Integration of temperature monitoring software inside the Master and Slave 19” RACK cabinets for the Slow Control System of the MPD-TOF detector

By Monika Kutyła, WUT

Supervisor: M.Sc. Krystian Rosłon, WUT, JINR
Tasks

- Prepare and install hardware in the cabinets
- Check previous version of software
- Enable engine to run without visualisation
- Loading setting from files
- Create main VI
Why cooling system is necessary?

Electronics generate heat  RACKs will be tightly-closed
HARDWARE INSIDE EACH RACK
• Humidity and temperature transducer with digital output (LUMEL P19)
• Module of logic outputs (LUMEL SM4)

• Power Supply (LUMEL ZSC 24V 5A)
• Fan Module
Electronic diagram
COMMUNICATION BETWEEN DEVICES
MODBUS Protocol

• Serial communications protocol;
• Enables communication among many devices;
• Master-Slave.
At the beginning

• Visualisation required;
• Specified executing order;
• Settings entered manually.
In this moment

Main VI

- Runs engine
- Enables to run visualisation
- Stops engine and visualisation
Visualisation

Before

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After
Loading settings from file
Exemplary ini file

[ID]
term UP = 12,000000
term DOWN = 13,000000
SM4 = 11,000000

[Fan]
Working = TRUE
Time for 1 loop = 2,000000
Max time diff = 3600,000000

[Critical Temp]
1 fan = 24,000000
2 fans = 26,000000
3 fans = 28,000000
4 fans = 30,000000
Results

• One VI to handle everything
• It is possible to run engine without visualisation
• All necessary settings are being loaded from files
• The fans in the RACKs are working
What is next?

LOADING SETTING FROM DATABASE

CHANGE LABVIEW TO SCADA
Thank you for attention

kutyla.m44@gmail.com