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Project: 08-25-3324 HCA LSMC TEMPORARY KITCHEN
 2100 SE BLUE PARKWAY
 LEE'S SUMMIT, Missouri 64063

Submittal #7001.0 - FIRE ALARM SYSTEM

Revision	0	Submittal Manager	Luke Arbanas (Nabholz Construction Corporation)
Status	Open	Date Created	Nov 12, 2025
Issue Date	Nov 12, 2025	Spec Section	
Responsible Contractor	ELECTRICAL CORPORATION OF AMERICA INC	Received From	Mitch Kelley (ELECTRICAL CORPORATION OF AMERICA INC)
Received Date	Nov 12, 2025	Submit By	
Final Due Date	Nov 19, 2025	Lead Time	
		Type	

Submittal Package

Approvers	Luke Arbanas (Nabholz Construction Corporation)
Ball in Court	Luke Arbanas (Nabholz Construction Corporation)
Distribution	Mitch Kelley (ELECTRICAL CORPORATION OF AMERICA INC)
Description	
Priority	
Manufacturer	
Constraint	

PROCUREMENT

Required On-Site Date	Estimated Lead Time (Days)
Estimated Delivery Date	Date of Shipment
Actual Delivered Date	Current Status

Comments

Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					

Name	Sent Date	Due Date	Returned Date	Response	Attachments
Mitch Kelley	Nov 12, 2025	Nov 19, 2025	Nov 12, 2025	Submitted	LSMC Temp Kitchen - FA submittal drawings.pdf (Current) LSMC Temp Kitchen - FA submittal datasheets.pdf (Current) MX25101-1001_Temp Kitchen FA submittal ECA COVERSHEET.pdf (Current)
Comment	AHJ to confirm if acceptable.				
Luke Arbanas	Nov 12, 2025	Nov 19, 2025		Pending	

Electrical Corporation OF America, Inc.

PROJECT: LSMC Expansion

SUBMITTAL No: MX25101-1001

SPEC. SECTION: Delegated
Design

SUBMITTAL IDENTIFICATION & CONTRACTOR'S APPROVAL STATEMENT

DATE: 11-12-25 COPIES Electronic DRAWING SHEET NO. FA0.01, FA1.10, FA2.11,
FA4.01, FA5.01

Description submittal contents: Temp Kitchen fire alarm - delegated design.

Location: LSMC Temp. Kitchen

Manufacturer: Siemens Building Systems

Subcontractor or Supplier (Optional) Siemens

REMARKS: Drawings and Product Submittals attached.

CONTRACTOR'S APPROVAL

ELECTRICAL CORPORATION of AMERICA has reviewed and coordinated the submitted documentation and verifies that the equipment and material meet the requirements of the Work and the Contracts Documents. We accept sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data contained in the submittal as required by the Contract Documents.

Deviations: None Yes
See remarks above

Approved By: Mitch Kelley
ECA

Date: 11-12-2025

This approval does not release subcontractor / vendor from the contractual responsibilities.

SIEMENS

Smart Infrastructure Buildings

7938 Marshall Dr.

Lenexa, KS 66214

Phone: 913-905-6700

Submittal Date

11/4/2025

MISSOURI CERTIFICATE OF AUTHORITY #000816



11/7/2025

JAY R. GUERRA
LICENSE # E-26382



ENGINEERING

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Fire Alarm System Equipment
Submittal for:

Lee's Summit Medical Center

Temporary Kitchen

2100 SE Blue Parkway

Lee's Summit, MO 64063

Job Number
44OP-406791

PREPARED FOR:

Lee's Summit Medical Center - Temporary Kitchen

2100 SE Blue Parkway
Lee's Summit, MO 64063

FIRE ALARM SYSTEM TABLE OF CONTENTS

QTY.	MODEL #	DESCRIPTION	CATALOG NUMBER	PART NUMBER
NOTIFICATION APPLIANCES				
4	SC-HS-CR-F	CEILING HORN STROBE RED FIRE	2610	S54361-F10-A1
INITIATING DEVICES				
6	ABHW-4B	Audible Base	6159	S54320-F13-A1
1	DB-11	Detector Base Assembly	6161	500-094151
3	FDBZ492	Duct Housing	6156	S54319-B22-A1
4	FDO421	Optical Smoke Detector	6152	S54320-F4-A1
6	FDT421	Heat Detector	6151	S54320-F5-A1
4	XMS-D	Manual Station - Dual Action	6364	S54321-F8-A1
3	XTRI-D	Dual Input Monitor Module with Built-In Isolator	6167	S54370-B2-A1
5	XTRI-R	Single Input Monitor Module with Relay w/ Isolator	6167	S54370-B1-A1
PANEL COMPONENTS				
1	PAD5-6A	PAD-5 6A Kit (PAB-ENCL, PAD-5-MB, FP2011-U1)	3364	S54339-A15-A1
MISC.				
2	7ah	PowerSonic PS-1270F2 7AH Batteries, F2	PS-Series	A7F30026425
2	DTK-2MHLP24BM	Surge Suppressor	Insert	A7F30030413

Notification Appliances

'ACEND' Series – ~~Horns | Strobes | Horn-~~ Strobes

Applications : Indoor, Ceiling-Only

Architect & Engineer Specifications

- Sophisticated series of notification appliances that meets fire-industry codes and regulations for commercial-building applications
- Compatible with the Siemens Cerberus PRO and Desigo Fire Alarm Control Panels (FACPs); Siemens PAD-Series Power Supplies
- Energy Efficient and Sustainable
- Siemens EcoTech Certification
- Cutting-edge LED technology
 - Capability to have existing Xenon and LED strobes in the same field-of-view
 - Fewer power supplies required, smaller wire gauge, reduced wire runs
- Straightforward installation coupled with compact, modern design
 - No visible mounting screws
 - Manual (index finger) slide-setting adjuster
- Six (6) field-selectable Candela settings:
15cd | 30cd | 75cd | 110cd | 135cd | 185cd
- Faceplates ship in distinctive types:
 - 'FIRE' | 'ALERT' | 'AGENT' | 'EMERGENCY' | 'HOUSE ON FIRE' Icon 
- High / Low Horn Sound Output
- 10 Horn Patterns (Field Selectable)
- UL 1638 | UL 1971 | UL 464 Listed
- ULC 525 | ULC 526 Listed
- FCC Part 15

Product Overview

The 'ACEND'-series is Siemens new offering of horns, strobes, and horn-strobes with LED based strobes to its notification-appliances portfolio. With the 'ACEND'-series, Siemens offers a full of range of products with low and high candela settings that makes these sophisticated notification appliances ideal for new installs and retrofit applications. These appliances are compatible with Siemens Cerberus PRO and Desigo fire alarm control panels and with Siemens PAD-Series power supplies. (For more details, see compatibility table in these documents: **315-096363**, **A6V10333530**, **A6V10333532**)

The 'ACEND' Series notification appliances hold Siemens **EcoTech** Certification, an environmental self-declaration, based on sustainability evaluations.

The notification appliances use recycled materials and sustainable packaging, minimizing waste throughout their lifecycle and reducing environmental impact.

The 'ACEND'-series notification appliances are designed for low power consumption and work at a range of 16 - 33VDC with significantly reduced current draw.

The strobe portion of these appliances meets the 20-millisecond light-pulse-duration requirements of the 2022 edition of NFPA 72. This feature allows existing Xenon and the new LED devices to be used in the same field-of-view.

In a single device, the 'ACEND'-series appliances can provide alarm-signaling tones for dual applications. All strobe models in the series feature multi-Candela settings (15cd | 30cd | 75cd | 110cd | 135cd | 185cd) on a single appliance.

Additionally, there are ten (10) modes of operation for the audible portion of these notification appliances:

- Continuous
- Bell
- March Time Horn
- Code 3 Horn
- Code 3 Tone
- Code 4 Tone
- Slow Whoop
- Siren
- HI/LO
- Canadian March Time 30

These high-quality energy-efficient devices have a sleek modern design and are consistent to the look of the interior composition of the building application.

The 'ACEND'-series audible and/or visual notification appliances are apt for indoor, ceiling-mount applications.



Model SC-HN-CR-N
Horn



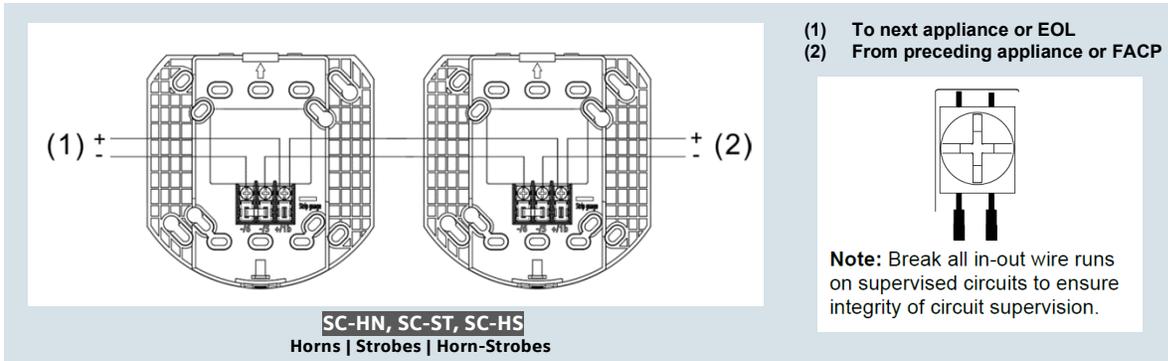
Model SC-ST-CW-F
Strobe



Model SC-HS-CW-F
Horn-Strobe



Wiring Diagrams



Specifications

In terms of composition and functionality, the 'ACEND'-series horns, strobes and horn-strobe appliances provide added value to the installer for these types of applications for operation:

- Compact | sleek | low-profile design
- Sustainable and Energy efficient
- Reduced power consumption
- Comprehensive feature list
- Convenient mounting options
- Easy-to-adjust selection-slider switch for Candela settings
 - No tools required for setting changes
 - Multi-level settings: 15cd | 30cd | 75cd | 110cd | 135cd | 185cd
- High and Low audible outputs
- Cutting-edge LED technology

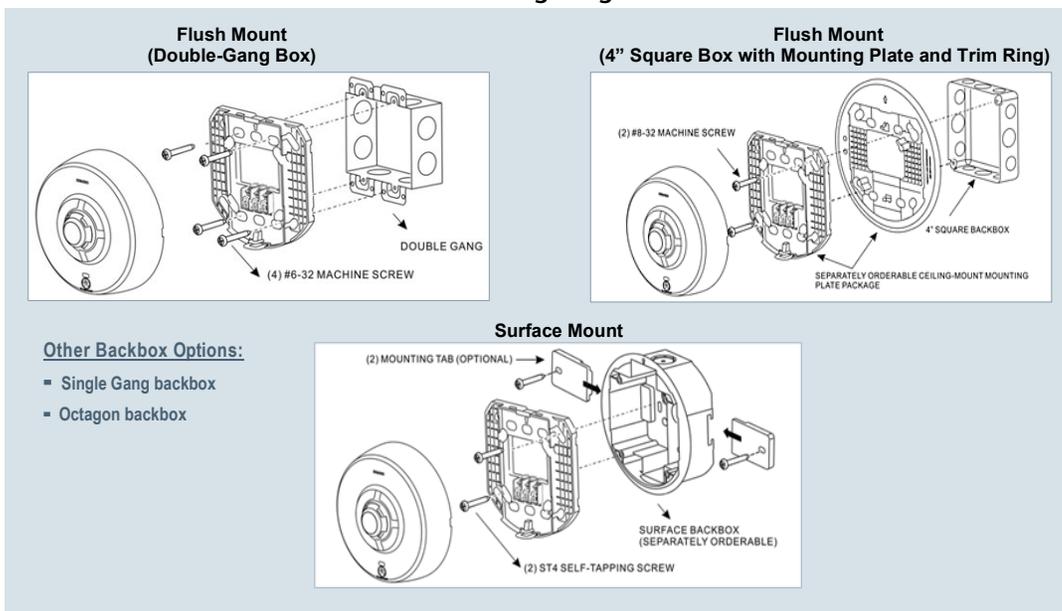
The LED portions of the of SC-ST Strobes and SC-HS Horn-Strobes meet the 20 millisecond light-pulse-duration requirements of the 2022 edition of NFPA 72. By meeting this latest requirement, existing Xenon as well as the new LED-technology devices can now be in the same field-of-view.

All appliances are UL/ULC listed as "Special Application 16 to 33VDC" and compliant with applicable clauses of FCC Part 15.

All types of the 'ACEND'-series horns, strobes and horn-strobe appliances are UL / ULC Listed for indoor use.

Horn: UL 464, ULC 525 | Strobe: UL 1638, UL 1971, ULC 526

Mounting Diagrams



Technical Data

→ Horn-Strobes | Output Current Draw (UL) (Max.)

Current Draw (mA) @ 16 - 33VDC							
Horn Pattern	Volume	Candela Settings					
		15cd	30cd	75cd	110cd	135cd	185cd
Continuous	High	36	38	50	77	112	188
	Low	36	38	50	77	112	179
Bell	High	36	38	50	77	112	183
	Low	36	38	50	77	112	180
March Time Horn	High	45	47	59	86	121	170
	Low	45	47	59	86	121	168
Code 3 Horn	High	37	39	51	78	113	172
	Low	37	39	51	78	113	168
Code 3 Tone	High	39	41	53	80	115	167
	Low	39	41	53	80	115	166
Code 4 Tone	High	42	44	56	83	118	157
	Low	42	44	56	83	118	150
Slow Whoop	High	36	38	50	77	112	146
	Low	36	38	50	77	112	145
Siren	High	36	38	50	77	112	163
	Low	36	38	50	77	112	162
HI/LO	High	36	38	50	77	112	150
	Low	36	38	50	77	112	149
Canadian March Time 30	High	44	46	58	85	120	155
	Low	44	46	58	85	120	144

Strobe | Output Current Draw (UL) (Max.)

Current Draw (mA) @ 16 - 33VDC						
Models: SC-ST-CR-F SC-ST-CW-F	Candela Settings					
	15cd	30cd	75cd	110cd	135cd	185cd
	24	27	39	68	93	143

GENERAL NOTES:

1. Strobes are designed to flash at 1-flash-per-second minimum over their "Regulated Voltage Range."
2. NFPA-72 specifies a flash rate of 1-to-2 flashes-per-second.
3. All Candela ratings represent minimum effective Strobe intensity based on UL 1971.

→ Horn | Output Ratings (Max.)

Models: SC-HN-CR-N SC-HN-CW-N	Reverberant dBA Per UL 464 at Voltage Range 16 to 33V			
	Horn Pattern	16V	24V	33V
	Continuous Code 3 Horn Code 4 Tone	High dBA	High dBA	High dBA
		82	86	89
	Low dBA	Low dBA	Low dBA	Low dBA
		80	84	86

Horn-Only | Output Current Draw (UL) (Max.)

Current Draw (mA) @ 16 - 33VDC		
Horn Pattern	Volume	Current Draw (mA)
Continuous	High	29
	Low	20
Bell	High	27
	Low	24
March Time Horn	High	38
	Low	36
Code 3 Horn	High	30
	Low	26
Code 3 Tone	High	32
	Low	31
Code 4 Tone	High	35
	Low	28
Slow Whoop	High	21
	Low	20
Siren	High	28
	Low	27
HI/LO	High	28
	Low	27
Canadian March Time 30	High	37
	Low	26

Technical Data

General Properties

'ACEND' Series Horns / Horn-Strobes	
OPERATING TEMPERATURE:	- 32°F (0°C) to 122°F (50°C) - for indoor use only
RELATIVE HUMIDITY:	95%
OPERATING VOLTAGE RANGES:	16 to 33VDC
STROBE OUTPUT RATING:	- Field-selectable Candela outputs: 15cd 30cd 75cd 110cd 135cd 185cd
STROBE FLASH RATE:	Strobes are designed to flash at one-flash-per-second
STROBE SYNCHRONIZATION:	See *Compatibility table below. For more detailed information, refer to Document ID: 315-096363, A6V10333530, A6V10333532.
TEMPORAL SETTING:	Ten (10) field-selectable Horn Patterns (See <i>List of Horn Patterns in Horn-Only Output Current Draw & Horn/Strobe Output Current Draw Tables on Page 3</i>)

FACP / Power Supply	*Compatibility
Desigo / Cerberus PRO / FireFinder XLS	YES
PAD-3 PAD-4 PAD-5	YES
Booster Amplifiers	YES (Speakers only)
FS250 MPC System 3 MXL TXR-320	YES (Only on PADs not directly from panels)

Physical Properties

'ACEND' Series Horns / Horn-Strobes	
MATERIAL:	All appliances are made from environmentally friendly recyclable plastics.
WEIGHT:	Horns: 295 gm (0.65lb) Strobes: 319 gm (0.7lb) Horn-Strobes: 342 gm (0.75lb)
LENS TYPE:	LED strobe situated in a rugged Lexan lens
DIMENSIONS:	Horns: 6.1" (15.4 cm.) x 1.87" (4.75 cm.) Horn-Strobes: 6.1" (15.4 cm.) x 2.44" (6.2 cm.)

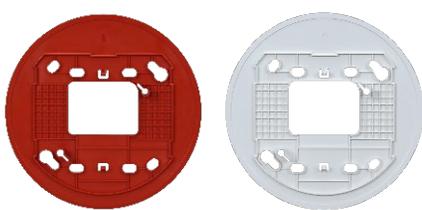
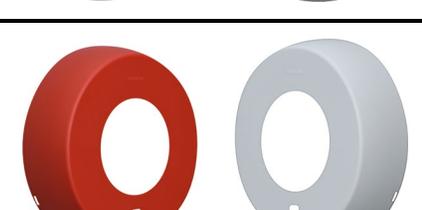
Mounting and Wiring Properties

'ACEND' Series Horns / Horn-Strobes	
INDOOR MOUNTING:	- Ceiling-mount applications - Single-Gang, Double-Gang, Octagon backboxes or 4" (10.2 cm.) Square Box
WIRING TYPE:	#12 – #18, American Wire Gauge (AWG)

Details for Ordering

MODEL	PART NUMBER	APPLIANCE TYPE	MOUNTING TYPE	STROBE TYPE	FACEPLATE COLOR	FACEPLATE LETTERING
SC-HN-CR-N	S54361-F15-A1	Horn	CEILING	- None -	RED	- No Lettering -
SC-HN-CW-N	S54361-F15-A2		CEILING	- None -	WHITE	- No Lettering -
SC-HS-CR-F	S54361-F10-A1	Horn-Strobe	CEILING	Clear	RED	FIRE
SC-HS-CW-F	S54361-F10-A2		CEILING	Clear	WHITE	FIRE
SC-ST-CR-F	S54361-F7-A1	Strobe	CEILING	Clear	RED	FIRE
SC-ST-CW-F	S54361-F7-A2		CEILING	Clear	WHITE	FIRE

Related Hardware

Model	Part Number	Description	Image
SMB-HS-CR	S54370-F16-A1	Red surface mount backbox for ceiling mounted horns, strobes, and horn/strobes	
SMB-HS-CW	S54370-F16-A2	White surface mount backbox for ceiling mounted horns, strobes, and horn/strobes	
STR-HS-CR	S54370-F2-A1	Red plastic trim ring for ceiling mounted horns, strobes, and horn/strobes	
STR-HS-CW	S54370-F2-A2	White plastic trim ring for ceiling mounted horns, strobes, and horn/strobes	
SCVR-HS-CR-EMG	S54370-F31-A1	Red plastic cover for ceiling mounted horns, strobes, and horn/strobes with "EMERGENCY" text	
SCVR-HS-CW-EMG	S54370-F31-A2	White plastic cover for ceiling mounted horns, strobes, and horn/strobes with "EMERGENCY" text	
SCVR-HS-CR-ALR	S54370-F33-A1	Red plastic cover for ceiling mounted horns, strobes, and horn/strobes with "ALERT" text	
SCVR-HS-CW-ALR	S54370-F33-A2	White plastic cover for ceiling mounted horns, strobes, and horn/strobes with "ALERT" text	
SCVR-HS-CR-AGT	S54370-F35-A1	Red plastic cover for ceiling mounted horns, strobes, and horn/strobes with "AGENT" text	
SCVR-HS-CW-AGT	S54370-F35-A2	White plastic cover for ceiling mounted horns and horn/strobes with "AGENT" text	
SCVR-HS-CR-HOF	S54370-F37-A1	Red plastic cover for ceiling mounted horns, strobes, and horn/strobes with "HOUSE ON FIRE" logo	
SCVR-HS-CW-HOF	S54370-F37-A2	White plastic cover for ceiling mounted horns, strobes, and horn/strobes with "HOUSE ON FIRE" logo	
SCVR-HS-CR-BNK	S54370-F14-A1	Red plastic cover for ceiling mounted horns, strobes, and horn/strobes with no text	
SCVR-HS-CW-BNK	S54370-F14-A2	White plastic cover for ceiling mounted horns, strobes, and horn/strobes with no text	

Related Hardware (cont.)

Model	Part Number	Description	Image
STLENS-R	S54370-F17-A1	Red plastic translucent lens for fire alarm strobes	
STLENS-A	S54370-F17-A2	Amber plastic translucent lens for fire alarm strobes	
STLENS-B	S54370-F18-A1	Blue plastic translucent lens for fire alarm strobes	
STLENS-G	S54370-F18-A2	Green plastic translucent lens for fire alarm strobes	

NOTICE – The information contained in this data-sheet document is intended only as a summary and is subject to change without notice. The product(s) described here has/have a specific instruction sheet(s) that cover various technical, limitation and liability information.

Copies of install-type, instruction sheets – as well as the *General Product Warning and Limitations* document, which also contains important data, are provided with the product. All are available from the Manufacturer.

Data contained in the aforesaid type of documentation should be consulted with a fire-safety professional before specifying or using the product.

Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.



Siemens Industry, Inc.
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August - 2025
(Rev. 5)

Detection Bases

Intelligent Audible (Sounder) Base [with Loop-Power Option]

Model ABHW-4B | ~~ABHW-4BZ~~

Architect & Engineer Specifications

- Innovative two-wire, loop-power option
- Supports Class-X SLC operation via Siemens *ISOtechnology*
- Highly flexible programming and configuration options with independently controlled outputs by device
- Provides six (6) field-configurable audible -tone patterns:
 - Steady
 - American National Standards Institute (ANSI) Temporal 3
 - ANSI Temporal 4 Carbon Monoxide [CO]
 - Temporal 4 Low Power
 - March time 120 (and **Canadian** March time 30)
- Power options include:
 - NACs
 - Loop (two-wire)
 - Siemens PAD-series NAC Extenders
 - Model ZIC-4A (for FireFinder XLS FACPs)
 - Any other UL Listed, 24VDC regulated power supply
- Compatible with Desigo Fire Safety intelligent detectors and Siemens 'H'-series and 'S'-series devices
- Synchronization by loop
- Standard 3,000 Hz Buzzer tone
- UL268, UL464 & UL2075 Listed; ULC-S525, ULC-S529 Listed
- FM (#3150, #3230 & #3010) and CSFM (#7300-0067:0271) Approved

Product Overview

The Model ABHW-4B Audible (Sounder) Base from Siemens Industry Inc. is an intelligent, supervised, and addressable detector base designed for use in standard applications requiring an audible notification device. Each Model ABHW-4B base generates a 3,000 Hz audio signal that complies with NFPA 72 Standard.

Model ABHW-4B is UL / ULC Listed, and is the first-ever agencies-listed audible base to have the option of being powered directly from a signal line circuit (SLC) in a two-wire configuration, when used with a Desigo detector. The loop-power feature and advanced configuration options contained with each audible (sounder) base are not available when a Siemens Model 'H'-series detector is used. Though, Model ABHW-4B will function similar to that of a Model ADBH-11 audible base when a Model 'H' or 'S'-series detector is used.

The innovative loop-power option provides easier two-wire connection for new or expansion applications where additional wiring or power options are limited. Model ABHW-4B can also be powered in a traditional four-wire configuration, utilizing a notification-appliance circuit (NAC); a Siemens PAD-series NAC extender; Model ZIC-4A, or any UL Listed, 24VDC regulated power supply.

Note: See the Model ABHW-4B Installation and Operation Manual (IOM: A6V10405587) for further information.

Model ABHW-4B provides six (6) field-configurable tone patterns: two (2) volume levels are used with compatible Siemens detectors and FACPs. Steady; Temporal 3 pattern; Temporal 4 pattern; Temporal 4 with low power; March Time 120, and Canadian March Time 30 are supported by each intelligent audible (sounder) base.

Intelligent audible (sounder) bases wired in the same device-loop circuit are fully synchronized with the Desigo Advanced-Line and Standard-Line detectors, and support the Siemens Remote Lamps, Models RL-HC and RL-HW.

When used in conjunction with agency-listed / compatible Siemens fire components, Model ABHW-4B may be used in lieu of a single / multiple station smoke alarms to achieve enhanced, system-level functionality.

Each intelligent, addressable audible (sounder) base consists of a standard Siemens Fire Safety Series '11' detector-base layout combined with supportive circuitry for Desigo Fire Safety and Model 'HFP' / 'SFP'-series of addressable detectors.



Model ABHW-4B
(Front & Back View)



Specifications (cont.)

Model ABHW-4B houses a pre-wired, audible (sounder) device capable of generating a 3,000 Hz tone that provides a signal up to 85dBA at 10 feet (3.1m) for localized annunciation.

Several different power options are available to provide power to the Model ABHW-4B audible base. Additionally, all Model ABHW-4B bases are capable of sounding simultaneously, individually or in any combination depending upon the system configuration used on a Siemens FACP.

Note: For power and wiring options, see **IOM: A6V10405587**.

Each Model ABHW-4B is a UL / ULC Listed supplementary smoke-detection device that meets or exceeds the 85dB at 10 ft. (3.1m) audibility requirement specified in UL268, ULC-S525, ULC-S529 as well as UL464 / UL2075, except for 520Hz, low-frequency-tone requirements.

Application Data

The smoke detectors used with Model ABHW-4B are subject to the maximum 30 ft. center spacing (900 sq. ft.) as referred to in the National Fire Protection Association Standard 72. This spacing, however, is based on ideal conditions, namely, smooth ceiling, no air movement, and no physical obstructions between the fire source and the detector.

Do not mount detectors in areas close to ventilating or air-conditioning outlets. Exposed joists or beamed ceilings may also affect safe spacing limitations for detectors. It is mandatory for NFPA 72 guidelines be applied to detector placements and spacing.

Technical Data		
Electrical Ratings		
Operating Voltage:	Loop power:	16 - 33 VDC
	External power:	16 - 33 VDC
Supervisory Current (max)	From SLC loop:	250 μ A
	From external source:	20 μ A
Alarm Current (RMS max)	Loop Power:	High dBA: 7.5 mA
		Low dBA: 4.5 mA
	External Power:	High dBA: 8.0 mA
		Low dBA: 3.5 mA
Connections		
Admissible Cross-Section Cable:	12 — 18 AWG (American Wire Gauge)	
Design:	Two (2) back-end blocks of up to four (4) screw terminals on each side	

Physical Properties	
Operating Temperature:	32° — 120°F (0° — 49°C)
Operating Humidity:	10 — 95%, non-condensing
Sound Output:	High: \geq 85 dB
	Low: \geq 75 dB
Mounting Box:	(10.2 cm.) 4-inch-square gang box

Compatibility with Siemens FACPs

Model ABHW-4B functions with the following:

Panel	System Type
FireFinder XLS	Person Machine Interface (PMI) v10.02 (or later)
	Zeus Custom-Configuration Software v10.02 (or later)
	Device Loop Card (Model DLC) v6.01 (or later)
Model FC2005	Desigo 50-point addressable FACP v01.04.20 (24), Software-tool v01.02.16 (53)
Models FC2025 FC2050	Software-tool v6.0.0R1 (or later)

Compatible Intelligent Detectors

MODEL OR TYPE	PART NUMBER	PRODUCT
FDO421	S54320-F4-A1	Optical Detector
FDT421	S54320-F5-A1	Heat Detector
FDOT421	S54320-F6-A1	Optical Heat Detector
FDOOT441	S54320-F7-A1	Dual-Optical Heat Detector
FDOOTC441	S54320-F8-A1	Dual Optical Heat (w/ CO) Detector

Compatible Remote Lamps

MODEL OR TYPE	PART NUMBER	PRODUCT
RL-HW	500-033310	Remote Alarm Lamp, Wall
RL-HC	500-033230	Remote Alarm Lamp, Ceiling

Compatible Model 'H' / 'S'-Series Detectors

MODEL OR TYPE	PART NUMBER	PRODUCT
HFP-11	500-033290	'H'-Series Optical / Heat Detector
HFPT-11	500-033800	'H'-Series Heat Detector
HFPO-11	500-034800	'H'-Series Optical Detector
SFP-11	500-033290C	'S'-Series Optical / Heat Detector
SFPT-11	500-033380C	'S'-Series Heat Detector
SFPO-11	500-034800C	'S'-Series Optical Detector

Details for Ordering

MODEL OR TYPE	PART NUMBER	PRODUCT
ABHW-4B	S54320-F13-A1	Audible (Sounder) Base [with Loop-Power Option]
ABHW-4BZ	S54320-F13-A2	Buzzer-Version Audible Base [3KHz tone – C.O.O. USA]

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Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.

SIEMENS

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July - 2023
(Rev. 5)

Desigo® Specialized Detection Devices

'DB' Series Detector Bases

→ Models ~~DB2-HR, DB-11 and DB-11E~~

Architect & Engineer Specifications

- Each detector base supports Isolation field wiring for ISOtechnology feature
- All bases compatible with optional Model LK-11 detector-locking kit
- Each detector base also functions with the addressable Models FDO421, FDOT421, FDOOT441, FDOOTC441 and FDT421 intelligent detectors
- Model DB2-HR is compatible with ASAtechnology multi-criteria detectors
- Each detector base is compatible with Model 'H', "11" and "121" series of conventional detectors
- Model DB2-HR has backwards compatibility with Siemens Model 'H'-series intelligent detectors
- Models DB-11 and DB-11E mount on a 4-inch octagon, square or single-gang electrical box
- Model DB-11 has plugs to cover the outer-mounting screw holes
- Model DB2-HR mounts on a 4"-square, double-gang electrical box
- UL268 Listed, ULC-S529 Listed
- FM, CSFM and NYC Fire Department Approved

Product Overview

The detector bases are low-profile, surface mounting bases used with various Siemens – Fire Safety conventional and addressable detectors. Model DB2-HR, which is a redesign of Model DB-HR, is compatible with the standard, addressable type of intelligent detectors, as well as the multi-criteria detection devices utilizing the patented ASAtechnology™

Model DB2-HR supports operation with Siemens' 50-point addressable; 252-point addressable; 504-point addressable, and FireFinder® XLS / Modular fire systems. A relay output from the fire detector base for signaling other devices is provided by Model DB2-HR.

The detector bases use screw-clamp contacts for electrical connections and self-wiping contacts for increased reliability. Further, the bases can be used with the optional Model LK-11 detector locking kit, which contains 50 detector locks and an installation tool, to prevent unauthorized removal of the detector head.

Specifications

Models DB-11 and DB-11E are standard bases for Model 'H'-series "11" and Model "121"-series conventional detectors. Model DB-11 has a 6" (15.2 cm) diameter, and the diameter for Model DB-11E is 4.5 inches (11.4 cm).

Moreover, Models DB-11 and DB-11E mount on a 4"-square, (10.2 cm) octagon or single-gang box. Model DB-11 has integral, decorative plugs to cover the outer screw holes.

However, Model DB2-HR mounts on a double-gang, 4-inch (10.2 cm.) square electrical box.



→ Model DB-11

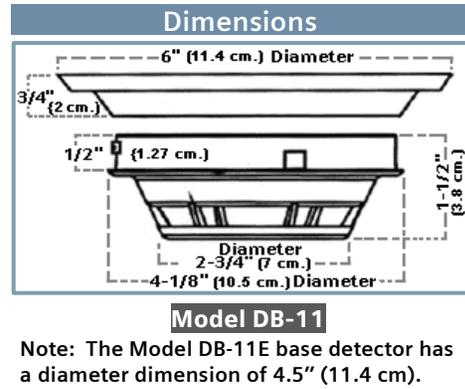
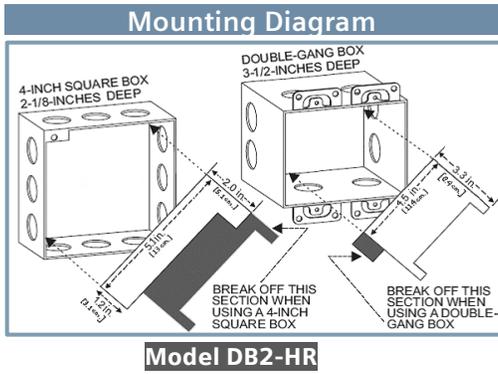


Model DB-11E

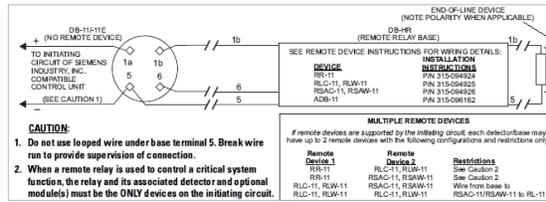


Model DB2-HR

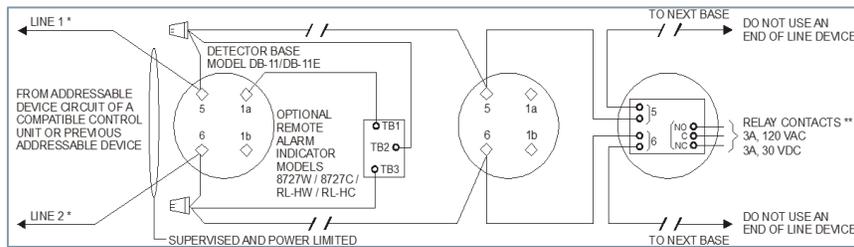




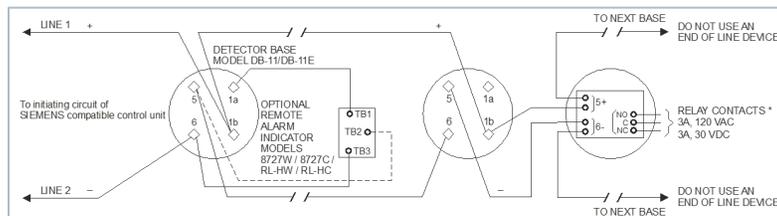
Wiring Diagrams



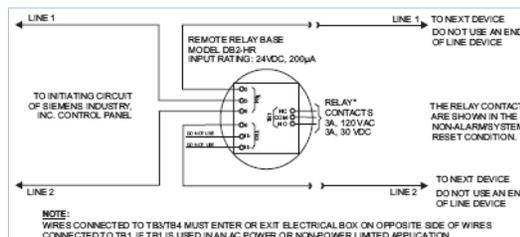
Note: The illustration above is typical wiring for Models DB-11 and DB-11E (using Models OH121, OP121, and HI121 detectors).



Note: The illustration above is typical polarity insensitive wiring for Models DB-11 and DB-11E (using Models FDO421 / FDOOT441 / FDOOTC441 / FDOT421 / FDT421 detectors).



Note: The illustration above is typical isolator mode wiring for Models DB-11 and DB-11E (using Models FDO421 / FDOOT441 / FDOOTC441 / FDOT421 / FDT421 detectors).



Note: The illustration above is typical wiring for Model DB2-HR for polarity-insensitive detectors.

Details for Ordering		
MODEL OR TYPE	PART NUMBER	PRODUCT
DB-11	500-094151	Low-Profile Surface-Mount Base
DB-11C	500-095687	Low-Profile Surface-Mount Base [Canada]
DB-11E	500-094151E	Smaller-Diameter Detector Base
DB-HR	500-033220	Relay Base for 'H'-Series Intelligent Detector
DB2-HR	S54370-F12-A1	Relay base compatible with standard and advanced detectors; backwards compatible with Model 'H'-series intelligent detectors
FDT421	S54320-F5-A1	Thermal (Heat) Detector
FDOT421	S54320-F6-A1	Addressable Multi-Criteria Fire Detector
FDO421	S54320-F4-A1	Photoelectric Smoke Detector
FDOOT441	S54320-F7-A1	Multi-Criteria Fire Detector with ASAtechnology™
FDOOTC441	S54320-F8-A1	Multi-Criteria Fire / CO Detector with ASAtechnology™
LK-11	500-695350	Base Locking Kit for Model '11'-series detectors
H1121	S54372-F3-A1	Heat Detector
OH121	S54372-F2-A1	Multi-Sensor Smoke Detector
OP121	S54372-F1-A1	Photoelectric Smoke Detector

NOTICE – The information contained in this data-sheet document is intended only as a summary, and is subject to change without notice. The product(s) described here has/have a specific instruction sheet(s) that cover various technical, limitation and liability information.

Copies of install-type, instruction sheets – as well as the *General Product Warning and Limitations* document, which also contains important data, are provided with the product, and are available from the Manufacturer.

Data contained in the aforesaid type of documentation should be consulted with a fire-safety professional before specifying or using the product.

Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.

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Desigo® Fire Safety Specialized Devices

Models ~~FDBZ492, FDBZ492 HR, FDBZ492 R and FDBZ492 PR (with FDBZ-WT and FDBZ492-RTL)~~

Architect & Engineer Specifications

- Four (4) models available
- Addressable and conventional with and without relays
- Compatible with Siemens – Fire Safety conventional and addressable fire-alarm control panels (FACPs)
- Magnet test feature with the Model OP121 conventional detector
- Design for air-velocity range of 100 to 4,000 feet-per-minute (fpm)
- Robust, compatible conventional remote indicator test switch that incorporates tri-color light-emitting diode (LED)
- Clear housing cover with smoke test port on cover for quick identification of detector type
- Removable via four (4) captive-thumb screws (no tools required)
- Includes a smoke / aerosol detector test port
- Optional NEMA 4X-reinforced, stainless-steel and watertight enclosure available, Model FDBZ-WT
- No tools required for cover removal, sampling and exhaust-tube installations
- Trouble-event activation upon front-cover removal
- Alarm LED visible from front
- Self-contained model available with 'on-board' power supply for conventional detectors
- Expanded temperature range
- Relay models available
- UL268A Listed, ULC-S529 Listed
- FM (#3010), CSFM (#3240-0067:0265) Approved

Product Overview

The Siemens – Fire Safety Model 'FDBZ'-series of air-duct-detector housings are designed for use with Siemens Model 'H'-series, 'FD'-series and Model OP121 detectors. (see: Details for Ordering for a complete list of compatible devices).

Designed for installation directly to heating, ventilating and air-conditioning (HVAC) duct systems, the Model 'FDBZ'-series of duct housings complies with National Fire Protection Association Standard (NFPA) No.'s 72 and 90A, and is Underwriters' Laboratories Listed.

When equipped, the air-duct detector housing will signal the presence of smoke being carried through the duct system. Air-duct detectors are not intended to be substituted for open-area detection.

Notes: Most conventional time-control equipment guarantee only one (1) detector per zone when the detector's operated relay function is critical. The connection of a remote lamp and a remote relay –per detector – is allowed. Refer to the installation manual of the respective conventional FACP. With either the Desigo® series or FireFinder® XLS series of FACPs, up to 252-addressable detectors with relays per circuit may be used. The connection of an intelligent remote lamp (ILED) and a remote relay is allowed for each detector simultaneously.

Specifications

The Model 'FDBZ'-series of air-duct housings are uniquely designed to use with the photoelectric detector. Sensitivity of Models PE-11, PE-11C, OP121 conventional detectors can be verified for calibration via LED visual status or a Model RSAW-11, Model RSAC-11 or FDBZ492-RTL multi-color remote lamp. A **Green** flash indicates the detector has passed its self-test. **Amber** indicates a Trouble condition, and **Red** indicates an Alarm event.

Sensitivity for Models FP-11, HFP-11, SFP-11, HFPO-11, SFPO-11 FDO421, FDOOT441 and FDOOTC441 intelligent detectors is verified from the multi-color LED of the respective detector, or its sensitivity reading may be printed by command from the corresponding FACP to an optional printer.



FDBZ-series of air-duct housings
[~~FDBZ492, FDBZ492 HR, FDBZ492 R & FDBZ492 PR~~]



Specifications (cont.)

The remote alarm indicator (Model FDBZ492-RTL) allows for manual testing via a key-switch for conventional and addressable detectors, as well as the conventional and addressable air-duct housing with relay. Model FDBZ492-RTL, which mounts remotely from the conventional and addressable air-duct housing, allows for manual relay-output control. The duct-detector remote indicator key-switch also indicates the current state of the detector.

The watertight housing (Model FDBZ-WT), which allows the air-duct detector housing to be installed inside the separate NEMA 4X enclosure, is for installations for either an outdoor area or in environments where excessive moisture is prevalent.

Each detector unit employs a cross-sectional sampling principle of operation. Inlet sampling tubes are available in four (4) lengths (see: Sampling Tube Selection Table). Outlet sampling tubes are one (1) common length and draw. A continuous, cross-sectional sample of air moves through the duct. Stratification or skin affect phenomenon that occurs in the duct can prevent smoke (especially in large ducts) from reaching a spot-type detector.

In addition, the unique design of the sampling chamber ensures uniform sensitivity in air velocities, ranging from a low of 100 fpm to as high as 4,000 fpm. Each air-duct housing comes with three (3) wiring entry ports:

- Two (2) 3/4" conduit knockouts
- One (1) 1/2" conduit opening

The inlet sampling tube length is determined by the width of the air duct being protected. The inlet tube — greater than and nearest to the duct width — should be used (see: Sampling Tube Selection Table). The inlet tube can then be trimmed at the job site to the exact width of the duct. The outlet sampling tube for all ducts — irrespective of width — has a fixed length of approximately 5.5 inches (14cm.), and is supplied with the air-duct housing.

Note: When the use of a remote relay is required, order Model FDBZ492-R for conventional systems; Model FDBZ492-HR for addressable systems. When required, a separate watertight enclosure (Model FDBZ-WT), which is designed to contain the air-duct housings is available.

(For full details, refer to installation instructions for the respective air-duct housing.)

Note: When a self-contained duct detector with power supply is required, order Model FDBZ492-PR.

(For full details, refer to installation instructions - part number A6V10330327.)

Sampling Tube Selection Table

Duct Width	Sampling Tube (Model No.)
For duct widths 6" to 1'	ST-10
For duct widths 1' to 3'	ST-25
For duct widths 3' to 5' (requires support)	ST-50
For duct widths 5' to 10' (requires support)	ST-100

Maintenance of the detector is easily accomplished via the removal of the duct-housing sampling chamber cover. The detector, which plugs into the housing, is easily removed for cleaning or replacing by a trained technician.

All that is necessary for installation of the air-duct detector is the cutting of three (3) small holes for the Sampling Tube installation (template included), and the drilling of two (2) holes for mounting the air-duct housing. The unit is then easily mounted in place, and connection made to the existing wires or terminals — if optional accessories are utilized. No mechanical tools are required for removing the cover or connecting the sampling and exhaust tubes to an air-duct housing.

Models ST-50 and ST-100 require support. However, Model ST-100 is shipped in two (2) 5-ft. (152 cm.) pieces with a coupling for field assembly.

Operation

Based on the monitoring results, the LED indicator flashes the following colors based on the following conditions:

Flash Color	Condition	Flash Interval (in seconds)
Green*:	Normal supervisory operation. Smoke sensitivity is within rated limits.	10
Yellow:	Detector is in <i>Trouble</i> condition, and needs either repair or replacement.	4
Red:	<i>Alarm</i> condition.	1
No Flash:	Detector is not powered.	—

*LED can be turned OFF.

Please follow the corresponding description of the panel used.

Technical Data	
Operating Temperature Ranges:	+32°F (0°C) to 120°F (49°C)
Sampling Tube Pressure Range of Differences:	> 0.01 inches - < 1.2 inches of water column
Relative Humidity:	0 - 95%; non-condensing
Air Pressure	No effect
Altitude Range:	No limitations
Air-Duct Velocity:	100 — 4,000 ft. / min (0.51— 20m / sec)

Physical Properties	
Dimensions: (H -x- W -x- D)	Rectangular: 14.38" -x- 5" -x- 2.5" (37 cm. -x- 12.7 cm. -x- 6.36 cm.) Square: 7.75" -x- 9" -x- 2.5" (19.7 cm. -x- 22.9 cm. -x- 6.36 cm.)
Detector Weight:	1.8 Lbs. (0.82 Kg.)

Air Duct Housing Hardware Package
<ul style="list-style-type: none"> ▪ Short-Return (outlet) Tube ▪ Stopper ▪ #12 + 3/4" Sheet-Metal Screws ▪ Mounting Template
<p>Note: Detector and Sampling Tube to be purchased separately. Minimum hardware required:</p> <ul style="list-style-type: none"> - one (1) Air-Duct Housing Assembly - one (1) Sampling Tube - one (1) Detector

Details for Ordering		
Model or Type	Part Number	Description
FDBZ492	S54319-B22-A1	<p>A two-wire addressable or conventional duct detector (without relays) designed for direct use on heating, ventilating and air-conditioning (HVAC) air-duct systems. When equipped, the air-duct detector housing will signal the presence of smoke being carried through the duct system.</p> <p>For use with the following Models:</p> <ul style="list-style-type: none"> ▪ OP121 ▪ FP-11 ▪ HFP-11 ▪ HFPO-11 ▪ PE-11 ▪ FDO421 ▪ FDOOT441 ▪ FDOOTC441 ▪ PE-11C ▪ SFP-11 ▪ SFPO-11
FDBZ492-HR	S54319-B23-A1	<p>A two-wire addressable duct detector (with relays) designed for direct use to HVAC air-duct systems and works with the Remote Test Switch (FDBZ492-RTL). This part has a programmable relay base, and when equipped, the addressable air-duct detector housing will signal the presence of smoke being carried through the duct system.</p> <p>For use with the following Models:</p> <ul style="list-style-type: none"> ▪ FDO421 ▪ FDOOT441 ▪ FDOOTC441 ▪ FP-11 ▪ HFP-11 ▪ HFPO-11 ▪ SFPO-11 ▪ SFP-11
FDBZ492-R	S54319-B24-A1	<p>A two-wire conventional duct detector with relays designed for direct use on HVAC air-duct systems. This detector has a relay base, and when equipped with conventional air-duct housing, will signal the presence of smoke being carried through the duct system.</p> <p>For use with the following Models:</p> <ul style="list-style-type: none"> ▪ PE-11 PE-11C ▪ OP121
FDBZ492-PR	S54319-B25-A1	<p>A four-wire conventional duct detector with relays and a built-in power supply. Housing is designed for direct use to HVAC air-duct systems. It has a relay base with a built-in power source. When equipped with conventional air-duct housing, this duct detector will signal the presence of smoke being carried through the duct system.</p> <p>For use with the following Models:</p> <ul style="list-style-type: none"> ▪ PE-11 PE-11C ▪ OP121
FDBZ492-RTL	S54319-S27-A1	<p>Device is used for manual testing via a key-switch for duct-housing Models FDBZ492-R, FDBZ492-PR and FDBZ492-HR. Device mounts remotely from the conventional and addressable air-duct housing, allowing for manual relay-output control. The duct-detector remote key-switch also indicates the current state of the detector.</p> <p>For use with the following Models:</p> <ul style="list-style-type: none"> ▪ FDBZ492-HR ▪ FDBZ492-R ▪ FDBZ492-PR
FDBZ-WT	S54319-B26-A1	<p>An optional, separate watertight NEMA 4X enclosure (Model FDBZ-WT) that provides added watertight protection for any of the Model FDBZ492-series duct housings. The duct housing fits into the separate 4X enclosure. This part allows the air-duct detector housing to be installed in the separate enclosure, and can be used in either an outdoor area or in environments where excessive moisture is prevalent.</p> <p>For use with the following Models:</p> <ul style="list-style-type: none"> ▪ FDBZ492 ▪ FDBZ492-R ▪ FDBZ492-HR ▪ FDBZ492-PR
ST-10	500-649710	Sampling tube for Ducts 6" to 1'
ST-25	500-649711	Sampling tube for Ducts over 1' to 3'
ST-50	500-649712	Sampling tube for Ducts 3" to 5'
ST-100	500-649713	Sampling tube for Ducts 5' to 10'

Note: Model names in Red for use in Canada.

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Data contained in the aforesaid type of documentation should be consulted with a fire-safety professional before specifying or using the product.

Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.

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(Rev. 6)

Desigo® Fire Safety Detectors and Peripherals

Photoelectric Smoke Detector Model FDO421

Architect & Engineer Specifications

- UL 268 7th edition Listed
- Built-in *ISOtechnology™*
- 252 Isolation devices per SLC
- Compatible with `H'-series devices on the same loop (with Desigo Fire Safety series fire-alarm control panels)
- Compatible with Model DPU (device programmer / loop tester)
- Each detector is self-testing:
 - self-monitored for sensitivity with UL Listed limits
 - complete diagnostics performed every 10 seconds
- Polarity insensitive via *SureWire™* technology
- Functions with Model DB-11-series mounting bases
- Tri-color detector-status light-emitting diode (LED) with 360 ° view
- Field-selectable application - sensitivity profiles
- Remote sensitivity - measurement capability
- Utilizes advanced, microprocessor-based signal processing
- Supports Alarm Verification (AV) feature
- Automatic environment compensation
- Superior electromagnetic interference (EMI) and radio-frequency interference (RFI) immunity
- Restriction of Hazardous Substances (ROHS compliant)
- UL Listed | FM & CSFM Approved
 - UL 268: `Open Area Smoke Detection'
 - UL 268A (Duct) - `In-duct housing' use
 - UL 268A (Duct) - `Direct-in-Duct' use
 - ULC-S529: 'System Smoke Detection'
 - ULC-S530: 'Heat Actuated Fire Detection'
 - FM 3230
 - CSFM | File: 7272-0067:0258

Product Overview

The Photoelectric Smoke Detector (Model FDO421) uses state-of-the-art microcontroller circuitry and surface-mount technology for maximum reliability. Model FDO421 incorporates an optical sensor using a light-scattering detection principle. The device utilizes advanced software algorithms to analyze the signals, and provides highly stable and accurate smoke detection.

Model FDO421 also uses state-of-the-art microprocessor circuitry with error check; detector self-diagnostics, and supervision programs.

Each detector is UL 268 7th edition listed incorporating advanced built-in *ISOtechnology™* - True Class-X SLC operation (use is optional) greatly improving system reliability and circuit integrity while providing advanced addressable fault finding.

The unit fits into one (1) wall-or-ceiling footprint, and only occupies one (1) address on the signal-line circuit (SLC).

Model FDO421 is a plug-in, two-wire, addressable photoelectric smoke detector whose value is increased with built-in *ISOtechnology* feature. Model FDO421 is Underwriters' Laboratories Listed [UL268A Listed for direct in-air duct usage].

Each detector consists of a dust-resistant photoelectric chamber and microprocessor-based electronics with a low-profile plastic housing. Every Model FDO421 fire detector is shipped with a protective dust cover.

Operation

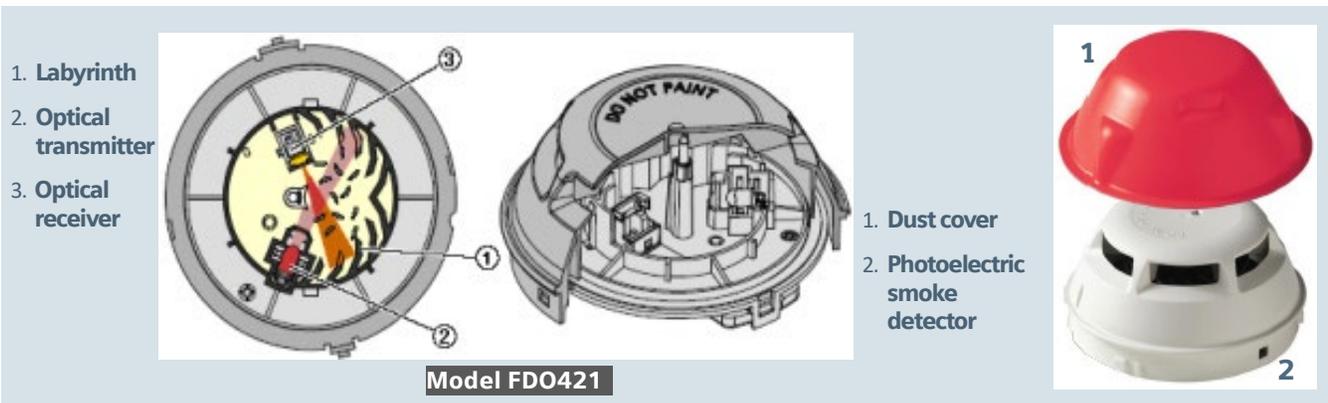
Model FDO421 is a wide-spectrum, photoelectric smoke detector that incorporates an infrared light-emitting diode (IRLED), as well as a light-sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern.

The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke, airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the detector chamber, light emitted from the IRLED is scattered by the smoke particles and is received by the photodiode (see: images on page 2).



Model FDO421
Photoelectric Smoke Detector





Sensitivity Settings

Application Parameter Sets

Model FDO421 provides two (2) pre-programmed sensitivity parameter sets that can be selected by the Siemens fire-alarm control panel in order to match the expected application or environmental conditions:

- Standard
- Air-duct

Standard: This application parameter set, which is ideal for normal office | hotel-lobby-type applications, is the default setting.

Air-Duct: This application parameter set is used when the detector is used a UL268A (DI) compliant, direct in-air duct application without a duct housing.

Model FDO421 does not require a field sensitivity test. Model FDO421 is UL Listed as a self-testing device and complies with NFPA 72 as a self-monitoring detector and control-panel arrangement. This parameter set is also used when Model FDO421 is used in air-duct housings (Models FDBZ492 and FDBZ492-HR).

A quick visual inspection is sufficient to indicate the condition of Model FDO421 at any time. If more detailed information is required, a printed report can be provided from the compatible FACP, indicating the status and settings assigned to each individual detector. When Model FDO421 moves to 'Alarm' mode, the detector will flash **RED** and continue flashing until the system is reset at the FACP. At that same time, any user-defined, system-alarm functions programmed into the system are activated.

Model FDO421 contains a tri-color LED indicator, capable of flashing any one (1) of three (3) distinct colors: **GREEN** | **YELLOW** | **RED**. During each flash interval, the microprocessor-based detector monitors the following scenarios:

- Smoke sensitivity is within the range indicated on the nameplate label
- Smoke in its sensing chamber
- Internal sensors and electronics are functional

Based on the results of the monitoring, the LED indicator flashes the following:

FLASH COLOR	CONDITION	FLASH INTERVAL [in seconds]
GREEN*	Normal supervisory operation. Smoke sensitivity is within rated limits.	10
YELLOW:	Detector is in trouble and needs replacement.	4
RED:	'Alarm' condition	1
NO FLASH:	Detector is not powered.	—

* denotes LED can be turned OFF
Please follow the corresponding description of the panel used.

Installation

All Model FDO421 intelligent, addressable detectors use a surface-mounting base (Model DB-11 or DB-11E), which mounts on a 4-inch (10.2 cm.) octagonal, square or single-gang electrical back box. The base utilizes screw-clamp contacts for electrical connections and self-wiping contacts for increased reliability.

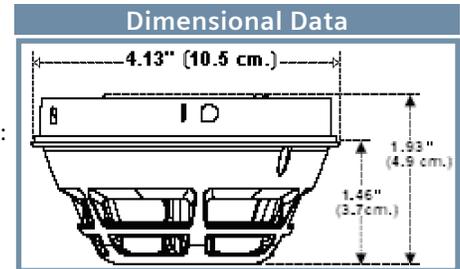
The Model DB-11 detector base can be used with the optional Siemens Model LK-11 detector locking kit, which contains 50 detector locks and an installation tool to prevent unauthorized removal of the detector head. Model DB-11 has aesthetically conducive plugs to cover the outer mounting-screw holes.

Model FDO421 may be installed on the same initiating circuit with the Siemens Model 'H'-series detectors [when used with Desigo Fire Safety Modular | FireFinder XLS/V | FC/FV20-series FACPs] –

- XTRI series interface modules
- HFP-11, HFPT-11 detection devices
- HTRI series interface modules
- HCP output-control module
- HMS & XMS series manual stations
- HZM conventional zone module

Each detector, which is shipped with a protective dust cover, consists of the following:

- Built-in **ISOtechnology** for True-Class-X SLC performance
- Dust-resistant photoelectric chamber
- Microprocessor-based electronics with a low-profile plastic housing



All Model FDO421 intelligent, addressable detectors are approved for operation with the Underwriters' Laboratories-specified temperature range of 32° to 100°F (0° to 38°C). (See: installation manual P/N – A6V10323928 for further details)

Application Data

Installation of Model FDO421 smoke detectors require a two-wire circuit. In many retrofit cases, existing wiring may be used. 'T-tapping' is permitted only for Style 4 (Class B) wiring. Model FDO421 is polarity insensitive, which can greatly reduce installation and debugging times. When operating in NFPA 72 Class-X applications SLC polarity must be maintained to support up to 252 isolation ready devices per loop. When used in mixed mode a maximum of 30 non-isolated devices between isolation devices (wired in polarity-insensitive mode). See control panel install document for further details.

Model FDO421 detectors can be applied within the maximum 30-foot center spacing (900 sq. ft. areas,) as referenced in NFPA 72. This application guideline is based on ideal conditions – specifically, smooth ceiling surfaces, minimal air movement, and no physical obstructions between potential fire sources and the actual detector. Do not mount detectors near ventilation or heating and air conditioning outlets. Exposed joists or beamed ceilings may also affect safe spacing limitations for detectors. For challenging site applications, use of the alarm verification feature should be considered. Consult the associated control panel engineering tool for details on implementation.

Should questions arise regarding detector placement, observe NFPA 72 guidelines. Good fire-protection-system engineering and common sense dictate how and when fire detectors are installed and used. Contact your local Siemens – Fire Safety distributor or sales office whenever you need assistance applying Model FDO421 in unusual applications. Be sure to follow NFPA guidelines and UL Listed / ULC Listed installation instructions – included with every Siemens – Fire Safety detector – and local codes as for all fire protection equipment.

Field-Device Programmer / Test Unit

Model FDO421 is compatible with the Siemens field-device programmer / test unit (Model DPU), which is a compact, portable menu-driven accessory for electronically programming and testing these addressable detectors promptly and reliably. For instance, the field technician selects the accessory's program mode, and enters the desired address.

Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods (e.g. – dials and rotary switches), and reduces installation and service costs by electronically programming and testing the detector prior to installation. When set in 'test' mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly.

Each field-device programmer / test unit operates on AC power or rechargeable batteries, providing flexibility and convenience in the programming / testing of fire-safety equipment from practically any location. Additionally, with the use of a Model DPU unit, there is no longer a cause for concern with any vibration, corrosion and other deteriorating conditions that can accompany the vitality of electro-mechanical-addressing mechanisms.

Each detector fits into one (1) wall-or-ceiling footprint, and only occupies one (1) address on the signal-line circuit (SLC).

Technical Data	
OPERATING TEMPERATURE:	+32° – +100°F (0° – +38°C)
RELATIVE HUMIDITY:	0 – 95% (non-condensing)
AIR PRESSURE:	No effect
AIR VELOCITY:	0 – 4,000 feet-per-minute (fpm) (0 – 20 meters-per-second)
INPUT VOLTAGE RANGE:	16VDC – 30VDC
'ALARM' CURRENT, MAX.:	410µA
'STANDBY' CURRENT, MAX.:	250µA
MAXIMUM SPACING:	30–ft. centers (900 sq. ft.), per NFPA 72
DETECTOR WEIGHT:	0.317 Lbs. (0.144 kg.)
MECHANICAL PROTECTION GUARD:	UL and ULC Listed (with STI Guard Model STI-9604)
SENSITIVITY RANGE:	1.41 - 3.76 % / ft obs. (Nominal 2.0 % / ft. obs.)

Panel Compatibilities		
MODEL OR TYPE	DATA SHEET	PANEL
XLS	6300	FireFinder® (fire)
XLSV	6340	FireFinder (fire w/ voice)
DESIGO MODULAR	7300	Desigo Modular (overview)
FC2005	6813	Desigo Fire Safety 50-point addressable
FC2025	6815	Desigo Fire Safety 252-pt. addressable (fire)
FC2050		Desigo Fire Safety 504-pt. addressable (fire)
FV2025	6821	Desigo Fire Safety 252-point addressable (fire w/ Intelligent Voice Communication [IVC])
FV2050		504-pt. addressable (fire w/ Intelligent Voice Communication [IVC])

Details for Ordering		
MODEL OR TYPE	PART NUMBER	PRODUCT
FDO421	S54320-F4-A1	Photoelectric Smoke Detector
Compatible Devices:		
MODEL OR TYPE	PART NUMBER	PRODUCT
ABHW-4B	S54320-F13-A1	Buzzer Version Audible Base (standard 3,000 Hz tone)
ABHW-4BZ	S54320-F13-A2	Audible Base
ABHW-4S	S54320-F14-A1	Sleeping Room Version, 520 Hz Low Frequency Audible Base
ABHW-4SZ	S54320-F14-A2	Audible Base
DB-11	500-094151	Detector Mounting Base
DB-11E	500-094151E	Detector Base, small
DB2-HR	S54370-F12-A1	Detector Mounting Base with Relay
RL-HC	500-033230	Remote Alarm Indicator: 4" (10.2 cm) octagon-box mount, red
RL-HW	500-033310	Remote Alarm Indicator: single-gang box mount, red
FDBZ492	S54319-B22-A1	Addressable Air-Duct Housing
FDBZ492-HR	S54319-B23-A1	Addressable Air-Duct Detector with Relay
LK-11	500-695350	Base Locking Kit
See: www.STI-USA.com for further details on ordering Model STI-9604		
In Canada order:		
MODEL OR TYPE	PART NUMBER	PRODUCT
DB-11C	500-095687	Detector Mounting Base, ULC Listed

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SIEMENS

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August - 2024
(Rev. 16)

Desigo® Fire Safety Detectors and Peripherals

Thermal (Heat) Detector Model FDT421

Architect & Engineer Specifications

- Built-in *ISOtechnology™*
- Compatible with Siemens Model `H`-series devices on the same loop (with Desigo Fire Safety Modular | FireFinder XLS/V | FC/FV20-series fire-alarm control panels)
- Contains seven (7) field-selectable settings in a temperature range of 135°F – 175°F (57.2°C – 78.9°C)
- Provides a low-temperature warning of 40°F (4.4°C)
- Field programmable as rate-of-rise or fixed temperature
- Tri-color detector-status light-emitting diode (LED) with 360 ° view
- Compatible with Model DPU (device programmer / loop tester)
- Utilizes advanced, microprocessor-based signal processing
- Each detector is self-testing:
 - complete diagnostics performed every 10 seconds
- Polarity insensitive via *SureWire™* technology
- Functions with Model DB-11-series mounting bases
- Superior electromagnetic interference (EMI) and radio-frequency interference (RFI) immunity
- Restriction of Hazardous Substances (RoHS compliant)
- UL 521 Listed, ULC Listed
- CSFM (#7272-0067:0258) Approved

Product Overview

The Intelligent Thermal (Heat) Detector (Model FDT421) provides an advanced method of detection, address programming supervision – combined with sophisticated FACP communication. Model FDT421 uses a state-of-the-art thermistor, microprocessor and advanced signal analysis, providing high reliability and accuracy.

Additionally, Each Model FDT421 unit is UL listed including advanced built-in *ISOtechnology™* - a “True Class-X” SLC operation (use is optional) greatly improving system reliability and circuit integrity while providing advanced addressable fault finding.

Each model FDT421 is a cost-effective, two-wire / addressable thermal detector that provides a distinctive, advanced feature: seven (7) field-selectable temperature settings specially tailored for application-specific detection needs combined with Class-X SLC operation built-in avoiding additional installation and material cost.

The temperature-range settings for each Model FDT421 detector is between 135°F (57°C) – 175°F (79°C) with fixed and rate-of-rise programmability. This variance provides the customer with maximum flexibility to program the temperature settings to suit multiple application needs and changing environmental conditions.

Model FDT421 can be configured to provide a low-temperature warning signal at 40°F (4.4°C). This feature – along with a compatible FACP (Desigo Fire Safety Modular | FireFinder XLS/V or with Desigo FC /FV2025 or FC /FV2050 FACPs) – serves as prevention of water freezing in pipes for sprinkler systems, meeting NFPA 72.

Operation

Model FDT421 also utilizes a modern, accurate and shock-resistant thermistor to sense significant changes in temperature.

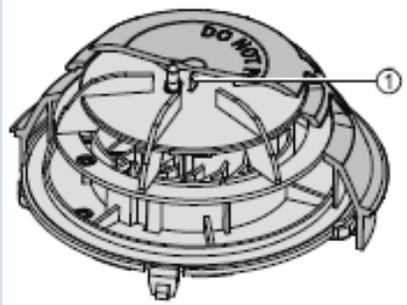
Each Model FDT421 detector has seven (7) pre-programmed parameter sets that can be selected by the Siemens FACP.



→ **Model FDT421**
Thermal (Heat) Detector



1. Thermistor



Model FDT421

NOTE: Each detector consists of a dust-resistant chamber, a solid state, functional internal sensor, and microprocessor-based electronics with a low-profile plastic housing.



Thermal (heat) detector

Detector Supervision and Testing

Model FDT421 contains a tri-color LED indicator, capable of flashing any one (1) of three (3) distinct colors: **GREEN** | **YELLOW** | **RED**. During each flash interval, the microprocessor-based detector monitors the following fire-system conditions:

- Temperatures reaching programmed thresholds
- Internal sensors and electronics are functional

Based on the results of the monitoring, the LED indicator flashes the following:

FLASH COLOR	CONDITION	FLASH INTERVAL [in seconds]
GREEN*:	Normal supervisory operation. Temperature has not reached programmed alarm thresholds or set points.	10
YELLOW:	Detector is not operating at normal capacity and needs replacement.	4
RED:	`Alarm' condition	1
NO FLASH:	Detector is not powered.	–

* denotes LED can be turned OFF

Please follow the corresponding description of the panel used.

A quick visual inspection is sufficient to indicate the condition of the detector at any time.

If more detailed information is required, a printed report can be provided from the respective Desigo Fire Safety Modular | FireFinder XLS/V or Model FC20-series FACPs that indicates the status and settings assigned to each individual detector.

Installation

All Model FDT421 detectors use a surface-mounting base, Model DB-11 or Model DB-11E, which mounts on a 4-inch (10.2 cm.) octagonal, square or single-gang electrical box. The base utilizes screw-clamp contacts for electrical connections and self-wiping contacts for increased reliability.

The Model DB-11 detector base can be used with the optional Siemens Model LK-11 detector locking kit, which contains 50 detector locks and an installation tool to prevent unauthorized removal of the detector head. Model DB-11 has aesthetically conducive plugs to cover the outer mounting-screw holes.

Model FDT421 may be installed on the same initiating circuit with the Siemens Model `H'-series detectors and devices [when used with Desigo Fire Safety Modular | Model FC20-series | FireFinder XLS/V FACPs] –

- HFP-11, HFPT-11
- Model `XTRI' - series interfaces
- Model `XMS' - series manual stations
- Model `HTRI' - series interfaces
- Model `HMS' - series manual stations
- Model `HCP' - output control modules
- Model `HZM' - series of addressable, conventional zone modules

Application Data

Installation of Model FDT421 intelligent, addressable thermal detector requires a two-wire SLC circuit. In many retrofit cases, existing wiring may be used. `T-tapping' is permitted only for Style 4 (Class B) wiring. Model FDT421 is polarity insensitive when not used in Class-X mode, which can reduce installation and debugging times. The unit's value is multiplied with built-in **ISOtechnology** the True Class-X - NFPA 72 compliant SLC isolation feature, supporting up to 252 isolation ready devices per loop. When used in mixed mode a maximum of 30 non-isolated devices between isolation devices (wired in polarity-insensitive mode). Each detector fits into one (1) wall-or-ceiling footprint, and only occupies one (1) address on the signal-line circuit (SLC).

Model FDT421 can be applied within the maximum 50-feet (15.24 m.) center spacing (2,500 sq. ft. [232.3 sq. m.]) per Underwriters' Laboratories. This application guide is based on ideal conditions, specifically, smooth-ceiling surfaces, minimal air movement, and no physical obstructions between potential fire sources and the actual detector. Do not mount detectors in close proximity to heating | ventilation | air-conditioning (HVAC) outlets. Exposed joists or beamed ceilings may also affect safe spacing limitations for detectors.

Should questions arise regarding detector placement, observe NFPA 72 guidelines. Good fire-protection system engineering and common sense dictate how and when fire detectors are installed and used. Contact your local Siemens – Fire Safety distributor or sales office whenever you need assistance applying Model FDT421 in unusual applications.

Be sure to follow NFPA guidelines and UL Listed / ULC Listed installation instructions included with every Siemens – Fire Safety detector – and local codes for all fire-protection equipment.

Specifications

Model FDT421 is a plug-in, (2) two-wire thermal (heat) detector, compatible with Desigo Modular | FireFinder XLS/V and Model FC20-series FACPs. Each Model FDT421 detector has microcomputer-chip technology and highly stable, solid-state electronic circuitry. Model FDT421 detectors utilize a modern, accurate and shock-resistant thermistor to sense temperature changes. This electronic-sensing method virtually eliminates thermal lag associated with mechanical temperature-sensing devices and provides almost instantaneous temperature status to the FACP.

Model FDT421 provides seven (7) field-selectable, pre-programmed temperature settings:

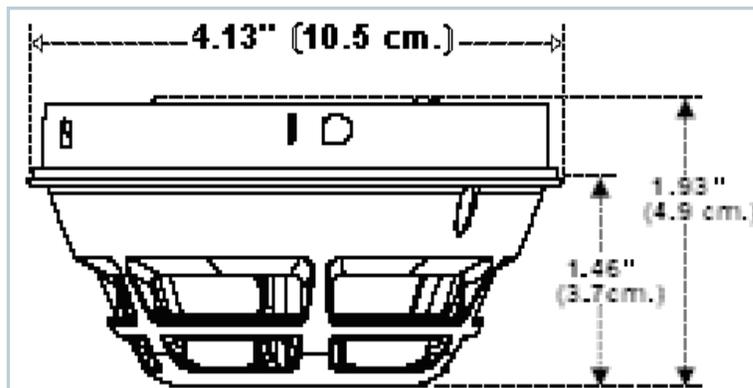
Fixed Temperature set points (5)	Rate of Rise set points (2)
<ul style="list-style-type: none"> Fixed 135°F (57°C) Fixed 145°F (63°C) Fixed 155°F (68°C) Fixed 165°F (74°C) Fixed 175°F (79°C) 	<ul style="list-style-type: none"> <u>Rate-of-Rise</u>: 15°F / min. (8.3°C) at fixed 135°F (57°C) <u>Rate-of-Rise</u>: 15°F / min. (8.3°C) at fixed 175°F (79°C)

Additionally, the Model FDT421 detector has the following optional feature:

- Model FDT421 provides indication of potential water freezing for sprinkler systems, via configuration for reporting a low-temperature warning of 40°F (4.4°C).

This feature is compatible with Desigo Modular systems, as well as with FireFinder XLS/V and Desigo FC/FV2025 or FC/FV2050 FACPs.

Mounting Diagrams | Dimensions



Model FDT421

Field-Device Programmer / Test Unit

Model FDT421 is compatible with the Siemens field-device programmer / test unit (Model DPU), which is a compact, portable and menu-driven accessory for electronically programming and testing these addressable detectors promptly and reliably. For instance, the field technician selects the accessory's program mode, and enters the desired address.

Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods (e.g. – dials and rotary switches), and reduces installation and service costs by electronically programming and testing the detector prior to installation. When set in 'test' mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the detector is operating properly.

Each field-device programmer / test unit operates on AC power or rechargeable batteries, providing flexibility and convenience in the programming / testing of fire-safety equipment from practically any location. Additionally, with the use of a Model DPU unit, there is no longer a cause for concern with any vibration, corrosion and other deteriorating conditions that can accompany the vitality of a mechanical-addressing mechanism.

The encompassing result is an intelligent detector that provides enhanced detection capability to a wide range of products of combustion – while offering unsurpassed rejection to nuisance-alarm sources, including: dust | steam | aerosols and other deceptive phenomena that could cause false alarms.

Technical Data	
OPERATING TEMPERATURE:	+32° – +120°F (0° – +49°C) [with 145°F (63°C) 155°F (68°C) 165°F (74°C) and 175°F (79°C) alarm-threshold settings] +32° – +100°F, (0° – +38°C) [With 135°F (57°C) alarm threshold setting]
THERMAL RATING:	Model FDT421 provides seven (7) field-selectable, pre-programmed temperature settings: <ul style="list-style-type: none"> • Fixed 135°F (57°C) • Fixed 145°F (63°C) • Fixed 155°F (68°C) • Fixed 165°F (74°C) • Fixed 175°F (79°C) <ul style="list-style-type: none"> • Rate-of-Rise: 15°F / min. (8.3°C) at fixed 135°F (57°C) • Rate-of-Rise: 15°F / min. (8.3°C) at fixed 175°F (79°C)
RELATIVE HUMIDITY:	0 – 95% (non-condensing)
AIR PRESSURE:	No effect
INPUT VOLTAGE RANGE:	16VDC – 30VDC
'ALARM' CURRENT, MAX:	410µA
'STANDBY' CURRENT, MAX:	250µA
MAXIMUM SPACING:	50-ft. (15.24 m.) centers (2500 sq. ft. 232.3 sq. m.), per NFPA 72 and ULC-S524
DETECTOR WEIGHT:	0.317 Lbs. (0.144 kg.)

Panel Compatibilities		
MODEL OR TYPE	DATA SHEET	PANEL
XLS	6300	FireFinder (fire)
XLSV	6340	FireFinder (fire w/ voice)
Desigo Modular	7300	Desigo Modular (overview)
FC2005	6813	Desigo Fire Safety 50-point addressable
FC2025	6815	Desigo Fire Safety 252-pt. addressable (fire)
FC2050		Desigo Fire Safety 504-pt. addressable (fire)
FV2025	6821	Desigo Fire Safety 252-point addressable (fire w/ Intelligent Voice Communication [IVC])
FV2050		504-pt. addressable (fire w/ Intelligent Voice Communication [IVC])

Details for Ordering		
MODEL OR TYPE	PART NUMBER	PRODUCT
FDT421	S54320-F5-A1	Thermal (Heat) Detector

Compatible Devices		
MODEL OR TYPE	PART NUMBER	PRODUCT
ABHW-4B	S54320-F13-A1	Buzzer Version Audible Base (standard 3,000 Hz tone)
ABHW-4BZ	S54320-F13-A2	Audible Base
ABHW-4S	S54320-F14-A1	Sleeping Room Version, 520 Hz Low Frequency Audible Base
ABHW-4SZ	S54320-F14-A2	Audible Base
ADB-BOX	500-698360	Surface Mount Adapter Box for Audible Base
DB2-HR	S54370-F12-A1	Relay base compatible with Siemens standard and advanced detectors
DB-11	500-094151	Detector Mounting Base
DB-11E	500-094151E	Detector Base, small
RL-HC	500-033230	Remote Alarm Indicator: 4" (10.2 cm) octagon-box mount, red
RL-HW	500-033310	Remote Alarm Indicator: single-gang box mount, red
LK-11	500-695350	Base Locking Kit

See: www.STI-USA.com for further details on ordering Model STI-9604

In Canada order:

MODEL OR TYPE	PART NUMBER	PRODUCT
DB-11C	500-095687	Detector Mounting Base, ULC Listed

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SIEMENS

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November - 2023
(Rev. 11)

Peripheral and Detection Initiating Devices

XMS-Series Manual Pull Stations Addressable & Conventional Models

Architect & Engineer Specifications

- Single & Dual-Action models
- Built-in ISOtechnology™
 - Complies with NFPA 72 Class X (Style 7) survivability requirements.
 - Supports up to 252 X-Series isolation peripherals per SLC / DLC
 - Supports up to 30 addressable devices between isolator devices
- Compatible with current Siemens Fire Alarm Control Units (FACU's)
- Low current draw
- Polarity insensitive (in non-isolation mode) via SureWire technology
- Multi-color status LED
- T-45 reset key
- Model XMS-2S:
 - Two stage operation via unique activation key
 - T-45 reset key for device reset
- Minimal mounting depth allowing compatibility with standard single gang electrical boxes in retrofit sites
- Trouble indication during service and maintenance
- Single action, Dual-action, and metal versions available
- French, Portuguese, and Spanish versions available
- UL38 Listed
- ULC-S528 Listed
- RoHS compliant
- FM Approved

Product Overview

The XMS-Series of manual pull stations are a complete addressable and conventional pull station portfolio including single action, dual-action, 2-Stage, and metal versions. The addressable versions feature built-in Class X (Style 7) isolation capability for increased system survivability. All models feature a T-45 reset key to match the fire alarm panel enclosure. Addressable models also feature a tri-color status LED to indicate normal, alarm, and trouble status. All models utilize one address.

The manual stations can be commissioned to operate in non-isolation (polarity insensitive) or isolation with Class X mode of operation.

Specifications

Models XMS-S, XMS-D, XMS-DA, XMS-2S, and XMS-M are compatible with Siemens FACPs. The Model XMS-S is a single action pull station in a plastic housing that requires one action by the user to initiate the alarm. Models XMS-D, XMS-2S, and XMS-DA are dual-action pull stations in a plastic housing that require two actions by the user to initiate an alarm. The Model XMS-M is a single action pull station in a metal housing that requires one action by the user to initiate the alarm. These models are field installed addressable devices containing advanced control panel communication technology.

The XMS-Series manual pull stations feature a "maintenance trouble" that places the fire alarm panel into a trouble condition if an XMS is accidentally left in an armed status when the cover is removed for maintenance work.

This technology provides bi-directional communication with the connected control panel. To reset the stations, insert the Siemens T-45 key provided into the key lock and turn the key 10-15 degrees counterclockwise as the arrow shows. The cover will move upward to the normal position. Rotate the key clockwise and remove key from the lock. At Normal position the top of the Cover is flush with the top surface of the Base. Reset the Fire Alarm Control Panel to clear the alarm.

The addressable XMS pull station variants are compatible with all current models of Desigo Fire Safety & Cerberus PRO commercial fire alarm control panels. These devices can be wired in either Isolation Mode or Polarity Insensitive Mode Wiring.

The XMS-S & XMS-M manual station front cover has a recess pocket to pull down and locks in position after the alarm is initiated. The XMS-D, XMS-DA & XMS-2S manual stations have an additional lever labeled "PUSH HERE THEN" to get access to the front cover pocket to initiate the alarm.

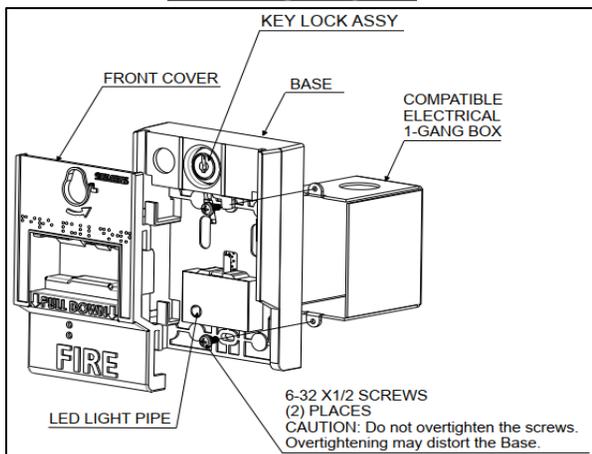
The XMS-Series Manual Pull Stations are UL and ULC listed, FM approved, and RoHS compliant.



Model XMS-D



Mounting Diagram



Technical Data

Operating Voltage Range	13 - 32VDC
Max Average Operating Current @ 24v:	500µA
Operating Temperature Range	32° — 120°F (0° — 49°C)
Operating Humidity Range	0 — 95%, RH

Physical Properties

Construction:	High impact polycarbonate plastic
	Aluminum
Shipping Weight:	1.0 lbs
Dimensions:	5.50" H x 4.0" W x 1.250" D
Compliance:	ADA
Compatible Electrical Boxes:	2-1/2" deep 1-gang box



Model XMS-DA



Model XMS-2S

Order Details

Model or Type	Part Number	Description
XMS-S	S54321-F7-A1	Addressable Single Action Manual Pull Station with Isolation
XMS-D	S54321-F8-A1	Addressable Dual-Action Manual Pull Station with Isolation
XMS-M	S54321-F19-A1	Addressable Single Action Metal Pull Station with Isolation
XMS-SP	S54321-F9-A1	Addressable Single Action Manual Pull Station with Isolation - Portuguese Text
XMS-DP	S54321-F10-A1	Addressable Dual-Action Manual Pull Station with Isolation - Portuguese Text
XMS-SE	S54321-F11-A1	Addressable Single Action Manual Pull Station with Isolation - Spanish Text
XMS-DE	S54321-F12-A1	Addressable Dual-Action Manual Pull Station with Isolation - Spanish Text
XMH-501	S54321-F18-A1	Conventional Dual-Action Manual Pull Station for Agent Release
XMS-501	S54321-F16-A1	Conventional Dual-Action Manual Pull Station
XMS-51	S54321-F15-A1	Conventional Single Action Manual Station with Auxiliary Relay and Key Switch
SMBOX-XMP	S54321-F20-A1	Surface Mounting Backbox for X-Series Manual Stations
APLT-XMP	S54321-F21-A1	Adapter Plate for X-Series Manual Stations to Legacy Surface Backboxes
4DGBOX-XMP	S54321-F22-A1	Adapter Plate for X-Series Manual Stations to 4" and Double-Gang Backboxes

Specific Details for Canadian Orders

Model or Type	Part Number	Description
XMS-DA	S54321-F13-A1	Addressable Dual-Action Manual Pull Station with Isolation and Auxiliary contact – French Text
XMS-2S	S54321-F14-A1	Addressable 2-Stage Dual-Action Manual Pull Station with Isolation and Auxiliary contact – French Text
XMS-51C	S54321-F23-A1	Conventional Dual-Action Pull Station with Auxiliary contact – French Text

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May - 2025
(Rev. 3)

Peripheral and Detection Devices Initiating Device

Intelligent Device Interface Modules

Model XTRI-D | XTRI-R | ~~XTRI-S~~

Architect & Engineer Specifications

- Siemens *ISOtechnology™*
 - Provides “True Class-X” operation meeting NFPA 72 SLC field wiring requirements
 - Supports 252 *ISOtechnology* ready devices per loop, and in mixed mode up to 30 devices between isolated devices
- Dual input on Model XTRI-D, via a single address
- Integral single-pole, double-throw (SPDT) relay on Model XTRI-R:
 - Up to 4 Amps.
- Low current draw
- Polarity insensitive (in non-isolation mode) via *SureWire™* technology:
 - Modern technology supports comprehensive system and interface communication
- Multi-color light-emitting diode (LED) indicates system status:
GREEN | **AMBER** | **RED**
- Mounts in a 4-inch (10.2 cm.) square, 2-1/4” (5.7 cm.) deep single-gang or double-gang back box
- Non-obstructive front-end access to programming port and wiring terminals
- Device Programmer | Test Unit programs and verifies address, as well as tests device functionality
- Restriction of Hazardous Substances (RoHS) compliant
- UL864 | UL2572 | UL2017 Listed; CAN/ULC-S527 & CAN/ULC-S576 Listed
 - File S24304, Vol. 3
- FM Approved

Product Overview

The Siemens – Fire Safety XTRI-series Intelligent Interface Modules are designed to provide the means of interfacing direct shorting devices to the fire-alarm control panel (FACP) SLC. All modules take up one (1) address on the loop.

Each XTRI-series interface module provides the “built-in” *ISOtechnology* feature - intelligent dual isolation meeting NFPA 72 Class X (Style 7) wiring requirements. Up to 252 isolators per loop and up to 30 devices between isolators (wired in polarity-insensitive mode). Additionally, the devices between isolators can either be ‘H’-series or the more contemporary ‘X’-series detection devices.

Specifications

The Siemens – Fire Safety XTRI-series Intelligent Interface Modules are available in three (3) individual types:

- One (1) Dual-Input: XTRI-D
- Two (2) Single-Inputs: XTRI-R (with relay) | XTRI-S
 - The single-input versions are each designed to monitor a normally open (N.O) or (N.C) normally closed dry contact

XTRI-D | XTRI-R | XTRI-S incorporates *ISOtechnology* – the configurable, built-in dual isolator function. Additionally, an XTRI-series interface module supports NFPA 72 Class X (Style 7) survivability requirements for shorts while providing reliable alarm communication to the Siemens FACP. The isolation feature found on the XTRI-series Intelligent Interface Modules gives information as to the location of the fault. When a short occurs, the panel can identify the fault automatically, and the module recognizes the short location (in front of the device or behind the device). Overall, the built-in isolators improve the diagnostics and location of the problem, including a short.

The modules are configurable by a Siemens compatible FACP (or panels) in an isolator (polarity sensitive) or non-isolator (polarity insensitive) mode. When a XTRI-series interface module is configured as an isolator, that module has the capacity of functioning as both an in/out device, as well as an isolator.

Advanced troubleshooting is provided by compatible panels by identifying when a XTRI-series interface module is configured as an isolator, but is wired incorrectly in a polarity-insensitive mode.

Each Model XTRI-series device has a multi-color LED that flashes when **GREEN** operating in Normal mode; **AMBER** if the unit is in a ‘Trouble’ condition, and **RED** to indicate a change of status.

Model XTRI-S

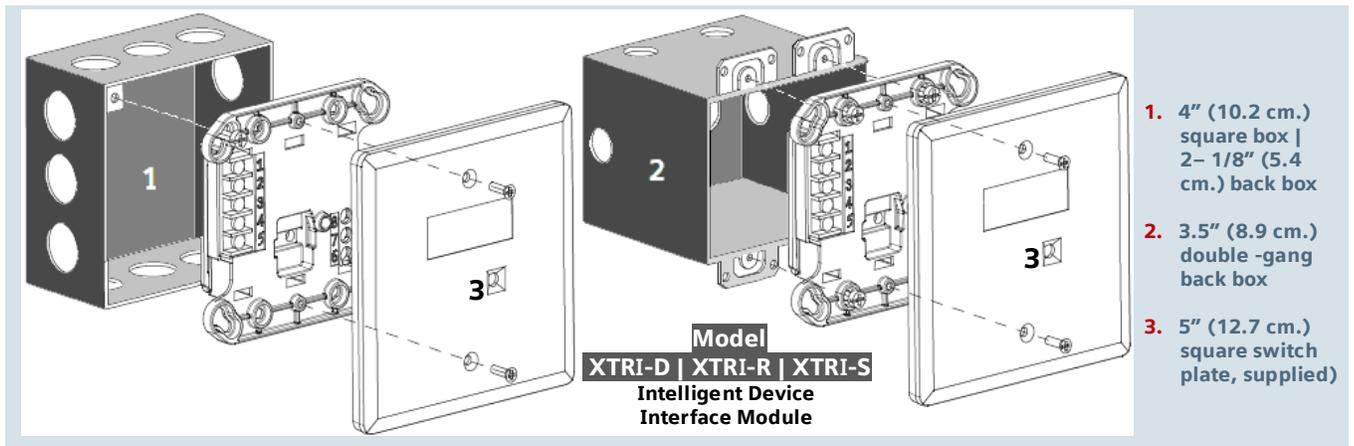
This single-input interface module can only monitor and report the status of a N.O. or N.C. contact.



Model

~~XTRI-D~~ | ~~XTRI-R~~ | ~~XTRI-S~~
Intelligent Device
Interface Module





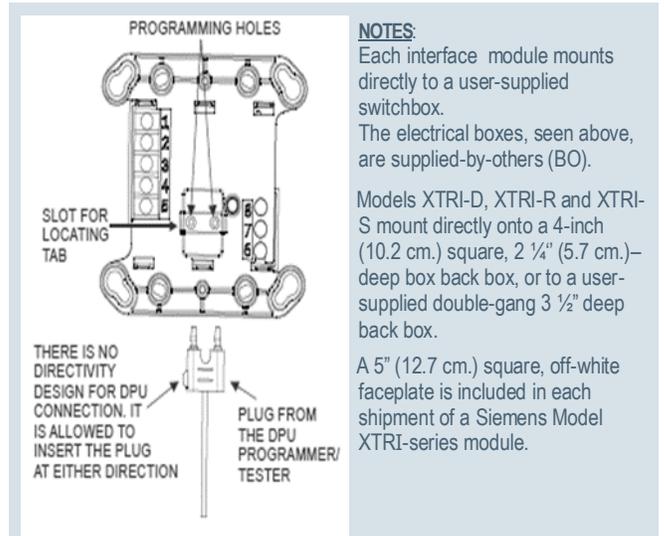
Specifications (cont.)

Model XTRI-R

Through the use of an addressable 'Form C' relay, the Model XTRI-R relay and contact device input are controlled at the same address. The relay and input contact can be controlled as a separate function from a Siemens compatible FACP. The relay is typically used where control or shunting of external equipment is required.

Model XTRI-D

Model XTRI-D is a dual-input module that is designed to supervise and monitor two (2) sets of dry contacts. Model XTRI-D only requires one (1) address, but responds independently to each input. Model XTRI-D is ideal for monitoring a water-flow switch and its respective valve tamper switch.



Operation

Field-Device Programmer / Test Unit

Siemens – Fire Safety innovative technology allows Model XTRI-series intelligent interface modules to be programmed via the Siemens field-device programmer / test unit (Model DPU), which is a compact, portable and menu-driven accessory for electronically programming and testing Siemens peripheral modules and devices promptly and reliably. For instance, the field technician selects the accessory's program mode, and enters the desired address.

Model XTRI-series interface module is connected to Model DPU with the programming cable provided with the tester.

NOTE: Since the XTRI-series of interface modules are advanced initiating devices, the latest Model DPU firmware update is required.

Model DPU eliminates the need for cumbersome, unreliable mechanical programming methods (e.g. – dials and rotary switches), and reduces installation and service costs by electronically programming and testing the module prior to installation. When set in 'test' mode, Model DPU will perform a series of diagnostic tests without altering the address or other stored data, allowing technicians to determine if the module is operating properly.

Each field-device programmer / test unit operates on AC power or rechargeable batteries, providing flexibility and convenience in the programming / testing of fire-safety equipment from practically any location. Additionally, with the use of a Model DPU unit, there is no longer a cause for concern with any vibration, corrosion and other deteriorating conditions that could negatively affect any electro-mechanical-addressing mechanism.

Compatibilities

Siemens 'X' modules may be used along with Model 'H'-series intelligent detectors; Model 'HMS'-series addressable manual stations, or any other 'H'-series addressable intelligent module (e.g. Model HZM or Model HCP). Additionally, the X-series modules are compatible with all Desigo and Cerberus Pro detectors and peripherals of the same circuit.

Interspersing 'X' & 'H'-series devices on the same loop is mostly permitted, but there are exceptions: Models HLIM (isolation module) and SBGA-34 (audible base) cannot be used with 'X' devices on the same loop.

Temperature and Humidity Range

Models XTRI-D | XTRI-R | XTRI-S intelligent interface modules are UL Listed | ULC Listed. Environmental operating conditions for each interface module is 32°F (0°C) to 120°F (49°C) with a relative humidity of no greater than 95%, non-condensing.

LED Indicators

FLASH COLOR	CONDITION	FLASH INTERVALS [in seconds]
GREEN*:	Normal supervisory operation	10
YELLOW:	Device is in trouble and needs to be replaced	4
RED:	Locate `Alarm`	1
	Output Device (XTRI-R only)	10
NO FLASH:	Power is not being received / Replacement is needed	-

Technical Data

OPERATING VOLTAGE RANGE:	13VDC – 32VDC	
RELATIVE HUMIDITY:	0 – 95% (non-condensing)	
`ACTIVE' OR `STANDBY' CURRENT, MAX.:	500µA	
LINE SIZES AMERICAN WIRE GAUGE (AWG)	14 AWG, max. 18 AWG, min.	
CURRENT DRAW MAX AVG.	XTRI-S	650µA
	XTRI-R	750µA
	XTRI-D	950µA
RELAY RATINGS: (for Model XTRI-R)		
RESISTIVE:	4 Amps 125 VAC	
	4 Amps 30 VDC	
INDUCTIVE:	3.5A, 120 VAC (0.6 pF)	
	3.0A, 30 VDC (0.6 pF)	
	2.0A, 120 VAC (0.4 pF)	
	2.0A, 120 VAC (0.35 pF)	
	2.0A, 30 VDC (0.35 pF)	

Details for Ordering

MODEL OR TYPE	PART NUMBER	PRODUCT
XTRI-S	S54370-B3-A1	Single Input Module
XTRI-R	S54370-B1-A1	Single Input Module (with relay)
XTRI-D	S54370-B2-A1	Dual Input Module
DPU	500-033260	Device Programmer / Test Unit

NOTE: Refer to installation manual: P/N – A6V101055479 to ensure Model XTRI-D | XTRI-R | XTRI-S compatibility with the Siemens FACPs intended for use in the given application.

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Data contained in the aforesaid type of documentation should be consulted with a fire-safety professional before specifying or using the product.

Any further questions or assistance concerning particular problems that might arise, relative to the proper functioning of the equipment, please contact the Manufacturer.

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October - 2023
(Rev. 5)

FACP Accessories

→ PAD-5 Addressable Power Supply Unit

Models ~~PAD5-6A | PAD5-6A-R | PAD5-9A | PAD5-9A-R~~

Architect & Engineer Specifications

- ❑ PAD-5 comes standard with a variable of four (4) `Class B`, two (2) `Class A` output circuits, and is expandable, via Model PAD-5-CLSA, to four (4) additional `Class B`, two (2) `Class A` output circuits
- ❑ Power supplies support notification-appliance circuit (NAC) power:
 - up to 6A used with Model FP2011-U1
 - up to 9A used with Model FP2012-U1
- ❑ Complete, real-time PAD-5 unit status at the main fire-alarm control panel
- ❑ 24VDC output voltage
 - 3A of auxiliary-output power
- ❑ Automatically recognized variable end-of-line (EOL) values
 - 2.2k – 24kΩ
- ❑ Multi-module mounting in a two-height-unit (2HU) enclosure
- ❑ Model PAD-5-CLSA allows optional releasing functionalities for:
 - pre-action
 - deluge
 - clean agent
- ❑ Built-in strobe synchronization:
 - supports coded audible signals, including Temporal 3 | T4 patterns
- ❑ `Form C` general `Trouble | AC Fail` monitoring contact
- ❑ Battery supervision and control
- ❑ Ground-fault detection
- ❑ Advanced microprocessor control
- ❑ Uses Flash memory-based system firmware
 - optional system-diagnostic and firmware-upgrade tool
- ❑ Americans with Disabilities Act (ADA) compliant
- ❑ UL 864 10th Edition | UL 1076 | UL 2017 | UL 2572 Listed
- ❑ ULC-S527 and ULC-S576-14 Listed
- ❑ FM Approved

Product Overview

Used with Siemens - Fire Safety fire alarm control panels (FACPs); PAD-5 is an UL 10th Edition | ULC-S527 Listed, addressable power-supply unit that complies with the notification requirements of the Americans with Disabilities Act (ADA). Each PAD-5 unit can provide up to 9 Amps of NAC power with up to eight (8) supervised NACs and auxiliary power output.

Features include:

- Intelligent controller resides on SLC loop
- Four (4) `Class A` or eight (8) `Class B` NACs that can be mixed
- `Class X` wiring-isolator device
- Temperature-compensated battery-charging circuits
- `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.

Additionally, each PAD-5 unit supports P2 addressable communications and P2 device-level fault indicators – via use of a Model XDLC loop card connected to a Siemens Modular control panel. Monitoring status and individual NAC control from a single address are also provided by a PAD-5 unit. Per ULC, separate ground-fault detection and indication for all remote power supplies are required. The GND FLT Relay 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 terms of electrical characteristics, PAD-5 power supply units provide steady 24VDC output voltage to each NAC – independent of voltage fluctuations on the primary or secondary power source. Consequently, a larger voltage drop and a greater wire length for each NAC are supported by a Siemens PAD-5 unit.

Specifications

The Siemens PAD-5 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)
- March Time 30, 60 or 120 PPM

There is also one (1) supervised NAC Follower input circuit that is driven by a Siemens FACP, NAC or from a PAD-5 main board, Model PAD-5-MB.





Typical configuration of two (2) main boards mounted in a two-height-unit (2HU) enclosure

NOTE: One-height-unit (1HU) and two-height-unit (2HU) enclosures are versatile, universal housings. Either size can be used on any type of Siemens PAD-series power-supply unit and the Booster Amplifier.

Specifications – (continued)

- Four (4) 'Class B' or two (2) 'Class A' NACs are standard:
- Rated 3A each for conventional reverse polarity 24 VDC notification appliances with various operation modes
 - The four (4) outputs can be configured as non-Alarm, contact-only input circuits
 - Capability to mix-and-match Class A/B expansion NAC circuits

- Internal 6.5A or 9A power supply / battery charger:
- Charges internal batteries up to 18AH (for 1HU); up to 35AH (for 2HU), and up to 100AH in external cabinet (Siemens Model BB-55-series battery boxes; available in black or red)
 - Provides status monitoring of battery | input power | Earth faults



Typical 1HU enclosure configuration

PAD-5 Unit Components

PAD-5-MB

The main board (Model PAD-5-MB) used with PAD-5 notification-extender units provides remote, auxiliary power for signaling appliances. Model PAD-5-MB also allows for expansion of notification appliances (NACs) that plug into each main board. Each PAD-5-MB main board connects via the P2 loop of a Siemens 'X'-series Device Loop Card (Model XDLC) connected to the Siemens Modular fire-alarm control panel (FACP). Up to 32 Siemens PAD-5 main boards or mixture expansion cards can connect to one (1) Model XDLC at a time. Additionally, Model PAD-5-MB has one (1) address, and is programmed with the Siemens Device Programmer / Test Unit, Model DPU.



Model PAD-5-MB

PAD-5-CLSA

Used in conjunction with PAD-5 units, the 'Class A/B' Expansion Module (Model PAD-5-CLSA) provides additional connectivity of Siemens signaling appliances. In order for proper additional functionality, two (2) circuits, rated at 3A max., are wired as 'Class A', or four (4) circuits are wired as 'Class B'. Model PAD-5-CLSA uses one (1) address on the P2 loop. The address for Model PAD-5-CLSA must be the next sequential (numerical) address to that of the connected Model PAD-5-MB main board.

The Model DPU programmer / test unit is used to program the P2 address of each Model PAD-5-CLSA. There are LED indicators for each zone, as well as for the P2 interface and for the status of the card. Additionally, Model PAD-5-CLSA can be used in Sinorix® pre-action, deluge sprinkler, or for clean-agent control. There is an on-board releasing disconnect switch that can be used to disable power to both releasing circuits, thus preventing accidental discharge of clean agent during routine maintenance.



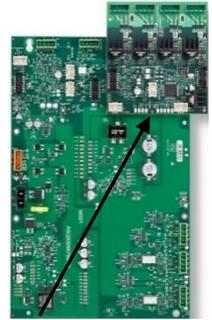
Model PAD-5-CLSA Mounted to a PAD-5-MB Main Board

PAD-5 Unit Components – (continued)

PAD-5-CDC

Model PAD-5-CDC is the Conventional Zone Module used with PAD-5 notification-extender units. Specifically, each Model PAD-5-CDC supports four (4) `Class A' or four (4) `Class B' conventional-detection zone-input circuits. The address for Model PAD-5-CDC must be the next sequential (numerical) address to that of the connected Model PAD-5-MB main board. Up to 30 Siemens conventional smoke detectors are supported, per zone.

All information, per circuit, is displayed from the Operating Unit of the Siemens Modular FACP. Each Model PAD-5-CDC supports Siemens and other-branded smoke detectors, as well as one (1) beam detector per zone. Additionally, Model PAD-5-CDC provides optional alarm verification by circuit, as well as consistent ground fault detection.



Model PAD-5-CDC
Mounted to a PAD-5-MB
Main Board

PAD-5 Enclosures

There are two (2) types of unit enclosures available for Siemens PAD-5 power units / extenders. The one-height-unit (1HU) enclosure, Model PAB-ENCL, is the basic enclosure.

Each 1HU enclosure can hold one (1) 170W or one (1) 300W Siemens power supply; one (1) PAD-5 main board, and one (1) adapter plate, and one (1) Model PAD-5-CDC or one (1) Model PAD-5-CLSA. The two-height-unit (2HU) enclosure, Model PAB2-ENCL, allows for more versatility. Each 2HU enclosure can house up to two (2) PAD-5 main boards and power supplies.

A red version of each enclosure is also furnished: Model PAB-ENCL-R for the 1HU enclosure and Model PAB2-ENCL-R for the 2HU enclosure.



PAB-ENCL
1 HU Enclosure



PAB2-ENCL
2 HU Enclosure

Power Supplies

There are also two (2) types of power-limited power supplies for Siemens PAD-5 power units / extenders. (170W) The Model FP2011-U1 power supply provides up to 6 Amps. at 170 Watts of main power to PAD-5, and Model FP2012-U1 provides up to 9 Amps. at 300 Watts.

Additionally, the power supplies can recharge and maintain backup charge for the two (2) back-up batteries. The 170W power supply, Model FP2011-U1, can provide battery-backup charge of 7A (up to 35AH), and the 300W power supply, Model FP2012-U1, provides battery-backup charge of 35AH (up to 100AH)



FP2011-U1
(up to 170W)



FP2012-U1
(up to 300W)

Status Indicator LEDs

Battery Charging Status:	Green	Red
NAC 1 Status:	Yellow	
NAC 2 Status:	Yellow	
NAC 3 Status:	Yellow	
NAC 4 Status:	Yellow	
Auxiliary Output Status:	Yellow	
3.3VDC Status:	Green	
Main Microprocessor Status:	Yellow	
P2 Loop Status:	Green	Red

Configuration Options

CIRCUIT TYPE	PAD-5 MAIN BOARD				Model CLSA EXPANSION CARD				EOL REQUIRED
	1	2	3	4	5	6	7	8	
Sync Coded Pattern	✓	✓	✓	✓	✓	✓	✓	✓	Yes 2.2k – 24kΩ
Auxiliary Power Output	✓	✓	✓	✓	✓	✓	✓	✓	–
Releasing*					✓	✓			Yes to 24kΩ
Shorting Device Input	✓	✓	✓	✓	✓	✓	✓	✓	Yes 2.2k – 24kΩ

* denotes Circuits 7 and 8 are not used for either Aux. Pwr. or NAC Output when PAD-5 is configured for releasing

Technical Data	
LINE IMPEDANCE:	3.2Ω, max per loop
ALARM CURRENT: [For NACs & aux. power]	3.0A per circuit, max.
	– 6A, max. [via FP2011-U1] – 9A, max. [via FP2012-U1]
TOTAL OUTPUT POWER:	24VDC @ 6A, [with the 170W power supply, Model FP2011-U1]
	24VDC @ 9A, [with the 300W power supply, Model FP2012-U1]
AMBIENT TEMPERATURE:	+32° – +120°F (0° – +49°C)
RELATIVE HUMIDITY:	0 – 93% @ 86°F (30°C); (non-condensing)
AUXILIARY POWER CIRCUIT:	Each circuit @ 3A, max.
BATTERY CHARGING CAPACITY:	up to 100AH
OUTPUT CIRCUITS CONFIGURATIONS:	Two (2) `Class A` – up to four (4) `Class A` (via Model PAD-5-CLSA)
	– Four (4) `Class B`
	– One (1) `Class A`, Two (2) `Class B`
INSTALLATION ENVIRONMENT:	Indoor Dry
NACS:	– Supervised, power-limited – 10mA standby, max. – 3A active Operating – 0.3A Regulated – four (4) circuits – 2K ohms (+), 8K Ω (-)

Physical Properties	
PAD-5 1HU-UNIT DIMENSIONS: [W -x- H -x- D]	16.0" –x– 24.0" –x– 3.50" (40.6 cm. -x- 60.9 cm. -x- 8.8 cm.)
PAD-5 2HU-UNIT DIMENSIONS: [W -x- H -x- D]	16" –x– 40" –x– 5.5" (40.6 cm. -x- 101.6 cm. -x- 14 cm.)
ENCLOSURE TYPES:	Black or Red

Details for Ordering		
MODEL OR TYPE	PART NUMBER	PRODUCT
PAB-ENCL	S54339-A8-A1	PAD-5 1HU enclosure
PAB-ENCL-R	S54339-A9-A1	PAD-5 1HU enclosure, red
PAB2-ENCL	S54339-A10-A1	PAD-5 2HU enclosure
PAB2-ENCL-R	S54339-A11-A1	PAD-5 2HU enclosure, red
PAD-5-MB	S54339-A5-A1	PAD-5 main board (with one [1] adapter plate)
PAD-5-CLSA	S54339-A6-A1	PAD-5 addressable NAC (Class A/B) expansion card
PAD-5-CDC	S54339-A7-A1	PAD-5 Conventional Detector Card
FP2011-U1	500-450222	170W Power Supply
FP2012-U1	S54400-Z60-A1	300W Power Supply

Details for Ordering – (cont.)		
PAD-5 1HU-only Kits		
MODEL OR TYPE	PART NUMBER	PRODUCT
PAD5-6A	S54339-A15-A1	Complete 6A PAD-5 kit: – One (1) Unit Enclosure, black (PAB-ENCL) – One (1) Main Board, PAD-5-MB (with one [1] adapter plate included) – One (1) 170W power supply, FP2011-U1
PAD5-6A-R	S54339-A16-A1	Complete 6A PAD-5 kit: – One (1) Unit Enclosure, red (PAB-ENCL-R) – One (1) Main Board, PAD-5-MB (with one [1] adapter plate included) – One (1) 170W power supply, FP2011-U1
PAD5-9A	S54339-A17-A1	Complete 9A PAD-5 kit: – One (1) Unit Enclosure, black (PAB-ENCL) – One (1) Main Board, PAD-5-MB (with one [1] adapter plate) – One (1) 300W power supply, FP2012-U1
PAD5-9A-R	S54339-A18-A1	Complete 9A PAD-5 kit: – One (1) Unit Enclosure, red (PAB-ENCL-R) – One (1) Main Board, PAD-5-MB (with one [1] adapter plate) – One (1) 300W power supply, FP2012-U1
PAD-5 Unit Accessories		
MODEL OR TYPE	PART NUMBER	PRODUCT
BAAP	S54339-A14-A1	Adapter Plate (used to mount a booster amplifier)
P3AP	S54339-A12-A1	Adapter Plate (used to mount a Siemens PAD-3 auxiliary power unit)
P4AP	S54339-A13-A1	Adapter Plate (used to mount a Siemens PAD-4 auxiliary power unit)

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SIEMENS

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Tel: (973) 593-2600

September - 2025
(Rev. 4)



→ PS-1270

General Purpose SLA PS Series - General Purpose



Versatile sealed lead acid batteries specifically engineered for use in general purpose float and light cyclic applications including fire and security systems, emergency lighting, UPS, toys and medical devices.

Configuration Options

- PS-1270 F1
- PS-1270 F1 VDS
- PS-1270 F2
- PS-1270 FR F1
- PS-1270 FR F1 VDS
- PS-1270 FR F2 VDS

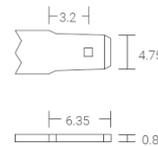
Performance Specs

Nominal Voltage	12.0 Volts, (6.0 cells)
Nominal Capacity	
20-hr. (0.35A to 10.5 Volts)	7.0Ah
10-hr. (0.65A to 10.5 Volts)	6.53Ah
5-hr. (1.21A to 10.2 Volts)	6.05Ah
1-hr. (4.27A to 9.6 Volts)	4.27Ah
Approximate Weight	4.34lbs, (1.97kg)
VDS Weight	5.1lbs, (2.3kg)
Dimensions	L: 5.94in, 151.0mm
+/- 0.08 in. (+/- 2mm) for length, width, and height dimensions	W: 2.56in, 65.0mm
	H: 3.7in, 94.0mm
	TH: 3.94in, 100.0mm
Internal Resistance (approx.) mΩ	33.0mΩ
Max Short Circuit Discharge Current	196.0A
Operating Temperature Range	
Charge	-4°F (-20°C) to 104°F (40°C)
Discharge	5°F (-15°C) to 122°F (50°C)
Case	ABS (UL94 HB or V-0 optional)
Recommended Power-Sonic Charger	PSC-12500ACX

Available Terminals (mm)

F1 FASTON

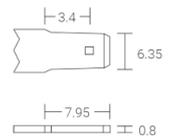
0.187" x 0.032"
quick disconnect
tabs.



F2

FASTON

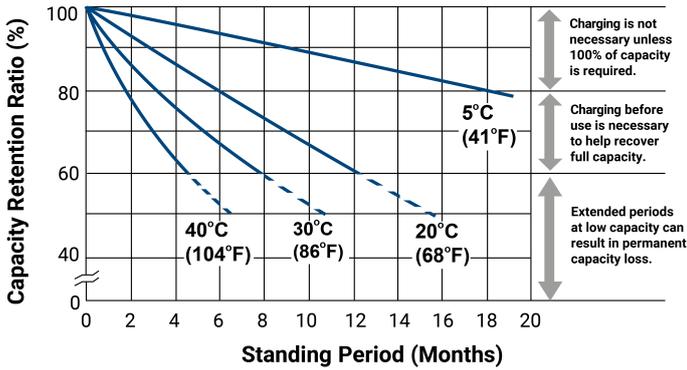
0.250" x 0.032"
quick disconnect
tabs.



Graphs

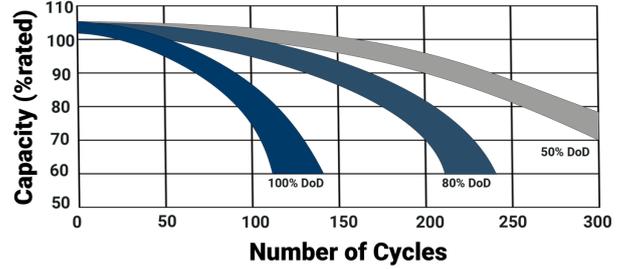
Capacity Retention SLA

CAPACITY RETENTION



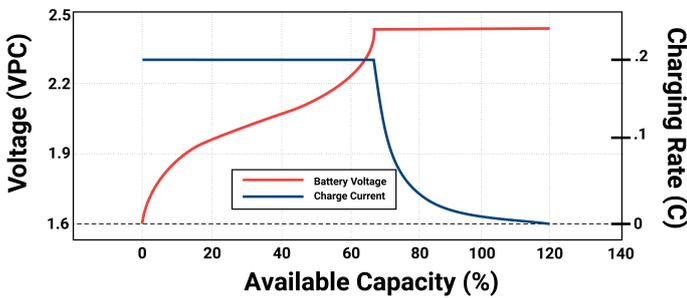
PS Cycle Life

CYCLE LIFE @25°C



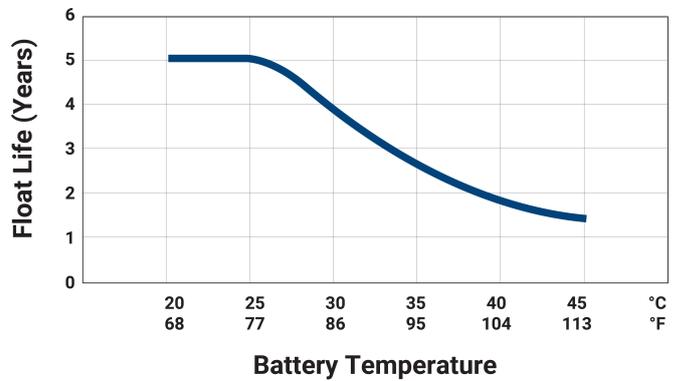
SLA Charging

CHARGING CHARACTERISTICS @ C/5 AND 25°C



SLA Float Life 5YR

FLOAT LIFE VS. TEMPERATURE



Constant Current

VoltageOverTime	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V/cell	24.3	15.7	11.8	9.4	6.87	5.11	4.27	3.14	2.56	1.84	1.46	1.24	1.06	0.829	0.675	0.361
1.65V/cell	22.5	14.9	11.4	9.1	6.73	5.02	4.2	3.1	2.52	1.82	1.44	1.23	1.05	0.82	0.669	0.358
1.67V/cell	22.3	14.8	11.3	9.01	6.67	4.98	4.17	3.08	2.51	1.81	1.43	1.22	1.04	0.816	0.665	0.356
1.70V/cell	21.4	14.4	11.1	8.86	6.57	4.92	4.13	3.05	2.49	1.79	1.42	1.21	1.03	0.809	0.66	0.354
1.75V/cell	19.9	13.8	10.7	8.6	6.43	4.83	4.06	3.0	2.45	1.77	1.4	1.19	1.02	0.8	0.653	0.35
1.80V/cell	18.5	13.2	10.3	8.35	6.28	4.73	3.99	2.95	2.41	1.74	1.38	1.18	1.01	0.79	0.644	0.347
1.85V/cell	17.0	12.5	9.9	8.1	6.12	4.64	3.91	2.9	2.38	1.72	1.36	1.16	0.99	0.78	0.637	0.343

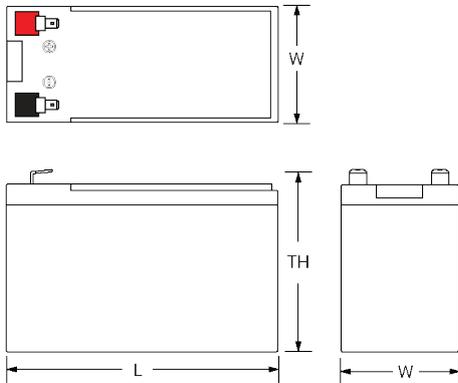
Constant Power

VoltageOverTime	5min	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V/cell	44.7	29.2	22.1	17.6	13.0	9.7	8.17	6.05	4.95	3.59	2.85	2.43	2.08	1.64	1.34	0.722
1.65V/cell	41.8	28.0	21.5	17.3	12.8	9.6	8.1	5.98	4.9	3.55	2.82	2.4	2.06	1.62	1.33	0.716
1.67V/cell	41.4	27.8	21.3	17.1	12.7	9.5	8.02	5.95	4.87	3.53	2.81	2.39	2.05	1.61	1.32	0.712
1.70V/cell	39.9	27.2	20.9	16.8	12.5	9.4	7.95	5.9	4.84	3.5	2.79	2.37	2.03	1.6	1.31	0.707
1.75V/cell	37.4	26.1	20.3	16.4	12.3	9.3	7.84	5.82	4.77	3.46	2.76	2.35	2.01	1.58	1.29	0.7
1.80V/cell	34.8	25.0	19.7	16.0	12.1	9.15	7.73	5.74	4.71	3.42	2.72	2.32	1.99	1.57	1.28	0.693
1.85V/cell	32.3	23.9	19.1	15.6	11.8	9.01	7.61	5.67	4.65	3.37	2.69	2.29	1.96	1.55	1.27	0.686

Charging

Cycle Applications: Apply constant voltage charge at 2.35VPC – 2.45VPC (14.1 to 14.7 volts for 12V Monobloc) at 20°C. The initial charging current should be set at less than C/5 Amps. Switch to float charge when the current falls to a 3% capacity rate to avoid overcharging. **Stand-By or "Float" Service:** Apply constant voltage charge of 2.25VPC – 2.30VPC (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 stand-by applications should be regulated in relation to ambient temperature. As temperature rises, charging voltage should be reduced to prevent overcharge and increased as the temperature falls to avoid undercharge. For further charging information, including temperature compensation factors, see the Power-Sonic Technical Manual.

Engineering Drawing



For 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.

Approvals



CE marking confirms a product meets EU safety, health, and environmental protection standards for battery and energy systems.



Conflict-free mineral certification ensuring ethical sourcing and transparent supply chain for responsible production.



Extended mineral reporting meets global supply chain transparency standards for responsible and ethical sourcing practices.



IEC 60896 standard ensures stationary lead-acid batteries meet safety, performance, and float charge application requirements.



ISO 9001:2015 certification ensures consistent quality management and manufacturing standards for energy storage products.



PFAS-free certification verifying environmentally responsible manufacturing of batteries and energy storage technologies.



California Proposition 65 compliant, providing consumer safety through reduced chemical exposure in battery manufacturing.



REACH compliant with EU chemical safety standards ensuring restricted substances are controlled in all battery components.



RoHS compliance ensures restriction of hazardous substances in electrical, electronic, and battery-powered products.



Sealed lead-acid batteries classified UN2800 non-spillable, certified safe for air, sea, and ground transport worldwide.



SVHC compliant with EU REACH regulations for Substances of Very High Concern used in electrical and energy storage products.



U.S. EPA TSCA compliance ensures toxic substances are regulated for safe manufacturing of batteries and electronic components.



UL 1989 certified for valve-regulated and vented lead-acid batteries used in UPS, emergency, and backup power applications.



VdS certified for tested reliability, quality, and safety of batteries in alarm, security, and backup power systems.



DTK-2MHLPB Series Modular Low Voltage Surge Protectors

DITEK's DTK-2MHLPB Series of low voltage surge protectors provide robust protection in a compact package. This series was designed for ease of installation, with convenient field-replaceable modules and a Snap-Track base system, allowing the installer to protect multiple circuits while utilizing a common ground point.



Product Features

- Protects (2) low voltage circuit pairs per module
- Hybrid design utilizing SAD and GDT technologies
- Shorts to ground when compromised
- Field-replaceable modular design with single point ground for fast and easy installation
- Six voltage configurations available to protect various types of circuits
- Hardwired multi-base mounting system allows protection for up to (10) pairs with a common ground
- Suitable for use on both AC and DC low voltage circuits

Applications

- Fire Alarm Panel NAC, SLC, PIV and IDC Circuits
- Burglar Alarm Panel NAC and IDC Circuits
- Telco Dialer Circuits
- 70V Speakers and Audio Equipment
- Low-Voltage Landscaping Lighting and Lighting Control Circuits
- 4-20mA Current Loops

Accessories

- To order module with base, add "WB" to end of part number
- Test Module Kit, p/n DTK-2MHLPTM

Technical Specifications

DTK-2MHLP	5B	12B	24B	36B	48B	75B	130B
Service Voltage:	5V	12V	24V	36V	48V	75V	130V
MCOV:	6V	18V	33V	48V	64V	90V	140V
Clamping Voltage:	8V	21.6V	39V	57V	76V	108V	155V
Protection Modes:	Differential Mode (L-L) Common Mode (L-G)						
Surge Current Rating:	20,000A						
Maximum Continuous Current:	5 Amps						
Failure Mode:	Short to Ground						

Mechanical Specifications

Base Connection Method:	Hardwired terminals, 30-12 AWG	
Module Connection Method:	Edge card into mounting base	
Housing:	ABS	
Operating Temperature:	-40°F - 158°F (-40°C - 70°C)	
Maximum Humidity:	95% non-condensing	
Dimensions:	Module 2.1" L x 1.4" W x 1.9" H (53 mm x 36 mm x 48 mm)	Module with Base 3.25" L x 1.5" W x 2.6" H (83 mm x 38 mm x 66 mm)
Weight:	1.2 oz (34 g)	2.8 oz (79 g)

Quality Standards & Approvals

Certifications:	UL497B
Warranty:	10 Year Limited Warranty

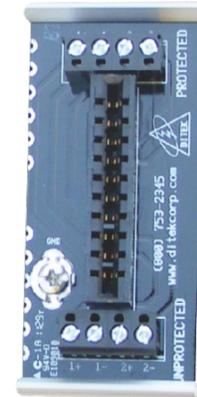




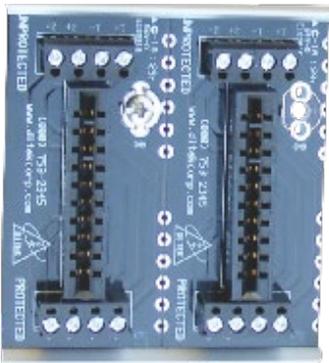
DTK-2MHLPB Series Modular Low Voltage Surge Protectors

Base Part Numbers and Dimensions

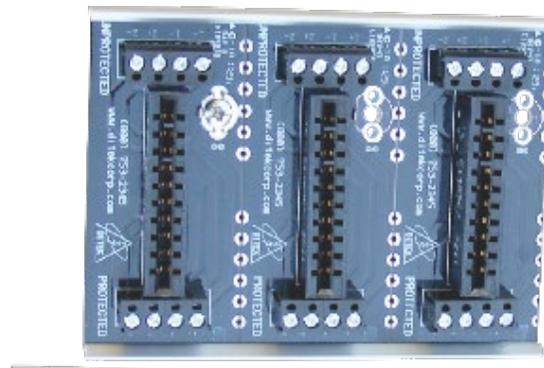
Part Number	# Pairs Protected	Dimensions
DTK-MB10	2	3.25" H x 1.50" W (82.5 mm x 38.1 mm)
DTK-2MB	4	3.25" H x 3.00" W (82.5 mm x 76.2 mm)
DTK-3MB	6	3.25" H x 4.50" W (82.5 mm x 114.3 mm)
DTK-4MB	8	3.25" H x 6.00" W (82.5 mm x 152.4 mm)
DTK-5MB	10	3.25" H x 7.50" W (82.5 mm x 190.5 mm)



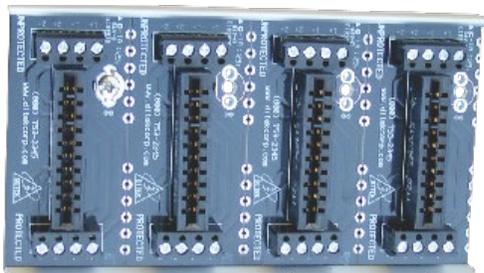
DTK-MB10



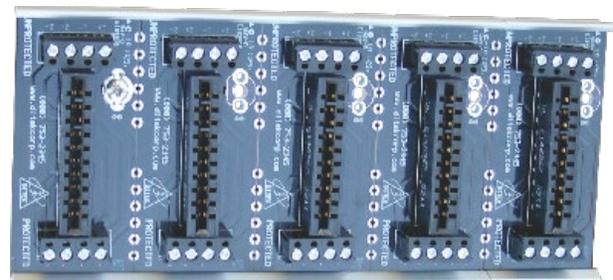
DTK-2MB



DTK-3MB



DTK-4MB



DTK-5MB

GENERAL NOTES

- IT IS THE INTENT THAT THE GENERAL NOTES INDICATED HERE BE APPLICABLE ONLY TO THE CONTRACTED SCOPE OF WORK INDICATED WITHIN THIS DRAWING PACKAGE. NOT ALL NOTES MAY APPLY TO THIS PROJECT.
- THESE GENERAL NOTES SHALL NOT BE APPLICABLE TO ANY EXISTING CONDITIONS WITHIN THE FACILITY. I.E. EXISTING CONDITIONS FOUND TO BE PRESENT PRIOR TO THIS CONTRACT WORK. PREVIOUSLY PERFORMED BY OTHER OR PREVIOUS SYSTEM CONTRACTORS. SEPARATE WORK UNRELATED TO THIS CONTRACT, SYSTEMS PREVIOUSLY APPROVED UNDER PAST CODES / REGULATIONS, ETC.
- SIEMENS EQUIPMENT IS UNDERWRITERS LABORATORIES (UL) LISTED FOR POWER LIMITED INSTALLATION.
- A STAMPED SET OF APPROVED PLANS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION. ANY DEVIATION FROM APPROVED PLANS, INCLUDING THE SUBSTITUTION OF DEVICES SHALL BE APPROVED BY THE AUTHORITY HAVING JURISDICTION/ INSPECTOR OF RECORD. SIEMENS SHALL NOT BEAR ANY ADDITIONAL COST FOR RE-ENGINEERING AS A RESULT OF DEVIATIONS.
- THESE DRAWINGS DEPICT GENERAL LOCATIONS OF LIFE SAFETY EQUIPMENT & FIELD DEVICES. ANY RACEWAY RUNS THAT ARE INDICATED WITHIN THIS DRAWING PACKAGE ARE SHOWN DIAGRAMMATICALLY AND ARE FOR CIRCUITING PURPOSES ONLY. EXACT ROUTING OF THE CONDUITS TO BE DETERMINED IN THE FIELD BY THE INSTALLING CONTRACTOR TO SUIT CONDITIONS. ALL THE CHANGES SHALL BE CLEARLY INDICATED ON THE RECORD DRAWINGS.
- WIRING SHALL NOT BE LOOPED UNDER DEVICE TERMINALS. WIRE MUST BE CUT FOR IN AND OUT RUNS PRIOR TO INSTALLING UNDER DEVICE TERMINALS.
- ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO USE COLOR CODE AND/OR WIRE NUMBERS PER CONTRACT DOCUMENTATION ON ALL WIRING. SUCH IDENTIFICATION SHALL BE SHOWN DIAGRAMMATICALLY THROUGHOUT ALL CIRCUITS, CONNECTIONS, TERMINATIONS AND AT JUNCTION BOXES.
- WHERE SHIELDED CABLE IS USED, THE SHIELD SHALL BE CONTINUOUS AND GROUNDED ONLY ONCE AT THE RESPECTIVE CONTROL UNIT.
- T-TAPPING IS ONLY ACCEPTABLE ON SLC CLASS B CIRCUITS EXCEPT WHERE CONTRACT SPECIFICATIONS PROHIBIT.
- ALL 120VAC CIRCUITS FEEDING FIRE ALARM EQUIPMENT SHALL BE FROM A DEDICATED CIRCUIT MARKED AS "FIRE ALARM," MARKED RED, AND PROVIDED WITH A BREAKER LOCK-ON DEVICE.
- ALL WIRING, INITIATING DEVICES AND ANNUNCIATOR PANELS SHALL BE SUPERVISED TO THE PRINCIPAL POINT OF ANNUNCIATION. (CONTROL UNIT(S) TO SUPERVISE ANNUNCIATOR PANEL(S), SUB-PANEL(S), ALL CIRCUITS AND INITIATING DEVICES).
- UNLESS OTHERWISE NOTED, ALL MANUAL PULL STATIONS SHALL BE MOUNTED AT A MAXIMUM HEIGHT OF 48" ABOVE FINISHED FLOOR TO THE OPERABLE PART.
- FIRE ALARM SIGNAL SHALL MEET ANSI S3.41, AUDIBLE EMERGENCY EVACUATION SIGNAL (TEMPORAL PATTERN). FIRE ALARM AUDIBILITY SHALL BE NO LESS THAN 15db (PUBLIC MODE) OR 10db (PRIVATE MODE) ABOVE AMBIENT SOUND THROUGHOUT THE AREA OF ALARM.
- WHERE MORE THAN TWO VISUAL APPLIANCES ARE IN THE SAME FIELD OF VIEW, THEY SHALL BE SYNCHRONIZED IN ACCORDANCE WITH NFPA 72.
- CEILING MOUNTED VISUAL NOTIFICATION APPLIANCES SHALL BE MOUNTED BELOW VISUAL OBSTRUCTIONS, AND WHEN THESE APPLIANCES ARE MOUNTED ABOVE 10' A.F.F., THEY SHALL BE DERATED OR PROVIDED WITH PERFORMANCE-BASED ALTERNATIVE IN ACCORDANCE WITH NFPA 72.
- IN ACCORDANCE WITH NFPA 72, WHERE DETECTION IS NOT REQUIRED DURING CONSTRUCTION, DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER ALL OTHER CONSTRUCTION TRADES HAVE COMPLETED CLEANUP.
- INSTALLATION OF DEVICES SHALL BE IN ACCORDANCE WITH MANUFACTURER INSTALLATION INSTRUCTIONS AND LISTINGS. MISAPPLICATION OF EQUIPMENT AND SUCH, VOIDS ALL WARRANTIES EITHER EXPRESSED OR IMPLIED WITH REGARDS TO LOSS, DAMAGE, LIABILITIES AND/OR SERVICE PROBLEMS.
- UNLESS NOTED OTHERWISE ALL WIRING AND INSTALLATION METHODS SHALL CONFORM TO APPLICABLE ELECTRICAL CODE. MINIMUM SIZE OF 3/4" METALLIC RACEWAY SHALL BE INSTALLED.
- EFFORTS MUST BE PLACED ON MINIMIZING UNNECESSARY WIRE RUNS WITHIN DEVICE BACKBOXES. DO NOT INSTALL WIRE WITHIN A BACKBOX THAT DOES NOT SERVE ITS CORRESPONDING DEVICE AND WHICH MAY INHIBIT ITS PROPER INSTALLATION. GOOD WIRING/INSTALLATION PRACTICES MUST BE ADHERED TO AT ALL TIMES.
- AS FIELD CONDITIONS DICTATE ACTUAL RACEWAY INSTALLATIONS, DEVICE BACK BOXES AND JUNCTION BOXES SHALL BE SIZED PER FIELD INSTALLING CONDITIONS. DEVICE BACK BOX SIZES INDICATED WITHIN THIS DRAWING PACKAGE ARE MINIMUM REQUIREMENTS ONLY. AN INCREASE IN BACK BOX DEPTH, ADDITION OF EXTENSION BOX/RING, ETC. MAY BE REQUIRED IN ORDER TO PROPERLY ACCOMMODATE FOR WIRE QUANTITIES INSTALLED WITHIN THE RACEWAY.
- THE INSTALLATION OF DEVICE BACKBOXES & WIRE SHALL BE SIZED AND INSTALLED PER APPLICABLE ELECTRICAL CODE. IN ADDITION SUCH BOXES & WIRE SHALL BE INSTALLED IN A MANNER AS TO ALLOW FOR THE EASE OF DEVICE INSTALLATION & FUTURE MAINTENANCE. THE INSTALLATION OF DEVICES WHICH REQUIRE EXCESSIVE FORCE OR THE PINCHING OF WIRES IN ORDER TO PROPERLY SEAT THE DEVICE TO ITS FINISHED SURFACE MAY RESULT IN GROUND FAULTS OR OTHER SYSTEM TROUBLES, AND SHALL BE CONSIDERED AN UNACCEPTABLE INSTALLATION STANDARD.
- DO NOT APPLY POWER TO CONTROL UNIT(S) UNTIL SIEMENS AUTHORIZED PERSONNEL HAVE VERIFIED THE SYSTEM INSTALLATIONS. UPON SATISFACTORY COMPLETION OF THEIR INSPECTION, POWER WILL BE APPLIED TO THE CONTROL UNIT(S). SIEMENS ASSUMES NO LIABILITY FOR ANY DAMAGE TO THE EQUIPMENT SUPPLIED IF POWER IS APPLIED TO THE CONTROL UNIT(S) PRIOR TO INSPECTION OF THE INSTALLATION BY SIEMENS AUTHORIZED PERSONNEL.
- CABLE INSTALLED IN UNDERGROUND RACEWAYS OR OTHER WET LOCATIONS SHALL BE RATED/LISTED FOR WET LOCATIONS.
- FOR ADDITIONAL INSTALLATION INSTRUCTIONS, REFER TO CATALOG CUT SHEETS AND/OR INSTALLATION INSTRUCTIONS.

TYPICAL CALLOUTS & ABBREVIATIONS

AC = ABOVE CEILING	HT = HEIGHT
AFF = ABOVE FINISHED FLOOR	ID = IN-DUCT MOUNTED
AHJ = AUTHORITY HAVING JURISDICTION	IDC = INITIATING DEVICE CIRCUIT
AHU = AIR HANDLING UNIT	MAX = MAXIMUM
ANN = ANNUNCIATOR	MIN = MINIMUM
BMS = BUILDING MANAGEMENT SYSTEM	N = NEW
C = CEILING MOUNTED	N/A = NOT APPLICABLE
CD = CONDUIT (CIRCULAR RACEWAY)	NAC = NOTIFICATION APPLIANCE CIRCUIT
CD = CUBIC CANDELA	NC = NOT IN CONTRACT
CFM = CUBIC FEET PER MINUTE (AIRFLOW)	NTS = NOT TO SCALE
CKT = CIRCUIT	PS = POWER SUPPLY
CSFD = COMBINATION SMOKE FIRE DAMPER	RA = RETURN-AIR GRILL MOUNTED
DACT = DIGITAL ALARM COMM. TRANSMITTER	RL = RELOCATED DEVICE
DR = DROP & RE-HANG EXISTING	RR = REMOVE EXISTING, REPLACE w/ NEW
E = EXISTING	SF = DEVICE MOUNTED IN SUB-FLOOR
EL = ELEVATOR RECALL	SLC = SIGNALING LINE CIRCUIT
EOL = END OF LINE	TBD = TO BE DETERMINED
EPO = EMERGENCY POWER OFF	TYP = TYPICAL
ER = EXISTING TO BE RELOCATED	UF = UNDER-FLOOR
FAA = FIRE ALARM ANNUNCIATOR	UON = UNLESS OTHERWISE NOTED
FACP = FIRE ALARM CONTROL PANEL	WM = DEVICE WALL MOUNTED
FACU = FIRE ALARM CONTROL UNIT	WP = WEATHERPROOF
FATC = FIRE ALARM TERMINAL CABINET	X = DEMO EXISTING
FBO = FIRE BELL OPERATOR	XP = EXPLOSION PROOF
FSD = FIRE SMOKE DAMPER	

DEVICE INSTALLATION/OPERATING GUIDELINES

- THE UL LISTED OPERATING TEMPERATURE RANGE FOR ALL ADDRESSABLE DEVICES IS FROM 32°F (0°C) TO 100°F (38°C). IF A DEVICE IS SHOWN IN AN AREA WHICH MAY EXPERIENCE EXTREME COLD OR HEAT, CONTACT YOUR SIEMENS REPRESENTATIVE.
- FIRE ALARM EQUIPMENT SHALL NOT BE STORED OR INSTALLED IN AREAS EXPOSED TO THE ELEMENTS EXCEEDING NORMAL OPERATING CONDITIONS. LISTED WEATHERPROOF DEVICES MAY BE INSTALLED AT EXTERIOR LOCATIONS PER MANUFACTURER INSTRUCTIONS. ALL OTHER DEVICES NOT SPECIFICALLY LISTED AS WEATHERPROOF MUST BE INSTALLED IN SUITABLE LOCATIONS OR LISTED NEMA ENCLOSURES APPLICABLE FOR THE ANTICIPATED ENVIRONMENT AND DEVICES TO BE INSTALLED.
- THE INSTALLATION OF A FIRE ALARM SYSTEM AND ANY FIRE ALARM EQUIPMENT SHOULD NOT BE INSTALLED NEXT TO OR WITHIN CLOSE PROXIMITY OF ANY RADIO FREQUENCY EQUIPMENT (EMI, RF, HIGH OUTPUT, ETC.), SUCH INSTALLATION CONDITIONS MAY CAUSE UNDESIRABLE EFFECTS TO THE SYSTEM SUCH AS INTERMITTENT FAULTS, IMPROPER SYSTEM OPERATIONS, FALSE ALARMS, ETC.
- ENSURE EACH ADDRESSABLE DEVICE HAS BEEN PROPERLY PROGRAMMED PRIOR TO ITS INSTALLATION. DO NOT TERMINATE WIRES ONTO ADDRESSABLE DEVICES BEFORE IT HAS BEEN PROGRAMMED.
- ALL INITIATING DEVICES (DETECTORS, PULL STATIONS, ETC.) AND NOTIFICATION APPLIANCES (HORNS, STROBES, ETC.) MUST BE INSTALLED WITH BACKBOXES. THE EQUIPMENT SHOULD NEVER BE SUPPORTED WITH THE CIRCUIT WIRES.
- THE USE OF MAGNETS FOR THE PURPOSE OF TESTING DETECTORS FOR INITIATION OF AN ALARM IS STRICTLY PROHIBITED. TESTING WITH A MAGNET DOES NOT SATISFY NFPA 72 TEST METHOD REQUIREMENT OF "SMOKE ENTRY INTO THE SENSING CHAMBER", AND MAY CAUSE UNDESIRABLE EFFECTS TO THE DETECTOR.
- THE PAINTING OR MODIFYING OF ANY FIRE ALARM EQUIPMENT IS STRICTLY PROHIBITED AND SHOULD NOT BE PERFORMED UNDER ANY CIRCUMSTANCES.

CHECK LIST FOR START UP

- THE FOLLOWING IS A LIST OF CRITERIA THAT MUST BE MET PRIOR TO START UP
- MARK-UP THE SIEMENS FIRE SAFETY SHOP DRAWINGS, SHOWING THE ACTUAL WIRE RUNS. NOTE THAT ANY DISCREPANCIES/CHANGES BETWEEN THE ACTUAL CONDITIONS AND THE SYSTEM DRAWINGS SHOULD BE NOTED FOR INCLUSION ON THE FINAL RECORD DRAWINGS.
 - ALL DEVICES HAVE BEEN INSTALLED AND TERMINATED PROPERLY.
 - CONTACTED SIEMENS FIRE SAFETY PROJECT MANAGER 14 DAYS PRIOR TO SCHEDULED START UP.
 - ALL FIELD DEVICES INCLUDING DETECTORS, MODULES, NOTIFICATION APPLIANCES BOTH VISUAL AND AUDIBLE ARE ADDRESSED AND OUTPUT SET (AS REQUIRED) AND INSTALLED.
 - IF YOUR SYSTEM IS BEING FURNISHED WITH A DIALER, APPLICABLE AMOUNT OF RJ31X PHONE JACKS MUST BE INSTALLED WITHIN 3 FEET OF THE MAIN FIRE ALARM CONTROL UNIT. THESE PHONE LINES MUST BE CONNECTED BEFORE ALL BUILDING PHONE EQUIPMENT (NO "9" PREFIX), AND SHOULD HAVE NO DIAL-OUT RESTRICTIONS. PROVIDE THE SIEMENS PROJECT MANAGER WITH A CUSTOMER EMERGENCY CALL LIST. IF MONITORING NOT PROVIDED BY SIEMENS, THEN FOLLOWING INFORMATION MUST ALSO BE OBTAINED PRIOR TO START UP: CENTRAL STATION ACCOUNT NUMBER, RECEIVER PHONE NUMBERS, CENTRAL STATION VOICE LINE NUMBER, AND ALARM COMPANY PHONE NUMBER.
 - CHECK HERE IF NOT APPLICABLE

CHECK FIELD WIRING WITH AN OHM METER:

ALL FIRE ALARM CIRCUITS SHOULD BE COMPLETED AND TESTED BEFORE THE ARRIVAL OF THE FIRE ALARM AUTHORIZED PERSONNEL. CIRCUITS MUST BE FREE OF OPENS, SHORTS, AND GROUND FAULTS BEFORE BEING CONNECTED TO THE SYSTEM. CIRCUITS SHOULD HAVE END OF LINE RESISTORS INSTALLED BEFORE TESTING THEM. A WRITTEN CONFIRMATION SHALL BE PROVIDED TO SIEMENS BY THE INSTALLER ACKNOWLEDGING ALL CIRCUITS HAVE BEEN TESTED. ADHERENCE TO THIS PRACTICE WILL SAVE TIME AND MONEY FOR ALL CONCERNED PARTIES. IF IT IS A NAC CIRCUIT, THE RESISTOR IS WITH THE EQUIPMENT THAT CONTROLS THAT CIRCUIT.

A GROUND FAULT IS A CONDUCTOR THAT IS CONNECTED TO GROUND. THEY CAN OCCUR FROM SKINNED INSULATION OR INTERNAL DEVICE FAILURES. FIRE ALARM SYSTEMS MONITOR BOTH THE POSITIVE AND NEGATIVE CONDUCTORS FOR SHORTS TO GROUND. SHORTS CAN BE DETECTED BY USING A CONTINUITY DETECTOR OR AN OHMMETER. SIMPLY CONNECT ONE LEAD OF YOUR METER TO A GOOD GROUND SOURCE AND THE OTHER TO THE CONDUCTOR YOU ARE TRYING TO TEST. THE METER SHOULD GIVE AN INDICATION OF AN OPEN IF THE CIRCUIT IS FREE FROM A FAULT. MEG OHM GROUND FAULTS MAY INDICATE THE PRESENCE OF WATER IN CONTACT WITH SYSTEM WIRING. ALL SYSTEM FIELD WIRING MUST BE FREE OF GROUNDS AND SHORTS, BEFORE THE START UP.

- MEASURE EACH CONDUCTOR OF THE ADDRESSABLE LOOP (SLC) TO GROUND, CONDUCTOR TO CONDUCTOR, CONDUCTOR TO SHIELD, AND SHIELD TO EARTH. THE RESISTANCE SHOULD BE GREATER THAN 1 MEGA OHM. NOTE LINE TO LINE MEASUREMENTS REQUIRE ONE END OF THE PAIR TO BE SHORTED. STRAY VOLTAGES SHOULD BE LESS THAN 1 VDC/AC. RECORD THE READINGS.

- MEASURE EACH CONDUCTOR OF THE NOTIFICATION APPLIANCE CIRCUIT (NAC) TO GROUND, AND CONDUCTOR TO CONDUCTOR. THE RESISTANCE SHOULD BE GREATER THAN 1 MEGA OHM, WITHOUT THE END OF LINE RESISTOR. STRAY VOLTAGES SHOULD BE LESS THAN 1 VDC/AC.

- MEASURE ACROSS THE CONDUCTORS OF A NOTIFICATION APPLIANCE CIRCUIT(NAC), YOUR READING SHOULD BE EQUIVALENT TO THE VALUE OF THE END OF LINE RESISTOR INSTALLED AT THE LAST DEVICE.

IF THE MEASUREMENTS ARE NOT WITHIN THE ACCEPTABLE VALUES, THEN THE CIRCUIT WIRING HAS A SHORT, OPEN, OR GROUND FAULT, AND IS NOT READY FOR START UP!

SYMBOLS LEGEND

SYMBOL	QTY	MODEL NUMBER	DESCRIPTION	*ROUGH IN
FD2492	3	FD2492-41	DUCT DETECTOR HOUSING	FIELD VERIFY
				FD2492
				FD2492
			SAMPLING TUBE (FIELD VERIFY DUCT SIZES BEFORE ORDERING)	
	1	FD421-41	INTELLIGENT PHOTOELECTRIC SMOKE DETECTOR HEAD	08-11
	1	DB-11	DETECTOR BASE	45 DEEP BOX w/ 1-5/8" RING
	1	FD421-41	INTELLIGENT HEAT DETECTOR HEAD	48W-48
	6	ADRM-45	INTELLIGENT DETECTOR BASE w/ SOUMER (DIMP-5, DIM-4, STIRK07)	45 DEEP BOX w/ 1-5/8" RING
	4	IMS-D	INTELLIGENT MANUAL PULL STATION	45 DEEP BOX w/ 1-5/8" RING
	4	IMS-D	INTELLIGENT DUAL INPUT MONITOR MODULE	45 DEEP BOX
	5	IMS-D	INTELLIGENT CONTROLLABLE RELAY w/ SINGLE INPUT MONITOR MODULE	45 DEEP BOX
	1	PA0-5-6A	ADDRESSABLE POWER SUPPLY NOTIFICATION APPLIANCE EXTENDER - 6A (INCLUDES PAB-ENCL, PAD-5-MB, FP2011-U1)	SURFACE MOUNT
	2	PS-1200	BATTERY 12 VOLT 7 AMP HOUR	INSIDE PAB-ENCL
	4	SC-45-08-F	MULTI-CANDELA HORN/STROBE, CEILING MOUNT - RED	45 DEEP BOX
	2	DR-2M4P2486	DTEX MODULAR LOW VOLTAGE SURGE PROTECTOR	SURFACE MOUNT

CABLE LEGEND

LTR	DESCRIPTION	AWG	# OF COND	SHIELD
A	(SLC) ADDRESSABLE LOOP	18	2	NO
B	(NAC) VISUAL (STROBE) CIRCUIT	14	2	NO
C	(NAC) AUDIBLE (CHIME) CIRCUIT	14	2	NO
D	DOOR HOLDER POWER	14	2	NO
E	24VDC POWER	14	2	NO
P	PAD ACTIVATION CIRCUIT	16	2	NO
R	RELAY CABLE	16	3	NO
Z	(IDC) CONVENTIONAL ZONE CIRCUIT	16	2	NO
XN	(SLC) X-NET COMMUNICATION CIRCUIT	16	2	NO
HN	(SLC) H-NET COMMUNICATION CIRCUIT	16	2	NO

CONDUIT WIRE FILL CHART

CONDUIT TRADE SIZE	ELECTRICAL METALLIC CONDUIT		FLEXIBLE METALLIC CONDUIT		RIGID METALLIC CONDUIT		FLEXIBLE LIQUIDTIGHT METALLIC CONDUIT	
	INTERNAL DIAMETER	MAXIMUM FILL-40%	INTERNAL DIAMETER	MAXIMUM FILL-40%	INTERNAL DIAMETER	MAXIMUM FILL-40%	INTERNAL DIAMETER	MAXIMUM FILL-40%
3/4"	0.8240	0.2130	0.8240	0.2130	0.8360	0.2200	0.8300	0.2160
1"	1.0490	0.3460	1.0200	0.3270	1.0630	0.3550	1.0540	0.3490
1 1/4"	1.3800	0.5980	1.2750	0.5110	1.3940	0.6100	1.3950	0.6110
1 1/2"	1.6100	0.8140	1.5380	0.7430	1.6240	0.8290	1.5880	0.7920
2"	2.0670	1.3420	2.0400	1.3070	2.0830	1.3630	2.0330	1.2980

* UNIT MEASUREMENTS INDICATED UNDER 40% MAXIMUM FILL REPRESENT SQUARE INCHES. FOR REFERENCE ONLY - RECOMMENDATION FOR CONDUIT SIZE PER N.E.C.

TENANT IMPROVEMENT SCOPE OF WORK

THIS PROJECT IS BEING SUBMITTED AS A TENANT IMPROVEMENT TO THE FACILITY'S EXISTING FIRE ALARM SYSTEM. INSTALL DEVICES AS SHOWN IN EQUIPMENT LEGEND AND FLOORPLANS OF THIS DRAWING PACKAGE. SPLICE, CONTINUE, INSTALL & EXTEND WIRE AS NECESSARY TO ENSURE PROPER OPERATING CONDITIONS.

IT IS ASSUMED THAT THE FACILITY'S EXISTING CONDITIONS (I.E. FIELD DEVICES, REMOTE EQUIPMENT, SEQUENCE OF OPERATIONS, INTERFACE MODULES, ETC.) ARE ALL IN GOOD WORKING CONDITION. ANY EXISTING EQUIPMENT, DEVICES, ETC. THAT MAY BE FOUND TO BE FAULTY SHALL NOT BE REQUIRED TO BE CORRECTED OR REPLACED UNDER THIS CONTRACT.

UPON COMPLETION A COMPLETE PRETEST SHALL BE PERFORMED TO VERIFY FUNCTIONALITY. IF THE FUNCTIONALITY IS COMPLETE THEN THE PROPER DOCUMENTATION SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PRIOR TO SCHEDULING A FINAL INSPECTION.

THIS PROJECT INCLUDES THE FOLLOWING TO BE ADDED:

- NOTIFICATION POWER SUPPLY (NAC)
- MANUAL PULL STATIONS
- DUCT SMOKE DETECTORS
- ADDRESSABLE RELAY MODULES
- ADDRESSABLE DUAL INPUT MODULES
- SMOKE DETECTORS
- HEAT DETECTORS WITH AUDIBLE BASES
- AUDIBLE/VISUAL APPLIANCES

SEQUENCE OF OPERATIONS

Building Sequence of Operations	Control Unit Annunciation	Notification	Required Fire Safety Control
Activate control unit ALARM buzzer and LED	X	X	X
Activate control unit SUPERVISORY buzzer and LED	X	X	X
Annunciate at remote fire alarm annunciator	X	X	X
Send signal to supervising station (24-hour attended location)	X	X	X
Activate all audible/visual devices throughout the building	X	X	X
Activate sprinkler alarm device	X	X	X
Shutdown associated air handling (HVAC) units immediately	X	X	X
Release all electro-magnetically hold-open doors throughout building	X	X	X
Recall associated elevator(s) to primary recall floor *	X	X	X
Recall associated elevator(s) to alternate recall floor *	X	X	X
Shunt elevator power	X	X	X
Send signal to elevator controller of device activation in elevator hoistway or machine room (not Lght)	X	X	X
Manual fire alarm box	X	X	X
Smoke detector above FA panel	X	X	X
Smoke detector @ door hold location	X	X	X
Area smoke / heat detector	X	X	X
Top of stair smoke detector	X	X	X
Duct smoke detector @ Fan duct	X	X	X
Smoke detector @ Damper location	X	X	X
Elevator lobby smoke detector-main floor	X	X	X
Elevator lobby smoke detector-all other floors	X	X	X
Elevator machine room @ main floor smoke det	X	X	X
Elevator machine room heat detector	X	X	X
Elevator hoistway smoke detector	X	X	X
Elevator hoistway heat detector	X	X	X
Elevator 120VAC shunt trip circuit failure	X	X	X
Sprinkler water flow switch	X	X	X
Sprinkler valve supervisory switches	X	X	X
Kitchen Hood Suppression system activation	X	X	X
Fire pump running	X	X	X
Fire pump fail	X	X	X
Fire pump phase reversal	X	X	X
FACU 120VAC power failure	X	X	X
Remote power supply trouble (power_wiring)	X	X	X
System device trouble	X	X	X
System wiring trouble (ground, open, short)	X	X	X

* - Elevator recall to primary or alternate floor and Visual Warning (Firefighter Hat) shall be performed by the elevator controller per the Elevator Code ASME A17.1

SHEET INDEX

DWG#	SHEET DESCRIPTION
FA0.01	SYSTEM INFORMATION, NOTES, LEGENDS
FA1.10	FIRST LEVEL (MOB & HCA) FIRE ALARM PLAN - AREA A
FA1.11	FIRST LEVEL (MOB & HCA) FIRE ALARM PLAN - AREA B
FA1.12	FIRST LEVEL (MOB & HCA) FIRE ALARM PLAN - AREA C
FA1.13	FIRST LEVEL (MOB & HCA) FIRE ALARM PLAN - AREA D
FA1.20	SECOND LEVEL (MOB) FIRE ALARM PLAN - AREA A
FA1.21	SECOND LEVEL (HCA) FIRE ALARM PLAN - AREA B
FA1.22	SECOND LEVEL (HCA) FIRE ALARM PLAN - AREA C
FA1.23	SECOND LEVEL (HCA) FIRE ALARM PLAN - AREA D
FA1.30	THIRD LEVEL (HCA) FIRE ALARM PLAN
FA2.01	FIRST LEVEL (MOB) SYSTEM RISER DIAGRAM
FA2.02	SECOND LEVEL (MOB) SYSTEM RISER DIAGRAM
FA2.11	FIRST LEVEL (HCA) SYSTEM RISER DIAGRAM
FA2.12	SECOND LEVEL (HCA) SYSTEM RISER DIAGRAM
FA2.13	THIRD LEVEL (HCA) SYSTEM RISER DIAGRAM
FA3.01	CONTROL PANEL LAYOUT
FA4.01	SYSTEM CALCULATIONS
FA5.01	DEVICE MOUNTING & WIRING DETAILS

SIEMENS CONTACT INFORMATION

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 EMAIL: eric.kircher@siemens.com

APPLICABLE CODES & REGULATIONS

- INTERNATIONAL BUILDING CODE: 2018 EDITION
- INTERNATIONAL FIRE CODE: 2018 EDITION
- INTERNATIONAL MECHANICAL CODE: 2018 EDITION
- NATIONAL ELECTRICAL CODE (NFPA 70): 2017 EDITION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

- NFPA 72: 2016 EDITION

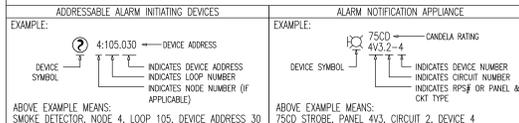
CIRCUIT INFORMATION

SIGNALING LINE CIRCUIT (SLC): CLASS B
 NOTIFICATION APPLIANCE CIRCUITS (NAC): CLASS B
 NETWORK/PANEL COMMUNICATION (SLC): CLASS B

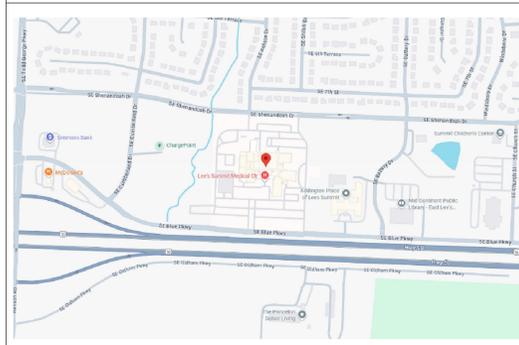
BUILDING/PROJECT INFORMATION

BUILDING OCCUPANCY: I-2 (INSTITUTIONAL), B (BUSINESS)
 SPRINKLERS: YES
 NUMBER OF STORIES: 3
 SQUARE FOOTAGE OF PROJECT: ESTIMATED 111,689 SQ. FT.

DEVICE NUMBERING LEGEND



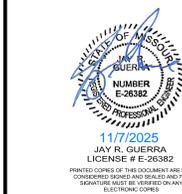
VICINITY MAP



MISSOURI STATE CERTIFICATE OF AUTHORITY #000816



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APPROVAL STAMPS

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AGENCY REFERENCE:

REV	DATE	REVISIONS	INITIALS
1	11/04/25	44OP-406791: TEMPORARY KITCHEN	TRM
0	10/29/25	44OP-404703: DEVICE UPDATES	AM

DRAWN: TRM

CHECKED:

SHEET DESCRIPTION:

FIRE ALARM SYSTEM
SYSTEM INFORMATION, NOTES, LEGENDS

JOB NUMBER:

