



ADDENDA

**ASHRAE Addendum g to
ASHRAE Guideline 36-2018**

High Performance Sequences of Operation for HVAC Systems

Approved by ASHRAE on January 27, 2020.

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FOREWORD

This addendum makes the following changes:

- a. Removes option to make all alarms configurable as latching or nonlatching.
- b. Removes generic entry delays. Moved entry delays to each alarm instance.
- c. Updates post-exit suppression timer initiation point from alarm entry to alarm exit.
- d. Removes resets for exit deadband and postexit suppression delays upon alarm acknowledgment.
- e. Reduces alarm levels for zone high/low zone temperature alarms from Levels 2 and 3 to Levels 3 and 4.
- f. Reduces alarm levels for low primary airflow alarms from Levels 2 and 3 to Levels 3 and 4.
- g. Reduces alarm levels for low discharge air temperature alarms from Levels 2 and 3 to Levels 3 and 4.
- h. Extends VAV airflow sensor calibration alarm delay from 10 to 30 minutes; add an additional constant value threshold as a qualifier to initiate the alarm.
- i. Adds an additional constant-value threshold as a qualifier to initiate leaking damper alarms.
- j. Extends VAV low airflow alarm delays from 5 to 10 minutes.
- k. Adds filter high-limit differential pressure at design airflow (DP100) to the AHU sections for information provided by the designer.
- l. Adds additional qualifiers for filter differential pressure alarms to reduce nuisance alarms.
- m. Adds filter differential pressure point and alarm to single-zone VAV air-handling units.

This addendum addresses the following issues:

- a. Provides direction on how to determine the filter high-limit differential pressure at design airflow, DP100.
- b. Reduces the number of alarms that are classified as critical (Level 2).
- c. Reduces the amount of required programming for each individual alarm to help ensure that the Guideline 36 sequences can be programmed into commodity control hardware.
- d. Reduces nuisance alarms.

Note: In this addendum, changes to the current standard are indicated in the text by underlining (for additions) and ~~strike through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

Addendum g to Guideline 36-2018

Add Section 3.1.4.4 as shown (I-P and SI).

3.1.4.4 Filter High-Limit Differential Pressure at Design Airflow, DP100

The filter high-limit differential pressure threshold shall be determined as the maximum recommended filter pressure drop at design airflow by the filter manufacturer.

Add Section 3.1.5.2 as shown (I-P and SI).

3.1.5.2 Filter High-Limit Differential Pressure at Design Airflow, DP100

The filter high-limit differential pressure threshold shall be determined as the maximum recommended filter pressure drop at design airflow by the filter manufacturer.

Add Section 3.1.6.3 as shown (I-P and SI).

3.1.6.3 Filter High-Limit Differential Pressure at Design Airflow, DP100

The filter high-limit differential pressure threshold shall be determined as the maximum recommended filter pressure drop at design airflow by the filter manufacturer.

Revise Section 4.8 as shown (I-P and SI). The remainder of the table is unchanged.

4.8 Single-Zone VAV Air-Handling Unit

Required?	Description	Type	Device
[...]			
O	Mixed air temperature	AI	Averaging temperature sensor
O	Return air temperature	AI	Duct temperature sensor
<u>O</u>	<u>Filter pressure drop</u>	<u>AI</u>	<u>Differential pressure transducer across filter</u>
[...]			

Delete Section 5.1.12.3 as shown (I-P and SI).

~~5.1.12.3 Entry Delays.~~ All alarms shall have an adjustable delay time such that the alarm is not triggered unless the alarm condition is true for the delay time. Default entry delays:

- a. ~~Level 1 alarms: 1 second~~
- b. ~~Level 2 alarms: 10 seconds~~
- c. ~~Level 3 alarms: 1 minute~~
- d. ~~Level 4 alarms: 5 minutes~~

Revise Section 5.1.12.5 as shown (I-P and SI).

~~5.1.12.5 Any alarm can be configured as latching or nonlatching.~~ A latching alarm requires acknowledgment from the operators before it can return to normal, even if the exit deadband has been met. A nonlatching alarm does not require acknowledgment. Default latching status is as follows:

- a. Level 1 alarms: latching
- b. Level 2 alarms: latching
- c. Level 3 alarms: nonlatching
- d. Level 4 alarms: nonlatching

Revise Section 5.1.12.6 as shown (I-P and SI).

~~5.1.12.6 Postexit Suppression Period.~~ To limit alarms, any alarm may have an adjustable suppression period such that, if once the alarm is triggered exited, its post-exit suppression timer is triggered and the alarm may not trigger again until the post-exit suppression timer has expired. Default suppression periods are as follows:

- a. Level 1 alarms: 0 minutes
- b. Level 2 alarms: 5 minutes
- c. Level 3 alarms: 24 hours
- d. Level 4 alarms: 7 days

Delete Section 5.1.12.7 shown (I-P and SI).

~~5.1.12.7 For both latching and nonlatching alarms, the operators may acknowledge the alarm. Acknowledging an alarm clears the alarm, the exit deadband, and suppression period. A device can go right back into alarm as soon as the entry delay elapses.~~

Revise Section 5.3.6.1 as shown (I-P and SI).

5.3.6.1 Zone Temperature Alarms

- a. High-temperature alarm
 1. If the zone is 2°C (3°F) above cooling set point for 10 minutes, generate a Level 3 alarm.
 2. If the zone is 3°C (5°F) above cooling set point for 10 minutes, generate a Level 2 alarm.
- b. Low-temperature alarm
 1. If the zone is 2°C (3°F) below heating set point for 10 minutes, generate a Level 3 alarm.

2. If the zone is 3°C (5°F) below heating set point for 10 minutes, generate a Level 23 alarm.

Revise Section 5.5.7 as shown (I-P and SI).

5.5.7 Alarms

5.5.7.1 Low Airflow

- a. If the measured airflow is less than 70% of set point for 5 minutes while set point is greater than zero, generate a Level 34 alarm.
- b. If the measured airflow is less than 50% of set point for 5 minutes while set point is greater than zero, generate a Level 23 alarm.
- c. If a zone has an importance multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.5.7.2 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for 10 minutes, and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.5.7.3 Leaking Damper. If the damper position is 0%, and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the zone is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.6.6 as shown (I-P and SI).

5.6.6 Alarms

5.6.6.1 Low Airflow

- a. If the measured airflow is less than 70% of set point for ~~5-10~~ minutes while set point is greater than zero, generate a Level 34 alarm.
- b. If the measured airflow is less than 50% of set point for ~~5-10~~ minutes while set point is greater than zero, generate a Level 23 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.6.6.2 Low Discharge Air Temperature

- a. If heating hot-water plant is proven ON, and the DAT is 8.3°C (15°F) less than set point for 10 minutes, generate a Level 34 alarm.
- b. If heating hot-water plant is proven ON, and the DAT is 17°C (30°F) less than set point for 10 minutes, generate a Level 23 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its hot-water reset T&R control loop, low-DAT alarms shall be suppressed for that zone.

5.6.6.3 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for 10 minutes, and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.6.6.4 Leaking Damper. If the damper position is 0%, and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the zone is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

5.6.6.5 Leaking Valve. If the valve position is 0% for 15 minutes, DAT is above AHU SAT by 3°C (5°F), and the fan serving the zone is proven ON, generate a Level 4 alarm.

Revise Section 5.7.6 as shown (I-P and SI).

5.7.6 Alarms

5.7.6.1 Low Primary Airflow

- a. If the measured airflow is less than 70% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~3~~4 alarm.
- b. If the measured airflow is less than 50% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.7.6.2 Low Discharge Air Temperature

- a. If heating hot-water plant is proven ON and the discharge air temperature is ~~8.3~~8.3°C (15°F) less than set point for 10 minutes, generate a Level ~~3~~4 alarm.
- b. If heating hot-water plant is proven ON and the discharge air temperature is 17°C (30°F) less than set point for 10 minutes, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its hot-water reset T&R control loop, low discharge air temperature alarms shall be suppressed for that zone.

5.7.6.3 Fan alarm is indicated by the status input being different from the output command after a period of 15 seconds after a change in output status.

- a. Commanded ON, status OFF: Level 2
- b. Commanded OFF, status ON: Level 4

5.7.6.4 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.7.6.5 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

5.7.6.6 Leaking Valve. If the valve position is 0% for 15 minutes, discharge air temperature is above AHU SAT by 3°C (5°F), and the fan serving the zone is proven ON, generate a Level 4 alarm.

Revise Section 5.8.6 as shown (I-P and SI).

5.8.6 Alarms

5.8.6.1 Low Primary Airflow

- a. If the measured airflow is less than 70% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~3~~4 alarm.
- b. If the measured airflow is less than 50% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.8.6.2 Low Discharge Air Temperature

- a. If heating hot-water plant is proven ON and the discharge air temperature is 8.3°C (15°F) less than set point for 10 minutes, generate a Level ~~3~~4 alarm.
- b. If heating hot-water plant is proven ON and the discharge air temperature is 17°C (30°F) less than set point for 10 minutes, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its hot-water reset T&R control loop, low discharge air temperature alarms shall be suppressed for that zone.

5.8.6.3 Fan alarm is indicated by the status input being different from the output command after a period of 15 seconds after a change in output status.

- a. Commanded ON, status OFF: Level 2
- b. Commanded OFF, status ON: Level 4

5.8.6.4 Airflow Sensor Calibration. If the fan serving the zone ~~has been is~~ ON for ~~10 minutes~~ and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.8.6.5 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

5.8.6.6 Leaking Valve. If the valve position is 0% for 15 minutes, discharge air temperature is above AHU SAT by 3°C (5°F), and the fan serving the zone is proven ON, generate a Level 4 alarm.

Revise Section 5.9.6 as shown (I-P and SI).

5.9.6 Alarms

5.9.6.1 Low Primary Airflow

- If the measured airflow is less than 70% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~3~~4 alarm.
- If the measured airflow is less than 50% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~2~~3 alarm.
- If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.9.6.2 Low Discharge Air Temperature

- If heating hot-water plant is proven ON and the discharge air temperature is 8.3°C (15°F) less than set point for 10 minutes, generate a Level ~~3~~4 alarm.
- If heating hot-water plant is proven ON and the discharge air temperature is 17°C (30°F) less than set point for 10 minutes, generate a Level ~~2~~3 alarm.
- If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its hot-water reset T&R control loop, low discharge air temperature alarms shall be suppressed for that zone.

5.9.6.3 Fan alarm is indicated by the status input being different from the output command after a period of 15 seconds after a change in output status.

- Commanded ON, status OFF: Level 2
- Commanded OFF, status ON: Level 4

5.9.6.4 Airflow Sensor Calibration. If the fan serving the zone ~~has been is~~ OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.9.6.5 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

5.9.6.6 Leaking Valve. If the valve position is 0% for 15 minutes, discharge air temperature is above AHU SAT by 3°C (5°F), and the fan serving the zone is proven ON, generate a Level 4 alarm.

Revise Section 5.10.6 as shown (I-P and SI).

5.10.6 Alarms

5.10.6.1 Low Airflow

- If the measured airflow is less than 70% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~3~~4 alarm.

- b. If the measured airflow is less than 50% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.10.6.2 Low Discharge Air Temperature

- a. If heating hot-water plant is proven ON and the discharge air temperature is 8.3°C (15°F) less than set point for 10 minutes, generate a Level ~~3~~4 alarm.
- b. If heating hot-water plant is proven ON and the discharge air temperature is 17°C (30°F) less than set point for 10 minutes, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its hot-water reset T&R control loop, low discharge air temperature alarms shall be suppressed for that zone.

5.10.6.3 Fan alarm is indicated by the status input being different from the output command after a period of 15 seconds after a change in output status.

- a. Commanded ON, status OFF: Level 2
- b. Commanded OFF, status ON: Level 4

5.10.6.4 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.10.6.5 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

5.10.6.6 Leaking Valve. If the valve position is 0% for 15 minutes, discharge air temperature is above AHU SAT by 3°C (5°F), and the fan serving the zone is proven ON, generate a Level 4 alarm.

Revise Section 5.11.6 as shown (I-P and SI).

5.11.6 Alarms

5.11.6.1 Low Airflow

- a. If the measured airflow is less than 70% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~3~~4 alarm.
- b. If the measured airflow is less than 50% of set point for ~~5~~10 minutes while set point is greater than zero, generate a Level ~~2~~3 alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.11.6.2 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.11.6.3 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.12.6 as shown (I-P and SI).

5.12.6 Alarms

5.12.6.1 Low Airflow

- a. If the measured airflow is less than 70% of set point for 5 minutes while set point is greater than zero, generate a Level ~~3~~4 alarm.

- b. If the measured airflow is less than 50% of set point for 5 minutes while set point is greater than zero, generate a Level ~~2~~₃ alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.12.6.2 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.12.6.3 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.13.6 as shown (I-P and SI).

5.13.6 Alarms

5.13.6.1 Low Airflow

- a. If the measured airflow is less than 70% of set point for 5 minutes while set point is greater than zero, generate a Level ~~3~~₄ alarm.
- b. If the measured airflow is less than 50% of set point for 5 minutes while set point is greater than zero, generate a Level ~~2~~₃ alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.13.6.2 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.13.6.3 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.14.6 as shown (I-P and SI).

5.14.6 Alarms

5.14.6.1 Low Airflow

- a. If the measured airflow is less than 70% of set point for ~~5~~₁₀ minutes while set point is greater than zero, generate a Level ~~3~~₄ alarm.
- b. If the measured airflow is less than 50% of set point for ~~5~~₁₀ minutes while set point is greater than zero, generate a Level ~~2~~₃ alarm.
- c. If a zone has an Importance-Multiplier of 0 (see Section 5.1.14.2[a][1]) for its static pressure reset T&R control loop, low airflow alarms shall be suppressed for that zone.

5.14.6.2 Airflow Sensor Calibration. If the fan serving the zone ~~has been~~ is OFF for ~~10 minutes~~, and airflow sensor reading is above the larger of 10% of the maximum airflow set point or 50 cfm for 30 minutes, generate a Level 3 alarm.

5.14.6.3 Leaking Damper. If the damper position is 0% and airflow sensor reading is above the larger of 10% of the cooling maximum airflow set point or 50 cfm for 10 minutes while the fan serving the damper is proven ON, generate a Level 4 alarm.

The constant-value thresholds for the airflow sensor calibration and leaking damper alarms are a function of the transducer and A/D converter used to measure airflow. The value used should be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.16.13.3 as shown (I-P and SI).

5.16.13.3 Filter pressure drop exceeds the larger of the alarm limit or 12.5 Pa (0.05 in. of water) for 10 minutes when airflow (expressed as a percentage of design airflow or design speed if total airflow is not known) exceeds 20%: Level 4. The alarm limit shall vary with total airflow (if available; use fan speed if total airflow is not known) as follows:

$$DP_x = DP_{100}(x)^{1.4}$$

where DP₁₀₀ is the high-limit pressure drop at design airflow (determine limit from filter manufacturer) and DP_x is the high limit at the current airflow rate x (expressed as a fraction). For instance, the set point at 50% of design airflow would be (0.5)^{1.4}, or 38% of the design high-limit pressure drop. See Section 3.1.4.4 for DP₁₀₀.

The constant-value threshold for the filter pressure drop alarm is a function of the transducer and A/D converter used to measure filter differential pressure. The value used shall be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.17.3.3 as shown (I-P and SI).

5.17.3.3 Filter pressure drop exceeds the larger of the alarm limit or 12.5 Pa (0.05 in. of water) for 10 minutes when airflow (expressed as a percentage of design airflow or design speed if total airflow is not known) exceeds 20%: Level 4. The alarm limit shall vary with total airflow (if available; use fan speed if total airflow is not known) as follows:

$$DP_x = DP_{100}(x)^{1.4}$$

where DP₁₀₀ is the high-limit pressure drop at design airflow (determine limit from filter manufacturer) and DP_x is the high-limit at airflow rate x (expressed as a fraction). For instance, the set point at 50% of design airflow would be (0.5)^{1.4}, or 38% of the design high limit pressure drop. See Section 3.1.5.2 for DP₁₀₀.

The constant-value threshold for the filter pressure drop alarm is a function of the transducer and A/D converter used to measure filter differential pressure. The value used shall be determined as the minimum accuracy of the transducer and A/D converter combination.

Revise Section 5.17.3.4 as shown (I-P and SI).

5.17.3.4 High building pressure [more than 25 Pa (0.10 in. of water)] for 5 minutes: Level 3

Revise Section 5.17.3.5 as shown (I-P and SI).

5.17.3.5 Low building pressure [less than 25 Pa (0.10 in. of water), i.e., negative] for 5 minutes: Level 3

Revise Section 5.18.12 as shown (I-P and SI).

5.18.12 Standard Alarms

Add Section 5.18.12.3 as shown (I-P and SI).

5.18.12.3 Filter pressure drop exceeds the larger of the alarm limit or 12.5 Pa (0.05 in. of water) for 10 minutes when fan speed exceeds 20% of MaxCoolSpeed: Level 4. The alarm limit shall vary with fan speed as follows:

$$DP_x = DP_{100}(x)^{1.4}$$

where DP₁₀₀ is the high-limit pressure drop at design airflow (determine limit from filter manufacturer) and DP_x is the high-limit at the current fan speed x (expressed as a fraction). For instance, the set point at 50% of design speed would be (0.5)^{1.4}, or 38% of the design high-limit pressure drop. See 3.2.2.1 for MaxCoolSpeed and 3.1.6.3 for DP₁₀₀.

The constant-value threshold for the filter pressure drop alarm is a function of the transducer and A/D converter used to measure filter differential pressure. The value used shall be determined as the minimum accuracy of the transducer and A/D converter combination.

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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About ASHRAE

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards, and connect on LinkedIn, Facebook, Twitter, and YouTube.

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