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CERBERUS PYROTRONICS

CP-35

System 3 Control Panel

ENGINEER AND ARCHITECT SPECIFICATIONS

- Basic Two Zone System
- Expandable
- Double Supervision
- Ground Detection
- Supervised Alarm Relay Coil
- Listed, ULC Listed, FM, CSFM and NYMEA Approved



Description

The Cerberus Pyrotronics control panel model CP-35 is the basic control unit for the System 3 universal alarm control. It is of solid state circuitry and is designed for use in commercial, institutional, industrial and life safety applications. The unit is Underwriters Laboratories, Inc. listed and FM approved for service in accordance with NFPA 72. The system is also UL listed for waterflow alarm and supplementary modules included in the system.

The model CP-35 and its associated PS-35 (Power Supply) provide circuitry for two supervised detector circuits, wired for either Class A or Class B (Styles D or B respectively). The CP-35 control panel accommodates any of Cerberus Pyrotronics conventional low-voltage detectors, manual stations or contact type input devices. The CP-35 also incorporates one supervised audible signal circuit utilizing either 120 VAC or 24 VDC audible devices. The audible signal circuit can be wired in either a Class A or B (Styles Z or Y respectively) configured when using 24 VDC audibles. If 120 VAC audibles are used, the circuit can only be wired as a Class B (Style W) circuit.

The two initiating zones within the CP-35 are power limited per NFPA 70. With the addition of a PLM-35 module, the audible circuit also becomes a power limited circuit.

Nine visual system indicators are mounted on the face of the CP-35, a green Power On LED, a red Alarm LED, a yellow Trouble LED and a yellow Ground Fault LED. To monitor the two detector circuits, a red Zone Alarm LED and a yellow Zone Trouble LED are supplied for each zone. An additional yellow Audible Signal Circuit Trouble LED is also provided.

Two momentary contact switches are mounted on the CP-35, one serving as a combination Reset/Lamp Test function, while the other permits Alarm Silence. A fixed two position Trouble Silence switch and an internal trouble signal sounding device is provided. A remotely located Alarm and Trouble Annunciator (RTA-38) is optional.

Operation

Power

The combination of a Model CP-35 with a PS-35, operates from a three-wire, 120/240 VAC 50/60 Hz supply with grounded neutral, incorporating double supervision. Secondary power may be supplied with option standby battery. The green Power LED is illuminated to show that power is normal. Each input power line is separately fused within the power supply.

Loss of the main AC operating power or secondary AC supervisory power is signaled by the system audible and yellow visual trouble LED. Restoration of power returns the panel to normal condition. When standby battery is specified, loss of main power results in an audible and visual trouble signal and the batteries provide power to the system.

The system power supply furnishes power for detector circuits and audible signal circuits. The detector circuits may be the two zones incorporated in the CP-35 control, plus any mix of additional compatible zones, signal circuits or other fire monitoring circuits. In addition, an output rated at 24 VDC 1.5A is provided on terminals 5 and 6 of the PS-35 for powering modules internally housed and wired within the control unit enclosure.

Alarm

The control panel alarm section circuitry responds to any zone module alarm input signal either from the on-board zones or separate zone modules. The alarm condition is Locked In within the control panel and is cleared only by operation of the control panel Reset switch. An alarm condition is indicated by:

1. Change of state of the two SPDT alarm relay contacts.
2. Illumination of the panel Alarm visual indicator.
3. Energizing of both the silenceable and non-silenceable alarm outputs.
4. High going current-limited alarm signal.
5. Alarm signal output to the remote alarm and silence station. Operation of the momentary Alarm Silence switch causes both the silenceable alarm output to de-energize and the visual alarm indicator to flash.

Subsequent Alarm

After operation of the Alarm Silence switch following a system alarm condition, the system visual indicator operates in a flashing mode. A subsequent alarm input from a different zone will cause a renewed high going signal on the silenceable alarm output terminal, causing the associated or connected audible devices to be energized again. This operation may be repeated for up to ten (10) subsequent alarm conditions.

Simultaneous alarm input signals from two or more zone modules are considered to be but a single alarm input signal. Operation of the panel mounted alarm silence switch when no alarm is present has no effect. Operation of the key-operated momentary remote alarm station silence switch will cause a system trouble condition when the panel is not in an alarm condition.

Trouble

A trouble condition in CP-35 will be caused by any of the following:

- An open initiating device circuit or initiating device out of place
- An open in the municipal tie circuit
- An open or short on a notification appliance circuit
- Removal of a supervised system module
- Loss of main power and/or secondary power if equipped with additional backup
- Any ground fault within the system or its wiring
- Auxiliary power output fuse open or missing (see PS-35)
- The momentary reset switch not in its fully closed position
- Failure of the 12VDC logic power supply
- Alarm relay coil open
- Loss of 120 VAC trouble phase input supply
- Key-operated remote alarm station silence switch in off-normal position when system is not in alarm
- Battery charger/transfer module fault condition

CP-35 trouble conditions are annunciated by the following actions:

- CP-35 Trouble LED illuminates
- CP-35 built-in trouble buzzer sounds
- Trouble relay, SPDT contacts, changes state
- High going, current limited trouble output, Term 43 is energized
- Trouble output to RTA-38, Term s 22-26, is energized

The control panel audible trouble buzzer may be silenced by the control panel trouble silence switch or the remote trouble silence station switch, when used. Trouble ringback of this buzzer is provided to indicate that either the control panel trouble silence switch or the remote trouble station trouble silence switch is in the off-normal or silence position when no panel trouble condition is present.

Flexibility

The use of the Cerberus Pyrotronics control panel model CP-35 permits expansion of system capability to incorporate additional functions over and above the two zone actuation circuits and visual and audible annunciating devices provided with the basic panel. The CP-35 will accommodate a combination of the following options:

- Multiple alarm priorities
- Master Code
- Municipal tie with disconnect light and switch
- Remote station connection with the disconnect light and switch
- Time limit cut out with indicator
- Supplementary relays
- Battery standby
- Remote alarm and Trouble silence
- Non-fire monitoring
- Reconfirmation
- Halon release, FM 200
- Multiple audible circuits
- Pre-action/deluge sprinkler control

Engineer and Architect Specifications

The control panel for the alarm system shall be Cerberus Pyrotronics model CP-35. It shall be listed by Underwriters Laboratories, Inc.

The panel shall provide power and necessary components for the operation of the basic two zones of supervised detector circuits and one supervised audible signal circuit utilizing 24 VDC devices. The detector circuit shall accommodate ionization, photoelectric, flame or thermal detectors as well as shorting type contact devices intermixed as desired on the same zone.

The model CP-35, with a PS-35, shall operate from a three-wire 120/240 VAC 50/60 Hz supply. Each input shall be separately fused within the panel. It shall include LEDs for system power, alarm, and trouble as well as LED indicators for zone alarm, zone trouble and audible signal circuit trouble.

Momentary contact switches shall be provided for Reset/ Lamp Test and Trouble Silence which shall silence the internal trouble signal sounding device. Alarm receipt shall override trouble.

The control panel shall be capable of powering early warning detectors and audible signal circuits. Additional circuitry and visual signaling for this capability shall be provided by Cerberus Pyrotronics Add-On modules and enclosures as are necessary. Interconnection of these modules to the CP-35 shall be by ten-plug and harness assemblies which shall provide system power, supervision, lamp-testing functions and such other circuitry as is necessary for an operable system.

The control panel shall have two (2) sets of normally open and normally closed alarm operated relay contacts and one (1) set of normally open and normally closed trouble operated relay contacts. All contacts shall be rated at 120 VAC/30 VDC, 3 Amp. The alarm relay coil shall be supervised. In addition, the panel shall have built-in ground detection as well as plug-in connectors for emergency power. It shall be arranged so that alarm signal annunciation shall take precedence over a trouble signal. Terminals shall be provided so that the trouble indicators and controls can be located remotely.

The model CP-35 shall permit expansion of system capabilities to incorporate any combination of compatible Cerberus Pyrotronics System 3 modules not exceeding the maximum current demand.

Electrical Information

Power Requirement: 120/240 VAC, 50/60 Hz, three-wire

Ordering Information

The model CP-35 occupies space normally taken by five (5) modules and must be located in the upper left-hand position of any type enclosure. This should be considered when sizing the enclosure.

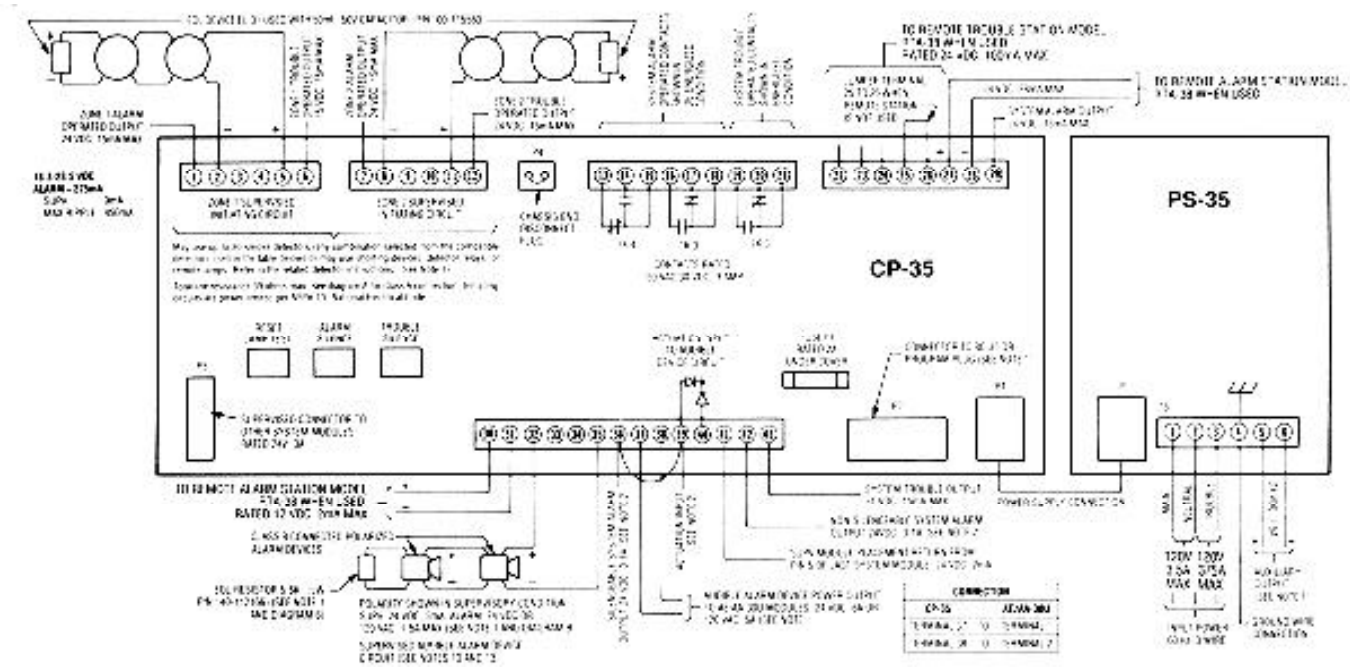
Model No.	Description	Shipping Wt.	Part No.
CP-35	Control Panel w/ 2 zones and 1 universal signal circuit	6lb. (3.7kg.)	500-884879
PS-35	Power Supply for the CP-35	16lb. (8.3kg.)	500-884950
PLM-35	Power Limiting Module for the CP-35 audible circuit	6oz. (.2kg)	500-893490

The model CP-35 is normally mounted on rail/brackets, separately priced, for installation in the enclosures. Each enclosure requires a rail/bracket assembly kit of appropriate size. The size of the enclosure therefore must be noted at the time of order. Rail/bracket assembly kits are shown below.

Rail/Bracket Assembly Kit	Enclosure	Door	Module Spaces
EK-31	EB-31	ED-31	8
EK-32	EB-32	ED-32	16
EK-33	EB-33	ED-33	24
EK-35	EB-35	ED-35	40

Note: Please refer to the System 3 Enclosure Specification Sheet No. 3325 for additi onal information and options.

Typical Wiring



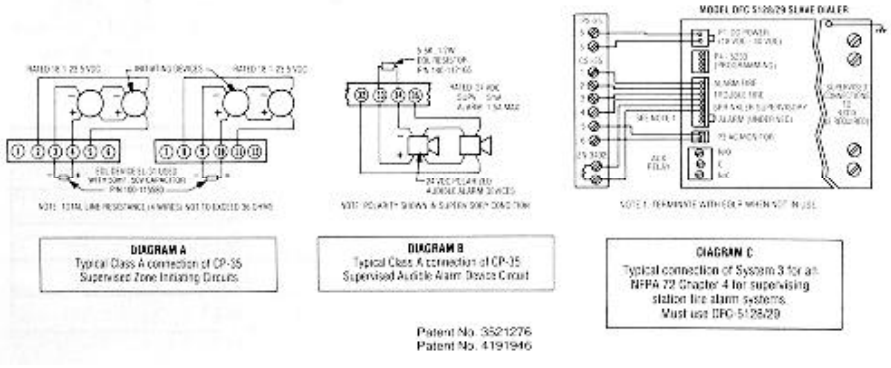


DIAGRAM A
Typical Class A connection of CP-35 Supervised Zone Initiating Circuits

DIAGRAM B
Typical Class A connection of CP-35 Supervised Audible Alarm Device Circuit

DIAGRAM C
Typical connection of System 3 for an NFPA 72 Chapter 4 for supervising station fire alarm systems. Must use DPC-5128/29

Patent No. 3521276
Patent No. 4191946

Compatible Detectors

Detector Compatibility Identifier	Base Compatibility Identifier	Installation / Wiring Instructions
DI-3/3H	DB-3	P/N 315-081943
DI-4A/H	DB-4	P/N 315-085257
DI-6	DB-4	P/N 315-085257
DI-A3/A3H	DB-3	P/N 315-081943
DI-B3/B3H	AD-3I/3P	P/N 315-086590
	DA-3SR	P/N 315-094963
	SA-3I/3P	P/N 315-086593
PBA-1191	PBB-1191	P/N 315-095424
PE-11	DB-11	P/N 315-094198
PE-3/3T	DB-3S*	P/N 315-090875
PE-3000/300T	DB-3S*	P/N 315-086441
PEC-3/3T	DB-3S*	P/N 315-086545

The ADB-3 Base may also be used (P/N 315-086238A)

CP-35 is the Compatibility Identifier

NOTES:

1. When emergency power is provided using charger/transfer module Model BC-35, 24 VDC audible devices must be used with end of line device with Model EL-31 or equivalent on audible device circuits. When BC-35 is not used, 120 VAC audible devices may be employed by use of AC program plug Model No. JP-A (black wires) in P2, and Model EL-32 with end of line device, or by use of 24 VDC audible devices with program plug Model No. JP-D (yellow) in P2, and Model EL-31 with end of line device.
   Note: When Class A audible circuit configuration is used, 24 VDC audible devices are required.
2. Connect the silenceable System Alarm output signal, terminal 36, to audible circuit actuation input terminals such as terminal 39 of the CP-35 and terminal 5 of the AE/AA-30U modules. Connect the non-silenceable system alarm output signal, terminal 42, to such modules as the MT-30, LP-30, and SR-35. When other alarm signals such as coding or time limit are required, see individual module instruction sheets.
3. When water flow devices are used, employ non-silenceable system alarm output signal TB1, terminal 42, to energize audible alarm device circuits.
4. Audible alarm device circuits may be coded by using coder modules MC-30 or ZC-30.
5. Audible alarm device circuit signal duration may be limited by using the time limit cutout module Model TL-30U.
6. Refer to battery manufacturer s instructions for maintenance and test of System batteries when applicable.
7. Refer to appropriate module instructions for specific information. The maximum line resistance should be 3 ohms, and a minimum of 14 AWG wire is recommended. **All wiring should comply with the local and national codes that apply to the particular installation.**
8. NFPA 72 requires a secondary power supply source, as does the inclusion of automatic Halon release. The secondary (standby) power source must consist of one of the following: a.A storage battery which provides 24 hour capacity (but 60 hour capability is required for Remote Station and Municipal Tie systems)
   b.An engine-driven generator and storage batteries with 4 hour capability
   c.Multiple automatic starting, engine-driven generators capable of supplying the energy required with the largest generator out of service.
9. The total power supply current (24 VDC full wave) is rated at 10A max for the PS-35 power supply. This current is the sum of that which flows through (a) Plug P3 (3A max) to the various modules and (b) terminals 5 and 6 of the power supply module and all audible alarm device circuits when DC audible devices are used. **Under no circumstances should these given maximum current values be exceeded.**
10. COMPATIBLE NOTIFICATION APPLIANCES, see table at right.
11. Auxilliary output is rated 24 VDC Nominal, 1.5A max for internal application such as SR-32, SR-33, SR-35, or Model RA annunciator located within control unit enclosure(s). (See Note 9 for total current rating.)
12. See individual detector instructions for actual terminal connection numbers. Maximum of 30 detectors per circuit allowed. (Only one PBA-1191 may be used per circuit.)
13. To use power limited wiring to NFPA 70, NEC Article 760, the audible circuits (terminals 32 and 35) must use the PLM-35 module. Refer to Instructions P/N 315-093495.
14. Connect the following modules only: AA-30U, AD-30S, AE-30U, HC-30U, HC-35, DS-30, LP-30, MC-30, MT-30, PM-31, PM-32, RM-30U, RM-30RU, SM-30, SR-30, SR-32, SR-35, TL-30U, ZC-30, and ZC-31.
15. All power limited wiring requires separation from non-power limited wiring. Refer to the System 3 Power Limited Wiring Instructions, P/N 315-093680.

Chime/ Strobes	Vibrating Bells	Electro-Mech. Horn/Strobes		Electronic Horns 1-Tone with Strobe	Single Stroke Bells
EC-S15-C/F/S EC-S17-C/F/S EC-S75-F/S EC-S110-F/S	BE-F/LC BF-F/LC BS-F/LC BT-F/LC	HN-S15-C/F/S HN-S17-C/F/S HN-S75-F/S HN-S110-F/S	HNH-S15-C/F/S HNH-S17-C/F/S HNH-S75-F/S HNH-S110-F/S	EH-S15-C/F/S EH-S17-C/F/S EH-S75-F/S EH-S110-F/S	BE-SS BF-SS BS-SS BT-SS
Strobes	**Electronic S.W./Strobes**	**Horns/ Horn Strobes 3-Tone**	**Horns/ Horn Strobes 3-Tone**	**Sync. Strobes**	**Bell/Strobe Plate**
S15-F/FS/FT/S/ST S17-F/FS/FT/S/ST S75-F/FS/FT/S/ST S110-F/FS/FT/S/ST	EW-S15-C/F/S EW-S17-C/F/S EW-S75-F/S EW-S110-F/S	MC-C/F/S MC-S15-C/F/S MC-S17-C/F/S MC-S75-F/S MC-S110-F/S	MTL-C/F/S MTL-S15-C/F/S MTL-S17-C/F/S MTL-S75-F/S MTL-S110-F/S	S15S-F/FS/FT/S/ST S17S-F/FS/FT/S/ST S75S-F/FS/FT/S/ST	S15-6060H/6090V S17-6060H/6090V S75-6090V S110-6090V
Sync. Electro-Mech. Horn/Strobes		**Sync. Horns/ Horn Strobes 3-Tone**	**Sync. Horns/ Horn Strobes 8-Tone**	**Synchronizing Control Module**	**Sync. Bell/Strobe Plate**
HN-S15S-C/F/S HN-S17S-C/F/S HN-S75S-F/S	HNH-S15S-C/F/S HNH-S17S-C/F/S HNH-S75S-F/S	MC-S15S-C/F/S MC-S17S-C/F/S MC-S75S-F/S	MTL-S15S-C/F/S MTL-S17S-C/F/S MTL-S75S-F/S	SCM-F/FW	S15S-6060H/6090V S17S-6060H/6090V S75S-6090V
Electronic Horns 1-Tone	**Chimes**	**Electronic Slow Whoop**	**Electro-Mech. Horns**	**Tri-Tone Horns**	**Suffixes**
EH-C/F/S	EC-C/F/S CH-F/LC/SS	EW-C/F/S	HN-C/EP/F/S HNH-C/EP/F/S	SEA TTH	C = Ceiling EP = Explosion Proof F = Flush FT = Flush w/Terminals G = Gang Mount H = Horizontal LC = Low Current S = Surface SS = Single Stroke ST = Surface w/Terminals U = Universal Mount V = Vertical W = White
Mini-Horns		**Sync.**	**Mini-Horns/Strobes 8-Tone**	**Sync. Mini-Horns/ Strobes 8-Tone**	
MH-1G/1GW MH-U/UW MH-S15-U/UW MH-S17-U/UW MH-S75-U/UW MH-S110-U/UW	MHT-1G/1GW MHT-U/UW MHT-S15-U/UW MHT-S17-U/UW MHT-S75-U/UW MHT-S110-U/UW	MHST-1G/1GW MHST-U/UW MHST-S15S-U/UW MHST-S17S-U/UW MHST-S75S-U/UW	MMT-1G/1GW MMT-U/UW MMT-S15-U/UW MMT-S17-U/UW MMT-S75-U/UW MMT-S110-U/UW	MMT-S15S-U/UW MMT-S17S-U/UW MMT-S75S-U/UW	

•The SCM-F/FW Synchronizing Control Module must be used with these modules to synchronize the strobes.

NOTICE: The use of other than Cerberus Pyrotronics control equipment will be considered a misapplication of Cerberus Pyrotronics equipment and as such void all warranties either expressed or implied with regards to loss, damage, liabilities and/or service problems.

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