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PPAP Package for:

Customer Name: Newark Electronics
Customer Part Number: 96Y7778
(TE Connectivity Part Number): 1-2296694-3
Date: May 2020

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Nondisclosure Agreement

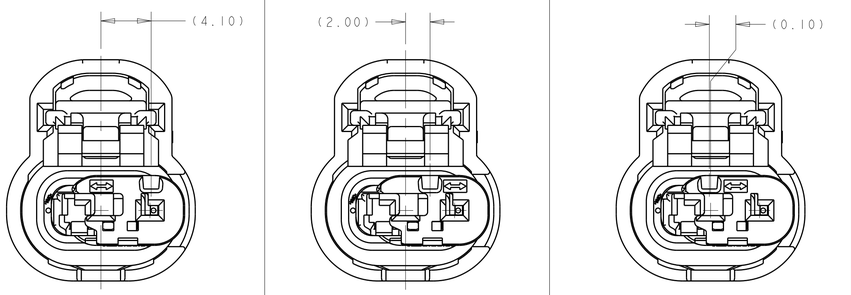
If a nondisclosure agreement has been reached with your company, it will be included on the following page(s). Please review the terms of this agreement to ensure that further actions associated with information contained within this PPAP package do not violate these terms.

If a nondisclosure agreement HAS NOT been reached, certain documents deemed confidential by TE Connectivity will not be included in this PPAP package. These documents include but are not limited to the Design FMEA, the Process Flow Diagram, the Process FMEA and the Control Plan. These documents can be reviewed by you company but cannot be retained.

Section 1

Design Records

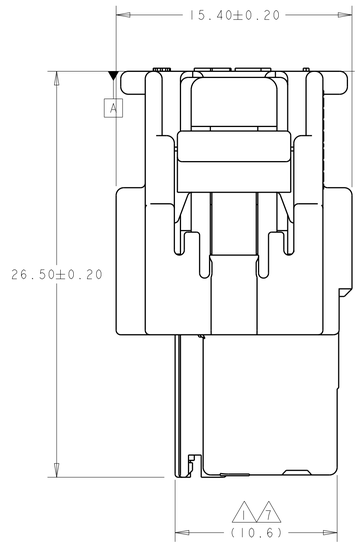
REVISIONS					
P	LTR	DESCRIPTION	DATE	DWN	APVD
	A	RELEASED PER ECO-16-006018	19APR2016	DLD	MDB

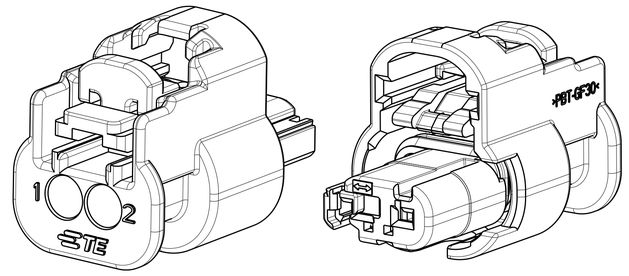


KEY CODE A 12
SCALE 4:1

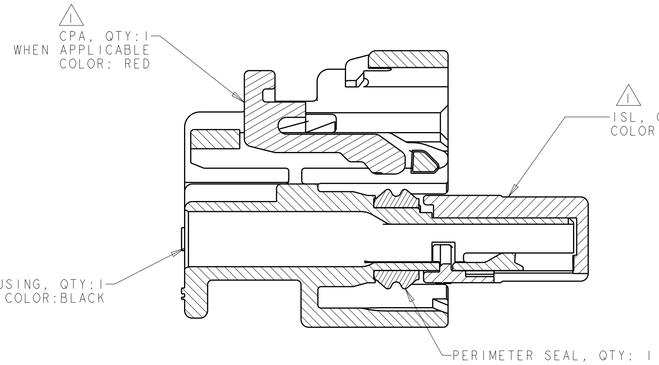
KEY CODE B 12
SCALE 4:1

KEY CODE C 12
SCALE 4:1

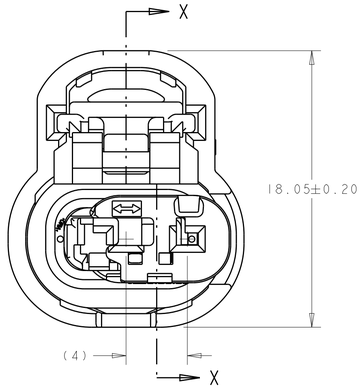




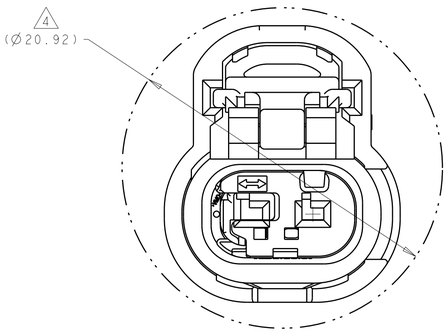
ISOMETRIC VIEW
SCALE 4:1



SECTION X-X
SHOWN WITH CPA AND ISL IN
PRE-LATCHED POSITION



ISL SHOWN IN
PRE-LATCHED (AS-SHIPPED) POSITION

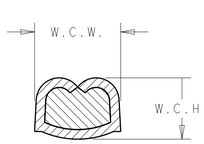


ISL SHOWN IN
FINAL (LOCKED) POSITION - REF ONLY
SCALE 5:1

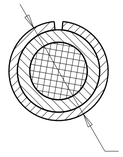
1. 1 ISL AND CPA (WHEN APPLICABLE) ARE SHIPPED IN THEIR PRE-LATCHED POSITIONS.
2. TERMINALS SOLD SEPARATELY. FOR USE WITH TE MCON 1.2mm CLEAN BODY CONTACT WITH WIRE SEAL. SEE TABLE.
3. APPLICABLE INTERFACE DRAWINGS: EWCAP 120-S-002-1-Z01 AND 120-S-002-1-Z02.
4. 4 MINIMUM FEED THROUGH CONDITION WITH 1.0mm CLEARANCE ALL AROUND.
5. TRACEABILITY CODE (YY = TWO DIGIT YEAR, JJJ = 3 DIGIT JULIAN DAY, S = 1 DIGIT SHIFT).
6. FOR OPTIONAL TERMINAL CAVITY BLOCKING, CONTACT TE SALES REPRESENTIVE OR CUSTOMER SERVICE.
7. 7 SEE INSTRUCTION SHEET 408-32103 FOR CONNECTOR SERVICE AND ISL OPERATION. ISL ACTUATION DISTANCE IS 2.0mm.
8. 8 CONTACT PLATING AND APPLICABLE INDIVIDUAL WIRE SEAL ARE APPLICATION DEPENDENT. CONTACT TE SALES REPRESENTATIVE OR CUSTOMER SERVICE FOR DETAILS.
9. 9 FOR WIRE CRIMP DETAILS, SEE TE APPLICATION SPECIFICATION 114-18464.
10. 10 DOCUMENTED I.C.D. IS SPECIFIED TO MEET MOST WIRE SEAL APPLICATIONS. HOWEVER, I.C.D. IS HIGHLY DEPENDENT ON INSULATION TYPE AND OD. SUFFICIENT GRIP OF THE WIRE SEAL MUST BE OBTAINED SUCH THAT WIRE SEAL DOES NOT DISPLACE FROM INSULATION GRIP DURING CONTACT INSERTION INTO CONNECTOR HOUSING. THE WIRE SEAL SHALL NOT BE CRIMPED TOO TIGHTLY THAT THE WIRE SEAL TEARS DURING THE CRIMPING OPERATION.
11. CONNECTOR VALIDATION PENDING PER GMW3191 T4,V4,S3 WITH THE FOLLOWING EXCEPTIONS:

    PRIMARY TERMINAL RETENTION FORCE > 25 NEWTONS.

12. 12 KEY CODE DIMENSIONS ARE SHOWN WITH ISL IN PRE-LATCHED POSTION. FOR DIMENSION OF KEY WITH ISL IN FINAL POSITION, ADJUST SHOWN DIMENSIONS BY 2.0mm.
13. MATES WITH STRAIGHT EXIT WIRE DRESS, TE PN 2272168-1 AND RIGHT ANGLE EXIT WIRE DRESS, TE PN 2272169-1
14. THIS DRAWING IS RESTRICTED TO GM CORPORATION



WIRE CRIMP
DIMENSIONS



INSULATION CRIMP
DIMENSIONS

150°C 8	1418844 1670146 1418850	9	9	10	8
MAX TEMP	FEMALE TERMINAL P/N	W.C.H	W.C.W	I.C.D	WIRE SEAL PART NUMBER

YES	DK GRAY	KEY CODE C	1-2296694-3
	LT GRAY	KEY CODE B	1-2296694-2
	BLUE	KEY CODE A	1-2296694-1
NO	DK GRAY	KEY CODE C	2296694-3
	LT GRAY	KEY CODE B	2296694-2
	BLUE	KEY CODE A	2296694-1
CPA (YES / NO)	ISL COLOR	KEY CONFIGURATION	PART NUMBER

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: mm

TOLERANCES UNLESS OTHERWISE SPECIFIED:
0 PLC ±-
1 PLC ±0.3
2 PLC ±0.15
3 PLC ±-
4 PLC ±-
ANGLES ±-

MATERIAL -
FINISH -

DWN V. PATAGAR 25MAR2013
CHK R. HETRICK 25MAR2013
APVD R. HETRICK 25MAR2013
PRODUCT SPEC -
APPLICATION SPEC -
WEIGHT -

TE Connectivity

NAME PLUG ASSEMBLY, SEALED, 2 POSITION, MCON
-

SIZE	CAGE CODE	DRAWING NO	RESTRICTED TO
A1	00779	C-2296694	GM

RESTRICTED CUSTOMER | SCALE 5:1 | SHEET 1 OF 1 | REV A

4805 (3/13)

Section 2

Engineering Change Documents

Product Change Notification

Current Date: 13-Nov-2019

TE Connectivity

Product Change Notification: P-19-018198 **PCN Date:** 11-NOV-19

TE would like to inform you of the following change(s) to the listed TE Connectivity Product. In case of any further questions about this change(s), please contact your TE Connectivity Sales Engineer. Affected part, drawing and/or specification numbers are listed on the attached sheet(s).

General Product Description:
Multiple Part numbers. Phase 1. Americas Footprint Optimization.

Description of Changes
We hereby inform you about a transfer of tools and/or processes of the components of the Finished Goods that we ship to you to further improve our Supply Chain towards our customers. The transfer follows a strict procedure, which fully maintains quality, ability to supply and form-fit-function of the concerned products. The receiving manufacturing location operates under a certified quality management system in accordance with standard automotive requirements. These moves will be validated not to affect product FFF, tool geometry or quality performance. TE will uphold our responsibility to internally validate and approve these tools among appropriate first article dimensional and capability analysis, comparative 2-sample T-tests before and after moves, before and after CT scans where needed, and PV test as defined by TE product engineering. TE is willing to provide any such validation data to our customers as our joint non-disclosure agreement statuses allow. AMEND with PCN P-19-018058

Reason for Changes:	
Product improvement.These changes are part of an overall effort from TE to improve our supply chain toward our customers and to focus each plant on core products and processes. A TE-internal release test based on the relevant part specifications will be executed before delivery and this notification serves to fulfill our notification requirements as prescribed by AIAG 4th edition. This change notification document accompanies a letter sent to your organization on September 13, 2019 signed by our Vice President of Sales and Marketing. Follow up conversations can occur upon request with your sales contact within 15 calendar days after receipt of this PCN. TE can share validation data with your organization upon request. If you have any questions or needs from this move, please contact your sales engineer within 15 days of receipt of this letter. If no response is received on this period, TE will consider this as an approval and tools must move to the new locations.	
Estimated Dates:	
Last Order Date (Obsolete Parts Only):	**First Date To Ship** (Changed Parts Only):
	03-JAN-2020
Last Ship Date (Obsolete Parts Only):	**Last Date for Mixed Shipments:** (Changed Parts Only):
	No Mixed Shipments

Part Number(s) being Modified:

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1-1417746-2	NO					
1-1419168-1	NO		"V23542-G1506-D101"			
1-1419168-2	NO		"V23542-G1506-D102"			
1-1419168-3	NO		"V23542-G1506-D103"			
1-1419168-5	NO					
1-1438096-8	NO					
1-1438103-3	NO					
1-1438103-9	NO					
1-1438153-1	NO					
1-1438153-3	NO					
1-1438153-4	NO					
1-1438153-7	NO					
1-1438153-8	NO					
1-1438435-3	NO					
1-1438693-4	NO					
1-1438693-6	NO					
1-1438693-8	NO					
1-1438693-9	NO					
1-1438841-1	NO					
1-1438841-2	NO					
1-1438841-7	NO					
1-1456426-1	NO					
1-1456426-2	NO					
1-1456426-5	NO					
1-1456426-6	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1-1456985-0	NO					
1-1587041-4	NO					
1-1670915-1	NO					
1-1670917-1	NO					
1-1718644-5	NO					
1-1732466-0	NO					
1-1924067-1	NO					
1-1924067-2	NO					
1-1924067-3	NO					
1-1924067-4	NO					
1-1924067-5	NO					
1-1924067-6	NO					
1-1924067-9	NO					
1-1924513-5	NO					
1-1924513-9	NO					
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1-2098863-1	NO					
1-2098922-3	NO					
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1-2103177-2	NO					
1-2103177-4	NO					
1-2138020-0	NO					
1-2203455-0	NO					
1-2203515-0	NO					
1-2203515-1	NO					
1-2203515-3	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1-2203515-4	NO					
1-2203515-7	NO					
1-2203529-2	NO					
1-2203654-2	NO					
1-2203654-7	NO					
1-2203663-0	NO					
1-2203663-6	NO					
1-2203769-1	NO					
1-2203769-3	NO					
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1-2203973-0	NO					
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1-2272723-0	NO					
1-2296694-1	NO					
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1-2296695-1	NO					
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1-2296702-1	NO					
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1-638514-5	NO					
1-638514-6	NO					
1-776905-1	NO					
1-776905-2	NO					
1-776905-3	NO					
1419168-7	NO		"V23542-G1506-A101"			

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1438098-1	NO					
1438099-1	NO					
1438099-8	NO					
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1438136-3	NO					
1438136-4	NO					
1438136-5	NO					
1438426-1	NO					
1438426-3	NO					
1438435-2	NO					
1438435-4	NO					
1438435-7	NO					
1438435-9	NO					
1438442-4	NO					
1438483-1	NO					
1438486-1	NO					
1438545-1	NO					
1438617-1	NO					
1438618-1	NO					
1438618-3	NO					
1438619-1	NO					
1438620-1	NO					
1438691-1	NO					
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1438691-7	NO					
1438691-8	NO					
1438693-1	NO					
1438693-5	NO					
1438950-4	NO					
1438950-6	NO					
1438950-7	NO					
1456630-1	NO					
1456630-2	NO					
1456897-2	NO					
1456897-5	NO					
1456983-1	NO					
1456983-2	NO					
1456983-3	NO					
1456983-4	NO					
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1456985-9	NO					
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1488992-5	NO					
1488992-6	NO					
1557300-1	NO					
1557304-1	NO					
1557321-1	NO					
1557404-1	NO					
1557405-1	NO					
1557406-1	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1557408-2	NO					
1557408-3	NO					
1557409-3	NO					
1557409-4	NO					
1557410-2	NO					
1557410-3	NO					
1557410-4	NO					
1557485-3	NO					
1557485-4	NO					
1557671-1	NO					
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1557676-1	NO					
1557676-2	NO					
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1557676-4	NO					
1557773-1	NO					
1557773-2	NO					
1557774-1	NO					
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1557800-4	NO					
1557800-5	NO					
1557874-1	NO					
1557915-1	NO					
1557921-1	NO					
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1557949-1	NO					
1557989-2	NO					
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1587671-1	NO					
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1587719-1	NO					
1587819-1	NO					
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1587819-4	NO					
1670119-1	NO					
1732377-1	NO					
1732377-2	NO					
1732434-3	NO					
1732466-7	NO					
1732513-3	NO					
1732560-4	NO					
1732789-2	NO					
184000-1	NO					
184004-1	NO					
184006-1	NO					
184006-2	NO					
184008-1	NO					
184010-1	NO					
184012-1	NO					
184014-1	NO					
184016-1	NO					
184022-1	NO					
184026-1	NO					
184032-1	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
184034-1	NO					
184042-1	NO					
184042-2	NO					
184046-1	NO		"EM3604-000", "AMP-0-0184046-1"			
184050-2	NO					
184060-1	NO					
184115-1	NO					
184116-1	NO					
184116-2	NO					
184124-1	NO					
184139-1	NO					
184140-1	NO					
184141-1	NO					
184207-1	NO					
184212-1	NO					
184212-2	NO					
184214-1	NO					
184216-1	NO					
184220-1	NO					
184240-1	NO					
184244-1	NO					
184248-1	NO					
184270-1	NO					
184292-1	NO					
184311-1	NO					
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184391-1	NO					
184392-1	NO					
184392-2	NO					
184393-1	NO					
184393-2	NO					
184394-1	NO					
184396-1	NO					
184397-1	NO					
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184435-1	NO					
184452-1	NO					
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184471-1	NO					
184471-5	NO					
184471-7	NO					
1924211-1	NO					
1924211-3	NO					
1924211-6	NO					
1924227-2	NO					
1924292-1	NO					
1924292-5	NO					
1924292-6	NO					
1924484-1	NO					
1924513-1	NO					
1924674-9	NO					
1924675-1	NO					
1924675-4	NO					
1924683-1	NO					
1924684-1	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1924685-1	NO					
1924686-1	NO					
1924689-1	NO					
1924783-4	NO					
1924940-5	NO					
1924940-6	NO					
1924941-7	NO					
1924941-9	NO					
1924942-1	NO					
1924942-2	NO					
1924942-3	NO					
1924942-4	NO					
1924942-5	NO					
1924942-6	NO					
1924943-1	NO					
1924943-2	NO					
1924943-3	NO					
1924943-5	NO					
1924943-6	NO					
1924944-2	NO					
1924944-4	NO					
1924944-6	NO					
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2-1438103-2	NO					
2-1438103-3	NO					
2-1438103-4	NO					
2-1438103-6	NO					
2-1438103-7	NO					
2-1438103-8	NO					
2-1438136-3	NO					
2-1438153-1	NO					
2-1438454-1	NO					
2-1438950-1	NO					
2-1670917-1	NO					
2-1718643-1	NO					
2-1718644-1	NO					
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2-1924939-4	NO					
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2-1924940-4	NO					
2-1924941-0	NO					
2-1924941-1	NO					
2-2035383-2	NO					
2-2035383-7	NO					
2-2098922-3	NO					
2-2098922-5	NO					
2-2098922-8	NO					
2-2098922-9	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
2-2098923-0	NO					
2-2098923-1	NO					
2-2098923-2	NO					
2-2203654-3	NO					
2-2203654-4	NO					
2-2203654-9	NO					
2-2203663-6	NO					
2-2203663-8	NO					
2-2203663-9	NO					
2-2311078-0	NO					
2-2311078-1	NO					
2-2311078-5	NO					
2-2311078-6	NO					
2-2311078-7	NO					
2-2311078-8	NO					
2-2311078-9	NO					
2-2311082-0	NO					
2-2311082-1	NO					
2-2311082-2	NO					
2-2311082-3	NO					
2-2311082-4	NO					
2-2311082-5	NO					
2-2311082-6	NO					
2-2311082-9	NO					
2-2840440-1	NO					
2-2840672-1	NO					
2035383-3	NO					
2098198-5	NO					
2098256-7	NO					
2098269-1	NO					
2098269-4	NO					
2098541-1	NO					
2098541-2	NO					
2098541-5	NO					
2098541-6	NO					
2098641-1	NO					
2098641-2	NO					
2098641-5	NO					
2098641-6	NO					
2098863-2	NO					
2098863-3	NO					
2098863-4	NO					
2098864-3	NO					
2098865-1	NO					
2098865-2	NO					
2098865-3	NO					
2098865-4	NO					
2098865-5	NO					
2098866-1	NO					
2098866-3	NO					
2098866-4	NO					
2098866-5	NO					
2098866-7	NO					
2098922-1	NO					
2098922-2	NO					
2098922-6	NO					
2098922-8	NO					
2098922-9	NO					
2098923-5	NO					
2098923-6	NO					
2098923-8	NO					
2098923-9	NO					
2098924-5	NO					
2098924-7	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
2098924-8	NO					
2103022-1	NO					
2103177-5	NO					
2103385-4	NO					
2103628-1	NO					
2103628-2	NO					
2103628-4	NO					
2103628-5	NO					
2103628-6	NO					
2103628-7	NO					
2103741-2	NO					
2103741-3	NO					
2103742-2	NO					
2103742-3	NO					
2103743-2	NO					
2103743-3	NO					
2103744-1	NO					
2138020-1	NO					
2138020-2	NO					
2138020-3	NO					
2138020-4	NO					
2138020-5	NO					
2138020-6	NO					
2138020-8	NO					
2138020-9	NO					
2138041-1	NO					
2138041-2	NO					
2138043-6	NO					
2138161-1	NO					
2138161-2	NO					
2138161-3	NO					
2177376-1	NO					
2203109-6	NO					
2203455-1	NO					
2203455-7	NO					
2203455-8	NO					
2203455-9	NO					
2203515-5	NO					
2203516-7	NO					
2203516-8	NO					
2203516-9	NO					
2203663-5	NO					
2203773-7	NO					
2203919-1	NO					
2203973-2	NO					
2203973-5	NO					
2203973-6	NO					
2203973-7	NO					
2203973-8	NO					
2203973-9	NO					
2272033-1	NO					
2272723-1	NO					
2272723-5	NO					
2272723-9	NO					
2289050-1	NO					
2289050-2	NO					
2294430-1	NO					
2294430-5	NO					
2296698-1	NO					
2296700-3	NO					
2296700-6	NO					
2296701-1	NO					
2296701-3	NO					
2300498-1	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
2300498-2	NO					
2300498-6	NO					
2300498-7	NO					
2301631-2	NO					
2304305-2	NO					
2304306-1	NO					
2306039-1	NO					
2306271-1	NO					
2306883-1	NO					
2306884-1	NO					
2307223-1	NO					
2307235-1	NO					
2310207-1	NO					
2310239-1	NO					
2310242-1	NO					
2310242-2	NO					
2311069-1	NO					
2311069-3	NO					
2311069-4	NO					
2311069-5	NO					
2311069-6	NO					
2311071-1	NO					
2311073-9	NO					
2311074-1	NO					
2311075-1	NO					
2311077-1	NO					
2311077-2	NO					
2311084-1	NO					
2311084-2	NO					
2311084-3	NO					
2316020-1	NO					
2316023-1	NO					
2321028-1	NO					
2323660-1	NO					
2323661-1	NO					
2324336-1	NO					
2327375-1	NO					
2327375-2	NO					
2327611-1	NO					
2327611-2	NO					
2327904-1	NO					
2327904-2	NO					
2331832-1	NO					
2332200-6	NO					
2332200-7	NO					
2332470-1	NO					
2335239-1	NO					
2336315-1	NO					
2336318-1	NO					
2336334-1	NO					
2336677-1	NO					
2337306-1	NO					
2337311-1	NO					
2339949-1	NO					
2339949-2	NO					
2339949-3	NO					
2348609-1	NO					
2348609-3	NO					
2349476-1	NO					
2840368-2	NO					
2840595-1	NO					
2840624-1	NO					
2840789-1	NO					
2840822-1	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
2840837-1	NO					
2840838-1	NO					
2840960-1	NO					
2840960-2	NO					
3-1419171-9	NO					
3-1438099-1	NO					
3-1438099-4	NO					
3-1438099-5	NO					
3-1438103-1	NO					
3-1438103-3	NO					
3-1438103-4	NO					
3-1438103-8	NO					
3-1438691-1	NO					
3-1438693-1	NO					
3-1438693-2	NO					
3-1438693-6	NO					
3-1438841-2	NO					
3-1438841-5	NO					
3-1438841-8	NO					
3-1438950-5	NO					
3-1587041-0	NO					
3-1924513-2	NO					
3-1924513-6	NO					
3-1924513-8	NO					
3-1924672-4	NO					
3-1924672-7	NO					
3-1924939-0	NO					
3-1924939-1	NO					
3-1924939-4	NO					
3-1924939-5	NO					
3-1924939-8	NO					
3-2035383-3	NO					
3-2035383-5	NO					
3-2035383-7	NO					
3-2035383-8	NO					
3-2098269-1	NO					
3-2098269-2	NO					
3-2098269-3	NO					
3-2098269-6	NO					
3-2098269-7	NO					
3-2098269-8	NO					
3-2098922-0	NO					
3-2098922-3	NO					
3-2098922-5	NO					
3-2098922-7	NO					
3-2138020-1	NO					
3-2138020-2	NO					
3-2138020-4	NO					
3-2203654-2	NO					
3-2203654-4	NO					
3-2203654-5	NO					
3-2203663-1	NO					
3-2203663-3	NO					
3-2311078-0	NO					
3-2311078-1	NO					
3-2311078-2	NO					
3-2311078-3	NO					
3-2311078-4	NO					
3-2311078-5	NO					
3-2311078-6	NO					
3-2311078-7	NO					
3-2311078-9	NO					
3-2311082-0	NO					
3-2311082-2	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
3-2311082-5	NO					
3-2311082-6	NO					
3-2311082-7	NO					
3-2311082-8	NO					
3-2311082-9	NO					
319234-2	NO					
4-1419171-0	NO					
4-1419171-1	NO					
4-1438090-7	NO					
4-1438099-7	NO					
4-1438099-8	NO					
4-1438136-2	NO					
4-1438136-3	NO					
4-1438691-1	NO					
4-1438691-6	NO					
4-1438693-2	NO					
4-1438693-3	NO					
4-1438693-5	NO					
4-1438841-0	NO					
4-1438841-1	NO					
4-1438841-5	NO					
4-1456426-1	NO					
4-1488991-1	NO					
4-1488991-2	NO					
4-1587041-6	NO					
4-1924067-1	NO					
4-1924067-2	NO					
4-1924225-7	NO					
4-1924225-8	NO					
4-1924292-1	NO					
4-1924513-2	NO					
4-1924513-3	NO					
4-1924513-4	NO					
4-1924513-5	NO					
4-1924513-6	NO					
4-1924513-7	NO					
4-1924513-8	NO					
4-1924513-9	NO					
4-1924783-1	NO					
4-1924783-2	NO					
4-1924783-3	NO					
4-1924783-4	NO					
4-1924783-9	NO					
4-1924939-2	NO					
4-1924939-3	NO					
4-1924939-5	NO					
4-1924939-6	NO					
4-1924939-7	NO					
4-1924939-8	NO					
4-1924939-9	NO					
4-2035383-1	NO					
4-2035383-6	NO					
4-2035383-7	NO					
4-2035383-8	NO					
4-2035383-9	NO					
4-2098269-1	NO					
4-2098269-2	NO					
4-2098269-5	NO					
4-2098269-6	NO					
4-2098269-7	NO					
4-2098269-8	NO					
4-2098541-1	NO					
4-2098541-2	NO					
4-2098559-1	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
4-2098641-1	NO					
4-2098641-2	NO					
4-2098922-1	NO					
4-2098922-2	NO					
4-2098922-3	NO					
4-2098922-4	NO					
4-2098922-6	NO					
4-2098922-8	NO					
4-2103015-1	NO					
4-2103015-2	NO					
4-2103015-4	NO					
4-2103015-5	NO					
4-2103015-6	NO					
4-2103177-1	NO					
4-2103177-2	NO					
4-2103177-4	NO					
4-2103177-5	NO					
4-2103177-6	NO					
4-2103177-7	NO					
4-2103350-1	NO					
4-2103350-2	NO					
4-2103350-4	NO					
4-2103350-5	NO					
4-2103587-1	NO					
4-2103587-2	NO					
4-2203654-2	NO					
4-2203654-3	NO					
4-2203654-6	NO					
4-2203654-7	NO					
4-2203654-8	NO					
4-2203654-9	NO					
4-2203663-3	NO					
4-2203663-4	NO					
4-2203663-6	NO					
4-2203663-7	NO					
4-2203663-8	NO					
4-2203663-9	NO					
4-2272003-1	NO					
4-2272003-2	NO					
4-2272003-3	NO					
4-2272003-4	NO					
4-2272003-5	NO					
4-2272004-1	NO					
4-2272004-2	NO					
4-2272005-1	NO					
4-2272005-2	NO					
4-2272173-1	NO					
4-2272173-2	NO					
4-2272173-3	NO					
4-2840548-1	NO					
4-2840548-2	NO					
5-1438099-1	NO					
5-1438129-9	NO					
5-1438691-4	NO					
5-1438691-6	NO					
5-1438691-7	NO					
5-1438841-9	NO					
5-1557773-1	NO					
5-1557773-2	NO					
5-1557773-3	NO					
5-1557773-5	NO					
5-1557774-1	NO					
5-1557774-3	NO					
5-1557774-4	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
5-1557774-5	NO					
5-1557774-7	NO					
5-1557802-1	NO					
5-1557803-1	NO					
5-1557911-1	NO					
5-1557915-1	NO					
5-1557921-1	NO					
5-1557922-1	NO					
5-1587041-6	NO					
5-1587041-7	NO					
5-1924225-3	NO					
5-1924225-5	NO					
5-1924225-7	NO					
5-1924225-9	NO					
5-1924513-0	NO					
5-1924513-1	NO					
5-1924513-3	NO					
5-1924513-5	NO					
5-1924513-6	NO					
5-1924513-8	NO					
5-1924783-0	NO					
5-1924783-2	NO					
5-1924783-3	NO					
5-1924783-4	NO					
5-1924783-5	NO					
5-1924939-0	NO					
5-1924939-1	NO					
5-1924939-4	NO					
5-1924939-5	NO					
5-1924939-6	NO					
5-1924939-7	NO					
5-1924939-9	NO					
5-2035383-0	NO					
5-2035383-3	NO					
5-2035383-6	NO					
5-2098269-0	NO					
5-2098922-9	NO					
5-2103177-1	NO					
5-2203455-5	NO					
5-2203654-0	NO					
5-2203654-1	NO					
5-2203654-3	NO					
5-2203654-6	NO					
5-2203654-7	NO					
5-2203654-8	NO					
5-2203654-9	NO					
5-2203663-0	NO					
5-2203663-1	NO					
5-2203663-3	NO					
5-2203663-8	NO					
5-2203663-9	NO					
5-2272723-1	NO					
5-2272723-5	NO					
5-2272723-7	NO					
5-2272723-9	NO					
5-2311082-3	NO					
5-2311082-4	NO					
5-2311082-5	NO					
5-2311082-6	NO					
6-1438090-7	NO					
6-1438691-0	NO					
6-1438841-3	NO					
6-1438841-5	NO					
6-1438841-7	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
6-1924225-0	NO					
6-1924225-1	NO					
6-1924225-2	NO					
6-1924225-5	NO					
6-1924225-6	NO					
6-1924225-7	NO					
6-1924225-8	NO					
6-1924783-0	NO					
6-1924783-2	NO					
6-1924783-6	NO					
6-1924783-7	NO					
6-1924783-9	NO					
6-1924939-0	NO					
6-1924939-1	NO					
6-1924939-2	NO					
6-1924939-3	NO					
6-1924939-4	NO					
6-1924939-5	NO					
6-1924939-6	NO					
6-1924939-7	NO					
6-1924939-8	NO					
6-1924939-9	NO					
6-2035383-0	NO					
6-2035383-2	NO					
6-2035383-3	NO					
6-2035383-5	NO					
6-2035383-6	NO					
6-2035383-9	NO					
6-2098922-0	NO					
6-2098922-6	NO					
6-2098922-7	NO					
6-2098922-8	NO					
6-2103177-4	NO					
6-2203654-0	NO					
6-2203654-6	NO					
6-2203654-7	NO					
6-2203654-8	NO					
6-2203654-9	NO					
6-2203663-0	NO					
6-2203663-2	NO					
6-2203663-5	NO					
6-2203663-6	NO					
6-2203663-7	NO					
6-2203663-9	NO					
6-2272723-0	NO					
638514-1	NO					
638514-8	NO					
7-1438136-2	NO					
7-1438136-3	NO					
7-1438691-4	NO					
7-1438691-7	NO					
7-1438691-8	NO					
7-1438691-9	NO					
7-1438841-1	NO					
7-1438841-2	NO					
7-1438841-3	NO					
7-1438841-5	NO					
7-1438841-6	NO					
7-1456659-0	NO					
7-1456659-1	NO					
7-1456659-3	NO					
7-1456659-7	NO					
7-1456659-8	NO					
7-1456659-9	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
7-1924225-0	NO					
7-1924225-1	NO					
7-1924225-2	NO					
7-1924225-3	NO					
7-1924783-0	NO					
7-1924783-1	NO					
7-1924783-2	NO					
7-1924783-3	NO					
7-1924783-4	NO					
7-1924783-5	NO					
7-1924783-6	NO					
7-1924783-7	NO					
7-1924783-8	NO					
7-1924783-9	NO					
7-1924939-0	NO					
7-2035383-0	NO					
7-2035383-2	NO					
7-2035383-3	NO					
7-2035383-8	NO					
7-2098922-2	NO					
7-2098922-3	NO					
7-2098922-6	NO					
7-2098922-8	NO					
7-2203654-0	NO					
7-2203654-1	NO					
7-2203654-2	NO					
7-2203654-3	NO					
7-2203654-9	NO					
7-2203663-0	NO					
7-2203663-1	NO					
776905-8	NO					
8-1438129-4	NO					
8-1438129-5	NO					
8-1438136-2	NO					
8-1438691-0	NO					
8-1438691-1	NO					
8-1438691-2	NO					
8-1438691-3	NO					
8-1438691-4	NO					
8-1438691-5	NO					
8-1438691-7	NO					
8-1438691-8	NO					
8-1438841-3	NO					
8-1438841-4	NO					
8-1438841-5	NO					
8-1438950-3	NO					
8-1438950-5	NO					
8-1438950-6	NO					
8-1456659-0	NO					
8-1456659-7	NO					
8-1456659-9	NO					
8-1924783-1	NO					
8-2035383-0	NO					
8-2035383-3	NO					
8-2035383-9	NO					
828904-1	NO		"CF0547-000", "AMP-0-0828904-1", "80.264.00", "8202609390", "8202611101"			
828904-2	NO					
828922-1	NO		"EG9737-000", "AMP-0-0828922-1", "80.263.00", "820A-37376"			
828922-2	NO					
9-1438090-6	NO					
9-1438136-6	NO					
9-1438841-4	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
9-1438841-7	NO					
9-1456659-2	NO					
9-1456659-7	NO					
9-2035383-4	NO					
9-2035383-5	NO					
9-2035383-6	NO					
9-2035383-7	NO					
963292-1	NO					
963293-1	NO					
963530-1	NO		"1072609867", "820P-37717", "820P-37904", "43119-000"			
963531-1	NO		"1072607258"			
964972-1	NO					
967067-1	NO		"0-0967067-1", "EG9740-000", "AMP-0-0967067-1"			
967067-2	NO					

Product Change Notification

Current Date: 13-Nov-2019

TE Connectivity

Product Change Notification: P-19-018199 **PCN Date:** 11-NOV-19

TE would like to inform you of the following change(s) to the listed TE Connectivity Product. In case of any further questions about this change(s), please contact your TE Connectivity Sales Engineer. Affected part, drawing and/or specification numbers are listed on the attached sheet(s).

General Product Description:
Multiple Part numbers. Phase 1. Americas Footprint Optimization.

Description of Changes
We hereby inform you about a transfer of tools and/or processes of the components of the Finished Goods that we ship to you to further improve our Supply Chain towards our customers. The transfer follows a strict procedure, which fully maintains quality, ability to supply and form-fit-function of the concerned products. The receiving manufacturing location operates under a certified quality management system in accordance with standard automotive requirements. These moves will be validated not to affect product FFF, tool geometry or quality performance. TE will uphold our responsibility to internally validate and approve these tools among appropriate first article dimensional and capability analysis, comparative 2-sample T-tests before and after moves, before and after CT scans where needed, and PV test as defined by TE product engineering. TE is willing to provide any such validation data to our customers as our joint non-disclosure agreement statuses allow. AMEND with PCN P-19-018058

Reason for Changes:	
Product improvement.These changes are part of an overall effort from TE to improve our supply chain toward our customers and to focus each plant on core products and processes. A TE-internal release test based on the relevant part specifications will be executed before delivery and this notification serves to fulfill our notification requirements as prescribed by AIAG 4th edition. This change notification document accompanies a letter sent to your organization on September 13, 2019 signed by our Vice President of Sales and Marketing. Follow up conversations can occur upon request with your sales contact within 15 calendar days after receipt of this PCN. TE can share validation data with your organization upon request. If you have any questions or needs from this move, please contact your sales engineer within 15 days of receipt of this letter. If no response is received on this period, TE will consider this as an approval and tools must move to the new locations.	
Estimated Dates:	
Last Order Date (Obsolete Parts Only):	**First Date To Ship** (Changed Parts Only):
	03-JAN-2020
Last Ship Date (Obsolete Parts Only):	**Last Date for Mixed Shipments:** (Changed Parts Only):
	No Mixed Shipments

Part Number(s) being Modified:

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
1-1438356-1	NO					
1-1438356-8	NO					
1-1438454-1	NO					
1-1924940-1	NO					
1-1924940-3	NO					
1-1924940-7	NO					
1-1924940-8	NO					
1-1924940-9	NO					
1-2203312-1	NO					
1-2203312-2	NO					
1-2203312-3	NO					
1-2203773-3	NO					
1438129-1	NO					
1438129-2	NO					
1438129-3	NO					
1456554-1	NO					
1557407-2	NO					
1557407-3	NO					
1557801-1	NO					
1557801-2	NO					
1557801-3	NO					
1557801-4	NO					
1557873-1	NO					
1587902-2	NO					
1670120-1	NO					
1670120-2	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
184002-1	NO					
184020-1	NO					
184097-1	NO					
184099-1	NO					
184344-1	NO					
184471-6	NO					
184471-8	NO					
2-1438693-0	NO					
2-1438693-1	NO					
2-1438693-8	NO					
2-1438693-9	NO					
2-1456659-4	NO					
2-1924225-9	NO					
2098557-1	NO					
2098557-2	NO					
2098557-4	NO					
2098557-7	NO					
2098559-5	NO					
2098559-6	NO					
2098559-7	NO					
2098559-8	NO					
2098863-5	NO					
2098863-6	NO					
2098863-7	NO					
2098863-8	NO					
2098863-9	NO					
2103149-1	NO					
2103149-4	NO					
2103149-7	NO					
2103534-1	NO					
2103534-2	NO					
2103534-4	NO					
2138089-1	NO					
2203654-5	NO					
2203654-9	NO					
2272763-1	NO					
2311072-1	NO					
2321027-1	NO					
2324337-1	NO					
3-1438136-4	NO					
3-1924783-0	NO					
3-1924783-7	NO					
3-1924783-8	NO					
3-1924783-9	NO					
4-2098557-1	NO					
4-2311082-0	NO					
4-2311082-1	NO					
4-2311082-2	NO					
4-2311082-4	NO					
4-2311082-5	NO					
4-2311082-6	NO					
4-2311082-7	NO					
4-2311082-8	NO					
5-1456659-3	NO					
5-1456659-8	NO					
5-1557909-1	NO					
5-1557910-1	NO					
5-1557910-2	NO					
5-1924670-0	NO					
5-2304580-1	NO					
6-1438136-2	NO					
6-1438136-8	NO					
6-1438136-9	NO					
6-1587041-6	NO					
6-1587041-9	NO					

Part Number	Part Discontinued per PCN	Customer Drawing	Alias Part Number(s)	Substitute Part Number	Substitute Alias Part Number(s)	Description Of Difference
776671-1	NO					
776834-3	NO					
776834-4	NO					
776834-5	NO					
776887-2	NO					
776887-3	NO					
776887-5	NO					
9-1438691-0	NO					
9-1438691-1	NO					
9-1438691-3	NO					
9-2301631-2	NO					
963294-1	NO					

Section 3

Customer Engineering Approval

GMW 3191 (2019) - Sealed Connector

Testing Purpose:	**Product Validation Report**
EWO Number:	N/A - TE NA Tool Transfer
Model Year:	N/A
First Using Program:	N/A
Application:	Pressure Sensor, Engine Temp Sensor, Oil Pan, Etc.
Notes:	This PV Report was to validate the move of Mold M1928332 (Mold E) for TE PN 2301455-X .

Customer Information				**Supplier Information**					
				Connector Supplier Name:	TE Connectivity				
GM Connector Part Number(s)				Supplier Part Number(s)	1-2296694-1,1-2296694-2, 1-2296694-3, X-2296694-X, 2296694-X 1-2296704-1, 1-2296704-2, 1-2296704-3, X-2296704-X, 2296704-X				
13512365, 13592366, 13592367 13514238, 13514239, 13514240				**Terminal Information**					
				Primary Terminal			Secondary Terminal		
GM Terminal Part Number	N/A			Terminal Supplier	Terminal Type	Terminal Part No	Terminal Supplier	Terminal Type	Terminal Part No
Other Information				TE	1.2 MCON	1418844	N/A	N/A	N/A
Wire Type				TE	1.2 MCON	1670146	N/A	N/A	N/A
Tool Number	1928332	Tool Revision Number		TE	1.2 MCON	1418850	N/A	N/A	N/A
Tool Location	Empalme, MX								

Connector Information				**GM Approval**
Connector Type:	Sealed	X	Unsealed	Pretest:
Connector Size:	2 POSN			
Part Description:	Plug Assembly, Sealed, 2 POSN MCON			
Temperature Class:	T4			Post Test:
Vibration Class:	V4			GM CVE - 05MAR20
Sealing Class	S3			
Connector Mating Force Class:	M1			

				Primary Terminal or Connector (****)								**Secondary Terminal/Connector (****)**									
				Sample Description					**Test Results**					**Sample Description**					**Test Results**					
	Test Item	Test Requirement	Acceptance Criteria	Minimum Sample Size	Terminal Size (mm)	Wire Size	Test Number	Test Start Date	Test Completion Date	Minimum	Maximum	Average	Standard Deviation	Pass/Fail	Terminal Size (mm)	Wire Size	Test Number	Test Start Date	Test Completion Date	Minimum	Maximum	Average	Standard Deviation	Pass/Fail	Notes
Connector System Mechanical Tests	**Terminal to Connector Engagement Force (Section 4.2.4) Test Sequence 29A**																							
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance				20200235 ACL	2/21/2020	2/21/2020					PASS										
	TPA in Open Position (4.2.4) **Female Connector**	With the TPA in the open position, insert the terminal at a rate of 50mm/min until terminal is fully seated and locked	Wire size < 1.0 mm², Force < 15N	10 Terminals	1.2	0.5 MX				6.82N	14.85N	10.06N	2.07	PASS										
			Wire size ≥ 1.0 mm², Force < 30N																					
			Forward Stop ≥ 25N																					
	TPA in Fully Seated Position (4.2.4) **Female Connector**	With the TPA in the closed position, insert the terminal at a rate of 50mm/min until terminal is fully seated and locked or all forward motion has of the terminal has ceased or the maximum insertion force reaches 75N	Wire size < 1.0 mm², Force ≥ 30N	10 Terminals																				
			Wire Size = 1.0 mm², Force ≥ 40N																					
			Wire size > 1.0 mm², Force ≥ 60N																					
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS										
Connector System Mechanical Tests	**Terminal from Connector Extraction Force (Section 4.2.5) Test Sequence 29B**																							
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance				20200235 ACL	2/21/2020	2/21/2020					PASS										
	Primary Lock Only (4.2.5.4) **Female Connector**	With the TPA in the open position, extract the terminal at a rate of 50mm/min until the terminal is removed	Terminal Size = .5mm, Force ≥ 20N Terminal Size = .64mm, Force ≥ 30N Terminal Size ≤ 1.5mm, Force ≥ 50N Terminal Size ≤ 2.8mm, Force ≥ 60N Terminal Size ≤ 6.3mm, Force ≥ 90N Terminal Size ≤ 9.5mm, Force ≥ 100N Terminal Size > 9.5mm, Force ≥ 100N	10 Terminals	1.2	0.5 MX 0.5 GSO				38.47N 40.89N	51.00N 49.65N	44.66N 45.92N	4.82 3.13	PASS *See Notes										Per original validation: 25N Average
	Primary & Secondary Locks (4.2.5.4) **Female Connector**	With the TPA in the closed position, extract the terminal at a rate of 50mm/min until the terminal is removed	Terminal Size = .5mm, Force ≥ 60N Terminal Size = .64mm, Force ≥ 60N Terminal Size ≤ 1.5mm, Force ≥ 80N Terminal Size ≤ 2.8mm, Force ≥ 100N Terminal Size ≤ 6.3mm, Force ≥ 120N Terminal Size ≤ 9.5mm, Force ≥ 150N Terminal Size > 9.5mm, Force ≥ 200N	10 Terminals	1.2	0.5 MX 0.5 GSO				87.94N 86.89N	111.05N 108.90N	99.05N 97.66N	8.89 8.18	PASS										Per original validation: 60N Min
	Primary & Secondary Locks (Moisture Conditioning) (4.2.5.4) **Female Connector**	Condition connectors according to Section 3.2.1 and with With the TPA in the closed position, extract the terminal at a rate of 50mm/min until the terminal is removed	Terminal Size = .5mm, Force ≥ 60N Terminal Size = .64mm, Force ≥ 60N Terminal Size ≤ 1.5mm, Force ≥ 80N Terminal Size ≤ 2.8mm, Force ≥ 100N Terminal Size ≤ 6.3mm, Force ≥ 120N Terminal Size ≤ 9.5mm, Force ≥ 150N Terminal Size > 9.5mm, Force ≥ 200N	10 Terminals																					
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS										
	Connector to Connector Engagement Force (Section 4.2.8) Test Sequence 29D																							

Section 4

Design FMEA

See Section A for nondisclosure conditions.
The Design FMEA, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.

Section 5

Process Flow Diagram

See Section A for nondisclosure conditions.
The Process Flow Diagram, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.

Section 6

Process FMEA

See Section A for nondisclosure conditions.
The Process FMEA, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.

Section 7

Control Plan

See Section A for nondisclosure conditions.
The Control Plan, if included, is a Class II confidential document belonging to TE Connectivity. A class II document may not be further distributed and is subject to the conditions of the nondisclosure agreement.

Section 8

Measurement System Analysis

Gage Repeatability and Reproducibility (ANOVA)

Method:	Externas - Internas	**Equipment:**	Vernier	**Elaborated Date:**	January 24, 2020
Trainer:	Miguel Rodriguez	**ID Equipment:**	EEVE-426	**STANDARD RECORDS**	**2020-0273**
Area:	MOLDEO	**Sample Code:**	Moldeo-Vernier		
		Plant:	Plant 2		

	Number	Name
Operator A:	55694	Guillermo Hernandez
Operator B:	110596	Suseth Rodriguez
Operator C:	89173	Gretel Borbon
Eng. Quality:	**62982**	**Miguel Rodriguez**
According Results:	**Accepted**	

GR&R - %Study Variation: 0.62%

Number of Distinct Categories: 228

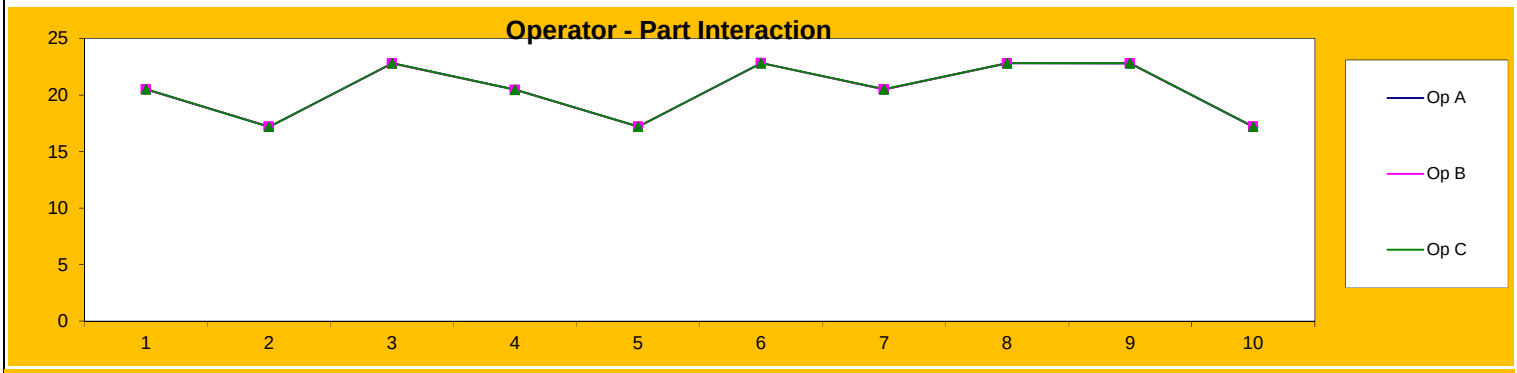
All points under line UCL R: OK

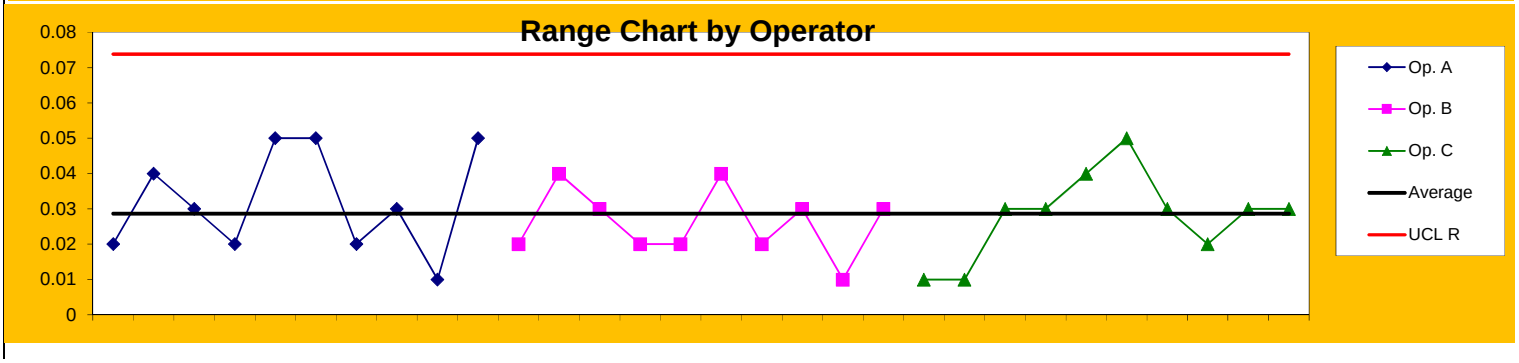
Reason of the Study

Entrenamiento

# of Trials =	3	K_1 =	0.5908	Xbar diff =	0.008333	D_4 =	2.58
# of appraisers =	3	K_2 =	0.5231	Rbarbar =	0.028667	R_p =	5.631111111
# of parts =	10	K_3 =	0.3146	UCL R =	0.0740		

Appraiser/Trial #		Parts to measure 1	2	3	4	5	6	7	8	9	10	Average
55694 Guillermo Hernandez	S-1	20.500	17.180	22.830	20.480	17.180	22.810	20.500	22.820	22.800	17.160	20.426
	S-2	20.510	17.190	22.800	20.470	17.210	22.840	20.510	22.830	22.810	17.200	20.437
	S-3	20.520	17.220	22.820	20.460	17.230	22.860	20.490	22.800	22.800	17.210	20.441
Average		**20.5100**	**17.1967**	**22.8167**	**20.4700**	**17.2067**	**22.8367**	**20.5000**	**22.8167**	**22.8033**	**17.1900**	Xbar $_a$ = 20.4347
Range		**0.0200**	**0.0400**	**0.0300**	**0.0200**	**0.0500**	**0.0500**	**0.0200**	**0.0300**	**0.0100**	**0.0500**	Rbar $_a$ = 0.0320
110596 Suseth Rodriguez	S-1	20.490	17.200	22.790	20.450	17.200	22.800	20.500	22.800	22.810	17.180	20.422
	S-2	20.510	17.190	22.820	20.460	17.190	22.820	20.510	22.800	22.810	17.210	20.432
	S-3	20.510	17.230	22.800	20.470	17.210	22.840	20.490	22.830	22.820	17.210	20.441
Average		**20.5033**	**17.2067**	**22.8033**	**20.4600**	**17.2000**	**22.8200**	**20.5000**	**22.8100**	**22.8133**	**17.2000**	Xbar $_b$ = 20.4317
Range		**0.0200**	**0.0400**	**0.0300**	**0.0200**	**0.0200**	**0.0400**	**0.0200**	**0.0300**	**0.0100**	**0.0300**	Rbar $_b$ = 0.0260
89173 Gretel Borbon	S-1	20.520	17.190	22.830	20.450	17.190	22.810	20.510	22.830	22.830	17.190	20.435
	S-2	20.510	17.200	22.800	20.480	17.200	22.830	20.530	22.820	22.810	17.220	20.44
	S-3	20.520	17.190	22.820	20.470	17.230	22.860	20.500	22.810	22.840	17.210	20.445
Average		**20.5167**	**17.1933**	**22.8167**	**20.4667**	**17.2067**	**22.8333**	**20.5133**	**22.8200**	**22.8267**	**17.2067**	Xbar $_c$ = 20.4400
Range		**0.0100**	**0.0100**	**0.0300**	**0.0300**	**0.0400**	**0.0500**	**0.0300**	**0.0200**	**0.0300**	**0.0300**	Rbar $_c$ = 0.0280





Gage Repeatability and Reproducibility (Crossed)

Method:	Externas - Internas	**Equipment:**	Vernier
Trainer:	Miguel Rodriguez	**ID Equipment:**	EEVE-426
Area:	MOLDEO	**Sample Code:**	Moldeo-Vernier
		Plant:	Plant 2

Elaborated Date: January 24, 2020
STANDARD RECORDS 2020-0273

	Number	Name
Operator A:	55694	Guillermo Hernandez
Operator B:	110596	Suseth Rodriguez
Operator C:	89173	Gretel Borbon
Eng. Quality:	**62982**	Miguel Rodriguez
According Results:		**Accepted**

General Comments - Special Event

Gage R&R Study - ANOVA Method

Variance and Standard Deviation Components

Source	St. Dev.	Variance	% of Variance
Total Gage R&R	0.015105	0.00022815	0.00%
Repeatability	0.016055	0.00025778	0.00%
Reproducibility	0	0	0.00%
Operator	0.00368	1.3539E-05	0.00%
Operator*Part	0	0	0.00%
Part to Part	2.451951	6.01206461	100.00%
Total Variation	2.451998	6.01229276	100.00%

Process Tolerance = 0

Gage R&R Using 5.15 Standard Deviations (99%)

Source	Study Variation	% Study Variation
Total Gage R&R	0.077789	**0.62%**
Repeatability	0.082686	0.65%
Reproducibility	0	0.00%
Operator	0.01895	0.15%
Operator*Part	0	0.00%
Part to Part	12.62755	100.00%
Total Variation	12.62779	100.00%

Gage R&R Using 6.0 Standard Deviations (99.7%)

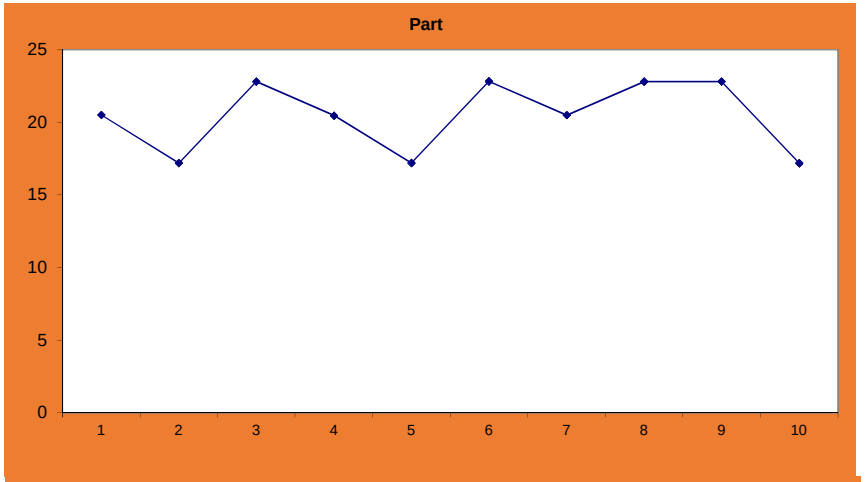
Source	Study Variation	% Study Variation
Total Gage R&R	0.090627	**0.62%**
Repeatability	0.096333	0.65%
Reproducibility	0	0.00%
Operator	0.022077	0.15%
Operator*Part	0	0.00%
Part to Part	14.71171	100.00%
Total Variation	14.71199	100.00%

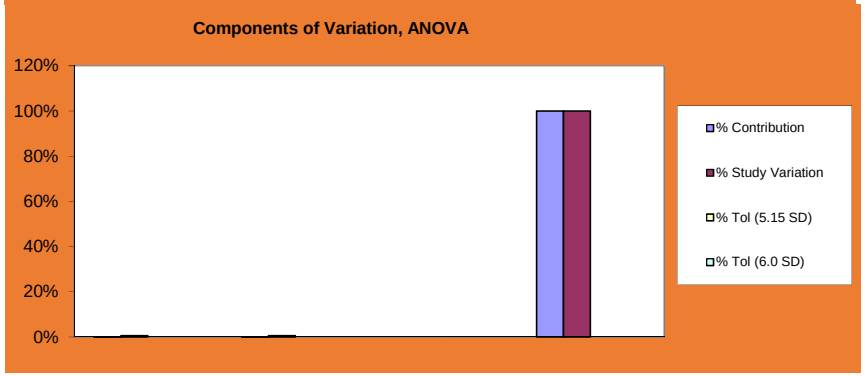
Number of Distinct Categories = **228**

Analysis of Variance (ANOVA) Table

Source	DF	SS	MS	F	p
Part	9	486.9783878	54.1087098	209904.478	0.000
Operator	2	0.001068889	0.00053444	2.073	0.135
Op.x Part Interaction	18	0.002308889	0.00012827	0.498	0.949
Gage (error)	60	0.015466667	0.00025778		
Total	89	486.9972322			

p value for Op. x Part Interaction as error term = 0.25





DATA - GRR ATTRIBUTE STUDY

Empalme Site

DATE:	31-Jan-20
REQUEST:	Miguel Rodriguez
QUALITY ENGINEER:	Miguel Rodriguez
MANUFACTURE ENGINEER	Miguel Rodriguez
PLANT:	Plant 2
SPC TECHNICIAN:	Victor Peralta
PART NUMBER:	Varios
COMMENT General:	Quality Inspection - Pin Gage - Method Inspection

Work Center:	N/A
NUM. Gage-Fixture	Pin Gage Go-NoGo
OPERATOR 1	55694-Guillermo Hdez.
OPERATOR 2	110596-Suseth Rodriguez
OPERATOR 3	89173-Gretel Borbon
Standard Record	2020-0372

Known Population				55694-Guillermo Hdez.			Expert	110596-Suseth Rodriguez			Expert	89173-Gretel Borbon			Expert	OPER VS OPER	OPER VS SAMPLE
# ID	Num Sample	DETAILS	Standard	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Agree	Agree
1	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
2	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
3	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
4	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
5	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
6	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
7	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
8	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
9	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
10	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
11	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
12	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
13	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
14	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
15	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
16	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
17	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
18	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
19	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
20	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
21	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
22	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
23	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
24	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
25	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
26	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
27	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
28	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
29	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK

DATA - GRR ATTRIBUTE STUDY

Empalme Site

DATE:	31-Jan-20
REQUEST:	Miguel Rodriguez
QUALITY ENGINEER:	Miguel Rodriguez
MANUFACTURE ENGINEER	Miguel Rodriguez
PLANT:	Plant 2
SPC TECHNICIAN:	Victor Peralta
PART NUMBER:	Varios
COMMENT General:	Quality Inspection - Pin Gage - Method Inspection

Work Center:	N/A
NUM. Gage-Fixture	Pin Gage Go-NoGo
OPERATOR 1	55694-Guillermo Hdez.
OPERATOR 2	110596-Suseth Rodriguez
OPERATOR 3	89173-Gretel Borbon
Standard Record	2020-0372

Known Population				55694-Guillermo Hdez.			Expert	110596-Suseth Rodriguez			Expert	89173-Gretel Borbon			Expert	OPER VS OPER	OPER VS SAMPLE
# ID	Num Sample	DETAILS	Standard	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Agree	Agree
30	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
31	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
32	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
33	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
34	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
35	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
36	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
37	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
38	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
39	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
40	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
41	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
42	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
43	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
44	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
45	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
46	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
47	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
48	3	Wire Hole Increase	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
49	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
50	2	Wire Hole Reduced	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK

Final comments of the study:

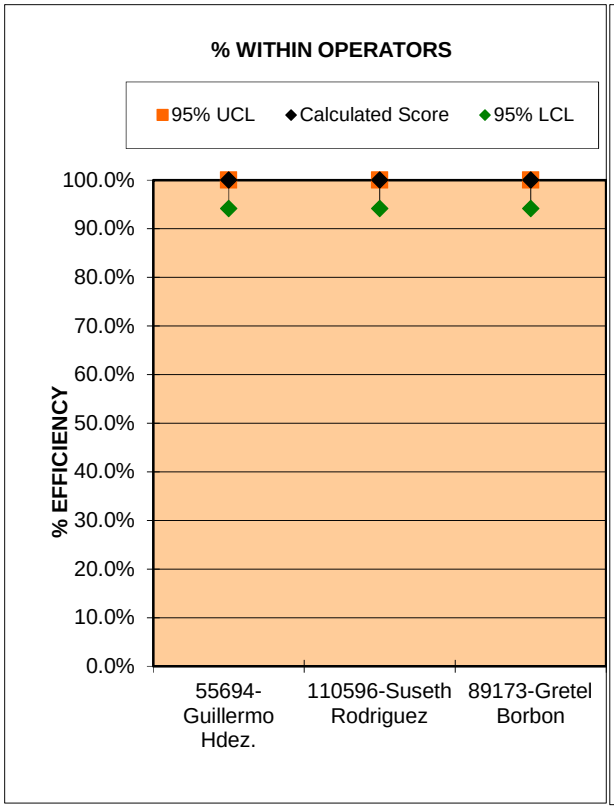
SPC Technician: Must be sent to answer to request, quality engineer and manufacture engineer.

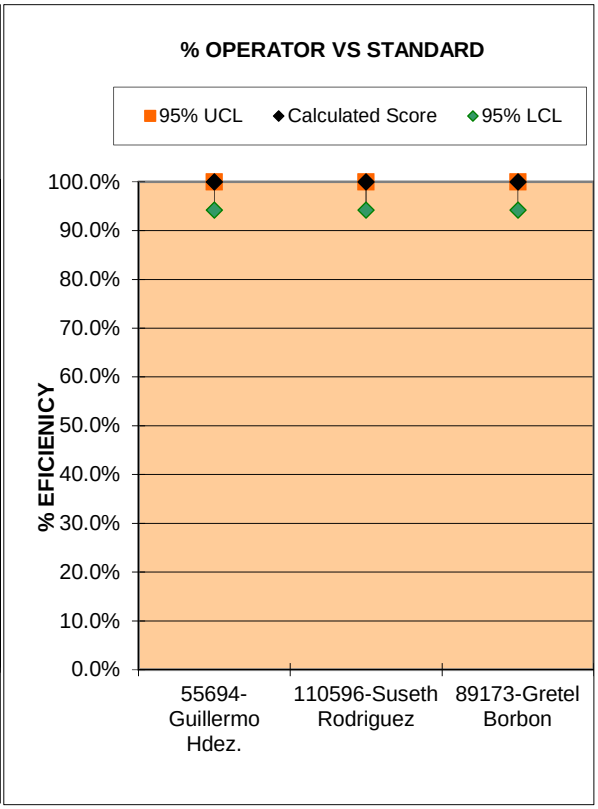
REPORT GRR ATTRIBUTE

DATE	31-Jan-20	ID - EQUIPMENT
STANDAR RECORD	*2020-0372*	Pin Gage Go-NoGo
Work Center:	N/A	
RESULT	ACCEPTED	

	% OPER VS OPER			% OPER VS STANDARD		
Operators	55694-Guillermo Hdez.	110596-Suseth Rodriguez	89173-Gretel Borbon	55694-Guillermo Hdez.	110596-Suseth Rodriguez	89173-Gretel Borbon
Inspeced total	50	50	50	50	50	50
# Agreement	50	50	50	50	50	50
95% UCL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Calculated Score	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
95% LCL	94.18%	94.18%	94.18%	94.18%	94.18%	94.18%

	Screen % Effective Score	Screen % Effective Score vs Standard
Total Inspected	50	50
# Agreement	50	50
95% UCL	100.0%	100.0%
Calculated Score	**100.0%**	**100.0%**
95% LCL	94.18%	94.18%





DATA - GRR ATTRIBUTE STUDY

Empalme Site

DATE:	24-Jan-20
REQUEST:	Miguel Rodriguez
QUALITY ENGINEER:	Miguel Rodriguez
MANUFACTURE ENGINEER	Miguel Rodriguez
PLANT:	Plant 2
SPC TECHNICIAN:	Victor Peralta
PART NUMBER:	Varios
COMMENT General:	Inspeccion Calidad

Work Center:	N/A
NUM. Gage-Fixture	Go-NoGo/Pin Latch
OPERATOR 1	55694-Guillermo Hdez.
OPERATOR 2	110596-Suseth Rodriguez
OPERATOR 3	89173-Gretel Borbon
Standard Record	2020-0274

Known Population				55694-Guillermo Hdez.			Expert	110596-Suseth Rodriguez			Expert	89173-Gretel Borbon			Expert	OPER VS OPER	OPER VS SAMPLE
# ID	Num Sample	DETAILS	Standard	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Agree	Agree
1	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
2	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
3	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
4	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
5	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
6	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
7	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
8	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
9	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
10	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
11	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
12	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
13	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
14	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
15	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
16	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
17	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
18	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
19	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
20	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
21	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
22	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
23	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
24	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
25	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
26	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
27	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
28	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
29	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK

DATA - GRR ATTRIBUTE STUDY

Empalme Site

DATE:	24-Jan-20
REQUEST:	Miguel Rodriguez
QUALITY ENGINEER:	Miguel Rodriguez
MANUFACTURE ENGINEER	Miguel Rodriguez
PLANT:	Plant 2
SPC TECHNICIAN:	Victor Peralta
PART NUMBER:	Varios
COMMENT General:	Inspeccion Calidad

Work Center:	N/A
NUM. Gage-Fixture	Go-NoGo/Pin Latch
OPERATOR 1	55694-Guillermo Hdez.
OPERATOR 2	110596-Suseth Rodriguez
OPERATOR 3	89173-Gretel Borbon
Standard Record	2020-0274

Known Population				55694-Guillermo Hdez.			Expert	110596-Suseth Rodriguez			Expert	89173-Gretel Borbon			Expert	OPER VS OPER	OPER VS SAMPLE
# ID	Num Sample	DETAILS	Standard	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Try #1	Try #2	Try #3	Result	Agree	Agree
30	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
31	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
32	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
33	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
34	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
35	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
36	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
37	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
38	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
39	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
40	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
41	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
42	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
43	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
44	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
45	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
46	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
47	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
48	1	Good Parts	YES	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	YES	YES	YES	ACCEPTED	OK	OK
49	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK
50	2	Missing Latch / Lock	NO	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	NO	NO	NO	ACCEPTED	OK	OK

Final comments of the study:

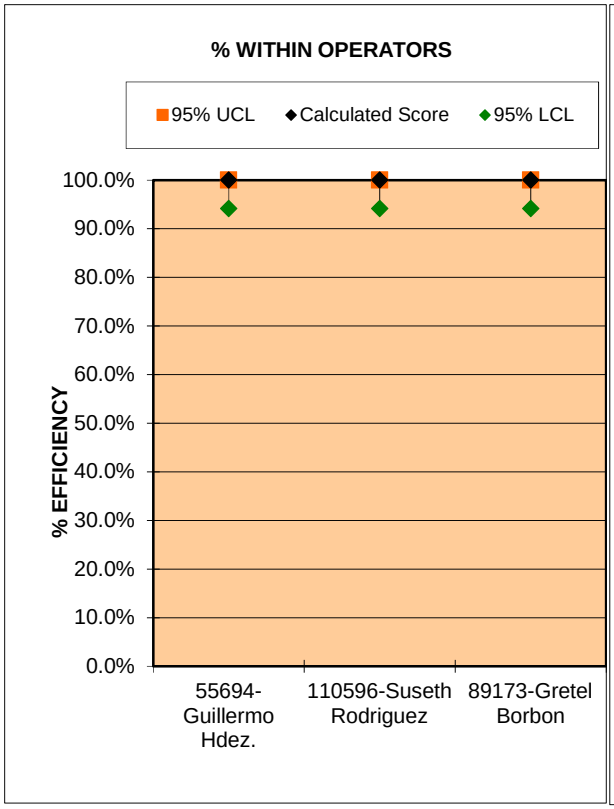
SPC Technician: Must be sent to answer to request, quality engineer and manufacture engineer.

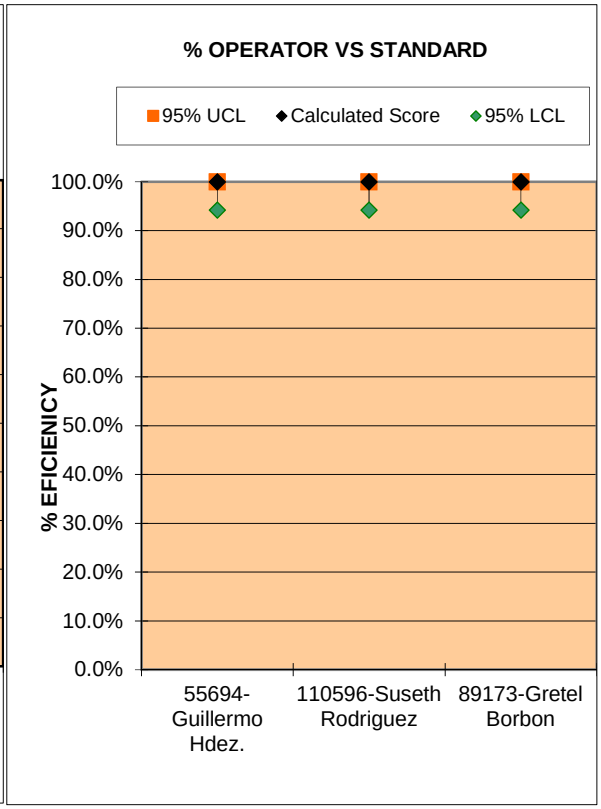
REPORT GRR ATTRIBUTE

DATE	24-Jan-20	ID - EQUIPMENT
STANDAR RECORD	*2020-0274*	Go-NoGo/Pin Latch
Work Center:	N/A	
RESULT	ACCEPTED	

	% OPER VS OPER			% OPER VS STANDARD		
Operators	55694-Guillermo Hdez.	110596-Suseth Rodriguez	89173-Gretel Borbon	55694-Guillermo Hdez.	110596-Suseth Rodriguez	89173-Gretel Borbon
Inspeced total	50	50	50	50	50	50
# Agreement	50	50	50	50	50	50
95% UCL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Calculated Score	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
95% LCL	94.18%	94.18%	94.18%	94.18%	94.18%	94.18%

	Screen % Effective Score	Screen % Effective Score vs Standard
Total Inspected	50	50
# Agreement	50	50
95% UCL	100.0%	100.0%
Calculated Score	**100.0%**	**100.0%**
95% LCL	94.18%	94.18%





Section 9

Dimensional Results

Final assembly dimensions not affected by this change.

Production Part Approval

DIMENSIONAL TEST RESULTS

ACT-1173

TE Connectivity-Empalme is accredited by ANSI-ASQ National Accreditation Board for ISO/IEC 17025 under a defined calibration and/or testing scope.

Organization: TE Connectivity	Part Number: 1-2296694-3
Supplier/Vendor Code: N/A	Part Name: PLUG ASSEMBLY SEALED 2 POSITION MCON
INSPECTION FACILITY: TE Connectivity Empalme Metrology lab	Design Record Change Level: DWG: C - 2296694 REV A
	Engineering Change Documents: N/A
	# Folio: 47932 Page ___1___ of ___2___

Item	Dim./Spec.	Spec. / Limits tol +	tol -	Units	Organization Measurement Results (Data) SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	SAMPLE 5	SAMPLE 6	Ok	Not Ok	Instrument # ID
1	15.40	0.20	0.20	mm.	15.384	15.402	15.416	15.389	15.410	15.384	✔		LMMC-010
2	26.50	0.20	0.20	mm.	26.482	26.560	26.571	26.554	26.561	26.573	✔		LMMC-010
3	18.05	0.20	0.20	mm.	17.975	17.992	17.985	17.986	17.964	17.964	✔		LMMC-010
4	10.6	REFERENCE		mm.	10.70	10.64	10.66	10.68	10.64	10.65	✔		LMMC-010
5	4	REFERENCE		mm.	3.74	3.77	3.81	3.80	3.80	3.80	✔		LMMC-010
6	0.10	REFERENCE		mm.	0.147	0.133	0.168	0.204	0.191	0.202	✔		LMMC-010
7	20.92	MINIMUM		mm.	OK	OK	OK	OK	OK	OK	✔		LMMC-010
	NOTES:												
1	ISL AND CPA (WHEN APPLICABLE) ARE SHIPPED IN THEIR PRE - LATCHED POSITIONS.				OK	OK	OK	OK	OK	OK	✔		
2	TERMINALS SOLD SEPARATELY. FOR USE WITH TE MCON 1.2mm CLEAN BODY CONTACT WITH WIRE SEAL. SEE TABLE.				NOTED PER APQP TEAM						✔		
3	APPLICABLE INTERFACE DRAWINGS: EWCAP 120-S-002-1-Z01 AND 120-S-002-1-Z02.				NOTED PER APQP TEAM						✔		
4	MINIMUM FEED THROUGH CONDITION WITH 1.0mm CLEARANCE ALL AROUND.				OK	OK	OK	OK	OK	OK	✔		
5	TRACEABILITY CODE (YY = TWO DIGIT YEAR, JJJ = 3 DIGIT JULIAN DAY, S = 1 DIGIT SHIFT)				OK	OK	OK	OK	OK	OK	✔		
6	FOR OPTIONAL TERMINAL CAVITY BLOCKING. CONTACT TE SALES REPRESENTIVE OR CUSTOMER SERVICE.				NOTED PER APQP TEAM						✔		
7	SEE INSTRUCTION SHEET 408-32103 FOR CONNECTOR SERVICE AND ISL OPERATION. ISL ACTUATION DISTANCE IS 2.0mm.				NOTED PER APQP TEAM						✔		
8	CONTACT PLATING AND APPLICABLE INDIVIDUAL WIRE SEAL ARE APPLICATION DEPENDENT, CONTACT TE SALES REPRESENTATIVE OR CUSTOMER SERVICE FOR DETAILS.				NOTED PER APQP TEAM						✔		
9	FOR WIRE CRIMP DETAILS, SEE TE APPLICATION SPECIFICATION 114-18464				NOTED PER APQP TEAM						✔		

SIGNATURE	TITLE	DATE
Fabiola Agruel	Metrology Chief	October 23, 2019

Production Part Approval

DIMENSIONAL TEST RESULTS

ACT-1173

TE Connectivity-Empalme is accredited by ANSI-ASQ National Accreditation Board for ISO/IEC 17025 under a defined calibration and/or testing scope.

Organization: TE Connectivity	Part Number: 1-2296694-3
Supplier/Vendor Code: N/A	Part Name: PLUG ASSEMBLY SEALED 2 POSITION MCON
INSPECTION FACILITY:	Design Record Change Level: DWG: C - 2296694 REV A
TE Connectivity Empalme Metrology lab	Engineering Change Documents: N/A
	# Folio: 47932 Page ___2___ of ___2___

Item	Dim./Spec.	Spec. / Limits tol +	tol -	Units	Organization Measurement Results (Data) SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4	SAMPLE 5	SAMPLE 6	Ok	Not Ok	Instrument # ID
10	DOCUMENTED I. C. D. IS SPECIFIED TO MEET MOST WIRE SEAL APPLICATIONS, HOWEVER, I. C. D. IS HIGHLY DEPENDENT ON INSULATION TYPE AND OD, SUFFICIENT GRIP OF THE WIRE SEAL MUST BE OBTAINED SUCH THAT WIRE SEAL DOES NOT DISPLACE FROM INSULATION GRIP DURING CONTACT INSERTION INTO CONNECTOR HOUSING. THE WIRE SEAL SHALL NOT BE CRIMPED TOO TIGHTLY THAT THE WIRE SEAL TEARS DURING THE CRIMPING OPERATION.				NOTED PER APQP TEAM						✔		
11	CONNECTOR VALIDATION PENDING PER GWW3191 T4,V4,S3 WITH THE FOLLOWING EXCEPTIONS: PRIMARY TERMINAL RETENTION FORCE > 25 NEWTONS.				NOTED PER APQP TEAM						✔		
12	KEY CODE DIMENSIONS ARE SHOWN WITH ISL IN PRE-LATCHED POSITION. FOR DIMENSION OF KEY WITH ISL IN FINAL POSITION, ADJUST SHOWN DIMENSIONS BY 2.0mm.				NOTED PER APQP TEAM						✔		
13	MATES WITH STRAIGHT EXIT WIRE DRESS, TE PN 2272168-1 AND RIGHT ANGLE EXIT WIRE DRESS, TE PN 2272169-1.				NOTED PER APQP TEAM						✔		
14	THIS DRAWING IS RESTRICTED TO GM CORPORATION.				OK	OK	OK	OK	OK	OK	✔		

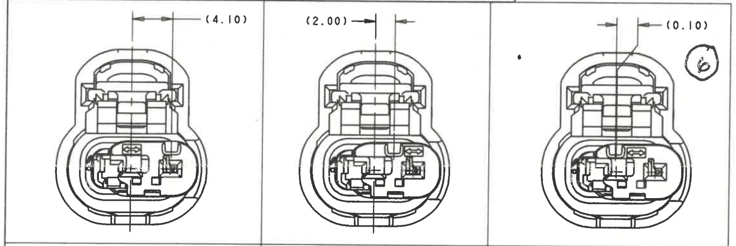
CONCLUSION:

TOTAL # OF FEATURES	42	
LESS BASIC DIMENSIONS	0	
LESS REFERENCE DIMENSIONS	18	
REPORTED DIMENSIONS		24
# DIMENSIONS IN TOLERANCE		**24**
# DIMENSIONS OUT OF TOLERANCE		**0**
% DIMENSION IN TOLERANCE		**100.00** %
% DIMENSION OUT OF TOLERANCE		**0.00** %

SIGNATURE	TITLE	DATE
Fabiola Agruel	Metrology Chief	October 23, 2019

THIS DRAWING IS UNPUBLISHED. RELEASED FOR PUBLICATION 20

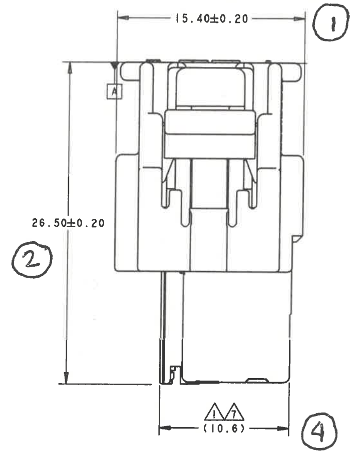
REVISIONS					
P	LTR	DESCRIPTION	DATE	DWN	APVD
	A	RELEASED PER ECO-16-006018	18APR2016	DLD	MDB

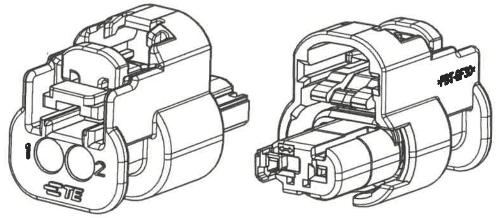


KEY CODE A 12 SCALE 4:1

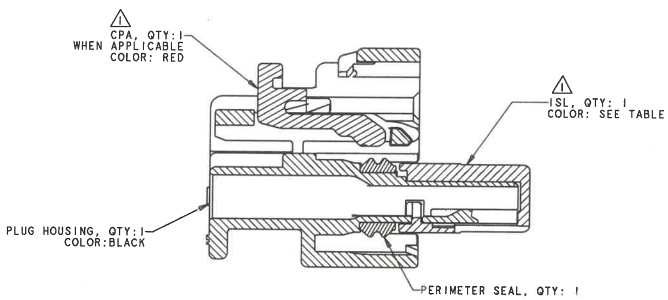
KEY CODE B 12 SCALE 4:1

KEY CODE C 12 SCALE 4:1

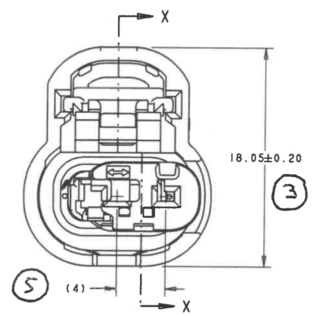




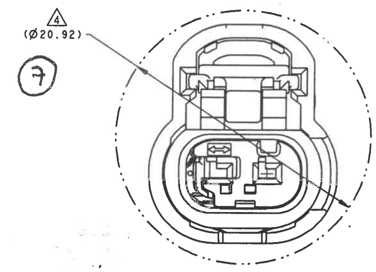
ISOMETRIC VIEW
SCALE 4:1



SECTION X-X
SHOWN WITH CPA AND ISL IN
PRE-LATCHED POSITION

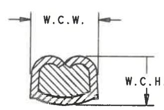


ISL SHOWN IN
PRE-LATCHED (AS-SHIPPED) POSITION

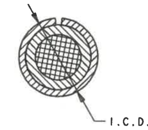


ISL SHOWN IN
FINAL (LOCKED) POSITION - REF ONLY
SCALE 5:1

1. ISL AND CPA (WHEN APPLICABLE) ARE SHIPPED IN THEIR PRE-LATCHED POSITIONS.
2. TERMINALS SOLD SEPARATELY. FOR USE WITH TE MCON 1.2mm CLEAN BODY CONTACT WITH WIRE SEAL. SEE TABLE.
3. APPLICABLE INTERFACE DRAWINGS: EWCAP 120-S-002-1-Z01 AND 120-S-002-1-Z02.
4. MINIMUM FEED THROUGH CONDITION WITH 1.0mm CLEARANCE ALL AROUND.
5. TRACEABILITY CODE (YY = TWO DIGIT YEAR, JJJ = 3 DIGIT JULIAN DAY, S = 1 DIGIT SHIFT).
6. FOR OPTIONAL TERMINAL CAVITY BLOCKING, CONTACT TE SALES REPRESENTIVE OR CUSTOMER SERVICE.
7. SEE INSTRUCTION SHEET 408-32103 FOR CONNECTOR SERVICE AND ISL OPERATION. ISL ACTUATION DISTANCE IS 2.0mm.
8. CONTACT PLATING AND APPLICABLE INDIVIDUAL WIRE SEAL ARE APPLICATION DEPENDENT. CONTACT TE SALES REPRESENTATIVE OR CUSTOMER SERVICE FOR DETAILS.
9. FOR WIRE CRIMP DETAILS, SEE TE APPLICATION SPECIFICATION 114-18464.
10. DOCUMENTED I.C.D. IS SPECIFIED TO MEET MOST WIRE SEAL APPLICATIONS. HOWEVER, I.C.D. IS HIGHLY DEPENDENT ON INSULATION TYPE AND OD. SUFFICIENT GRIP OF THE WIRE SEAL MUST BE OBTAINED SUCH THAT WIRE SEAL DOES NOT DISPLACE FROM INSULATION GRIP DURING CONTACT INSERTION INTO CONNECTOR HOUSING. THE WIRE SEAL SHALL NOT BE CRIMPED TOO TIGHTLY THAT THE WIRE SEAL TEARS DURING THE CRIMPING OPERATION.
11. CONNECTOR VALIDATION PENDING PER GMW3191 T4,V4,S3 WITH THE FOLLOWING EXCEPTIONS:
    PRIMARY TERMINAL RETENTION FORCE > 25 NEWTONS.
12. KEY CODE DIMENSIONS ARE SHOWN WITH ISL IN PRE-LATCHED POSTION. FOR DIMENSION OF KEY WITH ISL IN FINAL POSITION, ADJUST SHOWN DIMENSIONS BY 2.0mm.
13. MATES WITH STRAIGHT EXIT WIRE DRESS, TE PN 2272168-1 AND RIGHT ANGLE EXIT WIRE DRESS, TE PN 2272169-1
14. THIS DRAWING IS RESTRICTED TO GM CORPORATION



WIRE CRIMP
DIMENSIONS



INSULATION CRIMP
DIMENSIONS

Digitally signed by Gladys Gallegos
Date: 2019.10.23 09:33:35 -07'00'

CPA (YES / NO)	ISL COLOR	KEY CONFIGURATION	PART NUMBER
YES	DK GRAY	KEY CODE C	1-2296694-3
	LT GRAY	KEY CODE B	1-2296694-2
	BLUE	KEY CODE A	1-2296694-1
NO	DK GRAY	KEY CODE C	2296694-3
	LT GRAY	KEY CODE B	2296694-2
	BLUE	KEY CODE A	2296694-1

MAX TEMP	FEMALE TERMINAL P/N	W.C.H	W.C.W	I.C.D	WIRE SEAL PART NUMBER
150°C	1418844	9	9	10	8
8	1670146				
	1418850				

THIS DRAWING IS A CONTROLLED DOCUMENT.

DIMENSIONS: mm

TOLERANCES UNLESS OTHERWISE SPECIFIED: 0 PLC ± ; 1 PLC ±0.3 ; 2 PLC ±0.15 ; 3 PLC ± ; 4 PLC ± ; ANGLES ±

MATERIAL - ; FINISH -

DWN V.PATAGAR 25MAR2013
CHK R.HETRICK 25MAR2013
APVD R.HETRICK 25MAR2013
PRODUCT SPEC -
APPLICATION SPEC -
WEIGHT -

TE Connectivity

NAME: PLUG ASSEMBLY, SEALED, 2 POSITION, MCON

SIZE A1 | CAGE CODE 00779 | DRAWING NO C-2296694 | RESTRICTED TO GM

RESTRICTED CUSTOMER | SCALE 5:1 | SHEET 1 OF 1 | REV A

4805 (3/13)

Section 10

Material, Performance Test Results

BASF CORPORATION

We create chemistry

Certificate of Analysis

Customer:

TE CONNECTIVITY CORPORATION
8350 E OLD VAIL RD
TUCSON AZ 85747-9197

Attention:	BASFORDERINFO@TE.COM	Product Number	:	50116737
eMAIL:	basforderinfo@te.com	Product Name	:	ULTRADUR® B4300G6 HR LS BK15045 POLYBUTYLENE TEREPHTHALATE 726KG Fibreboard IBC (11G)
Cust Prod:	1573435-2	Vehicle	:	534107
Cust Prod Name:	ULD.B4300G6 HR LS BK15045 726KG 11G	Batch/Lot	:	0208816223
Cust P.O.:	2711247067	Manuf.Date	:	Jan-14-2020
Cust P.O. Line:	1	Shipped Date	:	Feb-14-2020
		Shipped Quantity	:	1,600.556 LB
		Delivery Date	:	Feb-20-2020
		Order Number	:	117405382 000010
		Delivery Note	:	144261888 900001

Inspection Certificate 3.1 according to EN 10204

Characteristic	Result	UOM	-----Specification----- Minimum	Maximum	Test Method
Moisture Content	0.01	%		0.05	ASTM D6869 / ISO 15512B
Viscosity Number for PBT, PSU and PES	101	ml/g	95	120	ISO1628 (Phenol/Dichlorb.
Ash / Filler Content	29.41	%	28.00	32.00	ASTM5630/ISO3451
Melt Flow Rate 265/2.16	17.50	g/10min	8.00		ASTM D1238A

Comments :

Results shown are the means of individual test values for those samples taken during production.

This product is approved to the following specification:

GMW16459-PBT-GF30

Thank you for choosing a BASF Product

					Primary Terminal or Connector (****)											Secondary Terminal/Connector (****)											Notes
					Sample Description					Test Results						Sample Description					Test Results						
	Test Item	Test Requirement	Acceptance Criteria	Minimum Sample Size	Terminal Size (mm)	Wire Size	Test Number	Test Start Date	Test Completion Date	Minimum	Maximum	Average	Standard Deviation	Pass/Fail		Terminal Size (mm)	Wire Size	Test Number	Test Start Date	Test Completion Date	Minimum	Maximum	Average	Standard Deviation	Pass/Fail	
Connector System Mechanical Tests	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance	10 Connector Pairs			20200235 ACL	02/21/20	02/21/20					PASS												
	Connector to Connector Engangement Force (4.2.8) and (USCAR25)	Engage fully populated connectors at a rate of 50mm/min	Connector Class 1, Force ≤ 20N Connector Class 2, Force ≤ 45N Connector Class 3, Force ≤ 75N		1.2	0.5 MX 0.5 GSO				17.07N 16.39N	21.80N 20.20N	18.47N 18.16N	1.46 1.35	PASS												
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS												
Connector System Mechanical Tests	**Terminal Position Assurance (Section 4.2.9) Test Sequence 29E**																									
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance	10 Female Connectors			20200235 ACL	02/21/20	02/21/20					PASS												
	TPA Pre Lock Position to TPA Removal from Connector Force (4.2.9.4.1) **Female Connector**	Remove TPA from connector at a rate of 50mm/min	Unprotected TPA Removal Force ≥ 20N Protected TPA Removal Force ≥ 20N																							
	TPA Pre Lock Position to TPA Locked Postition Force (4.2.9.4.1) **Female Connector**	Insert TPA into the connector at a rate of 50mm/min	30N ≤ Unprotected TPA Removal Force ≤ 45N 20N ≤ Protected TPA Removal Force ≤ 45N		1.2	N/A - MX N/A - GSO				17.49N 17.93N	20.99N 20.38N	19.33N 18.98N	1.03 0.75	PASS *See Notes												Per original validation: 15N Min
	TPA Closing Force w/ Properly Assembled Terminals (4.2.9.4.2) **Female Connector**	With fully populated connector, insert TPA at a rate of 50mm/min	30N ≤ Unprotected TPA Removal Force ≤ 45N 20N ≤ Protected TPA Removal Force ≤ 45N																							
	TPA Closing Force w/ One Improperly Assembled Terminal (4.2.9.4.3) **Female Connector**	With one improperly inserted terminal, insert TPA at a rate of 50mm/min	30N ≤ Unprotected TPA Removal Force ≤ 45N 20N ≤ Protected TPA Removal Force ≤ 45N																							
	Retention Force of Seated TPA (4.2.9.4.4) **Female Connector**	With TPA in the closed position, pull TPA to the pre-stage position at a rate of 50mm/min	Unprotected TPA Removal Force ≥ 60N Protected TPA Removal Force ≥ 60N																							
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS												
Connector System Mechanical Tests	**Connector Position Assurance (Section 4.2.15) Test Sequence 29L**																									
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance				20200235 ACL	2/24/2020	2/24/2020					PASS												
	CPA Locking Force Mated Connector (4.2.15.4.1)	Using a mated connector, close the CPA at a rate of 50mm/min	Force to close CPA ≤ 22N	10 Connector Pairs	1.2	N/A - MX N/A - GSO				6.26N 6.52N	7.61N 7.85M	6.75N 7.00N	0.41 0.44	PASS												
	CPA Unlocking Force Mated Connector (4.2.15.4.1)	Using a mated connector, open the CPA at a rate of 50mm/min	10N ≤ Force to Open CPA ≤ 30N	10 Connector Pairs	1.2	N/A - MX N/A - GSO				8.31N 7.92N	9.06N 9.84N	8.66N 8.76N	0.25 0.59	PASS *See Notes												Per original validation: 7N Min
	CPA Closing Force Unmated Connector (4.2.15.4.2) **Female Connector**	Using an unmated connector, close the CPA at a rate of 50mm/min	Force to close CPA > 80N	10 Female Connectors	1.2	N/A - MX N/A - GSO				114.67N 88.44N	139.76N 143.73N	125.56N 122.31N	6.53 21.21	PASS												
	CPA Extraction Force Unmated Connector (4.2.15.4.3) **Female Connector**	Using an unmated connector, apply force in the direction opposite the closing direction to the CPA at a rate of 50mm/min	CPA Extraction Force ≥ 60N	10 Female Connectors	1.2	N/A - MX N/A - GSO				119.21N 118.09N	128.24N 127.61N	124.00N 124.82N	2.55 3.12	PASS												
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS												
Connector System Mechanical Tests	**Locked Connector Disengagment Force (Section 4.2.18) Test Sequence 29P**																									
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance	10 Connector Pairs			20200235 ACL	02/21/20	02/21/20					PASS												
	Locked Connector Disengagement Force (4.2.18)	Pull connectors apart at a rate of 50mm/min	Disengagement Force(Terminal size .5mm - 1.2mm) > 80N Disengagement Force(Terminal size > 1.2mm) > 120N		1.2	0.5 MX 0.5 GSO				124.40N 125.57N	129.14N 131.97N	126.75N 128.66N	1.68 2.72	PASS												
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS												
Connector System Mechanical Tests	**Unlocked Connector Disengagment Force (Section 4.2.19) Test Sequence 29Q**																									
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance																							
	Unlocked Connector Disengagement Force (With Locking Feature Disengaged) (4.2.19)	With mated connectors, pull connectors apart at a rate of 50mm/min	Disengagement Force < 100N	5 Connector Pairs																						
	Unlocked Connector Disengagement Force (Lock Feature Disengagement) (4.2.19)	With mated connectors, pull the primary locking feature at a rate of 50mm/min until lock is disengaged	Disengagement Force < 70N	5 Connector Pairs																						
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part																							

					Primary Terminal or Connector (****)											Secondary Terminal/Connector (****)											Notes
					Sample Description					Test Results						Sample Description					Test Results						
	Test Item	Test Requirement	Acceptance Criteria	Minimum Sample Size	Terminal Size (mm)	Wire Size	Test Number	Test Start Date	Test Completion Date	Minimum	Maximum	Average	Standard Deviation	Pass/Fail		Terminal Size (mm)	Wire Size	Test Number	Test Start Date	Test Completion Date	Minimum	Maximum	Average	Standard Deviation	Pass/Fail	
Sealed Connector Environmental Tests	**Thermal Aging (Section 4.4.1) Test Sequence 31A**																									
	Pre Test Visual Examination (3.4)	Visually examine each test specimen before testing or conditioning	There shall not exhibit any evidence of deterioration, cracks and/or other deformities that could affect performance, function and/or appeearance	10 Connector Pairs			20200230 ACL	2/19/2020	2/24/2020					PASS												
	Pre Test Isolation Resistance (4.3.5)	With mated connector pairs, apply 500VDC to adjacent terminal pairs, measure resistance 15s of stabilized reading. If the connector is equipped with a shorting bar, measure the resistance between the 2 terminal that are connected to the shorting bar	Isolation Resistance ≥ 100MΩ		1.2	0.5 - MX				**≥ 100MΩ**	**≥ 100MΩ**	**≥ 100MΩ**		PASS												
	Pre Test Pressure/Vacuum Leak (Sealing Class 2 & 3) (4.4.10)	Submerge test sample 300mm - 400mm in the salt water solution. Apply 7psig of pressure for 15 seconds. Switch the regulator source to vacuum 48kPa (7psig) for 15s.	Pressure - There shall be no loss of applied pressure and no bubbles visible exiting any test sample Vacuum - must meet isolation resistance acceptance criteria There must be no signs water inside the connector		1.2	0.5 - MX				**No bubbles/water ingress**				PASS												
	Post Test Isolation Resistance (4.3.5)	With mated connector pairs, apply 500VDC to adjacent terminal pairs, measure resistance 15s of stabilized reading. If the connector is equipped with a shorting bar, measure the resistance between the 2 terminal that are connected to the shorting bar	Isolation Resistance ≥ 100MΩ		1.2	0.5 - MX				**≥ 100MΩ**	**≥ 100MΩ**	**≥ 100MΩ**		PASS												
	Thermal Aging (4.4.1)	Place samples in chamber at the maximum temperature specified in GMW 3191 Table 2 for a duration of 1008 hours.	Test samples shall meet visual exmination requirements and all mechanical assists and/or other elements required to separate connectors for service shall function without breakage		1.2	0.5 - MX								ENVIRON												70hrs @150ºC
	Post Test Pressure/Vacuum Leak (Sealing Class 2 & 3) (4.4.10)	Submerge test sample 300mm - 400mm in the salt water solution. Apply 4psig of pressure for 15 seconds. Switch the regulator source to vacuum 28kPa (4psig) for 15s.	Pressure - There shall be no loss of applied pressure and no bubbles visible exiting any test sample Vacuum - must meet isolation resistance acceptance criteria There must be no signs water inside the connector		1.2	0.5 - MX				**No bubbles/water ingress**				PASS												
	Post Test Isolation Resistance (4.3.5)	With mated connector pairs, apply 500VDC to adjacent terminal pairs, measure resistance 15s of stabilized reading. If the connector is equipped with a shorting bar, measure the resistance between the 2 terminal that are connected to the shorting bar	Isolation Resistance ≥ 100MΩ		1.2	0.5 - MX				**≥ 100MΩ**	**≥ 100MΩ**	**≥ 100MΩ**		PASS												
	Post Test Visual Examination (3.4)	Visually examine each test specimen after testing, note any obsevable changes, such as swelling, corrosion, discoloration, physical distortion, cracks, etc.	There shall be no corrosion, discoloration, cracks, etc which could affect the functionality of the part											PASS												

	GMW3191	Deviation	Original Tool	GSO Before Move	MX After Move
Terminal to Connector Engagement Force TPA in open position	15N Max		Max Wire: Min 7.35 Max 10.19 Avg 8.91	N/A	Max Wire: Min 6.82 Max: 14.85 Avg: 10.06 St Dev 2.07
Terminal from Connector Extraction Force Primary Lock Only	50N Min	25N Avg	Min 44.96 Max 58.43 Avg 51.37	Min 40.89 Max 49.65 Avg 45.92 St Dev 3.13	Min 38.47 Max 51.00 Avg 44.66 St Dev 4.82
Terminal from Connector Extraction Force Primary & Secondary Locks	80N Min	60N Min	Min 83.19 Max 126.56 Avg 105.35	Min 86.89 Max 108.90 Avg 97.66 St Dev 8.18	Min 87.94 Max 111.05 Avg 99.05 St Dev 8.89
Connector to Connector Engagement Force	22N Max		Min 15.80 Max 17.31 Avg 16.58	Min 16.39 Max 20.20 Avg 18.16 St Dev 1.35	Min 17.07 Max 21.80 Avg 18.47 St Dev 1.46
TPA Pre Lock Position to TPA Locked Position Force	30N Min 45N Max	15N Min	Min 17.29 Max 19.47 Avg 18.25	Min 17.93 Max 20.38 Avg 18.98 St Dev 0.75	Min 17.49 Max 20.99 Avg 19.33 St Dev 1.03
CPA Locking Force Mated Connector	22N Max		Min 5.99 Max 14.46 Avg 8.75	Min 6.52 Max 7.85 Avg 7.00 St Dev 0.44	Min 6.26 Max 7.61 Avg 6.75 St Dev 0.41
CPA Unlocking Force Mated Connector	10N Min 30N Max	7N Min	Min 8.12 Max 9.78 Avg 9.21	Min 7.92 Max 9.84 Avg 8.76 St Dev 0.59	Min 8.31 Max 9.06 Avg 8.66 St Dev 0.25
CPA Closing Force Unmated Connector	80N Min		Min 126.08 Max 137.05 Avg 132.25	Min 88.44 Max 143.73 Avg 122.31 St Dev 21.21	Min 114.67 Max 139.76 Avg 125.56 St Dev 6.53
CPA Extraction Force Unmated Connector	60N Min		Min 118.50 Max 144.72 Avg 129.45	Min 118.09 Max 127.61 Avg 124.82 St Dev 3.12	Min 119.21 Max 128.24 Avg 124.00 St Dev 2.55
Locked Connector Disengagement Force	80N Min		Min 125.05 Max 128.45 Avg 126.77	Min 125.57 Max 131.97 Avg 128.66 St Dev 2.72	Min 124.40 Max 129.14 Avg 126.75 St Dev 1.68

Section 11

Initial Process Studies

Not Applicable

Section 12

Qualified Laboratory Documentation

By Royal Charter

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - IATF 16949:2016

This is to certify that:

TE Connectivity
Global Automotive Division
Americas North
Carretera Internacional, KM 1969
Guadalajara-Nogales Km 2
Empalme
Sonora
85340
Mexico

operates a Quality Management System which complies with the requirements of IATF 16949:2016 for the following scope:

Design and manufacture of electrical interconnecting devices.

For and on behalf of BSI:

Carlos Pitanga, Chief Operating Officer Assurance – Americas

BSI Certificate Number: 514458-003
IATF Number: 0315420

...making excellence a habit.™

Certification Date: 2018-07-11 Latest Issue: 2018-07-11 Expiry Date: 2021-07-10

Location	Registered Activities
TE Connectivity Global Automotive Division Americas North Carretera Internacional, KM 1969 Guadalajara-Nogales Km 2 Empalme Sonora 85340 Mexico	Manufacture of interconnecting devices. Including the following remote support functions: TE Connectivity Global Automotive Division Americas North 900 Wilshire Boulevard Suite 150 Troy, MI 48084 Design and Development. TE Connectivity Global Automotive Division Americas North Fulling Mill Road Middletown, PA 17057 Design and Development, Product Testing and Customer Service. TE Connectivity Global Automotive Division Americas North 3800 Reidsville Road Winston-Salem, NC 27102 Design and Development, Product Testing and Calibration, Business Office (Quote Process) and Purchasing. TE Connectivity Global Automotive Division Americas North 20 Esna Park Drive Markham, Ontario L3R 1E1 Canada Design and Development and product testing (optics lab) TE Connectivity Global Automotive Division Americas North 2100 Paxton Street Harrisburg, PA 17111 Provision of Product Testing to TE Connectivity Manufacturing Sites. TE Connectivity North Carolina Distribution Center 8000 Piedmont Triad Parkway Greensboro, North Carolina 27409 Receiving Inspection, Storage / Inventory.

BSI Certificate Number: 514458-003

IATF Number: 0315420

Certification Date: 2018-07-11 Latest Issue: 2018-07-11 Expiry Date: 2021-07-10

Section 13

Appearance Approval Report

Not Applicable

Section 14

Sample Product

Sent in separate package
(if required)

Section 15

Master Sample

Retained at manufacturing location

Section 16

Checking Aids

Not Applicable

Section 17

Records of Compliance with Customer-Specific Requirements

MDS Report
Substances of assemblies and materials

1. Company and Product Name

1.1 Supplier Data

Name [ID]:	**Tyco Electronics GAD [913]**
DUNS Number:	**-**
Street/Postal Code:	**Amperestr. 12-14**
Nat./ZipCode/City:	**DE 64625 Bensheim**
Supplier Code:	**-**
Contact Person:	**IMDS Team (India) Engineering Services**
- Phone:	**-**
- Fax No.:	**-**
- E-Mail Address:	**imds@te.com**

1.2 Product Identification

Part/Item No.:	**1-2296694-3**
Description:	**Plug Assembly, 2 Posn. MCON**
Report No.:	**-**
Date of Report:	**-**
Purchase Order No.:	**-**
Bill of Delivery No.:	**-**
Preliminary MDS:	**No**
IMDS ID / Version:	**606593274 / 10**
Node ID:	**923155712**
MDS Status (Change Date):	**Internally released (04/23/2020)**

MDS Report

Substances of assemblies and materials

Materials which are subject to legal prohibitions must not be included!
Dangerous substances formed or released during use must also be declared
Please note: GADSL list for substances that require declaration

2. Characterization of the Component

Part/Item No.:	**1-2296694-3**	Report No.:	**-**
Description:	**Plug Assembly, 2 Posn. MCON**	IMDS ID / Version:	**606593274 / 10**
		Node ID:	**923155712**

Tree Level	Description Article Name Name Substance name	Part/Item No. Item- /Mat.-No. Material-No. CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. GADSL, SVHC	Parts Marking Recyclate (Indust./Consumer) Application [ID]
1	Plug Assembly, 2 Posn. MCON	1-2296694-3	606593274 / 10		3.23				
├2	Plug Housing, 2 Pos, Sealed, MCON, T4 Variant - Black	2301455-1	592715920 / 4	1	2.2				Yes
├3	PBT-GF30	1573435-2	448749639 / 4		2.2			5.1.a	No
├4	GF-Fibre	-				30			

Tree Level	Description / Article Name / Name / Substance name	Part/Item No. / Item- /Mat.-No. / Material-No. / CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. / GADSL, SVHC	Parts Marking / Recyclate (Indust./Consumer) / Application [ID]
4	Further Additives, not to declare	system				5.5			
4	PBT	-				64			
4	Carbon black	1333-86-4				0.5			
2	2P MCON Sealed Female ISL - Dark Grey	2203636-3	481319913 / 5	1	0.77				Yes
3	PBT-GF15	704734-4 + 704402-3	480254554 / 4		0.77			5.1.a	No
4	PBT-GF15	704734-4	98895942 / 3			98		5.1.a	
5	GF-Fibre	-				15			
5	Further Additives, not to declare	system				1			
5	PBT	-				84			
4	PBT MASTERBATCH	704402-3	309172508 / 3			2		5.1.b	
5	PBT	-				68.026022	61 - 71		
5	Titanium-dioxide	13463-67-7				27.055762	20.1 - 30		
5	Confidential Substances	*********				4.918216			
2	RING SEAL	1924957-2	658666747 / 2	1	0.08				Not Applicable
3	VMQ	A4005WB			0.08			5.3	No
4	VMQ	-				71.79	70 - 72		
4	Nepheline syenite	37244-96-5				27			
4	PTFE	-				0.07			

Tree Level	Description / Article Name / Name / Substance name	Part/Item No. / Item- /Mat.-No. / Material-No. / CAS No.	IMDS ID / Version	Quantity	Weight [g]	Portion [%]	Portion (from - to) [%]	Classif. / GADSL, SVHC	Parts Marking / Recyclate (Indust./Consumer) / Application [ID]
4	Boric acid	10043-35-3				0.07		D / P / SVHC	
4	Dimethylsilicone	63148-62-9				0.07			
4	Siloxanes and Silicones, di-Me, Me vinyl, vinyl group-terminated	68083-18-1				0.5			
4	Cobalt-aluminate-blue-spinel	1345-16-0				0.3		D	
4	Titanium-dioxide	13463-67-7				0.2			
2	Front Loaded Sealed CPA - Red	2138343-1	320209481 / 13	1	0.18				Not Applicable
3	PBT-GF30	17669-1 + 3-1573497-5	668311786 / 3		0.18			5.1.a	No
4	PBT-GF30	17669-1	48049287 / 6			97.5		5.1.a	
5	GF-Fibre	-				30			
5	Further Additives, not to declare	system				1			
5	PBT	-				69			
4	PBT Masterbatch RAL3002 CARMINE RED	3-1573497-5	668231210 / 1			2.5	2 - 3	5.1.b	
5	PBT	-				95.263158	90 - 100		
5	Confidential Substances	*********				4.736841			

This is an uncontrolled copy of a document created by IMDS. End of the report.

Section 18

Part Submission Warrant

DaimlerChrysler Ford GM

Part Submission Warrant

Part Name: 2POS, MCON 1.2 CB REC 1p TL SEALED | Cust. Part Number: 96Y7778

Shown on Drawing No.: C-2296694 | Org. Part Number: 1-2296694-3

Engineering Change Level: A | Dated: 19-Apr-2016

Additional Engineering Changes: N / A | Dated: N / A

Safety and/or Government Regulation: ☐ Yes ☑ No | Purchase Order No.: N / A | Weight (kg): 0.0032

Checking Aid Number: N / A | Checking Aid Engineering Change Level: N / A | Dated: N / A

ORGANIZATION MANUFACTURING INFORMATION

TE Connectivity / 588115092
Supplier Name & Supplier/Vendor Code

Carretera Int. Km. 1969 Guadalajara-Nogales
Street Address

Empalme | 85340 | Mexico
City | Region | Postal Code | Country

CUSTOMER SUBMITTAL INFORMATION

Newark Electronics
Customer Name/Division

N/A
Buyer/Buyer Code

GM
Application

MATERIALS REPORTING

Reporting of all materials, not just Substances of Concern, may be required by certain OEMs or other customers.
Has customer-required Substances of Concern information been reported? ☑ Yes ☐ No

Submitted by IMDS or other customer format: 606593274 / 10

Are polymeric parts identified with appropriate ISO marking codes? ☑ Yes ☐ No ☐ N/A

REASON FOR SUBMISSION

- ☐ Initial submission
- ☐ Engineering Change(s)
- ☑ Tooling: Transfer, Replacement, Refurbishment, or additional
- ☐ Correction of Discrepancy
- ☐ Tooling Inactive > than 1 year
- ☐ Change to Optional Construction or Material
- ☐ Sub-Supplier or Material Source Change
- ☐ Change in Part Processing
- ☐ Parts produced at Additional Location
- ☐ Other - please specify

REQUESTED SUBMISSION LEVEL (Check one)

- ☐ Level 1 - Warrant only (and for designated appearance items, an Appearance Approval Report) submitted to customer.
- ☐ Level 2 - Warrant with product samples and limited supporting data submitted to customer.
- ☑ Level 3 - Warrant with product samples and complete supporting data submitted to customer.
- ☐ Level 4 - Warrant and other requirements as defined by customer.
- ☐ Level 5 - Warrant with product samples and complete supporting data reviewed at supplier's manufacturing location.

SUBMISSION RESULTS

The results for ☑ dimensional measurements ☑ material and functional tests ☐ appearance criteria ☑ statistical process package
These results meet all design record requirements: ☑ YES ☐ NO (If "NO" - Explanation Required)
Mold / Cavity / Production Process: M1928332

DECLARATION

I affirm that the samples represented by this warrant are representative or our parts, which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm the these samples were produced at a production rate of Proprietary /1 hour. I also certify that the documented evidence of such compliance is on file and available for review. I have noted any deviation from the declaration below.

EXPLANATION/COMMENTS: Production Rate is TE proprietary.
P-19-018198 & P-19-018199: Component 2301455-1

Is each Customer Tool properly tagged and numbered? ☐ Yes ☐ No ☑ N/A

Organization Authorized Signature: Alejandra Lara H. | Date: 11-Mayo-2020

Print Name: Alejandra Lara | Phone No.: N/A | Fax No.: N/A

Title: PPAP Technician | E-mail: alejandra.lara@te.com

FOR CUSTOMER USE ONLY (IF APPLICABLE)

Part Warrant Disposition: ☐ Approved ☐ Rejected ☐ Other

Customer Signature | Date

Print Name | Customer Tracking Number (optional)

Section 18a

Bulk Material Requirements

Not Applicable