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Fire Alarm System Data Sheet Submittals



Convergint Project Number: US01-J00299950

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LIFE SAFETY & INCIDENT MANAGEMENT

Auxiliary Power Supplies

APS6A, APS10A

FDNY
COA 60207300-1657:
0229

Overview

The Auxiliary Power Supply (APS) is a UL 864, 10th Edition listed power supply. It is a 24 Vdc filtered-regulated, and supervised unit that can easily be configured to provide additional notification appliance circuits (NACs) or auxiliary power for Mass Notification/Emergency Communication (MNEC), as well as life safety applications.

The APS contains the circuitry to monitor and charge internal or external batteries. Its steel enclosure has room for up to two 24 ampere-hour batteries. The APS has four Class B (convertible to two Class A) NACs. These can be activated in one or two groups from the APS's unique dual input circuits. The APS has a door-mounted AC power indicator LED.

The APS also has room for and can power a number of different modules. These can be Signature AA-30 or AA-50 dual-channel audio amplifiers, SIGA-UIO modules and/or SIGA-RELS. A MN-BKRT3 can also be installed. This bracket can accommodate an MN-NETSW1 Ethernet network switch, an MN-FVPN VoIP module and a MN-COM1S Communications module

The APS is available in 6.5 or 10 ampere models. Each output circuit has a capacity of three amperes; total current draw cannot exceed the unit's rating.

Features

- Allows for reliable filtered and regulated power to be installed where needed
- Cost effective system expansion
- Provides for Genesis and Enhanced Integrity notification appliance synchronization

- Supports coded output operation
- Self-restoring overcurrent protection
- Multiple signal rates
- Can be cascaded or controlled independently
- Easy field configuration
- On-board diagnostic LEDs identify wiring or internal faults
- Standard EDWARDS keyed lockable steel cabinet with removable door
- 110 and 230 Vac models available
- Accommodates 18 to 12 AWG wire sizes
- Optional tamper switch
- Dual battery charging rates
- Optional earthquake hardening: OSHPD seismic pre-approval for component Importance Factor 1.5

The APS meets current UL requirements and is listed as under the following standards:

Standard (CCN)	Description
UL864 10th edition (UOXX)	Fire Alarm Systems
UL636 (ANET, UEHX7)	Holdup Alarm Units and Systems
UL609 (AOTX, AOTX7)	Local Burglar Alarm Units and Systems
UL365 (APAW, APAW7)	Police Station Connected Burglar Alarm Units and Systems
UL1076 (APOU, APOU7)	Proprietary Burglar Alarm System Units
UL1610 (AMCX)	Central Station Alarm Unit
ULC-S527 (UOXXC)	Control Units, Fire Alarm (Canada)
ULC-S303 (AOTX7)	Local Burglar Alarm Units and Systems (Canada)
C22.2 No. 205	Signaling Equipment (Canada)

Application

The APS provides additional power and circuits for notification appliances and other 24 Vdc loads. It is listed for indoor dry locations and can easily be installed where needed.

Fault conditions are indicated on the on-board diagnostic LEDs, opening the BPS input sense circuit and the trouble relay (if programmed). While this provides indication to the host system, the APS can still be activated upon command. A separate AC Fail contact is available on the APS circuit board, which can be programmed for trouble or AC Fail. There are seven on-board diagnostic LEDs: one for each NAC fault, one for battery fault, one for ground fault, and one for AC power.

The unique dual-input activation circuits of the APS can be activated by any voltage from 6 to 45 VDC (filtered-regulated) or 11 to 33 Vdc (full-wave rectified, unfiltered). The first input circuit can be configured to activate 1-4 of the four possible outputs. The second input circuit can be configured to control circuits 3 and 4. When outputs are configured for auxiliary operation, these circuits can be configured to stay on or automatically deactivate 30 seconds after AC power is lost. This feature makes these circuits ideal for door holder applications. The APS also has a separate 200 mA 24 Vdc output that can be used to power internal activation modules.

APS NACs can be configured for a 3-3-3 temporal or continuous output. This makes the APS ideal for applications requiring signaling rates that are not available from the main system.

In addition to the internally generated signal rates, the APS can also be configured to follow the coded signal rate of the main system NACs. This allows for the seamless expansion of existing NACs.

At the top of the steel enclosure, the APS has space and mounting bosses for:

- Up to two SIGA-AA30 or SIGA-AA50 dual-channel audio amplifiers

- One MN-BRKT3 with one MN-NETSW1 Ethernet switch, one MN-FVPN VoIP module, and one MN-COM1S communication module
- One SIGA-UIO6 or SIGA-UIO6R module motherboard
- Up to two SIGA-UIO2R module motherboards
- Up to two SIGA-REL releasing modules
- Up to two SIGA MP2L mounting plates modules

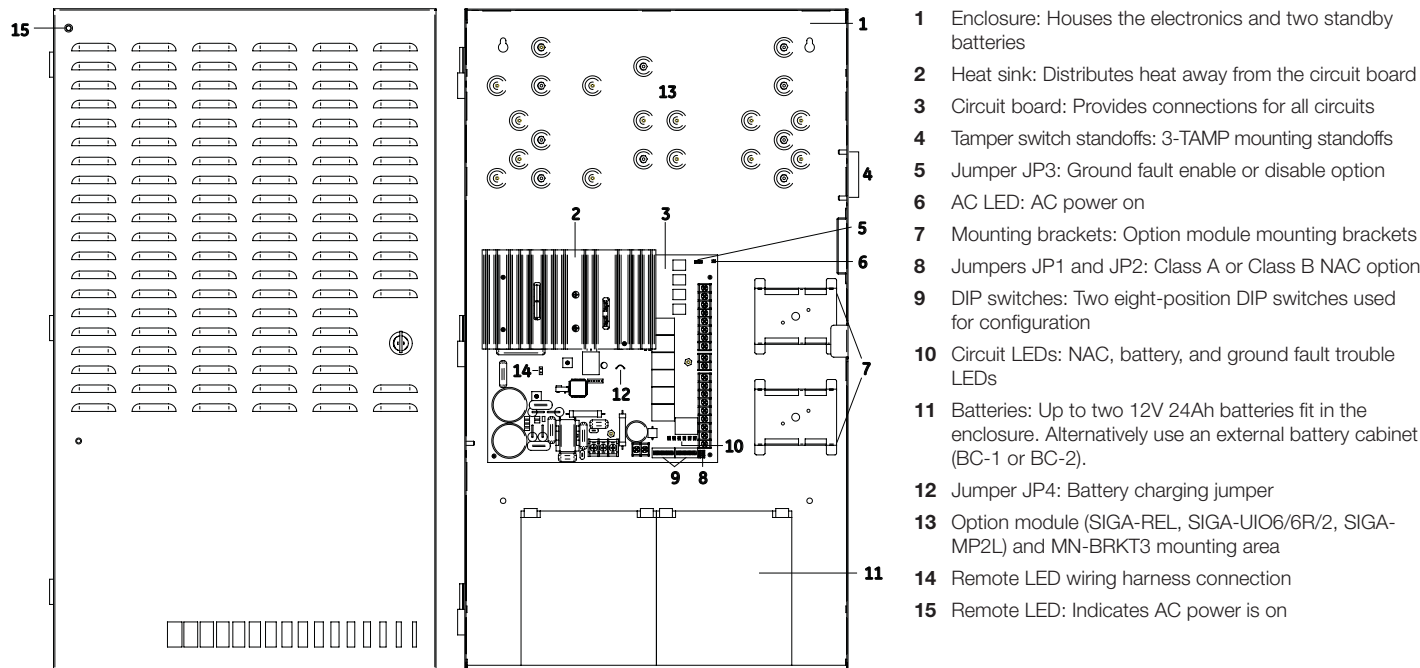
The above devices are in addition to the three factory-installed Signature module mounting brackets to the right of the APS circuit board.

Engineering Specification

Supply, where needed, EDWARDS APS Series Auxiliary Power Supplies (APS) that are interconnected to and supervised by the main system. The APS shall function as a stand-alone auxiliary power supply with its own fully-supervised battery complement. The APS battery complement shall be sized to match the requirements of the main system. The APS shall be capable of supervising and charging batteries having the capacity of 24 ampere-hours for Mass Notification/Emergency Communication (MNEC) life safety applications.

<<The APS shall be capable of installation for a seismic component Importance Factor of 1.5.>>The APS shall provide a minimum of four independent, fully supervised Class B circuits that can be field configurable for notification appliance circuits or auxiliary 24 Vdc power circuits. APS NACs shall be convertible to a minimum of two Class A NACs. Each APS output circuit shall be rated at 3 amperes at 24 VDC. Each output circuit shall be provided with automatically restoring overcurrent protection. The APS shall be operable from the main system NAC and/or EDWARDS Signature Series control modules. APS NACs shall be configurable for continuous or 3-3-3 temporal rate. Fault conditions on the APS shall not impede operation of main system NAC. The APS shall be provided with ground fault detection circuitry and a separate AC fail relay.

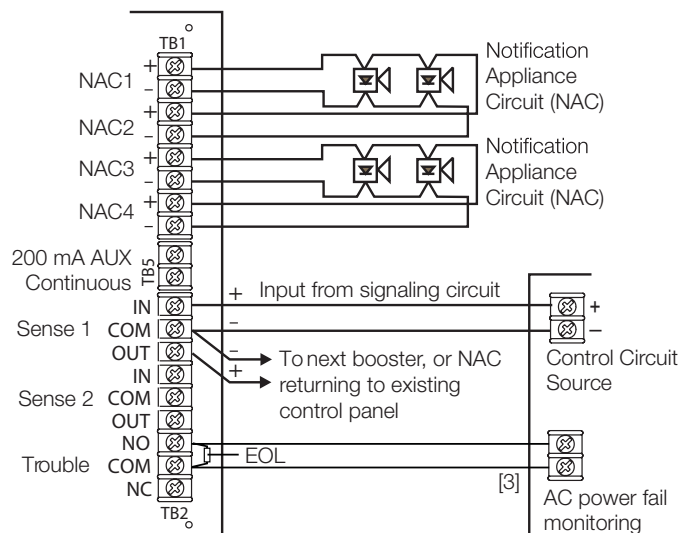
Cabinet Layout



Typical Wiring

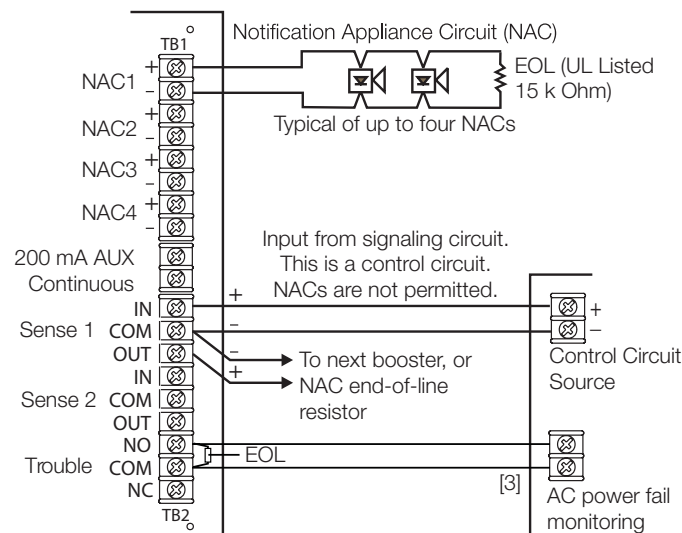
NAC Class A wiring

Connect one NAC circuit to one NAC output, either NAC1 or NAC3. Terminate the circuit at the NAC2 or NAC4 terminal screw, respectively.



NAC Class B wiring

Connect a single NAC circuit to one NAC output. Terminate the circuit with a 15 k Ohm EOL resistor.

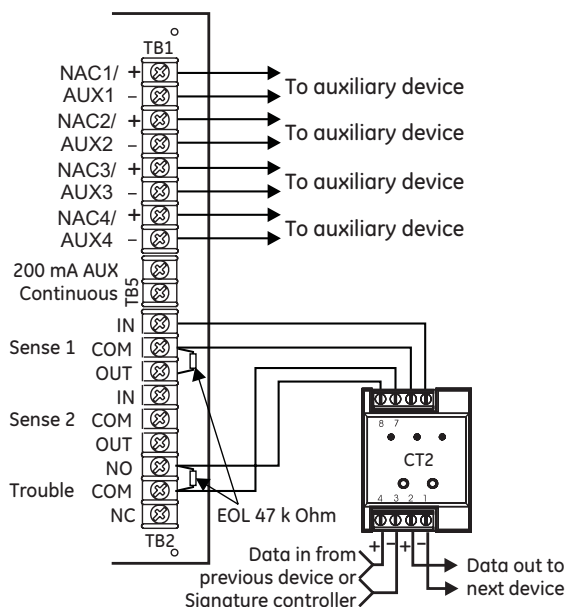


NAC wiring notes:

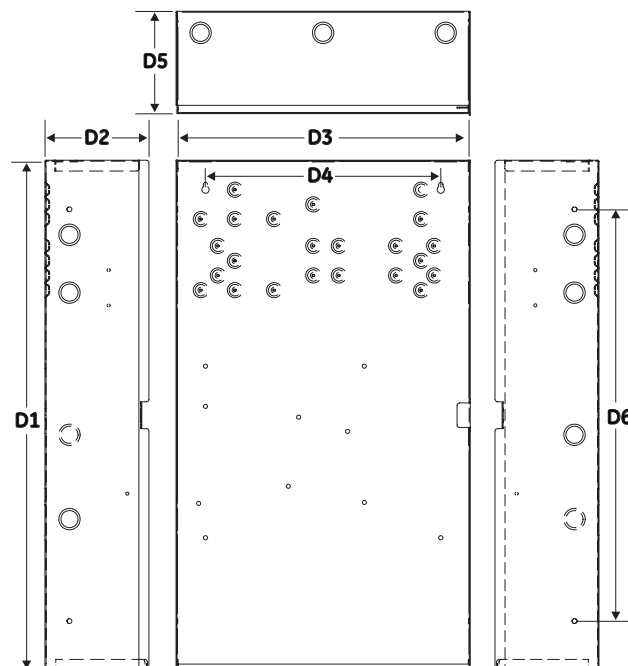
1. A trouble on the APS is sensed on the existing control panel's NAC circuit causing a NAC trouble on that panel. This removes the need to separately monitor the trouble contact except for AC power failure (see [3] below).
In an alarm condition, the APS allows NAC current to move downstream to devices connected to the existing control panel's NAC circuit.
2. Refer to the connected control panel's documentation for more details on NAC wiring.
- [3] The AC power failure panel connection annunciates at the panel but does not report off premises for a predetermined time period in U.S. fire applications.

Trouble relay wiring with four AUX circuits

When all four NAC/AUX circuits are configured as AUX circuits and DIP switch SW2-6 is ON, a SIGA-CT2 module must be used to monitor the sense 1 trouble contacts and the trouble relay.



Dimensions



D1	D2	D3	D4	D5	D6
26.0 in (66 cm)	5.3 in (13.5 cm)	15.0 in (38 cm)	12 in (30.5 cm)	5.3 in (13.5 cm)	21.0 in (53.3 cm)



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Specifications

Model	6.5 amp APS	10 amp APS
AC Line Voltage	120VAC or 220-240VAC 50/60Hz 390 watts	120VAC or 220-240VAC 50/60Hz 580 watts
Sense voltage (input)	6 to 45 Vdc, 11 to 33 Vrms (FWR and unfiltered DC)	
Sense current (input)	6 mA @ 24 Vdc, 3 mA @ 12 Vdc, 12 mA @ 45 Vdc	
Input Current (from an existing NAC)	3mA @ 12Vdc, 6mA @ 24Vdc	
Booster Internal Supervisory Current	70mA + 35 mA for each circuit set to AUX	
Booster Internal Alarm Current	270mA	
NAC/AUX output voltage	19.1 to 26.85 Vdc	
NAC/AUX output current	3.0 A max. per circuit (10 A or 6.5 A max. total for all NACs) (10 A or 6.5 A max. total for all AUXs) [2]	
NAC/AUX class	Class B or Class A	
Wire size	18 to 12 AWG (0.75 to 2.5 sq mm)	
NAC EOL	UL: 15 k Ohm (P/N EOL-15) ULC: Use P/N EOL-P1 and select the 15 k Ohm resistor	
Auxiliary output (continuous)	1 dedicated 200 mA auxiliary output, not supervised by APS, included in total current	
Common trouble relay	Form C, 1 A, 30 Vdc (resistive)	
Battery requirements [1]	6.5 to 24 Ah for fire applications Under 10 Ah, cut JP4. 10 Ah or above, do not cut JP4.	
Battery charger current limit	1.2 A when the battery jumper wire is cut 2.1 A when the battery jumper wire is not cut	
Operating environment		
Temperature	32 to 120 °F (0 to 49 °C)	
Humidity	0 to 93% RH, noncondensing	
Ground fault impedance	10 k Ohm	
Intended installation environment	Indoor-dry	

[1] The maximum battery size the panel can charge is 24 Ah (12V24A or equivalent).

[2] The maximum current is 8 amps for auxiliary circuits that operate when the panel is in standby.

Ordering Information

Catalog Number	Description	Shipping Wt. lb (kg)
→ APS6A	6.5 Amp Auxiliary Power Supply	26 (11.8)
APS6A/230	6.5 Amp Auxiliary Power Supply (220V)	
APS10A	10 Amp Auxiliary Power Supply	
APS10A/230	10 Amp Auxiliary Power Supply (220V)	

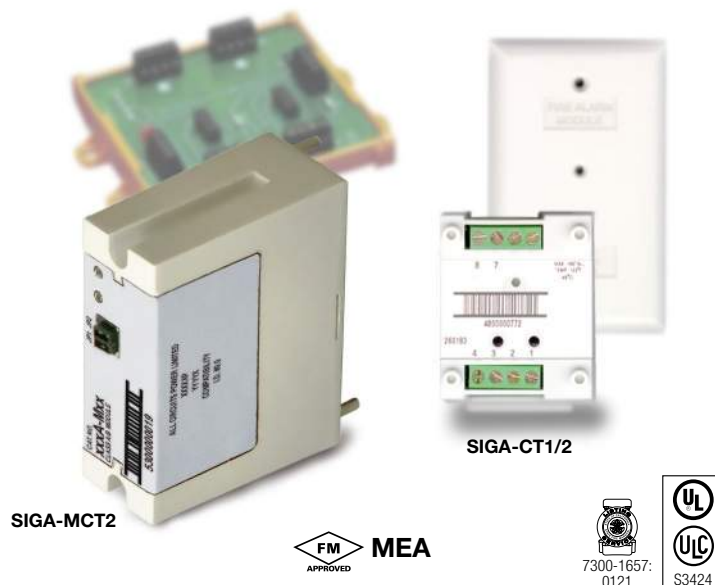
Notes

- Requires installation of separate battery cabinet.
- For earthquake anchorage, including detailed mounting weights and center of gravity detail, refer to Seismic Application Guide 3101676. Approval of panel anchorage to site structure may require local AHJ, structural or civil engineer review.

Related Equipment		
MN-BRKT3	MN-FVP series mounting bracket for APS-(6)(10)A power supplies	
BC-1EQ	Seismic Kit for BC-1. Order BC-1 separately. See note 2	
BPS-CVR	Electronics Protective Cover	
APSEQ	Seismic kit for APS6A or APS10 Auxiliary Power Supplies. See note 2	
12V6A5	12 V, 7.2 Amp Hour Battery, two required	3.4 (1.6)
12V10A	12 V, 10 Amp Hour Battery, two required	9.5 (4.3)
12V17A	12 V, 18 Amp Hour Battery, two required	13 (5.9)
12V24A	12 V, 24 Amp Hour Battery, two required	20 (9.07)
3-TAMP	Tamper switch	1.0 (0.6)
BC-1	Battery Cabinet (up to 2 - 40 Amp Hour Batteries)	58 (26.4)

Input Modules

SIGA-CT1, SIGA-CT1HT,
SIGA-CT2, SIGA-MCT2



SIGA-MCT2

SIGA-CT1/2



Overview

The SIGA-CT1 Single Input Module, SIGA-CT1HT High Temperature Single Input Module and SIGA-CT2/SIGA-MCT2 Dual Input Modules are intelligent analog addressable devices used to connect one or two Class B normally-open Alarm, Supervisory, or Monitor type dry contact Initiating Device Circuits (IDC).

The actual function of these modules is determined by the “personality code” selected by the installer. This code is downloaded to the module from the Signature loop controller during system configuration.

The input modules gather analog information from the initiating devices connected to them and convert it into digital signals. The module’s on-board microprocessor analyzes the signal and decides whether or not to input an alarm.

The SIGA-CT1, SIGA-CT1HT and SIGA-CT2 mount to standard North American 1-gang electrical boxes, making them ideal for locations where only one module is required. Separate I/O and data loop connections are made to each module.

The SIGA-CT1HT module operates at an expanded temperature range of 32 °F to 158 °F (0 °C to 70 °C) for those applications requiring more extreme environmental temperature variation.

The SIGA-MCT2 is part of the UIO family of plug-in Signature Series modules. It functions identically to the SIGA-CT2, but takes advantage of the modular flexibility and easy installation that characterizes all UIO modules. Two- and six-module UIO motherboards are available. All wiring connections are made to terminal blocks on the motherboard. UIO assemblies may be mounted in EDWARDS enclosures.

Standard Features

- Multiple applications**
Including Alarm, Alarm with delayed latching (retard) for waterflow applications, Supervisory, and Monitor. The installer selects one of four “personality codes” to be downloaded to the module through the loop controller.
- SIGA-CT1HT rated for high temperature environments**
Suitable for attic installation and monitoring high temperature heat detectors.
- Plug-in (UIO) or standard 1-gang mount**
UIO versions allow quick installation where multiple modules are required. The 1-gang mount version is ideal for remote locations that require a single module.
- Automatic device mapping**
Signature modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- Electronic addressing**
Programmable addresses are downloaded from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.
- Ground fault detection by address**
Detects ground faults right down to the device level.

Signature Series Overview

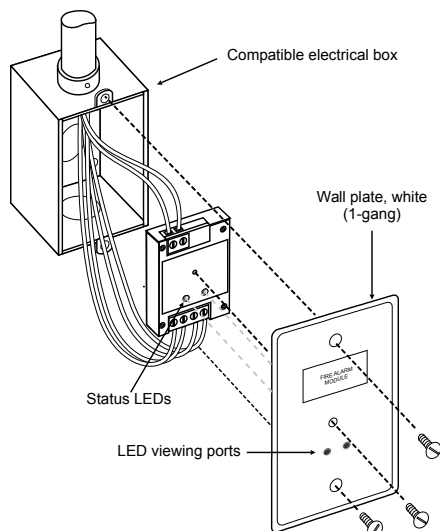
The Signature Series intelligent analog-addressable system from EDWARDS Security is an entire family of multi-sensor detectors and mounting bases, multiple-function input and output modules, network and non-network control panels, and user-friendly maintenance and service tools. Analog information from equipment connected to Signature devices is gathered and converted into digital signals. An onboard microprocessor in each Signature device measures and analyzes the signal and decides whether or not to input an alarm. The microprocessor in each Signature device provides four additional benefits – Self-diagnostics and History Log, Automatic Device Mapping, and Fast, Stable Communication.

Self-diagnostics and History Log – Each Signature Series device constantly runs self-checks to provide important maintenance information. The results of the self-check are automatically updated and permanently stored in its non-volatile memory. This information is accessible for review any time at the control panel, PC, or using the SIGA-PRO Signature Program/Service Tool.

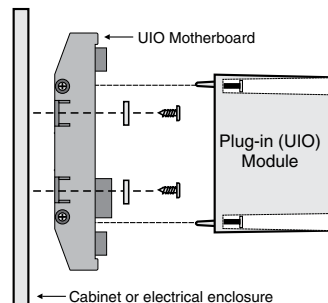
Automatic Device Mapping – The Signature Data Controller (SDC) learns where each device's serial number address is installed relative to other devices on the circuit. The SDC keeps a map of all Signature Series devices connected to it. The Signature Series Data Entry Program also uses the mapping feature. With interactive menus and graphic support, the wired circuits between each device can be examined. Layout or "as-built" drawing information showing branch wiring (T-taps), device types and their address are stored on disk for printing hard copy.

Installation

SIGA-CT1, SIGA-CT1HT and SIGA-CT2: modules mount to North American 2½ inch (64 mm) deep 1-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with 1-gang covers and SIGA-MP mounting plates. The terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size.



SIGA-MCT2: mount the UIO motherboard inside a suitable EDWARDS enclosure with screws and washers provided. Plug the SIGA-MCT2 into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size.



Electronic Addressing - The loop controller electronically addresses each module, saving valuable time during system commissioning. Setting complicated switches or dials is not required. Each module has its own unique serial number stored in its on-board memory. The loop controller identifies each device on the loop and assigns a "soft" address to each serial number. If desired, the modules can be addressed using the SIGA-PRO Signature Program/Service Tool.

EDWARDS recommends that this module be installed according to latest recognized edition of national and local fire alarm codes.

Application

The duty performed by the SIGA-CT1 and SIGA-CT2/MCT2 is determined by their sub-type code or "Personality Code". The code is selected by the installer depending upon the desired application and is downloaded from the loop controller.

One personality code can be assigned to the SIGA-CT1. Two personality codes can be assigned to the SIGA-CT2/MCT2. Codes 1, 2, 3 and 4 can be mixed on SIGA-CT2/MCT2 modules only. For example, personality code 1 can be assigned to the first address (circuit A) and code 4 can be assigned to the second address (circuit B).

NORMALLY-OPEN ALARM - LATCHING (Personality Code 1)

- Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact initiating devices such as Pull Stations, Heat Detectors, etc. An ALARM signal is sent to the loop controller when the input contact is closed. The alarm condition is latched at the module.

NORMALLY-OPEN ALARM - DELAYED LATCHING

(Personality Code 2) - Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact initiating devices such as Waterflow Alarm Switches. An ALARM signal is sent to the loop controller when the input contact is closed for approximately 16 seconds. The alarm condition is latched at the module.

NORMALLY-OPEN ACTIVE - NON-LATCHING (Personality Code 3)

- Assign to one or both circuits. Configures either circuit A or B or both for Class B normally-open dry contact monitoring input such as Fans, Dampers, Doors, etc. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is not latched at the module.

NORMALLY-OPEN ACTIVE - LATCHING (Personality Code 4)

- Assign to one or both circuits. Configures either circuit A or B or both for Class B normally open dry contact monitoring input such as from Supervisory and Tamper Switches. An ACTIVE signal is sent to the loop controller when the input contact is closed. The active condition is latched at the module.

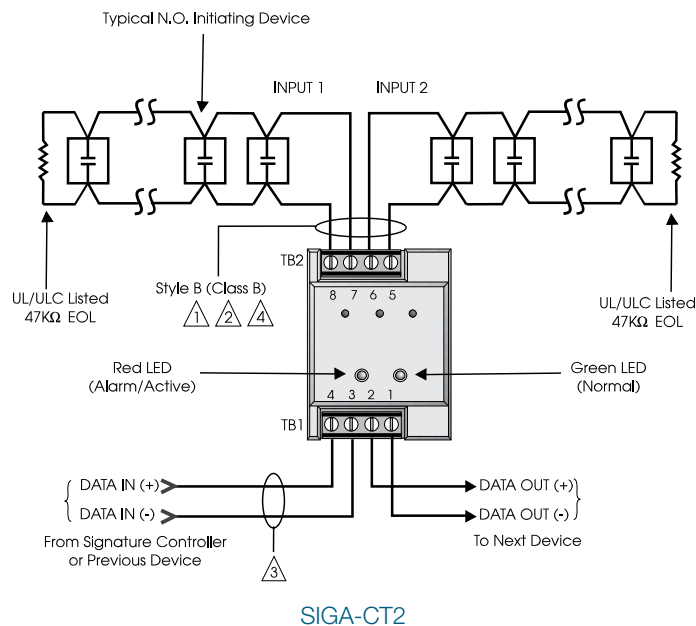
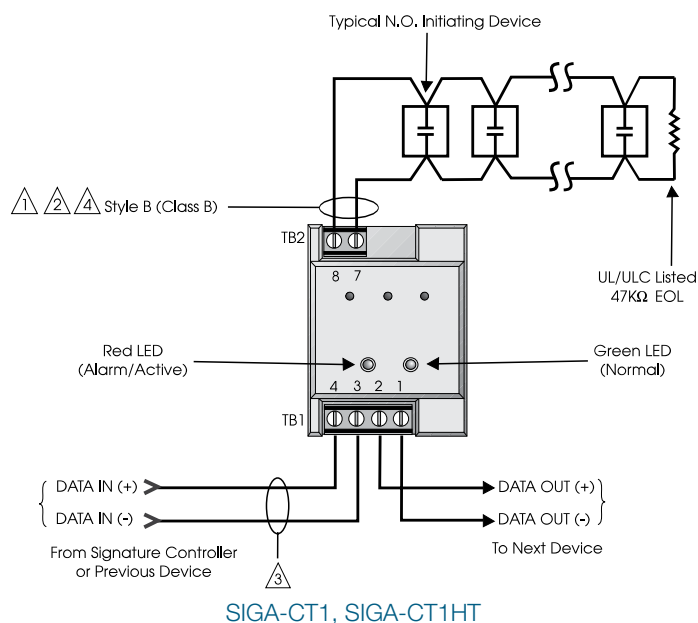
Typical Wiring

Modules will accept #18 AWG (0.75mm²), #16 (1.0mm²), and #14AWG (1.50mm²), and #12 AWG (2.50mm²) wire sizes.

Note: Sizes #16 AWG (1.0mm²) and #18 AWG (0.75mm²) are preferred for ease of installation. See Signature Loop Controller catalog sheet for detailed wiring requirement specifications.

Initiating (Slave) Device Circuit Wire Specifications

Maximum Allowable Wire Resistance	50 ohms (25 ohms per wire) per Circuit	
Maximum Allowable Wire Capacitance	0.1µF per Circuit	
For Design Reference:	Wire Size	Maximum Distance to EOLR
	#18 AWG (0.75 mm ²)	4,000 ft (1,219 m)
	#16 AWG (1.00 mm ²)	
	#14 AWG (1.50 mm ²)	
	#12 AWG (1.50 mm ²)	



NOTES

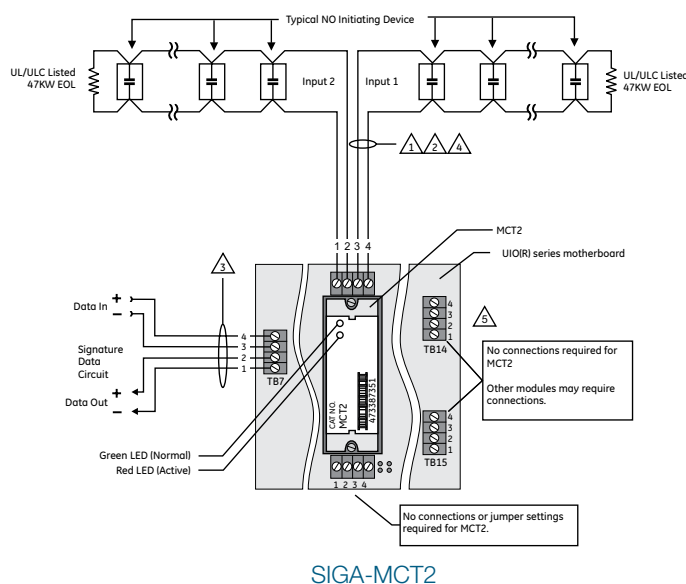
- 1 Maximum 25 Ohm resistance per wire.
- 2 Maximum #12 AWG (2.5 mm²) wire; Minimum #18 AWG (0.75 mm²).
- 3 Refer to Signature controller installation sheet for wiring specifications.
- 4 Maximum 10 Vdc @ 350 µA
- 5 The SIGA-UIO6R and the SIGA-UIO2R do not come with TB14.
- 6 All wiring is supervised and power-limited.
- 7 These modules will not support 2-wire smoke detectors.

Warnings & Cautions

This module will not operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguards with your local fire protection specialist.

Compatibility

These modules are part of EDWARDS's Signature Series intelligent processing and control platform. They are compatible with EST3, EST3X and iO Series control panels.





LIFE SAFETY & INCIDENT MANAGEMENT

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Specifications

Catalog Number	SIGA-CT1HT	SIGA-CT1	SIGA-CT2	SIGA-MCT2
Description	Single Input Module		Dual Input Module	
Type Code	48 (factory set) Four sub-types (personality codes) are available		49 (factory set) Four sub-types (personality codes) are available	
Address Requirements	Uses One Module Address		Uses Two Module Addresses	
Operating Current	Standby = 250µA; Activated = 400µA		Standby = 396µA; Activated = 680µA	
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)			
Construction	High Impact Engineering Polymer			
Mounting	North American 2½ inch (64 mm) deep one-gang boxes and 1½ inch (38 mm) deep 4 inch square boxes with one-gang covers and SIGA-MP mounting plates			UIO2R/6R/6 Motherboard
Operating Environment	32°F to 158°F (0°C to 70°C)	32°F to 120°F (0°C to 49°C)		
Storage Environment	-4°F to 140°F (-20°C to 60°C); Humidity: 0 to 93% RH			
LED Operation	On-board Green LED - Flashes when polled; On-board Red LED - Flashes when in alarm/active.			
Compatibility	Use with Signature Loop Controller			
Agency Listings	UL, ULC, MEA, CSFM			

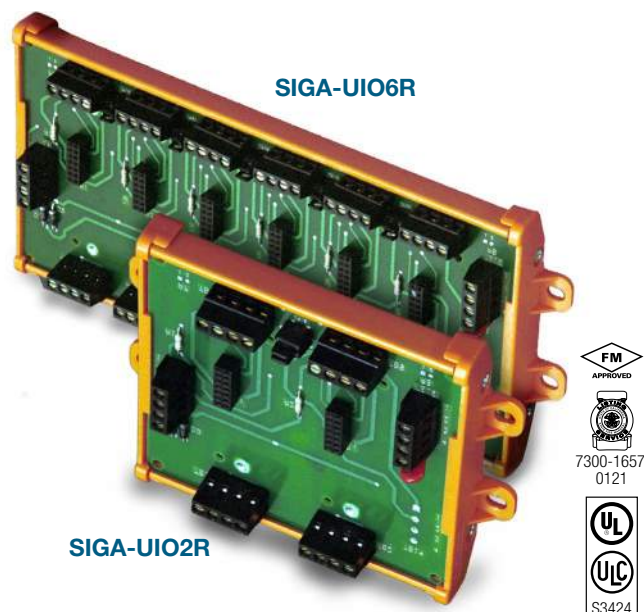
Ordering Information

Catalog Number	Description	Ship Wt. lbs (kg)
SIGA-CT1	Single Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-CT1HT	Single Input Module High Temperature Operation UL/ULC Listed	0.4 (0.15)
SIGA-CT2	Dual Input Module — UL/ULC Listed	0.4 (0.15)
SIGA-MCT2	Dual Input Plug-in (UIO) Module — UL, ULC Listed	0.1 (0.05)

Related Equipment		
27193-11	Surface Mount Box - Red, 1-gang	1.0 (0.6)
27193-16	Surface Mount Box - White, 1-gang	1.0 (0.6)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs — Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs — Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board — Six Module Positions	0.56 (0.25)
MFC-A	Multifunction Fire Cabinet — Red, supports Signature Module Mounting Plates	7.0 (3.1)
SIGA-MB4	Transponder Mounting Bracket (allows for mounting two 1-gang modules in a 2-gang box)	0.4 (0.15)
SIGA-MP1	Signature Module Mounting Plate, 1 footprint	1.5 (0.70)
SIGA-MP2	Signature Module Mounting Plate, 1/2 footprint	0.5 (0.23)
SIGA-MP2L	Signature Module Mounting Plate, 1/2 extended footprint	1.02 (0.46)

Universal Input/Output Module Motherboards

SIGA-UIO2R, SIGA-UIO6R,



Overview

Signature Series Universal Input-Output Module Motherboards provide mounting and wiring terminations for up to six Signature Series plug-in UIO (SIGA-“M” series) modules. UIO motherboards slide into a rigid extruded track (included) with mounting pads for convenient mounting into a variety of equipment enclosures. UIO modules plug into the board and are held securely in place with captive machine screws. All field wiring connects to terminal blocks on the motherboard, which permits rapid removal and replacement of modules for troubleshooting.

The **SIGA-UIO2R** provides mounting and wiring terminations for up to two UIO modules, and the **SIGA-UIO6R** provides mounting and wiring terminations for up to six UIO modules. Both motherboards feature a riser #1 input and a riser #2 input bus. Jumpers on riser #1 input, between modules, facilitate sharing a single riser among more than one module. This significantly reduces wiring requirements. Removing the jumpers provide separate riser inputs to each adjacent module. Riser #2 input is fixed to each module position and cannot be split.

The **SIGA-UIO6** provides mounting and wiring terminations for up to six UIO modules. This motherboard provides two riser inputs that are common to all modules.

Standard Features

- Modular flexibility**
Wide assortment of multi-function plug-in modules provides total flexibility.
- Minimum wiring requirements**
Integral jumpers between modules allow sharing of risers to reduce installation wiring.
- Easy installation**
#12 AWG (2.5 mm2) terminal blocks and sturdy mounting pads ensure quick installation into EDWARDS enclosures.
- Supports automatic device mapping**
All compatible UIO modules transmit information to the loop controller regarding their circuit locations with respect to other Signature devices on the wire loop.
- Supports intelligent devices**
On-board modules make decisions and input an alarm from initiating devices connected to them even if the loop controller's polling interrogation stops.
- Twisted or shielded wire not required**
Because all decisions are made at the on-board modules, lower communication speeds are possible. This results in substantially improved control panel response time and less sensitivity to line noise and loop wiring properties.
- Supports electronic addressing**
Programmable addresses are downloaded to compatible UIO modules from the loop controller, a PC, or the SIGA-PRO Signature Program/Service Tool. There are no switches or dials to set.

Mounting and Installation

Mount the UIO motherboard inside a EDWARDS MFC-A cabinet or other suitable electrical enclosure with screws and washers provided. Each MFC-A will hold one UIO2R motherboard or one UIO6 or UIO6R motherboard complete with their full complement of modules.

Plug a Signature Series UIO module into any available position on the motherboard and secure the module to the motherboard with the captive screws. Wiring connections are made to the terminals on the motherboard (see wiring diagram). UIO motherboard terminals are suited for #12 to #18 AWG (2.5 mm² to 0.75 mm²) wire size.

EDWARDS recommends that all boards and modules be installed according to latest recognized edition of national and local fire alarm codes.

Testing & Maintenance

The module's automatic self-diagnosis identifies when it is defective and causes a trouble message. The user-friendly maintenance program shows the current state of each module and other pertinent messages. Single modules may be turned off (de-activated) temporarily, from the control panel.

Scheduled maintenance (Regular or Selected) for proper system operation should be planned to meet the requirements of the Authority Having Jurisdiction (AHJ). Refer to current NFPA 72 and ULC CAN/ULC 536 standards.

Compatibility

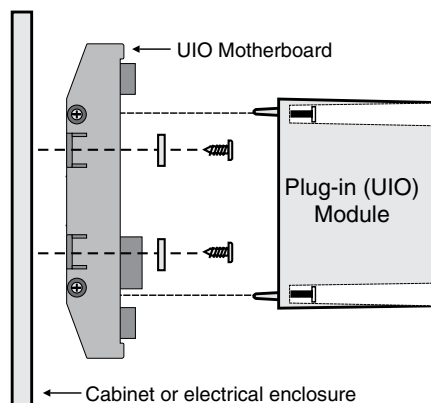
Signature Series Universal Input/Output Module Boards are compatible only with SIGA-“M” Series I/O Modules, which require a Signature Data Controller. They are compatible with EST3, EST3X and iO Series control panels.

Warnings & Cautions

Signature devices will not operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguards with your fire protection specialist.

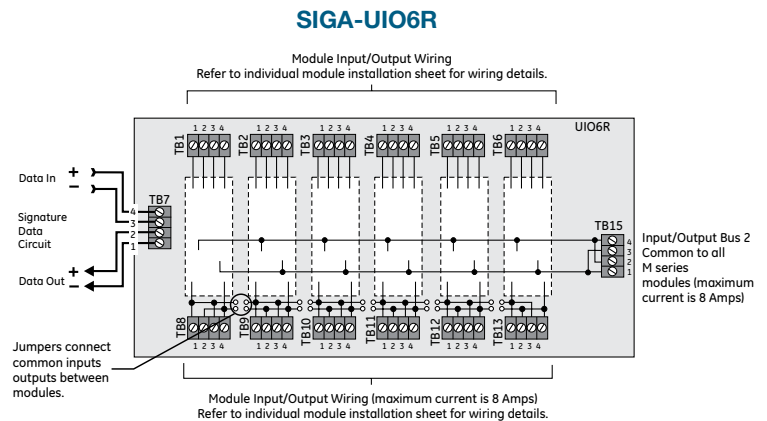
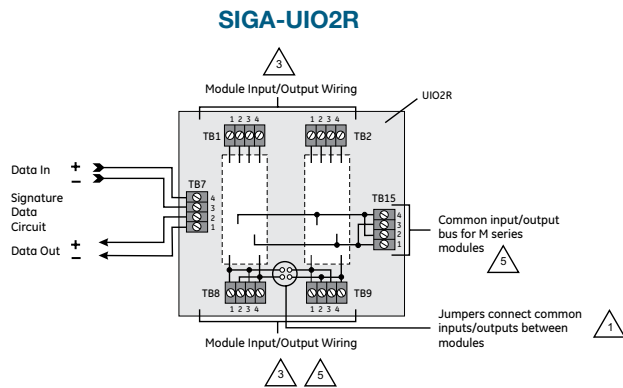


The MFC-A cabinet is UL listed for use with UIO motherboards and meets requirements for spacing and clearance around the components.



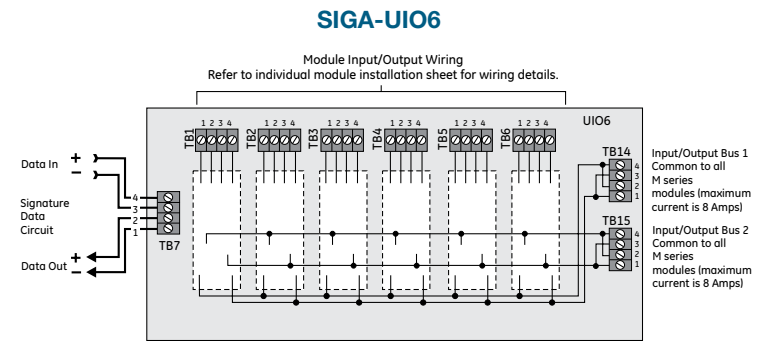
Typical Wiring

Signature Series Universal Input/Output Motherboards have terminal blocks to accept #18 AWG (0.75mm²), #16 AWG (1.0mm²), #14 AWG (1.5mm²), and #12 AWG (2.5mm²) wire sizes. See Signature Data Controller catalog sheets for detailed wiring requirements and specifications.



Notes

- 1 Jumpers may be used to make the inputs/outputs between modules common.
- 2) Not all modules use the SIGA-UIO2R terminals for the same functions.
- 3 Refer to individual SIGA-M series installation sheets for jumper settings and wiring information. Installations with multiple SIGA-UIO motherboards or enclosures (which include other wiring) require FPL, FPLR, FPLP, or equivalent NEC-approved wire for all power limited wiring. Observe the details of supervision and power limited versus non-power limited circuits. Refer to the SIGA-M series installation sheets.
- 4) Do not mix incompatible signals.
- 5 Maximum current is 8 Amps.
- 7) Refer to Signature Data Controller Installation Sheets for wiring specifications.





LIFE SAFETY & INCIDENT MANAGEMENT

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Specifications

Catalog Number	SIGA-UIO2R	SIGA-UIO6R	SIGA-UIO6
Module Capacity	Two	Six	Six
Dimensions (with module installed)	5.4 inch L (across mounting feet) x 4.3 inch W x 3.2 inch H	9.56 inch L (across mounting feet) x 4.3 inch W x 3.2 inch H	
Address Requirements	no address required		
Type Code	none		
Compatible Modules	All SIGA-Mxxx Signature Series		
Operating Voltage	15.2 to 19.95 Vdc (19 Vdc nominal)		
Mounting (cabinets)	Directly into suitable enclosures (e.g.: MFC-A) - Notes 1, 2, 3.		
Wiring Terminals	#12 AWG (2.5mm²) to #18 AWG (0.75mm²)		
Storage and Operating Environment	Operating Temperature: 32°F to 120°F (0°C to 49°C) Storage Temperature: -4°F to 140°F (-20°C to 60°C) Operating and Storage Humidity: 0 to 93% RH		
Agency Listing	UL, ULC, MEA, CSFM		

Notes:

1. Allow a minimum clearance of one inch around all sides of the UIO motherboard.
2. On-site drilling of mounting holes may be required. Self-tapping mounting screws are provided.
3. Suitable cabinets: MFC-A, CAB2, 3-CAB5, 3-CAB7, 3-CAB14, 3-CAB21, 3-RCC series, RACC series.

Ordering Information

Catalog Number	Description	Ship Wt. - lb (kg)
SIGA-UIO2R	Universal Input-Output Module Board w/Riser Inputs - Two Module Positions	0.32 (0.15)
SIGA-UIO6R	Universal Input-Output Module Board w/Riser Inputs - Six Module Positions	0.62 (0.28)
SIGA-UIO6	Universal Input-Output Module Board - Six Module Positions	0.56 (0.25)
MFC-A	UL listed cabinet for mounting UIO motherboards, red with white "FIRE" 8 inch H X 14 inch W X 3.5 inch D (203 mmH X 356 mm W X 89 mm D)	7.0 (3.1)

VESDA-E VEP (UL 268 7th Ed.)

VEP-A00-1P-UL, VEP-A00-P-UL, VEP-A10-P-UL



The VESDA-E VEP series of smoke detectors bring the latest and most advanced detection technology to provide very early warning and the best nuisance alarm rejection to a wide range of applications. Built on the Flair detection technology and years of application experience, VEP detectors achieve consistent performance over their lifetime via absolute calibration.

Flair Detection Technology

Flair is the revolutionary detection chamber that forms the core of the VESDA-E VEP, providing higher stability and increased longevity. Direct imaging of the sampled particles using a CMOS imager combined with multiple photo-diodes allows better detection and fewer nuisance alarms.



Installation, Commissioning and Operation

VESDA-E VEP is equipped with a powerful aspirator that enables use of a total of 427 ft (130 m) of sampling pipe in the one pipe model and 1,542 ft (470 m) in the four pipe model. Out of box operation is made possible with AutoConfig which allows airflow normalisation and AutoLearn Smoke and Flow to be initiated from within the detector. VEP is fully supported by the ASPIRE and Xtralis VSC software applications which facilitate ease of pipe network design, system commissioning and maintenance.

VESDAnet™

VESDA devices communicate on VESDAnet which provides a robust bi-directional communication network allowing continued redundant operation even during single point wiring failures. VESDAnet enables primary reporting, centralized configuration, control, maintenance and monitoring.

Ethernet Connectivity

VESDA-E detectors offer connectivity to corporate networks via Ethernet, allowing for devices installed with Xtralis monitoring and configuration software to connect to the detector.

Backward Compatibility

VESDA-E VEP is compatible with existing VESDA installations. The detector occupies the same mounting footprint, pipe, conduit and electrical connector positioning as VESDA VLP. VEP is also compatible with existing VESDAnet installations allowing monitoring of both VESDA-E and legacy detectors via the latest VSC and VSM4 applications.

Features

- One and four pipe models for different applications
- Flair detection technology delivers reliable very early warning in a wide range of environments with minimal nuisance alarms
- Multi stage filtration and optical protection with clean air barriers ensures lifetime detection performance
- Four alarm levels and a wide sensitivity range deliver optimum protection for the widest range of applications
- Intuitive LCD icon display provides instant status information for immediate response
- Flow fault thresholds per port accommodate varying airflow conditions
- Smart on-board filter retains dust count and remaining filter life for predictable maintenance
- Extensive event log (20,000 events) for event analysis and system diagnostics
- AutoLearn™ smoke and flow for reliable and rapid commissioning
- Referencing to accommodate external environmental conditions to minimise nuisance alarms
- Backward compatible with VLP and VESDAnet
- Ethernet for connectivity with Xtralis software for configuration, secondary monitoring and maintenance
- USB for PC configuration, and firmware upgrade using a memory stick
- Two programmable GPIs (1 monitored) for flexible remote control
- Field replaceable sub-assemblies enable faster service and maximum uptime

Listings / Approvals

- UL 268 7th edition
- ULC
- CSFM
- FM
- FDA
- FCC
- RCM

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

VESDA-E VEP (UL 268 7th Ed.)

TECHNICAL SPECIFICATIONS



Specifications

Supply Voltage Range	18-30VDC (Nominal 24VDC)				
Maximum Power Consumption*	Quiescent		Alarm		
VEP-A00-P-UL + IAQ STAX	0.95A		1.00A		
VEP-A00-P-UL VEP-A00-1P-UL VEP-A10-P-UL	0.57A		0.59A		
Nominal Power Consumption @ 24VDC	Quiescent		Alarm		
	Aspirator Setting				
	1	5	1	5	
VEP-A00-P-UL + IAQ STAX	0.70A	0.78A	0.74A	0.82A	
VEP-A00-P-UL	0.29A	0.38A	0.32A	0.41A	
VEP-A00-1P-UL	0.34A		0.37A		
VEP-A10-P-UL	0.33A	0.41A	0.36A	0.44A	
	One Pipe VEP	Four Pipe VEP			
	VEP-A00-1P-UL	VEP-A00-P-UL	VEP-A10-P-UL		
Dimensions (WHD)	13.8 in x 8.9 in x 5.3 in (350 mm x 225 mm x 135 mm)				
Weight	9.7 lbs (4.4 kg)	9.7 lbs (4.4 kg)	10.0 lbs (4.5 kg)		
Operating Conditions	Ambient: 32°F to 100°F (0°C to 38°C) Sampled Air: -4°F to 140°F (-20°C to 60°C)** Humidity: 5% to 95% RH, non-condensing				
Area Coverage	10,760 sq. ft (1,000 m²)	21,520 sq. ft (2,000 m²)			
Min. Airflow per Pipe	15 l/m				
Pipe Length (Linear)	312 ft (95 m)	919 ft (280 m)			
Pipe Length (Branched)	427 ft (130 m)	1,542 ft (470 m)			
Pipe Lengths Depending on No. of Pipes in Use	1 Pipe	1 Pipe	2 Pipe	3 Pipe	4 Pipe
	312 ft (95 m)	361 ft (110 m)	328 ft (100 m)	262 ft (80 m)	230 ft (70 m)
StaX	PSU				
Maximum No. of Holes	33	80			
Computer Design Tool	ASPIRE				
Pipe Size	Inlet: External diameter 1.05 in (3/4 in IPS) 25 mm Exhaust: External diameter 1.05 in (3/4 in IPS) or 25 mm via adaptor				
Relays	7 programmable relays (latching or non-latching states) Contacts rated 2 A @ 30 VDC (Resistive)				
IP Rating	IP40 (not evaluated by UL)				
Cable Access	1 in (4 x 26 mm) ports				
Cable Termination	Screw Terminal blocks 0.2–2.5 sq mm (24–14 AWG)				
Measurement Range	0.0000% to 11.09% obs/ft (0.000 to 32% obs/m)				
Sensitivity Range	0.0015% to 6.575% obs/ft (0.005 to 20% obs/m)				
Threshold Setting Range	Alert: 0.0015% to 0.614% obs/ft (0.005% to 2.0% obs/m) Action: 0.0015% to 0.614% obs/ft (0.005% to 2.0% obs/m) Fire1: 0.0030% to 0.614% obs/ft (0.010% to 2.0% obs/m) Fire2: 0.0061% to 6.575% obs/ft (0.020% to 20.0% obs/m)				
Software Features	Event log: Up to 20,000 events Smoke level, user actions, alarms and faults with time and date stamp AutoLearn: Detector learns Alarm Thresholds and Flow Fault thresholds by monitoring the environment.				

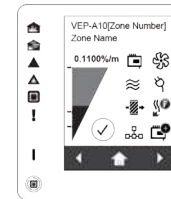
* Maximum current measured is from the supply voltage that generates the highest current.

** Sampled Air temperature shall reach Ambient Detector temperature upon entry into Detector. Refer to Xtralis Design Guides & Application Notes for sampled air pre-conditioning.

Approvals Compliance

Please refer to the Product Guide for details regarding compliant design, installation and commissioning.

3.5" Display



LED	Description
	Fire 2
	Fire 1
	Action
	Alert
	Disabled
	Fault
	Power

Home Page

Icon on Display	Description
	Smoke and Alarm Threshold Levels
	Detector OK
	Detector Fault
	Aspirator Fault
	Airflow Fault
	Power Fault
	Filter Fault
	Smoke Chamber Fault
	VESDAnet Fault
	StaX Module Fault

Ordering Information

Ordering Code	Description
VEP-A00-P-UL	VESDA VEP with LEDs, Plastic Enclosure, UL
VEP-A10-P-UL	VESDA VEP with 3.5" Display, Plastic Enclosure, UL
VEP-A00-1P-UL	VESDA VEP 1 Pipe with LEDs, Plastic Enclosure, UL

Spare Parts

VSP-956-04*	VESDA-E VEP Flow Sensor Manifold	VSP-963	VESDA-E Aspirator
VSP-960	VESDA-E Mounting Bracket	VSP-968	VESDA-E VEP-A00-P/1P Front Cover Plastic (LEDs)
VSP-961	VESDA-E Exhaust adaptor US	VSP-969-04*	VESDA-E VEP-A10-P Front Cover Plastic (3.5" Display)
VSP-962	VESDA-E Filter	VSP-965	VESDA-E Sampling Module
VSP-962-20	VESDA-E Filter - 20 Pieces	VSP-964-04*	VESDA-E Smoke Detection Chamber - MK4

* GA3 spare parts are available using existing ordering codes.

www.xtralis.com

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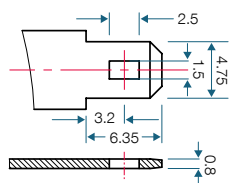
PS-1270

12V 7.0 AH @ 20-hr.
12V 6.5 AH @ 10-hr.

Rechargeable Sealed Lead Acid Battery PS – General Purpose Series

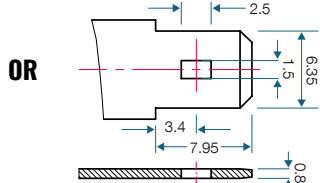
TERMINALS: (mm)

F1: Quick disconnect tabs,
0.187" x 0.032" – Mate with
AMP. INC. FASTON "187" series



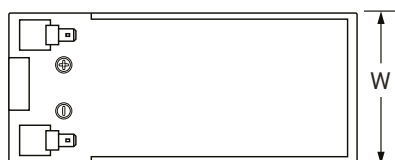
Torque – Not Applicable

F2: Quick disconnect tabs,
0.250" x 0.032" – Mate with
AMP. INC FASTON "250" series

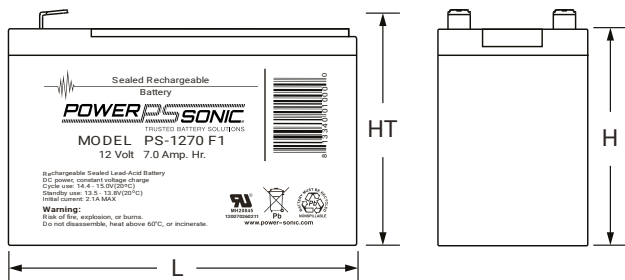


Torque – Not Applicable

DIMENSIONS: inch (mm)



L: 5.95 (151)
W: 2.56 (65)
H: 3.70 (94)
HT: 3.86 (98)
Tolerances are +/- 0.04 in.
(+/- 1mm) and +/- 0.08 in.
(+/- 2mm) for height
dimensions. All data subject
to change without notice.



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Hurricane Way, Wickford,
Essex SS11 8YQ
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F: +44 (0)1268 560902
E: salesEMEA@power-sonic.com

FEATURES

- Absorbent Glass Mat (AGM) technology for superior performance
- Valve regulated, maintenance free spill proof construction
- Power/volume ratio yielding excellent energy density
- Rugged vibration and impact resistant ABS case and cover
- Gas recombination technology
- 5 year design life

APPROVALS

- Approved for transport by air. D.O.T., I.A.T.A., F.A.A. and C.A.B. certified
- U.L. recognized
- ISO9001:2015 – Quality management systems

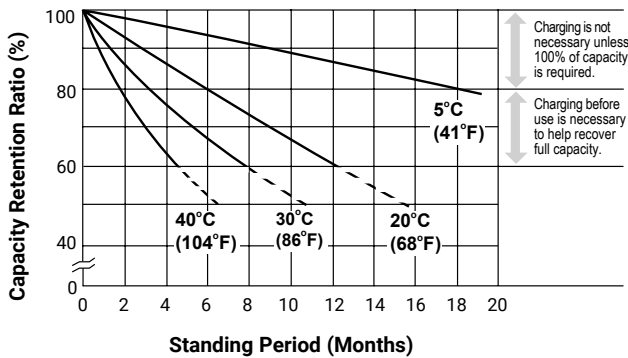
PERFORMANCE SPECIFICATIONS

Nominal Voltage	12 volts (6 cells)
Nominal Capacity	
20-hr. (350mA to 10.50 volts)	7.00 AH
10-hr. (650mA to 10.50 volts)	6.50 AH
5-hr. (1.2A to 10.20 volts)	6.00 AH
1-hr. (4.5A to 9.00 volts)	4.50 AH
Approximate Weight	4.80 lbs. (2.18 kg)
Internal Resistance (approx.)	23.0 milliohms
Max Short-Duration Discharge Current (10 Sec.)	70.0 amperes
Shelf Life (% of nominal capacity at 68°F (20°C))	
1 Month	97%
3 Month	91%
6 Month	83%
Operating Temperature Range	
Charge	5°F (-15°C) to 122°F (50°C)
Discharge	-4°F (-20°C) to 140°F (60°C)
Case	ABS Plastic
Power Sonic Chargers	PSC-12800A-C PSC-121000-PC

PS-1270 12V 7.0 AH @ 20-hr. 12V 6.5 AH @ 10-hr.

Rechargeable Sealed Lead Acid Battery
PS – General Purpose Series

SHELF LIFE & STORAGE



CHARGING

Cycle Applications: Apply constant voltage charge at 2.35v/c – 2.45v/c (14.1 – 14.7v for 12v Monobloc) at 20°C. Initial charging current should be set at less than 0.25C Amps. Switch to float charge to avoid overcharging.

“Float” or “Stand-By” Service: Apply constant voltage charge of 2.25v/c – 2.30v/c (13.5 to 13.8 volts for 12v Monobloc at 20°C. When held at this voltage, the battery will seek its own current level and maintain itself in a fully charged condition.

Temperature Compensation: Charging Voltage for both Cyclic and Standby applications should be regulated in relation to ambient temperature. As temperature rises charging voltage should be reduced to prevent overcharge and increased as temperature falls to avoid undercharge.

For further charging information including temperature compensation factors, see Power Sonic Technical Manual/ Power Sonic Charger specifications.

APPLICATIONS

- General purpose
- Medical
- Emergency lighting
- Fire and security

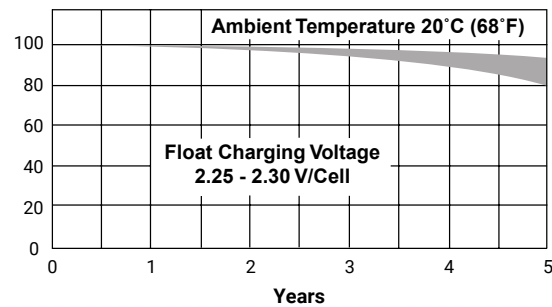
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LIFE CHARACTERISTICS IN STAND-BY USE



CHARGERS

Power Sonic offers a wide range of chargers suitable for batteries with a variety of capacities.

Please refer to our website for more information on our switch mode and transformer type chargers.

Please contact our technical department for advice if you have difficulty in locating a suitable charger.

FURTHER INFORMATION

Please refer to our website www.power-sonic.com for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc.

