

WHITE PAPER: Determining Temperature Class for Electric Process Heaters

By: - April 20, 2020

Summary


Electric process heaters that interface with flammable materials in explosive environments need to be properly evaluated to protect the equipment against catastrophic failures. A temperature class requirement will be provided by the user based on the explosive gases that may be present in the installation area.

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industry: energy processes
authors: scott boehmer & mike bange



subject: Determining Temperature Class for Electric Process Heaters

summary: Electric process heaters that interface with flammable materials in explosive environments need to be properly evaluated to protect the equipment against catastrophic failures. There are several possible protection methods that may be employed to protect from a potential explosion. A temperature class requirement will be provided by the user based on the explosive gases that may be present in the installation area. The maximum surface temperature of the process heater must then be evaluated to assure compliance.

Temperature classes that are based on the maximum operating temperature for heaters prescribe the level of safeguards. Determining the temperature class for a specific electric process heater is unique compared to other electrical components installed in classified locations. The temperature code, or T-code, is highly dependent on the process conditions of the heating application. Global Temperature Classes/Codes are broken down into the following various levels.

codes:

Zones	Divisions	Temperature
Temperature Class IECEX, ATEX, U.S., CA	Temperature Code U.S., CA	Maximum Surface Temperature (°C)
T1	T1	450
	T2	300
T2	T2A	280
	T2B	260
	T2C	230
	T2D	215
	T3	200
T3	T3A	180
	T3B	165
	T3C	160
T4	T4	135
T4	T4A	120
T5	T5	100
T6	T6	85

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