Advanced

Axis AX

Commander 3 Series

The Commander 3 Series is a low profile strobe and horn/strobe combination that offers dependable audible and visual alarms and the lowest current available.

The GE3 Series 24VDC offers tamperproof field selectable candela options of 15, 30, 60, 75, and 110 candela. The 12VDC offers tamperproof field selectable candela options of 15, 30, 60, and 75 candela.

The Commander 3 Series horn offers a continuous or syncable temporal three in 2400Hz and mechanical tone, a chime and whoop tone. All tones are easy for the professional to change in the field by using switches.

The GE3 Series has a minimal operation current and has a minimum flash rate of 1Hz regardless of input voltage.

The Commander 3 Series is shipped with the standard 4” metal mounting plate which incorporates the popular Super -Slide TM feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing.

The Commander 3 also features the Checkmate TM - Instant Voltage Verification feature which allows the installer to check the voltage drop draw and match it to the blueprint.

The GE3 Series appliances are UL 464 and UL 1971, listed for use with fire protective systems and are warranted for three years from date of purchase.



Features

- Field Selectable Candela Options (15, 30, 60, 75, and 110 Candela)
- Super-Slide™ Bracket
- Ease of Supervision Testing Checkmate™
- Instant Voltage Verification Switch Selection for High or Low dBA
- Silence Horn While Strobes Remain Flashing
- Faceplate Available in Red or Off-White
- Unit Dimensions: 5” High x 4.5” Wide x 2.5” Deep
- Lower Installation and Operating Costs
- Input Terminals 12 to 18 AWG
- Switch for Chime, Whoop, Mechanical and 2400Hz Tone
- Tamperproof Re-entrant Grill
- Switch for Continuous or Temporal 3 (Not available on whoop tone)

Listings and Approvals

- UL 464 & UL 1971 Listed
- CAN/ULC S526-M87 Listed
- ULSZ7.S3406 Listed (GEC3-24, GEH24 & GEH12)
- FM Approved
- CSFM: 7135-0569:122 (GEC3-24 & GEH-24)
  - 7125-0569:123 (GES3-24)
  - 7125-0569:129 (GES3-12)
  - 7135-0569:130 (GEC3-12 & GEH-12)
- BS+A/MEA: 285-91-E (GEC3-24 & GES3-24)
  - 580-06-E (GEC3-12 & GES3-12)

GEH 12 VDC / 24 VDC Low Profile Evacuation Horn

Model Number	Part Number	Nominal Voltage	Reverberant dBA @ 10ft. per ul 464	In Anechoic Room dBA @ 10ft.

GEH12-R	904-1239-002	12 VDC	62-82	100
GEH12-W	904-1241-002	12 VDC	62-82	100
GEH24-R	904-1205-002	24 VDC	62-82	100
GEH24-W	904-1207-002	24 VDC	62-82	100

GES3 12 VDC or 24 VDC Selectable Candela Low Profile Evacuation Strobe

Model Number	Part Number	Nominal Voltage	Candela (UL 1971)
GES3-12WR	904-1235-002	12 VDC	15, 30, 60, 75
GES3-12WW	904-1237-002	12 VDC	15, 30, 60, 75
GES3-12PWP	904-1236-002	12 VDC	15, 30, 60, 75
GES3-12PWW	904-1238-002	12 VDC	15, 30, 60, 75
GES3-24WR	904-1321-002	24 VDC	15, 30, 60, 75, 110
GES3-24WW	904-1319-002	24 VDC	15, 30, 60, 75, 110
GES3-24PWR	904-1322-002	24 VDC	15, 30, 60, 75, 110
GES3-24PWW	904-1320-002	24 VDC	15, 30, 60, 75, 110

Model Designations:

W = Wall Mount
R = Red Faceplate
W= Off-white Faceplate
P = Plain (No Lettering)

All units are available in plain (no lettering). When ordering add a 'P' to the end of the model number. Plain units are non-returnable.

ALERT bezel available
AGENT bezel available

GEC3 12 VDC or 24 VDC Selectable Candela Low Profile Evacuation Horn/Strobe

Model Number	Part Number	Nominal Voltage	Candela (UL 1971)	Reverberant dBA @ 10ft., per UL 464	In Anechoic Room dBA @ 10ft.
GEC3-12WR	904-1231-002	12 VDC	15, 30, 60, 75	62-82	100
GEC3-12WW	904-1233-002	12 VDC	15, 30, 60, 75	62-82	100
GEC3 12PWR	904-1232-002	12 VDC	15, 30, 60, 75	62-82	100
GEC3-12PWW	904-1234-002	12 VDC	15, 30, 60, 75	62-82	100
GEC3-24WR	904-1317-002	24 VDC	15, 30, 60, 75, 110	62-82	100
GEC3-24WW	904-1315-002	24 VDC	15, 30, 60, 75, 110	62-82	100
GEC3-24PWR	904-1318-002	24 VDC	15, 30, 60, 75, 110	62-82	100
GEC3-24PWW	904-1316-002	24 VDC	15, 30, 60, 75, 110	62-82	100

GE3-12 Product Strobe Current Ratings

Candela	15cd	30cd	60cd	75cd
12 VDC	106mA	131mA	186mA	237mA
UL Max[1]	136mA	212mA	331mA	436mA

GE3-24 Product Strobe Current Ratings

Candela	15cd	30cd	60cd	75cd	110cd
24 VDC	55mA	63mA	88mA	112mA	136mA
UL Max[1]	78mA	96mA	137mA	180mA	224mA

GE3-12 Product Horn Current Ratings

Horn Mode	Minimum dBA @ 10ft. per UL 464 (High)	Minimum dBA @ 10ft. per UL 464 (Low)	Regulated 12 VDC Max. Operating @ High Setting (mA)
Temp 3 2400Hz	76	69*	29
Temp 3 Mechanical	75	68*	26
Temp 3 Chime	62*	60*	13
Continuous 2400HZ	79	74*	29
Continuous Mechanical	78	72*	26
Continuous Chime	63*	61*	13
Whoop	78	71*	55

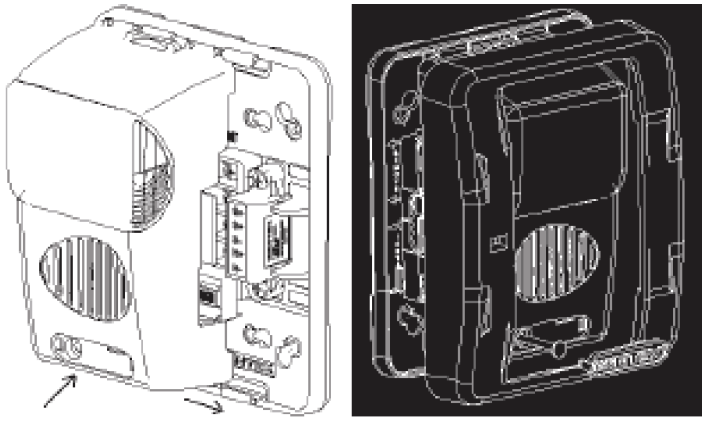
GE3-24 Product Horn Current Ratings

Horn Mode	Minimum dBA @ 10ft. per UL 464 (High)	Minimum dBA @ 10ft. per UL 464 (Low)	Regulated 24 VDC Max. Operating @ High Setting (mA)
Temp 3 2400Hz	78	71*	28
Temp 3 Mechanical	76	70*	25
Temp 3 Chime	70*	66*	15
Continuous 2400Hz	81	74*	28
Continuous Mechanical	80	72*	25
Continuous Chime	70*	66*	15
Whoop	82	69*	56

Notes:

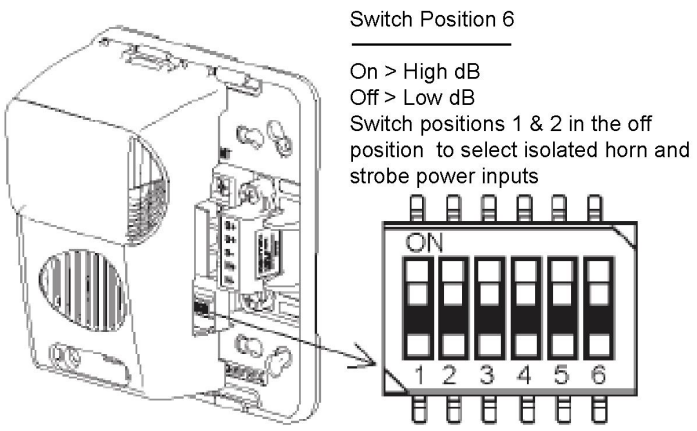
- To obtain the horn/strobe current draw, add the strobe current draw and the horn current draw.
- Operating temperature: 32ºF to 120ºF (0ºC to 49ºC). The GE3 Series is not listed for outdoor use.
- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 mode its sound pressure is the same as the continuous mode.
- For nominal and peak current across UL regulated voltage rage for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual. 12 VDC models are DC only.
- Gentex does not recommend using a coded or pulsing signaling circuit with any of our strobe products (See technical bulletin 014).
- [1]RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33 VDC for 24 VDC units, 8-17 VDC for 12 VDC units). For strobes the UL max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

Mounting Super Slide TM



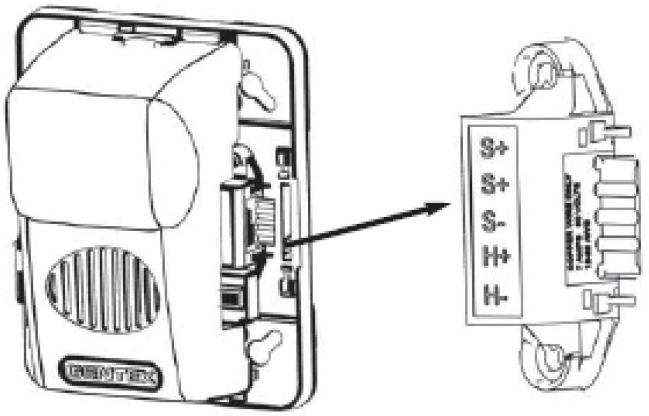
Die cast metal mounting plate: Mounts to single gang, double gang 4" square boxes or GSB box.

Switch Locations



Switch Position	3	4	5
Mechanical - Temp	ON	ON	ON
Mechanical - Cont.	OFF	ON	ON
Hi - Temp	ON	OFF	ON
Hi - Cont.	OFF	OFF	ON
Chime - Temp	ON	ON	OFF
Chime - Cont.	OFF	ON	OFF
Whoop	ON	OFF	OFF
Whoop	OFF	OFF	OFF

Checkmate TM Instant Voltage Verification

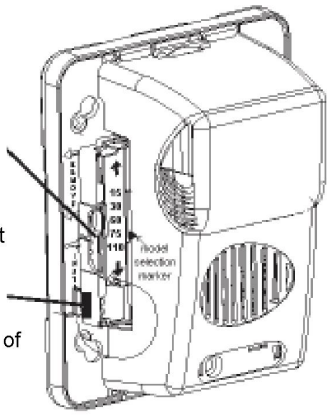


The access holes are provided in the back of the terminal block to allow the voltage to be measured directly without removing the device. Typically this would be done at the end of the line to confirm design criteria. Most measurements will be taken using the S+ and S- locations although access is provided to other locations. NOTE: Care should be taken to not short the test probes.

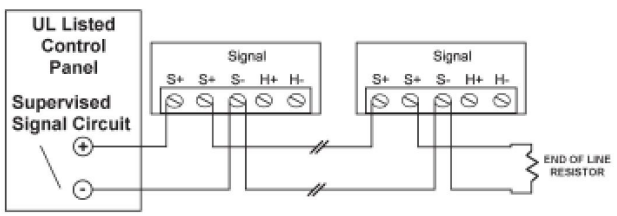
Candela Selection

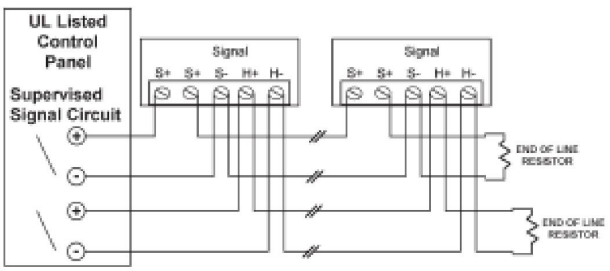
Candela selection slider switch. Depress center and slide switch to desired brightness level

Break off pin and insert into hole at the bottom of the selector to lock candela setting. Signal must be removed from the bracket and pin pushed forward from backside out of hole to change candela.

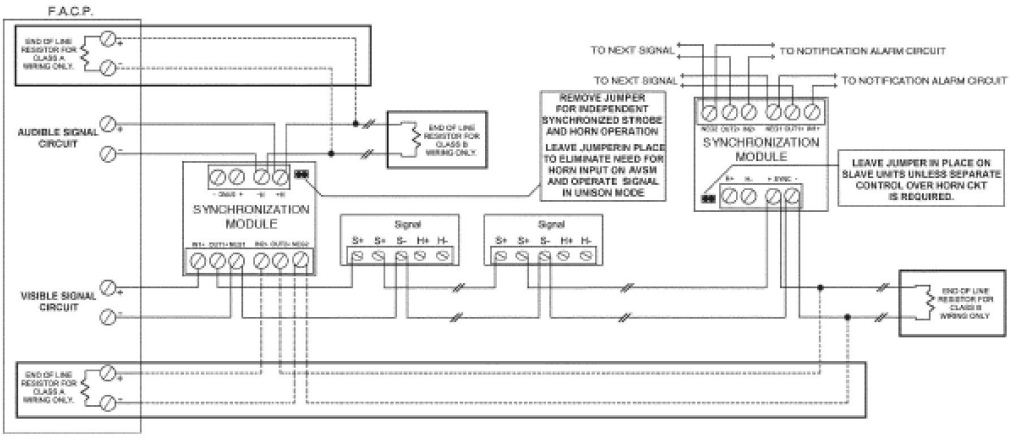


Conventional GES3 & GEC3 Series Wiring Diagram





GE3 Series With Gentex Synchronization Module Wiring Diagram



Note: See technical bulletin 015 for proper synchronization module for application.
Note: When synchronizing the GE3 12 VDC Series, the AVSM synchronization module MUST be used.

Specification

The audible and/or visible signal shall be Gentex GE3 Series or approved equal and shall be listed by Underwriters Laboratories, Inc per UL 1971 and/or UL 464. The notification appliance shall also be listed with Factory Mutual Listing Service (FM), the California State Fire Marshal (CSFM) and the Bureau of Standards and Appeals (NYC).

The notification appliance (combination audible/visible) shall produce a peak sound output of 100dBA or greater at 12 VDC or 24 VDC as measured in an anechoic chamber. The signalling appliance shall also have the capability to silence the audible signal while leaving the visible signal energized with the use of a single pair of power wires. Additionally, the user shall be able to select either continuous or temporal tone output with the temporal signal having the ability to be synchronized. Unit shall be capable of being installed so that any unauthorized attempt to change the candela setting will result in a trouble signal at the fire alarm control panel.

The audible/visible and visible signaling appliance shall also maintain a minimum flash rate of 1Hz or up to 2Hz regardless of power input voltage. The appliance shall have and operating current of 55mA or less at 24VDC for the 15Cd strobe circuit and 106mA or less at 12VDC for the 15Cd strobe circuit. The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with a mounting bracket with terminals and barriers for input/output wiring and be able to mount to a single gang or double gang box or double workbox without the use of an adaptor plate.

The unit shall have an input voltage range of 16-33 volts with either direct current or full wave rectified power for 24 VDC models or a voltage range of 8-17.5 volts for 12 VDC models. The appliance shall be capable of testing supervision without disconnecting wires. Also the appliance shall be capable of mounting to a surface back box. The unit shall also be able to verify voltage at the unit without removing unit.

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

Advanced

Axis AX

Commander 4 Series

The GCS/GCC Series is a ceiling mount strobe or horn/strobe combination that offers dependable audible and visual alarms and the lowest current available.

The GCS/GCC offers tamperproof field selectable candela options of 15, 30, 75, 95, 115 and 150 candela.

The GCC horn offers a continuous or synchable temporal three in 2400Hz or mechanical tone. These tones are easy for the professional to change in the field by using switches. The models are shipped from the factory in the temporal three alarm mode.

The GC Series has a minimal operating current and has a minimum flash rate of 1Hz regardless of input voltage.

The Commander 4 Series comes standard with the 4” mounting plate which incorporates the popular Super -Slide TM feature that allows the installer to easily test for supervision.

The Commander 4 also features the Checkmate TM - Instant Voltage Verification feature which allows the installer to check the voltage without removing the signal.

The GC Series appliances are UL 464 and UL 1971 listed for use with fire protective systems and are warranted for three years from the date of purchase.



Features

- Field Selectable Candela Options (15, 30, 75, 95, 115 and 150 candela)
- Super-Slide TM Bracket - Ease of Supervision Testing
- Checkmate TM - Instant Voltage Verification
- Switch Selection for High or Low dBA
- Silence Horn while Strobes Remain Flashing
- Unit Dimensions: 6” x 2.6”
- Lower Installation and Operating Costs
- Input terminals 12 to 18 AWG
- Switch for Mechanical and 2400Hz Tone
- Tamperproof Re-entrant Grill
- Switch for Continuous or Temporal 3
- Faceplate Available in Red or Off-White

Listings and Approvals

- UL 464 & UL 1971 Listed
- CAN/ULC S526-M87 Listed
- ULSZ7.S3406 Listed (GCC)
- FM Approved
- CSFM:
  - 7135-0569:122 (GCC)
  - 7125-0569:123 (GCS)
- BS+A/MEA: 285-91-E

GCS 24 Volt Ceiling Mount Selectable Strobe

Model Number	Part Number	Nominal Voltage	Candela
GCS24CR	904-1213-002	24 VDC	15, 30, 75, 95, 115, 150
GCS24CW	904-1215-002	24 VDC	15, 30, 75, 95, 115, 150
GCS24PCR	904-1214-002	24 VDC	15, 30, 75, 95, 115, 150
GCS24PCW	904-1216-002	24 VDC	15, 30, 75, 95, 115, 150

GCS 24 Volt Ceiling Mount Selectable Horn/Stobe

Model Number	Part Number	Nominal Voltage	Candela	Reverberant dBA @ 10 ft. Per UL 464[1]	In Anechoic Room dBA @ 10ft.
GCC24CR	904-1209-002	24 VDC	15, 30, 75, 95, 115, 150	81-86	90
GCC24PCR	904-1210-002	24 VDC	15, 30, 75, 95, 115, 150	81-86	90
GCC24CW	904-1211-002	24 VDC	15, 30, 75, 95, 115, 150	81-86	90
GCC24PCW	904-1212-002	24 VDC	15, 30, 75, 95, 115, 150	81-86	90

Notes:

- The GC Series is not listed for outdoor use.
- Operating temperature: 32ºF to 120ºF (0ºC to 49ºC)
- For nominal and peak current across UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual.
- Gentex does not recommend using a coded or pulsing signalling circuit with any of our strobe products (see technical bulletin number 014 for more information).

Model Designations:
'P' = Plain (no lettering), 'C' = Ceiling Mount, 'R' = Red Faceplate, 'W' = Off-White Faceplate

GCS/GCC Product Strobe Current Ratings

Candela	15cd	30cd	75cd	95cd	115cd	150cd
24 VDC	72mA	101mA	167mA	200mA	214mA	286mA
UL Max[2]	120mA	130mA	247mA	318mA	360mA	454mA

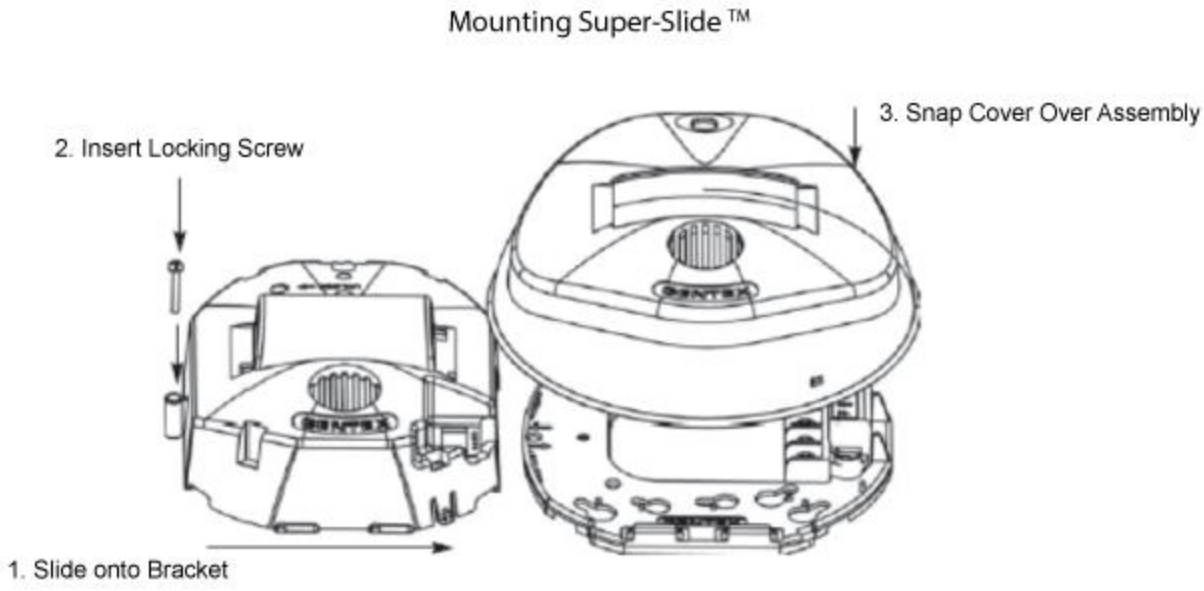
Horn Mode	Minimum dBA @ 10ft. Per UL 464 (High)	Minimum dBA @ 10ft. Per UL 464 (Low)	Regulated 24 VDC Max. Operating @ High Setting (mA)
Temp 3 2400Hz	83	75	23
Temp 3 Mechanical	21	73*	22
Continuous 2400Hz	86	78	23
Continuous Mechanical	84	76	22

* Operating the horn in this mode at this voltage will result in not meeting the minimum UL reverberant sound level required for public mode fire protection service. These settings are acceptable only for private mode fire alarm use. Use the high dBA setting for public mode application.

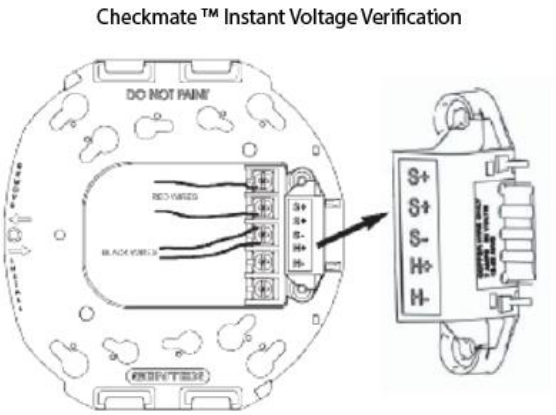
Notes: The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. While the horn is producing a tone in the temporal 3 mode its sound pressure is the same as continuous mode. To obtain horn/strobe current draw, add the strobe current draw to and the horn current draw.

[1] The listed horn current draws are for the Continuous Tone mode. The Temporal 3 Tone has a reverberant dBA @ 10ft. per UL 464 is 77-83 with a horn current draw of 34mA
[2] RMS current ratings are per UL average RMS method. UL max current rating is the maximum RMS current within the listed voltage range (16-33 VDC for 24 VDC units and 8-17 VDC for 12 VDC units). For strobes the UL max current is usually at the minimum listed voltage (16 VDC for 24 VDC units or 8 VDC for 12 VDC units). For Audibles the max current is usually at the maximum listed voltage. For unfiltered FWR ratings, see installation manual.

Mounting Super Slide TM

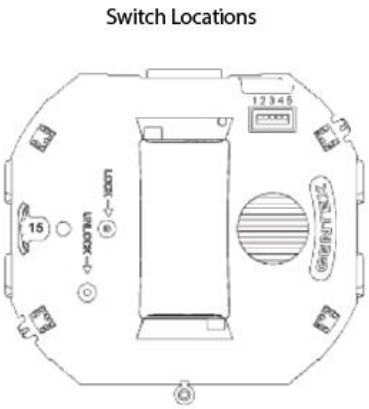


Checkmate TM Instant Voltage Verification



The access holes are provided in the back of the terminal block to allow the voltage to be measured directly without removing the device. Typically this would be done at the end of the line to confirm design criteria. Most measurements will be taken using the S+ and S- locations although access is provided to other locations. Note: Care should be taken to not short the test probes.

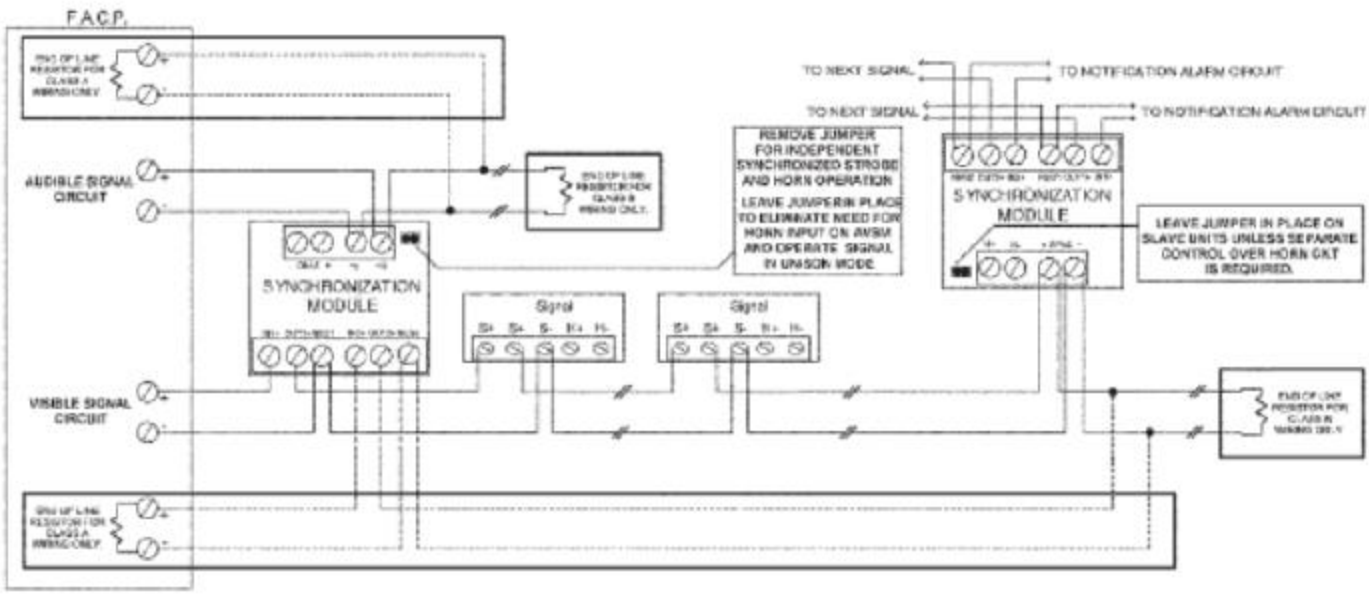
Switch Locations



Switch positions 1 and 2 in the down position to select isolated horn and strobe power inputs. Switch 3 selects between temporal or non-temporal tone. Up is temporal. Switch 4 selects between mechanical or high frequency tone. Up is mechanical. Switch 5 selects between high or low dBA. Up is high dBA.

Wiring Diagram

Wiring Diagram GCS/GCC Series With Gentex Synchronization Module



Note: See technical bulletin 015 for proper synchronization module for application.

Specification

The visible and audible/visible signal shall be Gentex model GC5 or GCC or approved equal and shall be listed by Underwriters Laboratories Inc. per UL 1971 for the GCS and also UL 464 for the GCC. The notification appliance shall also be listed with the California State Fire Marshal (CSFM) and the Bureau of Standards and Appeals (NYC).

The notification appliance (combination audible/visible units only) shall produce a peak sound output of 90dBA or greater as measured in an anechoic chamber. The signalling appliance shall also have the capability to silence the audible signal while leaving the visible signal energized with the use of a single pair of power wires. Additionally, the user shall be able to select either continuous or temporal tone output with the temporal signal having the ability to be synchronized.

The audible/visible and visible signaling appliance shall also maintain a minimum flash rate of 1 Hz or up to 2Hz regardless of power input voltage. The appliance shall have an operating current of 72mA or less at 24 VDC for the 15 Cd circuit.

The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with a mounting bracket with terminals with barriers for output/input wiring and be able to mount to a single gang, double gang box or double workbox with the use of an adaptor plate. The unit shall have an input voltage range of 16-33 volts with either direct current or full wave rectified power.

The appliance shall be capable of test supervision without disconnecting wires. Also the appliance shall be capable of mounting to a surface box. The unit shall also be able to verify voltage at the unit without removing the unit.

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

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Axis AX

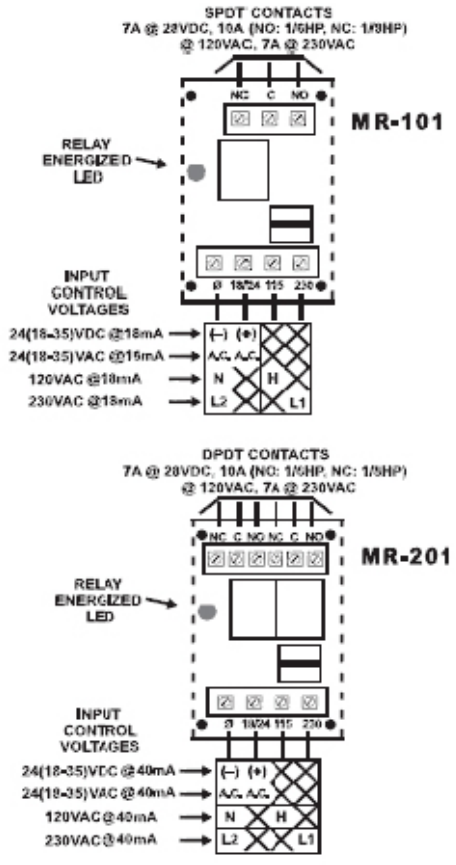
MR Series

The MR Series Multi-voltage Control Relays offer SPDT or DPDT 10 Amp resistive contacts which may be operated by one of four input control voltages. A single relay may be energized from a voltage source of 24VDC, 24VAC, 120VAC or 230VAC by wiring to appropriate input terminals.

Each relay position contains a red LED which indicates the relay coil is energized. Relays may be “snapped apart” from a standard 4 module assembly and used independently. These devices are ideal for applications where local contacts are required for system status, remote contacts for control of electrical loads and general purpose switching. They are suitable for use with HVAC, Temperature Control, Fire Alarm, Security, Energy Management and Lighting Control Systems.



Wiring Diagram



Features

- Relays may be Energized from a Voltage Source of 18 to 35VDC or VAC, 120VAC or 230VAC
- Each Relay Position Contains a Red LED, which Illuminates when the Coil is Energized. This Provides a Time Saving Device when Checking an Installed System – No Metering is Required
- Single, Dual or Triple Relay Modules may be “Snapped Apart” from Standard 4-Position Master DC Control Inputs are Polarized
- For Continuous Duty use at 24VAC, 24VDC or 120VAC (NOTE: Not intended for continuous duty use @ 230VAC)
- /C Versions Mounted in Enclosures
- /C/R Versions with Red Covers for NYC and Other Uses
- /T Versions come Complete with Track Mounting Hardware which Facilitates Installation in Standard Cabinets
- UL Recognized Relays Rated at 10,000,000 Mechanical Operations
- UL Listed as Control Unit Accessory
- Available in Dust Resistant Enclosures with LED Viewing Port(s)

Listings and Approvals

- UL & CUL Listed
- CSFM Listed
- MEA Accepted

Specification

Model Number	Module Positions	Contact Configuration	Track Mount H x W x D	Enclosure Mount H x W x D	Cover Material	UL* File S3403	MEA File 73-92-E	CSFM File 7300-1004
MR-101/T	1	SPDT	3.25" (82mm) 2.125" (54mm) 1.50" (38mm)			UOXX2		:106
MR-101/C	1	SPDT		5.125" (130mm) 3.125" (79mm) 2.50" (63mm)	Grey ABS-94VO Plastic	UOXX UOXX2 UOXX7	Vol. 14	:101
MR-101/C/R	1	SPDT			Red ABS-94VO Plastic		Vol. 22	
MR-104/T	4	SPDT	3.25" (82mm) 8.50" (215mm) 1.50" (38mm)			UOXX2		:106
MR-104/C	4	SPDT		5.125" (130mm) 9.50" (241mm) 2.50" (63mm)	Plated 18ga CRS	UOXX UOXX2 UOXX7	Vol. 14	:101
MR-104/C/R	4	SPDT			Red 18ga CRS			
MR-201/T	1	DPDT	3.25" (82mm) 2.125" (54mm) 1.50" (38mm)			UOXX2		:106
MR-201/C	1	DPDT		5.125" (130mm) 3.125" (79mm) 2.50" (63mm)	Grey ABS-94VO Plastic	UOXX UOXX2 UOXX7	Vol. 16	:101
MR-201/C/R	1	DPDT			Red ABS-94VO Plastic		Vol. 22	
MR-204/T	4	DPDT	3.25" (82mm) 8.50" (215mm) 1.50" (38mm)			UOXX2		:106
MR-204/C	4	DPDT		5.125" (130mm) 9.50" (241mm) 2.50" (63mm)	Plated 18ga CRS	UOXX UOXX2 UOXX7	Vol. 16	:101
MR-204/C/R	4	DPDT			Red 18ga CRS			

Coil Voltage:	MR-100: 24(18-35)VDC, 24(18-35)VAC, 120VAC, 230VAC MR-200: 24(18-35)VDC, 24VAC, 120VAC, 230VAC (Pull in voltage: 75% of nominal max. @ 25°C; Drop out voltage: 25% of nominal min. @ 25°C
Polarized:	DC input only
Energized LED Indicator:	One per module position
Current Requirement:	Per module psition: MR-100 Series = 18mA / MR-200 Series = 40mA
Contact Ratings:	7A @ 28VDC / 10A (NO: 1/6HP, NC: 1/8HP) @ 120VAC / 7A @ 230VAC
Contact Construction:	Dry Form "C"
Environmental:	32°F to 120°F (0° to 49°C) @ 85% RH (@ 32°F), Non-condensing, Non-freezing
Wiring:	Solid or stranded; #12 to #22 AWG terminals
/T Versions	3.5" wide, low profile plastic snap track provided with mounting screws
/C Versions	Backbox: 18ga CRS, plated with 1/2" conduit knockouts top and bottom

* UOXX=Control Unit Accessories, System; 2=Component; 7=Certified for Canada

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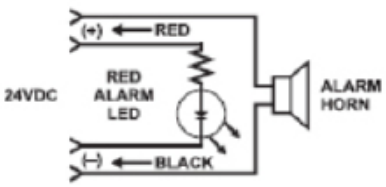
Axis AX

MS Series Remote Accessories

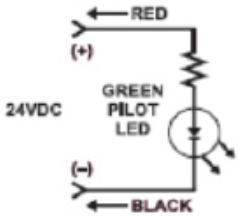
The MS Series remote accessories are designed to be used with the Air Products and Controls Duct Smoke Detectors to provide audible and visual indication as well as remote test/ reset functions. These devices are constructed of attractive, yet durable brushed stainless steel and mount on a standard single or double gang electrical backbox.



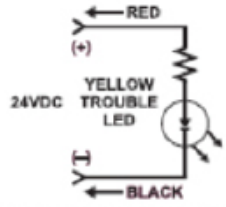
Wiring Diagram



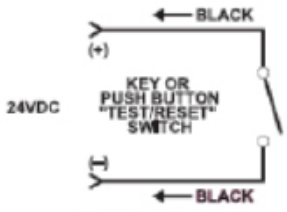
ALARM



PILOT



FAULT/TROUBLE



TEST/RESET

> FOR APPROPRIATE DUCT DETECTOR TERMINALS, PLEASE REFER TO DETECTOR INSTALLATION INSTRUCTIONS.

Specification

	Pilot LED (Green)	Alarm LED (Red)	Fault Trouble LED (Yellow)	Push Button Test/ Rest	Key Operated Test/Reset	Horn	Single Gang	Double Gang
MS-RA		Yes					Yes	
MS-RA/P	Yes	Yes					Yes	
MS-RA/R		Yes		Yes			Yes	
MS-RA/P/R	Yes	Yes		Yes			Yes	
MS-RA/P/T	Yes		Yes				Yes	
MS-RA/FT/P	Yes		Yes	Yes			Yes	
MS-KA/R		Yes			Yes		Yes	
MS-KA/P/R	Yes	Yes			Yes		Yes	
MS-KA/P/R/T	Yes		Yes		Yes		Yes	
MS-RD		Yes					Yes	
MS-F/T			Yes				Yes	
MS-RH/P/A	Yes	Yes				Yes	Yes	
MS-RH/KA/P/R	Yes	Yes			Yes	Yes		Yes
MS-RH/KA/P/A/T	Yes	Yes	Yes		Yes	Yes		Yes
MS-RH						Yes	Yes	

Power Requirements:	Alarm LED Trouble LED Pilot LED Alarm Horn	15mA @ 24 VDC 15mA @ 24 VDC 15mA @ 24 VDC 20mA @ 24 VDC
Sound Pressure:	Alarm Horn	78dB @ 10ft.
Dimensions:	Single Gang Double Gang	4 1/2" H x 2 3/4" W 4 1/2" H x 4 1/2" W
Wiring:	LEDs/Horn Switches	6" / 24 AWG Pigtails 6" / 22 AWG Pigtails
Approvals		UL Listed for use with air products and controls duct smoke detectors including all RW-Series, SM-Series and SL-Series duct smoke detectors. UL URRQ. S7425 ULC URRQ7. S7425 CSFM 7300-1004:107 MEA 73-92-E VOL25

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PAM Series

The PAM Series Relays are encapsulated multi-voltage devices with “flying” leads that offer versatile, reliable performance in a convenient package. Several of the versions contain a red LED which indicates when the relay coil is energized. The PAM Series Relays are packaged with a self-tapping screw and a piece of double sided tape for easy installation almost anywhere. The relays are also packaged with wire-nuts to aid installation.

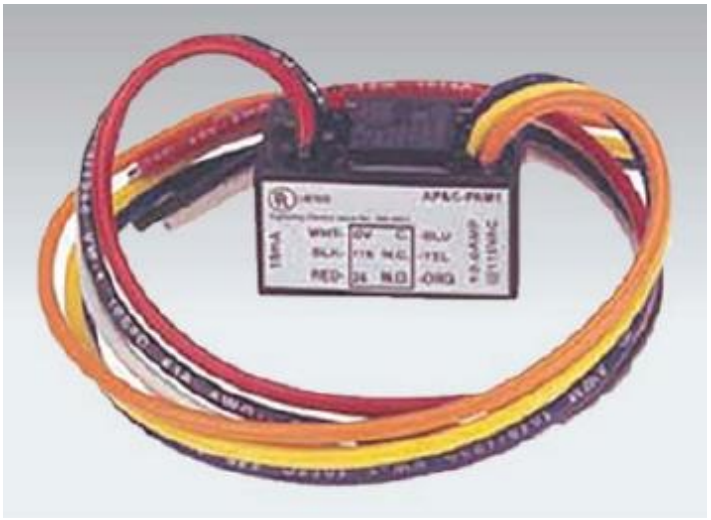
PAM Relays are ideal for applications where remote relays are required for control or status feedback. They are suitable for use with HVAC, Temperature Control, Fire Alarm, Security, Energy Management, Lighting Control Systems and Building Automation Systems.

The PAM-1 Relay provides 10A Form “C” contacts. The relay may be energized by one of three input voltages: 24VDC, 24VAC, or 120VAC. The input voltages are polarity sensitive and diode-protected. PAM-1 Relays contain a red LED which indicates when the relay coil is energized.

The PAM-2 Relay provides 7A Form “C” contacts. The relay may be energized by one of two input voltages: 12VDC or 24VDC. The input voltages are polarity-sensitive and diode protected. PAM-2 Relays contain a red LED which indicates when the relay coil is energized.

The PAM-4 Relay provides 10A Form “C” contacts. The relay may be energized across a wide voltage range from 9VDC to 40VDC, making it ideal for 12VDC and 24VDC EOL circuits. The 15mA operating current is constant across the operating range. The input voltages are polarity-sensitive and diode protected.

The PAM-SD Relay provides 7A Form “C” contacts. The relay may be energized by an input voltage between 20VDC to 32VDC, making it ideal for 24VDC NAC circuits. The input voltages are polarity-sensitive and diode protected. The PAM-SD provides an additional set of wires for redundant input voltage (circuit supervision pass through).



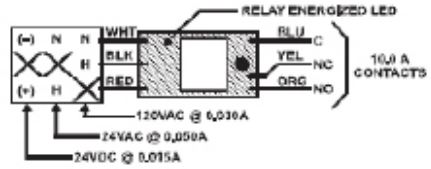
Features

- Multi-Voltage Relays
- Ideal for Remote Relay Control
- Compact Design
- Ease of Installation
- Low Current Consumption

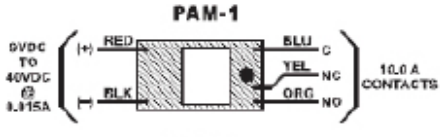
Listings and Approvals

- UL & CUL Listed
- CSFM Listed
- MEA Accepted

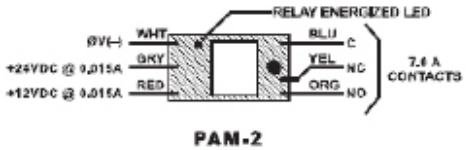
Wiring Diagram



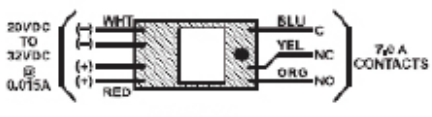
PAM-1



PAM-4



PAM-2



PAM-SD

Specification

Model Number	PAM-1	PAM-2	PAM-4	PAM-SD
Coil Voltage	24 VAC / 24 VDC / 120 VAC	12 VDC / 24 VDC	9 to 40 VDC	20 to 32 VDC
Polarized	Yes	Yes	Yes	Yes
Energized LED Indicator	Yes	Yes	No	No
Current Requirement				
@12 VDC		15mA	15mA	
@24 VDC	15mA	15mA	15mA	15mA
@24 VAC	50mA			
@120 VAC	30mA			
Contact Configuration	(1) SPDT dry Form "C"	(1) SPDT dry Form "C"	(1) SPDT dry Form "C"	(1) SPDT dry Form "C"
Contact Ratings: (Contact rating/Power factor)				
@5 VDC	250uA /.35 PF	250uA /.35 PF	250uA	250uA /.35 PF
@24 VDC	7A / .35 PF	7A / .35 PF	7A	7A / .35 PF
@120 VAC	10A	7A / .35 PF	10A	7A / .35 PF
Wire Leads	6 "Flying" Leads 12" / 18" AWG Wire-nuts Provided	6 "Flying" Leads 12" / 18" AWG Wire-nuts Provided	5 "Flying" Leads 12" / 18" AWG Wire-nuts Provided	7 "Flying" Leads 12" / 18" AWG Wire-nuts Provided
Ambient Temperature: (@ 100% RH, Condensing)	32ºF - 120ºF (0ºC - 49ºC)	32ºF - 120ºF (0ºC - 49ºC)	32ºF - 120ºF (0ºC - 49ºC)	32ºF - 120ºF (0ºC - 49ºC)
Construction	100 % potted (Sealed) with "flying" leads			
Mounting	Pre-drilled mounting screw hole and self tapping screw provided. Double sided tape provided.			
Dimensions				
H	1.50" (38mm)	1.50" (38mm)	1.50" (38mm)	1.50" (38mm)
W	1.00" (25mm)	1.00" (25mm)	1.00" (25mm)	1.00" (25mm)
D	0.90" (23mm)	0.90" (23mm)	0.90" (23mm)	0.90" (23mm)
Listings and Approvals				
UL*:	UOXX/7.S3403	UOXX/7.S3403	UOXX/7.S3403	UOXX/7.S3403
MEA:	73-92-E Vol.21	73-92-E Vol.21	73-92-E Vol.21	73-92-E Vol.21
CSFM:	7300-1004.101	7300-1004.101	7300-1004.101	7300-1004.101

*UOXX = Control Unit Accessories, System; /7=also Certified for Canada

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Portable Thermal Strip Printer

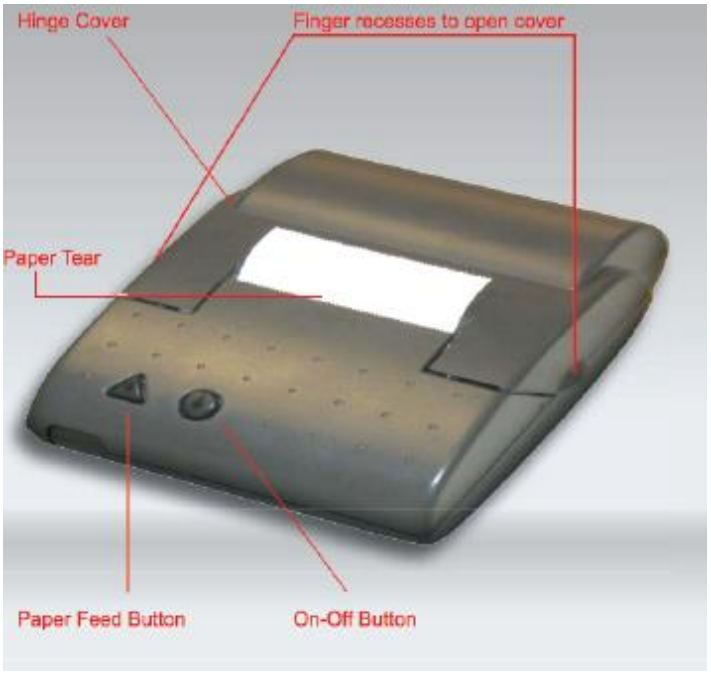
The AX-048, Portable Thermal Printer, is for use with the Axis AX Series Intelligent Fire Alarm Control Panels. This state of the art unit has been designed to provide automatic, or on demand, hard copy listings of the history event log and/or status information. For automatic operation, the printer allows the user to individually select the operation for alarm, trouble, supervisory, and test event types.

The unit is fast and silent during operation and has its own built-in battery backup to enable continuous uninterrupted operation, even during an AC mains fail situation. The printer mechanism itself has an easy access, front-loading paper roll compartment.

Ideally suited for engineer use, connect the printer to the panel during commissioning/maintenance to print out details of troubles, disablements, etc. along with input points including their analog values for a permanent record.

The AX-048 printer is designed with a clamshell type easy paper loading system. It is a portable printer for operation from its battery supply, but it can also be used in a permanent desktop installation using the AC mains power supply for operation and battery charging.

The printer will automatically turn off after five (5) minutes if not used to save the battery power. This feature can be turned off if the printer is to be used in a permanent desktop installation. The diagram to the right shows the main operator features.



Features

- Portable, Ideal for Service Testing
- Battery or AC Option
- Isolated RS-232 Interface
- Compact, Light Weight
- 30 Character Width Printing
- Battery Standby Support
- Easy Paper Loading (Clamshell design)
- Same Paper Roll as Used on AX-012

Specification

Printer Type	Thermal, graphical
Dimensions	150 D x 110 W x 70 H (max height)
Power Supply	120V AC via the supplied adaptor
Operating Temperature	5ºC to 50ºC, 10-85% RH (Non-condensing)
Storage Temperature	-20ºC to 50ºC, 10-90% RH (Non-condensing)
Printer Resolution	384 dots per line, 8 dots / mm
Sensors	Door closed, paper out
Paper Roll	Thermal, 58mm W, 50mm D
Power Save Mode	Automatic switch off - If the printer is not used for 5-minutes to save battery life. This feature can be turned off.

Order Codes and Options

AX-048	Desktop Thermal Printer c/w PSU, battery and leads.
	Ordering Information for spares:
AX-008	Thermal Printer Roll (Pack of 10)
AX-035	Rechargeable battery pack
AX-036	Rubber boot and belt kit
AX-037	Spare PSU and Power Lead

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Axis AX

Low Frequency Audible Horn

The GHLF is a high quality, low profile, low frequency audible appliance that offers a dependable audible alarm with a low current draw. The GHLF is ideal for any occupancy that requires notification appliances.

The GHLF horn offers a 520 Hz square wave, temporal 3 tone. A jumper selection is available for normal or loud decibel tone. A temporal 4 pattern is available when used with the Gentex GTSM Synchronization Control Module.

The GHLF is shipped with a standard 4” metal mounting plate which incorporates the popular SuperSlide® feature that allows the installer to easily test for supervision. The product also features a locking mechanism which secures the product to the bracket without any screws showing.

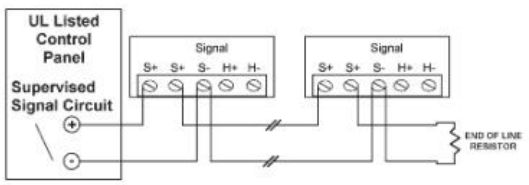
The GHLF also features the patented Checkmate® - Instant Voltage Verification feature which allows the installer to check the voltage drop and match it to the blueprint.

The GHLF horn is listed to ANSI/UL 464 and CAN/ULC S525, is listed for use with fire protective systems and is warranted for three years from date of purchase.

NOTES:

- This appliance is not recommended for use on coded or pulsing signaling circuits
- The four pulse temporal pattern (temporal 4) can only be obtained on this product when used in conjunction with the Gentex GTSM synchronization module
- See GTSM control module manual (550-0632, manual issue date (02-01-15) for synchronization module wiring diagrams. GTSM manual can be obtained at www.gentex.com/fire or call Gentex Corporation at 1-800-436-8391.

Wiring Diagram



Model Designations:
R = Red Faceplate
W= White Faceplate
*All units are plain (No lettering)



Features

- 520 Hz Square Wave Temporal 3 Tone
- Super-Slide™ Bracket - Ease of Supervision Testing
- Checkmate™ - Instant Voltage Verification
- Switch Selection for Normal or Loud dBA
- Temporal 4 Available via GTSM Synchronization Module
- Nominal Voltage 24 VDC
- Unit Dimensions: 6-1/8” High x 5-1/2” Wide x 2-5/8” Deep
- Input Terminals 12 to 18 AWG
- Tamperproof Re-entrant Style Grill and Locking Screw
- Faceplate Available in Red or Off-White

Listings and Approvals

- ANSI/UL 464 Listed
- CAN/ULC S525 Listed
- CSFM: Pending

Model Number	Part Number	Nominal Voltage
GHLFW	904-0530-002	24 VDC
GHLFR	904-0531-002	24 VDC

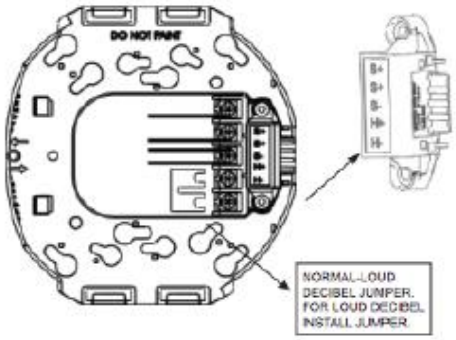
	Horn Decibel Levels: Reverberant Room		24 VDC Nominal Horn Current Ratings (mA)				Horn Current Ratings Over Input Voltage Range of 16-33 V (mA)			
Horn Mode	Minimum SPL @ 10 ft. per	Minimum SPL at 10ft. per	24 VDC Operating	24 VDC Operating	24 VFWR Operating	24 VFWR Operating	Regulated 24 VDC Max.	Regulated 24 VDC Max.	Regulated 24 VFWR Max.	Regulated 24 VFWR Max.

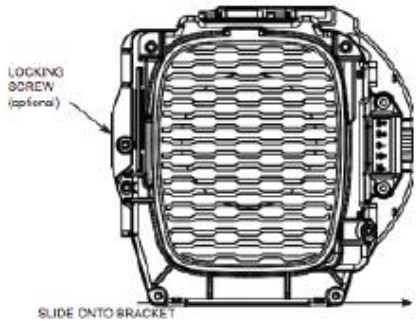
	ANSI/UL 464 Normal	ANSI/UL 464 (Loud)	Current (Normal)	Current (Loud)	Current (Normal)	Current (Loud)	Operating Current (Normal)	Operating Current (Loud)	Operating Current (Normal)	Operating Current (Loud)
Temporal 3 520 Hz	77.8 dBA	79.8 dBA	72.1 mA	120.1 mA	104.6 mA	158.4 mA	99.4 mA	155.8 mA	152.1 mA	213.5 mA
Temporal 4 520 HZ	81.5 dBA	83.4 dBA	75.9 mA	116.0 mA	108.1 mA	182.0 mA	101.1 mA	157.2 mA	163.1 mA	235.2 mA

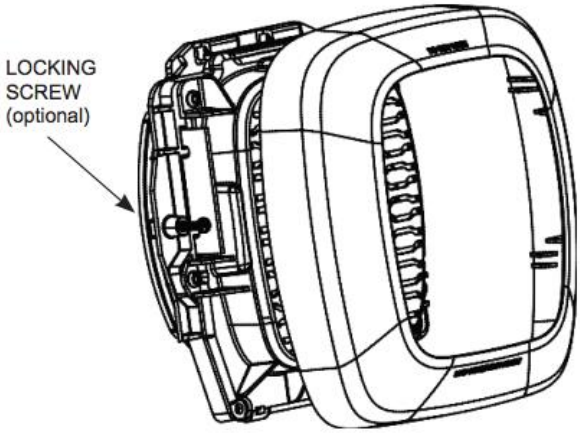
* Temporal 4 520 Hz measured per ANSI/UL 2075

NOTES:

- Operating temperature: 32° to 120°F (0° to 49°C). The GHLF is not listed for outdoor use.
- For nominal and peak current across ANSI/UL regulated voltage range for filtered DC power and unfiltered (FWR [Full Wave Rectified]) power, see installation manual.
- The sound output for the temporal 3 tone is rated lower since the time the horn is off is averaged into the sound output rating. 1 RMS current ratings are per ANSI/UL average RMS method. ANSI/UL max current rating is the maximum RMS current within the listed voltage range (16-33VDC for 24VDC units). For unfiltered FWR ratings, see installation manual.







Gentex Checkmate® Instant Voltage Verification:

It is often necessary to confirm the voltage drop along a line of devices. The access holes are provided in the back of the terminal block to allow the voltage to be measured directly without removing the device. Typically this would be done at the end of the line to confirm design criteria. Most measurements will be taken using the S+ and S- locations although access is provided to other locations. NOTICE: CARE SHOULD BE TAKEN TO NOT SHORT THE TEST PROBES.

Gentex Super-Slide® Mounting Bracket:

Allows the installer to pre-wire the system, test for system supervision, remove the signal head until occupancy, switch out Gentex signals without changing mounting brackets and has locking edge connector for snap-in-place installation.

Specification

The alarm horns shall be Gentex model GHLF. The appliance shall be listed with Underwriters Laboratories (ANSI/UL) for use with fire protective signaling systems (ANSI/UL 464) and with CAN/ULC S525 with intended use in fire alarm systems. The GHLF will produce a peak sound output of 88.3 dBA as measured in an anechoic chamber. The appliance shall be polarized to allow for electrical supervision of the system wiring. The unit shall be provided with a mounting bracket with terminals and barriers for input/output wiring and be able to mount to a single gang or double gang box or double workbox without the use of an adapter plate. The GHLF shall be mounted on the wall or the ceiling. The unit shall have an input voltage range of 16-33 volts with either direct current or full wave rectified power at 24 VDC. The appliance shall be capable of testing supervision without disconnecting wires, verify voltage without removing unit and be capable of mounting to a surface back box.

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Axis AX

Microphone with Enclosure

The Advanced CAV-MIC Microphone with Enclosure provides live voice communications capabilities to Advanced Axis AX “V” Series, Axis AX Command Centers and AV-VBM Audio Panels. The CAV-MIC provides a supervised microphone mounted to an enclosure that mounts to a single aperture location on Advanced audio products.

When utilized with Advanced switch/LED products, the CAV-MIC can provide uncomplicated live voice paging via “All Call Paging”, “Page Evacuation Areas”, “Page Alert Areas”, “Page Inactive Areas” and/or Selective Area Paging buttons.



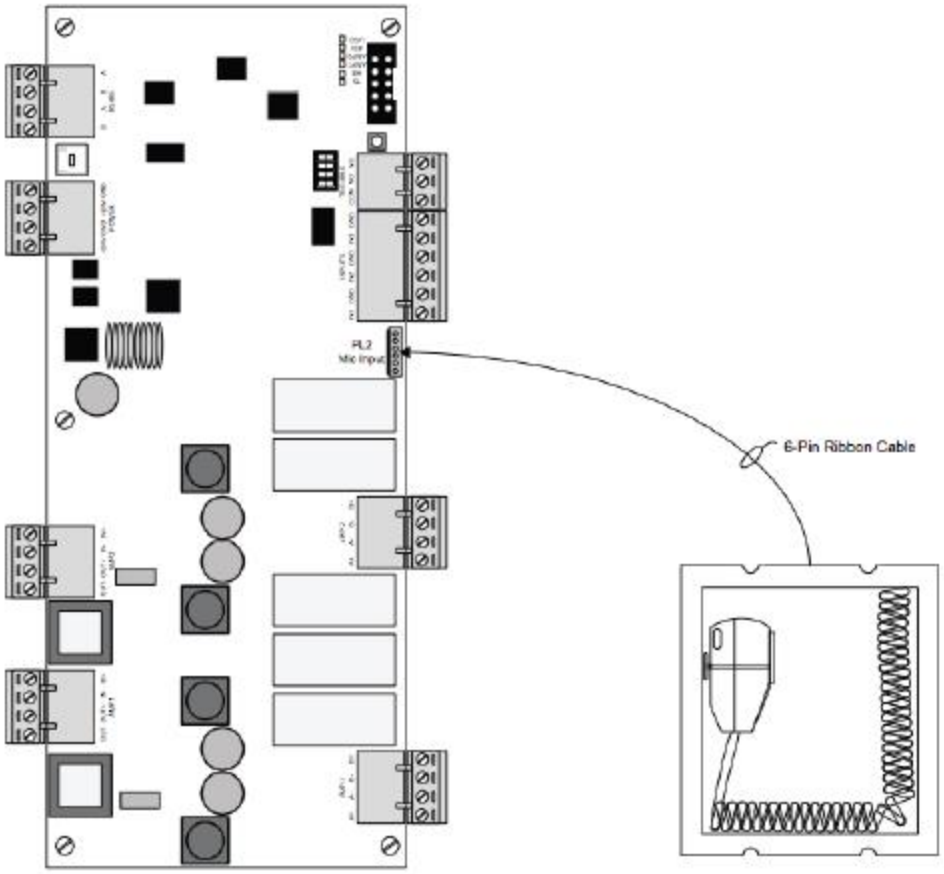
Features

- Completely Supervised by Advanced Amplifier
- Supervised for Open Mic Condition
- Easy to Install in Advanced Products
- Easy to Operate
- Easy Supervised Plug-in Cabling to Amplifier
- Pre-assembled Microphone Enclosure with Mounting Clip
- 16 Gauge Steel Construction

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Order Codes and Options

CAV-MIC	Microphone and Enclosure Assembly

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Axis AX

Audio Converter

The Advanced CAV-V70 is a Universal Audio Converter that converts any ANSI/UL Listed, maximum 40 Watt, 25 Vrms speaker circuit to a 40 Watt 70 Vrms speaker circuit. It is ideally suited to interface with the Advanced 40 Watt, 25 Vrms output off the CAV-AMP-80 amplifier. The CAV-AMP-80 amplifier is integral to the Advanced Axis AX “V” Series panels, CAV-VBM Audio Panel, AV-VB Audio Booster and the Axis AX Series Command Centers.

The CAV-V70 includes a 40 Watt, 70 Vrms Speaker Circuit Interface Module, an Audio Converter Transformer and a LED Power/Trouble Indicator Card, all mounted in an attractive, lockable enclosure. Each CAV-V70 enclosure is capable of supporting two (2) 40 Watt, 70 Vrms Speaker Circuit Interface Cards and Audio Converter Transformers with the addition of a CAV-V70-KIT. The maximum total available wattage is 80Watts @70 Vrms and two (2) independent Class A or Class B speaker circuits.

The enclosure can be supplied in gray and can be located remotely from the 25 Vrms audio source. Remote mounting offers installation advantages, especially in retrofit applications.

All wiring between the CAV-AMP-80 amplifier and the CAV-V70 Audio Converter is fully supervised. In addition to getting wired to an existing speaker circuit, each 70 Vrms Speaker Circuit Interface Card requires power from either the “Host” fire alarm control panel or from an ANSI/UL Listed 24 VDC nominal power supply



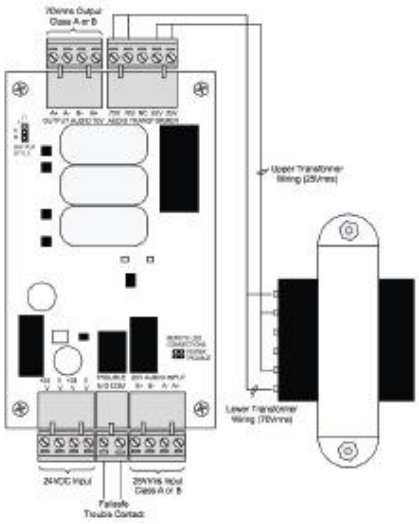
Features

- 25 Vrms to 70 Vrms Converter
- Fully Supervised - Allows Remote Mounting Options
- Single or Dual 40 Watt Speaker Circuits
- Class A or B Wiring
- Can Interface to any ANSI/UL Listed 25 Vrms Speaker Circuit (40 watt maximum)
- Attractive Lockable Enclosure
- Integral External Power & Trouble LEDs
- Numerous Internal Diagnostic LEDs
- Ideally Suited to Interface to CAV-AMP-80 Amplifier

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

Input Voltage (DC)	24 VDC (Wired from FACP or ANSI/UL listed power supply)
Operating Current	60mA
Trouble Contact	Failsafe, 1A @ 30VDC
Temperature	Indoor/dry Environment, 32-120ºF (0-49ºC)
Relative Humidity	93% Non Condensing (Max)
Dimension	12”H x 9”W x 3”D
Input Speaker Circuit	25 Vrms @ 40 Watt (max), Class A or B
Output Speaker Circuit	70 Vrms @ 40 Watt (max), Class A or B, End-of-line 100K

Order Codes and Options

CAV-V70*	70 Vrms Universal Audio Converter
CAV-V70-KIT	70 Vrms Speaker Circuit Interface Card and Audio Converter Transformer

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Axis AX

Distributed Audio Booster

The CAV-VB, Distributed Audio Booster, is designed to be used in conjunction with an Axis AX “V” Series, Axis AX Command Center Intelligent Fire Alarm Control Panel or a CAV-VBM Audio Panel to provide increased digital audio signaling during an emergency situation (alarm, alerts, warnings, mass notification, etc.) to meet total system wattage requirements via true distributed audio methodology.

The CAV-VB, Distributed Audio Booster, consists of an audio amplifier (CAV-AMP-80) containing; two (2) dual 40 Watt amplifiers configured Class A or B, a 16 digital message/tone generator and supervision circuitry, a power supply/charger (CAX-PSU-6) and an enclosure. A green AC power LED and yellow trouble LED are provided on the front of the enclosure. Additional internal PCB LEDs are provided for detailed service diagnostics as well as amplifier status.

The sixteen (16) programmable, flash based, digital message/tone generator of the CAV-VB is completely field programmable for tailoring to meet specific installation requirements. Digital messages/tones are programmed in a simple/user-friendly Windows® based tool. The Windows® based programming tool allows users to select from a library of industry recognized messages/tones. Selection options include; leading and trailing tones, male or female voice messages, message category (such as; evacuation, alert, warnings, etc.) and message priorities. In addition, wave files may be downloaded and added to the library to allow complete customization of messages/tones. Used in conjunction with the Windows® based programming tool, the Axis AX Series PC-NeT field configuration programming tool with its powerful control-by-event programming, greatly simplifies and drastically reduces the time it takes to program very large complex applications (see figure 1)

If controlled by one of the three (3) prioritized relay trigger inputs, two of the relay trigger inputs can be assigned to two separate/individual messages (such as; one input could generate an evacuate message/tone and the other input could generate an alert message/tone) input three is always allocated/assigned as booster mode activation for microphone input rebroadcasting.

In support of some local requirements, the CAV-VB may be set to a “backup mode” whereby as a precaution, should the primary amplifier fail, the secondary amplifier automatically will engage and override the primary amplifier, provided there are no short circuits in the fi eld speaker circuit wiring.

Specifically designed for project flexibility, each CAVVB can be setup to produce its own messages or it can be operated in a unique “booster” mode. Booster mode allows the CAV-VB amplifier to simply re-amplify a signal generated from another amplifier/audio signal source [i.e. Axis AX “V” Series, Axis AX Command Center Intelligent Fire Alarm Control Panel and/or CAV-VBM Audio Panel] (see figure 2)



Features

- Interfaces with any AxisAX “V” Series and/or AxisAX Command Center Fire Alarm Control Panel
- Advanced Digital Audio Technology
- Dual 40 Watt @ 25 Vrms Amplifiers
- 16-Channel Digital Message/Tone Generator
- Unique Amplifier Booster/Cascading Option
- High Fidelity Sound Quality
- Two (2) Class A or B Speaker Circuits
- External AC Power and Trouble LEDs
- Internal Service Diagnostic and Status Indicators
- USB Port Interface for Message/Tone Programming
- Simple User-Friendly Message/Tone Programming
- Optional one-to-one Amplifi er Backup Capability
- Three Prioritized Relay Trigger Inputs
- AxisAX “V” Series Controlled via PBUS or Relay Inputs
- AxisAX “V” Series Powerful CBE Logic Programming

Listings and Approvals

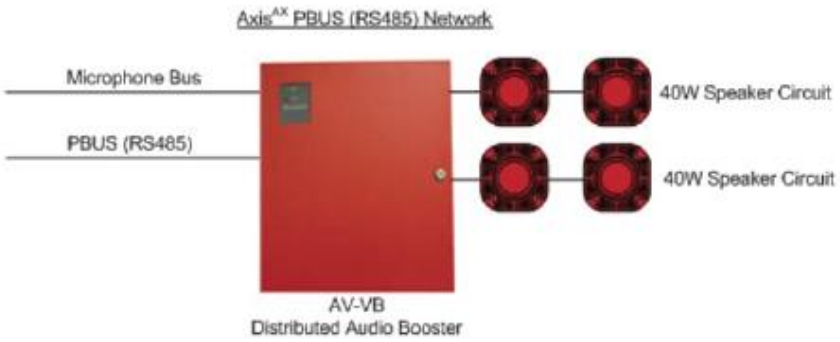
- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

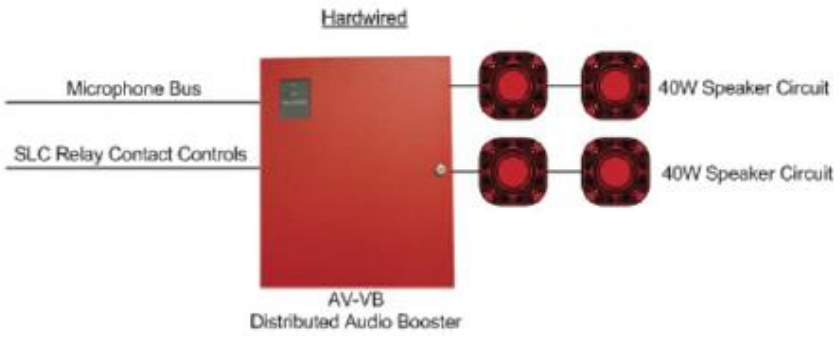
CAV-VB, Distributed Audio Booster, message/tone generation or booster operation can be controlled either via the Axis AX “V” Series or Axis AX Command Center Intelligent Fire Alarm Control Panel’s PBUS (RS-485 network) serial communications bus (contact Advanced regarding correct software version), or from the activation of one of three (3) prioritized relay trigger inputs. When controlled via the PBUS (RS-485 network) serial communications bus (contact Advanced regarding correct software version), one of sixteen messages/tones stored in the CAV-VB amplifier can be selected for broadcasting. If controlled by one of the three (3) prioritized relay trigger inputs, two of the relay trigger inputs can be assigned to two separate/individual messages (such as; one input could generate an evacuate message/ tone and the other input could generate an alert message/ tone) input three is always allocated/assigned as booster mode activation (see figure 3). The functionality of selecting different prioritized messages, based on specific events, makes the CAV-VB ideal for numerous emergency signaling applications. Pre-programmed alarm, evacuation, alerts, warnings and other types of messages are extremely easy to implement. In booster mode operation, message/live audio from an Axis AX “V” Series, Axis AX Command Center or CAV-VBM Audio Panel is reamplified and the identical message is rebroadcast out each CAV-VB, resulting in a distributed audio system.

Specification

Operating Voltage Input Output	 120 VAC 24 VDC & 25 Vrms
Operating Current Quiescent Alarm	 40 mA (Typical) 200 mA (Plus total speaker circuit load)
Output Ratings	2x 40 watts @ 25 Vrms, class A or B
LED Indicators	AC power & system trouble
Operating Temperature	32ºF -120ºF (0ºC to 48ºC)
Humidity	10-95% (Non-condensing)
Enclosure Dimension	16” W x 19 1/ 8 ” H x 5” D
Weight	19lb 5oz

Wiring Diagram





Order Codes and Options

CAV-VB	Distributed Audio Booster
Optional Modules:	
CAV-V70	Universal Audio Converter (converts 25 Vrms to 70 Vrms)

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

Advanced

Axis AX

Audio Panel with Microphone

The Advanced CAV-VBM, Audio Panel, is designed to be used in conjunction with any Advanced Axis AX Series or ULC Listed fire alarm control panel to provide automatic (and manual) fire alarm audio signaling and live voice paging during an emergency situation. The CAV-VBM is fully compatible with the Advanced CAV-VB distributed audio booster. The combination of the CAV-VBM and CAV-VB provides the means to meet the total system wattage requirements of virtually any application due to superior true distributed audio technology

The CAV-VBM, Audio Panel, consists of two (2) 40 Watt amplifiers that may be configured Class A or B, a dual digital (programmable) message/tone generator, a power supply/charger (CAX-PSU-6) and an integral microphone inside a compact, lockable enclosure.

Key status indicators viewable on the front panel display include a green AC power on LED, a yellow amplifier trouble LED and a yellow power supply trouble LED. Additional diagnostic LEDs that are mounted on the amplifier PCB include: amplifier 1 trouble (open or short), amplifier 1 failure, amplifier 2 trouble (open or short) and amplifier 2 failure, and heartbeat. On the CAX-PSU-6; LEDs include battery trouble, PSU trouble, AC on LED and heartbeat.

There are 3 toggle switches that provide for manual activation of either Message 1, Message 2 or to initiate an All Call system wide page from the CAV-VBM throughout all distributed CAV-VB audio boosters.

The built-in dual programmable, flash based, digital message/tone generator of the CAV-VBM, Audio Panel, comes standard with Message 1 programmed for Evacuation and Message 2 programmed for Alert message. Both messages are completely field programmable for tailoring to meet specific installation requirements. Digital messages/tones can be programmed with the Advanced simple, user-friendly Windows® based tool. The Windows® based programming tool allows users to select from a library of industry recognized messages/ tones. Selection options include: leading and trailing tones and male or female voice messages. In addition, wave files may be downloaded and added to the library to allow complete customization of messages/tones (see figure 1).

In support of some local requirements, the CAV-VBM may be set to a “backup mode” whereby as a precaution, should the primary amplifier fail, the secondary amplifier automatically will engage and override the primary amplifier, provided there are no short circuits in the field speaker circuit wiring. Specifically designed for project flexibility, each CAV-VBM and CAV-VB can be setup to produce their own messages. This makes setting up a dual channel, three channel or floor above/floor below application simplistic.



Features

- Interfaces to Any Listed Fire Alarm Control Panel
- Advanced Digital Audio Technology
- Dual 40 Watt @ 25 Vrms Amplifiers
- 2-channel Digital Message/Tone Generator
- Unique Amplifier Booster Option
- High Fidelity Sound Quality
- Built-in Live Voice Paging Microphone
- Two (2) Class A or B Speaker Circuits
- AC Power On, Amplifi er and PSU and Trouble LEDs
- Internal Service Diagnostic and Status Indicators
- USB Interface for Message/Tone Programming
- Optional one-to-one Amplifi er Backup Capability
- Three Prioritized Relay Trigger Inputs
- Message 1 On/Off, Message 2 On/Off and All Call Toggle Switches

Listings and Approvals

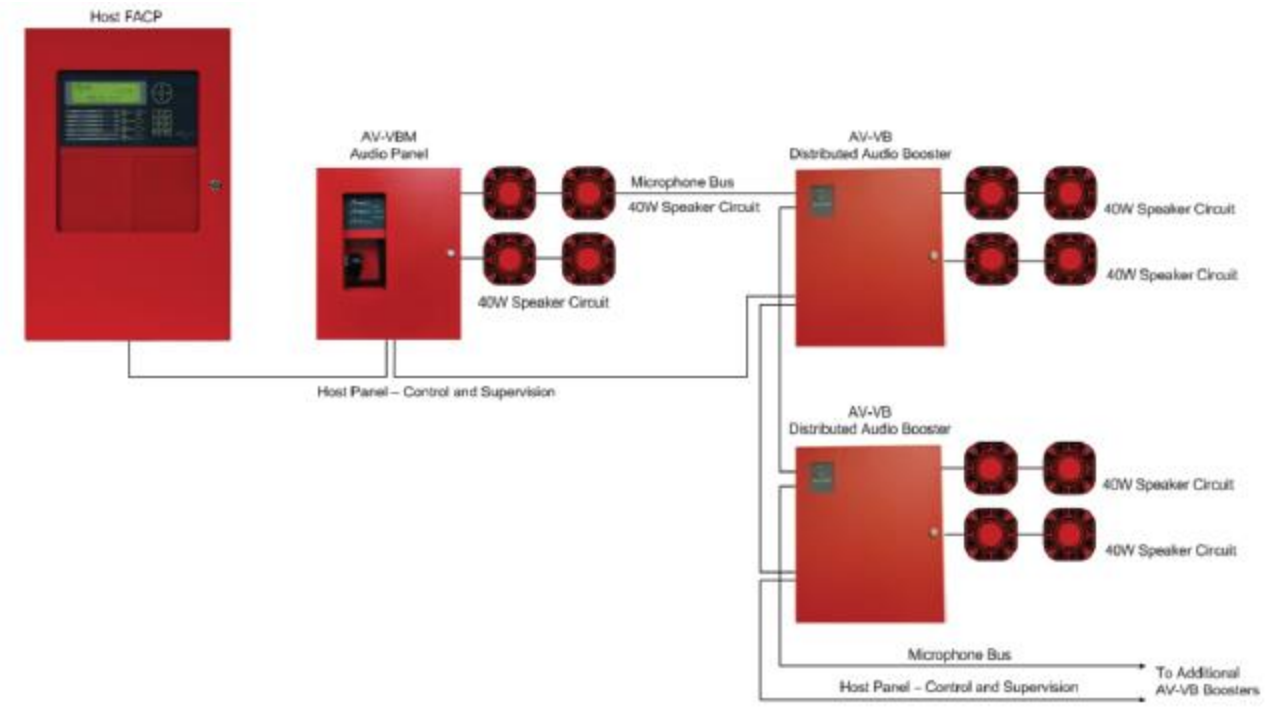
- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

A unique feature of the CAV-VB Distributed Audio Booster effectively allows the amplifier to simply re-amplify a signal generated from another amplifier/audio signal source. This allows reduced system wiring, wiring to any listed audio panel/amplifier rated at 25 Vrms, and complete synchronization.

CAV-VBM, Audio Panel, message/tone generation is controlled via 3 N.O. relay contacts from the host fire alarm control panel, wired to the three prioritized trigger inputs. When activated, Trigger One will cause both amplifiers to play message 1 (factory programmed as Evacuation). When activated by Trigger Two, both amplifiers will play message 2 (factory programmed as Alert). When Trigger 3 is activated due to an All Call function, amplifiers will output the live audio from the microphone, overriding either message 1 or 2 (see figure 2).

All distributed amplifiers CAV-VB units, can be configured to either output the actual audio signals from the CAV-VBM in real time, synchronized (as is typical in a standard dual or three channel application) or may each be programmed differently in a multi-channel application (see figures 3 and 4).

Wiring Diagram



Specification

Operating Voltage Input Output	 120 VAC 24 VDC & 25 Vrms
Operating Current Quiescent Alarm	 40 mA (Typical) 200 mA (Plus total speaker circuit load)
Output Ratings	2x 40 watts @ 25 Vrms, class A or B
LED Indicators	AC power & system trouble
Operating Temperature	32º -120ºF (0º to 48ºC)
Humidity	10-95% (Non-condensing)
Enclosure Dimensions	16” W x 19 1/8 ” H x 5” D
Weight	19lb 5oz

Order Codes and Options

CAV-VBM	Audio Panel
Optional Modules:	
CAV-V70	Universal Audio Converter (Converts 25 Vrms to 70 Vrms)

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W: www.advancedco.com

As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

Advanced

Axis AX

Configured Command Centers

The Axis AX Series Configured Command Centers from Advanced have been designed to support a wide variety of applications. The command centers are fully compatible with the Axis AX Series Intelligent Fire Alarm Control Panels and the Axis AX “V” Series Intelligent Fire Alarm Control Panels with Integrated Audio.

Axis AX Series Configured Command Centers come in 3 variations: CAX-CC1-16 (Single Loop), CAX-CC2-16 (Two Loops) and CAX-CC4-16 (Four Loops). Each command center comes in a 22.6”H x 20.3”W x 5.5”D cabinet and includes: one CAX-DSP, keyboard display, one main base card (configured for 1,2 or 4 SLC loops), one CAX-ACB, AC input board, a CAV-AMP-80, audio amplifier (two 40 Watt speaker outputs), one CAX-PSU-6, amplifier power supply and one CAX-ASW-16, switch LED module.

The command center cabinet has been designed to support a wide range of additional option modules to suit specific application requirements. The option modules provide the following capabilities: DACT, city tie, networking, modem, I/O drivers, switch and relay modules, as well as many others. Consult with the factory for more details on the Axis AX Series module range.

In order to simplify installation, programming, troubleshooting, training and support, all of the Axis AX Series fire panels & command centers can be programmed using the same Windows based programming tools. In addition, a “family” consisting of all of the Axis AX Series main PCBs, option modules, peripherals and intelligent devices are fully compatible across the full range of Axis AX Series fire panel & command center products.

In order to simplify control and operation of a large, networked, wide area or high rise system, each command center will support up to 252 individually assignable switches through use of up to sixteen CAX-ASW-16, Switch LED Modules. These modules mount to the inner doors of the command centers. The switch action may be either toggle, on/off or push button. Each switch is associated with 3 LEDs that are red, yellow and green. These LEDs are each fully programmable and can be set to turn on steady and/or to blink. A large area is made available per switch and LED for user defined text that may clearly identify the intended function. With such versatility, operation and control is simplified, status is readily available and quickly identified.

Examples of switch operations include: Fan and HVAC control, paging area select, message select, telephone control, purging, zone/area/point bypass, etc. The total number of switches supported across a maximum configured network is 51,200. A key feature is that individual switch and LED response time is not affected by the size of the network and each switch and LED can be assigned to network functions as well as individual panel functions.



Features

- 1, 2 and 4 SLC Loop Options
- Integral 80 Watt Amplifier
- Built-in Paging Microphone
- Configured with One CAX-ASW-16 Switch LED Module
- Networkable – up to 200 Intelligent Panels
- Integrated 80 Watt Digital Audio Features include:
  - 2 Class A or B, 40 Watt, 25 Vrms Outputs
  - Programmable 16 Channel Message Generator
  - Automatic one-to-one Backup Capability
- Local internally mounted Microphone and Switches provide:
  - All call, Alert and Selective Messaging and Paging by Zone or Area
- Up to 504 Analog Addressable Points
- Multiple Command Centers w/Control Options
- Mass Notification Programming Options
- Synchronized Audio and Visual Control (Panel or Network Wide)
- CAV-VB Boosters expand Audio Wattage (16 per panel)

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Supplied with a single CAV-AMP-80, Amplifier Module, with associated CAX-PSU-6, Power Supply Charger, and CAV-MIC, Microphone Module, each command center can expand audio wattage with the addition of Advanced CAV-VB, Audio Boosters. Each CAV-AMP-80 and CAV-VB's have two 40 Watt speaker circuits (may be programmed as 1:1 backup). Through either manual or automatic controls, live or recorded audio messages can be sent to any location in a facility.

Control functions can include: All Call, All Evac, All Alert, Message Select and Area Select. For instant control of paging to all areas, press the All Call button. To generate and play an evacuation message or an alert message throughout a facility press the All Evac or All Alert button. To play a specific message (up to 16 messages) in specific areas, use the individual message selection buttons followed by the individual area selection buttons.

A typical high rise application may be configured with an CAV-VB, Audio Booster, per floor. The boosters are controlled by the Control-by-Event logic at the command center to generate specific messages upon specific conditions. It is easy to program for example a typical fire floor, floor above, floor below evacuate message simultaneous with adjacent alert floor messages, while simultaneously providing the capability to override automatic messages at any time with manual paging to all or selective areas.

Simplifying and reducing initial system set-up, Axis AX Series Configured Command Centers are equipped with an installer-friendly "Auto-Learn/Loop Detection" feature that permits the rapid recognition of all signaling line circuits' devices. This rapid recognition, simplifies the assignment of critical life safety functions immediately. Assignments include: intelligent detector type and operation criteria, addressable input device recognition as an alarm input, and addressable output control on a general alarm basis.

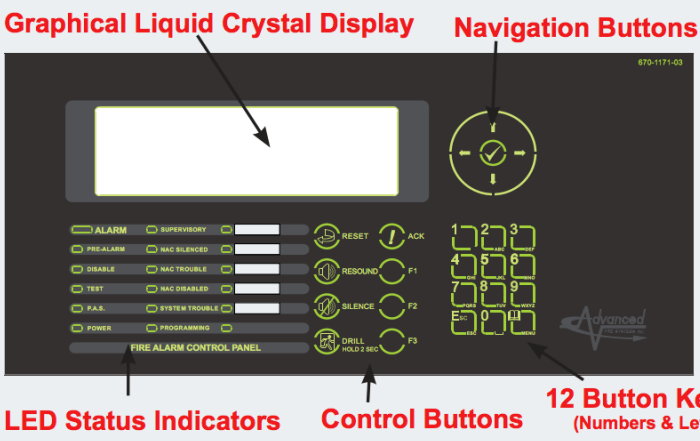
Designed with built-in powerful installation and customization tools, the Axis AX Series Configured Command Centers can adapt to virtually any application requirement.

With DynamiX programming, typical time consuming complexities associated with I/O relationship programming such as two-stage, multi-pattern NAC control, intelligent detector drift compensation, precision response/sensitivity mode settings, flexible timing functions, and more, are sharply reduced.

The Axis AX Series Configured Command Centers are fully field programmable via the onboard graphical LCD display and alphanumeric keypad (CAX-DSP). Front panel programming may encompass defining input to output relationships, configuring output circuit characteristics, entering zone, device, and other text descriptions, and configuring multiple user-access passwords.

To maximize the capability and flexibility of the Axis AX Series Configured Command Centers, and expand upon the customization of an installation, the Advanced Windows based PC-NeT field configuration tool is available. The PC-NeT field configuration tool is a powerful, user-friendly programming tool that allows users to perform virtually any I/O relationship with multiple criteria. Simple drop-down menus with point-and-click operation makes project commissioning and troubleshooting fast and efficient.

Designed with the technician in mind, each module of the Axis AX Series Configured Command Center is easy to install and service. The integral power supply offers status LEDs, temperature compensated charging, and the ability to operate directly from the batteries when AC supply is not yet available at the installation site. A unique built-in intelligent multi-meter allows technicians to interrogate any input and/or output and diagnose potential time consuming trouble issues with virtually no complications or aggravation. With an Axis AX Series Configured Command Center, servicing a customer after installation can be as simple as using the Advanced Remote Diagnostic Virtual Panel Simulator and/or ipGateway (CAX-LAN). The ipGateway (CAX-LAN) provides real time text and email alerts of system status.



Advanced User Interface w/Graphical LCD:

Designed to be user-friendly and easy to operate, the Advanced User Interface w/Graphical LCD (backlit 240 x 64) is the information and control center for the Axis^{AX} Series Intelligent Fire Alarm Control Panel(s).

The unit incorporates a graphical LCD display, LED status indicators, control buttons (including 3 programmable buttons), navigation buttons, and a 12 button keypad for complete system status, interrogation, and control.

Button (Keys)

	Reset
	Ack (panel buzzer acknowledge)
	Resound (resound signals)
	Silence (silence signals)
	Fire Drill
	Function Keys (3 - programmable control buttons)
	Navigation Keys (up, down, left, right, and tick [enter])
	12 Button Keypad (numbers, letters, esc, and menu)

LED Indicators

Alarm	Red
Pre-Alarm	Red
Disable	Yellow
Test	Yellow
P.A.S.	Yellow
Power	Green
Supervisory	Yellow
NAC Silenced	Yellow
NAC Trouble	Yellow
NAC Disabled	Yellow
System Trouble	Yellow
Programming	Yellow
Programmable LED 1	Red
Programmable LEDs 2-5	Yellow

Wiring Diagram

Specification

Operating Voltage	120 VAC (1.4A) - 240 VAC (0.7A), 50/60Hz
System-Brown-Out	98 VAC nominal
Battery Circuit	
Charging Voltage	27.4 VDC nominal
Temp. Compensated	
Charging Current	2 Amp
Battery Derating Factor	0.83A
Battery Capacity	7 Ah (minimum), 48 Ah (maximum)
Battery Fuse	5A @ 240 VAC, Time Delayed, Ceramic, High Breaking (In-line Wire Link)
Fire Supervisory, and Trouble Relays	(Power Limited - When utilizing system power)
Type	Form "C"
Rating	1A @ 30 VDC/VAC
Trouble Relay	Normally Active (fail-safe operation)
Auxiliary Power Outputs	(Power Limited)
Resettable	
Voltage	24 VDC
Current	0.5A
Reset Time	10-15 Seconds
Non-Resettable	
Voltage	24 VDC
Current	0.5A
Humidity	85% RH
Temperatures	Operating: 32ºF - 120ºF (0ºC - 49ºC) Recommended Room: 60ºF - 86ºF (15ºC - 27ºC)
Enclosure Dimensions	
Back Box	22.6"H X 20.3"W X 5.5"D
Housing	24.1"H X 21.5"W X 6.3"D
SLC Loop	(Power Limited)
Class (Style)	Class A or B (Style 4, 6 or 7)
Voltage	24 VDC
Minimum Return Voltage	17 VDC
Current	0.5A
NAC Circuits	(Power Limited)
Class (Style)	Class A or B
Voltage	24 VDC (filtered and regulated)
Minimum Return Voltage	16 VDC
Current	2A (each)
Maximum Voltage Drop	3 VDC
Maximum Line Impedance	1.5Ω
RS232	Supervised, Optically Isolated
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1
Base Card Operating Current	Quiescent Alarm
CAX-CTL-1PCB	110 mA 195 mA
CAX-CTL-2PCB	110 mA 195 mA
CAX-CTL-4PCB	175 mA 260 mA
CAV-AMP-80	
Input Voltage (DC)	24 VDC (operating range 15-30 VDC)
Amplifier #1 Output	40 Watts @ 25 Vrms, Class A or B Wiring
Amplifier #2 Output	40 Watts @ 25 Vrms, Class A or B Wiring
Activation	RS-485 (PBus) or Contact Closure
CAV-MIC	Supervised Microphone Input

*Refer to Axis AX Series module data sheets for optional modules specifications.

Order Codes and Options

CAX-CC1-16	Axis AX Series Command Center with cabinet, 2 power supply's/chargers, 1 SLC, 2 NACs, two 40 watt speaker circuits, 1 AXASW-16 switch LED module and microphone (126 addressable points)
CAX-CC2-16	Axis AX Series Command Center with cabinet, 2 power supply's/chargers, 2 SLC, 2 NACs, two 40 watt speaker circuits, 1 AXASW-16 switch LED module and microphone (252 addressable points)
CAX-CC4-16	Axis AX Series Command Center with cabinet, 2 power Supply's/Chargers, 4 SLC, 4 NACs, two 40 watt speaker circuits, 1 AXASW-16 switch LED module and microphone (504 addressable points)
	CAX-CTL base card option modules**:
CAX-LPD	2 SLC, 2 NAC expander card
CAX-NAC	2 NAC expander card
CAX-PSU	5 Amp expansion power supply module
CAX-NET4	Network interface card (Style 4)
CAX-NET7	Network interface card (Style 7)
CAX-012	Thermal strip printer
CAX-SEB/D9068P	Serial expansion board and serial digital alarm communicator
	CAV-AMP-80 amplifier option module:
CAV-V70	Universal audio converter (Converts 25 Vrms to 70 Vrms)

* Refer to Axis AX data sheets for peer to peer network and peripheral bus modules.

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

Advanced

Axis AX

Modular Command Center

The Axis AX Series Modular Command Centers from Advanced have been designed to support a wide variety of applications. The Modular Command Centers are fully compatible with the Axis AX Series Intelligent Fire Alarm Control Panels and the Axis AX “V” Series Intelligent Fire Alarm Control Panels with Integrated Audio.

In order to simplify installation, programming, troubleshooting, training and support, all of the Axis AX Series Fire Panels & Modular Command Centers can be programmed using the same Windows™ based programming tools. In addition, a “family” consisting of all of the Axis AX Series main PCBs, option modules, peripherals and intelligent devices are fully compatible across the full range of Axis AX Series Fire Panel & Modular Command Center products.

In order to simplify control and operation of a large, networked, wide area or high rise system, each Modular Command Center will support up to 252 individually assignable switches through use of up to sixteen CAX-ASW-16, Switch LED Modules. These modules mount to the inner doors of the Modular Command Centers. The switch action may be either toggle, on/off or hold for 2 seconds. Each switch is associated with 3 LEDs that are red, yellow and green. These LEDs are fully programmable and can be set to turn on steady and or to flash. A large area is made available per switch LED for user defined text that may clearly identify the intended function. With such versatility, operation and control is simplified, status is readily available and quickly identified.

Examples of switch operations include: fan and HVAC control, paging area select, message select, purging, zone/area/point bypass, etc. The total number of switches supported across a maximum configured network is 51,200. A key feature is that individual switch and LED response time is not affected by the size of the network and each switch and LED can be assigned to network functions as well as individual panel functions.

A CAV-AMP-80, Audio Amplifier Module, with associated CAX-PSU-6 Power Supply/Charger and CAV-MIC, Microphone Assembly installed in a Modular Command Center adds audio capability at the head end of a fi re system. Each CAV-AMP-80 has two 40 Watt speaker circuits (may be programmed as 1:1 Backup) and can play up to 16 different messages, allowing for easy adaptation to mass notifi cation requirements. Through either manual or automatic controls, live or recorded audio messages can be sent to any location in a facility.



Features

- 1, 2 and 4 Loop Command Centres
- Mass Notification Functionality
- Audio/Visual Synchronization (Panel & network wide)
- Two Standard Sizes (3x3 and 3x5)
- Up to 200 Networked Panels
- Multiple Command Center Control Options

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- CSFM Approved: 7165-1713:0101
- NYCFD COA #6105

Control functions include: All Call, All Evac, All Alert, Message Select and Area Select. For instant control of paging to all areas, press the All Call button. To generate and play an Evacuation, Alert or Mass Notifi cation message throughout a facility press the All Evac, All Alert or Message button. To play a specific message in specific areas, use individual message selection buttons followed by the individual area selection buttons.

A typical high rise application may be configured with Advanced CAV-VB Audio Booster's on a per floor (area) basis. The boosters are controlled by the Control-by-Event logic at the Command Center to generate specific messages upon specific conditions. It is easy to program for example a typical fire floor, floor above and floor below evacuate message simultaneously with adjacent floor alert messages, while also simultaneously providing the capability to override automatic messages at any time with manual paging to all or selective areas. While providing all of this power and flexibility the audio and visual signals maintain full synchronization when required to.

The Modular Command Centers are available in two basic enclosure sizes. The smaller of the two enclosures (also referred to as 3x3 modular command center) measures 22.6"H x 20.3"W x 5.5"D. The larger of the two enclosures (also referred to as 3x5 modular command center) measures 35.9"H x 20.3"W x 5.5"D. The enclosures may be either surface or flush mounted.

Selecting the right components to create a customized Modular Command Center is straightforward. Follow steps 1-6 below.

Step One: Enclosure Selection - Small Enclosure

Backbox – CCM-01-BB. Dimensions: 22.6"H x 20.3"W x 5.5"D

Provides 3x3 module support. May be surface or flush mounted. Supports one AxisAX Series main PCB (base card), one expandable CAX-PSU power supply, one CAV-AMP-80 Amplifier, one CAX-PSU-6 Power Supply Charger, or one of either CAX-RL4 or CAX-RL8 Relay Module or CAX-MDM Modem Module and one D9068P Communicator.Inner Door Options – CCM-01-ID1, CCM-01-ID2, CCM-01-ID3.

C-CCM-01-ID1: 1 double aperture and 7 single aperture openings. Attaches to C-CCM-01-BB back box. Has 1 double aperture, which supports mounting of CAX-DSP (FRCAX-DSP) Display/Keyboard Module or CAX-DAP blank plate, and 7 single aperture openings. Single aperture openings support: CAX-SAP, CAX-I/O-48, CAX-ASW-16, CAX-012 and CAV-MIC modules. Metalwork and mounting hardware only.

C-CCM-01-ID3: 9 Single aperture openings. Attaches to C-CCM- 01-BB back box. Has 9 single aperture openings. Single aperture openings support: CAX-SAP, CAX-I/O-48, CAX-ASW-16, CAX- 012 and CAV-MIC modules. Metalwork and mounting hardware only.

Outer Door – CCM-01-OD: Attaches to C-CCM-01-BB back box. Metalwork, plexiglass, key lock and mounting hardware only.

Step One: Enclosure Selection - Large Enclosure





Backbox – CCM-02-BB. Dimensions: 35.9”H X 20.3”W X 5.5”D

Provides 3x5 module support. May be surface or flush mounted. Supports one AxisAX Series main PCB (base card), one expandable CAX-PSU power supply, two CAV-AMP-80 Amplifi ers, two CAXPSU-6 Power Supply Chargers, one of either CAX-RL4 or CAXRL8 Relay Modules or CAX-MDM Modem Module and one D9068P Communicator.Inner Door Options – CCM-02-ID1, CCM-02-ID2, CCM-02-ID3

C-CCM-02-ID1: 1 double aperture and 13 single aperture openings. Attaches to C-CCM-02-BB back box. Has 1 double aperture opening, which supports mounting of CAX-DSP (FRCAX-DSP) Display/Keyboard Module or CAX-DAP blank plate, and 13 single aperture openings. Single aperture openings support: CAX-SAP, CAX-I/O-48, CAX-ASW-16, CAX-012 and CAV-MIC modules. Metalwork and mounting hardware only.

C-CCM-02-ID3: 15 Single aperture openings. Attaches to C-CCM- 02-BB back box. Has 15 single aperture openings. Single aperture openings support: CAX-SAP, CAX-I/O-48, CAX-ASW-16, CAX-012 and CAV-MIC modules. Metalwork and mounting hardware only. Outer Door – C-CCM-02-OD Attaches to C-CCM-02-BB back box. Metalwork, plexiglass, key lock and mounting hardware only.

Outer Door

Outer Door – C-CCM-02-OD Attaches to C-CCM-02-BB back box. Metalwork, plexiglass, key lock and mounting hardware only.

Step 2: Main PCB's

Standard System Modules, select one each:

- CAX-ACB: AC input power interface PCB. Required for CAX-CTL-1PCB and CAX-CTL-2PCB
- CAX-DSP: AX Series Display/Keyboard PCB. Comes with mounting plate, membrane switch, cables and mounting hardware.

System Base Card, select one of the following:

- CAX-CTL-1PCB (Base Card): Single Loop Control Board with internal PSU. Cannot expand system power with CAX-PSU.
- AX-CTL-2PCB (Base Card): Two Loop Control Board with internal PSU.
- Optional expansion power supply for CAX-CTL-2PCB: Add CAX-PSU Expansion Power Supply Module, 5.0A @ 24VDC, filtered and regulated, if required.

SLC and/or NAC Expansion for CAX-CTL-2PCB (Base Card) ONLY, select one of the following:

- CAX-LPD: Includes 2 SLCs and 2 NACs
- CAX-NAC
- Includes 2 NACS

Optional Network Module, select one if networking Remote Annunciators, Command Centers, Axis AX Series Intelligent Fire Alarm Panels and/or Axis AX"V" Series Intelligent Integrated Audio Panels. (For fiber optic networking refer to AX-MOXA data sheet):

- CAX-NET4: Ad-NeT-PluS Network Interface Module (Style 4). Maximum 64 nodes; panels and/or remote annunciators.
- CAX-NET7: Ad-NeT-PluS Network Interface Module (Style 7). Maximum 200 nodes; panels and/or remote annunciators.

Optional Digital Communicator, select both items below if required:

- D9068P: Digital Alarm Communicator FACP Powered, PCB only, serial port compatible, w/cables. Requires CAX-SEB board to interface to the Main PCB (Base Card).
- CAX-SEB: Axis AX Series RS-232 Serial Expansion Board. Use with D9068P Communicator.





Step 3: Audio Support

For systems requiring audio support, the following modules are required:

CAV-AMP-80: Audio Amplifier Module includes built-in 16 message generator, dual booster inputs and two 40 watt, 25 Vrms speaker outputs. Includes mounting plate and mounting hardware. The smaller Modular Command Center will support one amplifier, the larger Modular Command Center will support two amplifier modules.

CAX-PSU-6: Power Supply Charger Module, 5.0A @ 24VDC, filtered & regulated, for use with CAV-AMP-80 Amplifier. The smaller Modular Command Center will support one CAX-PSU-6, the larger Modular Command Center will support two CAX-PSU-6 modules.

CAV-MIC: Microphone with enclosure. Mounts to all Modular Command Center inner doors, in a single aperture location.





Step 4: Fire Fighter Telephone Support

For systems requiring firefighter telephone support, the AV-TEL or AV-TEL-MCCS module is required. The AV-TEL/AV-TELMCCS mounts in a double aperture location on the inner door.

AV-TEL: Is a firefighter phone with Telephone Riser Module and enclosure, providing one riser which supports up to 35 addressable or conventional firefighter telephones/jacks.

AV-TEL-MCCS: Is a firefighter phone for use with the AV-TELRISER6. The AV-TEL-RISER6 provides 6 risers each supporting 35 addressable or conventional firefighter telephones/jacks.

Step 5: Options Modules Mounted to Back Box

AX-RL4: Four Relay Output Card, Form C relays rated 1.0A @ 30 VDC/VAC, freely programmable. Cannot be installed if AV-AMP-80 is installed, however can be installed in a remote enclosure.

AX-RL8: Eight Relay Output Card with two (2) Form C and six (6) - Form A relays rated 1.0A @ 30 VDC/VAC, freely programmable. Cannot be installed if AV-AMP-80 is installed.

AX-MDM: 24 Volt DC, Modem Module. Cannot be installed if AV-AMP-80 is installed, however can be installed in a remote enclosure.

Step 6: Option Modules that Mount to Inner Doors

Each of the modules below mounts in a single aperture location on the inner door. Mounting hardware and cabling included.

AX-ASW-16: 16 Switches, with three integrated, programmable LED’s per switch (red, yellow, green).

AX-I/O-48: 16 Switch inputs and 48 LED driver outputs. Supports up to 5 optional AX-RL10 Relay Output Modules, for a total of 50 relay outputs. Each AX-RL10 module provides ten Form C A relays rated 1.0A @ 30 VDC/VAC. Comes with 1 foot long ribbon cable.

AX-012: AX Series Thermal Printer with mounting hardware.

AX-SAP: Single aperture blank metal plate. Comes with mounting hardware.

AX-DAP: Double aperture blank metal plate. Comes with mounting hardware.

Order Codes and Options

CCM-01-BB	22.6"H X 20.3"W X 5.5"D, 3X3 Back Box
CCM-01-ID1	Inner Door 1 Double and 7 Single Apertures
CCM-01-ID2	Inner Door 2 Double and 5 Single Apertures
CCM-01-ID3	Inner Door 9 Single Apertures
CCM-01-OD	Outer Door
CCM-02-BB	35.9"H X 20.3"H X 5.5"D, 3X5 Back Box
CCM-02-ID1	Inner Door 1 Double and 13 Single Apertures
CCM-02-ID2	Inner Door 2 Double and 11 Single Apertures
CCM-02-ID3	Inner Door 15 Single Apertures
CCM-02-OD	Outer Door

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Advanced

Axis AX

Conventional Duct Detectors

The SL-2000 Series Smoke Duct Detector is the latest innovation for early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial, Industrial, and Residential applications. The unit is designed to prevent the recirculation or spread of smoke by air handling systems, fans, and blowers. Complete systems may be shut down in the event of smoke detection. The SL-2000 is designed and built to meet all local code requirements, as well as the NFPA and ICC standards regarding HVAC supply and return duct smoke detectors. Output terminals are provided for a wide range of remote accessories such as horns, strobes, remote status indicators, and test/reset key switches or push buttons.

The SL-2000 includes many features that represent true innovations from current generation duct smoke detectors. Our traditional installer/servicer-friendly approach has been closely followed and expanded throughout the SL- 2000. This philosophy provides a new level of efficiency in after-purchase value to both the installer/servicer and end-user. Our attention to detail has yielded a host of “No-Tools Required” features, as well as a multi-application performance level as yet unmatched in the industry. Innovative product combined with unsurpassed customer service equals the right combination for all of your projects. The key features below detail many of the customer-driven innovations incorporated in the SL-2000 Series.



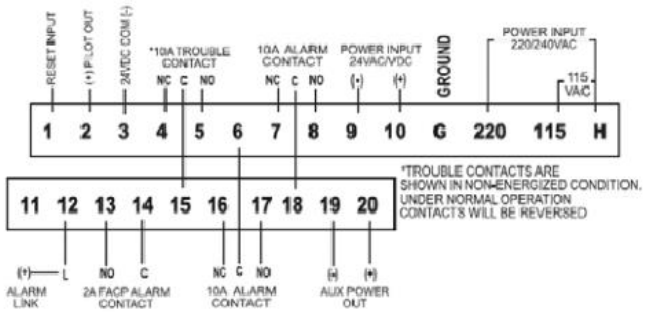
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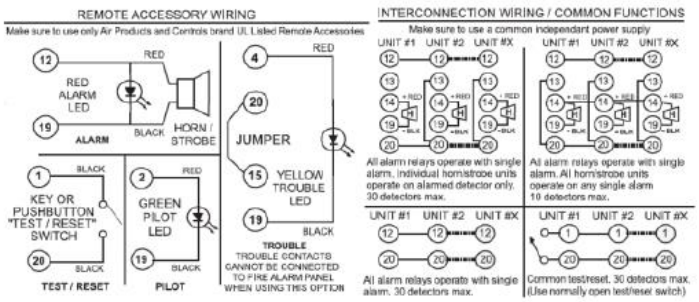
- Photoelectric and Ionization Versions Available
- Low-flow Technology (100-4000ft/min)
- Listed for High-temp Applications
- Patented “No-tools Required”
- Patented “Test Port Valve”
- Magnet Test Capability
- Operating Voltages: 115VAC, 230VAC, 24VDC, 24VAC
- Flashing Detector LED Indicating Normal Operation
- Various Remote Accessories Available
- Green Pilot and Red Alarm Indicators
- Compatible with WP-2000 Weatherproof Enclosure
- External Mounting Tabs for Ease of Installation
- Compact and Lightweight
- Two 10A Form “C” Alarm Contacts
- One 2A Form “A” Alarm Contact
- One 10A Form “C” Trouble Contact
- Large Screw Terminals

Listings and Approvals

- UL, CUL, CSFM and MEA Listed

Terminal Connections





Specification

Detector Model Number:	SL-2000-N 55000-225APO SL-2000-P 55000-328APO
Accessories:	MS- and MSR-Series Remote Accessories, WP-2000 Weatherproof Enclosure, TG-2000 Aerosol Test Gas, and T-PB Power Supplies available from Air Products and Controls Inc.)
Power Requirements: (Without Accessories) Standby Alarm	 230VAC 8mA, 115VAC 14mA, 24VAC 55mA, 24VDC 14mA 230VAC 18mA, 115VAC 32mA, 24VAC 190mA, 24VDC 68mA
Relay Contact Rating:	
Alarm Contacts:	Resistive load: Two form "C" rated at 10 Amps @ 115VAC Resistive load: One form "A" rated at 2 Amps
Trouble Contacts:	Resistive load: One form “C” rated at 10Amps @ 115VAC
Air Velocity:	100 to 4,000 ft./min.
Ambient Temperature:	SL-2000-N 32°F to 158°F (O°C to 70°C) SL-2000-P 32°F to 140°F (O°C to 60°C)
Humidity:	85 ±5 % RH (@32 ±2°C; 86 ±3.6°F) Non-condensing / Non-freezing
Wiring	Solid or stranded: #12 to #22 AWG terminals
Approvals:	UL & CUL listed (UL268A, UROX, UROX7) file # 82829, CSFM listed (3240-1004:105), MEA accepted (73-92-E; VOL. 27)
Material:	Grey plastic back box, clear plastic cover (Makrolon 94V-O)
Dimensions:	13 1/2” L x 4 1/2” W x 2 1/4” H
MAX. Net Weight:	2 1/2 lbs
Radioactive Element:	For SL-2000-N (Ionization) americium 241; 0.9 micro-curie. Do not expose to corrosive atmospheres
Hardware:	7” exhaust tube, sampling tube end cap, mounting template, test magnet, and mounting hardware included

Order Codes and Options

SL-2000-P	Photoelectric Duct Detector, 230VAC, 115VAC, 24VAC, 24VDC
SL-2000-N	Ionization Duct Detector, 230VAC, 115VAC, 24VAC, 24VDC
STN-1.0	10” sampling tube for ducts 6” - 12” wide
STN-2.5	30” sampling tube for ducts 1’ - 3’ wide
STN-5.0	5’ sampling tube for ducts 3’ - 5’ wide
STN-10.0	10’ sampling tube for ducts 5’ - 10’ wide

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Axis AX

FIRERAY® 3000

The FIRERAY® 3000 End to End infrared Optical Beam Smoke Detector (OBSD) has been designed using the latest optical technology, incorporating modern industrial, electronic and software techniques. This detector offers cost effective protection of large, open area spaces with high ceilings. It is also very suited to applications where access to ceiling mounted smoke detectors presents practical difficulties.

The FIRERAY® 3000 is ideal for applications where line of sight for the IR (infra-red) detection path is narrow and where the building structure uses reflective surfaces. It has also been designed to be aesthetically pleasing and thus can equally suit modern architectural buildings as well as historical sites, particularly where ornate ceilings exist.



Features

- Separate Transmitter and Receiver Heads
- Range 16.5 to 393 Feet (Configurable per set of detectors)
- Integrated Laser Alignment in Receiver
- 2-wire Interface Between Controller and Receiver
- Single and Twin Channel Capability
- Separate Fire and Fault Relays per Detector
- Low Level Controller with LCD Display
- Programmable Sensitivity and Fire Threshold
- Automatic Gain Control (AGC) for Drift Compensation
- Built-in Electronic UL/ULC Obscuration-Acceptance Fire Test
- Knockouts for Ease of Installation and Wiring
- Optional Transmitter Powering from Controller

Listings and Approvals

- UL and ULC Listed: S3417
- CSFM: 7260-1508:105

Specification

Operating Range:	16.5 to 393 feet (5-120 m)
Operating Voltage Range:	12 to 36 VDC ±10%
Operating Controller Current (With 1 or 2 Receivers):	14 mA (Constant)
Operating Transmitter Current:	8 mA (per Transmitter)
Power Down Reset Time:	>20 seconds
Fire and Fault Relay Contacts:	Resistive VFCO 2A @ 30 VDC
Operating Temperature (UL):	-40°F to 131°F (-20°C to 55°C)
Optical Wavelength:	850 nm
LED Indications:	
Control Unit:	Red = Fire Amber = Fault Green = System ok
Receiver:	Red = Fire
	Alignment LEDs for single person alignment
IP Rating:	IP54
Relative Humidity (Non-Condensing):	93%
Parts List:	
System:	1 x Transmitter (Clear lens) 1 x Receiver (Dark lens) 1 x Control unit
Additional Detector:	1 x Transmitter (Clear lens) 1 x Receiver (Dark lens)
Housing Material (Transmitter/Receiver/Controller):	UL94V2 PC
Cabling between each Receiver & Controller:	18-14 AWG, 1-pair, twisted jacketed
Maximum Cable Distance between Receiver & Controller:	330 feet (100 m)
Dimensions & Weight: Control Unit: Transmitter & Receiver:	 7.99” wide x 4.88” high x 2.81” deep, 1.34 lbs 3.07” wide x 3.03” high x 6.33” deep, 0.456 lbs

Order Codes and Options

3000-103	FIRERAY® 3000 End to End Beam Smoke Detector, 16.5 ft to 393 ft system includes 1x transmitter, 1x receiver, and 1x system control unit
3000-016	Additional Detector Pack (set of Transmitter and receiver heads) use up to 1 additional detector pack per 3000-103
3000-201	FIRERAY® 3000 Adjustment Bracket
3000-202	FIRERAY® 3000 Surface Mount Adaptor
3000-203	FIRERAY® 3000 4” Square Cover Plate
5000-011	FIRERAY® 3000 Surface Mount Detector Back Box (Requires one 3000-202 surface mount adaptor for each head - ordered separately)
3000-209	FIRERAY® 3000 Controller Back Box
3000-210	FIRERAY® 3000 Semi Flush Trim Plate
1000-018	Wire Cage for FIRERAY® 3000 when used with the 5000-011 detector back box and 3000-202 (ordered separately)

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FIRERAY® 5000

The FIRERAY® 5000 System is an auto-aligning, self-correcting infrared beam smoke detector. Up to 2 detector heads can report to a single ground level controller. In addition, each system controller houses two pairs of fire and trouble relays, one per detector. Once the detector head is installed, using the easy-fit mounting system an integral LASER can be activated. This allows the reflective prism to be located quickly and with confidence.

The Auto-Align function ensures proper alignment and maximum signal during the beam installation. Auto-Optimise automatically steers and maintains the beam in the optimum position for reliable performance. The signal generated in the transmitter element and reflected by the prism back to the receiver element is analyzed for the presence of smoke. The internal microprocessor determines an alarm condition when a predetermined level obscuration is reached.

The system is designed to be mounted so the beam will project between 19” (0.5m) and 24” (0.6m) below the ceiling. Lateral detection may be up to 30ft. (9.144m) on either side of the beam, providing a maximum total coverage area of up to 19,800 square feet (60ft. x 330ft. or 18.29m x 100m).



Features

- Range of 26.25 ft to 330 ft (8 m to 100 m)
- Built-in Laser Assisted Prism Mounting
- Auto-Optimise: Auto-Correction Due to Building Shift
- Contamination Compensation
- Programmable Alarm Thresholds: 10% - 60% in 1% Increments
- Separate Trouble and Alarm Relays for Each of the 2 Channels
- Password Protected Settings
- Low Current Draw 5 to 8.5 mA
- Built-in 1/2” (M-20) Conduit Knockouts on System Controller
- Programmable Fault and Alarm Delay: 2 - 30 SecondsUp to 2 Detector Heads Reporting to one Ground Level Controller
- Built-in Electronic UL/ULC/FM Obscuration-Acceptance Fire Test

Listings and Approvals

- UL and ULC Listed: S3417
- FM Approved
- CSFM: 7260-1508:104
- MEA - 22-08-E

Specification

Primary Input Power:	14 to 36 VDC
Standby Current: Low Current Mode High Current Mode	 Low current mode: 5 mA to 8.5 mA @ 24 VDC (Depending on number of detector heads used) 37 mA @ 24 VDC
Alarm Current:	5 mA to 8.5 mA @ 24 VDC (Depending on number of detector heads used)
Relay Contacts:	1 A @ 30 VDC resistive
Reset Time:	5 seconds maximum
Start-Up Time:	45 seconds
Optical Wavelength:	850 nm
Alarm Threshold:	10% - 60% (35% default)
Temperature Rating: UL Listed Installations	-40ºF to 131ºF (-20ºC to 55ºC) 32ºF to 100ºF (0ºC to 38ºC)
Relative Humidity:	0% to 93%, Non-condensing
Range:	26.25 ft. to 330 ft. (8 m to 100 m)
Cabling Between Each Detector & Controller:	18 - 14 AWG, 1-pair
Housing:	Flame retardant ABS
IP Rating:	IP54
Finish:	Light grey/black
Knockouts: Controller Detector Head	
Controller	7 - 1/2” (M-20)
Detector Head	1 - 1/2” (M-20)
Weight:	Head & controller 3.24 lbs (1.47 kg)
Dimensions: Head Controller Prism	 5.28” deep x 5.16” high x 5.28” wide (134 mm x 131 mm x 134 mm) 3.43” deep x 9.06” high x 7.95” wide (87 mm x 230 mm x 202 mm) 0.37” deep x 4.13” high x 3.94” wide (9.5 mm x 105 mm x 100 mm)

Order Codes and Options

5000-103	Reflective Auto Align Beam Smoke Detector, 27 ft to 330 ft system includes 1 detector head, 1 controller and 1 prism
5000-031	Additional Detector Head and 1 prism use up to 1 additional detector head per 5000-103
5000-004	Long Range Prism Kit, 3 additional prisms for installations between 160 ft and 330 ft (50 m - 100 m)
5000-005	Universal Alignment Bracket used with F-5000 detector head, 5000-007 and 5000-008
5000-201	Universal 1300 Alignment Bracket used with F-5000 detector head, 5000-007 and 5000-008
5000-006	Wall Bracket Mounts 1 or 4 Prisms
5000-007	4 Prism Alignment Adaptor Plate
5000-008	1 Prism Alignment Adaptor Plate
5000-009	Controller Back Box
5000-010	Semi-Flush Trim Plate for 5000-009
5000-011	Detector Surface Mount Uni-Box
5000-012	Detector 2 Gang Mounting Plate
5000-014	Ceiling Pendant Mount Bracket
1000-018	Wire Protective Cage for detector
1000-019	Wire Protective Cage for controller

23901	Replacement Prism

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WP-2000 Enclosure

The WP-2000, Weatherproof Duct Detector Enclosure, is for use with an SL-2000 Series Conventional Duct Detector. The enclosure offers outdoor protection of a SL-2000 Conventional Duct Detector from rain, sleet, and snow or indoor protection from dripping water.



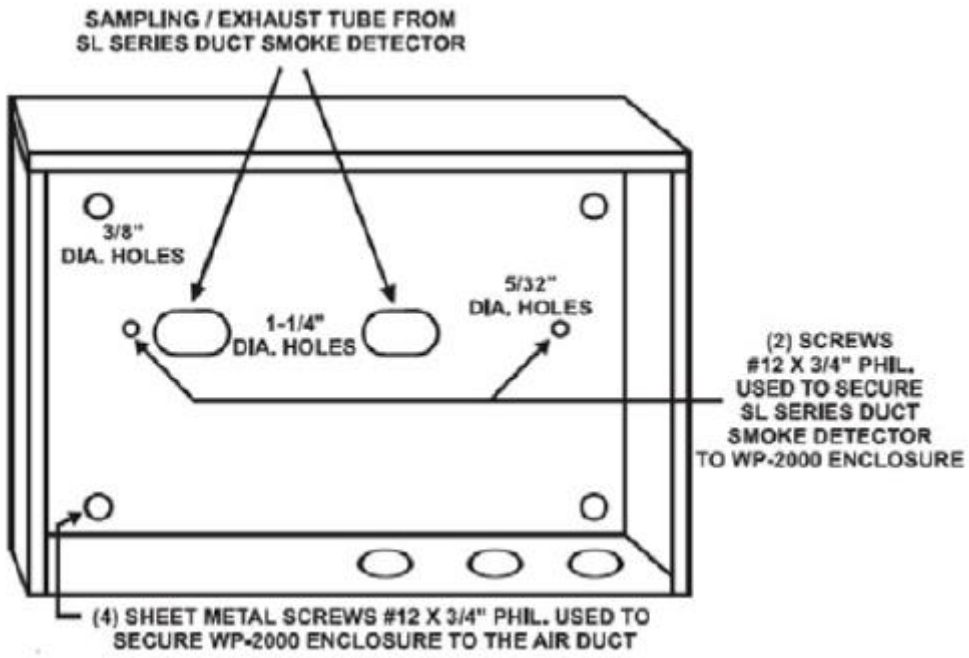
Features

- 16 Gauge Steel
- Drip Shield Top
- Slip-on Removable Cover
- Embossed Mounting Holes
- 3 Knockouts in Bottom of Enclosure
- UL 50 Type 3R / NEMA Type 3R Enclosure
- Egg Shell White Finish
- Foam Gaskets for Sampling/Exhaust Ports

Listings and Approvals

- UL, CUL Listed

Installation Diagram



Specification

Dimensions	11.06” H x 18.13” W x 4.38” D
Knockouts	3 bottom, convertible 0.75” to 1.75”
Metal	16 gauge CRS
Access	2 screws, removable cover
Protection Rating	3R - UL 50, NEMA and CSA
Temperature	See SL-2000 series data sheet

Order Codes and Options

WP-2000	Weatherproof Duct Detector Enclosure

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Xtralis OSID Smoke Detection

Open-area Smoke Imaging Detection (OSID) by Xtralis is a new innovation in projected beam smoke detection technology. By using advanced dual wavelength projected beams and optical imaging technology for early warning smoke detection, OSID provides a low-cost, reliable and easy-to-install solution that overcomes typical beam detection issues such as false alarm incidents and alignment difficulties.

The OSID system measures the level of smoke entering beams of light projected over an area of protection. A single OSID Imager can detect up to seven emitters to provide a wide coverage area. Two innovations in smoke detection technology have been developed for the revolutionary OSID smoke detector:

Dual Wavelength Particle Detection The beam projected from each emitter contains a unique sequence of ultraviolet (UV) and infrared (IR) pulses that are synchronized with the imager and enable the rejection of any unwanted light sources.

By using two wavelengths of light to detect particles, the system is able to distinguish between particle sizes. The shorter UV wavelength interacts strongly with both small and large particles while the longer IR wavelength is affected only by larger particles. Dual wavelength path loss measurements therefore enable the detector to provide repeatable smoke obscuration measurements, while rejecting the presence of dust particles or solid intruding objects.

Optical Imaging with a CMOS Imaging Chip. An optical imaging array in the OSID Imager provides the detector with a wide viewing angle to locate and track multiple emitters. Consequently, the system can tolerate a much less precise installation and can compensate for the drift caused by natural shifts in building structures. Optical filtering, high-speed image acquisition and intelligent software algorithms also enable the OSID system to provide new levels of stability and sensitivity with greater immunity to high level lighting variability

Operation Status information (Fire Alarm, Trouble and Power) is communicated through the Imager via Status LEDs, dedicated Trouble and Alarm relays, and the Remote Indicator interface. Specific Trouble (Fault) conditions are identified through coded flashes of the Trouble LED. An internal heating option is also provided on the Imager to prevent condensation on the optical surface, and a reset input enables an external signal to reset the device.

Simple Installation and Maintenance The OSID system consists of up to seven Emitters, for the 45° and 90° Imager units, located along the perimeter of the protected area, and an Imager mounted opposite. Each component can be mounted directly to the surface or can be secured with the supplied mounting brackets. Battery powered Emitters with up to five years battery life are also available to reduce installation time and cost. On the Imager, a termination card provides all field wiring terminals, and DIP switches enable the user to configure the detector for particular applications.



Features

- Maximum Detection Range of 492 ft. (150 m) [OSI-10]
- Fire, Trouble and Power Status LEDs
- High False Alarm Immunity
- Dust & Intrusive Solid Object Rejection
- Three Selectable Alarm Thresholds
- Easy Alignment with Large Adjustment & Viewing Angles
- No Need for Precise Alignment
- Tolerant of Alignment Drift
- Automatic Commissioning in Under 10 minutes
- Simple DIP Switch Configuration
- Dual Wavelength LED-Based Smoke Detection
- Simple and Easy Maintenance Requirements
- Conventional Alarm Interface for Straightfoward Fire System Integration

Listings and Approvals

- UL Listed
- ULC Listed

Alignment of the Emitter is simply achieved using a laser alignment tool to rotate the optical spheres until the laser beam projected from the alignment tool is close to the Imager. The Imager is aligned in a similar way so that its Field of View (FOV) encompasses all Emitters. A Trouble or Fault will be indicated if an Emitter is missing or outside the Imager field of view. The OSID system is highly tolerant to dust and dirt and requires little maintenance in practice. Preventative maintenance is limited to occasionally cleaning the optical faces of the detector components.

Configuration Options OSID systems may be configured to suit a range of detection spaces by selecting the number of Emitters and type of Imager. Each type of Imager differs by the lens used in the unit, which determines the field of view and range of the system.

Imager	Field of View		Detection Range				Max. Number of Emitters
	Horizontal	Vertical	Standard Power		High Power		
			Min	Max	Min	Max	
10°	7°	4°	98 ft (30 m)	492 ft (150 m)	--	--	1
45°	38°	19°	49 ft (15 m)	197 ft (60 m)	98 ft (30 m)	393 ft (120 m)	7
90°	60°	48°	20 ft (6 m)	** 111 ft (34 m)	39 ft (12 m)	** 223 ft (68 m)	7

** Maximum Distances measured for the Center Field of View of the Imager. For more details on distances for the Imager, see the OSID Product Guide.

Specification

Supply Voltage:	20 to 30 VDC (24 VDC nominal)
Imager Current Consumption: Nominal @ 24 VDC Peak @ 24 VDC	 8mA (1 emitter) 10mA (7 emitters) 31mA
Emitter Current Consumption: Wired Version @ 24 VDC Battery Version	 350Ω standard power, 800Ω high power Built-in 5 year battery
Field Wiring, Cable Gauge:	26 - 12 AWG (0.2 - 4mm)
Alarm Threshold: Low - Highest Sensitivity / Earliest Alarm Medium - Medium Sensitivity High - Lowest Sensitivity / Maximum Immunity to Nuisance Smoke Conditions	 20% (0.97 dB) 35% (1.87 dB) 50% (3.01 dB)
Adjustment Angle:	60º (Horizontal) 15º (Vertical)
Maximum Misalignment Angle:	2º
Dimensions (WHD), Emitter / Imager:	7.80 in x 5.12 in x 3.78 in (198 mm x 130 mm x 96 mm)
Operating Conditions*: Temperature Humidity	 14ºF to 131ºF (-10ºC to 55ºC)* 10 to 95% RH (Non-condensing)
* Product UL Listed for use from 32ºF to 103ºF (0ºC to 39ºC)	
IP Rating: Electronics Optics Enclosure	 IP 44 IP 66
Status LEDs: Fire Alarm Trouble / Power	 Red Bi-color yellow/green

Order Codes and Options

OSI-10	Imager - 7º Coverage
OSI-45	Imager - 38º Coverage
OSI-90	Imager - 80º Coverage
OSE-SP	Emitter - Standard Power
OSE-SPW	Emitter - Standard Power, wired
OSE-HPW	Emitter - High Power, wired
OSID-INST	OSID Installation Kit
OSP-001	FTDI Cable 1.5m
OSP-002	Laser Alignment Tool

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Advanced

Axis AX

Two-Stage Pull Stations

The Advanced RMS Series Two-Stage Pull Stations consists of a family of four (4) models. Models include single or dual action with either combination English/ French labeling or English labeling only.

The RMS Series Two-Stage Pull Stations are manually operated non-coded pull stations specifically designed to meet the Canadian Two-Stage alarm activation requirements, where a Stage 1 activation provides an Alert Signal and a Stage 2 activation provides an Alarm Signal. Each station includes a pull handle (“TIREZ - PULL” or “PULL DOWN”) for alert signaling and a second stage key operated switch for activating an alarm signal. For safety reasons, the second stage alarm key switch is only accessible after the pull handle has been activated.

The high quality, die-cast RMS Series Two-Stage Pull Stations include screw terminal connections for easy wiring. In addition, each pull station comes with a Hex screw reset tool, a two-stage activation key and a break-glass rod.



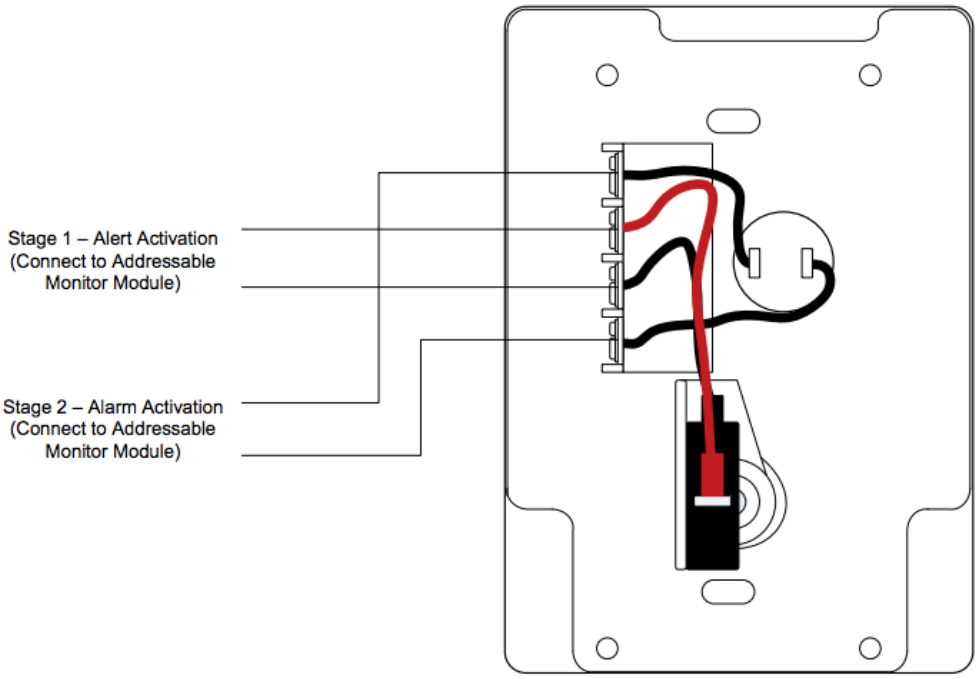
Features

- Two-Stage Pull Station
- Single or Dual Action
- English/French or English Labeling
- High-Quality Die-Cast Construction
- Low Profile, High Visibility Design
- Screw Terminal Connections
- Optional Break-Glass Rod
- Hex Key Lock for Reset

Listings and Approvals

- ULC Listed: 32ZS

Wiring Diagram



Specification

Switch Rating	
Micro Switch	10 Amp @ 120 VAC
Key Switch	0.5 Amp @ 30 VDC
RMS-1T-KS (F)	
Dimensions	4.75”H x 3.2”W x .875”D
Weight	15.5oz
RMS-1T-KS-LP (F)	
Dimensions	4.75”H x 3.325”W x 1.5”D
Weight	1lb 4oz

Order Codes and Options

RMS-1T-KS	Conventional Single Action Two-Stage Pull Station, English Labeling
RMS-1T-KS-F	Conventional Single Action Two-Stage Pull Station, English/French Labeling
RMS-1T-KS-LP	Conventional Dual Action Two-Stage Pull Station, English Labeling
RMS-1T-KS-LP-F	Conventional Dual Action Two-Stage Pull Station, English/French Labeling

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Data Gathering Panels

Available in two (2) configurations, CAX-DGP-FACP (data gathering panel with integral Axis AX Series Intelligent Fire Alarm Control Panel) or CAX-DGP (data gathering panel without integral Axis AX Series Intelligent Fire Alarm Control Panel), the Advanced Data Gathering Panels (DGPs) are ideal for applications where a significant quantity of audio amplifiers wattage and power supply current is required. Consolidation of amplifiers and power supplies into a rugged metal cabinet has multiple advantages including:

- Reduction in the number of costly AC power taps/drops from multiple to single location
- Reduction in the overall space/area required for the fire alarm panel, amplifiers and power supplies
- Reduction in system installation time
- Reduction in system wiring.
- Time savings during troubleshooting and testing
- The ability to support multiple floors/areas from a single DGP/location

Each CAX-DGP is sold in a modular format with optional Axis AX Series modules/peripherals being mounted in the field to a removable stainless steel backplate. Based on space availability, virtually any Axis AX Series module/peripheral can be installed in a CAX-DGP to meet various installation requirements, however, the CAX-DGP-FACP is preconfigured to accommodate a 1, 2 or 4 loop CAX-CTL base card, up to three (3) CAV-AMP-80 amplifiers (totaling 240 Watts), and two (2) CAX-PSN (maximum 20 Amps) notification power supplies (6 amp [CAX-PSN-64] or 10 amp [CAX-PSN-106]). The CAX-DGP is preconfigured to accommodate up to six (6) CAV-AMP-80 amplifiers (totaling 480 Watts) and two (2) CAX-PSN (maximum 20 Amps) notification power supplies (6 amp [CAXPSN-64] or 10 amp [CAX-PSN-106]). Though these back plates are pre-configured for the above-mentioned modules, if all locations are not being utilized additional Axis AX Series modules/peripherals can be installed in the field.

Refer to specific Axis AX Series module/peripheral data sheets for further information regarding individual module/peripheral features and benefits.



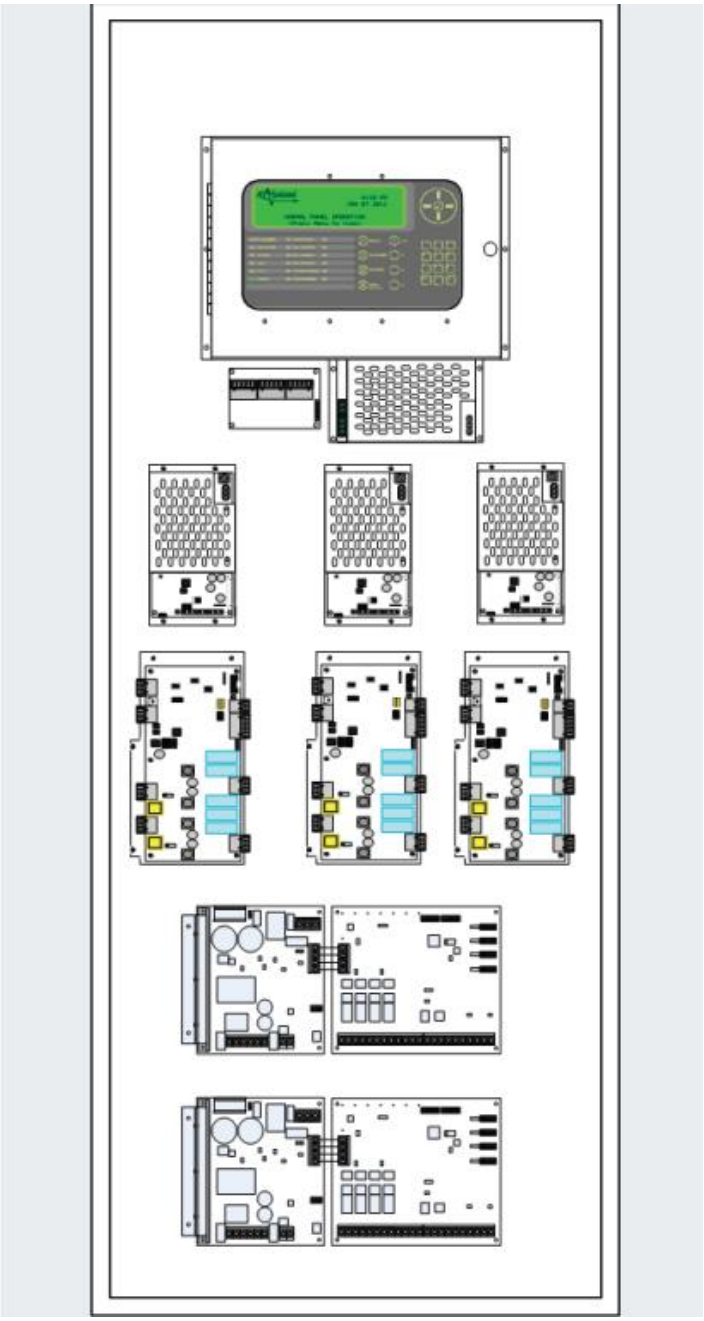
Features

- Pre-Drilled Removable Back plate
- Can Support Multiple Floors or Areas
- Minimizes Overall Cabinet Space Requirements
- Removable Hinged Door
- Reduces Costly AC Taps/Drops
- 14 Gauge Metal w/Optional Dress Plate
- CAX-DGP holds up to Six (6) CAV-AMP-80 Amplifiers
- Holds up to Two (2) CAX-PSN-106 10 Amp Power Supplies
- Ideal for Low and High Rise Applications
- Supports any Axis AX Series Modules/Peripherals
- CAX-DGP-FACP Supports Axis AX Series Base Card

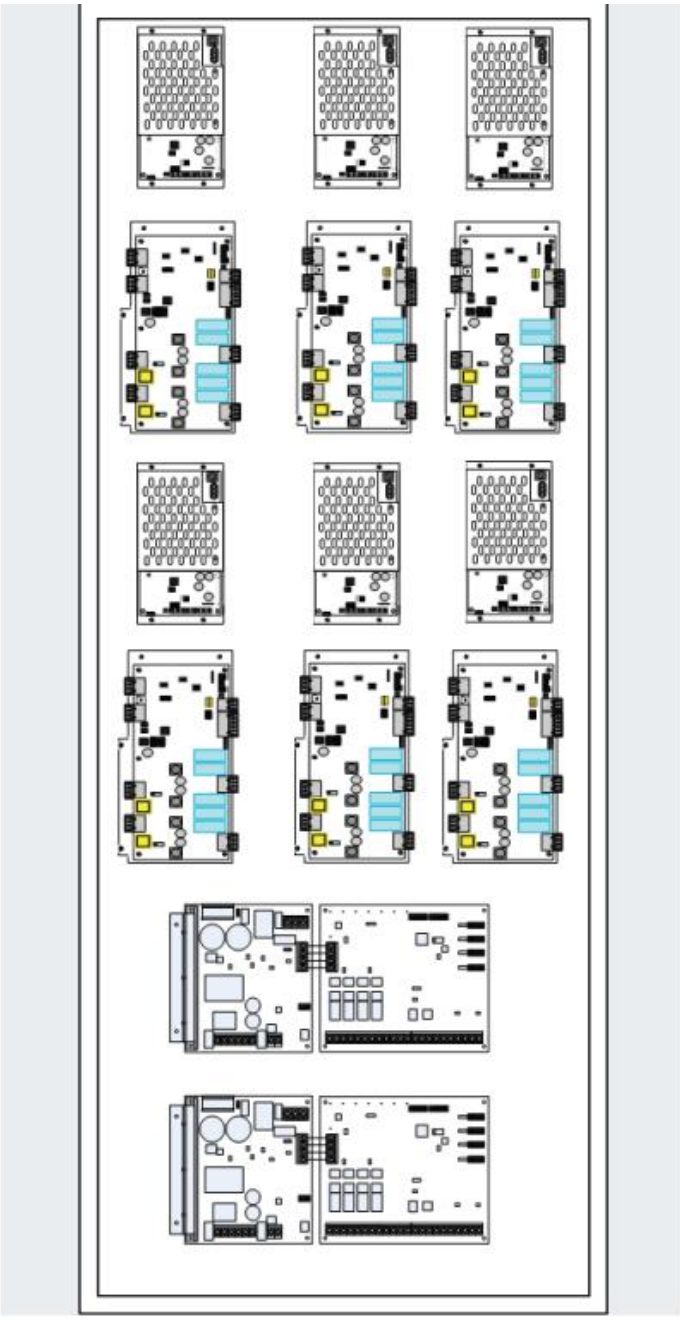
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

AX-DGP-FACP Assembled Enclosure



AX-DGP Assembled Enclosure



Order Codes and Options

CAX-DGP	Data Gathering Enclosure (Does not accommodate mounting of AX-CTL base card and AX-DSP display) [60”H x 24”W x 6”D] without removable hinged door, with mounted door 60.4”H x 24.4”W x 6.2”D] (Includes mounting back plate)
CAX-DGP-FACP	Data Gathering Enclosure (Accommodates mounting of AX-CTL base card and AX-DSP display) [60”H x 24”W x 6”D without removable hinged door, with mounted door 60.4”H x 24.4”W x 6.2”D] (Includes mounting back plate)
CAX-DGP-DP	AX-DGP Dress Plate
CAX-DGP-FACP-DP	AX-DGP-FACP Dress Plate (Required on all AX-DGP-FACP enclosures)
CAX-DGP-BP	AX-DGP Blank Mounting Back Plate (No pre-drilled holes)

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Color Graphics Package

Alarm displays should be easy to read and understand. CAd-VIEW Graphics software provides a simplified interface to help facility managers, guard staff, and emergency responders assess alarm situations.

CAd-VIEW Graphics software can be installed on any Windows-based platforms. Utilizing a workgroup environment, multiple users can share access from their own desktop computers. CAd-VIEW Graphics software is easy to install on most readily available PC's, laptop's, flat-panel and touch screen computers. Basic system requirements:

Windows-based environment	Minimum 2GB RAM
Minimum 1GB hard drive	RS232 interface port
TCP/IP serial server	XGA or WXGA video

17" or 19" monitor



Features

- Windows Based Graphics Program
- Touch Screen Option
- Color Coded Real-Time Status Indicators
- Built-in Event Prioritizing
- AutoCAD Compatible
- Selectable "Take Action" Instructions
- One-Touch Event Re-Trace (Next/Previous)
- Any Number of Backgrounds (Floors)
- Optional Email Notification
- Simplistic Operation
- Optional Touch Screen
- Hi-res Screen Formats
- Field Configurable/Programmable
- Zoom In/Zoom Out Features w/Device Focus

Order Codes and Options

CAd-VIEW1	Licensed Package up to 126 Analog/Addressable Points
CAd-VIEW2	Licensed Package up to 252 Analog/Addressable Points
CAd-VIEW3	Licensed Package up to 504 Analog/Addressable Points
CAd-VIEW4	Licensed Package up to 1008 Analog/Addressable Points
CAd-VIEW5	Licensed Package > 1008 Analog/Addressable Points

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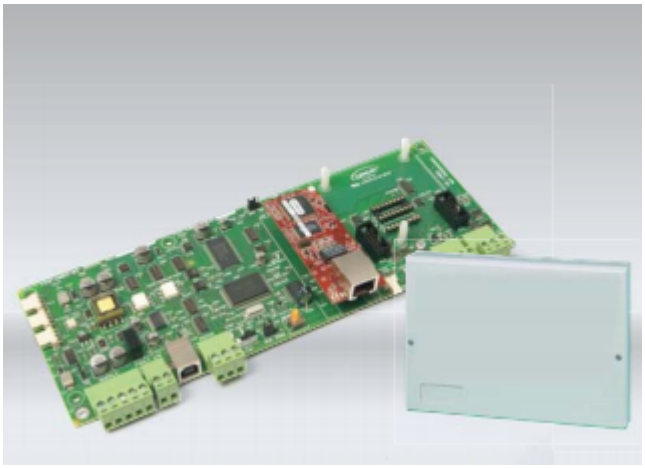
Axis AX

BMS / Graphics Interface

Providing superior monitoring and control in a remote location, via a serial RS-232 interface, the Advanced BMS/Graphics Interface (CAX-BMS) provides building management system or color graphics package interfacing to a single Axis AX Series Intelligent Fire Alarm Control Panel or to a complete Axis AX Series peer-to-peer network (AD-NeT-PluS) installation.

The BMS/Graphics Interface (CAX-BMS) consists of the CAX-BMS PCB and an enclosure. It consumes one node address on an AD-NeT-PluS network, and can be utilized on either the Advanced Style 4 or Style 7 fault tolerant peer-to-peer network.

The state of each network node and the status of individual devices (such as analog values of intelligent smoke detectors) of an AD-NeT-PluS network can be sent to the building management system or color graphics package at any time in a user-friendly, clear and concise manner. In addition, at any time control and view requests can be sent to the CAX-BMS interface device.



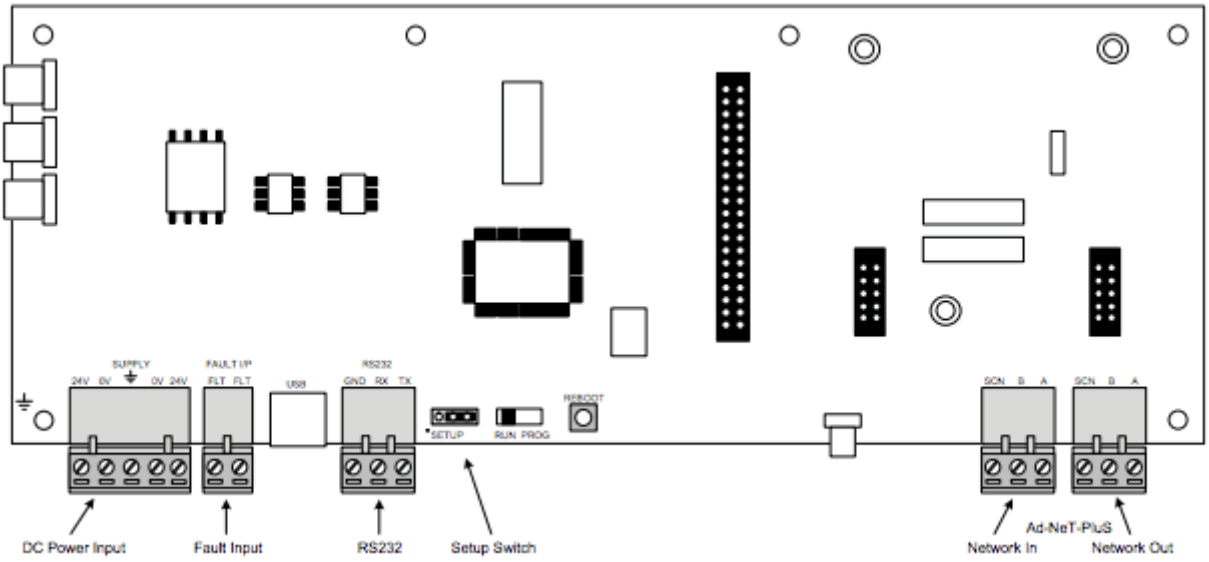
Features

- One-Way / Two-Way Interface to AD-NeT-PluS
- Adjustable Baud Rate Interface
- Power Supply Contact Monitoring Input
- Uncomplicated and Simplistic Installation
- Ad-VIEW Graphics Interface
- AD-NeT-PluS Network Module
- Style 4 (Class B) and Style 7 (Class A) Versions
- Sector Base/Building Partition Programming
- Easy Configuration via PC-NeT

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

Operating Voltage	18 - 28 VDC
Operating Current (AX-NET4 & 7) CAX-BMS (Style 4 network) CAX-BMS/ST7 (Style 7 network)	 70 mA 110mA
Environment	Indoor, Dry
Operating Temperature	32-120ºF (0-48ºC)
Humidity	10-95% (non-condensing)
Enclosure Dimensions Knockouts	 8 3/8“ H x 11 3/4“ W x 1 5/8” D 4 top, 4 bottom rear
Weight (PCB & enclosure)	4.5 lb
Wiring	Twisted pair 18 - 20 AWG minimum. Recommended Twisted Shielded (Belden 8760, 8762)
Serial Interface	Isolated RS-232 w/Adjustable Baud Rate
Fault Input	Remote Power Supply Monitoring Input
Indications	Microprocessor Heartbeat. Network Transmit/Receive

Order Codes and Options

CAX-BMS	BMS/Graphics Interface Style 4 w/enclosure
CAX-BMS/ST7	BMS/Graphics Interface Style 7 w/enclosure
CAX-BMS-PCB	BMS/Graphics Interface PCB
CAX-BMS-CAB	BMS/Graphics Interface enclosure

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Axis AX

LCD Displays

The Advanced UL-LCDW19 and UL-LCDW22 wide screen LCD displays are UL864/ULC-S527 Listed, high resolution displays that are fully compatible with the Advanced ULPC-RACK PC. The UL-LCDW19 and UL-LCDW22 are small, light, compact units that can be ordered with or without a touch screen option and may be supplied in rack mount configurations.

The ULPC-RACK PC is ideal for applications requiring PC based fi re graphics annunciation and control, and is ideally suited for proprietary applications. The PCs come pre-loaded from the factory with the Advanced Ad-VIEW graphics package. Customization of graphic images and system wide controls is made simple with the Ad-VIEW package. Interface to an Axis AX Series Intelligent Fire Alarm Control Panel and/or network, is through an AX-BMS module, which interfaces to the Axis AX Series Ad-Net-Plus fire network. All nodes on the network (up to 200) communicate status and system event information back through the AX-BMS module to the PC. All communications circuitry is fault tolerant.



Features

- 19” and 22” LCD Wide Screen Displays
- Up to 1680 x 1050 WSXGA Resolution
- More than 16.2 Million Colors
- Touch Screen Option
- Rack Mount Option
- Thin Frame Bezel
- Small Footprint
- Black Frame and Stand
- Built-in Speakers

Listings and Approvals

- UL 864 Listed: file UOXX2.S7066
- ULC-S527 Listed

Specification

LCD Screen	19” Wide Screen	22” Wide Screen
Resolution	1440 x 900 WXGA	1680 x 1050 WSGA
Brightness (typical)	300 cd/m2	300 cd/m2
Viewing Angle Left/Right Up/Down	 -85°/+85° (CR>10) -80°/+80° (CR>10)	 -85°/+85° (CR>10) -80°/+80° (CR>10)
Colors	More than 16.7 million	More than 16.7 million
Contrast Ratio	1000:1 (typical)	700:1
Touchscreen (optional)	Capacitive	Capacitive
VESA Mount (Standard)	75/75mm	75/75mm
Dimensions w/stand	17.4”w x 15.6”h x 8”d (441.96mm x 396.24mm x 203.2mm)	20.2”w x 15.9”h x 8.7”d (513.08mm x 403.86mm x 221.8mm)
With Touchscreen	17.4”w x 13.5”h x 7”d (441.96mm x 342.9mm x 177.8mm)	20.2”w x 15.9”h x 8.7”d (513.08mm x 403.86mm x 221.8mm)
Weight	14.3 lbs. (6.5 kg) without touchscreen (15.3 lbs. (6.9 kg) with touchscreen and base)	14.3 lbs. (6.5 kg) without touchscreen (15.3 lbs. (6.9 kg) with touchscreen and base)
Color	Black	Black
Input Signal	VGA - D-Sub 15 Pin & DVI-Connector	VGA - D-Sub 15 Pin & DVI-Connector
Power Supply Input	120 VAC to DC Power Brick	120 VAC to DC Power Brick
Power Consumption (max)	48 Watts Typical	48 Watts Typical
Current Rating	5A (with Audio)	5A (with Audio)
Speaker	(2) Multimedia, Built-In, 2 Watt	(2) Multimedia, Built-In, 2 Watt

Order Codes and Options

UL-LCDW19	Wide Screen LCD, 19”, 1440 x 900 WSXGA
UL-LCDW22	Wide Screen LCD, 22”, 1680 x 1050 WSXGA

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19” LCD Display

The Advanced UL-LCD19, is a UL864/ULC-S527 listed, high resolution, 19 inch LCD display that is fully compatible with the Advanced ULPC-RACK PC. The UL-LCD19 is a small, light, compact unit that can be ordered with or without touch screen option and may be supplied in an 8U rack mount option.

The ULPC-RACK PC is ideal for applications requiring PC based fire graphics annunciation and control, and is ideally suited for proprietary applications. The PCs come pre-loaded from the factory with the Advanced Ad-VIEW graphics package. Customization of graphic images and system wide controls is made simple with the Ad-VIEW package. Interface to an Axis AX Series Intelligent Fire Alarm Control Panel and/or network is through an AX-BMS Module. All nodes on the network (up to 200) communicate status and system event information back through the AX-BMS Module to the PC. All communications circuitry is fault tolerant



Features

- 19” LCD Display
- 1280 x 1024 Resolution
- 16.2 Million Colors
- Touch Screen Option
- 8U Rack Mount Option
- Thin Frame Bezel
- Small Footprint
- Black Frame and Stand
- (2) 2 Watt Speakers

Listings and Approvals

- UL 864 Listed: file UOXX2.S7066
- ULC-S527 Listed

Specification

Active Area	14.8” x 11.85” (376mm x 301mm)
Resolution	1280 x 1024
Brightness (typical)	270 cd/m2
Viewing Angle Horizontal Vertical	 80L/80R (CR>5) 80U/70D (CR>5)
Colors	16.2 million
Contrast Ratio	700:1
Touchscreen (Optional)	Capacitive, USB/Serial
Dimensions w/stand (W x H x D) VESA Mount Without Base With Touchscreen Without Touchscreen	 Standard 100mm x 100mm 16.73” x 16.25” x 2.36” (425mm x 347mm x 60mm) 16.73” x 15.75” x 8” (425mm x 400mm x 203.2mm) 16.73” x 16.3” x 9.44” (425mm x 414mm x 240mm)
Weight	14.3 lbs. without touchscreen (Standard Base), 15.3 lbs. with touchscreen and base, 15.5 lbs. with 8U Rackmount Bracket
Color	Black
Input Signal	DVI-D & VGA 15 pin D-Sub
Power Supply Input	AC 120V @ 60Hz
Power Consumption (maximum)	30 Watts

Order Codes and Options

UL-LCD19	LCD, 19”, 1280 x 1024, UL 864

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Axis AX

UL Listed 19” Rack Mount PC

The Advanced ULPC-RACK, is a UL864 9th Edition listed 19 inch rack mounted PC that is ideal for applications requiring PC based fire graphics annunciation and control, ideally suited for proprietary applications. The PC’s come pre-loaded from the factory with the Advanced Ad-VIEW graphics package. Customization of graphic images and system wide controls is made simple with the Ad-VIEW package.

Interface to an Axis AX Series Intelligent Fire Alarm Control Panel and/or network is through an AX-BMS module, which interfaces to the Axis AX Series Ad-NetPlus fire network. All nodes on the network (up to 200) communicate status and system event information back through the AX-BMS module to the PC. All communications circuitry is fault tolerant.

For added security, the front panel door comes with a keylock which protects the power switch. Special attention has been given in the design to enhanced shock and vibration protection, making the ULPC-RACK robust against abnormal environmental disturbance. MTBF rating is a minimum of 100,000 hours at 25 degrees Centigrade/70 degrees Fahrenheit.

LCD touch sensitive screen options include both 19” and 19/22” widescreen options. A 10 slot passive PICMG backplane supports a number of option modules to further customize the PC.



Features

- 19” Rack Compatible
- Compact 4U Height
- Metal Enclosure w/Lockable Door
- Enhanced Shock/Vibration Protection
- 17” or 19” Adaptable LCD w/Touch Screen
- 300W ATX Power Supply
- Replaceable Air Filters
- Dual Cooling Fans
- (2) USB Ports

Listings and Approvals

- UL 864 Listed: file UOXX2.S7066
- ULC-S527 Listed

Specification

Construction	Heavy-Duty Steel with Aluminum Front Pane
Air Filter	(1) Replaceable Filter
Cooling Fan	(1) 12 cm (86.5 cfm) and (1) 8 cm (35.3 cfm) Ball-Bearing Cooling Fan
Disk Drives	(3) 5¼" and (2) 3½" Drive Bays (One for Internal HDD)
Color	Black
Dimensions	19"W x 17.7"D x 7"H (482 x 450 x 177mm)
Weight	39 lbs. (17.5kg)
Operating Temperature	0 - 50°C (32 - 122°F)
Storage Temperature	0 - 70°C (32 - 158°F)
RHNC	5 - 95%
Vibration	1.5G, 3 Axis, 10 - 15Hz, .75cm
Shock	10G, 3 Axis, 11ms
Maximum Output	300W
Output Voltage	+5V and +3.3V total output not exceed 120W +3.3 @ 10/20A +5 @ 10/20A +12 @ 14A -12 @ .8A +5VSB @ 2A
Input Voltage	115/230
Input Frequency	47Hz - 63Hz
Input Current	9.0 Amps @ 115VAC , 60Hz
Efficiency	70%
MTBF	Minimum 100,000 Hours at 25°C (70°F)
Safety	UL/ULC/CSA/TUV/FCC/IEC
Processor	P4 up to 2.8GHz, Core 2 Duo up to 2.33GHz
Options Ordered Separately	Quad Serial RS232/422/485 PCI Card Optically Isolated Dual/Quad RS232 Serial PCI Card 256 MB Dual Video Card SATA Raid 1 Controller Dual SATA Hard Drives (Up to 320GB) Capacitive Touchscreen Serial or USB TS Controllers 19", 19" and 22" Widescreen
Certifi cation	FCC, UL864 9th Edition

Order Codes and Options

ULPC-RACK	UL Listed Desktop PC

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UL Listed 19” Desktop PC

The Advanced ULPC-STD, is a UL864 9th Edition Listed All-In-One desktop PC that is ideal for applications requiring PC based fire graphics annunciation and control, ideally suited for proprietary applications. Power to the PC can be either DC (9-32 Volts) or AC (115-230 Volts). This small, compact PC comes standard with built-in 2 watt speakers, unidirectional microphone, handset, 19 inch touch sensitive display and is ultra-quiet due to being fanless.

The PC’s come pre-loaded from the factory with the Advanced Ad-VIEW graphics package. Customization of graphic images and system wide controls is made simple with the Ad-VIEW package. Interface to an Axis AX Series Intelligent Fire Alarm Control Panel and/ or network is through an AX-BMS module, which interfaces to the Axis AX Series Ad-Net-Plus fire network. All nodes on the network (up to 200) communicate status and system event information back through the AX-BMS module to the PC. All communications circuitry is fault tolerant.



Features

- All-In-One Fanless Computer
- 19” LCD Touch Screen Display
- Lightweight Aluminum Construction
- Built-in 2 Watt Speakers
- Unidirectional Microphone
- 9-32 VDC/115-230VAC Optional
- 1280 x 1024 Resolution - 16.7 Million Colors
- Core 2 Duo Processor
- 2 1/2” - 80GB Hard Drive
- (1) RS232 COMM Port
- (4) USB 2.0 Ports
- (1) PCI Slot, 32 Bit

Listings and Approvals

- UL 864 Listed: file UOXX2.S7066
- ULC-S527 Listed

Specification

Viewable Screen Size	19” Diagonal LCD Display (378 x 304mm)
Panel Type	TFT Active Matrix
Maximum Resolution	1280 x 1024
Brightness	250 cd/m2
Viewing Angle	±85° Horizontal, ±80° Vertical
Light Source	CCFL; 50,000 Hrs . Life
Frequency	Horizontal 31 - 80 KHz, Vertical 56 - 77 Hz
Colors	16.7 Million
Contrast Ratio	1000:1
Touchscreen	Surface Acoustic Wave
Size (W x H x D) With Stand Without Stand	 17.8” x 16.9” x 8.7”, (452.12 x 429.26 x 220.9mm) 17.8” x 14.667” x 4.6”, (452.12 x 372.5 x 116.84mm)
Weight	15.5 lbs
Material	5052 Aluminum
Finish	Epoxy Powder Coat/Polyurethane
Colour	Black - Fine Texture
Humidity	10% to 90% RH
Temperature	0° to 50°C
Voltage	24 VDC / 120 VAC* (Optional)
Current	3A @ 24 VDC / .6A @ 115 VAC* (Optional)
Power Consumption	72 Watts Maximum / 80 Watts Maximum
I/O Ports	KB, MS - PS/2 DIN (4) USB - Standard USB-A, (1) Side Mount (1) COM - DB9P, (1) COM - DB9P (Optional) (2) LAN - Standard RJ45 (1) Digital I/O (Optional) (1) LPT Port (Optional)
Sound	Line In, Out, Stereo Jacks
Speakers	Dual Stereo 2 watt Amplified
Processor	Core 2 Duo - Intel GME965 - Socket P
CPU	Up to 2.2 GHz
FSB	800 MHz
Memory	Up to 4GB Main Memory, DDR 2 667 MHz
Video	Integrated X3100 Graphics Media Accelerator
Sound	High Definition Audio 7.1 Channels
LAN	(2) Gigabit Ethernet Ports
Expansion	(1) PCI Slot (Optional)
Disk	(1) 2.5” HD and (1) CF Disk up to 8 GB
Certification	FCC, UL, CUL, CE, UL864 9th Edition, ULC S527

Order codes and Options

ULPC-STD	UL Listed Desktop PC

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Intelligent ipGateway

Providing superior remote monitoring and diagnostic interrogation from any remote location, via a secured internet connection, the Advanced Intelligent ipGateway (CAX-LAN) provides an internet gateway to a single Axis AX Series Intelligent Fire Alarm Control Panel or to a complete Axis AX Series peer-to-peer network (AD-NeT-PluS) installation.

The ipGateway consists of the ipGateway PCB, enclosure, and integral display software. It consumes one node address on an AD-NeT-PluS network and can be utilized on either the Advanced Style 4 or Style 7 fault tolerant peer-to-peer network.

The Intelligent ipGateway gathers real-time information from a standard web browser giving visual and audible indication of the status of all AD-NeT-PluS connected nodes. The state of each network node and the status of individual devices (such as analog values of intelligent smoke detectors) of an AD-NeT-PluS network can be displayed at any time in a user-friendly clear and concise manner. Installation event logs can be viewed, saved, or printed as needed without the need to be physically at the installation site.

In addition to providing real-time remote access to Advanced Axis AX Series networks, the ipGateway can be configured to provide email notification based on various system/installation status changes. Status events such as alarms, supervisory, pre-alarms, troubles, disables, etc. can be sent via email to various designated email accounts based on time-of-day and day-of-week settings.

Specific custom user text messages can be configured for any email, providing precise and accurate information immediately to critical personnel.

With unique password protected access, granted by authorized on-site building maintenance personnel or a service technician, remote external commands can be generated over the TCP/IP network. This feature allows the remote user to assist local personnel in maintenance and troubleshooting of virtually any issue related to an Axis AX Series installation. This remote access and control incorporates a safety time-limiting feature, to avoid prolonged access without approval.



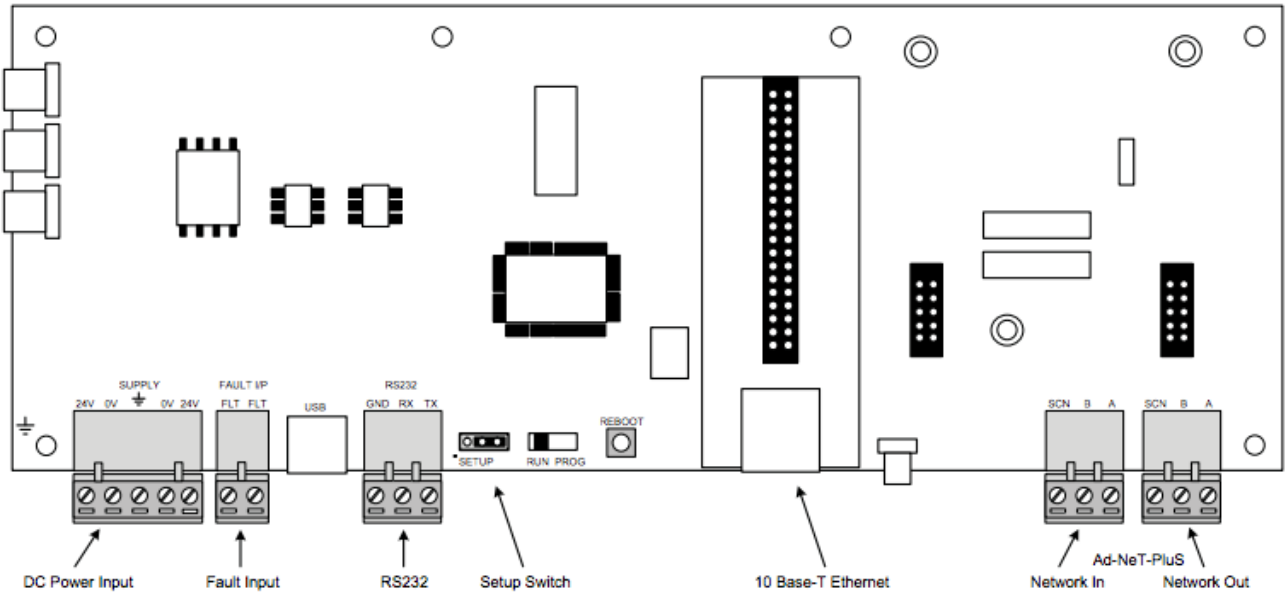
Features

- Monitoring & Interrogation via the Internet
- Secured Internet Connection
- AD-NeT-PluS Network
- Password Protected
- Event Notification via Email
- Configurable via the Internet
- Style 4 or 7 Network Communications
- Remote access to AD-NeT-PluS Network
- Auto Learn Feature
- Multiple User Access Permissions
- Uncomplicated and Simplistic Installation
- Utilizes Standard Web Browser

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- CSFM Approved: 7120-1713:0100
- NYCFD COA #6105

Wiring Diagram



Specification

Operating Voltage	18 - 28 VDC
Operating Current (CAX-NET4 & 7) CAX-LAN (Style 4 Network) CAX-LAN/ST7 (Style 7 Network)	 70 mA 110 mA
Environment	Indoor, Dry
Operating Temperature	32ºF-120ºF (0ºC-48ºC)
Humidity	10-95% (Non-Condensing)
Enclosure Dimensions Knockouts	 8 3/8“H x 11 3/4“W x 1 5/8”D 4 top, 4 Bottom Rear
Weight (PCB & Enclosure)	4.5 lb
Wiring	Twisted Pair 18 - 20 AWG Minimum Recommended Twisted Shielded (Belden 8760, 8762)
Serial Interface	Isolated RS-232
Fault Input	Remote Power Supply Monitoring Input
Ethernet Interface	10 Base-T, RJ45
Indications	Microprocessor Heartbeat Network Transmit/Receive LAN Activity LAN Connectivity LAN Run

Order Codes and Options

CAX-LAN	ipGateway Style 4 with enclosure
CAX-LAN/ST7	ipGateway Style 7 with enclosure
CAX-LAN-PCB	ipGateway PCB with Mounting Hardware
CAX-LAN-CAB	ipGateway Enclosure

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Axis AX

Intelligent 120 VAC I/O Module

The Advanced Intelligent 120 VAC I/O Module is an application specific addressable module for use with the Axis AX Series Intelligent Fire Alarm Control Panels. Each module is SLC loop powered, eliminating the need for additional field wiring and external power supplies.

Designed for installation on Advanced Axis AX Series SLC (signaling line circuit), the Intelligent 120 VAC I/O Module provides a single initiating device circuit (IDC) input and an independently controlled Form-C relay contact output, rated 4 Amp @ 120 VAC/30 VDC. The Intelligent 120 VAC I/O Module utilizes the Advanced unique sub-addressing for the independently controlled relay. By sub-addressing the independently controlled relay the Axis AX Series system point capacities are expanded with installation, programming, and commissioning time minimized. The Intelligent 120 VAC I/O Module mounts to the front of a standard 4” square or 2-gang electrical outlet box.

The IDC input of the Intelligent 120 VAC I/O Module is capable of being wired Class A or B and can monitor a single contact device or a group of devices. Contacts can be normally open (N.O.) or normally closed (N.C.) ranging from heat detectors, linear heat detectors, 4-wire conventional smoke detectors, waterflow switches, tamper switches, manual pull stations, control point status, switch control input, or any other supervised input requirement. Though the IDC input can monitor any number of contact devices, it is recommended not to mix alarm, supervisory, or security contacts on the same IDC module circuit.

Compatible with the Axis AX Series Dynamix I/O relationship programming, the relay output of the Intelligent 120 VAC I/O Module can be individually assigned to any input or output relationship, output group, timing function, gated function, invert operation, etc. to perform project specific control operations. Ideally suitable for HVAC control/shutdown or similar ancillary functions, the Intelligent 120 VAC I/O Module relay contact is rated 120 VAC/30 VDC at 4 Amp (resistive).

Each Intelligent 120 VAC I/O Module incorporates an integral eight position programming DIP switch which allows for device addressing and IDC wiring classification definition. The module contains a red status LED which illuminates steady during active condition of the IDC input.



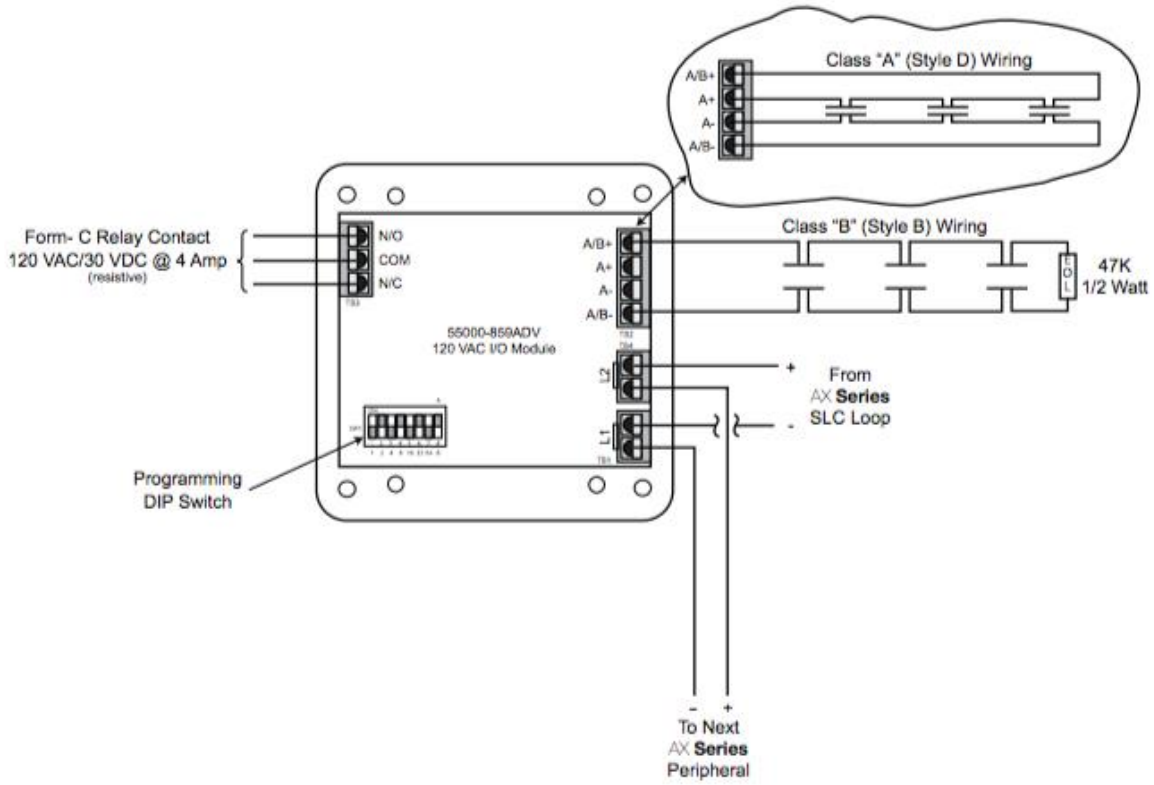
Features

- Switches 120 VAC @ 4 Amp
- SLC Loop-Powered & Sub-Addressable
- 4” Square or 2-Gang Electrical Box Mounting
- Flexible Programming
- Durable Construction
- Cost-Effective & Trouble-Free Installation
- Supervised Initiating Device Circuit (IDC)
- Class A or B Wiring
- Independently Controlled 120 VAC/30 VDC Relay Contact
- Axis AX Series Dynamix I/O Relationship Programming
- IDC Activation Status LED

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460

Wiring Diagram



Specification

Voltage	17-28 VDC, with Communication Pulses 5-9 VDC
Operating Current Quiescent Alarm With LED's	 0.95 mA 3 mA 5 mA
Line Impedance	100 Ω
Wiring Classification	Class A or Class B
End-of-Line Resistor	47 KΩ, 0.5 Watt (Class "B" Only)
Relay Output Rating	Form-C 120 VAC/30 VDC @ 4 Amp (Resistive)
Wiring	Screw In-Out Terminals
Mounting	4" Square or 2-Gang Electrical Outlet Box
Dimensions (Diameter & Height)	4 1/2" W x 4 1/2" H x 1" D
Weight	2.8 oz
Operating Temperature	32ºF -120ºF (0ºC-49ºC)
Humidity	10-93% (Non-condensing)

Order Codes and Options

55000-859AFC	Intelligent 120 VAC I/O Module
45681-157AFC	120 VAC Switching Accessory Foam Pad

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Advanced

Axis AX

Intelligent Detector Bases

The Intelligent Detector Bases from Advanced offer unique fire alarm industry features that simplify installations and provide tremendous flexibility. Incorporating sub-addressable and SLC loop-powered ancillary outputs, these intelligent bases allow for cost-effective and trouble-free installations.

By sub-addressing ancillary outputs off of the Intelligent Detector Bases, remote LEDs and relays are independently controlled by the Axis AX Series Intelligent Fire Alarm Control Panels. In addition, the remote LEDs and relays are SLC loop-powered (powered directly from the Axis AX Series fire alarm control panel's SLC loop) which reduces the need for additional field wiring and external power supplies. Sub-addressing and SLC loop powering of ancillary outputs makes installation, programming, and commissioning of the most complex projects extremely simplistic.

The Intelligent Detector Bases are available in either standard, E-Z-Fit, relay, or isolating base configurations. The Advanced Intelligent Detector Bases mount to a 3" or 4" square or octagonal electrical box. Based on type of base selected, an optional Advanced adapter kit may be required for 4" square or octagonal mounting.

Bases are specifically designed to enable "one-way-only" intelligent detector insertion without any need for force. Simply insert the detector and rotate clockwise. Incorporating a high degree of protection against unauthorized removal of detectors, each base can be locked to its associated detector by a mini hexagonal screw.

Utilizing the Advanced unique method of addressing intelligent detectors, the Intelligent Detector Bases incorporate a patented address ("XPerT") card. The address is quickly and easily set by removing "pips" on the XPerT card according to a chart supplied with each base.

To save time during installation pre-addressed XPerT cards are available. Once the address is set on the XPerT card, it is then slid into the base and locked in place. By addressing the detector in the base rather than in the detector, the all-too-common errors associated with detector removal and maintenance are eliminated.

All bases have a wide interior diameter for ease of access for wiring to in-out terminals. Though not required for proper operation, each base has a dedicated earth connection terminal for clean, isolated, and continuity maintenance of earth ground connection of wire shield when shielded cable is utilized.



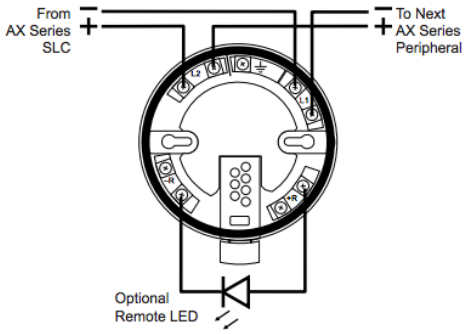
Features

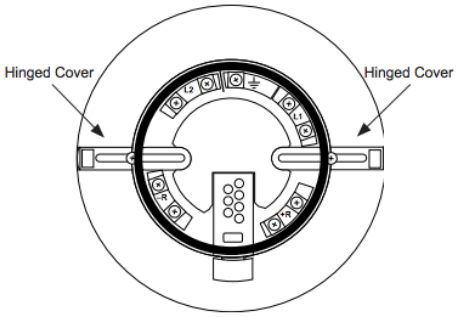
- Patented XPerT Addressing Card
- Sub-Addressable Ancillary Outputs
- SLC Loop-Powered Ancillary Outputs
- Integral Remote LED Output
- In-Out Terminals for Ease of Wiring
- Dedicated Terminal for Shielded Cable
- Low-Profile Design
- 3" or 4" Square or Octagonal Electrical Box Mount
- Sub-Addressable Relay Option
- Style 7, Isolation Options
- "One-Way-Only" Detector Insertion
- Base to Detector Locking Mechanism
- Integral XPerT Card Address Labeling Tab

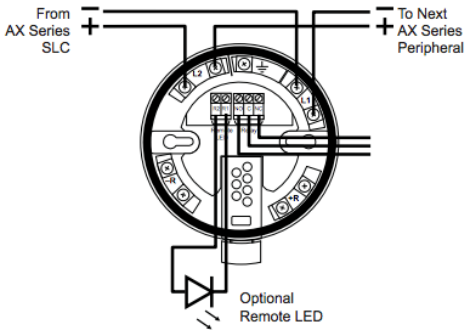
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UROXC.S24459

Wiring Diagram







E-Z-Fit Base (45681-250ADS)
Designed for mounting flexibility, the E-Z-Fit base mounts to a 4” square or octagonal electrical box. The E-Z-Fit is easy to install and allows the screws of a 3” or 4” square or octagonal electrical box to be fitted loosely prior to mounting the base. The base is then placed over the screws and shifted left to right for optimum positioning. Once positioned, the mounting screws are tightened and unique hinged covers are closed concealing the screws. The intelligent detector when installed, locks the hinged covers in-place. The E-Z-Fit base offers a sub-addressable remote LED output.

Standard Base (45681-210ADS)
Designed to mount on a 3” octagonal electrical box, the standard base incorporates a sub-addressable remote LED output. The remote LED output can be programmed to activate from any cause and effect program of the Axis AX Series Intelligent Fire Alarm Control Panel. To mount to a 4” square or octagonal box, an Advanced adapter kit is required.

Relay Base (45681-242ADS)
The relay base mounts on a 3” octagonal electrical box and incorporates a sub-addressable remote LED output and Form “C” relay contact. The Form “C” relay contact has a low current draw and is rated 30 VDC/VAC @ 1 Amp (resistive) and can be utilized to control various remote ancillary functions. The remote LED output and the Form “C” relay contact are capable of being programmed to activate from any cause and effect program of the Axis AX Series Intelligent Fire Alarm Control Panels.

Adapter Kit (38531-829ADS, 38531-830ADS)
The adapter kits are utilized in installations requiring standard bases, relay bases, and/or isolating bases to be mounted to 4” square or octagonal electrical boxes. The adapter kit includes a mounting plate for electrical box mounting and trim ring for the base.

Intelligent Isolating Bases
Refer to Intelligent Isolating Bases data sheet.

Specification

Remote LED Output Current	5 mA (Maximum)
Relay Base Only Relay Voltage/Current Activation Surge Current Energized Current De-energized Current	 30 VDC/VAC @ 1 Amp. (Resistive) 5 mA 40 µA Less than 1 µA
Terminals	Nickel-Plated Steel
Environment	Indoor, Dry
Operating Temperature	32°F-120°F (0°C-48°C)
Humidity	10-93% (Non-condensing)
Dimensions (Diameter & Height) Standard & Relay Base E-Z-Fit Base	 4” D x 15/16”H 6 3/8”D x 5/8”H
Weight	3.5 oz
Housing	Polycarbonate, 94 V0

Order Codes and Options

45681-250AFC	E-Z Fit Low Profile Base (Fits 3” or 4” Square or Octagon Electrical Box)
45681-210AFC	Standard Base (Fits 3” Octagon Electrical Box)

45681-242AFC	Relay Base (Fits 3” Octagon Electrical Box)
Adapter Kit:	
38531-830ADS	Mounting Bracket
38531-829ADS	Trim Ring
38531-771	Blank XPerT Card
45682-127	Pre-Addressed XPerT Cards (1-127)
* Refer to AX Series Intelligent Isolating Bases data sheet for Information and features pertaining to these products.	

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Axis AX

Intelligent Air Duct Detectors

The Advanced Intelligent Air Duct Detectors are the latest innovation for early detection of smoke and products of combustion present in air moving through HVAC ducts in Commercial, Industrial, and Residential applications. The units are designed to prevent the recirculation or spread of smoke by air handling systems, fans, and blowers. Complete systems may be shut down in the event of smoke detection.

The operating principle of the Intelligent Air Duct Detectors is based on the Venturi effect. Two tubes extend into the HVAC duct. Air flowing through the duct is forced into the air intake (inlet) tube via the air intake holes (facing the air flow) and passes over the detector head. The air will be drawn out via the exhaust tube back into the HVAC duct. When the concentration of smoke particles suspended in the air stream reach the alarm threshold of the intelligent detector head the Intelligent Air Duct Detector will go into alarm thus alarming the Axis AX Series Intelligent Fire Alarm Control Panel.

The Intelligent Air Duct Detectors are designed to operate in duct widths from 6” to 10’ wide with an air velocity between 100 to 4,000 feet per minute.

Four (4) versions of the Intelligent Air Duct Detector are available from Advanced, the versions include both two and four wire operation with an intelligent photoelectric or ionization detector. Two wire versions do not include an alarm relay contact, and can only drive a remote LED indicator. If alarm relay contact and/or additional remote accessory options are required, beyond a remote LED, the four wire version must be provided.

The Intelligent Air Duct Detectors are built to meet all local code requirements, as well as the NFPA and ICC standards regarding HVAC supply and return duct smoke detectors. Output terminals are provided for a wide range of remote accessories such as remote status indicators, and test/reset key switches or push buttons. The Intelligent Air Duct Detectors include many features that represent true innovations from current generation duct smoke detectors.



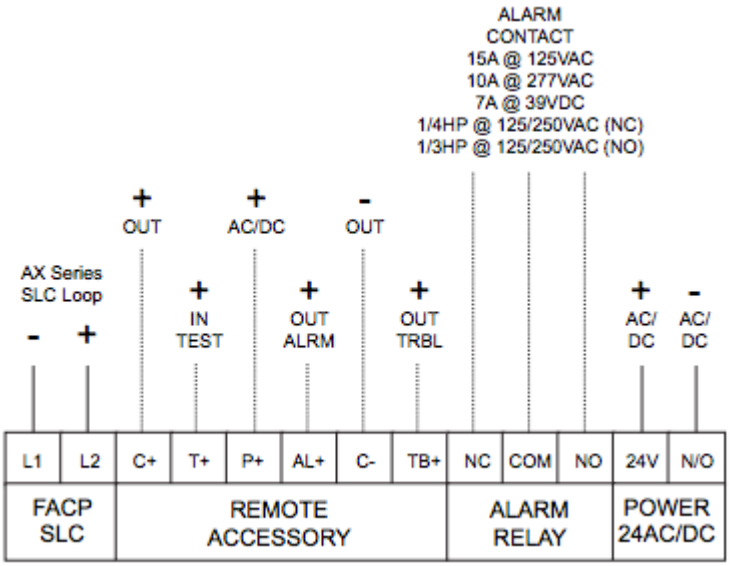
Features

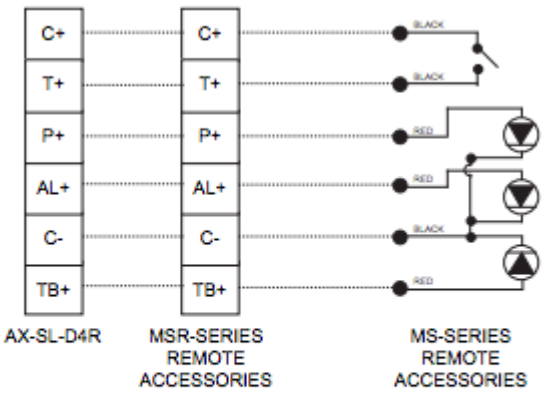
- 2/4 Wire with Intelligent Photo or Ion Detector
- Low-Flow Technology (100-4000ft/min)
- Listed for High-Temp Applications
- Patented “No-Tools Required”
- Patented “Test Port Valve”
- Instantaneous Cover Removal Indication
- Staggered Terminal Blocks for Easier Wiring
- Flashing Detector LED Indicating Normal Operation

Listings and Approvals

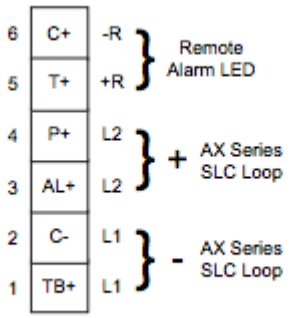
- ETL ANSI/UL 864 Listed: 101564744NYM-001
- UL File: UROX.S2829
- ULC File: UROXC.S2829
- CSFM Approved: 3240-1004:0116
- NYC MEA: 73-92-E

Wiring Diagram





X-SL-DAA (P or N) TERMINAL CONNECTIONS AX-SL-DAA (P or N) TERMINAL CONNECTIONS



Specification

AX Series SLC Loop	
Voltage	17-28 VDC
Modulation Voltage	5-9 VDC (Peek to Peek)
Supervisory Current	0.85 mA
Surge Current	2.5 mA
Alarm Current	3.5 mA (LED On) (Max.)
Line Impedance	50 Ω(Max.)
Alarm Relay Contact Rating (4-Wire Only)	
DC Voltage	7 Amp @ 39VDC
AC Voltage	15 Amp @ 125VAC, 10 Amp @ 277VAC
Wiring	Screw In-Out Terminals
Humidity	10% to 85% RH Non-Condensing
Dimensions (Diameter & Height)	13 1/2” L x 4 1/2” W x 2 1/4” D
Weight	2.25 lbs
Ambient Temperature AX-SL-DA4R-P, AX-SL-DAA-P AX-SL-DA4R-N, AX-SL-DAA-N	 32º -140ºF (0º-60ºC) 32º -140ºF (0º-60ºC)
Air Velocity	100 to 4,000ft/min.

Radioactive Material AX-SL-DA4R-N, AX-SL-DAA-N	Americium 241, 0.9 micro curie

Order Codes and Options

AX-SL-DA4R-P	Intelligent Duct Detector, PHOTO, 4-Wire
AX-SL-DA4R-N	Intelligent Duct Detector, ION, 4-Wire
AX-SL-DAA-P	Intelligent Duct Detector, PHOTO, 2-Wire
AX-SL-DAA-N	Intelligent Duct Detector, ION, 2-Wire
STN-1.0	10” Sampling Tube for Ducts 6” - 12” wide
STN-2.5	30” Sampling Tube for Ducts 1’ - 3’ wide
STN-5.0	5’ Sampling Tube for Ducts 3’ - 5’ wide
STN-10.0	10’ Sampling Tube for Ducts 5’ - 10’ wide

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Advanced

Axis AX

Intelligent Heat Detector

The low-profile Advanced Intelligent Heat Detectors have a common profile with the intelligent photoelectric and ionization detectors, but have a low airflow resistance case made of self-extinguishing white polycarbonate. Designed with a built-in dedicated microprocessor, the intelligent heat detector offers a wide range of capabilities to suit any commercial, industrial, or institutional application. Incorporating dual-alarm LEDs which illuminate red during alarm, the detector provides a complete 3600 view of device status. The detector's dual-alarm LEDs can also be programmed for flashing during quiescent mode.

The Intelligent Heat Detector incorporates a unique industry method of addressing the detector. Each detector is individually addressed through it's associated base by a patented address ("XPerT") card. The address is quickly and easily set by removing "pips" on the XPerT card according to a chart supplied with each base. Once the address is set on the XPerT card, it can be slid into place and locked into the detector base. By addressing the detector at the base rather than internally to the detector, the all-too-common errors associated with detector removal and maintenance are eliminated.

Each Intelligent Heat Detector is capable of being field programmed for one of five response/heat modes (see Table 1). All five response modes relate to different heat characteristics. Response modes 1, 2, and 5 are Static / Rate of Rise. Modes 3 and 5 are static only, with Mode 3 being default. Response mode settings of individual detectors are stored within the detector's memory. The advantage of storing this information in the detector rather in the fire alarm control panel software is that the detector will maintain the programmed response/heat settings when power is removed from the detector. If the detector is powered down or inadvertently replaced in another location, the detector response/heat mode is not lost.

Another unique industry feature of the Advanced Intelligent Heat Detector, in conjunction with the Axis AX Series Intelligent Fire Alarm Control Panel, is it's ability to sub-address detector base ancillary functions. Each Intelligent Heat Detector is capable of incorporating, based on optional intelligent base utilization, a remote LED and/or relay. When these options are utilized, the user is capable of subaddressing each of these options (remote LED and/or relay) to activate independently of the intelligent heat detector. This provides 100% free programmability of the detector base outputs to meet the demanding requirements of today's installations. (For further explanation, refer to Intelligent Detector Bases and Intelligent Isolator data sheets).



Features

- Patented XPerT Detector Base Addressing
- Built-in Dedicated Microprocessor
- Five Selectable Response/Heat Modes
- 135ºF to 200ºF Static/Rate of Rise
- Sub-Addressing of Ancillary Functions
- Dual-Alarm LEDs with 360º View
- Integral XPerT Card Address Labeling Tab
- Automatic Detector Testing w/Maintenance Alert
- Sub-Addressable Remote LED Output
- Optional Relay and Isolator Bases
- Superior Rejection of Transient Signals
- Detector to Base Locking Mechanism
- Plastic Dust Cover for Construction Protection
- 100% Digital Communication Protocol

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UQGSC.S24459

Table 1

Response Mode	Sensitivity Characteristics
1	Ordinary 135°F Static / Rate-of-Rise
2	Ordinary 150°F Static / Rate-of-Rise
3	Ordinary 150°F Static
4	Ordinary 200°F Static / Rate-of-Rise
5	Intermediate 200°F Static

Table 2

Warehouse Restaurant					Loading Bay Parking Garage					Kitchen; Laundry (enclosed & ventilated)					Boiler Rm				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
✓	✓				✓	✓						✓	✓	✓			✓		✓
1, 2, 3, 4, 5 = Response/Sensitivity Modes ✓ = Mode Suitable for Installation																			

Specification

Voltage	17-28 VDC
Modulation Voltage	5-9 VDC
Operating Current Quiescent Alarm W LED's	 0.5 mA 0.5 mA 5.5 mA
Surge Current	1.0 mA
Sensitivity - Heat	135°F, 150°F, 200°F
Environment	Indoor, Dry
Ambient Temperature	32-15°F (0-65°C)
Humidity	10-93% (Non-Condensing)
Dimensions	4” x 1 ⅞”
Weight	3.7 oz
Housing	Polycarbonate, 94 V0

Order Codes and Options

58000-450AFC	Intelligent Heat Detector

* Refer to Intelligent Detector Bases and Intelligent Isolator data sheets for specific information

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Advanced

Axis AX

Intelligent I/O Relay Output & Switch Monitor

The Advanced Intelligent I/O Relay Output & Switch Monitor (55000-820AFC) is an application specific addressable module for use with the Axis AX Series Intelligent Fire Alarm Control Panels. Each module is SLC loop powered, eliminating the need for additional field wiring and external power supplies.

Designed for installation on Advanced Axis AX Series SLC (signaling line circuit), the 55000-820AFC provides a single initiating device circuit (IDC) input, an independently controlled Form-C relay contact output, and an unmonitored optically isolated voltage input. The 55000-820AFC utilizes the Advanced unique sub-addressing for both the independently controlled relay and the optically isolated voltage input. By subaddressing these I/O features, Axis AX Series system point capacities are expanded with installation, programming, and commissioning time minimized. The 55000-820AFC mounts to the front of a standard 4” square or 2-gang electrical outlet box.

The IDC input of the 55000-820AFC is capable of being wired Class A or B and can monitor a single contact device or a group of devices. Contacts can be normally open (N.O.) or normally closed (N.C.) ranging from heat detectors, linear heat detectors, 4-wire conventional smoke detectors, waterflow switches, tamper switches, manual pull stations, switch input points for control, or any other supervised input requirement. Though the IDC input can monitor any number of contact devices, it is recommended not to mix alarm, supervisory, or security contacts on the same IDC module circuit.

Compatible with the Axis AX Series Dynamix I/O relationship programming, the relay output of the 55000-820AFC can be individually assigned to any input or output relationship, output group, timing function, gated function, invert operation, etc. to perform project specific control operations. Ideally suitable for elevator control, HVAC shut down, door holder release, or similar ancillary functions, the 55000-820AFC relay is rated 24 VDC @ 1 Amp (resistive) or 30 VAC .5 Amp (resistive).

The optically isolated voltage input of the 55000-820ADV is utilized for special applications when unsupervised status monitoring of a voltage input is required (i.e. HVAC status, ancillary product status, manufacturing process equipment status, etc.).

Each 55000-820AFC incorporates an integral eight position programming DIP switch which allows for device addressing and wiring classification definition. The module contains a red status LED which illuminates steady during active condition of the IDC input.



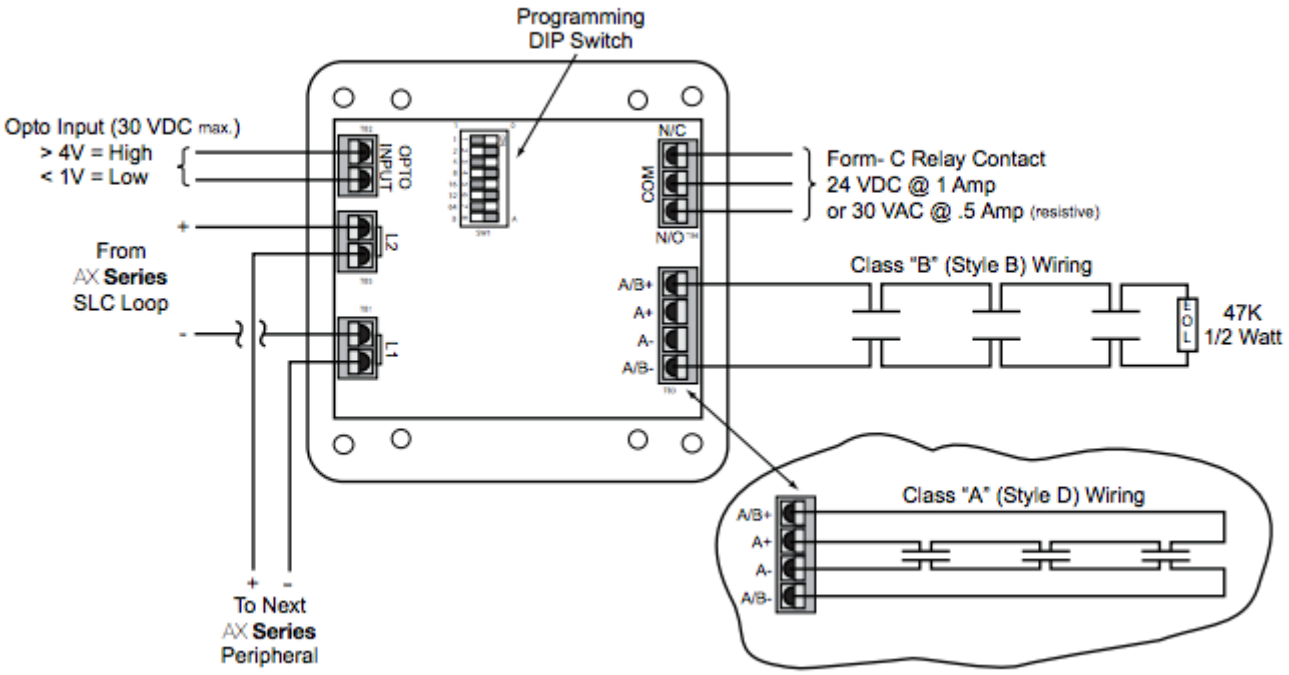
Features

- SLC Loop-Powered & Sub-Addressable
- 4” Square or 2-Gang Electrical Box Mounting
- Flexible Programming
- Durable Construction
- Cost-Effective & Trouble-Free Installation
- Optically Isolated Voltage Input
- Supervised Initiating Device Circuit (IDC)
- Class A or B Wiring
- Independently Controlled Form-C Relay Contact
- Axis AX Series Dynamix I/O Relationship Programming
- IDC Activation Status LED

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460

Wiring Diagram



Specification

Voltage	17-28 VDC, with Communication Pulses 5-9 VDC
Operating Current Quiescent Alarm With LED's	 0.85 mA 0.85 mA 5.85 mA
Line Impedance	100Ω
Wiring Classification	Class A or Class B
End-of-Line Resistor	47 KΩ, 0.5 Watt (Class “B” Only)
Relay Output	Form-C
Rating	24 VDC @ 1 Amp or 30 VAC @ .5 Amp (Resistive)
Optically Isolated Input	Unsupervised
Voltage	35 VDC (Max.)
Input	Programmable Active High (Less than 4V) or Low (Less than 1V)
Mounting	4” Square or 2-Gang Electrical Outlet Box
Dimensions (Diameter & Height)	4 1/2”W x 4 1/2”H x 1”D
Weight	2.8 oz
Operating Temperature	32º -120ºF (0º -49ºC)
Humidity	10-93% (Non-Condensing)

Order Codes and Options

55000-820AFC	Intelligent I/O Relay Output & Switch Monitor

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Intelligent Loop Isolator & Isolating Detector Bases

Available in two versions, Loop Isolator only and Isolating Detector Base for Intelligent Detector mounting, the Intelligent Isolators offer superior SLC loop protection. The Intelligent Isolating Bases sense and isolate short-circuit faults associated with Axis AX Series SLC loop wiring.

Under normal operation, the SLC loop power and communications are passed through the Isolators. If a short-circuit or an abnormally low line impedance occurs, the isolator senses the drop in voltage and isolates the negative supply of the SLC loop, in the direction of the fault. The short-circuit fault will be indicated on the Axis AX Series Intelligent Fire Alarm Control Panel's graphical display and on the isolators via an illuminated yellow LED. If an intelligent detector is associated with an active short-circuited isolating base, the detector will continue to function properly. During the isolated condition the isolating base will continually test the circuit, and when the fault is rectified will automatically restore the isolated SLC loop to normal.

If an installation requires that not a single intelligent device be lost in the event of a single short-circuit to an SLC loop ("true" NFPA Style 7 circuit), every device on the Axis AX Series SLC loop should be protected by an isolator. In applications requiring minimal short-circuit protection (not necessary to provide a "true" NFPA Style 7), isolated groups of devices can be created with one Isolator protecting a maximum group of twenty intelligent detectors/ devices. Each Axis AX Series Intelligent Fire Alarm Control Panel's SLC's have built-in isolators.

Isolating Detectors Bases are specifically designed to enable "one-way only" intelligent detector insertion without the need for force. Simply insert the detector and rotate clockwise. Incorporating a high degree of protection against unauthorized removal of detectors, each base can be locked to it's associated detector by a mini-hexagonal screw.

Both the Loop Isolator and the Isolating Dectector Bases have a wide interior diameter for ease of access for wiring to in-out terminals. Though not required for proper operation, each unit has a dedicated earth connection terminal for clean, isolated, and continuity maintenance of an earth ground connection of wire shield when shielded cable is utilized.

Utilizing the Advanced unique method of addressing intelligent detectors, the Intelligent Isolating Detector Base incorporates a patented address ("XPerT") card. The address is quickly and easily set by removing "pips" on the XPerT card according to a chart supplied with each base. To save time during installation pre-addressed XPerT cards are available. Once the address is set on the XPerT card, it is then slid into the base and locked in place. By addressing the detector in the base rather than in the detector, the all-too-common errors associated with detector removal and maintenance are eliminated.



Features

- Patented XPerT Addressing
- Short-Circuit Isolation
- Meets NFPA Style 7 Requirements
- In-Out Terminals for Ease of Wiring
- Dedicated Terminal for Shielded Cable
- Low-Profile Design
- Built-in Short Circuit Yellow LED Indicator
- 3" or 4" Square or Octagonal Electrical Box Mount
- "One-Way-Only" Detector Insertion
- Base to Detector Locking Mechanism

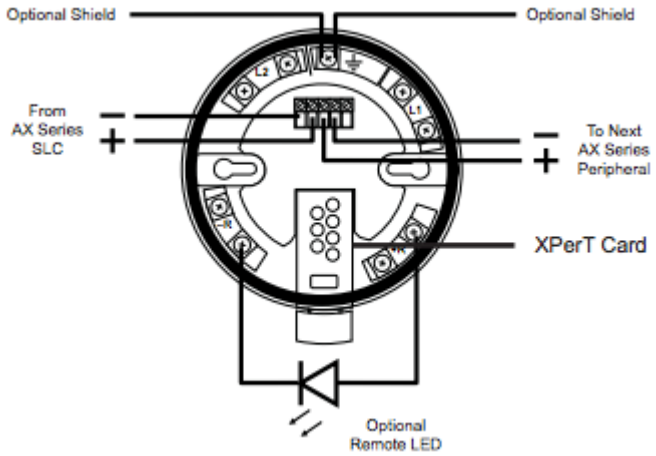
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460
- ULC Listed: UROXC.S24459

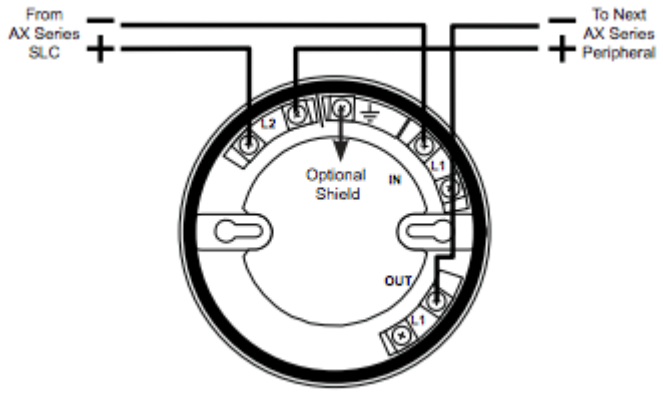
Each Intelligent Isolating Detector Base has the capability of supporting a remote LED. The remote LED is sub-addressable and can be programmed to activate from any cause and effect program of the Axis AX Series Intelligent Fire Alarm Control Panel. The

Intelligent Isolating Detector Bases mount on 3” octagonal electrical boxes. To mount to 4” square or octagonal electrical boxes the optional Advanced adapter kit is required. **Intelligent Detector Bases:** Refer to Intelligent Detector Bases data sheet.

Intelligent Isolating Detector Base Wiring, 45681-321ADV



Intelligent Loop Isolator & Base Wiring (Not addressed) 55000-750ADV / 45681-211ADS



Specification

Remote LED Output Current	5 mA (Maximum)
Voltage	17 - 28 VDC
Environment	Indoor, Dry
Operating Temperature	32º-120ºF (0º-48ºC)
Humidity	10-93% (Non-Condensing)
Dimensions	4”D x 15/16”H
Weight	3.5 oz
Housing	Polycarbonate, 94 V0

Ordering Codes and Options

45681-321AFC	Isolating Detector Base (Fits 3” Octagonal Electrical Box)
55000-750AFC	Loop Isolator (Fits 3” Octagonal Electrical Box)
45681-211AFC	Isolator Base (use with 55000-750ADV)
Optional Adapter Kit:	
38531-830ADS	Mounting Bracket
38531-829ADS	Trim Ring
38531-771	Blank XPerT Card
45682-127	Pre-Addressed XPerT Cards (1-127)

* Refer to Intelligent Detector Bases data sheet for Information and features pertaining to these products.

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Advanced

Axis AX

Intelligent Mini Switch Monitor Module

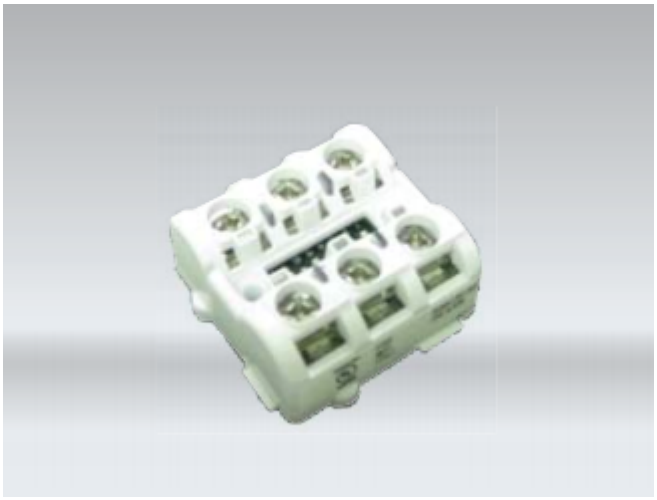
Designed to be a miniature interface for Axis AX Series SLC circuits, the Intelligent Mini Switch Monitor Module from Advanced offers unique fire alarm industry features that simplify installations and provide superior flexibility.

Each Intelligent Mini Switch Monitor Module provides an addressable interface for a single contact device or group of contact devices connected via an initiating device circuit (IDC). With the flexibility of the Advanced Axis AX Series Intelligent Fire Alarm Control Panel's contact devices can be normally open (N.O.) or normally closed (N.C.) dry contacts. Contact devices range from heat detectors, linear heat detectors, 4-wire conventional smoke detectors, waterflow switches, tamper switches, manual pull stations, switch control inputs, etc. The Intelligent Mini Switch Monitor Module can monitor any number of contact devices, however it is recommended not to mix alarm, supervisory, or security contacts on the same monitoring module circuit.

In addition to the standard contact monitoring for alarm type status, each Intelligent Mini Switch Monitor Module has the capability to monitor a normally open contact with a Listed 10K resistor in series with the contact. When this contact is activated, the Axis AX Series Intelligent Fire Alarm Control Panel will interpret this status change as a pre-alarm event rather than an alarm event. Through the Axis AX Series Intelligent Fire Alarm Control Panel, PCNeT programming, separate control/operations can be performed based on this pre-alarm event.

The Intelligent Mini Switch Monitor Module's initiating device circuit (IDC) is wired Class B to the monitored contact device(s). Each Intelligent Mini Switch Monitor Module incorporates three LEDs for device status; a green LED which flashes on device poll, a yellow LED which flashes when the initiating device circuit is in trouble and a red LED which illuminates steady during an alarm condition. In addition to the onboard LEDs, the Intelligent Mini Switch Monitor Module offers a remote LED output which flashes during device polling and illuminates steady during an alarm condition.

The Intelligent Mini Switch Monitor Module incorporates an integral eight position programming DIP switch for device addressing and priority interrupt programming. DIP switch eight is utilized for programming the priority interrupt feature. The priority interrupt feature provides a less than 2 second response time for alarm reporting to the Axis AX Series Intelligent Fire Alarm Control Panel(s). When the priority interrupt device is in an active state, the monitor's priority interrupt bypasses the normal Axis AX Series SLC communications process, and immediately allows the device to communicate with the Axis AX Series Intelligent Fire Alarm Control Panel(s). The priority interrupt feature is usually utilized for monitoring of highly critical contact devices such as manual pull stations.



Features

- Miniature Device Interface
- Class B Wiring
- PC-NeT Flexible Device Type Programming
- Programmable Priority Interrupt
- Optional Remote LED Output
- Durable Construction
- Adaptable for Pre-Alarm Signaling
- Integral Status LEDs
  - Green Flashes during Device Polling
  - Yellow Flashes during Trouble
  - Red Illuminates Steady during Alarm
- Electrical Box or DIN Rail Mounting
- Optional Remote Device Polling/Alarm LED

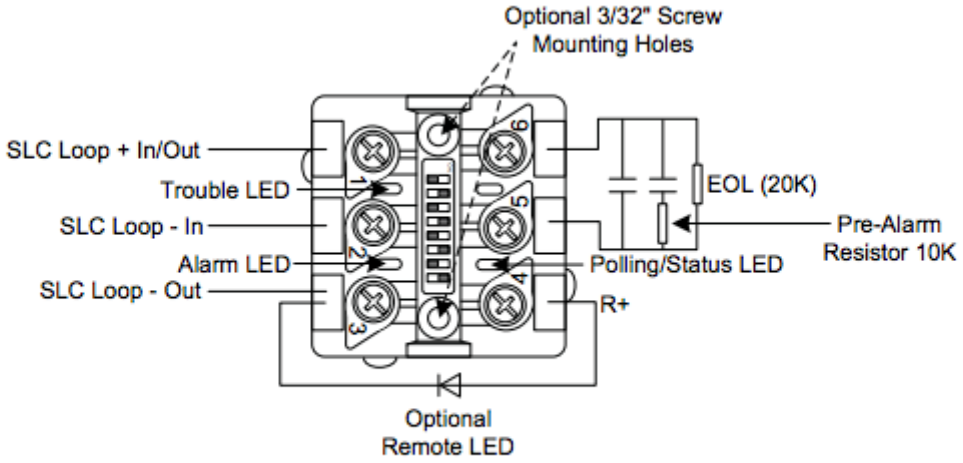
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460

Engineered to fit into limited space enclosures, the Intelligent Mini Switch Monitor Module can either be installed inside the device being monitored, or it can be placed in an electrical box in the vicinity of the device being monitored. In addition, the Intelligent Mini

Switch Monitor Module can be snapped into a standard electrical 1 3/8” DIN rail track for multiple Intelligent Mini Switch Monitor Module mounting.

Wiring Diagram



Specification

Voltage	17-28 VDC 5-9 VDC (Communication Pulses)
Operating Current Quiescent Alarm With Remote LED	 0.2 mA 3.6 mA 6.4 mA
End-of-Line Resistor	20 KΩ, 0.5 Watt
Pre-Alarm Resistor	10 KΩ, 0.5 Watt
Wiring	Screw In-Out Terminals
Mounting	Electrical Box or 1 3 / 8 ” DIN Rail
Dimensions (Length, Width & Height)	1 11/16” L x 1 11/16” W x 13/16”H
Weight	1.1 oz
Operating Temperature	32º-120ºF (0º-49ºC)
Humidity	10-93% (Non-Condensing)

Order Codes and Options

55000-765AFC	Intelligent Mini Switch Monitor Module
28181-104	Listed End of Line Resistor (20K)
28181-097	Listed Pre-Alarm Resistor (10K)

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Advanced

Axis AX

Intelligent Multi Sensor Detector

The low-profile Advanced Intelligent Multi Sensor Detector, utilizes a combination of photoelectric and thermal sensing technologies to monitor two types of fire signatures (smoke and heat), offering increased immunity to potential false alarms. The signals from the photoelectric sensing element and the temperature sensor are completely independent, and represent the smoke level and the air temperature respectively in the vicinity of the detector. The built-in dedicated microprocessor processes the two signals according to the response/sensitivity mode selection of the device. In addition, to provide the best protection possible, when utilized in the multi sensor mode of operation, the saturation of any one element (extreme heat or heavy smoke concentration) will result in device operation.

Distinguished by clear dual-alarm LEDs which illuminate red during alarm, the detector provides a complete 360° view of device status. The detector's dual-alarm LEDs can also be programmed for flashing during quiescent mode.

The Intelligent Multi Sensor Detector incorporates a unique industry method of addressing the detector. Each detector is individually addressed through it's associated base by a patented address ("XPerT") card. The address is quickly and easily set by removing "pips" on the XPerT card according to a chart supplied with each base. Once the address is set on the XPerT card, it can be slid into place and locked into the detector base. By addressing the intelligent detector at the base rather than internally to the detector, the all-too-common errors associated with detector removal and maintenance are eliminated.

The response characteristics of the Intelligent Multi Sensor has been carefully set to comply with the stringent requirements of UL and NFPA 72. Each multi sensor is continuously monitored and tested for proper sensitivity and thermistor operation. If a problem is detected with the device's sensitivity or thermistor monitoring capability, a trouble or maintenance signal is reported back to the fire alarm control panel. In addition to the monitoring of the detectors operation, the multi sensor photoelectric chamber will compensate for any sensitivity drift of the initial programmed response/sensitivity value due to environmental contamination and/or dust buildup. Initial device sensitivity settings will be maintained at a constant level even when the chamber is severely contaminated. When compensation levels exceed normal values, a maintenance signal will be generated.



Features

- Patented XPerT Detector Base Addressing
- Built-in Dedicated Microprocessor
- Combination Photoelectric and Thermal Technology
- Five Selectable Response/Sensitivity Modes
- Ten 7-Day Response/Sensitivity Mode Timers
- Dual-Alarm LEDs with 360° View
- 100% Digital Communication Protocol
- Integral XPerT Card Address Labeling Tab
- Automatic Drift Compensation
- Automatic Detector Testing w/Maintenance Alert
- Field Programmable Alarm Verification
- Sub-Addressable Thermal Sensor and Remote LED Output
- Optional Relay and Isolator Bases
- Superior Rejection of Transient Signals
- Detector to Base Locking Mechanism
- Plastic Dust Cover for Construction Protection

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UROXC.S24459
- ULC Listed: UQGSC.S24459

The Intelligent Multi Sensor Detector response/sensitivity modes (see Table 2) relate to different combinations of smoke sensitivity characteristics with or without thermal sensing and transient rejection/stabilization times. When operating in mode settings 1, 3 or 4 the temperature signal processing extracts rate-of-rise information and combines it with the photoelectric signal to evaluate for potential fire signatures. In this configuration the detector responds to the smoke characteristics and to a large sudden change in temperature indicative of a flaming fire. The response/sensitivity modes correspond to unique response behaviors of the detector and the type of environment it is protecting, which can be broadly related to the characteristics of a fire (see Table 1). Response mode 1 is more sensitive than response mode 4. Detectors set to response mode 1 would be more suitable for environments in which sources of unwanted alarms are rare (i.e.: clean rooms and computer rooms). Response mode 4 set detectors would be suitable for more dusty or smoky environments (i.e.:laundry rooms, loading dock areas). Response mode 3 (default programmed) would be the mid-sensitivity level used for most normal applications. Response mode setting and hysteresis of the individual detectors are stored within the detector's memory. The advantage of storing this critical information in the detector rather in the fire alarm control panel software is that the detector will maintain the programmed response settings and compensated values even when power is removed from the detector. If the detector is powered down or inadvertently replaced in another location, the detector response mode and clean values are not lost, thereby minimizing the errors associated with inferior products; false alarms due to a dirty detector and non-calibrated response/sensitivity mode parameters.

Equally beneficial as the response mode settings, the detectors are each capable of being programmed for different response/sensitivity mode settings based on the time of day and day of week. Detectors can be set to one of ten 7-day response mode/sensitivity timers, allowing the detector to be more or less sensitive due to installation changing environments based on time of day and day of week. The detector can also be programmed to have thermal only or smoke only operation during specific times. Such changing environments can be industrial, manufacturing, or assembly processes that produce smoke, fumes, or excessive dust during normal working hours.

Another unique industry feature of Intelligent Multi Sensor Detector, in conjunction with the Axis AX Series Intelligent Fire Alarm Control Panel, is its ability to sub-address the detector thermal sensing element and detector base ancillary functions. Each detector is capable of being programmed as a single addressable input point (photo detector, heat detector or combo photo/heat detector) or as a dual addressable input point (photo detector, heat detector or combo photo/heat detector and a heat detector), this feature allows for unique apartment/dormitory monitoring of Intelligent Multi Sensor Detectors.

In addition, each detector is capable of incorporating, based on optional detector base utilization, a standard remote LED or a subaddressable remote LED and/or relay. When these options are utilized, the user is capable of programming these options (remote LED and/or relay) to activate independently of the detector. This provides 100% free programmability of the detector base outputs to meet the demanding flexibility requirements of today's installations. (For further explanation, refer to Intelligent Detector Bases and Intelligent Isolator data sheets).

Table 1

Clean Rm Computer Rm					Hotel Rm Apartment					Office Hospital Ward Factory Light Industry					Warehouse Restaurant					Loading Dock Parking Garage					Kitchen Laundry (enclosed & ventilated)					Boiler Rm				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
✓							✓	✓				✓	✓			✓	✓	✓	✓		✓	✓	✓	✓			✓	✓			✓				
1, 2, 3, 4, 5 = Response/Sensitivity Modes ✓ = Mode Suitable for Installation																																		

Table 2

Response Mode	Sensitivity Characteristics	Programmable Assessment Time
1	1.7 %/ft w/Thermal	20 sec
2	2.3 %/ft Smoke Only	30 sec
3	2.7 %/ft w/Thermal	20 sec
4	3.3 %/ft w/Thermal	20 sec
5	135^{0}F Static Only	30 sec

Specification

Voltage	17-28 VDC
Modulation Voltage	5-9 VDC
Operating Current Quiescent Alarm With LED's	 0.4 mA 0.4 mA 5.4 mA
Surge Current	1.0 mA
Air Flow	0-300 ft/min
Sensitivity - Smoke & Heat	1.7 - 3.3 %/ft & Rate-of-Rise /Fixed Temp. 135° F

Environment	Indoor, Dry
Ambient Temperature	32-135ºF (0-57ºC)
Humidity	10-93% (Non-Condensing)
Dimensions	4” x 17/8”
Weight	3.7 oz
Housing	Polycarbonate, 94 V0

Order Codes and Options

58000-750AFC	Intelligent Multi Sensor Detector

* Refer to Intelligent Detector Bases and Intelligent Isolator data sheets for specific information

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Advanced

Axis AX

Intelligent Multi-Flex Sounder Base

The Intelligent Multi-Flex Sounder Base, with or without optional synchronization modules, provides advanced functionality and performance, delivering flexible notification capabilities for any installation. The sounder base offers selectable steady or temporal (NFPA 72 three-pulse) signal pattern output with a high or low volume level.

With Advanced built-in sub-addressing, each sounder base can be independently controlled by the Axis AX Series Intelligent Fire Alarm Control Panel's SLC loop. Intelligent Multi-Flex Sounder Bases can be programmed to activate from associated intelligent detectors or from any other system criteria, such as general alarm. Sub-addressing makes installation applications, programming, and commissioning of the most complex projects extremely flexible and simplistic.

The Intelligent Multi-Flex Sounder Base can accommodate any Axis AX Series intelligent detector, providing the ultimate in smoke detection and alarm signaling.

Intelligent Multi-Flex Sounder Bases require an external 24VDC power input. The 24VDC may be obtained from the power outputs of the Axis AX Series Intelligent Fire Alarm Control Panel or from any external power supply, Listed for Fire Protective Signaling. In addition to the sub-addressing control features of the sounder bases, reversing the polarity of the 24VDC supply voltage will put all connected sounder bases into a general alarm mode.

Optional synchronization modules are available to allow temporal pattern signaling to be completely synchronized throughout the installation. When utilizing the optional synchronization module general alarm signaling of all sounder bases is accomplished by reversing the polarity of the 24VDC power input. This eliminates the merging of tones from multiple sounder bases programmed for temporal pattern signaling.

The Intelligent Multi-Flex Sounder Base mounts to a 4-inch octagonal or 4-inch square electrical box. The sounder base has in-out terminals for Axis AX Series SLC loop wiring. Though not required for proper operation, each sounder base has dedicated earth connection terminals for clean, isolated, and continuity maintenance of earth ground connection of wire shield when shielded cable is utilized.Each Intelligent MultiFlex Sounder Base's are designed to enable "one-way-only" intelligent detector insertion without any need for force. Simply insert the detector and rotate clockwise. Incorporating a high degree of protection against unauthorized removal of detectors, each base can be locked to its associated detector by a mini-hexagonal screw.



Features

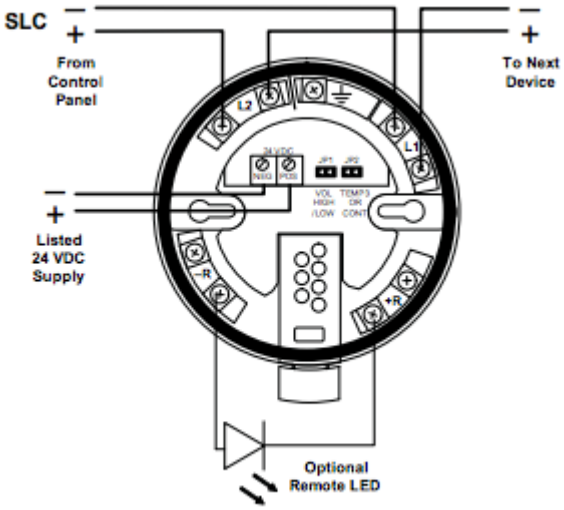
- Sub-Addressable
- DynamiX I/O Relationship Programming
- Patented XPerT Card Addressing
- Optional Synchronization of Temporal Pattern
- In-Out Terminals for Ease of Wiring
- Dedicated Terminal for Shielded Cable
- Integral XPerT Card Address Labeling Tab
- Single Station / Multi-Station Programming
- Compatible with all AxisAX Series Intelligent Detectors
- Selectable Temporal or Steady Tone
- Selectable High or Low Volume
- 4" Square Electrical Box Mounting
- Base to Detector Locking Mechanism
- "One-Way-Only" Detector Insertion

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- UL File: UROX.S2829
- ULC File: UROXC.S2829
- CSFM Approved: 7300-1004:0117
- NYCFD MEA 73-92-E

Similar to all other Axis AX Series intelligent bases, the sounder bases incorporate a fire alarm industry unique method of addressing plugged in intelligent detectors. The Intelligent Multi-Flex Sounder Base is addressed by a patented address (“XPerT”) card. The address is quickly and easily set by removing “pips” on the XPerT card according to a chart supplied with each base. Once the address is set on the XPerT card, it is slid into the base and locked in place. By addressing the Axis AX Series intelligent detector at the base rather than internally to the detector, the all-too-common errors associated with detector removal and maintenance are eliminated.

Wiring Diagram



**Note: Optional Remote LED follows sounder operation

Specification

Operating Voltage	17 - 28 VDC
Sounder Output Level (Jumper Selectable)	75 or 85 dB
Sounder Alarm Current	29 mA
Environment	Indoor, Dry
Operating Temperature	32-120ºF (0-48ºC)
Humidity	95% (Non-Condensing)
Dimensions	6”L x 6”W x 1.6”D
Weight	4 oz
Terminals	Nickel-Plated Steel
Housing	Polycarbonate, 94 V0

Order Codes and Options

MB-SDRT-AA	Intelligent Multi-Flex Sounder Base
MB-SDRT-SM	Multi-Flex Synchronization Module

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Axis AX

Intelligent NAC Module

Advanced Intelligent NAC Module is an addressable module for use with the Axis AX Series Intelligent Fire Alarm Control Panel's SLC Loops. Each module incorporates an independent, individually programmable, notification appliance circuit (NAC), providing cost-effective solutions in areas requiring multiple notification appliance circuits. Each NAC module allows switching of an external power supply, such as a 24 VDC regulated power source or audio amplifier to a group of notification appliances.

The notification appliance circuit can be wired either Class A or B. Each module also supervises the wiring for opens, shorts and grounds and reports this status back to the intelligent fire alarm control panel. Typical input power to the NAC module would be from the main FACP, a power supply booster or an amplifier.

To increase the already rapid response activation, each module can be set to a group address, allowing all NAC modules assigned to a common group address to be activate from a single command poll from the intelligent fire alarm control panel.

An eight position programming DIP switch is provided on each NAC module for NAC circuit addressing and wiring classification definition. An additional four position programming DIP switch is provided for group addressing. The NAC module mounts to the front of a standard 4" square or 2-gang electrical outlet box. Displayed on the front of each module is a single red status LED that flashes when the module is polled.

Compatible with the Axis AX Series Dynamix I/O relationship programming, the NAC module can be individually assigned to activate from any input zone or address. In addition, the NAC module can be programmed with various output relationships, timing functions, gated functions, etc. to perform project specific control operations.



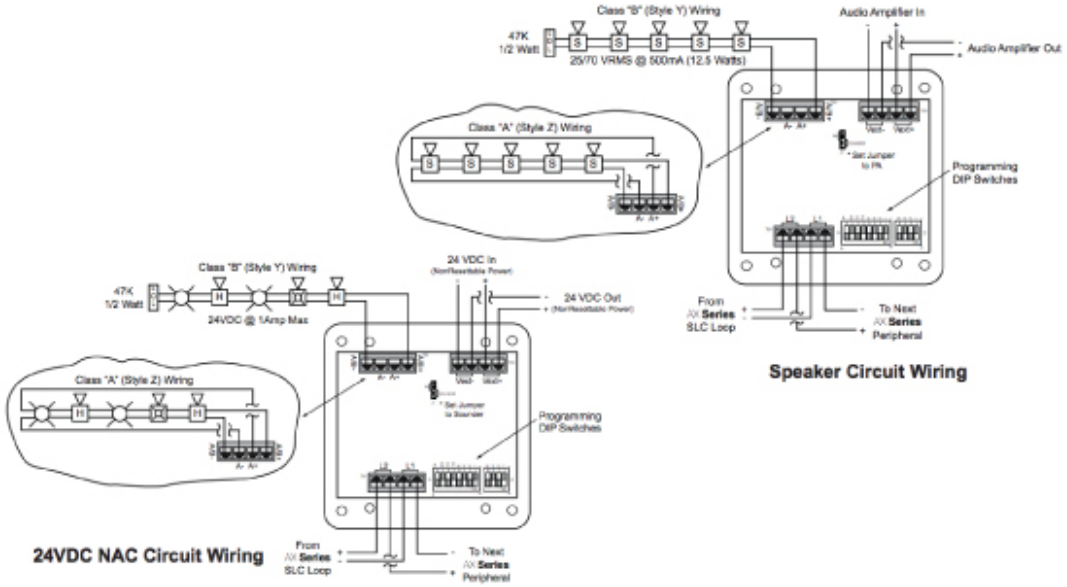
Features

- Class A or B Wiring
- Horn/Strobe or Speaker Control
- Flexible Programmability
- Durable Construction
- Cost-Effective & Trouble-Free Installation
- 25/70 VRMS Speaker Capability
- 4" Square or 2-Gang Electrical Outlet Box Mounting
- Power Limited

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460

Wiring Diagram



Specification

Voltage	17-28 VDC, with Communication Pulses 5-9 VDC
Operating Current	1 mA (Quiescent) 1 mA (Alarm) 6 mA (With LED's)
Line Impedance	50 Ω
Wiring Classification	Class A or B
End-of-Line Resistor	47 KΩ, 0.5 Watt (Class “B” Only)
Circuit Voltage Input	24 VDC or 25/70 VRMS
Max NAC Circuit Line Loss	24VDC @ 1 Amp (Use Regulated DC Listed Supply)
Max Speaker Circuit Output	24VDC, 25 /70.7VRMS @ 500mA
Wiring Terminals	Screw In-Out Terminals
Mounting	4” Square or 2-Gang Electrical Outlet Box
Dimensions (Diameter & Height)	4 1/2”W x 4 1/2”H x 1”D
Weight	2.8 oz
Operating Temperature	32º -120º F (0o -49º C)
Humidity	10 - 93% (Non-Condensing)

Order Codes and Options

55000-825AFC	Notification Appliance Circuit Module

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Advanced

Axis AX

Intelligent Photoelectric Detector

The low-profile Intelligent Photoelectric Detector, with built-in dedicated microprocessor, offers a wide range of capabilities to suit any commercial, industrial, or institutional application. Distinguished by it's clear dual-alarm LEDs which illuminate red during alarm, the detector provides a complete 360º view of device status. The detector's dual-alarm LEDs can also be programmed for flashing during quiescent mode.

The Intelligent Photoelectric Detector incorporates a unique industry method of addressing the detector. Each detector is individually addressed through it's associated base by a patented address ("XPerT") card. The address is quickly and easily set by removing "pips" on the XPerT card according to a chart supplied with each base. Once the address is set on the XPerT card, it can be slid into place and locked into the detector base. By addressing the detector at the base rather than internally to the detector, the all-too-common errors associated with detector removal and maintenance are eliminated.

Designed to adapt to changing environments and protect against unwanted false alarms, the response characteristics of the detectors have been carefully set to comply with the stringent requirements of UL 268 and NFPA 72. Each detector is continuously monitored and tested for proper sensitivity and operation. If a problem is detected with either the device's sensitivity or proper operation, a trouble or maintenance signal is reported back to the fire alarm control panel. In addition, the detector will compensate for any sensitivity drift of the initial programmed response/sensitivity value due to environmental contamination and/or dust build-up. Each detector will maintain the initially set sensitivity at a constant level even when the chamber is severely contaminated. When compensation levels exceed normal values, a maintenance signal will be generated.

In addition to the detector's superior false alarm reduction features, each detector is capable of being field programmed for one of five response/sensitivity modes (see Table 1).

Response modes correspond to unique response behaviors of a detector and the type of environment it is protecting, which can be broadly related to the characteristics of a fire. The detector response modes relate to different combinations of smoke sensitivity characteristics and transient rejection/stabilization times (see Table 2). Response mode 1 is more sensitive than response mode 5. Detectors set to response mode 1 would be for environments in which sources of unwanted alarms are rare. Response mode 5 set detectors would be suitable for more dusty or smoky environments (i.e.: factory, light industry areas). Response mode 3 (default programmed) would be the mid-sensitivity level used for most normal ionization detector applications.



Features

- Patented XPerT Detector Base Addressing
- Built-in Dedicated Microprocessor
- Five Selectable Response/Sensitivity Modes
- Ten 7-Day Response/Sensitivity Mode Timers
- Sub-Addressing of Ancillary Functions
- Dual-Alarm LEDs with 360º View
- 100% Digital Communication Protocol
- Integral XPerT Card Address Labeling Tab
- Automatic Drift Compensation
- Automatic Detector Testing w/Maintenance Alert
- Field Programmable Alarm Verification
- Sub-Addressable Remote LED Output
- Optional Relay and Isolator Bases
- Superior Rejection of Transient Signals
- Detector to Base Locking Mechanism
- Plastic Dust Cover for Construction Protection

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UROXC.S24459

Response mode setting and hysteresis of the individual detectors are stored within the detector's memory. The advantage of storing this critical information in the detector rather in the fire alarm control panel software is that the detector will maintain the programmed response settings and compensated values even when power is removed from the detector. If the detector is powered down or inadvertently replaced in another location, the detector response mode and clean values are not lost, thereby minimizing the errors associated with inferior products; false alarms due to a dirty detector and non-calibrated response/sensitivity mode parameters.

Equally beneficial as the response mode settings, the detectors are each capable of being programmed for different response/sensitivity mode settings based on the time of day and day of week. Detectors can be set to one of ten 7-day response mode/sensitivity timers, allowing the detector to be more or less sensitive due to installation changing environments based on time of day and day of week. Such changing environments can be industrial,restaurant, or factory processes that produce smoke, fumes, or excessive dust during normal working hours.

Another unique industry feature of the Intelligent Photoelectric Detector, in conjunction with the Axis AX Series Intelligent Fire Alarm Control Panel, is it's ability to sub-address detector base ancillary functions. Each detector is capable of incorporating, based on optional intelligent base utilization, a remote LED and/ or relay. When these options are utilized, the user is capable of sub-addressing each of these options (remote LED and/or relay) to activate independently of the detector. This provides 100% free programmability of the detector base outputs to meet the demanding requirements of today's installations. (For further explanation, refer to Intelligent Detector Bases and Intelligent Isolator data sheets).

Table 1

Clean Rm Computer Rm					Hotel Rm Apartment					Office Hospital Ward Factory Light Industry					Warehouse Restaurant					Loading Bay Parking Garage					Boiler Rm				
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
✓							✓	✓	✓			✓	✓	✓				✓						✓					✓	✓
1, 2, 3, 4, 5 = Response/Sensitivity Modes ✓ = Mode Suitable for Installation																													

Table 2

Response Mode	Sensitivity Characteristics	Programmable Assessment Time
1	1.7 %/ft	5 sec
2	1.7 %/ft	30 sec
3	2.3 %/ft	5 sec
4	2.3 %/ft	30 sec
5	2.9 %/ft	5 sec

Specification

Voltage	17-28 VDC
Modulation Voltage	5-9 VDC
Operating Current Quiescent Alarm With LED's	 0.4 mA 0.4 mA 5.4 mA
Surge Current	1.0 mA
Air Flow	0-300 ft/min
Sensitivity - Smoke	1.16 - 4 %/ft
Environment	Indoor, Dry
Operating Temperature	32º-120ºF (0º-48ºC)
Humidity	10-93% (Non-Condensing)
Dimensions	4" x 1 ⅞"
Weight	3.7 oz
Housing	Polycarbonate, 94 V0

Order Codes and Options

58000-650AFC	Intelligent Photoelectric Detector

* Refer to Intelligent Detector Bases and Intelligent Isolator data sheets for specific information.

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Advanced

Axis AX

Intelligent Relay Module

Advanced Intelligent Relay Module is an application specific addressable module for use with the Axis AX Series Intelligent Fire Alarm Control Panels. Each module is SLC loop powered, eliminating the need for additional field wiring and external power supplies.

Designed for installation on Advanced Axis AX Series SLC (signaling line circuit) loop the Intelligent Relay Module provides two isolated Form “C” relay contacts for controlling a variety of auxiliary control functions, such as elevators, HVAC, door holders, dampers, control equipment, etc.

Compatible with the Axis AX Series Dynamix I/O relationship programming, the Intelligent Relay Module’s Form “C” outputs can be assigned to any input or output relationship, output group, timing function, gated function, etc. enhancing project specific control operations.

Relay ratings of each Form “C” contact is 24 VDC @ 2 Amp (resistive) or 30 VAC @ .5 Amp (resistive).



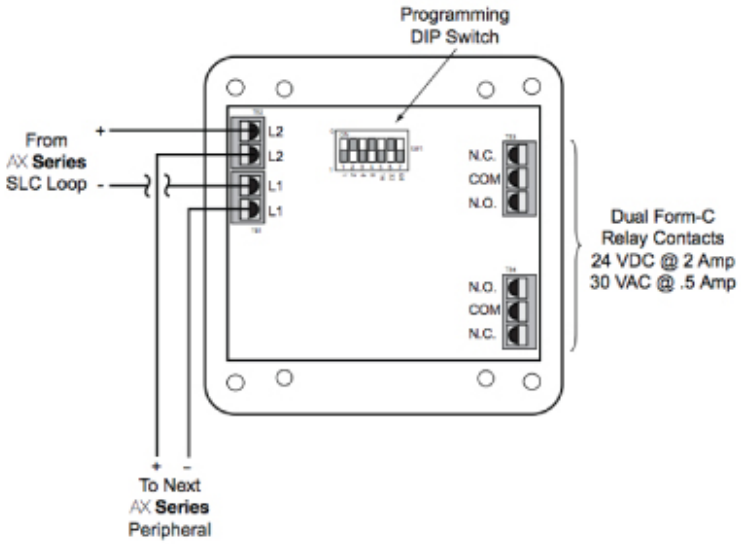
Features

- Compact Size
- Two Isolated Form “C” Relay Contacts
- Flexible Device Type Programming
- Loop Powered Directly from SLC Loop
- Cost-Effective & Trouble-Free Installation
- 7 - Position Addressable DIP Switch
- Integral Polling Status LED
- 4” or 2-Gang Electrical Box Mounting
- Durable Construction

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460

Wiring Diagram



Specification

AX Series SLC Loop	
Voltage	17-28 VDC
Modulation Voltage	5-9 VDC (Peek to Peek)
Supervisory Current	0.85 mA
Surge Current	2.5 mA
Alarm Current	3.5 mA (LED On) (Max.)
Line Impedance	50 Ω (Max.)
Relay Output Rating DC Voltage AC Voltage	 24 VDC @ 2 Amp (Resistive) 30 VAC @ .5 Amp (Resistive)
Wiring	Screw In-Out Terminals
Mounting	4” Square or 2-Gang Electrical Box
Dimensions (Diameter & Height)	4 1/2”W x 4 1/2”H x 1”D
Weight	2.8 oz
Operating Temperature	32º-120ºF (0º-49ºC)
Humidity	10-93% (Non-Condensing)

Order Codes and Options

55000-863AFC	Intelligent Relay Module

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Advanced

Axis AX

Intelligent Switch Monitors

Available in various configurations, compact package (mini), 4” electrical box mount and with or without priority interrupt, the Intelligent Monitor Modules from Advanced offer unique fire alarm industry features that simplify installations and provide superior flexibility.

Designed for installation on Advanced Axis AX Series SLC (signaling line circuit), each Intelligent Monitor Module provides an addressable interface for a single contact device or group of contact devices connected via an initiating device circuit (IDC). With the flexibility of the Advanced Axis AX Series Intelligent Fire Alarm Control Panels, contact devices can be normally open (N.O.) or normally closed (N.C.) dry contacts. Contact devices range from heat detectors, linear heat detectors, 4-wire conventional smoke detectors, waterflow switches, tamper switches, manual pull stations, switch input points for control, etc.

Mini Switch Monitor (55000-831AFC) Designed with flying leads for field wiring, the Mini Switch Monitor can either fit inside the device being monitored, or can be placed in an electrical box in the vicinity of the device being monitored. Based on installation requirements, the Mini Switch Monitor’s initiating device circuit (IDC) is capable of being wired Class A or B to the monitored contact device(s). An integral eight position programming DIP switch must be set for device addressing and wiring classification definition. Each Mini Switch Monitor incorporates a red status LED which illuminates steady during active condition. Mini Switch Monitor’s can monitor any number of contact devices, however it is recommended not to mix alarm, supervisory, or security contacts on the same monitoring module circuit.

Mini Priority Switch Monitor (55000-830AFC) The Mini Priority Switch Monitor is identical to the Mini Switch Monitor with the exception of a priority interrupt feature. The priority interrupt provides the fastest response possible to the Axis AX Series Intelligent Fire Alarm Control Panel(s). When the priority interrupt device is in an active state, the monitor’s priority interrupt bypasses the normal Axis AX Series SLC communications process, and immediately allows the device to communicate with the Axis AX Series Intelligent Fire Alarm Control Panel(s). The Mini Priority Switch Monitor is utilized to monitor highly critical contact devices such as manual pull stations.



Features

- Compact Size
- Class A or B Wiring
- Flexible Device Type Programming
- Optional Priority Interrupt
- Cost-Effective & Trouble-Free Installation
- 8 Position DIP Switch Addressing
- Integral Status LED
- 4” or 2 Gang Electrical Box Mounting
- Durable Construction

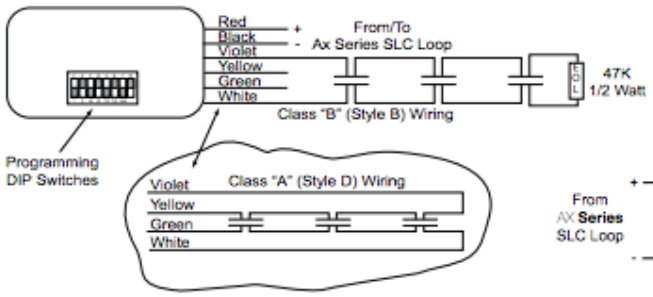
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- ULC Listed: UOXXC.S24460

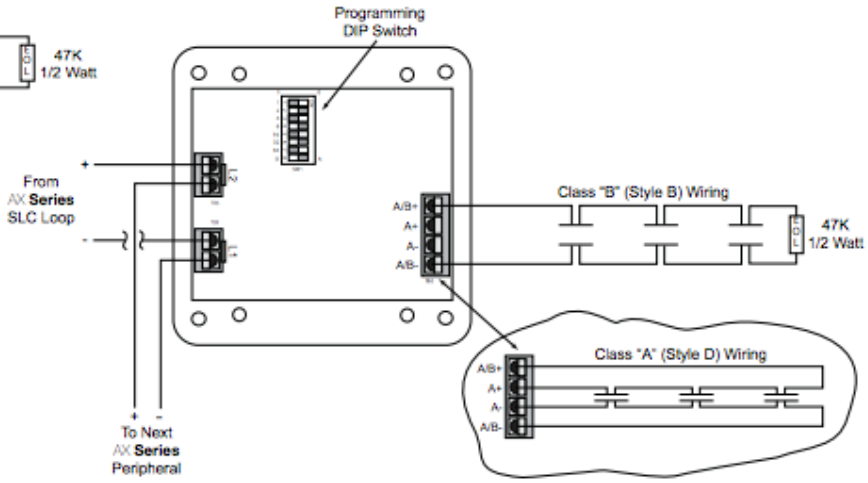
Switch Monitor (55000-805AFC) The Switch Monitor is designed to mount to the front of a 4” square or 2-gang electrical box. Based on installation requirements, the Switch Monitor’s initiating device circuit (IDC) is capable of being wired Class A or Class B to the monitored contact device(s). An integral eight position programming DIP switch provides programming of device address and wiring classification definition. Each Switch Monitor incorporates a red status LED which illuminates steady during active condition. Switch Monitor’s can monitor any number of contact devices, however it is recommended not to mix alarm, supervisory, or security contacts on the same monitoring module circuit.

Priority Switch Monitor (55000-806AFC) The Priority Monitor is identical to the Switch Monitor with the exception of a priority interrupt feature. The priority interrupt provides the fastest response possible to the Axis AX Series Intelligent Fire Alarm Control Panel(s). When the priority interrupt device is in an active state, the monitor’s priority interrupt bypasses the normal Axis AX Series SLC communications process, and immediately allows the device to communicate with the Axis AX Series Intelligent Fire Alarm Control Panel(s). The Priority Switch Monitor is utilized to monitor highly critical contact devices such as manual pull stations.

Mini Switch Monitor (55000-831ADV, -830ADV)



Switch Monitor (55000-805ADV, -806ADV)



Specification

Voltage	17-28 VDC, with Communication Pulses 5-9 VDC
Operating Current Quiescent Alarm W/LED	(55000-805ADV, -806ADV, -831ADV, -830ADV) 0.6 mA 0.6 mA 5.6 mA
Line Impedance	100 Ω
End-of-Line Resistor	47 KΩ, 0.5 Watt (Class “B” Only)
Wiring Mini Switch Monitor(55000-831AFC, -830AFC) Switch Monitor (55000-805AFC, -806AFC)	 Wire Leads (18 AWG, 6” Long) Screw In-Out Terminals
Mounting Mini Switch Monitor (55000-831ADV, -830AFC) Switch Monitor (55000-805AFC, -806AFC)	 Inside Electrical Box Mount 4” Square or 2-Gang Electrical Box
Dimensions (Diameter & Height) Mini Switch Monitor(55000-831AFC, -830AFC) Switch Monitor (55000-805AFC, -806AFC)	 3”W x 2”H x 3/4”D 4 1/2”W x 4 1/2”H x 1”D
Weight Mini Switch Monitor (55000-831AFC, -830AFC) Switch Monitor (55000-805AFC, -806AFC)	 1.5 oz 3 oz
Operating Temperature	32º-120º F (0º-49º C)
Humidity	10-93% (Non-Condensing)

Order Codes and Options

55000-831AFC	Mini Switch Monitor

55000-830AFC	Mini Priority Switch Monitor
55000-805AFC	Switch Monitor
55000-806AFC	Priority Switch Monitor

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Advanced

Axis AX

VESDA VLC by Xtralis

The VESDA VLC-400 is a derivative of the standard VESDA VLC product family specifically designed to support Apollo communication protocol. It operates as a smoke sensor on the Axis AX Series SLC loop and reports directly to the Axis AX Series Intelligent Fire Alarm Control Panel. Up to 126 VLC-400 detectors may be connected directly to an Axis AX Series Intelligent Fire Alarm Control Panel SLC loop eliminating the need for a separate loop interface thereby providing simpler installation and lower costs.

The VLC-400 provides very early smoke detection for small to medium areas within a single environment and incorporates:

A purpose built aspirator design	Clean air barrier optics protection
A simplified display	Onboard relay and remote LED output
An onboard isolator supporting NFPA 72 Style 7 SLC wiring	Supervised PSU monitor input (47K EOL)

VLC detectors provide Very Early Warning of potential fire conditions by drawing air samples through a single pipe up to 260 ft long, or through two pipes of up to 98ft when branched within 16ft of the detector. Smoke is sampled through holes in the pipe and transported to the detector by an integrated aspirator. Holes are positioned according to the application and often follow the spacing of standard conventional point detectors. Where necessary sampling points can be constructed using capillary tubes and sample point devices.

As an Advanced Axis AX Series SLC detector, the VLC-400 operates in one of 5 sensitivity modes (see specifications section). The threshold associated with each mode is independently configurable using a PC running Xtralis VSC with the default settings.

The detector continuously passes air samples from the protected area through to the Laser Detection Chamber. Ultra-fine air filtration provides very clean air to protect the optical surfaces inside the detector from contamination. If any smoke is detected in the chamber, its concentration is signaled to the Main Processor Card. When the concentration of smoke is higher than the set alarm thresholds, then it is reported either as a Pre-Alarm or an Alarm depending upon the set alarm thresholds.



Features

- Compatible with Advanced Axis AX Series SLC Loops
- Protects Areas up to 8000 sq. ft.
- Absolute Smoke Detection
- Wide Sensitivity Range
- AutoLearn Smoke
- Single Pipe Inlet
- VESDAlink Communications
- Clean Air Barrier Optics Protection
- Airflow Monitoring
- Simple Mounting Design

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- UL
- LPCB
- CE - EMC and CPD
- EN 54-20
- ULC Listing Pending

*Regional approvals listings and regulatory compliance vary between VESDA product models. Refer to www.xtralis.com for the latest product approvals matrix.

Specification

Supply Voltage	18 to 30 VDC (Nominal 24 VDC)

Power Consumption	Maximum 5.4 watts (Including Alarm)
Maximum No. of Detectors per SLC Loop:	126 (Addresses 1-126)
Configurable Onboard Relay	Follows Fire LED [or Control by FACP] (NO or NC, 2A @ 30 VDC)
Isolation	Fuse rating: 1.6A, Integrated Apollo Loop Isolation Meeting NFPA Style 7
Enclosure Dimensions (WHD):	4.2 lbs (1.9 kg)
Operating Temperature	32ºF to 103ºF (0ºC to 39ºC) *Tested: 14ºF to 131ºF (-10ºC to 55ºC) *Sample Air: -4ºF to 140ºF (-20ºC to 60ºC) *Humidity 10% to 95% RH, Non-Condensing
Sampling Network	Maximum Single Pipe Length: 260 ft (80 m Approx.), Maximum Two Pipe Lengths: 164 ft (50 m Approx.) Each, Maximum Area of Coverage: 8000 sq. ft (800 m2 Approx.)
Pipe ID	Internal Diameter: 9/16” - 7/8” (15-21mm) External Diameter: 1.05” (25mm)
IP Rating	IP30
Cable Termination	Screw Terminal Blocks 30-12 AWG (0.2 - 2.5 mm2)
Sensitivity Range	0.0015 to 6% Obs/ft (0.005 to 20% Obs/m)
Default Settings for Sensitivity Modes	Mode 1 - 0.015% Obs/ft - 15 Sec Delay Mode 2 - 0.03% Obs/ft - 10 Sec Delay Mode 3 - 0.06% Obs/ft - 10 Sec Delay Mode 4 - 0.15% Obs/ft - 10 Sec Delay Mode 5 - 0.31% Obs/ft - 15 Sec Delay
Software Features	Event Log: Capacity 10,240 Events Reporting Smoke Level, Alarms, Faults with Time and Date Stamp AutoLearn Function which Adapts the Detector to the Surrounding Environment (Minimum 15 Minutes, Maximum 15 days)

Order Codes and Options

VLC-400	VESDA VLC 400

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Xtralis XAS Smoke Detector

The Xtralis XAS Air-sampling Smoke Detection system provides a flexible detection solution to meet unique needs of challenging applications found in typical commercial and industrial sites. The XAS solution is well suited to installations where access to the monitored areas is restricted and provides tamper-proof and unobtrusive detection. The ability to mount the device outside the protected area makes it ideal for use in applications such as correctional facilities, transformer vaults, cable tunnels, elevator machine rooms and HVAC ducts.

The XAS systems actively draw air from the protected area through sampling holes in a pipe network. Sampled air is then filtered before being analyzed by a compatible Advanced Axis AX Series Intelligent Fire Alarm Control Panel SLC smoke detector. The XAS system is available with one inlet pipe (XAS-1) or two inlet pipes (XAS-2), and can be used with one or two analog detectors.

		XAS-1	XAS-2
Two Detector Strategy	Dual Addressable areas		√
	Redundancy	√ (OR)	√ (OR)
	Coincident / Double Knock *	√ (AND)	√ (AND)

* Subject to local codes and standards

Note: (OR / AND) represents the suggested programming logic for combining two analog detectors to achieve detection strategy.



Features

- Compatible with Advanced Axis AX Series SLC Loops
- Single or Dual Inlet Detection
- High Performance Aspirator
- Multiple Programmable Detection Strategies
- Multiple Piping Options
- 164 ft (50 m) Maximum per Unit
- 50 ft (15 m) Maximum per Flexible Tube
- Microprocessor Controlled
- Integral Display and Programmer
- Field Serviceable Air Filter
- Adjustable Aspirator Speed with Airflow Monitoring

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- UL-268
- UL-268A
- ULC-529

The systems may be configured for a number of detection strategies including:

- Single or dual analog addressable area detection
- Redundant analog detection
- Coincident or double-knock detection

Detector Configuration Options:
Several configuration options are available for the XAS-1 and XAS-2 systems:

- XAS-1 system – one or two analog detectors (shared inlet)
- XAS-2 system – two analog detectors (dual inlet)

XAS-1 systems with one analog detector are capable of providing single area detection, but XAS-1 and XAS-2 systems with two analog detectors are able to provide a number of detection strategies. The table below describes the recommended configuration options to fi t the selected detection strategy when two analog detectors are installed into an XAS system.

Specification

Supported Detectors	1 or 2 - analog photoelectric smoke detectors Sensitivity Range: 1.30 %/ft - 3.43 %/ft Air Velocity Range: 0 - 4000 FPM 4 in. mounting base
Supply Voltage	24 VDC nominal
Current:	350 mA maximum In-Rush 680 mA
Dimensions (WHD)	10.2 in x 12.6 in x 6.5 in (259 mm x 321 mm x 166 mm)
Weight	XAS-1: 7.27 lbs (3.3 kg) XAS-2: 7.5 lbs (3.4 kg)
Operating Conditions	Tested to: 14ºF to 131ºF (-10ºC to 55ºC) Recommended Detector Ambient: 32ºF to 100ºF (0ºC to 38ºC) Sample Air: 4ºF to 140oF (-20ºC to 60ºC) Humidity: 10% to 95% RH, non-condensing
Air Inlet Pipe	Accepts both metric and American standard sizes. Metric: 25 mm (1.05 in.) American pipe: 3/4 in. I.D. (21 mm) Flexible tubing: 3/4 in. O.D. (19 mm)
Sampling Network	Pipe length: up to 164 ft (50 m) total per device Flexible tube length: maximum 50 ft (15 m)
IP Rating	IP30 wiring enclosure Detector enclosure: IP65
Filtration	Serviceable filter External filter optional
Flow Monitoring and Reporting	High and low programmable flow limits
Aspirator	Control: 10 programmable speeds Pressure: 250 Pa
Relay Outputs	XAS-1: 1 fault relay output XAS-2: 2 fault relay outputs
Field Wiring	Screw Terminals 18 to 10 AWG (0.9 to 5.5 sq. mm) solid 20 to 12 AWG (0.6 to 3.5 sq. mm) stranded

Order Codes and Options

XAS-1-US	Air-sampling Smoke Detector with 1 Inlet
XAS-2-US	Air-sampling Smoke Detector with 2 Inlets
58000-650	Enhanced Analog Photoelectric Smoke Detector
55000-650	Analog Photoelectric Smoke Detector
45681-234ADS	4 in. Low Profile Base

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Advanced

Axis AX

Intelligent Manual Pull Stations

Advanced Intelligent Manual Pull Stations (CAX-APS2) consist of a family of versatile, low profile, and high quality addressable manual pull stations. Available with either English or French labeling, the CAX-APS2 stations are easily recognizable during a fi re situation. Constructed of rugged die-cast metal for long life and reliability the CAX-APS2 stations are painted with a high gloss red finish and raised white “FIRE” / “FEU” lettering. A red LED on the front of the station flashes during polling and turns on steady in alarm. Integrated into the station is a Form C relay output that activates when in alarm. All models are fitted with a common key-lock for resetting (CAT B/CAT 30) which is common with the panel key.

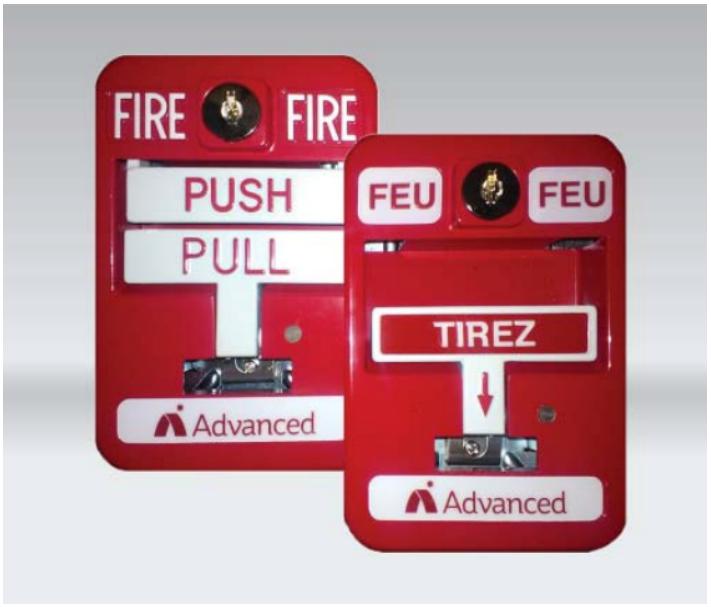
Available in either single (CAX-APS2-F1 / CAX-APS2- F1-F) or dual (CAX-APS2-F2 / CAX-APS2-F2-F) action configuration, the CAX-APS2 stations are designed to prevent false alarms when bumped, jarred or shaken. The dual action CAX-APS2-F2 further deters malicious false alarms by requiring a two-process function for activation; first push the “PUSH” / “POUSSER” bar inwards which then allows the “PULL” / “TIREZ” bar to be grasped and pulled outward.

Optional surface backboxes are available for indoor applications.

The Intelligent Manual Pull Stations are available in a variety of colors to meet various special application requirements. Colored stations do not include the raised white “FIRE” labeling, but are capable of accommodating labels for Alert, Alarm, Exit, Evac, etc. identification. Special applications can include; weather alert, door release, medical emergency, fire suppression activation and others.

Operation:

The CAX-APS2 stations are operated by pulling the handle marked “PULL” / “TIREZ” on the front of the station as far down as it will go. At this point, the station will lock in place and is easily visible from up to 50 feet away. The activation handle is reset by opening the station with the reset key (keyed to match Axis AX Series Intelligent Fire Alarm Control Panels), returning the toggle switch to its “Normal” position, moving the handle to its upright position and relocking the station. On the CAX-APS2-F2 dual station model, the “PUSH” / “POUSSER” bar must be pushed inward prior to pulling the handle marked “PULL” / “TIREZ”.

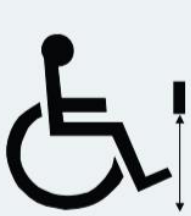


Features

- Single or Dual Action
- Rugged Die-Cast Metal Construction
- Red Status LED
- Integrated Form C Relay Contact
- Low Profile, High Visibility Design
- Visual Indication of Activation including Red Status LED
- Surface or Semi-Flush Mountable
- Available in Special Application Colors
- Key-Lock for Reset

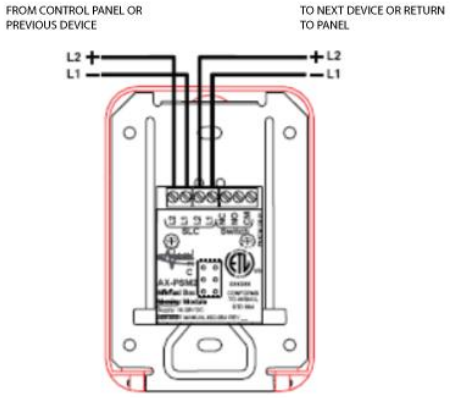
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001
- CAN/ULC-S528-05



Install the AX-APS2 pull stations in accordance with local codes and regulations. To comply with the ADA requirements, locate the pull station on the wall as follows:

Front wheelchair access: < 48”
Side wheelchair access: < 54”



Specification

Operating Voltage	17-28 VDC, with Communication Pulses 5-9 VDC
Operating Current Quiescent Alarm	 1.7 mA 2.7 mA
Operating Temperature	32ºF (0ºC) to 120ºF (49ºC), for Indoor Use Only
Dimensions With Surface Mount Backbox	4 3/4 ” H x 3 1/4 ” W x 1.1” D 4 3/4 ” H x 3 1/4 ” W x 2 1/4 ” D (Cast or Sheet Metal)
Weight	1.1 lb
Analog Value	16 = Normal, 64 = Alarm, 4 = Trouble
Address Range	1 - 126 (DIP Switch Programmable)
Color	Red with Raised White Letters, White “PULL” Bar with Raised Red Letters

Order Codes and Options

CAX-APS2-F1	Intelligent Manual Pull Station, Single Action (English)
CAX-APS2-F1-F	Intelligent Manual Pull Station, Single Action (French)
CAX-APS2-F2	Intelligent Manual Pull Station, Dual Action (English)
CAX-APS2-F2-F	Intelligent Manual Pull Station, Dual Action (French)
Options:	
AX-APS-BB1	Interior Surface Mount Backbox - Red (Sheet Metal)
AX-APS-BB1-D	Deep Interior Surface Backbox, Red
AX-APS-GLS	Package of Scored Plastic (Acrylic) Break rods (1 Dozen to a Packet)

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Axis AX

Intelligent Single Loop Fire Alarm Control Panel

The CAX-CTL-1L Intelligent Single Loop Fire Alarm Control Panel is a member of the industry leading Axis AX Series Intelligent Fre Alarm Control Panels by Advanced. The CAX-CTL-1L contains the identical features as the Advanced CAX-CTL-2 (2 loop) and CAX-CTL-4 (4 loop) Intelligent Fire Alarm Control Panels, and is ideally suited to smaller applications. However, as a member of the Axis AX Series product line the CAX-CTL-1L can easily be utilized in larger applications due to its integral peer-to-peer networking capabilities.

Designed with installation and service engineers in mind, the CAX-CTL-1L intelligent panel is modularly packaged, using surface mount and dual flash microprocessor technology, with onboard real time clocks for ease of installation, troubleshooting, programming, and maintenance.

The CAX-CTL-1L Intelligent Single Loop Fire Alarm Control Panel provides a single Style 4 or Style 6/7 Signaling Line Circuit (SLC). Communications to the field devices attached to the SLC is via an advanced, 100% digital protocol with advantages of being highly immune to noisy environments. The SLC supports up to 126 analog addressable devices (any combination of intelligent detectors, input and/or output devices, including loop powered technology devices). In addition, unique sub-addressing of various input and/or output devices is permitted, expanding on overall CAXCTL-1L system capacity.

The CAX-CTL-1L comes with two filtered, voltage regulated Signal Appliance Circuits (NACs), Class A or B, each rated 2 Amp @ 24 VDC. Due to exceptional regulation and high rating, the onboard signal circuit outputs provide compatibility with most Listed notification appliance devices.

The CAX-CTL-1L intelligent panel has resettable and non-resettable power outputs; each rated .5 Amp @ 24 VDC, for connection to four-wire conventional smoke detectors and/or ancillary devices. Each CAX-CTL-1L contains three, field programmable, Form “C” relays, each rated 1 Amp @ 30 VDC, defaulted as a fail-safe trouble relay, alarm relay, and supervisory relay.



Features

- 126 Analog Addressable Points
- Advanced User Interface with Graphical LCD
- “DynamiX” I/O Relationship Programming
- Multi-Pattern & Two-Stage NAC Control
- Remote Diagnostic Virtual Panel Simulator
- AD-NeT-PluS Peer-to-Peer Networking
- Automatic Drift Compensation per Detector
- Automatic Detector Testing with Maintenance Alert
- Alarm Verification and PAS
- SLC Circuit Compatibility with Xtralis VLC-400
- Style 4, 6 & 7 SLC Operation (Supports loop powered technology)
- Class A or B NAC Circuits
- Voltage Regulated NACs (Compatible with most Listed NAC devices)
- Synchronization of Audibles and Visuals (Panel or network wide)
- “Auto-Learn/Loop Detection” Programming
- Built-in Intelligent Multi-Meter
- Optional ipGateway for text and email status notification
- Optional Integral or Portable Printer

Simplifying and reducing initial system set-up, each CAX-CTL-1L Intelligent Single Loop Fire Alarm Control Panel is equipped with an installer-friendly “Auto-Learn/ Loop Detection” feature that permits the rapid recognition of all signaling line circuit devices. This rapid recognition simplifies the assignment of critical life safety functions immediately. Assignments include: intelligent detector type and operation criteria, addressable input device recognition as an alarm input and addressable output control on a general alarm basis

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

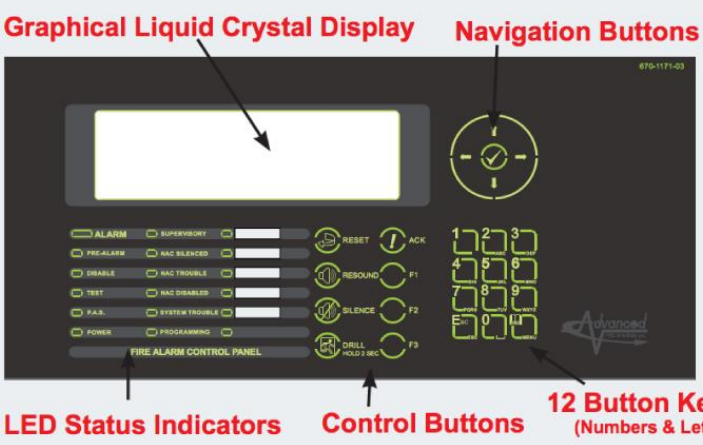
Designed with built-in powerful installation and customization tools, the CAX-CTL-1L Intelligent Single Loop Fire Alarm Control Panel can adapt to virtually any application requirement. With DynamiX programming, typical time-consuming complexities associated with I/O relationship programming such as two-stage signal circuit control, intelligent detector drift compensation, precision response/sensitivity mode settings, flexible timing functions, and more, are sharply reduced.

The CAX-CTL-1L intelligent panels are fully field programmable via the onboard graphical LCD display and alphanumeric keypad. Front panel programming may encompass defining input to output relationships, configuring output circuit characteristics, entering zone, device, and other text descriptions, and configuring multiple user-access passwords.

To maximize the capability and flexibility of the CAX-CTL- 1L Intelligent Single Loop Fire Alarm Control Panel and to expand upon the customization of an installation, the Advanced Windows based PC-NeT field configuration tool is available. The PC-NeT field configuration tool is a powerful, user-friendly programming tool that allows users to perform virtually any I/O relationship with multiple criteria. Simple drop-down menus with point-and-click operation make project commissioning and troubleshooting fast and efficient.

The CAX-CTL-1L intelligent panel can accommodate remote graphical LCD annunciators (with or without system control capabilities) on the Ad-NeT-PluS peer-to-peer network. Multiple annunciator locations can be created based on installation demands. These locations can have either: no system control, partial system control, or full system control. When installations exceed a single panel’s capacity, the Advanced Ad-NeT-PluS peer-to-peer network may be implemented, providing up to 200 network nodes. The Ad-NeT-PluS is completely field programmable for inter-panel functionality or segregation of information and control based on installation requirements.

Designed with the technician in mind, each module of the CAX-CTL-1L intelligent panel is easy to install and service. The integral power supply offers status LEDs, temperature compensated charging, and the ability to operate directly from the batteries when AC supply is not yet available at the installation site. A unique built-in intelligent multi-meter allows technicians to interrogate any input and/or output and diagnose potential time consuming trouble issues with virtually no complications or aggravation. With an CAX-CTL-1L intelligent panel, servicing a customer after installation can be as simple as using the Advanced Remote Diagnostic Virtual Panel Simulator and/or ipGateway (CAX-LAN). The simulator can be activated from any Windows based PC and connected to the installation site via a dedicated modem. The Remote Diagnostic Virtual Panel Simulator, emulates the on-site control panel LCD and keypad in real time from an off-site location. The simulator is an incredibly powerful tool for diagnosing and troubleshooting site applications. The ipGateway (CAX-LAN) provides real time text and email alerts of system status.



Advanced User Interface w/Graphical LCD:

Designed to be user-friendly and easy to operate, the Advanced User Interface w/Graphical LCD (backlit 240 x 64) is the information and control center for the AX-CTL-1 (1L) Intelligent Single Loop Fire Alarm Control Panel.

The unit incorporates a graphical LCD display, LED status indicators, control buttons (including 3 programmable buttons), navigation buttons, and a 12 button keypad for complete system status, interrogation, and control.

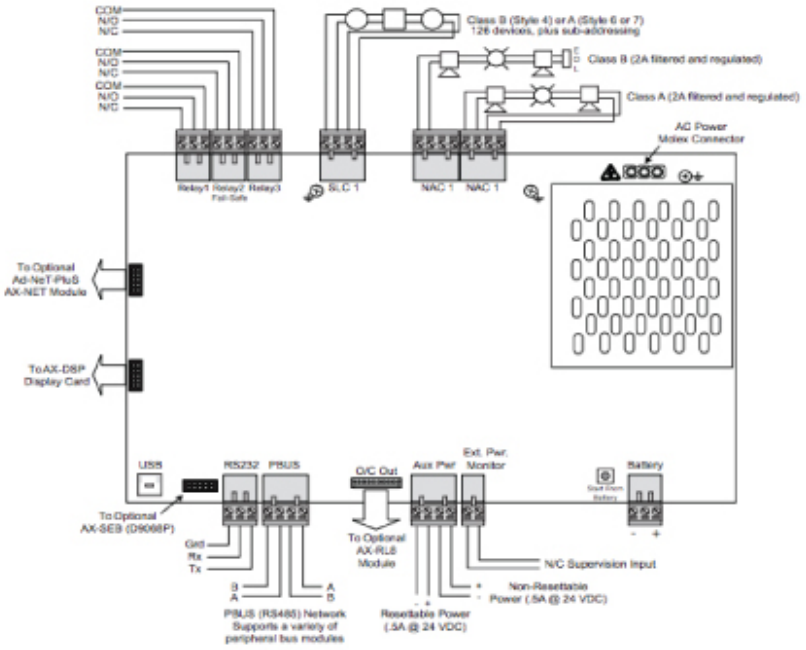
Button (Keys)

	Reset
	Ack (panel buzzer acknowledge)
	Resound (resound signals)
	Silence (silence signals)
	Fire Drill
	Function Keys (3 - programmable control buttons)
	Navigation Keys (up, down, left, right, and tick [enter])
	12 Button Keypad (numbers, letters, esc, and menu)

LED Indicators

Alarm	Red
Pre-Alarm	Red
Disable	Yellow
Test	Yellow
P.A.S.	Yellow
Power	Green
Supervisory	Yellow
NAC Silenced	Yellow
NAC Trouble	Yellow
NAC Disabled	Yellow
System Trouble	Yellow
Programming	Yellow
Programmable LED 1	Red
Programmable LEDs 2-5	Yellow

Wiring Diagram



Specifications

Operating Voltage	120 VAC (1.4A) - 240 VAC (0.7A), 50/60Hz
System-Brown-Out	98 VAC Nominal
Battery Circuit	
Charging Voltage	27.4 VDC Nominal
Temp. Compensated Charging Current	2 Amp
Battery Derating Factor	0.83A
Battery Capacity	7Ah (minimum), 48Ah (maximum)
Battery Fuse	5A @ 240 VAC, Time Delayed, Ceramic.
Fire, Supervisory, and trouble relays	(Power Limited - When utilising system power)
Type	Form "C"
Rating	1A @ 30 VDC/VAC
Trouble Relay	Normally Active (Fail-safe operation)
Auxillary Power Outputs	(Power Limited)
Resettable	
Voltage	24 VDC
Current	0.5A
Reset time	10-15 Seconds
Non-resettable	
Voltage	24 VDC
Current	0.5A
Humidity	85% Relative Humidity
Temperatures	
Operating	32°F - 120°F (0°C - 49°C)
Recommended Room	60°F - 86°F (15°C - 27°C)
Enclosure Dimensions	
AX-CTL-1	19.1"H x 16"W x 5.3"D
AX-CTL-1L	24.1"H x 16"W x 6.3"D
SLC Loop	(Power Limited)
Class (Style)	Class A or B (Style 4, 6 or 7)
Voltage	24 VDC
Minimum Return Voltage	17 VDC
Current	0.5A
NAC circuits	(Power Limited)
Class (Style)	Class A or B
Voltage	24 VDC (Filtered and regulated)
Minimum Return Voltage	16 VDC
Current	2A (Each)
Maximum Voltage Drop	3 VDC
Maximum Line Impedance	1.5Ω
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1
Base Card Operating Current	Quiescent Alarm
AX-CTL-1(L)	110mA 195mA

* Refer to individual Axis AX series module datasheets for specific specifications regarding option modules

Order Codes and Options

CAX-CTL-1*	Intelligent Single Loop Fire Alarm Control Panel with compact enclosure, power supply/charger, 1 SLC, 2 NACs, 3 auxiliary relays (Enclosure supports batteries 7Ah - 18Ah)
CAX-CTL-1L*	Intelligent Single Loop Fire Alarm Control Panel with standard Axis AX Series enclosure, power supply/charger, 1 SLC, 2 NACs, 3 auxiliary relays (Enclosure supports batteries 7Ah - 18Ah)
	AX-CTL Base Card Option Modules**:
CAX-NET4	Network Interface Card (Style 4)
CAX-NET7	Network Interface Card (Style 7)
CAX-RL8	8-Way Relay Output Card (Programmable)
CAX-012	Thermal Strip Printer
CAX-SEB/D9068P	Serial Expansion Board and Serial Digital Alarm Communicator

* Refer to individual Axis AX Series module data sheets for peer to peer network and peripheral bus optional modules.

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

Advanced

Axis AX

Intelligent 2 & 4 Loop Fire Alarm Control Panels

Advanced has combined the latest technology with many years of fire experience, to create the Axis AX Series Intelligent Fire Alarm Control Panels. The panels are highly flexible and ideally suited to meet the needs of virtually any commercial, industrial or institutional application.

The Axis AX Multi Loop Panel is available in two standard models, the CAX-CTL-2 (2 Loop) and CAX-CTL-4 (4 Loop). Designed with installation and service engineers in mind, these intelligent panels are modularly packaged, using surface mount and dual flash microprocessor technology, with onboard real time clocks for ease of installation, troubleshooting, programming and maintenance.

The CAX-CTL-2 Intelligent Fire Alarm Control Panel provides two Style 4 or Style 6/7 Signaling Line Circuits (SLCs). Communications to field devices attached to the SLCs is via an advanced, 100% digital protocol with advantages of being highly immune to noisy environments and will operate over non-shielded cable without causing interference problems with sensitive electronic equipment.

Each SLC supports up to 126 analog addressable devices (any combination of intelligent detectors, input and/or output devices, including loop powered technology devices). In addition, our unique sub-addressing of various input and/or output devices permits expanding system capacities further.

The CAX-CTL-2 also comes with two filter, voltage regulated Notification Appliance Circuits (NACs), Class A or B, each rated 2 Amp @ 24 VDC. Due to exceptional regulation and high rating, the onboard NAC outputs provide compatibility with virtually any Listed notification appliance.

The CAX-CTL-4 Intelligent Fire Alarm Control Panel provides four Signaling Line Circuits (SLCs) and four fully filtered, voltage regulated Notification Appliance Circuits (NACs), each rated 2 Amp @ 24 VDC. In this configuration, the Axis AX Series panel can accommodate a total system capacity of 504 analog addressable point's standard, not counting sub-addressing capacity.

Both the CAX-CTL-2 and CAX-CTL-4 intelligent panels have resettable and non-resettable power outputs, each rated .5 Amp @ 24 VDC, for connection to four-wire conventional smoke detectors and/or ancillary devices. Each CAX-CTL-2 and CAX-CTL-4 contains three, field programmable, Form "C" relays, each rated 1 Amp @ 30 VDC, defaulted as a fail-safe trouble relay, alarm relay, and supervisory relay.



Features

- Advanced User Interface with Graphical LCD
- Multi-Pattern & Two-Stage NAC Control
- Remote Diagnostic Capabilities
- Advanced Networking
- Built-in Intelligent Multi-Meter
- Up to 504 Analog/Addressable Points
- Automatic Drift Compensation per Detector
- Automatic Detector Testing with Maintenance Alert
- Alarm Verification and PAS
- Style 4, 6 & 7 SLC Operation (Supports loop powered technology)
- Synchronisation of Audibles and Visuals (Panel or network wide)
- User-Friendly PC-NeT Field Configuration Program
- 5 to 10 Amps of System Power
- Optional ipGateway for Text and Email Status Notification

Simplifying and reducing initial system set-up, each Axis AX Series Intelligent Fire Alarm Control Panel is equipped with an installer-friendly “Auto-Learn/Loop Detection” feature that permits the rapid recognition of all signaling line circuits’ devices. This rapid recognition, simplifies the assignment of critical life safety functions immediately. Assignments include: intelligent detector type and operation criteria, addressable input device recognition as an alarm input, and addressable output control on a general alarm basis.

Designed with built-in powerful installation and customization tools, the Axis AX Series Intelligent Fire Alarm Control Panel(s) can adapt to virtually any application requirement. With Dynamix I/O programming, typical time consuming complexities associated with I/O relationship programming such as two-stage multi-pattern NAC control, intelligent detector drift compensation, precision response/sensitivity mode settings, flexible timing functions, and more, are sharply reduced.

Features Continued

- “Auto-Learn/Loop Detection” Programming
- Class A or B NAC Circuits
- SLC Circuits Compatibility with Xtralis VLC-400
- Voltage Regulated NACs (Compatible with most Listed NAC devices)

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- CSFM Approved: 7165-1713:0101
- NYCFC COA #6105

The Axis AX Series intelligent panels are fully field programmable via the onboard graphical LCD display and alphanumeric keypad. Front panel programming may encompass defining input to output relationships, configuring output circuit characteristics, entering zone, device, and other text descriptions, and configuring multiple user-access passwords.

To maximize the capability and flexibility of the Axis AX Series Intelligent Fire Alarm Control Panel(s), and expand upon the customization of an installation, the Advanced Windows based PC-NeT field configuration tool is available. The PC-NeT field configuration tool is a powerful, user-friendly programming tool that allows users to perform virtually any I/O relationship with multiple criteria. Simple dropdown menus with point-and-click operation makes project commissioning and troubleshooting fast and efficient.

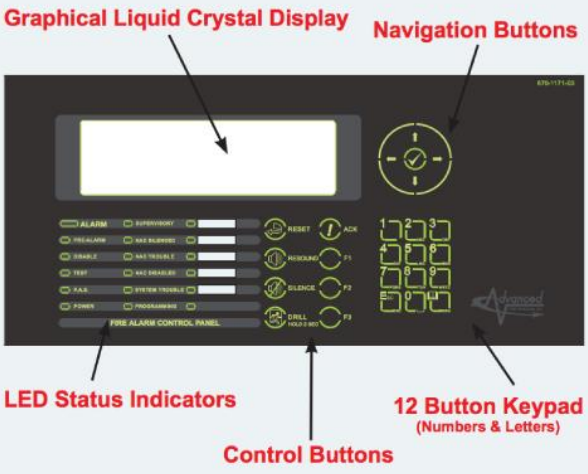
The Axis AX Series system accommodates remote graphical LCD annunciators (with or without system control capabilities) on the Advanced network. Multiple annunciator locations can be created based on installation demands. These locations can have either: no system control, partial system control, or full system control. In addition, information on system status changes can be vectored, allowing displays to receive only information pertaining to specific events.

The Axis AX Series panels can accommodate very large, sophisticated applications with relative ease. When installations exceed a single panel’s capacity the Advanced Ad-NeT-PluS peer-to-peer network may be implemented, providing up to 200 network nodes. The Ad-NeT-PluS is completely field programmable for interpanel functionality or segregation of information and control based on the overall installation requirements.

Advanced User Interface w/Graphical LCD:

Designed to be user-friendly and easy to operate, the Advanced User Interface w/Graphical LCD (backlit 240 x 64) is the information and control center for the AX Series Intelligent Fire Alarm Control Panel(s).

The unit incorporates a graphical LCD display, LED status indicators, control buttons (including 3 programmable buttons), navigation buttons, and a 12 button keypad for complete system status, interrogation, and control.



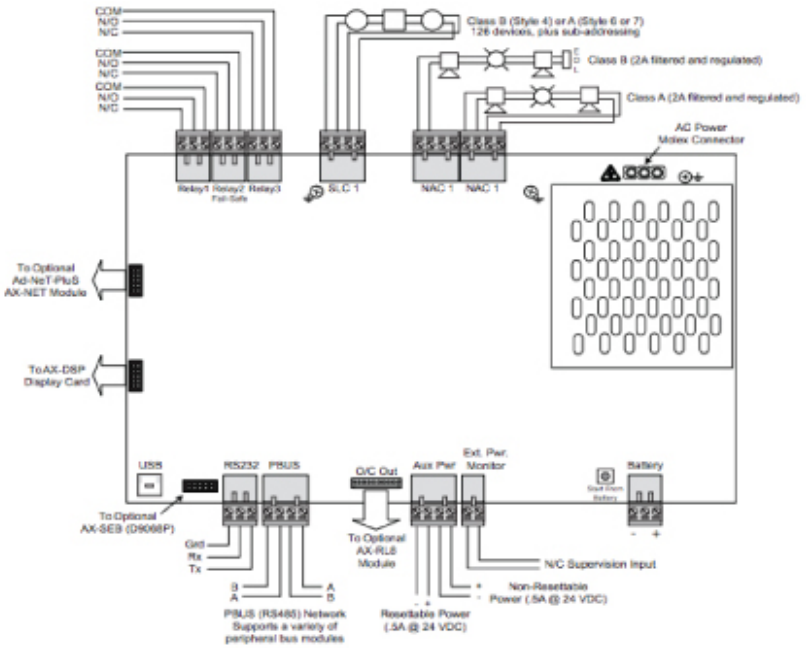
Button (Keys)	
	Reset
	Ack (panel buzzer acknowledge)
	Resound (resound signals)
	Silence (silence signals)
	Fire Drill
	Function Keys (3 - programmable control buttons)
	Navigation Keys (up, down, left, right, and tick [enter])
	12 Button Keypad (numbers, letters, esc, and menu)

LED Indicators	
Alarm	Red
Pre-Alarm	Red
Disable	Yellow
Test	Yellow
P.A.S.	Yellow
Power	Green
Supervisory	Yellow
NAC Silenced	Yellow
NAC Trouble	Yellow
NAC Disabled	Yellow
System Trouble	Yellow
Programming	Yellow
Programmable LED 1	Red
Programmable LEDs 2-5	Yellow

Designed with the technician in mind, each module of the Axis AX Series panel is easy to install and service. The integral power supply offers status LEDs, temperature compensated charging and the ability to operate directly from the batteries when AC supply is not yet available at the installation site.

A unique built-in intelligent multi-meter allows technicians to interrogate any input and/or output and diagnose potential time consuming trouble issues with virtually no complications or aggravation. With an Axis AX Series panel, servicing a customer after installation can be as simple as using the Advanced Remote Diagnostic Virtual Panel Simulator and/or ipGateway (CAX-LAN). The simulator can be activated from any Windows based PC and connected to the installation site via a dedicated modem. The Remote Diagnostic Virtual Panel Simulator, emulates the on-site control panel LCD and keypad in real time from an off-site location. The simulator is an incredibly powerful tool for diagnosing and troubleshooting site applications. The ipGateway (CAX-LAN) provides real time text and email alerts of system status.

Wiring Diagram



Specification

Operating Voltage	120 VAC (1.4A) - 240 VAC (0.7A), 50/60Hz
System-Brown-Out	98 VAC Nominal
Battery Circuit	
Charging Voltage	27.4 VDC Nominal
Temp. Compensated Charging Current	2 Amp
Battery Derating Factor	0.83A
Battery Capacity	7Ah (Minimum), 48Ah (Maximum)
Battery Fuse	5A @ 240 VAC, Time Delayed, Ceramic, High Breaking (In-line WireLink)
Fire, Supervisory, and Trouble Relays	(Power Limited - When utilising system power)
Type	Form "C"
Rating	1A @ 30 VDC/VAC
Trouble Relay	Normally Active (Fail-safe operation)
Auxillary Power Outputs	(Power Limited)
Resettable	
Voltage	24 VDC
Current	0.5A
Reset Time	10-15 Seconds
Non-Resettable	
Voltage	24 VDC
Current	0.5A
Humidity	85% Relative Humidity
Temperatures	
Operating	32°F - 120°F (0°C - 49°C)
Recommended Room	60°F - 86°F (15°C - 27°C)
Enclosure Dimensions	
Back Box	22.6"H x 14.5"W x 5.5"D
Housing	24.1"H x 16"W x 6.3"D
SLC Loop	(Power Limited)
Class (Style)	Class A or B (Style 4, 6 or 7)
Voltage	24 VDC
Minimum Return Voltage	17 VDC
Current	0.5A
NAC Circuits	(Power Limited)
Class (Style)	Class A or B
Voltage	24 VDC (Filtered and regulated)
Minimum Return Voltage	16 VDC
Current	2A (Each)
Maximum Voltage Drop	3 VDC
Maximum Line Impedance	1.5 Ω
RS232	
Baud Rate	9600
Parity	None
Data Bits	8

Stop Bits	1
Base Card Operating Current	Quiescent Alarm
CAX-CTL-2	110mA 195mA
CAX-CTL- 4	175mA 260mA

* Refer to individual Axis AX series module data sheets for specific specifications regarding option modules

Order Codes and Options

CAX-CTL-2*	Intelligent Fire Alarm Control Panel with cabinet, power supply/charger, 2 SLCs, 2 NACs, 3 auxiliary relays (Cabinet supports batteries 7Ah - 18Ah) (254 Addressable Points)
CAX-CTL-4*	Intelligent Fire Alarm Control Panel with cabinet, power supply/charger, 4 SLCs, 4 NACs, 3 auxiliary relays (Cabinet supports batteries 7Ah - 18Ah) (504 Addressable Points)
	AX-CTL Base Card Option Modules**:
CAX-LPD	2 SLC, 2 NAC Expander Card
CAX-NAC	2 NAC Expander CArd
CAX-PSU	5 Amp Expansion Power Supply Module
CAX-NET4	Network Interface Card (Style 4)
CAX-NET7	Network Interface Card (Style 7)
CAX-RL8	8-Way Relay Output Card (Programmable)
CAX-012	Thermal Strip Printer
CAX-SEB/D9068P	Serial Expansion Board and Serial Digital Alarm Communicator

* Refer to individual Axis AX Series module data sheets for peer to peer network and peripheral bus option modules.

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Advanced

Axis AX

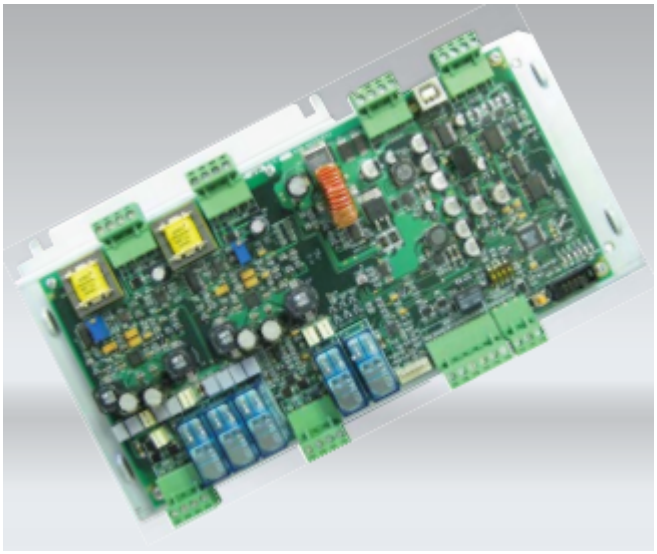
Audio Amplifier Module

The Advanced CAV-AMP-80 module provides Digital Audio capabilities to Axis AX “V” Series, Axis AX Command Centers, CAV-VBM Audio Panel and the CAV-VB Distributed Audio Booster. The module provides two Class A or B 40 Watt Audio Notification Appliance Circuits (ANACs). Communications with an Axis AX panel is achieved through the use of the CAX-CTL onboard PBUS (RS-485 network) interface port (contact AFSI regarding correct software version). This interface is used for control of the module including selection of the 16-channel flash-based digital messages, message repeat cycles, activation of the audio output, and monitoring of any CAV-AMP-80 trouble condition.

The module also includes the capability to be externally triggered by three (3) programmable dry contact inputs. Trigger 1 causes message one to be played. Trigger 2 causes message two to be played. Trigger 3 has the highest priority and activates booster mode. In booster mode, signals appearing at “AMP 1 Booster Audio Input” and “AMP 2 Booster Audio Input” are amplified up to 25 Vrms levels, and are amplified out the two audio notification appliance circuits. Trigger 3 overrides Triggers 1 and 2 to support higher priority paging. For installations requiring local paging, the CAV-AMP-80 module includes a 6-pin ribbon cable connection that easily interfaces to the Advanced CAV-MIC microphone.

The CAV-AMP-80 module includes a field programmable 16 channel message generator, programmable through the Advanced audio module field configuration tool. The 16 messages are stored in onboard E2 memory. The PC-NeT tool is required for programming all Axis AX Series FACPs, annunciators, network options and the CAV-AMP-80 control-by-event logic.

There are two (2) 40 Watt amplifiers that output identical messages simultaneously. A programming option provides for selecting a 1 to 1 backup (may be required in some jurisdictions). “Booster” configuration is provided by use of the AMP audio I/O terminals. This is ideal for synchronizing audio signals and sharply reducing installation costs.



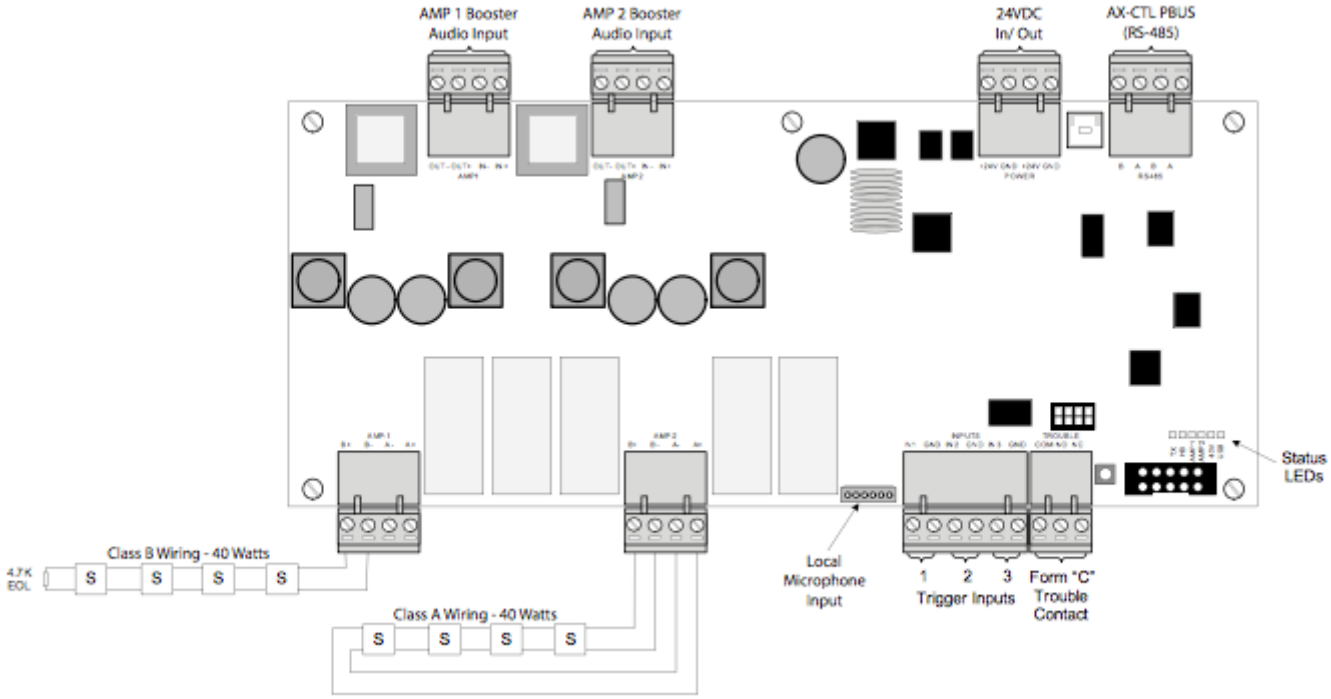
Features

- Dual 40 Watt @ 25 Vrms Amplifiers
- 16-Channel Digital Message Generator
- PC-NeT Programmable
- Unique “Booster” Option
- Compact/Efficient Digital Amplifier Design
- Class A or B Wiring
- Isolated PBUS (RS-485 Network) Interface
- Freely Programmable CBE logic
- PC-NeT Configuration Tool Compatible
- Automatic one-to-one Backup Option
- Supervised Microphone Input for CAV-MIC Module
- Three Programmable External Trigger Inputs

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

Input Voltage (DC)	24 VDC (Operating Range 15-30 VDC)
Current	.035A (Quiescent) .220A Plus Total Speaker Circuit Load (Alarm)
Amplifier #1 Output	40 Watts @ 25 Vrms, Class A or B Wiring
Amplifier #2 Output	40 Watts @ 25 Vrms, Class A or B Wiring
Activation	RS-485 or Contact Closures (Triggers #1, #2 and #3)
CAV-MIC	Supervised Microphone Input
Printed Circuit Board Dimensions	9'' Long X 4.25" Wide

Order Codes and Options

CAV-AMP-80	Audio Amplifier Module with Two 40 Watt Speaker Outputs
CAV-ZS	Audio Zone Splitter Module
CAV-MIC*	Microphone and Enclosure Assembly
CAV-VB*	Distributed Audio Booster. Includes One AV-AMP-80, One AX-PSU-6, and Enclosure
CAV-VBM*	Audio Panel w/Microphone. Includes One AV-AMP-80, One AX-PSU-6, One AV-MIC, Manual Message Selection Switches and Enclosure
CAV-V70*	Universal Audio Converter (Converts 25Vrms to 70Vrms)

* For gray enclosure, add the suffix "G" to the part number.

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Advanced

Axis AX

Remote Graphical LCD Annunciators

Providing superior flexibility and customization to an Axis AX Series Intelligent Fire Alarm Control Panel installation, the Axis AX Series Remote Graphical LCD Annunciators are available in two (2) models, the CAX-ANN-C and CAX-ANN-D. The CAX-ANN-C provides annunciation and programmable peer-to-peer system controls while the CAX-ANN-D provides annunciation only. To prevent unauthorized access to the CAX-ANN-C, the unit can be set to password required access for all controls, or an optional access enable keyswitch (p/n: AX-KSW) can be installed, thereby restricting access to the Reset, Silence, Resound and Drill functions without first activating the keyswitch. Designed to adapt to any installation the graphical annunciators are compact and attractive.

Both units incorporate the Advanced industry unique backlit 240 x 64 graphical LCD display. The graphical LCD display allows adaptation to virtually any language and character set. In addition to the programmable language capabilities, the graphical LCD display allows users/customers to customize the display with installation/company logo and details which will be displayed during normal system mode.

The level of information displayed and the control capabilities of each CAX-ANN-C and CAX-ANN-D remote annunciator is fully field programmable. Individual units can be configured to vector information and control, allowing remote annunciators to be dedicated to alarms, troubles, supervisory or other status events.

The CAX-ANN-C and CAX-ANN-D communicate over the Advanced AD-NeT-PluS fault tolerant, Style 4 or 7, peer-to-peer network. This is a true peer-to-peer network with full cross node reporting. The CAX-ANN-C and CAX-ANN-D are comprised of three (3) parts; the back box, cover, chassis assembly. They can be mounted surface or semi-flush (With optional trimming). In addition, a tamperproof box p/n: CAX-ANN-TP and a weatherproof box p/n: CAX-ANN-WP are available.



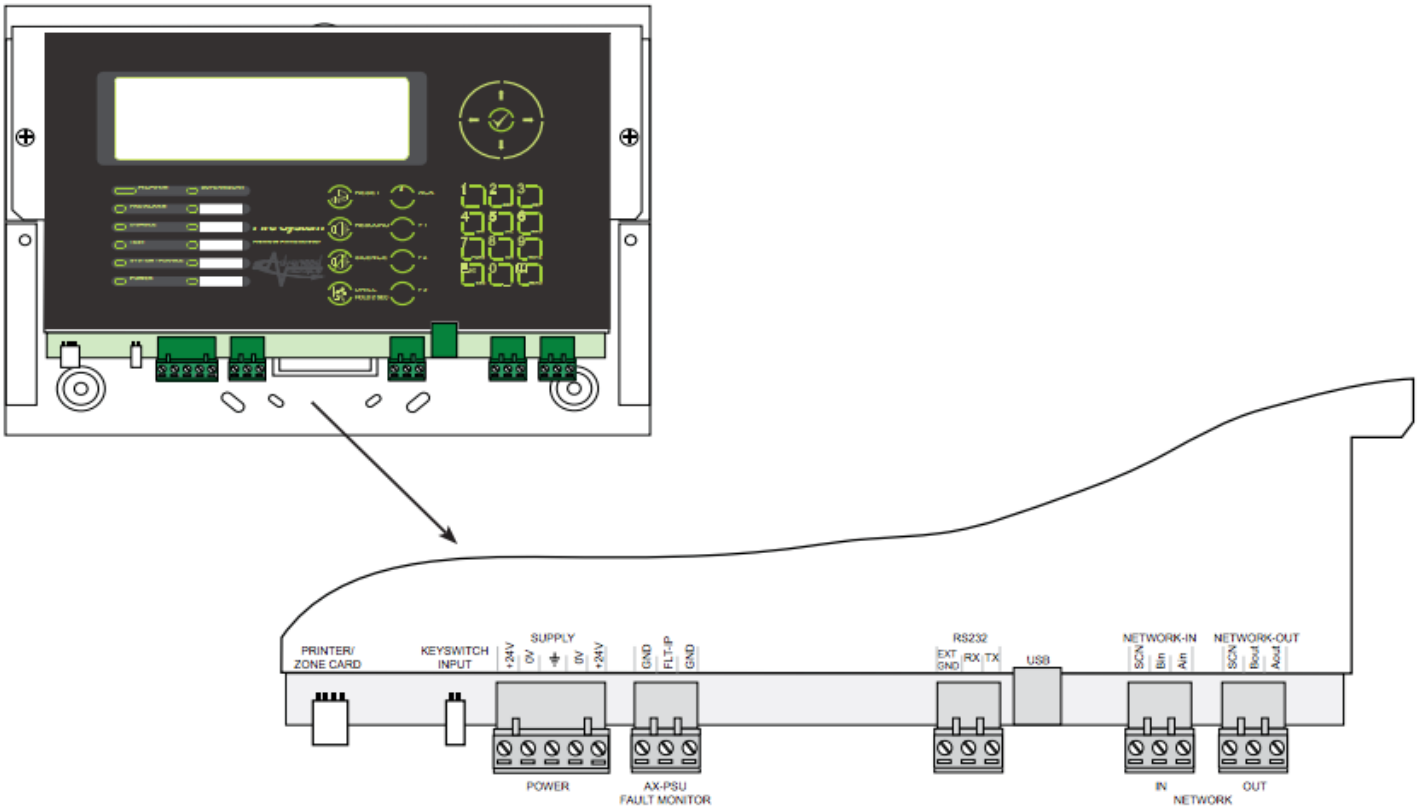
Features

- Advanced User Interface with Graphical LCD
- Vector Reporting of Events
- Full System Control or Annunciation Only
- Dedicated System & Navigation Keys
- AD-NeT-PluS Peer-to-Peer Network Compatible
- Compact, Attractive Appearance
- Backlit 240 x 64 Graphical LCD Display
- Style 4 or 7 Network Communications
- Multiple Language Adaptability
- Optional Access Enable Key-Switch
- 5000ft Maximum Cable Length
- Supervised External Trouble Input

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

Display	Backlit, 240 x 64 Graphical LCD
Input Voltage (DC)	24 VDC (Operating range 15-30 VDC)
Standby Current	78 mA (Backlight off)
Operating Current	140 mA (In alarm)
LED Indicators	Red - Alarm, Green - Power, 10 Yellow - Trouble, Supervisory & System Status Indicators
Keypad	Alphanumeric Keypad, Navigation Keys & On-Board Buzzer
Controls (AX-ANN-C Only)	Acknowledge, Reset, Silence, Resound & Drill
External Monitoring Input	Supervised Closed Contact
Serial Port	RS232
Enclosure	Steel, Four ½“ Knockouts, Rear Entry Double Gang Electrical Box Mount
Color	Red or Gray
Dimensions	8½“ H x 11¾“ W x 1¾“ D
Weight	4.5 lbs

Order Codes and Options

CAX-ANN-C*	Remote Graphical LCD Annunciator with Control (Style 4)
CAX-ANN-C/ST7*	Remote Graphical LCD Annunciator with Control (Style 7)
CAX-ANN-D*	Remote Graphical LCD Annunciator without Control (Style 4)
CAX-ANN-D/ST7*	Remote Graphical LCD Annunciator without Control (Style 7)
	CAX-ANN Options:
CAX-KSW	Optional Access Enable Keyswitch
CAXM-008	Trim-Ring for Semi-Flush Mounting
CAX-ANN-TP	Tamperproof Enclosure
CAX-ANN-WP	Weatherproof Enclosure (Comes with 24V heater)

* For gray enclosure, add the suffix “G” to the part number.

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Axis AX

Remote Annunciator Enclosures

Advanced offers two optional surface mount Remote Annunciator Enclosures, CAX-ANN-WP and CAX-ANN-TP. Each enclosure accommodates one AX-ANN-C or AX-ANN-D remote annunciator.

The CAX-ANN-WP is a weatherproof remote annunciator enclosure incorporating a heater and thermostat protecting the CAX-ANN-C and CAX-ANN-D remote annunciator from weather and outdoor elements, while the CAX-ANN-TP is a tamperproof remote annunciator enclosure protecting the CAX-ANN-C and CAX-ANN-D remote annunciator from vandalism and malicious damage.

In addition the CAX-ANN-WP incorporates a gasket, clear Lexan window and a corrosive resistant piano hinged drop-down door to prevent dust and moisture buildup on the remote annunciator.



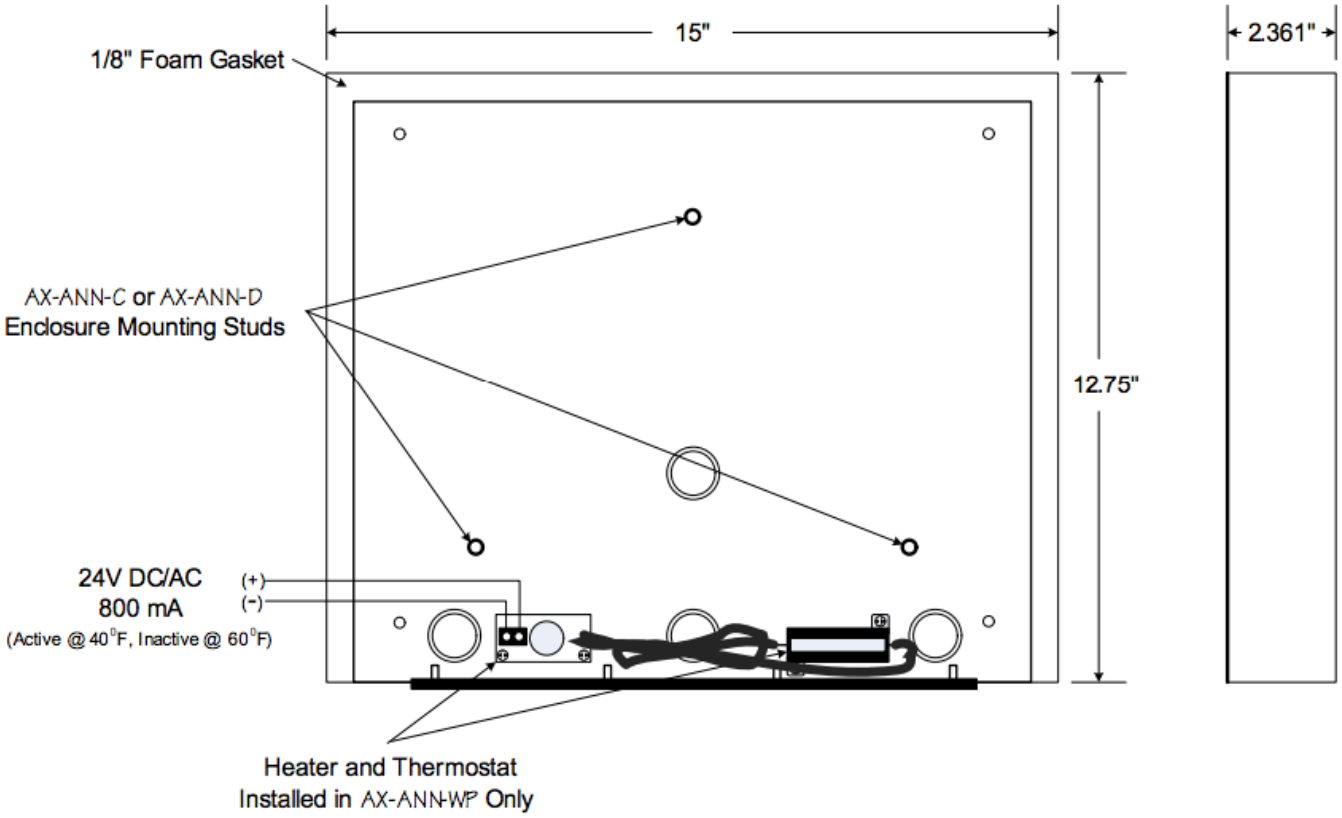
Features

- 16 Gauge Cold Rolled Steel Construction
- Houses one CAX-ANN-C or CAX-ANN-D Annunciator
- Full Length Piano Hinged Drop-Down Door
- Clear Lexan Window
- Tamperproof Version for Vandalism Protection
- Weatherproof Version Includes Built-In Heater
- CAT-30 Keyed to Match Fire Alarm Control Panel
- Powder Coated Red
- Dimensions 15”W x 12.75”H x 2.361”D
- Surface Mount

Specification

Electrical Characteristics	
CAX-ANN-WP Heater/Thermostat	24V DC/AC @ 800 mA (Active at 40ºF, inactive at 60ºF)
Keylock	CAT-30
Knockouts	Four ½“
Color	Red
Dimensions	15”W x 12.75”H x 2.361”D
Weight	9.0 lbs

Wiring Diagram



Order Codes and Options

CAX-ANN-TP	Tamperproof Enclosure (Less CAX-ANN-C or CAX-ANN-D annunciator)
CAX-ANN-WP	Weatherproof Enclosure with 24V heater/thermostat (Less CAX-ANN-C or CAX-ANN-D annunciator)

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Advanced

Axis AX

Switch LED Module

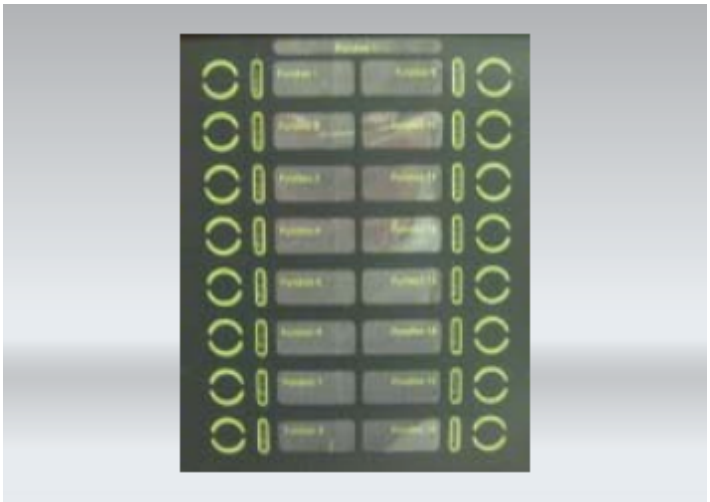
Providing superior flexibility and customization, the Switch LED Module (CAX-ASW-16) provides full control and annunciation of any individual input, output, zone, or group of devices on an Axis AX Series Intelligent Fire Alarm Control Panel or Axis AX Series network. The level of annunciation and control is totally controlled by the system programming and the installation requirements.

To meet this level of flexibility, the CAX-ASW-16 is a freely programmable I/O module, providing 16 switches and 48 LEDs. Switches and LEDs can be programmed as a set or independently, based on user requirements.

The CAX-ASW-16 is easily configurable utilizing the Advanced PC-NeT field configuration tool, which works in a Windows environment. Switches can be programmed to bypass (disable/enable) points, zones, and/or groups. They can also be programmed to turn On/Off relay points, NAC circuits, city connections, or they can be configured to provide complete HOA (Hand-Off-Auto) control functionality. When interfacing to Advanced audio system; controls can be configured for All Call, All Evac, All Alert, Select Zone/Area Paging, individual message selection, firefighter telephone selection, and much more.

LEDs are programmable for a number of status indications of points, zones and/or groups within the system, including alarm, supervisory, trouble, switch active, relay active, etc. In addition, LEDs can be programmed for primary and secondary status events, along with flash rates based on last known status/event (i.e: off, on steady, 1/2 second flash or 1 second flash).

Up to 16 CAX-ASW-16 modules can be connected to an Axis AX Series Intelligent Fire Alarm Control Panel, providing 256 switches and 768 LEDs. Switches and LEDs can be assigned to a single host Axis AX Series Intelligent Fire Alarm Control Panel or can be transmitted over the Advanced Ad-NeT-PluS peer-to-peer network to other network nodes (FACPs). In addition, other Axis AX Series Intelligent Fire Alarm Control Panels on the network can have their own set of CAX-ASW-16 modules.



Features

- Compact, Attractive Appearance
- Freely Programmable I/O Module
- 16 Switches and 48 LEDs
- Field Programmable with PC-NeT Tool
- Communicates via PBUS (RS-485 Network)
- Each Axis AX FACP Supports up to 16 Modules
- Simple DIP Switch Addressing
- Programmable Mass Notification Functionality
- Can be Installed Remotely from Axis AX FACP
- Easy Panel or Remote Installation/Configuration
- Supervised External Trouble Input
- Configurable On-Board Piezo (Buzzer)
- Multi-Module Daisy Chaining

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Specification

Input Voltage (DC)	24 VDC (Operating range 18-28 VDC)
Operating Current Quiescent Alarm All LEDs Active (On) One LED (Approximate)	 15 mA 53 mA 0.8 mA
Switches	16 Programmable Switches Push Button Toggle Latch/Non-Latch
LED Indicators	48 LEDs 16 Green 16 Yellow 16 Red
External Monitoring Input	Supervised Closed Contact
Piezo (Buzzer)	Field Configurable On/Off, Pulse/Steady
Screw Terminals	12 - 24 AWG
Daisy Chain Headers	10-Way IDC Ribbon Connector for Multi-Module Interconnect

Order Codes and Options

CAX-ASW-16	Switch LED Monitor

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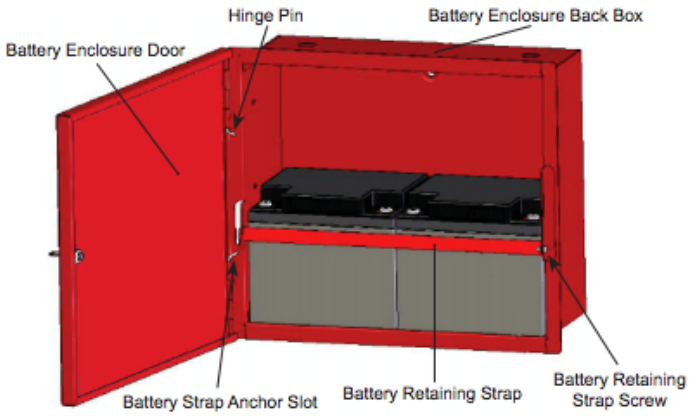
Advanced

Axis AX

Battery Enclosure

The CAX-BAT, Battery Enclosure, is designed to accommodate up to 40Ah batteries to support the Advanced Axis AX Series Intelligent Fire Alarm Control Panels. In addition an optional battery tray can be added to support multiple sets of batteries.

Note: The battery charging output of the Axis AX Series Intelligent Fire Alarm Control Panels (via CAX-CTL Base Card and CAX-PSU-6 power supplies) is temperature compensated to maintain the optimum charging voltage in accordance with the manufacturers' specifications. Housing the batteries in the external enclosure could lead to the batteries being charged at an incorrect voltage – to avoid this, ensure that the external battery enclosure is installed in an area with an equivalent environment to the installed location of the Axis AX Intelligent Fire Alarm Control Panel.



Features

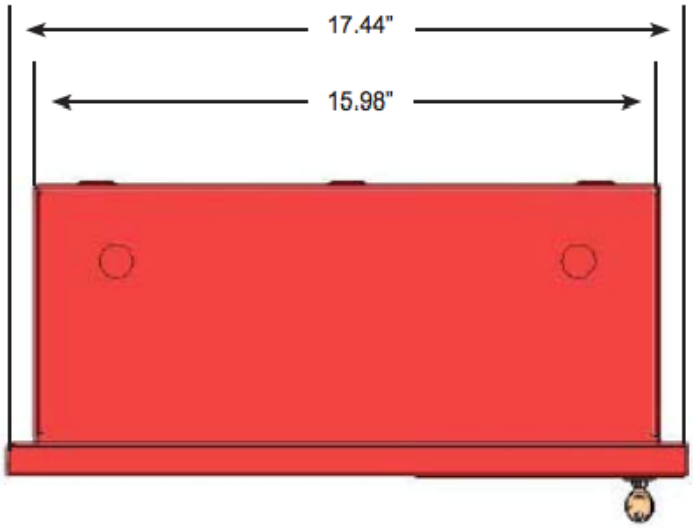
- Accommodates up to 40Ah Batteries
- CAT30 Keyed to match Axis AX FACP & Pull Stations
- Surface or Semi-Flush Mounting
- Integral Battery Retaining Strap
- 16 Gauge Steel Construction
- Easy to Install
- Available in Red or Gray Color
- Two 3/4" Knockouts
- Optional Battery Tray

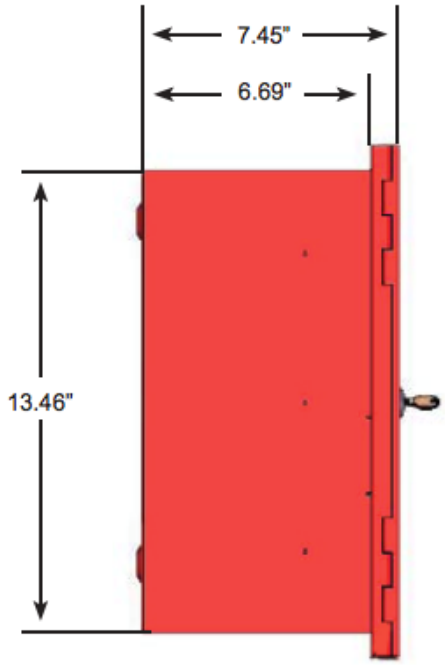
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Specification

Dimensions	15" H x 17½" W x 7½" D
Weight	20 lbs
Knockouts (2)	¾" (Two at the top of the enclosure)
Enclosure	16 AWG Zintec Sheet Steel
Color	Red RAL3002 Carmine Red





Order Codes and Options

CAX-BAT	Battery Enclosure
AX-BAT-TRAY	Battery Tray (Supports multiple sets of batteries)

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Axis AX

City Tie Module

The CAX-CTY, City Tie Module, is an interface module that allows the Axis AX Series Intelligent Fire Alarm Control Panel, via a dedicated notification appliance circuit, to control and monitor a Local Energy Masterbox. When properly connected, supervision of all wiring is provided along with all the necessary power to trip the Masterbox coil.

The compact designed CAX-CTY, connects to any Axis AX Series dedicated notification appliance circuit (CAX-LPD/CAX-NAC [internal panel NACs] or SLC loop external NAC module). The module may be installed in a standard electrical box with or without the SLC loop external NAC module.



Features

- ANSI/UL 864 Listed
- Supervised Masterbox Trip Circuitry
- Superior Transient Protection
- NAC Circuit Interface
- Compact, Design
- Standard Electrical Box Mount
- Supports DynamiX I/O Relationship Programming
- Optional Disconnect Switch w/LED Status

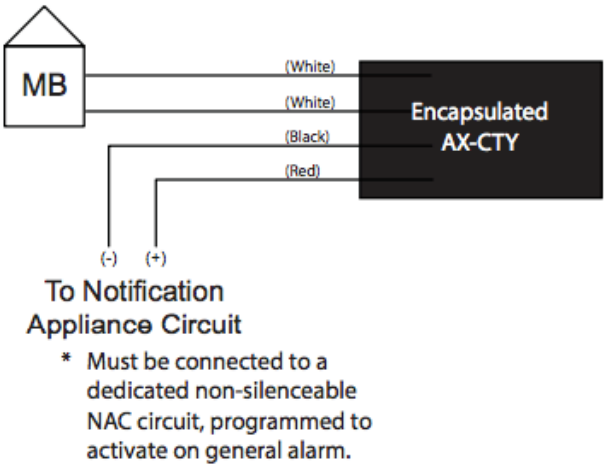
Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Specification

Operating Voltage	18 - 28 VDC
Operating Current Quiescent Alarm	 0 mA 0.5 A (Max) for less than 1/2 a Second
Operating Temperature	32ºF-120ºF (0ºC-48ºC)
Environment	Indoor, Dry
Humidity	10-95% (Non-condensing)
Dimensions	1/2 ” H x 1” W x 8 1 / 2 ” L (Includes wire length)
Weight	0.8 oz

Wiring Diagram



Order Codes and Options

CAX-CTY	City Tie Module

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Advanced

Axis AX

Conventional Zone Module

The CAX-CZM, is an Advanced Conventional Zone Module that can be monitored and controlled by an Axis AX Series fire alarm control panel (P-BUS, “Peripheral Bus”, operating mode), or by any ANSI/UL 864 Listed fire alarm control panel (“Standalone” operating mode).

The CAX-CZM module provides monitoring of up to eight (8) Class B conventional zone circuits with programmable end-of-line resistor (6.8K, 4.7K, or 3.9K), or four (4) Class A conventional zone circuits. In addition, each CAX-CZM module has three (3) Form C relay contacts defaulted in “Standalone” operating mode as alarm, trouble, and if required, earth/ground fault condition on a per module basis. If utilized in the “Peripheral Bus” mode of operation, these three (3) Form C relay contacts are freely programmable for any system functionality.

When connecting the CAX-CZM module(s) to an Axis AX Series Intelligent Fire Alarm Control Panel (“Peripheral Bus” operating mode) up to sixteen (16) CAX-CZM modules can be supported. By supporting sixteen (16) CAX-CZM modules an Axis AX Series Intelligent Fire Alarm Control Panel can accommodate up to 128 Class B (64 Class A) conventional zones and 48 (Form C) relay contacts. When utilized in the “Peripheral Bus” mode of operation, all zone and relay functionality is fully field programmable using the Advanced powerful ‘DynamiX’ cause and effect rules of its PC-NeT field configuration program.

In the “Peripheral Bus” or “Standalone” operating modes, the AX-CZM module gets powered from either the Axis AX Series Intelligent Fire Alarm Control Panel, Host fire alarm control panel or by an ANSI/UL Listed 24 VDC nominal power supply. In “Standalone” mode of operation the Host (ANSI/UL 864 Listed) fire alarm control panel would monitor the single alarm, trouble (alarm and trouble contacts are common for all eight zones) and, if required, earth/ground fault contacts for AX-CZM module status.

Each CAX-CZM module makes use of Advanced’ Software Monitoring And Real Time Power Management (SMART-PM) techniques in order to minimize current requirements under alarm conditions across multiple zones. This SMART-PM technology results in lower power consumption, and increased fire alarm control panel battery life. Utilizing the SMART-PM information, each zone circuit is capable of indicating a trouble condition when a 2mA load is exceeded (i.e. too many conventional smoke detectors added to the circuit).



Features

- Axis AX Series P-BUS or Standalone Operation
- Eight Class B or Four Class A Zone Circuits
- Programmable Class B End-of-Line
- P-BUS Operation Supports Sixteen CAX-CZM’s
- Three Form “C” Relay Contacts
- Advanced Power Management (SMARTPM)
- Programmable End-of-Line 6.8K, 4.7K or 3.9K
- 50 Ω Initiating Circuit Resistance
- Ideal for Retrofit Applications
- Extensive 2-Wire Detector Compatibility
- Conventional Detector and Contact Device Monitoring
- Programmable Alarm Verification
- P-BUS Supervised Remote Power Supply Monitoring
- 28 Zones and 48 Relays per Axis AX Series Panel
- Removable Terminal Blocks
- Programmable Latching/Non-Latching Input Types

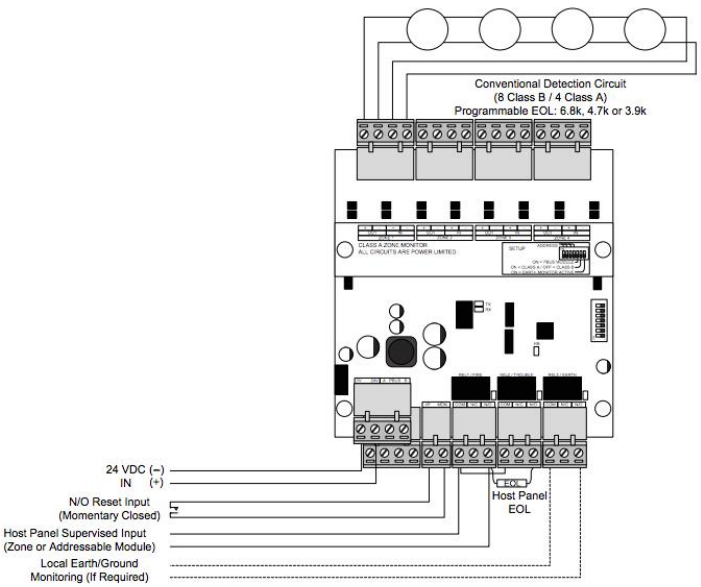
Listings and Approvals

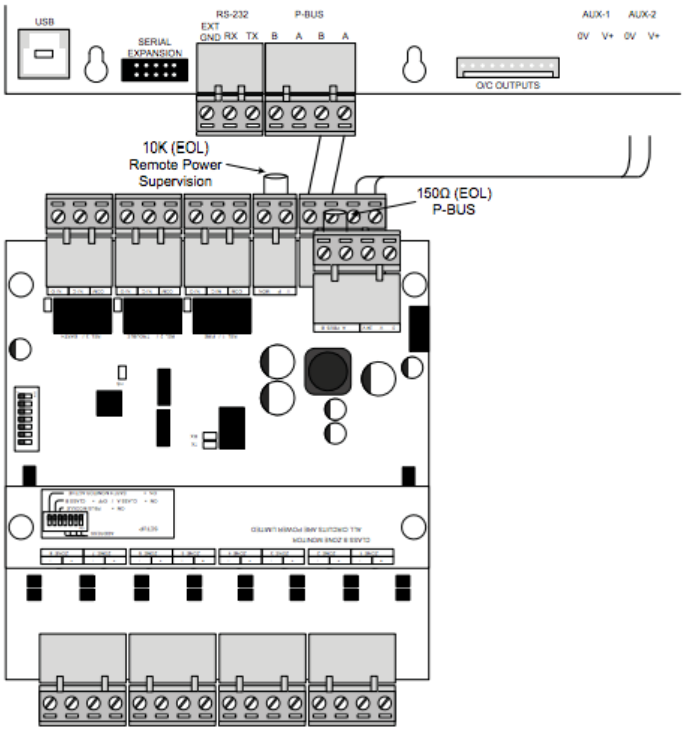
- ETL ANSI/UL 864 Listed: 101564744NYM-001
- UL UOXX (Control Unit Accessory, System) Listed: S2446
- CSFM Approved: 7165-1713:0101

Specification

Operating Voltage	24 VDC
Operating Current	
Quiescent	110mA (8 Zones = Min Load)
Minimum	120mA (8 Zones = Max Load, Relays Off)
Maximum	135mA (8 Zones = Max Load, Relays On)
Alarm	At Least 318mA (8 Zones = Max Load, Relays On)
Relays	
Relay 1	"Standalone" Common Alarm
Relay 2	"Standalone" Common Trouble (Fail-Safe)
Relay 3	"Standalone" Earth/Ground Fault
Ratings	1A @ 30 VDC
LEDs	
Red	Relay 1 - "Standalone" Alarm
Green	Relay 2 - "Standalone" Normal
Yellow	Relay 3 - "Standalone" Earth/Ground
Resistors	
Class B EOL	6.8K 4.7K or 3.9K
P-BUS Operation	10K
Remote Power	150K
End-of-Line	
Environment	Indoor, Dry
Operating Temperature	32°F - 120°F (0°C - 49°C)
Humidity	93% (Non-Condensing)
Weight	5.3 oz
Dimension	4.2" X 5"

Wiring Diagrams





Order Codes and Options

CAX-CZM	Conventional Zone Module
AXM-009*	Optional Enclosure (Supports 2 AX-CZM's)

*For grayenclosure, add the suffix "G" to the part number.

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Axis AX

General Purpose Enclosure

The Advanced General Purpose Enclosure (AX-GCAB) provides an economical surface mount enclosure for mounting any optional Advanced products (i.e. AXI/O-48, AX-CZM, etc).

The AX-GCAB is fabricated from 16 gauge steel with a durable, red or gray textured powder coat finish. It features a lift-a-way hinged door for ease of access and maintenance and is key locked (CAT 30) to match other Advanced products (FACP, pull stations, etc).

Each AX-GCAB enclosure includes a 20 gauge steel back plate which incorporates pre-drilled holes for mounting optional products. Addition holes can be drilled to customize configurations for installation of other equipment.



Features

- Compact, Attractive Appearance
- Easy to Install
- Keyed (CAT30) to match Axis AX Series FACP
- Locked Hinged Front Door Access
- Surface Mount
- 16 Gauge Steel Construction
- 20 Gauge Steel Back Plate
- Available in Red or Gray Color
- Five (5) Knockout Clusters (1/2”,3/4”, 1”, 1 1/2” and 2”)
- Integral Threaded Grounding Stud and Lug.

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Order Codes and Options

AX-GCAB	General Purpose Enclosure

* For gray enclosure, add the suffix “G” to the part number.

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Advanced

Axis AX

Switch/LED Driver Module

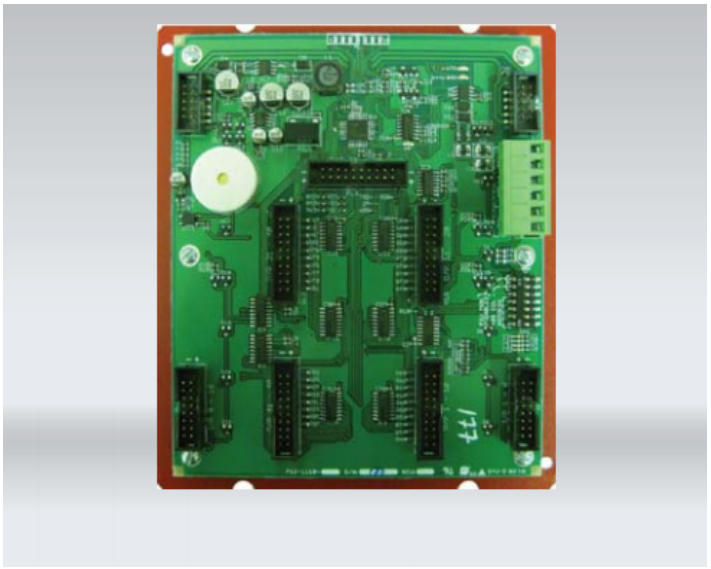
Providing superior flexibility and customization, the Switch/LED Driver Module (CAX-I/O-48) provides full control and annunciation of any individual input, output, zone, or group of devices on an Axis AX Series Intelligent Fire Alarm Control Panel or Axis AX Series network. The level of annunciation and control is totally controlled by the system programming and the installation requirements.

To meet this level of flexibility, the CAX-I/O-48 is a freely programmable I/O module, providing 16 switch inputs and 48 LED driver outputs. Switch inputs and LED driver outputs can be completely field programmable based on user requirements.

The CAX-I/O-48 is easily configurable utilizing the Advanced PC-NeT field configuration tool, which works in a Windows environment. Switch inputs can be programmed to bypass (disable/enable) points, zones, and/or groups. They can also be programmed to turn On/Off relay points, NAC circuits, city connections, or they can be configured to provide complete HOA (Hand-Off-Auto) control functionality. When interfacing to Listed annunciators each I/O can be configured based on annunciator requirements.

LED driver outputs are programmable for a number of status indications of points, zones and/or groups within the system, including alarm, supervisory, trouble, switch active, relay active, etc. In addition, LED driver outputs can be programmed for primary and secondary status events, along with flash rates based on last known status/event (i.e: off, on steady, 1/2 second flash or 1 second flash).

Up to 16 CAX-I/O-48 modules can be connected to an Axis AX Series Intelligent Fire Alarm Control Panel, providing 256 switch inputs and 768 LED driver outputs. Switch inputs and LED driver outputs can be assigned to a single Axis AX Series Intelligent Fire Alarm Control Panel or can be transmitted over the Advanced Ad-NeT-PluS peer-to-peer network to other network nodes (FACPs). In addition, other Axis AX Series Intelligent Fire Alarm Control Panels on the network can have their own set of CAX-I/O-48 modules.



Features

- Ideal for Interfacing to Custom Graphic Annunciators
- Freely Programmable Driver Module
- 16 Switch Inputs and 48 LED Driver Outputs
- Field Programmable with PC-NeT Tool
- Communicates via PBUS (RS-485 Network)
- Adaptable to many Listed Annunciators
- Each Axis AX FACP Supports up to 16 Modules
- Compact, Attractive Appearance
- Simple DIP Switch Addressing
- Can be Installed Remotely from Axis AX FACP
- Supervised External Trouble Input
- Configurable On-Board Piezo (Buzzer)
- Multi-Module Daisy Chaining

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram

Specification

Input Voltage (DC)	24 VDC (Operating range 18-28 VDC)
Operating Current Quiescent	11mA – All Driver Outputs Off

Alarm One Drive Output Active	50mA – All Driver Outputs Active .1042mA
Switches	16 Programmable Switch Inputs
LED Driver Outputs	48
External Monitoring Input	Supervised Closed Contact
Piezo (Buzzer)	Field Configurable On/Off, Pulse/Steady
Screw Terminals	12 - 24 AWG
Daisy Chain Headers	10-Way IDC Ribbon Connector for Multi-Module Interconnect

Order Codes and Options

CAX-I/O-48	Switch/LED Driver Module

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LED Modules

As a member of the Axis AX Switch LED Module family, the Advanced LED Modules consist of three (3) different types of modules that provide tremendous system annunciation and flexibility. Each module is fully compatible with the Axis AX Series Intelligent Fire Alarm Control Panels, “V” Series Integrated Audio Panels and Axis AX Command Center Panels. Each Axis AX Series panel can support up to sixteen (16) Axis AX Switch LED Modules in any combination.

The three (3) different types of LED Modules are the CAX-LED16RY, CAX-LED32R and CAX-LED32Y.

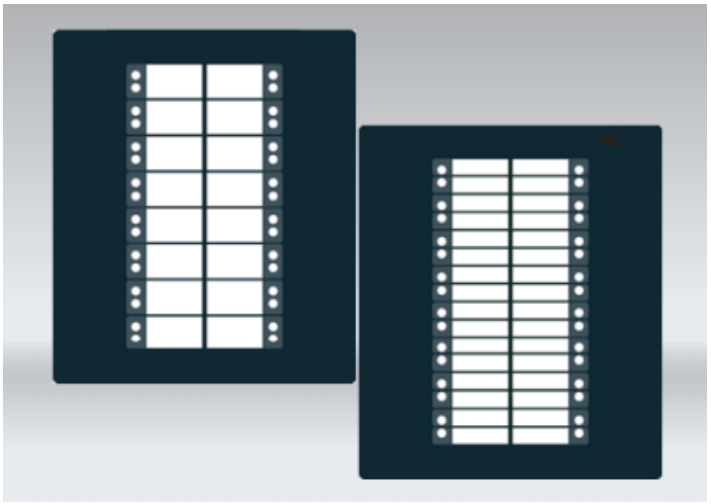
The CAX-LED16RY consists of sixteen (16) red and sixteen (16) yellow LEDs. These are typically used to annunciate the alarm and trouble status of up to 16 individual zones or areas.

The CAX-LED32R consists of thirty-two (32) red LEDs. These are typically used to annunciate the alarm status of up to 32 zones or areas.

The CAX-LED32Y consists of thirty-two (32) yellow LEDs. These are typically used to annunciate the trouble of up to 32 zones or areas

In addition to the above mentioned zone or area annunciation, each LED can be mapped or assigned to any system function in support of fire alarm, system status, non-fire conditions, warnings or mass notification events. Each LED can also be further programmed for primary and secondary functions with flash rates based on last known status/event (off, on steady, 1/2 second flash or 1 second flash).

LED Modules can be installed in any available single aperture location of an Axis AX Series Intelligent Fire Alarm Control Panel, “V” Series Integrated Audio Panel or Axis AX Command Center Panel. In addition, LED Modules can be mounted remotely from the main fire alarm control panel in one of the Advanced attractive remote annunciation enclosures (CAX-LZA-CAB1, CAX-LZA-CAB2 or within a large selection of CAX-LOC enclosures).



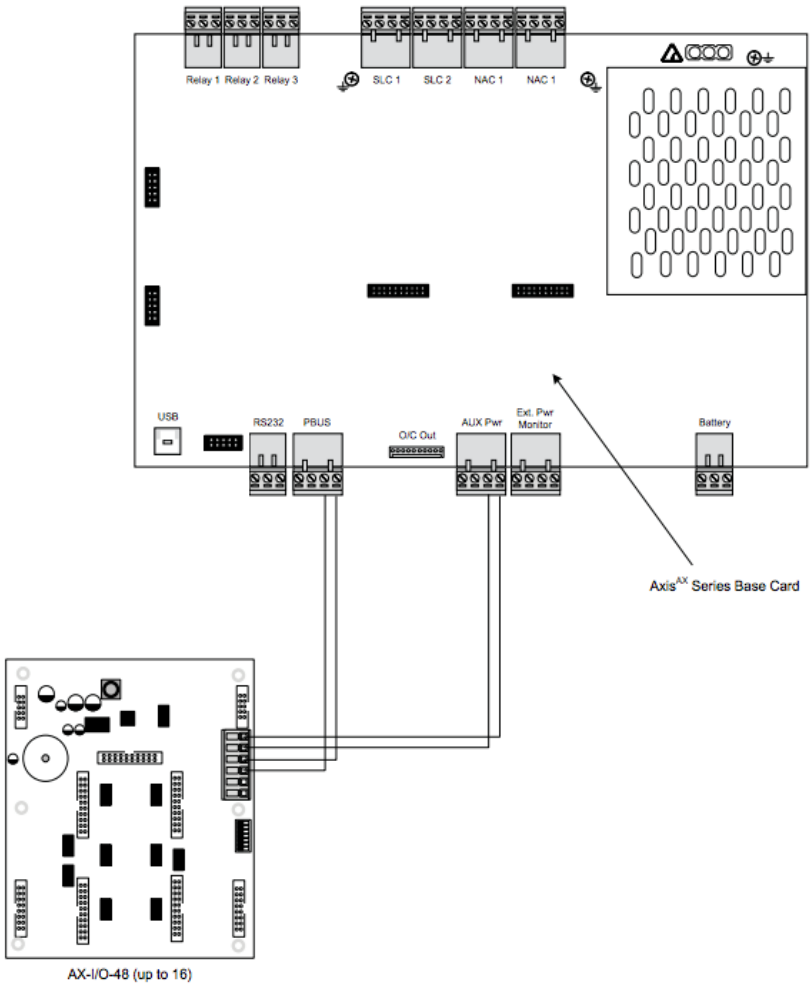
Features

- Compact, Attractive Appearance
- Freely Programmable LEDs
- Up to 16 Modules per Axis AX FACP
- Field Programmable with PC-NeT Tool
- Communicates via PBUS (RS-485 Network)
- Local Axis AX FACP or Remote Mounting Options
- Simple DIP Switch Addressing
- Large Customer Slide-in Label Area
- Supervised External Trouble Input
- Configurable On-Board Piezo (Buzzer)
- Multi-Module Daisy Chaining

Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001

Wiring Diagram



Specification

Input Voltage (DC)	24 VDC (Operating range 18-28 VDC)
Operating Current Quiescent Active All LEDs Active (on) One LED (approximate)	 15 mA 41 mA 0.8 mA
LED Indicators CAX-LED16RY CAX-LED32R CAX-LED32Y	 16 Red and 16 Yellow 32 Red 32 Yellow
External Monitoring Input	Supervised Closed Contact
Piezo (Buzzer)	Field Configurable On/Off, Pulse/Steady
Screw Terminals	12 - 24 AWG
Daisy Chain Headers	10-Way IDC Ribbon Connector for Multi-Module Interconnect

Order Codes and Options

CAX-LED16RY	LED Module Incorporating 16 Red and 16 Yellow LEDs
CAX-LED32R	LED Module Incorporating 32 Red LEDs
CAX-LED32Y	LED Module Incorporating 32 Yellow LEDs

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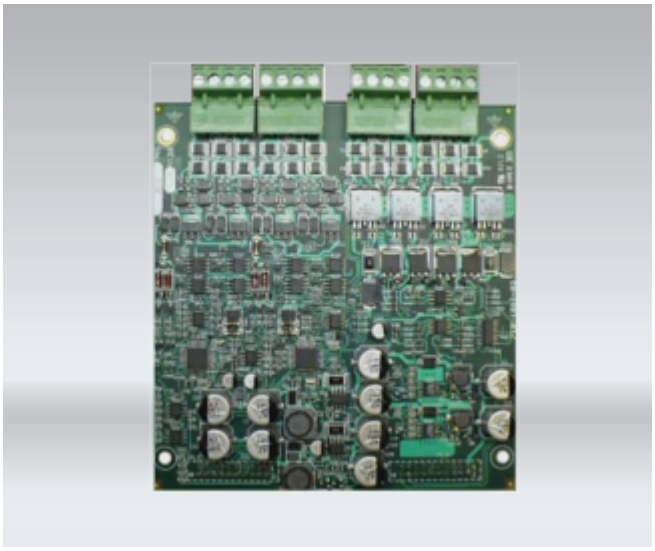
Axis AX

AX-LPD Module

Advanced CAX-LPD module provides SLC and NAC circuit expansion of an existing CAX-CTL-2 Intelligent Fire Alarm Control Panel. The module provides two Style 4 or Style 6/7 Signaling Line Circuits (SLCs) and two notification appliance circuits (NACs). Communications to field devices attached to the SLCs is via an advanced, 100% digital protocol with advantages of being highly immune to noisy environments and will operate over non-shielded cable without causing interference problems with sensitive electronic equipment. The NAC circuits are filtered and regulated, capable of being wired Class A or B, each rated 2 Amp @ 24 VDC. Due to exceptional regulation and high rating, the NAC outputs provide compatibility with virtually any Listed notification appliance.

Each SLC circuit supports up to 126 analog addressable devices (any combination of intelligent detectors, input and/or output devices, including loop powered technology devices), for a total expansion capacity of 252 points. In addition, the SLC circuits support the Advanced unique sub-addressing of various input and/or output devices, expanding system capacities further.

Advanced CAX-NAC module provides NAC circuit expansion of an existing CAX-CTL-2 Intelligent Fire Alarm Control Panel. The module provides two notification appliance circuits (NACs). The NAC circuits are filtered and regulated, capable of being wired Class A or B, each rated 2 Amp @ 24 VDC. Due to exceptional regulation and high rating, the NAC outputs provide compatibility with virtually any Listed notification appliance.



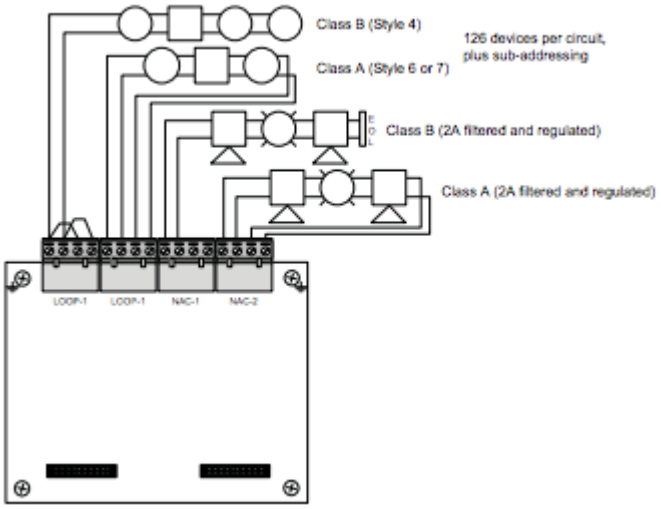
Features

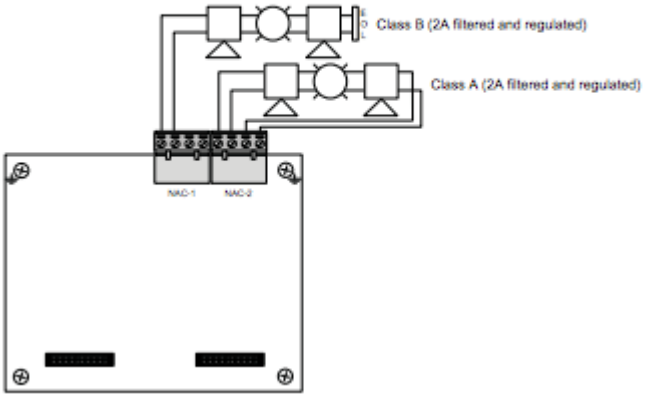
- 2 SLC/NAC or 2 NAC Expansion
- “DynamiX” I/O Relationship Programming
- Multi-Pattern & Two-Stage NAC Control
- 252 Analog Addressable Point Expansion
- Automatic Detector Testing with Maintenance Alert
- Automatic Drift Compensation per Detector
- Alarm Verification and PAS
- Style 4, 6 & 7 SLC Operation (126 devices per SLC)
- SLC’s Support Loop Powered Technology
- Class A or B NAC Circuits
- Multi-Pattern and Two-Stage NAC Circuit Control
- Synchronized Audibles and Visuals (Panel or Network Wide)
- Programmable Silenceable & Non-Silenceable NACs
- Voltage Regulated NACs (Compatible with many Listed NAC devices)
- “Auto-Learn/Loop Detection” Programming

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM- 001

Wiring Diagrams





Specification

SLC Loop	
Class (Style)	Class A or B (Style 4, 6 or 7)
Voltage	24 VDC
Minimum Return Voltage	17 VDC
Current	.5A
NAC Circuits	
Class (Style)	Class A or B
Voltage	24 VDC (Filtered and regulated)
Minimum Return Voltage	16 VDC
Current	2A (each)
Maximum Voltage Drop	3 VDC
Maximum Line Impedance	1.5 Ω
End of Line Resistor	10K
Environment	Indoor. Dry
Operating Temperature	32ºF-120ºF (0ºC-48ºC)
Humidity	10-95% (Non-condensing)
Dimensions	47 / 8 ” W x 51 / 2 “ L x 11 / 2 ” D
Weight	4.5 oz

Order Codes and Options

CAX-LPD	2-Way SLC/NAC
CAX-NAC	2-Way NAC

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Advanced

Axis AX

Local Zone Annunciator Enclosures

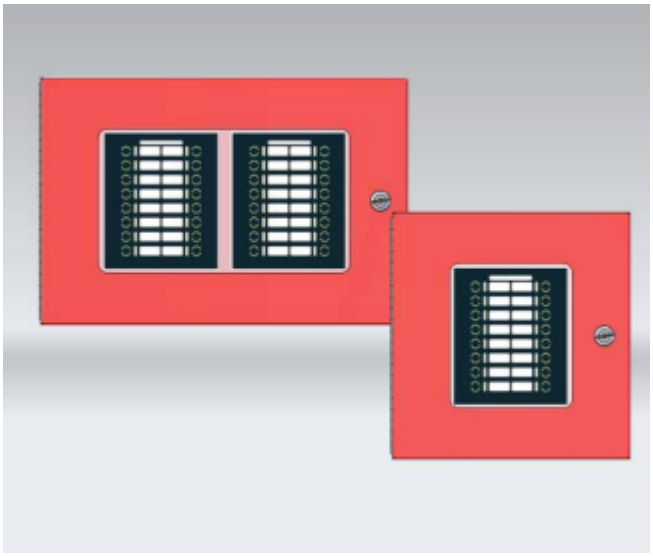
Often fire alarm applications call for LED type annunciation, and in some cases, control functionality located remotely from the fire alarm control panel. In these circumstances, it is essential that the annunciator be fully supervised, adequately protected in a locked enclosure and be attractive in appearance. With these requirements in mind, Advanced developed its CAX-LZACAB series of enclosures

The CAX-LZA-CAB series enclosures provide superior flexibility and customization to an Axis AX Series Intelligent Fire Alarm Control Panel installation, the enclosures (CAX-LZA-CAB1 and CAX-LZA-CAB2) provide for remote usage of Advanced switch LED modules, CAX-ASW-16, CAX-I/O-48, CAX-LED16RY, CAX-LED32R and CAX-LED32Y. Available in two (2) configurations, cabinet styles 1 and 2, and four (4) model types for gray and red color, the AX-LZA-CAB series enclosures can accommodate any remote LED annunciation and/or control requirement.

The CAX-LZA-CAB1 Local Zone Annunciator Enclosure is designed to hold a single Advanced switch LED module.

The CAX-LZA-CAB2 Local Zone Annunciator Enclosure is designed to hold up to two Advanced switch LED modules. Within this enclosure, modules can be mixed and matched to suit the installation application.

The CAX-LZA-CAB1 and CAX-LZA-CAB2 enclosures are designed to be surface or semi-flush mounted with optional trimming (CAX-LZA-CAB1-TR or CAX-LZA-CAB2- TR). In addition, the enclosures can also be mounted to a 4” double gang electrical box and are available in either red or gray color.

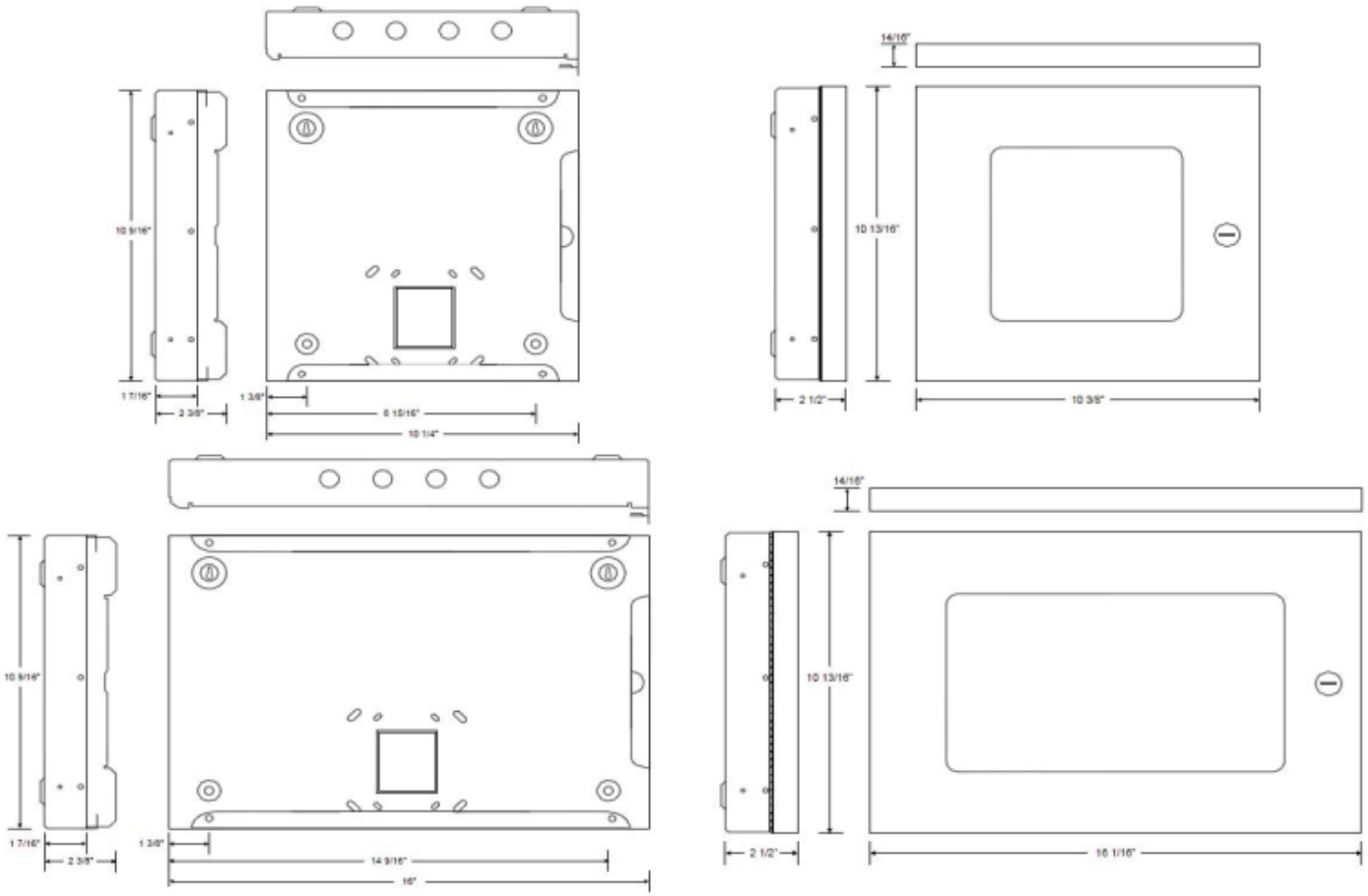


Features

- Compact, Attractive Appearance
- Keyed (CAT30) to match Axis AX Series FACP
- Designed for Remote System Annunciation & Control
- Locked Hinged Front Door Access
- Easy to Install
- Surface or Semi-Flush Mounting
- 16 Gauge Steel Construction
- Available in Red or Gray Color
- Four (4) 5/8” Knockouts
- Optional 4” Double Gang Electrical Box Mounting

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001



Order Codes and Options

CAX-LZA-CAB1	Single Aperture, Local Zone Annunciator Enclosure
CAX-LZA-CAB2	Dual Aperture, Local Zone Annunciator Enclosure
	Options
CAX-LZA-CAB1-TR	Semi-Flush Mount, Local Zone Annunciator CAB1, Trim Ring
CAX-LZA-CAB2-TR	Semi-Flush Mount, Local Zone Annunciator CAB2, Trim Ring

* For gray enclosure, add the suffix “G” to the part number.

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Serial to Fiber Optic Converter

The CAX-MOXA, Serial to Fiber Optic Converter, allows Advanced Axis AX Series AD-NeT-PluS network (peer-to-peer network) installations to be converted from copper wiring to fiber optic cabling.

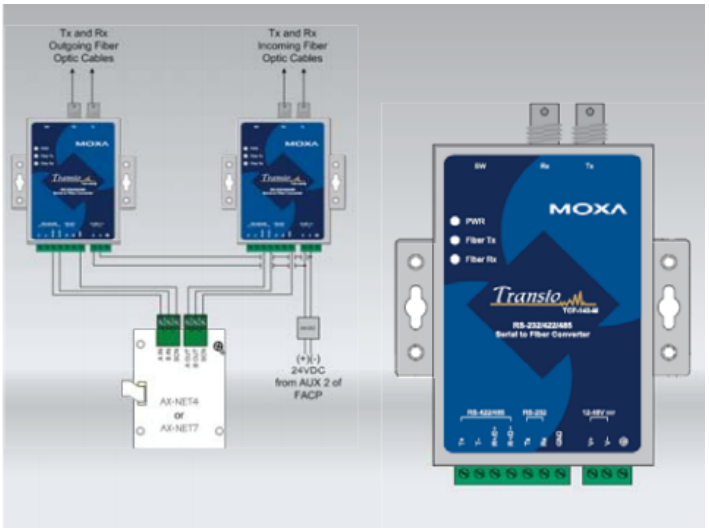
By converting AD-NeTPluS networks from copper wiring to fiber optic cabling a customer gains immunity from electrical interference, immunity from adverse temperature and moisture conditions, and a communications path/length that exceeds copper wiring distances.

The CAX-MOXA is mounted in its own enclosure (CAX-GCAB) adjacent to the Axis AX Series AD-NeT-PluS node (i.e. Intelligent Fire Alarm Control Panel, Annunciator, CAX-LAN [ipGateway] or any other network node) that it is going to be converting to fiber optic cabling.

A total of two CAX-MOXA serial to fiber converters will be required for the incoming network and outgoing network wiring of each node for Style 7 configurations. However, in a Style 4 network configuration only one CAX-MOXA serial to fiber converter is required at the beginning of the network and one at the end of the network, with all nodes in between requiring two.

By utilizing CAX-MOXA, Serial to Fiber Optic Converters, installation cabling can be a mixture of both copper and fiber optic cabling. This allows the use of the fiber optics only in those areas requiring fiber optic communications paths.

Each set of CAX-MOXA's get connected to the AD-NeTPluS node 24 VDC non-resettable power via an CAX-DCI isolation power module.



Features

- Converts Copper Wiring to Fibre Optic Cable
- Increased Immunity from Electrical Interference
- Supports Style 4 and 7 Configurations
- Increases Network Distances
- On-Board Status LEDs
- Allows AD-NeT-PluS to Support Fibre Optic Cabling
- Entire Installations or a Mixture of Copper & Fiber Optic Cabling
- Easy to Install and Maintain
- Removable Terminal Blocks
- ST Fiber Optic Connections

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

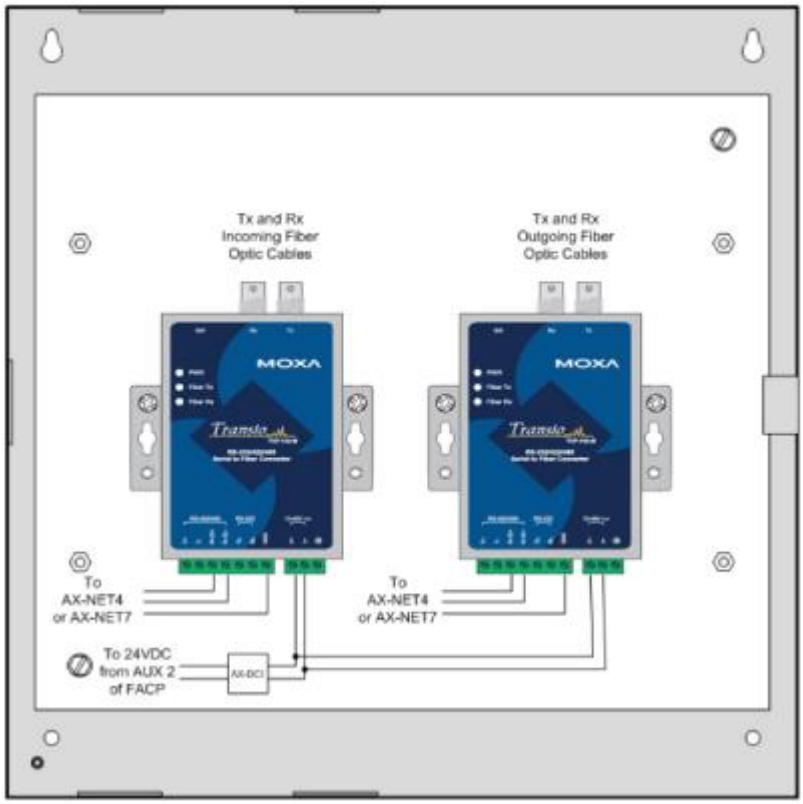
Specification

Operating Voltage	12 - 48 VDC
Operating Current	17 mA
Operating Temperature	32-120°F (0-48°C)
Environment	Indoor, Dry
Fiber Communications Connector Type Distance Support Cable Wavelength TX Output RX Sensitivity Transmission	 ST 5 km 50/125, 62.5/125 or 100/140 ìm 850 nm > -5 dBm -20 dBm Half or Full Duplex
Humidity	10-95% (Non-condensing)
Dimensions	3.95”L x 2.64”W x .87”H
Weight	4.5 oz
CAX-DCI	
Operating Voltage	18 - 30 VDC
Wiring Input Current Output Current	Power Limited with Auto-Recovery Short Circuit Protection 0.11 Amp 0.083 Amp (Maximum draw)
CAX-GCAB	
Environment	Indoor, Dry
Humidity	10-95% (Non-condensing)
Dimensions	14”H x 14”W x 3 1/4”D
Weight	11 lb 4 oz

Order Codes and Options

CAX-MOXA	Serial to Fiber Optic Converter
CAX-DCI	DC Power Isolator Module
CAX-GCAB	General Purpose UL Listed Enclosure with Universal Mounting Plate

Wiring Diagram



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AD-NeT-PluS Network Modules

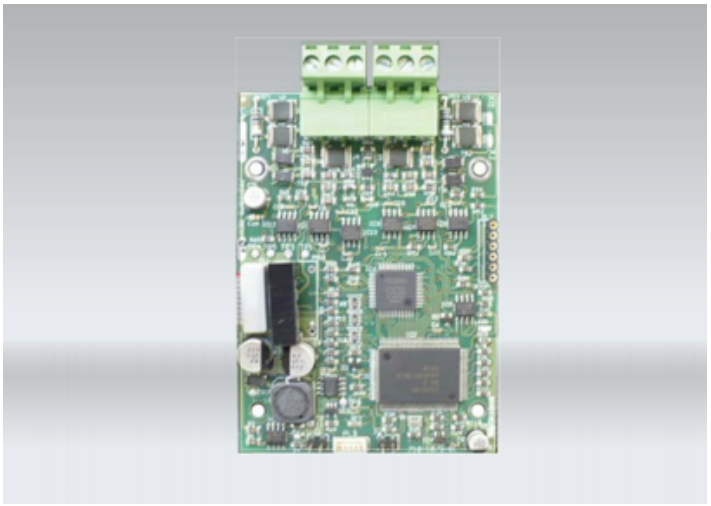
Providing superior flexibility and customization to an Axis AX Series installation, the CAX-NET4 and CAX-NET7 network modules provide both the benefits of distributed intelligence and reduced installation costs while meeting the smallest to largest network demands.

The network can be fully fault tolerant to single opens or short circuits by utilizing the Advanced CAX-NET7 module. In addition, ground fault monitoring is standard with either style network.

The Advanced network, AD-NeT-PluS, operates as a true peer-to-peer network with full cross node reporting. The network allows information from any input or output device to be passed over the network and be displayed on any Axis AX Series Intelligent Fire Alarm Control Panel or Remote Graphical LCD Annunciator. Details include alarm, mass notification, supervisory, warning, trouble, control events and disabled zone/points as well as analog values, test instructions and status information.

For more complex networked systems, the Advanced Windows based PC-NeT configuration software allows sector based programming for such functions as drill, acknowledge, silence, resound and reset control keys. All panels within the same sector can share common controls and each fire alarm panel or remote annunciator can also be programmed to show specific network information on a zone/point basis.

The level of information displayed and the control capabilities of each network node is fully field programmable. Individual nodes can be configured to vector information and control, allowing specific nodes to be dedicated to alarms, mass notifications, troubles, supervisory or other status events.



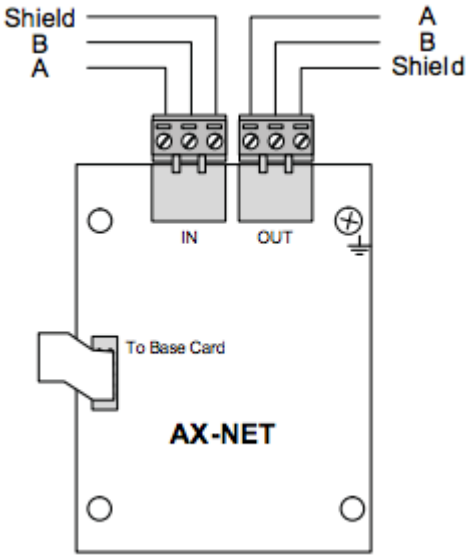
Features

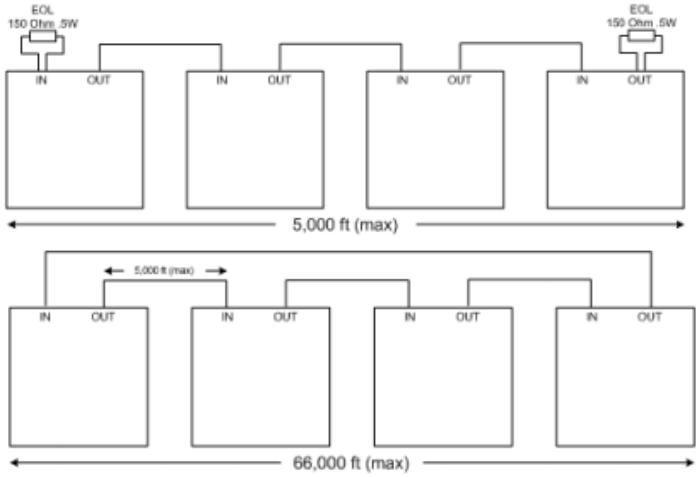
- Style 4 or 7 Network Communicators
- AD-NeT-PluS Peer-to-Peer Network
- Fully Fault Tolerant Network
- Up to 5000ft Between Nodes
- Full Network Analysis from any Node
- 200 Nodes Per Network
- Up to 1000 Shared Network Zones
- Uncomplicated and Simplistic Installation

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagrams





Specification

Operating Current (CAX-NET4 & 7) Quiescent Alarm	 62 mA 62 mA
Environment	Indoor, Dry
Operating Temperature	32ºF-120° F (0ºC-48° C)
Humidity	10-95% (Non-condensing)
Dimensions CAX-NET4 & CAX-NET7	 3½“ H x x 2½“ W x ½” D
Weight CAX-NET4 & CAX-NET7	 1.7 oz
Nodes/Distances CAX-NET4 CAX-NET7	 32 Nodes, 5000ft Maximum (EOL 150 Ohm .5 Watt [both ends]) 200 Nodes, 5000ft Between Nodes, 66000ft maximum
Wiring	Twisted pair 18 - 20 AWG Minimum Recommended Twisted Shielded (Belden 8760, 8762)

Ordering Codes and Options

CAX-NET4	Style 4 Network Module
CAX-NET7	Style 7 Network Module
712-1049	Remote Annunciator Style 7 Module Replacement

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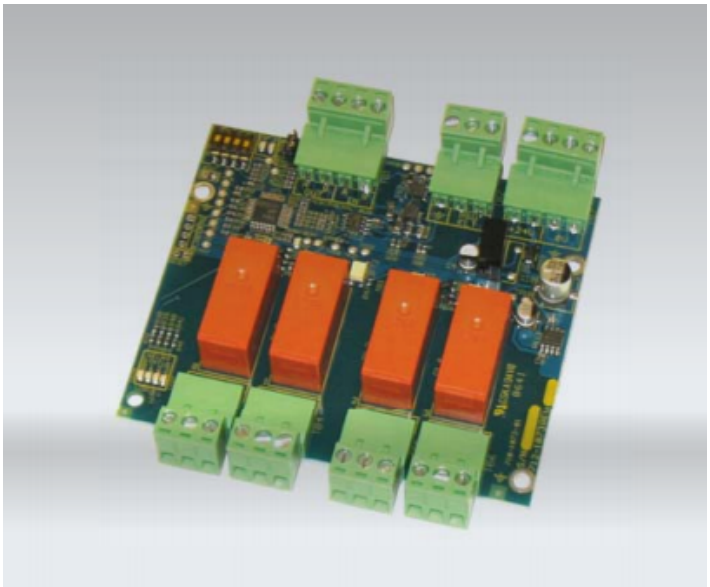
Axis AX

4 Point Relay Card

The CAX-RL4, 4 Point Relay Card, is an optional PBUS (RS485 network) peripheral module that provides four individually programmable relay outputs from an Axis AX Series Intelligent Fire Alarm Control Panel. Up to sixteen (16) CAX-RL4 cards can be connected to a single Axis AX Series Intelligent Fire Alarm Control Panel providing a maximum of 64 relay outputs. Each output of the CAX-RL4 is fully field programmable using the Advanced powerful 'DynamiX' cause and effect rules of its PC-NeT field configuration program.

The CAX-RL4, 4 Point Relay Card, can be installed in two different configurations; one CAX-RL4 can be mounted within the Axis AX Series Intelligent Fire Alarm Control Panel enclosure (if mounting location is available) or two (2) CAX-RL4 cards can be mounted in a separate enclosure.

Each CAX-RL4 card has on-board LEDs for the indication of individual relay activation, PBUS (RS-485 network) communications and microprocessor heartbeat.



Features

- Field Programmable Relay Card
- 16 Cards per Axis AX Series FACP Peripheral Bus
- Powerful DynamiX Cause & Effect Programming
- 120 VAC @ 5 Amp Rating
- Dedicated Power Supply Monitored Input
- 64 Relays per Axis AX Series FACP Peripheral Bus
- Removable Field Wiring Terminal Blocks

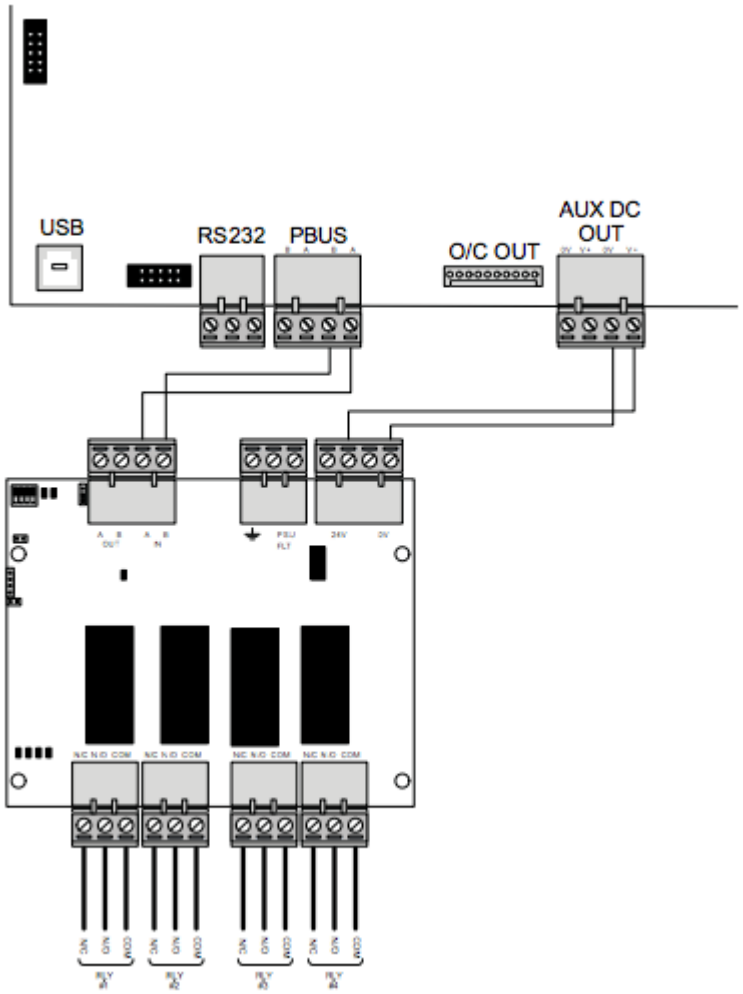
Listings and Approvals

- ETL ANSI/UL 864 Listed: 101564744NYM-001
- CSFM Approved: 7165-1713: 0101
- NYCFD COA #6105

Specification

Operating Voltage	15-30 VDC (From base card or listed power supply)
Operating Current Quiescent Alarm	 22 mA 100 mA
Output Ratings	5A @ 30 VDC/120VAC
LED Indicators	Relay Output Active PBus Communicators (RX/TX) Processor Heartbeat
End-of-Lines	10 KΩ - Fault Remote Power Supply 150 KΩ - PBUS EOL Built on Board
Environment	Indoor, Dry
Operating Temperature	32ºF - 120ºF (0ºC-48ºC)
Humidity	10-95% (Non-Condensing)
Weight (CAX-RL4)	3 oz
Optional Enclosure Dimension	8.58" X 11.81" X 1.77"

Wiring Diagrams



Order Codes and Options

CAX-RL4	4 Point Relay Card
CAXM-009*	Optional Listed Enclosure (Supports 2 AX-RL4's)

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8-Way Relay Output Card

The CAX-RL8, 8-Way Relay Output Card, is an internal peripheral card for use with Advanced Axis AX Series Intelligent Fire Alarm Control Panels. The CAX-RL8 card provides 2 Form-C and 6 Form-A (normally open) freely programmable relay contacts. Communications of the card and relays is done via a flat ribbon cable connection to the CAX-CTL base card.

Compatible with the Axis AX Series Dynamix I/O relationship programming, the relays of the CAX-RL8 can be individually assigned to any input or output relationship, output group, timing function, gated function, invert operation, etc. to perform project specific control operations. To simplify installation, each CAX-RL8 relay output is pre-configured to activate on common alarm.

Ideally suitable for elevator control, HVAC shutdown, door holder release, or similar ancillary functions, each CAX-RL8 relay is rated 30 VDC/VAC @ 1 Amp with a PF rating of 1 (resistive).



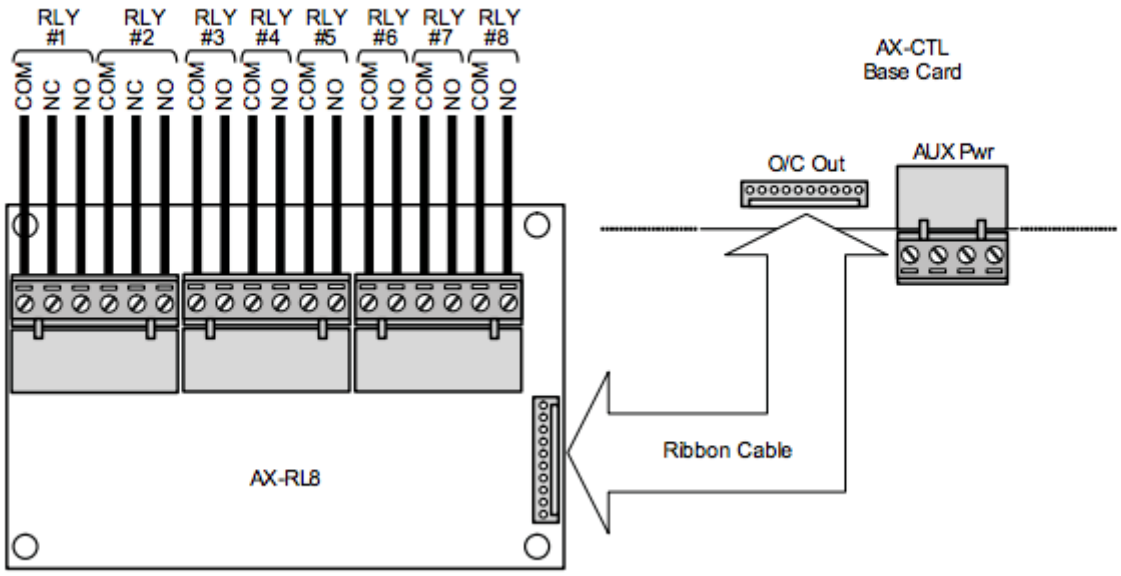
Features

- Eight (8) Individually Programmable Relays
- Contacts Rated 30 VDC/VAC, 1 Amp (Resistive)
- 2 Form-C and 6 Form-A Relays
- Fail-Safe Programmable
- Programmable Silencable or Non-Silencable
- Cost-Effective Ancillary Output
- Programmable Timing Functions
- Supports DynamiX I/O Relationship Programming
- Removable Field Wiring Terminal Blocks
- Rapid Activation Response

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

Relay Outputs	2 Form-C and 6 Form-A (Normally Open)
Relay Output Ratings	30 VDC/VAC @ 1 Amp, PF-1 (Resistive)
Operating Voltage	18-28 VDC (From Axis AXSeries Base Card)
Operating Current Quiescent Alarm	 0 mA 65 mA (All Relays On)
Environment	Indoor, Dry
Operating Temperature	32ºF-120ºF (0ºC-48ºC)
Humidity	10%-95% (Non Condensing)
Dimensions	2.76" X 4.13" X 0.71"
Weight	2.5 oz

Order Codes and Options

CAX-RL8	8-Way Relay Output Card
521-194	10-Pin Flat Ribbon Cable, Replacement

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PSN Series Power Supplies

The PSN series of notification power supplies offers reliable notification power with unprecedented versatility. The power supplies offer either 6 or 10 amps of continuous power through 4 or 6 outputs respectively. Each output is rated at 3 amps and it may be used continuously without any derating.

The power supply operates on either 120 VAC or 220 VAC power input and has a regulated 24 VDC output. In addition, the panel can charge up to 55 AH batteries. The cabinet is constructed of 18 gauge cold rolled steel and has a durable red powder coat finish. In addition, a key lock is provided for securing the door. Ample electrical knockouts are provided allowing the installer options for running wires and maintaining the correct separations.

The power supply offers an industry leading QuadraSync function that allows for multiple strobe circuits of different brands to be synchronized to flash at the same time. The supply can have four different brands, each connected to its own circuit and all of the strobes flash together. Each output can independently be configured to provide one of four synchronizations or steady power. This provides unequivocal flexibility in new and retrofit installations.

The supply can be configured to synchronize Potter/ AMSECO®, Gentex®, Wheelock® and System Sensor® strobe devices. Each output can be configured as the same sync protocol or set independently.

In addition, the supply has an input PassThru mode that allows the outputs to follow the input signal and sync up to the input flash. The supply will recognize the type of input being supplied and pass this through to the outputs with the same pattern. The input pass through can be selected on each output independently.

The power supply contains simple dipswitch programming and LED indications providing the installer with indications of the operation and the ability to correct any faults. A Trouble Memory is provided to allow an installer to review past troubles and make the necessary repairs. Each output has an LED to pinpoint the exact circuit where a problem may have occurred. Relays are provided for monitoring the general system and AC failure.



Enclosure Dimensions: 16 1/8"W x 16 3/4"H x 3 1/2"D

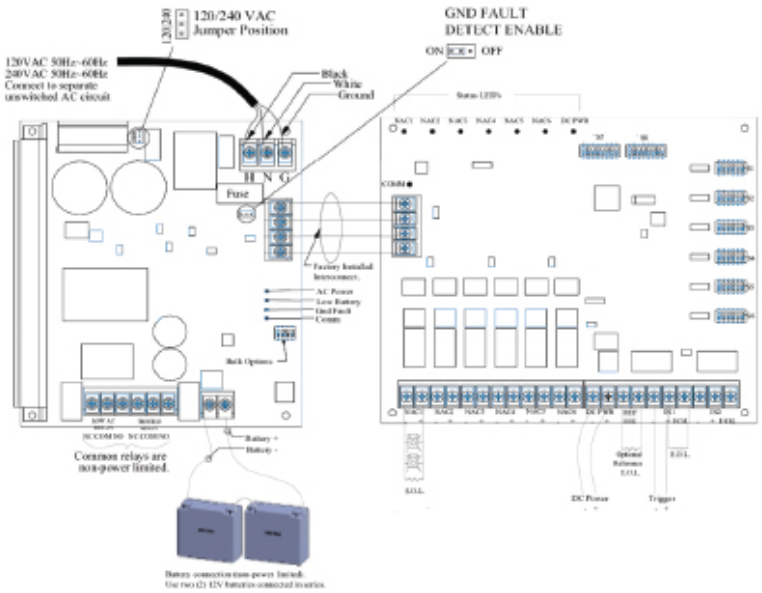
Features

- Sychronized Notification Appliance Circuits
- Configurable DIP Switch Output Circuit Programming
- Reference EOL Allows 2K-27K EOL Value
- QuadraSync Synchronization for Multiple Brand Usage
- PassThru Mode Operation Allow Matched Input Synchronization
- AX-PSN-64 Provides 6 Amps with 4 Outputs
- AX-PSN-106 Provides 10 Amps with 6 Outputs
- Outputs Rated at 3 Amps Each
- Two Trouble Relay Contacts (5A at 30VDC) - General System Trouble (Programmable for AC Delay) - Low AC Trouble
- Diagnostic LED's for: NAC Active, NAC Trouble, Earth Fault, AC On, Battery Fault

Listings and Approvals

- UL 864 Listed: file UOXX.S24460
- ULC Listed: file UOXX7.S24460
- CSFM Approved: 7315-0328:0189
- NYCFD COA #6105

Wiring Diagram



Engineering Specification

The contractor shall supply and install the AX PSN Series power supply. The power supply shall operate on either 120 or 240 VAC input. The supply shall be capable of continuous load power without any degradation to the main supply or the distribution board. The cabinet shall be capable of housing up to 18 AH batteries and the supply shall be capable of charging up to 55 AH batteries in an external cabinet.

The supply shall have dip switches for simplistic configuration of the system and LEDs to provide visual indication of the status of the system. The dip switches shall allow for AC power delay selection, Class A/B operation per output, Door Holder Power options, constant auxiliary power, trigger input type, ANSI Code 3 Temporal Code, Pass Thru (input tracking), Potter/AMSECO® sync, Gentex® Sync, System Sensor® Sync or Wheelock® sync.

The LEDs shall provide indication of communication between the power supply and distribution circuit assemblies. The LED's shall have distinct flash patterns to provide further indication of the troubles present. The supply shall have selectable Trouble Memory to provide the installer with an indication that a past trouble existed on a circuit for diagnostic purposes.

Each output of the power supply shall be capable of 3 amps of continuous power without degradation over time. The power supply shall provide for multiple circuits of strobe appliances. The power supply shall synchronize the flashes of any of the above listed strobe appliances on a per circuit basis. Up to four different strobe circuits may be connected and all of the strobes shall flash in unison as required by UL 864. In addition to this Quadrasync feature, the supply shall allow any of the four above mentioned sync patterns as an input and pass this signal through and synchronize the outputs to match the input flash pattern.

Ordering Codes and Options

AX-PSN-106	10 Amp Power Supply
AX-PSN-64	6 Amp Power Supply

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Advanced

Axis AX

Expansion Power Supply Module

The CAX-PSU is an Expansion Power Supply Module for use with the Advanced Axis AX Series Intelligent Fire Alarm Control Panels. The Expansion Power Supply Module provides an additional 5 amp of filtered, regulated, 24 VDC power for notification appliance circuits and auxiliary power outputs.

The CAX-PSU is a completely self-contained, temperature compensated, switching power supply designed to maximize energy and enclosure space.

Simple to install, the CAX-PSU typically mounts in an Axis AX Series enclosure. The unit mounts with screws to dedicated standoffs located on the right-hand side of the enclosure back box, below the base card. AC power is fed from the AC terminal block of the Axis AX Series CAX-ACB module to the CAX-PSU via a pluggable Molex connector. Expansion Power Supply Module availability and supervision is accomplished through wiring of the CAX-PSU to the Axis AX Series CAX-CTL base card.



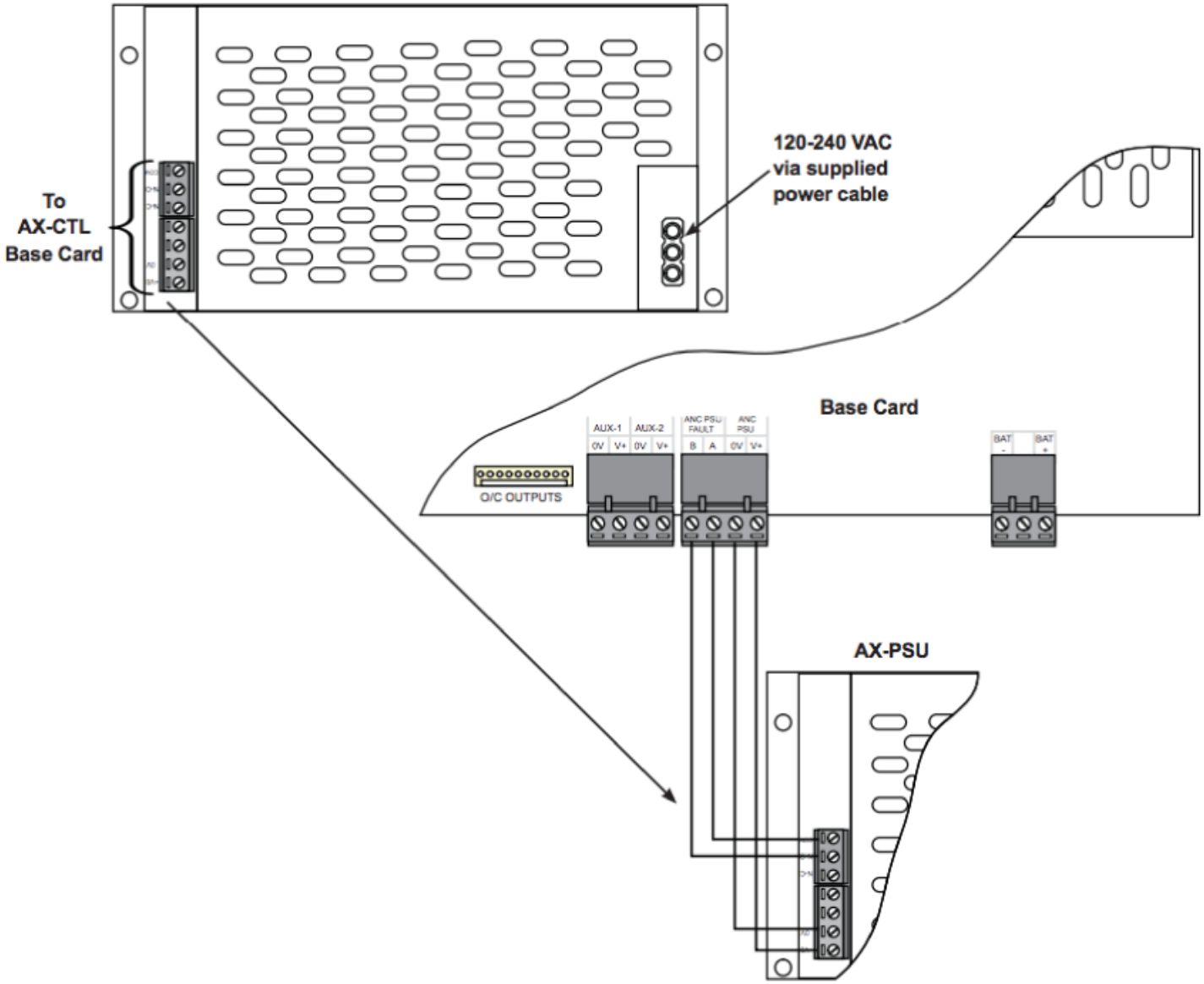
Features

- 120 or 240 VAC Input, 50/60 Hz
- 27.4 VDC @ 5 Amp
- Temperature Compensated Output
- Switching Power Supply Technology
- Filtered & Regulated Power Output
- Emissions & Safety Shield
- ANSI / UL 864 Listed
- 5 Amp @ 24 VDC Filtered, Regulated Supply
- Easy Cabinet Mount
- Energy & Space Saving Design
- Fully Self-Contained

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

AC Input	120 VAC - 240 VAC, 2.7 Amp (Max), 50/60 Hz
DC Output Voltage Current	 27.4 VDC 5 Amp
Output Voltage	Filtered, Regulated Temperature Compensated (Tracks AX-CTL Base Card DC Supply)
Environment	Indoor, Dry
Operating Temperature	32ºF-120ºF (0ºC-48ºC)
Humidity	10-95% (Non-condensing)
Dimensions	7.19”W x 3.69”H x .2.31”D
Weight	1 lb 10 oz

Order Codes and Options

CAX-PSU	Expansion Power Supply Module
521-175	AX-PSU, AC Cable Replacement

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Advanced

Axis AX

Power Supply Charger

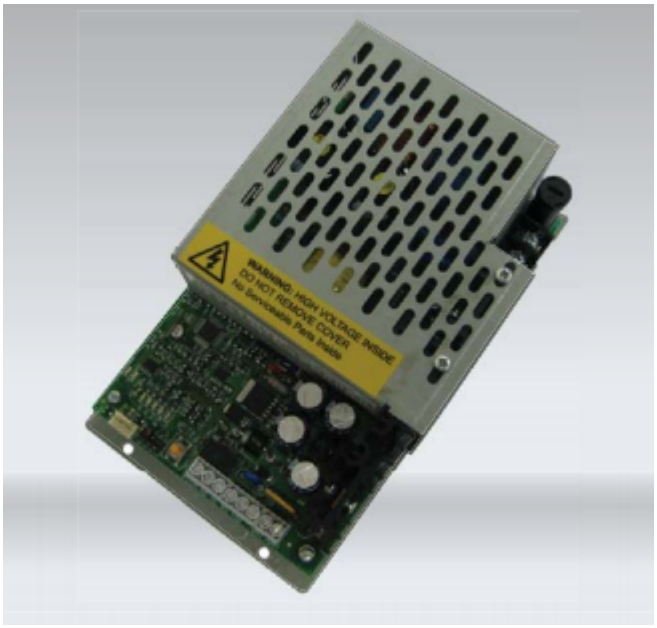
The Advanced CAX-PSU-6, Power Supply Charger, is an Axis AX Series power supply charger for use with the Advanced CAV-AMP-80, Audio Amplifier Module, and other peripheral products requiring 24 VDC and battery backup.

The CAX-PSU-6 is a completely self-contained microprocessor controlled; switching power supply designed using the latest surface mount technology to maximize energy and enclosure space.

Simple to install, the CAX-PSU-6 typically mounts in an Axis AX Series, CAV-VBM or CAV-VB enclosure. The unit mounts with screws to dedicated standoffs located each type of enclosure.

The charger of the CAX-PSU-6 supplies a supervised temperature compensated 1.5 Amp charger current which can charge up to 45 Ah batteries. In addition, the charger offers battery protection against deep discharge and supervises for battery cell failure.

Each CAX-PSU-6, Power Supply Charger, incorporates a fail-safe Form “C” trouble relay contact for use in monitoring power supply charger status. In addition to the trouble contact, there are seven (7) onboard diagnostic LEDs for indication of proper operation, ground fault, battery status, charger and power supply status.



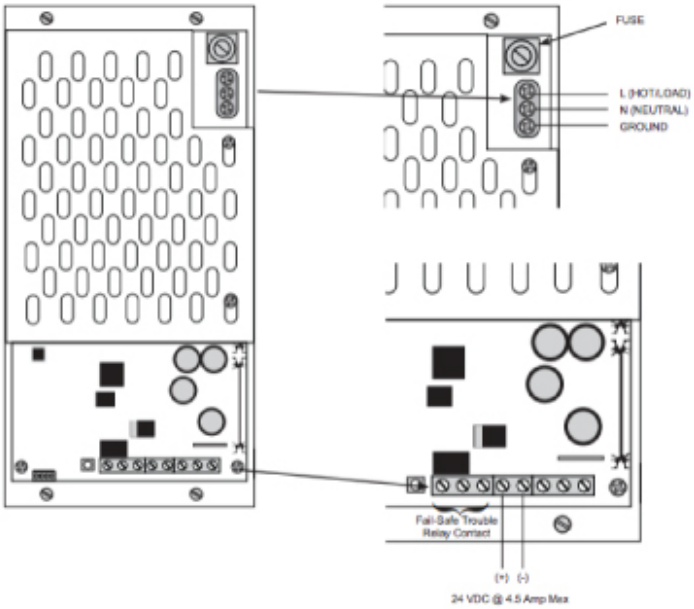
Features

- 120 or 240 VAC Input, 50/60 Hz
- 6 Amp Power Supply Charger (1.5 Amp dedicated to battery charging)
- Charger Monitors for Battery Cell Failure
- Interfaces to CAV-AMP-80 Amplifier and other Advanced Products
- Integral Emissions & Safety Shield
- 24 VDC Filtered, Regulated Power
- Max 1.5 Amp Charger Current, for 45 Ah Batteries. Deducted from overall 6 Amp supply
- High Efficiency Switching Mode Power Supply
- Fully Self-Contained
- Form C Fail-Safe Trouble Contact
- Dedicated Diagnostic LEDs

Listings and Approvals

- CAN/ULC-S527-11 & CAN/ULC-S559-04 Listed: 100780709NYM-001

Wiring Diagram



Specification

AC Input	120 VAC - 240 VAC, 3 Amp (Max), 50/60 Hz
DC Supply Voltage Current (Including charger)	Filtered, Regulated 24 VDC 6 Amp (1.5 Amp Dedicated to Battery Charging)
Battery Charger Capacity Maximum Battery	Max 1.5 Amp (Deducted from Overall 6 Amp Supply) 45 Ah
Environment	Indoor, Dry
Operating Temperature	32°F-120°F (0°C-48°C)
Humidity	10-95% (Non-condensing)
Dimensions	7 1/4” L X 4 1/4” W X 2 5/8” H
Weight	1 lb 10.6 oz

Order Codes and Options

CAX-PSU-6	Power Supply Charger

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Integrated Audio Intelligent Fire Alarm Control Panels

The latest advancements in digital, audio technology have been combined with the Axis AX Series Intelligent Fire Control Panels to create a new “V” Series line of fully integrated fire detection/voice evacuation control panels. The panels contain all of the same popular features as the standard Axis AX Series panels, but also include the CAV-AMP-80, Audio Amplifier Module, which provides 80 Watts of power that is fully controlled by the fire alarm control panel. These panels are highly flexible and ideally suited to meet the needs of virtually any commercial, industrial or institutional application and may operate as standalone systems, or may be networked up to 200 panels in any combination using our Advanced Ad-NeT-PluS networking technology.

The models in the “V” Series include the CAX-CTL-1V (single SLC loop), CAX-CTL-2V (two SLC loops) and the AX-CTL-4V (four SLC loops). In addition to providing 80 Watts of audio power, each panel comes equipped with an CAV-MIC (microphone) for live voice paging. Paging overrides any pre-recorded audio messages that are being generated. By installing one or more optional CAX-ASW-16, Switch Led Modules selective zone or area paging can be performed.

Modular construction permits field configuration of a panel(s) to suit specific installation requirements. Additional modules including, the CAX-ASW-16, Switch LED Module, and the CAX-012, Thermal Strip Printer, may by mounted to the inner door of the panel. A secure outer door with plexiglass permits viewing of these modules as well as the microphone.

The CAV-AMP-80, Audio Amplifier Module, provides two Class A or B, 40 Watt Audio Notification Appliance Circuits (ANACs). Sixteen programmable, flash-based, digital messages are freely programmable along with message repeat cycles and selection/activation of either or both output channels. Trouble conditions such as speaker wiring faults and amplifier malfunction are annunciated at the fire control panel per industry codes and standards.

The individual 40 Watt amplifiers can operate as separate independent amplifiers or as one-to-one backups of one another.

Expanding overall system audio wattage is simplified by adding a CAV-VB, Audio Booster, (see separate datasheet for more details). The CAV-VB is mounted externally in a separate enclosure and contains one CAV-AMP-80, Audio Amplifier Module, and one CAX-PSU-6, Power Supply Charger Module. Connecting the speaker output channel of an integrated CAV-AMP-80, Audio Amplifier Module, inside of an Axis AX “V” Series panel to an input of an external CAV-VB, Audio Booster, expands audio wattage by 40 Watts per channel. Resulting audio generated is fully synchronized. CAV-VB, Audio Boosters may be cascaded as desired to extend overall wattage per channel, or may be simply added to expand overall system wattage as desired.



Features

- Standalone or Networked Integrated Audio
- Fully Scalable, up to 200 Intelligent Panels
- CAV-VB Audio Booster w/Synchronized Audio
- Remote Microphone Channel
- IP Interface – Monitoring/Control/Email Notification
- Powerful yet Simple I/O Relationship Programming
- Mass Notification Programming Options
- CAV-VB Boosters expand audio wattage (16 per panel)
- Integrated 80 Watt Digital Audio Features include:
  - 2 Class A or B, 40 Watt, 25 Volt RMS Outputs
  - Programmable 16 Channel Message Generator
  - Automatic one-to-one Backup Capability
- Local internally mounted Microphone and Switches provide:
  - All Call, Alert and Selective Messaging and Paging by Zone or Area
  - Up to 504 Analog Addressable Points
  - Synchronized Audio and Visual Control (Panel or network wide)

Simplifying and reducing initial system set-up, Axis AX “V” Series Intelligent Fire Alarm Control Panels are equipped with an installer-friendly “Auto-Learn/Loop Detection” feature that permits the rapid recognition of all signaling line circuits’ devices. This rapid recognition, simplifies the assignment of critical life safety functions immediately. Assignments include: intelligent detector type and operation criteria, addressable input device recognition as an alarm input, and addressable output control on a general alarm basis.

Listings and Approvals

- ETL ANSI/UL 864/1711/1481 Listed: 101564744NYM-001, 100027836NYM-001c
- CSFM Approved: 7165-1713:0101
- NYCFD COA #6105

Designed with built-in powerful installation and customization tools, the Axis AX ”V” Series Intelligent Fire Alarm Control Panels can adapt to virtually any application requirement. With DynamiX programming, typical time consuming complexities associated with I/O relationship programming such as two-stage multi-pattern NAC control, intelligent detector drift compensation, precision response/ sensitivity mode settings, flexible timing functions, and more, are sharply reduced.

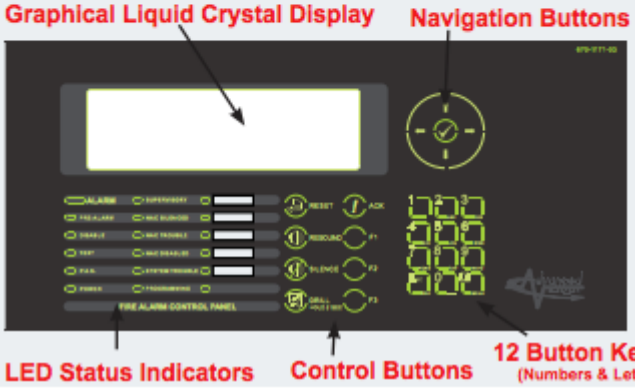
The Axis AX ”V” Series Intelligent Fire Alarm Control Panels are fully field programmable via the onboard graphical LCD display and alphanumeric keypad. Front panel programming may encompass defining input to output relationships, configuring output circuit characteristics, entering zone, device, and other text descriptions, and configuring multiple user-access passwords.

To maximize the capability and flexibility of the Axis AX ”V” Series Intelligent Fire Alarm Control Panel and expand upon the customization of an installation, the Advanced Windows based PC-NeT field configuration tool is available. The PC-NeT field configuration tool is a powerful, user-friendly programming tool that allows users to perform virtually any I/O relationship with multiple criteria. Simple drop-down menus with point-and-click operation makes project commissioning and troubleshooting fast and efficient.

Designed with the technician in mind, each module of the Axis AX ”V” Series panel is easy to install and service. The integral power supply offers status LEDs, temperature compensated charging, and the ability to operate directly from the batteries when AC supply is not yet available at the installation site. A unique built-in intelligent multi-meter allows technicians to interrogate any input and/or output and diagnose potential time consuming trouble issues with virtually no complications or aggravation. With an Axis AX ”V” Series panel, servicing a customer after installation can be as simple as using Advanced Fire Systems Remote Diagnostic Virtual Panel Simulator and/or ipGateway (CAX-LAN). The ipGateway (CAX-LAN) provides real time text and email alerts of system status.

Reset	
Ack (panel buzzer acknowledge)	
Resound (resound signals)	
Silence (silence signals)	
Fire Drill	
Function Keys (3 - programmable control buttons)	
Navigation Keys (up, down, left, right, and tick [enter])	
12 Button Keypad (numbers, letters, esc, and menu)	

Alarm	Red
Pre-Alarm	Red
Disable	Yellow
Test	Yellow
P.A.S.	Yellow
Power	Green
Supervisory	Yellow
NAC Silenced	Yellow
NAC Trouble	Yellow
NAC Disabled	Yellow
System Trouble	Yellow
Programming	Yellow
Programmable LED 1	Red
Programmable LED 2-5	Yellow



Advanced User Interface w/Graphical LCD:

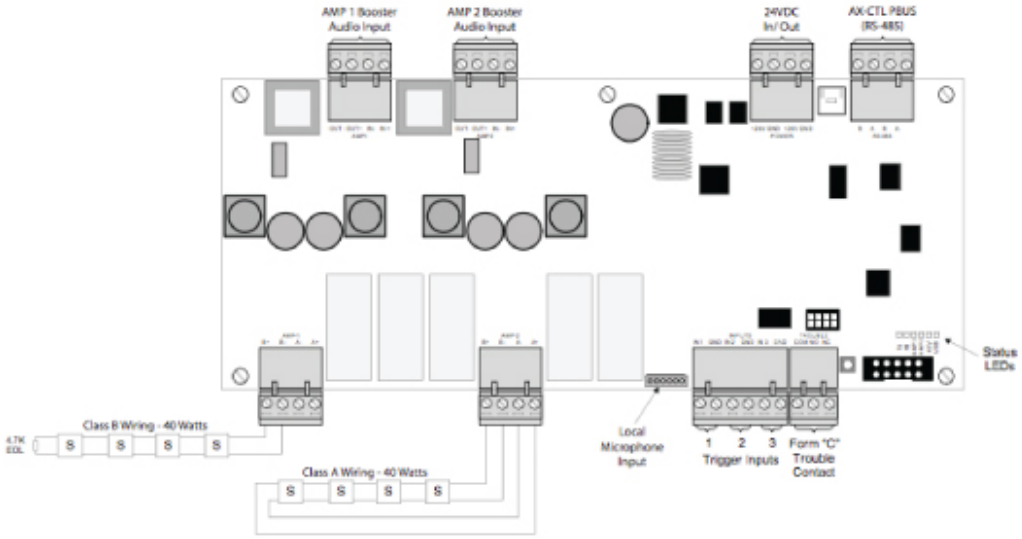
Designed to be user-friendly and easy to operate, the Advanced User Interface w/Graphical LCD (backlit 240 x 64) is the information and control center for the Axis^{AX} “V” Series Intelligent Fire Alarm Control Panel(s).

The unit incorporates a graphical LCD display, LED status indicators, control buttons (including 3 programmable buttons), navigation buttons, and a 12 button keypad for complete system status, interrogation, and control.

Specification

Operating Voltage	120 VAC (1.4A) - 240 VAC (0.7A), 50/60Hz
System-Brown-Out	98 VAC nominal
Battery Circuit	
Charging Voltage	27.4 VDC nominal
Temp. Compensated Charging Current	2 Amp
Battery Derating Factor	0.83A
Battery Capacity	7 Ah (minimum), 48 Ah (maximum)
Battery Fuse	5A @ 240 VAC, Time Delayed, Ceramic, High Breaking (In-line Wire Link)
Fire, Supervisory, and Trouble Relays	(Power Limited - When utilizing system power)
Type	Form “C”
Rating	1A @ 30 VDC/VAC
Trouble Relay	Normally Active (Fail-safe operation)
Auxiliary Power Outputs	
Resettable	(Power Limited)
Voltage	24 VDC
Current	5A
Reset Time	10 - 15 Seconds
Non-Resettable	
Voltage	24 VDC
Current	.5A
Humidity	85% RH
Temperatures	
Operating	32ºF - 120ºF (0ºC - 49ºC)
Recommended Room	60ºF - 86ºF (15ºC - 27ºC)
Enclosure Dimensions	
Back Box	22.6”H x 14.5”W x 5.5”D
Housing	24.1”H x 16”W x 6.3”D
SLC Loop	(Power Limited)
Class (Style)	Class A or B (Style 4, 6 or 7)
Voltage	24 VDC
Minimum Return Voltage	17 VDC
Current	.5A
NAC Circuits	(Power Limited)
Class (Style)	Class A or B (Class B end-of-line = 10K)
Voltage	24 VDC (Filtered and regulated)
Minimum Return Voltage	16 VDC
Current	2A (Each)
Maximum Voltage Drop	3 VDC
Maximum Line Impedance	1.5 Ω
RS232	Supervised, Optically Isolated
Baud Rate	9600
Parity	None
Data Bits	8
Stop Bits	1
Base Card Operating Current	Quiescent Alarm
CAX-CTL-1	110 mA 195 mA
CAX-CTL-2	110 mA 195 mA
CAX-CTL-4	175 mA 260 mA
AV-AMP-80	
Input Voltage/Current	24 VDC (Operating range 15-30 VDC), Quiescent .035A / Alarm .220A plus
Amplifier #1 Output	speaker load
Amplifier #2 Output	40 Watts @ 25 Vrms, Class A or B (Class B end-of-line = 4.7K)
Activation	40 Watts @ 25 Vrms, Class A or B (Class B end-of-line = 4.7K)
AV-MIC	RS-485 (PBus) or Contact Closure
	Supervised Microphone Input

Wiring Diagram



Order Codes and Options

CAX-CTL-1V*	Axis AX "V" Series Intelligent Fire Alarm Control Panel with cabinet, 2 power supplys/chargers, 1 SLC, 2 NACs, two 40 watt speaker circuits and microphone
CAX-CTL-2V*	Axis AX "V" Series Intelligent Fire Alarm Control Panel with cabinet, 2 power supplys/chargers, 2 SLC, 2 NACs, two 40 watt speaker circuits and microphone
CAX-CTL-4V*	Axis AX "V" Series Intelligent Fire Alarm Control Panel with cabinet, 2 power supplys/chargers, 4 SLC, 4 NACs, two 40 watt speaker circuits and microphone
	AX-CTL Base Card Option Modules**
CAX-LPD	2 SLC, 2 NAC Expander Card
CAX-NAC	2 NAC Expander Card
CAX-PSU	5 Amp Expansion Power Supply Module
CAX-NET4	Network Interface Card (Style 4)
CAX-NET7	Network Interface Card (Style 7)
CAX-RL8	8-Way Relay Output Card (Programmable)
CAX-SEB/D9068P	Serial Expansion Board and Serial Digital Alarm Communicator
	AV-AMP-80 Amplifier Option Module
CAV-ZS	Audio Zone Splitter Module
CAV-V70*	Universal Audio Converter (converts 25Vrms to 70Vrms)

* Refer to individual Axis AX Series module data sheets for peer to peer network and peripheral bus optional modules.

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Firefighter Phone System2 System Firefighter Phone Assemblies

The CAV-TEL2-MCCS and CAV-TEL2-MCCS/P are assemblies that include a firefighter phone, phone enclosure and interface module.

The difference between the CAV-TEL2-MCCS and CAV-TEL2-MCCS/P is that the CAV-TEL2-MCCS/P includes a push-to-talk firefighter phone. Both assemblies interface the Firefighter Phone System2 command center telephone with the Advanced CAV-TEL2-RISE riser module.

Both the Advanced C-CCM-01-ID2 (3x3 command center) and C-CCM-02-ID2 (3x5 command center) inner doors can support a CAV-TEL2-MCCS[/P] assembly, mounted in the bottom left side double aperture.



Features

- Compatible with Axis AX Series Command Centers
- Class B Supervised Interface Wiring
- Up to Two (2) CAV-TEL2-MCCS[/P] per Riser Module
- Standard or Push-to-Talk integral phone

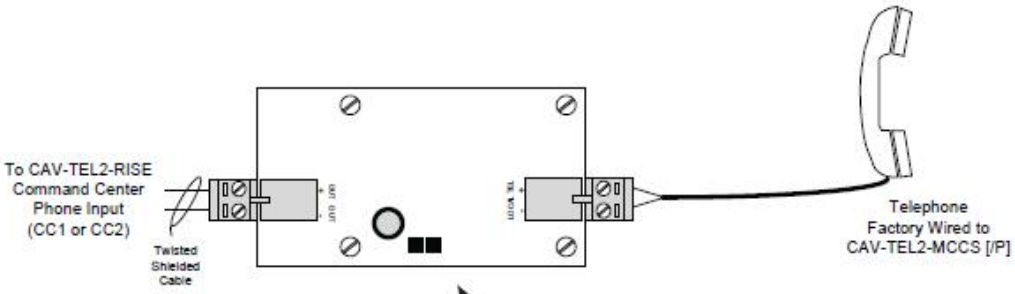
Ratings

- All Circuits Power Limited
- Terminals support 12-22 AWG Wire

Listings and Approvals

- CAN/ULC-S527-11 and CAN/ULC-S559-13 Listed: 100780709NYM-001

Wiring Diagram





Order Codes and Options

CAV-TEL2-MCCS	Command Center Firefighter Phone Assembly with Standard Phone
CAV-TEL2-MCCS/P	Command Center Firefighter Phone Assembly with Push-to-Talk (PTT) Phone

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Axis AX Firefighter Phone System2 Telephone Riser

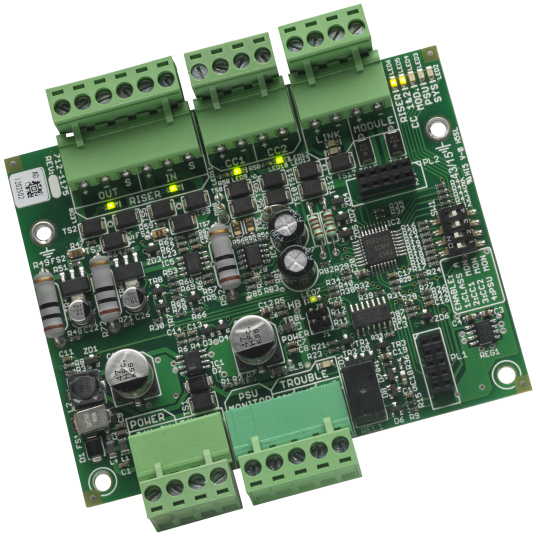
The CAV-TEL2-RISE module is an Advanced telephone riser module that can be mounted in an Axis AX command center (fire alarm command center or firefighter phone node) or in a dedicated enclosure with/without integral power supply charger (AXM-009, CAV-TEL2-CAB or CAV-TEL2-REM). The CAV-TEL2-RISE module provides a single Class X(A) or B telephone riser that can support up to 250 master addressable firefighter emergency phones. In addition, the CAV-TEL2-RISE module can support up to two command center firefighter phones (CAV-TEL2-MCCS [/P]).

A maximum of five (5) firefighter phones (any combination of master addressable firefighter emergency phones, secondary firefighter emergency phones or conventional firefighter phone jacks) and one command center firefighter phone can be active at the same time on an Advanced Firefighter Phone System2.

If more than 250 master addressable firefighter emergency phones or the installation requires more than one (1) firefighter telephone riser, an additional CAV-TEL2-RISE module can be installed, providing a maximum of 500 master addressable firefighter emergency phones.

All supervision/trouble monitoring of the CAV-TEL2-RISE telephone riser is accomplished through each master addressable firefighter emergency phone. Between the CAV-TEL2-RISE module and the master addressable firefighter emergency phones, built-in short circuit isolation allows the telephone riser circuit to operate with a single short circuit.

When used in conjunction with the optional CAV-TEL2-PPB plug-in page board, the CAV-TEL2-RISE module can be interfaced to an Advanced Axis AX audio product providing field firefighter phone paging via command center control.



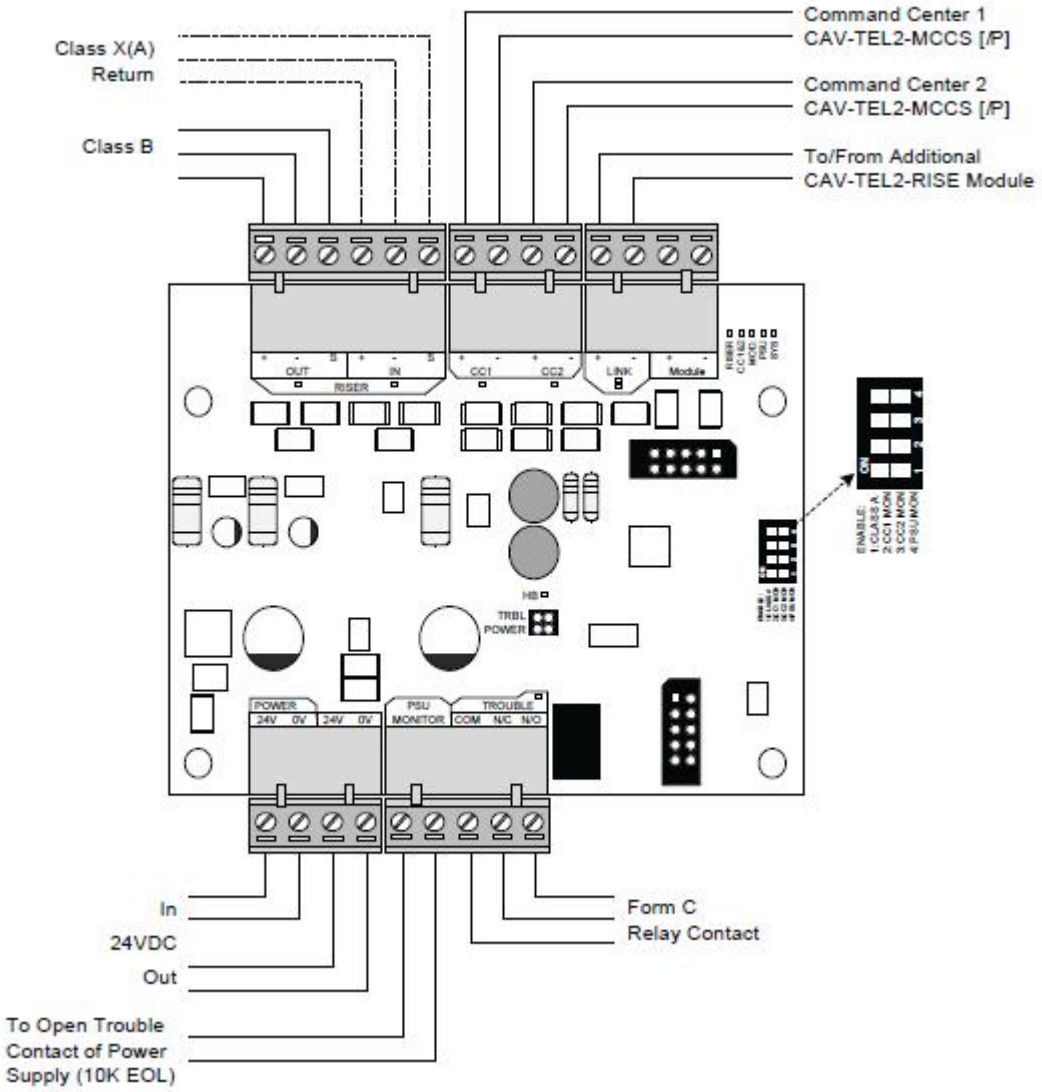
Features

- Class X(A) or B Wiring
- Supports 250 Master Addressable Phones
- Maximum Five (5) Active Phones
- Optional Phone Patch Paging
- Supports Two (2) Command Center Firefighter Phones
- Pluggable Terminal Blocks
- Link Connection for Interface to Additional CAV-TEL2-RISE
- Supervised Power Supply Monitoring Input
- Integral Form“C” Fail-Safe Trouble Contact
- Built-in Short Circuit Isolation

Listings and Approvals

- CAN/ULC-S527-11 and CAN/ULC-S559-13 Listed: 100780709NYM-001

Wiring Diagram



Order Codes and Options

CAV-TEL2-RISE	Firefighter Telephone System2 Telephone Riser Module
CAV-TEL2-PPB	Plug-in Audio Module
CAV-TEL2-CAB	Remote Cabinet with Single AV-TEL2-RISE Module
CAV-TEL2-REM	Remote Enclosure with Single AV-TEL2-RISE Module and AX-PSU-6 Power Supply Charger

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Canadian Firefighter Phone Node

The Axis AX Canadian Firefighter Phone Node is a dedicated addressable firefighter phone communications system. The firefighter phone node can be incorporated within an Advanced Ad-NeT-PluS network installation or can exist as a completely standalone firefighter phone system.

Firefighter phone nodes are modular designed based on installation requirements and are assembled within Advanced command center enclosures. As a minimum, firefighter phone nodes incorporate a dedicated base card with 1, 2 or 4 firefighter phone signaling line circuits (SLCs), a telephone riser module, an integral firefighter phone and firefighter phone keyboard display for the status and control of the system.

The firefighter phone node telephone riser module can support up to 250 master addressable firefighter phones. In addition, if additional master addressable firefighter phones are required or if an installation requires more than one (1) firefighter telephone riser, an additional telephone riser module can be provided for a maximum of 500 master addressable firefighter phones.

The master addressable firefighter phones connect to both the dedicated firefighter phone signaling line circuit and to the telephone riser module. The integral addressable module of the master addressable firefighter phone supports dial, ring and busy/hold tones for the user to know the call is being generated and received at the firefighter phone node. In addition, each master addressable firefighter phone can support up to a maximum of four (4) secondary firefighter emergency phones, conventional firefighter phone jacks or a combination of the two.

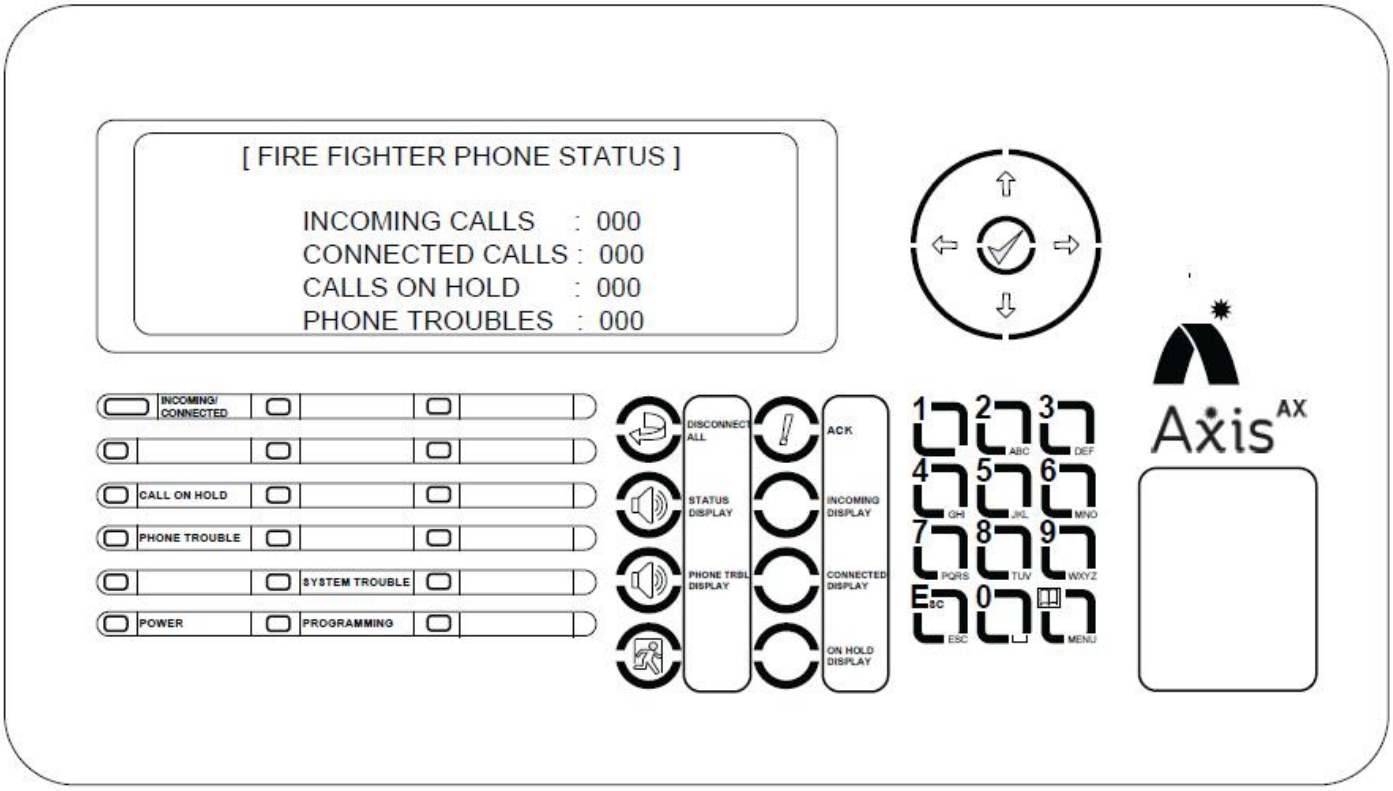
When combined with an Advanced Axis AX audio product, an optional plug-in pager board is available for field firefighter phone paging via the firefighter phone node command center.

Listings and Approvals

- CAN/ULC-S527-11 and CAN/ULC-S559-13 Listed: 100780709NYM-001

Features

- 1, 2 or 4 Class B, A or X Firefighter Phone SLC Loops
- Standalone or Networkable
- Single or Multiple Firefighter Phone Command Centers
- Riser Supports 250 Addressable Firefighter Phones
- Supports Standard or Push-to-Talk Handsets
- Class X (A/ST7) or Class B Telephone Riser
- Built-in Telephone Riser Short Circuit Isolation
- Multiple Risers Support a Max. 500 Addressable Firefighter Phones
- Modular Designed
- User-friendly Operator Display and Controls



Order Codes and Options

C-CCM-01-BB	3 x 3 Backbox, 22.6" H x 20.3" W x 5.5" D
C-CCM-01-ID2	3 x 3 Inner Door, 2 Double and 5 Single Apertures
C-CCM-01-OD	3 x 3 Outer Door
C-CCM-02-BB	3 x 5 Backbox, 35.9" H x 20.3" W x 5.5" D
C-CCM-02-ID2*	3 x 5 Inner Door, 2 Double and 11 Single Apertures
C-CCM-02-OD	3 x 5 Outer Door
CAX-SAP	Single Aperture Blank Plate
CAX-ACB	AC Board
CAX-CTL-1PCB	Telephone Node Base Card, 1 Phone SLC Loop
CAX-CTL-2PCB	Telephone Node Base Card, 2 Phone SLC Loops
CAX-LPD	SLC/NAC Expansion Board, 2 Phone SLC Loops and 2 Phone NAC (Signal) Circuits
CAX-PSU	5A Expansion Power Supply
CAX-PSU-6	6A Power Supply charger
CAX-DSP/T	Firefighter Keyboard Display
CAV-TEL2-RISE	Telephone Riser Module
CAV-TEL2-MCCS	Firefighter Phone Node Command Center Standard Telephone
CAV-TEL2-MCCS/P	Firefighter Phone Node Command Center Push-to-Talk Telephone
CAV-TEL2-PPB	Plub-in Audio Module

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Firefighter Phone System2 Master Addressable and Secondary Firefighter Emergency Phones

The Advanced Master Addressable and Secondary Firefighter Emergency Phones are state-of-the-art, modern, reliable firefighter phones for use with Advanced's Firefighter Phone System2, providing two-way communications for firefighters and other emergency personnel.

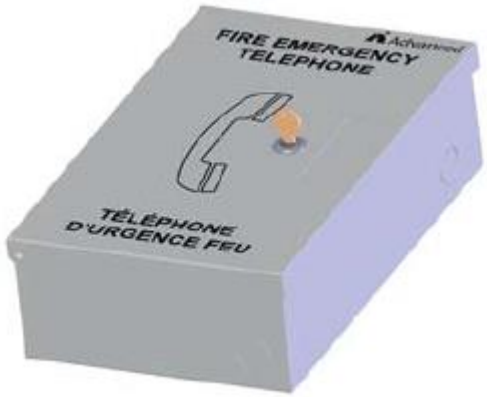
Whether the Firefighter Phone System2 is integrated within an Axis AX fire alarm system, part of a dedicated firefighter phone node or a standalone firefighter phone system, the master addressable and associated secondary firefighter emergency phones work seamlessly in any installation.

Master addressable firefighter emergency phones include an integral addressable interface module for connection to an Advanced SLC addressable circuit and Firefighter Phone System2 telephone riser. The addressable interface module is capable of supporting a total of four (4) secondary firefighter emergency phones, conventional phone jacks or a combination of the two. Secondary firefighter emergency phones and conventional phone jacks report all status and events to the Firefighter Phone System2 command center, via the interconnected master addressable firefighter emergency phone.

Both the master addressable and secondary firefighter emergency phones contain a backbox, handset/chassis assembly and a door, with breakglass keylock access. Each handset/chassis assembly is designed with rugged plastic and includes an electronically controlled off-hock activation signal. In addition, handset/chassis assembly phones are available with a standard coiled cord or armored cable.

When a master addressable firefighter phone handset is removed from its cradle, a dial tone will be heard at the handset, when the call-in signal is recognized at the firefighter command center, the dial tone will change to a ring tone. These dial and ring tones, at the handset, allow the user to know the call is being generated and received at the Firefighter Phone System2 command center, awaiting command center operator connection. In addition, at the Firefighter Phone System2 command center, the master addressable firefighter phone activation will generate a buzzer and visual indication of the specific master addressable firefighter emergency phone calling in.

Once the call is connected by the command center operator, the ring tone will cease and two-way communications will be initiated. At any time during communications, the command center operator can place the connected call on hold, which in turn will activate a busy/hold tone at the master addressable firefighter emergency phone handset.



Features

- Advanced SLC addressable protocol compatible
- Integral dial, ring and busy/hold tones
- Breakglass keylock access
- Electronic controlled off-hook activation
- Master phone supports four (4) secondary phones
- Heavy duty construction
- Modular assembly
- Durable finish
- Integral 'phone connect' LED
- Coiled or armored cord cabling
- Standard or push-to-talk phone
- Pluggable PCB terminal blocks
- Optional semi-flush bezel (trim ring)
- Optional noise-cancelling microphone

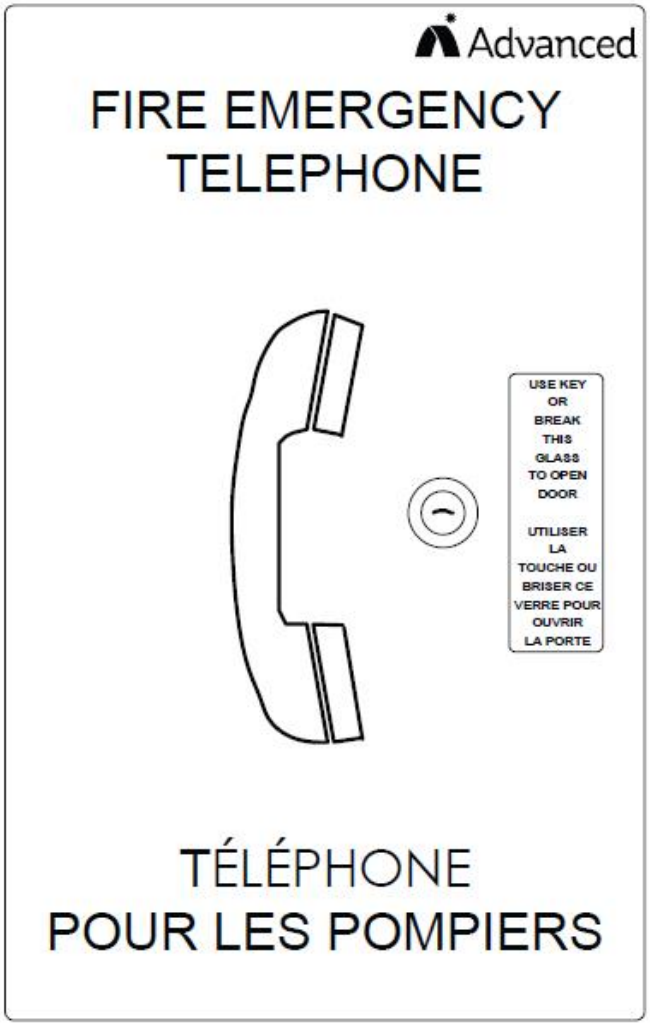
Listings and Approvals

- CAN/ULC-S527-11 and CAN/ULC-S559-13 Listed: 100780709NYM-001

Secondary firefighter emergency phones and conventional phone jacks operate the same as the master addressable firefighter emergency phones. However, all status indication and control with the Firefighter Phone System2 command center is done via the associated master addressable firefighter emergency phone.

Based on installation, the master addressable and secondary firefighter emergency phones can be surface or semi-flush mounted with optional trim ring kit.

Advanced also offers optional noise canceling microphones to filter ambient noise from the installation's surrounding background area. In addition, Advanced offers an optional retaining clip which latches the phone to the handset/chassis assembly cradle is available.



Specifications

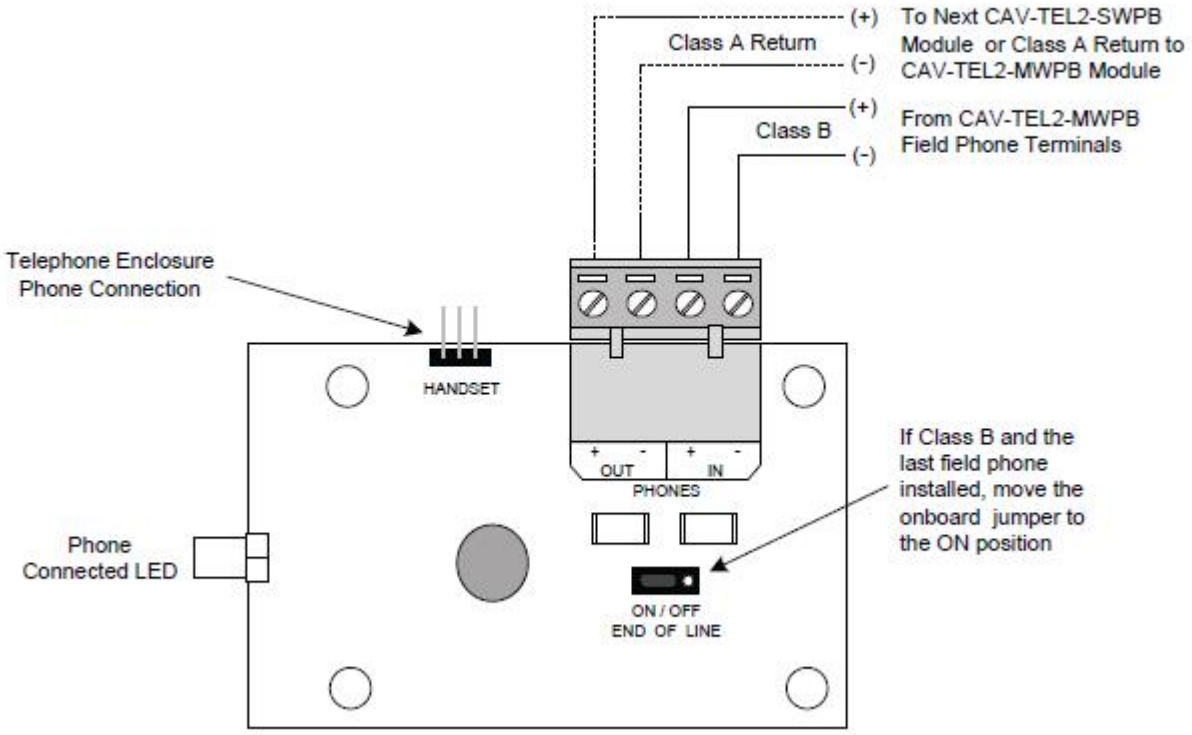
Addressable Phone Interface Module Specifications

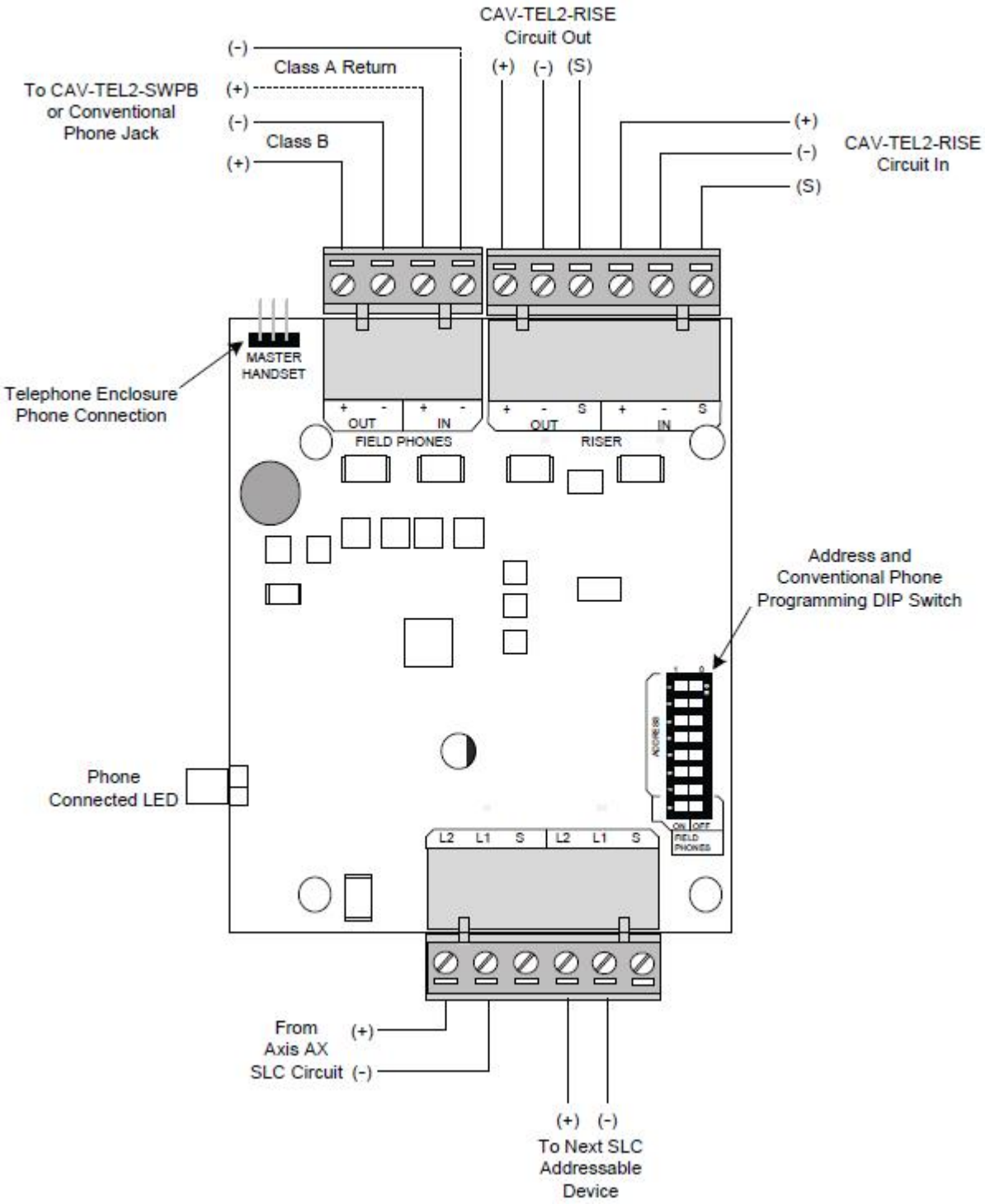
Voltage	17-28 Vdc
Operating current - non active phone	900 uA
Operating current - off-hook w/tone	4.7 mA
Operating current - off-hook connected	7.4 mA
Temperature	32-120°F (0-48°C)
Humidity	10-95% (non-condensing)
Analogue values - normal	18
Analogue values - off-hook/active	55
Analogue values - phone fault/open field ckt	6
Analogue values - riser supply fault	5 (up to 10V)
Analogue values - riser supply short circuit	4
Analogue values - corrupt communications	4
Analogue values - comm fault/device missing	0
Address range	1-126 (DIP switch prog.)
Environment	Indoor, dry
Field phones	Max. 4 (secondary or jack)

Terminal wire size	12-22 AWG (Power Limited)

Secondary Phone Interface Module Specifications

Voltage	24 Vdc
Operating current - quiescent	0 mA
Operating current - active	30 mA
Temperature	32-120°F (0-48°C)
Humidity	10-95% (non-condensing)
Terminal wire size	12-22 AWG (Power Limited)





Order Codes and Options

Master Addressable Firefighter Emergency Phones	
CAV-TEL2-WD	Master addressable firefighter phone, backbox, breakglass with keylock door, standard phone, coiled cord
CAV-TEL2-WDP	Master addressable firefighter phone, backbox, breakglass with keylock door, push-to-talk (PTT) phone, coiled cord
CAV-TEL2-WDV	Master addressable firefighter phone, backbox, breakglass with keylock door, standard phone, armored cable
CAV-TEL2-WDT	Master addressable firefighter phone, backbox, breakglass with keylock door, push-to-talk (PTT) phone, armored cable

Secondary Firefighter Emergency Phones	
CAV-TEL2-SWD	Secondary firefighter phone, backbox, breakglass with keylock door, standard phone, coiled cord
CAV-TEL2-SWDP	Secondary firefighter phone, backbox, breakglass with keylock door, push-to-talk (PTT) phone, coiled cord
CAV-TEL2-SWDV	Secondary firefighter phone, backbox, breakglass with keylock door, standard phone, armored cable
CAV-TEL2-SWDT	Secondary firefighter phone, backbox, breakglass with keylock door, push-to-talk (PTT) phone, armored cable
Semi-flush bezel (trim ring)	
CAV-TEL2-MB	Semi-flush bezel
Retaining clip and noise cancelling microphones	
CAV-TEL2-RC	Handset hook retaining clip
CAV-TEL2-NCMS	Noise canceling microphone for standard phone
CAV-TEL2-NCMP	Noise canceling microphone for push-to-talk (PTT) phone

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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.