

Is “universal” better?

Are “generic” damper actuators a better solution or a bigger headache?

Overview

Damper actuator development has taken a new turn with the introduction of the “generic” or “universal” damper actuator. Built for a wide range of applications, this universal damper actuator is generic until it is programmed to specific operating parameters.

This paper addresses the technical differences between a universal damper actuator, a conventional damper actuator, and reviews the impact on labor costs from selection through commissioning.

Product Selection

Conventional damper actuators are designed and built to perform a specific control function based on standard, proven algorithms. To order a conventional damper actuator, you simply select the damper actuator with the position, speed, torque and options needed based on the job specifications. At the factory, the damper actuator is assembled and tested. Upon delivery to the job, the damper actuator is ready to install. Siemens damper actuators require no special tools to install.

With a universal damper actuator, you have two options: Have the programming pre-defined and configured at the factory or have it shipped as a “generic” damper actuator that requires configuration and programming prior to installation. The first step in ordering the actuator is completing a complex, multi-step form that defines the desired control parameters. For each type of actuator, a separate form must be completed. At the factory, the universal damper actuator is built based on the parameters listed on the form. Tagging is required to clearly label control parameters so that the actuator is identifiable at the job site.

Pricing for a conventional damper actuator is established and readily available. Pricing for the universal damper actuator varies depending on the options selected with an added cost for the required tagging. As a rule a thumb, the universal damper actuator can typically cost 20-

30% more than a conventional damper actuator with the same control parameters.

Another important issue about using the universal actuator with a Building Management System (BMS) is “control redundancy.” Control redundancy is an overlap in functionality between the device and the system that is not required or used. Ideally, the damper actuator is engineered to optimize a specific application and designed to be an integral part of a BMS. In many cases, the universal damper actuator overlaps with the BMS and the functionality is redundant and never used. In other words, you are paying for additional functionality that has no return on investment.

On the Job: Installation, Start up and Commissioning

While the convenience of having a generic damper actuator on hand is appealing, the reality is that it requires more technical expertise to support. A universal damper actuator needs to be programmed prior to installation using a special programming tool. Additional training or technical expertise is required to use the tool.

Depending on the configuration of the universal damper actuator, the wiring designations are not standardized. This adds complexity to the installation process and increases the opportunity for errors. Non-standard wiring configurations can also cause confusion or errors when maintenance is required. At the start up and commissioning phase, if there are problems with the universal actuator, there is no way to validate that the programming is correct. Mistakes in the ordering process could result in the wrong damper actuator being delivered and installed. Your only option is to order another actuator or reprogram the actuator in the field. Both delay the installation, and the latter requires the knowledge and tool to perform the programming.

Let's review point by point from damper actuator selection through installation:

Universal Actuator	Siemens Actuator
23-point parameter checklist for each product	Order product needed per specification
Technology entanglement or overload of features	Specific product parameters
Tagging required at an additional cost	No tagging required, clearly labeled and verified
May need to be configured and programmed	Ready to install
Special programming tool required	No programming required/ No special tools required
Wiring designations can change	Standardized wiring configurations
Cost varies based on configuration	Established cost
No way to validate programming	Easy to validate functionality

Summary

When making your decision, watch out for “technology entanglement” or an overload of unneeded features resulting in control redundancy between the damper actuator and the BMS. Remember, most controlled devices such as a damper actuator are designed to be integral part of the control package, and not be the package itself. Job cost impacts such as labor should also be closely reviewed. In this comparison, additional labor was required to specify, place the order and install the universal damper actuator. More technical expertise overall was required to support the universal damper actuator from ordering through commissioning.

When comparing damper actuators, make sure that features that impact operation and installation are not overlooked such as a self-centering shaft actuator. Other impacts on labor such as factory-installed end switches versus field installation should also be taken into consideration.

Make sure to review these selection guidelines:

- Damper actuator features
- Quality of damper actuator
- Ease of ordering
- Ease of installation
- Cost of installation
- Start up and commissioning costs
- Maintenance costs
- Manufacturer support of damper actuator
- Price

HVAC Products

Siemens Building Technologies, Inc.

HVAC Products
1000 Deerfield Parkway
Buffalo Grove, Illinois 60089-4513
USA
(847) 215-1000

Siemens Building Technologies, Ltd.

HVAC Products
2 Kenview Boulevard
Brampton, Ontario L6T 5E4
Canada
(905) 799-9937