



Aachen



CMS
BARREL MUON
DT CHAMBERS

Status
of Production
at Aachen

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020304



Summary



- Summary of SLs/DTs:

SLs Mech. Finished	22
SLs HV assembled	18
SLs FE assembled	11
SLs HV test in Ar/CO ₂	7
SLs Fully tested	2 (of which one was damaged)
DTs assembled	2

- Currently gluing SL 023 and SL024
- Patch panels for HV tests finished
- Ongoing work on tooling (handling, storage, signal cables, level shifters, gas piping, ...)
- Finalizing work on gas components for DT (fittings, manifolds, pressure transducers, piping)
- Awaiting FE covers, LV feedthroughs, final GND springs/foils for FE cover.
- Had to stop SL gluing for ~2 weeks in February - run out of plates, which are arriving this week.
- Are needing bills related to the commitments made.
- Expecting next batch of 6 MB1 honeycomb panels ~020318 for control at Aachen; full batch of 10 MB1, 10 MB2, 10 MB3 foreseen to be finished by ~020415.



Dead Cells

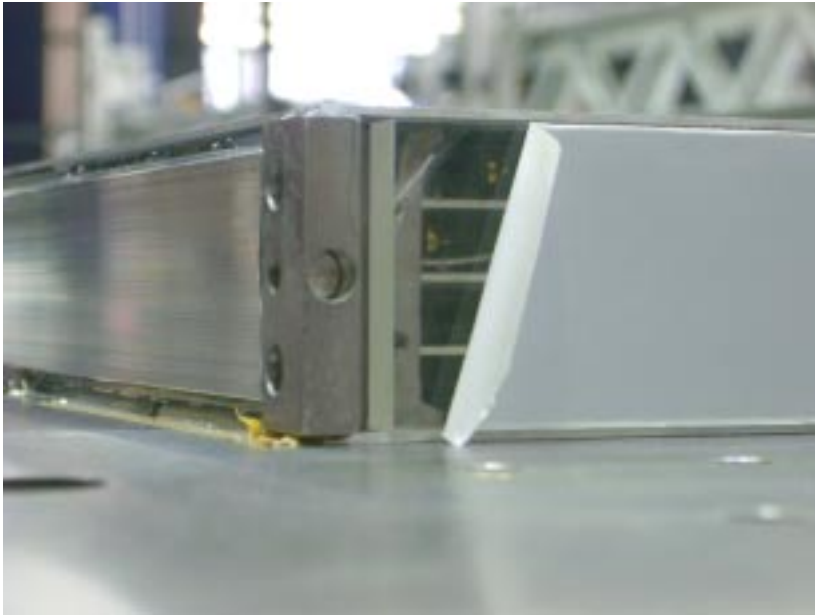


The updated list of dead channels is under
<http://www.physik.rwth-aachen.de/~hoepfner/Assembly/dead-channels.html>

Results from HV Tests

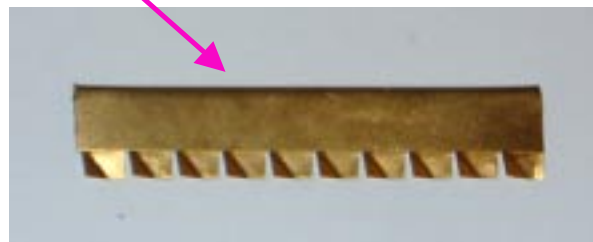
SL Number	SL Type	Part of chamber No.	Status HV Test in gas	Total No. of dead channels	Cell No. Component	SL Flyer (link to PS-file)
SL 001	phi	1	OK	0		link to PS file
SL 002	theta	1	OK	0		
SL 003	phi	1	OK	0		
SL 004	phi	2	air			
SL 005	theta	2	air	10	12, 22, 24, 18, 56, 178, 182, 204, 208 = Strips 144 Cathode	
SL 006	phi	2	air	1	166 Strip	
SL 007	phi	exploded SL	OK	2	102 Strip 18 ???	
SL 008	phi()		ongoing			
SL 009	theta		ongoing	1	141 Cathode left	
SL 010	phi		repair			
SL 011	phi()		OK	0		
SL 012	theta		OK	1	210 Strip	
SL 013	phi		repair	3	66, 91, 76 Strips	
SL 014	theta		repair	1...2		
SL 015	phi()		OK	0		
SL 016	phi		air			
SL 017	theta		air			
SL 018	phi()					
SL 019	phi					
SL 020						
SL 021						
SL 022						

Last update: 01.03.2002



In order to protect to SL from dust/dirt before the final covers can be mounted, a ~5 mm thick plexiglas plate (shown inclined for better visibility) is inserted into the opening.

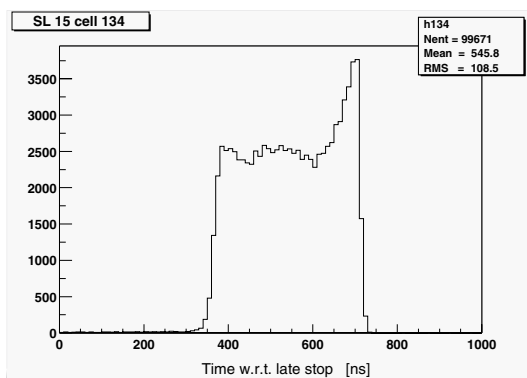
Bend along this edge too sharp



Experiencing problems with *provisional* GND springs/foils on FE cover.



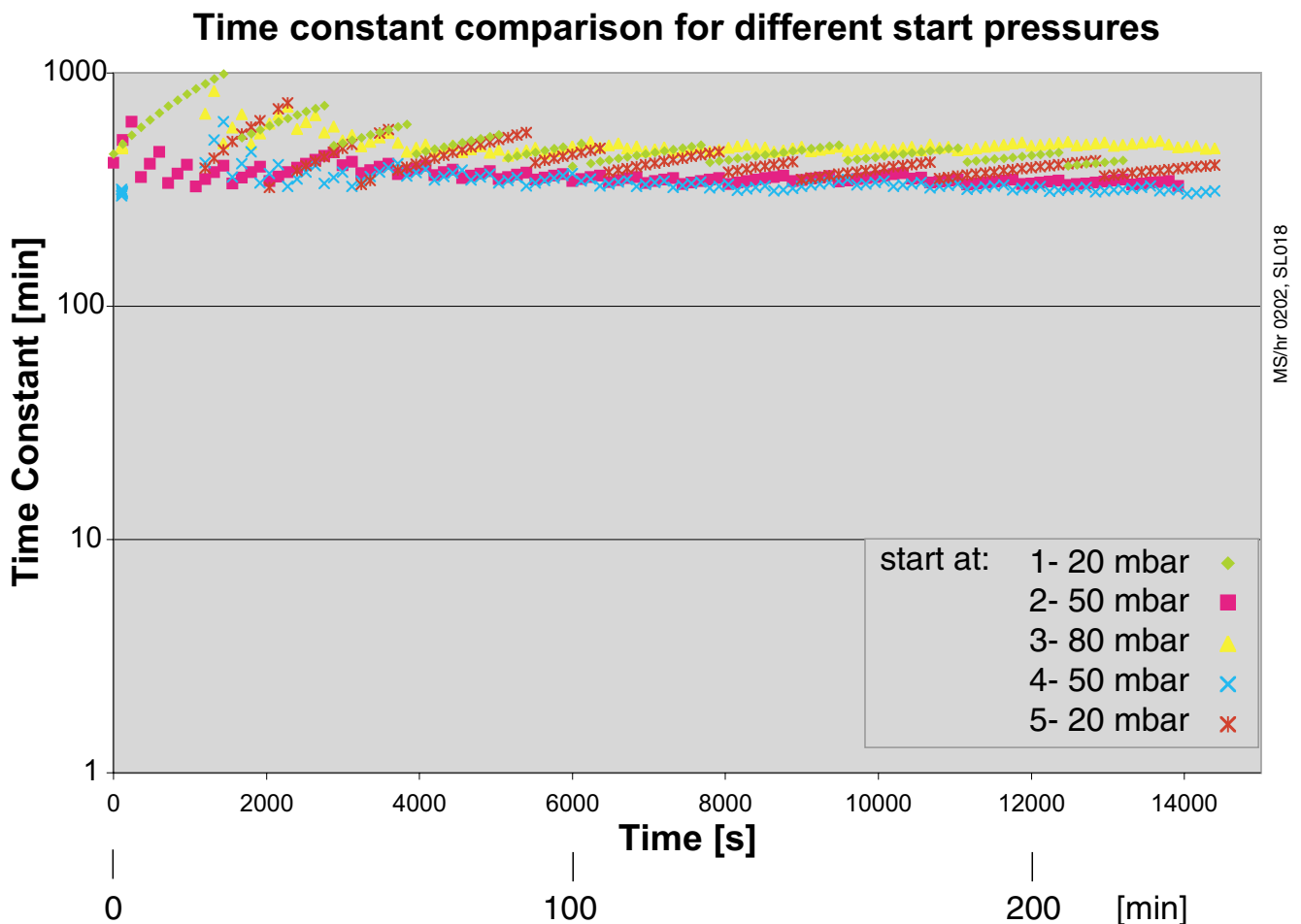
Bench for tests with cosmics (pink); can house 3 DTs or up to 9 SLs. HV supply, patch panel, TDCs, DAQ in racks. SLs undergoing HV test in gas are on external (yellow) support.



Time distribution, at somewhat higher threshold (25 mV). Currently reading 16 ch. at a time. Further level shifters arriving soon.

Cosmics tests: are in learning phase; moving to a larger number of channels.

Pressure decay time constant measurement, to assess gas tightness.
 The time constant is computed from every data point and plotted.
 Resolution is 8 bit. Five runs on same SL018, starting at different pressures, to check whether there is a variation and/or an hysteresis.



Observe:

- For low starting pressure, the limited ADC resolution leads to a saw-like structure (constant pressure reading during quite a time)
- All values consistent
- No hysteresis observed.



View (left) of the measuring device with two channels, each with a 100 and a 500 mbar (+ and -) range differential pressure transducer. 8-bit ADC inside. Readings either from the display or via computer (bottom, software by M. Sowa).

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Start/Stop

Device Type/Ser. No. PG4-01/005

Sensor 1 Type (Group A) 500 mbar rel

Sensor 2 Type (Group A) 500 mbar rel

Sensor 3 Type (Group B) 100 mbar rel

Sensor 4 Type (Group B) 100 mbar rel

Set Port Number 1

Measure every 120,00 s

Atmospheric Pressure 986,00 mbar

Air Temperature 21,00 °C

Air Humidity 20,00 %

Select SL/DT Size MB1

Select SL/DT Type SLphi

Select SL/DT Serial Number 18

Write to File: c:\qastightness\qastightness_MB1SLphiinv018_020221_0758.txt

Number of Points Measured 92

Current Date/Time 21.02.02 11:03:00

Beginning of Measurement 21.02.02 07:58:54

End of Measurement

Elapsed Time 03:04:06 h:m:s

Time since Last Point 6 s

Time to Next Point 114 s

Pressure Sensor 1 (A) 19,00 mbar

Pressure Sensor 2 (A) 16,00 mbar

Pressure Sensor 3 (B) 18,00 mbar

Pressure Sensor 4 (B) 18,00 mbar

Pressure Max (A) 23,00 mbar

Pressure Min (A) 16,00 mbar

Pressure Max (B) 23,00 mbar

Pressure Min (B) 16,00 mbar

Current Value of Time Constant

Sensor 1 190,16 min

Sensor 2 170,76 min

Sensor 3 176,68 min

Sensor 4 176,68 min

Sensor 1 (A)

Sensor 2 (A)

Sensor 1 (A)

Sensor 2 (A)

Entering String: \$EVENT19;16;18;17;145;144;159;158;0;38;51;13;23;13;23;005;01;500r;500r;100r;100r

String OK: 19;16;18;17;145;144;159;158;0;38;51;13;23;13;23;005;01;500r;500r;100r;100r

String Length: 79

One such unit is now at CERN, for measurements at ISR. Later: read transducers on the chambers with a 10-bit ADC.

Gas fittings for the SL covers



Brass version of these fittings (preferred) seems to exist only in catalog; version in stainless steel exists but is more expensive. Still awaiting final statement from firm.



Brass version of gas fittings, turnable as well, from another supplier, might be an adequate alternative.