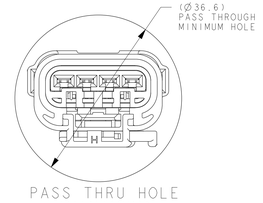
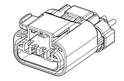
APPLICABLE COMPONENTS

ITEM	DESCRIPTION	MANDATORY	TERMINAL CAVITY MIN/MAX OD	PLATING/MATERIAL	FORD PART NUMBER	SUPPLIER COMPONENT PART NUMBER	
						MVL	DELPHI
(L1)(K3)(K2) 1	B3B6/FEMALE APEX/2.80MM (CAV 1-4)	NO	1.70 - 4.3	GOLD/TIN/SILVER AND COPPER ALLOY	N/A	N/A	N/A
2	MALE DELETE CAP	NO	N/A	PA66GF35	DU5T-14A594-AA	F291210	33511450
3	CAVITY PLUG	NO	N/A	PA66GF15	9U5T-14666-AA	54200005	15537297

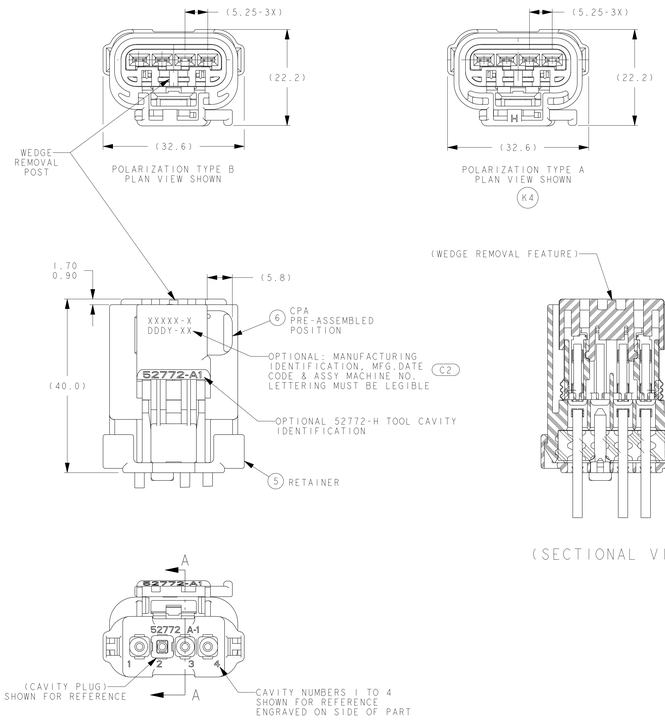



ISO VIEW
SCALE 1:1

CONNECTOR ASSEMBLY CHART

ASSEMBLY PART NO.'S		MAX. TEMP	VIBRATION CLASS	MATING COMPONENT	
FORD COMPONENT PART NO.	DELPHI COMPONENT PART NO.			FORD COMPONENT PART NO.	DELPHI COMPONENT PART NO.
4L3T-14A464-AB	33243061	125°C	V2	N/A	N/A
FU5T-14A464-JAB	15425692	125°C	V2	N/A	N/A

	ITEM	PIA DESCRIPTION	COLOR	FORD COMPONENT PART NO.	SUPPLIER COMPONENT PART NO. MVL	SUPPLIER COMPONENT PART NO. DELPHI	MATERIAL / SPEC.NO.	RECYCLING CODE	WEIGHT	NO. OF ITEMS REQUIRED	
(L2)	1	HOUSING 4 WAY APEX FEMALE INDEX A	BLACK	-	54200431	33503579	POLYAMIDE COMPOUND	PA66 GF35	7.95		1
	1	HOUSING 4 WAY APEX FEMALE INDEX B	LT.GREY	-	54200435	13545750	POLYAMIDE COMPOUND	PA66 GF35	8.02	1	
	2	SPACER 4 WAY APEX FEMALE	AQUA	-	54200442	33511959	POLYAMIDE COMPOUND	PA66 GF35	1.24	1	1
	3	INTERFACE SEAL	RED	-	54200459	33511960	SILICONE	VMQ	0.32	1	1
	4	END SEAL (STANDARD) AWG 20 TO 6mm²	PURPLE	-	C17019-U	33185280	SILICONE	VMQ	1.41	1	1 (K1)
	5	END SEAL RETAINER	BLACK	-	54200440	15537508	POLYAMIDE COMPOUND	PA66 GF35	1.23	1	1
	6	CPA	RED	-	54200003	15517297	POLYAMIDE COMPOUND	PA66 GF35	0.51	1	1



NOTES:

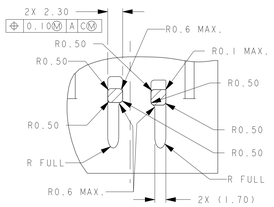
1. PART MUST CONFORM TO THE ELECTRICAL CONNECTION SYSTEM DESIGN SPECIFICATION (SDS) VER.21, DATED 13/JUN/11
2. CONNECTOR SYSTEM CONFORMS TO ES-F8DB-14A464-AA SAE/USCAR-2/REV 4) TEMPERATURE CLASS 3, SEALING CLASS S2
3. MAXIMUM MATING FORCE FULLY POPULATED WITH TIN TERMINALS= 42.5N WITH GOLD TERMINALS = 50.5N AVERAGE (IN-LINE CONNECTOR SYSTEM) THESE VALUES ARE FOR REFERENCE ONLY. WHEN MATED TO A SIMILAR MALE TERMINAL, VALUES VARY DEPENDING ON PHYSICAL CONDITIONS
4. REPAIR MANUAL WILL CALL OUT EXTRACTION TOOL (5400 EXT) TO BE USED
5. FOR SEALED INTERFACES ONLY SEALING SURFACES AS IDENTIFIED ON THIS DRAWING ARE SMOOTH AND FREE OF PARTING LINES.
6. CONNECTOR IS RATED AS ERGONOMIC CLASS (3) BASED ON USCAR- 25 REV 1. CONNECTOR PUSH SURFACE AREA IS (150 SQUARE mm ON C DATED 08AU3
7. ALL PLASTIC PARTS MUST HAVE MATERIAL IDENTIFICATION SYMBOLS CLEARLY MARKED, WHEREVER PACKAGE SIZE PERMITS
8. FOR ENGINEERING APPROVED SOURCE SEE ENGINEERING RELEASE
9. ENGINEERING APPROVAL OF SAMPLE FROM EACH SUPPLIER IS REQUIRED PRIOR TO AUTHORIZATION OF PART PRODUCTION
10. CHANGES IN DESIGN COMPOSITION OR PROCESSING FROM THE PART PREVIOUSLY APPROVED FOR PART PRODUCTION REQUIRES PRIOR ENGINEERING APPROVAL
11. GENERAL TOLERANCES: ±0.3 ALL ONE PLACE DIMENSIONS ±0.10 ALL TWO PLACE DIMENSIONS ±3.0° ALL ANGULAR DIMENSIONS
12. FEED THROUGH CONDITION I.E MIN HOLE SIZE TO GIVE 2MM TOTAL CLEARANCE ACROSS THE MAXIMUM DIAMETER
13. 0.3MM MAXIMUM RADIUS PERMISSIBLE ON EDGES AND FILLETS SHOWN AS SHARP FOR PLASTIC PARTS
14. ALL RADIUS 0.50
15. PARTS ARE TO BE FREE OF SCRATCHES, DISCOLORATION, SALT RESIDUE OR OTHER IMPERFECTIONS THAT MAY AFFECT FUNCTION OR FIT OF PART
16. DRAWING CONFORMS TO AVP-(T401/T406)-001 REVISION X DATED
17. (L1) ALL SEALED CONNECTOR APPLICATIONS MUST BE USED WITH FORD WIRE SPEC. ESB-M1L123-A/A2 THIN WALL X-LINK 20 TO 10 AWG WIRES ONLY, UNLESS OTHERWISE SPECIFIED (WIRE INSULATIONS Ø 1.70 MIN TO 4.3 MAX) METRIC EQUIVALENTS ACCEPTABLE
18. ALL NON-SEALED APPLICATIONS MAY BE USED WITH ANY WIRE INSULATION Ø2.6AGE THRU 10 GAGE (EXCEPT AS NOTED) PROVIDING THAT A TERMINAL GRIP FOR THAT CORE/INSULATION COMBINATION IS SHOWN ON THE FEMALE TERMINAL DRAWING

    NOTE: MAX. INSULATION GRIP WIDTH = 4.50
    MAX. INSULATION CRIMP HEIGHT = 4.50
    MAX. INSULATION DIA. = 4.04(10 GA THIN WALL)

19. *** SUPPLIER, MOLD AND CAVITY I.D. SIGNIFIES TOOL OWNERSHIP, FOR REFERENCE
20. SERVICE TOOLING GUIDE INFORMATION PER APEX TRAINING MANUAL
21. (K5) SEALS ARE DESIGNED TO MEET MINIMUM INSULATION DIAMETER SEALING, THE TERMINAL INSERTION FORCES MAY BE HIGHER THAN PERMITTED PER SAE/USCAR-2, PF-752 OR PF-9600 WHEN USED WITH ALL LARGEST INSULATION DIAMETER WIRES

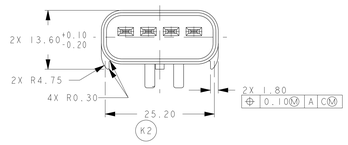
LTRS	REVISIONS			
ORIGINATOR	CHECKER	ENG APP	MATL APP	
RELEASED 4L3T-14A464-AA FOR PRODUCTION AUTHORITY NBOO-11111586-000 20010120				
T.ANGER	T.TAEPKE	W.DIXON		
REMOVED FU5T-14A464-JAA, AU5T-14A464-HAA AND 4L3T-14A464-AA K1 33185280 WAS 15537499 (LT.BLUE) K2 MIN/MAX WAS 1.70/2.70 K3 MIN/MAX WAS 3.10/4.04 K4 ADDED VIEW K5 ADDED NOTE K6 UPDATED DRAWING TO LATEST DRAWING STANDARD RELEASED FU5T-14A464-JAB AND 4L3T-14A464-AB				
AELE-E-11783955-309 20150331				
KISHORE	KKOLLER5	JPITTENI		
L1 WIRE RANGE WAS 1.70/4.04 L2 CORRECTED PN, WAS 15461312				
AELE-E-11783955-701 20210910				
X.ALEJA1	KKOLLER5	JCHAPP19		

REFERENCE 4 WAY FEMALE SEALED 2.8 APEX		DELPHI Connection Systems	
PART MUST COMPLY WITH RESTRICTED SUBSTANCE MANAGEMENT STANDARD WSS-M99P9999-A1 TO SAFEGUARD HEALTH,SAFETY AND THE ENVIRONMENT			
DRAFTED IN ACCORDANCE WITH FORD MOTOR COMPANY ENGINEERING CAD AND DRAFTING STANDARDS VERSION 27		3 RD ANGLE PROJ DIMENSIONS IN MILLIMETERS	
CAD TYPE X-PROE	CAD LOC. N/A	CAD FILE H59003/4L3T	DTMC IS MASTER
OPER. NO.	UNIT	DRAWING 4L3T-14A464-AB	
DESIGN FCI	DETAIL MAHADEVAN 20111129	TITLE SLV ASY WIR CONN FEM	SHT 1 OF 2
CHECKED Sucha Sian 20111129	SAFETY		
SCALE 4X	DATE 20111129	DIVISION	
		PLANT	
FU5T-14A464-JAB		FORD MOTOR COMPANY	

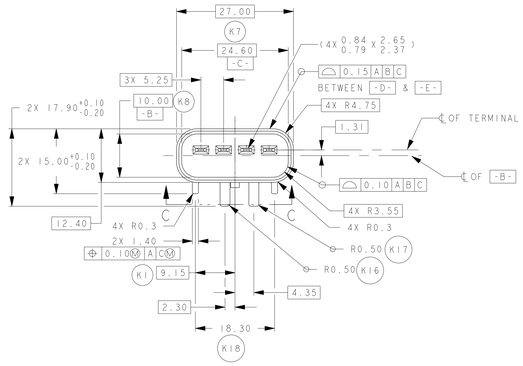


PARTIAL SECTION C-C
SCALE 3:1

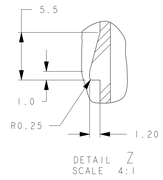
ISO VIEW
SCALE 1:1
TYPE A SHOWN



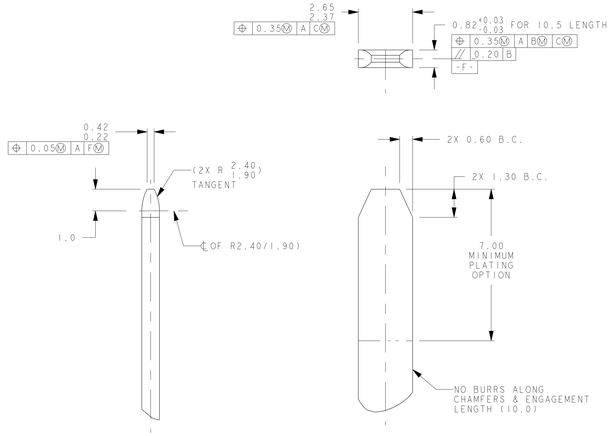
POLARIZATION OPTION A J2
DIMENSIONS SAME AS TYPE:B
EXCEPT AS SHOWN



POLARIZATION OPTION B



DETAIL Z
SCALE 4:1



MALE TERMINAL (ENGAGEMENT AREA SCALE: 10X

* B.C. INDICATES BEFORE COINING

MUST BE APPROVED BY THE RESPONSIBLE ENGINEER:

BASE MATERIAL - HIGH CONDUCTIVITY COPPER ALLOY

PLATING NOTES (CONTACT AREA)

TIN (125°C MAXIMUM CONTINUOUS TEMPERATURE)

A. HOT TIN DIP 0.5um TO 2um (20uin TO 80uin)
OR
B. POST ELECTRO MATTE TIN
BARRIER PLATE (OPTIONAL FOR SOLDERABILITY) - UNDERPLATE
WITH COPPER 2.5um (100uin) MIN. THICKNESS
TOP LAYER 5.0um±2.5um (200uin±100uin) TIN
PER ASTM B-545-83

PRECIOUS METAL: WHEN SPECIFIED (PER USCAR EWCAP PLATING REQUIREMENTS)

BARRIER PLATE - (OPTIONAL FOR SOLDERABILITY) UNDERPLATE
WITH COPPER 2.5um (100uin) MIN THICKNESS PER ATSM _-_TBD

INTERMEDIATE LAYER #1 SULFAMATE DUCTILE NICKEL 1.27um - 2.5um
(50uin - 100uin) THICK PER ASTM B699 TYPE 2

INTERMEDIATE LAYER #2 OPTIONAL 1.0um (40uin) MIN THICKNESS
PALLADIUM ELECTROPLATE PER ASTM B_TBD

TOP LAYER 0.1um (4uin) MIN THICKNESS HARD GOLD OVER LAYER #2
0.5um (20uin) MIN THICKNESS HARD GOLD IF LAYER #2 IS NOT
APPLIED, PER ASTM B _-TBD

FOR HEAVY DUTY DIESEL ENGINES: WHEN SPECIFIED

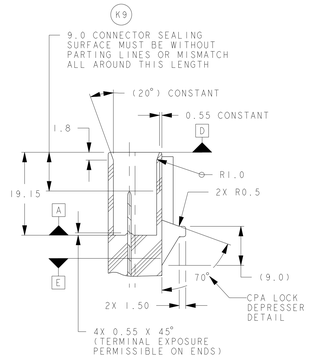
TOP LAYER 1.27um (50uin) MIN THICKNESS HARD GOLD ELECTROPLATE
PER ASTM B-488 TYPE 2 CODE "C" OVER INTERMEDIATE LAYER #1

OR

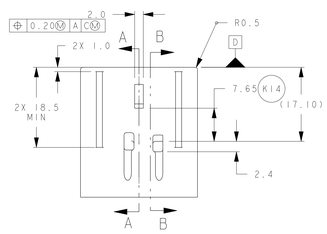
INTERMEDIATE LAYER #2 1.27um (50uin) MIN THICKNESS
PALLADIUM ELECTROPLATE

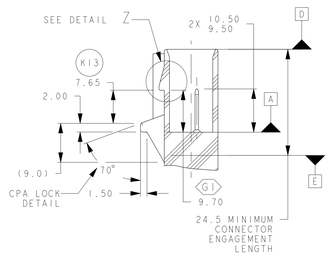
TOP LAYER 0.05um (2uin) MIN THICKNESS HARD GOLD ELECTROPLATE

NOTE: ABOVE NOTES RELATING TO MATERIAL AND PLATING ARE FOR REFERENCE ONLY. PARTS MUST BE VALIDATED TO CUSTOMER REQUIREMENTS



SECTION B-B





SECTION A-A

MALE INTERFACE NOTES:

(K) INDICATES IN - PROCESS INSPECTION FOR MANUFACTURING DIMENSION(S) OR SPECIFICATION(S) : 19

WIRING FABRICATORS MUST PURCHASE FROM ENGINEERING APPROVED SOURCES

MATES WITH 4 WAY FEMALE INSULATOR
SEE CHART

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE AS FOLLOWS:

2 PLACE DIMENSIONS ±0.10
1 PLACE DIMENSIONS ±0.25
ANGULAR ±2°

DRAFT PERMISSIBLE WITHIN DIMENSIONAL TOLERANCES ONLY UNLESS OTHERWISE SPECIFIED

MUST CONFORM TO USCAR EWCAP PF-1

PART TO BE MOLDED FREE FROM FLASH, VOIDS, STRESSES, IMPERFECTIONS, AND TOOL MARKS, THAT AFFECT FUNCTION, OR HANDLING OF THE PART

ALL EJECTOR MARKS 0.10 MAXIMUM HIGH TO 0.25mm BELOW THE SURFACE OF THE PART

TOOL MUST BE INTERCHANGEABLE TO PRODUCE ALL KEY TYPES AS CHARTED UNLESS OTHERWISE SPECIFIED

(G) DENOTES GAGE REQUIREMENTS FOR USER AND MANUFACTURER

(K19) PLATE BLADE TERMINAL PER THE ABOVE NOTES

LTRS	REVISIONS			
ORIGINATOR	CHECKER	ENG APP	MATL APP	
SEE PAGE 1 FOR REVISION RECORD				

REFERENCE 4 WAY FEMALE SEALED 2.8 APEX			DELPHI Connection Systems
PART MUST COMPLY WITH RESTRICTED SUBSTANCE MANAGEMENT STANDARD WSS-M99P9999-A1 TO SAFEGUARD HEALTH,SAFETY AND THE ENVIRONMENT			
DRAFTED IN ACCORDANCE WITH FORD MOTOR COMPANY ENGINEERING CAD AND DRAFTING STANDARDS VERSION 27.			3 RD ANGLE PROJ DIMENSIONS IN MILLIMETERS
CAD TYPE X-PROE	CAD LOC. N/A	CAD FILE H59003/4L3T	DTMC IS MASTER
OPER. NO.	UNIT	DRAWING 4L3T-14A464-AB	
DESIGN FCI	DETAIL MAHADEVAN 20111129	TITLE SLV ASY WIR CONN FEM	SHT 2 OF 2
CHECKED Sucha Sian 20111129	SAFETY		
SCALE 4X	DATE 20111129	DIVISION	
		PLANT	
FORD MOTOR COMPANY			