

**DETEX ARCHITECTURAL SPECIFICATIONS, JUNE 2019
AO19 SERIES HEAVY DUTY LOW-ENERGY
ELECTRIC SWING DOOR OPERATOR**

**SECTION 08 71 13
LOW ENERGY AUTOMATIC OPERATORS**

Specifier Note: Coordinate and edit articles and paragraphs below to suit project requirements. Add section numbers and titles per CSI "Master Format" and specifier's practice. Consult with manufacturer regarding performance requirements for units applicable to project, as well as, related equipment and accessories required.

PART I – GENERAL

1.01 SUMMARY

- A. SECTION INCLUDES: Automatic Heavy Duty Low Energy Operators as specified.
- B. RELATED SECTIONS:
 - 1. Division 26: Applicable Electrical Sections
 - 2. Section 08 40 00: Entrances, Storefronts, & Curtain Walls
 - 3. Section 08 71 00: Finish Hardware

1.02 REFERENCES

- A. AMERICAN ASSOCIATION OF AUTOMATIC DOOR MANUFACTURERS (AAADM)
- B. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):
 - 1. ANSI/BHMA A156.19: Power Assist and Low Energy Power Operated Doors
 - 2. ICC/ANSI 117.1: Standard for Accessible and Usable Buildings and Facilities
- C. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
 - 1. NFPA 101: Life Safety Code
 - 2. NFPA 80: Standard for Fire Doors and Other opening Protectives.
- D. THE ALUMINUM ASSOCIATION (AA)
 - 1. Aluminum Finishes Manual.
- E. UNDERWRITERS LABORATORY, INC. (USA & CANADA)
 - 1. UL 325: Standard for Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.
 - 2. UL 228: Standard for Door Closers-Holders, With or without Integral Smoke Detectors.
- F. BUILDER'S HARDWARE MANUFACTURERS ASSOCIATION (BHMA).

1.03 SUBMITTALS

- A. PRODUCT DATA:

1. Submit manufacturer's complete product and installation documents.
2. Submit Shop drawings showing layout, profiles, elevations and product components including anchorage, accessories, and electrical access locations.
3. Manufacturer's Operation and Maintenance documents.
4. Warranty document as specified herein.
5. Inspection compliance certification. Include certification that installation conforms to the requirements of ANSI/BHMA A156.19 unless specifically shown otherwise. Certification shall be completed and signed by an individual knowledgeable about the requirements of the standard and its application to the installation. Include a statement showing the qualifications of the inspector.

1.04 QUALITY ASSURANCE

- A. INSTALLERS QUALIFICATIONS: Installer shall be experienced to perform work of this section.
- B. MANUFACTURER'S QUALIFICATIONS: Manufacturer capable of providing field service representation during installation, reviewing installer qualifications, and reviewing application method.
- C. Equipment supplied shall comply with ANSI A156.19 and UL 325.

1.05 WARRANTIES

- A. MANUFACTURER'S WARRANTY:
 1. Operators shall be warranted against defect in material and workmanship for a period of three (3) years for mechanical components and one (1) year for electrical components.
 2. Other products shall be warranted against defects in material and workmanship for a period of one (1) year.
 3. Warranty shall start from the date of Substantial Completion.
 4. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1.06 PROJECT CONDITIONS

- A. MEASUREMENTS: Verify actual dimensions/openings by field measurements before fabrication and record on shop drawings. Coordinate production, shipping and construction schedule to avoid construction delays.

1.07 DELIVERY, STORAGE AND HANDLING

- A. ORDERING AND DELIVERY: Comply with factory's ordering instructions and lead time requirements. Delivery shall be in factory's original unopened, undamaged containers with identification labels intact.
- B. STORAGE AND PROTECTION: Provide protection from exposure to harmful environmental conditions and vandalism.

PART II PRODUCTS

2.01 APPROVED MANUFACTURER. Low energy automatic door operator shall be manufactured by:

DETEX CORPORATION
302 Detex Drive
New Braunfels, Texas 78130
Phone 800-729-3839
Fax 830-620-6711
www.detex.com

2.02 EQUIPMENT

- A. Operator Series AO19
 - 1. Header Assembly
 - a. Surface Mounted
 - b. Extruded aluminum case 7" x 4.5" x required length determined by door/frame size. Include hangar plate for quick installation
 - 2. Operating Mechanism
 - a. Maximum current draw shall not exceed 3.15 amps per operator
 - b. Concealed in aluminum case
 - c. Smooth, quiet operation
 - d. Opening Action: accomplished by a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Gear train bearings shall be sealed ball bearing types
 - e. Closing action: accomplished by an enclosed clock spring. Close speed control shall be supplied by dynamic braking of the motor and shall be fully adjustable. Operator shall act as a manual closer when power is off.
 - f. Provide 3-way On/Off/Hold switch
 - 3. OPERATOR CONTROL: Shall incorporate the following features
 - a. Adjustable hold open time delay of 2 to 30 seconds (ANSI A156.19 requirements 5 second minimum time delay).
 - b. Finite adjustment to opening and open check speeds including adjusting the opening force without affecting the opening speed.
 - c. Reverse On Obstruction: Field selectable, immediate during the closing cycles.
 - d. Motor Current Limit: An adjustable current limit shall shut off current to the motor when the door is inadvertently locked or otherwise prevented from opening, protecting motor and control from damage; as well as, reverse on obstruction during opening cycle.
 - e. Power Assist Close: Field selectable on/off. When on, power shall be applied to reverse motor when the door reaches the latch position. Power level shall be field adjustable.
 - f. Door Seal: Field selectable on/off. The control shall provide a small current to the motor to hold door closed after Power Assist Close has fully closed the door.
 - g. Ratchet Relay: If set to ON, an activation will cause the door to be opened and hold open. When next activation occurs, the door will begin

the closing cycle. Delayed activation is not available when this switch is ON.

- h. Lockout (Safety A): For use with an overhead presence detection sensor, the lock-out function is incorporated into the door control without the need for additional modules. When door is fully closed or fully open, door operation is inhibited when an obstruction is detected.
- i. (Safety B): For use with door mounted presence detection sensors. When this feature is used:
 - 1) If an obstruction is detected while the door is closed, door activation will be prevented.
 - 2) If an obstruction is detected during the opening cycle the door will go to a safety speed or stall.
 - 3) The sensor shall be inhibited by field selectable on/off from stalling the door when the door reaches back-check during the opening cycle.
- j. Electric Lock Form C Contacts
 - 1) Normally Open: To control a non-fail-safe electric locking device.
 - 2) Normally Close: To control a fail-safe electric locking device.
- k. Secondary Activation: After a knowing act activation, a signal from a motion sensor will reopen door when closing, when secondary traffic approaches. Secondary activation is deactivated when door reaches latch-check in accordance with ANSI/BHMA A156.19.
- l. Power Output for Sensing Devices and Radio Receivers:
 - 1) 24-volt AC and DC.
 - 2) Maximum current draw: 300 mA.
 - 3) May be used to power electric lock provided total current draw of lock and sensors does not exceed 300 mA.

4. OPERATION: Automatic and/or Manual:

- a. Automatic: Push button switch actuates door open; door closes after time delay expires.
- b. Push-N-Go: When selected, manually pushing door activates automatic opening cycle; door closes after push-n-go time delay expires.
- c. Operator to include the following variable adjustments for compliance with ANSI Standard A156.19: Opening speed .4 to 8 seconds; Closing speed 4 to 20 seconds
- d. Manual: Opening and closing force, measured 1" (25.4 mm) out from the lock stile of the door, not to exceed 15 pounds (67 N). Force to stop the door when operating in either direction, not to exceed 15 pounds.

B. ACTIVATION DEVICES:

- 1. Shall be located on each side of door in accordance with ANSI Standard A-117.
- 2. Push Plate: 4/12" x 4 1/2"

- a. Surface or flush mounted
- b. Hard Wired or Radio Control (Wireless)
- c. Push Plate shall have International Symbol for wheelchair accessibility logo and "Press to open" or "PUSH TO OPEN" legend.
- d. Stainless Steel or Blue powder coat

2.03 RELATED WORK REQUIREMENTS

- A. ELECTRICAL: 120 VAC, 60 cycle, 1 phase, 15 amp.

2.04 MATERIALS, FINISHES AND FABRICATION

- A. FINISHES (for all exposed aluminum surfaces):

1. 204-Ri Clear: Arch. Class II Clear Anodized Coating, AA-M12C22A31.
2. 313-Ri Dark Bronze: Arch. Class II Anodized Coating, AA-M12C22.

PART III EXECUTION

3.01 EXAMINATION

- A. SITE VERIFICATION OF CONDITIONS:

1. Have Installer verify that base conditions previously installed under other sections are acceptable for product installation according to manufacturer's instructions.
2. Have Installer make notification in writing of conditions detrimental to the proper and timely completion of work.
3. Do not allow Installer to start work until negative conditions are corrected in a manner acceptable to the installer and manufacturer.

3.02 INSTALLATION

- A. GENERAL:

1. Install door operator unit(s) plumb and level. Provide support and anchor in place.
2. Install activation and safety devices as required.
3. Make low voltage connections of related devices.
4. Make operator control adjustments in accordance with ANSI A156.19 and AAADM guidelines.

- B. ELECTRICAL (Provided under Division 26 sections): Electrical wiring for up to 3 operators (3.15 amp draw per operator) on a separate circuit breaker and shall be routed into the operator header.

- C. LOW VOLTAGE ELECTRICAL (Provided under Division 26 sections): Provide low voltage wiring for actuators to activate door operators.

3.03 CLEANING, ADJUSTMENT AND PROTECTION

- A. CLEANING: After installation:

1. Repair or provide new product where installed products are damaged.

2. Clean product surfaces and remove debris from immediate area of operating equipment for optimum condition and safety.
- B. ADJUSTMENT: Arrange for a qualified technician to inspect and adjust installation to assure compliance with ANSI A156.19.
 - C. PROTECTION: Provide protection against damage to door operators and assemblies until time of substantial completion.

END OF SECTION