



APPLICATION NOTE

Temperature Monitoring and Automatic Change
over system

ABSTRACT

The Application note talks about how redundancy was achieved for control and monitoring in a stability Chamber used for testing life of insulation materials

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Change-over of control and monitoring of Stability Chamber

Key Problem Solved

Automatic Change Over for redundancy

The Customer was using a hardware based PID Controller to maintain the temperature inside a stability chamber. In general, this setup was sufficient in the normal scenario. But with insulation testing, in case of heater failure or PID controller failure an additional set of controller and heater was provided to the chamber. The customer required an automatic change over in case of failure to meet the temperature or failure of communication to the backup system as the chamber could not be opened.

Setpoint Changes

Ability to change the setpoint of PID controller to change the temperature profile

Remote Monitoring

The customer needed a remote monitoring system which could monitor the system and allow for changing of setpoint from cloud/internet

Data Logging/Reporting

Maintaining 6 months of data for temperature of stability chambers

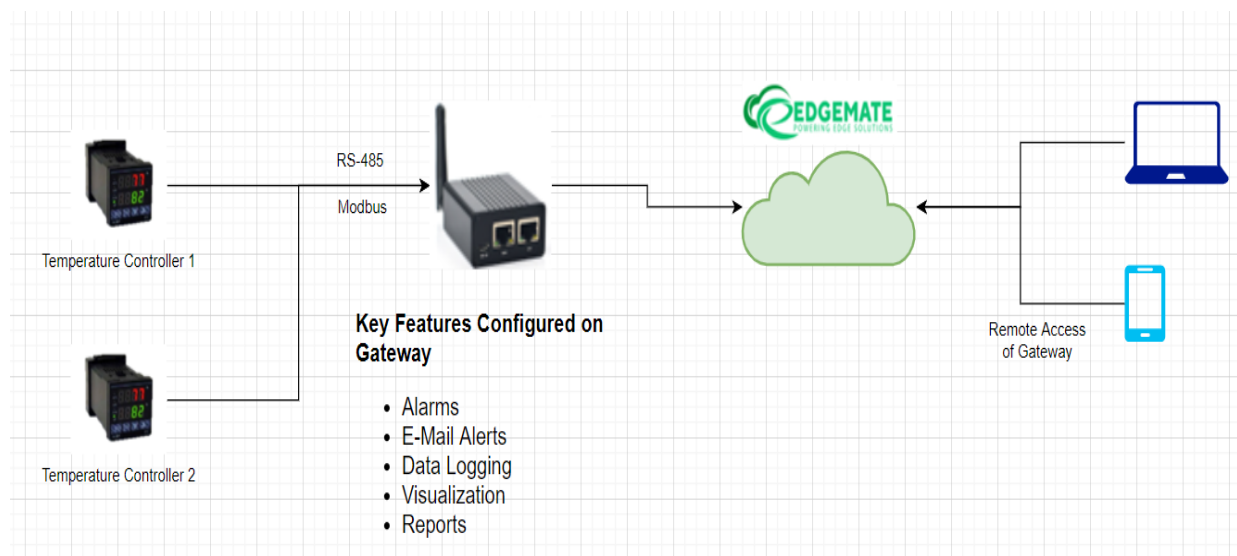
Email and alerts

The customer wanted the alert / notification in case of temperature exceeding the setpoints, failure to meet temperature requirement or change over when communication fails.

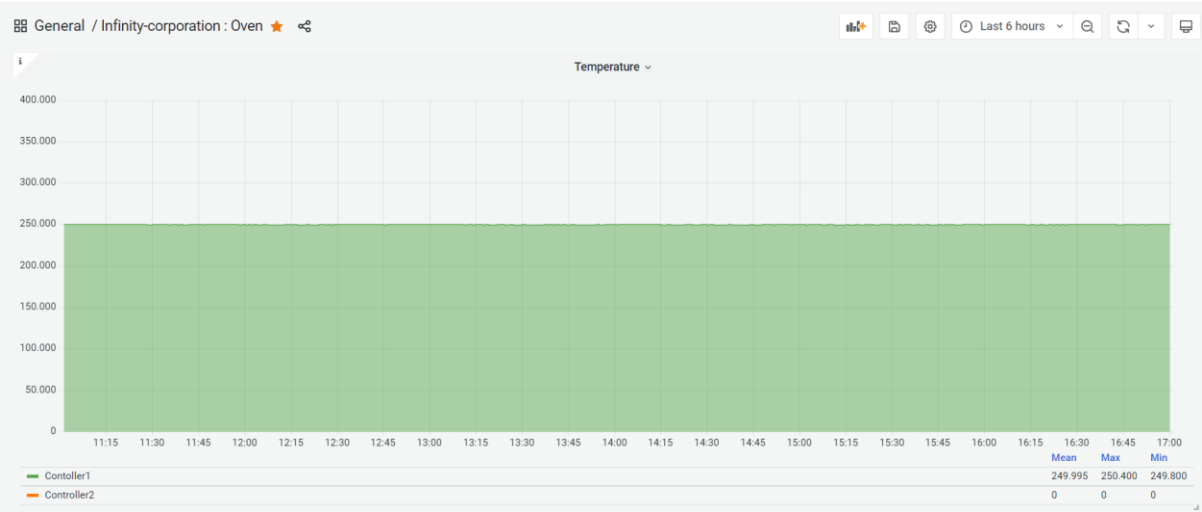
Remote Changes

Ability to change the alert algorithms remotely.

Solution Architecture



Application screenshots



SetPoint-Controller1: 250

SetPoint-Controller2: 250

Reset Machine

Start Controller 1 | Start Fail Safe Mode

Setpoint Settings

Setpoint Updated | Start Fail Safe Mode

Controller Status

Controller 1 Status: 0

Controller 2 Status: 1

Alerts

No alerts

testAlert | 4 rules | [edit] [lock]

State	Name	Health	Summary
Normal	Communication Failed Controller 1	ok	Controller 1 Failed Communication : please check the communication cable is properly connected, and check if device is communicating over RS485
Normal	Communication Failed Controller 2	ok	Controller 1 Failed Communication
Normal	Temperature Range Crossed Controller 1	ok	Controller 1 Crossed the Temperature range, controller can be faulty.
Normal	Temperature Range Crossed Controller 2	ok	Controller 2 Crossed the Temperature range, controller can be faulty.