P300

Fire Alarm Control

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 06/08/17

Features

- 127 expandable to 381 Analog Addressable Points. Any combination of detectors/modules
- 5 Amp Power Supply. Expandable to 315 amps
- 2 NAC circuits rated at 3 amps maximum, expandable to 188.
- 2 Input/Output (I/O) Circuits for system flexibility rated at 1 Amp each
- Built-in UL Listed IP Communicator
- Built-in email event notification and report capability.
- Optional Dual Line Digital Alarm Communicator
- System wide synchronization of Potter/AMSECO, Gentex, Cooper/Wheelock, and System Sensor signals.
- No twisted or shielded wiring required.
- Cabinet will accommodate up to 18AH batteries. Panel will charge up to 55AH.
- Capable of Class A or Class B wiring configurations
- Built-in NFPA 72 compliant smoke detector sensitivity test
- Dead-front cabinet design
- 1000 Event History Buffer

Potter/Nohmi Protocol Features

- Less than 4 second polling time
- LED's visible from 360°
- Adjustable Smoke Detector Sensitivity
- Adjustable Heat Detector Temperature
- High Temperature Heat Detector as fixed temp
- Drift Compensation
- Maintenance Alerts
- Day/Night Mode

Description

The P300 is a mid-sized analog/addressable fire alarm control panel with a total of 381 points. The points may be any combination of smoke sensors, heat detectors or modules. This panel has a 5 amp power supply that is distributed across two Notification Appliance Circuits (NACs) and two Input/Output (I/O) Circuits.

The NAC circuits are rated at a maximum of 3 Amps each and the I/O circuits are rated for a maximum of 1 Amp each. All of the outputs may be configured for notification or auxiliary power. In addition, each NAC and Output can be programmed for strobe synchronization and utilizes Quadrasync for strobe synchronization across circuits of various brands. The I/O may also be programmed for a dry contact input such as a water flow switch or pull station.

The cabinet will hold two 12 volt, 8 amp/hour batteries or two 12 volt, 18 amp/hour batteries. The system when fully loaded will charge 55 amp/hour batteries. Anything larger than 18 amp/hour will require an external battery cabinet the SSU-00050.

The panel has the Potter P-Link connection for expansion with remote annunciators, intelligent power supplies and other optional modules. The P-Link will support 31 accessories in any combination. The RA-6075 is a 2 x 16 LCD annunciator. The RA-6500 offers a larger 4 x 40 line LCD display that allows points and descriptions to be shown simultaneously. Intelligent remote power supplies repeat the P-Link data and can be mounted 6,500 feet from reach other. P-Link devices such as the RLY-5 relay module, SPG-1000 serial parallel gateway and DRV-50 LED driver can be mounted anywhere in the chain of communication with a maximum of 31 of each P-Link devices. A total of two (2) SLCE-127 Signaling Line Circuit Expanders (loop cards) may be installed in the P300 enclosure, in a remote enclosure such as the AE-8 or with a PSN-1000E remote intelligent power supply.

The entire system, including the SLC, NACs and P-Link may be converted with a CA-6075 Class A module. The entire system is programmed using a Windows based computer software and requires the use of a software programming software key.

The P300 can communicate to a monitoring station using the on board Ethernet connection to an IP communicator or using optional UL listed UD-1000 traditional two line alarm communicator. The UD-1000 connects to the main board and has two phone line jacks provided. The IP communicator uses a RJ-45 connection and when connected to the internet may be programmed to E-mail system status, history reports, reminders and the configuration file. The panel may be updated remotely using the UD-1000. If the Ethernet connection is needed remotely, the FCB-1000 fire communication bridge may be installed to allow the Ethernet connection to be installed in a rack.

S735 7165-0328:0195 NYC Fire Dept. Certificate of Approval 6156

Product includes a 5 year warranty

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SLC Loop Accessories

The control panel may be connected with up to 381 addressable devices or modules in any combination. The SLC is not restricted by any special wire requirements and may be wired with any wire that complies with the NEC.

SLC Loop Devices

Device	Description
PSA	Analog Photo Electric Smoke Detector is a smoke detector with a listed obscuration of 1.02 to 3.83 percent per foot.
PSHA	Combination Analog Photo Electric Smoke/Heat Detector – a smoke detector with a listed obscuration of 1.02 to 3.83 percent obscuration and a fixed temperature 135° Fahrenheit heat detector
FHA	Analog Fixed Temperature Heat Detector that is selectable from 135° F to 185°F
RHA	Analog Rate or Rise Heat Detector that has a fixed temperature selection from 135°F and 174°F and also will alarm if the temperature increase 12-15°F in one minute
DDA	Addressable Duct Smoke Detector
AB-6	6” round base that is mounted to an electrical box and wired for connection of one of the above sensors
AB-4	4” round base that may be mounted to an electrical box and wired for connection to the above sensors
AIB	Isolater base that interrupts a short in a SLC and prevents the short from affecting protected devices on the loop
ARB	Addressable Relay Base that contains two relays controlled by the SLC. One relay is rated at 8 amps at 240 VAC/30VDC and the other is rated at 2 amps 240 VAC/30 VDC
ASB	Addressable Sounder Base that contains an addressable sounder module that may be configured for local, group and all call.

Modules

Device	Description
MCM	Miniature Contact Module provides a small foot print contact module for mounting inside an enclosure.
APS-SA	Single Action Addressable Pull Station
APS-DA	Dual Action Addressable Pull Station
SCM-4	Single Contact Module is a standard contact module with an LED that mounts into a 4” square electrical box.
DCM-4	Dual Contact Module is a device that can monitor two distinct inputs with a single device or in a Class A mode.
TRM-4	Twin Relay Module provides two form C relays that simultaneously active when the module is triggered by the control panel. Each relay is rated for 2 amps at 24VDC or 0.5 amps at 125VAC.
MOM-4	Monitored Output Module is a power switching module that monitors the circuit that is controlled by the control panel.
CIZM-4	Conventional Input Zone Module is used to connect conventional smoke detectors to the system that receive their power from the module. This module is like a conventional zone on the SLC.
SCI	Short Circuit Isolater interrupts a short on the SLC and prevents the short from affecting protected devices on the loop.

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SLC Features

The Potter/Nohmi protocol is a digital protocol with a proven design for reliability and noise immunity. The system does not require special cable or conductors for connection of the Signaling Line Circuit as long as the cable is compliant with NFPA 70 and NFPA 72. The system allows for Class A or Class B installations as well as "T-Taps."

The total polling time for the protocol is about four (4) seconds which allows two polling cycles in the ANSI/UL 864 requirement of alarms reporting in less than ten seconds. Each loop is capable of 127 points with the exception of the P100 and P200.

Sensor Features

The sensors through the fire alarm control panel provide a real time status as to the condition of the system. The smoke detector sensitivity, heat detector temperature level and drift compensation as all programmable options. The system also allows for a day/night mode where the panel automatically adjusts the sensitivity depending on the time of day. To assist in the reduction of false alarms, the smoke detectors also have a maintenance warning that sends a trouble signal when a detector is dirty to the point that it can no longer maintain the programmed sensitivity.

User Interface

The fire alarm control panel has a 4 x 40 LCD display to provide information to the system status. The keypad has navigation keys to allow manipulation of the Menu on board the panel. The panel is shipped standard with the following LEDs:

- AC Power – Green
- Alarm – Red
- Earth Fault – Amber
- Supervisory-Amber
- Silenced-Amber
- Trouble-Amber

The common buttons include a Silence, Reset, Acknowledge and Drill. All of the buttons are accessible once the locked door is opened.

P-Link

The P300 has a proprietary communication protocol that communicates through a RS-485 connection to field devices. Up to thirty-one (31) devices may be connected to a single P-Link connection. The P-Link includes the communication terminals and regulated 24 VDC connection for the field devices. The field devices may be any of the following:

SLCE-127-Analog/Addressable loop expansion module (maximum of 2 per P300)

RA-6075 – 2 x 16 LCD annunciator with a key pad in a locked metal enclosure.

RA-6500 – 4 x 40 LCD annunciator with a key pad in a locked metal enclosure

LED-16 – 16 LED annunciator with common indicators in a locked metal enclosure

PSN-1000(E) – 10 amp, remote intelligent power supply with 6 NACs, 2 I/Os and a P-Link repeater

CA-6075 – Class A convertor that converts the SLC, NACs and P-Link connection

UD-1000 – UL listed, Dual line telephone alarm communicator

DRV-50 – LED driver expander, used to connect up to 50 LEDs in a graphic display

FCB-1000 – Fire communication bridge, provides remote mounting of the Ethernet connection

FIB-1000 – Fiber interface module, used to extend P-Link to multi-mode fiber (2 required)

RLY-5 – Relay module, provides 5 form C relay contacts rated at 3.0 amps 24VDC/125AC

SPG-1000 – Serial parallel gateway, allows for the connection to a serial or parallel printer

The FIB-1000, FCB-1000 and the SPG-1000 may be installed in the stacker bracket or ordered with the optional rack mount enclosure.

AE-8 – Eight card expansion cabinet

AE-14 – Fourteen card expansion cabinet

Ethernet/I.P. Connection

The P300 is shipped standard with an Ethernet connection. This connection is the programming port and may be connected to a building Wide Area Network (WAN) or Local Area Network (LAN). Once connected to the Internet, the panel may be selectively programmed to e-mail alarm conditions, trouble conditions, supervisory conditions, test, Event History and detector status. An e-mail may be sent to the panel and the panel will e-mail the event history, detector status, configuration file or server status to an authorized E-mail account. In addition, reminders may be set to send an e-mail for service, testing or other conditions.

In addition, the Ethernet connection is UL listed as an IP communicator. The IP communicator is listed to report to the UL listed Sur-Gard III IP receiver. The IP communicator replaces the traditional less reliable alarm communicator transmitter that utilized telephone lines. The IP communicator is an active method of connection and communication to the monitoring station.

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Specifications

Electrical Specs: AC Mains

3.0 Amps @ 120 VAC 50/60 HZ

2.0 Amps @ 240 VAC 50/60 HZ

Battery

130 mA Standby

220mA Alarm

- 5 Amps power for NACs, I/O and P-Link
- 3 Amps per NAC, regulated
- 1 Amp per I/O circuit, regulated
- Battery Charger range 8-55 Ah
- Battery Charger voltage 27.3 VDC
- P-Link maximum current of 1 Amp
- Panel holds (2) 8AH or (2) 18AH batteries

Cabinet

- 16 gauge cold rolled steel with removable locked door
- Dimensions – 18 $^{15}/_{16}$"W x 27 $^{5}/_{16}$"H x 4 $^{7}/_{16}$"D
- Dead front to cover all electronics
- Lexan viewing window

Temperature and Humidity

This fire alarm control is listed and approved for operation in an indoor application with temperature range fluctuations of 32° to 120° (0°C to 49°C) with a maximum humidity of 93% non-condensing. The ideal temperature is 77°F +/- 10°F (25°C +/-5°C).

Standards

The P300 series fire alarm control panel complies with the following standards and codes.

- NFPA 13, 70 and 72
- ANSI/UL 864
  - o Local (L), Remote Station (RS), Central Station (CS), Propriety (PPU), Auxiliary (AUX)
  - o Type of Service: Automatic (A), Manual (M), Water flow (WF) Sprinkler Supervisory (SS)
  - o Type of Signaling: Digital Alarm Communicator (DAC), March Time (March), Non Coded (NC), Reverse Polarity (Rev Pol), Other Technologies (OT)
- IBC 2000, 2003, 2006, 2009, 2012