

## **8.31: SPECIFICATIONS FOR KO-600 DOOR DYNAMICS® AUTOMATIC DOOR OPENERS**

### **MANUFACTURER:**

Operators specified herein are DOOR DYNAMICS® Kwik-Op® Automatic Door Openers as manufactured by Erich Industries, Inc., 550 N. Nine Mound Road, Verona, WI 53593, 1-800-882-5839, SwingDoorOpeners.com.

### **GENERAL:**

Model KO-600S will be utilized for a single door. Model KO-600D will be utilized for a double set of doors.

Automatic door opener to be heavy-duty industrial type capable of opening free swinging door panels weighing up to 600 pounds.

Automatic door opening mechanisms, or electronics will not be damaged if activated when doors are locked or blocked in the closed position, or if doors are activated and then struck with a load, or by continuous manual operation. The KO-600 opener is not attached to the door.

In case of emergency or power failure the door(s) shall operate independent of the pneumatic operator. Manual door action to be controlled by the normal operation of the pull side door closer.

Automatic door opening system shall allow for the future addition of a safety zone, if required, by adding the proper safety device. No change is required for control box or basic unit.

Automatic door opening system shall be adaptable to one way, two way, and two way bi-parting traffic. Simultaneous operation of double doors is standard.

Field adjustments on the pull side closer shall be restricted to back check, opening/closing force, sweep speed, latch speed and range setting. The opener air pressure adjustment for opening speed, force, and time delay set to customer's preference. No other adjustments shall be required in the field.

### **TECHNICAL SPECIFICATIONS:**

KO-600 model automatic door operator(s) shall be pneumatic, without gears, clutches or motors and not attached to the door(s).

The control system shall be microprocessor based, no micro switches; this insures maximum flexibility for end user. The system shall include built in diagnostics, on/off reset switch, and hold-open switches.

Automatic door operator(s) shall be mounted on the door frame head (1 1/2" wood or 1/4" steel minimum), not to the transom or building wall.

Automatic door operator(s) shall deliver opening force by Ultra-Power™ actuator arm and roller wheel.

Opening force shall be adjustable up to 200 pounds.

System shall utilize a variety of actuators including but not limited to push plates, motion detectors, pull cords, floor loops, card readers, optical scanners, photo eyes, and presence sensors. In applications where swing side obstructions or personnel may exist, optional presence sensors are strongly suggested to prohibit automatic opening.

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Door closing action shall be accomplished by the installation of a pull side door closer, such as the LCN 4011 or its acceptable equivalent, equipped with adjustable force, back and latch check action.

Control unit shall plug into standard 110 VAC outlet (or hardwired in as required by local code). Regardless of if unit is to be hardwired in or not, standard plug is provided for convenience of installers to test system with extension cord prior to power being hooked up. Activator(s) and safety device(s) shall wire into control unit.

Manufacturer will also provide (if applicable):

- Floor mounted powder coated doorstops for each door panel.
- For center hung doors, a head mounted powder coated doorstop for each opening.

**PRIOR TO INSTALLATION:**

Door(s) must be inspected to insure that they are in good operating condition and are free swinging.

Frame head must be adequate for mounting operator. Metal thickness of 1/4" or wood thickness of 1 1/2" (minimum) recommended.

Adequate air pressure and volume must be available. See plumbing section for pressure specifications and volume calculation method.

**INSTALLATION:**

Templates shall be provided for installation of operator, closer, and control unit.

Specific instructions shall be provided for installation of all equipment supplied. The units can be installed by a competent tradesman or maintenance person.

**ADJUSTMENT:**

Speed of door opening is governed by the air pressure adjustment system in the control unit.

Opening/closing hold open time delay can be adjusted from 1 to 99 seconds using the microprocessor system in the control unit.

Closer back check, opening/closing force, sweep speed, latch speed and range are controlled by adjustments on the outside of the closer.

**WARRANTY:**

The automatic door actuator(s) and control unit(s) shall carry a standard 1 year warranty.

The door closer(s) and electronic actuators or safety devices shall carry warranty as provided by their manufacturer(s).

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**OPTIONS:**

- Activating devices including but not limited to push plates, motion detectors, pull cords, floor loops, card readers, optical scanners, photo eyes, and presence sensors. In applications where swing side obstructions or personnel may exist, optional presence sensors are strongly suggested to prohibit automatic opening..
- T304 stainless steel bracket arm assemblies w/uniform #4 satin finish (pneumatic air cylinders are standard in stainless steel).
- When utilizing electromagnetic locks on doors consideration should be given on sizing and location issues as the door closers would be positioned on the pull side of the door and the opener arms would require 24" on the top of the door panel push side from the hinge edge of the door panel towards the opposite side.
- Custom controls including but not limited to interlock, airlock, explosion proof, etc.
- Air compressors for applications where air supply is not available
- Consult factory to determine appropriate control panel configuration when connecting to devices such as electric strikes, electromagnetic locks, card readers, time locks and push button key pads.
- Consult [www.DoorSensors.com](http://www.DoorSensors.com) for appropriate explosion proof environment activators and controls for application.
- Contact factory for other available custom options

**SERVICE:**

Factory shall maintain a toll free (800) telephone number, prominently displayed on the equipment, for factory direct service to end user.

**TO BE FURNISHED UNDER PLUMBING SECTION**

**AIR SUPPLY FOR AUTOMATIC DOOR OPERATORS:**

Air required shall be 70 PSI with sufficient capacity to furnish volume as required: (calculations are based on one pair of doors cycling six times per minute at 70 PSI-1 cylinder requires .073 CFM per cycle); first pair of doors requires 1 CFM and for each additional pair add 0.9 CFM.

If air supply is from air compressor, contact factory for capacity details.

**AIR SUPPLY LINES AND FITTINGS FOR AUTOMATIC DOOR OPERATORS:**

Air supply lines from air supply or compressor to each control unit shall be: 5 to 200; 1/2", 200' to 1000' 3/4" and reduced at terminus to 1/4" with 1/4" NPTF female fitting (plugged until final connection is made). Shut off valve can be included prior to reducing for service.

Recommended fittings, in listed order, upon existing compressor, shall be 1 shut off valve, 1-40 micron filter with gauge, site glass and auto-drain (equal to Watts #B12-04VJRCG) 1 coalescing filter with auto drain (equal to Watts #F701-04W3PT). Watts Fluid air Telephone: 207-439-9511.

Terminus of line to be 5" to right of control unit centerline and 8" (minimum) above the control unit.

Purge air supply prior to connecting to control unit or warranty may be voided.

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**TO BE FURNISHED UNDER ELECTRICAL SECTION**

**ELECTRICAL SUPPLY FOR AUTOMATIC DOOR OPERATORS:**

Junction box (4") 110/120 VAC, 60 HZ 2 AMP and/or outlet to be furnished at each control unit location, 10: to left of control unit centerline and 6: (minimum) above the control unit. Low voltage wiring from activating switches or devices to control box to terminate at same junction box, (or per local code).

**RETROFITTING IN EXISTING CENTER HUNG DOOR INSTALLATIONS**

**CAM LIFT HINGE CONVERSION FOR AUTOMATIC DOOR OPERATORS:**

When converting cam lift hinged door to automatic operation, the door or operator manufacturer shall provide a NO-RISE CONVERSION KIT with each operator. A steel filler tube or a fabricated or structural channel should then be utilized to fill approximate 2" gap on top of doors at header or extended bottom seal should be used on door panels.

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