Electrical Signaling

Electrical protective signaling systems are configurations of components used to produce alarm signals indicative of fire, smoke, sprinkler waterflow or other emergency and to produce supervisory signals indicative of conditions needing attention with respect to protection equipment or watch service. System configurations are classified according to where and how the signals are received. The categories are commonly designated as local, municipal, remote station, proprietary and central station. Auxiliary systems are either local or proprietary systems interconnected with a municipal system.

This category presents the major system component categories and the integrated system configurations. The selection of components to form a hybrid system should be made only by those skilled in system design. Also, the suitability of any system application should be judged on the basis of the hazard(s) being protected.

Central Station Signaling Systems

A central station system consists of electrically operated circuits, instruments and devices, together with primary and standby power supplies. This equipment is designed to transmit alarms, supervisory and trouble signals to a constantly attended central station where the signals are recorded, and experienced operators take proper action according to prescribed procedures. These systems are adaptable to plants of any size and may consist of a simple fire alarm system, or an extensive system actuating coded signals from manual fire alarm boxes, automatic fire and smoke detection devices, supervisory devices, intrusion sensors, sprinkler waterflow and watchman tours. Means are provided to identify each signal positively and to record automatically its receipt and time. Standby power for at least 24 hours is required in the central station. When standby power is provided by an automatically starting emergency generator, the equipment listed below is required to have a min of four hours power derived from batteries to supplement the generator.

Some of the systems listed below utilize computers; these may, but do not necessarily, automate the operations and record keeping otherwise required of central station personnel in response to the signals received.

Elite Fire Alarm Control Panel

Digital Alarm Communicator System consisting of Elite Fire Alarm Control Panel with digital alarm communication transmitter - either a Media Gateway with Releasing master card (P/N VF1150-00), having firmware 04.xx.xx, a Modem-DACT with Releasing (P/N VF1152-00), having firmware 04.xx.xx, an EtherDACT with Releasing (P/N VF1153-00), having firmware 04.xx.xx or a SyncroComms (PN S556), having firmware 02.xx communicating with digital alarm communication receiver (DACR) either model Sur-Gard, System III or MLR-2000 (Firmware Version 1.2) or model 9500 Silent Knight (Firmware Version 1.2) via the public switched network. (See control panel description under LOCAL PROTECTIVE SIGNALING.)

Company Name:	Kentec Electronics Ltd
Company Address:	Units 25-27 Fawkes Ave, Questor Dartford Kent DA1 1JQ
Company Website:	http://www.kentec.co.uk
Listing Country:	United Kingdom
Certification Type:	FM Approved

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Some of the systems listed below utilize computers; these may, but do not necessarily, automate the operations and record keeping otherwise required of central station personnel in response to the signals received.

Elite RS Alarm Control Panel with Releasing

Digital Alarm Communicator System consisting of Elite RS Alarm Control Panel with digital alarm communication transmitter – either a Media Gateway with Releasing master card (P/N VF1150-00), an EtherDACT with Releasing (P/N VF1153-00), an Embedded Dialer, or a SyncroComms (PN S556), having firmware KmD2xx communicating with model Sur-Gard, System III or MLR-2000 (Firmware Version 1.2) digital alarm communication receiver (DACR) via the public switched network. (See control panel description under LOCAL PROTECTIVE SIGNALING.)

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This category presents the major system component categories and the integrated system configurations. The selection of components to form a hybrid system should be made only by those skilled in system design. Also, the suitability of any system application should be judged on the basis of the hazard(s) being protected.

Local Protective Signaling

Local systems produce alarm and/or supervisory signals within the protected property, which may not be constantly attended. The systems are electrically supervised, include a secondary power supply having sufficient capacity to operate the system for 24 hours under maximum normal load and often are primarily for the purpose of providing occupant evacuation signals. Some local systems also provide for signaling to a constantly attended remote location.

The heart of a signaling system consists of a control unit to which are connected the initiating and signal indicating circuits. The control unit is usually in a separate enclosure, provides power to its external circuits, and often is of modular design to enable flexibility in obtaining multiple functions. In a coded signaling system, transmitters may be either separate from or integral to a control; they transmit to the control or from a control to remote receiving equipment. The equipment listed below, in conjunction with peripheral devices, may be used to form a complete system or a portion of a multizone system.

Elite (2 loop and 4 loop)

Elite (2 loop and 4 loop) Fire Alarm Control Panels. Control uses firmware revision 3.8xxxxH (Hochiki SLC protocol) or 3.8xxxxA (Apollo SLC protocol). Basic system consists of a 4 Amp power supply module (P/N VF8115-00), Control Unit Board with Releasing (P/N VF1610-00), Panel Annunciator Board with Releasing (P/N VF1611-00) and batteries (12AH to 18AH for inside the panel mount and up to 60AH for remote cabinet mount). The panel provides connections for either two or four signaling line circuit (SLC) loop monitoring (four SLC loop capability in the expanded version of the Elite panel requires installation of model VF1053-00 loop expansion module). Each SLC loop can be wired either in Class A, Style 6 or Style 7 configuration, or in Class B, Style 4 configuration. Each signaling line circuit can carry up to 126 detectors. The panel provides connections for four Class B, Style Y notification appliance circuits. Can use the following optional equipment:

1. VF1150-00 Media Gateway with Releasing(1) -- Enables central station signaling and “VESNet” network capabilities.
2. VF1151-00 Network Interface Card with Releasing(1) -- Enables “VESNet” network capabilities.
3. VF1152-00 ModemDACT with Releasing(1) -- Enables central station signaling.
4. VF1153-00 EtherDACT with Releasing(1) -- Enables central station signaling.
5. S556 SyncroComms -- Enables central station signaling.
6. VF1170-00 eNet -- Network interface -- Enables “eNet” network capabilities.
7. VF1171-00 16-channel I/O board – Provides expanded I/O.
8. VF1172-00 eView -- Remote annunciator.
9. VF13xx-yyy eMatrix – Remote graphic annunciator – Different models are different cabinet sizes & colors and have different numbers of channels.
10. VF8300-xx VESNet LCD Display with Releasing(1) -- Remote annunciator.

Note 1: The above foot-noted options are not compatible with VF1170-00 eNet or S556 SyncroComms. These two sets of options may only be used exclusive of each other.
The VF8300-xx display connects to the VESNet network as a slave to the master panel containing the MediaGateway with Releasing card. The display requires 24VDC power, typically supplied from an Elite Panel. The display provides one Class B, Style B initiating device circuit. To enable central station signaling model VF1150-00, VF1152-00, VF1153-00 or S556 must be used. To enable central station signaling and “VESNet” network capabilities model VF1150-00 Media Gateway with Releasing master card and/or model VF1151-00 Network Interface Card (“NIC”) with Releasing slave card are to be used. Panels containing NICs (Network Interface Cards) are slaves to the master panel containing the Media Gateway card. Panels with VESNet network capabilities (NIC or Media Gateway) can send signals to other VESNet devices and the central station. The VESNet can contain a maximum configuration of 127 Elite panels or VESNet LCD Displays with Releasing. To enable eNet network capabilities model VF1170-00 eNet Network Interface card must be used. To enable central station signaling over eNet, model S556 must be used. Panels with eNet network capabilities can send signals to other eNet devices and (if model S556 is on the network) the central station. The eNet can contain a maximum configuration of 64 Elite panels. Compatible addressable devices and bases which utilize the Hochiki SLC protocol are: [VES model VF2001, VF2002, VF2003, VF6001, VF6002, VF6004, VF6005, VF6006, VF6013, VF7001 and VF7002 (Refer to PLA Project ID 3022552) and Hochiki model AIE-EA ionization smoke detector, model ALG-V photoelectric smoke detector, model ATG-EA heat detector, models DH-98-A, and DH-98-AR and ALK-D duct smoke detectors, models HSB-NSA-6 and YBN-NSA-4 6 in and 4 in bases. Compatible addressable modules are: models FRCME-4-10K, FRCME-S-10K and FRCME-P monitor modules; DIMM dual input monitor module with two independent Class B (Style B) initiating device circuits (IDCs); model R2M relay module; model SRM solenoid releasing module; CZM conventional zone module with Class A (Style D) or Class B (Style B) initiating device circuits (IDCs); DCP-AMS, DCP-AMS-LP, DCP-AMS-KL, DCP-AMS-KL-LP addressable manual pull stations and model SOM signal output module. CZM conventional zone module compatible with: SLK-24F, SLR-24H, SLR-24V, SLR-835 SLR-835W, SLR-835H, SLR-835HW, SLR-835B-2, SLR-835BH-2 photoelectric type smoke detectors; SIH-24F, SIJ-24 ionization type smoke detectors; DCD-135, DCD-190 combination rate-of-rise fixed temperature detectors. Compatible addressable devices and bases which utilize the Apollo SLC protocol are XP95A photoelectric, ionization and heat detectors/bases (see the table below). Standby batteries provide 24 hour standby operation. (See also CENTRAL STATION SIGNALING SYSTEMS.)

The e-LAN Lite, eLAN, Elite Series Fire alarm Control Panels are compatible with the following devices:

Apollo Product Series	*Description*	*Apollo part #*	*VES part #*
Discovery	Heat detector	58000-450	VF5602-00
Discovery	Ion Smoke Detector	58000-550	VF5600-00
Discovery	Optical Smoke Detector	58000-650	VF5601-00
Discovery	Multi Sensor	58000-750	VF5603-00
XP95A	Base 4"	45681-210	VF5630-00
XP95A	Base-SC Isolator	45681-211	VF5634-00
XP95A	Base - 6" Low profile	45681-234	VF5636-00
XP95A	Base Relay	45681-242	VF5635-00
XP95A	Base 20D Isolator	45681-321	VF5633-00
XP95A	Base 6" E-Z Fit	45681-250	VF5632-00
XP95A	Isolator	55000-750	VF5605-00
XP95A	Module-Switch Monitor	55000-805	VF5662-00
XP95A	Module-Priority Switch Monitor	55000-806	VF5663-00
XP95A	Module-I/O Switch Monitor	55000-820	VF5665-00
XP95A	Module-Sounder Control Output	55000-825	VF5666-00
XP95A	Module-Priority Mini Switch Monitor	55000-830	VF5660-00
XP95A	Module-Mini Switch Monitor	55000-831	VF5661-00
XP95	Mini Disc Remote Indicator	53832-070	VF5609-00
XP95	Loop Powered Beam Detector	55000-266	VF5604-00
XP95A	Dual Priority Switch Monitor Module	55000-790	VF5664-00
XP95A	Relay Output Module	55000-863	VF5667-00
XP95A	Base 6"	45681-225	VF5631-00
XP95A	New Style Mini Switch Monitor	55000-765	VF5608-00
XP95A	Heat detector	55000-450	VF5668-00
XP95A	Ion Smoke Detector	55000-550	VF5669-00
XP95A	Optical Smoke Detector	55000-650	VF5670-00
XP95A	Multi Sensor	55000-886	VF5671-00
Air Products	Multi-flex Sounder base	MB-SDRT-AA	VF4990-00
Air products	2-Wire Analog Addressable Duct	SL-DAA-P	VF4991-00

Air Products	4-Wire Analog Addressable Duct	SL-DA4R-P	VF4992-00
Remote Test Station for Duct Detectors – Alarm LED			VF5020-00
Remote Test Station for Duct Detectors – Alarm LED w/ Reset Button			VF5021-00
Remote Test Station for Duct Detectors – Alarm LED w/ Reset Key Switch			VF5023-00

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The heart of a signaling system consists of a control unit to which are connected the initiating and signal indicating circuits. The control unit is usually in a separate enclosure, provides power to its external circuits, and often is of modular design to enable flexibility in obtaining multiple functions. In a coded signaling system, transmitters may be either separate from or integral to a control; they transmit to the control or from a control to remote receiving equipment. The equipment listed below, in conjunction with peripheral devices, may be used to form a complete system or a portion of a multizone system.

eLAN-RSA, eLAN-RSH, EliteRS-A, eliteRS-H Series

eLAN-RSA , eLAN-RSH, EliteRS-A and EliteRS-H Series Fire alarm Control Panels. The eLAN Series controls use firmware revision 06.xxxx. The EliteRS Series controls use firmware revision 07.xxxx. The controls use 12AH to 18AH batteries for inside the panel mount and up to 60AH for remote cabinet mount. Below see the table for model number breakdown for the eLAN-RSA , eLAN-RSH, EliteRS-A and EliteRS-H Series Fire alarm Control Panels:

VF08abc-cd

a = Model Designation: 8 = Elite or 9 = eLAN
b = This is reserved for definition of the loop protocol, defined by the numbers 1, 2, 3 , 5, 6 and 7:

1 – 1 Loop Hochiki Protocol;
2 - 2 Loop Hochiki Protocol;
3 - 1 Loop Hochiki Protocol, non expendable;
5 – 1 Loop Apollo Protocol;
6 – 2 Loop Apollo Protocol;
7 - 1 Loop Apollo Protocol, non expandable.
c = This is reserved for definition of the type of Coomunication Board that is installed on the panel, defined by the numbers 0, 1, 2, 3, 4, 5, 6 and 7:
0 – No communicators installed;
1 – Media Gateway Card is installed;
2 – NIC is installed;
3 – Not used;
4 – Modem DACT Ethernet card is used;
5 – e-Net interface is installed;
6 – Integrated Dialer is installed;
7 - e-Net interface and Integrated Dialer are installed.

d = This is reserved for definition of the enclosure color, defined by the numbers 1, 2, 3 and 4:

1 – Red enclosure;
2 – Charcoal enclosure;
3 – Not used;
4 – Grey enclosure.

The eLAN-RSA , eLAN-RSH, EliteRS-A and EliteRS-H Series Fire alarm Control Panels compatible components and modules are listed in the table below:

Model	***Interface Board***	***Embedded dialer***	***VesNet Compatible***	***eNet Compatible***	***FireNet Network Compatible***
VF0ab0	None	No	Yes	Yes	No
VF0ab1	VF1150-00 Media Gateway	No	Yes	No	No

VF0ab2	VF1151-00 NIC	No	Yes	No	No
VF0ab4	VF1153-00 Ether/DACT	No	Yes	No	No
VF0ab5	VF1170-00 eNet	No	No	Yes	No
VF0ab6	None	Yes	No	Yes	No
VF0ab7	VF1170-00 eNet	Yes	No	Yes	No

a = This is reserved for definition of the loop protocol, defined by the numbers 1, 2, 3 , 5, 6 and 7.
b = This is reserved for definition of the type of Coomunication Board that is installed on the panel, defined by the numbers 0, 1, 2, 3, 4, 5, 6 and 7 (see above).

The eLAN-RSA , eLAN-RSH, EliteRS-A and EliteRS-H Series Fire alarm Control Panels are compatible with the following devices:

Apollo Product Series	***Description***	***Apollo part #***	***VES part #***
Discovery	Heat detector	58000-450	VF5602-00
Discovery	Ion Smoke Detector	58000-550	VF5600-00
Discovery	Optical Smoke Detector	58000-650	VF5601-00
Discovery	Multi Sensor	58000-750	VF5603-00
XP95A	Base 4"	45681-210	VF5630-00
XP95A	Base-SC Isolator	45681-211	VF5634-00
XP95A	Base - 6" Low profile	45681-234	VF5636-00
XP95A	Base Relay	45681-242	VF5635-00
XP95A	Base 20D Isolator	45681-321	VF5633-00
XP95A	Base 6" E-Z Fit	45681-250	VF5632-00
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XP95A	Dual Priority Switch Monitor Module	55000-790	VF5664-00
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XP95A	Base 6"	45681-225	VF5631-00
XP95A	New Style Mini Switch Monitor	55000-765	VF5608-00
XP95A	Heat detector	55000-450	VF5668-00
XP95A	Ion Smoke Detector	55000-550	VF5669-00
XP95A	Optical Smoke Detector	55000-650	VF5670-00
XP95A	Multi Sensor	55000-886	VF5671-00
Air Products	Multi-flex Sounder base	MB-SDRT-AA	VF4990-00
Air products	2-Wire Analog Addressable Duct	SL-DAA-P	VF4991-00
Air Products	4-Wire Analog Addressable Duct	SL-DA4R-P	VF4992-00
Remote Test Station for Duct Detectors – Alarm LED			VF5020-00
Remote Test Station for Duct Detectors – Alarm LED w/ Reset Button			VF5021-00
Remote Test Station for Duct Detectors – Alarm LED w/ Reset Key Switch			VF5023-00

Description	***Hochiki part #***	***VES part #***
Ionization Smoke Detector	AIE-EA	VF2001-00
Photoelectric Smoke Detector	ALG-V	VF2002-00
Heat Detector	ATG-EA	VF2003-00
Base, 4”	YBN-NSA-4	VF7001-00
Base, 6”	HSB-NSA-6	VF7002-00
Dual Input Monitor Module	DIMM	VF6007-00
Fast Response Contact Module w/ Pigtails	FRCME-P	VF6001-00
Fast Response Contact Module w/ screw terminals	FRCME-S	VF6002-00

Fast Response Contact Module, 4” sq box.	FRCME-4	VF6013-00
Analog Addressable Duct Detector	DH-98A	VF5001-00
Analog Addressable Duct Detector w/ relay	DH-98AR	VF5002-00
Short Circuit Isolator	SCI	VF6003-00
Dual Relay Module	R2M	VF6005-00
Analog Sounder Base	ASB	VF7008-00
Supervised Output Module	SOM	VF6004-00
Solenoid Releasing Module	SRM	VF6006-00
Conventional Zone Module	CZM	VF6011-00
Fast Response Contact Module, Class A	FRCMA	VF6020-00
Fast Response Contact Module, Class A w/ Short Circuit Isolators	FRCMA-I	VF6021-00
Fast Response Contact Module, Class A w/ Pigtails	FRCMA-P	VF6022-00
Fast Response Contact Module, Class A w/ Pigtails & Short Circuit Isolators	FRCMA-PI	VF6023-00

Dual Relay Module, 1 Amp	DCP-R2ML	VF6030-00
Dual Relay Module, 8 Amp	DCP-R2MH	VF6031-00
Dual Relay Module, 1 Amp w/ Short Circuit Isolators	DCP-R2ML-I	VF6032-00
Dual Relay Module, 8 Amp w/ Short Circuit Isolators	DCP-R2MH-I	VF6033-00
Supervised Output Module, Class A	SOM-A	VF6040-00
Supervised Output Module, Class A w/ Short Circuit Isolators	SOM-AI	VF6041-00
Addressable Manual PullStation, Single Action	AMS-KL	VF3031-00
Addressable Manual PullStation, Dual Action		VF3032-00
Analog Photoelectric Smoke Sensor	ALK-V	VF2005-00
Multi-Sensor	ACD	
Remote Test Station for Duct Detectors – Alarm LED	MS-RA	VF5020-00
Remote Test Station for Duct Detectors – Alarm LED w/ Reset Button	MS-RA/R	VF5021-00

Remote Test Station for Duct Detectors – Alarm LED w/ Reset Key Switch	MS-KA/R	VF5023-00

Each of the models in the Matrix will be capable of interfacing with:
• eMatrix VF13xx-yyy
• eView Display VF1172-xx
• 16 Channel I/O VF1171-00

Each of the models in the Matrix listed as “VesNet Compatible” will be capable of interfacing with:
• Media Gateway w/releasing VF1150-00
• NIC w/releasing VF1151-00
• Ether/DACT w/releasing VF1153-00

Each of the models in the Matrix listed as “VesNet Compatible” will be capable of interfacing with:
• VesNet Serial display VF8300-xx

Each of the models in the Matrix listed as “eNet Compatible” will be capable of interfacing with:
• eNet Interface VF1170-00

(See also CENTRAL STATION SIGNALING SYSTEMS, AUTOMATIC RELEASES FOR EXTINGUISHING SYSTEMS AND OTHER FIRE PROTECTION EQUIPMENT and AUTOMATIC RELEASES FOR PREACTION AND DELUGE SPRINKLER SYSTEMS).

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APPROVAL REPORT

Project No.:	3042979
Class:	3010
Product:	Elite XT & Sigma A-XT Fire Alarm Control and Releasing panels
Name of Report Holder:	VES (on behalf of Kentec Electronics Ltd.)
Address of Report Holder:	620 Allendale Road King of Prussia, PA 19406
Name of Manufacturer:	Kentec Electronics Ltd.
Address of Manufacturer:	Units 25-27 Fawkes Avenue, Questor Dartford Kent DA1 1JQ
Customer ID:	123174-1
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2 December 2011
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