

*(Effective until July 1, 2020)*

**WAC 51-11C-403246 Section C403.2.4.7—Economizer fault detection and Section C403.2.4.8—Combustion heating equipment controls.**

**C403.2.4.7 Economizer fault detection and diagnostics (FDD).** Air-cooled unitary direct-expansion units with a cooling capacity of 54,000 Btu/h or greater listed in Tables C403.2.3(1) through C403.2.3(3) that are equipped with an economizer in accordance with Section C403.3 shall include a fault detection and diagnostics (FDD) system complying with the following:

1. The following temperature sensors shall be permanently installed to monitor system operation:
  - 1.1. Outside air.
  - 1.2. Supply air.
  - 1.3. Return air.
2. Temperature sensors shall have an accuracy of  $\pm 2^{\circ}\text{F}$  ( $1.1^{\circ}\text{C}$ ) over the range of  $40^{\circ}\text{F}$  to  $80^{\circ}\text{F}$  ( $4^{\circ}\text{C}$  to  $26.7^{\circ}\text{C}$ ).
3. Refrigerant pressure sensors, where used, shall have an accuracy of  $\pm 3$  percent of full scale.
4. The unit controller shall be configured to provide system status by indicating the following:
  - 4.1. Free cooling available.
  - 4.2. Economizer enabled.
  - 4.3. Compressor enabled.
  - 4.4. Heating enabled.
  - 4.5. Mixed air low limit cycle active.
  - 4.6. The current value of each sensor.
5. The unit controller shall be capable of manually initiating each operating mode so that the operation of compressors, economizers, fans and the heating system can be independently tested and verified.
6. The unit shall be configured to report faults to a fault management application accessible by day-to-day operating or service personnel or annunciated locally on zone thermostats.
7. The FDD system shall be configured to detect the following faults:
  - 7.1. Air temperature sensor failure/fault.
  - 7.2. Not economizing when the unit should be economizing.
  - 7.3. Economizing when the unit should not be economizing.
  - 7.4. Damper not modulating.
  - 7.5. Excess outdoor air.

**C403.2.4.8 Combustion heating equipment controls.** Combustion heating equipment with a capacity over 225,000 Btu/h shall have modulating or staged combustion control.

EXCEPTIONS:     1. Boilers.  
                  2. Radiant heaters.

[Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-403246, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-403246, filed 2/1/13, effective 7/1/13.]

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**WAC 51-11C-403246 Reserved.**

[Statutory Authority: RCW 19.27A.020, 19.27A.025, 19.27A.160 and chapter 19.27 RCW. WSR 19-24-040, § 51-11C-403246, filed 11/26/19, effective 7/1/20. Statutory Authority: RCW 19.27A.025, 19.27A.160, and 19.27.074. WSR 16-03-072, § 51-11C-403246, filed 1/19/16, effective 7/1/16. Statutory Authority: RCW 19.27A.020, 19.27A.025 and chapters 19.27 and 34.05 RCW. WSR 13-04-056, § 51-11C-403246, filed 2/1/13, effective 7/1/13.]