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ANNEX 1 : list of applicable WU MICD

Source : CR H-P-ASP-CR-0469 sent to ALS by ASP on 22/07/03

Update of following interface drawings


For Herschel:

- FH3DH and FH3DV: DR-521-001, Iss 1, dated 04/07/03
- FHFCU: 324-E-5000, Iss b, 07/07/03
- FHLCU: SRC/LCU/SP/2001-012, Iss 8, 12/06/03
- FPBOLC: PACS-MX-2000 000 D, Iss D, Sep 02
- FHSPU: FPL-ID-SPU-00002-CRS, Iss 3, 02/04/03
- CCU: HP-2-PANT-ID-0035, Iss 1, 27/02/03

For Planck

- 4K CAU: PLS114FS002SA, Indice A, 22/07/03
- 4K CRU: CDE-ID-1275-00002-CRS, Iss 1 dr, 13/05/03
- REBA: FPL-ID-REB-0002-CRS, Iss 3, 02/04/03

Corresponding lists of applicable drawings for Herschel and Planck are given in following tables

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Instrument Warm Units reference table (Herschel SVM)


INSTR.	ACRONYM	PRJ CODE	LATEST APPLICABLE DOCUMENT (FOR ALS)	REFERENCE DWG		
				NUMBER	ISS.	DATE
HIFI	FH3DH (1)		CR 469	DR 521-001	1	04-07-03
	FH3DV (1)		CR 469	DR 521-001	1	04-07-03
	FHFCU		CR 469	324-E-5000	b	07-07-03
	FHHRH		CR 311	CESR-HRS-MD-3151-103	3.4	08-11-02
	FHHRV		CR 311	CESR-HRS-MD-3151-103	3.4	08-11-02
	FHICU		AD 4	HER H004/02		10-02-02
	FHLCU		CR 469	SRC/LCU/SP/2001-012	8	12-06-03
	FHLSU		CR 422	ICD-HIF-157704	P1	19-02-03
	FHWEH		CR 308	WBE/DR/2000	B rev 6	04-11-02
	FHWEV		CR 308	WBE/DR/2000	B rev 6	04-11-02
	FHWOH		CR 309 Issue 2	UC 00.00	4	24-03-03
	FHWOV		CR 309 Issue 2	UC 00.00	4	24-03-03
PACS	FPBOLC		AD 5 + CR 469	PACS-MX-2000 000 D	D	XX-09-02
	FPDPU		AD 5	HER 005/02		02-05-02
	FPMEC-DEC		CR 394	ME.HES.114P.S.001SA ind A (date 07-04-03)		13-12-02
	FPSPU		AD 5 + CR 469	FPL-ID-SPU-00002-CRS	3	02-04-03
SPIRE	HSDCU	FSDCU	CR 425	SPIR-MX-5100 000 D	D	XX-10-02
	HSDPU	FSDPU	CR 425	HER S005/03	4	23-02-03
	HSFCU	FSFCU	CR 425	SPIR-MX-5200 000 F	F	XX-10-02

Latest applicable IID-B:

INSTRUMENT	A.D.	ISSUE	REV.	DATE
HIFI	4	2	2	26-06-02
PACS	5	2	1	01-07-02
SPIRE	6	2	2	01-07-02

Interface to the Cryostat Control Unit (Herschel only)
Cryostat Control Unit reference table (Herschel SVM)

ACRONYM	REFERENCE DOC			REFERENCE DWG		
	NUMBER	ISSUE	DATE	NUMBER	ISSUE	DATE
CCU	HP-2-PANT-ID-23808.0			HP-2-PANT-ID-0035	1	27-02-03

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Instrument Warm Units reference table (Planck SVM)

INSTR.	ACRONYM	PRJ CODE	LATEST APPLICABLE DOCUMENT	REFERENCE DWG		
				NUMBER	ISS.	DATE
HFI	<u>4CAU</u>	<u>PHDB</u>	<u>AD 7 + CR 387 + CR 469</u>	<u>PLS.114F.S.002SA</u>	<u>A</u>	<u>22/07/03</u>
	4CCU	PHDA	AD 7 + ICD-PLANCK4K-AST-012 Issue 2	CD65720 SHEET 1/2 & 2/2	01	08-03-02
	<u>4CRU</u>	<u>PHDJ</u>	<u>AD 7 + CR 469</u>	<u>CDE-ID-1275-00002-CRS</u>	<u>1 draft</u>	<u>13/05/03</u>
	HeTANK	PHEAA/B	AD 7	F4060A RSKTO51A1006	AD	15-01-98
	4KCDE	PHDC	AD 7 + IC-PHDC-000009-SEA Issue 2 draft A +CR 387	O-KE-0151-001-E	E	11/09/02
	DCCU	PHEC	AD 7+CR 387	H0201C006 H0201C009	A A	30-03-03 30-03-03
	DPU	PHBA-N/R	AD 7+CR 387	I592EB003	B	02/12/02
	PAU	PHCBA	AD 7 +CR 337 Issue 2	7137-QD0-000	A	13-05-03
	REU	PHCBC	AD 7 +CR 344	REU ICD IF- PHCBC282-200050-CESR+updated drawing	V2	30/01/03
LFI	BEU	PLBEU	AD 8	Draft sheet 1/2 & 2/2	DRAFT	12-06-02
	DAE-PB	PLAEF	AD 8	Draft sheet 1/2 & 2/2	DRAFT	22-03-02
	<u>REBA</u>	<u>PLREN/R</u>	<u>AD 8+ CR 469</u>	<u>EPL-ID-REB-0002-CRS</u>	<u>3</u>	<u>02-04-03</u>
SCS	SCC	PSM3/R3	AD 8 +CR 338	10203010 4 sheets	X20	21/02/02 (erroneous)
	SCE	PSM4/R4	AD 8	941000 941001		18/01/02 09/04/02

Latest applicable IID-B:



INSTRUMENT	A.D.	ISSUE	REV.	DATE
HFI	7	2	1	01-07-02
LFI	8	2	1	01-07-02
SCS	8	2	1	01-07-02

Interfaces to the Customer Furnished Equipment (SREM, VMC)

Customer Furnished Equipment reference table (Herschel/Planck SVM)

ACRONYM	REFERENCE DOC			REFERENCE DWG		
	NUMBER	ISSUE	DATE	NUMBER	ISSUE	DATE
SREM	SREM-DI-CSAG-003	1.2	15-12-00	CR 207 374 AZ C	AC	27-01-99
VMC						
FOG				DT0051932	01 rev 00	

XXX = HES for Herschel or PLS for Planck

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ANNEX 2 : sum up of ASED comments (mail from 28/07/03)

Pour : ken.pletinckx@nexans.com
Cc : gbottaro@to.alespazio.it
 stephane.dassy@nexans.com
 ofratacci@to.alespazio.it
Objet : Sum up of splinter with ASED

Hello everybody,
 in order to support the telecon this afternoon, here is the list of the outcomes of splinter session on Cryo-harness in SVM with Astrium (ASED) :

General :

1) A common database giving WU ICDs (M+E) and CAD models shall be managed by ASP on a ftp server accessible to all parties involved.

The following comments are to be considered as looking to the lateral panel from SVM center. They are based on the preliminary CryoH. routing CAD models delivered by ASED during the QPM. The models have been transmitted to ALS.

PACS panel :

1) ASED needs more space between DECMEC & BOLC to route CryoH, the power H. supplying DECMEC shall then be routed on DECMEC's small lateral side. Signal H. shall be put also as close as possible to the DECMEC.

Nota : segregation of harness class to be assessed

2) DECMEC J17 and redundant J117 connectors appear to be simultaneously connected to CryoH. and WIH. To be checked.

SPIRE panel :



1) the area at the left of the FSFCU shall be enlarged, leading to grouping of thermal ctrl/analog H.

2) OBDH H. loop currently located in the middle of the shear webs shall be shifted close to the left web as much as possible. If the antenna is blocking, the loop shall be shifted to the right web.

The centered area of the shear webs is dedicated to CCU H. routing

3) WIH on top of FSFCU unit shall be routed closer to the unit in order to free space for CryoH. routing and connection.

HIFI -Y-Z panel :

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1) FHFCU area : additional space needed for CryoH. accommodation but pending on following actions

- * FCU connectors changing => re-routing to be assessed by ASED
- * Up-converter : accommodation to be assessed by ALS
- * CryoH. routing update in FCU left area, ASED
- * WIH to be updated accordingly in this area

HIFI -Y panel :

1) WIH on top of FHLCU and FHLSU shall be routed closer to units in order to increase the space for the CryoH. routing

2) FHLCU J03 and J23 connectors are connected simultaneously to CryoH. and WIH. To be checked.

3) Routing on top of FHLSU : due to possible new IF for LOU WG, the routing of WIH / SVM H./ all non CryoH. shall be restricted to the minimum on top of FHLSU.

4) The LOU WG IF is on-going, as soon as information is available, this will be passed to ALS/Nexans

Star Trackers routing



ASED requests the routing of Star Trackers to ALS in order to check the compatibility with CryoH.

Cone Telescope H. bracket relocation

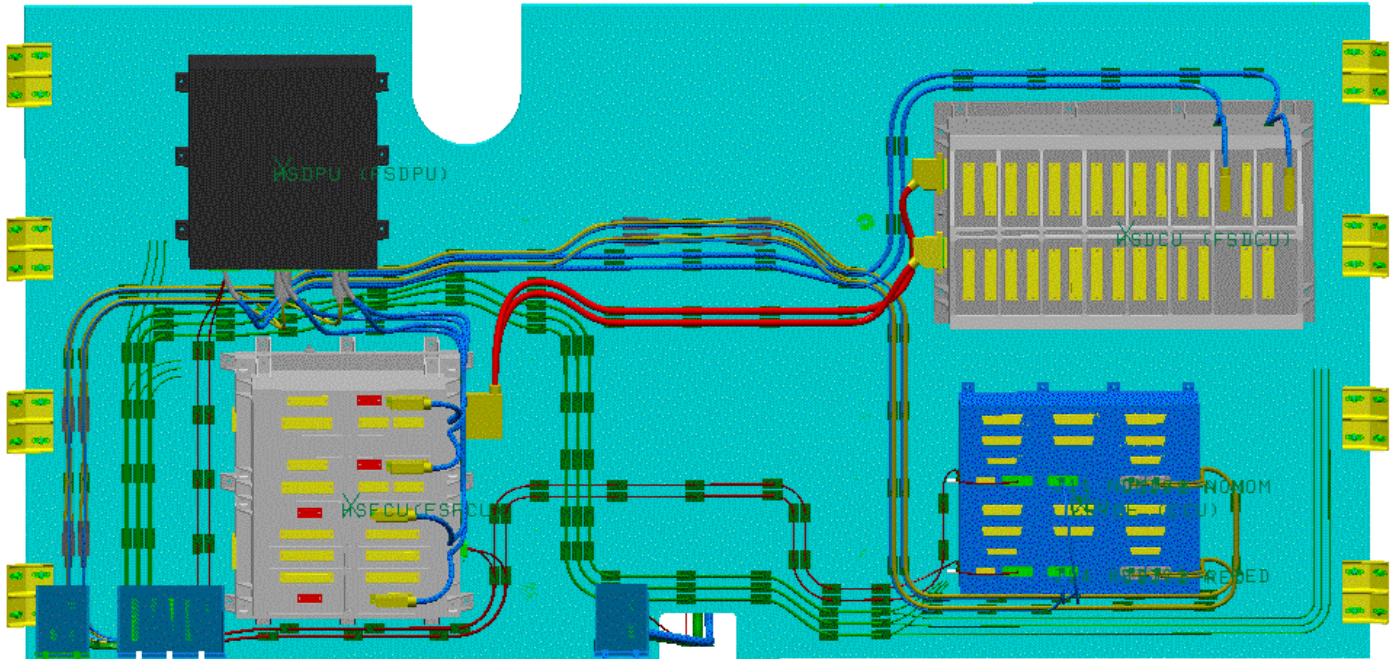
ASED has agreed the new location of the bracket proposed by ALS

Best regards.

Baptiste Marchand.

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ANNEX 3 : SPIRE panel latest configuration



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ANNEX 4 : Instruments comments (mail from 22/07/03)



Pour : ken.pletinck@nexans.com
 stephane.dassy@nexans.com
cc : gbottaro@to.alespazio.it
 ofratacci@to.alespazio.it
 Bernard Collaudin/ALCATEL-SPACE@ALCATEL-SPACE
Objet : comments from Instruments

Dear all,
 in order to support the discussion for tomorrow,
 we have received the following comments from Instruments up to now :
 (Astrium comments for Herschel Cryohrn are not included and will be reviewed
 tomorrow)

HERSCHEL

HIFI :

- 1) Bundles of different EMC classes are running close together. This should be avoided or metallic barriers should be used.
- 2) For EMC reasons the RF cabling and analog signal cables between these units should be routed close together and close to the baseplate. For the analog signal harness specific connectors are used to make this possible.
- 3) The backshells foreseen for HIFI are the following Glenair types:
 550T039M1R9H0-03B, size E, TOP entry
 550E039M1R9J0-03B, size E, END entry
 and the equivalent types for size A, B and C.
- 4) The receptacles for all coaxial (not only semi-rigid) cables, located on the connectors brackets, are:
 Type: ESCC 340200304B101, Manufacturer: Radiall/France
- 5) the pictures of the special connectors (for the WEH-WOH and WEV-WOV harness) are attached to this mail.
 As shown the cabling can route directly below these connectors on the base plates.

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I requested also a drawing of these connectors, which will be sent as soon as possible, but to get an impression of the dimension you need to know that the grid on these pictures is 5x5mm.

<<P7101322.JPG>>

<<P7101321.JPG>>

<<P7101320.JPG>>



HIFI conn views.zip

SPIRE :

1) Please specify the details of the 4 harness wide clamp base shown bottom right in VueF of drg HP-NXH-DR-XXXX.

J-L of CEA points out that it needs to fit with margin on the flat surface shown, not overhang over the power supply base's joint.

PACS :

1) the back shell information as well finalized WEU drawings are missing. These information was requested very often from our partner institutes but it is not yet available.

2) in the Herschel - PACS table the identifier FPFPU P09 is missing.

PLANCK



HFI 4K

1) J9 on the 4K CDE goes to the Ancillary unit and not on the Compressor. J9 is the 15 way connector with Compressor A & B temperatures and PPO A & B temperatures.

2) The small connector on the ancillary unit does not connect to the CDE but runs along the connecting pipework to the disconnection box.



Harness Routing to Disconnection Box.jpg

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3) The information you need for the HFI 4KCDE harnesses can be found in table 2 of the attached document (backshell).



IC PHDC 000064 SEA issue 1 Harness Design.doc

HFI 0.1 K

1) We are also somewhat discovering accommodation changes (such as redondant DPU now sitting on the same panel as the Nominal one), possible new splitting of the harnesses linking the DPUs to the DCE (which may imply new connectors, different geometry of covers,...), we lack a drawing showing the routing between these units,...

LFI



1) We send in annex the list of the BEU harness with indication about bundle characteristics.



Cables_Balax_1.xls

Best regards.

Baptiste Marchand.

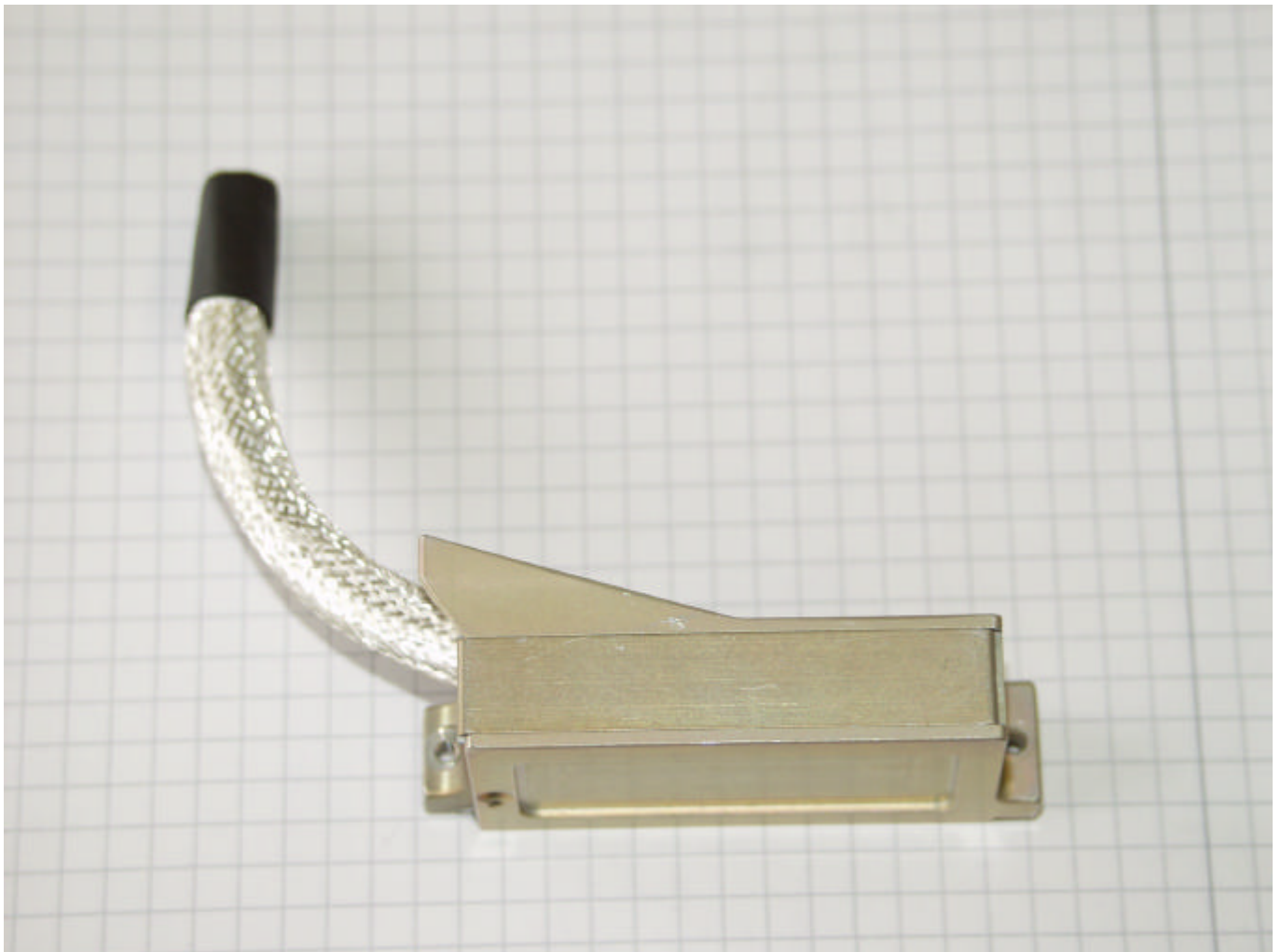
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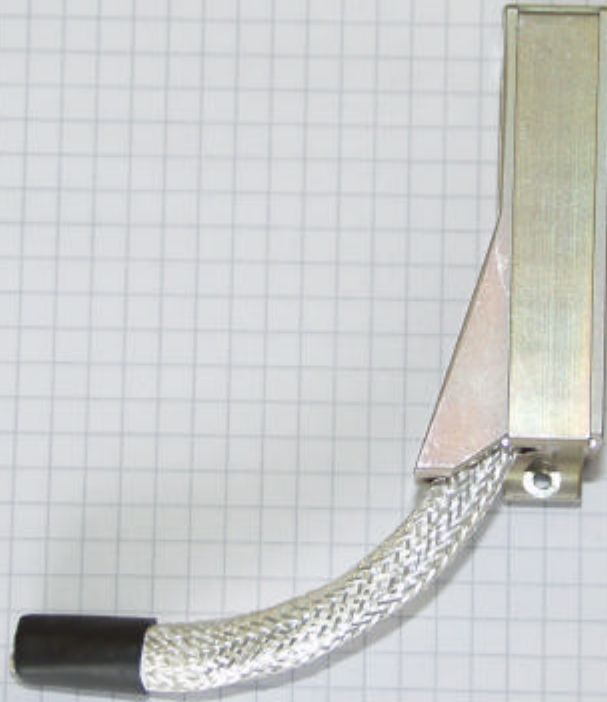
ANNEX 4 bis

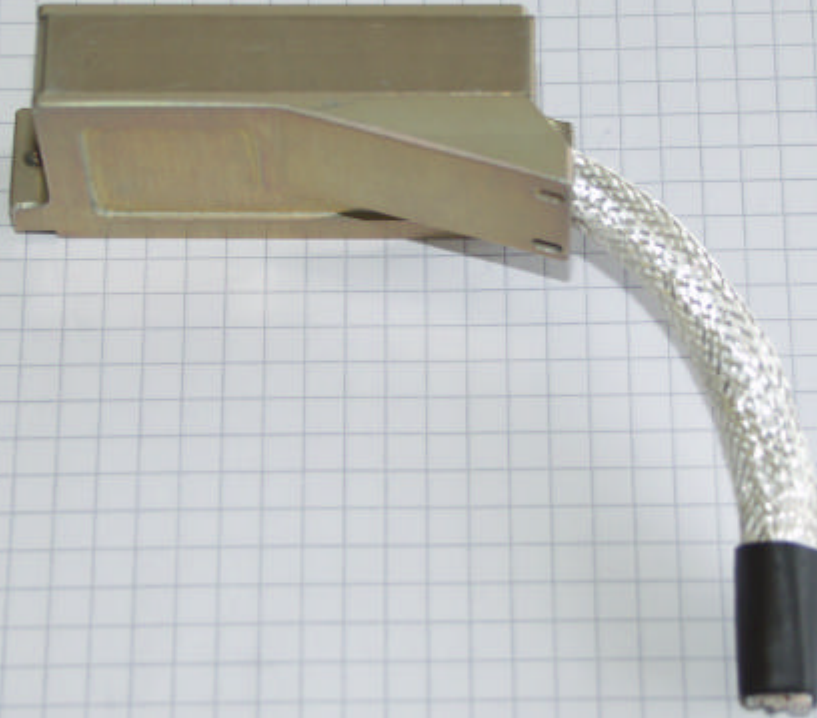
Content of HIFI conn views.zip :


Backshells for WEH/V and WOH/V.

Nota : dimensions of the grid on the pictures is 5x5 mm

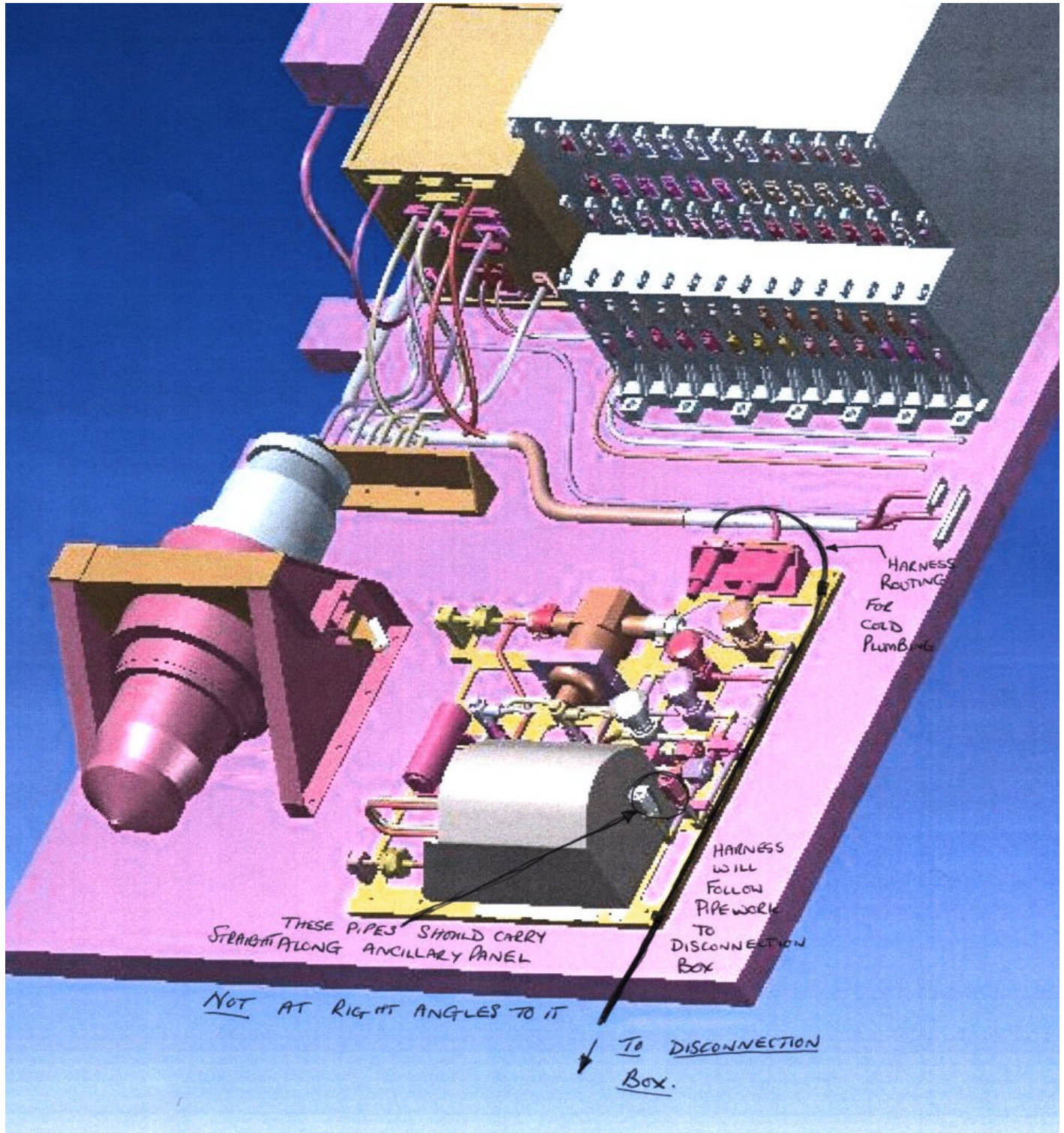






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ANNEX 4 ter : 4K CAU connection



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ANNEX 4 quarterio

Connector	Connector Type	Backshell	Function
PHDC-P3A	340100201B DEMA9SNMBFO	100P1574-09-1-C Polamco Ltd.	Compressor A Drive Outputs
PHDC-P3B	340100201B DEMA9SNMBFO	100P1574-09-1-C Polamco Ltd.	Compressor B Drive Outputs
PHDC-P4A	340100201B DEMA9PNMBFO	100P1574-09-1-C Polamco Ltd.	Position Pick-off (PPO) A
PHDC-P4B	340100201B DEMA9PNMBFO	100P1574-09-1-C Polamco Ltd.	Position Pick-off (PPO) B
PHDC-P5	SCBM5W5M0000G	100P1574-15-1-C Polamco Ltd.	Force Inputs
PHDC-P6	340100202B DCM62PNMBFO	100P1574-37-1-C Polamco Ltd.	Ancillary Inputs
PHDC-P8	340100201B DAM15PNMBFO	N/A	Transport Link
PHDC-P9	340100201B DAM15PNMBFO	100P1574-15-1-C Polamco Ltd.	Compressor Temperatures
PHDD-P120	340100201B DEMA9PNMBFO	100P1574-09-1-C Polamco Ltd.	Compressor A Drive Outputs
PHDD-P121	340100201B DEMA9PNMBFO	100P1574-09-1-C Polamco Ltd.	Compressor B Drive Outputs
PHDD-P122	340100201B DEMA9SNMBFO	100P1574-09-1-C Polamco Ltd.	Position Pick-off (PPO) A
PHDD-P123	340100201B DEMA9SNMBFO	100P1574-09-1-C Polamco Ltd.	Position Pick-off (PPO) B
PHDD-P124a	340200801B301	N/A	Force Input a
PHDD-P124b	340200801B301	N/A	Force Input b
PHDD-P124c	340200801B301	N/A	Force Input c
PHDD-P124d	340200801B301	N/A	Force Input d
PHDD-Pxxx	340100202B DCMA62SNMBFO	100P1574-37-1-C Polamco Ltd.	Ancillary Inputs
PHDD-Pyyy	340100201B DEMA9SNMBFO	100P1574-15-1-C Polamco Ltd.	Compressor Temperatures

ANNEX 5 PAU backshell IDS

Non magnetic D-Sub backshells

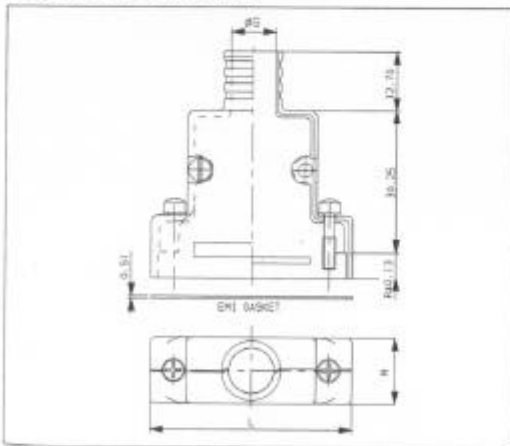
EMI/RMI Shielded backshells
Straight & Low profile outlet banded clamp termination

Accessories	D	E	8949	405	K	1	NM	J
Shell size E - A - B - C - D								
Cable outlet option								
Straight outlet				405				
Low profile outlet				401				
Cable outlet type (only for low profile outlet) (see below ★)								
Height code								
Front mount		Rear mount	mm	inch				
1		-	7,74	0,305				
-		2	6,32	0,249				
-		3	5,53	0,218				
-		4	4,74	0,187				
-		5	3,93	0,155				
Non magnetic								
Finish code								
Blank	0,8 µm gold							
J	12,7 µm nickel (per MIL-C-26074 grade B)							

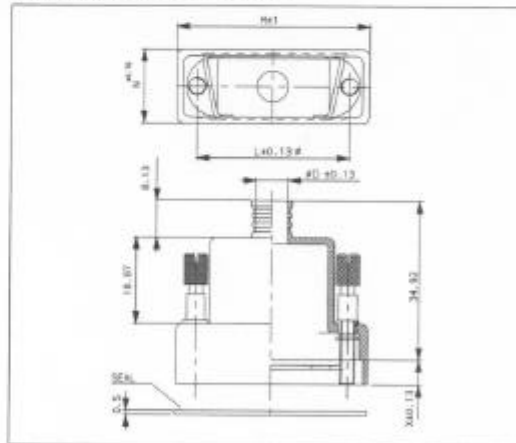
Characteristics

- Split, solid fully machined aluminium alloy
- Cable outlet for banded clamp termination system
- For front or rear mount with EMI gasket
- Non magnetic D-Sub backshells

Straight cable outlet : 405



Low profile cable outlet : 401



Shell size	M	L	Ø G	Shell size	M	N	L	Ø D	* Outlet type	Ø D	★ Outlet type
E	15,98 .829	35,03 1,379	6,73 .265	E	34,69 1,366	16,25 .640	24,99 .984	4,83 .190	B	5,59 .220	C
A	15,98 .829	43,36 1,707	9,9 .390	A	43,03 1,694	16,25 .640	33,32 1,312	4,83 .190	B	6,98 .275	E
B	15,98 .829	57,25 2,254	10,54 .415	B	56,92 2,241	16,25 .640	47,04 1,862	6,6 .260	D	7,24 .285	F
C	15,98 .829	73,53 2,895	10,54 .415	C	73,2 2,892	16,25 .640	63,5 2,500	6,6 .260	D	8,89 .350	G
D	18,79 .740	71,14 2,801	13,33 .525	D	70,56 2,778	19,05 .750	61,11 2,406	8,89 .350	G	12,45 .490	H



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ANNEX 6 – LFI bundles characteristics

BEU Cables - Baseline July 2003

Outer Space Side

from BEU to Pwr Box

	Cable Name	FROM			TO			Cable diam. mm	Bend. Fact.	Bending Radius mm	Content
		Conn. ID	Type	Backshell	Conn. ID	Type	Backshell				
1A	Left FEM Bias Tray - BIAS PWR	J11	DD DAMA15S	3401-022-35B				5	25	3 x TT AWG 24	
1B	Left FEM Bias Tray - PHSW PWR	J13	DD DAMA15S	3401-022-35B	J05	DD DBMA25P	3401-022-36B	5	25	2 x TT AWG 24	
2	Left BEM Tray Pwr	J23	DD DEMA9S	3401-022-34B	J07	DD DEMA9P	3401-022-34B	5	25	2 x TT AWG 24	
3	PWR BOX CMD Link	J48	HD DAMA26S	3401-022-35B	J47	HD DAMA26P	3401-022-35B	8,5	42,5	4 x TP + 1 x TSP + 8 S AWG 26	
4	DAE-BEU Pwr	J50	DD DEMA9S	3401-022-34B	J49	DD DEMA9P	3401-022-34B	6	30	1 x TT + 2 x TP AWG 22	
5	Right BEM Tray Pwr	J24	DD DEMA9S	3401-022-34B	J08	DD DEMA9P	3401-022-34B	5	25	2 x TT AWG 24	
6A	Right FEM Bias Tray - PHSW PWR	J14	DD DAMA15S	3401-022-35B				5	25	2 x TT AWG 24	
6B	Right FEM Bias Tray - BIAS PWR	J12	DD DAMA15S	3401-022-35B	J05	DD DBMA25P	3401-022-36B	5	25	3 x TT AWG 24	

from DAE BEU to Lateral Trays

7	Left FEM Bias b. CMD Link	J19	HD DBMA44P	GLN 550-S-102-M-3-R3-H	J15	HD DBMA44S	GLN 550-S-102-M-3-R3-H	12	50	
8	Left FEM Bias b. CMD Link	J21	HD DBMA44P	GLN 550-S-102-M-3-R3-H	J17	HD DBMA44S	GLN 550-S-102-M-3-R3-H	12	50	
9	Right FEM Bias b. CMD Link	J20	HD DBMA44P	GLN 550-S-102-M-3-R3-H	J16	HD DBMA44S	GLN 550-S-102-M-3-R3-H	12	50	
10	Right FEM Bias b. CMD Link	J22	HD DBMA44P	GLN 550-S-102-M-3-R3-H	J18	HD DBMA44S	GLN 550-S-102-M-3-R3-H	12	50	

S/C Centre Side

from Lateral Trays to DAE-BEU

11	Left BEM A Science Signals	J25	HD DBMA44P	GLN 550-E-102-M-3-R3-H	J29	HD DBMA44S	GLN 550-E-102-M-3-R3-H	14,6	75	12 x TSP + 1 TP AWG 26
12	Left BEM B Science Signals	J27	HD DBMA44P	GLN 550-E-102-M-3-R3-H	J31	HD DBMA44S	GLN 550-E-102-M-3-R3-H	14,6	75	12 x TSP + 1 TP AWG 26
13	Right BEM A Science Signals	J26	HD DBMA44P	GLN 550-E-102-M-3-R3-H	J30	HD DBMA44S	GLN 550-E-102-M-3-R3-H	14,6	75	12 x TSP + 1 TP AWG 26
14	Right BEM B Science Signals	J28	HD DBMA44P	GLN 550-E-102-M-3-R3-H	J32	HD DBMA44S	GLN 550-E-102-M-3-R3-H	14,6	75	12 x TSP + 1 TP AWG 26

from DAE BEU to REBA

15	Data Link Nom. REBA	J09	HD DCMA62S	3401-022-37B	J13	DD DAMA15S	3401-022-35B	15	75	5 x TP 26 AWG 26
					J22	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
					J23	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
					J32	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
					J33	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
bundle										

16	Data Link Red. REBA	J09	HD DCMA62S	3401-022-37B	J13	DD DAMA15S	3401-022-35B	15	75	5 x TP 26 AWG 26
					J22	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
					J23	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
					J32	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
					J33	MWDM-5L-9PSM	GLN 507-146-M09H			4 x TP AWG 26
bundle										

from S/C to DAE BEU

	Nom S/C CLK	N/A	DD DEMA9P	N/A	J03	DD DEMA9S	N/A			
	Red S/C CLK	N/A	DD DEMA9P	N/A	J03	DD DEMA9S	N/A			