

SECTION 34 41 26.00 10

ACCESS CONTROL POINT CONTROL SYSTEM  
**01/2020**

PART 2 PRODUCTS

1.1 GATEHOUSE CONTROL CONSOLE (GCC)

1.1.1 Overspeed and Wrong Way Annunciation Panels

Provide a back lit annunciation window for displaying OVERSPEED alarms and a back lit annunciation window for displaying WRONG WAY alarms. Provide volume adjustable sound indication for each alarm. Alarm display and sound indication shall occur in no less than 100 milliseconds after the sensor detects the overspeed or wrong way condition.

1.2 ALARM PANELS AT THE GUARD BOOTHS

One or more Alarm Panels consisting of back-lit OVER SPEED and WRONG WAY messages shall be mounted outside of but near the Guard Booths. Alarm Panels shall include an audible alarm. The number and location of Alarm Panels shall be such as to allow any ACP guard either sitting in a Guard Booth or standing along side a Guard Booth at the ID Check position to see and hear at least one panel. The audible alarm shall be loud enough to be heard over ambient traffic noise. Overspeed and wrong-way alarms shall clear automatically 3 seconds (adjustable) after the alarm condition ends with no action required by guard. Overspeed and wrong-way alarms shall be recorded on the Alarm and Events Recorder.

1.3 GUARD BOOTH AND OVERWATCH POSITION CONTROL PANELS

Provide a Control Panel for each Guard Booth and the Overwatch Position. Control Panels shall include the EFO control switch, indicating lights, and back lit alarm windows for OVER SPEED, WRONG WAY, and DURESS (Overwatch Position only) alarms (see Standard Drawing E1.03). Control Panels shall include a volume adjustable audible alarm. The audible alarm shall be loud enough to be heard over ambient traffic noise. Alarm acknowledgement and clearing of a DURESS alarm shall be from the Gatehouse alarm controls, except a control switch at the Overwatch Position shall be provided to silence the audible alarm. Overspeed and wrong-way alarms shall clear automatically 3 seconds (adjustable) after the alarm condition ends. For an Overwatch Position without a permanent building, the Control Panel shall be portable with a cord for plugging into a companion receptacle in the Overwatch Position junction box.

1.4 OVER SPEED, WRONG-WAY, AND VEHICLE PRESENCE DETECTORS

1.4.1 Induction Loops

Induction loops may be used for vehicle presence detection, wrong-way detection, and point over-speed detection. Induction loops shall be capable of detecting passenger vehicles, motorcycles, and high bed trucks. Tests for all three types of vehicles shall be conducted on each installed

loop during the Performance Verification Test.

- a. Tuning: automatic.
- b. Loop Sensing frequency: minimum four user selectable frequencies to minimize cross talk with adjacent loops.
- c. Sensitivity: user selectable, minimum 4 ranges, 20 to 2000 micro henries with a Q factor of minimum 5.
- d. Diagnostic: provide diagnostics and related indication for short and open loop circuit.
- e. Detector output: dry form C contact set, rated a minimum of 0.25 A at 24 Volts dc.
- f. Operating temperature: -40 to 170 degrees F.
- g. User selectable operation modes: presence, pulse on entrance - factory set on presence mode.
- h. User selectable operation: Fail Safe or Fail Secure - factory set at Fail Safe.
- i. User selectable sensitivity boost feature, which boosts sensitivity after a presence detection and holds the increased sensitivity until the detection drops out, at which time sensor sensitivity returns to the original setting.
- j. Power requirement: 120V/60Hz, or be provided with appropriate power module/assembly and appurtenance, which is suitable for operation with 120V/60Hz.
- k. Loop Wire.
  - (1) Provide number of inductive loops as per manufacturer's recommendations based on loop size and distance between loop and loop amplifier.
  - (2) Ensure that the loop slots in which the loop wire is laid are free from debris, sharp objects, and are completely dry. Clean out slots with compressed air before installing loop wire.
  - (3) Install loop wire in layers. Install backer rods over top wire at a minimum of 1 foot spacing to ensure uniform placement of wire in the slot. Fill the loop slots with sealant per recommendation of the loop wire manufacturer.
  - (4) Use 14AWG stranded cable with flame retardant thermoset crosslinked Polyethylene (XLPE). Loop wire extending from the loop to the loop amplifier shall be twisted with a minimum twist pitch of 6 per foot.
  - (5) Check conductor resistance to ground with "megger" of 500V or higher. Remove and replace the whole installation if ground resistance of less than 10 mega-Ohms is measured.

- (7) Loops shall be capable of detecting motorcycles, passenger vehicles, and high bed trucks with the same sensitivity setting.

#### 1.4.2 Radar

Radar detection sensors may be used for vehicle over speed detection. Continuous Over speed Detection. The detector unit shall be capable of continuously detecting the speed of vehicles within preset zones as they approach the ID Check Area of the ACP. The Sensor shall close an alarm contact when the speed of any vehicle anywhere within the zone is above a preset value. See drawings for required detection zones and detector speed settings. For radar sensors which sense speed at multiple discrete points in the direction of travel instead of continuously, the distance between discrete points shall not be more than 15 feet. Radar detection sensors shall meet the requirements listed below.

- a. The detector unit shall have an operating temperature range of -40 to +170 degrees F.
- d. The detector unit shall not emit a noise at levels exceeding 55 dBa when measured at a distance of 3 feet away from its surface.
- e. Each detector unit shall transmit on a frequency band of 24.125 GHz +/-25 MHz or another approved spectral band. The detector unit shall not interfere with any known equipment.
- g. The field of view of the detector unit shall cover an area defined by an oval shaped beam with a beam height and width of 12 degrees minimum and a range of 10 to 200 feet minimum.
- h. The enclosure rating of the detector unit shall be IP65 The overall detector dimensions shall not exceed the nominal envelop of 8 by 10 by 6-inch.
- i. The power requirement of the detector unit shall be 120V/60Hz, or be provided with appropriate power module/assembly and appurtenance, which is suitable for operation with 120V/60Hz.
- j. The detector unit output upon detection of a vehicle speed over the adjustable preset value shall be a dry form C contact set, rated a minimum of 0.25 A at 24Volts dc.
- k. The detector unit shall have a blind zone of not more than 10 feet in front of the unit.
- l. The detector unit may be applied in either Side-fired or Forward-looking configuration.
- m. Detector units may be mounted on existing ACP structures or utility poles if suitable for this purpose. When existing structures and utility poles are not suitable, provide mounting trusses or poles for mounting detector units.
- n. Set all detector unit parameters and adjust detectors to provide required zone coverages.

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