



Winter 2017/2018 refurbishing of MWPC's and Rich Wall

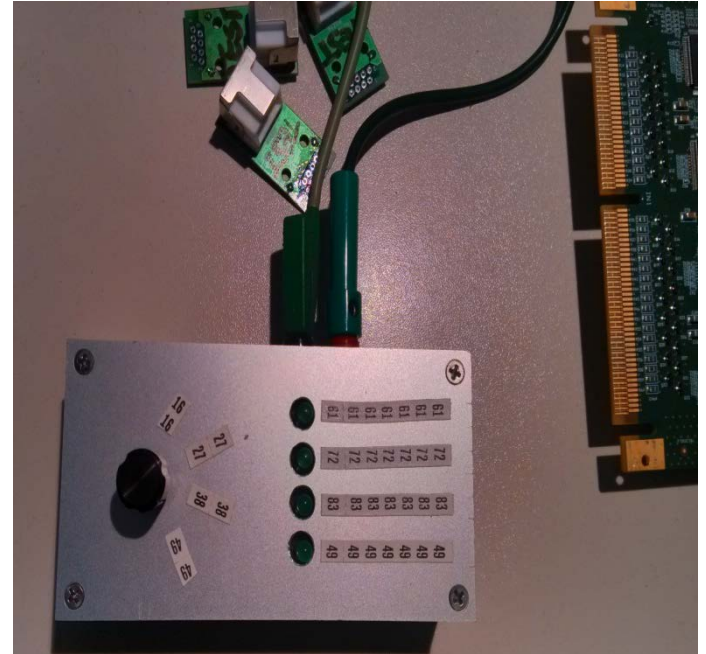
Work done during the winter shutdown MWPC

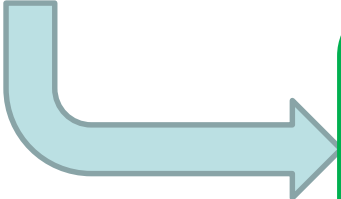
- During the run 2017, and in general during these last year runs, the mwpc stations PA02, PA03 and PA04 (after SM2) showed an increasing number of problems, causing a loss of time in the data taking.
- The problem arises mostly from the RJ45 connector on the FEE.
- We decided to change these connectors on the 3 stations with *old style* RS232 connectors, obviously both on the cards and the cables.
- We did the job in two steps to check this modification.



Work done during the winter shutdown MWPC

- ✓ By 28.02 we have proven the prototype operation in laboratory, with the test bench. All the material was available and the test tools produced.
- ✓ By 07.03 we have produced 12 modified FE boards and produced and tested 12 modified cables.
- ✓ During 07-09.03 we have mounted the 12 FE on the PA03 chamber, cabled it and performed a readout test.

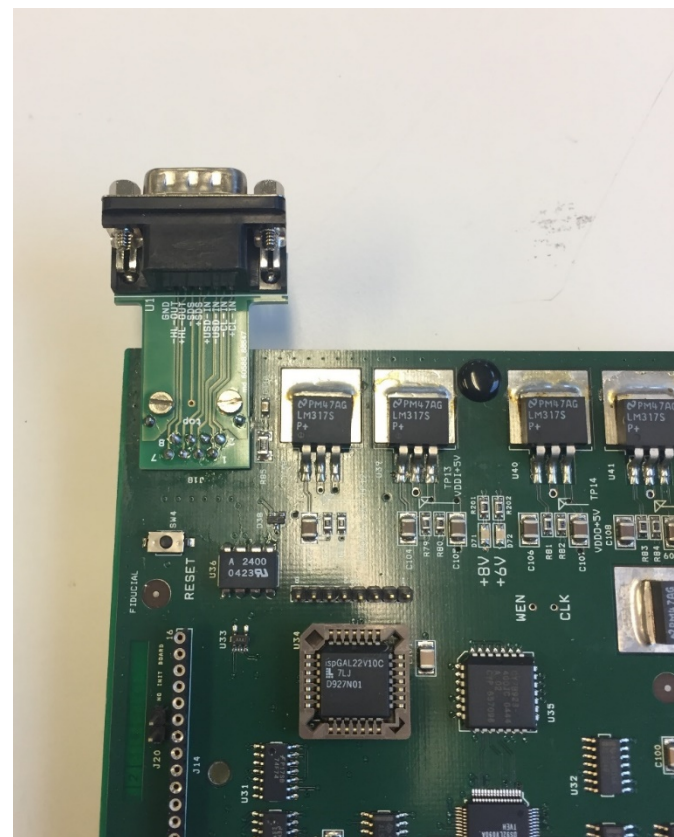
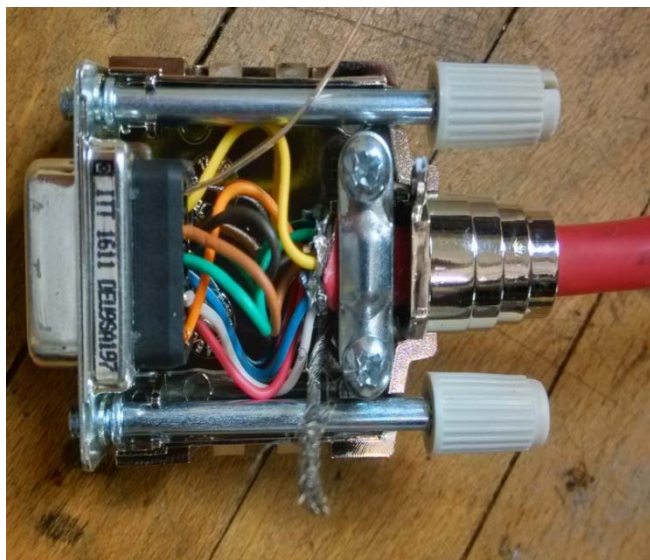


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- No readout problems were observed
 - Two cards needed a check as they were not properly responding, brought back to Turin

Work done during the winter shutdown

MWPC

- 14.03 all the remaining cables and the FEs modified (including spares).
- 15.03 all the cabling and the installation of the FEs on PA04 and PA05 done



Work done during the winter shutdown MWPC

HV, LV and gas are ok for all the mwpc stations for the 2018 DY run

MWPC

HV SYSTEM

Station 1 Station 2 Station 3
 Station 4 Station 5 Station 6 Station 7
 Station 8 Station 9 Station 10 Station 11

LV SYSTEM

! Sts 01-02 Sts 03-04 Sts 05-06
 Sts 07-08 Sts 09-10 St 11

! Gas System

MWPC Station 9 channels:

Group operation:

Channel Name	v0 (V)	vMon (V)	iMon (μ A)	isOn	HwAlarms
Mwpc_Hv_9_Ch001	4200.00	4204.00	0.00	TRUE	OK
Mwpc_Hv_9_Ch002	4200.00	4202.00	0.20	TRUE	OK
Mwpc_Hv_9_Ch003	1500.00	1493.00	0.00	TRUE	OK



Work done during the winter shutdown MWPC



- The spare situation for the 2018 DY run is:
- LV power supply 2 spares
- HV power supply 1 spare
- RJ45 FEE > 10 spares
- RS232 FEE 4 spares
- The situations is under control, and in case of needs we can repair during the year possible broken FEE cards, both at CERN or in Torino

Work done during the winter shutdown RW

- The 8th of February the RW has been moved back in it's running position for the 2018 Dy run



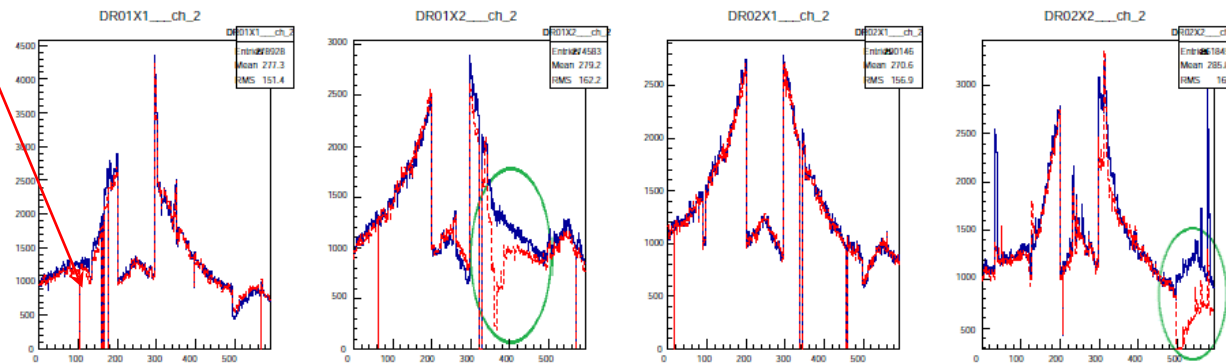
Work done during the winter shutdown

RW

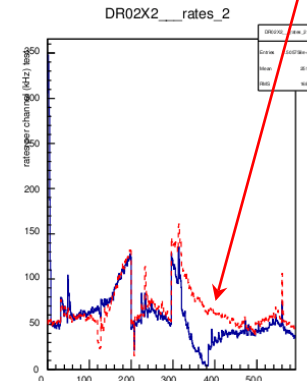
- We have about 6 tubes with a gas leakage, that have influence on the neighboring tubes, with a lack of efficiency, and few broken wires.
- Complicate work for this winter shutdown, due to a lack of manpower in Torino. We decided to do a temporary repair for the tubes with gas leakage and postpone the full repairs during the LS2, when more time and manpower will be available.
- We modified the gas connection to this tubes that now have a *privileged* lines, in order to increase considerably the gas flux and reduce their inefficiency.
- The total number of inefficient tubes is about 0,1 % of the channels
- The total number of broken wire tubes is about 0,1 % of the channels

broken wires

Run 260104 Canvas_DR01X1__ch_2: RW.cfg - Page 1 (59446 evts) Fri Jul 24 23:24:20 2015



inefficiency





Work done during the winter shutdown RW



- The spare situation for the 2018 DY run is:
- LV power supply 1 spare
- HV power supply 1 module spares (?)
- FEE >10 spares
- The situations is under control, and in case of needs we can repair during the year possible broken FEE cards, both at CERN or in Torino



Work done during the winter shutdown

RW



HV and LV are ok for RW for the 2018 DY run

Rwall HV System channels:

Group operation:

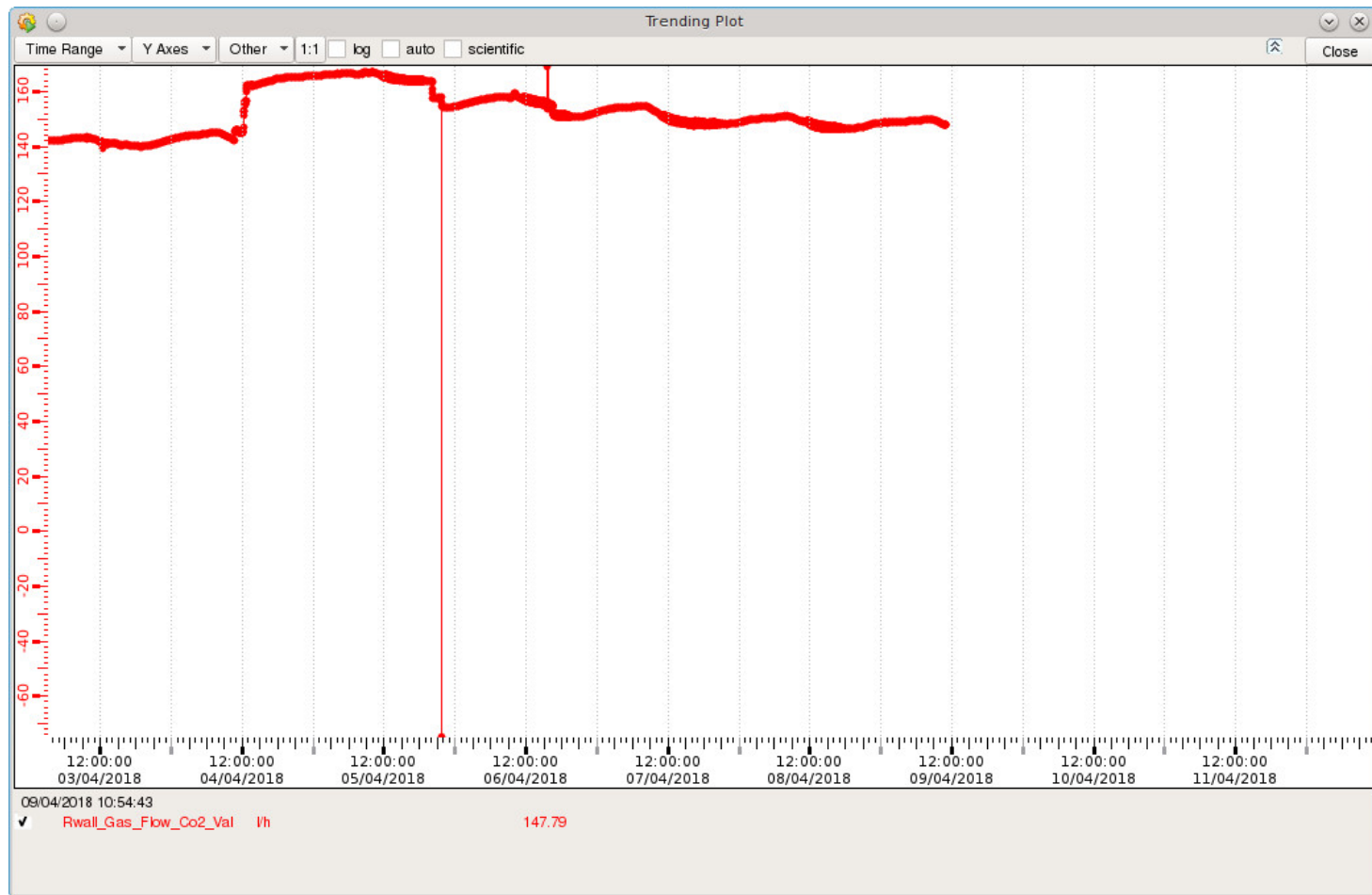
Channel Name	v0 (V)	vMon (V)	iMon (µA)	isOn	HwAlarms
Rwall_Hv_X1_1	2150.00	2149.00	0.00	TRUE	OK
Rwall_Hv_X1_2	2150.00	2149.00	0.00	TRUE	OK
Rwall_Hv_X2_1	2150.00	2149.00	0.00	TRUE	OK
Rwall_Hv_X2_2	2150.00	2148.50	0.00	TRUE	OK
Rwall_Hv_X3_1	2150.00	2148.50	0.00	TRUE	OK
Rwall_Hv_X3_2	2150.00	2148.50	0.00	TRUE	OK
Rwall_Hv_X4_1	2150.00	2149.00	0.00	TRUE	OK
Rwall_Hv_X4_2	2150.00	2148.50	0.00	TRUE	OK
Rwall_Hv_Y1_1	2150.00	2149.00	0.00	TRUE	OK
Rwall_Hv_Y1_2	2150.00	2148.00	0.00	TRUE	OK
Rwall_Hv_Y2_1	2150.00	2148.00	0.00	TRUE	OK
Rwall_Hv_Y2_2	2150.00	2148.50	0.00	TRUE	OK
Rwall_Hv_Y3_1	2150.00	2149.50	0.00	TRUE	OK
Rwall_Hv_Y3_2	2150.00	2151.50	0.00	TRUE	OK
Rwall_Hv_Y4_1	2150.00	2147.00	0.00	TRUE	OK
Rwall_Hv_Y4_2	2150.00	2149.00	0.00	TRUE	OK



Work done during the winter shutdown RW



There was a problem with CO2 gas for the RW but the situation now seems quite stable in any case we will follow the variation





Work done during the winter shutdown



Now all the mwpc's stations and the RW are in operation, with LV and HV on and the situation looks ok, except for 1 port, problem under investigation.

v SourceID	Type	BadEvents	#Header	#Data	#Errors	Special	Special at	#Spills
480	MW1	100.0%	0.00	0.00	1.00	1.00	290	5
460	MWPC	0.0%	0.00	0.02	0.00	0.00	0	0
455	MWPC	0.0%	0.00	0.00	0.00	0.00	0	0
454	MWPC	0.0%	0.00	0.00	0.00	0.00	0	0
453	MWPC	0.0%	0.00	18.44	0.00	0.00	0	0
452	MWPC	1.5%	0.03	0.42	0.06	0.00	0	2
451	MWPC	0.0%	0.00	0.05	0.00	0.00	0	0
450	MWPC	0.0%	0.00	0.00	0.00	0.00	0	0
449	MWPC	0.0%	0.00	0.00	0.00	0.00	0	0
448	MWPC	0.0%	0.00	0.00	0.00	0.00	0	0
432	RW	0.0%	0.00	17.34	0.00	0.00	0	0
417	MW2	0.0%	0.00	2.14	0.00	0.00	0	0
416	MW2	0.0%	0.00	0.14	0.00	0.00	0	0
382	PMM	0.0%	0.00	12.81	0.00	0.00	0	0
381	PMM	0.0%	0.00	12.82	0.00	0.00	0	0
380	PMM	0.0%	0.00	12.55	0.00	0.00	0	0
324	Straw	0.0%	0.00	0.02	0.00	0.00	0	0
323	Straw	0.0%	0.00	1.02	0.00	0.00	0	0
322	Straw	0.0%	0.00	0.00	0.00	0.00	0	0

Frontends on selected SourceID: 453

Port#	GeoID/Value	#Errors	#Header	#Data	Special
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Work done during the winter shutdown



MWPC and RW ready for the 2018 DY run!