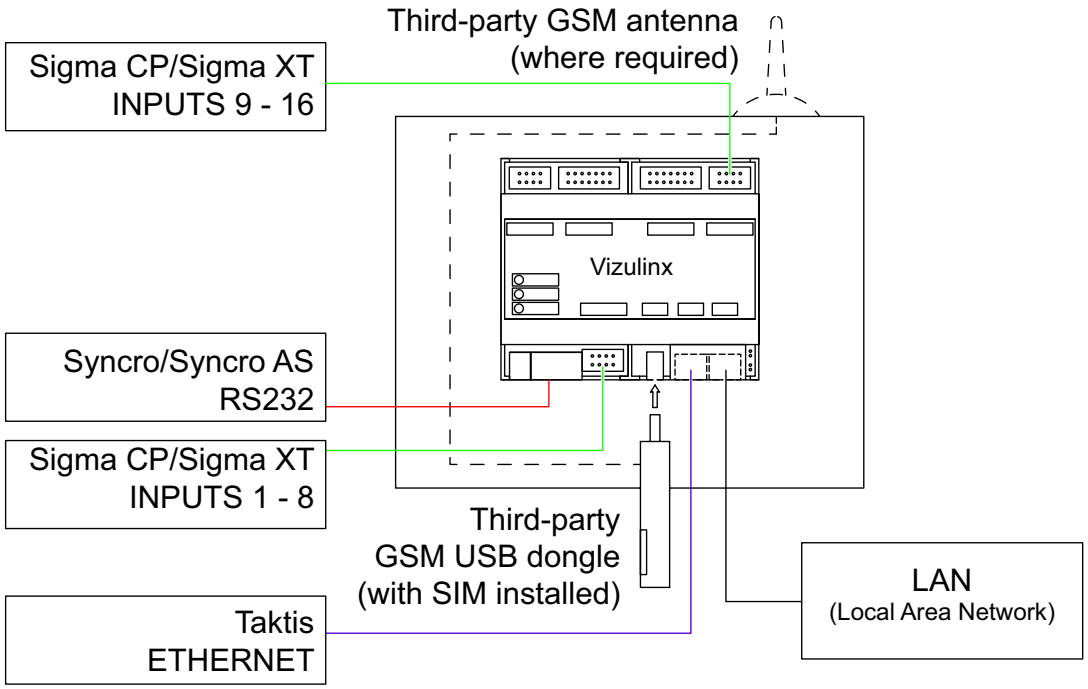
GSM & Wi-Fi

GSM & Wi-Fi enables the Vizulinx to connect to the GSM network to provide notification messages by text, while also using the GSM network to connect to the internet enabling the sending of e-mail notifications.
The following recommended range of Huawei Hi-Link USB dongles can be used to provide SMS an Internet connectivity via GSM:

E3372h, E5331, E5332, E5372, E5375, E5756, E589, E5730, E5776, EC5321, EC315, E5220, E5221, E5251, E5151, E355, E8231, E8278, E5186, E5170, E5377, E5786, E5573, EC5321, EC5377U, E5770, E5771, E5785, E5787, E5573, HW-02G, HW-01F, HW-02E, E8372, 401HW, 506HW, HWD34, KD02, KD04, WS318, WSR20, WS331, WS330, WS880, WS326, WS328, WS860

See Configuration section of this manual for instructions on how to set-up GSM and Wi-Fi requirements.

Figure 3-13
Typical Vizulinx System Diagram



Important!! Syncro and Elite panels which connect to the Vizulinx using the RS232 port cannot be connected at the same time as a Taktis which uses the Ethernet 0 (BMS interface) port.

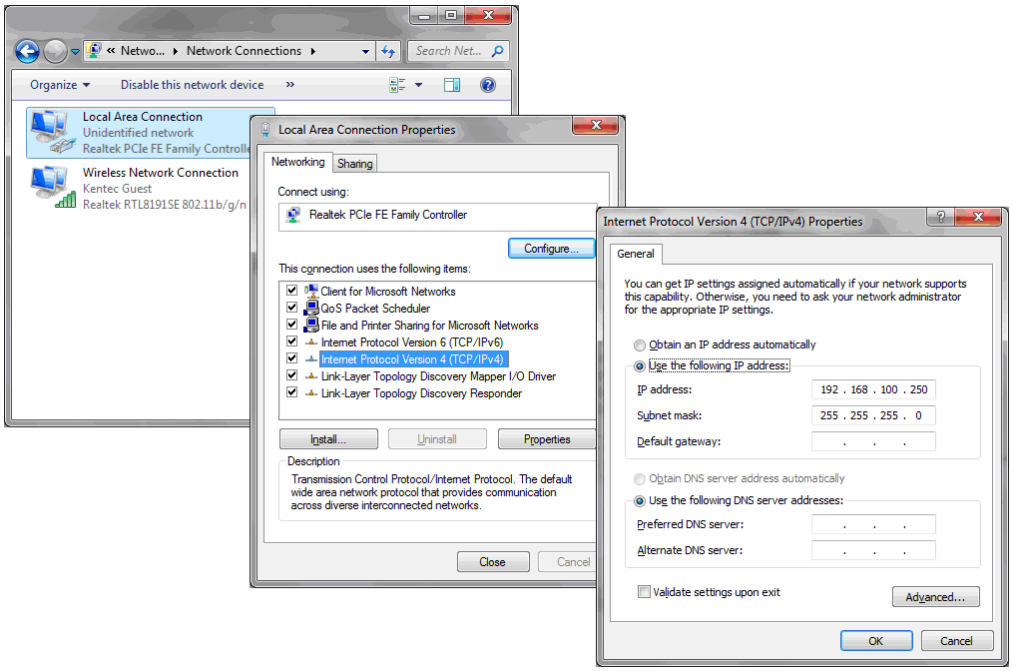
Conventional and extinguishing control panels connected to the Vizulinx GPIO can be connected alongside either a Syncro/Elite or Taktis type panels.

Section 4
Configuration

This section covers setup connection and configuration of the Vizulinx module.

Getting Started

1. Connect the Vizulinx module to the fire alarm system.
2. Power up Vizulinx (allow 15 seconds to boot).
3. Set your configuration PC static IP address to: 192.168.100.90

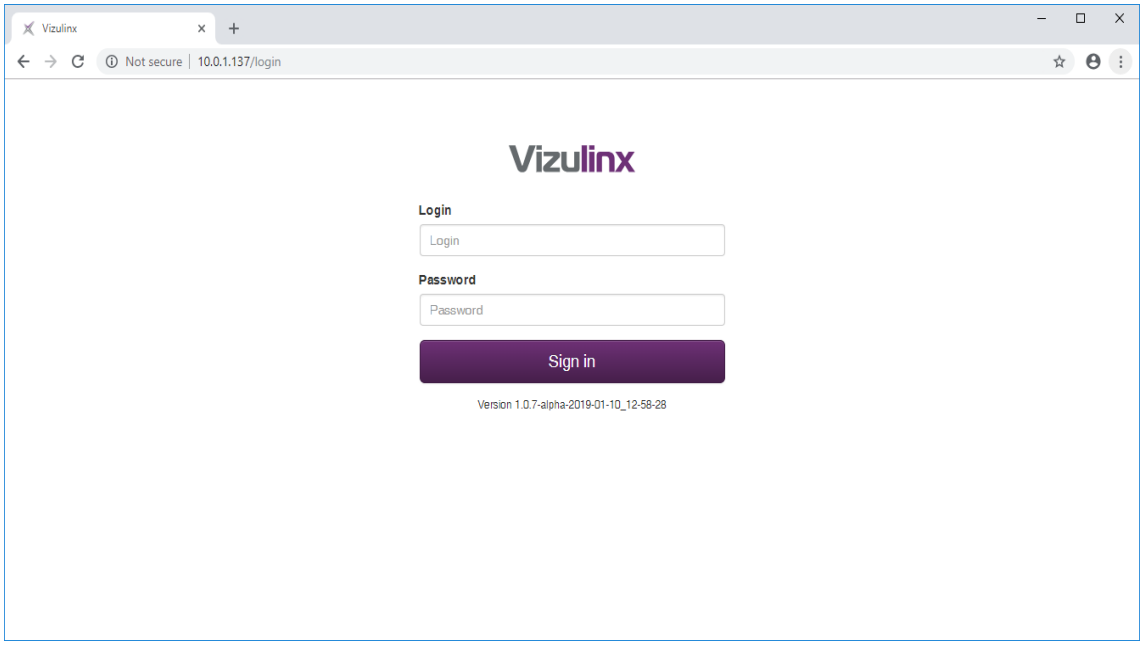


4. Open the internet browser on the configuration PC and enter the following address into the address bar: http://192.168.100.250

   Important: This system is not compatible with Microsoft Edge browsers. Google Chrome is the recommended browser.

5. On the Vizulinx sign in screen enter the Login ID and password. The default settings are:

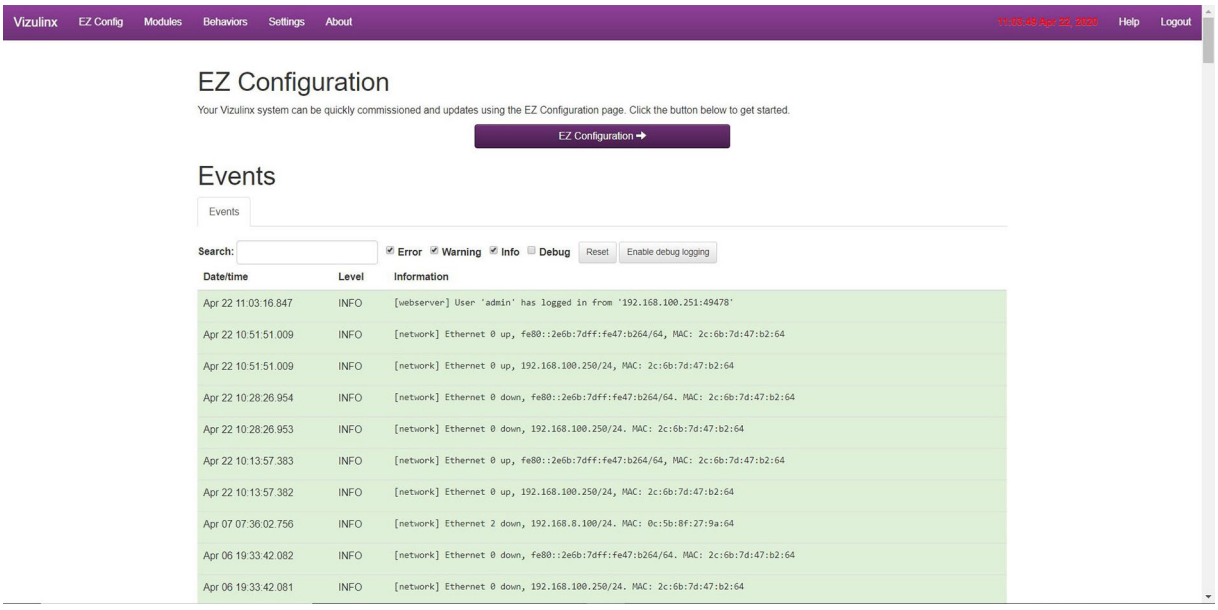
Login: admin
Password: password



Note: Refer to the Settings section of this document for details on how to change login and password details.

EZ Configuration

The Vizulinx on first ever power up has no default configuration, once logged in the Vizulinx event screen is displayed with the option “EZ Configuration” The Vizulinx will be non-functional until the system has been configured.



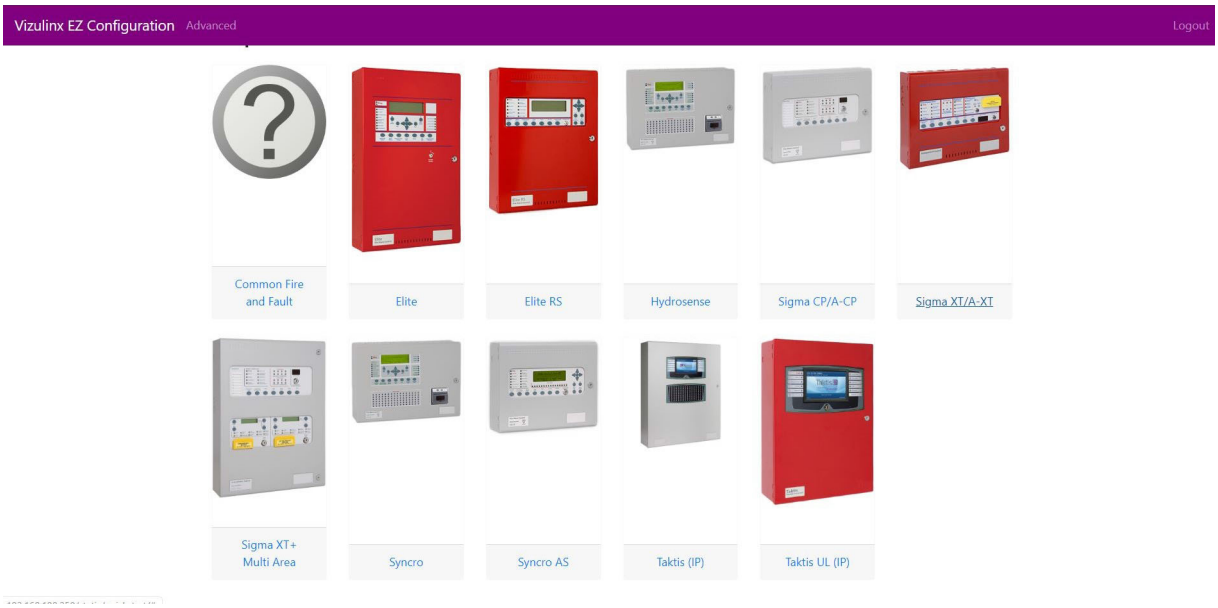
EZ configuration provides a quick and simple setup process for the Vizulinx module. Click on the “EZ Configuration” button to start the setup process: The EZ configuration is a step by step guided process to setting up the Vizulinx for the required configuration.

Step 1 - Site/Location name

Enter a site or location name to be able to identify the Vizulinx, this will appear in the header text of e-mails and can be shown in SMS text messages. This is important when receiving messages from multiple Vizulinx sites.

Step 2 – Panel selection

Vizulinx can be used with the full range of Kentec fire alarm and extinguishing control panels as shown on the screen.

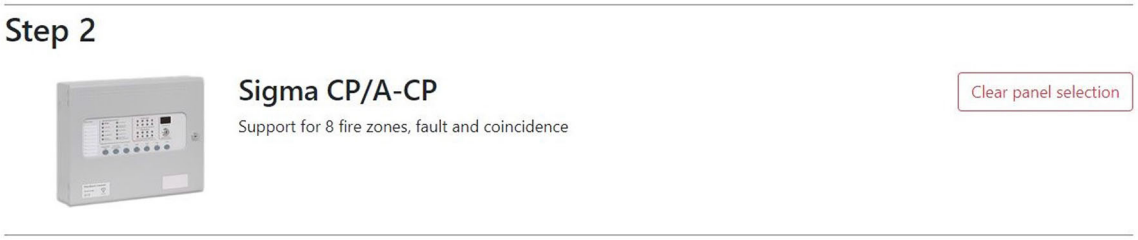


Select the panel type required by clicking on the icon. Depending on the panel selected further information may be required.

Common Fire and Fault

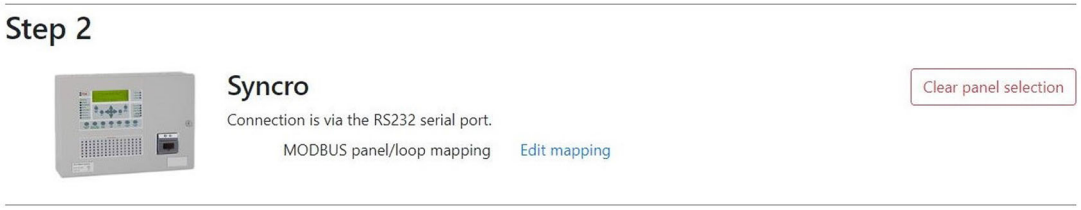
This selection can be used to monitor fire and fault from any fire alarm control panel. Selection of this panel option configures GPIO A inputs 1 and 2 as fire and fault inputs, respectively. The configured Vizulinx behaviours will trigger on activation of the inputs.

Sigma CP/A-CP, Sigma XT/A-XT and Sigma XT+
There is no configuration required for the conventional fire alarm panels when selected, the default allocation of GPIO to support connection of conventional panels will be done automatically. The screen will just display the panel selected with a short description as shown in the example below.

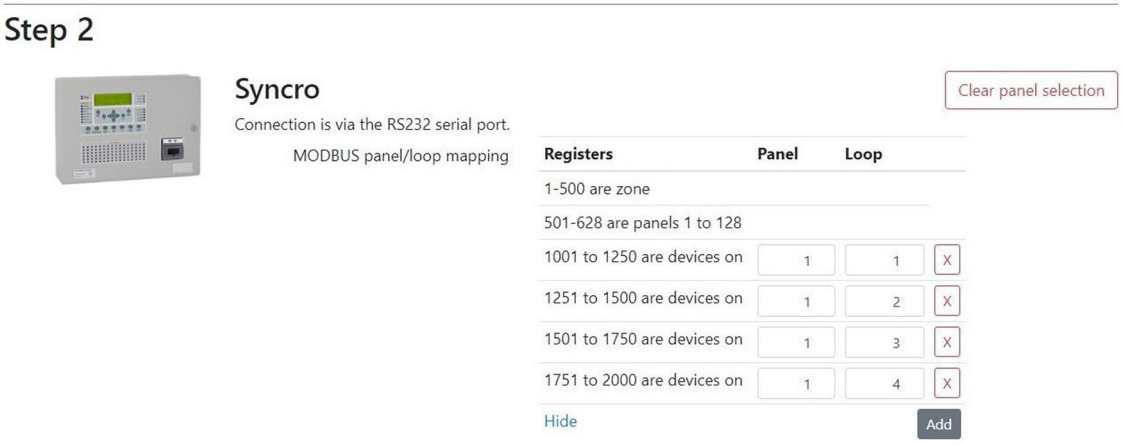


The default GPIO settings applied by this selection can be modified if required, see GPIO ports section of this manual.

Syncro AS, Syncro, Elite, Elite RS and Hydrosense
These panel options require little configuration once selected, however if planning to use Modbus the panel/loop mapping of the Modbus addresses can be configured here:



Modbus Panel/Loop Mapping
The mapping of Modbus addresses to panel and loops can also be done at this stage, click on edit mapping and the following window will appear:

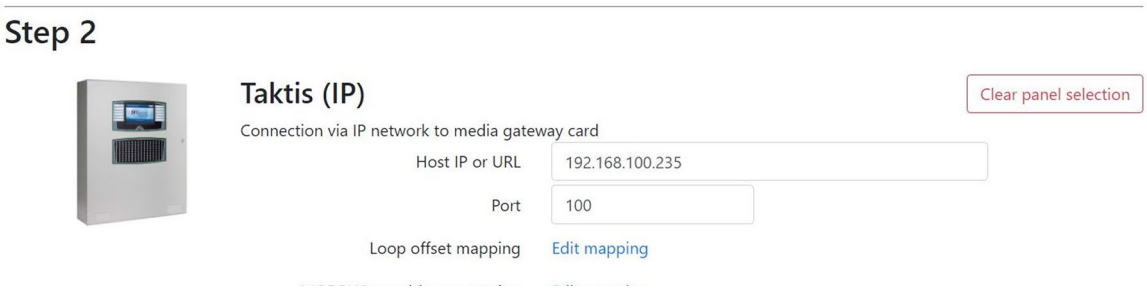


The Vizulinx is provided with a standard number of Modbus addresses as shown, addresses 1001 to 2000 are allocated to loops – 250 addresses per loop.

Enter the panel number and loop number to allocate each block of 250 addresses.

For full details on Modbus mapping and configuration, refer to the Modbus section of this manual.

Taktis (IP) and Taktis UL (IP)
Taktis panels communicate with Vizulinx using IP connectivity therefore when selecting a Taktis IP connection data will be required as shown below:



Host IP or URL
This is the IP address of the Media Gateway Card installed within the Taktis panel connected to the Vizulinx module.

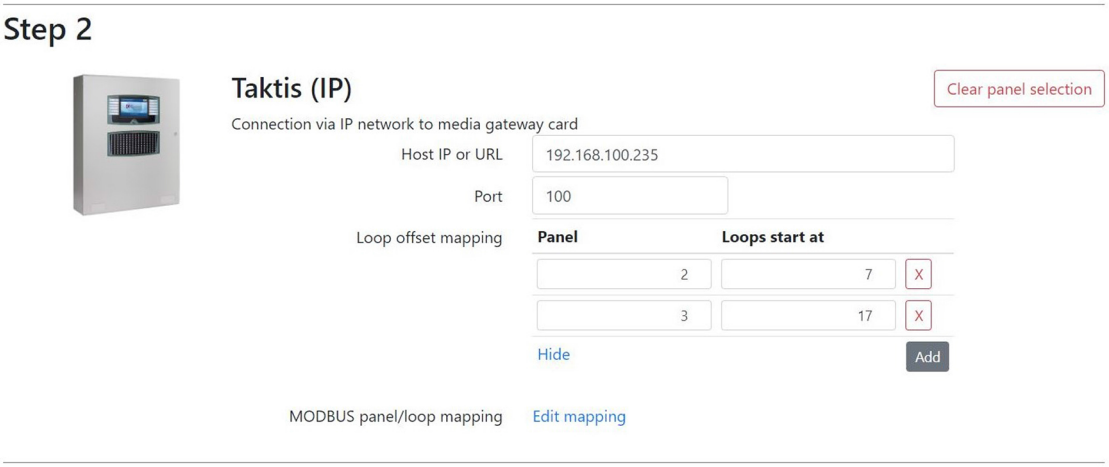
IP address of the Taktis panel can be obtained through its Access level 3 – Edit Configuration menu. To access the information, enter the level 3 password and press the following keys on the display –
User Controls> Configuration> Edit Configuration> Panel Modules> Configure Media Gateway> LAN

Port
This is the Port number associated with the Comms; The Port number should match that in the panels Media Gateway Card settings. Port number of the Taktis panel can be obtained from its Access Level 3 – Edit Configuration menu. To access the settings, enter the Access Level 3 password and press the following keys on the display – User Controls> Configuration> Edit Configuration > Panel Modules> Configure Media Gateway> LAN

Note: To establish connection between Vizulinx and the Taktis panel the IP address of the Vizulinx will need to be configured to be in the same range as the panels IP address, see Network section of this manual.

Loop Offset Mapping
If loop offsets are being used across a Taktis network then it is important to map these in Vizulinx so that Loop data in the messaging matches the network.

Click on Edit mapping and the following screen will appear:



Click on add and enter the panel number and the ID number of the first loop in the panel based on the offset. For each additional panel on the Taktis network click add and enter the data. It is not necessary to enter panel as there will be no offset this will always start with loop.

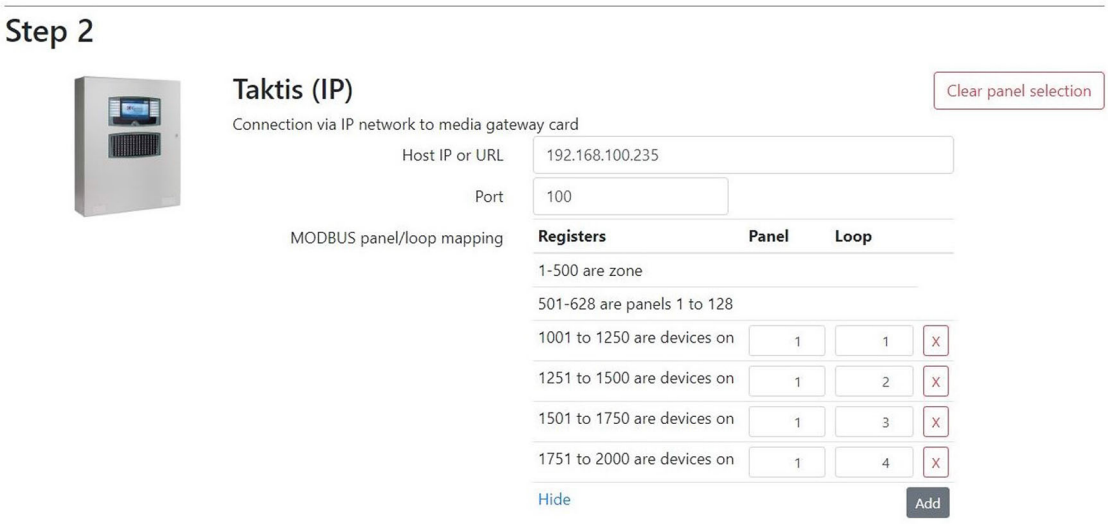
The example in the screen shot above is for a three panel network:

Panel 1- 6 loops Numbered 1-6

Panel 2 –10 loopsNumbered 7-16

Panel 3 – 4 loopsNumber 17 – 20

MODBUS Panel/Loop Mapping
The mapping of Modbus addresses to panel and loops can also be done at this stage, click on Edit mapping and the following window will appear:



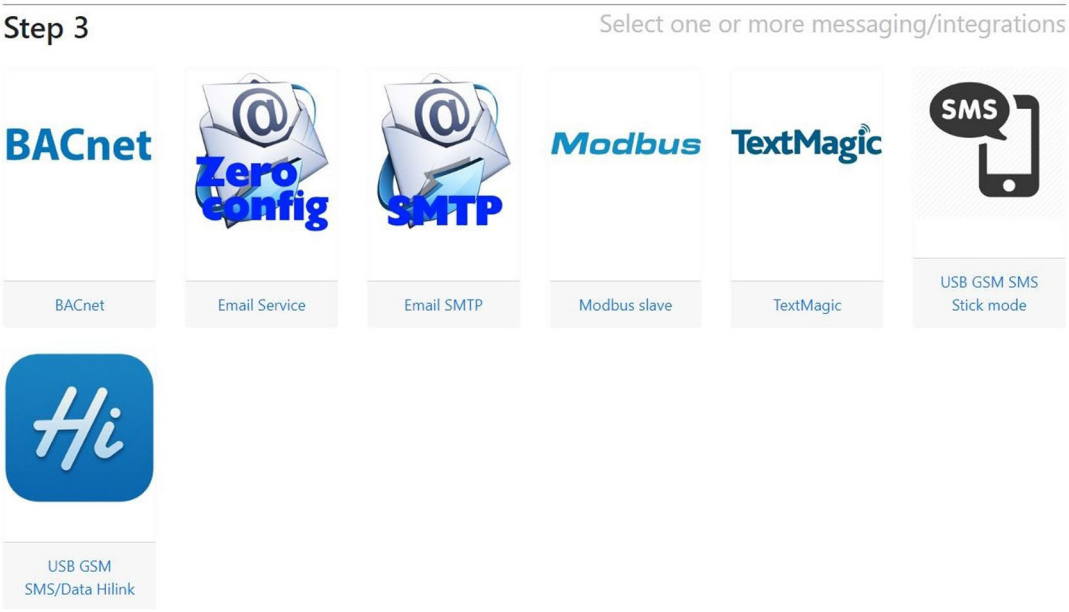
The Vizulinx is provided with a standard number of Modbus addresses as shown, addresses 1001 to 2000 are allocated to loops – 250 addresses per loop.

Enter the panel number and loop number to allocate each block of 250 addresses.

For full details on Modbus mapping and configuration, refer to the Modbus section of this manual.

Step 3 – Messaging/Integrations

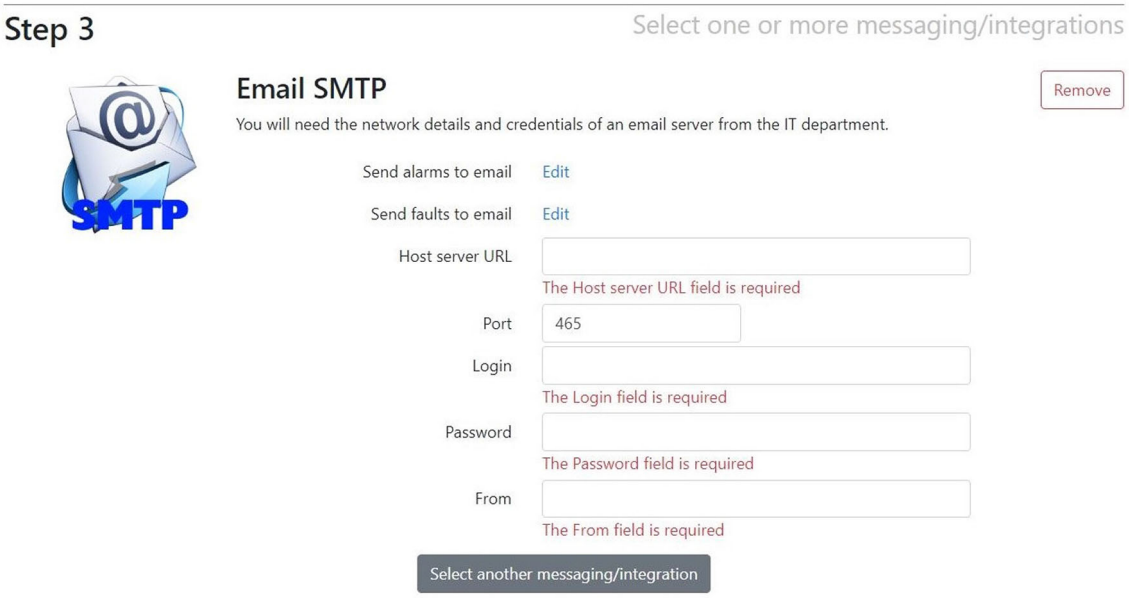
Vizulinx can provide SMS and E-mail messaging using different methods as well as system integration through Modbus or BACnet. This step enables you to select the communication method or integration required for your system.



Note: Multiple messaging and integrations can be set-up simultaneously on the same system however messaging and integration methods which use the same ports cannot be run simultaneously the following options cannot be run simultaneously: Modbus and BACnet, USB GSM SMS stick mode and USB GSM SMS/Data Hi-Link, E-mail SMTP and Zero config e-mail.

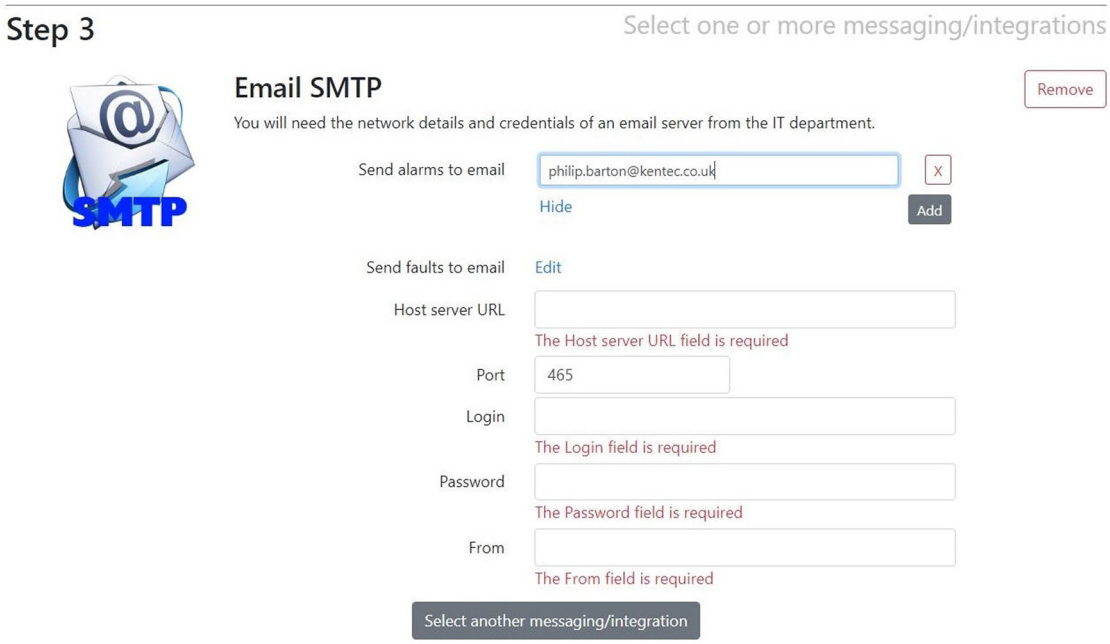
E-mail SMTP

This option enables the Vizulinx unit to send e-mail messages using Simple Mail Transfer Protocol, to enable connection to the SMTP server the following information is required:



Send alarms/faults to e-mail

If an alarm or fault is activated on the Fire Panel, Vizulinx can send an e-mail message via the SMT server containing the alarm/fault information to a programmed e-mail address. To add an e-mail address,click “edit” and then “Add”, enter the e-mail address in the box


Step 3
Select one or more messaging/integrations
Email SMTP
Remove
You will need the network details and credentials of an email server from the IT department.
Send alarms to email
philip.barton@kentec.co.uk
X
Hide
Add
Send faults to email
Edit
Host server URL
The Host server URL field is required
Port
465
Login
The Login field is required
Password
The Password field is required
From
The From field is required
Select another messaging/integration

:

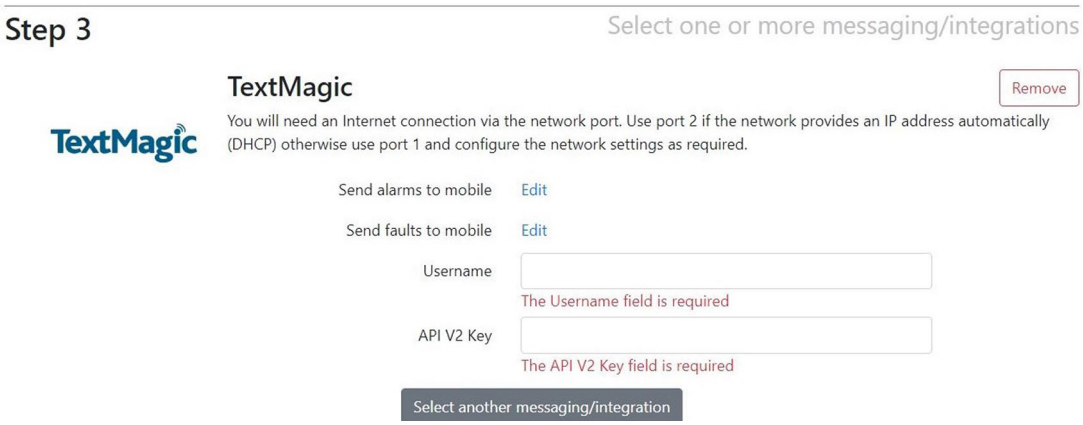
Enter additional e-mail addresses by clicking on “Add”. There are no limits to the number of e-mail addresses that can be entered. Additional e-mail addresses can still be added to this feature after the EZ configuration is complete.

Host server URL
This is the URL of the e-mail server.
Port
The TCP port used to communicate with the server.
Login
Login ID required to access the e-mail server.
Password
Password corresponding to the Login ID required to access the mail server.
From
This is an e-mail address which identifies to the recipient where the e-mail has come from.

Once all information has been entered you can select another communication method by clicking on the “Select another messaging/integration” button. If you do not wish to select another communication/integration method click on the “Save changes” button to complete setup.

TextMagic (SMS)
This option enables the transmission of text messages via SMS (Simple Message Service) using the Text-Magic web service. To use this feature, you will require connection to a LAN network with internet access and a TextMagic account. To set-up a TextMagic account go to www.textmagic.com

To setup the TextMagic (SMS) enter the following information:



Send alarms/faults to mobile
If an alarm or fault is activated on the Fire Panel, Vizulinx can send an SMS message via the TextMagic service containing the alarm/fault information to a programmed mobile number. To add a mobile number, click “edit” and then “Add” enter the mobile number in the box:

Note: Telephone numbers must be entered using the country code e.g. +44.

Enter additional mobile numbers by clicking on “Add”. There are no limits to the number of mobilenumbers that can be entered.

Additional e-mail addresses can still be added to this feature after the EZ configuration is complete.

Username
This is the username used to login to your text magic account.

API V2 Key
This is the alphanumeric code which securely links the Vizulinx to your Text Magic account. This is available from your TextMagic account.

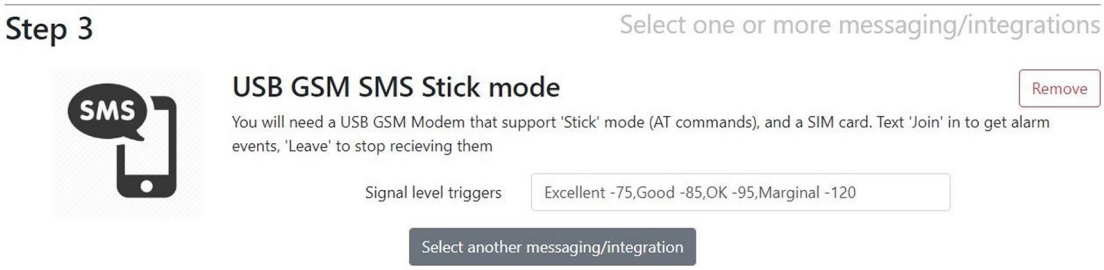
Once all information has been entered you can select another communication method by clicking on the “Select another messaging/integration” button. If you do not wish to select another communication/integration method click on the “Save changes” button to complete setup.

USB GSM SMS Stick mode
This option enables the transmission of SMS text messages from Vizulinx via a USB GSM dongle modem. A suitable dongle modem fitted with a network SIM card installed can be plugged into the USB socket on the Vizulinx module. The following USB dongle modems are recommended for use with the Vizulinx module:

Huawei E1750
Huawei E165G
Huawei E3372S Stick mode

Important note!
It is advised to check the GSM network coverage before installing a Vizulinx with a USB GSM. Kentec will not take any liability for the reliability or performance related to the GSM network.

Only a single piece of information can be entered for this feature:



Signal level triggers
These are the levels associated with the GSM network signal strength and it is recommended that these should be left at default settings of:

Excellent -75, Good -85, OK -95, Marginal -120

Once the EZ config is complete the Vizulinx events screen will display an event for successful connection to the GSM network along with the current signal level. Events will also be shown whenchanges in the signal strength occur.

For details on how to register mobile phone numbers to receive text messages across GSM see the Distribution List section of this manual

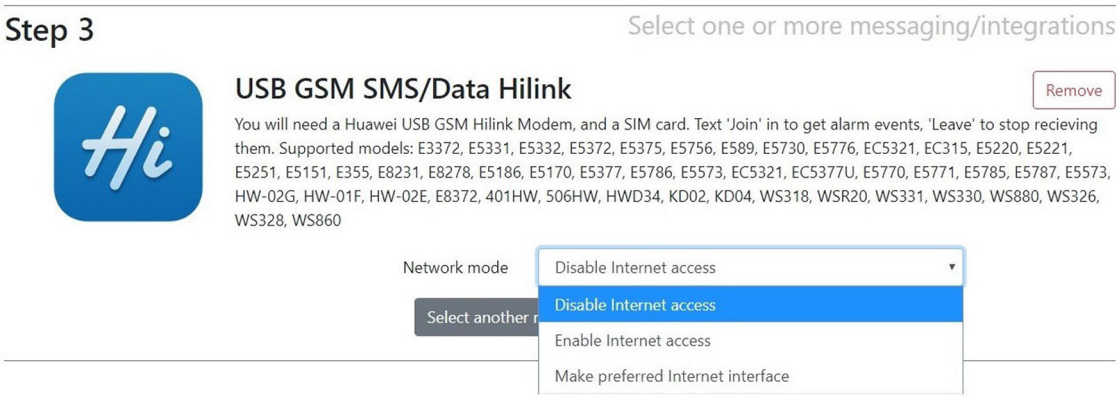
Once all information has been entered you can select another communication method by clicking on the “Select another messaging/integration” button. If you do not wish to select another communication/integration method click on the “Save changes” button to complete setup.

USB GSM SMS/Data Hilink
This option supports the use of USB Wi-Fi dongles. A suitable wi-fi dongle with a network SIM card installed can be plugged into the USB socket on the Vizulinx module, this enables the Vizulinx to connect to the internet via GSM allowing Vizulinx to send SMS text messages and e-mail (using zero config e-mail option) without the need for a LAN connection.

The following USB Wi-Fi dongles are recommended for use with the Vizulinx module:
E3372, E5331, E5332, E5372, E5375, E5756, E589, E5730, E5776, EC5321, EC315, E5220, E5221, E5251, E5151, E355, E8231, E8278, E5186, E5170, E5377, E5786, E5573, EC5321, EC5377U, E5770, E5771, E5785, E5787, E5573, HW-02G, HW-01F, HW-02E, E8372, 401HW, 506HW, HWD34, KD02, KD04, WS318, WSR20, WS331, WS330, WS880, WS326, WS328, WS860

Important note!
It is advised to check the GSM network coverage before installing a Vizulinx with a USB GSM. Kentec will not take any liability for the reliability or performance related to the GSM network.

The network mode can be configured to determine the functionality of the Wi-Fi connectivity:



Disable internet access
This setting will prevent the USB Wi-Fi dongle from connecting to the internet and will operate thedongle in GSM SMS mode only allowing the sending of text messages but no e-mail.

Enable internet access
This setting connects the USB Wi-Fi dongle when there is no other alternative internet connection. It canprovide a level of redundancy for systems which use a LAN internet connection as primary internetaccess i.e. should the LAN connection the wi-fi dongle will takeover connection to the internet.

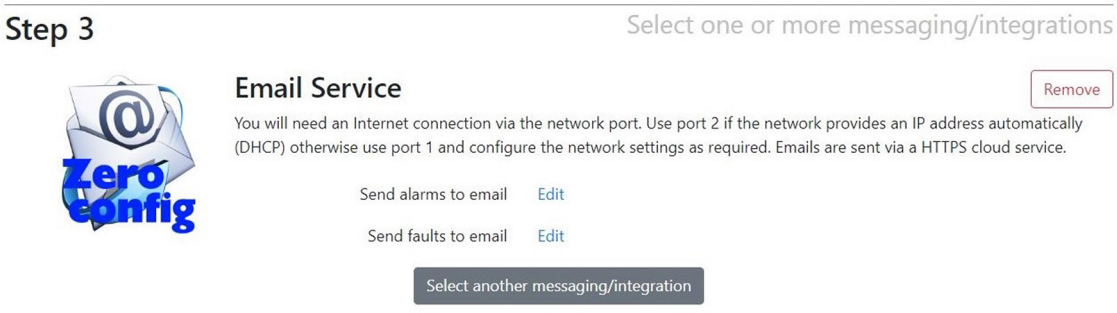
Make preferred internet interface
This setting will make the USB the primary connection to the internet allowing the sending of SMS text and Zero config e-mail messages.

Once all information has been entered you can select another communication method by clicking on the “Select another messaging/integration” button. If you do not wish to select another communication/integration method click on the “Save changes” button to complete setup.

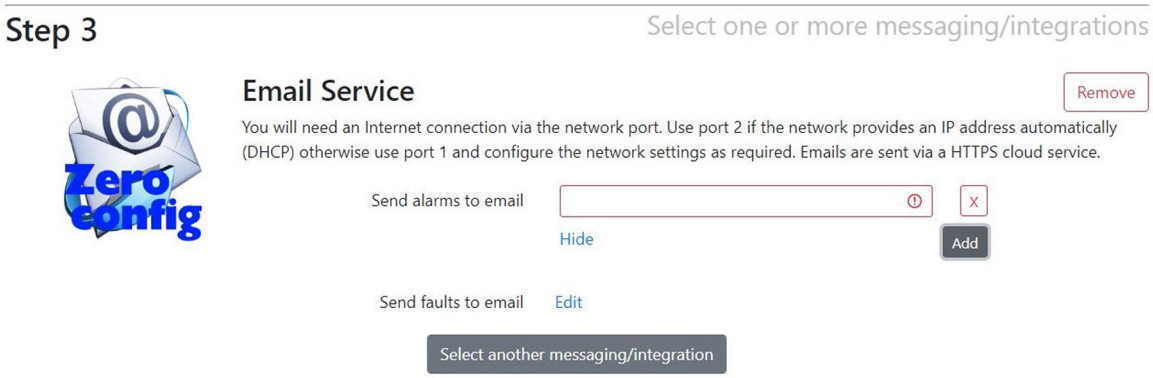
Zero config email service
This option provides an e-mail service without the requirement of setting up a connection to an e-mail server, the feature uses an e-mail server pre-configured specific to Vizulinx. To use this feature the Vizulinx must have a connection to the internet via LAN or USB GSM Wi-Fi dongle.

E-mails will be sent from vizulinx.net it is important to ensure e-mails from this server are not blocked by the receiving e-mail server.

The only setup for this feature is to add any e-mail addresses you wish to send messages to:



Send alarms/faults to e-mail
If an alarm or fault is activated on the Fire Panel, Vizulinx can send an e-mail message via the SMTP server containing the alarm/fault information to a programmed e-mail address. To add an e-mail address, click “edit” and then “Add”, enter the e-mail address in the box:

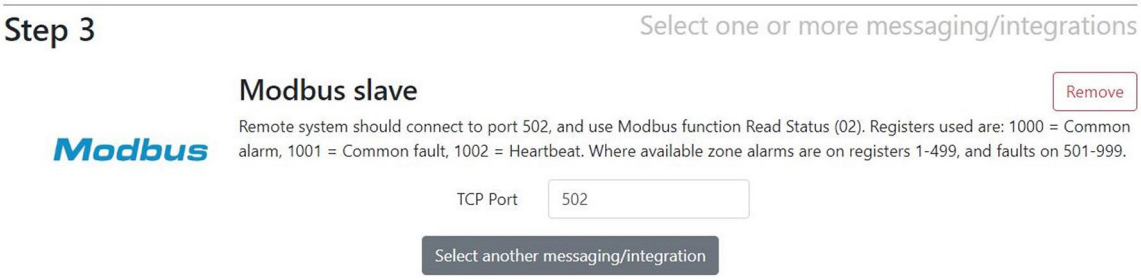


Enter additional e-mail addresses by clicking on “Add”. There are no limits to the number of e-mailaddresses that can be entered.

Additional e-mail addresses can still be added to this feature after the EZ configuration is complete.
Once all information has been entered you can select another communication method by clicking on the “Select another messaging method” button. If you do not wish to select another communication method click on the “Save changes” button.

Modbus slave
This feature enables the transmission of status information from the fire alarm system to Modbus compatible equipment. The Vizulinx is a Modbus slave with a pre-configured address map, full Modbus information is provided in the Modbus section of this manual.

The only setup for this feature is to select the TCP Port used for Modbus communication:



TCP Port
This is the port for communication with Modbus and should be default 502.

Note: When using Syncro with Modbus the Syncro panel must be configured for a **Graphics System** - this is a tick box within the panel settings on the LE2 configuration software. This ensures Modbus registers are cleared automatically when alarm and fault statuses are cleared on the panel.

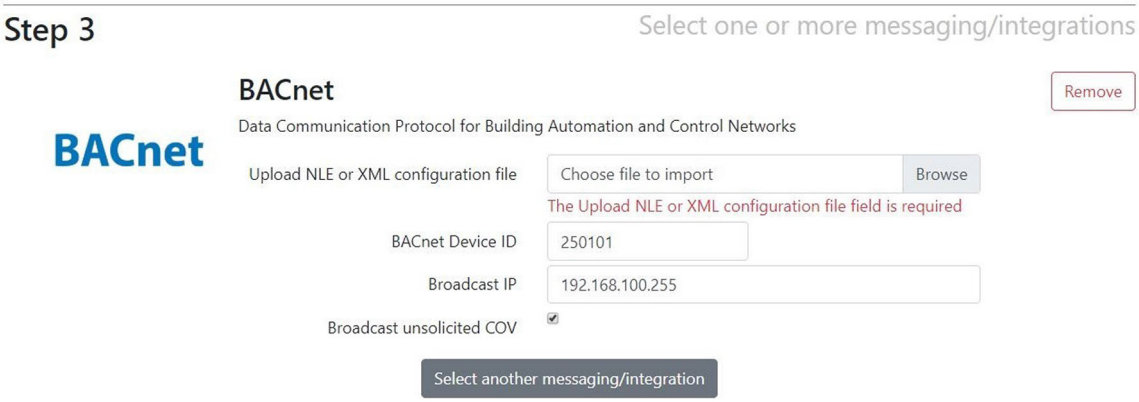
Once all information has been entered you can select another communication method by clicking on the “Select another messaging method” button. If you do not wish to select another communication method click on the “Save changes” button.

BACnet

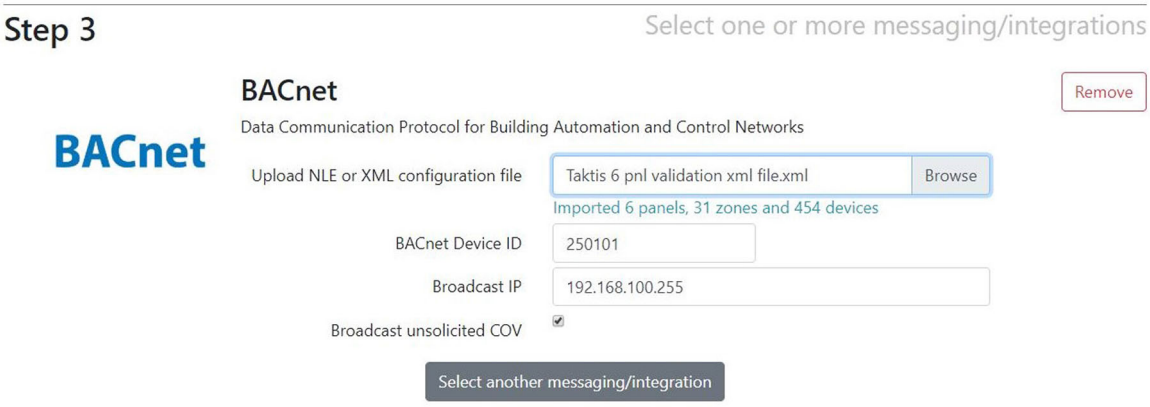
Note: BACnet feature is only available when using a Taktis/Taktis UL control panel

This feature enables the transmission of status information from the fire alarm system to Modbus compatible equipment. Detailed information regarding BACnet is provided in the BACnet section of this manual

To setup the BACnet feature the following information needs to be entered:



Upload NLE or XML configuration file
BACnet requires the panel/network configuration to be able to allocate object ID's this is obtained from LE2 configuration software used with the Kentec range of addressable panels. Click on the browse window and select the required config file. When the config file has loaded the screen will show the number of panels/ nodes, zones and devices as shown below:



The imported values should be checked against the configuration file to ensure they are accurate.

BACnet device ID
This is an ID number used to identify the Vizulinx module on a network. The default ID is 250101 however this can be changed should it conflict with any existing ID's on the BACnet system. To change click on the box and type in the new ID number or use the up and down arrows to scroll.

Broadcast IP
This is the IP address the Vizulinx unit uses to transmit information this should be set as required for the BAC-net system.

Broadcast unsolicited COV
Support is provided for solicited and unsolicited COV (Change of Value) controlled by the tick box as shown in the screenshot above. Solicited (subscribed) COV – Vizulinx must send a subscribe request and wait for a response from the BACnet server before it can send its changes of value. Unsolicited or Unsunbscribed COV means the Vizulinx can send all changes of value without the need for a subscribe request to the BACnet server. Tick or un-tick the box as required.

Note: It is possible to upload an updated panel/network config file at any time.

Once all information has been entered you can select another communication method by clicking on the “Select another messaging method” button. If you do not wish to select another communication method click on the “Save changes” button.

Completion of EZ configuration
Once EZ configuration is complete i.e. changes have been saved, Vizulinx will return you to the main “Vizulinx” events screen. The EZ configuration is a starting setup and features can be modified, added to or deleted as required using Modules. The Modules and their configuration are addressed in the modules section of this manual.

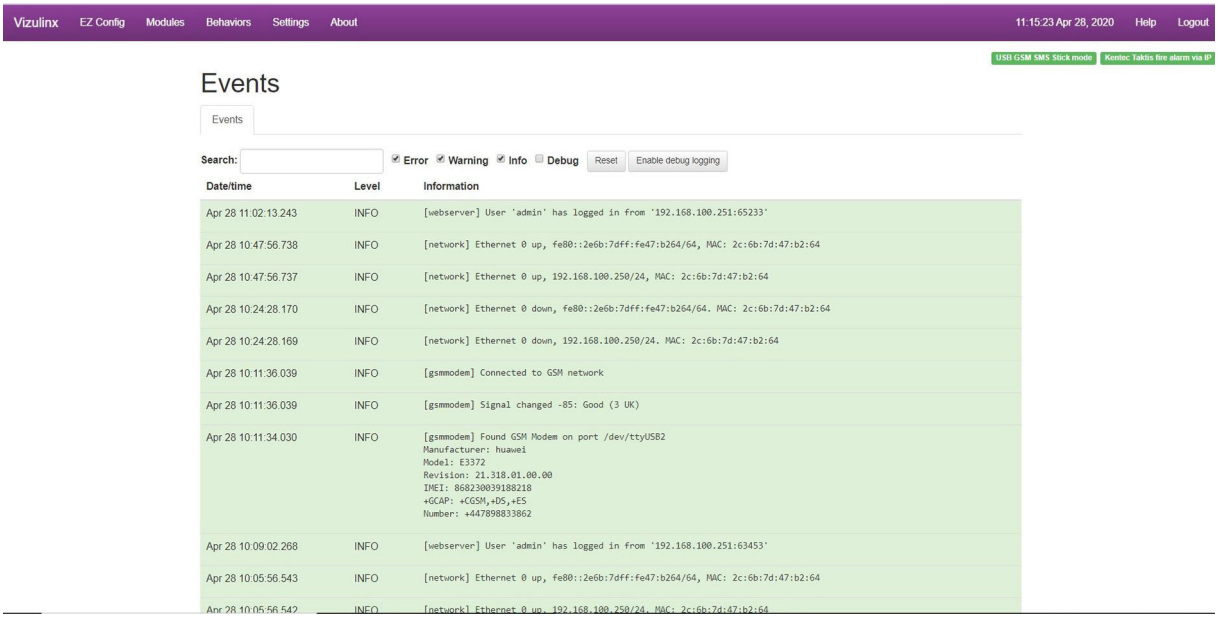
Modifications to EZ configuration
On the Vizulinx main events screen there is a header option at the top of the screen which says “EZ configuration” clicking on this option opens a screen which allows you to easily modify some of the basic EZ configuration settings i.e. adding additional e-mail addresses, phone numbers etc.

This allows simple modifications to the configuration to be made quickly and easily.

Vizulinx (Events screen)

The Vizulinx events screen is the main screen and it displays information on system status and active events. It will also indicate errors in functionality that can assist with diagnostics.

The Vizulinx screen layout is shown below with descriptions for the important highlighted sections:

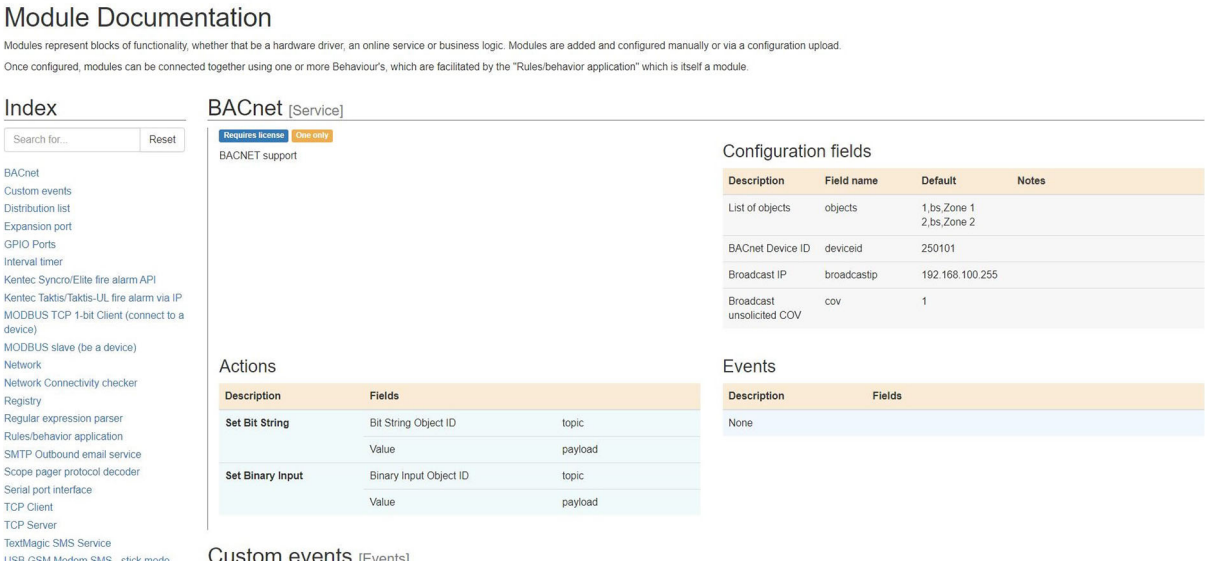


Time and date

On first connection to Vizulinx the time and date will be taken from the browser and will appear in red. Hold the mouse cursor over the time and date and a message will appear “System date/time – Click to set to browser time”, click and the time and date will be set and turns white as confirmation. Clicking on the time and date at anytime will set it to the browser time and date.

Help

Opens the help menu in a new browser tab. The help menu provides guidance on all and information on all of the features and settings of Vizulinx as shown below:



Logout

Logs the user out of the Vizulinx web browser. Users should logout before disconnecting PC or laptop

Connection Status

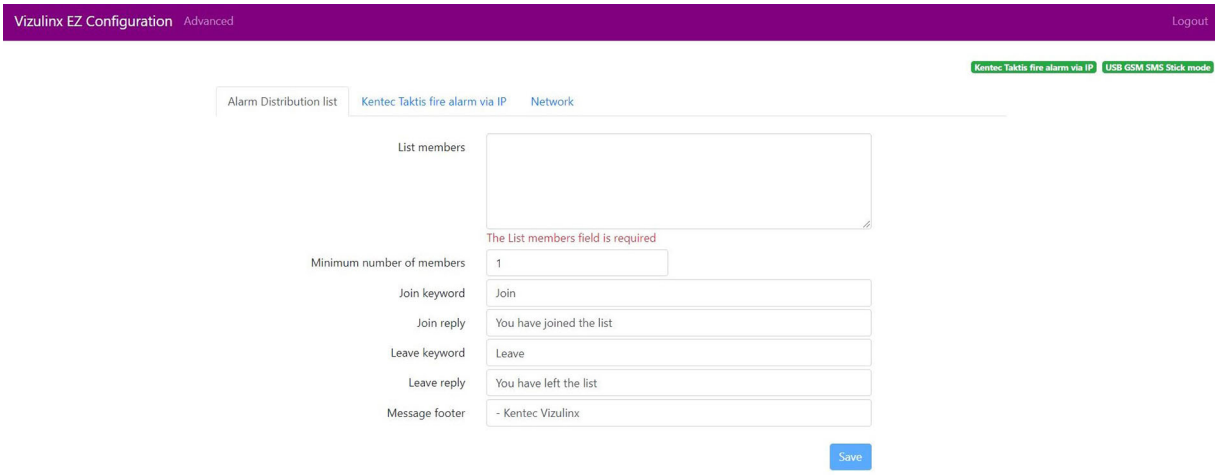
The status of various connections is shown by a coloured icon in the top right of the screen as shown above. Connections to the panel and GSM network will be displayed.If the Vizulinx has been configured to monitor connection to the internet (see Network Connectivity Checker in Modules section) the status of this connection will also be displayed. If the icon is green then the connection status is good, if the icon is red there is no connection.

Vizulinx

Clicking on the Vizulinx option on the menu header bar will return the display to the Vizulinx events screen.

EZ config

The EZ config option allows access to modify settings that were configured during the EZ configuration process, such as adding more e-mail addresses, mobile numbers etc. The options visible in this window will depend on the options selected during the EZ configuration process. An example of the EZ config window is shown below, a separate tab is provided for each of the configured features.



For details on the configuration settings view the relevant modules section of this manual.

To return to the main Vizulinx events screen click on “Advanced” on the menu header bar.

Modules

Features and functions within the Vizulinx are created using modules. A module will configure the necessary system settings within Vizulinx to run the feature or function i.e. selection of the Modbus module will setup the necessary system settings for the Modbus interface. It is recommended that the Vizulinx should initially be configured using the EZ configuration process which will automatically install and configure the required modules based on the selections made. The modules screen allows the user to customise the modules installed, add additional modules or remove modules as required. Details on the modules and the configuration settings are provided in the modules section of this manual.

Behaviours

The behaviours screen allows the user to customise the cause and effect associatedwith their system i.e. A fire condition from the panel will send an e-mail to a designated e-mail address. Selections made during the EZ configuration process will automatically have default behaviours created based on the selections made. Through this screen users can modify/customise the default behaviours, add new custom behaviours and delete existing behaviours as required. Details on configuring behaviours can be found in the behaviours section of the manual.

Settings

This screen provides access to system settings relating to licensing, diagnostics etc. For full details on the settings screen see the settings section of this manual.

Events
The central panel of the Vizulinx main screen displays events that occur on the system. Any event that occurs on the Vizulinx system is shown here typical events are:

- Events received from fire alarm panel/network i.e. fire and fault indications
- Confirmation of messages sent i.e. e-mails and texts
- Confirmation of network connections
- Module events – start/creating of modules
- Detailed error messages
- BACnet messages out
- Modbus messages out

Filtering can be carried out regards what events are shown this is controlled by the tick boxes at the top of the events panel i.e. Errors, Warnings and Info.

Debug
A diagnostic tool that allows raw debug data to be captured as shown in the screen-shot below, this is important diagnostic that can be interpreted by the Vizulinx developer. The debug option is disabled as default as it will cause the event screen to fill up very quickly. If users experience an issue that they cannot resolve, they can enable the debug function and repeat the steps that lead to the issue so the debug info can be collected. The debug option can be disabled once the information is collected.

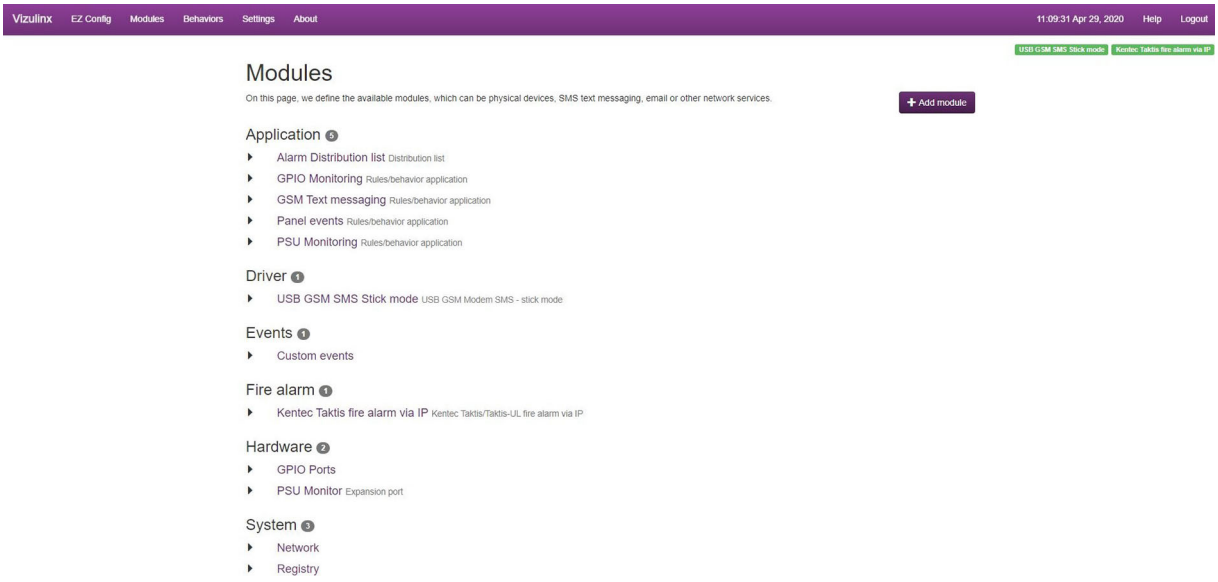
The event log and the debug information is saved in Vizulinx and can be downloaded as part of a diagnostic report, see the settings section of this manual for details on how to download a diagnostic report.

Section 5
Modules

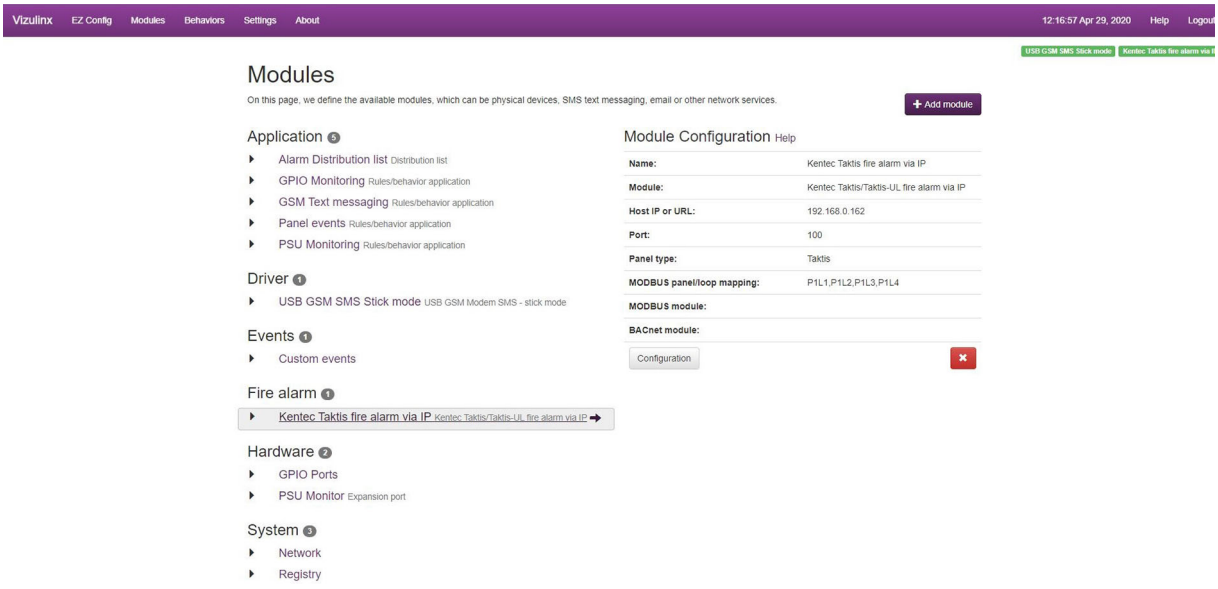
Recommendations are to configure the Vizulinx using the EZ configuration which will automatically install and setup the relevant modules as well as create default configurations. It is possible to add extra modules, remove modules and configure selected modules at any time through the “Modules” screen.

This section details the functions of each available module and their configuration settings. The modules screen is accessed by clicking on the "Modules" tab in the menu header bar on the Vizulinx main screen.

Modules are listed under category groups and can be a physical device such as a Control Panel, a service such as SMS text messaging or an Application such as a rule or behaviour. The screen shot shows an example of the modules screen for a Taktis system configured for SMS via USB GSM stick mode.

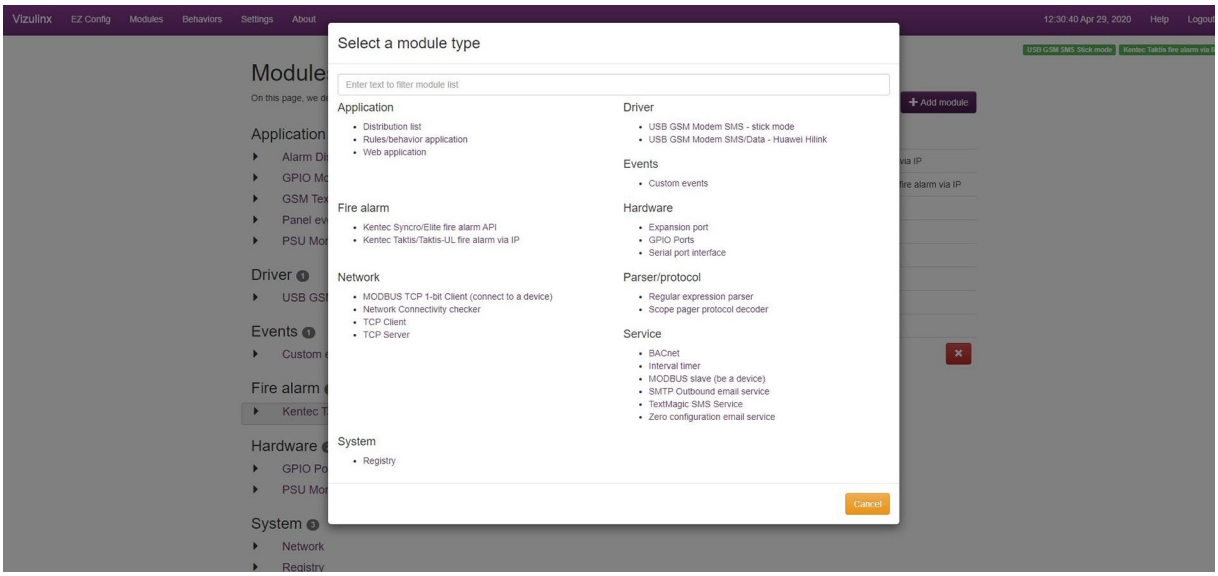


Clicking the relevant module will show the current configuration in the top right corner of the “Modules” screen along with a “Configuration” button which opens the configuration screen for the module.



Modules can be removed by clicking on the red cross in the configuration settings area.

Modules can be added by clicking on the “Add module” button which opens another showing the available modules:



Available modules are sorted into groups to make them easy to identify this section details the modules associated with each group and the configuration settings.

Application

Modules in this group mainly relate to the control of rules/behaviours to provide our cause and effect actions associated with various options GPIO, Panel events, e-mail and SMS messaging. Each module has configuration options associated with them:

E-mail - Application that controls the activation of e-mail messaging associated with the configured rules/behaviours.

GPIO Monitoring - Application that controls the activation of rules and behaviours associated with the monitoring of GPIO inputs.

GSM Text messaging - Application that controls the activation text messages via GSM associated with the configured rules/behaviours.

Modbus PSU - Application that controls the activation of Modbus signalling relating to monitoring of the Vizulinx used to monitor the PSU. Vizulinx can monitor its power supply using a dedicated General Purpose Input.

Modbus GPIO - Application that controls activation of Modbus signalling relating to the GPIO (General Purpose Inputs & Outputs). Vizulinx has 16 GPIO’s that can be used to monitor or activate other equipment.

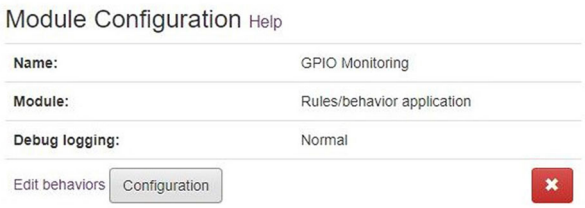
Panel events - Application that controls the activation of rules/behaviours associated with panel events.

PSU Monitoring - Application that controls the activation of rules/behaviours associated with PSU monitoring. Vizulinx can monitor its power supply using a dedicated General Purpose Input.

SMS - Application that controls the activation text messages via SMS associated with the configured rules/behaviours.

Rules/Behaviours - Application that controls the activations of rules and behaviours which are not specifically allocated to any of the Applications i.e. e-mail, SMS etc.

The Applications listed previously are embedded App's that control the linking of features with rules/behaviours, limited config is available with these options. The configuration options with all the above Application modules are the same, click on any of the modules and the "Module configuration" will Appear in the top right corner of the screen the same three config settings will be listed for the Applications above – Name, Module, Debug logging:



Name: Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the "Configuration" button and typing a new name in the box.

Module: This is a description of the module type and cannot be changed.

Debug logging: As detailed in the Vizulinx events screen section of this manual, the Vizulinx can log debugging info relating to events etc. The debug logging in this configuration can filter what conditions are logged when debugging. Click on the "Configuration" button to open the config window, there is a drop down list associated with the "Debug logging" box allowing section of "Normal", "Filters", "Rules" and "Rules & Filters

Normal - Logs debugging data for the App only

Filters - Logs debugging data associated with filters configured for any behaviours linked to the App.

Rules - Logs debugging data associated with any behaviours relating to the App.

Rules & Filters - Logs debugging data associated with any behaviours and filters relating to the App.

The "Module configuration section of the screen also has a link to the help section relating to that function as well as a link that takes the user to the behaviours screen.

There are two other available Application modules "Distribution list" and "Web Application" these have multiple configuration options available as detailed in this next section:

Distribution List

The distribution list Application is associated with the text messaging functions. A distribution list is the log of mobile numbers to send text messages to when an event occurs on the panel. Behaviours can be created to send messages to the numbers in a distribution list when certain events occur i.e. alarms, faults etc.

When any of the text messaging functions (USB GSM stick mode, USB GSM HiLink or TextMagic) are selected in the EZ configuration a distribution list module will automatically be created but will have no mobile numbers listed.

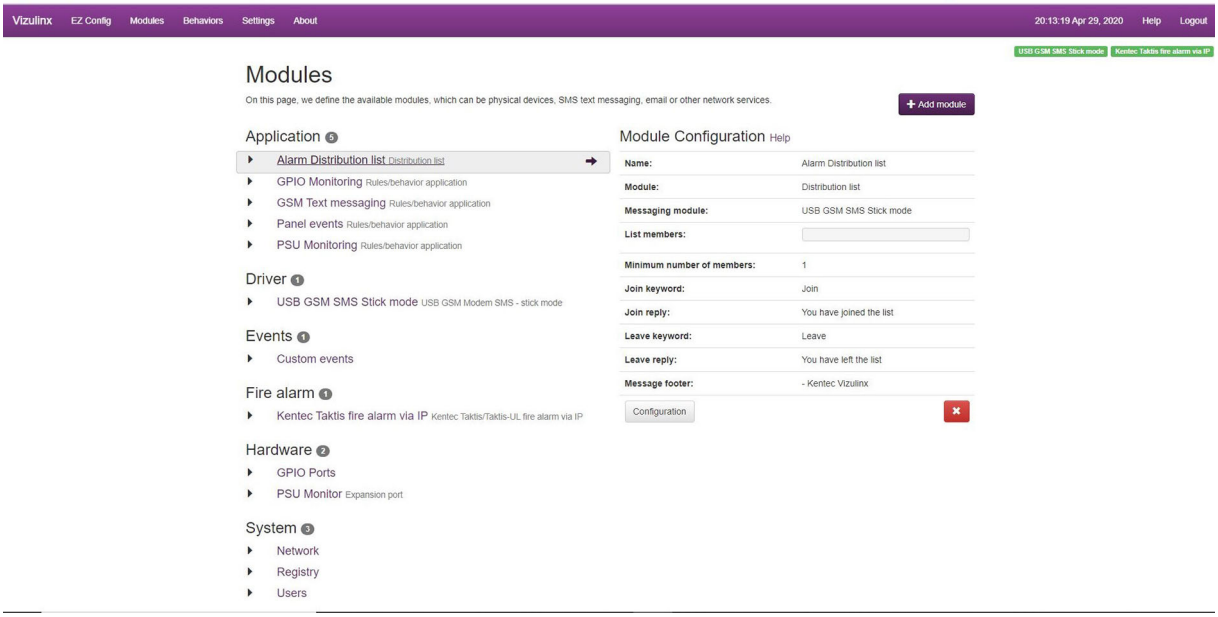
Entering phone numbers to a distribution list can be done in two ways manually or automatic logging.

Note: Using the TextMagic feature mobile numbers can only be entered manually.

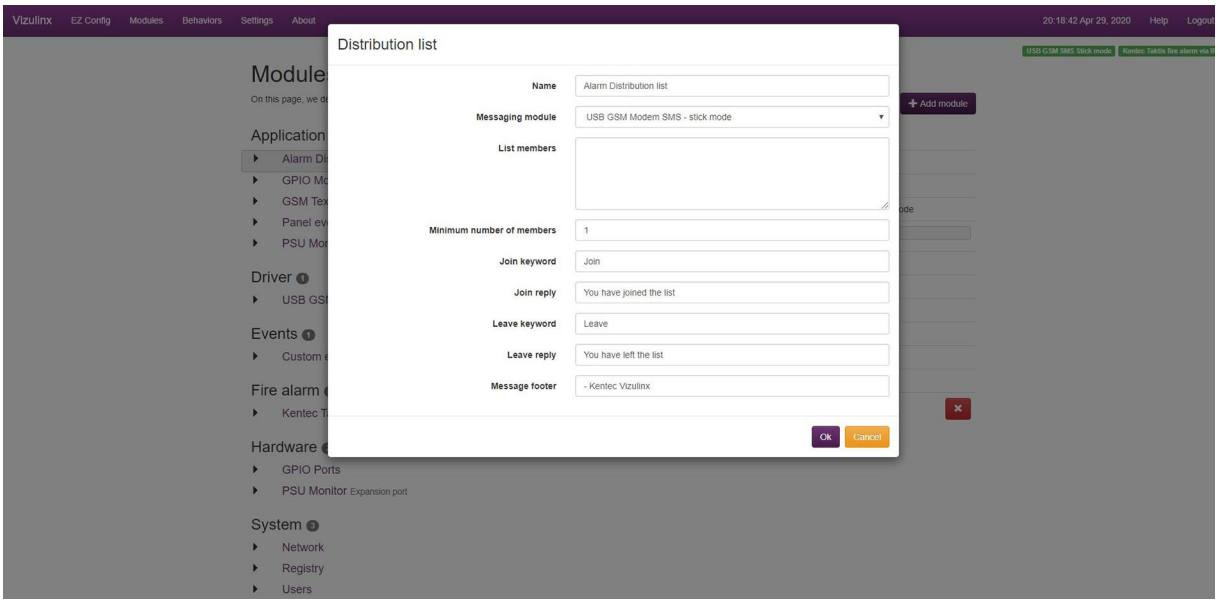
There are two methods used to add phone numbers to a distribution list. If using "TextMagic" as your SMS service phone numbers will need to be added manually. If using either of the USB dongles to provide the SMS service phone numbers can be logged and un-logged from lists automatically by texting unique join and leave passwords to the SIM card number of the USB dongle, see below for further details.

Multiple distribution lists can be created, each list would require its own unique “Name” and unique “Join” and “Leave” keywords, see below for further details:

Click on the distribution list module in the list and the module configuration data will Appear in the top right corner of the modules screen, as shown below:



The module shows the current configuration for this module, to modify the configuration settings shown click on the “Configuration” button to open the Distribution list configuration window.



The available configuration settings are as follows:

Name - This is user changeable text to describe the distribution list, default value is Alarm distribution list which is based on the default behaviours set based on the EZ configuration. Multiple distribution list modules can be added to the Vizulinx to suit different criteria, each list will require a different and can be configured with differentmobile numbers.

Example:

Service team distribution list – All mobile numbers on the list will be the staff who are responsible for service and maintenance only. Could be setup to receive alarm and fault notifications, see behaviours section of the manual.

Management list - All mobile numbers on the list will be site/departmental managers. Could be setup to receive alarm messages only, see behaviours section of the manual.

There is no limit to the number of different distribution list modules that can be created on the Vizulinx, however it is important each new distribution list has its own unique name.

Messaging module -This is the method used to send text messages to the numbers on this distribution list, again the default setting will be based on the EZ configuration selections. It is possible to combine either of the USB text messaging solutions with the TextMagic solution to provide some redundancy. If more than one text messaging option has been configured you can select which option to use with the distribution list by clicking on andselecting from the drop down list.

List members - This window show the mobile numbers which are currently logged onto this distribution list.

Note: If the TextMagic option was selected during EZ configuration any mobile numbers that were entered at that stage will be displayed in the members list.

To manually add numbers to the list click on the members list box and type additional numbers, numbers must be entered with the country code i.e. +44 etc. After entering each number press enter before entering a new number.

If using the USB stick or HiLink modems for text messaging they provide a unique feature which allows users to log their own mobile numbers on or off distribution lists as required using join and leave keywords.

Minimum no. of members - This shows the minimum number of mobile numbers that must be entered for the list, at least 1 number is required.

Join keyword - As stated above when using either of the USB modems for text messaging they provide the unique feature of automatic logging of mobile numbers to the distribution lists.

The join keyword is a passcode that can be sent by text to the registered number of the SIM card used in the USB modem (stick or HiLink), the mobile number used to send the join keyword will be automatically added to thedistribution list.

This allows users to register their mobile numbers on the distribution list without and third-party intervention.

The default join keyword “Join” should be changed to a unique keyword for added security. Click on the join keyword box and type in your unique join keyword.

Important! Where multiple distribution lists have been set-up each list must have a different join keyword.

Join reply - Users who have texted the join keyword to the Vizulinx module will receive a confirmation text response, a join reply. The default join reply is shown in the screenshot this can be customised by clicking on the join reply box and typing in your required reply message. This message will be received by the users registered mobile number as confirmation they have joined the list and will be receiving text messages from the Vizulinx system.

Leave keyword - As well as being able to log their mobile number onto the distribution list users can also automatically remove their mobile number form the list by texting the leave keyword to the same mobile number used to join the list. This will remove their mobile number from the list and therefore they will receive no text messages.

The default leave keyword “Leave” should be changed to a unique keyword for added security. Click on the leave keyword box and type in your unique leave keyword.

Important! Where multiple distribution lists have been set-up each list must have adifferent join keyword.

Leave reply - Users who have texted the leave keyword to the Vizulinx module will receive a confirmation text response, a leave reply. The default leave reply is shown in the screenshot this can be customised by clicking on the leave reply box and typing in your required reply message. This message will be received by the users registered mobile number as confirmation they have left the list and will no longer be receiving text messages from the Vizulinx system.

Message footer -This is the text that appears at the end of the text message. This can be customised by clicking on the box and typing the required message footer.

Web Application -This is a module which allows the Vizulinx to link to custom Apps. There are two Apps currently available from Kentec:

Modbus viewer - This App can be used to test the Modbus configuration.The App reads the Modbus data sent by Vizulinx and converts it back into readable data enabling the user to check Modbus is sending the correct data.

BACnet object ID calculator - This App is a handy calculator tool for checking BACnet object IDs. The calculator works in two ways – it can be used to calculate the panel, zone or device data associated with an object ID or it can calculate an object ID by entering the

For further information and availability of web Applications contact Kentec.

Driver

This group of modules contains driver modules for hardware that is connected to the Vizulinx currently this contains two drivers for USB modem support.

Important! Vizulinx is only provided with one USB port therefore will only support one USB modem, the relevant USB modem type should be selected as required.

USB GSM SMS Stick Mode

This driver supports the use of the USB stick mode modem with the Vizulinx. Configuration settings available for this module are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Signal level triggers - These levels are set to monitor the signal strength of the GSM network values can be set during the EZ configuration for USB GSM SMS stick mode option.

Changes in signal strength will be displayed on the Vizulinx events screen.

The default values are the optimum signal level values for mobile networks and the recommendation is to not change them.

Default: Excellent -75,Good -85,OK -95,Marginal -120

USB GSM Modem SMS/DATA – Huawei HiLink

This driver supports the connection of Huawei HiLink modems to provide SMS text and e-mail messaging using the GSM network. Configuration settings available for this module are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Network mode -This is the mode in which the modem will operate and can be set during the EZ Configuration for USB GSM modem HiLink option.

Disable internet access - This setting will prevent the USB Wi-Fi dongle from connecting to the internet and will operate the dongle in GSM SMS mode only allowing the sending of text messages but no e-mail.

Enable internet access - This setting connects the USB Wi-Fi dongle when there is no other alternative internet connection. It can provide a level of redundancy for systems which use a LAN internet connection as primary internet access i.e. should the LAN connection the Wi-Fi dongle will take over connection to the internet.

Make preferred internet interface - This setting will make the USB the primary connection to the internet allowing the sending of SMS text and Zero config e-mail messages.

Events

These modules control how events are handled when they are received by Vizulinx. Only one module is available in this section which is “Custom Events”.

Custom Events

Custom events can be used to funnel events from multiple modules into a common custom event that can be used as a trigger into other modules. E.g. All fault events received from the fire control panel can be created into one custom event labelled. This makes configuring of behaviours simpler and quicker by reducing the number of behaviours required for common event types.

Configuration settings for this module are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button andtyping a new name in the box.

Events - The list of custom events are created here, as default there will be custom events created for alarms and faults. The custom event is entered with the event type followed by the fields that are included with the event i.e. payload, topic.

Custom events for alarm and fault events will be created as default following the EZ configuration setup.

Fire Alarm Modules

These modules control the interface between the selected addressable fire alarm control panel and Vizulinx. Modules are provided for support Syncro and Elite type panels as well as Taktis and Taktis UL panel variants.

Note: Modules will work with branded variants of all Syncro and Taktis control panels

Kentec Syncro/Elite Fire Alarm API

This module supports the serial connection between a Syncro/Elite variant panel and Vizulinx. Available configuration settings are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Data source - Not configurable. Data source between Syncro and Elite variant panels are RS232 only.

Panel type - This allows the user to select from a panel type which is compatible with this module from the drop-down list. This will be automatically configured when the panel type is selected during EZ configuration but can be changed through this screen.

Modbus panel / loop mapping - If not using the Modbus feature this can be ignored. If using the Modbus feature this configures the mapping of Modbus addresses to panels and loops. See the Modbus section of this manual for details on Modbus mapping.

Modbus module - Not configurable. Vizulinx can only be a Modbus slave device.

Kentec Taktis/Taktis UL Fire Alarm via IP

This module supports the serial connection between a Syncro/Elite variant panel and Vizulinx. Available configuration settings are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Host IP or URL - This is the IP address of the fire panel the Vizulinx is connecting with. This information will be configured during the EZ configuration setup but can be changed through this screen.

Port - This is the port used for communication between Vizulinx and the fire panel. This information will be configured during the EZ configuration setup but can be change through this screen.

Panel type - This allows the user to select from a panel type which is compatible with this module from the drop-down list. This will be automatically configured when the panel type is selected during EZ configuration but can be changed through this screen.

Loop offset mapping - If loop offset is used on a Taktis then it is necessary to map this in Vizulinx, if mapping has been done during the EZ configuration it will be shown here. If you wish to modify the loop offsets or add additional panels then it can be done here. Loop offset mapping will be shown as the Panel number and starting loop number of each panel – example: P2L8 is panel 2 with a starting loop number of 8. Enter each panel on the network with it starting loop number based on the offset i.e. P2L8, P3L15, P4L32.

Note: it is not necessary to include panel 1 in the mapping as this generally will always start at loop 1.

Modbus panel / loop mapping - If not using the Modbus feature this can be ignored. If using the Modbus feature this configures the mapping of Modbus addresses to panels and loops. See the Modbus section of this manual for details on Modbus mapping.

Modbus module - Not configurable.Vizulinx can only be a Modbus slave device.

BACnet module - If not using the BACnet feature this setting can be ignored. If using the BACnet feature this will need to be set as BACnet. For details on BACnet configuration see BACnet section of this manual.

Hardware Module

Enables configuration of the various inputs that are used for monitoring external equipment connected to Vizulinx i.e. conventional panels, third party equipment, power supplies etc.

GPIO Ports

16 GPIO (General Purpose Inputs & Outputs) are provided on the Vizulinx module which can be configured to monitor an output from any other equipment. The inputs are as default high and are pulled low to activate, behaviours can be created to activate when the pin changes state from high to low or low to high as required. If a conventional fire panel was selected in the quick start wizard i.e. Sigma CP, Sigma XT etc. these pins will be pre-configured to specific panel functions with pre-configured ID names. Port A supports GPIO pins 1-8 and Port B supports GPIO pins 9-16. The configuration options available with this module are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Port A mode - This selects whether the port A pins are inputs or outputs. Port A supports pins 1 to 8

Port B mode - This selects whether the port B pins are inputs or outputs. Port A support pins 9 to 16

Port names - This is the list of ID names allocated to the GPIO pins these are user configurable. The list correlates to the pin number sequence, wherever the pin ID Appears on the list this is the pin number it is linked to i.e. the 1st pin ID on the list relates to GPIO pin 1, the 2nd pin ID on the list relates to GPIO pin 2 etc.

Debounce -This specifies how long a GPIO pin must be active for before the relative action is instigated. Debounce reduces the possibility of false activations. Default:150ms

Expansion Port

The Vizulinx has two additional 14 pin IDC connectors Expansion port A (Marked “PSU fault”) and Expansion port B these are mainly for future expansion. However both ports have two pins that are available to be used, expansion port A uses pin 1 as default to monitor the fault output on the power supply unit used to power the Vizulinx. Activation of the pin will trigger a power supply fault event. Configuration options for the Expansion ports are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Port - Select which expansion port you want to configure.

GPIO 1 Mode - Selects whether GPIO pin 1 on the expansion port is an input or an output.

GPIO 2 Mode - Selects whether GPIO pin 2 on the expansion port is an input or an output.

Port names - Names Applied to the two GPIO pins 1 & 2, these are default “Input 1” and “Input 2”. These are user configurable and can be changed to describe the operation of the input/output.

PSU Monitor

This module is created as default following the EZ configuration and pre-configures pin 1 on expansion port A (PSU Fault) as a power supply fault input which can be used to monitor the fault output of an external PSU. Configuration option for this option are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Port - Select which expansion port you want to configure.

GPIO 1 Mode - Selects whether GPIO pin 1 on the expansion port is an input or an output.

GPIO 2 Mode - Selects whether GPIO pin 2 on the expansion port is an input or an output.

Port names - Names Applied to the two GPIO pins 1 & 2, these are default “Input 1” and “Input 2”. These are user configurable and can be changed to describe the operation of the input/output.

Serial Port Interface

This module provides support for a serial port interface, it will be configured as default to RS232 if a Syncro or Elite style panel is selected at EZ configuration stage. Configuration options for the module are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button andtyping a new name in the box.

Serial port - Selects the port you wish to use as a serial port interface.

Settings - This sets communication parameters for the port.

System Module

This module is created as default and covers information relating to the Vizulinx system.

Network

This configures the settings associated with the two Ethernet ports 0 and 1 used for networking and IP communications with other equipment such as a BMS.

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

The two Ethernet inputs have identical configuration options, Ethernet 0 is configured as a fixed address and Ethernet 1 is configured as DHCP as default. Configuration settings for the Ethernet ports are as follows

Ethernet ‘n’ - Configures the Ethernet output as a fixed IP address or DHCP. Fixed address allows manual configuration of the Ethernet port settings. DHCP enables the Vizulinx to automatically detect the connected network and allocate an available IP address.

The following settings are only required if the Ethernet port is configured as fixed IP address.

IP Address - Enter a suitable IP address to match the network or control panel the Vizulinx is connected to. Ethernet 0 has a default IP of 192.168.100.250.

Netmask - The network or panel connected will have a subnet mask address which must beentered in this box. Ethernet 0 default subnet mask 255.255.255.0.

Gateway IP - IP address of the gateway which controls the network or panel connection.

DNS Nameservers - IP address associated with the network or panel must be entered here.

Registry

The registry stores commonly used values that can be referred to when creating events, messages etc. Configuration options available for this feature are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Values - The module can be configured with values that are set when the system powers on by entering “=” lines i.e.“site=Building2”.

Whenever a value changes the module triggers a “Registry item updated” event.

This module also automatically monitors all online and offline events and sets values using the key “registry online:”which is replaced with the module’s unique identity. Registry values are available in templates using the format{{registry}} e.g. where the value “site=building 2” exists in the registry a message template containing {{Registry site}} will automatically replace this with “building 2” in the message.

When the site name is entered during the EZ configuration it will automatically Appear in this box.

Users

This module controls the user and login password function. There are no user configurable settings available other than being able to customise the name.

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Service Modules

These modules control the various services that are required to provide the Vizulinx feature i.e. E-mail, messaging, SMS messaging, Modbus, BACnet etc.

These modules will be auto configured when Vizulinx is setup using EZ configuration. This screen allows access to modify the modules set-up and see more information.

Interval Timer

This provides the ability to create a timed event (tick) from Vizulinx. A behaviour can be created which activates every time this tick occurs check communications or test the signal to other equipment connected to Vizulinx i.e. Modbus heartbeat. This screen enables us to amend the settings associated with the module. The configuration settings for this feature are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the “Configuration” button and typing a new name in the box.

Send tick on power up - This enables the Vizulinx to send its first tick on power up

Interval between ticks (secs) - This is how frequently the Vizulinx will continue to send ticks in seconds. An example would be every 10 secs the tick occurs which triggers a behaviour which subsequently activates a Modbus address, this creates a heartbeat signal to monitor the Modbus connection.

SMTP Outbound Mail

This is the service module which controls the SMTP outbound mail feature of Vizulinx. If this messaging option is selected during EZ configuration this module settings will be automatically configured. This screen enables us to amend the settings associated with the module. Configuration settings available are for this module are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the Configuration" button and typing a new name in the box.

Host server URL - This is the URL of the e-mail server.

Port - The TCP port used to communicate with the server.

Login - Login ID required to access the e-mail server.

Password - Password corresponding to the Login ID required to access the mail server.

From - This is an e-mail address which identifies to the recipient where the e-mail has come from.

Zero Configuration E-mail Service

This controls the service required to run the zero configuration e-mail function. As the description states there is no configuration available for this module other than being able to customise the module name.

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the "Configuration" button and typing a new name in the box.

TextMagic SMS Service

This controls the service required to run the TextMagic SMS function. If TextMagic is selected as a messaging option during EZ configuration the settings for this function will automatically be configured. This screen enables us to amend the settings associated with the module. Available settings are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the "Configuration" button and typing a new name in the box.

Username -This is the user name used to login to your TextMagic account.

API V2 Key -This is the alphanumeric code which securely links the Vizulinx to your TextMagic account. This is available from your TextMagic account.

Modbus Slave (be a device)

This service controls the function of the Vizulinx when configured as a Modbus slave device.If Modbus is selected as an integration option during EZ configuration the settings for this function will automatically be configured. Available configuration settings are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the Configuration" button and typing a new name in the box.

TCP Port - This is the port for communication with Modbus and is default 502.

For further details on Modbus feature see the Modbus section of this manual.

BACnet

This is the service which controls the functionality of Vizulinx when configured as BACnet device. If Modbus is selected as an integration option during EZ configuration the settings for this function will automatically be configured. Available configuration settings are as follows:

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the Configuration" button and typing a new name in the box.

List of objects - This is a list of object ID's allocated to the fire alarm system. The list is based on the panel config file uploaded into Vizulinx and shows the object ID followed by the user descriptions allocated to the panel, zone or device in the panel config. For full details on BACnet and object ID allocation see the BACnet section of this manual.

BACnet ID - This is an ID number used to identify the Vizulinx module on a network. The default ID is 250101 however this can be changed should it conflict with any existing ID's on the BACnet system. To change click on the box and type in the new ID number or use the up and down arrows to scroll.

Broadcast IP - This is the IP address the Vizulinx unit uses to transmit information this should be set as required for the BACnet system.

Broadcast unsolicited COV - Support is provided for solicited and unsolicited COV (Change of Value) controlled by the tick box as shown in the screenshot above. Solicited (subscribed) COV – Vizulinx must send a subscribe request and wait for a response from the BACnet server before it can send its changes of value. Unsolicited (Unsunbscribed) COV means the Vizulinx can send all changes of value without the need for a subscribe request to the BACnet server. Tick or untick the box as required.

Network Modules

These modules control functions relating to network connectivity. The modules contained in this section are as follows:

Modbus TCP 1 – bit client (Connect to a device)

This function is currently not available

Network Connectivity Checker

The Vizulinx requires a connection to the internet to enable e-mail messaging either via LAN or USB GSM HiLink dongle. This module enables Vizulinx to monitor the internet connection to ensure it is active, it monitors the connection by polling a configured selection of websites. When configured a network connectivity checker icon will Appear in the top right of the Vizulinx window this will be green if OK and red if connection has failed.

Name - Name is the description of the module i.e. what it does. The name can bechanged to something more descriptive as required by clicking on the Configuration" button and typing a new name in the box.

HTTP(S) to check - This is a selection of websites that Vizulinx will periodically try to connect to checking the internet connection is active. Vizulinx will try each address on the list in turn, if no responses are received a network connectivity fault will be indicated. Two default addresses are configured https://bbc.co.uk & http://google.co.uk additional addresses can be added as required.

Interval between checks (minutes) - This is the frequency at which the Vizulinx will carry out the internet connectivity check.

Timeout seconds - The Vizulinx will check all listed websites in sequence and the time-out is how long it will wait for a reply before trying the next web address.

TCP Client

Function not available

TCP Server

Function not available

Parser/Protocol Modules

These modules control specific functions such as regular parser expression.

Regular Parser Expression

This is a function available when connecting to a Syncro/Elite style panel which communicates to the Vizulinx using serial data connection. Regular expressions provide advanced data processing. This module buffers incoming data until a match is found then it creates an event based on the matched data. A knowledge of regular expression parser is required to be able to use this function.

Note: For an interactive online resource and tool see https://regex101.com/

Name - Name is the description of the module i.e. what it does. The name can be changed to something more descriptive as required by clicking on the Configuration" button and typing a new name in the box.

Data source - This is the data source that is searched of the regular expression.
This can only be Serial Port Interface

Regular expression -This is the expression the Vizulinx will search for in the serial port interface data.

Section 5
Behaviours

The behaviours screen is accessed by clicking on the "Behaviours" tab in the header bar.

Behaviours allow the user to define cause and effect fire alarm mapping from and to the connected devices/services.

Each connected device/service creates and/or listens for events, these events can be linked to create a range of system operations - from sending a text message (SMS) to the building owners mobile phone when there is a fire alarm, to sending an email to the maintenance engineer whenever there's a fault.

On the behaviours screen it will list the behaviours that have been set. Custom behaviours will be automatically set based upon the selections made within the EZ configuration.

Creating Behaviours

Behaviours are constructed of four main parts: Source, Event, Destination, Action

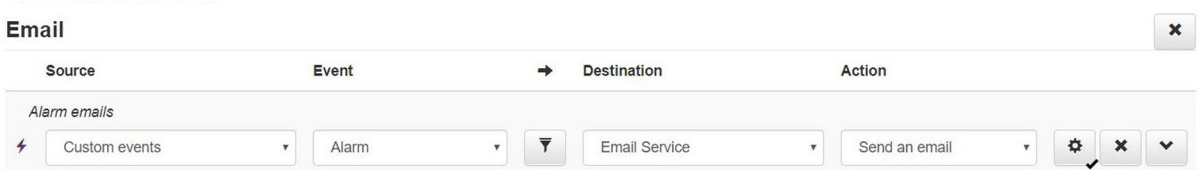
Source - This is the service, input or device which is going to trigger the behaviour.

Event - This is the event type the source must see which will trigger the behaviour

Destination - This is the service, input or device which is going to be activated by the source/event

Action - This is the action we want the destination to take when the behaviour is triggered

Example behaviour 1:



The above screenshot shows a rule which sends an e-mail when an alarm is received. The rule shows if an alarm condition is activated within custom events Vizulinx will activate the e-mail service to send an e-mail. The e-mail address would be configured within the e-mail service module.

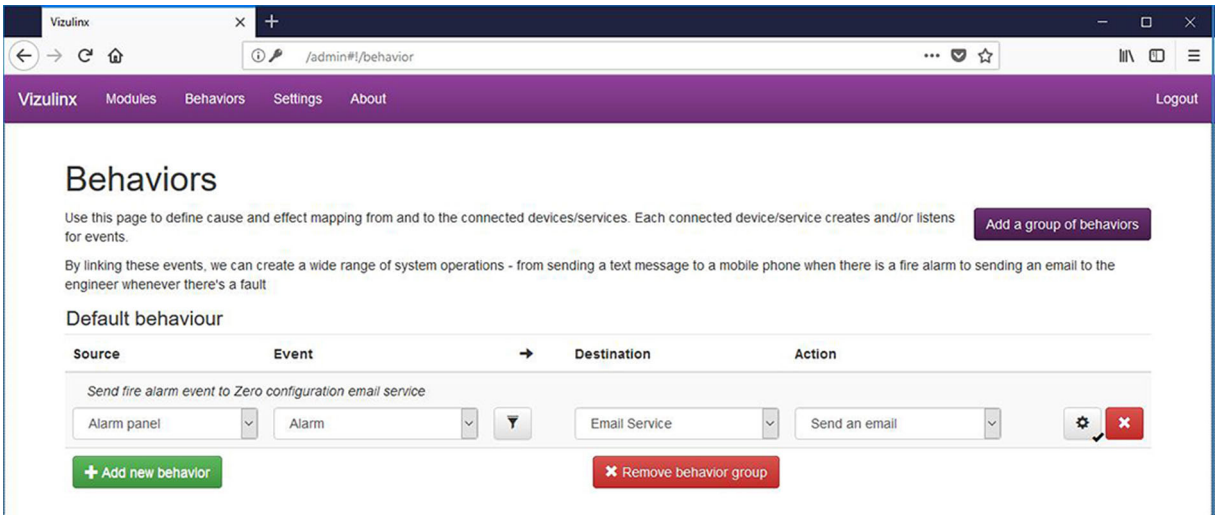
Example behaviour 2:

The above screenshot shows a different message which states any alarm that occurs on the Taktis Fire Alarm panel will send a text message using the USB GSM modem SMS/Data (HiLink modem). The number to send the message will be configured separately.

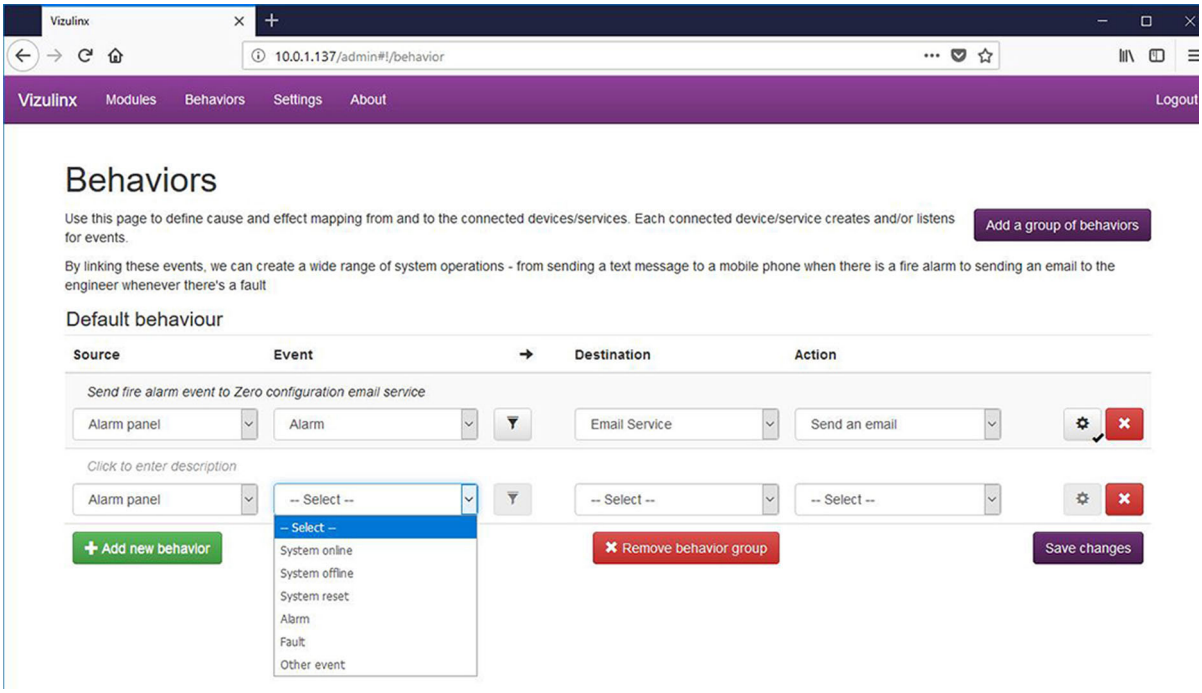
There are many source types which can be selected depending on the system configuration selected, a full list of source types and associated events is shown in **Appendix A** at the rear of the manual.

There are no identified limits to the number of behaviours that can be created, to create a behaviour the process is as follows:

Click the “Add new behaviour” button to add the new behaviour:



Complete the Source/Event/Destination/Action as appropriate by selecting options from the drop-down menus.



Click on “Save changes”

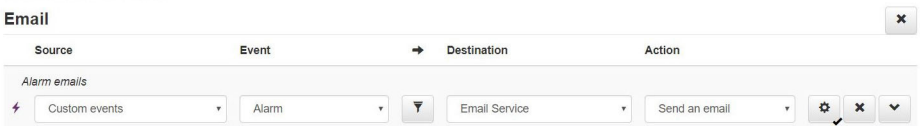
Customising Behaviours

Behaviours can be further enhanced by adding filters to the source and event data and customising the destination and action settings.

Adding a Behaviour Filter

A filter adds more control over a behaviour to subsequently provide more control over the functionality of the Vizulinx system.

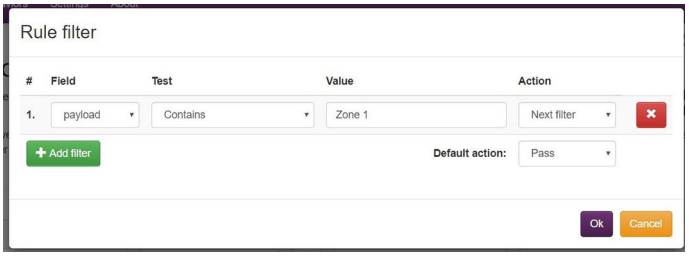
Example of a filtered behaviour:



If we return to our example behaviour Vizulinx will send an e-mail whenever an alarm appears in the custom events, this is any alarm from the control panel/network regardless of node, zone, device etc.

Between the source/event data and the destination/action data there is a button with the filter logo on it, click on this and the filter screen will appear, click on add filter and the boxes Field, Test, Value and Action will appear. These boxes can be configured to provide the required filter of the Source/Event data.

The original source/event data looks at any alarm, let's say we want to narrow that down so that the behaviour an alarm from custom events will only trigger the behaviour if that alarm is in zone 1.



The configurable boxes are as follows:

Field - This is the field we want to apply the filter to. In the example above this is the payload field, this contains all of the information related to the alarm – Panel, Loop, Zone, Device etc

Test - This is the type of filter we want to apply – Equals, Contains, Less than, Less than or equal, Greater than, Greater than or equal

Value - This is the value we want the rule to apply to the filter. We can type in here the value required such as shown in the screenshot above "Zone 1"

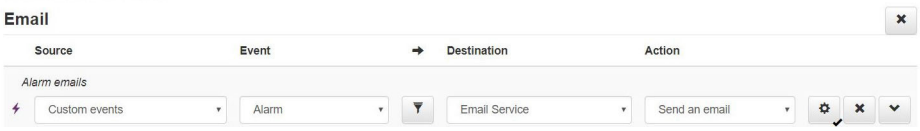
Action - Is what we want to happen when that filter is matched i.e. all parts of the filter are true. Actions are Next filter, Pass, Stop

Next filter - This will move on to the next filter in the list. Multiple filters can be applied toa single behaviour

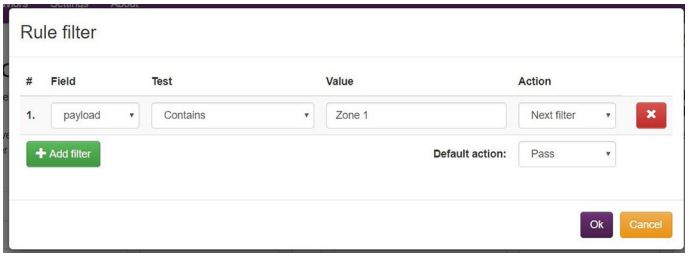
Pass - If the filter is true this will complete the behaviour as configured

Stop - If the filter is true this will stop the behaviour from completing

Based on our example we now have a behaviour:



And a filter:



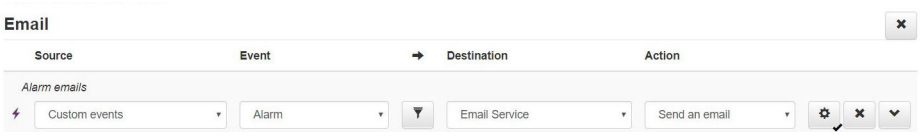
Our behaviour with the added filter now works as follows – Any alarm that appears in the custom events will be filtered and only alarms that contain the value “Zone 1” in the payload will be sent to the configured e-mail address.

Customising Behaviour Settings

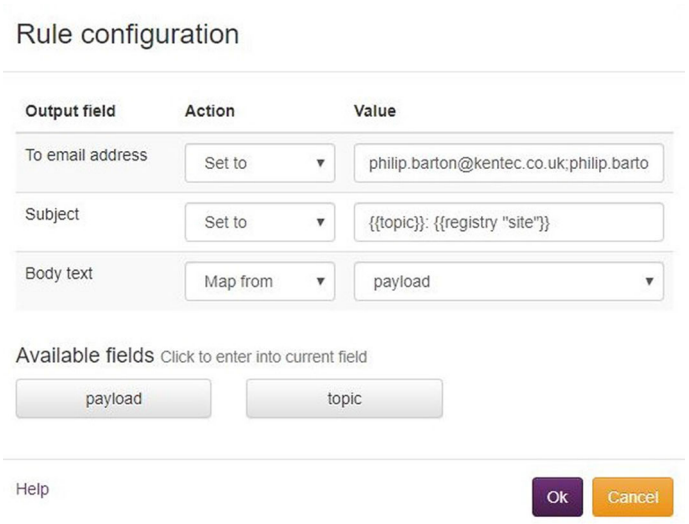
Each behaviour has its own individual settings which can be customised to enhance the performance of the system, this allows customisation of the information sent/displayed when the behaviour is activated i.e. such as customising format of e-mail and SMS messages.

At the end of each behaviour line there is a button with the standard settings icon (small cog), clicking on this button will open the settings window form this behaviour.

If we again refer to our example rule below:



The rule configuration settings for this rule are as follows:



Rule configuration may look slightly different dependent on the behaviour settings, the example shown above shows how we can configure the e-mail messaging.

There are three sections which make up the rule configuration – Output field, Action and Value.

Output field
The output field relates to the information type i.e. in this example “To email address”, “Subject” and “Body text” that make up the messaging

To email address - This is the e-mail address(es) we want to send the information associated with thisrule to. There are three possible actions which can be configured for this output field:

Pass thru - There are no e-mail addresses shown, the rule will use the e-mail addresses that were pre-configured during the EZ configuration process.

Set to - Allows the user to manually configure the e-mail addresses to beused. E-mail addresses configured during EZ configuration stagewill automatically be shown here. Click on the box and type new e-mail addresses, e-mail addresses must be separated by a semicolon when entering.

Map from - Is not applicable to this field however it will generally allow the user to map the field to specific information.

Subject - This is the information that is displayed in the subject line of the e-mail identifying what the e-mail relates to, this can be event type, site name etc. In the example shown above this is set to display the “Topic” which is the event status and is using the registry value “site” to display the site name. Behaviours that are created as default based on the EZ configuration will automatically show information. Three action settings are available:

Pass thru - This requires no configuration it will use default data from the panel and EZ configuration setup. This is based on event description and site name.

Set to - Allows the user to manually configure the e-mail addresses to be used. E-mail addresses configured during EZ configuration stage will automatically be shown here. Click on the box and type new e-mail addresses, e-mail addresses must be separated by a semicolon when entering.

Map from - Is not applicable to this field however it will generally allow the user to map the field to specific information.

Body text - This is the information shown within the body of the e-mail i.e. the relevant detail relating to the event. If the behaviour is configured to send an e-mail on an alarm condition the body text could display the detailed information relating to the alarm i.e. Panel, Loop, Zone, Device info. This body text can be based on data received from the alarm panel or can be customised to suit the customer requirements. Especially where language translations are required.

Pass thru - This requires no configuration it will use default data from the panel and EZ configuration setup to create the e-mail message. This is based on event type, panel, loop, device, location text data.

A typical default message format would be as shown:

Print room
DISCONNECTED FAULT
ADR=13 LOOP=3 ND=1 BACNET TEST PANEL
ZONE 10
Fault 1 Jan 2000 01:00

Set to - Allows the user to manually configure the body text of the e-mail message to be used. The message can be customised to contain whatever message is required and can be created in different languages as required. For example the message could be a simple notification message without the loop, zone device data i.e.

Fire alarm activated!!!

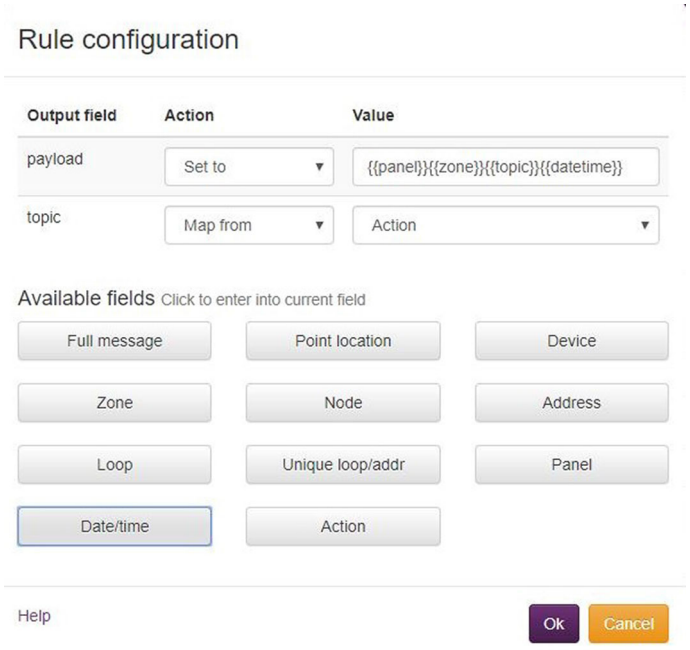
Map from - Where “Pass thru” sends all data provided from the fire panelassociated with the event. Map from uses the data from the panel but allows us to select what information we wish to include. Depending on the source selected the options available to “Map from” will vary.

There are two main types of Map from events for most behaviour options these are:

Topic - This maps the event type name from the panel i.e. Alarm, Fault, Disablement etc.

Payload - This maps the full data packet associated with that event i.e. panel, loop, zone data etc.

On some rule configurations “Map from” will provide a selection of data that cancreate the e-mail message, see the screen shot below:



The map from options and the data they provide are shown in the following table:

Available field	Template	Description
Full message	{{payload}}	Displays the full message that appears on the fire panel display
Point location	{{location}}	Displays the location text as configured in the panel for the active device i.e. office, kitchen, workshop etc.
Event text	{{event-text}}	Displays the event text i.e. Fire, Fault, disablement etc.
Device	{{device}}	Displays the device type responding to the event i.e. smoke detector, manual call point etc.
Zone	{{Zone}}	Displays the zone number of the active device/zone
Node	{{node}}	Displays the network address of the active panel
Address	{{adr}}	Displays the address number of the active device
Panel	{{panel}}	Displays the panel name as configured in the active panel
Date/Time	{{datetime}}	Displays the time and date of the event
Action	{{action}}	This is the action description configured within the panel for the active device.

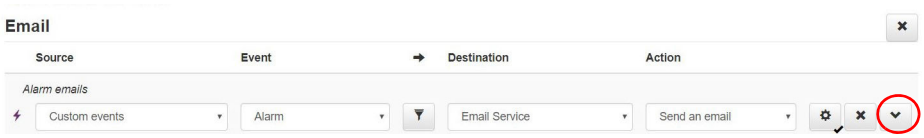
To select one of the bits of data to include in your message click on the button and itwill appear in {{}} in the selected box. The data will be sent in the message in order itis shown in the box. The message format for the selection in the screenshot examplewill be as follows:

BACNET TEST PANEL
ZONE 10
Fire 1 Jan 2000 01:00

Customising Behaviour Names
Behaviours created following EZ configuration will be automatically grouped, the group name can be changed by clicking on the name text and typing in a custom description. Individual behaviour names can also be changed by clicking on the name text and typing in the new description.

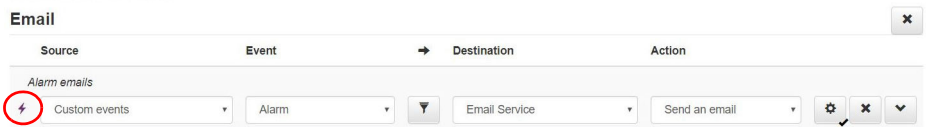
Saving a Behaviour
When a behaviour has been added, deleted or modified the save changes button will appear under the behaviour line, the modifications will only be accepted when the save changes button is clicked.

Copying a Behaviour
Vizulinx provides the ability to create a new behaviour by copying an existing rule. This is a useful feature if you want to create similar rules with only a minor variation. At the end of each behaviour line is a button with a down arrow as shown below:

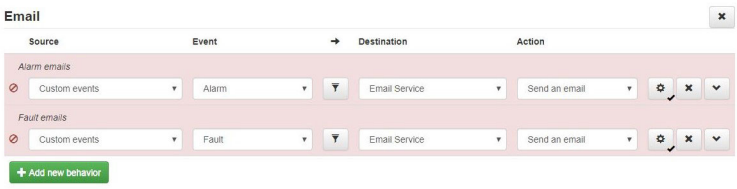


Clicking on the down arrow Vizulinx will automatically create an identical copy of the behaviour you clicked on, this can then be modified to suit without having to create the whole rule from the beginning.

Disabling a Behaviour
Behaviours can be disabled which means they will not complete even if the source/event data is valid. This can prevent the unnecessary activation of behaviours during fire system testing. To disable a behaviour click on the lightning bolt icon at the start of the behaviour line.



The lightning bolt icon will change to a prohibition symbol and the behaviour line will be highlighted in red as shown below.



To enable the rule click on the prohibition icon at the front of the line the icon will change.

Deleting Behaviours
Individual behaviours can be deleted by clicking on the '**x**' button at the end of the behaviour line.
Behaviour groups can be deleted by clicking on the '**x**' button at the top right of the behaviour group.

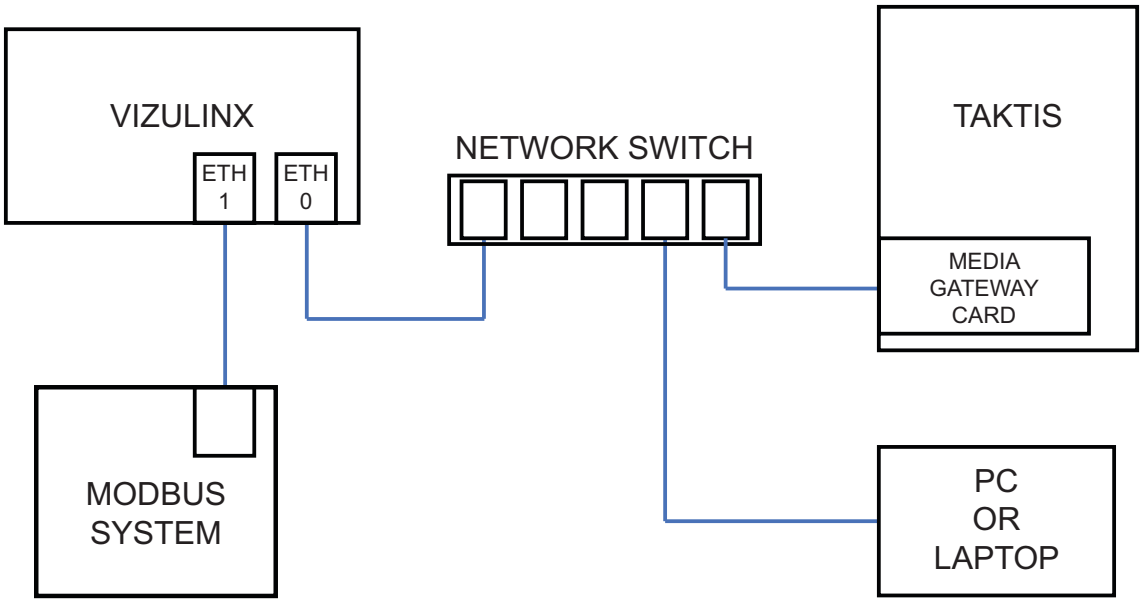
Section 6
Modbus

Vizulinx can be configured as a Modbus slave device allowing it to communicate various status conditions to other Modbus devices using Modbus TCP/IP. Modbus enables the fire alarm control panels connected to Vizulinx to integrate with other equipment such BMS (Building Management Systems), Plant control equipment etc

Modbus Connectivity

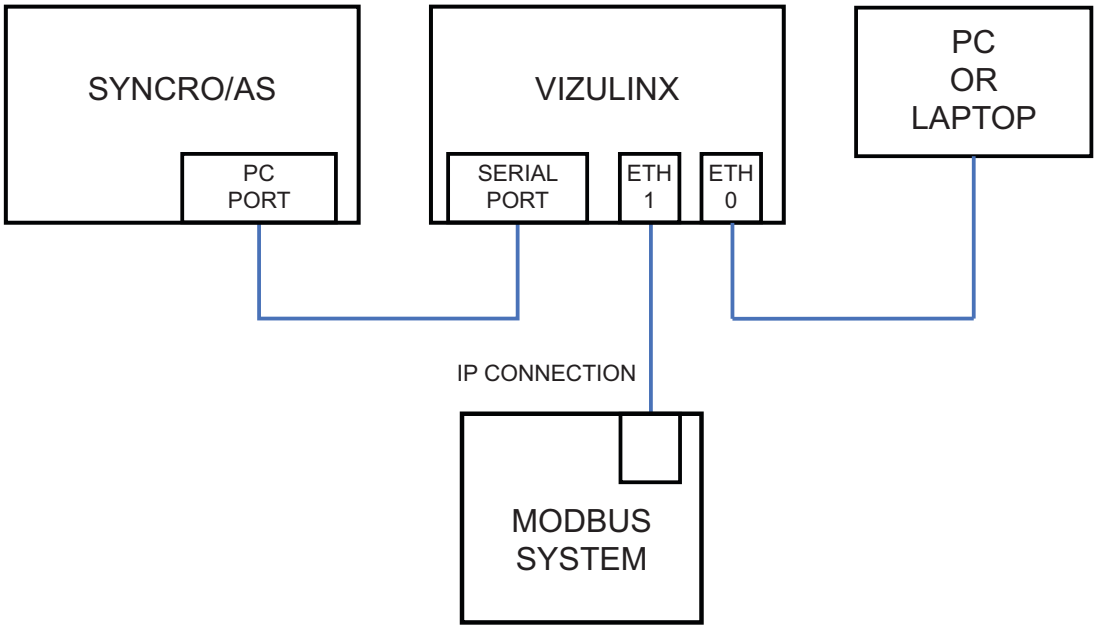
Vizulinx connects to Modbus using its Ethernet 1 (Eth 1) port, the port IP settings will need to be configured to match the Modbus system. If Vizulinx is used with a Taktis panel the panel will connect to Ethernet 0 (Eth 0), Syncro panels connect to Vizulinx using serial connection so do not require an Ethernet port.

Taktis Modbus system connectivity



Note: It is recommended the connection between Vizulinx is via a network switch, this will enable connection of the PC or laptop for configuration and diagnostics without disconnecting the Taktis.

Syncro/Syncro AS Modbus system connectivity



Vizulinx as a Modbus device does not have a specific Modbus address ID, Vizulinx is designed to listen to the MODBUS port and responds to any request from the Modbus system using the same ID used in the request in the reply packet.

Modbus Mapping for Addressable Systems

Modbus in Vizulinx has been made as easy as possible to configure, using pre-defined mapping of Modbus addresses for loops, zones and devices. Vizulinx is provided with 2000 Modbus addresses as standard which is adequate for small systems of up to 4 loops, the number of Modbus addresses can be increased by purchase of a license.

The default mapping of Modbus addresses is shown In the table below:

<table>
<tr><th colspan="5">16 bit Input registers (Func 0x40)</th></tr>
<tr><td rowspan="3">Modbus</td><td rowspan="3">Description</td><td colspan="3">Values</td></tr>
<tr><td rowspan="2">Decimal</td><td rowspan="2">Bit</td><td colspan="2">Flags</td></tr>
<tr><td>EN Panels</td><td>UL Panels</td></tr>
<tr><td>1 - 500</td><td>Zone status</td><td rowspan="3">0
1
2
4
8
16
32
64
128
256</td><td rowspan="3">-
0
1
2
3
4
5
6
7
8</td><td rowspan="3">Normal
Fire
Evacuate
Alert
Pre-Alarm
Security
Fault
Disablement
Tech Alarm
Test</td><td rowspan="3">Normal
Fire
CO alarm
Auxiliary
Pre-Alarm
Security
Trouble
Disablement
Supervisory
Test</td></tr>
<tr><td>501 - 1000</td><td>Panel status</td></tr>
<tr><td>1001 - 2000</td><td>Device status
Default mapping is by loop:
Panel 1 Loop 1 – 1001-1250
Panel 1 Loop 2 – 1251-1500
Panel 1 Loop 3 – 1501-1750
Panel 1 Loop 4 – 1751-2000</td></tr>
<tr><td>0</td><td>Panel online</td><td colspan="3">0 = Offline, 1 = Online</td></tr>
</table>

Modbus Addresses 1-500
These Modbus addresses are allocated to the reporting of zone status with the addresses linked in zone sequence i.e. Address 1 = Zone 1, Address 2 = Zone 2 etc.

Each zone address has an associated flag shown in the table above which indicates the specific status of the zone. There are nine states that the zone can be in as shown in the table e.g. a fire in zone 6 will set bit 0 (Dec value 1) on Modbus address 6 to a value of 1.

Modbus Addresses 501-1000
These Modbus addresses are allocated to the reporting of panel status with the addresses linked in panel sequence i.e. Address 1 = Panel 1, Address 2 = Panel 2 etc.

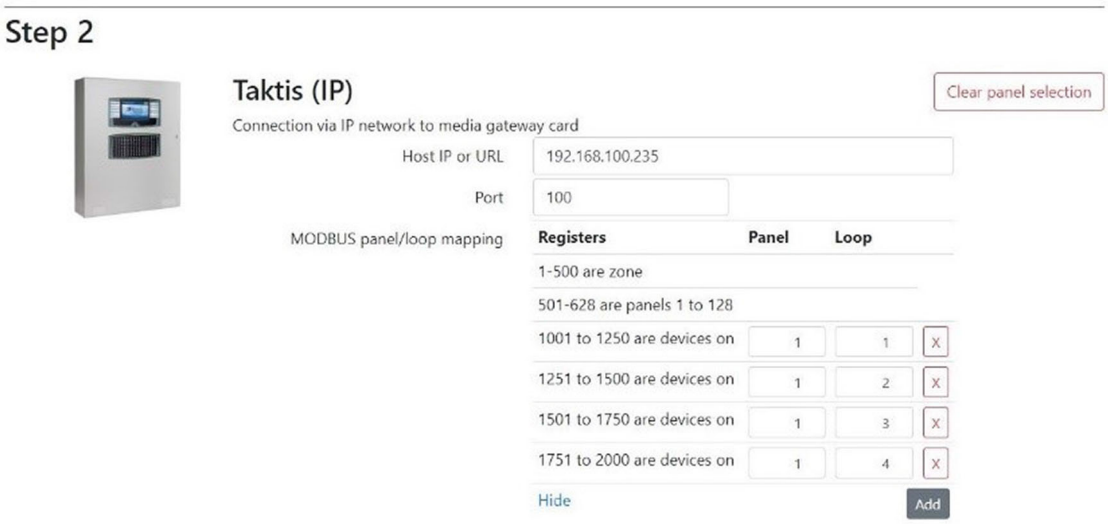
Each panel address has an associated flag shown in the table above which indicates the specific status of the panel. There are nine states that the panel can be in as shown in the table e.g. a fault on panel 8 will set bit 5 (Dec value 32) on Modbus address 508 to a value of 1.

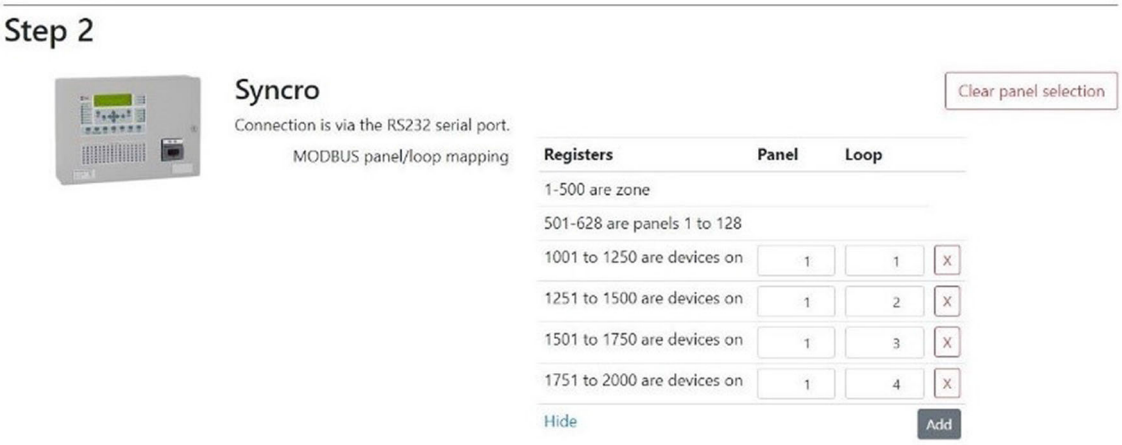
Device Status
These Modbus addresses are allocated to reporting the status of the devices on the detection loops across the panel/network of panels i.e.smoke detectors, heat detectors, Manual Call Points etc.

The Vizulinx unit is provided as default with 1000 x 16 bit addresses to indicate device status, this is enough to cover 4 detection loops with up to 250 x 16 bit device addresses per loop. Additional groups of 1000 x 16 bit addresses can be enabled on the Vizulinx module by purchasing a license from Kentec Electronics a license will be required for every 1000 addresses enabled, up to a maximum of 9999 device addresses. Each device address has an associated flag which indicates the specific status of the device.

Modbus Loop Mapping
Unlike Modbus addresses allocated to Panels and Zones which are fixed, the mapping of loops to available Modbus address is configurable.

The mapping of loops can either be configured during EZ Configuration when an addressable panel is selected, see below:





Select the panel number and loop number you wish to associate with that block of addresses, the panel loop selection does not need to be entered in sequence, any panel number and loop number can be allocated to any block of addresses this make is it easier to add additional panels and loops without affecting the existing Modbus address allocation.

Modbus mapping can also be configured by going to the modules screen and selecting the panel module and clicking on the configuration button.

In the module configuration table it shows the line “MODBUS panel/loop mapping:” along with the panel/loop mapping.

Clicking on the configuration button opens the config button shown above which allows the panel/loop mapping to be modified.

Mapping the Panels/Loops

The default panel/loop mapping is entered as P1L1,P1L2,P1L3,P1L4 which equals to Panel 1 Loop 1, Panel 1 Loop 2 etc. The address groups are allocated in the sequence the Panel/Loops are entered in the box i.e. P1L1 – 1st 250 addresses (1001-1250), P1L2 – 2nd 250 addresses (1251-1500) etc. Any additional panel/loop combinations entered into this section will take the next available 250 addresses.

The sequence entered can be reconfigured as required for example if we have a network of 3 x 1 loop panels connected to the Vizulinx unit we can reconfigure the mapping to P1L1,P2L1,P3L1 to match the system configuration. This method of sequencing makes it easy to add panels/loops to our system without having to reconfigure the Modbus address mapping e.g. If we have a network of 3 x 1 loop panels and mapping P1L1,P2L1,P3L1 and we upgrade Panel 1 to make it two loops we don’t need to reconfigure the mapping sequence. The new panel/loop combination can be added to the end of the existing sequence and will take the next available group of Modbus addresses. i.e. P1L1,P2L1,P3L1,P1L2

Adding a Modbus License

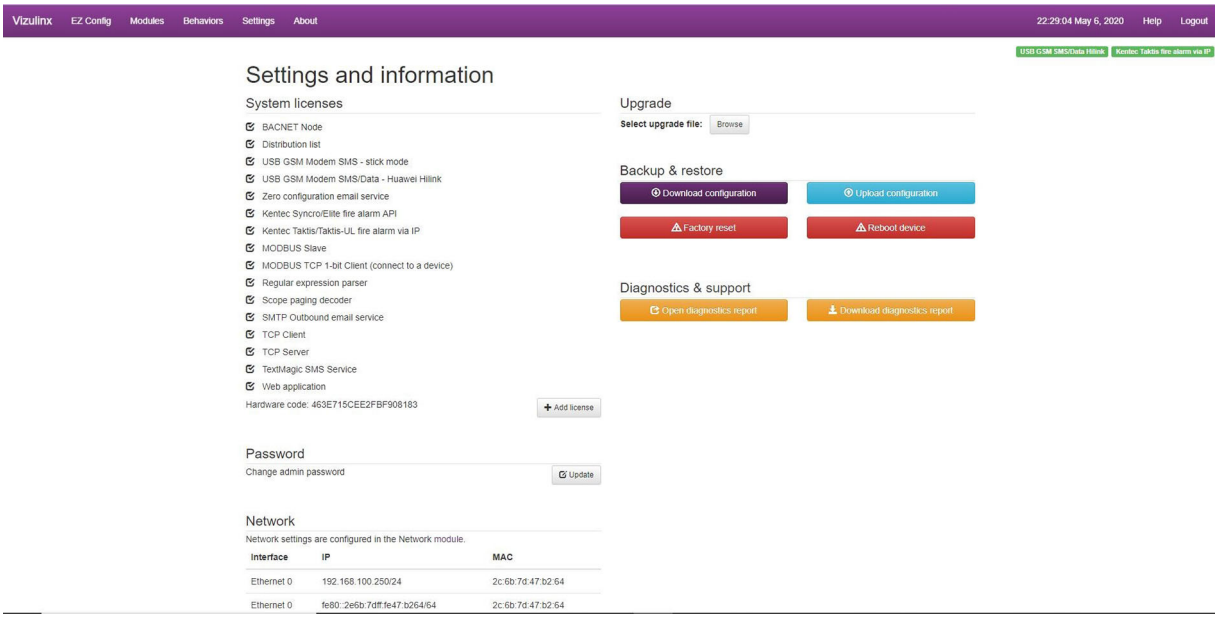
As already mentioned the 1000 x 16 bit addresses provided as standard in the Vizulinx unit can be increased by purchasing an upgrade license. Each license will enable an additional 1000 x 16 bit addresses up to a maximum of 10000 addresses.

To add a Modbus license a license code will be required which is purchased from Kentec Electronics. To obtain the license code you must provide the Vizulinx hardware code to Kentec, you will then be provided with a license code which can only be used on the Vizulinx with the hardware code you supplied. License codes cannot be used on multiple Vizulinx units and cannot be transferred between Vizulinx units.

To enter a license code follow this sequence:

1. Connect a PC to Vizulinx and access the web-server

2. Login and go to the settings and information screen:



3. Type in the license code and click “Add” button

The new license will appear on the “System Licenses” list on the left of the screen and an additional 1000 x 16-bit device addresses. Mapping of these additional addresses to panel/loops is done the same as previously described.

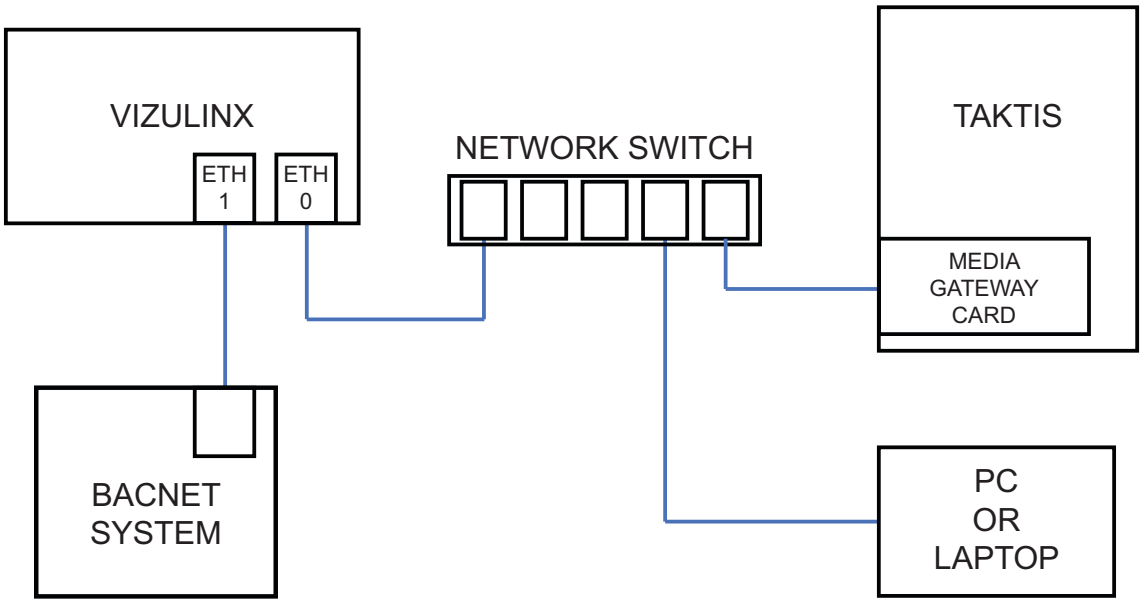
Section 7
BACnet

Vizulinx can provide BACnet IP communications to third party systems such as BMS for Taktis Systems and networks. Kentec have unique BACnet vendor ID which identifies the Vizulinx on BACnet as a Kentec product.

BACnet Connectivity

BACnet communicates to Vizulinx using its Ethernet 1 (Eth 1) port, the port IP settings will need to be configured to match the BACnet system.

Taktis BACnet system connectivity:



Note: It is recommended the connection between Vizulinx (Ethernet 0) and Taktis is via a network switch, this will enable connection of the PC or laptop for configuration and diagnostics without disconnecting the Taktis panel.

BACnet Configuration

Configuration and setup of the BACnet feature has been kept as simple as possible and can be done through the EZ configuration setup or manually through the Vizulinx modules screen, refer to these sections of the manual to see config settings.

Allocation of BACnet object IDs is done automatically based on the panel/network configuration, the panel/network configuration file is obtained using the panels LE2 software.

Once the LE2 panel/network config files is uploaded BACnet object IDs will be allocated for any Panels, Loops, Zones, Device addresses and sub-addresses found in the config file.

Vizulinx as standard will be provided with 500 object IDs which will be allocated on upload of the LE2 configuration file, the number of available BACnet object IDs can be increased by purchase of a license code from Kentec. Each license code will unlock an additional 500 object IDs, see add license part of this section.;

Appendix B of this manual shows the BACnet Protocol Implementation Conformance statement which provides details on the BACnet protocol used in Vizulinx.

BACnet Object ID Construction

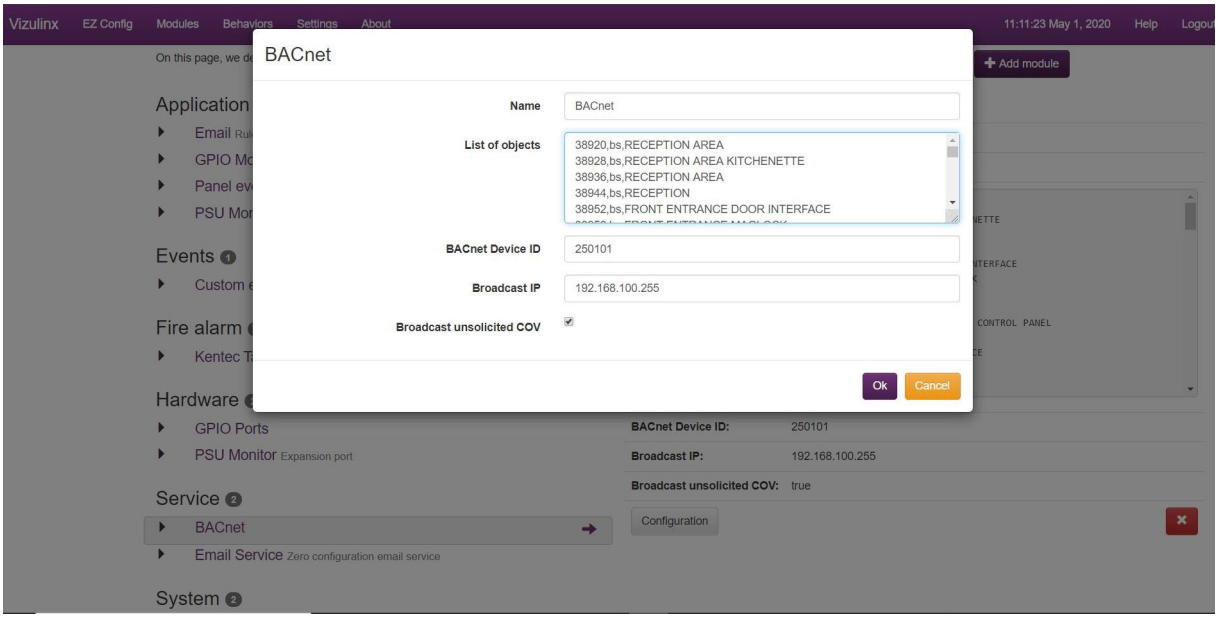
The following table shows how BACnet object IDs are constructed:

Nibble	1/2 5		4				3				2				1				0			
Bit	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Panel	Not used						Panel 0 - 127						0x3ff									
Zone	Zone (0-2000)												0x3fe									
Device	Panel (0-127)							(Loop 0-16)					Device (0-255)							Sub-address (0-6)		

Flag	1	2	3	4	5	6	7	8	9
EN Panels	Fire	Evacuate	Alert	Pre-Alarm	Security	Fault	Disablement	Tech Alarm	Test
UL Panels	Fire	CO Alarm	Auxiliary	Pre-Alarm	Security	Trouble	Disablement	Supervisory	Test

BACnet Object ID List

A list of the allocated IDs alongside the user allocated description for that panel, zone or device can be seen in the modules screen. Click on the BACnet module and click on configuration button you will see the following screen which shows the list of allocated objected devices.



Adding a BACnet License

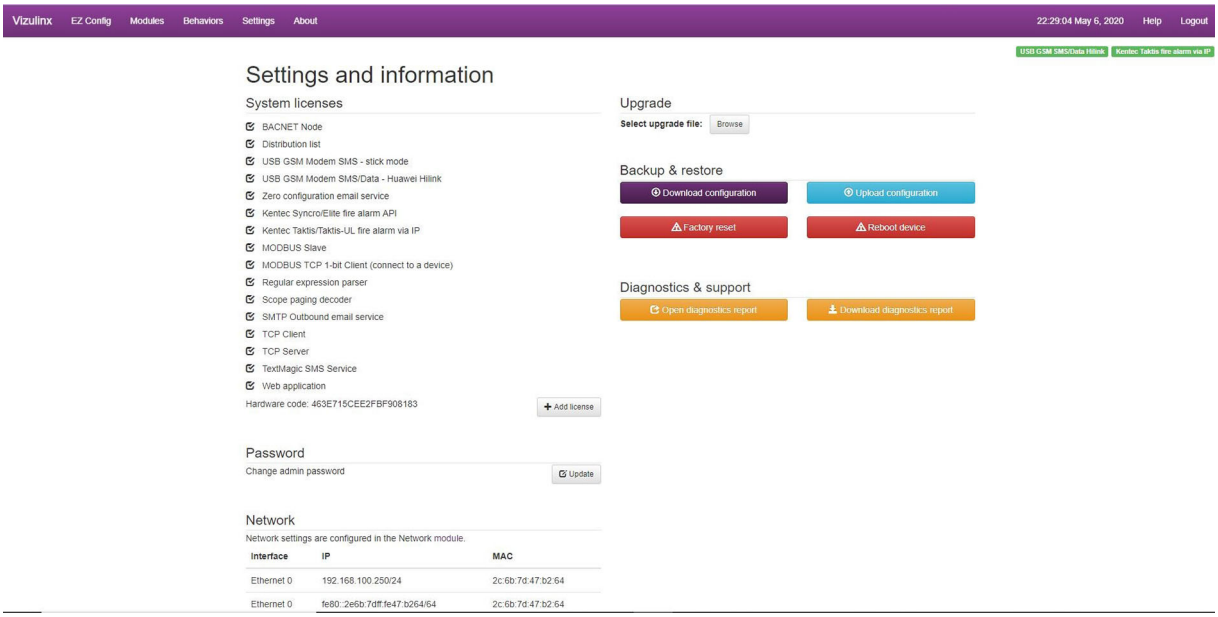
As already mentioned the 500 BACnet object IDs provided as standard in the Vizulinx unit can be increased by purchasing an upgrade license. Each license will enable an additional 500 BACnet object IDs.

To add a BACnet license a license code will be required which is purchased from Kentec Electronics. To obtain the license code you must provide the Vizulinx hardware code to Kentec, you will then be provided with a license code which can only be used on the Vizulinx with the hardware code you supplied. License codes cannot be used on multiple Vizulinx units and cannot be transferred between Vizulinx units.

To enter a license code follow this sequence:

1.Connect a PC to Vizulinx and access the web-server

2.Login and go to the settings and information screen:



3. Click on the add license button and enter the license key provided into the box when instructed:

4. Type in the license code and click “Add” button

The new license will appear on the “System Licenses” list on the left of the screen and an additional 1000 x 16-bit device addresses. Mapping of these additional addresses to panel/loops is done the same as previously described.

Section 5
Specifications

Equipment			
Product Code	**Description**	**Colour**	**Size WxHxD (mm)**
K85000	Vizulinx - Module only	N/a	106 x 90 x 32
K85000 M2	Vizulinx - Housed version (M2)	Powder coat - Grey (BS-00-A-05)	385 x 310 x 90
K85110 AM3	Vizulinx - Housed version (AM3) 110V AC	Powder coat Red (RAL 3002)	369 x 481 x 110
K85240 AM3	Vizulinx - Housed version (AM3) 240V AC	Powder coat Red (RAL 3002)	369 x 481 x 110

Specifications		
K85000	module only operating voltage	9 - 30V DC
	module current consumption	200mA max @ 9V DC, 80mA max @ 30V DC
	Processor	AM3354 CPU 300-800-Mhz
	RAM	512MB
	1x USB type A port	For GSM and Wifi connectivity (via dongle)
	2x Ethernet ports	For connection to LAN and PC: Port 1 static IP (192.168.100.250) Port 2 DHCP assigned to plug into existing LAN
	Isolated RS232 port	Avoids ground faults
	16x General Purpose input/output	Inputs: 0v triggered, Outputs: default high switch low (0v). Provided in two groups of 8.
	3x Status LED's	Power (green), amber (activity), red (error)
	Packaged weight	1kg
K85000 M2 K85110 AM3 K85240 AM3	Power supply input voltage	K85000M2/K85240 AM3 - 230V AC +10%/-15% Model K85110 AM3 - 110V AC
	Power supply output current	2.5A (continuous)
	Standby battery capacity	K85000 M2 - 2 x 12V 7Ah SLA batteries (Yuasa NP) K85110 AM3/K85240 AM3 - 2 x 12V 12Ah SLA batteries (Yuasa NP)
	Packaged weight	3kg

Additional Information

Supported Operating System: Microsoft Windows.

Supported web browsers: Internet Explorer, Google Chrome, Mozilla Firefox, Opera

Contacting Kentec

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Appendix A
Behaviour Source/Events

This table shows the possible behaviour triggers based on source and event options. The source and event triggers available at any time will be dependant upon the Vizulinx configuration.

Source	Event	Comments
Custom Events	Alarm	Will trigger a behaviour when a custom event behaviour relating to an alarm is activated
	Fault	Will trigger a behaviour when a custom event behaviour relating to an fault is activated
Distribution list	User joined list	Triggers a behaviour when a user joins the distribution list
	User left list	Triggers a behaviour when a user leaves the distribution list
GPIO Ports	Pin changed state	Will trigger a behaviour when a GPIO pin has changed state
	Pin Low	Will trigger a behaviour when a GPIO pin has been pulled low (0v applied)
	Pin High	Will trigger a behaviour when a GPIO pin has been pulled low (0v removed)
Modbus Slave	Master has connected	Will trigger a behaviour when a master Modbus device has established communication with the Vizulinx
Network	Network interface up	Will trigger a behaviour when connection to the Ethernet network is established
	Network interface down	Will trigger a behaviour when connection to the Ethernet network has failed
Network connectivity checker	Connectivity online	Will trigger a behaviour when connection to the internet has established
	Connectivity offline	Will trigger a behaviour when connection to the internet has failed

Continued.

Source	Event	Comments
PSU Monitor	Pin changed state	Will trigger a behaviour when the GPIO pin used to monitor the PSU fault output changes state
	Pin low	
	Pin high	
Regular expression parser	Parser messaged	Will trigger a behaviour when Parser is messaged
Registry	Registry item updated	Will trigger a behaviour when a change is made in the registry data
RS232	Raw data	Will trigger a behaviour when raw data is received on the RS232 serial port
Syncro/Elite type panels	System on-line	Will trigger a behaviour when the RS232 connection between Vizulinx and Syncro/Elite type panels
	System off-line	Will trigger a behaviour when the RS232 connection between Vizulinx Syncro/Elite type panels has failed
USB GSM SMS/Data HiLink	Device online	Will trigger a behaviour when an active connection to the USB GSM HiLink dongle is established
	Device offline	Will trigger a behaviour when an active connection to the USB GSM HiLink dongle has failed
	Receive text message	Will trigger a behaviour when an active connection to the USB GSM HiLink dongle receives a text message
USB GSM SMS stick mode	Registered on network/Ready to send	Will trigger a behaviour when dongle has connected to the GSM network and has a signal
	Unable to send not connected	Will trigger a behaviour when dongle is unable to send text messages either due to low or no GSM network connection
Users	User has logged in	Will trigger a behaviour when a user logs into the Vizulinx through the web browser

Behaviour destination/actions

The sources and event behaviour listed in the previous table can be paired with the following possible Destination/ Actions to create a complete behaviour.

The available destination/actions available at any time will depend on the configuration of the Vizulinx features and services.

Destination	Action	Comments
BACnet	Set bit string	When associated behaviour source/ event is activated a bit string on BAC-net will be set
	Set binary input	When associated behaviour source/ event is activated a binary input on BACnet will be set
	Reset all object to default value	When associated behaviour source/ event is activated all BACnet objects will be returned to their default value
Distribution list	Send message to list members	When the behaviour source/event is activated a message will be sent to the mobile numbers in the distribution list. When multiple distribution lists have been created the destination must show the correct distribution list to send the message to
E-mail service	Send an e-mail	When associated behaviour source/ event is activated Vizulinx will send an e-mail message using the Zero config e-mail service
E-mail SMTP	Send an e-mail	When associated behaviour source/ event is activated Vizulinx will send an e-mail message using the SMTP e-mail server
GPIO Ports	Control GPIO pin	When associated behaviour source/ event is activated Vizulinx will control the status of a GPIO pin.
PSU Monitor	Control GPIO pin	When associated behaviour source/ event is activated Vizulinx will control the status of the GPIO pin used to mon-itor the PSU.
USB GSM SMS/Data HiLink	Send a text message	When associated behaviour source/ event is activated Vizulinx will send a text message.
USB GSM SMS - stick mode	Send a text message	When associated behaviour source/ event is activated Vizulinx will send a text message.

Appendix B

BACnet Protocol Implementation Conformance Statement

Date: 06/05/2020
Vendor Name: South Midlands Communications Ltd
Product Name: Vizulinx
Product Model Number: n/a
Application Software Version: 1.0.16 onwards
Firmware Revision: 1.0.16 onwards
BACnet Protocol Revision: 1.2

Product Description

This products maps generic fire alarm statuses to BACnet objects. Event notifications are sent to registered clients.

BACnet Standardized Device Profile (Annex L)

X BACnet Operator Workstation (B-OWS)
X BACnet Advanced Operator Workstation (B-AWS)
X BACnet Operator Display (B-OD)
X BACnet Building Controller (B-BC)
√ BACnet Advanced Application Controller (B-AAC)
X BACnet Application Specific Controller (B-ASC)
X BACnet Smart Sensor (B-SS)
X BACnet Smart Actuator (B-SA)

List all BACnet Interoperability Building Blocks Supported (Annex K)

DS-RP-B, DS-COV-B, DM-DDB-B, DM-DOB-B

Segmentation Capability

X Able to transmit segmented messages
X Able to receive segmented messages

Standard Object Types Supported

√ Binary Input
√ BitString (Fire, Evacuate, Alert, Pre-alarm, Security, Fault, Disablement, Technical)

Data Link Layer Options

√ BACnet IP, (Annex J)
√ BACnet IP, (Annex J), Foreign Device
X ISO 8802-3, Ethernet (Clause 7)
X ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
X ATA 878.1, EIA-485 ARCNET (Clause 8), baud rate(s) _____
X MS/TP master (Clause 9), baud rate(s):
X MS/TP slave (Clause 9), baud rate(s):
X Point-To-Point, EIA 232 (Clause 10), baud rate(s):
X Point-To-Point, modem, (Clause 10), baud rate(s):
X LonTalk, (Clause 11), medium: _____
X BACnet/ZigBee (ANNEX O)

Device Address Binding

Is static device binding supported? (This is currently necessary for two-way communication with MS/TP slaves and certain other devices.) **X**

Networking Options

√ Router, Clause 6 - List all routing configurations, e.g., ARCNET-Ethernet, Ethernet-MS/TP, etc.

X Annex H, BACnet Tunneling Router over IP

√ BACnet/IP Broadcast Management Device (BBMD)

Does the BBMD support registrations by Foreign Devices?**X**

Does the BBMD support network address translation?**X**

Network Security Options

√ Non-secure Device - is capable of operating without BACnet Network Security

X Secure Device - is capable of using BACnet Network Security (NS-SD BIBB)

X Multiple Application-Specific Keys:

X Supports encryption (NS-ED BIBB)

X Key Server (NS-KS BIBB)

Character Sets Supported

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

√ ISO 10646 (UTF-8) **X** IBM(c)/Microsoft(c) DBCS **X** ISO 8859-1

X ISO 10646 (UCS-2) **X** ISO 10646 (UCS-4) **X** JIS X 0208

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:

Fire alarm systems, Intruder alarm systems, CCTV systems.

Object ID Schematic

Nibble	**1/2 5**		**4**				**3**				**2**				**1**				**0**			
Bit	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Panel	Not used						Panel 0 - 127								0x3ff							
Zone	Zone (0-2000)														0x3fe							
Device	Panel (0-127)							(Loop 0-16)					Device (0-255)							Sub-address (0-6)		