

# Micro 320-I

## Intelligent Addressable Control Panel

### General Information

The Micro 320-I intelligent addressable control panel is a stand-alone panel for small to medium systems. The Micro 320-I meets virtually every application requirement.

### Features

- Listed to UL Standard 864, 9<sup>th</sup> edition.
- One isolated intelligent Signaling Line Circuit (SLC) Style 4, 6 or 7.
- Up to 159 detectors (any mix of ion, photo, thermal, or multi-sensor) and 159 modules (N.O. manual stations, two-wire smoke, notification, or relay). 318 devices maximum.
- Standard 80 character display.
- 6.0 amp power supply with four Class A/B built-in Notification Appliance Circuits (NAC). Selectable strobe synchronization.
- Built-in Alarm, Trouble, and Supervisory relays.
- Optional universal 318-point DACT.
- 80-Character remote annunciators (up to 32).
- EIA-485 annunciators, including custom graphics.
- Printer interface (80-column and 40-column printers).
- History file with 800-event capacity in nonvolatile memory, plus separate 200-event alarm-only file.
- Alarm Verification selection per point, with tally.
- Autoprogramming and Walk Test reports.
- Positive Alarm Sequence (PAS) Presignal.
- Silence inhibit and Auto-Silence timer options.
- March time / temporal / California two-stage coding / strobe synchronization.
- Field-programmable on panel or on PC, with program check, compare, simulate.
- Full QWERTY keypad.
- Charger for up to 90 hours of standby power.
- Non-alarm points for lower priority functions.
- Remote ACK / Signal Silence / System Reset / Drill via monitor modules.
- Automatic time control functions, with holiday exceptions.
- Surface Mount Technology (SMT) electronics.
- Extensive, built-in transient protection.
- Powerful Boolean logic equations.

#### Intelligent Features:

- Poll 318 devices in less than two seconds.
- Activate up to 159 outputs in less than five seconds.
- Multicolor LEDs blink device address during Walk Test.
- Fully digital, high-precision protocol.
- Manual sensitivity adjustment - nine levels.
- Pre-alarm intelligent sensing - nine levels.



Micro 320-I

- Day/Night automatic sensitivity adjustment.
- Drift compensation.
- Degraded mode - in the unlikely event that the microprocessor fails, intelligent detectors revert to degraded operation and can activate the Micro 320-I NAC circuits and alarm relay. Each of the four built-in panel circuits includes a Disable/Enable switch for this feature.
- Multi-detector algorithm involves nearby detectors in alarm decision.
- Automatic detector sensitivity testing.
- Maintenance alert (two levels).
- Self-optimizing pre-alarm.

#### VIEW® (Very Intelligent Early Warning) Smoke Detection Technology:

- Stock Number 70101225
- Revolutionary spot laser design.
- Advanced intelligent sensing algorithms differentiate between smoke and non-smoke signals.
- Addressable operation pinpoints the fire location.
- No moving parts to fail or filters to change.
- Early warning performance comparable to the best aspiration systems at a fraction of the lifetime cost.

#### HARSH (Hostile-Area Smoke Head):

- Provides early warning of smoke detection in environment where traditional smoke detectors are not practical.
- The detector's filters remove particulates down to 30 microns in size.
- Intake fan draws air into photo chamber, while airborne particles and water mist are removed.
- Requires auxiliary 24 VDC from system or remote power supply.

### Releasing Features:

- Ten independent hazards.
- Sophisticated cross-zone (three options).
- Delay timer and Discharge timers (adjustable).
- Abort - four options.
- Low-Pressure CO<sub>2</sub> listed.

### High-Efficiency Offline Switching 3.0 amp power supply (6.0 A in alarm):

- 120 or 220/240 VAC.
- Displays battery current/voltage on panel (with display).

## Detector Protocol

At the heart of the Micro 320-I is a set of detection devices and device protocol - FlashScan®. FlashScan is an all-digital protocol that gives superior precision and high noise immunity.

In addition to providing quick identification on an active input device, this new protocol can also activate many output devices in a fraction of the time required by competitive protocols. This high speed also allows the Micro 320-I to have the largest device per loop capacity in the industry - 318 points; yet every input and output device is sampled in less than two seconds.

### Intelligent Sensing Features:

**Drift Compensation and Smoothing:** Drift compensation allows the detector to retain its original ability to detect actual smoke and resist false alarms, even as dirt accumulates. It reduces maintenance requirements by allowing the system to automatically perform the periodic sensitivity measurements required by NFPA 72. Smoothing filters are also provided by software to remove transient noise signals, such as those caused by electrical interference.

**Maintenance Warnings:** When the drift compensation performed for a detector reaches a certain level, the performance of the detector may be compromised and special warnings are given. There are three warning levels:

- 1) **Low Chamber value**, usually indicative of a hardware problem in the detector.
- 2) **Maintenance Alert**, indicative of dust accumulation that is near but below the allowed limit.
- 3) **Maintenance Urgent**, indicative of dust accumulation above the allowed limit.

**Sensitivity Adjust:** Nine sensitivity levels are provided for alarm detection. These levels can be set manually, or can change automatically between day and night. Nine levels of pre-alarm sensitivity can also be selected, based on predetermined levels of alarm. Pre-alarm operation can be latching or self-restoring, and can be used to activate special control functions.

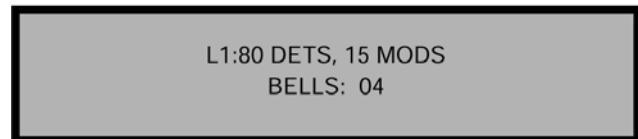
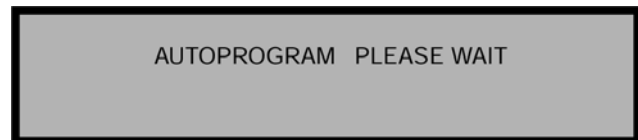
**Self-Optimizing Pre-Alarm:** Each detector may be set for "Self-Optimizing" pre-alarm. In this special mode, the detector "learns" its normal environment, measuring the peak analog readings over a long period of time, and setting the pre-alarm level just above these normal peaks.

## Field Programming Options

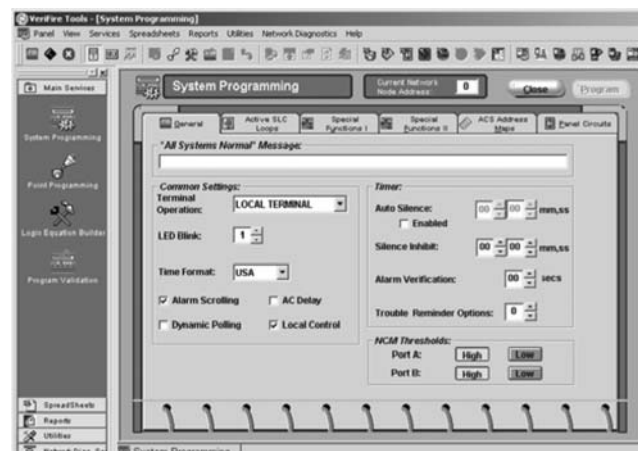
**Autoprogram** is a timesaving feature of the Micro 320-I. It is a special software routine that allows the panel to "learn" what devices are physically connected and automatically load them in the program with default values for all parameters. Requiring less than one minute to run, this routine allows the user to have almost immediate fire protection in a new installation, even if only a portion of the detectors are installed.

**Keypad Program Edit:** The Micro 320-I has the exclusive feature of program creation and editing capability from the front panel keypad, **while continuing to provide fire protection**. The architecture of the software is such that each point entry carries its own program, including control-by-event links to other points. This allows the program to be entered with independent per-point segments, while the Micro 320-I simultaneously monitors other (already installed) points for alarm conditions.

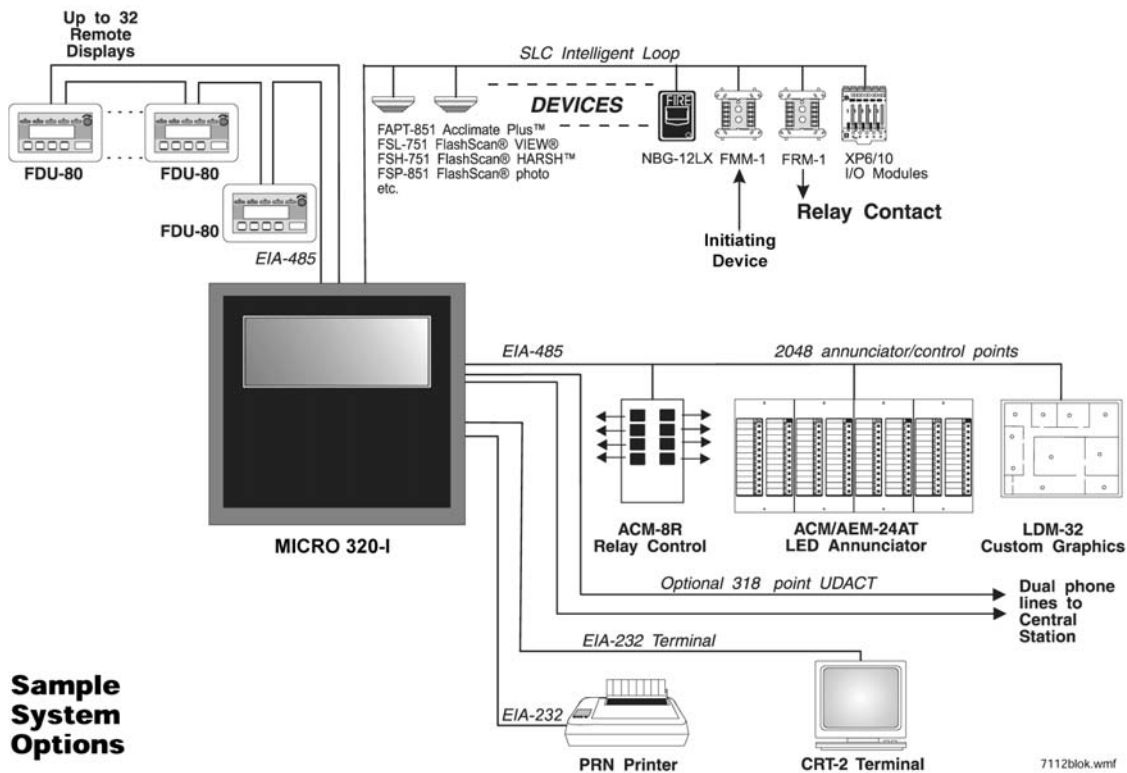
**Programming Software:** The Micro 320-I programming software is an offline programming and test utility that can greatly reduce installation programming time and increase confidence in the site-specific software. It is Windows® based and provides technologically advanced capabilities to aid the installer. The installer may create the entire program for the Micro 320-I in the comfort of the office, test it, store a backup file, then bring it to the site and download from a laptop into the panel.



*Autoprogram Function*



*Programming Screen*

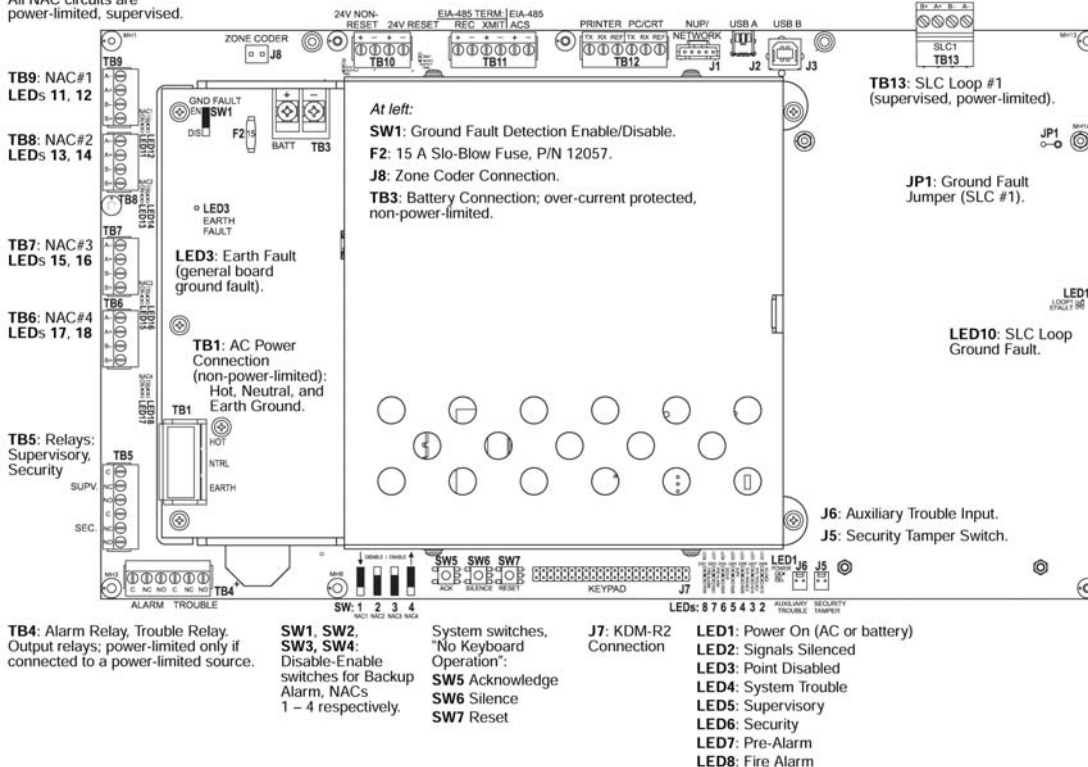


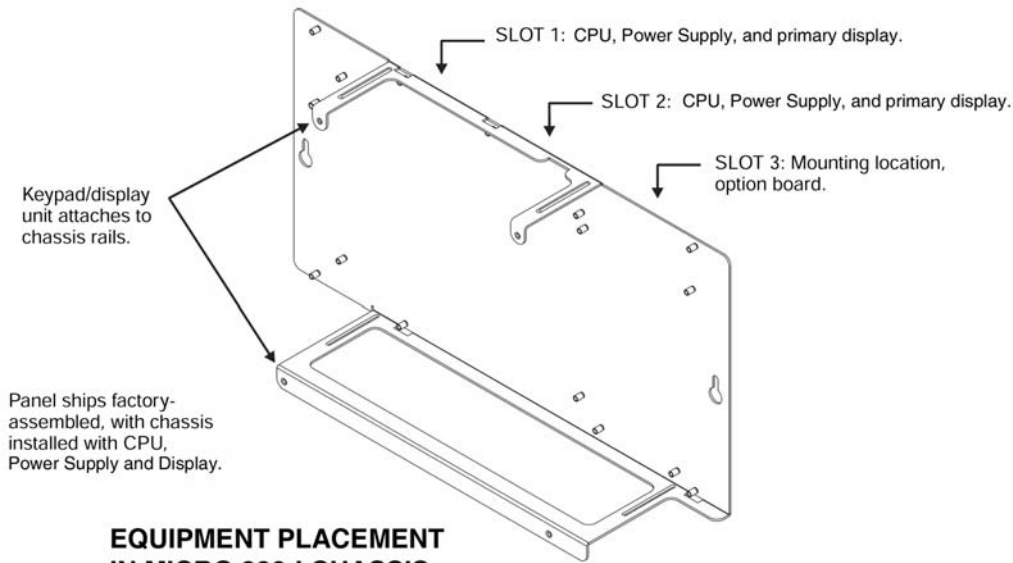
## Sample System Options

### CPU-320 Board Diagram

- TB10: DC Power (24 VDC, power-limited): Non-Resettable, Resettable.  
 TB11: EIA-485 Connection (supervised); Terminal Mode, ACS Mode.  
 TB12: EIA-232 Connection; Printer, PC/Terminal (CRT).  
 J1: Not Used  
 J2: USB A Programming Connection  
 J3: USB B Programming Connection

All NAC circuits are power-limited, supervised.





## Placement of Equipment in Chassis and Cabinet

The following guidelines outline the Micro 320-I flexible system design.

**Wiring:** When designing the cabinet layout, consider separation of power-limited and non-power-limited wiring as discussed in the Installation Manual.

It is critical that all mounting holes of the Micro 320-I are secured with a screw or standoff to ensure continuity of earth ground.

## Display/Keypad Controls and Indicators

**Program Keypad:** QWERTY type (keyboard layout).

- 12 LED Indicators:**
- Power
  - Fire Alarm
  - Pre-Alarm
  - Security
  - Supervisory
  - System Trouble
  - Signals Silenced
  - Points Disabled
  - Control Active
  - Abort
  - Predischarge
  - Discharge

**Membrane Switch Controls:**

- Acknowledge/Scroll Display
- Signal Silence
- Drill
- System Reset
- Lamp Test

**LCD Display:** 80 characters (2 x 40) with long-life LED backlight.

## Configuration Guidelines

The Micro 320-I panel ships assembled; description and some options follow.

**Micro 320-I (S/N 70101613):** The standard, factory-assembled panel includes the following components:

- One CPU control panel mounted on chassis (120 V operation - ships with grounding cable, battery interconnect cables, and document kit.
- One integral power supply mounted to the CPU.
- One primary display keypad/display.
- One cabinet for surface or semi-flush mounting.

Purchase batteries separately. One or two option boards may be mounted inside the cabinet; additional option boards can be utilized in remote cabinets.

**Micro 320-IE (S/N 70101614):** Same as Micro 320-I above, but with 240 V operation.

**TR-320 (S/N 70101615):** Trim ring for the enclosure.

### Option Modules:

**FCPS-24S6/-24S8:** Remote six-amp and eight-amp power supplies with battery charger.

#### Compatible Devices, EIA-232 Ports

**PRN-6 (S/N 70101611):** 80-column printer.

**CRT-2 (S/N 70100733):** Video display terminal.

#### Compatible Devices, EIA-485 Ports

**FDU-80 (S/N 70101263):** Remote LCD display, 80 characters, with LEDs.

**LDM:** Lamp Driver Modules LDM-32 (S/N 70100985), LDM-E32 (S/N 70100986), and LDM-R32 (S/N 70100987); remote custom driver modules.

**ACM-8R:** Remote Relay Module with eight Form-C contacts. Can be located up to 6,000 ft. (1828.8 m) from panel on four wires.

**UDACT (S/N 70100775):** Universal Digital Alarm Communicator Transmitter, 636 channel.

**UZY-256 (S/N 70101168):** Programmable Universal Zone Coder provides positive non-interfering successive zone coding. Microprocessor-controlled, field-programmable from IBM® compatible PCs (requires optional programming kit).

#### Compatible Intelligent Devices

**F5I-851 (S/N 70100952):** Low-profile FlashScan ionization detector.

**F5P-851 (S/N 70100946):** Low-profile FlashScan photoelectric detector.

**F5P-851T (S/N 70100953):** Low-profile FlashScan photoelectric detector with 135°F (57°C) thermal.

**F5T-851 (S/N 70100956):** FlashScan thermal detector 135°F (57°C).

**F5T-851R (S/N 70100957):** FlashScan thermal detector 135°F (57°C) with rate-of-rise.

**F5T-851H (S/N 70101598):** FlashScan 190°F (88°C) high temperature thermal detector.

**F5D-751P (S/N 70100954):** FlashScan photo duct detector with housing.

**F5D-751RP (S/N 70100955):** FlashScan photo duct detector with relay and housing.

**F5H-751 (S/N 70101227):** FlashScan HARSH Hostile Area Smoke Head.

**F5L-751 (S/N 70101225):** FlashScan VIEW laser photo detector.

**B710LP (S/N 70100730):** Low-profile base. Standard U.S. style.

**F5M-1 (S/N 70100947):** FlashScan monitor module.

**F5DM-1 (S/N 70101025):** FlashScan dual monitor module.

**F5ZM-1 (S/N 70100959):** FlashScan two-wire detector monitor module.

**F5M-101 (S/N 70100948):** FlashScan miniature monitor module.

**F5CM-1 (S/N 70100951):** FlashScan NAC control module.

**F5RM-1 (S/N 70100949):** FlashScan relay module.

**NBG-12LX (S/N 70100960):** Manual fire alarm station, addressable.

**ISO-X (S/N 70100727):** Isolator module.

**XP6-C (S/N 70101201):** FlashScan six-circuit supervised control module.

**XP6-MA (S/N 70101210):** FlashScan six-zone interface module; connects intelligent alarm system to two-wire conventional detection zone.

**XP6-R (S/N 70101202):** FlashScan six-relay (Form C) control module.

**XP10-M (S/N 70101200):** FlashScan ten-input monitor module.

### Other Options:

**Micro-TCD:** CD-ROM. Contains programming software for the panel. Includes local panel connection cable. Programming PC requires a serial port connection.

**NFS-LBB (S/N 70101248):** Battery Box (required for batteries larger than 25 AH).

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## System Specifications

### System Capacity:

- Intelligent Signaling Line Circuits ..... 1
- Intelligent detectors ..... 159
- Addressable monitor/control modules ..... 159
- Programmable internal hardware and output circuits . 4
- Programmable software zones ..... 99
- Special programming zones ..... 14
- LCD annunciators per panel ..... 32
- ACS annunciators ..... 32 addresses x 64 points

### Electrical Specifications:

- Primary input power
  - **Micro 320-I board:** 120 VAC, 50/60 Hz, 3.0 A
  - **Micro 320-IE board:** 220/240 VAC, 50/60 Hz, 1.5 A
- Total output 24 V power: 6.0 A in alarm.



#### NOTE

*THE POWER SUPPLY HAS A TOTAL OF 6.0 A OF AVAILABLE POWER. THIS IS SHARED BY ALL INTERNAL CIRCUITS.*

- Standard notification circuits (4): 1.5 A each
- Four-wire detector power: 1.25 A
- Non-resettable regulated power outputs: 1.25 A each
- Battery charger range: 18 AH - 200 AH. Use separate cabinet for batteries over 25 AH.
- Optional high-capacity (25 - 120 AH) battery charger
- Float rate: 27.6V

### Cabinet Specifications:

- **Backbox, outside:**
  - 18.240" high x 5.77" deep
  - (46.33 cm high x 14.656 cm deep)
- **Backbox, with door:**
  - 18.469" high x 18.870" wide x 5.817 deep
  - (46.911 cm high x 47.93 cm wide x 14.775 cm deep)
- **Backbox, inside:**
  - 18.120" inner width x 5.175" inner depth
  - (46.025 cm inner width x 13.145 cm inner depth)

### Temperature & Humidity Ranges:

This system meets NFPA requirements for operation at 0 - 49°C / 32 - 120°F, and at a relative humidity of 93% ± 2% RH (noncondensing) at 32°C ± 2°C (90°F ± 3°F). 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 its peripherals be installed in an environment with a normal room temperature of 15 - 27°C / 60 - 80°F.

### Standards:

The Micro 320-I(E) complies with the following UL and NFPA Standards requirements:

- **NFPA 72** - National Fire Alarm Code for Local Fire Alarm Systems and Remote Station Fire Alarm Systems (requires an optional Remote Station Output Module)
- **UL 864** - Fire
- **UL-1076** - Burglary
- **Local** - Automatic, Manual, Waterflow, and Sprinkler Supervisory
- **Auxiliary** - Automatic, Manual, and Waterflow (requires 4XTMF)
- **Remote Station** - Automatic, Manual, and Waterflow (requires 4XTMF)
- **Proprietary** - Automatic, Manual, and Waterflow. Not applicable for FM.

### Agency Listings and Approvals:

The listings and approvals below apply to the basic Micro 320-I(E) control panel. In some cases, certain modules may not be listed by certain approval agencies, or listing may be in process. Consult CFS National Product Manager for latest listing status.

- **UL Listed**
- **ULC Listed**
- **FM Approved**



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