

## **TECHNICAL SPECIFICATIONS for Model 222 E-ST (02827 HYS) Extra Duty Slide Gate Operator With Smart Touch Controller**

### **PART I – GENERAL**

#### **1.01. INCLUDED IN THIS SECTION**

- A. Pre-wired, self-contained, slide gate operator for horizontal sliding gates, including all selected attachments and accessory equipment.
- B. For further information, call the factory at 1-800-321-9947.

#### **1.02. RELATED WORK SPECIFIED ELSEWHERE**

- A. Fencing: See section 02815.
- B. Cast in place concrete: See section 03300.
- C. Electrical service and connections: See section 16512.

#### **1.03. SUBMITTALS**

- A. Shop drawings: Submit shop drawings under the provisions of Section 01300. Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the operator. Drawings shall also show the size and location of the concrete mounting pad. Underground electrical runs shall be shown on shop drawings.
- B. Installation instructions: Submit two copies of manufacturer's installation instructions for this specific project.
- C. Test reports:
  - 1) Submit affidavits from the manufacturer demonstrating that the gate mechanism has been tested to 200,000 cycles without breakdown.
  - 2) Each operator shall bear a label indicating that the operator mechanism has been tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.

#### **1.04. QUALITY ASSURANCE**

- A. Manufacturer: A company specializing in the manufacture of hydraulic gate operators of the type specified, with a minimum of ten years experience.
- B. Installer: A minimum of three years experience installing similar equipment.

#### **1.05. CODES AND REGULATORY REQUIREMENTS**

- A. Operators shall be built to UL325 standards and be listed by a testing laboratory. Complete all electrical work according to local codes and National Electrical code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
- B. Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction. See also 2.02D.
- C. Vehicle gates should never be used by pedestrians. Separate pedestrian gates must always be provided when foot traffic is present.
- D. Current safety standards require gate operators to be designed and labeled for specific usage classes. HySecurity Model 222 E-ST is compliant in all usage classes, Classes I-IV.

#### **1.06. PRODUCT DELIVERY AND STORAGE**

- A. Comply with 01600.
- B. Store products upright in the original shipping containers, covered, ventilated and protected from all weather conditions.

**1.07. WARRANTY**

- A. Provide a five-year limited warranty against all defects in materials or workmanship. Defective materials shall be replaced with comparable materials furnished by the manufacturer, at no cost to the owner. Freight, labor and other incidental costs are not covered under the factory warranty, but may be covered by a separate service agreement between installing company and the owner.

**PART II – PRODUCTS****2.01. GATE OPERATORS**

- A. HySecurity Gate Operators Model 222 E-ST with Smart Touch Controller, or other comparable operator, as approved by the architect. Substitute operators that are approved will be published in an addendum, not less than ten days prior to bid opening. Requests for substitution will include the amount of savings to be passed on to the owner.

**2.02. OPERATION**

- A. Operation shall be by means of a metal rail passing between a pair of solid metal wheels with polyurethane treads. Operator motors shall be hydraulic, geroller type, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 pounds without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 4000 pounds. Gate panel velocity shall not be less than 1.0 feet per second and shall be stopped gradually to prevent shock loads to the gate and operator assembly. The “soft stop” feature of the gate operator shall be controlled by two adjustable hydraulic brake valves (one for each direction)
- B. Standard mechanical components shall include as a minimum:
  - 1) Supporting arms: Cast aluminum channel. Arms shall incorporate a fully bushed, 1-1/2" bronze bearing surface, acting on arm pivot pins. (item 2 below)
  - 2) Arm pivot pins: 3/4" diameter, stainless steel, with integral tabs for ease of removal.
  - 3) Tension spring: 2-1/2" heavy duty, 800 pound capacity.
  - 4) Tension adjustment: Finger tightened nut, not requiring the use of tools.
  - 5) Drive release: Must instantly release tension on both drive wheels, and disengage them from contact with drive rail in a single motion, for manual operation.
  - 6) Limit switches: Fully adjustable, toggle types, with plug connection to control panel.
  - 7) Electrical enclosure: Oversized, metal, with hinged lid gasketed for protection from intrusion of foreign objects, and providing ample space for the addition of accessories.
  - 8) Chassis: 1/4" steel base plate, and 10 Ga. sides and back welded and ground smooth.
  - 9) Cover: 16GA. galvanized sheet metal with a powder paint finish. All joints welded, filled and ground smooth. Finished corners square and true with no visible joints.
  - 10) Finish: Fully zinc plated then finish coat of high gloss powder paint withstanding 1000-hour salt spray test.
  - 11) Drive wheels: 6" Dia. Metal hub with polyurethane tread.
  - 12) Drive rail: Shall be extruded 6061 T6, not less than 1/8" thick. Drive rail shall incorporate alignment pins for ease of replacement or splicing. Pins shall enable a perfect butt splice.
  - 13) Hydraulic hose: Shall be 1/4" synthetic, rated to 2750 p.s.i.
  - 14) Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.
  - 15) Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
  - 16) Hydraulic fluid: High performance type with a viscosity index greater than 375.
  - 17) A zero to 2000-PSI pressure gauge, mounted on the manifold for diagnostics, shall be a standard component.
  - 18) The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.
- C. Minimum standard electrical components:
  - 1) Pump motor: Shall be a 1 HP, 56C, TEFC, continuous duty motor, with a service factor of 1.15, or greater. Standard voltages available, single or three phase.

- 2) All components shall have overload protection.
- 3) Controls: Smart Touch Controller Board with 128K memory containing:
  - a) inherent entrapment sensor;
  - b) built in "warn before operate" system;
  - c) built in timer to close;
  - d) liquid crystal display for reporting of functions;
  - e) 19 programmable output relay options;
  - f) anti-tailgate mode;
  - g) built-in power surge/lightening strike protection;
  - h) capable, with optional software, of event logging EEPROM for trouble shooting diagnostics;
  - i) RS232 port for connection to laptop or other computer peripheral and RS485 connection of Master/Slave systems.
- 4) Transformer: 75 VA, non-jumpered taps, for all common voltages.
- 5) Control circuit: 24VDC.
- D. Required external sensors: See 1.05B. Specify photo eyes or gate edges or a combination thereof to be installed such that the gate is capable of reversing in either direction upon sensing an obstruction.
- E. Optional control devices: (consider one or more of the following: card reader, key-switch, radio control, pushbuttons, vehicle detectors, keypads or seven day timers).
- F. Optional alert devices: flashing lights or rotating beacon.
- G. Other options:
  - 1) Other models available for gate speeds from 1 to 3 feet per second.
  - 2) Special locks for operator cover.
  - 3) Special Correctional Facilities model with heavy, 10 Ga. cover to withstand physical attack,
  - 4) Heater with thermostat control for cold or damp climates.
  - 5) Weather-stripped drive rail slot in chassis, and snow wiper blades for drive rail.
  - 6) Remote gate release devices. Places operator in "manual mode" from remote location.
  - 7) 115/208/230 VAC single phase and 208/230/460 VAC three phase available. (50 Hertz is available specify voltage.)

### **2.03. FACTORY TESTING**

- A. Fully assemble and test, at the factory, each gate operator to assure smooth operation, sequencing and electrical connection integrity. Apply physical loads to the operator to simulate field conditions. Tests shall simulate physical and electrical loads equal to the fully rated capacity of the operator components.
- B. Check all mechanical connections for tightness and alignment. Check all welds for completeness and continuity. Check welded corners and edges to assure they are square and straight.
- C. Inspect painted finish for completeness and gloss. Touch up imperfections prior to shipment.
- D. Check all hydraulic hoses and electrical wires to assure that chafing cannot occur during shipping or operation.

## **PART III – EXECUTION**

### **3.01. SITE EXAMINATION**

- A. Locate concrete mounting pad in accordance with approved shop drawings.
- B. Make sure that gate is operating smoothly under manual conditions before installation of gate operators. Do not proceed until gate panel is aligned and operates without binding.

### **3.02. INSTALLATION**

- A. Install gate operator in accordance with the manufacturer's printed instructions, current at the time of installation. Coordinate locations of operators with contract drawings, other trades and shop drawings.
- B. Installer shall insure that the electric service to the operator is at least 20 AMPS. Operator wattage is 1500.

### **3.03. FIELD QUALITY CONTROL**

- A. Test gate operator through ten full cycles and adjust for operation without binding, scraping or uneven

motion. Test limit switches for proper "at rest" gate position.

- B. All anchor bolts shall be fully concealed in the finished installation.

**3.04. CONTINUED SERVICE AND DOCUMENTATION**

- A. Train owner's personnel in the general maintenance of the gate operator and accessories and provide one copy of "operations and maintenance", manual for the owner's use (a second manual is available upon request.) Manuals will identify parts of the equipment for future procurement.

**NOTE:** HySecurity Gate Operators reserves the right to change these specifications at any time, without notice and without prejudice. Call (800) 321-9947 if you are not sure that you have the latest edition.

**NOTE:** Operators manufactured by HySecurity Gate Operators are intended for use in controlling vehicular traffic and are not intended to be used by pedestrians or to control pedestrian traffic. **Always install a separate pedestrian man gate.**