

## HeatManager – Control System

*Made in Sweden*

[electroheat.com](http://electroheat.com)

Metal | Plastics | Composites | Rubber | Cables |  
Drying | Hardening | Annealing | Tempering | Coating |  
Air | Vacuum | Nitrogen |  
*and more*

## Control System

### **Temperature sensor:**

Thermocouple for controlling of temperature, the sensor is connected to a Siemens PLC with a special developed PLC program for industrial ovens.

### **HMI:**

Siemens 12 - 19" Comfort Panel is mounted one the oven/furnace.

Our standard program for control of heating and cooling contains;

- Manual temperature setting (°C)
- View of actual temperature (°C)
- Recipe management; ramp rate, hold time etc.
- Operating mode: Automatic / Manual
- Alarm List
- Logbooks; containing list of trippings, device faults, events
- Logging record of all temperature sensors + setpoint
- Delayed start (Weekly timer)
- Standby temperature
- Logging of power consumption + visual overview
- Manual
- Electrical diagram
- Spare part list
- Notifications; for service/calibrations intervals etc.
- HMI in English and Swedish (Other languages upon on request)

### **Over heat protection:**

Siemens Fail-Safe PLC

### **Miscellaneous:**

Light tower (I/O Link, Balluff) for production disruption detection, light tower is placed on the electrical cabinet.

Red = Alarm

Green = Ready

White = In operation (0-100% indication of program sequence)

### **Power meter:**

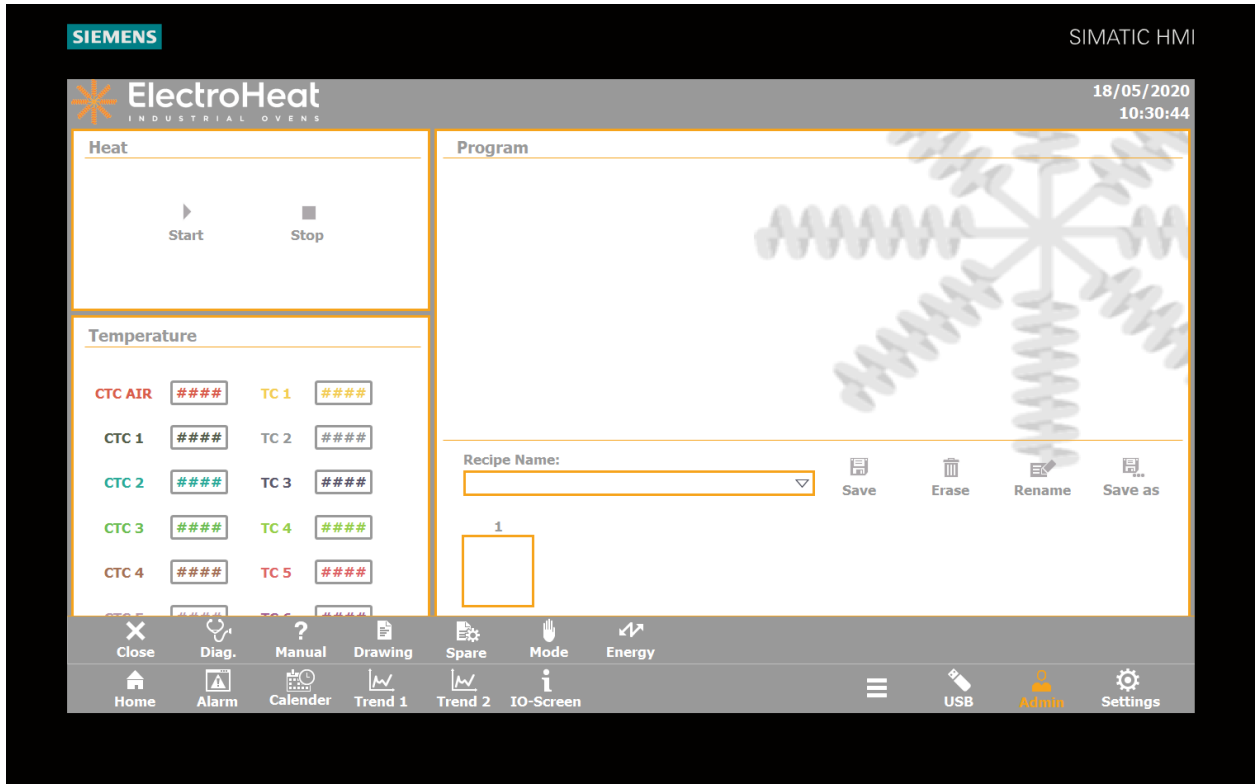
Siemens PAC 3200. The Power meter display is placed in the front of the cabinet and connected to the PLC through Profinet.

### **Electrical cabinet:**

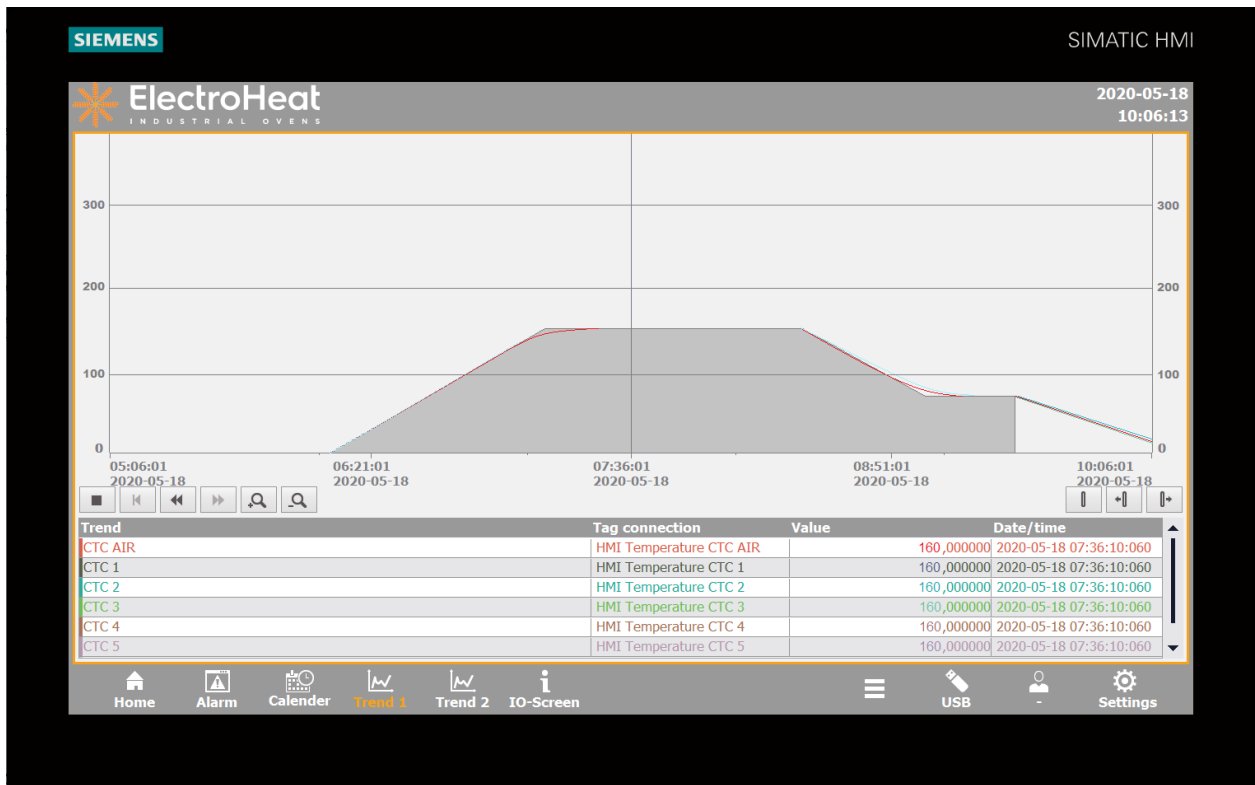
Electrical components are from leading suppliers that meet the European Safety Standards of high quality, performance, and modern technology.

Cabinet	Rittal
Heat control	Solid State relays
Heating control	PLC Siemens SIMATIC S7-1500 CPU Failsafe
OPC-UA	PLC with integrated OPC-UA
HMI	Touch screen Siemens 12"
Remote Access	Secomea 1139 4G/Ethernet
Cooling	Fan (Max ambient temp. 23°C)
Energy Meter	Siemens PAC3200
UPS	24VDC Back-up 10 Sec
IoT Computer	Siemens MindConnect IoT 2040

Example of start view:



Example of trend view:



Example of settings menu view:



Example of I/O view:

