



Nashua Fire Rescue

Fire Marshal's Office

177 Lake Street, Nashua NH 03060-4402
NashuaNH.gov

Adam Pouliot
Fire Marshal
(603) 589-3460
Fax (603) 589-3474

Master Box Requirements

Underground Conduit

- Conduit Size
 - o 1" or 2" to be determined by Contractor based on length.
- Protection
 - o Schedule 40 PVC
 - o Where subject to damage Schedule 80 PVC
- Termination
 - o All Conduits will terminate in an approved Junction Box or weather head

Any underground master box service will need to be inspected **prior** to backfilling by calling Nashua Fire Dispatch at 603-594-3636 and asking for the Superintendent or Assistant Superintendent of the Fire Alarm Division. (This pertains only for the Master Box Installation; all other inspections are through the Nashua Fire Marshal's Office 603-589-3460)

Overhead Conduit

- Where the municipal loop enters the protected property the cable shall be protected by conduit. Acceptable means, PVC, EMT, Rigid, or other as approved by AHJ.
 - o Minimum size 3/4"
- Upon Exiting the building the conduit will terminate using an appropriate size weather head
- Termination
 - o All Conduits will terminate in an approved Junction Box or weather head

Cable Type

- IMSA 20-1 #14 solid AWG copper
 - o minimum of four conductor

Grounding

- Purpose
 - o This provides an alternative path to transmit an alarm activation during an open circuit
- Grounding Electrode Size
 - o (1) 5/8" X 8' Ground Rod to be driven not more than 5' from Master Box
- Grounding Electrode Conductor
 - o #8 Bare
- Lightning Arrestor
 - o Installed prior to connection to Municipal Circuit
 - o (Power & Tel Model 317B or equivalent).

Electronic / Solid State Master Box Transmitters

The City of Nashua Fire Rescue in 2013 began the process of allowing the installation of electronic transmitters on the 100 milliamps system. Each system will transmit the following minimum codes utilizing zones on the transmitter:

- Signal for indication of Internal building Fire Alarm System an individual zone or code will be used for each separate building
- Signal for indication of external fire box manual pull
- Signal for Low and / or No Battery alarm of the electronic transmitter

Additionally if a sprinkler system is installed in the premises:

- Signal for Supervisory indication on Sprinkler System (if installed in building)

When an Electronic / Solid State Master Box transmitter is installed in a building there must be a minimum of one external fire box manual pull station. The exterior device shall be housed in a Cottage Style shell for an exterior surface mounting application or a front door assembly for a flush mounting installation. Mounted inside the Cottage Shell front door will be a microswitch with latching contacts that are electronically supervised and wired. The microswitch is activated by pulling down the white pull lever from the exterior of the shell.

The numbering convention identified with the Digitizer DET 6B due to not being field programmable will be as follows:

- A zone for internal fire alarm panel activation, transmitted by four rounds
- A zone for external manual pull of the fire box, transmitted by four rounds
- A zone for the Supervisory indication, transmitted by two rounds
- A zone for Medical or Carbon Monoxide activation, transmitted by four rounds
- A zone for internal fire alarm panel trouble activation, transmitted by two rounds
- A zone for Low Battery alarm of the electronic transmitter, transmitted by two rounds

Each zone, with exception of the outside pull, shall be able to disable the associated trip relay.

The applicant will provide the Fire Department with a programming worksheet to ensure all codes are correct and programmed properly. Where possible the Fire Alarm Division will provide programming and testing of the unit prior to installation.

All Electronic Master Box transmitters will be delivered to Nashua Fire Alarm Division for a minimum 5 business days for programming and compatibility testing. No Electronic transmitter will be permitted to be attached to the municipal loop that requires municipal loop energy to monitor circuit integrity in a standby mode.

All electronic master box enclosures shall be either a Cat 1 or 702 keyed cylinder. The shunt mechanism inside shall A126 keyed cylinder.

The Fire Alarm Control Panel will supervise the Electronic Master box. The following will indicate a City Master Box Trouble on the FACP.

- Loss of AC power to Electronic Master Box
- Outside Pull Zone Activated
- Shunt Key is activated
- General Trouble of the Electronic Master Box Card

Special Considerations

The City of Nashua NH will assume the cost for labor and Wire for private fire alarm connections to its fire alarm system where the connection does not exceed two hundred feet (200 ft) over private property, for an overhead connection from the nearest street pole. The owner or contractor will be responsible for all cost of materials (wire, cable, hardware, etc.) beyond 200 ft., over private property. The owner or contractor will also provide the necessary conduit, wire, weather-head from the fire alarm box to the fire alarm bracket, lightning arrestor at the master box. Depending on the municipal infrastructure the contractor or owner shall provide either a red enamel terminal box furnished with a six double terminal block, [Power and Tel Part number ATB-R or equivalent] or a 3M Ready Access Closure for lashed or figure 8 wire and 2- 4 pair terminal blocks, [(1)-Power and Tel Part number 100MB or equivalent, and (2)-Power and Tel Part number 1645].

Where an underground entrance is required from an underground vault, the owner or contractor will assume the cost of conduit, cable and installation from the underground vault to the fire alarm box on the building and provide a 3M Better Buried Splice Closure System containing the following parts, [Power and Tel Part number (1) BB2X12 SB/2SC-LHS, or equivalent, (2) 2" LHS BBDC End Caps, or equivalent, and (1) 3M 4442 High Gel Re enterable Encapsulant, or equivalent]

These materials will include enough to reach the fire alarm gain on the pole. Direct bury wire or cable will not be allowed. The size of the conduit will be one and one half inches in diameter.

- Materials and workmanship shall comply with industry standards and NFPA 70.

The building owner or designee will ensure that access to the Fire Alarm Master Box, or in the case of an exterior fire box pull location for an electronic / solid state master box transmitter, is accessible year round from a walkway or entranceway. Until the alarm system is inspected and accepted the outside pull station shall be covered and labeled out of service.