INFORMATION SHEET

THERMOCOUPLE AND LOW TEMPERATURE SHUTOFF VALVE

How do the valve and thermocouple work?

Catalytic heaters require 3 things to work: Fuel, oxygen and a 250°
catalyst. The thermocouple senses the temperature of the catalyst
and holds the valve in the open position as long as the catalyst
maintains a temperature of 250° F. If the thermocouple senses that
the catalyst has dropped below that temperature, the valve will
close and the heater will not operate until it is manually restarted
with the electric heating element.

*What's the **downside** of adding the valve and thermocouple to catalytic heaters?*

The downside to adding the valve and thermocouple has to do with
the reliability of the heater. Catalytic heaters are typically
considered very durable and simple products. When more
components are added to the product, more places for potential failures are added as well. The
vast majority of the time when a customer is having trouble with a catalytic heater, the problem is
the valve and thermocouple.

*What's the **benefit** of adding the valve and thermocouple to catalytic heaters?*

From a safety standpoint, the valve and thermocouple eliminate the risk of venting natural gas
through the face of the heater. The important thing to consider in different applications is how much
gas is going to be potentially vented. This is easy to determine based on the BTU ratings of the
heaters. The BTU rating for the heaters is on the label on the back of the heater. See table 1 for
common enclosures and potential gas venting. It's important to understand the risk that is being
mitigated. The question to ask is whether or not that potential amount of vented gas is a concern
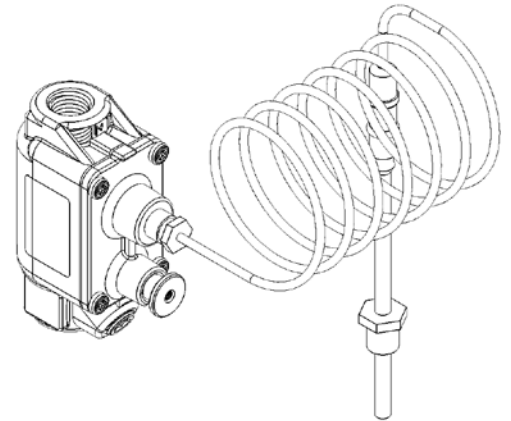worth the added expense and time of adding the valve and thermocouple.

Table 1
Potential venting prevented by adding low temperature shutoff valve

Heater Size	Number of Heaters	Potential Venting
3000 BTU	1	3 SCFH
3000 BTU	2	6 SCFH
2667 BTU	1	2.6 SCFH
2667 BTU	2	5.2 SCFH
6000 BTU	1	6 SCFH
2667 BTU	1	2.6 SCFH