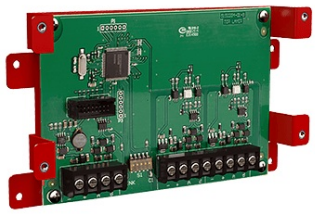

POTTER SLCE-127 SLC Loop Expander Instructions

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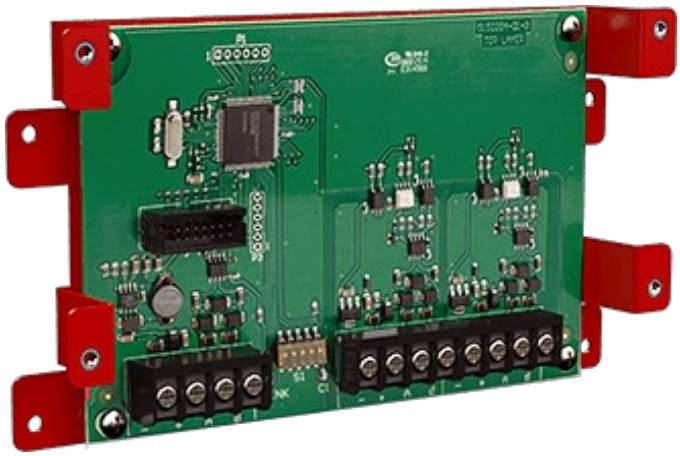


Contents

SLC Loop Performance

Before the 2013 edition of NFPA 72 there wasn't a requirement to include SLC loop isolation modules when designing addressable fire alarm systems. Unless there was a mandated wiring style (Class A, Style 7 / Class X) that required isolators, they often weren't included in the system design. Depending on the make and model of the fire alarm panel, a single SLC could support hundreds of addressable devices. Without loop isolation devices, a single short on the SLC would result in a loss of communication with all devices on the loop.

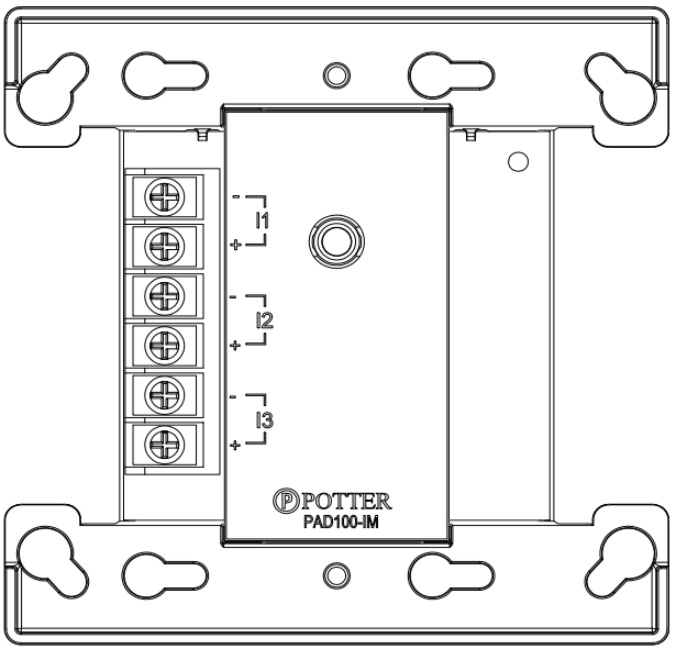
In the 2013 edition of the NFPA 72 Handbook, there are substantial losses mentioned due to the shorting and failure of an SLC damaged by fire before an alarm could be activated. In addition, there were concerns that SLC

shorts caused inadvertently in part by building operations and activities could result in an alarm system failure if a fire occurs before the trouble conditions are repaired. These concerns prompted the adoption of a new requirement that limits the number of addressable devices that can be lost due to a single fault on an SLC loop.

In the 2016 edition of NFPA 72, the limits were changed from 50 devices to one (1) zone of addressable devices. There was also clarification that the intention of the requirement applied to both short circuit and opencircuit faults.

PAD100-IM Isolator Module

The PAD100-IM loop isolation module provides the required circuit protection to limit the number of addressable devices affected by a single fault condition. When using a Class B wiring scenario each module provides two (2) isolated “legs” of the circuit. This limits the number of addressable devices connected to each leg and facilitates code compliant system design.



NFPA 72, 2013

23.6.1 – A single fault on a pathway connected to the addressable devices shall not cause the loss of more than 50 addressable devices.

The Handbook provided a few methods to accomplish the requirement including the following:

- Installing SLC loops with no more than 50 addressable devices per circuit
- T ’Tapping a class B signaling circuit into a “star” configuration with loop isolator modules installed as the first device after each T-tap and keeping the isolated Class B T-tapped legs of the circuit to fewer than 50 devices

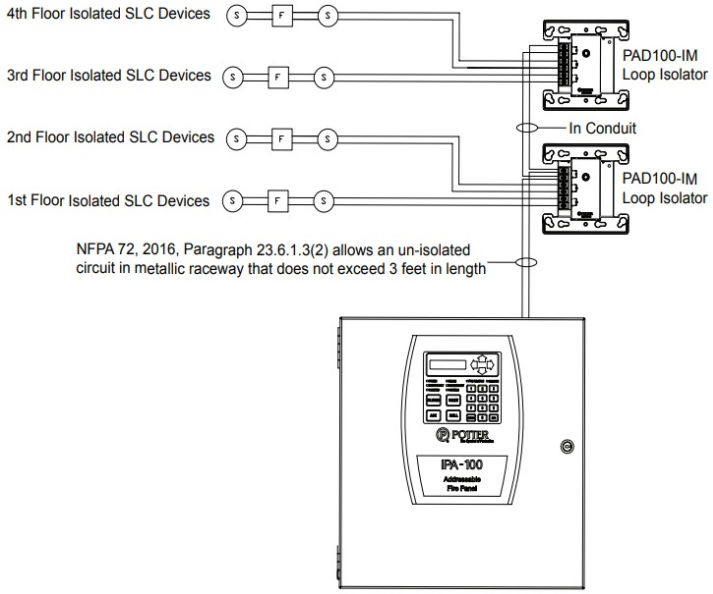
NFPA 72, 2016

23.6.1 – A single fault on a pathway connected to the addressable devices shall not cause the loss of the devices in more than one zone.

The Handbook provided the following designations for zones:

1. By floor where an SLC would not span multiple floors
2. By floor area, where a large floor would be split into multiple zones based on a maximum floor area

3. By fire barrier or smoke barrier compartment boundaries, which an SLC would not cross
4. By maximum length or circuit, where an SLC would not be longer than a predetermined length



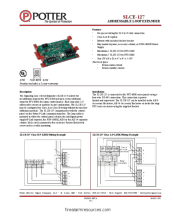
Class B wiring example using IPA series fire alarm control panel and PAD100-IM loop isolation modules.

Potter Electric Signal Company LLC: St. Louis, Missouri

- Tech Support 866-240-1870

firealarmresources.com

Documents / Resources

	POTTER SLCE-127 SLC Loop Expander [pdf] Instructions SLCE-127 SLC Loop Expander, SLCE-127, SLC Loop Expander, Loop Expander, Expander
	POTTER SLCE-127 SLC Loop Expander [pdf] Owner's Manual SLCE-127 SLC Loop Expander, SLCE-127, SLC Loop Expander, Loop Expander, Expander

References

- Potter Electric: Fire Alarms & Fire Sprinkler Systems