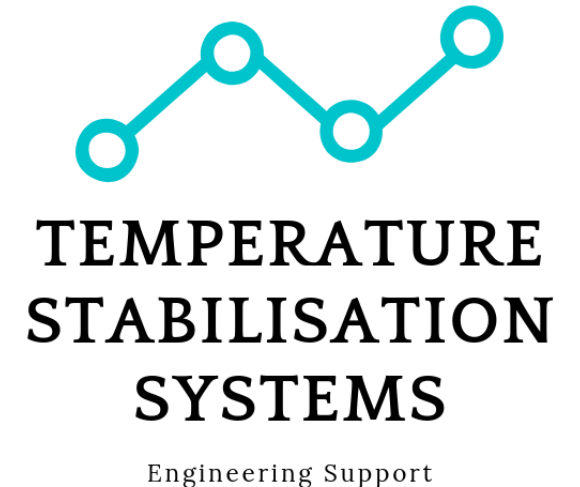


Monitoring and stabilisation of the test laboratory environment Time of Flight for NICA-MPD PLATFORM

Authors: Klaudia Pachulska & Jędrzej Kołaś
Faculty of Physics Warsaw University of Technology



Project Developer: Monika Kutyla
Supervisor: Krystian Roslon

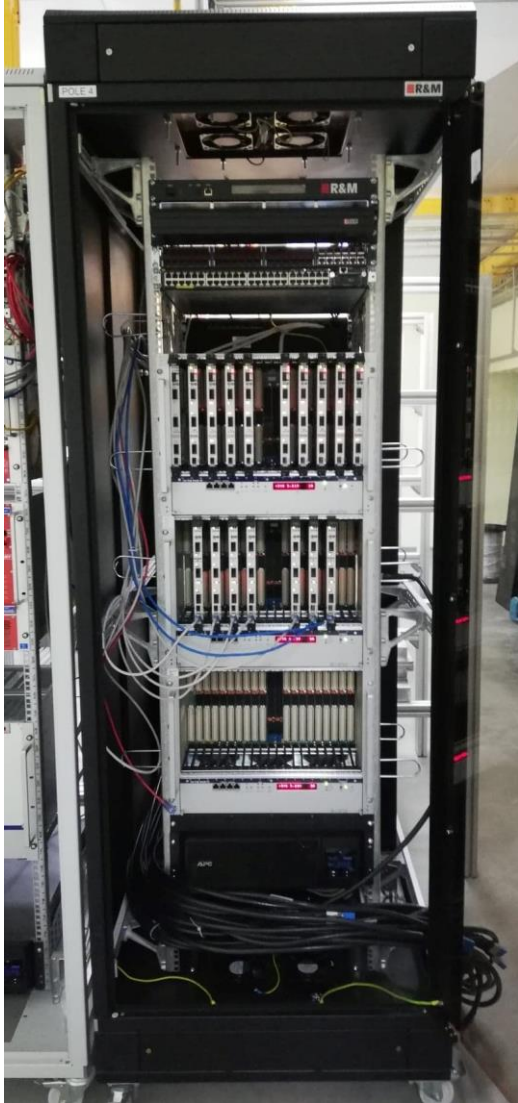


Presentation plan



- Measuring system
- Design objectives
- Used parts
- Description of the temperature measuring system
- Schematics of the temperature stabilisation system
- Further development
- Summary

Measuring system



- 19" RACK cabinets by Reichle & De-Massari placed inside building 42, High Energy Physics Laboratory in JINR (picture on the right).
- The temperature is measured in the upper and lower section of each RACK, as well as inside the rooms where cabinets are seated.

Design objectives

- Creating the schematics of the system for monitoring and stabilisation of the environment inside the test laboratory.
- Placement of said system inside RACK cabinets.
- Integration of the system between cabinets.
- Implementation of the system into the NICA project.



Used parts

Humidity and temperature transducer LUMEL P19



Module of logic outputs LUMEL SM4



Used parts

Power supply LUMEL
ZSC 24V 5A



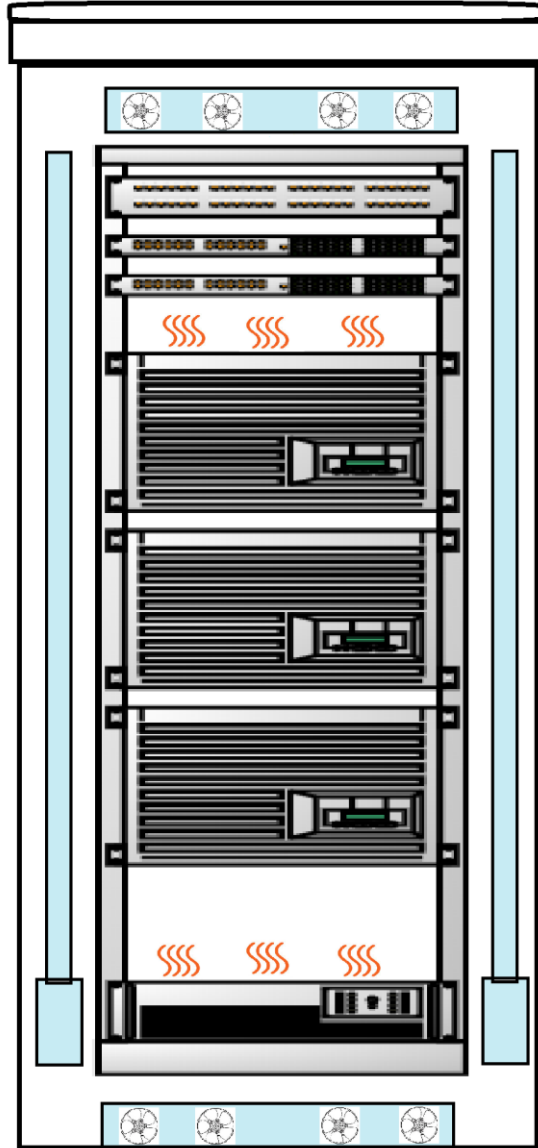
Converter USB/RS – 485
LUMEL PD10



2x4 fans SUNON DP200A



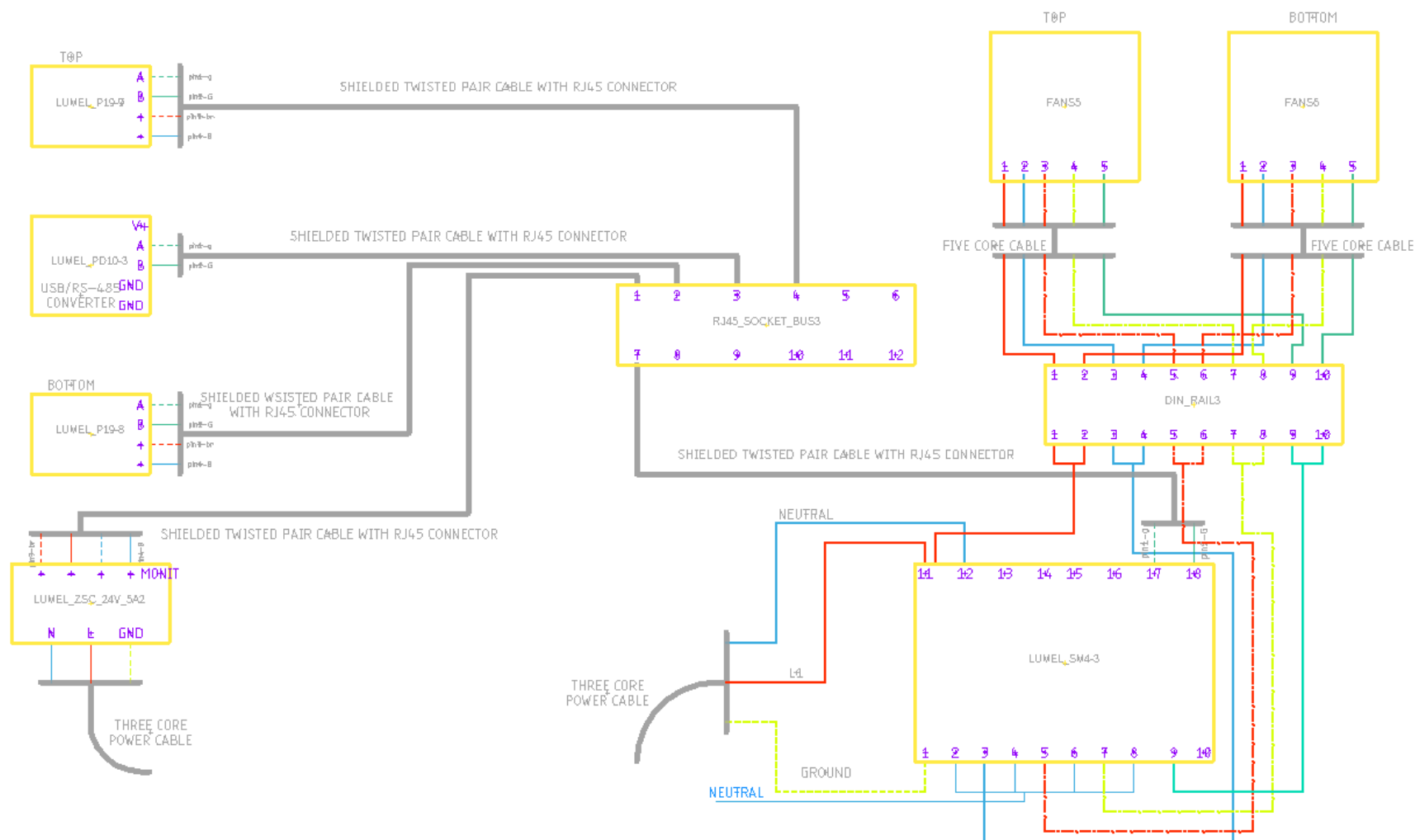
Description of the temperature measuring system

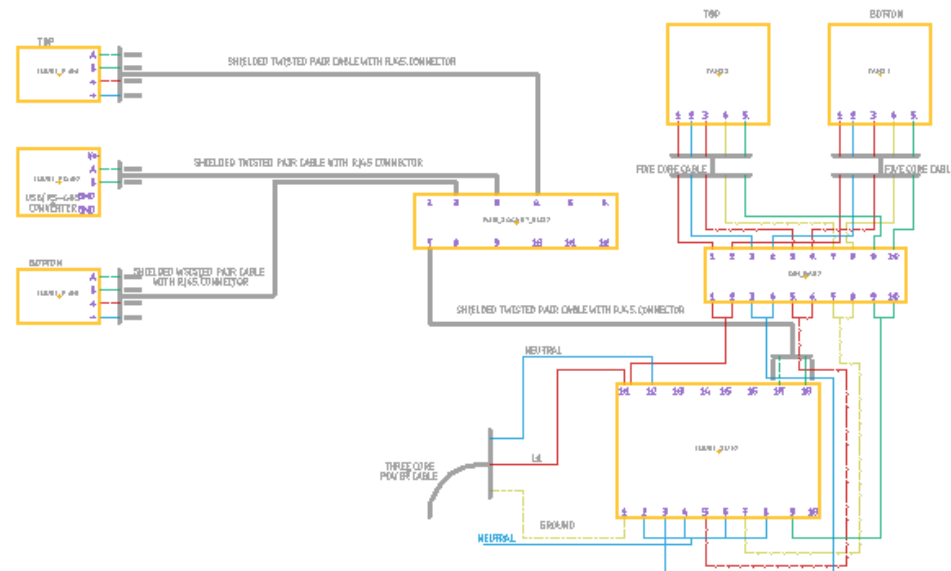
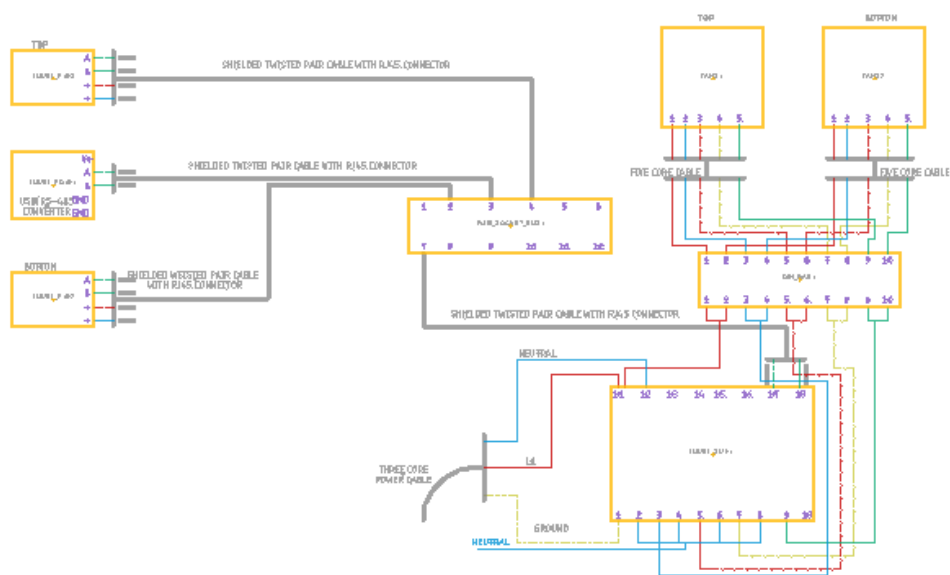
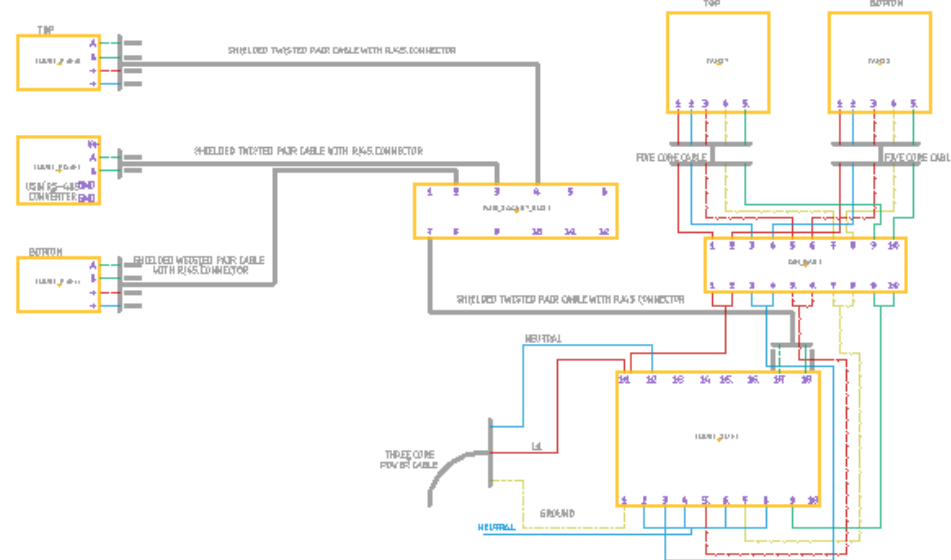
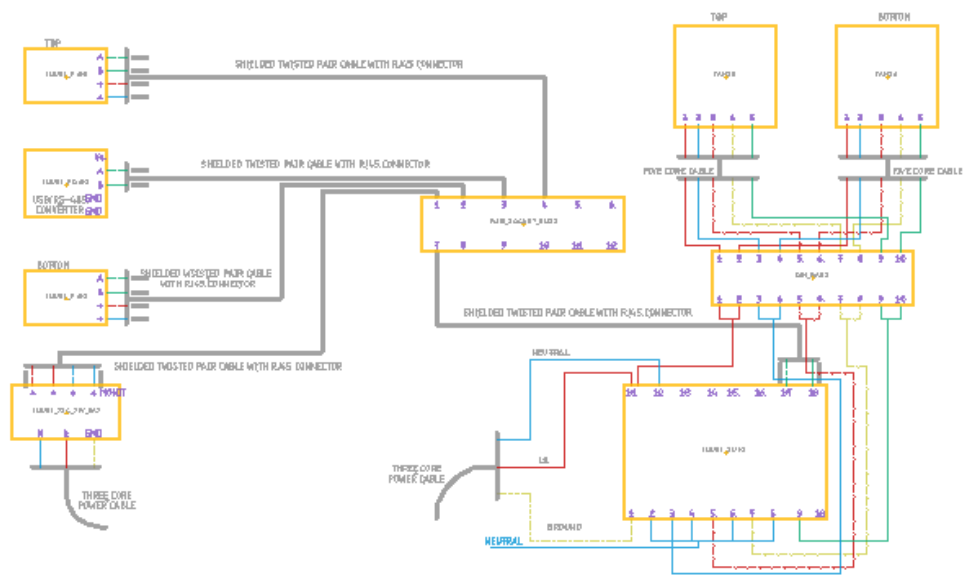


The temperature measuring system consists of:

- 2 transducers P19,
- 2 sets of 4 fans,
- 2 coolers with pumps.

Schematics of the temperature stabilisation system inside a RACK cabinet





Further development



- Placement of the P19 transducers inside the rooms of the building 42.
- Location of the system for monitoring and stabilisation of the environment inside RACK cabinets.
- Extension of the fans control program in Visualisation.vi.

Summary



- Monitoring and stabilisation of the test laboratory environment Time of Flight for NICA-MPD-PLATFORM is one of the larger tasks realised in the NICA project.
- Schematics for the monitoring and stabilisation of the test laboratory and RACK's environment have been made, as well as cables for the P19 transducers have been laid inside the building 42.
- The fans and the cooling system are already located inside the RACKs.

Thank you for your attention



Authors:

Klaudia Pachulska & Jędrzej Kołaś

Co-authors:

Adam Kisiel, Marek Peryt, Krystian Roślon, Marcin Bielewicz, Daniel Dąbrowski, Marek Peryt, Michalina Milewicz-Zalewska, Nikita Dunin, Monika Kutyla