

Mounting of Gas Pressure ADC "PADC"

Always at rear of
CMS DT Muon chamber

Same for
MB1, MB2, MB3, MB4,...

Same for each
+Z and -Z Types

But DIFFERS in orientation for
Services at Left and at Right

040907, update 041201, 050606
H. Reithler

Update 050606: the table of cable lengths is now included here.

File located at: http://www.physik.rwth-aachen/~reithler/050606PADC_installation.pdf
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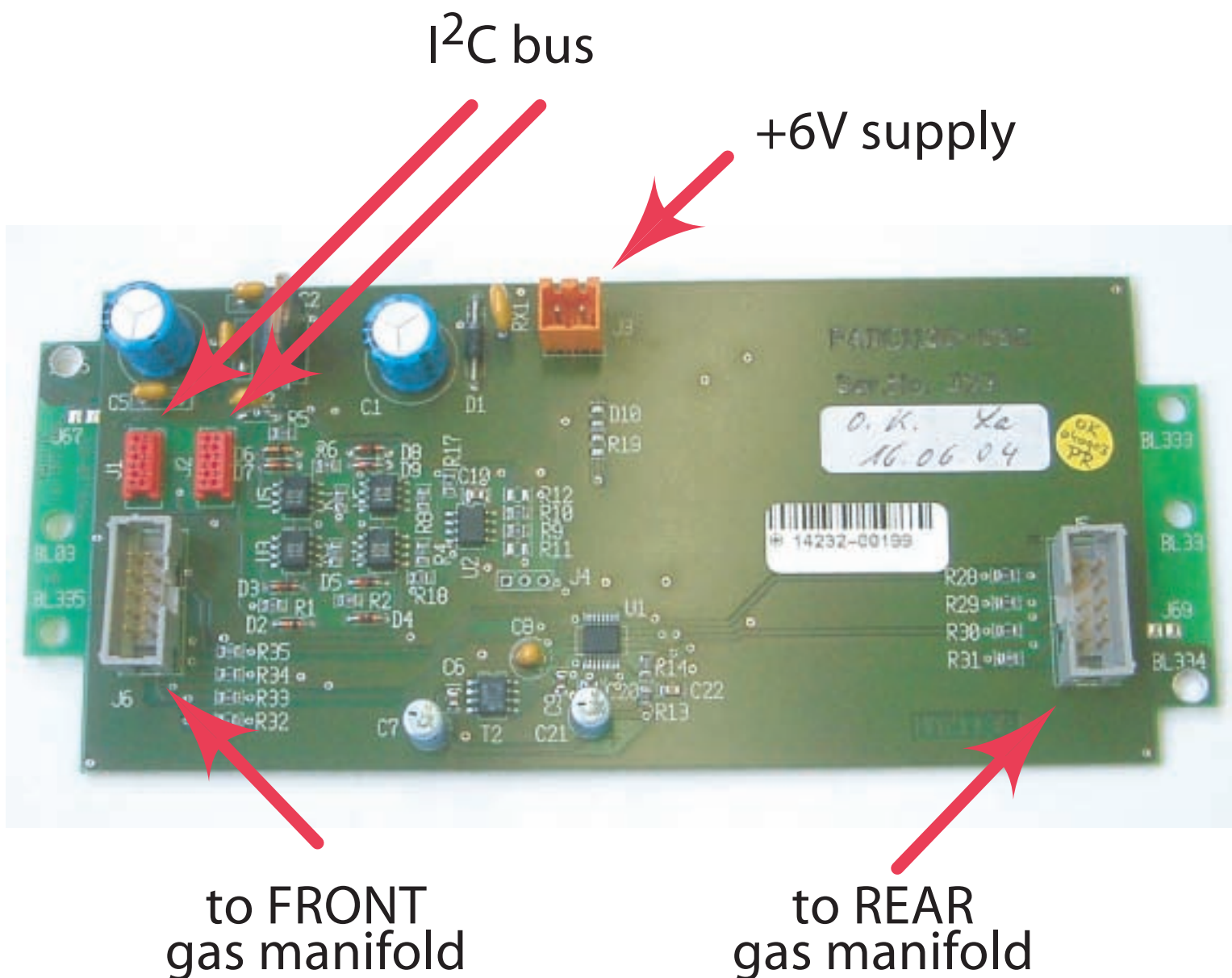


Fig.1: PADC board and its connections.
 Orient the PADC board in its box such that the connector "to REAR" points to the rear gas manifold.
 This means to the left and right for a "left" and "right" chamber, respectively.

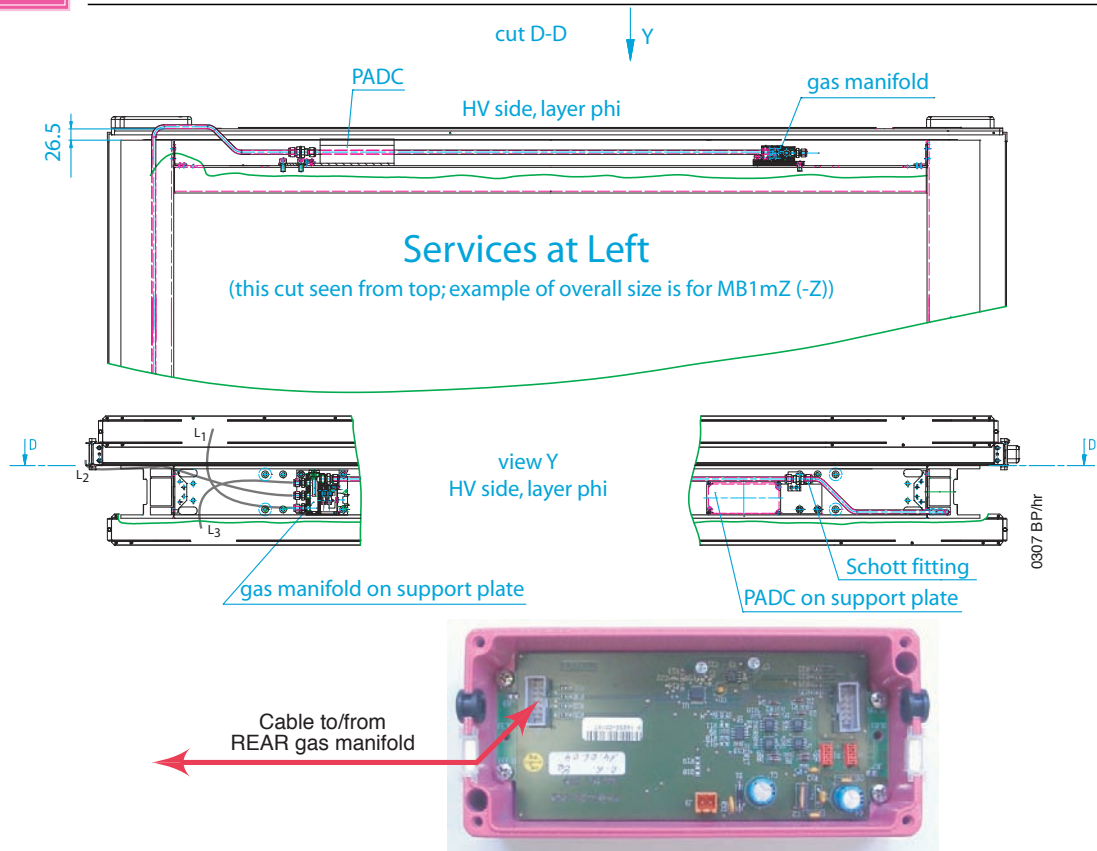


Fig.2: PADC on a "left" chamber.

Gas manifold and PADC-box are attached to the C-profile through spacer plates to ensure free access to the outer two threaded holes at left and right, for handling of the chamber. On all MB4 chambers (have no SLtheta and honeycomb panel is accordingly thicker) the fixation holes are ~27 mm higher but this also holds for the alignment passages. Therefore the same gas components also fit on MB4; keep the lateral gas pipe at the upper border of its passage.

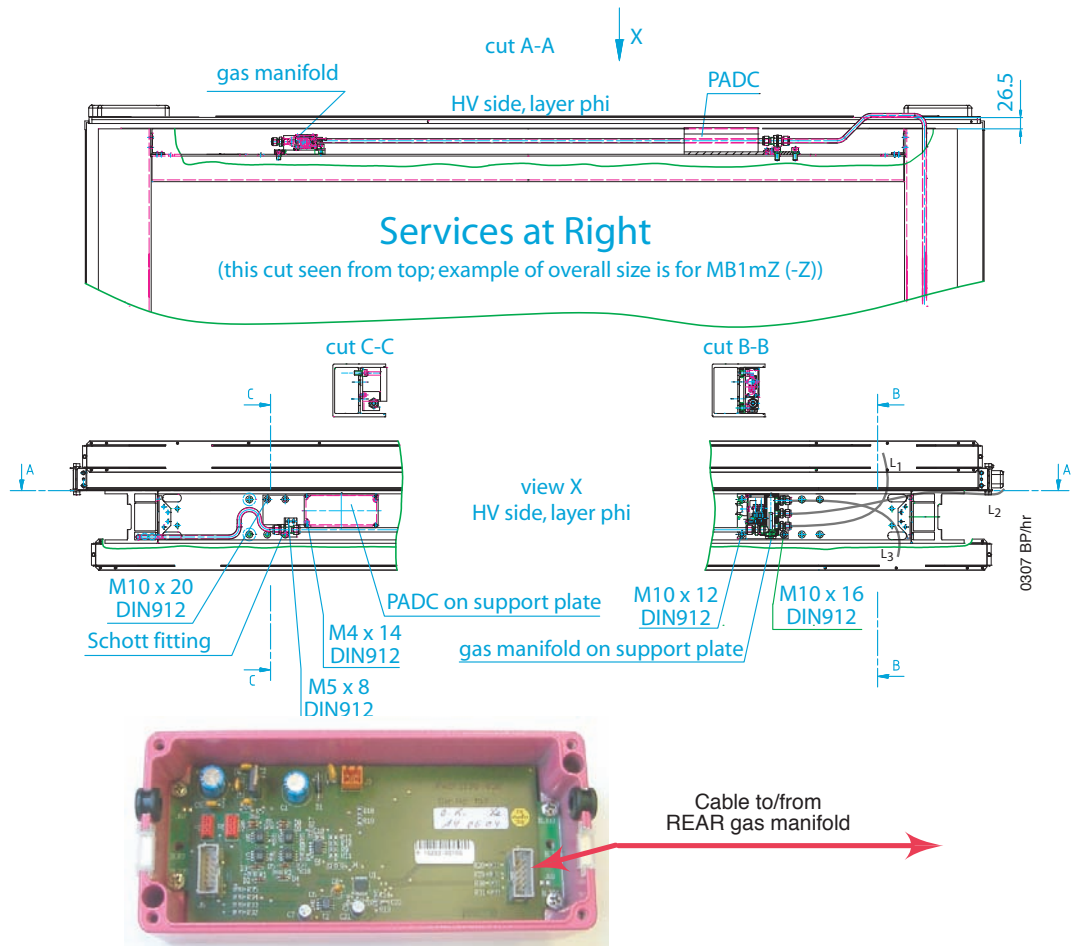


Fig.3: PADC on a "right" chamber.

Note that the gas pipe also passes through the lower lateral channel. Watch the orientation of the PADC board inside its box. The orientation of the box itself is independent from the orientation of the PADC.

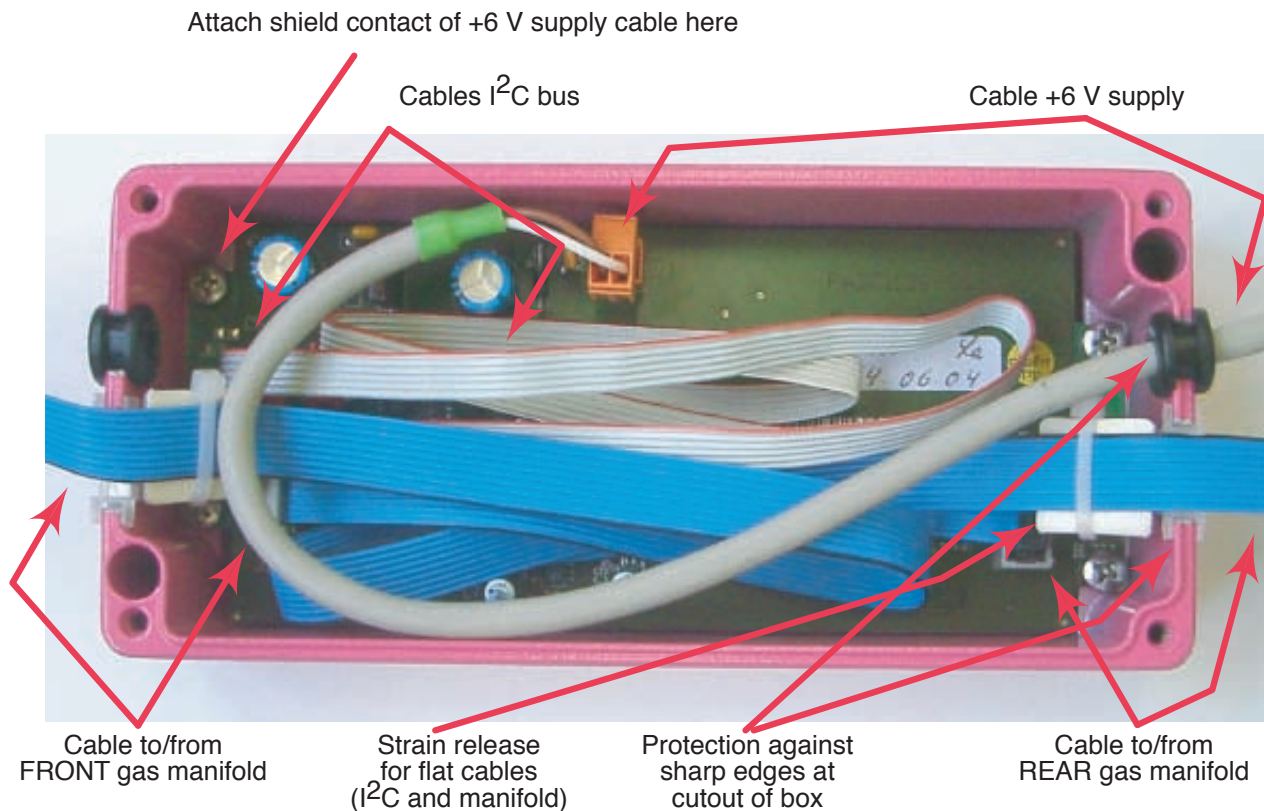


Fig.4: PADC cabling, here on a "right" chamber.

Note that the gas pipe also passes through the lower lateral channel. Watch the orientation of the PADC board inside its box. The orientation of the box itself is independent from the orientation of the PADC. Please note that the spare length of all cables is housed inside the box. Finally, the PADC board can be connected to local ground (default), or isolated from it if needed, by ensuring/removing the contact at the four screws attaching the PADC board to its box.

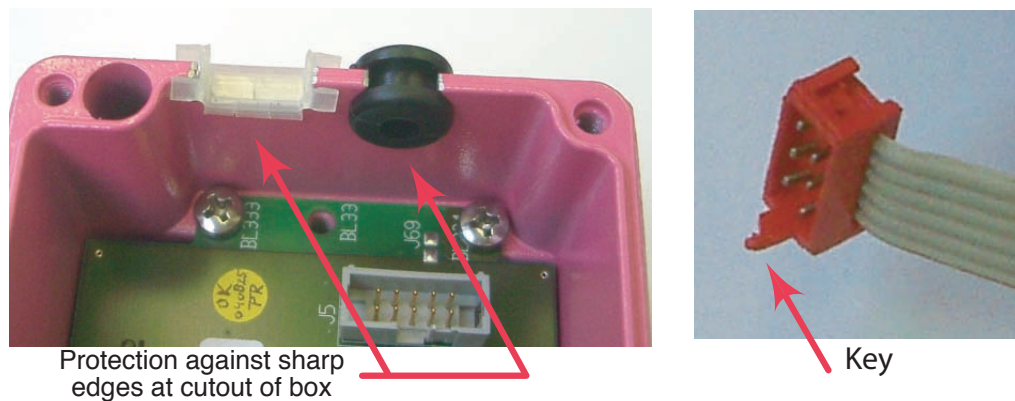


Fig.5: PADC cabling warnings.

Always make sure that the protections against sharp edges (see left photo) are in place. Note that the small connectors of the I2C bus cables are very weak and do not have any own strain release. These connectors do have a KEY in the form of a small protruding "nose" (see right photo) which fits into a hole in the PCB - this "nose" is very weak.

Fig.6: Cable for +6 V supply to PADC, PADC end.
When attaching the shield contact to one of the four screws inside the PADC box, please add a contact ring.

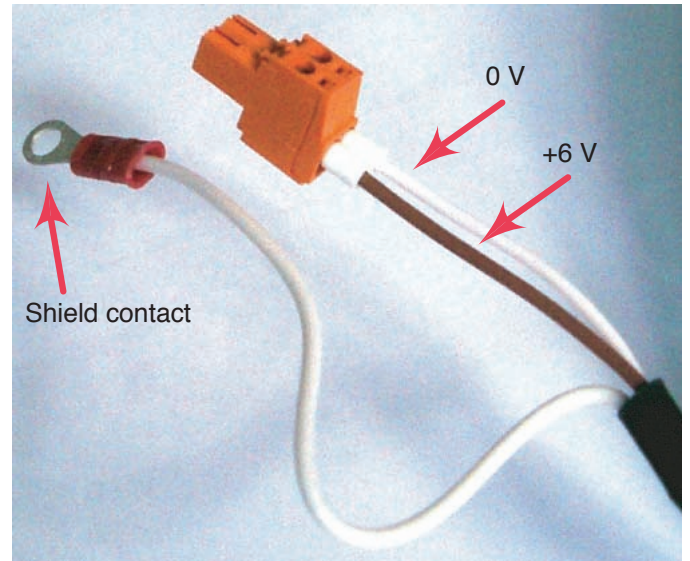
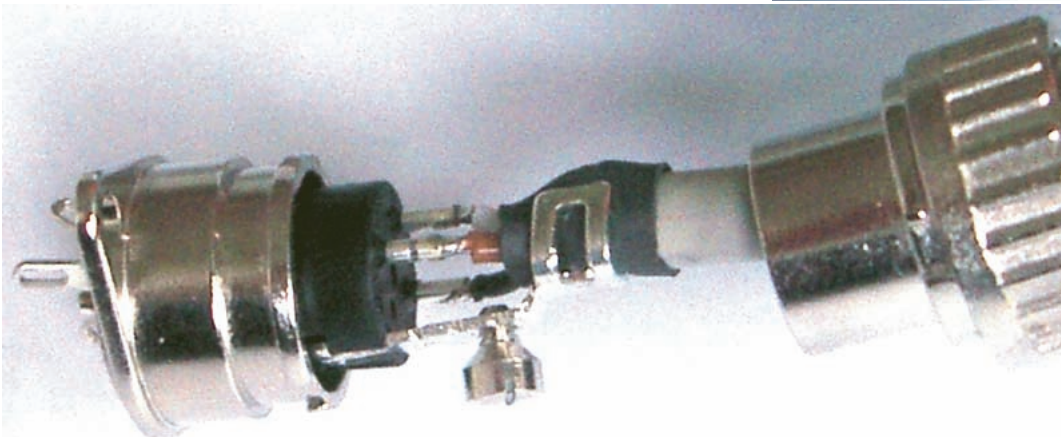
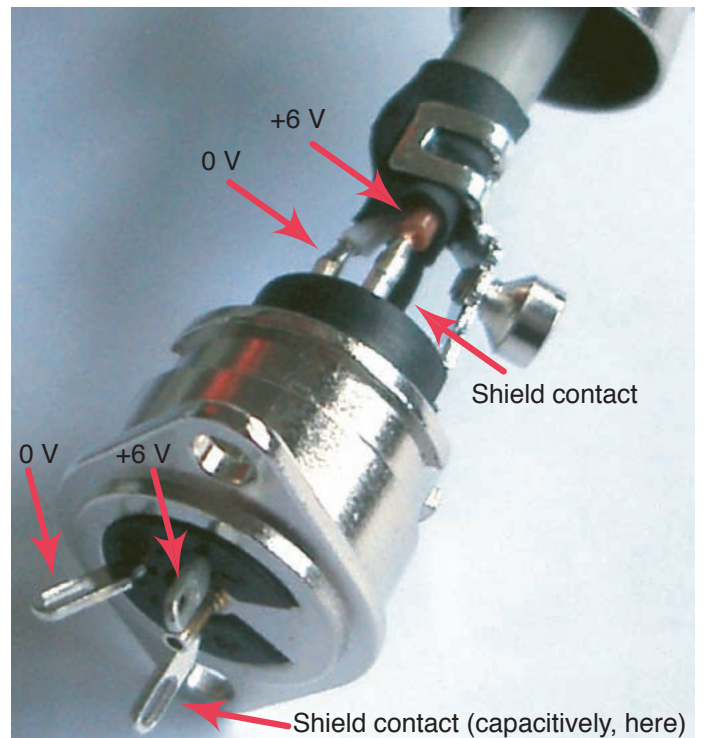


Fig.7: Cable for +6 V supply to PADC, far end.
This connector is plugged at the LV patch panel located on the front face of the magnet yoke iron "wheel", close to the front-end of the chambers. On the two photos the connector on the cable is open and is plugged into his matching patch panel connector, to show the details of the assembly. The LV cable for the minicrate is connected to the same patch panel. At this end of the PADC_LV cable the shield remains dc-floating; inside the patch panel it is connected capacitively to the shield of the cable from the supply.



CABLE LENGTH FOR ALIGNMENT AND PADC

V02: 030605 Gyorgy Bencze and Hans Reithler
and complement MB4 050603 HR

Chambers with services at RIGHT ("R" or "A" in label)

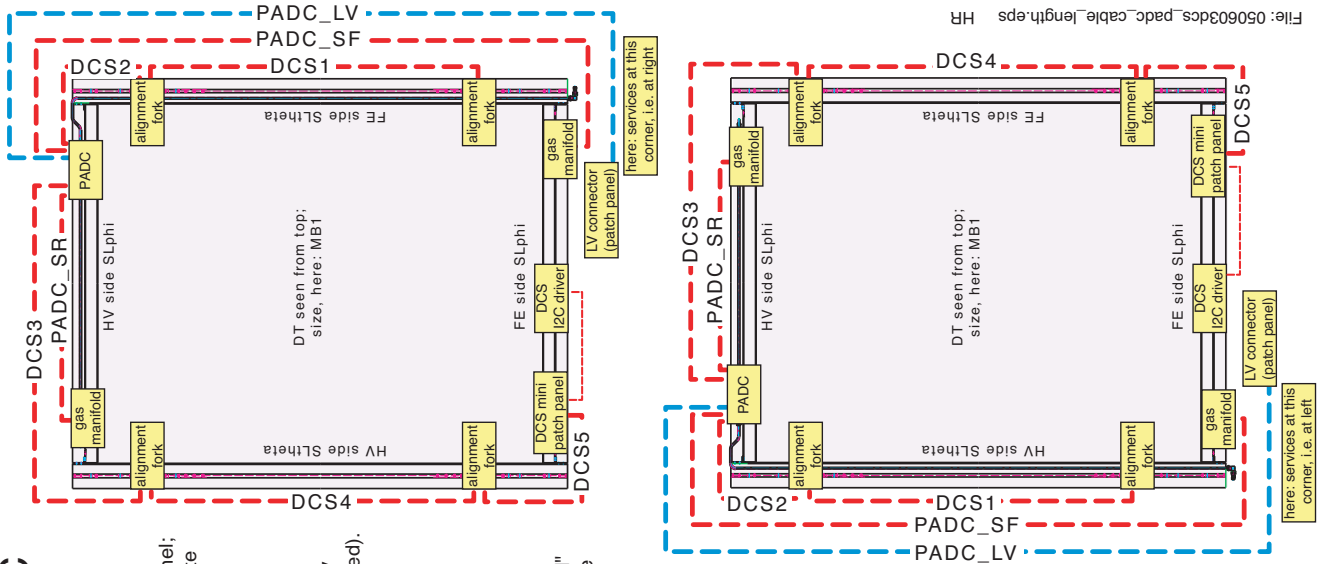
Cable:	MB1	MB2	MB3, MB4/4	MB4	MB4/	MB4/	MB4/	MB4/	MB4/	MB4/	MB4/	chimney:
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
DCS1	156	156	156	156	156	156	156	156	156	156	156	shorter
DCS2	140	140	140	140	140	140	140	140	140	140	140	0
DCS3	270	310	370	465	450	250	310	20	20	20	20	20
DCS4	156	156	156	156	156	156	156	0	0	0	0	0
DCS5	110	140	180	180	180	180	180	20	20	20	20	20
PADC_SR	120	170	220	315	300	105	165	0	0	0	0	0
PADC_SF	400	400	400	400	400	400	400	39	39	39	39	39
PADC_LV	600	600	600	600	600	600	600	39	39	39	39	39

Remarks:

- 1- PADC_LV runs through top channel; others through bottom channel. (Note that the routing of PADC_LV has been changed w.r.t. the routing proposed up to May 2003.)
- 2- Length of PADC_LV includes 200 cm from end of minicrate to LV patch panel on wheel face (assumed). Connector at this end still t.b.d.
- 3- DCS1, DCS4 have little spare length (space).
- 4- DCS2, DCS3, DCS5 have >15 cm spare length.
- 5- DCS5 goes to "mini-patch-panel" at end of minicrate (is end opposite to minicrate LV pigtail). A separate pigtail will link this to the actual DCS driver board (is part of the minicrate and not listed here).
- 6- PADC_SR, PADC_SF have >15 cm spare length at PADC end.
- 7- Length for other chamber types t.b.d. after having some experience with the present ones.
- 8- "MB4" refers to the MB4 for sectors 1, 2, 3, 5, 6, 7.
- 9- Note that the few "chimney" chambers are 39 cm shorter along Z and this changes some of the cable lengths. The cables for a chimney chamber are to be shortened by the amount given in the last column.

Chambers with services at LEFT ("L" or "B" in label)

Cable:	MB1	MB2	MB3, MB4/4	MB4	MB4/	MB4/	MB4/	MB4/	MB4/	MB4/	MB4/	chimney:
	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]	[cm]
DCS1	156	156	156	156	156	156	156	156	156	156	156	shorter
DCS2	140	140	140	140	140	140	140	140	140	140	140	0
DCS3	270	310	370	465	450	250	310	20	20	20	20	20
DCS4	156	156	156	156	156	156	156	0	0	0	0	0
DCS5	100	100	100	100	100	100	100	20	20	20	20	20
PADC_SR	120	170	220	315	300	105	165	0	0	0	0	0
PADC_SF	400	400	400	400	400	400	400	39	39	39	39	39
PADC_LV	700	700	700	700	700	700	700	39	39	39	39	39



File: 050603dcs_padc_cable_lengths.eps HR