AARAL

ANALOGUE ADDRESSABLE FIRE ALARM CONTROL SYSTEM

General

The AARAL is an advanced technology based analogue addressable Fire Alarm Control System designed for medium to large scale infrastructure, ease of use and high reliability with the capacity to support 32,000 devices in any combination. The control panel is designed with an ARM 32-bit microcontroller with high resolution (480 x 272 pixels) 4.3-inch graphical TFT display with a symbolic representation of system status and control keys for easy access. The AARAL is available in two different models as AARAL X4 is expandable up to 4 Loop Addressable FACP and AARAL X8 is expandable up to 8 Loop Addressable FACP.

The panel status shall be visually indicated in unambiguous color with distinguished inbuilt audible tone. This system can operate as a standalone or connect to 16 network nodes with network interface card.

SIGNALING

UL LISTED

Unique Selling Point

- 140 Nodes Class A / B Network.
- Unlimited device grouping.
- Alarm verification facility.
- Supports 32K Devices.
- Walk test facility.
- Maximum network distance up to 16Km.
- Programmable 24VDC output.
- Floor Grouping Facility.

Features

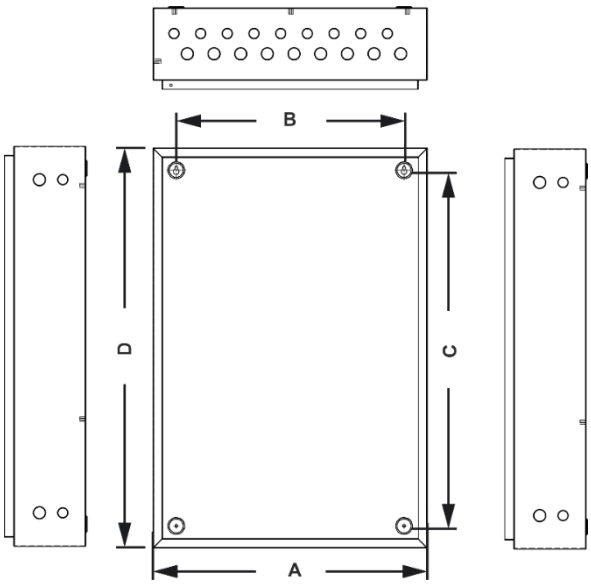
- UL Listed 864 10th Edition.
- System supports 140 nodes including 124 repeaters.
- System supports for 32,000 devices.
- Auto learn feature for faster programming of new devices
- 16 nodes peer to peer networkable with Network Interface card.
- Maximum 250 devices per loop.
- Earth fault detection facility @ 0 Ohms.
- 10,000 events logs with RTC per each panel with distributed different search option.
- 999 event queues for each type of Alarm, Supervisory, and Fault for ease & access.
- 2,000 groups (Max 1000 input & 1000 output group). Unlimited devices per group.
- Facility to add NAC and remote input in grouping.
- Pre-alarm facility.
- Alarm Verification facility.
- Configurable Day / Night mode.
- Programmable auto silence facility.
- Programmable AC loss delay.
- Programmable silence inhibits.
- Programmable reminders for alarm, supervisory and fault.
- Two programmable inputs: one for remote fire / conventional zone and another one for remote Fire.
- Battery low audible and visual warning.
- Two programmable Form C relay for fire, prealarm and supervisory
- One common fault relay.
- Two numbers of supervised synchronized NAC's.
- All field wiring is power limited and supervised.
- Repeater through RS485 network.
- NIC Card (Optional).
- USB interface for PC connectivity.

Specification

Electrical Specifications			
Primary Power	4 Loop 8 Loop	110 ~ 230VAC, 60 / 50 Hz, (2A @ 110VAC & 1.2A @ 230VAC) Max. 110 ~ 230VAC, 60 / 50 Hz, (2.8A @ 110VAC & 1.4A @ 230VAC) Max.	
Standby Power	4 Loop 8 Loop	24VDC (2 No's of 12V, 65Ah [Max] panel enclosure can house up to 14Ah sealed lead acid battery) 24VDC (2 No's of 12V, 65Ah [Max] panel enclosure can house up to 26Ah sealed lead acid battery)	
	For larger batteries UL listed battery box should be used within 3 meters from the panel by using 2.0 Sq. mm (14AWG) cable.		
Charging Circuit	Charging voltage Charging current Charging Capacity	28 V, ± 5% nominal 4.3A (max) 65Ah	
Operating Condition	Operating temperature: 0 – 49° C / 32 – 120° F Relative humidity: 93 ± 2% RH (non-condensing)		
Storage Temperature	0 - 60° C		
Quiescent Current	4 Loop 8 Loop	450mA @ 24V (Max) 500mA @ 24V (Max)	
Alarm Current	4 Loop 8 Loop	500mA @ 24V (Max) 750mA @ 24V (Max)	
Relays	Type Quantity Contact Rating Power factor	Form C 3 No's 2A @ 30 VDC (Resistive Only) 1.0	
Notification Appliance Circuits	Quantity	4 Loop 8 Loop	2 No's
	Total NAC Current	4 Loop 8 Loop	2 A (max)
	Operating Voltage NAC current Wiring Style Line Drop EOL resistor	24 VDC Regulated 1.0 A (Max) per circuit Class B 1.6 V 4K7, ½ watt	
24VDC Output (Special application)	Quantity Voltage Current	1 No 24VDC resettable or continuous 500mA (max)	
Signaling Line Circuits	Quantity Devices per loop Wiring style Loop Resistance Loop capacitance Loop current	4 No's (AARAL X4) & 8 No's (AARAL X8) 250 No's / Loop Class A, Class B, Class X 40 Ω (max) 0.6 µf (max) 350 mA (max)	
Remote Input 1 (Initiating Device Circuits)	Quantity Wiring style Operating voltage Alarm current Short circuit current Loop resistance EOL Resistor Standby current	1 No Class B 17 - 32 VDC 15 – 45 mA 50 mA (max) 40 Ω Max. (each side 20 Ω) 4K7, ½ watt 6.6mA (Including 1.6mA for detectors)	
Remote Input 2 (Input Circuit)	Quantity Wiring Style Operating Voltage Short circuit current Loop resistance EOL Resistor Standby current	1 No Class B 4 – 8 VDC 3 mA (max) 40 Ω (max) 4K7, ½ watt 1.3 mA Max.	
RS485 Network (Repeater / RE-PS5)	Nodes Wiring Style Wire type Circuit Length Loop resistance	8 Class B Shielded Twisted pair. 1.2 Km (Max) 100 Ohms	
NIC Network (Panel to Panel Via NIC)	Wiring style Wire type Distance Loop resistance	Class A and Class B Shielded Twisted pair. 1.2 Km (Max) 100 Ohms	

Mechanical Specification		
Dimension	4Loop 8Loop	(400W x 550H x 124D) mm (494W x 720H x 124D) mm
Wire Size	2.5 Sqmm (12 AWG)	
Color	White / Red / Black	
IP rating	IP 50	
Construction (Powder coated finish)	4Loop 8Loop	Base – 16, Door – 16-gauge CRCA sheet Base – 16, Door – 16-gauge CRCA sheet
Cable entry	Top – 7 x Ø 19mm, Side – 2 x Ø 19mm knockouts in the 4Loop cabinet. Top – 7 x Ø 22.5 mm, Side – 2 x Ø 22.5 mm knockouts in the 4 Loop cabinet. Top – 9 x Ø 19mm, Side – 2 x Ø 19mm knockouts in the 8 Loop cabinet. Top – 9 x Ø 22.5 mm, Side – 2 x Ø 22.5 mm knockouts in the 8 Loop cabinet.	
Weight	4 Loop 8 Loop	13Kg Approx. 20Kg Approx.

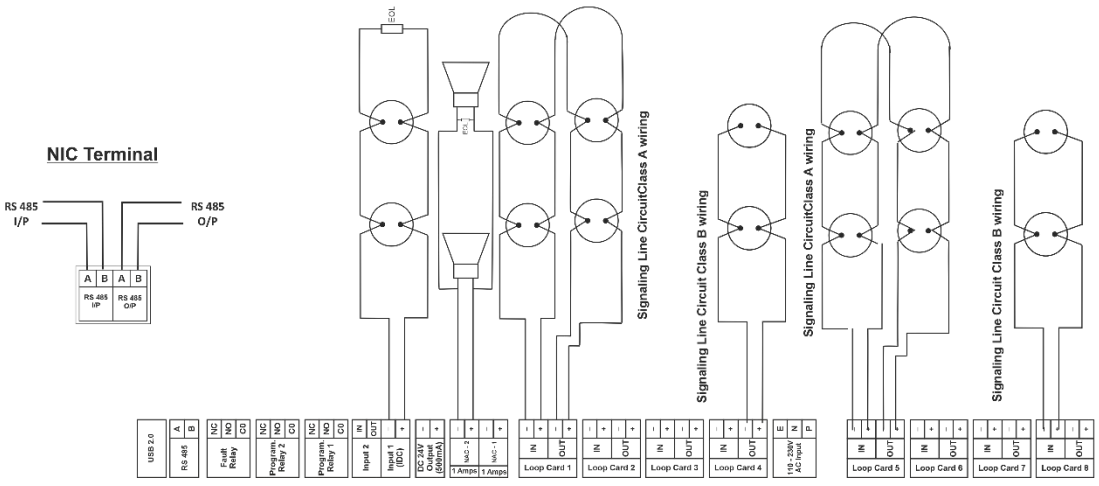
Dimensions



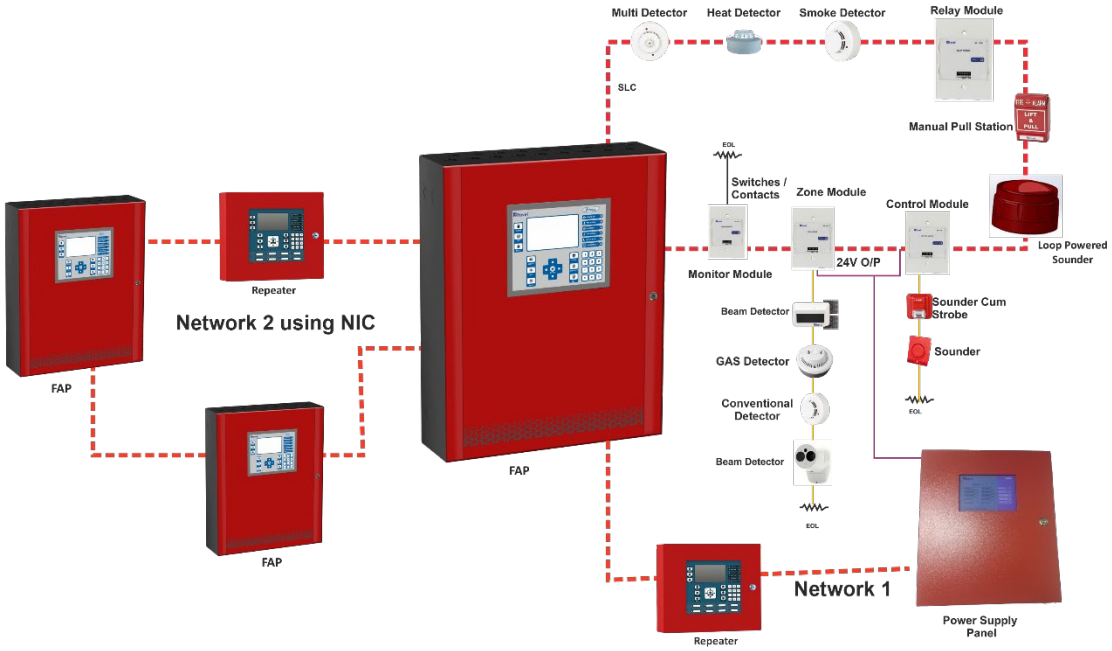
	4 Loop	8 Loop
A	400 mm	494 mm
B	325 mm	410 mm
C	475 mm	645mm
D	550 mm	720 mm
E	124 mm	124 mm

Wiring Configuration

Note:
- All the field wiring circuits are supervised.
- All the field wiring circuits are power limited except 110-230V AC and battery.



Peer-to-Peer Network



Compatible Devices

Models		Description
Detectors	*RE357-SH*	Addressable multi sensor detector
	RE357-S	Addressable smoke detector
	RE357-H	Addressable heat Detector
Modules	*RE–757C*	Addressable Control Module
	RE–757M	Addressable Monitor Module
	RE–757M2	Addressable Dual Monitor Module
	RE–757R	Addressable Relay Module
	RE-757R2	Addressable Dual Relay module
	RE–757Z	Addressable Zone Interface Module
	RE–757X	Addressable Input Output Module
	RE–757X2	Addressable Dual Input Output Module
Pull station	*RE–557PS*	Addressable Pull station – Single action
	RE-557PD-R	Addressable Pull station – Dual action (Red)
*Notification Devices**	*RE-657SS*	Addressable Sounder strobe
	RE-657SO	Addressable Sounder
	RE-657ST	Addressable Strobe
	RE-658SS	Addressable Loop Powered Sounder strobe
	RE-658SO	Addressable Loop Powered Sounder
	RE-658ST	Addressable Loop powered Strobe
	RE-677SO	Addressable Sounder – ceiling mount
	RE-678SO	Addressable Loop Powered Sounder – ceiling mount
	RE-716SO	UL Listed Conventional Sounder
	RE-716SS	UL Listed Conventional Sounder Strobe

**Conditions Apply*

Compatible Panels

Models	Description
Aaral RP	Repeater Panel
RE-PS 5	NAC Extender / Power supply Panel

Ordering Information

Model	Description	
Aaral X4	Basic panel up to 4 Loop with network option	FACP, complete system with user interface, main CPU, 110/230VAC power supply, loop card ordered separately. and NIC card ordered separately for network.
Aaral X8	Basic panel up to 8 Loop with network option	FACP, complete system with user interface, main CPU, 110/230VAC power supply, loop card ordered separately. and NIC card ordered separately for network.
Accessories / Replacement		
AR-MB-5N	Main mother board (1-4Loop)	
AR-EXMB	Extended Mother board (5-8 loop)	
AR-XDSB	Display Board	
AR-MMPI	Main – MB PS interface board	
AR-EMPI	Extended – MB PS interface board	
AR-PSX4	Power Supply for (4Loop) Panel	
AR-PPSA	Main Power Supply (8Loop) Panel	
AR-SPSA	Additional Power Supply (8Loop) Panel	
AR-LC	Loop Card	
AR-XNIC	Network Interface card	

India

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