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REVISION HISTORY					
LTR	DESCRIPTION	CLASS	DWN	ENGR	SEE JPL DATA MANAGEMENT SYSTEM FOR APPROVAL SIGNATURES AND DATES.
A	----- INITIAL RELEASE -----	E			
B	CHANGED TO IP64+ RATED CONNECTORS.	E	D PALMER	D PALMER	
C	UPDATE FOR PRODUCTION RELEASE.	E	D PALMER	D PALMER	
D	CHANGED TO IPC/WHMA-A-620C STANDARD. UPDATED LABELING.	E	D PALMER	D PALMER	

NOTES:

1. LASER MARK ON BACK SIDE OF P1 BACKSHELL (NOT THE COVERPLATE) WITH 1.0 mm MINIMUM HIGH CHARACTERS THE TEXT SHOWN IN TABLE 1. (THE VENDOR DESIGNATION AND THE STARTING SERIAL NUMBER SHALL BE IN ACCORDANCE WITH THE VALUES PROVIDED IN THE PURCHASE ORDER). LABEL INDIVIDUAL CABLE ENDS AS SHOWN.
2. ALL DIMENSIONS IN mm.
3. LENGTH TOLERANCE IS ±10 mm EXCEPT AS NOTED.
4. ON J1-J3, USE AN 8mm ±1mm LENGTH OF 1.2mm I.D. HEATSHRINK, ITEM 14, ON THE INSULATION OF EACH INDIVIDUAL WIRE TO ENSURE A GOOD SEAL WITH THE CONNECTOR HOUSING.
5. INSULATE DRAIN WIRES INSIDE P1 BACKSHELL WITH TEFLON TUBE SLEEVING, ITEM 18, (FOIL SHIELDS DO NOT NEED TO BE ISOLATED FROM EACH OTHER INSIDE THE P1 BACKSHELL.)
6. USE MANUFACTURER SPECIFIED TOOLING FOR ALL CONTACTS AND CONNECTORS.
7. STRIP WIRE INSULATION PER IPC/WHMA-A-620C, SECTION 3.
8. USE ADHESIVE LINED HEAT SHRINK TUBING, ITEM 16 ON EACH CABLE AT P1 AND J1-J3 TO SEAL IT.
9. CRIMP ITEM 1 AND ITEM 4 CONTACTS AND ITEM 10 PER IPC/WHMA-A-620C, SECTION 5.
10. DELETED.
11. WIRE PULLOUT TEST: VALIDATE CRIMPING PROCESSES PER IPC/WHMA-A-620C, SECTION 19.6.1, and 19.7.2.1
12. CONTACT RETENTION VERIFICATION: 100% OF CONTACTS SHALL BE TESTED FOR SEATING PER IPC/WHMA-A-620C, SECTION 19.7.5.
13. SPOT TIE CABLE BUNDLE TOGETHER UNDER BLACK HEAT SHRINK AS NEEDED USING ITEM 20.
14. USE FUSION WRAP, ITEM 19, TO BUILD UP DIAMETER OF THE WIRE BUNDLE FOR THE STRAIN RELIEF INSIDE OF THE P1 BACKSHELL, ITEM 2.

15. EACH CABLE SHALL BE 100% ELECTRICALLY TESTED PER IPC/WHMA-A-620C, SECTIONS 19.4 AND 19.5.
- CONTINUITY: CONNECTION RESISTANCE LESS THAN 0.5 OHMS (19.5.1).
- INSULATION RESISTANCE: MORE THAN 100 MOHMS WHEN MEASURED AT 500 VDC (19.5.4).

16. -1 CONFIGURATION ONLY
17. P1 BACKSHELL SUPPORTS CABLE EGRESS FROM EITHER SIDE. CONNECT AS SHOWN.
18. ALTERNATE LEMO CONNECTOR FEG.0B.304.CYBD42Z (BRASS) CAN BE USED WITH TMT PERMISSION.
19. ALTERNATE JST CONTACT SWPR-001T-P025 (TIN FINISH) CAN BE USED WITH TMT PERMISSION.
20. SILICONE INTERFACIAL SEAL (INCLUDED WITH ITEM 1) TO BE INSTALLED ON MATING FACE OF CONNECTOR P1.
21. ALL CONNECTOR PINS SHALL BE FITTED TO EACH CONNECTOR EVEN IF NOT USED FOR CONNECTIVITY.
22. INSTALL SEALING PLUGS, ITEM 21, IN CONNECTOR P1, ITEM 1, IN ALL UNWIRED LOCATIONS (46, 47, 48, 49, AND 50. FOR -1; ADD 39, 40, 41, 42, 43, 44, AND 45 FOR -2 AND -3).
23. UNUSED PINS IN THE JST CONNECTORS, J2 AND J3, ARE TO BE SEALED WITH 1.3 mm DIA. NYLON MONOFILAMENT, ITEM 22, CRIMPED TO A TERMINAL, ITEM 10, AND INSERTED IN UNUSED LOCATIONS IN THE SAME MANNER AS A NORMAL WIRE. TRIM THE MONIFILAMENT FLUSH WITH THE SURFACE OF THE SILICONE SEALING GLAND.

24. FABRICATE AND INSPECT CABLE PER IPC/WHMA-A-620C, CLASS 3.

FOR PRODUCTION

		MATERIAL:	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	CONTRACT NO _____	
		PER SPECIFICATION	LINEAR TOLERANCES:	APPD _____ DATE _____	
			.XX ± .03	DWN	D. PALMER
			.XXX ± .010	ENGR	D. PALMER
			ANGULAR TOLERANCE: ± 0.5°	SEE JPL DATA MANAGEMENT SYSTEM FOR APPROVAL SIGNATURES AND DATES.	
		SURFACE ROUGHNESS (MICROMETERS) ✓			
		DO NOT SCALE DRAWING INTERPRET DIMENSIONING AND TOLERANCING PER ASME Y14.5-2009 INTERPRET DWG PER ASME Y14.100			
		THIRD ANGLE PROJECTION			
TMT					
NEXT ASSEMBLY	USED ON				
APPLICATION					

TMT CROSS-REFERENCE				M1CS-400-01101 TMT.CTR.DWG.16.018.REL04	
JET PROPULSION LABORATORY					
CALIFORNIA INSTITUTE OF TECHNOLOGY PASADENA, CA 91109					
CABLE ASSEMBLY, STRAIN GAUGE HYDRA					
SIZE	CAGE CODE	10398529		REV	D
B	23835				
SCALE: 1/1		UNCLASSIFIED		SHEET 1 OF 6	

LEGEND

AL = ADHESIVE LINED
AR = AS REQUIRED
EQUIV. = EQUIVALENT
PBT = POLYBUTYLENE TEREPHTHALATE
PTFE = POLYTETRAFLUOROETHYLENE
POS = POSITION
QL = QUICK LOCK
REC = RECEPTACLE
SOC = SOCKET
TBD = TO BE DETERMINED
TPU = THERMOPLASTIC POLYURETHANE ELASTOMER
(DESMOPAN 786)

TABLE 1: CABLE MARKING TEXT	
LINE 1	STRAIN GAUGE HYDRA - L
LINE 2	M1CS-400-01101 AL Rev M
LINE 3	S/N NNN -XXXXX
WHERE L IS THE DASH NUMBER FROM THE PARTS LIST, M IS THE CURRENT REVISION, NNN IS A 3-LETTER VENDOR DESIGNATION (ASSIGNED BY TMT) AND XXXXX IS A UNIQUE SERIAL NUMBER FOR EACH CABLE ASSEMBLY.	

4	3	-	23		2P953	GMA.0B.035.DV	BEND RELIEF, YELLOW	LEMO	TPU
-	-	AR	22	J2-J3	-	TFM-B100-150CL	1.3 mm DIA. MONOFILAMENT	TRIPLE FISH	NYLON 23
10	10	5	21	P1	28198	4737-37-0-0	SEALING PLUG	POSITRONIC	PTFE 22
AR	AR	AR	20		92194	LTN-4C	LACING TAPE, 0.05" WIDE	ALPHA WIRE	NYLON
AR	AR	AR	19	P1	62081	P36728 OR EQUIV.	SEAL-TITE FUSION WRAP	LAWSON PROD.	
AR	AR	AR	18	P1	92194	TFT20026 NA005	TUBING, 0.4mm I.D. NATURAL	ALPHA WIRE	PTFE
AR	AR	AR	17	P1	92194	F2213/4 BK105	HEAT SHRINK, 19mm I.D. BLACK	ALPHA WIRE	POLYOLEFIN
AR	AR	AR	16	P1 J1-J3	92194	F3211/4 BK103	HEAT SHRINK, 6.4mm I.D. BLACK	ALPHA WIRE	POLYOLEFIN
-	AR	AR	15		92194	F221B3/16 CL100	HEAT SHRINK, 4.8mm I.D. CLEAR	ALPHA WIRE	POLYOLEFIN
AR	AR	AR	14	J1-J3	92194	F221B3/64 CL100	HEAT SHRINK, 1.2mm I.D. CLEAR	ALPHA WIRE	POLYOLEFIN
-	-	AR	13		92194	78113	CABLE, SJ, 3 CONDUCTOR, 26AWG	ALPHA WIRE	
AR	AR	AR	12		92194	78112	CABLE, SJ, 2 CONDUCTOR, 26AWG	ALPHA WIRE	
AR	AR	AR	11		92194	78152	CABLE, SJ, 2 PAIR, 28AWG	ALPHA WIRE	
2	2	11	10	J1-J3	67D17	SWPR-001GH-P025	TERMINAL, SOCKET, 22-26 AWG	JST SALES AMER.	GOLD FINISH 19
-	-	1	9	J3	67D17	06R-JWPF-VSLE-D	HOUSING, 6 POS, REC, 2mm	JST SALES AMER.	PBT
-	-	1	8	J2	67D17	03R-JWPF-VSLE-S	HOUSING, 3 POS, REC, 2mm	JST SALES AMER.	PBT
1	1	1	7	J1	67D17	02R-JWPF-VSLE-S	HOUSING, 2 POS, REC, 2mm	JST SALES AMER.	PBT
0	4	3	6		2P953	GMA.0B.035.DV	BEND RELIEF, GREEN	LEMO	TPU
3	0	4	5		2P953	GMA.0B.035.DR	BEND RELIEF, RED	LEMO	TPU
7	7	7	4	P2-P8	2P953	FEG.0B.304.U1716	CONNECTOR, 4-Pin LEMO PLUG	LEMO	18
1	1	1	3	P1	00779	1-2308272-7	CABLE CLAMP, SIZE 5, 14-16 mm	TE CONNECTIVITY	ZINC ALLOY
1	1	1	2	P1	00779	1-2308338-1	BACKSHELL, 50 POSITION DSUB, QL	TE CONNECTIVITY	ZINC ALLOY
1	1	1	1	P1	28198	EVD50P00000/AA-1289.2	PLUG, D-SUB 50 PIN MALE CRIMP	POSITRONIC	INCLUDES PINS
-3	-2	-1	ITEM NO	REF DES	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	SPECIFICATION	MATERIAL OR NOTE
	QTY REQD								
	PARTS LIST								

TABLE 3: FINISHED CABLE LENGTHS	
CONNECTOR	LENGTH
P2	1090 mm
P3	935 mm
P4	805 mm
P5	655 mm
P6	815 mm
P7	560 mm
P8	690 mm
J1	300 mm
J2	-
J3	-

WARPING HARNESS #1: RED
 WARPING HARNESS #2: GREEN
 WARPING HARNESS #3: YELLOW

 P1 CONNECTS TO UPPER SEGMENT BOX 2
 (THIS CONFIGURATION ONLY)

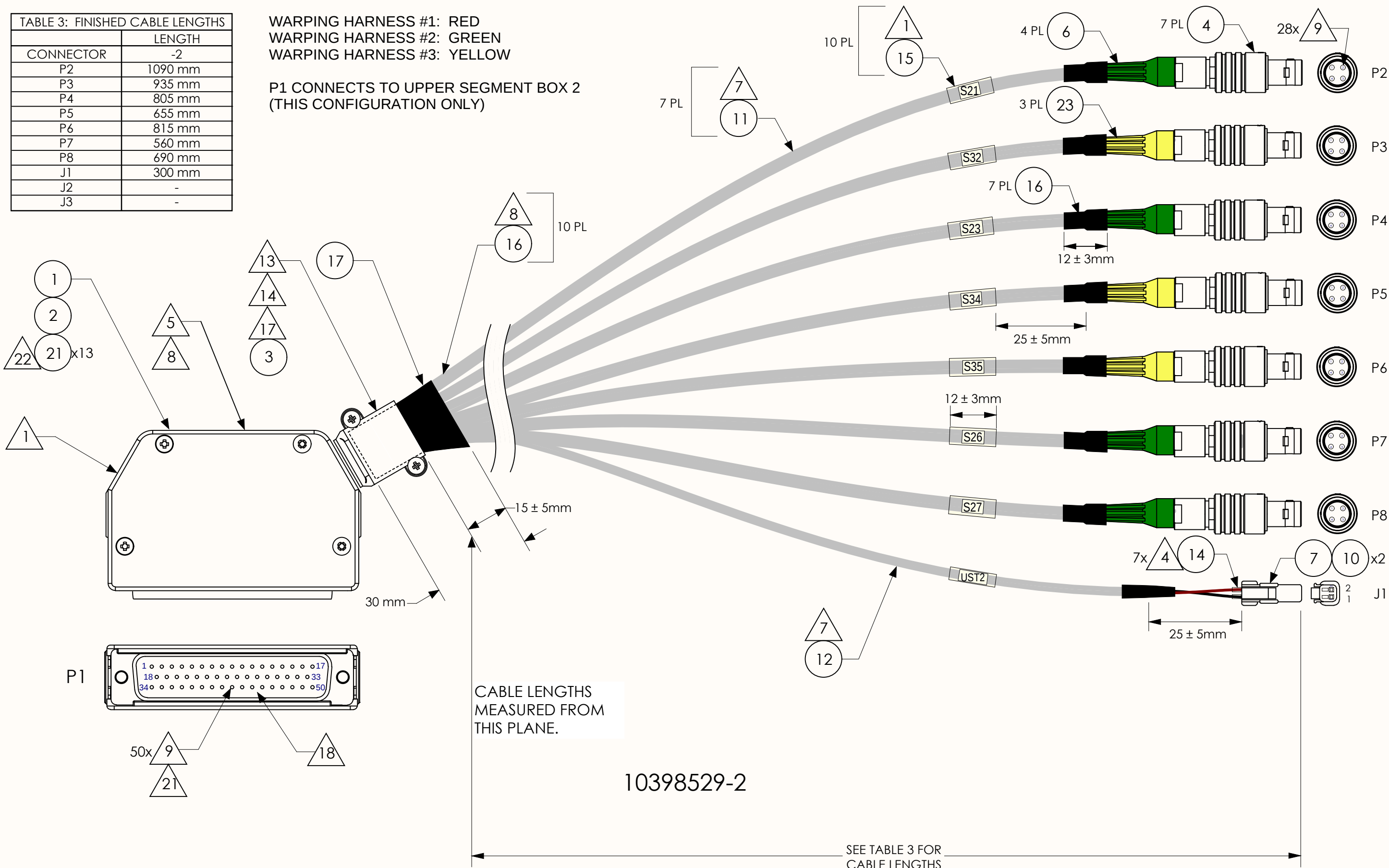


TABLE 4: FINISHED CABLE LENGTHS	
CONNECTOR	LENGTH
P2	1090 mm
P3	935 mm
P4	805 mm
P5	655 mm
P6	815 mm
P7	560 mm
P8	690 mm
J1	620 mm
J2	-
J3	-

WARPING HARNESS #1: RED
 WARPING HARNESS #2: GREEN
 WARPING HARNESS #3: YELLOW

 P1 CONNECTS TO UPPER SEGMENT BOX 3
 (THIS CONFIGURATION ONLY)

