**SIEMENS**

**Data Sheet**
**Fire Safety Products**

# FACP Accessories

## PAD-4 Distributed Power Supply Unit [for ULC markets]

### Notification Appliance Circuit Extender

### Models PAD-4-ENCL, PAD-4-MB (with FP2011-U1, FP2012-U1 power supplies)

## ARCHITECT AND ENGINEER SPECIFICATIONS

- **Four (4) 'Class B', power-limited notification appliance circuits (NACs)**
- **'Form C' general *Trouble* / *AC Fail* monitoring contact**
- **Optional built-in strobe synchronization**
  - Supports coded audible signals, including Temporal 3, Temporal 4 patterns
- **'Class A', field-selectable wiring**
  - Each unit can support an optional module (Model PAD-4-CLSA) that converts two (2) built-in 'Class A' NACs into four (4) 'Class A' NACs
- **Uses Flash memory-based system firmware**
  - Optional system-diagnostic and firmware-upgrade tool
- **Up to 3 Amps of auxiliary-power output**
- **Power supplies support NAC power**
  - Up to 6A used with Model FP2011-U1
  - Up to 9A used with Model FP2012-U1
- **Advanced microprocessor control**
- **Battery supervision and control**
- **24VDC output voltage**
- **ADA Compliant**

**'Class A' Adapter Card**
[Model PAD-4-CLSA]

**Main Board**
[Model PAD-4-MB]


**Unit Enclosure**
[Model PAD-4-ENCL]

- **Multi-module mounting in System 3™ enclosures**
  - Multiple modules share battery set
- **Ground-fault detection**
- **ULC-S527 Listed;**
  **FM (#3010), CSFM (#7315-0067:0268) Approved**

## Product Overview

Used with Siemens – Fire Safety fire alarm control panels (FACPs), the Distributed Power Supply PAD-4 Unit is a NAC expander with a built-in, auxiliary-power output. Each PAD-4 unit distributes additional power in buildings for audible and visual indicators that conform to the Americans with Disabilities Act (ADA). PAD-4 also has the following features:

- NACs
- Signal-input circuits
- Battery-charging circuit
- *Trouble* relays for remote monitoring
- Diagnostic light-emitting diodes (LEDs)
- Alternating Current (AC) power connection

The Siemens NACs, which connect with alarm signaling devices, have been designed to provide the highest level of reliability and performance. Signal coding on the circuits is accomplished through integrated circuits (rather than relays), which eliminates mechanical wear on the output circuits.

The PAD-4 unit provides constant 24VDC output voltage to each NAC – independent of voltage fluctuations on the primary or secondary power source. As a result, a larger voltage drop and a greater wire length for each NAC are supported by each PAD-4.

## Specifications

This version of the Siemens Distributed Power Supply Unit can be configured in the following manner that makes the outputs easily programmable:

- 'STEADY' outputs
- Synchronized strobe outputs
- American National Standards Institute (ANSI) Temporal 3
- ANSI Temporal 4 [for carbon monoxide (CO) alarm signal]

There are also two (2) inputs used to control the activation of the four (4) outputs. Programming can be set so one (1) input will silence the audible signal on Siemens Models 'AS'-series or 'ZH'-series horn and horn-strobes while the strobes remain active.



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## Specifications – (continued)

Operation of each PAD-4 unit is controlled by firmware stored in Flash memory on the main board, as well as the storage of a 10-event log, which can be viewed via Model PAD-4-FDT. In the event that an upgrade to the system firmware is required, the firmware can be transferred to the system without the replacement of firmware chips.

An optional firmware-download software tool, Model PAD-4-FDT, can be used for system diagnostic testing of the following:

- Primary-power voltage readouts
- Current draw for power charger
- Configuration switch settings
- Firmware version
- Battery voltage

When the tool is in communication with Model PAD-4-MB, the 'Test Mode' LED is illuminated. Model PAD-4-LUA is a USB serial port adapter that is required for tool-kit operation.

Each NAC extender supervises a variety of functions including:

- Low AC power
- Battery-voltage level
- Earth ground-fault conditions

All power can be directed to two (2) 'Class A' or four (4) 'Class B' power-limited NACs. Each NAC supports up to 3 Amps per circuit. Either one (1) or two (2) inputs can control four (4) outputs, which are compatible with all Siemens – Fire Safety 24VDC alarm signaling devices.

In cases where 'Class A' circuits are used, an optional Model PAD-4-CLSA module can be added, providing two (2) additional 'Class A' outputs to each PAD-4 unit.

Each NAC extender is also capable of operating other parts of a Siemens fire alarm system, such as door holders, via 3 Amps @ 24VDC max of power-limited auxiliary output. When the output activated, the total power available cannot exceed 6 Amps when used with Models FP2011-U1 or 9 Amps when used with FP2012-U1.

*Trouble* conditions are monitored through each unit's two (2) inputs. In addition, one (1) 'Form C' *Trouble* contact is provided for monitoring each unit that is connected through the input of a Siemens FACP. Therefore, the user has the option of connecting a PAD-4 NAC extender unit into a NAC of a Siemens FACP, or the unit may be monitored with a Model TRI-series monitoring module on a Siemens intelligent fire system.

A separate 'Form C' *Trouble* contact is used exclusively with each NAC extender to indicate *AC Fail Trouble* events on the NAC extender.

Each unit is packaged in its own sheet-metal enclosure with sufficient space to house up to 7AH battery sets. The enclosure (Model PAD-4-ENCL) is available in red.

The battery charger used in each unit can energize batteries of up to 18AH. Though, when battery sets greater than 7AH are required, the battery set must be housed in a System 3™ enclosure or a separate ULC Listed battery enclosure.

System 3 enclosures may also be used to house multiple Model PAD-4 units in a single enclosure, via the Model S3AP Adapter Plate. Two (2) units are capable of sharing the same battery set when mounted in the same enclosure. Model S3AP can also be used to mount the PAD-4 main board and 170-Watt power supply (Model FP2011-U1) into a PAD-3 enclosure.

Each Model PAD-4 unit complies with seismic certification, pursuant to the following:

- ASCE Standard 7, 2005 Edition
- International Building Code, 2006 Edition
- California Building Code, 2007 Edition
- ICC-ES AC 156, effective 2007
- OSHPD preapproved, under: OSP-0057-10
  - OSHPD CAN 2-1708A.5, Rev. 3

Each Model PAD-4-series unit also complies with seismic certification, pursuant to ASC / SEI 7-05, Section 13.2.2, when used with the PAD-4 battery bracket (Model PAD4-BATT-BRKT).

## Configuration Options

| Option | Input[s] | Output Controls | Circuit Types |
|---|---|---|---|
| 1 | Input 1 | All outputs | 'Class B' circuits |
| 2 | Input 1 | All outputs | 'Class B' circuits |
| | Input 2* | Silences horns on Output 1 | — |
| 3 | Input 1 | Outputs 1 and 2 | 'Class B' circuits |
| | Input 2 | Outputs 3 and 4 | 'Class B' circuits |
| 4 | Input 1 | Output 1 | 'Class B' circuits |
| | Input 2 | Outputs 2, 3 and 4 | 'Class B' circuits |
| 5 | Input 1 | Outputs 1 through 4 | 'Class A' circuit pairs |
| 6 | Input 1 | Outputs 1 through 4 | 'Class A' circuit pairs |
| | Input 2* | Silences horns on Output 1 | — |
| 7 | Input 1 | Outputs 1 and 2 | 'Class A' circuit pairs |
| | Input 2 | Outputs 3 and 4 | 'Class A' circuit pairs |

** denotes when used with Siemens Model 'AS' or 'ZH'–series horn / strobe devices*

## Indicator Lights

| | |
|---|---|
| **AC Power ON:** | **Green** |
| **AUX / PS:** | **Yellow** |
| **Ground Fault:** | **Yellow** |
| **Output 1 *Trouble*:** | **Yellow** |
| **Output 2 *Trouble*:** | **Yellow** |
| **Output 3 *Trouble*:** | **Yellow** |
| **Output 4 *Trouble*:** | **Yellow** |

| | |
|---|---|
| **Test Mode:** | **Yellow** |

## Technical Data

| | |
|---|---|
| ***AC Fail Trouble* Contact Rating:** { 'Form A' – Normally Closed (N.C) } | 2.0A @ 30VDC, max. **[resistive]** |
| **Basic *Trouble* Contact Rating:** { 'Form C' } | 2.0A @ 30VDC, max. **[resistive]** |
| ***Alarm* Current:** { for NACs and auxiliary power } | 3.0A per circuit, max.<br>**6A, max. {via Model FP2011-U1}**<br>**9A, max. {via Model FP2012-U1}** |
| **Ambient Temperature:** | 32° – 120° F<br>(0° – 49° C) |
| **Relative Humidity:** | Up to 93% @ 86° F (30° C); non-condensing |
| **Auxiliary Power Circuit:** | One (1) circuit @ 3A max. |
| **Battery Charging Capacity:** | 18AH |
| **Input Circuits / Configurations:** | Two (2) 'Class B' supervised<br>or<br>Two (2) 'Class A' supervised |
| **Input Current:** | 7.0mA, max. |
| **Input Voltage Range:** | 16 – 33VDC / VFW |
| **Installation Environment:** | Indoor, dry |
| **NACs:** | ○ Supervised, power-limited<br>○ 1.0mA standby current, max.<br>○ Four (4) circuits<br>○ 2K ohms (+), 8K ohms (-) |
| **Total Output Power:** | 24VDC @ 6 Amps (with Model FP2011-U1);<br>24VDC @ 9 Amps (with Model FP2012-U1) |
| **Output Circuits / Configurations:** | ○ Two (2) 'Class A';<br>– Up to four (4) 'Class A' (via Model PAD-4-CLSA)<br>○ Four (4) 'Class B';<br>○ One (1) Class A, Two (2) Class B; |
| **Single-Unit Dimensions:** { W -x- H -x- D }<br>**Model PAD-4-ENCL** | 13.5" –x– 18.75" –x– 3.25"<br>(34.3 cm. -x- 47.6 cm. -x- 8.3 cm.) |
| **Color:**<br>**Model PAD-4-ENCL** | Red |

## Temperature and Humidity Range

Each PAD-4 Distributed Power Supply Unit is ULC Listed for indoor dry locations within a temperature range of 120+/-3°F (49+/-2°C) to 32+/-3°F (0+/-2°C) and a relative humidity of 93+/-2% at a temperature of 90+/-3°F (32+/-2°C).

## Special Note for Canadian Users

Per ULC, separate ground-fault detection and indication for all remote power supplies are required. The GND FLT Relay, which is located on the Model PAD-4-CLSA module, provides a Normally Open (N.O.), 'Form A' contact that can be monitored via a monitoring module, such as Siemens Model HTRI-series modules or the 4 In / 4 Out Module, Model FDCIO422.

In order to comply with ULC requirements, the 'Class A' Adapter (Model PAD-4-CLSA) must be used on all PAD-4 unit installations – whether or not 'Class A' circuitry is used.

## Details for Ordering

| Model | Part Number | Description |
|---|---|---|
| PAD-4-ENCL | 500-050081 | PAD-unit enclosure |
| PAD-4-MB | 500-650217 | PAD-unit main board |
| FP2011-U1 | 500-450222 | 170-Watt power supply |
| FP2012-U1 | S54400-Z60-A1 | 300-Watt power supply |
| PAD-4-CLSA | 500-850254 | 'Class A' Adapter Card |

**— System Kits —**

| Model | Part Number | Description |
|---|---|---|
| PAD4-6A-CLSA | S54339-A2-A1 | **Complete 6A PAD-4 kit *with*:**<br>– One (1) Unit Enclosure, PAD-4-ENCL<br>– One (1) Main Board, PAD-4-MB<br>– One (1) 170W power supply, FP2011-U1<br>– One (1) 'Class A' Adapter Card, PAD-4-CLSA |
| PAD4-9A-CLSA | S54339-A4-A1 | **Complete 9A PAD-4 kit *with*:**<br>– One (1) Unit Enclosure, PAD-4-ENCL<br>– One (1) Main Board, PAD-4-MB<br>– One (1) 300W power supply, FP2012-U1<br>– One (1) 'Class A' Adapter Card, PAD-4-CLSA |

**— Optional Accessories —**

| Model | Part Number | Description |
|---|---|---|
| PAD4-BATT-BRKT | S54430-B4-A1 | Battery bracket for NAC expander |
| PAD-4-LUA | S54389-C1-A1 | PAD-4 Laptop-Upload Adapter |
| S3AP | 500-650257 | PAD-4 NAC expander adapter plate (for use with PAD-3 and System 3 enclosures) |

**Note**: Whether or not 'Class A' circuitry is used, the 'Class A' Adapter Card (Model PAD-4-CLSA) must be used in all PAD-4 Canadian installations, per ULC).

ULC requirements specify for separate ground-fault detection and indication to be used on all remote power supplies, which includes PAD-4 NAC extenders.

**Notice:** This marketing data sheet is not intended to be used for system design or installation purposes. For the most up-to-date information, refer to each product's installation instructions.

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