OpenAir® GRD Series Electronic Damper Actuator
Designed for UL Listed Fire/Smoke and Smoke Control Dampers

Product Description
Step-by-step description for direct-coupled mounting of the OpenAir GRD fast-acting, two-position, rotary electronic damper actuator. These actuators are intended for control of approved fire and smoke leakage-rated HVAC dampers.

Product Numbers
- GRD121.1U
- GRD221.1U
- GRD321.1U
- GRD126.1U
- GRD226.1U
- GRD326.1U

Warning/Caution Notations

| WARNING | Personal injury or loss of life may occur if you do not follow a procedure as specified. |
| CAUTION | Equipment damage or loss of data may occur if you do not follow a procedure as specified. |

Prerequisites

WARNING: Do not open the actuator housing.

CAUTION: Continuous use at voltages above the recommended tolerances may damage the actuator.

Installation

1. Actuator
2. Hex key – 3 mm
3. Eyelet and 1/4-inch hex head screw

Required Tools
- 3 mm hex wrench (provided)
- No. 2 Phillips screwdriver
- Drill
- 1/4-inch (6.4 mm) hex driver
Figure 3. Shaft Length and Proper Shaft Adapter Location.

Figure 4. Fasten the Shaft Adapter to the Damper Shaft.

CAUTION:
Apply 35 in-lb to 53 in-lb (4 Nm to 6 Nm) maximum torque to the shaft fixation set screws. All four screws must be tightened.

Figure 5.
1. Insert the eyelet through housing ear.
2. Insert screw through eyelet and tighten using 1/4-inch (6.4 mm) hex driver.

Figure 6. Tighten Conduit Screws (No. 2 Phillips Screwdriver).
Wiring

**NOTE:** All wiring must conform to NEC and local codes and regulations.

### 24 Vac/dc

<table>
<thead>
<tr>
<th>Function</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td>Red</td>
</tr>
<tr>
<td>Neutral</td>
<td>Black</td>
</tr>
<tr>
<td>Ground</td>
<td>Green/Yellow</td>
</tr>
</tbody>
</table>

### 120 Vac

<table>
<thead>
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<th>Function</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>Black</td>
</tr>
<tr>
<td>Neutral</td>
<td>White</td>
</tr>
<tr>
<td>Ground</td>
<td>Green/Yellow</td>
</tr>
</tbody>
</table>

### 230 Vac

<table>
<thead>
<tr>
<th>Function</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line</td>
<td>Brown</td>
</tr>
<tr>
<td>Neutral</td>
<td>Blue</td>
</tr>
<tr>
<td>Ground</td>
<td>Green/Yellow</td>
</tr>
</tbody>
</table>

**CAUTION:**
The actuator must be wired with a 230 Vac line with respect to neutral. The ground lead must be connected for proper protection of the actuator. Any other connection, such as phase-to-phase, can damage the actuator.

### Fixed Dual End Switches.

<table>
<thead>
<tr>
<th>Switch</th>
<th>Wire Color</th>
<th>Switch Makes</th>
<th>Switch Breaks</th>
</tr>
</thead>
<tbody>
<tr>
<td>5°</td>
<td>Gray</td>
<td>&lt; 5°</td>
<td>&gt; 5°</td>
</tr>
<tr>
<td>85°</td>
<td>Yellow</td>
<td>&gt; 85°</td>
<td>&lt; 85°</td>
</tr>
</tbody>
</table>

**CAUTION:** Mixed switch operation to the switching outputs of both fixed dual end switches (5° and 85°) is not permitted.

Either AC line voltage from the same phase must be applied to all four outputs of the fixed dual end switches, or UL-Class 2 voltage must be applied to all four outputs.

**NOTE:** Both sets of contacts are open when actuator is between 5° and 85°.
Wiring, Continued

Electronic Fusible Link (EFL)

All GRD Electronic Damper Actuators are EFL-capable. EFLs are purchased separately. See Table 1.

Table 1. Electronic Fusible Link Product Numbers.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASK791.165</td>
<td>165°F (74°C)</td>
</tr>
<tr>
<td>ASK791.212</td>
<td>212°F (100°C)</td>
</tr>
<tr>
<td>ASK791.250</td>
<td>250°F (121°C)</td>
</tr>
<tr>
<td>ASK791.350</td>
<td>350°F (177°C)</td>
</tr>
</tbody>
</table>

NOTE:
All EFLs are low voltage and do not need to be wired in conduit.

To install an EFL, do the following:

1. Remove and discard the plug marked EFL.

2. Using a small, needle-nose pliers or flat-blade screwdriver, remove the jumper.

3. Insert the quick connect from the EFL.

NOTE:
If you are not using an EFL, do not modify the actuator. An EFL or jumper must be installed for actuator to work properly.

Maintenance

CAUTION:
The GRD actuator does not require any periodic cycling to function properly as an integral part of an active smoke control damper system. The National Fire Alarm Code NFPA 72 states that all life safety systems are to be functionally checked at least annually. Check the smoke control damper/actuator every time you functionally check your smoke detectors, emergency lights, and/or power generators for operation.
Dimensions

Figure 7. Dimensions of the GRD OpenAir Actuator in Inches (mm).

References

Technical Instructions A6V11486812
OpenAir® GRD Series Electronic Damper
Actuator UL Listed Fire/Smoke and Smoke
Control Dampers

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