## Low Pressure Drop Air Filters

### Author

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### Description

Filters are commonly used to remove particulate from the airstream in an HVAC system. Because of their design, filters commonly introduce a pressure drop of 0.5-2.0 inches of water that the fan must overcome to move the air. Low pressure drop filters can eliminate much of this pressure drop, saving fan energy.

### Modeler Description

For each AirLoop, find the constant or variable volume fan and reduce the pressure drop by the specified amount. The default reduction is 0.5 inches of water. Note that this measure does not impact zone HVAC equipment or unitary equipment on an airloop.

### Use Case Types

Retrofit, New Construction

### Arguments

No arguments

### Initial Condition Message

### Final Condition Message

The number of airloops where pressure drop was reduced.

### Not Applicable Messages

Not applicable if no airloops with constant or variable speed fans were found in the model.

### Warning Messages

Warn if the requested pressure drop reduction was greater than the initial pressure drop.

### Information Messages

List the before and after pressure drop for each fan that was modified.

### Error Messages

Error if a reduction of more than 4 inches of water is requested.

### Code Outline

* Find all Airloops
  + Find the Fan:ConstantVolume or Fan:VariableVolume
  + Reduce the pressure drop by the specified amount

**This measure applies to:**

1. Large Office
2. Medium Office
3. Primary School
4. Secondary School
5. Large Hotel
6. Hospital
7. Small Office
8. Stand-Alone Retail
9. Strip Mall
10. Supermarket
11. Quick Service Restaurant
12. Full Service Restaurant
13. Small Hotel
14. Outpatient Healthcare
15. Warehouse
16. Midrise Apartment

### References

1. 2012 ASHRAE Handbook – HVAC Systems and Equipment, Chapter 29, Filter Types and Performance.