28 00 00 – Electronic Safety and Security

28 10 00 Electronic Access Control and Intrusion Detection

The following is a compilation of documents which highlight Coastal Carolina University’s Electronic Access Control and Intrusion Detection standards. These standards summarize the requirements of CCU’s ITS Department and Environmental Health and Safety Department.
Typical Card Reader Door with Electric Strike Using Hibred Cable

- Reader (Non-Secure Side)
- Junction Box
- Door Contact
- Electric Strike
- Typical Single Door w/ Hibred
- 538AFS

COLOR	TYPE
ORANGE	1
WHITE	2
BLUE	3
GRAY	4
Paragraph text
Squadron Enclosure
<table>
<thead>
<tr>
<th>TYPE</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>A</td>
<td>5388C</td>
<td>8 Conductor #18awg, Stranded, Shielded w/ drain, Color Coded</td>
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<tr>
<td></td>
<td>BELDEN 5306FE</td>
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<tr>
<td></td>
<td>CAROL E2038S</td>
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<tr>
<td></td>
<td>Or equivalent</td>
<td></td>
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<tr>
<td>B</td>
<td>YR15950</td>
<td>4 Conductor #22awg, Stranded, Shielded w/ drain, Color Coded</td>
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<tr>
<td>C</td>
<td>82760</td>
<td>2 Conductor #18awg, Stranded, No Shielded</td>
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<tr>
<td>D</td>
<td></td>
<td>CAT 5/6E – 8 Conductor Twisted Paired, 568B Network Cable</td>
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<td>H</td>
<td>538AFS</td>
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<tr>
<td></td>
<td></td>
<td>1 - 2 Conductor #18awg, Stranded, Shielded w/ Drain (Red, Black)</td>
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<tr>
<th>DEVICE</th>
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<tr>
<td>Hid Prox</td>
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<td>Dorado</td>
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<td>4 Conductor #22awg, Stranded, Shielded w/ drain, Color Coded</td>
</tr>
</tbody>
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SquadronTypicalDrawingsRev4 - JEL
(1) 4-Con. Beldfoil
16 AWG
White, Black
Red, Green
Stranded
Shielded

(1) 3-Pair Beldfoil
18 AWG
White & Green,
Orange & Brown,
Red & Black
Stranded
Shielded

(1) 2-Con. Beldfoil
18 AWG
Red,
Black
Bare Copper
Stranded
Shielded

Gray
LOCKING HARDWARE
Spare

Blue
REX
Spare

Orange
CARD READER

White
DOOR CONTACT

Gray
LOCKING HARDWARE
REX POWER

Blue
REX
DOOR CONTACT

Orange
CARD READER

White
Card Reader Power

SquadronTypicalDrawingsRev4 - JEL
Typical Hibred Layout

DEVICES

HIBRED CABLE / BANANA PEEL

SQUADRON PANEL

+ 12VDC
GROUND
DATA 0 / DATA
DATA 1 / CLOCK
DATA RETURN
GREEN LED
RED LED
BEEPER
HOLD / CARD PRES
SHIELD

MR5

DOOR CONTACT

REQUEST TO EXIT PIR

ELECTRIC STRIKE

+ In 1 DOOR
- In 1 MONITOR

WHITE 2
RED
BLACK

BLUE 3
Black
White
RED
Green

+ In 2 Rex
- In 2

GRAY 4
RED
Green
White
Black

NO
C
OUT 1
NC
Spare

STRIKE POWER SUPPLIED BY PROVIDER OF STRIKE

To Squadron Power Supply

SquadronTypicalDrawingsRev4 - JEL
28 31 33 Fire Detection and Alarm Interfaces

1. The fire alarm system shall be a complete, non-coded, addressable microprocessor-based fire alarm system with initiating devices, notification appliances, and monitoring and control devices.

2. The system and all associated operations shall be in accordance with the following:
   a. The International Building Code
   b. NFPA 72, National Fire Alarm Code
   c. NFPA 70, National Electrical Code
   e. NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems
   f. Other applicable NFPA standards
   g. Local Jurisdictional Adopted Codes and Standards

3. The system shall provide a means to recall alarms and trouble conditions in chronological order for the purpose of recreating an event history. A separate alarm and trouble log shall be provided.

4. Transmission shall be hard-wired, addressable signal transmission, dedicated to fire alarm service only. Transmission to the remote central station: Automatically route alarm, supervisory, and trouble signals to the remote central station.

5. Circuit faults shall be indicated by a trouble signal at the FACP by a distinctive indicating audible tone and alphanumeric annunciation.

6. General Alarm: A system general alarm shall include:
   a. Indication of alarm condition at the FACP and the annunciator(s).
   b. Identification of the device that is the source of the alarm at the FACP and the annunciator(s).
   c. Operation of audible and visible notification devices throughout the building until silenced at FACP.
   d. Closing doors normally held open by magnetic door holders.
   e. Unlocking designated doors.
   f. Shutting down supply and return fans serving zone where alarm is initiated.
   g. Closing smoke dampers on system serving zone where alarm is initiated.
   h. Notifying the local fire department.
   i. Initiation of elevator recall in accordance with ASME/ANSI A17.1, when specified detectors or sensors are activated.

7. Supervisory Operations: Upon activation of a supervisory device such as a tamper switch, the system will operate as follows:
   a. Activate the system supervisory service audible signal and illuminate the LED
at the control unit and remote annunciator.

b. Pressing the Supervisory Acknowledge Key will silence the supervisory audible signal while maintaining the Supervisory LED “on” indicating off-normal condition.

c. Record the event in the FACP historical log.

d. Transmission of supervisory signal to remote central station.

e. Restoring the condition will cause the Supervisory LED to clear and restore the system to normal.

8. Alarm Silencing: If the “Alarm Silence” button is pressed, all audible and visible alarm signals shall cease operation.

9. System Reset:
   a. The “System Reset” button shall be used to return the system to its normal state. The system shall verify all circuits or devices are restored prior to resetting the system to avoid the potential for re-alarming the system.
   b. Should an alarm condition continue, the system shall remain in an alarmed state.

10. Power Requirements:

   a. The control unit shall receive AC power via a dedicated fused disconnect circuit.

   b. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal AC power in a normal supervisory mode for a period of 48 hours with 10 minutes of alarm operation at the end of this period. The system shall automatically transfer to battery standby upon power failure. All battery charging and recharging operations shall be automatic.

   c. All circuits requiring system-operating power shall be 24 VDC and shall be individually fused at the control unit.

   d. The incoming power to the system shall be supervised so that any power failure will be indicated at the control unit. A green "power on" LED shall be displayed continuously at the user interface while incoming power is present.

   e. The system batteries shall be supervised so that a low battery or a depleted battery condition, or disconnection of the battery shall be indicated at the control unit and displayed for the specific fault type.

   f. The system shall support NAC Lockout feature to prevent subsequent activation of Notification Appliance Circuits after a Depleted Battery condition occurs in order to make use of battery reserve for front panel annunciation and control.
g. The system shall support 100% of addressable devices in alarm or operated at the same time, under both primary (AC) and secondary (battery) power conditions.

h. Loss of primary power shall sound a trouble signal at the FACP. FACP shall indicate when the system is operating on an alternate power supply.

**28 31 43 Fire Detection and Alarm Products**

1. The campus standard fire alarm system is Fire-Lite Alarms by Honeywell.
2. The base model Fire Alarm Control Panel is Fire-Lite Model MS-9600UDLS.
3. The campus standard fire alarm power supply is Fire-Lite Model FCPS-24FS8.
4. The campus standard fire alarm pull station is Fire-Lite Model BG-12LX.
5. All branch circuit breakers supplying power to the fire alarm system shall be painted red and be capable of being locked in the “on” position.
6. All fire alarm wire will be in conduit. Junction boxes will be painted red. All relays and modules with indicating lights shall be visible without removing ceiling tiles or opening doors on enclosures.
7. Test and Reset Keys for duct-mounted smoke detectors shall be mounted at approximately 48” AFF.
8. Prior to bid, Design Documents shall be submitted to the CCU Fire Marshal for review and comment.

**NOTE:**

All manufacturers and components shall be “open source” or “non-proprietary” systems where the parts, supplies, programing, software and all other portions or aspects of the system are available from multiple independent competitive dealers or suppliers on the open market. The use of non-proprietary equipment and systems will allow any certified technician to obtain parts, program, perform maintenance or subcontract repairs competitively.