

# DUCT DETECTOR UNIT REQUIREMENTS– NFPA 90A



## WHERE IS SUPPLY-SIDE DUCT-DETECTION REQUIRED?

Scenario	Does Unit Have a Fan?	Does Unit Exhaust-Only?	Connected System Capacity?	Duct-Detection Required for Unit?	Shutdown of Unit Required?	Reasoning	Where?	Basis
1	No			No	No	There is no fan to shutdown; system does not an “air distribution system”.	-	NFPA 90A 6.4.2.1
2	Yes	Yes	Any	No	No	Not required for fan units whose sole function is to remove air from inside building.	-	NFPA 90A 6.4.2.3
3	Yes	No	≤ 2,000 CFM	No	No	Fan is too small to require shutdown.	-	NFPA 90A 6.4.2.1(1), (2)
4	Yes	No	> 2,000 CFM	Yes	Yes	System is large enough to warrant smoke detection	Supply <sup>1</sup>	NFPA 90A 6.4.2.1(1)

## WHERE IS SUPPLY-SIDE DUCT-DETECTION REQUIRED?

Scenario	Multi-Story, Common Return?	Return System Capacity?	Exhaust Only?	Entire Area Covered By Area Smoke Detection?	Duct-Detection Required for Each Unit?	Shutdown of Unit Required?	Reasoning	Where	Basis
1	No	-	-	-	No	No	Return-side detection not required for single story or separate floor returns.	-	NFPA 90A 6.4.2.1(2)
2	Yes	≤ 2,000 CFM	-	-	No	No	Return is too small to justify shutdown.	-	NFPA 90A 6.4.2.1(2)
3	Yes	> 2,000 CFM	Yes	-	No	No	Not required for fan units whose sole function is to remove air from inside building.	-	NFPA 90A 6.4.2.3
4	Yes	> 2,000 CFM	No	Yes	No	Yes	Area detection can be used to shutdown units.	Area	
5	Yes	> 2,000 CFM	No	No	Yes	Yes	Common return size justifies shutdown.	Return <sup>2</sup>	NFPA 90A 6.4.2.1(2)

<sup>1</sup> Installed “downstream of the air filters and ahead of any branch connections in air supply systems”.

<sup>2</sup> Installed “at each story, prior to the connection to a common return and prior to any recirculation or fresh air inlet connections”