General
The LCM-320 Loop Control Module and the LEM-320 Loop Expander Module provide NOTIFIER’s ONYX® Series of Fire Alarm Control Panels (FACPs) with Signaling Line Circuits (SLCs). The ONYX® Series NFS-640 supports one LEM-320; the NFS-3030 supports up to five LCM-320s and five LEM-320s. The LEM-320 module is used to expand the NFS-640 to a second loop, and to expand each LCM-320 used on the NFS-3030 — each NFS-3030 LCM-320 supports an expansion LEM-320.

Features
• Up to 12,500 feet (3,810 m) on a Class B (Style 4) SLC loop (twisted unshielded).
• Built-in degraded mode increases survivability.
• Very simple installation — plug-in style.
• Permits multiple loops in small enclosure.

Specifications
• Voltage: 24 VDC nominal, 27.6 VDC maximum.
• Maximum loop length: The maximum wiring distance of an SLC using 12 AWG (3.1 mm²) twisted-pair wire is 12,500 feet (3,810 m) per channel. For a twisted-unshielded pair, 12 AWG (3.1 mm²) to 18 AWG (0.78 mm²).
• Distance with 12 AWG: 12,500 ft (3,810 m).
• Distance with 14 AWG: 8,000 ft (2,438 m).
• Distance with 16 AWG: 4,875 ft (1,486 m).
• Distance with 18 AWG: 3,225 ft (983 m).
• 50 ohms maximum per length of Style 6 & 7 loops.
• 50 ohms maximum per branch for Style 4 loop.
• Maximum current: for LCM-320: 130 mA; for LEM-320: 100 mA; for single SLC loop: 400 mA maximum.*
  *NOTE: Maximum short circuit — circuit will shut down until short-circuit condition is corrected.
• Maximum resistance: 50 ohms (supervised and power-limited).
• Temperature and humidity ranges: This system meets NFPA requirements for operation at 0°C to 49°C (32°F to 120°F); and at a relative humidity (noncondensing) of 85% at 30°C (86°F) per NFPA, and 93% ± 2% at 32°C ± 2°C (89.6°F ± 1.1°F) per ULC. However, the useful life of the system’s standby batteries and the electronic components may be adversely affected by extreme temperature ranges and humidity. Therefore, it is recommended that this system and all peripherals be installed in an environment with a nominal room temperature of 15°C to 27°C (60°F to 80°F).

Agency Listings and Approvals
See the first page of this data sheet for listing agencies and file numbers. These listings and approvals apply to the LCM-320 and LEM-320 modules. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult factory for latest listing status.

Product Line Information
LCM-320 Loop Control Module. Adds SLCs to NFS-3030; NFS-3030 supports up to five LCM-320s and five LEM-320s.

LEM-320 Loop Expander Module. Expands each LCM used on the NFS-3030; expands NFS-640 to two loops.
**LCM-320 Loop Control Module**

**Installation**

Mount LCM-320 and LEM-320 modules within the cabinet with the CPU; standard mounting locations are adjacent to the panel or in the row immediately below it. See panel installation manuals for instructions on installing modules and/or option boards in the chassis.

After all the LCM-320 and LEM-320 modules are mounted in the cabinet, connect the SLC loops to TB1 on each module. Up to 159 detectors and 159 modules can be connected to the SLC loop for each unit. FlashScan® devices can operate in either FlashScan® or CLIP mode, but CLIP devices in CLIP mode must be set to address 99 or lower.

Multiple LCM-320 modules are daisy-chained. The ribbon-cable connection runs from header J7 on the CPU-3030 to header J1 (Data In) on the first LCM; then from J3 (Data Out) on the first LCM to J1 (Data In) on the second LCM, and so on for up to five LCM-320 modules.

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**Module Highlights & Connections**

Set SW1 from 1 to 10 to assign a unique SLC loop number.

**Connecting LCM-320 with LEM-320**