TPOT Status

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for the TPOT team
PMG meeting, October 27, 2022

Updates since PMG 2022/09/22

Micromegas detectors

- all modules tested at SBU. 8 Fully functional modules identified for assembly on TPOT structure
- for the remaining two modules: one has 1 problematic HV channel (trips). The second is missing metrology. Are kept as “spare” in case something happen before TPOT installation

Mechanics

- TPOT support structure has been fully assembled at BNL, on transportation cart.
- Detector installation on support structure and cabling completed
- Pre-installation system tests nearly completed. Until end November
- TPOT installation mechanics: all parts ordered. Some received, need machining at BNL shop.

High level milestones and risk

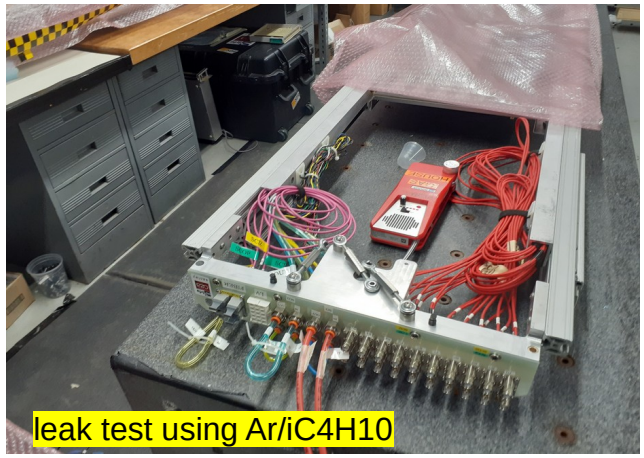
Milestone	date	Status	risk
Number of TPOT modules produced	Today	10	done
FEA analysis finished and reviewed	18/05/22	FDR happened. more FEA analyses requested. Agreed with TC to move forward	done
First batch of 5 TPOT Modules assembled & tested (Saclay)	07/06/22	6 modules assembled, test ongoing	done
FEE to detector fabricated and tested	07/23/22	cables/boards received on 6/21	done
HV system tested	06/16/22	happened on Week 21 (May 23)	done
Second batch of 5 TPOT modules assembled & tested (Saclay)	07/22/22		done
Characterization of all TPOT modules at SBU	09/09/22	80% done. Two more modules to test, and 5 channels to recover	done
Gas system designed, ES&H reviewed and tested	07/07/22 → ?	designed and ESRC reviewed on 6/21	low
TPOT mechanical support assembled	09/16/22	delayed due to last minute modifications	done
installation of modules on support structures	09/23/22	First 5 modules will be assembled this week. Remaining modules the next, pending validation	done
End of TPOT assembly	10/21/22		done
Installation of TPOT in sPHENIX	December 5 2022		moderate

Schedule

Schedule as shown during end-game review on October 14

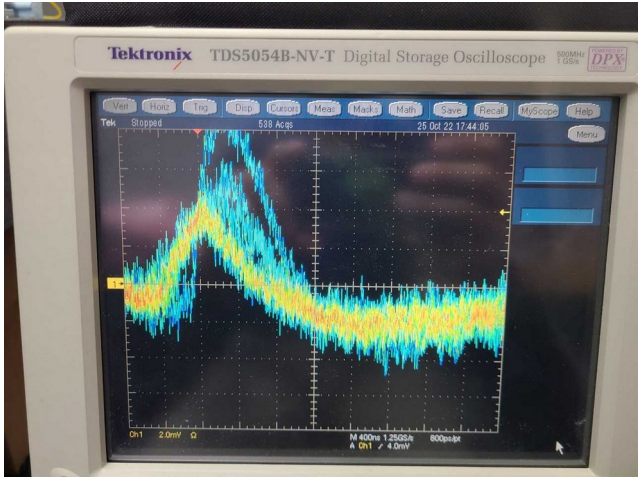
October 2022	November 2022	December 2022	January, February 2023
• ~~cable mapping~~ • ~~gas, cooling tightness~~ • ~~LV/HV connectivity~~ • Finalize/fabricate installation mechanics	• ~~HV test and cosmics~~ • Noise measurements • Survey • Finalize/fabricate installation mechanics	Installation inside EMCAL, cabling	post installation system test: • noise, • calibration, • alignment

Pictures

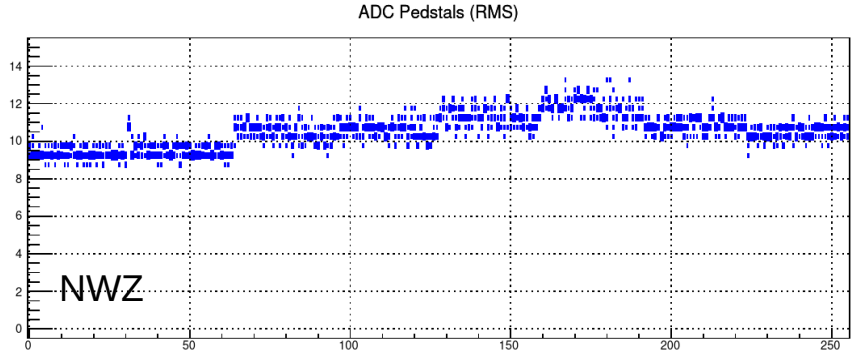


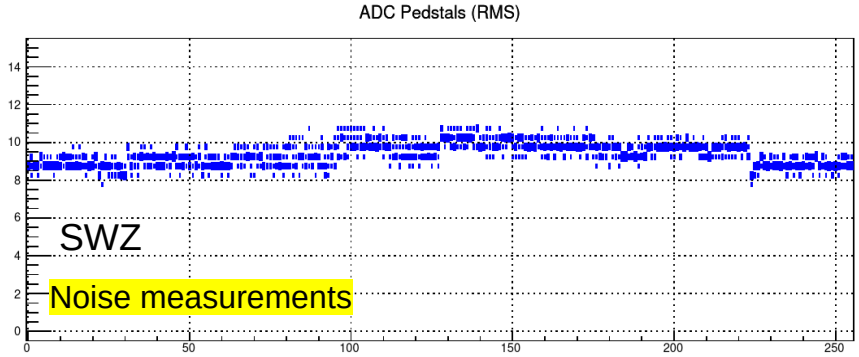
leak test using Ar/iC4H10

No leak detected in either gas or cooling circuits



Cosmic signal observed on all modules, all HV channels





All channels respond and are connected to detector