OPERATOR & ELECTRONICS DIVISION

DASMA TECHNICAL DATA SHEET

#358

Door & Access Systems Manufacturers Association International

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Gate Operators And OSHA Requirements

There are Federal laws administered by the Department Of Labor Occupational Safety and Health Administration (OSHA) that regulate installation of electrical equipment. These laws govern a workplace where construction is taking place. A gate operator that is considered "acceptable" within these guidelines is defined in the Definitions section (1910.399) of the "Safety Requirements For Special Equipment" portion of 29 CFR Chapter 17.

An installed gate operator is deemed to be "acceptable" if it meets one of the following criteria:

1. **If it is "accepted, or certified, or listed, or labeled, or otherwise determined to be safe by a nationally recognized testing laboratory."** The terminology that best suits gate operators in this case is "listing and labeling." The applicable standard would be UL 325. Keep in mind that a "nationally recognized testing laboratory" is one that has met certain criteria maintained by an independent laboratory evaluation agency.

2. **Where the criteria in #1 is not applied, if it is "inspected or tested by another Federal agency, or by a State, municipal or other local authority responsible for enforcing occupational safety provisions of the National Electrical Code and found in compliance with the applicable provisions of the National Electrical Code (NEC)."** If the operator is inspected, the gate operator manufacturer will likely need to produce satisfactory evidence of compliance with the NEC. If the operator is tested, it may be by an entity authorized to do such testing by the applicable authority.

3. **If it is determined to be "safe for its intended use by its manufacturer on the basis of test data which the employer keeps and makes available for inspection to the Assistant Secretary and his authorized representatives."** Please note that the gate operator manufacturer should not only have test data, but also documentation that the operator meets applicable acceptance criteria. Certification of the documentation by a registered professional engineer is highly recommended.

DASMA suggests that installers of gate operators, when working in conjunction with a construction project, check with the building owner and/or contractor to find out whether Federal OSHA based laws govern the project.

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UL 325 And Gate Installations
Frequently Asked Questions
(Note: References to UL 325 have been updated to the 5th Edition)

1. **Is compliance with UL 325 a national law?** No; however, it became a state law in Nevada effective March 1, 2000. DASMA is continuing to monitor other states for potential legislation in this area.

2. **Who is going to check the gate system to determine if it is in compliance with the new standard?** No one at the present time; however, keep in mind there is the potential for liability if a gate system is not installed in compliance with UL 325.

3. **Am I required to upgrade existing installed operators to the new UL 325 standard?** No. There is no retroactivity with respect to UL 325.

4. **Can older operators that do not meet the standard be repaired?** Yes. You may wish to contact your attorney or your trade association legal counsel regarding liability issues in repairing older operators that have no entrapment sensing provisions.

5. **Can I upgrade, to the new standard, operators already installed?** There are no requirements to upgrade existing operators; however, upgrading is dependent on the product itself. The operator manufacturer must be consulted on this matter.

6. **What happens with the product that I have in stock that was purchased prior to March 1, 2000? Can I still install it?** Yes. There is no recall provision in the UL standard. Products that have already been tested and Listed can be installed.

7. **What is the significance of the operator usage classifications?** The classifications are intended to signify specific end use applications as defined in UL 325.

8. **Can operators be classified under more than one of the classifications?** Yes. UL 325 requires that "A vehicular gate operator shall be permanently marked to specify all intended Classes of applications." (underline added)

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9. **What is the difference between a primary and secondary entrapment protection device?** The secondary entrapment protection device is intended as a backup feature should the primary device fail or not work properly.

10. **Do photoelectric cells or electric edges have to be installed on all gates?** Not necessarily. These two options are among several acceptable options. Contact the operator manufacturer for acceptable protection devices to be installed on a particular gate.

11. **Do I have to install both photoelectric cells and reversing edges as secondary devices to be in compliance with the standard?** No; you do not have to put both on the gate. Either a non-contact sensor, a contact sensor or a combination thereof can be used as secondary devices.

12. **Will an operator function if a photoelectric cell or reversing edge is not connected?** This is dependent on the operator design. The operator manufacturer must be consulted on this matter.

13. **How far away from the gate should an access device (push button, card reader, etc.) be installed?** The applicable provision in UL 325 reads, "Controls must be far enough from the gate so that the user is prevented from coming in contact with the gate while operating the controls."

14. **If a reset switch is to be installed, where does it have to be installed?** UL 325 requires that "Controls intended to be used to reset an operator after 2 sequential activations of the entrapment protection device or devices must be located in the line-of-sight of the gate."

15. **Do I have to install a separate pedestrian gate?** UL 325 states that if the operator is for a vehicular gate, pedestrians must use a separate entrance.

16. **Do the new UL 325 requirements apply to both new and existing gates?** UL 325 requirements will apply to all new construction of gates and existing gates that could be motorized. Older non-motorized gates may need to be altered to meet the new requirements.

17. **Do I have to install guarding or screening on a gate?** Yes; however, this applies only to horizontal sliding gates. The important fact to remember is that if a horizontal gate system is not guarded or screened in accordance with the manufacturer's instructions, it cannot be claimed to be in compliance with UL 325.

18. **Does the 2 1/4 inch sphere test start at the bottom of the gate or is it measured from the ground up to 4 feet?** UL 325 requires that "All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4 feet above the ground …" (underline added)

19. **If a slide gate is on wheels and there is a 4-inch gap between the ground and the bottom of the gate, is this OK?** The standard does not include provisions governing the gap between the bottom of the gate and the ground; however, the standard for automated vehicular gate construction, ASTM F2200, addresses this matter.

20. **Do swing gates need to be guarded or screened so that a 2 1/4 inch sphere will not pass through it?** No.

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21. **Is there a difference between a UL listed product, an ETL listed product, or a product listed by anyone else?** Any listing by a Nationally Recognized Testing Laboratory (NRTL) that tests to the UL 325 standard is acceptable. The test laboratories are expected to use the same standard.

22. **Is there a speed limit for a pivot gate, and if so where would this be measured?** The only limit on speed that is specified in the standard is in Section 31.1.19, which specifies that either a Class I and Class II horizontal slide gate cannot move greater than 1 foot per second. Note that this only applies to slide gates. There is no speed limit on swing gates, or on vertical pivot gates.

23. **Should a gate weight limit, as well as gate speed limit, be considered?** UL 325 specifies minimum standards on vehicular gate operators. The standard in no way addresses the gate itself; therefore gate weight limits do not apply and do not belong in UL 325.

24. **Where should a hard wired input be located?** Section 56.8.4f calls for controls to be far enough away from the gate so that the person using the control cannot come in contact with the gate while operating the control. This paragraph also states that controls, intended to be used to reset an operator after 2 sequential activations of the entrapment protection devices, **must** be located in the line of site of the gate. Some manufacturers specify that the minimum distance the control should be from the gate or gate operator is 6 feet, while other manufacturers say 10 feet. The intent of Section 56.8.4f is to prevent persons from reaching through a gate to activate a control. Keep in mind that outdoor controls or easily accessible controls must have a security feature to prevent unauthorized activation.

25. **Can a placard be mounted on a post as well as a fence or gate?** Section 56.8.4g clearly states that "all warning signs and placards must be installed **where visible in the area of the gate**."

26. **Should code language read "if a pedestrian gate is installed, it shall be located within 10 feet of a vehicular gate"?** Section 56.8.4b clearly calls for the installation of a separate pedestrian access opening. There is no "if" in the paragraph; however, the location of the gate should be specified by some agency. For example, if a pedestrian access gate is installed 100 yards away from the vehicular gate, does this meet the intent of this paragraph? Code language should be to specify that a pedestrian gate must be installed, but location criteria for such gate have yet to be determined.

27. **Should placement of non-contact sensors be quantified?** Every gate installation is different. With respect to non-contact sensors, Section 56.8.4h, paragraph 3 calls for "one or more" non-contact sensors to be located **where the risk of entrapment or obstruction exists**. This places some responsibility on the installer to be able to identify these areas of risk. The standard cannot quantify this; there is no way to ascertain the risk areas until the vehicular gate system is installed.

28. **Should non-contact sensors be also placed on the secured side of the gate?** Yes, if there is a risk of entrapment or obstruction.

29. **How many contact sensors should be used on a gate?** Every gate installation is different. With respect to contact sensors, Section 56.8.4i, Paragraph 1 states that "one or more" contact sensors are to be located **where the risk of entrapment or obstruction exists** for slide gates. Paragraph 2 calls out "one or more" contact sensors for a vehicular vertical lift gate. Paragraph 3 calls out "one or more" contact sensors for a vehicular vertical pivot gate. Paragraph 6 calls for "one or more" contact sensors on the inside **and** outside leading edge of swing gate as well the bottom edge if there is greater than 6" between the gate and ground surface. Paragraph 7 calls out "one or more" contact sensors for a vertical barrier (arm). This places some responsibility on the installer to be able to identify these areas of risk. The standard cannot quantify this; there is no way to ascertain the risk areas until the vehicular gate system is installed.

30. **Is the difference between Classes I and II outlined in other provisions of UL 325 besides the definition section?** Regarding temperature testing, Class I is tested for limited duty and Class II is tested for continuous duty. Otherwise, there are no differences between Class I and Class II as described within UL 325.

31. **An airport security area appears to be a Class IV application. If a gate in this area is unmanned, is this a Class III application?** This would be a Class III application because the gate system is not manned, or guard controlled via a closed circuit connection, which is a requirement for a Class IV application. Keep in mind that a Class IV operator could not be used in this application.

32. **What is the difference between a Type E device and an audible device that warns that the gate is about to operate?** An alarm that warns that the gate is about to operate must do so during the entire gate cycle (Section 31A.1.16) and must be differentiated from the inherent entrapment alarm (Section 31A.1.18).

33. **Can "monitor" be defined as used in UL 325?** In reference to Section 31A.1.6, "monitor" means that the operator must check for the presence and proper operation of the device. This includes checking for the proper connection of the device, verifying that the device is functioning, verifying that there are no short circuits in the connection of the device, and verifying that there are no open circuits in the connection of the device, at least once during each open and close cycle. Keep in mind that the monitoring function is only applicable to those external devices that are used as a **primary** entrapment protection device. The standard does not call for any monitoring of a secondary entrapment protection device. Many manufacturers use Type A (inherent) devices as the primary entrapment protection device such that monitoring of an external device is not necessary, but some also use monitoring on devices that are not primary entrapment protection devices.

34. **How do you monitor a wireless device?** A wireless device would be extremely difficult to monitor under the conditions specified in Section 31A.1.6. There are no known external wireless devices being used as **primary** entrapment protection.

35. **Are there two graphics offered for the placards (slide and swing)?** The graphics on the placards must comply with the standard practices for safety information as prescribed in the Standard for Product Safety Signs and Labels, ANSI Z535.4-1991 (Section 58A.1.2). Section 58.1.4 allows for more than one pictorial to be used; however, most

manufacturers are using placards as designed by DASMA for industry standardization. The one-sign design is acceptable for both slide and swing gate applications.

36. **Our city has a noise law, 10 PM- 7 AM daily, where noise cannot exceed 70 dB at the property line. How does this affect compliance with UL 325?** We would have to have a copy of the city noise legislation before commenting on this. There may be provisions in the law that allow for safety related devices to exceed the 70db noise limit. If there is no such provision, then UL should be made aware of this for possible action.

37. **If a gate is not closed via a timer, does this affect any of the entrapment protection provisions that would be required for compliance?** No. The entrapment protection provisions are not dependent on whether an automatic close timer is employed or not.

38. **Where can I obtain more information on UL 325?** You may contact UL directly at (847) 272-8800, or DASMA at (216) 241-7333, or you may purchase UL 325 from Global Engineering Documents at (800) 854-7179 or from Comm 2000 at 888-853-3503.