Fire Alarm Systems

Program: Electrical Technician

Course: EL160 Low Voltage Applications

Objectives: Under the supervision of your instructor, you should be able to do the following:

- Identify various Fire Alarm components
- Demonstrate a basic understanding of how to connect a fire alarm system.
- Connect and test inputs and output devised of a fire alarm control panel (FACP).
- Understand inputs as either Class A (Style D) or Class B (Style B).
- Determine the differences between normal, trouble, supervisory alarm and general alarms.

Lab Equipment:

- Terminal connector crimp tool

Required Tools:

- 1 – Flat Head Screwdriver
- 1 – Phillips Head Screwdriver
- 1 – Pair of Wire cutter/strippers
- 1 – Terminal connector crimp tool
- 1 – Digital multimeter

Materials:

- 1 - Alarm Panel
- 1 - Smoke detector
- 1 - Strobes
- 1 - Audible horn
- 12 - 18 AWG FPL- cable
- 1 – resistor, recommend 4.7 K-ohms

Resources:

- NEC Article 760, National Fire Protection Association (NFPA) book, NCCER textbook, Chapter 5, 26405-14

Shop Maintenance:

- All work will cease 20 minutes prior to the end of class.
- All work areas must be cleaned.
- Tools and equipment must be cleaned and returned to the designated areas (cage, tool room, cabinets etc.)
- Any broken or missing tools must be reported immediately.
- Tools and equipment are students' responsibility

Required Time: Two Day

Procedures: (Eye protection must always be worn)

Ensure that main AC power and CD battery backup power are both off. Read the manufacture instructions for the panel and each device. For this lab assignment, your instructor will provide additional instructions regarding numbered placement location of strobe, smoke detector, and audible alarm (Figure 1).

Students will install each device in accordance with NEC and NFPA and manufacture instructions as to wiring requirements for

each item.

Figure 1 – Fire Alarm Lab Station